LifeSize Transit™

LifeSize Transit User Guide

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Contact information for LifeSize Communications is as follows:

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Welcome to LifeSize Transit

LifeSize Transit enables your video communications devices to communicate with each other across firewalls and NATs. The LifeSize Transit system is comprised of clients and a server containing the following functionality:

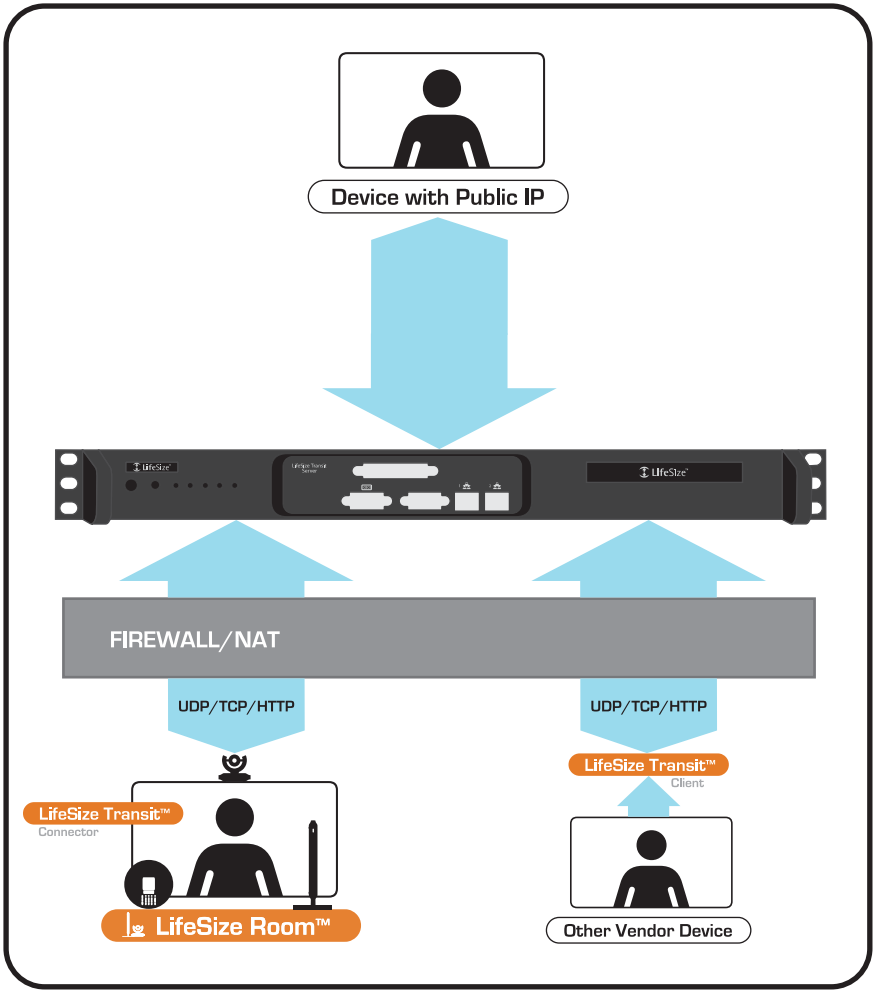
- Media server that is optimized for relaying the actual voice, video, and application sharing data.
- Signalling server (proxy server) that handles NAT/firewall traversal, call setup, and operation and maintenance services.
- Registrar that provides the SIP registration function.

Configurations

The following diagram illustrates the different configurations in which you can use the LifeSize Transit components.

- LifeSize Transit Connector, an embedded client included with LifeSize Room, serving as a SIP proxy to communicate over firewalls.
- LifeSize Transit Client used with a third party vendors' device, serving as an enterprise proxy to communicate over firewalls. The enterprise proxy is a multi-user version of the LifeSize Transit Connector running standalone and connected to your internal network which communicates with the LifeSize Transit Server. This configuration provides firewall and NAT traversal for devices that do not have the embedded LifeSize Transit Connector.
- The LifeSize Transit Server resides on the internet and enables firewall and NAT traversal, session and media control for UDP, TCP, and HTTP media. It also serves as a SIP proxy and registrar.

A system with a public IP address can also directly communicate with the server to contact another system inside the firewall.



Prerequisites

Ensure you have the following prior to beginning the installation process:

- a serial cable and serial console running at 38,400 baud, no parity (N, 8, 1) to complete the initial configuration
- a web browser for creating SIP users
- two static public IP addresses; one for SIP signalling and one for SIP media.

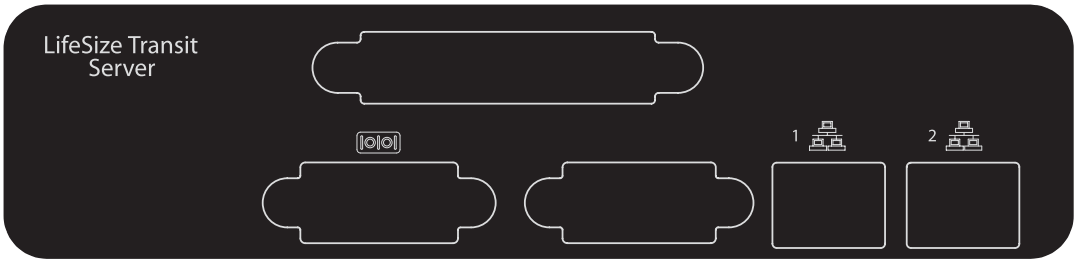
Server Installation

To install the LifeSize Transit Server, follow these steps:

1. Remove all components from the product packaging, including cables, and place them in the desired positions in your environment. Choose a location in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise, and electromagnetic fields are generated. Choose an area near a grounded power outlet.

2. Refer to ”Installing the Server into a Rack” on page 6 if you are installing the server in a rack.

3. Insert the network cable into network port 1 on the front panel of the server; this port is marked with the LAN symbol . Insert the opposite end of the network cable into a network port on the wall. *Note*: Network port 2 is reserved for future use.



4. Connect your console to the serial port for the initial configuration. (*Note*: A serial cable is not included.)

5. Insert the power cord into the power outlet on the back panel of the server and the opposite end into a power outlet on the wall.

6. The LifeSize Transit Server boots, and you are prompted to configure it the first time. If the configuration does not automatically appear on your console, press any key to display it.

Power and Reboot

The **Reset** button on the front panel reboots the system. The power button applies or turns off the main system power. Turning off the system power with this button removes the main power but keeps standby power supplied to the system.

Refer to ”Troubleshooting” on page 27 for details about the LED indicators.

Installing the Server into a Rack

The LifeSize Transit Server does not ship with a rack rail hardware package as the system can be rack mounted without the use of rails. To install the server in a rack, follow these steps:

1. Ensure the rack is in a location in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise, and electromagnetic fields are generated. Choose an area near a grounded power outlet.

   Note: Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them. In a single rack installation, attach stabilizers to the rack. In multiple rack installations, couple the racks together.

2. Leave enough clearance in front of the rack to enable you to open the front door completely (approximately 25 inches). Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

3. The server includes two rack mounting brackets located on each side at the front of the chassis. To mount the system into a rack, simply screw these brackets directly to the front of the rack (two screws for each bracket).

4. You may also detach the brackets from the chassis and move them back approximately four inches where there is a group of three holes to which to secure them. Installing in this manner may prevent you from closing the rack door.

Rack Mounting Considerations

Consideration	Description
Ambient Operating Temperature	If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consider installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).
Circuit Overloading	Consider the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Give appropriate consideration to equipment nameplate ratings when addressing this concern.
Reliable Ground	A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Pay particular attention to power supply connections other than the direct connections to the branch circuit (the use of power strips, etc.)

Configuring LifeSize Transit Server

After the LifeSize Transit Server boots, and you are prompted to configure it the first time. You can return to this configuration at any time to change settings (such as server IP addresses or the administrator password), restart the server, or load default settings.

Required Configuration

Following are the tasks required to configure the LifeSize Transit Server:

- Initial configuration required upon setup (as described in ”Initial Configuration from a Console Terminal” on page 7).
- Creating SIP domains (as described in ”Additional Configuration from a Web Browser” on page 8).
- Creating users (as described in ”Additional Configuration from a Web Browser” on page 8).

Otherwise, the LifeSize Transit Server comes preconfigured for standard use. You can modify the standard configuration for special circumstances if necessary. LifeSize recommends you consult Customer Support before changing the default configuration.

Initial Configuration from a Console Terminal

To access the initial LifeSize Transit Server configuration, follow these steps:

1. Connect your console terminal to a serial port at 38,400 baud, no parity (N, 8, 1).

   Note: Serial cable is not included.

2. Press **Enter** to display the menu.

3. *Optional*: You can change the date and time of the system clock from the **Set Date and Time** setting.

   Enter the date in the following format: MMDDHHMMYYYY, where MM is the month, DD is the day of the week, HH is the hour, MM is the minute, and YYYY is the year. For example, to enter June 10, 2006, 3:30 pm, enter the following:

   061015302006

4. Enter the IP address, subnet mask, and gateway for the Signalling Server.

5. Enter the IP address for the Media Server.

6. Enter the IP address for the primary and secondary DNS server.

7. *Optional*: You can also change the administrator username and password.

   Note: For security reasons, LifeSize recommends you change the default administrator password during the initial configuration. The default username and password are both *admin*.

8. *Optional*: You can change the **Ethernet Link Setting** to override the default link auto negotiation of the Gigabit NICs.

9. *Optional*: You can configure the **UDP Port Range** to use for media communication by entering the starting and ending numbers for the range.

10. After making your changes, choose option **9 - Save Settings and Restart System**.

Additional Configuration from a Web Browser

You can access most configuration operations from a web browser by following these steps:

1. Enter the IP address of the signalling server plus port 8181 on HTTPS.
   For example: https://www.acme.com:8181. Refer to step 3 in the initial configuration (”Configuring LifeSize Transit Server” on page 7.) This is a secure Internet connection, and you may receive an unknown certificate warning.

2. Enter the LifeSize Transit username and password. The default value for both is *admin*.

   Note: You can change these values from the configuration tool as described in ”Configuring LifeSize Transit Server” on page 7.

3. You are now ready to create users and configure the SIP domain.

Configuring SIP Domains

You must define a domain name in order to use the LifeSize Transit Server. To configure your SIP domain to be reachable from non-LifeSize Transit clients or other SIP servers, you must set up a SIP DNS SRV record. If all calls go through the LifeSize Transit Client or LifeSize Transit Connector (embedded in LifeSize Room), your SIP domain does not have to resolve through DNS.

To define a SIP domain, follow these steps:

1. Click **SIP Configuration** on the main page.
2. Scroll to **SIP Domains** and enter your SIP domain name.
3. Click the **+** button to add the domain.

   Note: Ensure you enter your SIP domain in the **SIP Domains** table and not in the **SIP Registration Policy** table.

   Note: For more information about this page, refer to ”SIP Configuration” on page 19.

Creating Users

To create a new user account, follow these steps:

1. Click the **Create User** link under **Provisioning** on the main page.
2. Enter the information for the new user account.

   Note: For more information about each field, refer to ”Provisioning” on page 26.

3. Click **Add**.

Configuring a Cluster

If you want to cluster more than one server, follow these steps:

1. From the master server in the cluster, click the **Cluster Configuration** link on the main page.
2. Beneath the **Servers** table, add server names and IP addresses or DNS names for the master and slave(s). For example:

   Name: Master
   Address: transit.austin.lifesize.com
   Click **Add**.

   Name: Slave
   Address: transit.houston.lifesize.com
   Click **Add**.

3. At the top of the page, enter the master IP address or DNS name that you defined in step 2 (transit.austin.lifesize.com) in the **Master proxy server address** field and click **Set**.
4. Mark the **Enable redirect when clients connect** checkbox and click **Set**.

5. From the cluster slave, repeat steps 1 - 4.
6. Click **Home**.
7. From the cluster slave only, click the **Database Configuration** link on the main page.
8. Select **Use master signaling server as database** under **Database Mode** and click **Set**.

   Note: Only perform this step on the cluster slave. Maintain the default setting on the master server.
9. Click **Home**.
10. Click **Server Configuration**.
11. Click **Restart**.
12. Repeat steps 8 - 10 on the master server in the cluster.

    Note: When clustering servers, make sure that SIP domains are not defined for the slave(s) on the SIP Configuration page. Refer to ”SIP Configuration” on page 19.

Configuring LifeSize Transit Client

If you are using LifeSize Connector, proceed to ”Configuring LifeSize Transit Connector” on page 13. Otherwise, after configuring your LifeSize Transit Server as described in ”Configuring LifeSize Transit Server” on page 7, you are ready to configure your LifeSize Transit Client.

Initial Configuration from a Console Terminal

To access the initial LifeSize Transit Client configuration, follow these steps:

1. Connect your console terminal to a serial port at 38,400 baud, no parity (N, 8, 1).

   Note: Serial cable is not included.
2. Press **Enter** to display the menu.
3. *Optional*: You can set the date and time of the system clock from the **Set Date and Time** setting.

   Enter the date in the following format: MMDDHHMMYYYY, where MM is the month, DD is the day of the week, HH is the hour, MM is the minute, and YYYY is the year. For example, to enter June 10, 2006, 3:30 pm, enter the following:

   061015302006

4. Enter **1** to choose the IP source, either **1** for DHCP or **2** to manually set a static IP address.

   If you chose DHCP, the IP address obtained from the DHCP server displays for option 2.

   If you chose static, enter 2 to set the client IP address, subnet mask, gateway, and primary and secondary DNS server addresses.

5. *Optional*: You can also change the administrator username and password.

   Note: For security reasons, LifeSize recommends you change the default administrator password during the initial configuration. The default username and password are both *admin*.

6. *Optional*: You can set the **Ethernet Link Setting** to override the default link auto negotiation of the Gigabit NICs.

7. After making your changes, choose option **7 - Save Settings and Restart System**.

Additional Configuration from a Web Browser

You configure your LifeSize Transit Client from a web browser by following these steps:

1. Enter the IP address of the client plus port 8080 on HTTP.
   For example: http://www.acme.com:8080. This is a secure Internet connection, and you may receive an unknown certificate warning.

2. Enter the LifeSize Transit username and password. The default value for both is *admin*.

   Note: You can change these values from the configuration tool as described in ”Configuring LifeSize Transit Server” on page 7.

3. You are now ready to set connection and SIP settings.

   Note: You can also view the registered users and current calls from this configuration page.

Connection Settings

To define connection settings, follow these steps:

1. Click **Connection** from the main menu.
2. Enter the user ID and password for the LifeSize Transit Client and click **Set**.

   Note: The user ID and password must be the login ID of a SIP user on the server created for this purpose.

3. Enter the server ID (name or IP address) for the LifeSize Transit Server and click **Set**.
4. Choose **Direct** for a direct connection to the server or **Address** or **Script** if you are using HTTP.
   If you chose HTTP and your proxy requires authentication, obtain the user ID, domain, and password from your system administrator.
5. Click **Set**.
6. Choose **Auto** to allow LifeSize Transit to select the optimal transport, or choose **Always** to always relay media through the tunnel.
7. Click **Set**.

SIP Settings

To define SIP settings, follow these steps:

1. Click **SIP Settings** from the main menu.
2. Enter the port for the SIP server.
3. Click **Set**.
4. If using third party devices, you must accept the default value or set the SIP proxy address (as defined in step 3 of ”Initial Configuration from a Console Terminal” on page 10) and port (as defined in step 2 of this procedure) as the IP address of the client and the port for the SIP server.

Configuring LifeSize Transit Connector

You can configure LifeSize Transit from your LifeSize Room system by accessing Administrator Preferences with the remote control and interface, or from a web browser.

To configure from a web browser, enter the IP address of your LifeSize Room system (which is displayed at the top of the main screen). On the login screen, choose the language in which to display the interface, enter the administrator password, and click **Submit**. This is a secure Internet connection, and you may receive an unknown certificate warning. You must have Flash Player version 8 or higher installed and configured on your web browser to access the administrator configuration from a web browser. Refer to your *LifeSize Room User Guide* for more information about managing the system remotely.

To configure LifeSize Transit using the LifeSize Room remote control and interface, follow these steps:

1. Select the button from the main screen to access the **System** menu.
2. Select the **Administrator Preferences** button.
3. Enter the administrator password and press **OK**.
4. Select the **LifeSize Transit** button.
5. Enter the signalling server address you defined in step 3 of the initial configuration in the **Transit Hostname** field (refer to ”Configuring LifeSize Transit Server” on page 7.)
6. Enter the LifeSize Transit username and password you defined in ”Creating Users” on page 9.
7. If your firewall only allows traffic through a web proxy, enter the web proxy address (URL), username, and password. Otherwise, leave these fields blank.
8. Choose *Enabled* for the **LifeSize Transit** preference to use LifeSize Transit to manage calls.

   Note: SIP proxy settings (refer to the following configuration of the LifeSize Transit registrar) automatically change to 127.0.0.1:5070 when you enable LifeSize Transit; do not change these settings.

9. Press **OK** to save your changes.

To configure the LifeSize Transit registrar, follow these steps:

1. Select the button from the main screen to access the **System** menu.
2. Select the **Administrator Preferences** button.
3. Enter the administrator password and press **OK**.
4. Select the **SIP** button.
5. Select the **SIP Server** button.
6. Enter the SIP username for the device and the SIP server authorization username and password you defined in ”Creating Users” on page 9.

   Note: SIP proxy settings automatically change to 127.0.0.1:5070 when you enable LifeSize Transit (as described in the previous procedure); do not change these settings.

7. Enter the **Registrar Hostname** (the hostname or IP address of the SIP registrar server you defined in ”Configuring SIP Domains” on page 8).
8. Enter the IP port number of the SIP registrar server.
9. Choose *Enabled* for the **SIP Registrar** preferences.
10. Press **OK** to save your changes.
11. To call another LifeSize Room system, simply enter the SIP username.

Optional Configuration Settings

The remainder of the configuration options are preconfigured and LifeSize recommends you do not change them unless necessary. Consult Customer Support if you need assistance modifying your configuration. The information described in the following sections is recommended for informational purposes only.

Main Page

The main page displays a menu of operation and maintenance functions, as well as links to provisioning from which you can list, search, and create users. The status of the server is detailed at the bottom of the page, including the following data:

Label	Description
Proxy Server Version	The version of the server's signalling function.
Media Engine Version	The version of the active media engine.
Public Address	The public address of the server.
Current Time	The system time of the machine on which the server is running.
Running Time	The length of time the server has been running since the last restart (hours:minutes:seconds).
Startup Time	The time at which the Signalling Server was started.
Media Engines	Indicates if the defined media engines are connected.
Connected Clients	The status of the connected (tunneled) clients.
Current Calls	The status of the current calls in the Signalling Server (for example, total, failed, average call time, bandwidth usage, etc.)
Global Current Calls	The status of concurrent calls in the total system. This value only displays when the Signalling Server is part of a cluster configuration.

List Tunneled Clients

Select **List Tunneled Clients** to display all connected LifeSize Transit Clients with the following information.

Label	Description
SIP ID	The SIP user ID with which the user logged in to the SIP client.
Country	The country from which LifeSize Transit is connected.
Region	The regional location from which LifeSize Transit is connected.
Version	The software version of the LifeSize Transit Client.

Label	Description
Connection ID	The internal LifeSize Transit user ID.
Client ID	The name of the computer on which the LifeSize Transit Client is installed.
Port	The port to which the LifeSize Transit Client is connected.
Public Address	The public address of the LifeSize Transit Client.
Proxy Address	The address of the HTTP(S) proxy, if used.
Auth	The authentication scheme that the HTTP proxy uses.
Type	The type of SIP client.
Duration	Indicates how long the LifeSize Transit Client has been connected.

Server Configuration

You can set basic system parameters for the Signalling Server from the **Server Configuration** page.

System Parameter	Description
Restart Proxy Server	Restarts the server.
Proxy Server Public Address	The URL of the server. Click **Set** and **Restart** for the change to take effect. **Restart** immediately terminates all calls and LifeSize Transit Client connections.
Proxy Server Ports	LifeSize recommends you do not change this parameter.

Database Configuration

Access the **Database Configuration** page to configure authentication of the LifeSize Transit users and connection to the database.

Local Authentication Configuration

Local authentication occurs when all LifeSize Transit users use one preconfigured password. In this case, the user ID can be any string.

> ***Note:*** These are LifeSize Transit user names and passwords and not SIP user names and passwords.

To enable local authentication, follow these steps:

1. Mark the **Enable local authentication** checkbox.
2. Click **Set**.
3. Add the preconfigured password in the **Local Authentication Password** field.
4. Click **Set**.
5. Restart the server for the changes to take effect.

Database Mode

Select how to configure the database:

Option	Description
No database	If local authentication is set and the registrar functionality is disabled, disable the database.
Connect directly to database	You use the database to authenticate LifeSize Transit users and provide SIP authentication. This is the default setting and is already completely configured. LifeSize recommends you do not change this setting.
User Master Signalling Server as Database	The master server is used as the database when several servers are connected in a cluster. Ensure the cluster configuration specifies the master server correctly.

Database Configuration

To configure the database, follow these steps:

1. Enter the URL for the location of the database.
2. Enter the database user name.
3. Enter the database password.
4. Click **Set**.
5. Restart the server for the changes to take effect.

You can also specify the hour at which to run database vacuuming. Database vacuuming is necessary if you use PostgreSQL as your database. Vacuuming cleans and optimizes database access once a day. The time at which vacuuming occurs is configurable; enter a value from 0 to 23 (0 equal to midnight and 12 equal to noon).

Media Engine Configuration

The Media Engine Configuration page shows the media engine connection status.

Field	Description
Enable application sharing in PXS **Allow direct media between clients**	These options are marked by default; do not change these settings.
Add Media Engine	**Address**: The address the server uses when connecting to the media engine. **Port**: The port the server uses when connecting to the media engine. LifeSize recommends using the default port. **Password**: The password used to authenticate the server. The password is configured in the **me.cfg** file. **Public Address**: The address used as the media address for clients. Typically the same as the connect address; however, if the media engine is protected by a firewall, the public address used in the firewall is used. DNS must be able to resolve this address. **Internal Address**: The media address for components on the internal LANs on which the media engine is installed. If this address is specified, all non-tunnelled clients use this address for media (all clients on the public internet must be tunnelled so use caution when specifying this address.) Click **Add** after entering data for a new media engine. Media engine 1 in the table is automatically the primary media engine.
Media Engines	If new media engines do not display as connected, ensure that the address, port, and password correspond to the value in the **me.cfg** file. If the primary media engine is out of service, the server automatically uses the secondary media engine.

SIP Configuration

You can configure various SIP parameters from the SIP Configuration page.

Field	Description
SIP ports	LifeSize recommends you do not change this parameter. If you alter the value of this port, you must modify all LifeSize Transit Clients (not recommended) and restart the server. Use the standard SIP port 5060.
Max UDP packet size	The server can receive and send SIP requests over TCP. If UDP messages are larger than the maximum transmission unit (MTU), they are fragmented and there is a risk they will not be received correctly by all hosts. To avoid UDP fragmentation, outbound requests are sent over TCP if they exceed a certain size. This size is 200 bytes less than the known MTU, or 1300 bytes if the MTU is unknown.
Incoming Redirect Messages	Controls how the server acts on incoming redirect (3xx) messages. For example, a redirect server can send a **302 Moved Temporarily** message in response to an INVITE, with the address of the client. The default behavior is enabled which sends the INVITE again to the new locations. If disabled, this redirect message is sent upstream to the calling client that performs the redirection.
Home Routing	If set to true, the Signalling Server routes requests from non-local users to their home proxy rather than to the destination. This preserves home based services and authentication and has no effect for users who are local on this server (the registrar is enabled).
Domain Registration Policy	The server provides resources (processor power and bandwidth) to users. You can restrict this usage to certain groups by creating a set of SIP domains users are allowed to log on to through this server; registrations of all other domains are rejected. Local users (if the registrar is enabled) will always be allowed regardless of this setting. Local users can still place and receive calls from other domains. If left empty, registrations are allowed for all domains.
Media Relay	The Signalling Server can relay RTP/UDP media for clients without LifeSize Transit Clients. For users behind relaxed NAT devices (allowing UDP traffic out) this is an attractive option as the LifeSize Transit Client is not needed. You can control the level of media relay as follows: **All:** All calls routed through the Signalling Server are relayed, regardless of whether they need it or not. This leads to excessive relaying and is not recommended. **All NAT:** Relaying media for all users in need, when either the calling or called client is behind NAT (and do not support STUN). **Local Users:** Behaves the same as All NAT, except relay only occurs for the authenticated users local to this registrar. **None:** Disables UDP relay. This setting does not affect the behavior of calls to or from a tunnelling client.
Direct Media for UDP registrations	Mark the **Allow direct media for UDP registrations behind the same public address** checkbox to yield more efficient media between clients on the same local network. This may cause media to fail on complex local networks with internal firewalls or NAT devices. You may want to enable this setting on an enterprise server if you know there is only one NAT device on the local network, but disable it for ISP installations serving many unknown NATs.

Field	Description
Proxy Mode	The proxy mode affects the routing between SIP users on external hosts or other servers. External requests can be handled by redirect or forward.
SIP domains	SIP domains are local; LifeSize Transit searches for these domain names in the database. For these domains to be callable from other systems, add these domain names to the DNS for this host.
Security Level	**Full** authenticates all requests. **Medium** authenticates all requests except from the clients on the local proxy server, where only REGISTER is authenticated. **Registration** allows requests from the REGISTERED (and authenticated) address; otherwise LifeSize Transit authenticates. **None** prevents requests from being authenticated.
Trusted hosts	Adds a set of hostnames and IP addresses (with optional SIP port) for the trusted hosts. These are not challenged for authentication.

Registered SIP Users

A table listing all SIP users registered in the database include information about their contact address, registration and expiration times. If UDP Relay is enabled in the SIP configuration servlet's Media Relay, the clients connected through a firewall/NAT device are listed in a similar table named **Direct Registrations from clients behind NAT**.

Label	Description
SIP URI	The registered SIP user ID.
Registered since	The date on which this user registered.
First registration	The date on which the user first registered on the system.
Created	The date on which the user was created in the database.
Expires	The date on which the user expires. If the client does not register again before the expiration time, the user remains unregistered.
Address	The SIP ID and IP address to which the client is registered.
Unregister	Clears the registration. The client appears to be registered but does not receive any calls. This function does not prevent the user from registering again.

SIP Routing

By default, SIP requests are routed to the domain in the SIP-URI after a SIP SRV DNS lookup. For testing or SIP servers that you cannot route through SIP SRV DNS, you can specify the domains and IP addresses on this page. DNS lookups do not occur for these domains; they are routed directly to the configured address. To specify hosts with more than one address:port, separate them with commas. The additional hosts are only used as backup if the primary host is not responding.

Routing Phone Numbers

The signalling server includes an expression-based scheme for resolving a phone number to a SIP-URI. It treats an incoming call as a phone number if the request is a TEL URI or a SIP URI where the user part of the URI is only digits (including -, +, *, and #) and the user is a phone parameter, or the domain part is a local domain for this registrar or this server's local IP address.

If the number matches the configured local prefixes it is considered a local number and the registrar looks it up in the database. Otherwise, the matching expressions are queried in case the corresponding result expression is executed to resolve it to a SIP-URI.

The expression rules consist of one matching expression and one result expression, resolving to a SIP-URI (the string is implicitly added to the output). They are based on shell expressions (not regular expressions), including wildcards for digits to be removed, and optionally to be included in the result. The order of the rules is significant; more general rules can eclipse more specific rules so place the most specific first.

The matching expression can include digits, + (international), plus the wildcard question mark (?) and asterisk (*). The question mark (?) is exactly one wildcard digit and will not be part of the output. The asterisk (*) matches one or more digits (not zero). If the asterisk (*) is part of the result string, the matches are placed in output. Any character after the asterisk (*) in the number expression has no meaning. The first asterisk (*) encompasses all further digits. The asterisk (*) can be placed anywhere in the result expression.

Dashes (-) are considered insignificant and are removed from numbers and expressions. The international plus sign (+) is regarded as a matching digit (+44* does not match 44*), but can only be present first in number or output expressions.

The result expression can hold all characters, where only the asterisk (*) has special meaning. It must end with a hostname.

If you specify home routing on the **SIP Configuration** page, the expressions are not queried for calls from non-local users to a number, but are routed to the home of the calling user.

Following are examples:

Matching Expression	Result Expression	Input Example	Output Example	Notes
555*	62.32.0.18	5551234	62.32.0.18	Absolute gateway routing.
+4785*	+4785*@sipsrv.no	+47851234	+47851234@sipsrv.no	
+44??*	*@196.32.21.2	+441212345	12345@196.32.21.2	All UK numbers are stripped of country and area code and sent to a gateway.
*	001*@us-gw.com	12345	00112345@us-gw.com	All other numbers are preceded with 001 and sent to a gateway operator.

Testing: For convenient testing of expressions, you can enter a number and see what it resolves to by pressing the **Test** button.

ENUM queries: If no match is found in the expressions for a number, the signalling server can optionally perform an ENUM query to resolve the number to a SIP URI. This checkbox allows ENUM queries.

Cluster Configuration

Configures how several servers interact in a LifeSize Transit cluster.

Label	Description
World Table	For internal use only.
Redirect	Redirects tunnelled clients to other servers. Enabled in production systems. If disabled, tunnelled clients will not be redirected to other servers.
Master Proxy Server Address	The address of the master server. This address is set in systems that use more than one server. Typically, the address of the signalling server on which the registrar is enabled and the database is accessed. If these features are enabled, the administrator must select one server as a master.
Servers	All servers in the cluster. The address of the signalling servers is typically the host address for the servers on the LAN. All servers in the cluster are defined in this table. To add entries to the table, use the **add server name** function. This configuration is crucial to redirect working properly.

Label	Description
Regions	Defines the server used for different regions. Only use this feature if several LifeSize Transit clusters exist throughout the world.

Mail and Event Configuration

Mail and Event Configuration enables you to configure and display event status in the Signalling Server.

Mail Configuration allows you to configure where mail is sent when events are registered in the Signalling Server.

Field	Description
Outgoing SMTP Server	The address of the outgoing SMTP server.
Mail Username	The username with which to authenticate the SMTP server.
Mail Password	The password with which to authenticate the SMTP server.
Mail Recipients	The recipient of the email.

SNMP Traps

Some events may be forwarded as SNMP traps. To enable SNMP traps, specify the address of a trap receiver. For example, if you have installed HP OpenView on 192.168.0.53 and it uses the default SNMP port 162, set the following trap receiver:

```
192.168.0.53:162
```

If the **Trap Receiver** field is empty, SNMP traps are disabled. If you change the trap receiver field, you must restart the system for the changes to take effect.

Currently the following SNMP traps may be sent:

Field	Description
connectionLost	The connection to the media engine has been terminated.
congestion	When thresholds are reached, such as maximum concurrent calls and maximum connected clients, congestion occurs.

Refer to the LifeSize Transit MIB file for details:

```
LifeSize Transit-MIB.my
```

Events

Information about special events in the server are available in the Event Table. **Event table size** indicates the maximum number of events stored in the table. The event-table displays the following information:

Label	Description
Number	The event number.
EventName	The logic name of the event.
Severity	The seriousness of the event.
Info	A written explanation of the event.
Raised	The date and time at which the event occurred.
Cleared	The date and time at which the event was removed.
Customer ID	The identification of the customer.
Key	The unique ID of the event.
LocalAddress	The address of the host for the event.
Action	The possible actions to handle the event.

Events displayed on white backgrounds are active, events displayed on grey backgrounds are cleared.

Call Status

Informative information about both current and present calls displays on the **Call Status** page. Successful calls appear in white and failed calls appear in red.

Field	Description
Maximum concurrent calls	The maximum number of concurrent calls permitted.
Active calls	Originating Side of Call: # is the call number. ***SIP ID*** is the SIP ID of the originating user. ***Connection ID*** is the LifeSize Transit user ID of the originating user. ***Version*** is the LifeSize Transit software version of the originating user. Type is the SIP client type of the originating user. ***Public Address*** is the public IP address of the originating user. ***Country*** the country of the originating user. Terminating Side of Call: ***SIP ID*** is the SIP ID of the terminating user. ***Connection ID*** is the LifeSize Transit user ID of the terminating user. ***Version*** is the LifeSize Transit software version of the terminating user. Type is the SIP client type of the terminating user. ***Public Address*** is the public IP address of the terminating user. ***Country*** is the country of the terminating user. Common Information: ***Start Time*** is the starting date and time of the call. ***Duration (sec)*** is the duration of the call in seconds. ***Bandwidth (KB)*** is the total bandwidth used for the call in Kilobytes. ***Media Types*** is the media type(s) used for this call. ***Call ID*** is the unique call identification.
Closed Calls	This table corresponds to the active calls data. Additional information regarding closed calls includes: ***EndReason*** is the reason the call ended. ***Same LAN*** is true if both LifeSize Transit Clients were on the same LAN, false if the LifeSize Transit Clients are on different LANs.

Logging

A comprehensive logging tool is included for identifying problems and system bugs.

Consult Customer Support for assistance with logging.

Provisioning

A user management system that is directly linked to the database. Click **List Users** to list the following information for all users in the database:

Label	Description
ID	The user ID for the LifeSize Transit user.
Name	The name of the LifeSize Transit user.
Address	The address for the LifeSize Transit user.
Zip	The zip code for the LifeSize Transit user.
City	The city for the LifeSize Transit user.
Country	The country for the LifeSize Transit user.
E-mail	The email address for the LifeSize Transit user.
Phone	The phone number for the LifeSize Transit user.
Login ID	The user's login ID.
SIP ID	The user's SIP ID.
SIP Name	The user's SIP name.
Created	The time at which the user was created.
First access	The time at which the user first accesses the server.
Last access	The time at which the user last accessed the server.
Lock	Prevents the user from accessing the system, for example, when an account has expired or the user violates the system rules.

You can modify the following user information by choosing **Edit**. This is also the information you provide to create a new user account.

- Name
- Email
- User ID
- Password
- SIP ID
- SIP Name
- SIP Password
- Zip
- City
- Country
- Phone

Click **Update** or **Add** after making changes.

Click **Delete** to remove the entire user record.

You can search users by name, email address, LifeSize Transit Server ID, or SIP ID. Click **Search Users** from the **Provisioning** menu.

Troubleshooting

If the media engine is connected, navigate to the media engine status link on the main page. If you are unable to connect, stop and restart the server.

Also check the status of the connected clients.

Reboot the system if necessary.

Consult Customer Support if you are unable to resolve your problem.

LED Status

The LED indicators on the front panel of the server indicate the following conditions:

LED	Icon	Indicator
Overheat/Fan Failure		When this LED flashes, it indicates a fan failure. When on continuously, it indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check to ensure that the chassis cover is installed securely. This LED remains flashing for as long as the condition exists.
NIC2		Indicates network activity on LAN2 when flashing.
NIC1		Indicates network activity on LAN1 when flashing.
HDD		Channel activity for all hard disk drives. This light indicates SATA drive activity when flashing.
Power		Indicates power is being supplied to the system's power supply unit. This LED should be illuminated when the system is operating.

Database Backup and Restore

To back up the server database, follow these steps:

1. Enter the IP address of the signalling server plus port 8080 on HTTP.
   For example: http://www.acme.com:8080.

2. Enter the LifeSize Transit username and password. The default value for both is *admin*.

   Note: You can change these values from the configuration tool as described in "Configuring LifeSize Transit Server" on page 7.

3. From the **LifeSize Transit Server Utilities** page, click **Database Backup**.

4. Click **Start Backup**.

5. Click **Download** to save the backup file to a local directory.

To restore the server database, follow these steps:

1. Follow the previous procedure to back up the server database.
2. From the **LifeSize Transit Server Utilities** page, click **Database Restore**.
3. Enter or browse for the database backup file you created in the previous procedure.
4. Click **Start Restore**.

System Safety

Follow these basic electrical safety precautions to protect yourself from harm, and the server from damage:

- Be aware of the locations of the power on/off switch on the chassis and the room's emergency power-off switch or electrical outlet in the case of an electrical accident.
- When disconnecting power, you should first power down the system and then unplug the power cords.
- Use only one hand when working with powered-on electrical equipment to avoid making a complete circuit which will cause electrical shock.
- Do not use mats designed to decrease static electrical discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cords must include a grounding plug and must be plugged into grounded electrical outlets.

General Electrical Safety Precautions

Follow these rules to ensure general safety:

- Keep the area around the server clean and free of clutter.
- The server weighs approximately 16.5 lbs (7.5 kg) when fully loaded. Always keep your back straight and lift with your legs.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.

  CAUTION - There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities. The battery must be replaced with the same or an equivalent type. Contact your distributor or LifeSize Customer Support for all servicing.

CAUTION - This server may have come equipped with a CD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

ESD Precautions

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Use a grounded wrist strap designed to prevent static discharge.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.
- Take care to assure that the chassis cover is in place when the server is operating to assure proper cooling.

System Specifications

The server meets the following system specifications:

Processors	Single Intel® Pentium® 4 LGA775 processor at an 800 MHz front side bus speed or a single Intel® Celeron® processor at a 533 MHz FSB (hyper-threading enabled)
Chipset	Intel E7221
BIOS	Award BIOS in 8 Mb Flash EEPROM
Memory Capacity	Four (4) DIMM slots to support a maximum up to 4 GB of unbuffered ECC *or* non-ECC DDR2-533/400 SDRAM modules. Note: All memory modules should be the same size, speed and type.
Serial ATA Controller	Intel ICH6R on-chip controller for 4-port Serial ATA (JBOD supported)
Hard Drive Bay	One (1) fixed drive bay for one (1) 3.5" hard drive
PCI Expansion Slots	One (1) 64-bit 133 MHz (3.3V) PCI-X slot (bundled with a riser card)
Motherboard	Model: P8SCT (ATX Form Factor) Dimensions: 12 x 9.5 in (305 x 241 mm)

Chassis	Model: SC513L-260 (1U Rackmount) Dimensions: (WxHxD) 17.2 x 1.7 x 19.85 in. (437 x 43 x 504 mm)
Weight	Gross Weight: 16.5 lbs. (7.5 kg.)
System Cooling	One (1) 10-cm 5K rpm cooling fan One (1) air shroud One (1) fan holder
System Input Requirements	AC Input Voltage: 100-240V AC auto-range Rated Input Current: 4A max Rated Input Frequency: 50 to 60 Hz
Power Supply	Rated Output Voltages: +3.3V (15A), +5V (25A), +12V (18A), -12V (1A), +5Vsb (2A) Rated Output Power: 260W (Model# SP262-1S, Part# PWS-0055)
BTU Rating	1372 BTUs/hr (for rated output power of 260W)
Operating Environment	Operating Temperature: 10º to 35º C (50º to 95º F) Non-operating Temperature: -40º to 70º C (-40º to 158º F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5 to 95% (non-condensing)