

## LiveU Network Requirements

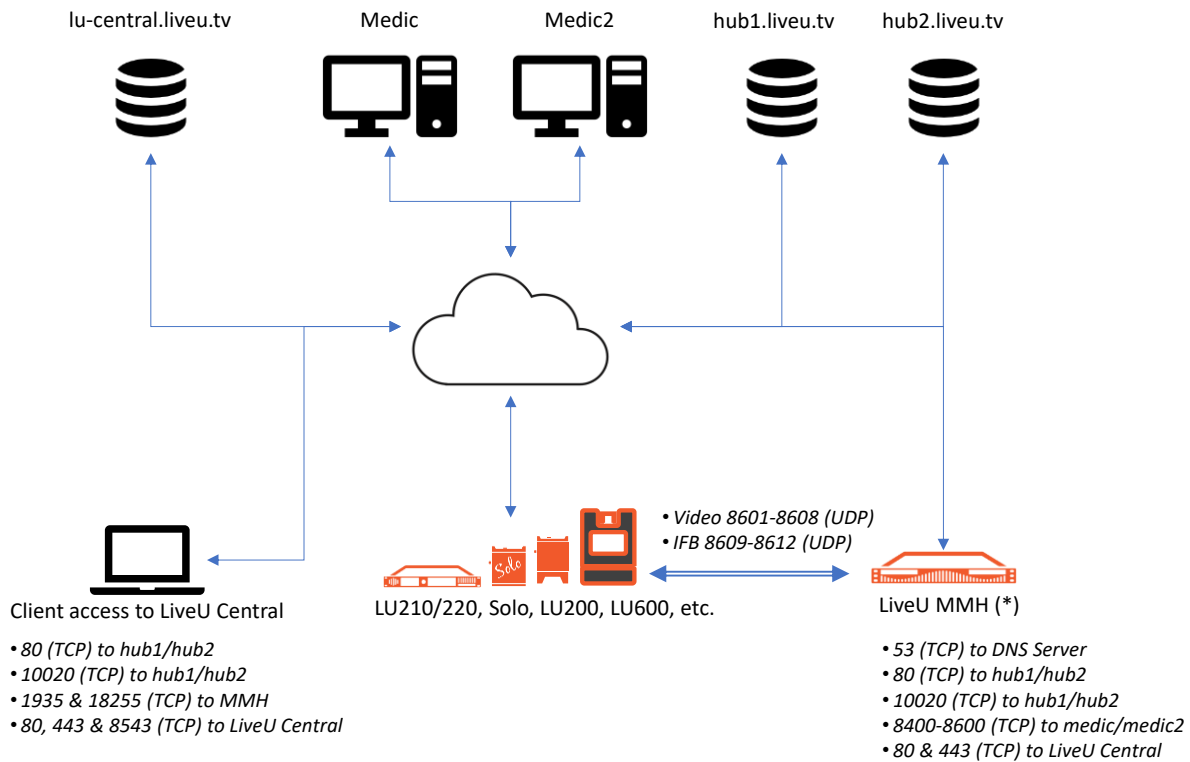
### Introduction

This document contains network requirements for connection of LiveU servers to the internet, and is relevant to the following products:

- LU2000 / LU4000
- Video Return Server
- DataBridge Gateway
- LU210/LU220
- LU300 Family
- LU610 Family

The information within is relevant to software releases V7.5 and above.

### System Schematic



(\*) NOTE: Additional MMH servers sharing the same physical IP need additional ports

## Device: LU2000 (MMH)

Protocol	Ports	Src / Dest	Required / Optional	Comments
Inbound UDP	8601-8606	Anywhere	Required	Incoming video and audio from any LiveU device. <b>Note:</b> If these ports are not available, LiveU support can work with you to use others
Inbound TCP	8601-8606	Anywhere	Optional	Used for session initialization when using the LiveU & Panasonic solution where select camera models can stream directly to your LU2000. If you plan to trial or use the Panasonic solution, these ports are required
Inbound UDP	8609-8615	Anywhere	Optional	Used with the IFB feature available on LiveU units
Inbound UDP	8620-8667	Anywhere	Optional	Used for video and audio delivery from a Panasonic camera that supports direct LiveU streaming. If you plan to trial or use the Panasonic solution, these ports are required
Inbound TCP	1935, 18255	Anywhere (see purpose)	Optional (but recommended)	1935 is used for RTMP to see the video preview in LiveU Central. 18255 is used for http delivery of shared files from your LU2000 to your computer. Both are highly recommended. <b>Note:</b> if these ports are not available, LiveU Support can work with you to use other ports
Inbound TCP	10022	Anywhere	Optional (but recommended)	"Fail safe" - if for any reason the MMH can't reach the main HUB, units will still be able to select channels and start streaming from the unit GUI. As of V7.0 and above, each MMH has a local HUB that the unit can connect to it in case there is no connection to main HUB.
Outbound TCP	873, 1873, & 22222	rsync.liveu.tv	Required (for updates)	Allows remote update of MMH servers through LiveU Central
Outbound TCP	80, 443 & 8543	lu-central.liveu.tv (54.83.195.191) (18.208.108.178)	Required	Used by the LU2000 server to communicate configuration details to LUC. Required to allow for 6.0+ features to be recognized and available
Outbound DNS		Your organization's DNS server (or 4.2.2.2)	Required	The LU2000 must be able to reach a DNS server. Any DNS, either internal or external to your network, is acceptable
Outbound TCP	80, 443 & 10020	hub1.liveu.tv (23.21.58.175) hub2.liveu.tv (46.137.77.107)	Required	Command and Control protocol. <b>Note:</b> if your firewall already allows all outbound sessions, you will not need to open any explicit ports
Outbound TCP	8400-8600	medic.liveu.tv (54.247.127.242) medic2.liveu.tv (54.83.47.114)	Optional (but recommended)	LiveU's support tool that allows for remote upgrade of the LU2000 as well as diagnosis and debug when necessary. While optional, without this access, LiveU cannot offer the same level of support on your LU2000. <b>Note:</b> if your firewall already allows all outbound sessions, you will not need to open any explicit ports
Outbound UDP	9000-9099	Anywhere	Optional (but recommended)	Used only if your LU2000 will be a LiveU Multipoint distributor
Outbound TCP	80, 443 & 5938	Anywhere	Optional NOT recommended	Used by TeamViewer. LiveU Support also uses the TeamViewer remote desktop tool for complete access when required & when initiated by the customer. <b>Note:</b> if your firewall already allows all outbound sessions, you will not need to open any explicit ports
Inbound UDP	Special: Any UDP flood or attack protection	Anywhere	Required	If your firewall offers any form of UDP flood or attack prevention, the IP address of your LU2000 needs to be whitelisted to disable this feature for this IP. The video and audio stream is a long-running, high bandwidth stream of UDP packets, and such features will interfere with receiving that stream

## Device: Video Return Server

Protocol	Ports	Src / Dest	Required / Optional	Comments
Inbound UDP	18000-18049	Anywhere	Required	Used for RTP base port: <ul style="list-style-type: none"> <li>• Hard coded to 2 instances.</li> <li>• Each instance uses up to 25 ports.</li> </ul>
Inbound TCP	18255	Anywhere (see purpose)	Optional (but recommended)	18255 is used for M-JPEG to see the video preview in LiveU Central. Opening this port is highly recommended. <b>Note:</b> if these ports are not available, LiveU Support can work with you to use other ports
Inbound TCP	10022	Anywhere	Optional (but recommended)	“Fail safe” - if for any reason the MMH can’t reach the main HUB, units will still be able to select channels and start streaming from the unit GUI. As of V7.0 and above, each MMH has a local HUB that the unit can connect to it in case there is no connection to main HUB.
Outbound TCP	873,1873, & 22222	rsync.liveu.tv	Required (for updates)	Allows remote update of MMH servers through LiveU Central
Outbound TCP	80, 443 & 8543	lu-central.liveu.tv (54.83.195.191) (18.208.108.178)	Required	Used by the Video Return server to communicate configuration details to LUC. Required to allow for 6.0+ features to be recognized and available
Outbound DNS		Your organization's DNS server (or 4.2.2.2)	Required	The Video Return server must be able to reach a DNS server. Any DNS, either internal or external to your network, is acceptable
Outbound TCP	80, 443 & 10020	hub1.liveu.tv (23.21.58.175) hub2.liveu.tv (46.137.77.107)	Required	Command and Control protocol. <b>Note:</b> if your firewall already allows all outbound sessions, you will not need to open any explicit ports
Inbound UDP	Special: Any UDP flood or attack protection	Anywhere	Required	If your firewall offers any form of UDP flood or attack prevention, the IP address of your Video Return server needs to be whitelisted to disable this feature for this IP. The video and audio stream is a long-running, high bandwidth stream of UDP packets, and such features will interfere with receiving that stream

## Device: LU2000 Workstations, LU200e, All devices

Protocol	Ports	Src / Dest	Required / Optional	Comments
Outbound TCP	80, 443 & 8543	52.204.145.164 52.21.44.60 52.6.93.126 52.70.108.25 52.72.46.113 54.209.189.230 104.196.13.7	Required	These IP addresses are used for High Availability Load Balancing

## Device: Any computer used to access LiveU Central from

Protocol	Ports	Src / Dest	Required / Optional	Comments
Outbound TCP	80, 443 & 8543	lu-central.liveu.tv (54.83.195.191) (18.208.108.178)	Required	The portal software is delivered over HTTPS via port 8543. Ports 80 and 443 just redirect you to the portal
Outbound TCP	1935	The external and/or internal IP of your LU2000	Optional (but recommended)	Video preview delivered by your LU2000 to your workstation viewing LiveU Central
Outbound TCP	18255	The external and/or internal IP of your LU2000	Optional (but recommended)	File downloads delivered from your LU2000 to your workstation, via LiveU Central

## Device: LU200e, LU210, LU220 & LiveU Solo

Protocol	Ports	Src / Dest	Required / Optional	Comments
Outbound TCP	443, 8543	lu-central.liveu.tv (54.83.195.191) (18.208.108.178)	Required	When using the LU200e encoder on a private network to reach your LU2000 remotely, the encoder requires some outbound connections. If your firewall allows all outbound connections, you do not need to do anything further. If your firewall does not allow all outbound connections, the unit needs to reach lu-central.liveu.tv for command communication, in addition it requires the outbound connections below
Outbound TCP	80, 443 & 10020	hub1.liveu.tv (23.21.58.175) hub2.liveu.tv (46.137.77.107)	Required	Command and Control protocol
Outbound TCP	8400-8600	medic.liveu.tv (54.247.127.242) medic2.liveu.tv (54.83.47.114)	Optional (but recommended)	File downloads delivered from your LU2000 to your workstation, via LiveU Central

## Device: LU200e, LU210, LU220

Protocol	Ports	Src / Dest	Required / Optional	Comments
Outbound UDP	8601-8608 & 9000-9010	External IP of your LU2000	Required	LiveU MMH servers can be configured to use most available ranges for UDP traffic. This call-out represents our defaults for MMH servers, Virtual servers, and MultiPoint cloud servers.

## Device: LiveU Solo

Protocol	Ports	Src / Dest	Required / Optional	Comments
Outbound UDP	Solo uses cloud resources to receive the UDP-based LRT stream, and these resources come from a large pool of redundant possible destinations, including many IPs and ports			

## Device: Solo Portal

Protocol	Ports	Src / Dest	Required / Optional	Comments
Outbound TCP	8543	107.22.247.170 54.225.169.111	Required	
Outbound TCP	80 & 443	54.235.167.20 204.236.238.140	Required	

## General Information

### Browser Preferences for LiveU Central

We recommend Google Chrome, but the latest versions of Internet Explorer and Firefox should also work. Please do not use the MMH server as your access to LiveU Central.

### Network Bandwidth Requirements

We recommend 12 Mbps download speed per output channel (up to the number of Backpacks you have) on your LiveU MMH server. LU200, LU500, and LU70L devices require 12 Mbps and Smart devices require 6+ Mbps.

**Example:** A station has a quad server (4 physical SDI outputs), one LU70L, two LU500 devices, and will use multiple Smart devices (LU-Smart-HD, LU-Lite). They should use the following:

36 Mbps for the three channels with devices plus an additional 4 Mbps for the fourth channel which will accept Smart devices. In total, 40 Mbps download speed will be adequate. An upload speed of at least 8-10 Mbps is also required to account for previews in LiveU Central.

Please remember to account for any other devices which will be sharing bandwidth

## Frequently Asked Questions

### **“Why am I seeing color bars as my physical output?”**

This is typically caused by the UDP ports in Step #2 on the previous page not being forwarded to the server. The backpacks send UDP packets directly to the server and must be properly forwarded.

### **“I’m trying to download a file from the “Files” tab on LU-Central, but I don’t see anything. Why?”**

Please check for a pop-up blocker. This is almost always the culprit.

### **“What if my network admin says that we have different incoming and outgoing public IP addresses?”**

This can be accommodated with a change to an internal configuration file. Please contact LiveU Support for assistance.

### **“If my server is directly on the Internet (no NAT), do I still have to forward ports?”**

No, you do not. If the server has a direct, unique public IP address, no port forwarding is required.

### **“My previews don’t show on LiveU Central. Why is that?”**

This is usually caused by one of three things:

- 1) The port (designated in step #3 on the previous page) is not properly forwarded.
- 2) The port is already in use elsewhere on your network.
- 3) The workstation is restricted (by a firewall rule) from accessing the port on the server.

### **“Previews from my Video Return Server aren’t showing on LiveU Central. Why is that?”**

This is usually caused by one of three things:

- 1) Port 18255 is not properly forwarded.
- 2) The port is already in use elsewhere on your network.
- 3) The workstation is restricted (by a firewall rule) from accessing the port on the server.

**“Why can’t I access lu-central.liveu.tv from my workstation at my desk?”**

In this case, tight network security is likely the culprit. Steps #1 through #3 from the previous answer need to be addressed by your network admin.