Telepresenter M2 Administration Manual

NCast Corporation

Publisher

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Introducing the NCast Telepresenter M2

Introduction

Welcome to interactive presentation that is easy, reliable and cost-effective. The Telepresenter M2 transmits and receives data, which is then presented through channels that are rich with high-quality audio, video and graphic streams. Use a remote control, select a channel, and a session appears such as a presentation or conference. To deliver a presentation or conference, select an empty channel and you are transmitting.

Contents

This section covers the following topics:

Overview

How it Works

The Telepresenter M2 produces only one communication stream in a channel that contains video, audio, graphics and conference control data packets, which can be easily controlled for customized presentations. Any of the data packet types may be disabled or altered to further reduce bandwidth usage.

The video, audio, and graphics streams on the sending and receiving unit continually request input, compress data, make packets, and transmit data in the form of RTP packets. The receiving units organize, decompress and play this information in the correct sequence. The conference control sends out information to maintain floor control throughout the session. The coordinator (instructor) can conduct live polls and temporarily allow participants to take the floor and ask questions.

The Telepresenter captures graphics output from any laptop, PC, document camera or standard video source and displays the graphics on an attached SVGA-XGA monitor. In addition, remote participants can watch TV-quality video presentations at any desktop or laptop via industry standard media players.

The Telepresenter also provides remote administration from any standard web browser for easy network set up and configuration. The graphical user interface on the Telepresenter provides easy navigation with the remote control.

Coordinator and Participant

Anyone who wants to share visual information, designs, and concepts with dispersed groups of people can use the Telepresenter M2 to gather input and make immediate changes. The creator of a session (person or group) is the coordinator with immediate floor control. The recipient of a transmission is the participant.

Uses & Features

Use Examples

The Telepresenter M2 may be used in a variety of situations for real-time, live interactive communication, for example, you can start a session to:

- Share visual information, designs, and concepts with dispersed groups of people to gather input and make immediate changes
- Conduct customer and employee training across many geographical areas
- Conduct and discuss research, engineering, architecture, product design, information systems development, or process analysis when the participants are not able to meet in one central location
- Access a centralized bank of expertise from a field location
- Disseminate important company information through presentations and training

Features List

The table below describes important features of the Telepresenter M2 unit.

Feature	Description
MPEG video	MPEG video is a leap forward in technology. The actual standard with videoconferencing is H.263 video. H.263 suffers badly with high motion, creating artifacts and effects, ultimately becoming a distraction to the session. MPEG is full motion video, the standard used by broadcast firms for DVD encoding. NCast provides MPEG video because it is what users are accustomed to seeing with movies and television.
XGA Graphics	Provides 1024 x 768 output and 1600 x 1200 input. Simple (only needs standard graphics output cable), and integrated (remote users are able to share their graphics).

Continued on next page

Uses & Features, Continued

Features List (continued)

Feature	Description
Multicast	Telepresenter M2 uses multicast, which drastically saves on bandwidth requirements. Videoconferencing products use unicast, an inefficient protocol that consumes bandwidth because every stream has to be replicated.
Bandwidth Scalability	You can dynamically increase or decrease the amount of bandwidth usage. Multicast provides scalability (see above). Telepresenter M2 does not require bridges and is not limited by the amount of users. Videoconferencing providers require a bridge to scale beyond three to four participants per conference, a costly solution.
Floor Control	Coordinator controlled. All remote sites are able to send audio, video, and graphics. Conserves bandwidth.
Audio Collaboration	More than 10 remote sites can speak concurrently. With presentation mode still active, users can discuss video and graphics.
Streaming functionality	Telepresenter M2 lets you stream to desktop players including but not limited to: Quicktime, Real One, and IPTV for the ongoing session.
Remote Administration	The Telepresenter M2 has an internal web server, which provides operation, administration, and diagnostics from the web and from a remote site.
Password Protected web pages	NCast provides two user levels: Administrator and Viewer, and passwords are user configurable.

Telepresenter Packaging, Requirements, and Options

Package Contents

The Telepresenter M2 package contains the following items:

- Telepresenter M2 unit
- Administrator Manual
- User Manual
- Quick Start Guide
- Infrared Remote Control Unit with 4 AAA Batteries
- AC Power cord
- Stereo Audio cables, 6ft each (2)
- Composite Video cables, 6ft each (2)
- CAT 5 Ethernet cable, 7ft
- S-Video cable, 6ft
- Male-to-Male SVGA-XGA cable, 6ft
- Product Warranty

Video/Monitor Requirements

The Telepresenter M2 has the following video/monitor requirements:

- VGA or higher resolution monitor (XGA recommended)
- NTSC/PAL enabled Television

Network Requirements

The Telepresenter M2 has the following network requirements:

- 10/100BT Ethernet Connection
- IP Multicast protocol
- 600 Kbps to 1.9 Mbps network bandwidth (for MPEG-1 video), or
- 2 to 5 Mbps network bandwidth (for MPEG-2 video), or
- 56 Kbs to 512 Kbps network bandwidth (for H.261 video)
- DHCP enabled (to create a dynamic IP address)
- Web browser for administration and Internet functions

Optional Items

The Telepresenter M2 has optional items, recommended for certain features:

- Amplified stereo speakers; either in television or separate set
- Video input device (video camera, DVD player, VCR)
- Microphones
- Graphics input device such as a laptop computer

NCast Telepresenter M2 Parts and Controls

Introduction

The Telepresenter is like a TV station in a box because there is no need for full-scale studio set up and preparation. Presentations are easy, like tuning in to a channel on a TV. The front panel allows easy administrator set up, the LCD screen indicates the current status of the unit, and the LED indicators show system activity. The remote control provides user-friendly navigation similar to surfing TV channels.

Contents

This section covers the following topics:

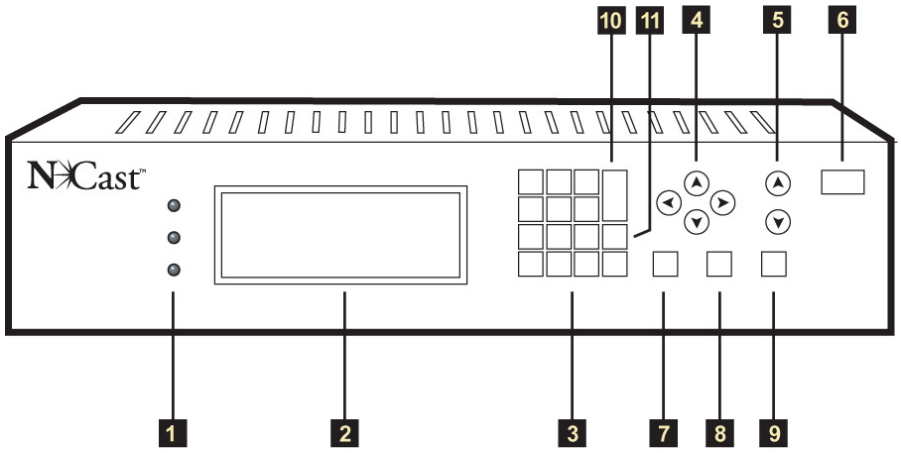
About the Front Panel

Description

The front panel of the Telepresenter M2 unit allows you to set up the IP address, check the status of the unit, and control basic functions such as volume and administrative settings.

Parts

The diagram below identifies the basic parts of the front panel.



Functions

The table below describes the functions of the parts on the front panel.

Part	Function
1 LED Indicators	QUESTION – question(s) has been submitted ON AIR – indicates transmission TRANSMIT – connected to a conference
2 LCD Display	Indicates the current status of the unit
3 Key Pad	Enter IP, date, time, etc. All are accessible via the Front Panel sub-menu.
4 Arrow Keys	Browse the LCD menu on the Front Panel Display
5 Volume	Decrease or increase the volume (down arrow/up arrow)
6 On Air	Temporarily disable the transmission while in a conference (coordinator only), or reset the stream
7 Menu	Access the administrative settings in the menu
8 Select	Change features while browsing the menu
9 Mute	Turn off the sound completely/return to previous volume
10 Enter	Accept input, for example after inputting an IP address
11 Blank	Use as a backspace key for data entry

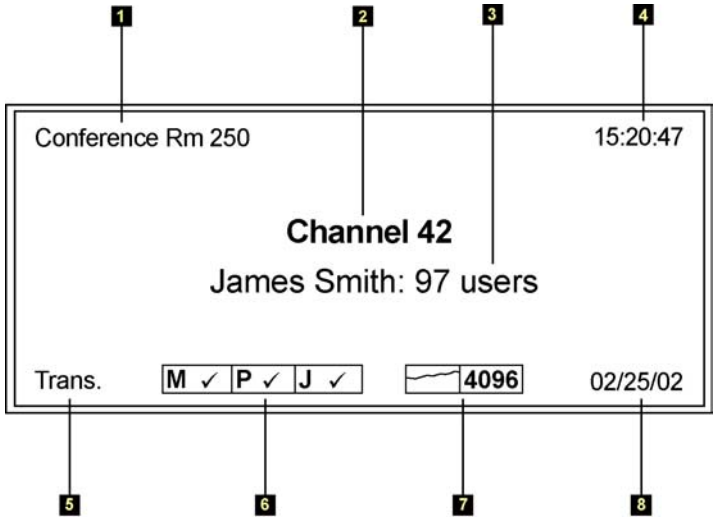
About the LCD Screen

Description

The LCD screen on the front panel of the Telepresenter M2 unit displays important status information.

Parts

The diagram below identifies the basic parts of the LCD screen.



Functions

The table below describes the functions of the parts on the LCD screen.

Part	Function
1 Unit ID	Assigned name upon initial set up and configuration
2 Current channel	Channel that the unit is tuned. When the unit is turned off, it remembers the last channel.
3 Coordinator: Users	Coordinator name and the number of users who are receiving the transmission, including desktop viewers
4 Time	Current time
5 Mode	Transmit or Receive
6 Mode Indicators	**M / H** – MPEG 1 or 2, or H.261 video type **C/A/a/P/G/D/L** – Audio Codec **J** – JPEG Graphics
7 Bandwidth Usage Meter	Displays total bandwidth usage (audio, video and graphics), Mbps, and input & output.
8 Date Stamp	Today's date

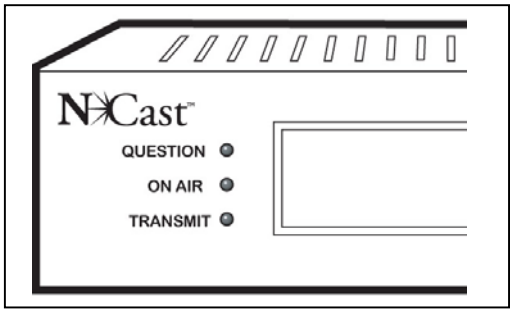
About the LED Indicators

Description

The LED indicators on the front panel illuminate and blink in different colors for question submission, transmission activity, and conference connection.

Parts

The diagram below identifies the basic parts of the LED indicators.



Functions

The table below describes the functions of the parts of the LED indicators.

Part	Color	Function
QUESTION	Green (static)	Participant asked a question, or questions are in the queue
	Green (blinking)	Participant and coordinator are in Question mode
	Red (static)	Floor control has been passed to a participant or floor control is *temporarily given* to a participant, who asks a question
	Red (blinking)	You need to press a key on the remote control
ON AIR and TRANSMIT	Green (static)	Transmitting data, connected to a conference Off air, no transmission, no connection
	Red (blinking)	Coordinator is off air

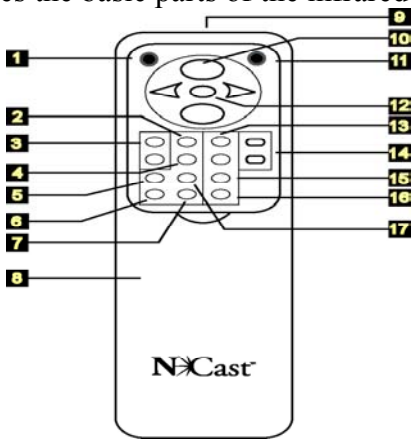
About the Infrared Remote Control

Description

The infrared remote control allows you to access several important functions.

Parts

This diagram identifies the basic parts of the infrared remote control.



Functions

The table below describes the functions of parts on the remote control.

Part	Function
1 Power	End session, shutdown, or cancel
2 Menu	Go to Settings to adjust audio, video, and graphics
3 Page +/Page –	Display the previous or next page
4 Exit	Return to NCast Central (Main Menu)
5 Last	Return to the last page visited (go back)
6 Question	Submit or answer a question
7 Help	Display help instructions
8 Compartment (hidden)	Slide the latch to reveal a numeric keypad & lock button
9 Infrared signal	Point to remote sensor on front panel when using
10 Arrow keys	Move to select an item from a menu or onscreen display
11 Mute	Turn off sound completely or return to previous volume
12 Select	Select an item in a menu or onscreen display
13 Main	Adjust the Line In 1 audio input control
14 Vol +/Vol –	Adjust the audio output control
15 Mic 1/Mic 2	Switch the input microphone volume for Mic 1 & 2
16 Aux	Change the video input selection
17 Info	Switch to full screen graphics mode

Site Preparation

Introduction

To maximize the potential of NCast Telepresenter features, the IP multicast must be set up correctly in conjunction with firewalls. In addition, the Telepresenter requires secure ports for outbound streams and for receiving streams from users outside the network

Contents

This section covers the following topics:

How to Assign Network Resources (Ports and IP Addresses)

Background

The firewall determines two pieces of information from the packets: the protocol that is being delivered and the port number to which it is being sent. If the firewall is configured to accept a specific protocol through the port, then the packet is allowed through the firewall.

Follow the steps in the table below before setting up the Telepresenter. These steps are only required for traversing the firewall.

Step	Action
1	Enable specific ports for NCast UDP traffic (applies to users outside a network firewall)
2	Designate secure ports for remote users

IP Addresses

IP addresses may be assigned to Telepresenter M2 devices two ways: DHCP or Static IP. There are a number of advantages to using DHCP or using static addresses. Ultimately, this is up to the network administrator. Use the table below to help choose the right option for your site.

IF your primary concern is…	THEN use…
Convenience	DHCP because the server supplies the IP address, netmask, gateway address, DNS hosting information, and host name.
Reliability	DHCP because it eliminates the possibility of wrong IP configurations for network settings.
Upgrades and repairs	DHCP because hot swaps are easy, if channel characteristics are the same for all units.
Macintosh users	Static IP because DHCP plug-in may be complicated due to security.
Administration	Static IP because it provides a stable address for the administration pages.
Security and firewall access	Static IP because it provides a stable address for security lists and access.
Monitoring	Static IP because it provides a stable address for network statistics/usage.

How to Prepare a Site for the Telepresenter

Background Use this procedure when you first purchase the Telepresenter and when you are ready to install the hardware at your site.

Procedure Follow the steps in the table below to prepare a site for the Telepresenter.

Step	Action
1	Enable network multicast between expected endpoints (all desktop/laptop computers and Telepresenters). **IP Multicast Address range: 224.0.0.1 to 239.255.255.255** The above address range is from a Class D; unlike conventional IP addresses, this address does not point to a particular node, but instead to a group.
2	Set up the multicast function in the routers between the sites. To set up IP multicasting with firewalls, you must allow packets sent to the standard IP multicast addresses to be enabled on all routers in between.
3	If some remote sites have less than a T-1 installed, scale down the video transmission rates for endpoints from 600 Kbps to 1.0 Mbps or a maximum of 1.25 Mbps. This ensures proper performance of the Telepresenter and provides bandwidth for audio, graphics, and other administrative protocols used by the Telepresenter.
4	Assign a dynamic or static IP address for the Telepresenter.
5	Perform IP configuration for your site. See How to Configure Network Settings (IP Configuration) and About the Network Configuration Page on pages 32–33.
6	*Optional*. If you are operating the Telepresenter on the public Internet, calculate the amount of bandwidth that you will have available for the session. Customize the Telepresenter settings so that the unit operates under these parameters.

Installation and Set Up

Introduction

This chapter discusses easy setup, wiring, and compatibility with available peripherals.

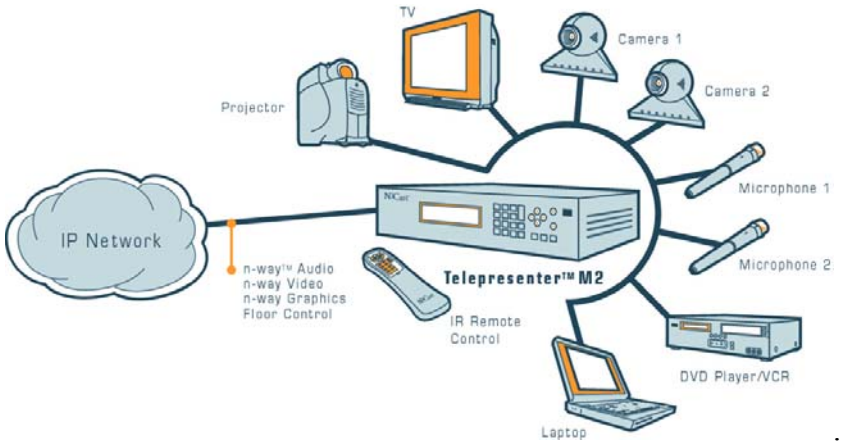
Contents

This section covers the following topics:

How to Install the Telepresenter M2

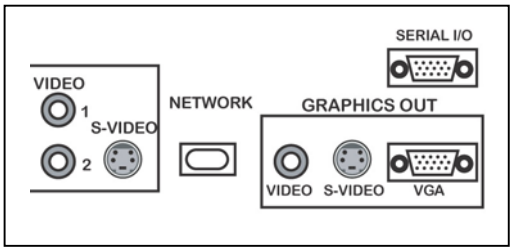
Background

The Telepresenter M2 offers high compatibility–easy connectivity to standard peripherals, audio, video and graphical equipment for outstanding presentations. The diagram below illustrates the connectivity concept.



Procedure

Follow the steps in the table below to install the Telepresenter at your site.

Step	Action
1	Connect the Ethernet cable to the NETWORK input jack on the rear panel. 

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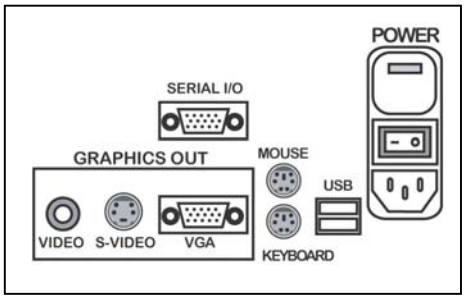
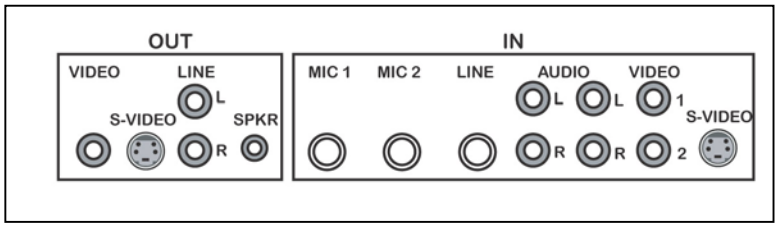
How to Install the Telepresenter M2, Continued

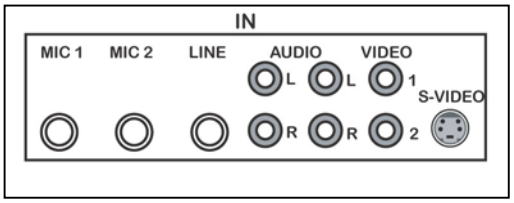
Procedure (continued)

Step	Action
2	Connect a VGA, SVGA-XGA, or projector monitor to the VGA monitor port on the rear panel (GRAPHICS OUT).  Note: The graphical user interface (GUI) is only accessible when a monitor is connected to the Telepresenter via one of the Graphics Out connectors.
3	Connect a television with S-Video input to the S-VIDEO output jack on the rear panel. Use the supplied S-Video cable.  Note: If your TV does not support S-Video input, you can still connect the Telepresenter M2 to composite video and audio output jacks by using the supplied cables. You can improve sound quality by connecting the Telepresenter audio output jacks (LINE L and R) or speaker output jack (SPKR) to an amplifier instead of the TV's internal speakers.

Continued on next page

How to Install the Telepresenter M2, Continued

Procedure (continued)

Step	Action
4	Connect your video and audio equipment to the input jacks on the rear panel. Use the supplied stereo audio and composite video cables. Supported devices for local or network transmission include cameras, VCRs, DVD players, and televisions. Note: Telepresenter M2 supports two composite video inputs and one S-Video input. 
5	Connect your microphone or line inputs to the input jacks on the rear panel. Note: You can only use one microphone input at a time. NCast recommends the use of echo cancellation microphones or devices with the Telepresenter.
6	Connect a laptop or PC to the VGA monitor port on the rear panel (GRAPHICS IN). Use the supplied male-to-male SVGA-XGA cable.

How to Turn on the Power

Background

Use this procedure after you install the Telepresenter. If the network is DHCP enabled, an IP address will be dynamically submitted to the Telepresenter M2 when the cable is connected and the unit is powered on. If the network is not DHCP enabled, you must enter an IP address via the Front Panel or in the IP Configuration page of the Web Administration Pages.

Procedure

Follow the steps in the table below to turn on power for the Telepresenter.

Step	Action
1	Connect the supplied AC cord to the power connector on the rear panel of the Telepresenter.
2	Make sure that all peripherals and equipment have been connected.
3	Turn the POWER switch on the rear panel on.

How to Enter a Static IP Address from the Front Panel

Background

If DHCP is not available when you turn on the power to the Telepresenter, you must enter a static IP address on the front panel LCD.

Note: You can enable DHCP by typing 0.0.0.0 as the IP address in step 4.

Procedure

Follow the steps in the table below to enter a static IP address.

Step	Action
1	Press the MENU button on the front panel of the Telepresenter M2. This will list five options: • Info • Set IP • Set Date • Set Time • PIN
2	Press the up or down arrow keys until you highlight "Set IP."
3	Press the SELECT button.
4	Enter the IP address by pressing numbers on the keypad. Note: Press the period (.) button to move to the next segment (if a segment of the IP address has only one or two digits). Use the button without numbers on it (blank button) as a backspace key.
5	Press ENTER to set the static IP address. A message is displayed on the front panel LCD: **IP Addr Set**
6	Press the POWER key on the remote control.
7	Press the SELECT key on the remote control to choose SHUTDOWN. A message is displayed on the front panel LCD: **SHUTDOWN**.
8	Turn the power switch on the rear panel to OFF.
9	Turn the power switch on the rear panel to ON.

How to Set the Gateway Address

Background

A gateway is a computer system or other device that acts as a translator between two systems that do not use the same communications protocols, data formatting structures, languages, or architecture. A gateway repackages information or changes its syntax to match the syntax of the destination system. You may have to configure the gateway address of your Telepresenter before you complete the set up.

Procedure

Follow the steps in the table below to set the gateway address.

Step	Action
1	Go to the Network Configuration page. See About the Network Configuration Page on page 33. Be sure to use a desktop system that has the same subnet as the Telepresenter M2 unit.
2	Check the gateway address field to make sure that it is the correct address.
3	Click **Update Network Configuration**. A message is displayed: The Network Configuration has been updated, please restart the unit.
4	Restart the Telepresenter unit, or, if no configuration changes were necessary, proceed to the next section.

How to Check the Settings

Background

Once the unit is powered on again, check the IP address of the Telepresenter from the front panel. If an IP address appears, you are now ready to configure the audio, video and graphics input settings from the Telepresenter graphical user interface (GUI).

Procedure

Follow the steps in the table below to check the Telepresenter settings.

Step	Action
1	Using the remote control, select SETTINGS.
2	Select AUDIO and use the arrow keys on the remote to choose the appropriate inputs according to the audio equipment connected.
3	Repeat step 2 for VIDEO and GRAPHICS inputs.
4	Some network configuration settings will need to be typed into the Telepresenter's Web Administration page, particularly the IP Configurations and the gateways.
5	Telepresenter M2 is now ready for interactive presentations and collaborative meetings.

Change PIN, Lock System, and Shut Down

Introduction

When you are away from the unit you can enter a personal identification number (PIN) to restrict access and you can also lock the system. In addition, the unit can be shut down to terminate all processes. The PIN only applies to front panel and GUI security, and it is not applicable to the web administration pages.

Contents

This section covers the following topics:

How to Set or Change the PIN

Background

Use the front panel of the Telepresenter unit to set or change the PIN. You can establish a PIN for security reasons, for example, to restrict access to the unit.

Procedure

Follow the steps in the table below to set or change the PIN.

Step	Action
1	Press the MENU key on the Telepresenter front panel.
2	Use the arrow keys to highlight “Set PIN.”
3	Press the SELECT key.
4	Use the keypad to enter the old PIN (or new PIN) and press Enter.
5	Enter a new four digit PIN and press Enter (only use numbers).

How to Lock the System

Background

The Lock button is on the remote control inside the hidden compartment. While in lock state, access to the Telepresenter front panel will be restricted and the Telepresenter will not accept any commands from the remote control or front panel, except for the number keys. However, the Telepresenter will continue to encode/decode audio, video and graphics in lock mode, if this was enabled before the lock state.

Procedure

Follow the steps in the table below to lock the Telepresenter.

Step	Action
1	Slide the latch on the remote control to reveal the hidden compartment.
2	Press the LOCK button on the remote control (upper right side of hidden compartment).
3	The LCD screen will display the following message when the Lock button is pressed for the first time: "Telepresenter Locked. Enter PIN _____" In addition, a message will be displayed on the GUI.
4	Use the keypad on the remote control or Front Panel to unlock the front panel. Note: NCast factory default setting for the four-digit universal PIN: 6278. This can be used if a user is locked out of the unit or if the user loses their PIN.

How to Shut Down

Background

Use the Power button on the infrared remote control to shut down the Telepresenter.

Procedure

Follow the steps in the table below to shut down.

Step	Action
1	Press the POWER button on the IR remote control.
2	Use the arrow keys to highlight “Shutdown.”
3	Press the SELECT key on the remote control. The Telepresenter will perform a clean shutdown and terminate all processes. Note: If the POWER button on the remote control is accidentally pressed, or if you change your mind about shutting down the system, highlight “Cancel” and press the SELECT key to cancel.

Web Administration and Network Configuration

Introduction

When the Telepresenter M2 is connected to an IP network, you can accomplish configuration, administration, and diagnostic tasks from a remote location. The Telepresenter M2 contains an embedded web server dedicated to these tasks.

Contents

This section covers the following topics:

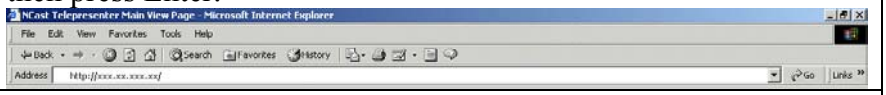
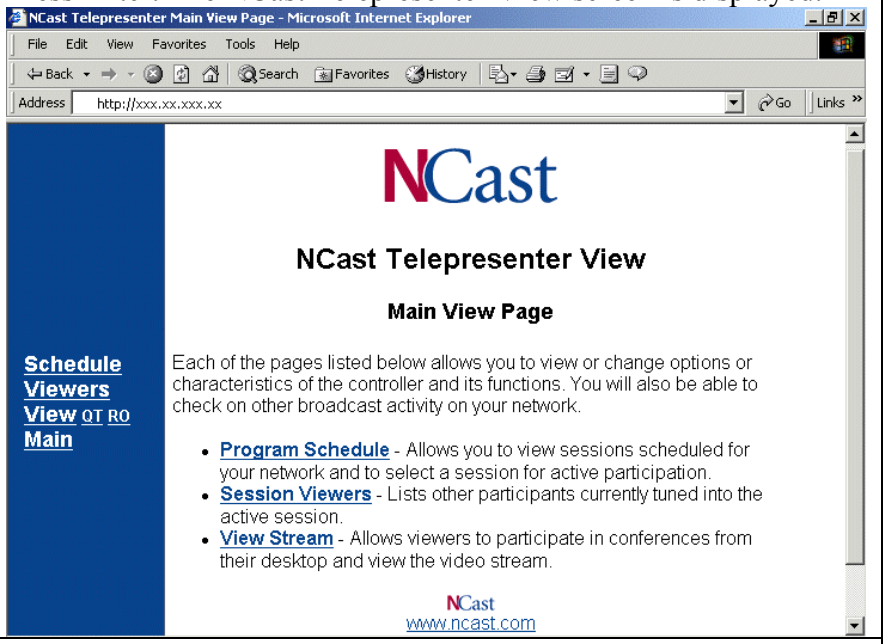
How to Access the Web Administration Pages

Background

The web server is easily accessed through any standard web browser via desktop and laptop computers. Each Telepresenter M2 is assigned an IP address from the network.

Procedure

Follow the steps in the table below to access the web administration pages.

Step	Action
1	Type the Telepresenter IP address into a standard web browser and then press Enter. 
2	Type the default Telepresenter user name and password for network administrators: Username: **admin**; Password: **ncast**. Note: Username and password are case sensitive.
3	Press Enter. The NCast Telepresenter View screen is displayed. 
4	Type **/admin** at the end of the IP address in the URL address window for access to administrator level privileges, settings, and configurations.

How to View a Video/Graphics Stream from the Web Page

Background

The Telepresenter M2 supports industry standard desktop video players including but not limited to: QuickTime, Real One Player, IPTV, MIM, etc. The View Stream Page enables users to view the NCast Telepresenter M2 video, audio, and graphics streams (sessions) directly from players installed on their desktop computers. To download one of the players go to:
http://www.apple.com/quicktime/download/
Or
http://www.real.com/realone

Procedure

Follow the steps in the table below to view a stream from the web page.

Step	Action
1	Type the Telepresenter IP address into any web browser.
2	Click the **View** link on the left side of the web page. Or, If QuickTime Player is installed as the default desktop player, click **QT**. Or, If Real One Player is installed as the default player, click **RO**. Note: The administrator must enable one of these media players on the Unit Options page. See How to Configure Unit Options and Setup on page 37.
3	Click a view link at the bottom of the screen to select the size of the video with or without graphics: • Small • Medium • Large (Fit to Window) • Graphics & Video • Graphics The video (and/or graphics) plays automatically with the default media player that is currently set up.
4	Click Back in your respective browser to return to the default page with the links to the different sized windows.

How to Configure Network Settings (IP Configuration)

Background

The Network Configuration Page provides advanced user options for specific network customization. Upon shipment, the Telepresenter has defaults of simple assumptions. For example, the gateway's address is assumed to be: x.x.x.1, a network's address at x.x.x.0, and a broadcast address at x.x.x.255, etc. These settings are usually quite standard on most networks.

Procedure

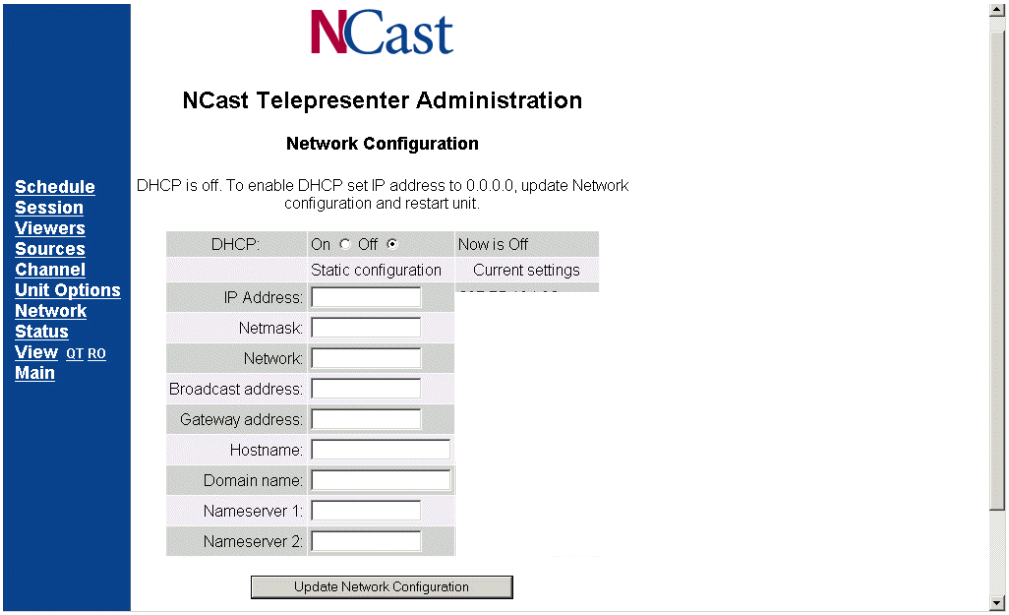
Follow the steps in the table below to access the Network Configuration web page.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Type information as needed to configure. See About the Network Configuration Page.
3	Click UPDATE IP CONFIGURATION.
4	Press POWER on the remote control.
5	Press the arrow keys on the remote control to highlight "Shutdown."
6	Press SELECT.
7	Turn off the Telepresenter M2 unit.
8	Turn on the unit to see the configuration changes.

About the Network Configuration Page

Description

The Network Configuration Page is for advanced users who are very familiar with the network settings.



Fields

The table below describes the fields on the Network Configuration Page.

Field	Description
DHCP	Enable/Disable DHCP settings for automatic address retrieval from the network.
IP Address	Assign a specific address to the Telepresenter. This will also display the current address assigned
Netmask	Type the Netmask ID
Network	Type the Network ID
Broadcast address	Broadcast to this IP address and send to all stations
Gateway address	Gateway address connecting networks
Hostname	Unique name by which a computer is known on the network
Domain name	Full name of system, including local hostname, domain name, and top-level domain.
Nameserver 1	Address where the Telepresenter may get name service
Nameserver 2	Backup address for Telepresenter name service
Ethernet mode	Auto-negotiation, 100 base or 10 base modes

How to Configure SNMP

Background

The Simple Network Management Protocol (SNMP) is an application layer protocol that facilitates the exchange of management information between network devices. It is part of the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite. SNMP lets network administrators manage network performance, find and solve network problems, and plan for network growth.

SNMP has three versions: SNMP version 1 (SNMPv1), SNMP version 2 (SNMPv2), and SNMP version 3 (SNMPv3). Both SNMPv1 and v2 have a number of common features, but SNMPv3 offers enhancements, such as security features.

Procedure

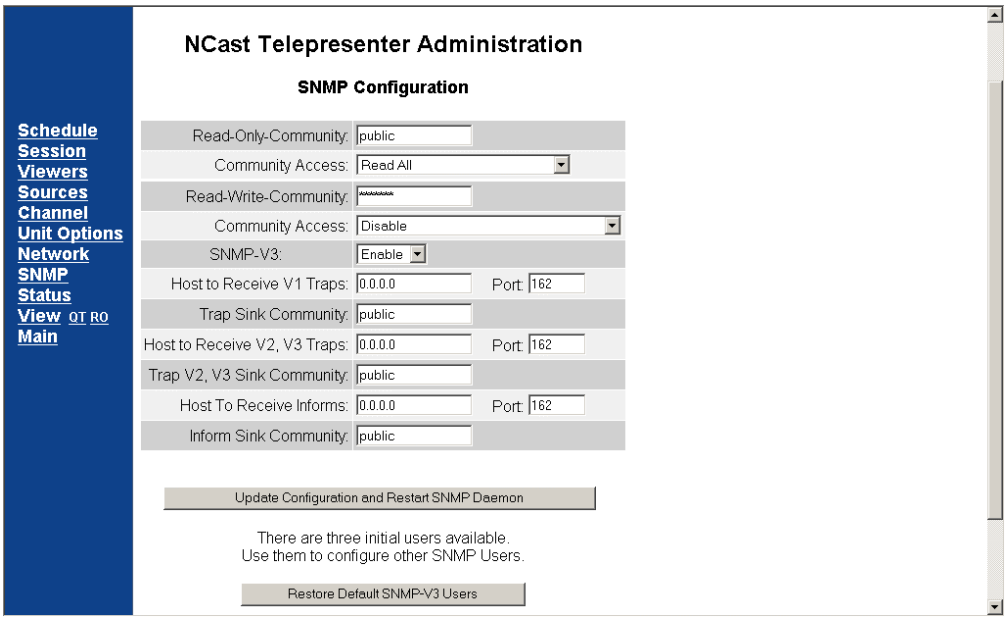
Follow the steps in the table below to access the SNMP Configuration web administration page.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Click the **SNMP** link on the left side of the web page.
3	Type the SNMP configuration information for your site in the appropriate fields.
4	Click **Update Configuration and Restart SNMP Daemon**.

About the SNMP Configuration Web Administration Page

Description

An SNMP-managed network consists of three key components: managed devices, agents, and network-management systems (NMS). Managed devices are monitored and controlled using four basic SNMP commands: **read** (to monitor managed devices) **write** (to control managed devices)**, trap** (to report events to the NMS)**,** and traversal operations (to gather information in variable tables). The SNMP Configuration page uses these commands by specifying read and write communities, trap communities, and hosts.



Fields

The table below describes the fields on the SNMP Configuration Page.

Field	Description
Read-Only Community	Defines the SNMP community string for Read-Only access type (default is Public)
Community Access	Defines the access options for Read-Only community string (Read All, Read All except NCast variables, or disable)
Read-Write Community	Defines the SNMP community string for Read-Write access type (default is Private)

Continued on next page

About the SNMP Configuration Web Administration Page,
Continued

Fields (continued)

Field	Description
Community Access	Defines the access options for Read-Write community string (Read All/Write All, Read All /Write all except NCast variables, or disable)
SNMP-V3	Enable/Disable settings for SNMP version 3
Host to Receive V1 Traps	Defines a trap receiver for SNMP version 1 traps
Port	Defines a port number for the SNMP version 1 trap receiver
Trap Sink Community	Defines a community for the SNMP version 1 trap (default is public)
Hosts to Receive V2, V3 Traps	Defines a trap receiver for SNMP version 2 or version 3 traps
Trap V2, V3 Sink Community	Defines a community for the SNMP version 2 or version 3 traps (default is public)
Host to Receive Informs	Defines a trap message receiver for notification when a trap condition occurs
Inform Sink Community	Defines a community for trap notification
Update Configuration and Restart SNMP Daemon	Saves the configured settings and restarts SNMP
Restore Default SNMP-V3 Users	Used to configure other SNMP users

How to Configure Unit Options and Setup

Background

Unit Options & Setup Web Administration Page is for initial setup, administration, and setting security on the unit. NCast recommends configuration of the Unit Options and Setup page first before other Web Administration pages. Each Telepresenter M2 unit on the network should have a unique configuration assigned by a network administrator.

Procedure

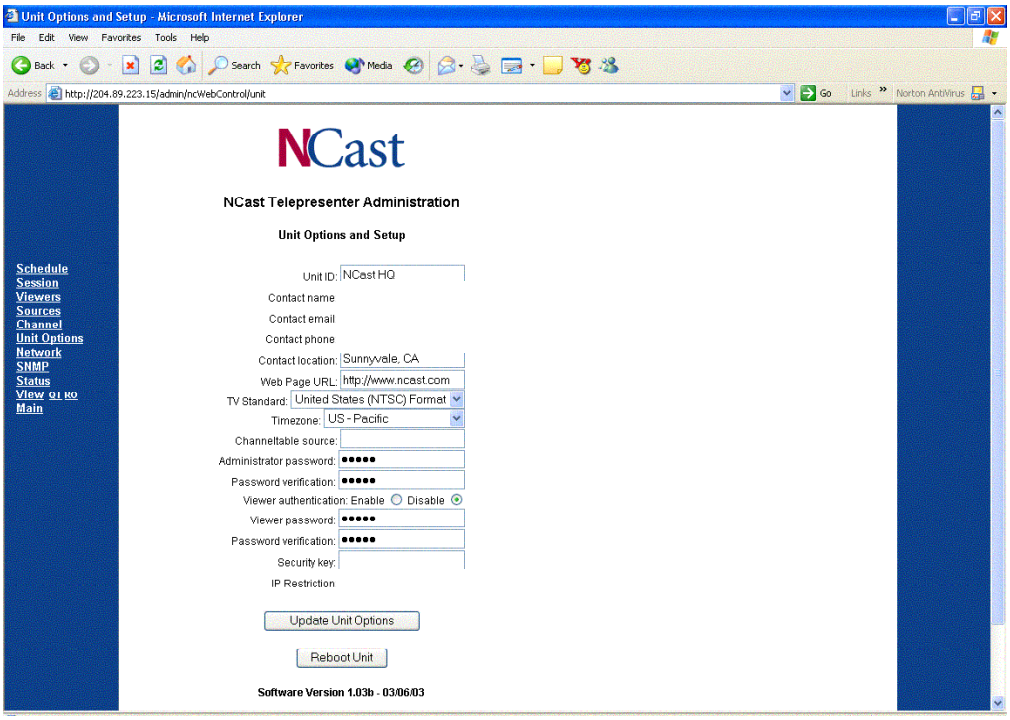
Follow the steps in the table below to access the Unit Options & Setup page.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Click the **Unit Options** link on the left side of the web page.
3	Type configuration information in the appropriate fields.
4	Click **Update Unit Options**. A message is displayed: Unit options have been updated.

About the Unit Options and Setup Web Administration Page

Description

The Unit Options & Setup web administration page provides information on each specific unit.



Fields

The table below describes the fields on the Unit Options and Setup page.

Field	Description
Unit ID	Assigned name or ID of unit (appears in announcements)
Contact name	Name of a contact person, administrator or owner of the unit (appears in announcements)
Contact email	E-mail address of the contact person of the unit
Contact phone	Phone number of the contact person
Contact location	Location of the unit
Web Page URL	Home page of the administrator (organization) web page
TV Standard	NTSC (United States, Canada, Japan) and PAL (Europe, South America)
Timezone	Time zone for the geographic location of the unit

Continued on next page

About the Unit Options and Setup Web Administration Page,
Continued

Fields (continued)

Field	Description
Channel Table Source	Source IP address unit of the Telepresenter (used to duplicate Channel Table configurations)
Administrator password	To control Telepresenter units remotely, an IT or network administrator must have a username and password to access Web Administration pages NCast default settings for username: **admin**; password: **ncast**
Password Verification	Enter the password again to verify accuracy. Please remember to write it down in a safe place and submit the password to appropriate IT Administration personnel
Viewer Authentication	**Enable**: Users will be prompted to enter login and password information each time, then access the Web Viewer Stream pages . **Disable**: Allows access to the Web View Stream pages without authentication of user passwords.
Viewer password	Provides users with the ability to view streaming video, audio and graphics from a desktop or laptop connected to the network, but restricts them from accessing web administration and configuration pages. NCast default settings for username: **viewer**; password: **ncast**. Admin and Viewer passwords can be changed in Unit Options & Setup page
Security Key	Used for standard encryption of media streams from Telepresenter to Telepresenter. Must be no longer than 16 characters, alphabetic or numeric. The same security key must be used for all units involved in the secure session. Note: The security key only works between Telepresenters, and if the security key is enabled, desktop users will be unable to view the streams.
IP Restriction	Sets the range of IP addresses that may change the unit's parameters (for example, a contact person can list their own desktop IP address, *1.2.3.4*, or you can configure the addresses to a subnet by using wildcards, *1.2.3.**. All others can only view this information, not edit it.
Reboot Unit	Perform a clean reboot from a remote location.

How to Configure Channel Characteristics

Background

The Channel Characteristics Table lists all setups as determined by an administrator. Every Telepresenter M2 on the network operates on a channel table. The channel table can be configured so that restrictions and controls can be set on bandwidth usage, whether video is allowed on a specific channel, what type of video can be used, whether the channel can be configured for graphics or audio, etc.

Procedure

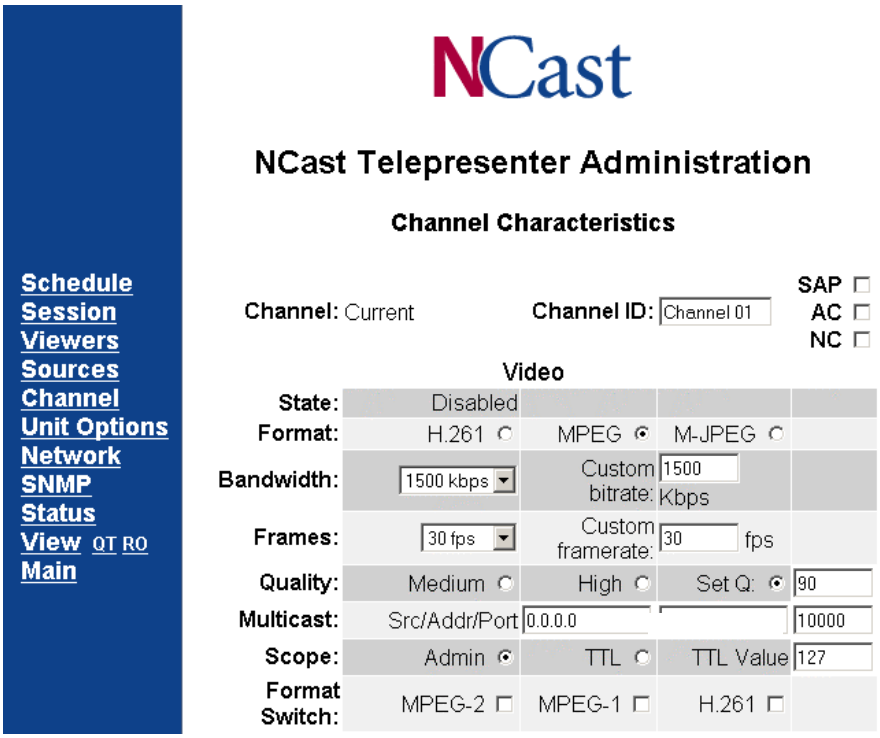
Follow the steps in the table below to access the Channel Characteristics page.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Click the **Channel** link on the left side of the page.
3	Click the appropriate options for audio, video, graphics and conference control settings. Use the drop-down lists to quickly select the desired settings.
4	Click **Update Channel Information**.
5	*Optional*. Click **Channel Summary** to view the current settings for all 100 channels.
6	*Optional*. Click **Channel Reset** to reset the channel to NCast default settings.

About the Channel Characteristics Page

Description

The Channel Characteristics page organizes complex configuration parameters into an efficient and versatile setting so you can administer and control a multimedia network. The Channel Characteristics page is divided into four sections: video, audio, graphics, and conference. It allows control over excessive bandwidth usage, scheduling problems, network overloads, and difficult multicast parameters that frustrate infrastructure development.



Channel Information

The channel is identified by representative text in the first field on the page; for example, a channel could be named after a department or current geographic location. The page also displays the numerical channel number.

Session Announcement Protocol (SAP)

If the SAP check box is selected on a particular channel, the Telepresenter transmits announcements so that other clients on a network can join a current session. Telepresenters are able to both send and receive SAP announcements.

Continued on next page

About the Channel Characteristics Page, Continued

Auto Coordinator (AC)	If the AC check box is selected, the Telepresenter M2 unit will automatically become the coordinator. You should plan ahead before deploying a group of Telepresenters because the coordinator is the controlling member of NCast sessions, responsible for the presentation itself, floor control, fielding questions, and transmitting the majority of the video, audio and graphics.
Never Coordinator (NC)	If the NC check box is selected, the Telepresenter unit will always be a participant on a specific channel (it disables coordinator privileges for a particular unit). NC and AC cannot be selected simultaneously.
State	State is a display option for video, audio, and graphics that shows whether transmission and reception is enabled or disabled on the channel.
Format	Format is a common setting for video, audio, and graphics that indicates the type of compression used on a channel as follows: • For Video: MPEG (1 or 2), H.261, and M-JPEG • For Audio: Pulse Code Modulation (PCM), Global System for Mobile Communications (GSM), digital audio compression (DVI), and 16-bit Audio in Mono & Stereo (For best quality, select L16S at 44 kHz. This setting will increase bandwidth consumption). • For Graphics: JPEG
Multicast	Multicast is a common setting for video, audio, and graphics with the following options: • **Src**: Source (headend) IP address for use with Source Specific Multicast Protocol (SSM); *currently not available* • **Addr**: Address used for the stream (multicast or unicast). Each stream has its own multicast address, video, audio and graphics. • **Port**: Port used for the stream

Continued on next page

About the Channel Characteristics Page, Continued

Scope

Scope is a common setting for video, audio, and graphics with the following options:

- **Admin**: Defines the boundaries of the multicast packet transmission (confines the multicast session packets within an organization's network).
- **TTL**: Time to Live, or the amount of time or router hops that multicast packets travel throughout a network before expiring.

TTL Values

TTL value is a common setting for video, audio, and graphics. You can determine the appropriate TTL value for your network; otherwise, the default value will be used. The table below defines conventional scope control values.

TTL	Scope Threshold
0	Restricted to the same host
1	Restricted to the same subnetwork
15	Restricted to the same site
63	Restricted to the same region
127	Worldwide
191	Worldwide; limited bandwidth
255	Unrestricted in scope

Video stream options

The table below describes the video-specific options of the Channel Characteristics page.

Field	Description
Bandwidth	Preset values of video bandwidth or a custom bit rate in kilobytes per second (Kbps)
Frames	Preset frames per second (fps) between 1 and 30. Or, a custom value for the frames per second.
Quality	Video quality (medium or high). Or, a custom value for the quality factor (ranges between 1-100). Only relevant to H.261.
Format Switch	Switch between video format streams. Defaults will disallow this feature, but if enabled, you can select from these three settings in the Video Settings portion of the GUI.

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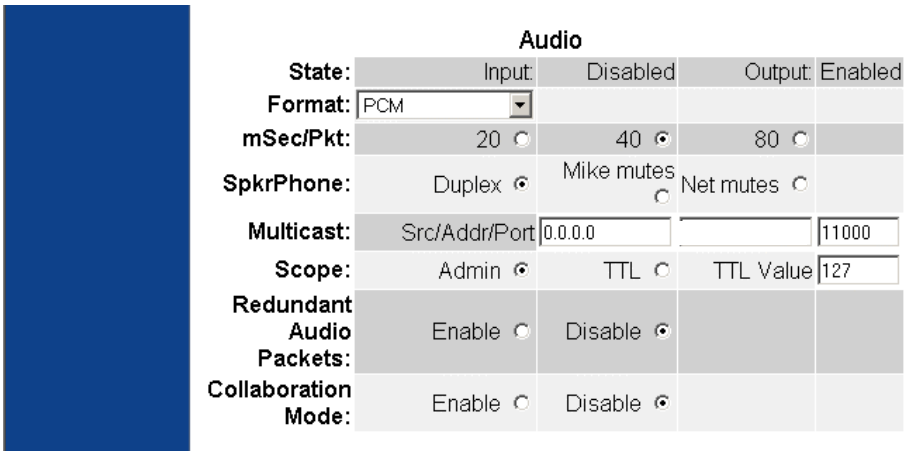
About the Channel Characteristics Page, Continued

Audio section

The illustration below shows the audio section of the Channel Characteristics page.



Audio stream options

The table below describes the audio-specific options of the Channel Characteristics page.

Field	Description
mSec/Pkt	Audio milliseconds per packet. The tradeoff is better efficiency with a higher number, but longer delay.
Spkrphone	Audio input control settings such as Full Duplex (simultaneous two-way conversation possible), Mike mutes (microphone has priority over incoming audio from the network), and Net mutes (incoming audio from the network has priority over the local microphone).
Redundant Audio Packets	Enable/Disable audio setting that improves audio transmission for a data network with packet loss. This will duplicate the amount of bandwidth used for the audio stream, for example, PCM now would equal 128 Kbps.
Collaboration Mode	Enable/Disable audio setting that allows every participant to speak at the same time

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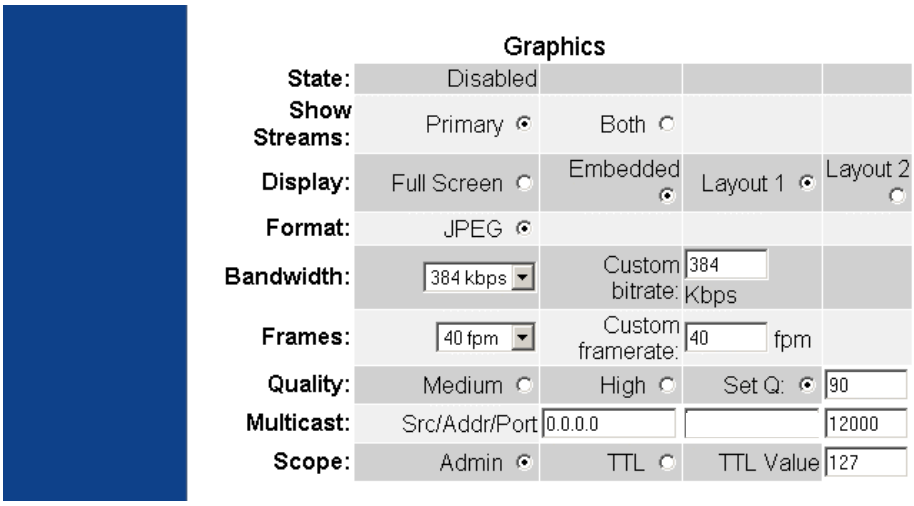
About the Channel Characteristics Page, Continued

Graphics section

The illustration below shows the graphics section of the Channel Characteristics page.



Graphics stream options

The table below describes the graphics-specific options of the Channel Characteristics page.

Field	Description
Show Streams	Primary: Shows only coordinator graphics Both: Displays both coordinator and participant graphics on local attendees' SVGA-XGA graphic monitors
Display	Both the coordinator and participant at every site can view graphics. Choose between Full Screen graphics, embedded graphics, Layout 1 (Picture in Picture) or Layout 2 (Side by Side)
Bandwidth	Preset values of graphics bandwidth or a custom bit rate in kilobytes per second (Kbps)
Frames	Preset frames per minute (fpm) between 1 and 40 (the more fpm, the more bandwidth required). Or, a custom value for the frames per minute.
Quality	Graphics quality (medium or high). Or, a custom value for the quality factor (ranges between 1-100).

Continued on next page

About the Channel Characteristics Page, Continued

Burst Mode vs. Bit Rate (graphics)

The drop-down list for graphics bandwidth has an option for burst mode and custom bit rate Burst mode allows graphics streaming to be as fast as possible, in bursts. However, this setting consumes more bandwidth for high-resolution graphics, which may cause slight video and audio interruptions. With custom, you set a specific bit rate, which will allow slower transmission of the graphics with lower bandwidth requirements.

MTU section

The illustration below shows the MTU section of the Channel Characteristics page.

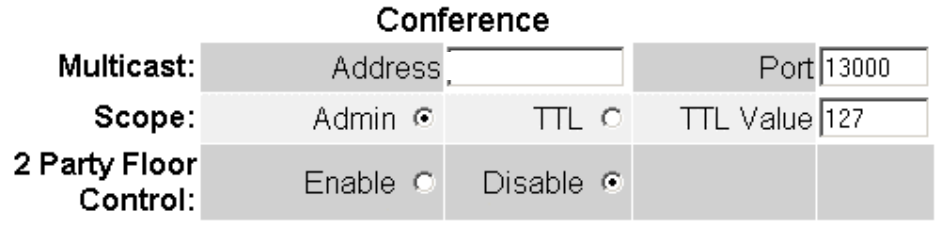
The maximum transfer unit (MTU) is the largest size of IP datagram that may be transferred using a specific data link connection. MTU lets you adjust the packet size of transmissions to fit the device. For example, satellite devices require a smaller MTU than Telepresenter default settings provide; therefore, you can tailor the packet size to be deliverable for other requirements.

Continued on next page

About the Channel Characteristics Page, Continued

Conference section

The illustration below shows the Conference section of the Channel Characteristics page.



2 Party Floor Control

Only available when there are two units in a session. “Enable” allows both parties to pass on floor control to each other. “Disable” sets the units to the videoconference mode, or default.

How to Duplicate Channel Configurations

Background

You can duplicate settings of the designated source channel table to facilitate configuration of multiple Telepresenter units across a company-wide network.

Procedure

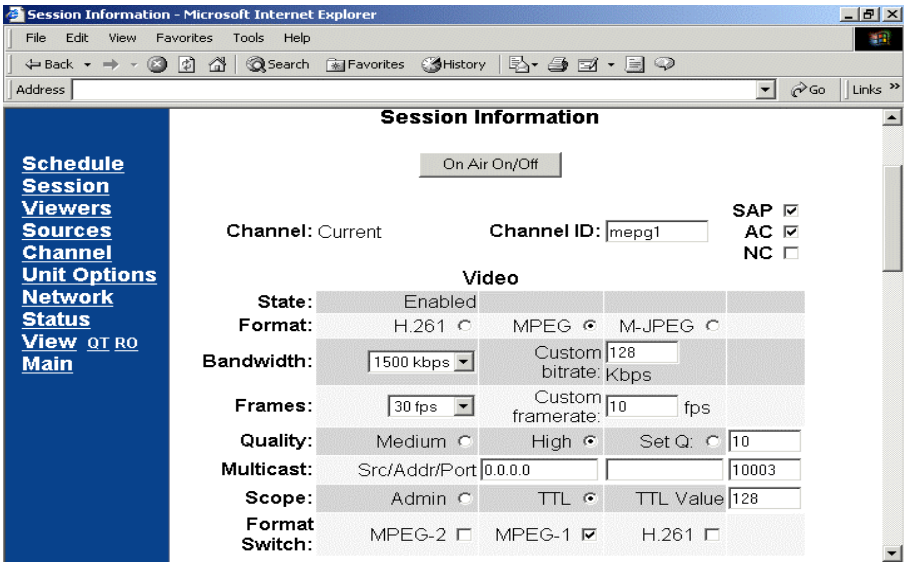
Follow the steps in the table below to duplicate the channel settings.

Step	Action
1	Go to the Unit Options and Setup web administration page.
2	Type the IP address of the source Telepresenter unit in the Channel Table Source field.
3	Click **Update Unit Options**.
4	Go to the Channel Characteristics web administration page.
5	Click **Download Channel Table**. All channel configuration settings of the source Telepresenter unit will be duplicated in the new Telepresenter unit.

How to Change Session Settings

Background

The Session Information web administration page shows current audio, video, graphics and conference control settings. This page allows a network administrator to temporarily change settings for a particular session. The changes will last as long as the session is running, without affecting the settings in the Channel Characteristics page, which are permanent.



Procedure

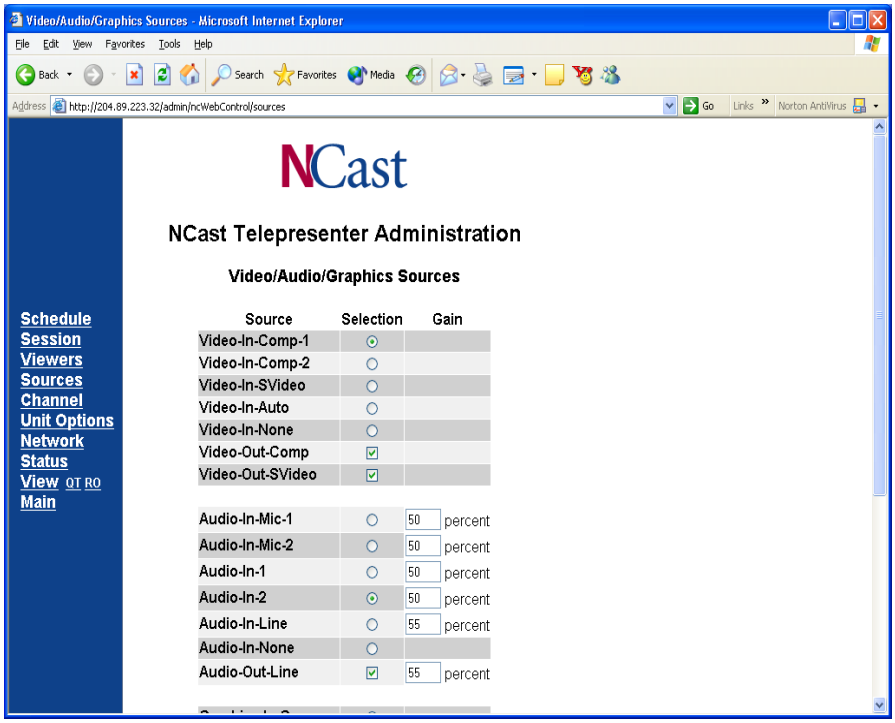
Follow the steps in the table below to access the Session Information page.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Click the **Session** link on the left side of the web page.
3	Click the appropriate options for audio, video, graphics and conference control settings. Use the drop-down lists to quickly select the desired settings. For more information, see About the Channel Characteristics Page on page 41.
4	Click **Update Session Information**.
5	*Optional*. Enter a channel number and click **Go To Channel**. This takes you to a channel and changes the channel on the unit so you can update the unit characteristics for a session.
6	*Optional*. Click **On Air On/Off** to toggle between transmitting and temporarily disabling a session stream (mimics the on/off air button on the front panel of the Telepresenter). This action quickly releases bandwidth for an emergency in the network.

How to Change Video/Audio/Graphics Sources

Background

The Video/Audio/Graphics Sources web administration page provides a report on the sources currently attached to the unit. It allows switching of input and output sources as required, as well the ability to change gain levels on audio inputs. From this page, a network administrator or user can remotely administer the selected inputs and outputs.



Procedure

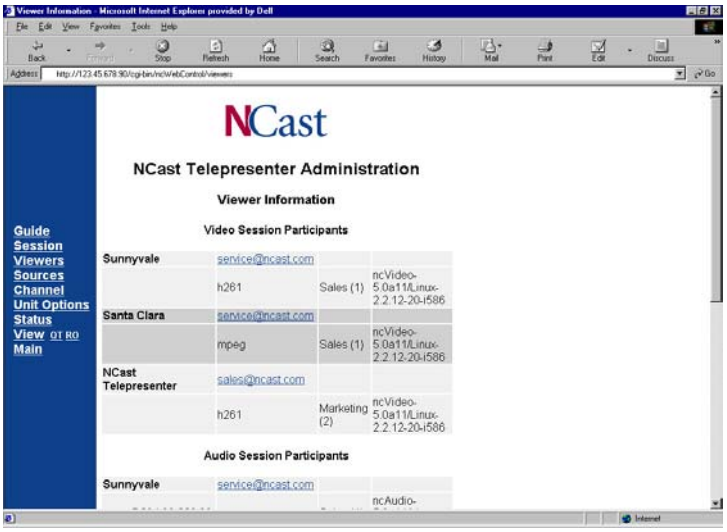
Follow the steps in the table below to access the Video/Audio/Graphics Sources page.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Click the **Sources** link on the left side of the web page
3	Click the appropriate options for audio, video, and graphics settings.
4	Click **Update Source Information**.

How to Display Viewer Information

Background

The Viewer Information Page displays information on viewers of a current session. Each entry is separated into three categories: video, audio and graphic viewers. Statistics are separated because viewers can independently tune in to any stream. Viewers have information that is listed according to what is sent out via their announcements, and according to what is listed in their Unit Options page. In addition, you can display the Telepresenter software information for a particular client.



Procedure

Follow the steps in the table below to display viewer information.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Click the **Viewers** link on the left side of the web page.

How to Display Status Information

Background

The Status Information Page provides information on Telepresenter M2 network performance. These statistics are for evaluating network performance and if necessary, for diagnosing network problems. The information is populated by reception reports received by participating Telepresenters on the network.

Procedure

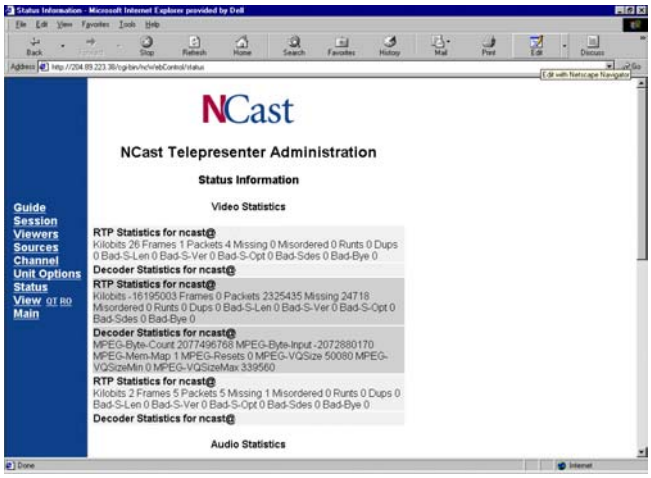
Follow the steps in the table below to display status information.

Step	Action
1	Type the Telepresenter IP address into a web browser.
2	Click the **Status** link on the left side of the web page.

About the Status Information Page

Description

The Status Information page is divided into three sections: video, audio, and graphic statistics. Because each channel represents all three data types, this page provides separate statistics on each. The Status Information page will also display performance in a current session.



Fields

The table below describes the fields on the Status Information page.

Field	Description
RTP Statistics for NCast@*x.x.x.x*	RealTime Transport Protocol (IP address of the applicable table)
Kilobits	Amount of information, in Kilobits, that the decoder has processed
Frames	Number of video frames received
Packets	Amount of received packets
Missing	Number of packets that have not been received
Runts	Ethernet frames that are shorter than the usual packet length (usually caused by network collisions)
Dups	Number of duplicate packets via the RTP sequence
Bad-S-Len	Incorrect Header Length Field
Bad-S-Ver	Incorrect Header Version Number
Bad-S-Opt	Unrecognized option specified in header
Bad-S-des	S-Des count is greater than available data
Bad-Bye	Bye count is greater than available data

Graphical User Interface

Introduction

The NCast Telepresenter M2 is controlled using a graphical user interface (GUI) that has been designed for easy navigation for all types of users with the IR remote control. This section describes each of the GUI pages and functionality. Press HELP on the remote control to obtain hints for each screen.

The GUI is only accessible when an SVGA monitor or a projector is connected to the Telepresenter via one of the Graphics Out connectors.

You cannot view network status or diagnostic information from the GUI, or perform advanced functions such as channel configuration or changing certain session parameters. Perform advanced settings by using a desktop browser and the Web Administration pages.

Contents

This section covers the following topics:

How to Enable Telepresenter Graphics Presentations

Background

The Telepresenter accepts graphics input from laptops, desktops (PC), document cameras, electronic whiteboards, and other devices without additional software requirements on the laptop or PC. The Telepresenter captures the screen as it appears on a laptop or PC and displays graphics on an SVGA-XGA monitor for highest quality resolution.

The Telepresenter is able to accept graphic input resolutions ranging to 1600x1200. Inputs above 1024x768 are scaled down to this resolution on output.

Graphics resolution and quality varies depending on the bandwidth, frames per second and latency settings found on the Session Information or Channel Characteristics web administration pages.

Procedure

Follow the steps in the table below to enable Telepresenter graphics presentations.

Step	Action
1	Connect a laptop or PC using the supplied male-to-male SVGA-XGA cable to the Telepresenter rear panel in the Graphics-In SVGA-XGA connector (or if you are attaching a document camera, you may plug into the S-Video or Composite Video connector, as appropriate).
2	Press the arrow keys on the remote control to move to **Settings** from NCast Central (a graphical user interface that is displayed on the SVGA-XGA monitor or projector).
3	Press SELECT on the remote control.
4	Press the arrow keys on the remote control to highlight **graphics**.
5	Press SELECT on the remote control.
6	Choose one of the following graphics inputs for the equipment attached to the Telepresenter: • Graphics In Composite • Graphics In SVHS/SVIDEO • Graphics In SVGA (most common) • Auto Detect (allows the Telepresenter to detect graphics input without manual selections) • None

About NCast Central

Description

NCast Central is the default page that appears when the Telepresenter M2 is in standby mode. When a session is created or joined, NCast Central will generate a list of Attendees on the left side of the screen. At the bottom of the screen, NCast Central displays a Question Queue, Coordinator Information and Help text.

Attendee List

In the Attendee list, the coordinator's name will appear as the first attendee. When floor control is relinquished to a participant, the participant's name in the attendee list is highlighted blue.

Helpful Tips

Use the arrow keys on your remote control to move around in the graphical user interface of the Telepresenter. Press **Exit** on the remote control to return to NCast Central.

About Today's Channels

Description

Today's Channels is a table that lists available channels for tuning. From Today's Channels, selecting an empty channel creates a session, where DVD-quality video, audio and high-resolution graphics can be presented and shared with remote sites and desktop users. The Telepresenter M2 may contain up to 100 channels.

Helpful Tips

To quickly search for a channel, use the **Page +** and **Page –** keys on the remote control. If a channel appears empty, it is available for starting a new session.

How to Start a Session

Background Empty channels do not have an originator; therefore, a new session can be created.

Procedure Follow the steps in the table below to create a new session.

Step	Action
1	Use the arrow keys or the page +/page – keys on the remote control to find an empty channel from Today's Channels.
2	Press **Select** on the remote control.
3	Select YES or NO for the following prompt: *Nobody is using this channel. Do you want to start a new session?* Note: If the administrator sets Always Coordinator (AC) as a channel characteristic for the Telepresenter, the unit will automatically begin as coordinator (and the prompt will not appear).
4	Select YES to connect to the channel and become the coordinator of that session. The following message displays: *Session started successfully*. Note: If you select NO a new session will not be created.

How to Join a Session

Background

Sessions that are currently running are shown with an originator's name.

Procedure

Follow the steps in the table below to join a current session.

Step	Action
1	Use the arrow keys or the page +/page – keys on the remote control to highlight a specific channel from Today's Channels.
2	Press **Select** on the remote control.
3	You will join the current session as a participant and your name will appear on the Attendee List in NCast Central.

About the Program Schedule

Description

Program Schedule is a detailed listing of current and pre-announced future sessions displayed from the network. This listing provides the specific time, date, duration, channel and name of the session, similar to a typical TV guide.

Note: Sessions cannot be created from Program Schedule.

Other Uses

The Program Schedule is a handy tool for accessing information on current transmissions in a given IP network. It lists all announcements from Telepresenters when they are a part of a session on a given channel. If the Telepresenter has access to the Internet, it will also see other networking announcements. These other networking announcements range from software multicast transmissions to other Telepresenters that are announcing over the Internet.

SAP

Telepresenters will also self-announce, so do not be surprised to see your own entry if you are currently tuned to or transmitting a current session. Keep in mind that your Telepresenter will only self-announce if it has permission to do so on that channel. Additionally, in order to view announcements from other Telepresenters, these units must have session announcement protocol (SAP) configured as well on that Telepresenter Channel Table. See About the Channel Characteristics Page on page 41.

Continued on next page

About the Program Schedule, Continued

Fields

The table below describes the fields on the Program Schedule.

Field	Description
Program	Displays the Unit ID that is transmitting. If the announcement is foreign, it will display the announcement details of the transmission
Date	If originating from a Telepresenter, displays the current date of the announcement. If originating from an SDR (Session Directory) tool, displays the scheduled date of the transmission
Time	Displays, in five minute intervals, the current time of Telepresenter broadcasts
Duration	Displays the duration of currently announced sessions
Channel	Displays the channel that is associated with this Telepresenter session. If this channel does not correspond with the Telepresenter Channel Table in use, it will display the other Telepresenter channel.

Helpful Tips

To quickly join a session in the Program Schedule listing, use the **Page +** and **Page –** keys on the remote control and press **Select** after you highlight the desired session. This easy search is particularly useful if you do not know which channel or time a session will be on air.

WWW caveats

If the network is enabled to do so, the Program Schedule will also display broadcasts from the World Wide Web. Some announcements in the Program Schedule originate from the World Wide Web; these may not be compatible with the Telepresenter M2 and therefore cannot be accessed.

SDR tools

If users wish to preannounce far in advance programs they will be presenting, for example, “Chemistry 101,” they can use SDR tools to send out announcements ahead of time. The SDR tools are handy for adding more details and sending out SAPs in advance. For more information on publicly available SDR tools, see FAQ on page 75.

About Settings

Description

Settings menus allow you to change inputs for audio, video and graphics, adjust volume levels, and choose the video format if allowed by network administrator settings.

Inputs

Use the arrow keys and press **Select** on the remote control to choose the correct connection inputs for the Telepresenter. The table below describes these settings.

Audio	Video	Graphics
Audio In 1	Video In 1	Graphics In Composite
Audio In 2	Video In 2	Graphics In SVHS / SVIDEO
Microphone 1	SVIDEO Video In	Graphics In SVGA
Microphone 2	Auto Detect	Auto Detect
None	None	None

For Graphics Settings: Selecting Auto Detect will allow the Telepresenter to detect graphics input without manually selecting the input.

Helpful Tips

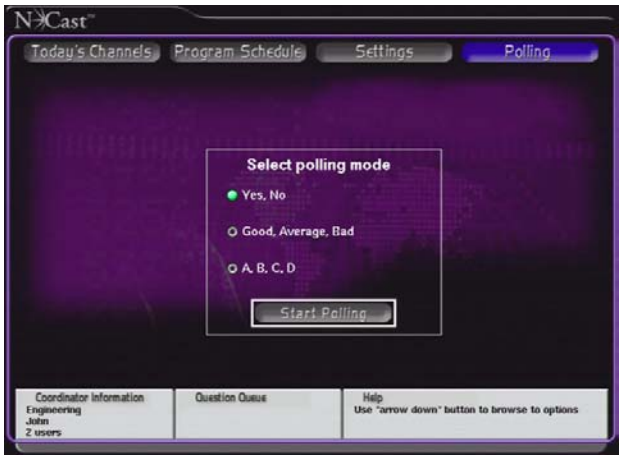
You can also access Settings by pressing **Menu** on the remote control. For easy navigation, press **Last** on the remote control to return to the previous screen.

About Polling

Description

A coordinator may set up a poll during a session at any time to elicit coordinated responses from participants. The Telepresenter includes three types of polls:

- Yes, No
- Good, Average, Bad
- A, B, C, D



Procedure

Follow the steps in the table below to begin a poll and to view the results.

Step	Action
1	Go to the **Polling** menu and select the desired poll.
2	Select **Start Polling**. Participants will see a poll screen automatically appear on their SVGA monitor or projector screen; from the poll screen, participants may select answers to respond to the poll.
3	*Required (Coordinator)*: Go back into the **Polling** menu to see the results of the poll.
4	*Required (Coordinator):* Select **Stop Polling** to end the poll.

Helpful Tips

A very effective poll can include a visual graphic; such as an Excel spreadsheet or a PowerPoint slide that asks the participants to respond.

How to End a Session

Background

Use the Power button on the infrared remote control to end a session. A coordinator may use End Session to terminate a session. A participant may use End Session to leave a session. It is highly recommended that every user end a session in order to release network bandwidth when they exit.

Procedure

Follow the steps in the table below to end a session.

Step	Action
1	Press **Power** on the remote control.
2	Press the arrow keys on the remote control to highlight **End Session** on the video monitor.
3	Press **Select** on the remote control. All participants that were on the channel will be terminated from the session.

Presentation Modes

Introduction

Interactive group meetings are easily facilitated using the Telepresenter. Virtually any number of Telepresenter remote sites can join a session. Desktop users can also participate in presentations and meetings by viewing Telepresenter M2 Sessions via any web browser with Apple QuickTime or RealOne media players.

Two-Way Conferencing

The Telepresenter M2 is equipped for point-to-point videoconferencing. Two-way videoconferencing feature is *automatic* when two Telepresenters are engaged in a session on the same channel. Both Telepresenters must have a video input, such as a camera or VCR player.

Two-way conferencing operates via multicast without floor control, where two users will be able to see and hear each other *without* needing to pass floor control – much like a phone conversation but with video interactivity.

Telepresenter M2 two-way conferences operate with one unit transmitting H.261 and the other unit transmitting MPEG quality audio and video, providing high quality face-to-face virtual meetings. Full duplex MPEG is also available as an option.

Unicast Mode

The Telepresenter can operate in Unicast mode (point-to-point communication from one device to another over a network). This can include a Telepresenter or a desktop computer. Only one Unicast stream can be sent at a time but the Darwin Streaming Server (free download), can be used to unicast multiple signals. Contact NCast for more information on this feature.

Contents

This section covers the following topics:

How to Set Up Two-Way Conferencing

Background

Two-way conferencing will operate with only two users on one channel. When a third party joins the channel, the Telepresenter M2 will automatically switch to group presentation mode, where the coordinator will be presenting to all the participants on the channel.

Note: Telepresenter M2 units cannot transmit MPEG in both directions unless custom hardware is present.

Procedure

Follow the steps in the table below to set up a two-way conference. Once all input settings are correctly set, both units will be in a two-way conference with audio and video transmissions.

Step	Action
1	At the coordinator Telepresenter site: Use the arrow keys on the remote control to find an empty channel on NCast Central.
2	At the participant Telepresenter site: Use the arrow keys on the remote control to select the same channel as the coordinator unit. Note: Participants must always select the channel *after* the coordinator.
3	Press the arrow keys on the remote control to move to **Settings** from NCast Central.
4	Check the audio and video input settings for the coordinator and participant units.
5	Check the LCD display on the Telepresenter to ensure that one unit is transmitting H.261 (h) and the other unit is transmitting MPEG (M).
6	*Optional*. Go to the Session Information web administration page to change the video settings (for example, from H.261 to MPEG video).
7	*Optional.* Click **Update Session Information**.

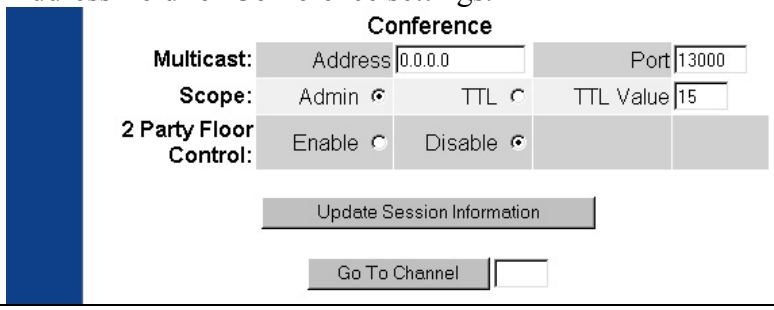
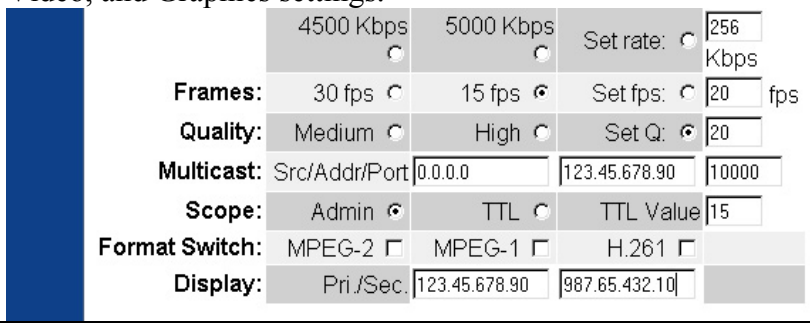
How to Set Up Unicast Mode

Background

Multicast is highly recommended when using the Telepresenter M2. However, if a network is not multicast enabled or not available, the alternative is to use Telepresenter in Unicast mode.

Procedure

Follow the steps in the table below to enable Unicast mode.

Step	Action
1	Type each Telepresenter IP address (coordinator unit and participant unit) into separate web browsers.
2	Click **Session** and configure one unit to transmit MPEG-1 and the other unit as H-261.
3	Click **Update Session Information**.
4	For the MPEG transmitting unit: Type 0.0.0.0 in the Multicast: Address field for Conference settings. 
5	Click **Update Session Information**.
6	For the MPEG transmitting unit: Type the IP address in the Multicast: Addr field and Display: Pri (Primary) fields for Audio, Video, and Graphics settings. 
7	Repeat the above steps for the Telepresenter transmitting H.261, using the IP address of the Telepresenter transmitting MPEG in the related fields.

System Optimization

Introduction

The Telepresenter is adaptable for a large variety of network environments with different bandwidth availability. You can configure the Telepresenter to achieve optimal settings for the video, audio, and graphics streams by tailoring bandwidth, viewing packet loss, and changing the settings for Q factor (Quality), frame rate, and bandwidth.

This section provides optimal settings for latency, frame rate, or picture quality at specified bandwidths (for both video and graphics). This information is a result of NCast internal testing. The results shown below assume a regular network. If an extremely over trafficked network is introduced, this could increase the amount of latency associated with the graphics stream.

Contents

This section covers the following topics:

About Bandwidth and Packet Loss

Tailoring Bandwidth

Tailoring a network connection's bandwidth is crucial for delivering a successful streaming media presentation. Internet users with 2.0 Mbps modems, for example, need to view presentations that require less than 2.0 Mbps of data per second. As the first step in optimizing system performance, you need to tailor the bandwidth to your audience and create content with that connection speed in mind. This helps ensure that the presentation streams smoothly.

In cases where an outbound network link becomes extremely slow, this is most likely due to a high demand for bandwidth with little supply. To alleviate the problem you should reduce the amount of bandwidth that the Telepresenters are utilizing, for example, reduce the MPEG video from 800 kbps to 700 kbps, the audio from Hi-Fi to PCM, and the graphics from 768 to 512 kbps.

Viewing Packet Loss

Audio, video, and graphics for transmission over the Internet has to be split into packets, which are then launched onto the network. At the receiver, the packets may be delivered out of order, or not at all, and packet arrival times are unpredictable. Packet loss occurs for a number of reasons: when routers become overloaded, when packets arrive too late to be played back, or when scheduling difficulties occur in a multi-tasking operating system.

Packet loss is a persistent problem that can get worse. From a user's point of view, packet loss severely disrupts audio intelligibility, even for very low loss rates. If a user is also experiencing packet loss with the video signal, that user can view packet loss statistics on our Statistics web page. By looking at this number, the user can determine whether they should reduce the bandwidth usage. See How to Display Status Information on page 52 for more information.

How to Set the Q Factor

Background

The Q factor that is displayed on the Channel Characteristics and Session Information pages represents a quality setting. A high Q factor results in a higher resolution for the image and therefore a larger file size. The bandwidth value directly affects the latency for graphics, or time for the image to be sent from a transmitter to a receiver. For example, when a bandwidth of only 256 Kbps is available for graphics, and a file has Q=90, it will take longer for the image to arrive at its destination.

Procedure

Follow the steps in the table below to set the Q factor (Quality).

Step	Action
1	Go to the Channel Characteristics page or the Session Information page. You can configure quality settings on either page. Note: Changes made to the Session Information page only apply to a session in progress.
2	Beside the Quality setting (for the Video or Graphics section of the page), select **Set Q**.
3	Type the quality factor.
4	Click **Update Channel Information** or **Update Session Information**.

About Optimal Frame Rates (Video)

H.261 optimal frame rate

Use the values in the table below to choose an optimal frame rate for H.261 video. The static frame rate value in this example is 30, but the Telepresenter automatically assumes the highest frame rate that the bandwidth setting allows (lower for smaller bandwidth connections). To achieve full 30 fps video, use MPEG as the video codec.

Bandwidth Setting	Specified Frame Rate Value	Quality Factor (Resolution)
64 Kbps	30	60-65
128 Kbps	30	70-80
256 Kbps	30	80-85
512 Kbps	30	75-85

H.261 Optimal Resolution

Use the values in the table below to choose an optimal resolution for H.261 video at the standard frame rate.

Bandwidth Setting	Specified Frame Rate Value	Quality Factor (Resolution)
64 Kbps	30	85-90
128 Kbps	30	80-90
256 Kbps	30	87-95
512 Kbps	30	85-95

About Optimal Latency (Graphics)

Graphics Optimal Latency

Use the values in the table below to choose an optimal graphics latency with a frame rate at a given resolution. Unlike video, the frame rate for graphics is measured in frames per minute (fpm). Based on the bandwidth, you can determine whether you want a higher frame rate or picture resolution. The maximum Q factor is 99.

Bandwidth	Latency	Q Factor (Resolution)
32 Kbps	6 seconds	30
64 Kbps	5 seconds	30
128 Kbps	4 seconds	60
256 Kbps	3 seconds	70
384 Kbps	1.5 to 2 seconds	80
512 Kbps	1.5 to 2 seconds	80
768 Kbps	2.5 seconds	90
Burst mode	1.5 to 2 seconds	90

Graphics Optimal Resolution

Use the values in the table below to choose the optimal graphics resolution with an acceptable latency.

Bandwidth	Latency	Q Factor (Resolution)
32 Kbps	13 seconds	50
64 Kbps	6 to 8 seconds	70
128 Kbps	6 seconds	80
256 Kbps	5 seconds	90
384 Kbps	4 seconds	90
512 Kbps	3 seconds	90
768 Kbps	2.5 seconds	90
Burst Mode	1.5 seconds	90

Appendix

Contents

This section covers the following topics:

Session Announcement Protocol (SAP)

Background

The Telepresenter has a feature that uses a protocol known as Session Announcement Protocol (SAP) to send announcements to potential receivers. The SAP feature, when enabled on a particular channel, transmits announcements so that other clients on a network can join a current session. The SAP announcements contain information on sessions, lectures, presentations, etc that are currently ongoing, or are scheduled for the future.

Composition

These messages contain a textual description of the content and its source, and the detailed technical information regarding the transmission. Telepresenters are able to both send and receive SAP announcements.

Usage

SAP announcements, when received by Telepresenters, are displayed on the GUI screen known as the Program Schedule. The Program Schedule screen will display the textual description of the corresponding SAP announcements on the network as programs for each announcing Telepresenter. You can even use the Program Schedule to browse between current programs and source them directly to the receiving Telepresenter by pressing the **Select** button on the remote control.

FAQ

Question	Answer
Why is the Telepresenter M2 not displaying the new IP address that I entered?	Reboot the Telepresenter M2 for any changes to take effect (especially if you typed an IP address on the Front Panel).
How can you obtain the MAC Address of the Telepresenter?	Press the menu key on the Front Panel of the Telepresenter M2, then the Select Key on the Info. Icon.
Why is the Telepresenter M2 taking too long to boot?	There could be a timeout problem if the DNS or gateway is not set up correctly in the LAN. Check the IP Configuration to verify gateway settings. Plus, the Telepresenter M2 sets up its system clock with a time server at Berkeley and a timeout can occur due to no Internet connection.
Is there any architecture for tunneling application/gateway?	Yes, because you can type a unicast address in the multicast address field of the Channel Characteristics page and use a reflector tool for the tunneling itself, such as RTP Reflector.

Continued on next page

FAQ, Continued

Question	Answer
Where can I find SDR tools for pre-announcing programs to the Program Schedule?	www-mice.cs.ucl.ac.uk/multimedia/software
I'm trying to use QuickTime/Real One to view the video stream at the desktop but it is not functioning correctly.	Select the appropriate desktop player stream on the Unit Options page. Check your version of QuickTime for version 5.0 or higher. Ensure that the stream is running at MPEG-1 (2.5 Mbps or MPEG-2 streams will not work for QuickTime and RealOne. Note: There is an MPEG-2 desktop player available for QT for a small fee.
How can I decrease the Quicktime delay?	You can shorten the buffer (not recommended in a congested network as video breaks will be more apparent). Here are the steps: 1. Open the Quicktime player program from the Start Menu. 2. Click Edit → Preferences → Quicktime Preferences. 3. Select **Instant On** from the drop down menu at the top of the Preferences window. 4. Make sure **Instant On** is enabled, and scroll the buffer down to nothing.
I'm at a desktop PC watching the transmission, the coordinator passed the floor, and I lost the video. How can I restore it?	Press Refresh on your browser. Desktop players do not have the capability to automatically handle floor control.
I'm trying to Telnet or FTP into the Telepresenter M2 but I am unable to do so.	Telnet and FTP are not available.

Continued on next page

FAQ, Continued

Question	Answer
I've tried changing the IP Address of the Telepresenter M2 on the Front Panel, but I cannot see it from a web browser.	Verify that the **Gateway** address is correct on the IPConfig page using a web browser on a desktop/laptop that lies on the same subnet as the Telepresenter.
How do I disable Floor Control?	Type 0.0.0.0 as the Conference Address on the web administration page and Click Update tab.
What type of MPEG rate can I use with a T-1 connection?	Use MPEG-1 and set the transmission rate to 1.0 Mbps on the Channel Characteristics page (video settings) and 6 to 800 Kbps with graphics installed. 1.5 Mbps leaves no headroom on a T1; video and audio breakup can occur as a result.

Troubleshooting

Background

NCast has thoroughly tested the Telepresenter M2 to ensure trouble-free operation. If one of the recommended remedies does not solve the problem or if the table below does not list the problem symptom, contact NCast Customer Support at 408.541.9230 or email techsupport@ncast.com for further assistance.

Problems

The table below describes some common problems and necessary actions.

Problem	Cause	Action
No power	Power cord is not inserted properly	Plug in securely
No audio	Incorrect audio cable connection	Check the connections. See How to Install the Telepresenter M2 on page 18.
	Incorrect audio input selection	Check the audio input settings. See About Settings on page 62.
No video on TV	Incorrect video cable connection	Check the connections. See How to Install the Telepresenter M2 on page 18.
	Incorrect video input selection	Check the video input settings. See About Settings on page 62.
Remote control not working	You are too far from the unit.	Move closer to the unit
	The tip of the remote is not pointed in the right direction.	Point the infrared signal toward the front panel of the unit
	The CPU is busy.	Wait for the CPU.
	Low batteries	Replace the batteries
Video and audio is not synchronized	Network latency	Press the **On Air** button twice (coordinator's unit).
No response from commands or the remote	Telepresenter system failure	Check the LCD time. Reboot the system.

Glossary

Background

At NCast, our goal is to create products that are easy to use and understand. Sometimes it is necessary to use words or phrases that may be unfamiliar.

Terms

The table below explains some of the product-specific and industry terms.

Term	Definition
Bandwidth	Width of a communications channel, measured in bits per second. Bandwidth is the capacity to move information
Channel	A transmission path that allows data flow between 2 or more endpoints
Coordinator / Originator	Group or person who creates the session, transmission or conference; also possesses floor control
DVI	Digital Audio Compression
GSM	Global System for Mobile Communications
H.261	Videoconferencing standard for video compression
IP Address	Internet protocol address, written as *XXX.XXX.XXX.XXX*, where *X* is any number between 0-9, and each 3-digit field has a value between 001-256.
LPC	Linear Predictive Coding
MBONE	IP Multicast Backbone
MPEG-1	Compression scheme for full motion video; a video standard 1.5Mbs
MPEG-2	Less compressed than MPEG-1 but has a higher Bit Rate from 3.5 to 10Mbs
Participant	Receiver of the transmission or conference
PCM	Pulse Code Modulation
RTP	Real-time Transport Protocol
SAP	Session Announcement Protocol
SDR	Session Directory

Continued on next page

Glossary, Continued

Terms (continued)

Term	Definition
Session	A conference, meeting or program initiated by a Telepresenter with another Telepresenter or desktop user
Streaming Media	Audio and Video data packets that start playing on your screen when invoked as opposed to today's email attachments or file downloads
SSM	Source Specific Multicast
Transmission / Conference / Session	A transmission, conference or session is the state in which two or more parties are involved in exchanging data
Transmit	To broadcast, send out over the network
UDP	User Datagram Protocol
Webcast	Real time delivery of audio, video or animation over the Internet