telestream


# Lightspeed VLS Series Server Guide

Serial # _____

September 2024

2409122057

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## Warranty Remedies

Your sole remedies under this limited warranty are as follows:

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Further information regarding this limited warranty may be obtained by writing:
Telestream, LLC
848 Gold Flat Road
Nevada City, CA 95959 USA

You can call Telestream during U. S. business hours via telephone at (530) 470-1300.

## Regulatory Compliance

Electromagnetic Emissions: EN 55032, IEC/EN 61000-3-2, IEC/EN 61000-3-3, FCC Part 15 Subpart B, ICES-003, VCCI 32-1, AS/NZS CISPR 32

Electromagnetic Immunity: EN 55035

Safety: IEC 62368-1, EN 62368-1, CSA C22.2 No. 62368-1-14, UL 62368-1

California Best Management Practices Regulations for Perchlorate Materials:
This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

Contact Telestream Customer Service for additional Regulatory Compliance certificates

# Obtaining Support | Information | Assistance

If you need assistance or customer support for your Lightspeed server, please refer to the contact information presented here:

| Resource | Contact Information |
|---|---|
| Vantage Support | Web site: telestream.net/telestream-support/vantage/support.htm<br>Support Email. support@telestream.net<br>Terms and times of support services vary, per the terms of your current service contract with Telestream. |
| Vantage Information, Assistance, FAQs, Forums, & Upgrades | Web site: telestream.net/telestream-support/vantage/support.htm<br>Support Email. support@telestream.net |
| Telestream | Website: telestream.net<br>Sales and Marketing Email: info@telestream.net<br>Telestream, LLC<br>848 Gold Flat Road<br>Nevada City, CA USA 95959 |
| Vantage Reseller Support | If you purchased your Lightspeed server from a reseller, please contact your reseller for support. |
| International Reseller Support | Website: telestream.net<br>See the Telestream web site for your regional authorized Telestream reseller. |
| Telestream Technical Writers | Email: techwriter@telestream.net<br>If you have comments or suggestions about improving this document, or other Telestream documents—or if you've discovered an error or omission, please email us. |

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# Safety Information

Observe all safety precautions including those listed in this document to avoid personal injury and prevent damage to this product or any product connected to it. To avoid any hazardous conditions, use this product only as specified.

If you have questions or require assistance, contact Telestream's Customer Service for assistance. See *Obtaining Support | Information | Assistance*.

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**Note:** Do not open the chassis cover of this server. Only Telestream authorized technicians should remove the chassis cover to expose the chassis interior, and install or configure components. See *Limited Warranty and Disclaimers*.

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## Topics

# Safety Terms

These safety statements are identified as follows:

***WARNING:*** *Warning statements indicate conditions that could result in injury or loss of life and describe how to avoid them.*

***CAUTION:*** Caution statements indicate conditions that could result in damage to this product or other property and describe how to avoid these problems.

# Warnings to Avoid Personal Injury

***WARNING:*** *Only Telestream authorized, qualified personnel should be allowed to install, replace, or service this equipment.*

***WARNING:*** *This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.*

***WARNING:*** *Read the installation instructions before connecting this system to the power source.*

***WARNING:*** *This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.*

***WARNING:*** *The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components (except for hot-swap components). This unit has two power supply connections. All connections must be removed to de-energize the unit.*

***WARNING:*** *Do not operate in wet or damp environments or outside recommended operating conditions. This product is intended for indoor use.*

***WARNING:*** *Use only the power supply specified for this product with a properly grounded power outlet.*

***WARNING:*** *Do not operate this product in an explosive atmosphere.*

***WARNING:*** *Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.*

***WARNING:*** *Do not operate this product if it is damaged. Have a qualified service person inspect damaged equipment before use.*

# General Precautions | Avoiding Property Damage

***CAUTION:*** Installation of the equipment must comply with local and national electrical codes.

***CAUTION:*** Ultimate disposal of this product should be handled according to all national laws and regulations.

***CAUTION:*** Excessive electrostatic discharge may damage some components. Take precautions against electrostatic discharge.

***CAUTION:*** Use care in handling. Delicate connectors can be easily damaged.

***CAUTION:*** Provide proper ventilation to prevent the product from overheating.

# Avoiding Electrostatic Discharge

Electrostatic discharge (ESD) damage, which can occur whenever electronic components are improperly handled, results in complete or intermittent failures. Telestream recommends using an ESD-preventive strap whenever you are handling Telestream equipment or one of its components.

***CAUTION:*** Whenever using an ESD-preventive wrist or ankle strap, ensure that it makes good skin contact. Connect the equipment end of the connection cord to an ESD connection socket if one is available or to bare metal on the rack.

Periodically check the resistance value of the ESD strap. The measurement should be between 1 and 10 megohms.

# Technical Specifications

Telestream's VLS-300 is a high-performance Windows server configured specifically for hosting Telestream Vantage® media processing products.

This chapter provides technical specifications for Telestream's Lightspeed VLS-300 server.

## Topics



**Note:** This guide provides relevant details about the VLS-300 Server. For a complete User Guide, see the Supermicro SuperServer SYS-121H-TNR User Guide.

# Installing Add-in Card Guidelines

In order to ensure optimal product performance and warranty coverage, it is important that Telestream products be used in accordance with the following product policy. It is critical that our product policy be adhered to when using add-in cards:

- Add-in cards are to be installed by Telestream, or an authorized agent, at or before commissioning.
- Only Telestream-qualified add-in cards can be used. For the most up-to-date list refer to the Lightspeed VLS Series Server product sheet on the Telestream web site. Using untested and unknown add-in cards voids the product warranty.

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**Note:** Except for externally removable power supplies and disk drives, the Lightspeed server has no user-serviceable parts. To maintain your warranty, any repair or additional PCI card installation and any service inside the sealed top cover must be performed by Telestream or an authorized Telestream service technician.

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# Lightspeed VLS-300 Server Specifications

The VLS-300 is a1U Hyper Supermicro Windows server with eight hot-swap 2.5" NVMe/ SAS/SATA bays and three PCIe 5.0 x16 + 1 PCIe 5.0 x16 AIOM slot.

## Operating System

The VLS-300 is shipped with the Windows 2019 | 2022 Server operating system per customer order.

## Physical Components

This table summarizes the Lightspeed VLS-300 Server, followed by detailed descriptions of major components.

| Components | Description |
|---|---|
| Processor | Dual Intel Xeon 6442Y, 2x 24c, 48c cores |
| GPU | 2 NVIDIA RTX A4000 GPUs |
| System Memory | 256GB; 4800 MHz DDR5 ECC RDIMM |
| Drive Bays | 12 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays |
| OS Drive | 2 800GB NVMe 6gb/s 2.5” Non-SED SSD drives |
| Media Drives | 2 1.92TB RAID 0 SSD SATA drives |
| PCIe Expansion Slots | 1 5.0 x16 FHHL slot<br>2 5.0 x16 FH/10.5" L slots<br>1 5.0 x16 AIOM slot (OCP 3.0 compatible) |
| BMC Network Interface | 1 RJ45 1GbE dedicated BMC LAN Port |
| Network Interface Options | 2-port 10GbE SFP+ NIC (standard)<br>OR<br>2-port 25GbE SFP28 NIC (option)<br>OR<br>2-port 100G QSFP28 NIC (option) |
| VGA Port | 1 VGA monitor port |

| Components | Description |
|---|---|
| USB Ports | 2 USB 2.0 ports (rear)<br>1 USB 3.1 port (front) |
| Power Supply | 2 1200W redundant Titanium Level (96%) hot-plug power supplies<br>AC Input:<br>• 800W: 100-127Vac/50-60Hz<br>• 1200W: 200-240Vac/50-60Hz<br>• 1200W: 230-240Vdc/50-60Hz (CCC only)<br>Power Cords: NA, EU & UK |

## Security | PC Health | Environmental Components

This table summarizes the Lightspeed VLS-300 Server, followed by detailed descriptions of major components.

| **Security** | |
|---|---|
| Hardware | • Trusted Platform Module (TPM) 2.0<br>• Silicon Root of Trust (RoT) – NIST 800-193 Compliant |
| Features | • Cryptographically Signed Firmware<br>• Secure Boot<br>• Secure Firmware Updates<br>• Automatic Firmware Recovery<br>• Supply Chain Security: Remote Attestation<br>• Runtime BMC Protections<br>• System Lockdown |
| **PC Health Monitoring** | |
| CPU | Monitors for CPU Cores, Chipset Voltages, Memory |
| Fan | • Fans with tachometer monitoring<br>• Status monitor for speed control<br>• Pulse Width Modulated (PWM) fan connectors |

| | |
|---|---|
| Temperature | • Monitoring for CPU and chassis environment<br>• Thermal Control for fan connectors |
| **Operating Environment** | Operating: 10°C ~ 35°C (50°F ~ 95°F)<br>Non-operating: -40°C to 70°C (-40°F to 158°F)<br>Operating: 8% to 90% RH<br>Non-operating: 5% to 95% RH |

# System Power

The chassis features redundant hot-swappable, dual power supplies that automatically sense the input voltage between 100v to 240v, and operate at that voltage. Power cords (included) plug directly into the power supply units at the back of the chassis.

The Power On/Off (0/1) button on the front energizes the unit. For Power LED states, see *Control Panel LEDs*.

# Drives

The chassis supports up to 12 SSD drives in the front panel drive bays.

The chassis is shipped with two 1.2TB 6gb/s 2.5" Non-SED SATA SSD drives for media storage, and two 800GB NVMe 6gb/s 2.5" Non-SED SSD drives for the operating system. For drive locations, see *Front Plane*.

Additional drives may be ordered and installed by Telestream.

# Front Panel

The chassis front control panel provides power control, UID button access, and server status lights, which are described in *Front Plane*. It has 12 drive bays.

# Cooling System

The system features eight 4-cm heavy-duty, hot-swap fans for cooling the system. Air shrouds concentrate airflow to maximize fan efficiency.

# GPU

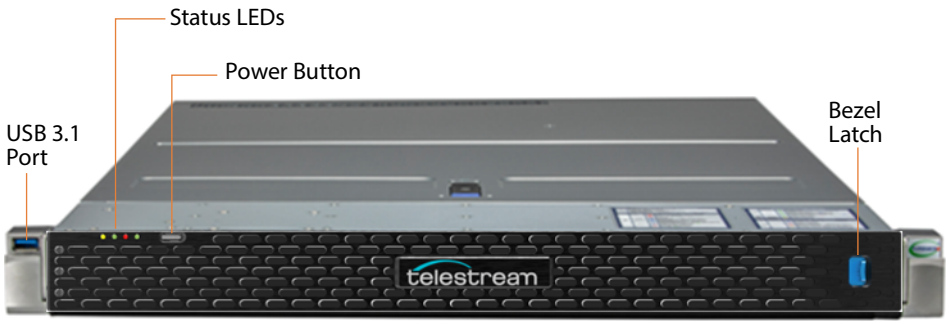
GPUs greatly accelerate video processing and H.264/H.265 media creation. Using a GPU in combination with the Lightspeed server's powerful multi-core CPU processors enables rapid transcoding and processing in Vantage. The VLS-300 server is factory-equipped with two NVIDIA RTX A4000 graphics cards, in slots 2 and 3.

# Expansion Card Slots

The chassis supports three PCIe card slots, two of which hold GPU cards, installed at the factory. The remaining PCIe slot (slot 1) is unused.

# Front Panel Bezel

The bezel affixed to the front panel provides visibility of the control panel—system monitoring LED indicators, and the power button:




## UID Button

The UID button—recessed, just to the left of the LEDs in the control panel—can only be accessed by removing the front bezel. The UID button turns on or off the blue light function of the Information LED used to locate a particular unit among many units in a rack or server room.

You can also use this button to reset the Baseboard Management Controller (BMC). The BMC can be reset using the button on the front control panel or on the chassis rear:

- Reset—Press and hold. After six seconds, the LED blinks at 2 Hz. The BMC resets and the reset duration is approximately 250 ms. Then the BMC starts to boot.
- Restore factory default configuration—Hold the button for twelve seconds. The LED blinks at 4 Hz while defaults are configured.
- Firmware update—the UID LED blinks at 10 Hz during a firmware update.

## Control Panel LEDs

The LEDs are described left to right:

- Information LED—Alerts operator to several states, as noted in the table below.
- NIC LED—Indicates network activity on LANs when flashing.
- Hard Drive Activity—Indicates activity on the storage drives when flashing.
- Power LED:
  - Steady on – Power on
  - Blinking at 4 Hz – Checking BIOS/BMC integrity
  - Blinking at 4 Hz and "i" LED is blue – BIOS firmware updating
  - Two blinks at 4 Hz, one pause 2 Hz and "i" LED blue – BMC firmware updating
  - Blinking at 1 Hz and "i" LED red – Fault detected

**Information LED States**

| Color | Status Description |
|---|---|
| Red, solid | An overheat condition has occurred. |
| Red, blinking at 1 Hz | Fan failure; check for an inoperative fan. |
| Red, blinking at 0.25 Hz | Power failure; check for failed power supply. |
| Red, solid; with Power LED blinking green | Fault detected |
| Blue and red, blinking at 10 Hz | Recovery mode |
| Blue, solid | UID has been activated locally to locate the server in a rack environment. |
| Blue, blinking at 1 Hz | UID has been activated using the BMC to locate the server in a rack environment. |
| Blue, blinking at 2 Hz | BMC is resetting. |
| Blue, blinking at 4 Hz | BMC is setting factory defaults. |
| Blue, blinking at 10 Hz with Power LED blinking green. | BMC/BIOS firmware is updating. |

## Power On/Off Button (to right of LEDs)

The main power switch applies or removes primary power from the power supply to the server but maintains standby power. Press the Power On/Off button to perform a normal power up/power down cycle. Under normal conditions, you should close client programs and shut down the domain and OS before cycling power.

Hold for four seconds to force a shut-down. A reboot abnormally terminates connected clients and systems and should be done only in the event of an unrecoverable system error.

## USB Ports

One USB 3.1 port for general use is located on the left ear of the server.

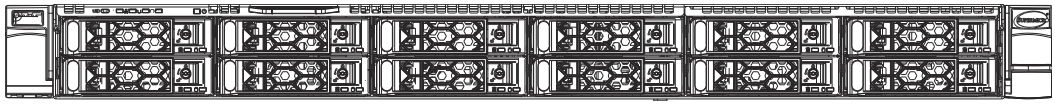
Two USB 2.0 ports are located on the back plane.

# Front Plane

The VLS-300 has a removable front bezel. Release the bezel via the blue bezel latch (right) and remove it to access the twelve drive bays.

Drive bay utilization (index 0), from bottom to top, left to right:

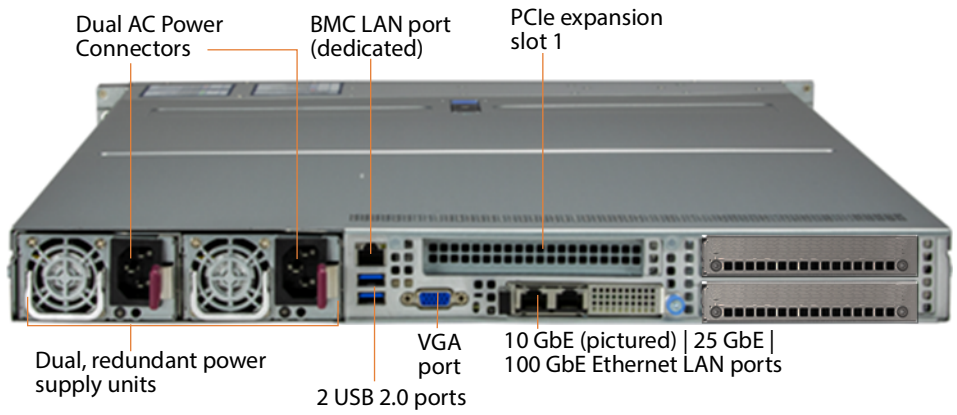
- 0, 1, 2, 3, 4, 5: unused
- 6 and 7: Media storage RAID drive bays
- 8 and 9: unused
- 10 and 11: NVMe OS drives



# Rear Plane

The VLS-300 has these ports and connectors on the rear panel:

- Two redundant AC power supply units and connectors—connect to a 20-amp or greater AC source
- One dedicated BMC LAN port that should not used for any other purpose
- Two USB 2.0 ports—connect as required to keyboard, mouse, or other serial device
- One VGA monitor port
- Two Ethernet LAN ports—connect as required to Ethernet LAN




Additional cards may be optionally installed in the PCIe expansion slots by Telestream.

# Server Installation and Maintenance

This chapter explains how to install Telestream's Lightspeed VLS-300 Server into a server rack and configure it for operation. Maintenance and support instructions are also provided.

You can identify the model of your Lightspeed server by reading the tag affixed to the top center of the server.

***WARNING:*** *Only trained and qualified personnel should be allowed to install, replace, or service this equipment.*

***CAUTION:*** Except for replaceable power supplies and hard drives which may be accessed from the outside, the Lightspeed server is a sealed device, with no user-serviceable parts or user-accessible expansion slots. You should never open the top cover or attempt to upgrade or alter the server. Doing so exposes you to electrical hazard, may damage the unit, and may invalidate your warranty.
Be sure to read and heed the cautions and warnings in *Safety Information* before proceeding with installation.
If you have hardware or software problems with your Lightspeed server, follow the steps in *Obtaining Support | Information | Assistance* later in this guide.

**Note:** Before proceeding, work with your network administrator to determine computer and network setting requirements.

## Topics

# Installing a Lightspeed Server

The following topics describe server installation:



## Unpacking the Server

The Lightspeed server is packed for shipping in a heavy-duty, cardboard box with foam padding surrounding the device to protect it. During unpacking, inspect the container and the contents for damage. If there is any damage, report it immediately to the freight carrier and to Telestream Support (see *Obtaining Support | Information | Assistance* for contact information).

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***CAUTION:*** The server is heavy. Unpack the server on a strong, well-balanced table that supports the full weight of the server and shipping container without tipping.

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Inside the box are the server, the rack mounting hardware necessary for installation, front bezel and power cords. Also included is a paper Quick Start document.

## Preparing for Setup

The system box includes the rackmount hardware required to install it into the rack. Please read this section in its entirety before you begin installation.

### Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise, and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (approximately 25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).

### Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor so that the full weight of the rack rests on all of them.
- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- You should extend only one server or component at a time—extending two or more simultaneously may cause the rack to become unstable.

# Rack Installation

Lightspeed VLS servers are designed to fit into a rack unit between 26.8" and 36.4" deep, using the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using.

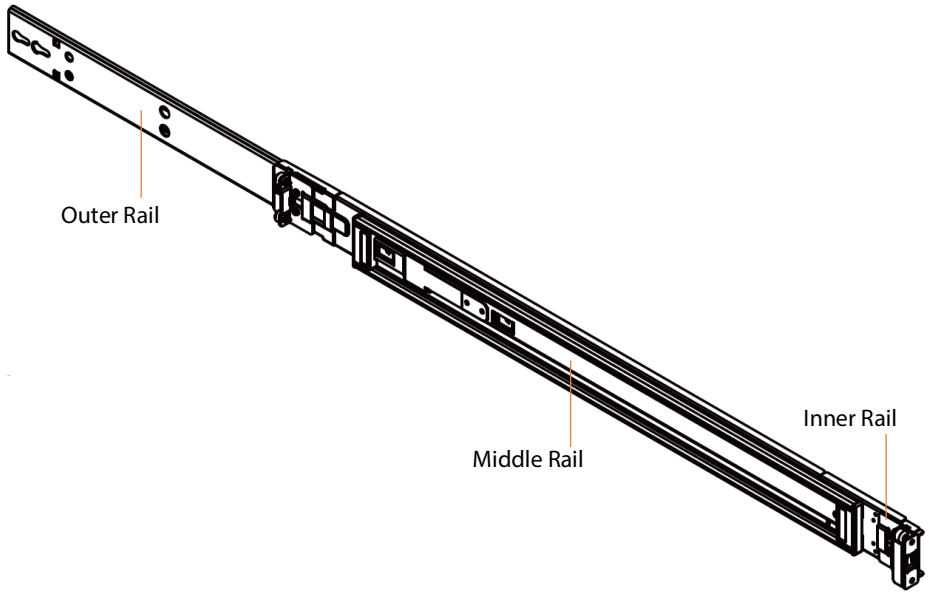
***CAUTION:*** Stability hazard—the rack stabilizing mechanism must be in place or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

## Identifying the Rails

The server box includes two rail assemblies. Each assembly consists of three sections:

- An inner rail that secures directly to the chassis
- An outer rail that secures to the rack
- A middle rail which extends from the outer rail.

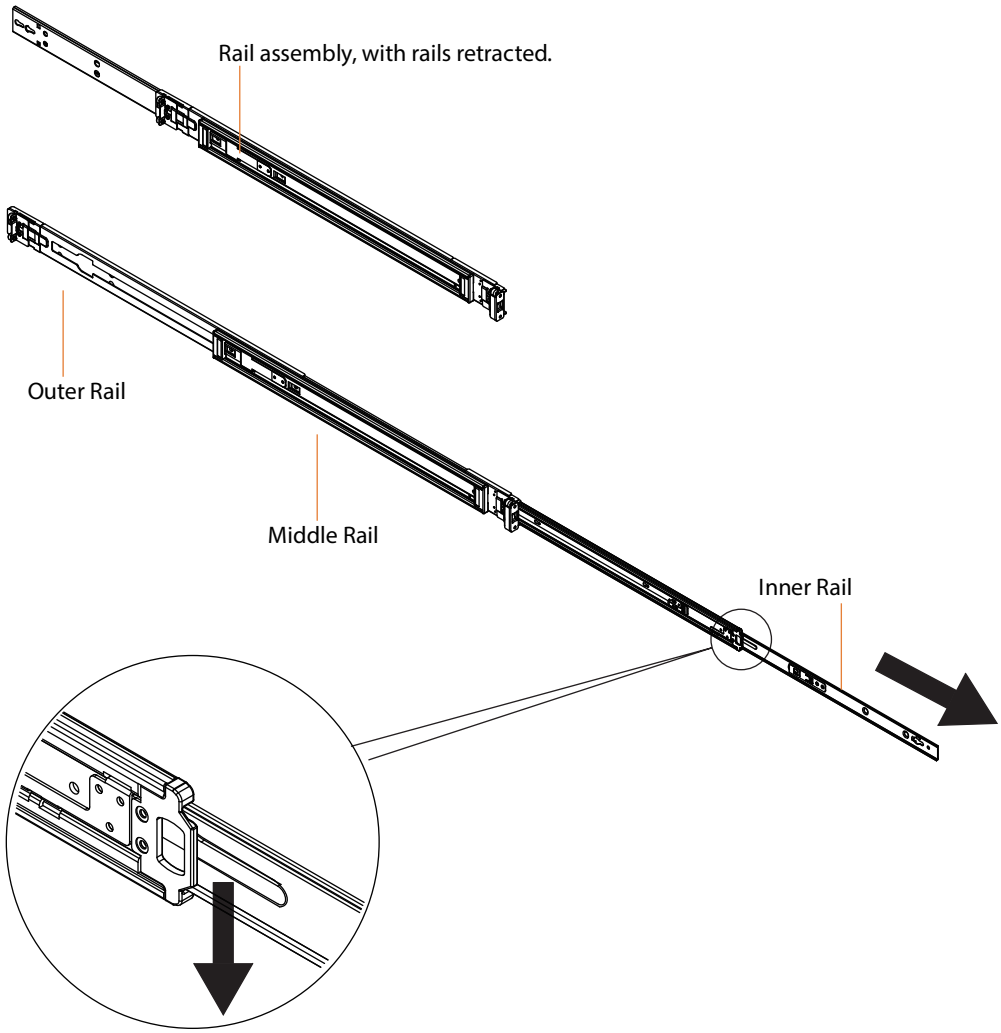
The rail assemblies are specifically designed and labeled for the left (L) and right side (R) of the chassis, as depicted here—left rail, with rails retracted:




**Note:** Both front chassis rails and the rack rails have a locking tab, which serves two functions. First, it locks the chassis into place when installed and pushed fully into the rack (its normal operating position. In addition, these tabs lock the chassis in place when fully extended from the rack. This prevents the chassis from coming completely out of the rack when pulled out for servicing.

## Releasing the Inner Rail

Each inner rail has a locking latch. This latch prevents the chassis from coming completely out of the rack when the chassis is pulled out for servicing. This figure depicts extending the middle rail, and releasing the inner rail to extend it completely:



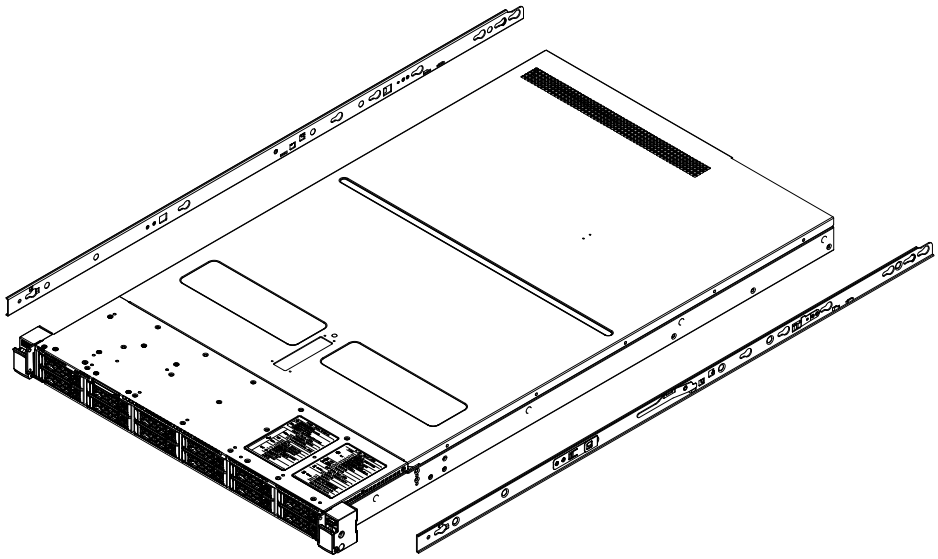

To mount the rail onto the chassis, first fully extend the inner rail:

1. Extend the inner rail out of the outer rail as far as it will go.
2. Press the locking tab down to release the inner rail.
3. Pull the inner rail all the way out.

## Installing the Inner Rails

Begin the rack mounting procedure by installing the inner rails to the chassis.

1. Identify the left and right inner rails by their labels.
2. Place the inner rail firmly against the side of the chassis, aligning the hooks on the side of the chassis with the holes in the inner rail.
3. Slide the inner rail forward toward the front of the chassis and under the hooks until the quick release bracket snaps into place, securing the rail to the chassis.
4. Optionally, you can further secure the inner rail to the chassis with a screw.



***CAUTION:*** Do not pick up the chassis with the front handles—they are designed to pull the system from a rack only.

## Installing the Outer Rails on the Rack

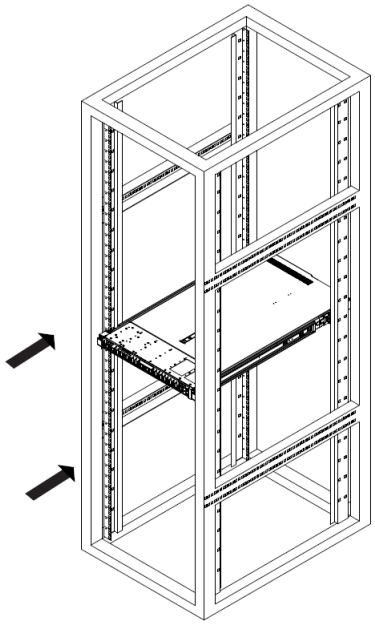
Follow these steps for both the left and right rail to install them on the rack:

1. Hang the outer rail's rear hooks onto the square holes on the rear of the rack.

   Take care that the proper holes are used so the rails are level. If desired, use screws to secure the rear of the outer rail to the rear of the rack.
2. Press upward on the locking tab at the rear end of the middle rail.
3. Push the middle rail back into the outer rail.
4. Hang the hooks on the front of the outer rail onto the square holes on the front of the rack. If desired, use screws to secure the outer rails to the rack.
5. Pull out the outer rail's rear section, adjusting the length until it just fits within the posts of the rack.

## Installing the Chassis into a Rack

Once the rails are attached to the chassis and the rack, you can install the chassis:



1. Pull the middle rail out of the front of the outer rail and make sure that the ball bearing shuttle is locked at the front of the middle rail.
2. Align the rear of the chassis rails with the middle rails and then push evenly on both sides of the chassis until it clicks into the fully extended position.
3. Depress the locking tabs on both sides of the chassis and push it fully into the rack. The locking tabs should audibly click as they snap into place.
4. Optional screws may be used to hold the front of the chassis to the rack.

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**Note:** Keep the ball bearing shuttle locked at the front of the middle rail during installation. This figure is for illustrative purposes only. Always install a chassis to the bottom of a rack first.

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# Making Connections

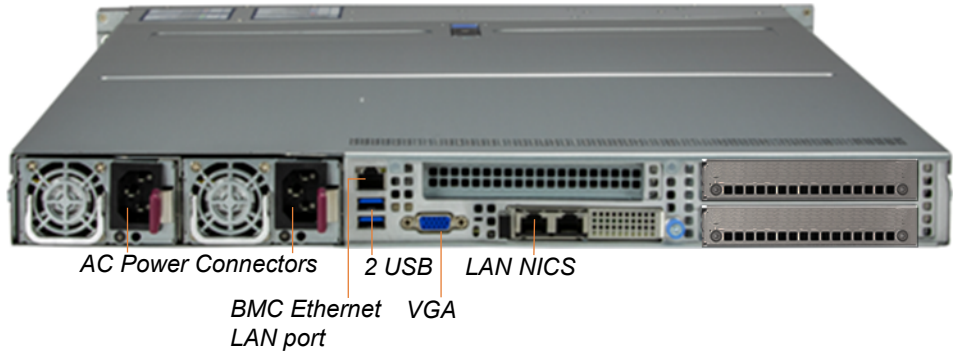
This topic describes the server's connectors and how to connect to them. Follow the order of connections given here:

- Data and Signal Connections
- Power Connections

## Data and Signal Connections

Make the following data and signal connections to the rear panel of the server:

- Make Ethernet media/general LAN connections to provide network connectivity.
- Optionally, connect a dedicated IPMI LAN to the BMC port.
- Optionally, connect devices, such as keyboard and mouse, to the USB connectors.
- Optionally, connect a monitor to the VGA connector.




## Power Connections

After you've installed the server chassis and all other connections made, connect the two redundant AC power cords to the back of the chassis and to an AC power source. Be certain to observe these AC power and connection requirements and all applicable electrical codes.

Observe the following precautions when connecting power and operating the server.

***WARNING: This unit has two power supply connections. Both connections must be removed to completely de-energize the unit.***

***WARNING:*** *Hazardous voltage or energy is present on the backplane when the system is operating. To prevent possible injury or death, use caution when servicing.*

***WARNING:*** *Ensure a proper earth ground connection to the ground conductor in the AC power plug. Failure to do so could present a severe electric shock hazard that could result in injury or death.*

***CAUTION:*** Telestream recommends connecting computer equipment to AC power through an uninterruptible power supply (UPS) with surge protection. Fluctuations in commercial supply voltage can damage unprotected electronic equipment. A high quality surge suppressor may be substituted if a UPS is not available, but a surge suppressor may not provide adequate electrical spike protection.

***WARNING:*** *When installing the product, use the provided or designated connection power cables. Using any other cables could cause a malfunction or a fire.*

***WARNING:*** *The fans might still be turning when you remove the replaceable power supply from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the replaceable power supply's housing.*

***WARNING:*** *Power supplies and other components can get very hot. Use caution when touching possibly hot components during operation and directly after unplugging.*

Take the following precautions to ensure a safe power connection:

- Make certain that the power source circuit can supply voltage within the specified range without becoming overloaded.
- Counted together, the server and other devices connected to the same power source must not exceed the total capacity of the power source circuit.

***WARNING:*** *This product relies on the protective circuit breakers in your building's electrical system for short-circuit (over-current) protection. The circuit breaker protecting the Lightspeed server must not be rated greater than 250 Volts, 20 Amps.*

When power is connected, press the Power On/Off (0/1) button on the front of the chassis to turn the server on. To turn power off, press the Power On/Off button again.

# Managing the Operating System

Windows Server 2019 | 2022 (Standard 64-bit) is pre-installed on the Lightspeed server on an SSD drive.

See microsoft.com for operating system (OS) specifications. The following topics explain OS activation, updating, and login:

- Microsoft Activation Key
- Microsoft Updates
- Windows User ID and Password

## Microsoft Activation Key

Two OS stickers (one for each CPU) on the top surface of the server lists license numbers. The number listed as the Physical Key is the OEM license number for the Microsoft Windows operating system. If you remove and reinstall the operating system, you will need to use this key to activate Windows again. The number typically contains five groups of five digits, as in this example: `YFG8H-TDD97-6BR4G-F88PF-XXXXX`. Enter the Physical Key shown on your stickers when activating Windows.

## Microsoft Updates

The Lightspeed server ships with the Windows operating system set to check for updates, but it does not automatically download or install them. Downloading and installation of critical operating system updates is the responsibility of each customer (see your system administrator).

## Windows User ID and Password

After the Lightspeed server boots up, you can log into it using this default Windows user account.

| | |
|---|---|
| **User** | Administrator |
| **Password** | telestream!1 |

# Maintaining the Server

This section describes common server maintenance tasks that you may need to perform from time to time:

## Topics



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***CAUTION:*** The Lightspeed server chassis is a sealed device with no user-serviceable parts inside. You should never open or alter the chassis. Doing so exposes you to electrical hazard, may damage the unit, and may invalidate your warranty. Replace only those parts that may be safely removed and reinserted from the outside, such as slide-in power supplies and hard drives.

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# Performance Tuning the Lightspeed Server

These settings are configured at the factory to ensure best performance of your Lightspeed server. The settings are supplied here in the event they have been changed and you need to restore them to factory original settings. (For details, consult your System Administrator or a Telestream Field Engineer).

1. In Performance Options, set Windows Performance options:
   - Navigate to Start > Control Panel > System > Advanced system settings > Settings > Advanced
   - Select Background services for Vantage transcoding nodes and SQL nodes
   - Select Programs for editorial systems and Vantage client applications that are not running other Vantage services.
2. In Performance Options, Data Execution Prevention tab:
   - Select Turn on (select) Data Execution Prevention (DEP) for essential Windows programs and services only.
3. Set User Account Control (UAC) (in Start > Control Panel > User Accounts > Change User Account Control Settings) as low as safely possible, considering your exposure to Internet viruses and malware.
4. Set Power Options to High Performance with Sleep disabled:
   - Navigate to Start > Control Panel > Power Options
   - Select the High Performance plan.
   - Set Sleep mode to Never (never sleep)
   - Select Change advanced power settings, and set all critical functions so that they are always ON (this usually means setting them to Never turn OFF).
5. Disable (turn OFF) any real-time software applications and processes, such as the following, that could adversely affect disk I/O performance or use excessive CPU:
   - Real-time virus scanning of media files as they are being captured
   - Automatic software updates that can preempt real-time services
   - Real-time file indexing.
6. Disable all unnecessary Windows services in the Start > Control Panel > Administrative Tools > Services (consult your System Administrator).
7. Turn OFF all firewalls (including third party firewalls) and packet filtering:
   - Set Start > Control Panel > Windows Firewall > Turn off Windows Firewall.

   If you use firewalls, open them for applications installed on the Lightspeed server.
8. You may improve network throughput by increasing buffer size on your network adapter. Set your Network Adapter's transmit and receive buffers to 1024:
   - Start > Control Panel > Network and Sharing > Change Adapter Settings > Local Area Connection > Properties.
9. Disable screen savers in Start > Control Panel > Display > Screen Savers.

10. Disable disk indexing in Start > Computer or in Windows Explorer. Right-click each disk and uncheck Allow files on this drive to have contents indexed in addition to file properties.

## Backing up the Lightspeed Server

In order to protect your Lightspeed server from data loss, Telestream highly recommends that you create an image of the Operating System drive (C:\) drive immediately upon taking delivery of your server and that you perform periodic back-ups of all critical data on the server.

Several disk image software solutions are available for creating a restoration image that you can use to restore the Lightspeed server's operating system drive (C:\) to its original state. Using software solutions such as these, along with regular backups, you can restore your server back to its original shipping state with all of your critical data:

- Acronis
- Clonezilla

Consult your IT/Systems administrator for details on creating restoration images and performing a periodic backup of your Lightspeed's critical data.

# Managing the Lightspeed Server

IPMI View management software provides remote network management of your Lightspeed servers using IPMI messages over Ethernet LAN or a dedicated IPMI LAN. If your Lightspeed Ethernet connectors are used to connect to storage, you can use the IPMI LAN connector to create an IPMI network among your Lightspeed servers.

You can download IPMI View from this location:
supermicro.com/en/solutions/management-software/ipmi-utilities

You'll find the IPMI View User's Guide at this location:
supermicro.com/support/manuals/?mlg=0

Among the tasks you can perform using IPMI View are these (see the IPMI View User's Guide for details):

- Discover Lightspeed servers on the IPMI network (requires dedicated IPMI LAN)
- View system event logs
- Check current sensors and monitor history of fans, voltages, temperature, and power supplies
- View firmware revision levels
- Perform various kinds of shutdowns and resets
- Blink the UID LED to locate a particular unit in the rack or server room
- Set fan speed
- Manage LAN configuration, SNMP configuration, and RS232 modem
- Manage users, passwords, and privileges
- Set up paging of users in the event of malfunctions
- Establish Text Console Redirection or KVM Console Video Redirection for remote system control via text display or full graphic display
- Access virtual media
- Set up server management groups
- Update firmware.

For detailed instructions about using any of these system management features, consult the *IPMI View User's Guide*.

# Updating the BIOS | IPMI

This topic provides instructions to download and install upgrades for the BIOS or IPMI of the VLS-300 server.

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**Note:** BIOS should only be updated by direction of Telestream Customer Service or field service bulletin.

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***CAUTION:*** Incorrectly installing or installing the incorrect BIOS | IPMI version can corrupt the server and require that you return it to Telestream for repair at your expense.

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## Pre-installation Requirements

Before upgrading the BIOS or IPMI, you must update the chipset and VGA drivers in order to avoid a failure upon system boot.

## Updating the Chipset and VGA Drivers

You can download the chipset and VGA drivers from Supermicro's website at the following link for the corresponding server:

supermicro.com/en/products/system/hyper/1u/sys-121h-tnr

The downloading and updating procedures for each server are similar.

### Downloading the Chipset

1. On the appropriate server's specification page, click Resources & Downloads.
2. Under Product Resources on the Supermicro Support page, select the OS manufacturer, the OS, and the Device Type. Click Submit.
3. Follow the link's Download Instructions to download the appropriate file.

### Downloading the VGA Driver

1. Under Drivers & Utilities, select the OS manufacturer, the OS, and the Device Type ASPEED Graphic. Click Submit.
2. Follow the link's Download Instructions to download the appropriate file.

## Driver Installation

Follow these steps to install the driver.

### Installing the Chipset Driver

To install the driver:

1. Browse to the folder location into which the driver was downloaded.
2. Extract the downloaded file and double-click the executable installation/setup file.

3. Follow the steps of the file's installer to complete the driver's installation.

### Installing the VGA Driver

To install the VGA driver:

1. Right-click the Windows Start menu in the taskbar and select Device Manager.
2. Expand Display Adapters.
3. Right-click ASPEED Graphics Family and select Update Driver:
4. Choose Browse My Computer to navigate the folder into which you downloaded the VGA driver and unzip or extract the file.
5. Navigate to the Windows WDDM folder:

   Example path `C:/PathToMyFiles/ASPEED/Windows WDDM/`
6. Choose the correct folder for the OS version installed.
7. Click Next to update the driver.

## Installing the BIOS and IPMI

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**Note:** BIOS should only be updated by direction of Telestream Customer Service or field service bulletin.

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***CAUTION:*** Incorrectly installing or installing the incorrect BIOS | IPMI version can corrupt the server and require that you return it to Telestream for repair at your expense.

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1. Click the following link to download the BIOS and IPMI files.
   supermicro.com/en/products/system/hyper/1u/sys-121h-tnr
2. Click Resources & Downloads, then BIOS Downloads to download the current versions.
3. To complete the installation, follow Supermicro's documentation included with the downloads of the BIOS and IPMI files.

# Installing New or Replacement Storage Drives

Follow these steps to remove a drive carrier from the chassis and replace a failing media storage drive or install a new one. Drives may be removed or replaced with power on. See *Drives* for details.

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***WARNING:*** *Only trained and qualified personnel should be allowed to install, replace, or service this equipment.*

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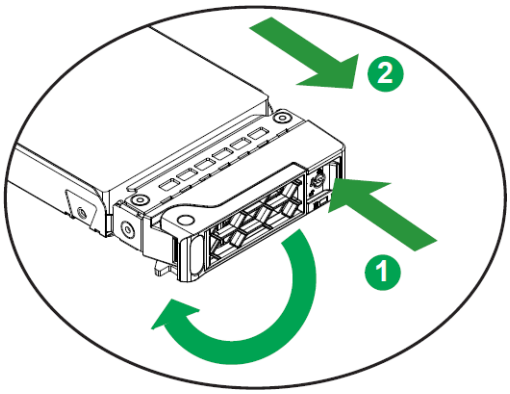
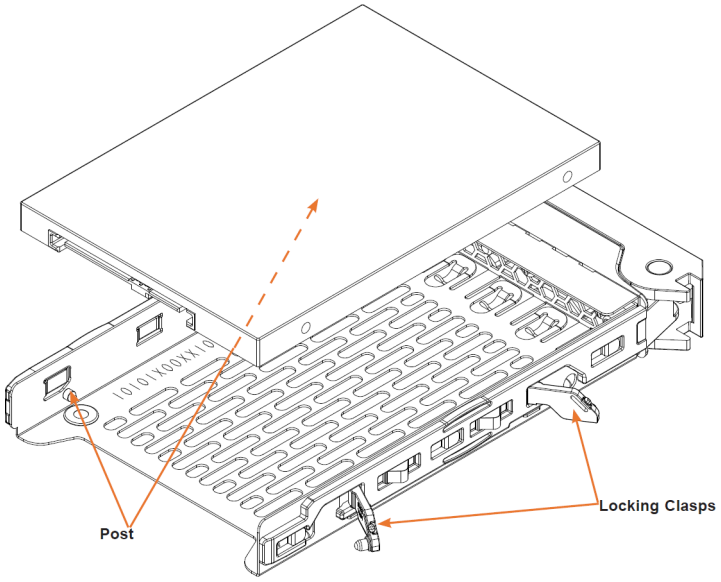
1. Remove the front bezel from the chassis.
2. Press the release button on the right front of the drive carrier to extend the drive carrier handle.
3. Use the drive carrier handle to pull the carrier out of the chassis.




4. Position the drive above the carrier with the PCB side facing down and the connector end toward the rear of the carrier.
5. Tilt the drive to insert it onto the two posts on the right inside of the carrier



6. Pull out the two spring locking clasps and allow the drive to sit fully in the carrier, then close them to secure the drive.
7. Insert the drive carrier into its bay, keeping the release button on the right. When the carrier reaches the rear of the bay, the release handle will retract.
8. Push the handle in until it clicks into its locked position.

## Rebuilding the Lightspeed RAID

If you receive a RAID error message from a Lightspeed server instructing you to rebuild a RAID drive, a tool and instructions for rebuilding the RAID are included in the software provided with the server. The path to the RAID UI and the docs is *C:\Program Files (x86)\Intel\Intel(R) Rapid Storage Technology enterprise*.

- The UI software is *IAStorUI.exe*.
- The IAStorUI documentation is *IAStorHelp.exe*.

## Replacing Power Supplies

The Lightspeed server includes two redundant, hot-pluggable power supply modules. They automatically sense the input voltage between 100V to 240V, and operate at that voltage. Power cords plug directly into the power supply units at the back of the chassis. The Power LED (fourth from left in control panel) lights solid green to indicate that the power supply is operating. When a fault is detected—the power supply fails or loses power—it blinks at 1 Hz and the Information LED (far left) lights red.

If either of the power supply modules fail, the other module will support the full load and will allow the system to continue operation without interruption. The PWR Fail LED will illuminate and remain on until the failed unit has been replaced. Replace with the same model. Replacement units can be ordered from Telestream. See *Obtaining Support | Information | Assistance*.

***WARNING:*** *Only trained and qualified personnel should be allowed to install, replace, or service this equipment.*

***WARNING: This unit has two power supply connections. Both connections must be removed to completely de-energize the unit.***

## Replacing the Power Supply

1. Unplug the AC power cord from the failed power supply module.
2. Push in the locking tab at the back of the module to release it.
3. Pull the unit straight out of the chassis.

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***CAUTION:*** the power supply may be very hot when first unplugged and could cause burns. Handle carefully by the edges and do not touch hot components.

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4. Insert the new unit into the chassis, pushing it in until it clicks firmly in place.
5. Reconnect the power cord.

# Return Material Authorization (RMA) Procedure

If your Lightspeed server needs service of any kind, regardless of whether you purchased it from Telestream or an authorized reseller, contact Telestream directly for return material authorization:

- *Email*: support@telestream.net
- *In the US, telephone*: 1-877-257-6245
- *From international locations, telephon*e: 1-530-470-2036.

Provide your organization name and contact information, the serial number of the inoperative unit, and request a Return Material Authorization.

Before returning your Lightspeed server, Telestream recommends that you back up the entire contents of all server drives. See *Backing up the Lightspeed Server* for details.