



***LifeSize® Multipoint 230™  
Installation Guide***

**July 2009**

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# CONTENTS

---

## *About This Manual*

Related Documentation	v
Conventions Used in this Manual	v

## **1** *LifeSize Multipoint 230 Functionality*

About the LifeSize Multipoint 230	1
Main Features	2
Call Capacity	6
About LifeSize Multipoint 230 Architecture	6
About LifeSize Multipoint 230 Topologies	6
Centralized Topology	6
Cascaded Conferences	6

## **2** *LifeSize Multipoint 230 Platform Overview*

LifeSize Multipoint 230 Chassis	10
LifeSize Multipoint 230 Chassis Main Features	10
Front and Rear Views of the LifeSize Multipoint 230 Chassis	11
LifeSize Multipoint 230 Media Blade Panel Features	12
Shelf Manager	13
Shelf Manager Main Features	13
Shelf Manager Panel Features	13

## **3** *Performing Initial LifeSize Multipoint 230 Configuration*

Initial Configuration and Boot Phases	15
---------------------------------------	----

Setting the IP Address for Both Blades	16
Setting Ethernet Speed and Duplex Parameters	18
Changing the Global User Name and Password	19
<b>4</b> <i>Cable Connections and Pin-outs</i>	
9-Pin Serial Port Terminal Cable	21
RJ-45 8-Pin IP Network Port	22
100 Mbps Ethernet	22
1 Gbps Ethernet	23
<i>Index</i>	25

# ABOUT THIS MANUAL

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The [LifeSize Multipoint 230 Installation Guide](#) describes how to install, configure and monitor the LifeSize Multipoint 230.

## RELATED DOCUMENTATION

The LifeSize Multipoint 230 documentation set is available on the LifeSize Utilities and Documentation CD-ROM and includes manuals and online helps. The manuals are available in PDF format.


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**Note** You require Adobe Acrobat Reader version 6.0 or later to open the PDF files. You can download Acrobat Reader free of charge from [www.adobe.com](http://www.adobe.com).

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## CONVENTIONS USED IN THIS MANUAL

The LifeSize Multipoint 230 is sometimes referred to as “the LifeSize Multipoint” in this manual. This manual uses the following conventions:

Convention	Description
<b>Blue Headings in Upper Case</b>	Level 1 headings introducing major sections.
	Pointing hand icon introduces a procedure.
<a href="#">orange link</a>	Live links appear in orange.

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# 1

## LIFESIZE MULTIPOINT 230 FUNCTIONALITY

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- [About the LifeSize Multipoint 230](#) on page 1
- [Main Features](#) on page 2
- [Call Capacity](#) on page 6
- [About LifeSize Multipoint 230 Architecture](#) on page 6
- [About LifeSize Multipoint 230 Topologies](#) on page 6

### ABOUT THE LIFESIZE MULTIPOINT 230

The LifeSize Multipoint 230 enables multimedia, multiparty collaboration in applications such as group conferencing, distance learning, training and video telephony. The LifeSize Multipoint supports multimedia, multiparty communications in the board room, at the desktop, in the home, or on the road over wireless.

The LifeSize Multipoint provides core IP-centric functionality, a wide range of layouts, powerful audio and video transcoding, support of web-initiated data collaboration, and software upgradeable technology. The system can be fully customized according to the needs of the administrator.

## MAIN FEATURES

**Table 1-1** Summary of LifeSize Multipoint 230 Features

<b>Feature</b>	<b>Description</b>
Superior video processing	Video and audio processing is carried out per user rather than per conference. Each user connects using unique, optimized audio and video settings to enjoy the best audio and video quality supported by his/her endpoint and network.
Seamless interoperability	<p>The LifeSize Multipoint is built on the strong foundation of the LifeSize H.323 and SIP software, ensuring full compliance and unmatched interoperability with IP and ISDN networks.</p> <p>The LifeSize Multipoint enables H.323 and SIP devices to participate in the same conference session.</p> <p>When used with the LifeSize Gateway, the LifeSize Multipoint also enables ISDN and V.35 wireless devices to participate in the same conference session.</p>
Intuitive web-based management and control	Both the LifeSize Multipoint 230 system and actual conference sessions are managed, configured, and dynamically modified through an intuitive, web-based interface that offers easy, high-level conference control and administrative flexibility for an enhanced user experience.
Unlimited number of conferences	The number of supported conferences is limited only by the number of ports provided by your license.
In-meeting indicators	A range of messages and icons are displayed on the endpoint monitor during conferences when certain operations occur, including when a participant joins or leaves a conference, an audio-only participant speaks, and a participant's personal video layout changes.

Feature	Description
Personal layouts per participant	Fully customizable personal video layouts for each conference participant.
Single LAN connection	<p>Only a single Ethernet connection is required for the entire LifeSize Multipoint 230 system. The connection is via the upper blade.</p> <p>The upper Media Blade manages the platform, including call signaling and processing, application interface, network management, and audio and video processing. The lower Media Blade functions as the slave.</p>
Snapshot files for Customer Support	One-click creation of a file of bundled logs and configuration files which you can send to LifeSize Customer Support for debugging.
Supported protocols	<ul style="list-style-type: none"> <li>■ H.323 version 4</li> <li>■ SIP RFC 3261 for the Session Initiation Protocol</li> <li>■ H.243 for conference control</li> <li>■ RFC 2833 for in-band DTMF with SIP</li> <li>■ H.281 for far end camera control (FECC)</li> <li>■ H.235 for IP-based media encryption</li> <li>■ H.239 for standard simultaneous transmission of live video and presentation sharing feeds.</li> <li>■ SDP (RFC 3264, 2327)</li> <li>■ H.320</li> </ul>
	<p><b>Note</b> The LifeSize Multipoint supports calls from H.323 and SIP endpoints in the same conference. Call signalling is handled on all ports regardless of the protocol type.</p>

## Main Features

Feature	Description
Audio transcoding codecs	<ul style="list-style-type: none"><li>■ AAC-LC/LD</li><li>■ G.711 A/<math>\mu</math> Law</li><li>■ G.722</li><li>■ G.722.1</li><li>■ Siren 14/G.722.1 C</li><li>■ G.729 A and B</li></ul>
Unmatched video quality	<p>The LifeSize Multipoint delivers exceptionally high quality video and audio processing, using latest industry standards and leveraging upon advanced software upgradeable DSP chips.</p> <p>The LifeSize Multipoint achieves the best video quality by supporting the following video capabilities:</p> <ul style="list-style-type: none"><li>■ High definition and standard definition participants in the same conference.</li><li>■ H.263 and H.264 in the same conference</li><li>■ A choice of 20 layouts</li><li>■ Up to 12 Mbps on each stream without affecting capacity</li><li>■ Resolutions from QCIF to 720p in the same conference without affecting capacity</li><li>■ VGA, SVGA, XGA (supported for presentation channel only)</li></ul>

Feature	Description
Security and privacy	<ul style="list-style-type: none"> <li>■ Administrator and operator password protection for accessing the LifeSize Multipoint web interface.</li> <li>■ Optional PIN protection for joining a conference and web access.</li> <li>■ Additional PIN protection for conference Moderator Control.</li> <li>■ The LifeSize Multipoint uses H.235-based encryption to achieve secure communication with endpoints that support this standard.</li> </ul>
In-conference control using DTMF or H.243	During a conference, participants may use their endpoint remote control or keypad to perform actions such as mute, volume control, changing video layouts and inviting participants. Users interact with the LifeSize Multipoint via DTMF signaling or the on-screen GUI of H.243-compliant endpoints.
Optional no self see	The administrator can configure the LifeSize Multipoint service to remove the self-view for each conference participant. This feature enables more effective use of the video screen.
Interactive Voice Response (IVR) messages	The LifeSize Multipoint includes pre-recorded greetings to conference participants and announcements as each new participant joins the conference. You can record messages to provide custom greetings and announcements.

## CALL CAPACITY

The LifeSize Multipoint provides a flat capacity of 30 ports, regardless of the call bit rate or resolution. Each video call consumes a single port.

High Definition calls can connect at up to 720p at 30fps.

Enhanced Definition calls can connect at up to 4CIF/352p at 30fps.

In some cases, the frame rate of calls using 4CIF might drop but not to less than 15fps.

## ABOUT LIFESIZE MULTIPOINT 230 ARCHITECTURE

The LifeSize Multipoint 230 enables both voice-only and video conference calls for H.323, SIP, H.320 and regular PSTN network telephones. H.323 and SIP devices can connect to a conference directly through the LifeSize Multipoint 230. Other devices such as voice telephones and video conferencing terminals (H.320) can connect to a conference via a gateway, such as the LifeSize Gateway.

The LifeSize Multipoint supports devices that can send and receive video streams, as well as those that cannot send but only receive video streams. This means that terminals without a video camera or video capturing capabilities can participate in a conference as voice-only participants while benefiting from seeing the other participants.

## ABOUT LIFESIZE MULTIPOINT 230 TOPOLOGIES

The LifeSize Multipoint 230 can work in a centralized or cascaded topology. This section describes these two options.

- [Centralized Topology](#) on page 6
- [Cascaded Conferences](#) on page 6

## CENTRALIZED TOPOLOGY

In a centralized topology, the LifeSize Multipoint performs media processing for all connected terminals, regardless of their location. The LifeSize Multipoint can handle multiple conferences simultaneously.

## CASCADED CONFERENCES

The LifeSize Multipoint allows you to combine two or more conferences resulting in a larger conference with many more participants. This is called *cascading*. Cascading creates a distributed environment that helps reduce the drain on network resources. In addition, the processing resources required by the LifeSize Multipoint are distributed between participating MCUs. Costly telephone or ISDN line usage can be further reduced with the mediation of a gateway.

Cascading occurs when one conference with “x” number of participants invites another conference with “y” number of participants. The two conferences effectively become one large conference. The bandwidth required across a cascaded conference link is only that of one audio/video stream between the two

conferences. This is significantly less than the accumulated bandwidth of all the participants. Each separate LifeSize Multipoint participating in a conference retains control of its individual conference resources and participants.

## About LifeSize Multipoint 230 Topologies

# 2

## LIFESIZE MULTIPPOINT 230 PLATFORM OVERVIEW

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The LifeSize Multipoint 230 platform is a high performance, multi-functional chassis that supports mix-and-match functionality. This highly configurable and scalable design provides maximum flexibility for configuring platforms to meet a wide variety of functional and performance application requirements.

The LifeSize Multipoint 230 platform includes these components:

- The LifeSize Multipoint 230 chassis
- Two LifeSize Multipoint Media Blades
- A LifeSize Shelf Manager

We describe each component in these sections:

- [LifeSize Multipoint 230 Chassis](#) on page 10
- [LifeSize Multipoint 230 Media Blade Panel Features](#) on page 12
- [Shelf Manager](#) on page 13

## LIFESIZE MULTIPOINT 230 CHASSIS

### LIFESIZE MULTIPOINT 230 CHASSIS MAIN FEATURES

- [LifeSize Multipoint 230 Chassis Main Features](#) on page 10
- [Front and Rear Views of the LifeSize Multipoint 230 Chassis](#) on page 11

The LifeSize Multipoint 230 chassis is a 3U chassis which can hold two LifeSize LifeSize Multipoint 230 Media Blades and a shelf manager.

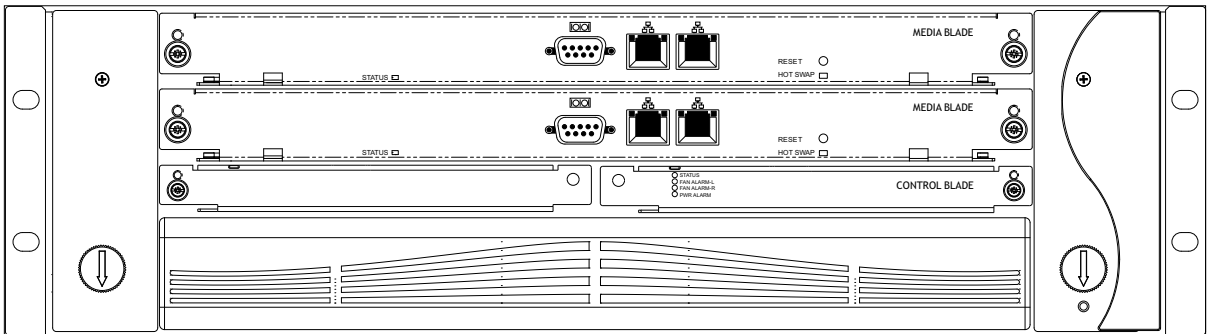
The upper LifeSize Multipoint functions as the master blade, providing the single management interface and controlling both blades in the chassis. The LAN connection is via the upper blade. The lower LifeSize Multipoint functions as the slave.

**Table 2-1**      *Chassis Main Features*

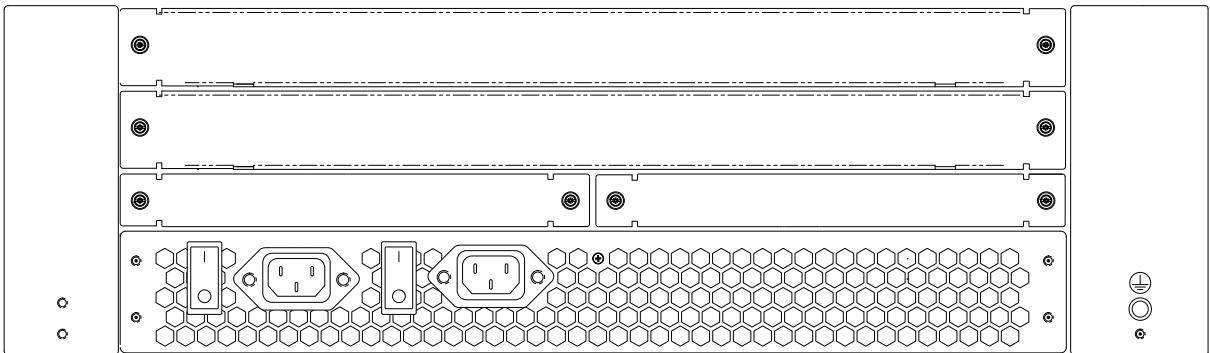
Field replaceable units (FRUs)	All boards, Power Supply Units and fan drawers are field replaceable units
Hot swap	All FRUs are hot-swappable—removing or replacing an FRU (except a Power Supply Unit) does not affect the operation of other FRUs.
Grounding and electrostatic discharge	<ul style="list-style-type: none"><li>■ The chassis includes an external GND 4mm stud as per the TUV requirement).</li><li>■ The chassis includes 4mm banana jacks for a 4.5mm plug or a standard 0.166" plug, as per the PICMG 3.0 specification.</li></ul>
Cooling	The chassis supports a single failed fan in the fan tray.
Power supply	<ul style="list-style-type: none"><li>■ Default AC power supply as the default choice.</li><li>■ Universal 90-264 VAC power ports.AC power entry includes regular IEC320-C14 filtered AC inlet and double pole switch located in the rear.</li><li>■ Thermal shutdown if the unit heats up beyond its limits.</li></ul>

**FRONT AND REAR  
VIEWS OF THE  
LIFESIZE  
MULTIPOINT 230  
CHASSIS**

*Figure 2-1 Chassis Front Panel*

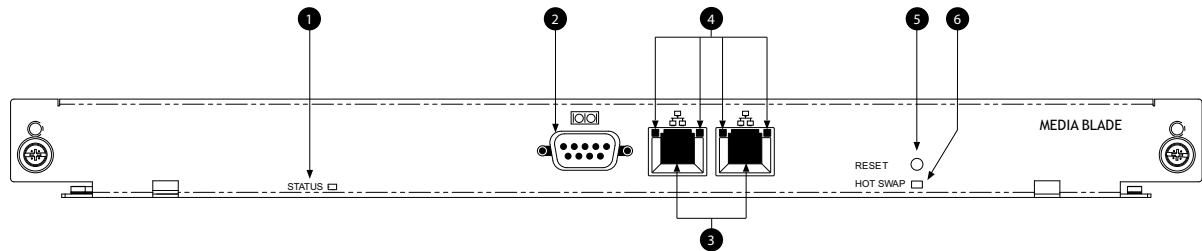


*Figure 2-2 Chassis Rear Panel*



**LIFESIZE  
MULTIPOINT 230  
MEDIA BLADE  
PANEL FEATURES**

**Figure 2-3** Media Blade Front Panel



**Table 2-2** Media Blade Panel Features

Component	Description
1 STATUS LED	Lights green to indicate normal operation. Lights red to indicate that an error has occurred and that the Media Blade requires resetting.
2 Serial connector	A DB-9 connector that allows you to connect a PC terminal for local configuration, maintenance and debugging.
3 100/1000 BASE-T Ethernet connectors	RJ-45 connectors that provide the primary LAN connection for the IP network port.
4 Ethernet connector Link/Activity LEDs	The top part of each Ethernet connector contains two LED indicators. The right LED lights green when the local IP network link is active. The left LED lights green if the connection speed reaches 1000 Mbps, and lights orange if the connection speed reaches 100 Mbps.
5 RESET button	Allows you to reset the Media Blade manually.
6 HOT SWAP LED	Lights blue when the latches of the board are unlocked and it is safe to remove the board from the chassis, and during reset. Goes off when the board is completely detached.

## SHELF MANAGER

- [Shelf Manager Main Features](#) on page 13
- [Shelf Manager Panel Features](#) on page 13

### SHELF MANAGER MAIN FEATURES

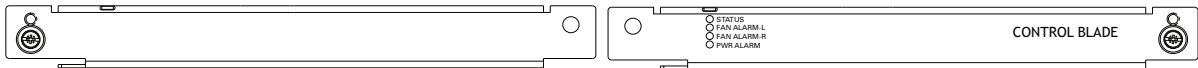
The shelf manager administers the chassis and its component power supply units, fans and boards.

Shelf manager functionality includes:

- Monitoring chassis temperature
- Controlling fan speed
- Providing alarm indications to the upper Media Blade over the Ethernet via the LifeSize Multipoint 230 chassis backplane

### SHELF MANAGER PANEL FEATURES

**Figure 2-4** Shelf Manager Front Panel



**Table 2-3** Shelf Manager Panel Features

Component	Description
STATUS LED	Lights green to indicate normal operation.
FAN ALARM - L LED	Lights red if the tachometer speed in one or more fans in the left fan tray falls below 900 rpm.
FAN ALARM - R LED	Lights red if the tachometer speed in one or more fans in the right fan tray falls below 900 rpm.
PWR ALARM LED	Lights red if there is a failure in one of the AC power supplies.

## Shelf Manager

# 3

## PERFORMING INITIAL LIFESIZE MULTIPOINT 230 CONFIGURATION

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### INITIAL CONFIGURATION AND BOOT PHASES

- [Setting Ethernet Speed and Duplex Parameters](#) on page 18
- [Setting the IP Address for Both Blades](#) on page 16
- [Initial Configuration and Boot Phases](#) on page 15
- [Changing the Global User Name and Password](#) on page 19

Initial monitoring and administration of the LifeSize Multipoint are performed from a remote PC via a serial connection using a terminal emulation application, such as HyperTerminal. This allows you to access the boot configuration menu of the LifeSize Multipoint. At power-up, the LifeSize Multipoint goes through the following boot phases:

- Auto-boot—The embedded operating system initializes and displays basic information.
- Configuration menu—A 10-second countdown allows you to enter the configuration menu.
- Initialization—The LifeSize Multipoint completes its boot sequence and is ready for operation.

---

**Note** You can perform serial port configuration of the LifeSize Multipoint only at startup, during a short period indicated by a 10-second countdown. Once the initialization phase is complete, the only way you can access the configuration menu is by restarting the LifeSize Multipoint.

---

## SETTING THE IP ADDRESS FOR BOTH BLADES

You use the serial port on the LifeSize Multipoint front panel to assign a new IP address to your LifeSize Multipoint. You must assign the IP address before you connect the LifeSize Multipoint to the network.

### Before You Begin

Gather these items to assign an IP address to the LifeSize Multipoint:

- Dedicated IP address for the two Media Blades
- Dedicated subnet mask for the LifeSize Multipoint
- IP address of the default router the LifeSize Multipoint uses to communicate over the network
- PC with available serial port and terminal emulator software installed
- Serial cable



### Procedure

- 1 Connect the serial cable from the PC terminal to the serial port on the front panel of the upper Media Blade.
- 2 Connect the power cable.
- 3 Start the terminal emulation application on the PC.
- 4 Set the communication settings in the terminal emulation application on the PC as follows:
  - Baud rate: 9600
  - Data bits: 8
  - Parity: None
  - Stop bits: 1
  - Flow control: None
- 5 Turn on the power to the LifeSize Multipoint.  
A log of the auto-boot events and a VxWorks banner scrolls across the computer monitor.

- 6 When the message “Press any key to start configuration” appears on the screen, press any key within 10 seconds.

The network configuration Main menu appears:

Main menu

N: Configure default network port values

P: Change the configuration software password

S: Configure network security level

T: Configure TFTP servers list

A: Advanced configuration menu

Q: Quit

---

**Caution** If you do not press a key before the countdown ends, the device continues its initialization and you will need to reboot the device to return to the network configuration Main menu.

---

- 7 Enter N at the prompt to configure default network port values and press **Enter**.
- 8 Enter 2 to change the network configuration.
- 9 Enter the IP address you want to assign to the LifeSize Multipoint at the Enter IP address for default interface prompt and press **Enter**.

---

**Caution** Do not use leading zeros in the IP address.

---

- 10 Enter the IP address you want to assign to the Secondary Media Blade at the Enter IP address 2 prompt and press **Enter**.

---

**Caution** Do not use leading zeros in the IP address.

---

## Setting Ethernet Speed and Duplex Parameters

- 11 Enter the IP address of the router associated with the segment in which the unit will be installed at the Enter Default Router IP Address prompt and press **Enter**.

---

**Caution** Do not use leading zeros in the IP address.

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- 12 Enter the subnet mask without leading zeros at the Enter IP Mask for default device prompt and then press **Enter**.  
If you are not using a subnet mask, press **Enter**.
  - 13 Allow the unit to complete the reboot process. A new emulator session begins.
  - 14 Close the terminal emulator session.
- 

## SETTING ETHERNET SPEED AND DUPLEX PARAMETERS

Use the serial port to set the Ethernet speed and duplex parameters that you want the LifeSize Multipoint to use.



### Procedure

- 1 Access the LifeSize Multipoint through the serial port and start the terminal emulator session.

---

**Note** If the LifeSize Multipoint is already running, you need to reboot or restart the device.

---

- 2 When the message “Press any key to start configuration” appears on the screen, press any key within 10 seconds.  
The network configuration Main menu appears.
- 3 Enter **A** at the prompt to display the Advanced Configuration menu, and press **Enter**.  
The Advanced Configuration menu appears.
- 4 Enter **3** at the prompt to select “Change LAN port Settings”, and press **Enter**.

- 5 Enter the appropriate number or letter at the prompt for one of these options:
  - ❑ 1 - 100Mbps Half Duplex
  - ❑ 2 - 100Mbps Full Duplex
  - ❑ 3 - 1Gbps Full Duplex
  - ❑ 4 - Auto Negotiation
  - ❑ Other - Quit

---

**Note** We recommend that you select “4 - Auto Negotiation”.

---

- 6 Press **Enter**.  
The network configuration Main menu appears.
  - 7 Do one of the following:
    - ❑ Enter the letter for the set of parameters that you want to configure.
    - ❑ Enter **Q** to save your changes and allow the device to complete the boot process.
- 

## CHANGING THE GLOBAL USER NAME AND PASSWORD

You can change the global user name and password that the LifeSize Multipoint uses. You use this user name and password to access the configuration web page for the LifeSize Multipoint. The user name and password are required for these tasks:

- Starting a Telnet session to monitor the LifeSize Multipoint
- Upgrading the LifeSize Multipoint software
- Uploading Interactive Voice Response (IVR) messages to LifeSize Multipoint configuration memory

The default global user name is *admin*. The default password is *password*.



### Procedure

- 1 Start a terminal emulator session as described in the [Setting the IP Address for Both Blades](#) on page 16.
- 2 Enter **P** at the prompt.
- 3 Enter the name that you want to use as the global user name at the Enter User name prompt, and press **Enter**.

## Changing the Global User Name and Password

- 4 Enter the password that you want to use at the Password prompt, and press **Enter**.  
The network configuration Main menu appears.
  - 5 Do one of the following:
    - Enter the letter for the set of parameters that you want to configure.
    - Enter **Q** to save your changes and allow the device to complete the boot process.
-

# 4

## CABLE CONNECTIONS AND PIN-OUTS

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- [9-Pin Serial Port Terminal Cable](#) on page 21
- [RJ-45 8-Pin IP Network Port](#) on page 22

### 9-PIN SERIAL PORT TERMINAL CABLE

**Table 4-1** describes the pin-to-pin configuration of the RS-232 terminal cable provided with the LifeSize Multipoint 230.

**Table 4-1** *RS-232 9-pin D-Type Serial Port Pin-out*

Pin	Function	I/O
1	NC	
2	RXD	Input
3	TXD	Output
4	NC	
5	GND	
6	NC	
7	NC	
8	NC	
9	NC	

## RJ-45 8-PIN IP NETWORK PORT

- [100 Mbps Ethernet](#) on page 22
- [1 Gbps Ethernet](#) on page 23

### 100 MBPS ETHERNET

[Table 4-2](#) describes the pin-out configuration of the 100 Mbps RJ-45 Ethernet connector.

**Table 4-2** *Pin-out Configuration of the 100 Mbps RJ-45 IP Ethernet Connector*

Pin	Function	I/O
1	TXD+	Output
2	TXD+	Output
3	RXD+	Input
4	NC	
5	NC	
6	RXD-	Input
7	NC	
8	NC	

## 1 GBPS ETHERNET

Table 4-3 describes the pin-out configuration of the 1 Gbps RJ-45 Ethernet connector.

**Table 4-3** *Pin-out Configuration of the 1 Gbps RJ-45 IP Ethernet Connector*

<b>Pin</b>	<b>Name</b>	<b>Function</b>	<b>I/O</b>
1	BI_DA+	Bi-directional pair A +	I/O
2	BI_DA-	Bi-directional pair A -	I/O
3	BI_DB+	Bi-directional pair B +	I/O
4	BI_DC+	Bi-directional pair C +	I/O
5	BI_DC-	Bi-directional pair C -	I/O
6	BI_DB-	Bi-directional pair B -	I/O
7	BI_DD+	Bi-directional pair D +	I/O
8	BI_DD-	Bi-directional pair D -	I/O

## **RJ-45 8-Pin IP Network Port**

# INDEX

---

## A

audio  
  codecs 4  
auto-boot 15

## B

boot configuration menu 15

## C

cables  
  RS-232 9-pin serial port 21  
cascaded conferences 6  
codecs  
  audio transcoding 4

## D

DTMF 5

## E

encryption 5

## H

H.235 3  
H.239 3  
H.243 5

## I

initial configuration 15  
interoperability 2

IVR 5

## O

optional no self see 5

## P

pin-out configuration  
  RJ-45 IP network port 22, 23  
  RS-232 9-pin D-type serial port 21  
ports  
  RJ-45 IP 22, 23  
  RS-232 9-pin serial 21  
privacy 5  
protocols 3

## R

remote control 5

## S

security 5  
self-view 5

## T

transcoding 4

## V

video  
  formats 4  
video quality 2, 4

## **W**

web-based management and control 2