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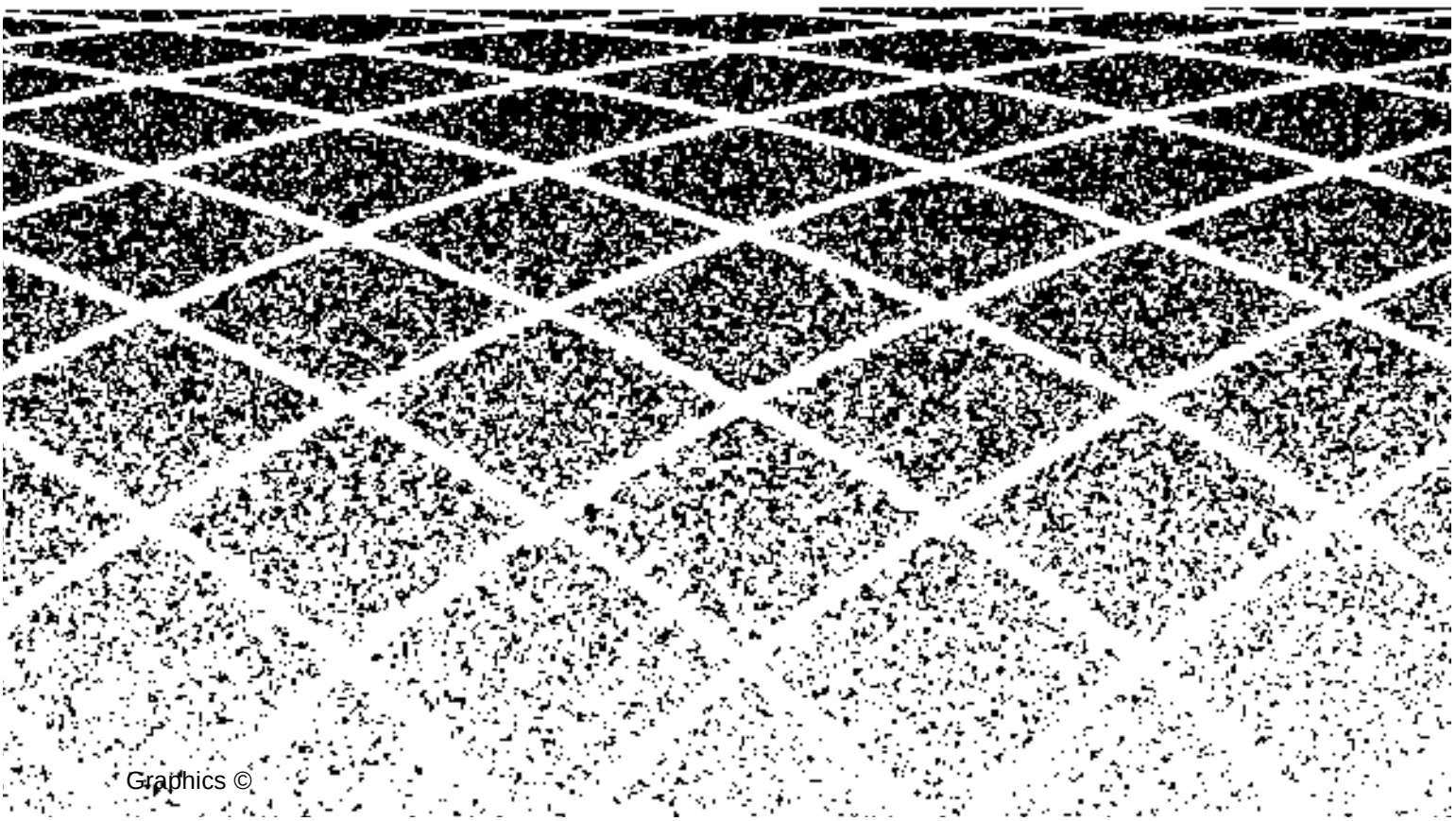
MultiPoint Control Unit
Reservations Agent Manual



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About this Document

This manual describes the AT&T MultiPoint Control Unit (MCU) Release 1.1 conference scheduling and reservation functions available to a reservation agent or telecommunications manager.

Related Information

Use this manual in conjunction with the following AT&T MCU documents and information sources:

- *AT&T MultiPoint Control Unit Installation Quick Reference,* 555-027-723

  Provides brief instructions on adding an AT&T MCU and components to enable you to do video conferencing.

- *AT&T MultiPoint Control Unit Maintenance,* 555-027-724

  Provides information about tests, alarms, and the actions you need to take to maintain your AT&T MCU.

- *AT&T MultiPoint Control Unit System Administration and Reports,* 555-027-727

  Provides detailed instructions an AT&T MCU telecommunications manager can use for ongoing administration and reports using the MCU Management Terminal (MCU-MT).

- *AT&T MultiPoint Control Unit Seminar,* BM1068U

  A course offered by AT&T to provide you with an overview of the AT&T MCU administration and scheduling functions.

- *AT&T Conference Reservation System User's Manual,* 555-230-520

  Provided with the optional AT&T Conference Reservation System, this manual gives detailed information and procedures an AT&T CRS administrator and/or reservation agent can use to install CRS, set up and manage CRS databases, reserve conferences and perform CRS system administration.

Organization

This manual contains five chapters and three appendices. They are:

- 1 provides an overview of the technology that led to the development of the AT&T MCU. It also gives a description of the features of the MCU.
- 2 explains the conference scheduling options and how to use the MCU Scheduling Terminal (MCU-ST).
- 3 provides an introduction to the AT&T Conference Reservation System (CRS).
- 4 explains the 24-hour internal reservation system, including how to develop a paper tracking system for scheduling conferences in advance of the planned date.
- 5 provides potential problems and solutions.
- Appendix A, "P x 64 Interoperability" presents a list of the video endpoints that are supported by the MCU, along with any limitations in features or functionality. This list is current as of the print date for this document. For the most current list, consult your Account Executive.
- Appendix B, "Conference Scheduling Commands" offers a quick reference of the commands a reservation agent can use to schedule, reserve and troubleshoot conferences.
- Appendix C, "Paper-Based Scheduling Forms" provides blank copies of the forms described in Chapter 4, "Paper-Based Scheduling."

This manual also has a Glossary and an Index.

Typographic Conventions

Several conventions are used to quickly convey information. These conventions are as follows:

- This *typeface* is used for references of titles of other documents and when referring to fields on screens.
- This **typeface** is used to identify commands and values for fields.
- This `typeface` is used when a word or phrase must be written on a paper form and when a message is returned by the MCU.
- The following icon:

WARNING:

emphasizes information that is important to your safety.

- The following icon:

CAUTION:

indicates information you need to prevent equipment damage.

- The following icon:

NOTE:

identifies additional information pertinent to the text preceding it.

MultiPoint Conferencing

1

Overview

The AT&T MultiPoint Control Unit (MCU) Release 1.1 brings multiple remote video (and, optionally, audio-only) endpoints onto a single video conference call. It is a multimedia product since it combines audio and video. This chapter gives background information on video/audio conferencing and the tasks you will be performing.

Standard vs. Proprietary

Until recently, video endpoints, like the original fax machines, could make contact only with other video endpoints developed by the same manufacturer. This was due to the fact that the technology, both video telephony and video conferencing, was built upon a manufacturer's private protocol, known as proprietary algorithms.

In 1990, the international standards body ITU-T (formerly CCITT) adopted a set of standards or rules that allow video product manufacturers to develop products with the ability to communicate with each other. These standards are collectively known as the H-series or Px64.

Multipoint Conferencing

Multipoint video conferencing takes the Px64 standards a step beyond two video endpoints communicating with each other (known as point-to-point). Multipoint video conferencing brings together multiple video endpoints at geographically dispersed locations into a single conference call. This requires tracking of video images, sound, and data from multiple sites for a simultaneous multimedia presentation.

Only one non-Px64 audio-only endpoint can be included in a Px64 conference on an AT&T MCU. However, such an endpoint can send a call from an audio bridging service. Therefore, multiple audio-only endpoints can participate in the conference via this service.

NOTE:
You can include Plain Old Telephones (POTS) as non-Px64 Audio-only endpoints.

Meet-Me Numbers, MCU-Extensions, and Bandwidth

As with any endpoint on a network (such as a telephone, computer, and video codec), the MCU is assigned network numbers, known as Meet-Me numbers. These numbers are used by conferees to dial into the MCU to participate in a multipoint conference. Each MCU is assigned multiple Meet-Me numbers, thus allowing multiple video endpoints to connect to the MCU simultaneously.

Each Meet-Me number is mapped to a MCU-extension on the MCU. Conferees will not be aware of the MCU-extension being reached since they are dialing a Meet-Me number. However, you must be aware of the mapping of Meet-Me numbers to MCU-extensions in order to reserve conferences on the MCU.

When you reserve a conference, an MCU-extension is added for each conferee. This process tells the MCU to reserve a video port for the duration of the conference and label it with a given MCU-extension. Once the conference is over, the video port is put back into the pool and the MCU-extension is again available for use.

Each conference is assigned a bandwidth of 56 kilobits per second (kbps or k), 64k, or 384k. Bandwidth is assigned on a per channel basis. Since both 56k and 64k bandwidth are used only for 2B (two channel) conferences, the effective bandwidth for such conferences is 112k and 128k, respectively. On the other hand, conferences with 384k bandwidth use only one channel and therefore have an effective bandwidth of 384k.

You assign bandwidth based on the network connections and video endpoint capabilities. For example, if two conferees are capable of originating 56k or 64k calls, but a third conferee can only originate 56k calls, the conference bandwidth must be set to 56k and all conferees should be instructed to originate 56k calls.

Furthermore, the MCU-extensions assigned to each conferee in a conference must be capable of supporting the conference bandwidth. The following rules apply: an MCU-extension with a 56k bandwidth can be assigned only to a conference with a 56k bandwidth; an MCU-extension of 384k/64k/56k bandwidth can join any conference (that is, a conference with a 56k, 64k or 384k bandwidth).

The relationship between Meet-Me numbers and MCU-extensions and their related bandwidths is discussed further in Chapter 4, "Paper-Based Scheduling."

Joining a Conference

Conferees can join a multipoint video conference by either dialing into the MCU (explained here) or receiving a call from the MCU (explained later in this chapter in Dial-Out on page 1-8).

For the former procedure, conferees use Meet-Me numbers. A Meet-Me number is usually a standard 10-digit phone number (often with 700 as the area code), a 7-digit PBX number or a 4- to 5-digit extension number that is part of a private dial plan.

NOTE:
Meet-Me numbers may be longer than 10 digits for international calls or for other configurations and access codes.

When a conference is scheduled to begin (and any time before the conference ends), conferees simply dial their Meet-Me number from their video endpoint to join in to the multipoint conference. Conferees need not join the conference in any particular order.

MCU Features

To assist conference conveners in configuring multipoint video conferences that maximize their conference experience, it is important to know how many MCU ports are available for conference calls and the features and capabilities offered to conferees. The following section describes the choices available.

NOTE:
The MCU is offered in different models with various options (see the *Multi-Point Control Unit System Description* for details). The full-featured EX model is described here. Feature sets vary depending on the MCU model, options selected and capabilities of the participating endpoint.

Number of MCU Ports

An MCU port is a collection of MCU resources that allow a video endpoint using a supported transfer rate (bandwidth) to connect to the MCU and participate in a multipoint conference. It includes trunking resources (trunks), video codec and conferencing resources and Px64 protocol termination resources.

Each MCU port can dynamically support various transfer rates. Transfer rate refers to the number of B (bearer) channels connected to a conference multiplied by the bandwidth of the B-channel. B-channel refers to a full-duplex, switched digital 56k/64k data channel provided by the network from a source (the video endpoint) to a destination (the MCU). A 2B-channel doubles the data channel bandwidth of the conference call from 56k/64k to 112k and 128k respectively. H0 refers to a transfer rate of one B-channel with a 384k bandwidth. The MCU supports video calls comprised of 2B-channel 56k or 64k and 384k (H0).

The MCU is offered in configurations based on MCU port resources and the MCU model. The first number in the configuration is the total number of MCU ports; all can be used for 2B conferences. The second number (always equal to or less than the first number) represents the number of MCU ports that can be used for H0 conferences. Also, one non-Px64 audio-only endpoint may be included in either type of conference (this is not indicated in the configuration).

The smallest configuration is 4/4 with four MCU ports available for 2B or 384k conferences. A four port system accepts a maximum of one four-party conference. The largest configuration is a 24/24 port system. With a maximum single 2B conference size of 24, the 24/24 port configuration can handle many combinations of conferences (such as three 8-party conferences, six 4-party conferences or two 12-party conferences). With a 24/24 configuration, you can use up to 24 MCU ports for H0 conferences.

Conference Modes

Meetings are conducted in a variety of ways. Some meetings require interaction among all conferees; others focus on one speaker who provides information to other conferees. Conference modes allow you to adjust the MCU to operate according to the type of meeting being held. A mode controls who is being seen at a given moment in a conference.

Conference modes are available according to the MCU model. Accordingly, some MCU models may feature conference modes that may not be available on other models.

The following conference modes are available:

Voice-Activated Mode (Automatic Control)

With voice-activated conference mode, the video image of the person speaking is seen by all other conferees except the speaker who continues to see the previous speaker. There is a minimal length of time between when a speaker stops talking and the video switches to the new speaker. When a new speaker becomes a video source, the MCU waits a moment before switching again to prevent a “ping-pong” appearance. A ping-pong appearance is caused by switching the video source too rapidly during a conversation that involves frequent changes of speaker. This conference mode is ideal for meetings where all participants share information. This automatic mode is a part of the MCU functionality and requires no special features from the video endpoint.

Contributor Mode (Automatic Control)

This mode (also known as the *See-Me* function) allows you to send high-resolution video still images to the other endpoints. It also allows you to send a broadcast to all the conferees in a conference. The relevant endpoints must support the ITU-T H.243 standard.

Chair Person Mode (User Control)

For this mode, the chair person determines which video sending endpoint is broadcast to all the other conferees. The chair person can change the video broadcaster at any time. Each conferee can hear audio from any other conferee. Any conferee can acquire the data token and initiate a data broadcast. Chair Person Control requires endpoint support. per ITUT-T H.243 standards.

Broadcast Mode with Auto Scan (Advanced Control)

In this mode, everyone in the video conference sees and hears one location continuously and unchanging. The location being viewed (the broadcaster) does not receive audio from any viewing location. The broadcaster does see video from each of the conferees on a continuous rotating basis (the rotation scan time can be adjusted when the conference is reserved). If the conferees join the conference before the broadcaster, they are added to the conference but view nothing until the broadcaster joins. If applicable, conferees will hear entry tones as other conferees join the conference. The advanced mode is part of the MCU functionality and requires no special features from the video endpoint.

Presentation Mode (Advanced Control)

Presentation mode allows one location to be viewed constantly and unchanging by all conferees, but unlike broadcast mode, all conferees including the presenter have audio from all sites. When anyone at the participating locations asks a question or makes a comment, the presenter hears and views that location. The other conferees hear the question or comment but continue to view the presenter. This

conference mode is ideal for classroom training and instructional meetings where there is one primary speaker and limited interaction from the conferees. If the conferees join the conference before the presenter, they are conferenced in but view nothing until the presenter joins. If applicable, conferees will hear entry tones as other conferees join the conference. This advanced mode is part of the MCU functionality and requires no special features from the video endpoint.

Video Quality

You can adjust the video quality according to the capabilities of the participating endpoints and the network interfaces used by both the endpoints and the MCU. Video quality is controlled by the amount of transfer rate and bandwidth allocated to video and the absolute amount of transfer rate selected for a given conference. As mentioned earlier, the transfer rate is based on the number of B-channels associated with a conference call.

The bandwidth for a video call is factored by the number of B-channels selected for a conference. The broader the bandwidth, the better the video quality. Therefore, for 2B transfer rates, 112k (two 56k channels) is the basic video quality; 128k (two 64k channels) provides better video quality; H0 (384k) provides the maximum bandwidth and thus the finest video image available with the MCU.

The MCU will not allow an endpoint to participate fully (audio and video) in a conference if it does not support the selected (or higher) bandwidth of the conference (56k, 64k, 384k). An endpoint calling with a 56k bandwidth cannot join a conference arranged with a 64k bandwidth.

The best video available for a 56k/64k video conference is achieved using a method of speech compression known as G.728 Low Delay Codebook Excited Linear Prediction (LD-CELP). G.728 uses 16k audio. Basically, the MCU and the video endpoints take the total amount of bandwidth on a conference call (regardless of whether it is 56k or 64k) and use a larger percentage of the bandwidth for video. The reduction in the audio bandwidth is indiscernible to most people. With maximum bandwidth for video, video quality is enhanced.

The highest quality audio you can arrange for a video conference is known as G.711 Pulse Code Modulation (PCM). G.711 is 56k/64k audio. Essentially, this selection maximizes the bandwidth allocated to audio. Therefore, the video quality is not as good as that which is offered with G.728.

NOTE:
Not all supported video endpoints offer G.728. For a multipoint conference to operate using G.728, all participating endpoints must support G.728. If one does not, the MCU automatically adjusts the conference to G.711.

Notification Tones

Notification tones are used during a conference to alert conferees about the status of a conference. Each tone has a different length and frequency so it can be distinguished from each other. Tones are selected on a per conference basis at the time a conference is reserved.

Entry and Exit Tones

When a conferee joins a conference, an entry tone alerts other conferees already on the conference that another endpoint has joined. Similarly, when a conferee disconnects from a conference, an exit tone notifies the other conferees that an endpoint has dropped.

Warning Tone

This tone sounds when only 10 minutes remain in a conference. This tone gives advance notice to conferees to either conclude the conference or request additional time to extend the conference.

Billing Information

In cases where the conference convener wants to track the reason for a conference and its duration for billing purposes, you can assign a billing identification number (up to 15 characters). The billing number associates the conference with a particular client, project or whatever information is necessary for proper accounting.

Audio Add-On

Audio Add-on is a customer option that allows the MCU to support one non-Px64 Audio-only endpoint participant per conference. This option is enabled via the Optional Features form. Audio Add-on participants hear the same tones (when applied) as Px64 endpoints. You can increase Audio Add-on capacity in increments of two.

Audio Add-on port capacity is considered supplementary to Px64 Multimedia port capacity. For example, if there are four Audio Add-on ports on a 24 port system, the system is viewed as one containing 24 Px64 ports plus four Audio Add-on ports. Accordingly, the expression “four port conference optioned with an Audio Add-on port,” for example, implies that the conference involves four Px64 ports plus one Audio Add-on port.

Audio Add-on functions only with Meet-Me endpoints (and not with the Dial-Out feature). This protects against security violations. Finally, Audio Add-on provides an optional Digital Tone Multifrequency (DTMF) password security capability.

Dial-Out

Dial-Out allows the MCU to originate calls and dial to the appropriate endpoints. Therefore, conference participants can be joined to conferences by receiving a call from the MCU. Each conference participant who joins a conference in this manner is identified as a Dial-out participant. This identification is made during conference reservation.

At conference start time, the MCU automatically originates a call to each Dial-out participant. A Dial-out call can use two different telephone numbers per endpoint. Once the Dial-out participant entry is submitted, the feature immediately tries to "set up" the call by initiating it to the endpoint. If the call fails, the MCU retries the call either up to four times by default or up to nine times via administration of the Feature-Related System Parameters form, which contains a Dial-out Post Answer Failure Retry Limit field. The MCU does not consider a call to be "set up" until the MCU has fully established a Px64 call to an endpoint (that is, the network is established and the protocol handshaking is completed).

The MCU provides Dial-out failure alarms via the DCP maintenance terminal. Such an alarm is required whenever the MCU is unable to establish a connection to the endpoint. Alarming via the telephone alerts the appropriate person (for example, the Reservation Agent) to investigate the problem by using the status conference command.

Mixed Conference Setup Mode

The MCU can support both Meet-me and Dial-out endpoints in the same conference. During conference reservation, each participant in a conference is identified as either a Meet-Me (Dial-in) or Dial-out participant.

Cascading

Cascading allows one MCU to connect to another MCU on a per conference basis. As such, this feature enables endpoints on each MCU to participate in a joint conference. As the first sentence implies, only one cascade per conference is allowed. However, note that each MCU can support up to 12 simultaneous cascades (for 12 different conferences).

Cascaded MCUs are connected to each other by an inter-MCU or cascade link. Each such link is unique to only one cascaded conference. In every case, the link uses a single conference port that is reserved via administration. This port is called the inter-MCU link port or cascade port.

The total number of ports allotted for each cascaded conference includes a tally for the cascade port. For example, an MCU that is participating in a cascade with four endpoints requires five ports for the conference (the additional port is used by

the cascade link). A maximum of 23 Px64 parties can be included in a conference on a single cascaded MCU. Joining two MCUs together via a cascade enables a maximum conference size of 46 Px64 parties.

Each cascaded MCU can support just one non-Px64 Audio-only endpoint. Therefore, a cascaded conference can support a maximum of two Audio-only endpoint participants (one per MCU).

At conference start time, the dial-out (originating) MCU establishes the cascade link by dialing a call to the dial-in (receiving) MCU.

NOTE:
The Reservation Agent determines the dial-out MCU and the dial-in MCU during administration of the cascade link.

NOTE:
The originating MCU also immediately attempts to establish a cascade link call whenever the Reservation Agent adds a cascade link record to a conference already in progress.

The MCU provides a recovery and retry procedure for automatic calls that result in failed call attempts. Accordingly, the MCU retries each original call either four times (by default) or (for post-answer failures only) nine times via administration of the Feature-Related System Parameters form.

For failed call originations, the MCU provides inter-MCU link failure alarms via the MCU Maintenance Alarm Terminal. For example, a Reservation Agent with a co-located MCU Maintenance Alarm Terminal could respond to an alarm on the terminal's "dial-out button" by using the status conference command to investigate the problem.

You can use cascading to join two conferences on a single MCU via an external MCU-link call. Therefore, a single MCU can cascade with itself via the network.

Cascading is optioned via the Optional Features form.

Dynamic Conference Resizing

This feature allows the Reservation Agent to add and remove conference participants before the conference starts as well as during the conference. The feature is applicable to all types of conference participants (including Meet-Me, Dial-out, Audio Add-on, and Cascade links).

This feature can add to a conference as many participants as is allowed according to the established limits for both conference participant types and available MCU resources. For example, resources permitting, the MCU never allows more than

one Audio Add-on port to a conference. On the other hand, the number of allowable Px64 endpoints within a conference is restricted only by the number of available Px64 ports for the duration of the conference.

Also, the feature allows you to remove and change dial-out numbers and to change the stop time on a reserved conference. Finally, the feature allows you to change dial-out numbers to dial-in numbers (and vice versa), and it allows you to change a primary MCU to a secondary MCU (and vice versa).

Conference Scheduling Methods

There are two ways to schedule and reserve conferences on the MCU. Each MCU is administered to accommodate only one conference scheduling method. The methods include the following:

- PC-Based Reservation System

  The AT&T Conference Reservation System (CRS) is an optional PC-based reservation system that automates the scheduling tasks, performs conflict resolution and ensures that selected endpoints have the ability to participate in a conference. It also allows you to reserve time on the MCU in advance of the scheduled conference date and automatically reserves the conference on the day it is scheduled to begin.

- Paper-Based Scheduling System

  You may arrange conferences from the MCU Scheduling Terminal (MCU-ST) on an as-needed basis or within a 24-hour window using the internal reservation system. On-demand conferencing can be used to dedicate resources of the MCU around-the-clock. You reserve MCU ports so selected locations always have the ability to convene a conference at any time without making a reservation.

  You can also create a paper-based scheduling system to track the number of MCU ports available and reserve MCU time in advance (more than 24 hours ahead of the planned start time) of the conference date.

Reservations Agent Tasks

2

Overview

As the reservation agent, you are responsible for accepting requests for multipoint conferences, ensuring that the resources are available for each conference, distributing the numbers conferees dial to join a conference, and helping to assist conferees who report problems.

Conference Scheduling Methods

There are two ways to schedule and reserve conferences on the MCU. The procedures are different according to the method you choose to use.

PC-Based Scheduling System

This optional PC-based scheduling system, the AT&T Conference Reservation System (CRS), automates the scheduling tasks and performs conflict resolution to ensure MCU resources are available and that selected endpoints have the ability to participate. It also allows you to reserve time on the MCU in advance of the scheduled conference date and automatically activates the conference on the day it is scheduled to begin. See Chapter 3, "PC-Based Scheduling" for more information.

Paper-Based Scheduling System

The paper-based scheduling system allows you to keep track of concurrent and overlapping conferences. By using this system, you know the number of MCU ports that are available and can reserve MCU time in advance (more than 24 hours ahead of the planned start time) of the conference date.

The paper-based scheduling system requires accurate records of specific conference information, such as conferees' names and contact numbers, conference mode, date of conference, start and stop times. It includes a usage chart to track MCU resource availability and to prevent overbooking. It also requires a way to remind you when to reserve the conference (within 24 hours of the start and stop times). This scheduling method is described in Chapter 4, "Paper-Based Scheduling."

You reserve conferences using the MCU Scheduling Terminal (MCU-ST). If a conference convener calls within 24-hours of the conference, you can reserve the conference while the convener is on the phone (provided the MCU resources and Meet-Me numbers are available for all conferees).

Another option is to dedicate resources of the MCU around-the-clock. This method reserves ports on the MCU so selected locations always have the ability to convene a conference at any time without making a reservation. Both methods are described in Chapter 4, "Paper-Based Scheduling."

Using the MCU-ST

The MCU-ST is used primarily to reserve conferences when you are using the paper-based scheduling system. The personal computer used with the AT&T Conference Reservation System (CRS) replaces the MCU-ST for scheduling and reserving conferences. However, another important function of the MCU-ST is diagnosing problems reported about conferences. So even if you are using the PC-based CRS, you may occasionally need to use the MCU-ST for troubleshooting and perhaps even as a backup for CRS.

Keys and Functions

The keyboard of the MCU-ST is equipped with cursor keys, transaction keys and editing keys to enable you to send and receive data from the MCU. These keys and their functionality are described below:

- **Cursor Keys**

  Used to move the cursor between fields and pages on a screen form. The cursor must be positioned in a field on a form before you add or change information in that field.

- **Editing Keys**

  BACKSPACE and CLEAR are used to edit data in a field. BACKSPACE erases the character at the current cursor position. CLEAR must be used in combination with SHIFT to clear all data in a field. The cursor must be in the field you want cleared before CLEAR and SHIFT are pressed. You can use TAB to advance from field to field or use SHIFT and TAB together to reverse the direction.

- **Transaction Keys**

  CANCEL, ENTER and HELP perform special functions. CANCEL erases a form or command. ENTER stores data from the screen into the system's memory. HELP displays more information about the values or commands that can be entered for a particular field or form.

  PAGE UP and PAGE DOWN display the previous page and the next page of screens with more than one page.

Logging In

Perform the following procedure to log in to the MCU-ST:

1. Enter **at**.
2. When the *OK* prompt appears, enter **atdt*code*** where ***code*** is the access code assigned by your telecommunications manager.

   NOTE:
   If you do not know the code word or number, ask your telecommunications manager. The code is provided by the AT&T Video Technical Center (VTC) when the MCU is installed.

3. Verify the MCU-ST displays: *Login:*
4. Enter **agent**.

5. Verify the screen displays: *password:*

NOTE:
Ask your telecommunications manager for the current password for the **agent** login.

6. Enter your password.

NOTE:
For security purposes, your password is not displayed as you enter it. The MCU verifies the login and password. If an invalid login or incorrect password name is entered, the screen displays: *login incorrect:*

7. The software version is displayed.
8. When the screen displays *Terminal Type (Enter 715, 513, 4410, or 4425): [715]*, press RETURN.
9. The screen should now display: *command:*

Changing Your Password

Use the following procedure to change your password after you have logged in:

NOTE:
Check with your telecommunications manager to be sure you are permitted to change the password for this login.

1. From the *command* prompt, enter **change password agent**. The Password Change form is displayed.
2. In the *Your Current Password* field, enter the password you used to log in.
3. In the *New Password For Login Name* field, enter your new password (see **NOTE**).

NOTE:
Valid passwords have four to seven alpha or numeric characters or a combination of both.

4. Reenter your new password in the *New Password (enter again)* field.
5. Verify the screen displays: *command successfully completed* followed by *command:*

Commands and Actions

When you logged in, you entered a command to the MCU and the MCU responded to your action. When you changed the password, the MCU displayed a form, in this case the Change Password Form, with fields for you to complete.

When you make reservations for conferences or check on the status of a conference, the MCU displays conference-related forms for you to view or complete. A list of these commands is provided as a quick-reference in Appendix B, "Conference Scheduling Commands."

After you are familiar with the process, you will discover some shortcuts to help you reserve conferences and check on conference status and port availability more quickly. For example, you do not have to type out an entire command for the MCU to recognize it. All that is required is for you to enter enough letters to make the command unique. So to change your password, instead of typing the entire command **change password agent**, you could type **ch pa agen**t.

Conference Record Screen

The Conference Record Screen is used to capture the information required by the MCU to reserve a conference.

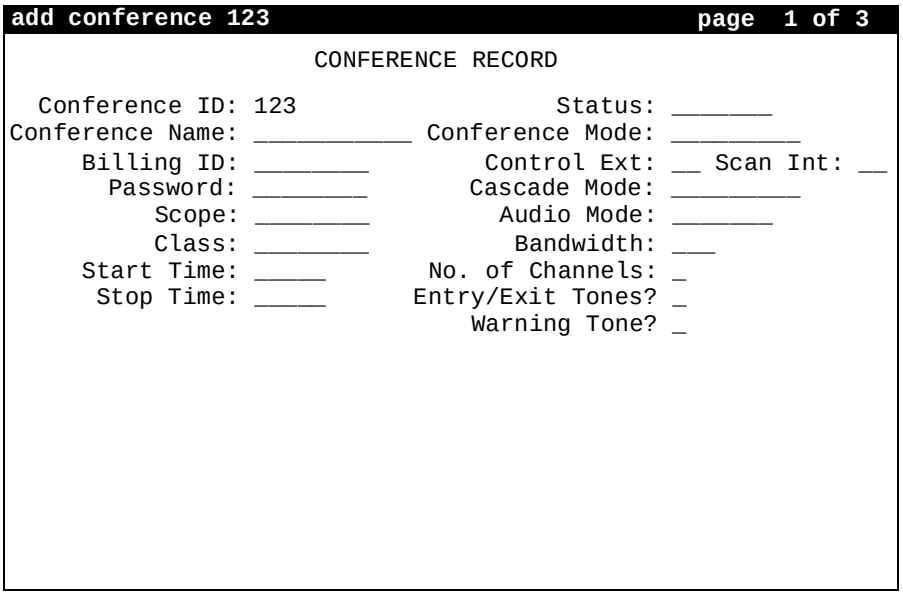


Figure 2-1. Conference Record Screen (Page 1 of 3)

```
add conference 123                                    page  2 of 3

                        CONFERENCE RECORD

CONFEREES

    Type MCU-EXT   Name    Dial-Out Number 1  Dial-Out Number 2
 1: ____ _______ _________ __________________ __________________
 2: ____ _______ _________ __________________ __________________
 3: ____ _______ _________ __________________ __________________
 4: ____ _______ _________ __________________ __________________
 5: ____ _______ _________ __________________ __________________
 6: ____ _______ _________ __________________ __________________
 7: ____ _______ _________ __________________ __________________
 8: ____ _______ _________ __________________ __________________
 9: ____ _______ _________ __________________ __________________
10: ____ _______ _________ __________________ __________________
11: ____ _______ _________ __________________ __________________
12: ____ _______ _________ __________________ __________________
13: ____ _______ _________ __________________ __________________
14: ____ _______ _________ __________________ __________________
15: ____ _______ _________ __________________ __________________
```

Figure 2-2. Conference Record Screen (Page 2 of 3)

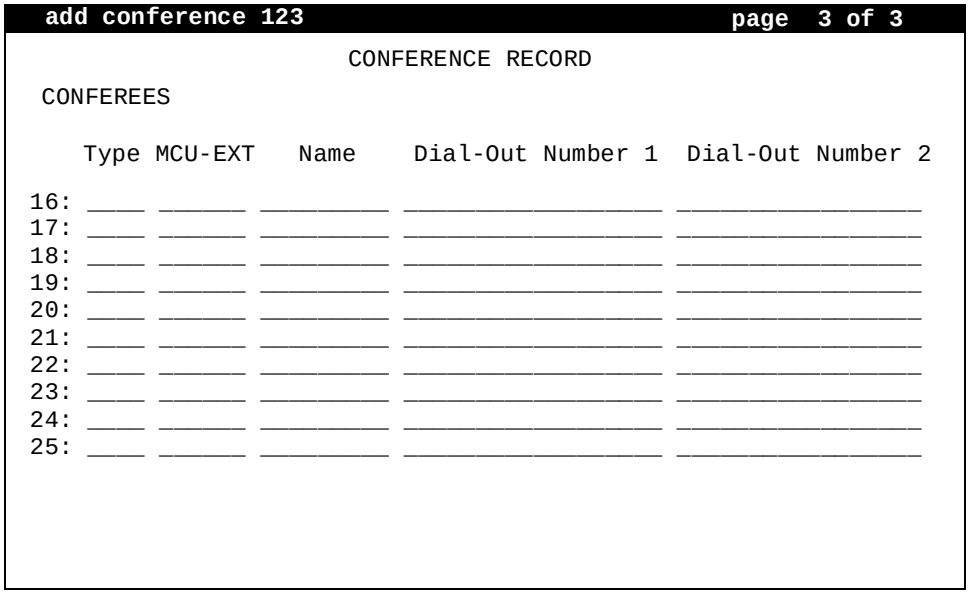


Figure 2-3. Conference Record Screen (Page 3 of 3)

The following list provides descriptions of the fields on the Conference Record screen and their related values:

- *Conference ID*

  Display-only field that shows the number that identifies this conference.

- *Conference Name*

  The purpose of the meeting for identification purposes.

- *Billing ID*

  If applicable, enter the billing number for this conference.

- *Password*

  Entered by the convener. Applies only to audio endpoints.

- *Scope*

  Visible only if a password is entered. If so, this field displays “audio.”

- *Class*

  There are three conference classes: **reserved**, **dedicated**, and **file**. A **reserved** conference is a conference that is scheduled to begin within 24-hours of the current time. A **dedicated** conference is a conference that is always available and can be joined at anytime. A **file** conference is a conference that is filed as a record for future use. The default is **reserved**.

- *Start Time*

  If **reserved** is selected in the *Class* field, this field appears so you can enter the time the conference begins. The time is entered in ***hhmm*** format where ***hh*** is the hour (00 to 23) and ***mm*** is the minutes (00 to 59). This field is optional for file conferences.

- *Stop Time*

  If **reserved** is selected in the *Class* field, this field appears so you can enter the time the conference ends. The time is entered in ***hhmm*** format where ***hh*** is the hour (00 to 23) and ***mm*** is the minutes (00 to 59). This field is optional for file conferences.

- *Status*

  This display-only field reports the current status of a conference as it relates to the *Class* of the conference. A reserved conference can be **active, in-use**, **inactive**, or **complete**. **Active** means the conference is available to receive calls. **In-use** means the conference is in-progress and one or more conferees has joined in. **Inactive** means the conference is not available to receive calls (for a reserved conference, the *Start Time* has not been reached). **Complete** means a conference has ended (the *Stop Time* has been reached). A dedicated conference is always **active** (available to receive calls). A file conference is always **inactive** (not available to receive calls).

- *Conference Mode*

  Depending on your MCU model, this field offers up to three conference modes. **Voice-activated** allows conferees to view the current speaker. The video source changes when another speaker begins talking. **Chair person control** allows the chair person to determine which video sending endpoint is broadcast to all the other conferees. **Presentation** mode allows one location to be viewed constantly by all conferees. If a conferee asks a question or makes a comment, the other conferees hear the speaker but continue to view the presenter. **Broadcastw/scn** mode allows one location to be viewed and heard constantly by all conferees. The broadcaster receives video (not audio) from all conferees on a rotating basis. **Voice-activated** is the default.

- *Control Ext.*

  This field appears only when the *Conference Mode* is either **Presentation** or **Broadcastw/scn**. The control extension is the MCU-extension of the location that will be the presenter or the broadcaster.

- *Scn Int.*

  This field appears only when the *Conference Mode* selected is **Broadcastw/scn**. This is the amount of time (in seconds) that the broadcaster will view each conferee before the MCU switches to the next conferee. The default is **15** seconds.

- *Cascade Mode*

  If the conference includes a CAS link, this mode must be either **primary** or **secondary.** On the other hand, if a cascaded endpoint cannot be administered, the mode must be **blank.** Finally, if endpoints can be administered but the link is not enabled, the mode is **disabled.**

- *Audio Mode*

  This display-only field shows **automatic** which means the MCU will automatically select the audio mode, either G.711 or G.728, depending on the capabilities of the participating video endpoints.

- *Bandwidth*

  This field is used to specify the bandwidth selected for the conference. If **56k** is selected, the conference will be a 2B-channel 56k conference (112k bandwidth). If **64k** is selected, the conference will be a 2B-channel 64k conference (128k bandwidth). If **384k** is selected, the conference will be a one channel 384k (H0) conference. **56k** is the default.

- *No. of Channels*

  This display-only field shows the number of channels being used for the conference selected. If the *Bandwidth* selected for the conference is 56k or 64k, this field will display a **2** for 2B-channels. If the *Bandwidth* selected for the conference is 384k, this field will display a **1** for one channel.

- *Entry/Exit Tones*

  This field appears if your MCU model has the Notification Tones feature. If it does appear, enter **yes** if you want conferees to hear an entry tone whenever a conferee joins the conference and an exit tone whenever a conferee leaves the conference. Enter **no** if you do not want the entry or exit tones for this conference. Tones are enabled or disabled on a per conference basis. The default is **yes**.

- Warning Tone

  This field appears when your MCU model has the Notification Tones feature. If it does appear, enter **yes** if you want conferees to hear a tone when 10 minutes remain before the scheduled end of the conference. Enter **no** if you do not want the warning tone for this conference. This tone is enabled or disabled on a per conference basis. The default is **yes**.

- *Type*

  This field indicates the type of conferee. Possible entries include **P64** (multimedia), **AUD** (audio-only), or **CAS**. Up to 25 entries are allowed.

- *MCU-Ext*

  An MCU-extension is required for each conferee in a conference. Up to 25 entries are allowed.

- *Name*

  When an MCU-extension is entered, the MCU automatically displays the associated name, which is usually the number the conferee dials to join a conference or the location of the conferee.

- *Dial-out Number 1, Dial-out Number 2*

  Network numbers that the MCU dials. These numbers are assigned to the endpoints. Up to 48 entries are allowed.

Availability of Ports Screens

The Availability of Ports Screens display the current day and the number of MCU ports (2B 56k/64k or 384k) and Audio-Only ports that are available over the next 24 hours. This information is vital to prevent overbooking of MCU ports when reserving simultaneous conferences.

Availability of 2B Ports Screen

Figure 2-4 presents a sample Availability of 2B Ports Screen. The following list provides descriptions of the fields on the screen and their related values:

- *Current TIme and Date*

  Display-only field shows the current date and time.

- *Administered Max 2B Port Cap*

  This display-only field shows the total number of MCU ports that are available for 2B conference calls.

- *Administered Audio-Only Capacity*

  This display-only field shows the total number of Audio-only ports that are available within the 2B conference.

- *Time 2B, Time.....Aud*

  The first two-field combination shows the time in15 minute increments over the next 24 hours and the number of 2B MCU ports that are available during each of the 15 minute time periods. The second two-field combination shows the number of Audio-only ports that are available for the same time parameters.

Figure 2-4 shows an MCU with 24 ports available for 2B conference calls (56k or 64k bandwidth) and with eight ports available for Audio-only calls. From the sample, we learn, for example, that 13 2B ports are available between 10:00 and 10:59 inclusive. This implies that 11 such ports are not available during this time period. Also, for the same time period, we learn that seven Audio-only ports are available. This implies that one such port is not available.

```
display available-ports 2B                              page  1 of  1

                              AVAILABILITY OF 2B PORTS

 10:09 am WED MAY 5, 1993                    Administered Max 2B Port Cap: 24
                                          Administered Audio-Only Capacity: 8

 Time  2B Aud  Time  2B Aud  Time  2B Aud  Time  2B Aud  Time  2B Aud  Time  2B Aud

10:00  13  7  14:00  17  3  18:00   1  2  22:00   5  4  02:00   5  2  06:00   9  2
10:15  13  7  14:15  17  3  18:15   1  2  22:15   5  4  02:15   5  2  06:15   9  2
10:30  13  7  14:30  17  3  18:30   1  2  22:30   5  4  02:30   5  2  06:30   9  2
10:45  13  7  14:45  17  3  18:45   1  2  22:45   5  4  02:45   5  2  06:45   9  2
11:00  14  6  15:00  18  2  19:00   2  2  23:00   6  4  03:00   6  2  07:00  10  2
11:15  14  6  15:15  18  2  19:15   2  2  23:15   6  4  03:15   6  2  07:15  10  2
11:30  14  6  15:30  18  2  19:30   2  2  23:30   6  4  03:30   6  2  07:30  10  2
11:45  14  6  15:45  18  2  19:45   2  2  23:45   6  4  03:45   6  2  07:45  10  2
12:00  15  5  16:00  19  1  20:00   3  2  00:00   3  4  04:00   7  2  08:00  11  4
12:15  15  5  16:15  19  1  20:15   3  4  00:15   3  4  04:15   7  2  08:15  11  4
12:30  15  5  16:30  19  1  20:30   3  4  00:30   3  4  04:30   7  2  08:30  11  4
12:45  15  5  16:45  19  1  20:45   3  4  00:45   3  4  04:45   7  2  08:45  11  4
13:00  16  4  17:00   0  2  21:00   4  4  01:00   4  4  05:00   8  2  09:00  12  4
13:15  16  4  17:15   0  2  21:15   4  4  01:15   4  4  05:15   8  2  09:15  12  2
13:30  16  4  17:30   0  2  21:30   4  4  01:30   4  4  05:30   8  2  09:30  12  2
13:45  16  4  17:45   0  2  21:45   4  4  01:45   4  4  05:45   8  2  09:45  12  2
```

Figure 2-4. Sample Availability of 2B Ports Screen

Availability of 384k Ports Screen

Figure 2-5 presents a sample Availability of 384k Ports Screen. The following list provides descriptions of the fields on the screen and their related values:

- *Current TIme and Date*

  Display-only field shows the current date and time.

- *Administered Max 384k Port Cap*

  This display-only field shows the total number of MCU ports that are available for 384k conference calls.

- *Administered Audio-Only Capacity*

  This display-only field shows the total number of Audio-only ports that are available within the 384k conference.

- *Time 384, Time.....Aud*

  The first two-field combination shows the time in 15 minute increments over the next 24 hours and the number of 384k MCU ports that are available during each of the15 minute time periods. The second two-field combination shows the number of Audio-only ports that are available for the same time parameters.

Figure 2-5 shows an MCU with 12 ports available for 384k conference calls and with four ports available for Audio-only calls. From the sample, we learn, for example, that four 384k ports are available between 13:00 and 13:14 inclusive. This implies that eight such ports are not available during this time period. Also, for the same time period, we learn that three Audio-only ports are available. This implies that one such port is not available.

```
display available-ports 384k                          page  1 of  1

                          AVAILABILITY OF 384k PORTS

 10:09 am WED MAY 5, 1993                  Administered Max 384k Port Cap: 12
                                          Administered Audio-Only Capacity: 4

 Time 384 Aud  Time 384 Aud  Time 384 Aud  Time 384 Aud  Time 384 Aud  Time 384 Aud

10:00   4  3  14:00  12  4  18:00   4  2  22:00   5  4  02:00   5  4  06:00   9  4
10:15   4  3  14:15  12  4  18:15   4  2  22:15   5  4  02:15   5  4  06:15   9  4
10:30   4  3  14:30  12  4  18:30   4  2  22:30   5  4  02:30   5  4  06:30   9  4
10:45   4  3  14:45  12  4  18:45   4  2  22:45   5  4  02:45   5  4  06:45   9  4
11:00   4  3  15:00   4  2  19:00   4  2  23:00   6  4  03:00   6  4  07:00  10  4
11:15   4  3  15:15   4  2  19:15   4  2  23:15   6  4  03:15   6  4  07:15  10  4
11:30   4  3  15:30   4  2  19:30   4  2  23:30   6  4  03:30   6  4  07:30  10  4
11:45   4  3  15:45   4  2  19:45   4  2  23:45   6  4  03:45   6  4  07:45  10  4
12:00   4  3  16:00   4  1  20:00   4  2  00:00   3  4  04:00   7  4  08:00  11  4
12:15   4  3  16:15   4  1  20:15   4  2  00:15   3  4  04:15   7  4  08:15  11  4
12:30   4  3  16:30   4  1  20:30   4  2  00:30   3  4  04:30   7  4  08:30  11  4
12:45   4  3  16:45   4  1  20:45   4  2  00:45   3  4  04:45   7  4  08:45  11  4
13:00   4  3  17:00   0  2  21:00   4  2  01:00   4  4  05:00   8  4  09:00  12  4
13:15  12  4  17:15   0  2  21:15   4  2  01:15   4  4  05:15   8  4  09:15  12  4
13:30  12  4  17:30   0  2  21:30   4  2  01:30   4  4  05:30   8  4  09:30  12  4
13:45  12  4  17:45   0  2  21:45   4  2  01:45   4  4  05:45   8  4  09:45  12  4
```

Figure 2-5. Sample Availability of 384k (H0) Ports Screen

Troubleshooting

You are the person who conference conveners call to make multipoint conference reservations. You are also the person who conferees call to confirm conference times and numbers to dial to join a conference. Therefore, you will most likely be the first person they call if anything goes wrong.

That is the reason for Chapter 5, "Diagnosing and Solving Problems." The procedures in that chapter are designed to help you solve most problems conferees will encounter. However, there may be problems that you cannot solve (such as network troubles or video endpoint problems), and you will be instructed when to escalate the problem to the AT&T Video Technical Center (VTC).

Multipoint conferencing is a new and exciting technology. There are many concepts and new terminology to learn. Be sure to follow the procedures for each of the scheduling and troubleshooting methods. They will help to remind you of each of the steps required to schedule and reserve multipoint conferences.

PC-Based Scheduling

3

Introduction to CRS

The AT&T Conference Reservation System (CRS) offers automated scheduling and reservation capabilities based on a Microsoft® Windows™ 3.1 software platform. The CRS handles all room, point-to-point and multipoint video conference reservation needs. You can automatically reserve the AT&T MultiPoint Control Unit (MCU) for upcoming multipoint conferences, print conference reminders and maintain a database of past, present and future conferences for resource and charge-back management.

As the reservation agent responsible for scheduling a conference, you can supply all the same customized information on easy-to-use CRS screens just as you do with the paper-based scheduling system. The CRS information you input (such as convener name and contact list, company name and conference time) is used to reserve the MCU ports as well as for billing purposes.

CRS can add, query, copy, and delete conference details in separate databases for Meet-Me numbers, video endpoint information, convener and contact data and site information. Using the databases, the reservation system can also provide an automatic conference summary.

With CRS, you can easily ensure that all endpoints in a conference are compatible. You can manage site time conflicts, video details, port availability, Meet-Me number assignments, and confirmations. CRS automatically notifies you of any unavailable resources which allows you to identify scheduling conflicts at the time the convener requests a conference.

Scheduling conflicts are presented on a graphical conflict calendar. Based on conference parameters, the conflict calendar allows you to search for the next available time when all resources are free. Once you have completed scheduling, you receive a report confirming your conference reservation.

Basic CRS Features

The following list includes a high-level overview of basic CRS capabilities:

- Flexible, Graphical Calendar Scheduling

  Provides fast conflict resolution through the use of a graphical calendar. The calendar simplifies the tasks of resolving resource, time and date conflicts for conferences being scheduled.

- Compatibility Checking

  Checks to ensure that only compatible endpoints are allowed to join a conference.

- Recurring Meeting Support

  Allows flexible repetition of meetings on a daily, weekly, biweekly, or monthly basis.

- Comprehensive, Conference Information Databases

  Allows creation and maintenance of the following databases:

  - People—Includes names, addresses, titles, company or department affiliation, and billing identification.
  - Sites—Includes name, associated audio and video numbers, contact person, company, endpoint, pool and preferred MCU. Also includes conference room information, including contents.
  - Companies or departments—Includes name and address.
  - Conference Templates—Includes bandwidth and protocol.
  - Endpoints—Includes bandwidth and protocol information.
  - MCU-Extensions—Includes MCU-extensions and required dial strings. These extensions can be automatically uploaded from the MCU after an installation.
  - MCU-Extension Pools—Includes groups of MCU-extensions with the same bandwidth and network access.
  - MCUs—Includes identification and communications information about the MCUs connected to the CRS.
  - Conferences—Includes information on conferences (that can be printed or faxed, if those capabilities are implemented with the CRS installation) scheduled for today, the past, or the future.

  - CRS System Defaults—Includes information on the active defaults for the CRS version.

- Information Access Flexibility

  Provides easy access to the database of conference conveners and contacts, including names, company names, addresses, phone numbers, and charge-back information.

- Control of MCU Reservations

  Informs the MCU(s) automatically about upcoming multipoint conferences.

- Charge-Back Information

  Keeps database records of conferences for chargeback purposes.

Other CRS Features

Other CRS capabilities include:

- Fax Support for Conference Confirmation

  Allows conveners to receive conference confirmations by fax.

- Flexible Configuration

  MCU/CRS configurations allow CRS to be collocated with the MCU or remotely located.

- Optimized Call Establishment

  MCU resource configurations enable the CRS to designate an optimized dialing pattern for individual conferences on one or two MCUs.

- Conference Template Creation

  Speeds up and simplifies the reservation process by allowing you to create conference templates to eliminate incompatibility between endpoints in a conference.

- Security Protection

  Offers password protection into the system and restricts access to administrator functions.

- Search and Modify Capability

  Allows you to change conference reservation information (such as the number of participants, start time, or date) before the conference begins.

- Data Export for Reports

  Allows the exporting of data in various standard formats for inclusion into external reports on personal computers or workstations.

- Comprehensive On-Line Help

  Provides context-sensitive help screens.

New Integrated MCU Features for CRS Conferences Features

In order to support the new integrated MCU features, CRS conference capabilities include:

- Dial-Out Conference Support

  Allows the AT&T MCU to call each endpoint in turn to establish conference connections on MCU models that support the dial-out feature.

- Dynamically Resizing a Conference

  Allows you to change details about a conference while the CRS conference is active (if supported by the MCU model(s) connected to the CRS).

  You can shorten the end time for a CRS conference that is already in progress if the ports and MCU-extension numbers are available (that is, not allocated to another scheduled conference). You can lengthen the end time for such a conference if MCU resources are sufficient (for example, if the ports and the MCU-extension numbers are available).

- Support for and Control of Cascaded MCUs

  Allows the CRS to manage the interconnection of two MCUs so that end-points on each MCU can participate in a joint conference.

- Audio-Only Conference Support

  Allows a single endpoint using a voice terminal or telephone to join a CRS conference.

Paper-Based Scheduling

4

Overview

The MCU has an internal reservation system that allows you to reserve multipoint conferences within 24 hours of their start and stop times. There are three ways you can use this 24-hour system:

- Reserved Conferences

  You can create a paper system to track conference information prior to the day of the conference, then on the day of the conference (or within 24-hours of the planned start and stop times), reserve the conference on the MCU. Alternatively, you can require conference conveners call to reserve a conference only on the day of the conference. After you check for MCU port and Meet-Me number availability, you confirm the conference and distribute the Meet-Me numbers to the convener.

- Dedicated Conferences

  You can reserve three or more MCU ports for a multipoint conference anytime. The MCU dedicates the resources for the conference without requiring a reservation.

- File Conferences

  You can file a copy of a Conference Record for future use. This allows you to collect the information once for a regularly scheduled video conference.

Advance Scheduling

The paper-based scheduling system is designed to allow you to accept conference reservations up to two months in advance of the date of the conference. On the day of the conference, or within 24 hours of the start and stop times, you enter the conference record into the MCU.

The paper-based scheduling system uses four components to log and verify conference information. These components are offered as suggestions to track important information when making conference reservations. You should design your own forms and charts based on these recommendations according to your size and model MCU. It will take some advance planning and practice to understand all the components of the paper-based scheduling system. It is recommended that you become familiar with the procedure before you begin reserving conferences.

To keep track of the paper-based scheduling system, it is helpful to have a three-ring binder with tabs for a two month time period and dividers for the days of the months (or as far in advance as you are willing to accept conference requests). As you complete the forms, insert them under the divider for the day of the conference. Here are the four components of the paper-based scheduling system:

- MCU-Extensions and Numbers to Dial

  This form shows all the MCU-extensions, supported bandwidth, and corresponding Meet-Me numbers conferees dial to join a conference (see Table 4-1).

- Site Profile

  This list provides valuable information about video endpoints, including their location, time zone, bandwidth capabilities and network type (see Table 4-2).

- Conference Appointment Form

  This form is used to record all the information necessary to schedule a multipoint video conference and is used as a guide to make the reservation on the day of the conference (see Table 4-3).

- Port and Extension Usage Chart

  This chart provides a means to record the number of ports and MCU-extensions required for a conference and is used to determine the availability of MCU ports and MCU-extensions when a conference is requested. It serves as quick visual confirmation of the number of MCU ports in use or available for a range of times for each day. This chart is used to prevent overbooking of the MCU. You refer to it to assist conference conveners in choosing the best time to reserve a conference and when requested to extend the time for a conference (see Table 4-4).

MCU-Extensions/Numbers to Dial Form

The MCU-Extensions and Numbers to Dial Form should be completed by the telecommunications manager who ordered the trunks and network numbers for the MCU. The form should show the all MCU-extensions assigned to the MCU and their corresponding Meet-Me numbers (the numbers conferees dial to join a conference). It should also include the bandwidth per channel for each MCU-extension and the Meet-Me numbers listed by network type (either public or private).

NOTE:
When an MCU-extension has a 64k/384k bandwidth, it is also capable of originating 56k calls. A video endpoint on a private network can use either a public or private Meet-Me number. A video endpoint on a public network can use only a public Meet-Me number.

Table 4-1. Sample MCU-Extensions and Numbers to Dial Form

MCU-Extensions and Numbers to Dial Form							
		Number to Dial				Number to Dial	
Ext.	**Bandwidth**	**Public**	**Private**	**Ext.**	**Bandwidth**	**Public**	**Private**
6000	56k or 64k/ 384k	(700)7376000	86000	5000	56k	(700)7565000	85000
6001	56k or 64k/ 384k	(700)7376001	86001	5001	56k	(700)7565001	85001
6002	56k or 64k/ 384k	(700)7376002	86002	5002	56k	(700)7565002	85002
6003	56k or 64k/ 384k	(700)7376003	86003	5003	56k	(700)7565003	85003
6004	56k or 64k/ 384k	(700)7376004	86004	5004	56k	(700)7565004	85004
6005	56k or 64k/ 384k	(700)7376005	86005	5005	56k	(700)7565005	85005
				5006	56k	(700)7565006	85006
				5007	56k	(700)7565007	85007
				5008	56k	(700)7565008	85008

Table 4-1. Sample MCU-Extensions and Numbers to Dial Form

MCU-Extensions and Numbers to Dial Form							
				5009	56k	(700)7565009	85009
				5010	56k	(700)7565010	85010
				5011	56k	(700)7565011	85011

Site Profile

Your telecommunications manager should create a site profile for all conferees participating in a conference prior to the day of the conference. Check this list before scheduling a conference to ensure that each conferee's video endpoint is capable of joining the conference. The chart also gives you specifics about the type of conference the video endpoint can join.

Table 4-2. Sample Site Profile

Site Profile					
Location Name	**Time Zone**	**Bandwidths Available**	**Network Type**	**Room Location**	**Contact Name/Phone**
Site A	EST	56k	private	G123	J. Gibson/215-555-1200
Site B	EST	56k 64k	private	1B-24	T. Lee/301-555-3231
Site C	MST	56k 64k 384k	private	457	C. Charles/303-555-9872
Site D	EST	56k 64k 384k	private	3G-104	D. Gilberg/908-555-7777
Site E	CST	56k	public	28A	R. Prasad/312-555-1818
Site F	PST	56k 64k	private	1150	A. Snowdon/619-555-2222

Whenever you receive a request to schedule a conference, check the Site Profile to confirm that each of the conferees has an existing profile. If you do not have a profile for a conferee, ask the conference convener for the conferee's name and phone number. You or your telecommunications manager should call the conferee to obtain a profile for the video endpoint.

The following is a list of information required to complete a Site Profile:

1. Ask the conferee to supply the model name and software version of the video endpoint.

   NOTE:
   If the conferee does not have the requested information, ask if there is a telecommunications manager on-site who does have the information and contact that person.

2. Check Appendix A, "P x 64 Interoperability" to see if the model and version of the endpoint are supported by the MCU. If they are, continue with step 3.

3. On the Site Profile, enter a unique name that identifies where the video endpoint is located (such as the city or department) in the *Location Name* field.
4. In the *Time Zone* field, specify in which time zone the video endpoint is located (such as **EST** for eastern standard time, **CST** for central standard time).
5. In the *Bandwidths Available* field, enter *all* the bandwidths supported by the video endpoint (**56k**, **64k** or **384k**).
6. In the *Network Type* field, enter either **private** if the connection is through a PBX or on a private network or **public** if the connection is directly to the network.
7. In the *Room Location* field, enter the conference room or office number where the video endpoint is located.
8. In the *Contact Name* field, enter the name and phone number of the person who should be called about the video endpoint when maintenance or information is needed.

Conference Appointment Form

The Conference Appointment Form (see Table 4-3) captures all the information necessary to schedule and reserve a multipoint video conference. It specifies the conference data, start and stop times, conference mode, and related information.

The Conference Appointment Form is actually a paper duplicate of the Conference Record screen on the MCU with a few additional fields. Use the Conference Record as your guide for creating this paper form.

1. Login as **agent** to the MCU-ST.
2. Enter **add conference 1** to display the Conference Record screen.
3. Make sure **reserved** appears in the *Class* field.
4. Tab to the *Conference Mode* field and try to select **broadcastw/scn**. If you cannot, the Advanced Control feature (includes **presentation** and **broadcastw/scn**) is not available with your MCU model.

5. Using Table 4-3 as your guide, design a paper Conference Appointment Form with the following fields:
   - The Conference ID number
   - The date of the conference
   - The convener's name or contact's name and phone number
   - The purpose or name of the conference (up to 20 characters)
   - The billing number (up to 15 digits)
   - The conference class (**reserved**, **dedicated** or **file**)
   - The conference bandwidth (**56k**, **64k** or **384k**)
   - The conference mode (**voice-activated**, **presentation** or **broadcastw/scn**). If **broadcastw/scn** or **presentation** are available, enter a field for the MCU-extension of the person who will be the broadcaster or presenter. If **broadcastw/scn** is selected, also enter a scan interval.

     NOTE:
     If you could not enter **broadcastw/scn** in step 4, **presentation** or **broadcastw/scn** are not available with your MCU model. Do not include an entry for these two fields on your paper Conference Appointment form.

   - The conference start time and stop time
   - Entry and exit tones

     NOTE:
     Check the Conference Record screen. If the *Entry/Exit Tones* field is not positioned below the *Bandwidth* field then your MCU model does not have the Notification Tones feature. You should not include an entry for this on your paper Conference Appointment Form.

   - Warning tone

     NOTE:
     Check the Conference Record screen. If the *Warning Tone* field is not to the right of the *Start Time* field, then your MCU model does not have the Notification Tones feature. Do not include an entry for this on your Conference Appointment Form.

- A location column with an entry for the maximum number of conferees who can join a conference. If the MCU has fewer than 12 ports, the maximum number of conferees is equal to the number of ports. If the MCU has more than 12 ports, the maximum number of conferees is 12 because that is the maximum number of conferees permitted to join a single conference.
- A *Network Type* column to indicate whether each video endpoint is on a private or public network.

  NOTE:
  A video endpoint with a private *Network Type* can use either a private or public Meet-Me number. However a video endpoint with a public *Network Type* cannot use a private Meet-Me number.

- An *Extension* column to enter the assigned MCU-extensions for each conferee.
- A *Number to Dial* column to enter the Meet-Me number that corresponds with the assigned MCU-extensions for each conferee to dial to join the conference.

Table 4-3. Sample Conference Appointment Form

Conference Appointment Form	
	Conference ID _____
Conference Date: ___/___/___	*Circle choices below*
	Conference Mode: **voice-activated**, presentation, broadcastw/scn
Contact Name: _____	If present or broadcast, control ext.: _____
Contact Phone: _____	If broadcast, scan interval: _____seconds (default is **15** seconds)
Conference Name: _____	Bandwidth **56k**, 64k, 384k
Billing ID*:* _____	Entry/Exit Tones: **yes**, no
Class: **reserved,** dedicated, file	Warning Tone: **yes**, no
Start Time: _____:_____	
Stop Time: _____:_____	

		Meet-Me	
Location	**Network Type**	**Extension**	**Number to Dial**
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Port and Extension Usage Chart

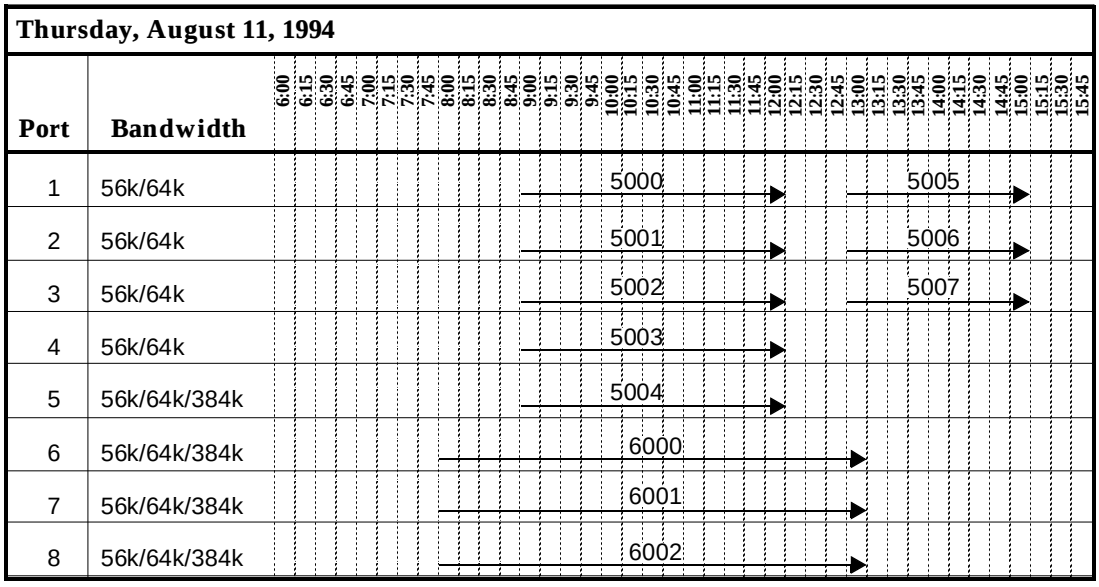
The Port and Extension Usage Chart provides a quick visual confirmation about the availability of MCU ports for conference calls. A chart is created for each day the MCU is scheduled for a conference. Port availability is based on the number of 56k/64k ports plus the number of 384k ports. 384k ports can be used for 56k/64k conference calls, but 56k/64k ports cannot be used for 384k conference calls.

Time slots can be based on business hours and can show quarter hour intervals. This chart records the MCU-extensions assigned to each of the conferees. This step allows you to track the MCU-extensions already in use so you do not assign the same MCU-extension to a conference reserved during the same timeframe.

The following chart shows eight ports (four 56k/64k and four 384k) available for a conference. This example assumes you have already reserved a five party, 56k conference starting at 9:00 a.m. and ending at 12:00 p.m., a three-party, 384k conference from 8:00 a.m. until 1:15 p.m., and a three-party, 56k conference beginning at 1:00 p.m. and ending at 3:00 p.m.

If you receive a request for a four-party, 384k conference on Thursday, August 11, you can look at the chart and quickly determine that the conference must begin and end before 8:00 a.m. or begin after 1:15 p.m.

Table 4-4. Sample Port and Extension Usage Chart



Reserved Conferences

You can schedule conferences in advance using the paper-based scheduling system or you can take reservations only within 24 hours of the conference.

NOTE:
Conferences can be reserved from the MCU-ST a day in advance provided the *Start Time* and *Stop Time* do not exceed 24 hours from the current time. For example, on Monday at 11:00 a.m., you can reserve conferences for Tuesday as the conference ends before 11:00 a.m.

If you are accepting conference reservations in advance of the day of the conference, start with the procedures in "Scheduling a Conference." If you are only accepting reservations on the day of the conference (or within 24 hours of the conference), skip to "Reserving a Conference."

Scheduling a Conference

When a conference convener calls to schedule a conference, perform the following steps to create a paper-based schedule:

1. Get a blank copy of the Conference Appointment Form. Ask the conference convener for the date of the conference, the contact's name and phone number. Enter the information, except for the date, on the Conference Appointment Form.
2. Ask which video endpoints will be joining the conference. Check the Site Profile and write the location of each endpoint in the *Location* field and the *Network Type* (**public** or **private**) on the Conferee Appointment Form.

   NOTE:
   If you do not have the endpoint listed on the Site Profile, ask the convener to provide the conferee's name and phone number to create a profile before you schedule the conference.
3. Check the Site Profile again to see what is the highest bandwidth all endpoints have in common. If they all have 384k, circle **384k** in the *Bandwidth* field on the Conference Appointment Form. If they do not, check to see if they all support 64k. If they do, circle **64k** in the *Bandwidth* field. If they do not, circle **56k** in the *Bandwidth* field.
4. Ask the convener what time the conference is scheduled to begin and what time it will end.

CAUTION:
Be sure to ask about any time zone differences. If you are in New York and a conference convener calls from California to request a 10:00 a.m. meeting, you need to know if that's 10:00 a.m. PST (1:00 p.m. EST) or 10:00 a.m. EST (7:00 a.m. PST).

5. Find the Port and Extension Usage Chart for the day of the conference. Check to see if the time slot and ports are available. If you entered a conference bandwidth of **384k** in step 3, then the available ports on the Port and Extension Usage Chart must be **56k/64k/384k**. For conference bandwidths of **56k** or **64k**, the MCU port bandwidth can be either **56k/64k** or **56k/64k/384k**.

   NOTE:
   If there is a conflict, help the conference convener choose another date or time when the resources are available.

6. Enter the day of the conference in the *Conference Date* field on the Conference Appointment Form.
7. Ask if the convener wants to track the time and purpose of the conference for billing. If so, request a billing number (up to 15 digits) and enter it in the *Billing ID* field on the Conference Appointment Form.
8. Fill in the *Start Time* and *Stop Time* fields on the Conference Appointment Form.
9. If applicable, ask the convener to select a conference mode (**voice activated**, **presentation**, or **broadcastw/auto scan**) then circle the answer in the *Conference Mode* field on the Conference Appointment Form. If either **presentation** or **broadcastw/scn** is selected, determine the location of the presenter or broadcaster and enter it in the *If present or broadcast, control ext.* field. If **broadcastw/scn** is selected, also enter the scan interval in the *If broadcast, scan interval* field.
10. If applicable, ask the convener whether or not to turn on entry and exit tones for the conference and circle the response in the *Entry/Exit Tones* field on the Conference Appointment Form.
11. If applicable, ask the convener whether or not to turn on the warning tone for the conference and circle the response in the *Warning Tones* field on the Conference Appointment Form.

12. From the MCU-Extension and Number to Dial Form, select an MCU-extension for each conferee. The MCU-extensions you select must:
    - support the conference bandwidth (selected in step 3)

      NOTE:
      For example, an MCU-extension that is administered with a 64k/384k bandwidth supports all conference bandwidths, including 56k. An MCU-extension with a 56k bandwidth supports only 56k bandwidth.

    - be a public number if the video endpoint has a public *Network Type* (see "Site Profile" on page 4-5)
    - be either a public or a private number if the video endpoint has a private *Network Type* (see "Site Profile" on page 4-5)
13. Write each MCU-extension and its corresponding Number to Dial (Meet-Me number) for each conferee. You choose the MCU-extension and corresponding Meet-Me number from the *Public* or *Private* column depending on the *Network Type* of the endpoint shown on the Site Profile. If the convener selected **presentation** or **broadcastw/scn** conference mode, enter the presenter's or broadcaster's MCU-extension in the *control ext.* field.

    NOTE:
    If you do not have enough private Meet-Me numbers available, you can distribute public Meet-Me numbers to any video endpoint that has a private *Network Type*. However, a video endpoint with a public *Network Type* can only use a public Meet-Me number.
14. Give the convener the Number to Dial from step 13 for each of the conferees.
15. Conclude your conversation with the conferee.
16. On the Port and Extension Usage Chart for the day of the conference, draw a line from the start time to the stop time of the conference. Repeat this for the number of ports (that is, the number of conferees).
17. On the Port and Extension Usage Chart, enter the MCU-extension for each conferee on each line you drew.
18. Open your notebook and insert the Port and Extension Usage Chart and the Conference Appointment Form under the divider for the day of the conference.
19. Be sure to check the Conference Appointment Form each day to see if a conference is scheduled. On the day of the conference, see "Reserving a Conference" on page 4-14 and perform the steps provided.

Reserving a Conference

When a conference start time and stop time are within 24 hours, perform the following procedure:

1. On the day of the conference or within 24 hours of the conference start time and stop time, go to your paper-based scheduling system and find the Conference Appointment Form for the conference.

   NOTE:
   You can reserve a conference the day before it is scheduled to begin, provided the conference start time and stop time fall within 24 hours of the current time. For example, if it is 5:00 p.m. and a conference is scheduled for tomorrow from 9:00 a.m. until 11:00 a.m., you can reserve it today. However, if the conference is scheduled from 3:00 p.m. until 5:30 p.m., it cannot be reserved since the stop time exceeds the 24-hour window.

2. Login as **agent** on the MCU-ST. To confirm that MCU resources are available, follow steps 3 and 4. To proceed with reserving the conference, skip to step 5.
3. Enter **display available-ports 2B** (for a 56k or 64k conference) or **display available-ports 384k** (for a 384k conference). This command displays the Availability of Ports screen.
4. Check the number of conferees against the number of available ports to be sure the resources are still available for the conference.

   NOTE:
   If there is a conflict, notify the conference contact so the conference can be rescheduled. Assuming the conference was scheduled properly, this situation should only arise if maintenance has busied-out the ports. It may also occur if you extend the length of a conference without first checking the Port and Extension Usage Chart for the day of the conference.

5. Enter **add conference next.** The Conference Record screen appears.
6. Note the *Conference ID* field on the top left of the Conference Record screen. Write it into the corresponding *Conference ID* field on your written Conference Appointment Form.
7. Using your written Conference Appointment Form as a guide, on the Conference Record screen enter a name for the conference (up to 20 characters) in the *Conference Name* field (such as sales meeting). This helps to identify this conference for future reference.
8. If applicable, enter a billing number (up to 15 digits) in the *Billing ID* field that cross-references to a client, project, or account being charged for this conference.

9. Enter **reserved** in the *Class* field so this Conference Record is reserved on the MCU.
10. Enter the time to begin the conference (in ***hhmm*** format) in the *Start Time* field where ***hh*** is the hour in military time (00 is 12 a.m. and 23 is 11 p.m.) and ***mm*** is the minutes. Do not type a colon between the hours and the minutes.
11. Enter the time to end the conference (in ***hhmm*** format) in the *Stop Time* field.
12. Enter the conference mode (**voice-activated**, **presentation**, or **broadcastw/scn**) in the *Conference Mode* field. If your MCU model does not offer Advanced Control features, **voice-activated** is the only allowable entry in this field.
    - If either **presentation** or **broadcastw/scan** is selected, enter the MCU-extension in the *Control Ext* field of the person who will be the presenter or the broadcaster. This field does not appear when **voice-activated** is selected.
    - If **broadcastw/scn** is selected, enter the scan interval (the number of seconds from 10 to 240 that the broadcaster will view a location before the video changes to the next location) in the *Scn Int* field. The default is **15** seconds.
13. Enter the conference bandwidth per channel (**56k**, **64k** or **384k**) in the *Bandwidth* field.
14. If applicable, enter **y** in the *Entry/Exit Tones* field if the conference convener wants to hear tones when participants join and leave the conference. If your MCU model does not support Notification Tones, this field does not appear.
15. If applicable, enter **y** in the *Warning Tone* field so conferees hear the warning tone 10 minutes before the conference stop time. If your MCU model does not support Notification Tones, this field does not appear.
16. Enter the type of conference [**P64** (multimedia), **AUD** (audio-only), or **CAS**] in the *Type* field.
17. Enter the MCU-extensions in the *Ext* field. The MCU automatically fills in the *Name* associated with these MCU-extensions the next time you display it.
18. For dial-out endpoints, enter in the *Dial-Out Number 1* and *Dial-Out Number 2* fields the network numbers that the MCU dials.

NOTE:
The MCU rejects any MCU-extension that is invalid (not administered).

19. Submit the Conference Record. The Conference Record will be rejected if:
    - any of the MCU-extensions are already assigned to a scheduled (overlapping) conference;
    - there are insufficient ports available for the requested time period;
    - administered ports are unavailable (that is, busied out by maintenance);
    - an MCU-extension is the sixth extension entered for a 384k conference;
    - an MCU-extension does not support the bandwidth of the conference;
    - the same MCU-extension is entered twice.
20. Enter **display conference *ID*** to redisplay the Conference Record.
21. If this is a recurring conference (such as a weekly project team meeting with the same conferees meeting at the same time), when the conference is over you can file a copy for future use (see "Recurring Conferences" on page 4-25 for details).

Changing a Conference Before the Start Time

To change a reserved conference scheduled to begin within 24 hours, but before it is in-progress (prior to the *Start Time*), perform the following steps:

NOTE:
Prior to the start time of a reserved conference you can change any of the details of the conference. The only caution is that when changing the start time, length of conference (stop time) or the number of conferees, you must first check to see if the resources are available and there are no conflicts with other scheduled conferences. Check your Port and Extension Usage Chart to be sure the MCU ports and MCU-extensions are available before you change the conference.

1. Login as **agent** to the MCU-ST.
2. Check the Conference Appointment Form for the *Conference ID* number.
3. Enter **display conference *ID*** where ***ID*** is the number of the conference. The Conference Record screen appears.
4. Check the *Class* field to be sure it displays **reserved**. If it displays **dedicated**, see "Changing a Dedicated Conference" on page 4-23. If it displays **file**, this conference is not reserved and all fields can be changed.

5. Check the *Status* field on the upper right to make sure it displays **inactive.** If either **active** or **in-use** is displayed, the conference has already begun and you can only extend the length (see "Extending the Time for a Conference" on page 4-19).
6. Check the Port and Extension Usage chart to make sure the resources are available for the time range and the number of conferees.

CAUTION:
If you are adding another conferee to the conference, check the Site Profile to see if the new conferee's endpoint supports the bandwidth selected for the conference (for example, if the endpoint supports only 56k and the conference bandwidth is 64k, you cannot add this conferee unless you change the conference and instruct all conferees to originate 56k calls).

7. Enter **change conference *ID*** where ***ID*** is the number of the conference. The Conference Record appears.
8. Change the appropriate fields to their new values.
9. Submit the Conference Record screen.

You can change a conference before it has been reserved on the MCU-ST by using the following procedure:

1. Find the Conference Appointment Form for the conference being changed.
2. If you are adding another conferee to the conference, check the Site Profile to be sure the conferee's endpoint offers the bandwidth selected for the conference. Also check the Port and Extension Usage Chart to make sure MCU ports and Meet-Me numbers are available.
3. Change the appropriate fields on the Conference Appointment Form to their new values.
4. Insert the Conference Appointment Form in your notebook and update the Port and Extension Usage Chart.

Changing a Conference After the Start Time

The manner in which you change a conference after the start time depends on whether or not Dynamic Resizing is optioned.

Procedure with Dynamic Resizing

Once a reserved conference has begun (that is, displays **active** or **in-use** in the *Status* field), you can make changes to the conference *while the conference is active or in use* only if the *Dynamic Resizing* option in the System-Parameters Customer-Options form is set to 'y.' Specifically, you can do the following:

- Add or remove Px64 parties by blanking out the entries for the *MCU-Ext, Dial-Out Number 1* and *Dial-Out Number 2* fields in the Conference Record form (however, you may not move an extension from one slot to another).
- Add or remove the non-Px64 Audio-Only party.
- Switch a multimedia party from dial-in to dial-out, or vice versa (however, an Audio-Only party must be a dial-in party).
- Change the dial-out number(s) associated with the party.
- Add or remove a cascaded extension and a cascade primary/secondary designation.
- Change a cascaded configuration's primary and/or secondary designation.
- Retain the ability to change the Stop Time and Class of the conference.

NOTE:
The vertical row of numbers ranging from 1 to 25 on the left edge of pages 2 and 3 of the Conference Record form are terminal numbers. A terminal number is assigned to each participant placed by the reservations agent. This assignment and placement are maintained until the conference is removed or the participant is removed from the conference record.

Procedure without Dynamic Resizing

If the *Dynamic Resizing* field in the System-Parameters Customer-Options form is set to 'n,' the only change you can make is to extend the length of the conference (change the *Stop Time*).

Extending the Time for a Conference

After a reserved conference begins, you can only extend the length, that is, you can only change the *Stop Time* field on the Conference Record screen. Conferees may want to extend the ending time to finish a meeting that is running over.

NOTE:
Be sure when changing the *Stop Time* field that you check to see if the resources are available and there are no conflicts with other scheduled conferences. Check your Port and Extension Usage Chart to be sure the MCU ports and MCU-extensions are available before you change the conference.

1. Login as **agent** on the MCU-ST.
2. Enter **display available-ports 2B** or **display available-ports 384k** to display the Availability of Ports screen. The Availability of Ports screen displays the port allocation in 15 minute increments.
3. Check to see if enough ports are available for all conferees for the additional time added to the conference.
4. Find the *Conference ID* on the Conference Appointment Form for this conference. You can also enter **list conference class reserved** to list the conference and its *Conference ID* number.
5. Enter **change conference *ID***. The Conference Record form appears.
6. Tab to the *Stop Time* field and enter the new time.
7. Submit the Conference Record screen.
8. Update your Conference Appointment form and the Port and Extension Usage Chart.

Ending a Conference Early

If a conference ends earlier than scheduled, the conference convener may notify you so you can terminate it on the MCU. To end a conference early, follow the steps below:

1. While the conference convener is on the phone, check your Conference Appointment Form to confirm the name of the conference that has ended early. Note the *Conference ID* number.
2. Login as **agent** on the MCU-ST.

> **NOTE:**
> If the *Conference ID* is not entered on the Conference Appointment Form, enter **list conference class reserved** to display a list of the day's conferences. Note the *Conference ID* number of the conference you are terminating.

3. Enter **change conference *ID***. The Conference Record appears.
4. Change the *Stop Time* field to the current time.
5. Submit the Conference Record.
6. On the Port and Extension Usage Chart, change the lines for each conferee on the conference to the new stop time. On the Conference Appointment form change the *Stop Time* field.

Cancelling a Reserved Conference

You can cancel a reserved conference that has not begun, that is, has not reached its *Start Time* using the following procedure.

> **NOTE:**
> To stop a conference in-progress, see "Ending a Conference Early" on page 4-20.

1. While the conference convener is on the phone, check your Conference Appointment Form to confirm the name of the conference being cancelled. Note the *Conference ID* and write `cancelled` on the top of the form.
2. Login as **agent** on the MCU-ST. If you are not keeping conference records, enter **list conference class reserved** to display the list of conferences. Note the *Conference ID* number of the conference you are terminating.
3. Enter **change conference *ID*** where **ID** is the conference number. The Conference Record appears.
4. Change the *Class* field from **reserved** to **file**.
5. Submit the Conference Record.

6. Enter **remove conference *ID***.

Dedicated Conferences

In circumstances when the MCU has a small number of ports or when there are known conference participants and regular usage times (such as off-site video classrooms), this on-demand method for scheduling conferences may be the best to use. This dedicated conference method allows you to reserve all or a portion of the MCU resources.

Dedicated conferences are conferences that are reserved and active at all times. With a dedicated conference, the MCU reserves the specified number of ports and the same set of preassigned Meet-Me numbers so a conference can begin anytime the participants dial in.

A dedicated conference has no administered start time or stop time. Stopping a conference requires manual intervention (see "Removing a Dedicated Conference" on page 4-24 for details). You should still maintain the paper-based scheduling system to track MCU port and MCU-extension usage.

Dedicated conferences work well in classroom environments when off-campus video endpoints join in for regularly scheduled classes. In a business environment, corporate executives or training personnel may need on-demand access to video multipoint conferencing without requesting a reservation. However, a limitation to this method is that even when a conference is not in-progress, the ports are not available to any other conference.

Scheduling a Dedicated Conference

To schedule a dedicated conference, you need the following required information:

- The purpose of the conference (a name up to 20 characters)
- Number of conferees
- The conference mode (**voice-activated**, **broadcastw/scn**, or **presentation**). If **broadcastw/scn** or **presentation** is selected, you also need the MCU-extension of the broadcaster or presenter.
- Conference bandwidth per channel (**56k**, **64k** or **384k**)

You can also request this optional information:

- A billing ID number (up to 15 digits)
- Are entry and exit tones being used

Reserving a Dedicated Conference

Perform the following steps to reserve a dedicated conference. You only need to do this once; the conference remains active until you remove it or change it.

1. Login as **agent** to the MCU-ST.
2. Enter **display available-ports 2B** or **display available-ports 384k** to display the Availability of Ports screen to check if the requested number of ports are available.
3. Enter **add conference next.** The Conference Record screen appears.
4. Enter a name for the conference (up to 20 characters) in the *Conference Name* field to identify it for future reference (for example, english101).
5. If applicable, enter a billing number (up to 15 digits) in the *Billing ID* field that cross-references to a client, project or account to be charged for this conference.
6. Enter **dedicated** in the *Class* field.
7. Enter the conference mode (**voice-activated**, **presentation**, **chair person control**, or **broadcastw/scn**) in the *Conference Mode* field.

   NOTE:
   If your MCU model does not offer Advanced Control features, **voice-activated** is the only allowable entry in this field.

   - If either **presentation** or **broadcastw/scan** is selected, enter the MCU-extension in the *Control Ext* field of the person who will be the presenter or the broadcaster. This field does not appear when **voice-activated** is selected.
   - If **broadcastw/scn** is selected, enter the scan interval (the number of seconds from 10 to 240 that the broadcaster will view a location before the video changes to the next location) in the *Scn Int* field.
8. Enter the conference bandwidth per channel (**56k**, **64k** or **384k**) in the *Bandwidth* field.
9. If applicable, enter **y** in the *Entry/Exit Tones* field if the conference convener wants to hear tones when conferees join and leave the conference. There is no warning tone for dedicated conferences because they are always active and there is no stop time associated with them.

   NOTE:
   If your MCU model does not support Notification Tones, this field does not appear.
10. In the *MCU-Ext.* field, enter an available MCU-extension with the correct bandwidth per channel for each conferee. The MCU automatically fills in the *Name* field (usually with the number to dial to join the conference or the

endpoint location) associated with the MCU-extension the next time you display this form. For a dial-out scenario, enter the appropriate dial-out numbers.

NOTE:
The MCU will reject an MCU-extension if it is invalid (not administered).

11. Submit the completed Conference Record screen. The MCU will reject the Conference Record if:
    - any of the MCU-extensions is already assigned to a scheduled (overlapping) conference;
    - an MCU-extension is assigned a 56k bandwidth and the conference is set at 64k or 384k;
    - there are not enough ports available;
    - administered ports have been busied out by maintenance;
    - an MCU-extension is entered twice.

NOTE:
You should reserve a separate group of MCU-extensions for dedicated conferences so rejections do not occur.

Changing a Dedicated Conference

You may be asked to change the conference mode, bandwidth, notification tones or the number of conferees on a dedicated conference. The procedure for doing so for a conference without dynamic resizing optioned differs from that for a conference with dynamic resizing optioned.

Procedure Without Dynamic Resizing

To change a dedicated conference without dynamic resizing optioned, perform the following steps:

1. Be sure to check your paper-based scheduling system. For example, if you are adding conferees to a dedicated conference, make sure the MCU ports and additional Meet-Me numbers are available.
2. Login as **agent** to the MCU-ST. Check the Conference Appointment Form for the *Conference ID* number.

3. Enter **change conference *ID*** where ***ID*** is the number of the conference. The Conference Record screen appears.
4. Check the *Class* field to be sure it displays **dedicated**.
5. Change the *Class* field to **file.**
6. Submit the Conference Record.
7. Enter **change conference ID** again.
8. Tab to the appropriate fields and make the changes.
9. After you make the changes, go to the *Class* field and change it from **file** to **dedicated**.
10. Submit the Conference Record.

Procedure with Dynamic Resizing

With dynamic resizing optioned, you can change a dedicated conference without cancelling it by changing it to a file conference before making changes. For details, refer to "Changing a Conference After the Start Time" on page 4-17 earlier in this chapter.

Removing a Dedicated Conference

You can remove a dedicated conference from the MCU when it is no longer needed. Alternatively, you may need to borrow the resources reserved for a dedicated conference for use in another conference.

Similarly, you may have a period of time when you do not need the dedicated conference and you want to make the resources available for other conferences until you need to restart the dedicated conference. For example, in an off-site video classroom situation, you may choose to change a dedicated conference to a file conference at the end of a semester then change it back to a dedicated conference when the new semester begins. The intent of this procedure is to be able to save the conference information for future use.

To remove a dedicated conference, use the following procedure:

1. Login as **agent** to the MCU-ST.
2. Enter **list conference class dedicated**. Note the *Conference ID* number.
3. Enter **change conference *ID*** where ***ID*** is the *Conference ID* number noted in step 2.
4. Change the *Class* field from **dedicated** to **file**.
5. Submit the Conference Record.

6. To remove the conference permanently after you have changed it from a *Class* of **dedicated** to **file**, enter **remove conference *ID***.

If you need to "borrow" the resources reserved for a dedicated conference or want to stop a dedicated conference anticipating that you will restart it in the future, follow the procedure below:

1. Login to **agent** the MCU-ST.
2. Enter **list conference class dedicated**. Note the *Conference ID* number.
3. Enter **change conference *ID*.** The Conference Record appears.
4. Change the *Class* field from **dedicated** to **file**.
5. Submit the Conference Record.

To restore the dedicated conference, perform the following procedure:

1. Login as **agent** onto the MCU-ST.
2. Enter **change conference *ID*.** The Conference Record appears.
3. Change the *Class* field from **file** to **dedicated**.
4. Submit the Conference Record.

File Conferences

The file conference is used when you want to save a Conference Record for future use. You may reserve a conference for a convener who tells you that the same people will be participating in this video conference once a week for two months. Likewise, certain locations may regularly plan video conferences.

You can use the file conference capability to store the Conference Record to use so you do not have to create a new record with the same information. You can save up to 200 Conference Records.

Recurring Conferences

If a conference will be held regularly (such as weekly or monthly), you can file a copy of the Conference Record to use over and over. Use the procedure below after a conference has ended and you want to keep a copy for future use:

1. Enter the dates for each recurring conference using the paper-based scheduling system. Make sure the time and resources are available.
2. Login as **agent** onto the MCU-ST.
3. Enter **change conference *ID*** where ***ID*** is the conference ID of the recurring conference.

4. Check to ensure that the *Status* field is **complete** and the Class field is **reserved**.
5. Tab to the *Class* field and change it from **reserved** to **file**. A copy of the Conference Record is filed for future use.
6. On the day of the next conference (or 24 hours before the stop time), login as **agent** onto the MCU-ST.
7. Enter **change conference *ID***.
8. Tab to the *Class* field and change it from **file** to **reserved.** The conference becomes **active** again.

Deleting Conference Records

The MCU stores up to 200 Conference Records. Use the procedure below to clear any records you no longer need:

1. Login as **agent** on the MCU-ST.
2. Enter **list conference class file**. Note the *Conference ID* numbers of all file conference you want to delete.
3. Enter **remove conference *ID*** where ***ID*** is the conference number noted in step 2. The Conference Record screen appears.
4. Confirm the screen displays a Conference Record you want to remove, then submit the Conference Record.
5. Repeat steps 3 and 4 for each Conference Record you want to delete.

Diagnosing and Solving Problems

5

Overview

Since you are the primary contact for making MCU reservations, conferees and conference conveners will call you first when something goes wrong with their conference. This section describes how to resolve scheduling conflicts and diagnose minor problems.

When conferees call to report a problem, you need to isolate the problem before you attempt to resolve it or escalate it. Since the MCU brings together a variety of video endpoints through the network (sometimes through another telephone system), it may take some investigating to figure out where the trouble lies. This troubleshooting section details some of the most likely possibilities and best actions to take.

NOTE:

Many of the problems in this chapter relevant to dial-out and cascading can be resolved only during an active conference and if dynamic resizing is allowed (customer option). Without dynamic resizing, modifications to the Status Conference form can be made only to the *Stop Time* and *Class* fields. Specifically, the *Class* field must be changed to “file” to stop the conference. Then, once the proper modifications are made, this field must be changed back to “reserved” or “dedicated.”

Status of Conference Screen

The Status of Conference screen displays information about active, in-use and complete conferences which can be used to diagnose a problem. This screen shows details of the last call only. Also, if you reserve a conference that has not yet begun using the same Conference ID as a completed conference, the Status of Conference screen will show the completed conference until the reserved conference has begun.

To view the Status of Conference screen on the MCU-ST, login and enter **status conference *ID*** where ***ID*** is the number of the conference. You can add **print** to the end of the command line (that is, **status conference *ID* print**) to print a copy of the Status of Conference screen.

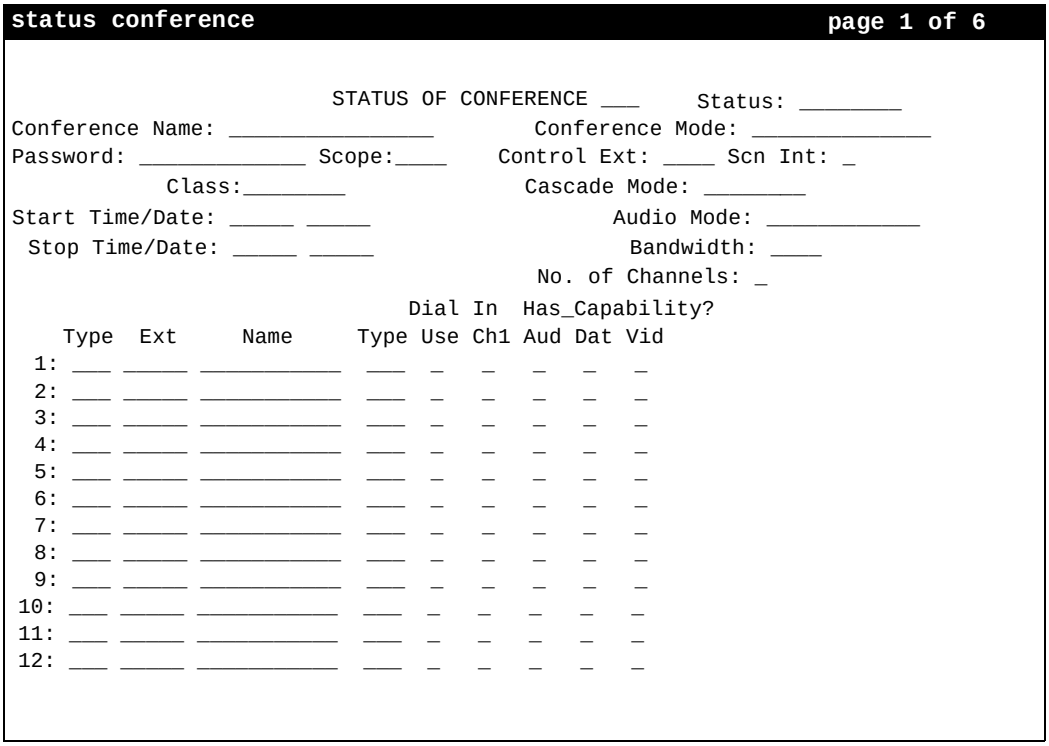


Figure 5-1. Sample Status of Conference Screen, Page 1

```
status conference                                          page 2 of 6


                                  Dial In  Has_Capability?
   Type  Ext     Name             Type Use Ch1 Aud Dat Vid
13: ___ _____ ___________  ___  _   _   _   _   _
14: ___ _____ ___________  ___  _   _   _   _   _
15: ___ _____ ___________  ___  _   _   _   _   _
16: ___ _____ ___________  ___  _   _   _   _   _
17: ___ _____ ___________  ___  _   _   _   _   _
18: ___ _____ ___________  ___  _   _   _   _   _
19: ___ _____ ___________  ___  _   _   _   _   _
20: ___ _____ ___________  ___  _   _   _   _   _
21: ___ _____ ___________  ___  _   _   _   _   _
22: ___ _____ ___________  ___  _   _   _   _   _
23: ___ _____ ___________  ___  _   _   _   _   _
24: ___ _____ ___________  ___  _   _   _   _   _
25: ___ _____ ___________  ___  _   _   _   _   _
```

Figure 5-2. Sample Status of Conference Screen, Page 2

```
status conference                                          page 3 of 6

                        STATUS OF CONFERENCE ___

Format: CIF    Sum Grp: Group1  Group2  Group3  Group4
  CMPI? _           L1: _______  _______  _______  _______
  QMPI? _           L2: _______  _______  _______  _______

        Join Drop    Drop    AC  -------Ports------- Sum
   Ext  Time Time   Reason   Num Trunk  Video  Audio  Grp Software
1: ____ ____ ____ _________ ___ _______ _______ _____   _ _________
        ____ ____ _________ ___ _______ _______ _____   _ _________
2: ____ ____ ____ _________ ___ _______ _______ _____   _ _________
        ____ ____ _________ ___ _______ _______ _____   _ _________
3: ____ ____ ____ _________ ___ _______ _______ _____   _ _________
        ____ ____ _________ ___ _______ _______ _____   _ _________
4: ____ ____ ____ _________ ___ _______ _______ _____   _ _________
        ____ ____ _________ ___ _______ _______ _____   _ _________
5: ____ ____ ____ _________ ___ _______ _______ _____   _ _________
        ____ ____ _________ ___ _______ _______ _____   _ _________
6: ____ ____ ____ _________ ___ _______ _______ _____   _ _________
        ____ ____ _________ ___ _______ _______ _____   _ _________
```

Figure 5-3. Sample Status of Conference Screen, Page 3

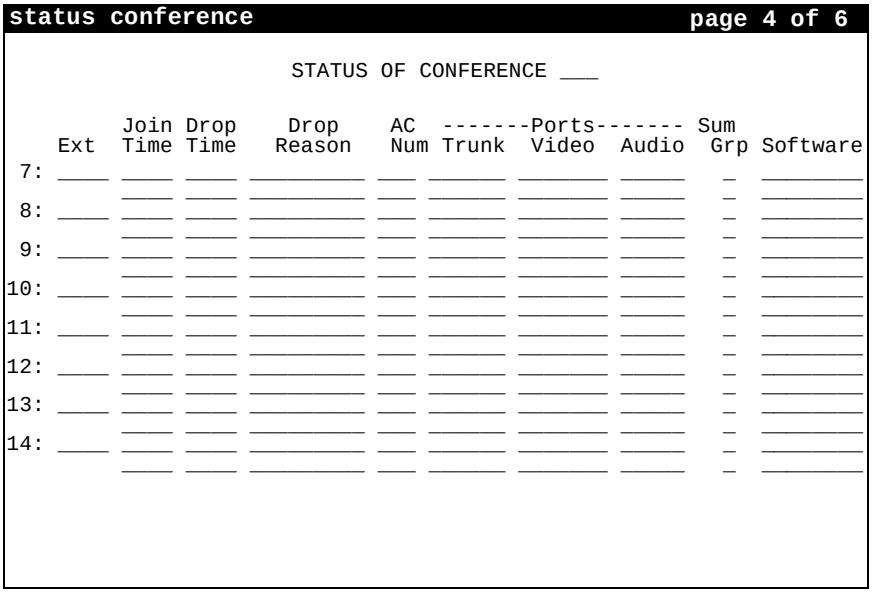


Figure 5-4. Sample Status of Conference Screen, Page 4

NOTE:
Pages 4 through 6 of the Status of Conference screen display the same information as Page 2 when there are more than six MCU-extensions assigned to a conference.

Dial-In Conferee Can't Join a Conference

If a dial-in conferee has tried unsuccessfully to join a conference (conferee may see a visual indication or hear a busy signal, or reorder tone), take the following actions:

1. Ask the conferee which conference was being joined (ask for the day, start time, convener's name, and purpose of the conference).
2. Login as **agent** on the MCU-ST.
3. Find the Conference Appointment Form for the conference and note the *Conference ID*. You can also enter **list conference** for a listing of the day's conferences. Locate the *Conference ID* number for the conference in question.

4. Enter **display conference *ID*** where ID is the *Conference ID* number found in step 3. The Conference Record screen is displayed (see the next figure).

```
display conference 123                                  page  1 of 3

                          CONFERENCE RECORD

  Conference ID: 123                        Status: _______
Conference Name: ___________ Conference Mode: _________
     Billing ID: ________         Control Ext: __ Scan Int: __
       Password: ________        Cascade Mode: _________
          Scope: ________          Audio Mode: ________
          Class: ________           Bandwidth: ___
     Start Time: _____       No. of Channels: _
      Stop Time: _____      Entry/Exit Tones? _
                                Warning Tone? _
```

Figure 5-5. Sample Conference Record Screen (Page 1)

5. Check the following fields on the Conference Record screen:
   - On the first page of the record, check the *Start Time* and *Stop Time* to be sure the conferee has the correct time of the conference. If the conferee is dialing in even one minute early, the call will be rejected. Note also if there is a time zone difference between the scheduled conference time and the location of the endpoint.
   - On the second or third page of the record, check the *Name* field to see if the conferee has dialed the right Meet-Me number. Make sure the Meet-Me number is assigned to the conference in question.
   - If there is a **2** in the *No. of Channels* field, ask the conferee if the *same* Meet-Me number was dialed *twice.* A 2-channel 56k/64k conference requires dialing the same Meet-Me number twice to connect both channels.
6. Enter **display time** to see if there was a time change (for example, daylight savings time) or a power outage that caused the MCU system clock to be incorrect. If the MCU system clock is wrong, notify your telecommunications manager.

7. Enter **status conference *ID*** where ***ID*** is the *Conference ID* number found in step 3. The Status of Conference screen is displayed (see Figure 5-1).
8. Check the *Stop Time/Date* field on the Status of Conference screen. A **blank** means the conference has started and is still in progress.

   If there is a time recorded in the *Stop Time/Date* field, the conference is over. Make sure the conference did not end early and that the conferee is calling from the same time zone.

   A conference reserved for an earlier time (that is, reached its *Stop Time*) will show **complete** in the *Status* field. If this is the case, make sure the conferee is not calling from a different time zone. However, check the screen to make sure you are displaying data about the right conference.

   NOTE:
   A Status of Conference screen is not available for a conference that has not started. However, a Status of Conference screen will appear for any previous conference that used the same *Conference ID*. Be sure you are viewing the right conference.
9. Check the *Ext/Meet-Me Name/In Use* field. There are three possible values for the *In Use* column.

   A **y** indicates the MCU-extension is being used by a conferee. The convener may have distributed the same number to two conferees. Give the conferee another MCU-extension assigned to the conference that has a **blank** in the *In Use* column.

   If there is a **blank** in the *In Use* column next to the dial type the conferee is using, the call never made it to the MCU. This indicates a problem with the endpoint or the network. Escalate the problem (see "When All Else Fails" on page 5-17).

   If there is an **n** in the *In Use* column, the endpoint call arrived at the MCU but got dropped. See "Conferee Dropped from Conference" on page 5-12 for the drop reason.
10. Before escalating the problem (if necessary), try changing the dial-in user to a dial-out user by obtaining the destination number(s) for the endpoint and then letting the MCU dial out to the endpoint (this task requires dynamic resizing).

Dial-Out Conferee Can't Join a Conference

If a dial-out conferee has tried unsuccessfully to join a conference, take the following actions:

1. Ask the conferee which conference was being joined (ask for the day, start time, convener's name, and purpose of the conference). Also, ask the conferee for the dial-out number or location identification information (for example, Location Name, Room Number, etc.). The dial-out numbers are needed to associate the endpoint with the administered data on the Status Conference forms.
2. Login as **agent** on the MCU-ST.
3. Find the Conference Appointment Form for the conference and note the *Conference ID*. You can also enter **list conference** for a listing of the day's conferences. Locate the *Conference ID* number for the conference in question.
4. Enter **display conference *ID,*** where ID is the *Conference ID* number found in step 3. The Conference Record screen is displayed (see the next figure).

```
display conference 123                                  page  1 of 3

                          CONFERENCE RECORD

  Conference ID: 123                      Status: _______
Conference Name: ___________ Conference Mode: _________
     Billing ID: ________          Control Ext: __ Scan Int: __
       Password: ________        Cascade Mode: _________
          Scope: ________          Audio Mode: _______
          Class: ________           Bandwidth: ___
     Start Time: _____        No. of Channels: _
      Stop Time: _____       Entry/Exit Tones? _
                                 Warning Tone? _
```

Figure 5-6. Sample Conference Record Screen (Page 1)

5. Check the following fields on the Conference Record screen:
   - On the first page of the record, check the *Start Time* and *Stop Time* to be sure the conferee has the correct time of the conference. Note also if there is a time zone difference between the scheduled conference time and the location of the endpoint.

- Check the administered dial-out numbers against the information obtained in step 1 to verify that the correct dial-out numbers were administered.
- If there is a **2** in the *No. of Channels* field, ensure that both dial-out numbers are specified correctly.

6. Enter **display time** to see if there was a time change (for example, daylight savings time) or a power outage that caused the MCU system clock to be incorrect. If the MCU system clock is wrong, notify your telecommunications manager.
7. Enter **status conference *ID*** where ***ID*** is the *Conference ID* number found in step 3. The Status of Conference screen is displayed (see Figure 5-1).
8. Check the *Stop Time/Date* field on the Status of Conference screen. A **blank** means the conference has started and is still in progress.

   If there is a time recorded in the *Stop Time/Date* field, the conference is over. Make sure the conference did not end early and that the conferee is calling from the same time zone.

   A conference reserved for an earlier time (that is, reached its *Stop Time*) will show **complete** in the *Status* field. If this is the case, make sure the conferee is not calling from a different time zone. However, check the screen to make sure you are displaying data about the right conference.

   NOTE:
   A Status of Conference screen is not available for a conference that has not started. However, a Status of Conference screen will appear for any previous conference that used the same *Conference ID*. Be sure you are viewing the right conference.

9. Check *In Use* field. There are three possible values, as follows:

   A **y** indicates the MCU-extension is being used and that the call is in the process of being connected. This may be true because the call failed to establish the first time and the MCU is attempting to reestablish the call. Check the join/drop times for both the channel and associated drop reasons.

   A **blank** indicates that the call never made it out of the MCU. This could indicate a problem with the dial-out number. If the administered dial-out numbers are correct, escalate the problem (see "When All Else Fails" on page 5-17).

   An **n** indicates that the outgoing call was made on behalf of this MCU-extension but was dropped.

   The following drop reasons on the endpoint channels indicate a dial-out failure:

   - No-trunks

There are no available trunks in the network. Escalate the problem.

- Busy

  The destination endpoint is busy. Ensure that the destination endpoint is idle.

- No-ring

  The network has not returned ringing for more than 30 seconds. Verify the destination number.

- Ring-no-a

  The destination's endpoint rang and did not answer after more than 60 seconds. Check the equipment for this endpoint.

- Wrong-num

  The network returned an intercept, or an ISDN cause value indicates an intercept. This indicates that the dial-out number(s) is (are) incorrect.

If the drop reason itself does not identify the problem, see "When All Else Fails" on page 5-17.

Cascaded Call Deficient

It is possible that some conferees will join a cascaded conference but other conferees expected to join the conference will fail to do so. Whenever this happens, you should investigate the state of the cascaded link.

Whenever two MCUs are cascaded (joined) in a conference, one of the MCUs is set up to perform a dial-out and the other MCU is set up to receive the call. Usually, problems relevant to MCU call setup are the same as for other video endpoints. Therefore, you can use the same troubleshooting procedures to resolve these problems. However, in addition, the MCU provides three drop reasons (explained later) to identify problems relevant to cascading. The MCU performing the dial-out does not retry the call(s) for these drop reasons. Accordingly, you must modify the cascade mode or change the dial-out numbers on the Status Conference Record for one or both MCUs.

If the call is a dial-in call, refer to the steps in "Dial-In Conferee Can't Join a Conference" on page 5-4 to track the problem. For a dial-out call, refer to the steps in "Dial-Out Conferee Can't Join a Conference" on page 5-6. In either case, you should investigate both the dial-in and dial-out MCUs.

If, in step 9 of the procedure in either section, there is an **n** in the *In Use* column of the Status Conference forms for the CAS endpoint, the call was established on behalf of this MCU extension but was dropped.

Drop reasons specific to cascading include the following:

- 2-pri

  The cascading mode for both MCUs is specified as “primary” on the Status Conference forms. However, the cascading mode for one of the MCUs must be “secondary.” Change the cascading mode on Page 1 of the associated Status Conference record.

  If there is no preference that a specific MCU be the primary MCU, make the change on the dial-out MCU. This will allow the dial-out MCU to retry cascaded calls.

  If there is a preference that a dial-in MCU be the secondary MCU, you must change the administration of both MCUs. Specifically, you must change the dial-in MCU cascade mode designation to “secondary” and temporarily disable the dial-out MCU cascade mode designation. You must then submit the Status Conference Record form. Finally, you must change the mode from “disabled” to “primary.” This will cause the dial-out MCU to retry cascaded calls.

- 2-sec

  The cascading mode for both MCUs is specified as “secondary” on the Status Conference forms. However, the cascading mode for one of the MCUs must be “primary.” Change the cascading mode on Page 1 of the associated Status Conference record.

  If there is no preference that a specific MCU be the primary MCU, make the change on the dial-out MCU. This will allow the dial-out MCU to retry cascaded calls.

  If there is a preference that a dial-in MCU be the primary MCU, you must change the administration of both MCUs. Specifically, you must change the dial-in MCU cascade mode designation to “primary” and temporarily disable the dial-out MCU cascade mode designation. You must then submit the Status Conference Record form. Finally, you must change the mode from “disabled” to “secondary.” This will cause the dial-out MCU to retry cascaded calls.

- Not-MCU

  The destination on the dial-out MCU was not an MCU. Verify that the MCU-extension administered on both MCUs for the cascaded link is of type CAS and that the dial-out number(s) on the dial-out MCU is (are) the correct number(s) to dial to reach the CAS MCU-extension on the dial-in MCU.

  The endpoint that called the CAS extension on the dial-in MCU was not an MCU. This could indicate that one of the Px64 conferees dialed the Meet-

Me Number associated with the CAS MCU-extension. Verify that the dial-out MCU has the correct dial-out number(s) administered for the CAS MCU-extension.

NOTE:
For non-cascaded conference drop reasons, see "Conferee Dropped from Conference" on page 5-12.

Conferee Cannot Get Video

If a conferee has joined a conference but does not receive video, do the following:

1. Ask the conferee which conference was joined (ask for the start time, convener's name and purpose of the conference).
2. Login as **agent** on the MCU-ST.
3. Find the Conference Appointment Form for the conference and note the *Conference ID*. You can also enter **list conference** for a listing of the day's conferences. Locate the *Conference ID* number for the conference in question.
4. Enter **display conference *ID*** where ***ID*** is the *Conference ID* number from step 3. The Conference Record screen is displayed (see Figure 5-3).
5. Check the *Status* field on the Conference Record screen to see if the conference is **in-use**, **active** or **complete**. If the conference is in-progress, the status should be **active** or **in-use**. However, check the screen to make sure you are displaying data about the right conference.
6. Check the *No. of Channels* field. If there is a **2** in the field, ask the conferee if the *same* Meet-Me number was dialed *twice*. A 2B-channel 56k/64k conference requires dialing the same Meet-Me number twice to connect both channels.
7. Enter **status conference *ID*** where ID where ***ID*** is the *Conference ID* number from step 3. The Status of Conference screen is displayed (see Figure 5-1).

   NOTE:
   A Status of Conference screen is not available for a conference that has not started. A conference that is reserved but has not begun displays **inactive** in the *Status* field.

8. Check the *Has Capability/Chl* field. A **y** in this field means the endpoint has the required number of channels.

   An **e** in this field means the video endpoint has not declared support for the correct number of channels and cannot join the conference.

An **n** means the video endpoint has declared the correct number of channels but all channels have not yet joined the conference. Ensure that the dial-in conferee dialed the *same* Meet-Me number *twice* or that the dial-out conferee's conference record has the endpoint numbers specified twice. If so, this may be a network or video endpoint problem; escalate the problem (see "When All Else Fails" on page 5-17).

- Check the *Has Capability/Vid* field. A **y** means the endpoint has the required video capability.

  An **e** means the endpoint has not declared any video capability. This may be an endpoint problem.

  An **n** means the endpoint is not receiving video but can join as audio-only possibly due to an audio or data problem.

Conferee Dropped from Conference

The MCU records the reason why a video endpoint dropped from a conference on Pages 2 and 3 of the Status of Conference screen.

1. Ask the conferee which conference was joined (ask for the start time, convener's name and/or purpose of the conference).
2. Login as **agent** on the MCU-ST.
3. Find the Conference Appointment Form and note the *Conference ID* number. You can also enter **list conference** for a listing of the day's conferences. Locate the *Conference ID* number for the conference in question.
4. Enter **status conference *ID*** where ***ID*** is the *Conference ID* number located in step 3. The Status of Conference screen is displayed.
5. Confirm you are viewing the right conference, then on Page 1 of the Status of Conference screen note the MCU-extension of the conferee on the *Ext/ Meet-Me Name* line. Check the MCU-Extension and Number to Dial Form to match the MCU-extension on the Status of Conference screen with the number the conferee dialed to join the conference.
6. If there is an **n** in the *In Use* column for the MCU-extension, the video endpoint call arrived at or was initiated by the MCU but got dropped. Make sure the conference *Stop Time* has not been reached.
7. Go to Pages 2 and 3 of the Status of Conference screen to find the drop reason.
8. Press PAGE to display the next page of the Status of Conference screen (see Figure 5-2).
9. For the MCU-extension of the conferee, find the *Drop Reason* column. If there are more than six conferees, check Page 3 for the remaining MCU-extensions. The possible values are as follows:

- 2-pri

  See "Cascaded Call Deficient" on page 5-9.

- 2-sec

  See "Cascaded Call Deficient" on page 5-9.

- Agent

  The reservations agent caused the call to drop (for example, the agent changed a connected dial-out destination number).

- Bandwidth

  A 64k call attempted to join a 56k conference, or a 56k call attempted to join a 64k conference.

- Busy

  See "Dial-Out Conferee Can’t Join a Conference" on page 5-6.

- Chair

  The Chair dropped the endpoint by using either CCD or CCK.

- Conf End

  The conference ended because either the stop time for a reserved conference was reached or an active conference was converted to a file.

- Far-End

  Clearing was received from the DS1 circuit pack. The drop came from either the network or the endpoint.

- Handshake

  Framing was either never found (that is, the endpoint could not complete initialization, or there were problems finding FAS and MFA and getting a correctly coded cap-set) or was lost for more than five seconds and the endpoint was dropped.

- No-Ring

  See "Dial-Out Conferee Can’t Join a Conference" on page 5-6.

- No-Trunks

  See "Dial-Out Conferee Can’t Join a Conference" on page 5-6.

- Not-MCU

  See "Cascaded Call Deficient" on page 5-9.

- Password

The user either entered the wrong password or did not enter it within 60 seconds (the waiting period). Note that the Px64 user gets three attempts to enter a correct password and 60 seconds per attempt. On the other hand, the audio add-on user gets one attempt to enter a correct password and 60 seconds per attempt.

- Resource

  One of the following reasons is relevant:

  — The VSP-MCU could not provide resources (VC or MMI) when the call arrived, or it lost the resources during the call. This happened because the resources were either busy, busied out by the craft, or were being used by system maintenance.

  — The DS1/MMI cable was disconnected.

  If there was a resource problem when the call arrived, the call would get a reorder (fast busy), and it would not get dropped by the VSP-MCU.

- Ring-No-A

  See "Dial-Out Conferee Can't Join a Conference" on page 5-6.

- System

  The MCU failed or was taken out-of-service.

- Unknown:

  Check for other reasons described in this section.

- Wrong-Num

  See "Dial-Out Conferee Can't Join a Conference" on page 5-6.

10. If you are unable to resolve the problem, see "When All Else Fails" on page 5-17 to escalate the problem.

Video Quality Decreased

The MCU attempts to provide the best video quality for a conference. It is possible that as conferees join a conference, the first few video endpoints may support high video quality (G.728) and so those locations initially receive the best video available. However, as other endpoints join that do not support G.728, the MCU adjusts the audio mode in use so all the video endpoints can participate in the conference.

As a result, the original conferees may notice a degradation of the video quality. Even if the non-G.728 video endpoints disconnect from the conference, the conference remains at the lower quality video.

If you receive a report from the conference convener or conferees about reduced video quality, perform the following steps:

1. Ask the conferee which conference was joined (ask for the start time, convener's name and/or purpose of the conference).
2. Login as **agent** to the MCU-ST.
3. Find the *Conference ID* number on the Conference Appointment Form or enter **list conference** and note the Conference ID**.**
4. Enter **status conference *ID*** where ***ID*** is the *Conference ID* located in step 3. The Status of Conference screen is displayed (see Figure 5-1).
5. On Page 1 of the Status of Conference screen, check the *Vid* column. If there is a **c**, the conference video quality was changed when a video endpoint joined that did not support the higher quality video. When this occurs, the entire conference is adjusted to accommodate the endpoint.
6. Check the *Aud* column. If there is a **c** in the field, the audio quality was changed when a video endpoint joined that did not support the audio capabilities of the other endpoints. When this occurs, the entire conference is adjusted to accommodate the endpoint.

Conferee Lost Audio or Video

Ask the conferee to drop from the conference and attempt to rejoin. If this fails, see "When All Else Fails" on page 5-17 to escalate the problem.

All Conferees Were Dropped

If all conferees are dropped from a conference that was in-progress, use the following procedure:

NOTE:
Conferees are dropped vis-a-vis the MCU that services them. Therefore, in a cascaded conference, it is possible that some conferees will be dropped while others will not be dropped.

1. Ask the conferee which conference was joined (ask for the start time, convener's name, and/or purpose of the conference).
2. Login as **agent** on the MCU-ST.
3. Find the *Conference ID* number on the Conference Appointment Form or enter **list conference** and note the *Conference ID***.**

NOTE:
If you are trying to locate a reserved conference, you can enter **list conference class reserved** for a listing of reserved conferences only. Likewise, if you are trying to locate a dedicated conference, you can enter **list conference class dedicated**.

4. Enter **display conference *ID*** where ***ID*** is the *Conference ID* number located in step 3. The Conference Record screen is displayed (see Figure 5-3).
5. Check the *Stop Time* field on the Conference Record screen to make sure the conference has not ended.
6. Check the *Status* field. If the *Status* is **complete**, the *Stop Time* of the conference has been reached and all conferees were dropped.

   If the *Status* is **inactive**, check the *Class* field. If **file** appears in the *Class* field, the conference was cancelled when it was changed from **reserved** or **dedicated** to **file**.
7. If you cannot diagnose the problem, see "When All Else Fails" on page 5-17 to escalate the problem.

Px64 Party Dials Audio Add-On Number

If a Px64 party tries to enter a conference by dialing a number intended for an audio-only endpoint, the caller hears a fluttering sound and is then dropped. The drop reason “Far-end” appears on the Status Conference report. If a Px64 party calls the reservations agent to complain about not being able to enter the conference, the agent can diagnose the problem by issuing the **status conference** command and then checking which multimedia parties have not yet joined the conference. The agent can then give the correct number to the multimedia party.

Audio Add-On Party Dials Px64 Number

If an audio add-on party tries to enter a conference by dialing a number intended for a Px64 endpoint, the call is dropped. The drop reason “Handshake” appears on the Status Conference report. If an audio add-on party calls the reservations agent to complain about not being able to enter the conference, the agent can diagnose the problem by issuing the **status conference** command and then determining the correct number for the audio add-on party. The agent can then give the correct number to the audio add-on party.

When All Else Fails

If you have performed the preceding procedures and you do not have the solution to the problem (or the recommended action is to escalate the problem), the AT&T Video Technical Center (VTC) engineers are available to assist you. Follow the procedure below to contact the VTC:

1. Make sure you have both the Conference Appointment Form and the Port and Extension Usage Chart available.
2. Login as **agent** to the MCU-ST.
3. Enter **status conference *ID*** to display the Status of Conference screen.
4. Call the Video Technical Center at **800 242-2121**.
5. From the voice menu, select Video. A VTC engineer will assist you.

P x 64 Interoperability

A

The Px64/H.320 standards have been implemented on the AT&T MultiPoint Control Unit (MCU) in conformance with the ITU-T standards on video teleconferencing. AT&T has tested, and will continue to test interoperability of its Px64 implementation with the video products of other manufacturers. AT&T will disclose the products that are found to be interoperable with the MCU. The current results on AT&T Px64 interoperability testing are provided in the table below. Tests are conducted on-site in a laboratory environment with purchased or loaned video endpoints and the tests will carry the distinction of AT&T certification of results.

NOTE:
The ITU-T standards are implemented on a self-certification basis. There is no official ITU-T conformance testing body nor is there a guide to arbitrate different interoperations of the standards by manufacturers of video products. Thus, as manufacturers implement the standards and add features or options to their endpoints, their products may change. AT&T will have no knowledge or control of any such changes made by other manufacturers in their Px64 implementation. As such, AT&T cannot guarantee the interoperability of our ITU-T implementation with untested versions of ITU-T compliant endpoints.

Table E-1 shows the AT&T and non-AT&T video endpoints that are supported by the MCU.

NOTE:
This table is current as of the print date for this document. For the most current version of the table, consult your Account Executive.

Table E-1. MCU Supported Video Endpoints

Endpoint Vendor/ Software Version	FCIF	QCIF	PCM	LD-CELP	112 Kbps	128 Kbps	384 Kbps	Data Module & MCU Version
AT&T/NCR PVS 70 Version 1.01, 1.00.12	Yes	Yes	Yes	Yes	Yes	Yes	NA	Direct DEF BRI MCU 1.0
AT&T GVS 4000 Version 3.0P.03	Yes	Yes	Yes	NA	Yes	Yes	Yes	ABC 2.3 MCU 1.0
AT&T GVS 1000 Version 1.0	Yes	Yes	Yes	Yes	Yes	Yes	NA	Direct DEF BRI MCU 1.0
AT&T GVS 4000 Version 4.1V	Yes	Yes	Yes	NA	Yes	Yes	Yes	ABC 2.3 MCU 1.0
CLI Rembrandt II/VP Version 7.94	Yes	Yes	Yes	NA	Yes	Yes	Yes	ABC 2.3 MCU 1.0
CLI Eclipse Version 1.1	NA	Yes	Yes	Yes	Yes	Yes	NA	Direct DEF BRI MCU 1.0
GPT Version 2.70	Yes	Yes	Yes	NA	Yes	Yes	Yes	HSL/DEFG3RV2 MCU 1.0
PictureTel S4000 Version 3.0P.03	Yes	Yes	Yes	NA	Yes	Yes	Yes	ABC 2.3 MCU 1.0
PictureTel S4000 Version 4.1V	Yes	Yes	Yes	NA	Yes	Yes	Yes	ABC 2.3 MCU 1.0
PictureTel S1000 Version 1.0	Yes	Yes	Yes	Yes	Yes	Yes	NA	Direct DEF BRI MCU 1.0
SONY PCS-2000A/ 2000AP PCS-Version 1.04	Yes	Yes	Yes	NC	NC	NC	Yes	ABC 2.3 MCU 1.0

Yes—Endpoint passed a voice-activated-switching test with the MCU by dialing in from AT&T premises and participating in a conference.

NA—Feature is not applicable (the endpoint does not support the feature).

NC—Test was not conducted.

Conference Scheduling Commands

B

The following tables provide a quick reference of the conference scheduling and troubleshooting commands and actions available from the MCU Scheduling Terminal (MCU-ST).

Table E-2. Conference Scheduling and Troubleshooting Commands

Command	Description
list meet-me	Lists all the MCU-extensions that have been administered.
add meet-me xxxxx	Adds an MCU-extension. Used by telecommunications managers who should choose MCU-extensions that are consistent with the MCU's dial plan and trunks.
remove meet-me xxxxx	Deletes an MCU-extension.
change meet-me xxxxx	Changes the characteristics of an MCU-extension.
add conference x	Add a dedicated, reserved or file conference.
change conference x	Change the characteristics of a conference.
display conference x	Displays the conference record.
remove conference x	Remove a conference (file or reserved/completed only).
list conference	Lists the conferences administered on the MCU.
display available-ports 2B	Displays the number of ports available for 2B-channel 56k or 64k conferences over the next 24 hours.
display available-ports 384k	Displays the number of ports available for 384k conferences over the next 24 hours.
status conference x	Displays details about a conference that is active, in-use, or completed.

Table E-3. Conference Class

Class	Description
dedicated	Conference is available continuously until it is changed to file.
reserved	Conference is scheduled to be available for a specified time period within the next 24 hours.
file	Conference is ignored by the MCU. Use this for recurring conferences and for recordkeeping.

Table E-4. Conference Status

Status	Description
active	Conference is available to receive calls.
inactive	Conference is not available to receive calls.
in-use	One or more conferees has joined the conference.
complete	A reserved conference has passed its stop time.

Table E-5. Conference Record Procedures

Action	On the Conference Record Screen
Stopping a dedicated or reserved conference	Change the *Class* to **file**. This stops the conference immediately.
Extending a reserved conference	Change the *Stop Time*.
Removing a dedicated or reserved conference	Change the *Class* to **file** then remove it.

Paper-Based Scheduling Forms

C

The blank forms on the following pages can be copied for use with the paper-based scheduling system described in Chapter 4, "Paper-Based Scheduling." Make as many copies as you need for your scheduling notebook.

Included in this appendix are the following forms:

- Site Profile*
- Conference Appointment Form
- Meet-Me Extensions and Numbers to Dial*
- Port and Extension Usage Chart

*Ask your telecommunications manager to complete this form as described in Chapter 4, "Paper-Based Scheduling."

Site Profile					
Location Name	**Time Zone**	**Bandwidths Available**	**Network Type**	**Room Location**	**Contact Name/Phone**

Conference Appointment Form

Conference ID _____

Conference Date: _____/_____/____

Circle choices below

Conference Mode: **voice-activated**, presentation, broadcastw/scn

Contact Name: _____

If present or broadcast, control ext.: _____

Contact Phone: _____

If broadcast, scan interval: _____seconds (default is **15** seconds)

Conference Name: _____

Bandwidth **112K**, 128K, 384K

Billing ID*:* _____

Entry/Exit Tones: **yes**, no

Class: **reserved**, file, dedicated

Warning Tones: **yes**, no

Start Time: _____:_____

Stop Time: _____:_____

		Meet-me	
Location	**Network Type**	**Extension**	**Number to Dial**
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

MCU-Extensions and Numbers to Dial							
		Number to Dial				Number to Dial	
Ext.	Bandwidth	Public	Private	Ext.	Bandwidth	Public	Private

Date:

Port	Bandwidth	6:00	6:15	6:30	6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00
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Glossary

A

active
A reserved conference status when the conference is scheduled to begin but no conferees have joined. A dedicated conference status is active at all times.

advanced mode
A feature of the MCU that offers presentation and broadcast with auto scan conference modes.

AT&T Conference Reservation System
A PC-based reservation system that manages the MCU reservation system, automates the scheduling tasks, performs conflict resolution, and ensures that participating video endpoints have the proper capabilities to join the conference.

AT&T MultiPoint Control Unit
Equipment that provides high-quality multimedia conferencing with video endpoints that communicate via the ITU-T Px64 standards.

AT&T Video Technical Center
A video technical support group that is available to help you with questions about the AT&T MCU R1.0.

audio add-on
Feature that allows the MCU to support one non-Px64 Audio-only endpoint participant per conference.

automatic mode
A feature of the MCU that offers voice-activated conference mode.

B

bandwidth
Specifies a transfer rate or range of frequencies for an amount of data moving from one point to another. Used in context for video bandwidth rates, the more free bandwidth for video, the better the picture quality transmitted. The MCU port capacity provides for 112k/128k bandwidth (2B-channel 56k/64k) and 384k (H0) bandwidth.

B-channel
A bearer channel provided by the network from a video endpoint to the MCU.

broadcaster
A video endpoint is considered the broadcaster when it sends the same video, audio and data signal to two or more locations.

broadcast w/scn
A conference mode where one video endpoint's video, audio and data are broadcast to all other conferees. The broadcaster views the other locations one after another for a fixed duration of time. The broadcaster is constantly viewed by all other locations.

C

cascading
Two or more AT&T MCUs connected via a Px64 communications link. This feature allows endpoints connected on different MCUs to participate in the same conference.

CCITT
See ITU-T.

CIF
Common Intermediate Format (also known as FCIF or Full CIF). An industry-standard means for encoding video signals for high quality pictures. QCIF MPI specifies a picture interval numbers.

class
A Conference Record has one of three classes: reserved, dedicated or file.

complete
A reserved conference has a status of complete when the stop time has passed and the last conferee has dropped from the conference.

conferee
A video endpoint participating in a multipoint video conference.

Conference Appointment Form
A form that is used to record all the information necessary to schedule and reserve a multipoint video conference.

convener
The person who schedules a conference and is responsible for distributing the Meet-Me numbers.

CRS
See AT&T Conference Reservation System.

D

dedicated
A conference class that reserves a specified number of MCU ports for a multipoint video conference at anytime.

dial-out
Feature that allows Px64 calls to originate (dial out) from the MCU in addition to receiving dial-in calls. Therefore, conference participants can join conferences by receiving calls from the MCU.

dynamic conference resizing
Feature that allows the user to add and remove conference participants before the conference starts as well as during the conference.

DX
An MCU model that features up to 16 ports and the automatic conference mode.

E

encoding
Changing video and/or audio signals into digital form for more efficient and accurate transmission (movement) from one entity to another.

entry tone
A tone that alerts conferees already on a conference that another conferee has joined in the conference.

EX
An MCU model that features up to 24 ports, notification tones and automatic and advanced conference modes.

exit tone
A tone that alerts conferees on a conference that a conferee has left the conference.

F

far-end
When troubleshooting problems on the MCU, the video endpoint is often referred to as being on the far-end of the connection.

FCIF
See CIF.

file
A conference class that saves a copy of a Conference Record for future use.

FX
An MCU model that features up to 24 ports and automatic and advanced conference modes.

G

G.711
See PCM.

G.728
See LD-CELP.

H

H0
A one channel 384k bandwidth call.

H.320
The multipoint conferencing standard adopted by the ITU-T (also known as Px64). This standard includes some of the other H-series standards governing the definition of multimedia equipment and equipment transmission (movement of data) capabilities and methods.

H-series
See H.320.

handshake
An expression relating to the establishment of communications between the MCU and a video endpoint.

I

Inactive
A conference status when a conference is reserved but has not begun and when a conference has a class of file.

In-use
A conference status when a reserved conference has begun and at least one conferee has joined the conference.

ITU-T
An international group known as International Telecommunications Union-Telecommunications Formerly CCITT) established in 1993 to develop standards to allow video endpoints to communicate with each other.

L

LD-CELP
A means of encoding audio so a smaller portion of bandwidth is allocated to audio. This results in greater bandwidth for video, thus improving picture quality.

login
A keyword assigned to a user to access the MCU.

login password
A codeword that can be customized by the user that corresponds with the user's login.

M

Management Terminal
A 715 BCT used primarily for administration and maintenance functions.

MCU

See AT&T MultiPoint Control Unit.

MCU-extension
An extension on the MCU that corresponds to the number a conferee dials to join a multipoint video conference.

MCU-Extensions and Numbers to Dial Form
A list of all MCU-extensions, supported bandwidth and corresponding Meet-Me numbers that conferees dial to join a conference.

MCU-MT
See Management Terminal.

MCU-ST
See Scheduling Terminal.

MCU-extension
An extension on the MCU that corresponds to the number a conferee dials to join a multipoint video conference.

MCU-Extensions and Numbers to Dial Form
A list of all MCU-extensions, supported bandwidth and corresponding Meet-Me numbers that conferees dial to join a conference.

Meet-Me number
A number a conferee dials to join a multipoint video conference.

mixed conference mode
Feature that allows the MCU to support both Meet-me and Dial-out endpoints in the same conference.

multimedia
The use of a variety of media, including audio, data, graphics, and full-motion video.

multipoint video conferencing
A technique of combining video, audio, and data from three or more video endpoints onto a single video conference call.

N

network service
The telephone company that provides the trunks and Meet-Me numbers to access the MCU.

network type
Specifies whether a video endpoint is connected to a private network (behind a PBX) or a public network.

notification tones
The entry, exit, and warning tones available with some of the MCU models.

P

paper-based scheduling system
A method of recording and tracking conference reservations to prevent overbooking of the MCU.

PC-based scheduling
A scheduling method that uses the AT&T Conference Reservation System to accept reservations and qualify video endpoints to participate in a multipoint video conference.

PCM
Pulse Code Modulation. A means of encoding audio which uses less bandwidth for video than LD-CELP so the picture quality is not as good as LD-CELP.

point-to-point
A conference involving only two sites whose video endpoints are not connected through the MCU.

port
An MCU port is a multimedia resource that provides a specific bandwidth (data rate) capacity, such as 56k, 64k or 384k (H0).

Port and Extension Usage Chart
A chart that is used to record the number of MCU ports and MCU-extensions reserved for a particular day.

presentation
A conference mode where a video endpoint's video is constantly broadcast to the other locations. However, the audio portion of the conference switches according to whom is speaking. Any conferee can be a speaker. The video endpoint that is the presenter views endpoints determined by voice activated switching.

protocol
A set of international industry-standard rules governing the exchange of data between two entities.

Px64
Also known as H-series. The standards adopted by the ITU-T committee that allow video endpoints that comply with the standards to communicate with each other.

Q

QCIF
Quarter Common Intermediate Format. An industry-standard means of encoding video signals to produce medium quality pictures by encoding only a quarter of the video resolution of CIF.

R

recurring meeting
A meeting that occurs more than once in a definite pattern, such as every Thursday.

reserved
A conference class that indicates a conference will begin and end within the next 24 hours.

reservation agent
The person responsible for accepting multipoint conference reservations, making reservations on the MCU-ST, or CRS and resolving minor problems.

rotation scan time
The number of seconds that a broadcaster views each location before viewing the next location in the rotation.

S

scan time
See rotation scan time.

scheduling terminal
Also known as the MCU-ST. A 715 Business Communications Terminal (BCT) used for reserving conferences on the MCU and for checking the status of conferences and availability of MCU ports.

Site Profile
A list of video endpoints that may participate in multipoint video conferences and their location, time zone, bandwidth, and network type.

status
The current state of a conference. A reserved conference status can be active, in-use, or complete. A file conference status is always inactive. A dedicated conference status is always active.

system administrator
The on-site telecommunications manager who administers the MCU trunks, maintenance alarm terminals, dial plan, passwords, MCU-extensions and numbers and system time. The system administrator can request system reports to check on MCU performance and also has access to all conference-related forms.

T

tones
See Notification Tones.

V

video endpoint
A video codec, with camera, speakers, screen and other equipment required for multimedia conferencing.

VTC
See AT&T Video Technical Center.

voice-activated
A conference mode where the video image of the person speaking is seen by all other conferees. The speaker sees the video image of the previous speaker. When a new speaker begins talking, the video switches to the new speaker.

W

warning tone
A tone that sounds when only 10 minutes remain in a conference.

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