LifeSize® Video Center Administrator Guide

May 2010

Copyright Notice

©2010 Logitech, and its licensors. All rights reserved.

LifeSize Communications, a division of Logitech, has made every effort to ensure that the information contained in this document is accurate and reliable, but assumes no responsibility for errors or omissions. Information in this document is subject to change without notice. Companies, names, and data used in examples herein are fictitious unless noted. This document contains copyrighted and proprietary information which is protected by United States copyright laws and international treaty provisions. No part of the document may be reproduced or transmitted, in any form or by any means, electronic or mechanical, for any purpose, without the express written permission from LifeSize Communications.

Trademark Acknowledgments

LifeSize, the LifeSize logo and other LifeSize marks, are owned by Logitech and may be registered. All other trademarks are the property of their respective owners.

Patent Notice

For patents covering LifeSize® products, refer to http://www.lifesize.com/support/legal.

Contacting Technical Services

If you have questions, concerns, or need assistance, contact your LifeSize Partner.

Providing Customer Feedback

LifeSize Communications welcomes your comments regarding our products and services. If you have feedback about this or any LifeSize product, please send it to feedback@lifesize.com. Contact information for LifeSize Communications is as follows:

Method	*Address*
Internet	http://www.lifesize.com
E-mail	support@lifesize.com
Phone	(877) LIFESIZE or (877) 543-3749 (512) 347-9300
Fax	(512) 347-9301

Getting Started with LifeSize Video Center

This document assumes you have successfully installed and powered up your LifeSize Video Center for the first time. If you have not yet done so, refer to the *LifeSize Video Center Installation Guide* for instructions.

The server has the following default network settings:

IP address : 192.168.1.25

Network Mask : 255.255.255.0

Default Gateway : 192.168.1.1

To change these settings for your server, complete the following steps:

1. Connect a computer via an ethernet cable directly to the server. Refer to the server installation guide for the correct port.
2. Configure the computer with the same network mask and default gateway as the server. Set the computer's IP address to an address in the 192.168.1.x network, for example 192.168.1.2.
3. Open a web browser on the computer and enter the IP address, *192.168.1.25*. For a list of compatible browsers, refer to the LifeSize Video Center release notes.
4. Log in with the following credentials:

   Username: *administrator*

   Password: *admin123*
5. Click the **Administer** tab.
6. In the navigation bar, click **System Settings**.
7. Under **Network Settings**, click **Edit** for **Primary NIC**.
8. Change the settings in the **Edit Network Interface** page to configure your server to work on your network. LifeSize recommends a static IP address.
9. Click **Apply Changes**.
10. Disconnect the ethernet cable from the computer and restore the computer's settings to work with your network. Connect the server to your network via the ethernet cable.
11. From a computer on the same network on which the server is now configured to operate, open a browser and enter the IP address you supplied in step 8 to re-access the server. If you cannot reconnect using the new IP address, refer to "Using the Console Command Line Interface to Access the Server" on page 19 for more information.

Changing the Default Administrator Password

LifeSize recommends that you change the administrator account password after you log in for the first time.

Click your username, *administrator*, to access your profile page and the **Change Password** link.

Network Considerations

LifeSize recommends the following conditions for optimal performance:

- Install the server on a non-lossy gigabit ethernet network.
- Ensure that the recording bit rate is set at the proper rate for your network to avoid packet loss.
- Ensure that the server and the recording-enabled LifeSize video communications systems reside on the same LAN.

Firewall Considerations

To view the ports the server uses for HTTPS, recording, and streaming, complete the following steps:

1. Click the **Administer** tab.
2. In the navigation bar, click **System Status**.
3. Refer to the **Port Usage** section.

Ensure that your firewall software is configured to allow traffic through these ports as well as the standard ports for FTP and SSH.

Service	Ports
Web Server	TCP ports: 80 (HTTP), 443 (HTTPS/SSL/TLS)
Streaming Server	TCP port: 1935 (RTMP)
Recording Server	TCP port: 554 (RTSP) UDP ports: 50000-52000 (RTP)

Configuring LifeSize Video Center

LifeSize Video Center is a network server that stores and streams video sent to it by LifeSize video communications systems enabled for streaming and recording. For a list of these devices, refer to the LifeSize Video Center release notes. Viewers access these videos and live streams from the server through a web-based user interface on their computers.

Administrators configure the LifeSize communications systems, and specify who can create these recordings and live streams. Administrators also determine the permissions viewers have to watch videos and live streams. Administrators accomplish these tasks by determining who can create recording keys and by assigning user roles.

Recording Keys

Recording keys are central to auto-publishing. A recording key is required to start a recording from a LifeSize video communications system. The recording or live stream is then instantly available to viewers.

To create a key, a user completes a form with the following information:

- title
- tags
- description
- user permissions
- channel assignment
- ownership

The server then generates a number for the key. Refer to LifeSize Video Center help for instructions.

Administrators set the length of the key, which can be 3 to 10 digits. Refer to “Defining Recording Key Length” on page 7 for instructions.

Administrators control who can create and edit recording keys and can reassign video ownership to any user. Consider the examples of a highly controlled environment, a distributed environment, and an ad hoc environment described in the following sections for guidance in designing your own environment.

Highly Controlled Environment Example

In a controlled environment, administrators can restrict recording key creation to themselves. Refer to “Restricting Recording Key Creation” on page 7 for instructions. Administrators could then communicate to users which keys to use for different types of conferences, and fulfill requests for new keys when needed.

Administrators can also create keys and then assign ownership of them to a trusted user, who could then edit the assigned keys, but not create new keys. These trusted users would own the videos created with these keys and be responsible for their maintenance. Refer to “Assigning Recording Key Ownership” on page 7 for more information.

Administrators can configure a LifeSize video communications system to enable recording with a default recording key. All recordings made from that video communications system will use that default recording key. Users are not prompted for a key when they record. Refer to “Configuring LifeSize Video Communications Systems to Record” on page 15 for instructions. This method simplifies recording for the user. However, every video recorded from that system will use the same key and therefore have the same title (differentiated with a date and time stamp) and other descriptive information. To make differentiating the videos easier, the video owner must then edit the videos’ details.

Distributed Environment Example

Large organizations may choose to bestow the ability to create recording keys to trusted users, called content creators. Refer to “User Roles” on page 9 for a description. For example, in an educational setting, an instructor may teach three classes and therefore need three recording keys. Instead of one administrator setting up recording keys for 30 instructors, instructors are allowed to create their own. Refer to “Allocating Recording Key Permissions” on page 8 for a description of this scenario.

Ad Hoc Environment Example

Small organizations may decide to forgo the effort of creating many different recording keys and allow users to record ad hoc using a blank recording key. Or, they may create recording keys for regularly scheduled meetings and use the blank key for events that do not fit those keys. If enabled, the user can create a recording from any recording enabled video communications system by pressing **OK** on the remote control when prompted for a recording key. Refer to “Enabling a Blank Recording Key” on page 8 for more information.

Note: The blank key cannot be used on a video communications system configured to use a default recording key, because the system will not prompt for a recording key.

The advantage of this approach is that users do not need to know a key to record. The disadvantage is that all videos recorded with the blank key, no matter their subject matter, are associated with just one recording key and therefore share the same title and description and user permissions. To make these videos easier to consume, someone must edit the video details on each video after recording to distinguish one from another.

Creating Recording Keys

After determining your organization's needs for recording and streaming (refer to "Recording Keys" on page 5 and "User Roles" on page 9 for guidance) follow the procedures appropriate for your streaming and recording environment.

Defining Recording Key Length

Recording keys can be 3 to 10 digits. Keys generated after changing this setting reflect the new length. Previously generated keys are unaffected.

1. Click the **Administer** tab.
2. In the **Content Management** section, click **Modify** for **Recording Keys**.
3. Click **Set key length**.
4. Enter a number from 3 to 10.
5. Click **Save**.

Restricting Recording Key Creation

Default global settings permit an administrator to assign users permission to create recording keys. Administrators can prevent non-administrators from creating recording keys by completing the following steps:

1. Click the **Administer** tab.
2. In the **Content Management** section, click **Modify** for **Global Authorization Properties**.
3. Clear the **Allow users to create recording keys** check box.
4. Click **Save**.

Assigning Recording Key Ownership

Ownership of a recording key defaults to the user creating the key. Therefore, if only administrators can create recording keys, by default, only administrators own recording keys and the videos created with them. However, an administrator can choose to assign ownership of keys to non-administrators when creating the keys.

1. Click the **Administer** tab.
2. In the **Content Management** section, click **Add** for **Recording Keys**.

From the **Create Recording Key** page, you can choose any user, including non-administrators in the **Owner** list. Owning this key classifies the user as a content creator, who, when logged in, can access the **Manage** tab. The key appears in **My Recording Keys**,

and any video created with the key appears in **My Videos**. The owner can edit the recording key, or delete it. Also the owner can edit video details or delete videos, if any have been recorded with the key.

Allocating Recording Key Permissions

If the global permission to create recording keys has not been disabled (refer to “Restricting Recording Key Creation” on page 7), administrators can assign users permission to create recording keys when creating or editing their user settings. Refer to “Editing User Settings” on page 10 for more information. Administrators can edit, delete, or reassign ownership of any recording key, including those created by non-administrator users.

Enabling a Blank Recording Key

In lieu of or in addition to requiring numeric recording keys to initiate a recording, administrators can enable a blank or empty key that essentially allows a user to press the **OK** button on the remote control when prompted for a recording key. This setting provides the least restrictive use of recording. Anyone can record at any time on a recording-enabled LifeSize video communications system.

1. Click the **Administer** tab.
2. In the **Content Management section**, click **Modify** for **Recording Keys**.
3. Click **Modify** for **Blank recording key ...**.
4. Select **Enable**. The fields for a recording key appear.
5. Complete the recording key fields for the blank key.

All videos created with the blank recording key are tagged with this information. The titles of the video will therefore only differ by time and date stamp. The owner of these videos must edit each video to give it a distinctive name, description, set of tags, and user permissions.

User Roles

LifeSize Video Center provides four user roles:

- **Anonymous Users** have accessed the user interface, but do not have user accounts or have not logged in. They only have access to videos that have not been restricted to registered users, and they cannot post comments.
- **Registered Users** have logged in to an account set up for them by site administrators. They can watch all videos to which they have been granted permission, and can post comments. They cannot create recording keys or own content.
- **Content Creators** are logged in users to whom administrators have entrusted access to the **Manage** tab, and can own videos and recording keys, and depending on global settings, create recording keys.
- **Administrators** are logged in users with full access to the server, including the **Administer** tab. They have the same access as the default administrator account, and therefore must be the most trusted of users. In very large organizations, having multiple users with administrator permissions can be the most efficient distribution of labor.

Creating Users

To create user accounts, complete the following steps:

1. Click the **Administer** tab.
2. In the **Authentication** section, click **Add** for **Users**.
3. Enter a **Username**, which must be 30 characters or fewer and limited to letters, numbers, or the underscore character. Usernames are case sensitive.
4. Enter a **Password** for the new user. Passwords are case sensitive and can be 1 to 20 characters.
5. Re-enter the password in **Password (Again)** to verify the password.
6. Choose a save option:
   a. **Save and add another** to save and close this user's entry and open an **Add** page for another new user.
   b. **Save** to save the user entry and open the new user's settings page. Refer to “Editing User Settings” on page 10.

Editing User Settings

Clicking the **Save** button in the **Add User** page opens the **Edit User** page where you can set the user's permissions. You can also access this page by clicking **Modify** for **Users** in the **Authentication** section of the **User and Content Management** page of the **Administer** tab. Click a user from the list.

1. Optional: You can change the **Username**, if necessary.
2. Optional: Reset the **Password** by clicking **change password form**.
3. In **Personal Information**, enter the user's **First name**, **Last name** and **Email address**.
4. In **Permissions**, select the check box to grant a permission for the user:

Permission	Description
Administrator	Select this check box to grant the user administrator permissions. This permission level allows users to create users and groups. This may be useful in large organizations in which it is more efficient to have trusted users manage their own users and groups. ***Caution:*** Administrator status provides users the same permissions as the default administrator account, allowing access to all settings.
Content creator	If selected, the user can create recording keys, and own and manage videos. Clearing this check box limits the user to viewing and commenting on videos and owning only administer-assigned keys and videos.
Use global disk quota settings	Restricts user to the global setting in **Administer > User and Content Management > Global Recording Properties**. To set a different limit, clear this check box and enter the new disk quota (in MBs) in the text box.
Use global recording length limit	Restricts user to the global setting in **Administer > User and Content Management > Global Recording Properties**. To set a different limit, clear this check box and enter the new recording length in hours and fractional hours. Enter 2.5 to represent two hours and 30 minutes.
Use global recording bit rate limit	Restricts user to the global setting in **Administer > User and Content Management > Global Recording Properties**. To set a different limit clear this check box and select the new bit rate (in Kb/s).
Use global default recording bit rate	Restricts user to the global setting in **Administer > User and Content Management > Global Recording Properties**. To set a new default bit rate, clear this check box and select a new bit rate (in Kb/s).

Note: Lower bit rates consume less disk space and bandwidth, but also reduce video quality. Settings of 256 or 384 are appropriate for videos meant to be viewed remotely on the internet. Videos meant to be viewed on the LAN can safely use higher bit rates.

5. In **Groups**, click a group to add the user to that group. Refer to “Creating Groups” on page 11 for more information about creating groups. SHIFT-click or CTRL-click to add multiple groups.
6. Choose from four exit options:
   a. **Delete** to remove the user from the system.
   b. **Save and continue editing** to save the changes but leave the **Edit** page open.
   c. **Save and add another** to save and close this user's entry and open an **Add** page for another new user.
   d. **Save** to close this user's entry and display a list of users.

Creating Groups

Adding users to a group streamlines the assignment of permissions. For example, you can add the 30 members of a chemistry class to a group called Chemistry 101. You can then grant that group permission to watch a video, rather than each user individually.

To create a group, complete the following steps:

1. Click the **Administer** tab.
2. In the **Authentication** section of the **User and Content Management** page, click **Add** for **Groups**.
3. Create the group name.
4. Select users from **Available Users** by clicking, SHIFT-clicking or CTRL-clicking.
5. Click the arrow to move users to **Chosen Users**. (You also can double-click a user to move it from one list to the other).
6. Choose from three save options.
   a. **Save and continue editing** to save the changes but leave the **Edit** page open.
   b. **Save and add another** to save and close this group's entry and open an **Add** page for another new group.
   c. **Save** to close this group's entry and display a list of groups.

Setting Global Authorization Properties

By default, all users can download videos from the server to their desktop, registered users can comment on videos, and content creators can create recording keys and own videos. However, administrators can globally restrict any or all of these options.

To adjust these settings, complete the following steps:

1. Click the **Administer** tab.
2. In **Content Management**, click **Modify** for **Global Authorization Properties**.
3. Clear the corresponding check box to disable the feature globally for all non-administrator users.

Global Setting	Description
Allow commenting on videos	When checked, registered users can comment on videos. Clear this check box to disable commenting on all videos. Existing comments remain visible.
Allow downloading of videos	When checked, any user can download video content. Clear this check box to prevent users from downloading content they do not own. Content owners can always download their content.
Allow users to create recording keys	When checked, content creators can create recording keys. If you clear this check box, only administrators can create recording keys. Refer to “Recording Keys” on page 5 and “Restricting Recording Key Creation” on page 7 for more information about recording keys and the implications of this setting on creating recording keys.

4. Click **Save**.

Global Recording Settings

You can define the global settings or limits for recordings on the server including global maximums for disk usage, recording length, bit rate, and the default recording bit rate.

1. Click the **Administer** tab.
2. In **Content Management**, click **Modify** for **Global Recording Properties**.
3. Adjust the following global recording settings:

Global Setting	Description
Disk Quota (in MB)	Sets the maximum amount of disk space any user can use for recordings. The default is the capacity of the server. You can set a lower limit in the text box. Refer to “Monitoring the Server” on page 15 for information about monitoring the server disk usage.
Recording length (in hours)	Sets the maximum recording length. The default is 8 hours. You can raise or lower this limit in hours and fractional hours. For example, enter 3.75 to represent three hours and 45 minutes.
Recording bit-rate (in Kb/s)	Sets the maximum recording bit rate. The default is 1152 Kb/s.
Default recording bit-rate (in Kb/s)	Sets the user default recording bit rate. The default is 400 Kb/s.

Note: Lower bit rates consume less disk space and bandwidth, but also reduce video quality. Settings of 256 or 384 are appropriate for videos meant to be viewed remotely on the internet. Videos meant to be viewed on the LAN can safely use higher bit rates.

4. Click **Save**.

Creating Channels

LifeSize Video Center includes a predefined channel, Main, to which all videos are assigned by default. You can create other channels and assign videos to them. Channels enable you to organize and categorize videos to make them easier to manage and locate.

For example, in an academic setting, you can create a Lectures channel, and a Staff Meetings channel to categorize videos appropriate to those audiences. Videos for student users are assigned to the Lectures channel, while videos for school staff are assigned to the Staff Meetings channel. To create a channel, complete the following steps:

1. Click the **Administer** tab.
2. In the **Content Management** section, click **Add** for **Channels**.
3. Enter a **Name** for the channel.
4. Optional: Add a description of the channel.
5. Leave the **Share with all** check box selected to make videos in the channel available to all users, or clear it to get a list of users and groups you can add to **Chosen users** and **Chosen groups**.

   Note: This option sets the default sharing mode for this channel. When you select this channel when creating a recording key, the defaults set for the channel are used for the user permissions. You can override these default settings in the recording key.
6. Choose from three save options:
   a. **Save and continue editing** to save the changes but leave the **Edit** page open.
   b. **Save and add another** to save and close this channel’s entry and open an **Add** page for a new channel.
   c. **Save** to close this channel's entry and display a list of channels.

Configuring LifeSize Video Communications Systems to Record

Certain LifeSize video communications systems with software version 4.6 or later can initiate a recording to LifeSize Video Center. Refer to the LifeSize Video Center Release Notes for a list of compatible LifeSize video communications systems. By default, the recording capability is disabled. To enable recording, complete the following steps:

1. On your LifeSize video communications system, navigate to **Administrator Preferences : Video : Record and Stream**.
2. Set **Recorder** to *Enabled*.
3. In **Recorder Hostname**, enter the IP address of the server to which you want to record. In most cases, you can leave **Recorder Port** set to 443.

   Note: If your network uses NAT with port forwarding rules that remap port 443 between the video communications system and the server, **Recorder Port** must reflect the remapped port number.
4. To provide a key to use for server authorization for all recordings from this system, enter it in **Recording Key**. Otherwise, users will be prompted to enter a key for each recording.

Monitoring the Server

The **User and Content Management** page, which appears when you click the **Administer** tab, contains **Disk Usage** and **RAID State** in the **Storage** section. **Disk Usage** indicates how close the server is to being full and **RAID State** alerts you to disk issues in the RAID. You can replace a faulty RAID drive. Refer to “Replacing a Faulty Disk Drive” on page 20 for instructions. For more complete server health information, click **System Status** in the navigation bar.

The **System Status** page also displays the server status, how long it has been running since its last restart, and CPU and memory usage in the **System Status** section. The server has a health monitoring system that checks the status of all critical processes on the system. If a process fails for any reason, the health monitoring system attempts to restart it. If a process cannot be restarted, the system displays an error status message. If you encounter an error status message, contact your LifeSize Partner, or LifeSize Technical Services for assistance.

The **Connections** section displays current streaming and recording activity, while the **Ports Usage** section displays the ports used for each server process. Refer to “Firewall Considerations” on page 4 for information about using port data to create firewall settings.

Maintaining the Server

LifeSize Video Center includes a number of features to help you maintain your server such as backup, restore, upgrade, reboot, and shut down.

LifeSize recommends you enter maintenance mode before changing system date and time, backing up, restoring, or upgrading. Maintenance mode terminates all streaming and recording activity and prevents non-administrators from logging in. LifeSize Video Center does not warn streaming and recording users before their activity is terminated, though it does alert users that their activity has been terminated by an administrator. You must use another method, such as email, if you wish to forewarn users.

To enter maintenance mode, complete the following steps:

1. Click the **Administer** tab.
2. In the navigation bar, click **Operations and Maintenance**.
3. Click **Enter maintenance mode**. The **Shutdown/Reboot** page appears.
4. Click the **Shutdown Services** button. Any current streaming activity is terminated and users receive a message that an administrator has terminated server services.

Ensure that you exit maintenance mode and restore services once your tasks are complete.

Creating Backups of Videos and Settings

Use the **Backup** option to create a copy of the videos, comments and all settings in the **User and Content Management** page.

Note: System settings and server software are not backed up.

1. Click the **Administer** tab.
2. In the navigation bar, click **Operations and Maintenance**.
3. Click **Backup**. The **Backup to FTP Server** page appears.
4. Enter the IP address for the **FTP host**.
5. Enter your FTP username.
6. Enter your FTP password.
7. You can enter an optional FTP backup directory.
8. Click the **Create Backup** button.

If you have previously backed up the server to this path, all subsequent backups are incremental, replacing only data that has since changed.

Restoring from a Backup

1. Click the **Administer** tab.
2. In the navigation bar, click **Operations and Maintenance**.
3. Click **Restore**. The **Restore From Backup** page appears.
4. Enter the IP address for the FTP host.
5. Enter your FTP username.
6. Enter your FTP password.
7. Enter the FTP backup directory, if you used one during the backup.
8. Click the **Restore From Backup** button. The server validates the backup image and lists all of the recordings located in the backup image.
9. Confirm or cancel the restore operation.

Upgrading the Server Software

If you have a current service plan, you will receive notice of upgrades to server software. Follow the instructions to download the upgrade file image from LifeSize or a qualified LifeSize Partner.

1. Click the **Administer** tab.
2. In the navigation bar, click **Operations and Maintenance**.
3. Click **Update**. The **Software Update** page appears.
4. Use the **Browse** button to find the software upgrade file image that you have downloaded to your computer.
5. Click **Update Software**. The application validates the update package and displays the version of the upgrade software. A warning appears if the upgrade is older than the current software version.
6. Click the **Update Software** button to confirm the upgrade.

Rebooting and Shutting down.

Changing the time zone setting (**Systems Settings : Edit Time and Date Settings)** requires rebooting to take effect. All other settings changes are immediate. To manually reboot or shutdown the system, access the **Operations and Maintenance** page.

Managing the Server

As videos populate your server, you have many management options. Click a video's title or thumbnail to open the video's detail page.

Featuring a Video

Administrators can add a video to **Featured Videos** by clicking **Feature video on the home page** or remove it by clicking **Remove from featured section on the main page**.

Note: If the video is assigned to a channel, you can feature the video on that channel's page.

Editing Videos

Click **Edit Video Properties** to change the title, description or other sections to make them easier for a user to find.

Deleting Videos

As the server becomes full, or during regular maintenance you may cull videos you no longer need. From the video's detail page, click **Delete this recording**.

Troubleshooting

Using the Console Command Line Interface to Access the Server

If you cannot access the server through the web interface, you can connect a monitor and keyboard directly to the server for console access to correct the problem.

1. Connect a monitor directly to the VGA output on the back of the server.
2. Connect a keyboard directly to the server, either with the USB or PS/2 connectors. You are prompted to log in.
3. Enter the following credentials:

   Username : administrator

   Password : admin123

   Note: The console username and password cannot be changed. This ensures you can always access the server when locked out of the web interface. Consider the physical security implications for your organization.

   A command line interface opens. Enter `help` for a list of commands:

   ```
   network
   ssh-access
   reboot
   shutdown
   reset-password
   help
   ```

   Enter `help` ***command*** for help using that command.

Modifying the Network Settings

If you have changed the default network settings for the server but cannot access it on the LAN with the IP address supplied when you made the changes, you can view and modify the settings with the `network` command.

To display the current network settings, enter the following:

```
network show eth0
```

To change the network settings, enter the following:

```
network set eth0 static <ip-address> <network-mask> <network>
    <broadcast-ip> <gateway-ip> [mtu]
```

For example, to return to factory defaults, enter the following:

```
network set eth0 static 192.168.1.25 255.255.255.0 192.168.1.0
    192.168.1.255 192.168.1.1 1500
```

Resetting the Default Web Interface Administrator Password

Use the `reset-password` command to reset the password for the `administrator` user in the web user interface to `admin123`.

Replacing a Faulty Disk Drive

The server stores videos on two SATA drives in Linux MD RAID10 (RAID 10) array configuration, so that the data is mirrored on the drives. If one drive fails, the remaining good drive contains a copy so that no data is lost.

If **RAID State** indicates a faulty drive, back up the remaining drive immediately to prevent data loss. Refer to “Maintaining the Server” on page 16 for information about maintenance mode and backing up videos and settings.

After backing up the drives, de-register the faulty disk from the RAID array.

1. Click the **Administer** Tab.
2. In the **Storage** section, click **View RAID Details**.
3. Locate the faulty disk and click **Remove Disk** to de-register the disk from the RAID array. Verify that the drive state is **Removed** in all RAID devices.
4. Shut down the server. Refer to “Rebooting and Shutting down.” on page 18 for instructions.

Contact your authorized LifeSize Partner or LifeSize Technical Services for an RMA (returned merchandise authorization) and replacement drive. Refer to your server installation guide for instructions to physically remove the faulty drive and replace it with the new drive.

Caution: Ensure that the remaining functioning drive is in the left-most slot of the server as you face it. The new drive should be in the second slot from the left.

After you have replaced the faulty drive, restart the server. Register the new drive in the RAID Array.

1. Click the **Administer** tab.
2. In the **Storage** section, click **View RAID Details**.
3. Locate the new disk, which is listed as **Removed**, and click **Add Drive**. After the drive has successfully been partitioned and added to the RAID array, the drive’s state changes to **Synchronizing** as it is populated with the data from the other drive.

When finished, the drive’s state changes to **OK**.