

ThinkStation P3 Ultra SFF Remote Solution User Guide

ThinkStation P3 Ultra SFF Gen1

ThinkStation P3 Ultra SFF Gen2

Lenovo



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Section 1 - Abstract

This document contains details intended to guide users with the correct steps to assemble and deploy the ThinkStation P3 Ultra SFF Remote Solution HyperShelf into a standard data center rack.

Section 2 - Hardware Overview

Remote Solution Components

The ThinkStation P3 Ultra SFF Remote Solution HyperShelf requires the following components.



Table 1. P3 Ultra SFF Remote Solution Components

Remote Solution Components	Quantity
P3 Ultra SFF HyperShelf Kit	1
ThinkStation P3 Ultra SFF Workstation	up to 7
ThinkStation BMC PCIE Adapter (Optional)	
P3 Ultra SFF Power Supply	
Ethernet Cables (10ft Recommended)	
Blanking Panel (Recommended)	1 per empty slot

Note: The P3 Ultra SFF HyperShelf supports up to 7 systems, if using less than 7 it is recommended to fill empty spaces with Blanking Plates.

HyperShelf Kit Components

Table 2. HyperShelf Kit Components

HyperShelf Kit	
(1) HyperShelf	
(1) Rail Kit	
(1) Fan Hardware Kit	
(1) Cable Management Arm Kit	
Rail Kit	
(1) Rail Assembly Pair	
(4) 8-32 x .250 Truss Head Screw	
Fan Hardware Kit	
(1) Fan Power Cord	

(2) 50" Velcro Wrap	
Cable Management Arm Kit	
(1) Cable Management Arm Assembly	
(1) 50" Velcro Wrap	
(6) 11" Cable Tie	
(8) 8-32 x .500 Truss Head Screw	
(2) 10-32 x .500 Pan Head Screw	
(2) 10-32 Cage Nut	

Recommended Configurations

The 7-unit **P3 Ultra SFF HyperShelf** requires a single part; there are recommended optional blanking plates and corresponding fan power cable outside of NA.

Rack Solutions
ThinkStation P3 Ultra SFF HyperShelf

Designed for data center environments and enterprise deployments, the Lenovo **ThinkStation P3 Ultra SFF HyperShelf** allows you to rack mount 7 workstations per 5U of rack space. This rack mount shelf provides a lower installation cost per device that doesn't interfere with the power button or peripheral ports.



Qty	Qty	Qty	Qty
1-24	25-99	100-199	200-500
4Z11Q46022	4Z11Q46023	4Z11Q46760	4Z11Q46761

Rack Solutions
Blanking Plate

The **Blanking Plate** is an accessory for the ThinkStation P3 Ultra SFF HyperShelf to ensure efficient cooling when the hypershelf is not fully populated. Warm air is exhausted through the fan to the rear of the hypershelf.



Qty	Qty	Qty	Qty
1-24	25-99	100-199	200+
4Z11U36605	4Z11U36606	4Z11U36607	4Z11U36608

Rack Solutions
C14 Fan Cable

Hyper Shelves are equipped with a standard 6ft Fan Cable with a NEMA 1-15P Plug to a Fan Terminal Receptacle. The **C14 6ft Fan Cable** with a IEC C14 plug to a Fan Terminal Receptacle is compatible with standard data center C13 outlets.



Qty	Qty	Qty	Qty
1-24	25-99	100-199	200-500
4Z11U36609	4Z11U36610	4Z11U36611	4Z11U36612

Optional

Designed for data center environments and enterprise deployments, the Lenovo **ThinkStation P3 Ultra HyperShelf** allows you to rack mount 7 workstations per 5U of rack space. This rack mount shelf provides a lower installation cost per device that doesn't interfere with the power button or peripheral ports.

WW Enabled PNs. Pricing includes shipping Lenovo Distribution hub from Rack Solutions.



Qty	Qty	Qty	Qty
1-24	25-99	100-199	200-500
4Z11Q46022	4Z11Q46023	4Z11Q46760	4Z11Q46761

The **Blanking plate** is an accessory for the ThinkStation P3 Ultra SFF HyperShelf to ensure efficient cooling when the hypershelf is not fully populated. Warm air is exhausted through the fan to the rear of the hypershelf.

WW Enabled PNs. Requires P3 Ultra HyperShelf. Pricing includes shipping Lenovo Distribution hub from Rack Solutions.



Qty	Qty	Qty	Qty
1-24	25-99	100-199	200+
4Z11U36605	4Z11U36606	4Z11U36607	4Z11U36608

Hyper Shelves are equipped with a standard 6ft Fan Cable with a NEMA 1-15P Plug to a Fan Terminal Receptacle. The **C14 6ft Fan Cable** with a IEC C14 plug to a Fan Terminal Receptacle is compatible with standard data center C13 outlets.

WW Enabled PNs. Pricing includes shipping Lenovo Distribution hub from Rack Solutions.



Qty	Qty	Qty	Qty
1-24	25-99	100-199	200-500
4Z11U36609	4Z11U36610	4Z11U36611	4Z11U36612

Three additional parts are needed for the **4-unit P3 Ultra SFF bracket solution**.



Rack Solutions
1U Modular Sliding Shelf 28"

The **1U Modular Sliding Shelf 28"** allows the most flexibility and space possible in a modular shelf. With this model, you will be able to choose from the full selection of brackets that we offer. Ball-bearing slide rails are utilized for increased accessibility, making for faster and easier serviceability of the hardware.

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Rack Solutions
1U Modular Sliding Shelf 28"

The **1U Modular Sliding Shelf 28"** allows the most flexibility and space possible in a modular shelf. Ball-bearing slide rails are utilized for increased accessibility, making for faster and easier serviceability of the hardware.

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Rack Solutions
Cable Management Arm

The **Cable Management Arm** is a fully adjustable, ruggedized solution. There are a number of ways to attach the cable management arm to different types of equipment. It is compact and will ensure that cable management from rack mounted workstations is clean and easy to manage.

The **1U Modular Sliding Shelf 28"** allows the most flexibility and space possible in a modular shelf. With this model, you will be able to choose from the full selection of brackets that we offer. Ball-bearing slide rails are utilized for increased accessibility, making for faster and easier serviceability of the hardware.

WW Enabled PNs. Requires Modular shelf and cable management arm. Pricing includes shipping to Lenovo Distribution hub from Rack Solutions.

Qty 1-24	Qty 25-99	Qty 100-199	Qty 200+
4Z11U36613	4Z11U36614	4Z11U36595	4Z11U36596

The **1U Modular Sliding Shelf 28"** allows the most flexibility and space possible in a modular shelf. Ball-bearing slide rails are utilized for increased accessibility, making for faster and easier serviceability of the hardware.

WW Enabled PNs. Requires Modular shelf and cable management arm. Pricing includes shipping to Lenovo Distribution hub from Rack Solutions.

Qty 1-24	Qty 25-99	Qty 100-199	Qty 200+
4Z11U36597	4Z11U36598	4Z11U36599	4Z11U36600

The **Cable Management Arm** is a fully adjustable, ruggedized solution. There are a number of ways to attach the cable management arm to different types of equipment. It is compact and will ensure that cable management from rack mounted workstations is clean and easy to manage.

WW Enabled PNs. Requires Modular shelf. Pricing includes shipping to Lenovo Distribution hub from Rack Solutions.

Qty 1-24	Qty 25-99	Qty 100-199	Qty 200+
4Z11U36601	4Z11U36602	4Z11U36603	4Z11U36604

P3 Ultra SFF Power Supply Consideration

The P3 Ultra SFF does not have an internal power supply. Instead, it is powered by an external power adapter as shown in Figure 1. There are different power adapters available for both generations of the P3 Ultra SFF.

Each P3 Ultra SFF will come with the correct power adapter. However, if components are upgraded, please refer to the power configurators below as guides to help make the best decisions when choosing the correct power adapter for your hardware configuration.

[ThinkStation P3 Ultra SFF Gen 1 Power Configurator](#)

[ThinkStation P3 Ultra SFF Gen 2 Power Configurator](#)

Figure 1 – P3 Ultra SFF Workstation Power Adapter



HyperShelf Power Demand

A fully populated P3 Ultra SFF HyperShelf Remote Solution consisting of the highest configuration P3 Ultra SFF Workstations would have a maximum power requirement of 2350 watts. Please ensure demanded wattage does not exceed circuit supply.

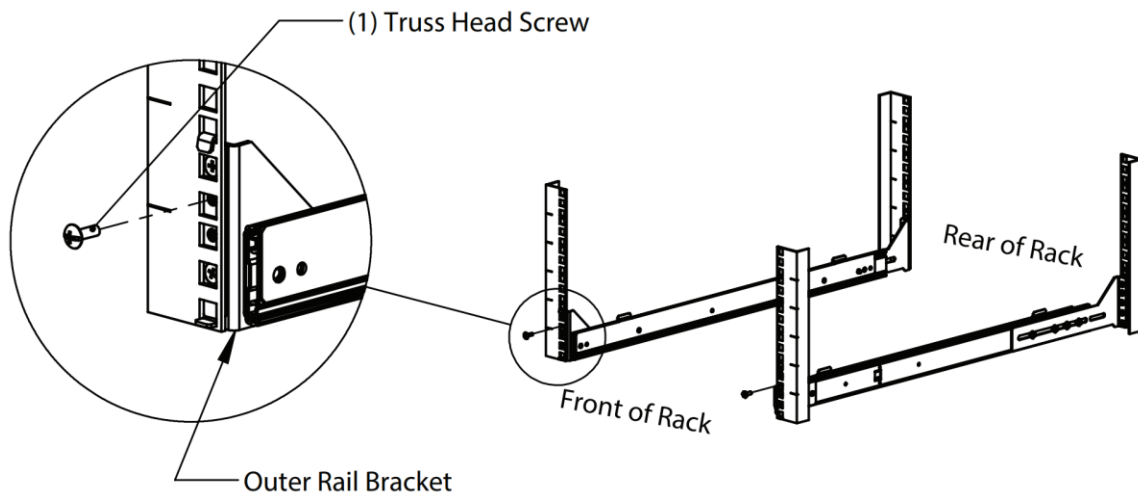
- **P3 Ultra SFF Workstations:** Require up to a total of **2310 watts**
- **Ventilation Fans:** Require **9.5 watts**
- **Total Power Recommendation:** **2350 watts**

Section 3 - Hardware Installation

HyperShelf Rack Installation

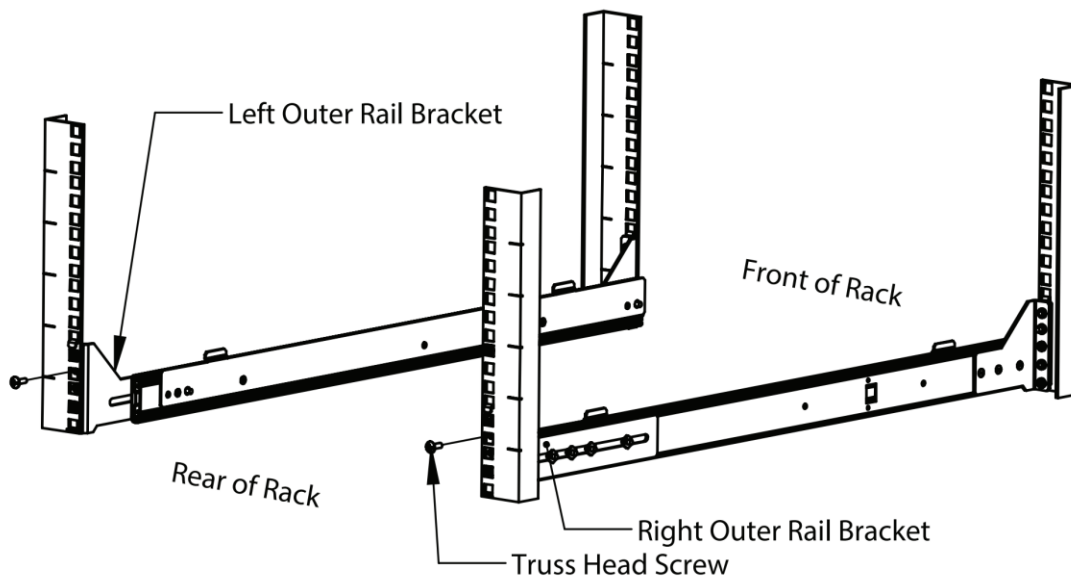
Attach the rail assemblies from the HyperShelf rail kit to the rack by hooking the top of the Outer Rail Bracket into the top of the "U" space. Secure the rails by installing (1) 8-32 x .500 Truss Head Screw per side into the Outer Rail Bracket.

Figure 2 – Attaching HyperShelf Rail Assemblies to the Rack



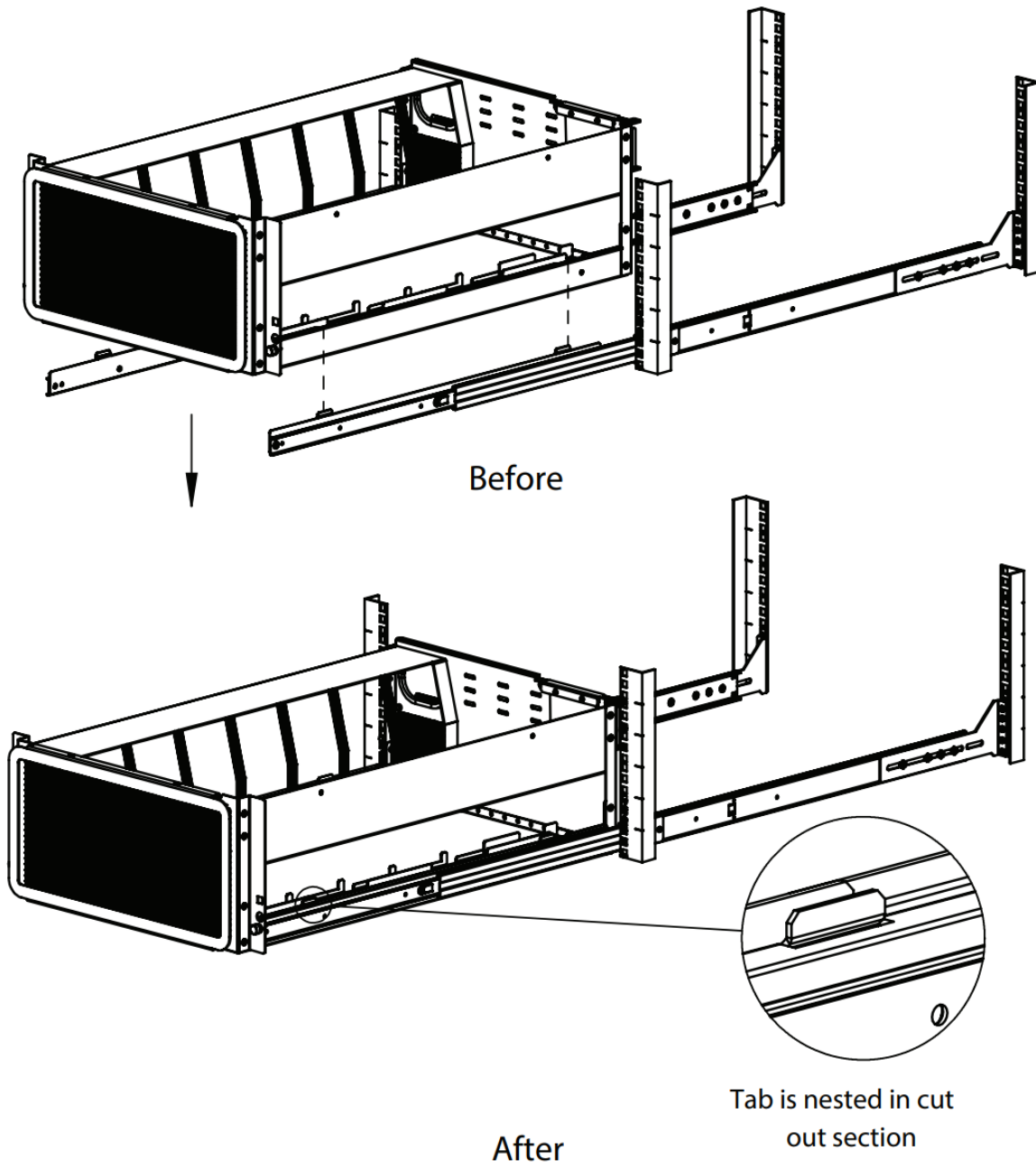
Secure the rear of the rail assemblies by installing (1) 8-32 x .500 Truss Head Screw into the right and left Outer Rail Bracket.

Figure 3 – Securing the HyperShelf Rail Assemblies to the Rack



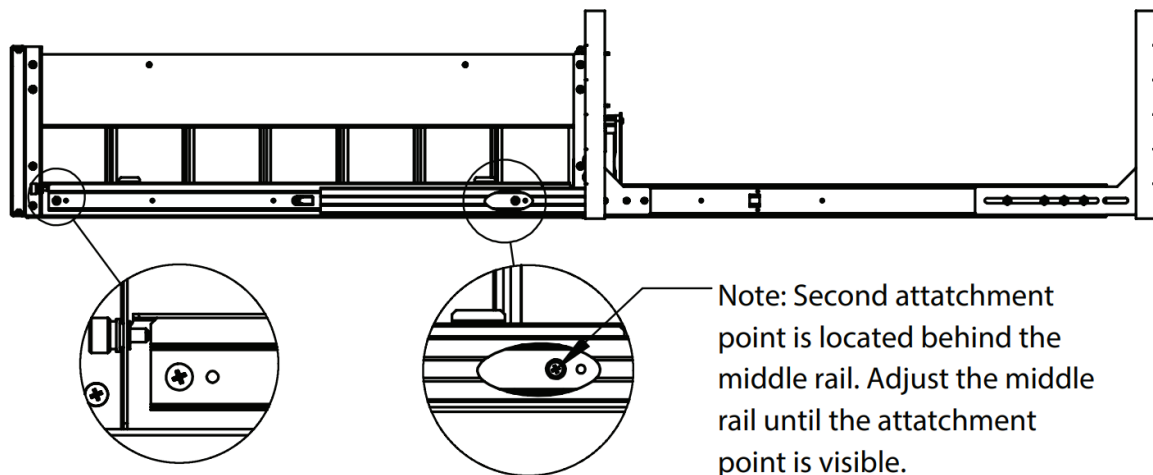
Install the HyperShelf into the rack. The rails should be fully extended, and side panels removed, Align the shelf with the rail side tabs and place the shelf on the rails.

Figure 4 – Installing the HyperShelf into the Rack



Secure the HyperShelf by installing (2) 8-32 x .250 Truss Head Screw provided in the Rail Kit into the inner rail attachment points on each side of the shelf.

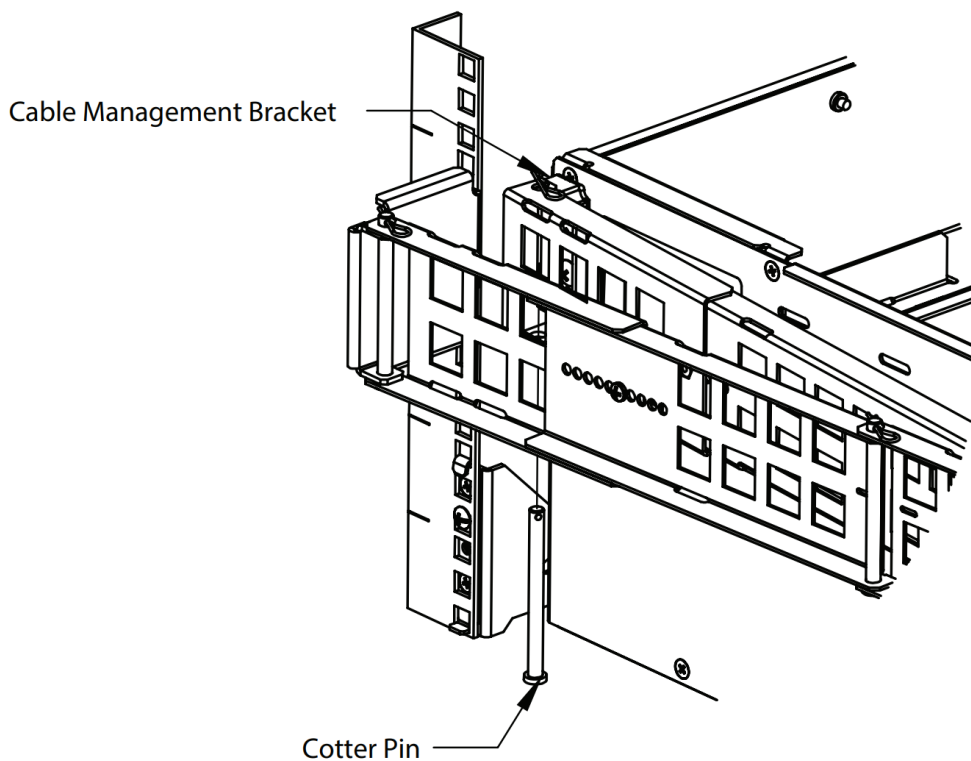
Figure 5 – Securing the HyperShelf to its Rails



Cable Management Arm Installation

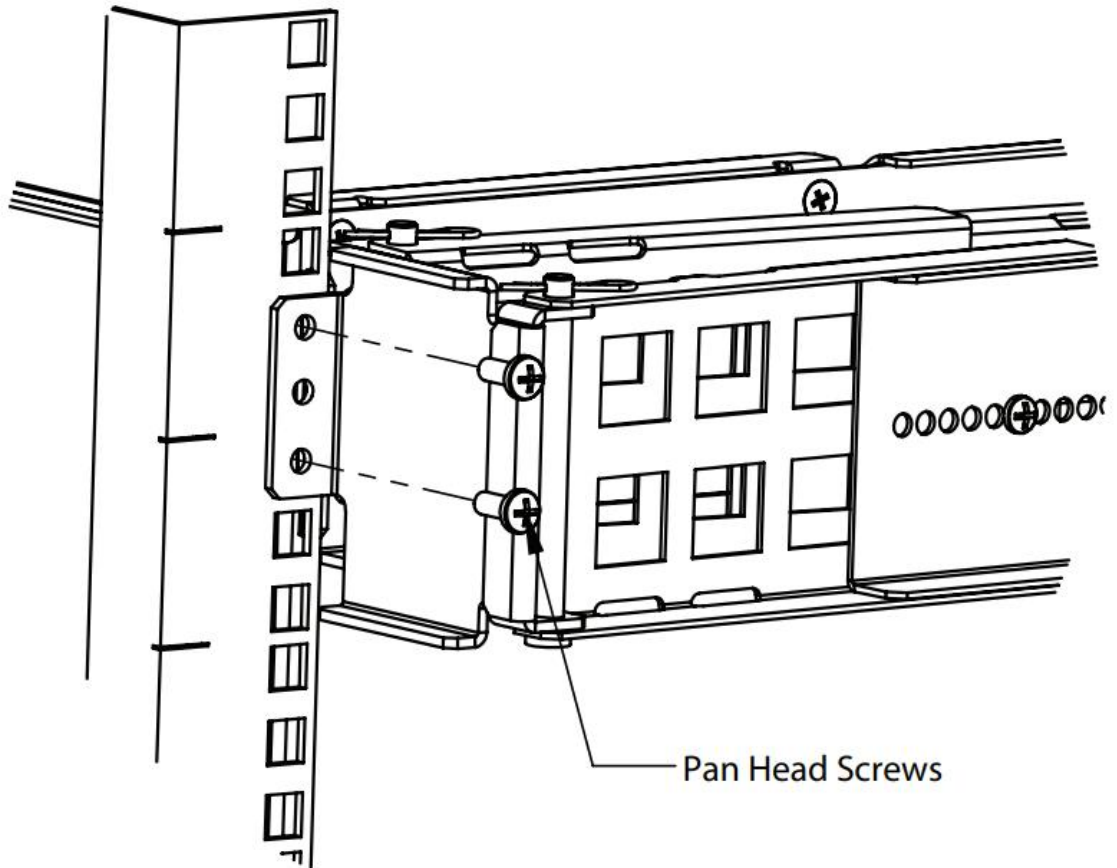
Attach the Cable Management Arm to the HyperShelf by putting the Cotter Pin through the Cable Management Bracket attached to the shelf. Secure with the hairpin.

Figure 6 – Securing the HyperShelf to its Rails



Secure the Cable Management Arm to the rack by installing (2) 10-32 x .500 Pan Head Screw provided in the Cable Management Arm Kit through the rack mounted Cable Management Bracket using provided cage nuts.

Figure 7 – Securing the Cable Management Arm to the Rack

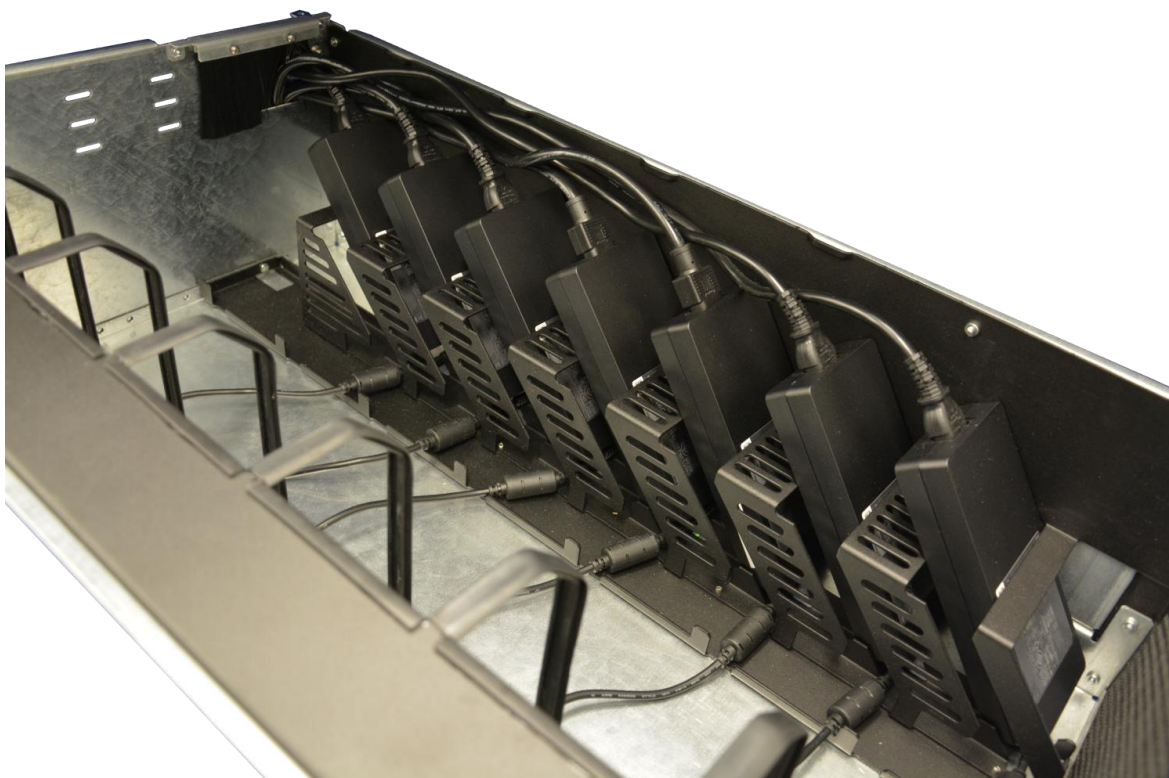


Installing P3 Ultra SFF Workstations Power Adapters

Place the power supplies into their designated slots and route the power cables as shown in Figure 8.

Note: P3 Ultra SFF power adapters are available in a range of 170W up to 330W depending on the system generation and configuration. It is recommended to check each power adapter wattage against the system configuration to ensure it will supply adequate power.

Figure 8 – Power Adapter Placement and Cable Routing

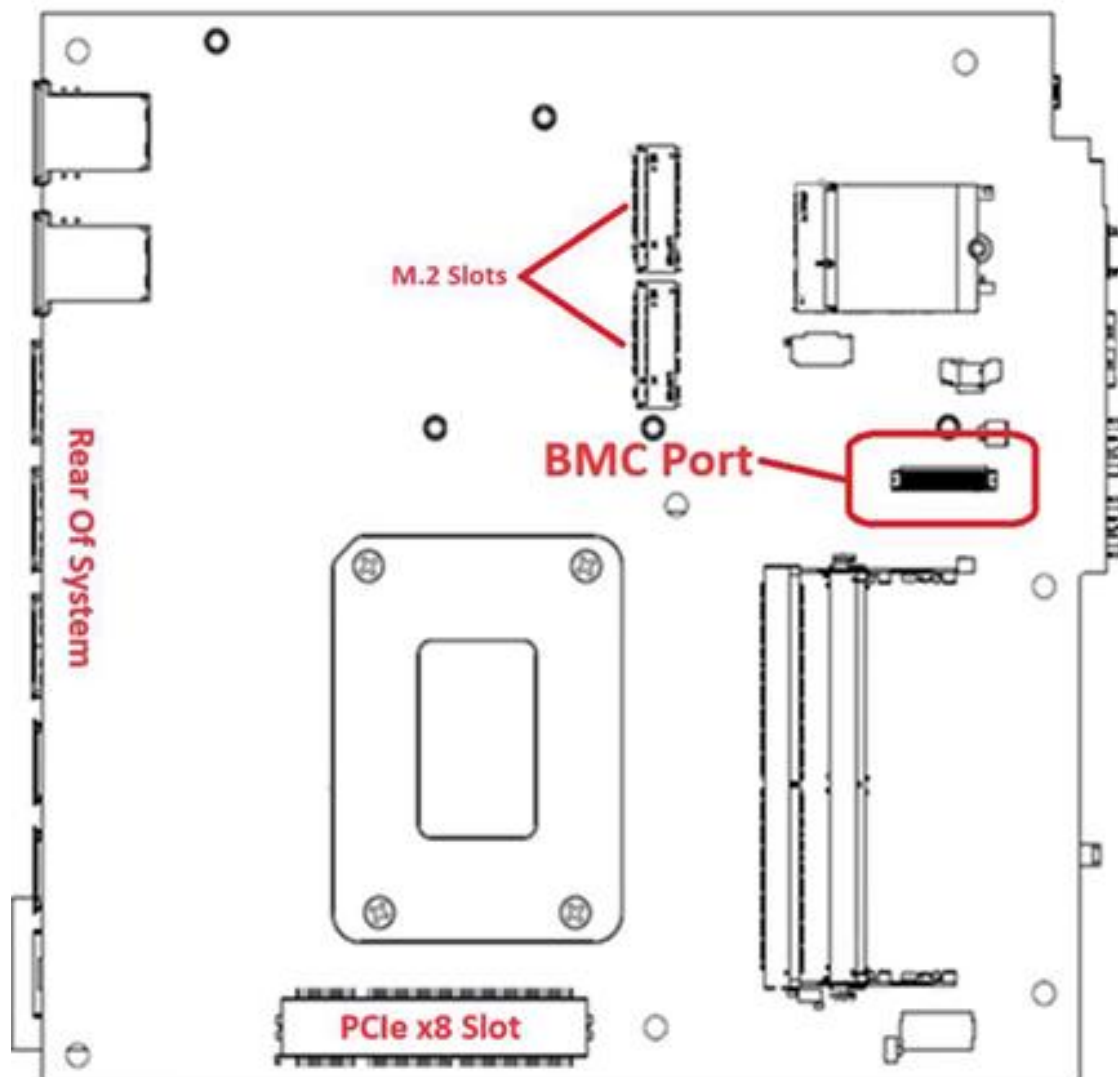


Installing BMC Cards

A Baseboard Management Controller (BMC) is a dedicated hardware controller for monitoring and controlling remotely located hardware.

If you use BMC cards, they must be installed in the PCIe x8 slot adjacent to the M.2 location as shown in Figure 9.

Figure 9 - P3 Ultra SFF Motherboard BMC Port Location (M.2 SSD side)



Connecting your BMC card to the 1Gb onboard ethernet port is recommended as it facilitates a passthrough network connection in tandem with the BMC remote control and monitoring features all in a single cable for improved cable management.

For additional information please review our detailed BMC installation and setup instructions available here [ThinkStation BMC Installation Guide](#).

Installing P3 Ultra SFF Workstations

Slide each P3 Ultra SFF Workstation down into its slot on the HyperShelf.

Figure 10 – Sliding P3 Ultra SFF Workstations into HyperShelf Slot



Now connect power and ethernet. A fully populated HyperShelf should appear as shown in Figure 11.

Figure 11 – HyperShelf Fully Populated with Ethernet and Power Cables Routed



In some configurations, not all slots on the HyperShelf will be occupied. Blanking panels are an optional add-on to ensure optimal airflow. Install these panels in any unused slots as shown in Figure 12.

Figure 12 – Blanking Panel Installation



Final HyperShelf Assembly

Attach the side panel opposite the power supplies to the HyperShelf and secure it by fastening the built-in spring loaded screws.

Figure 13 – Securing the Side Panel to the HyperShelf



Connect the HyperShelf fan power cable as shown in Figure 14.

Figure 14 – Connecting the Fan Power Cable to the HyperShelf



Section 4 - Software Recommendations

Management Recommendations

Two recommended options for remote software are Mechdyne TGX and Windows RDP.

TGX is a remote desktop workstation which enables the visualization of the most intensive graphics applications up to 4K resolution with like-local responsiveness. TGX eliminates disruptions in workflow by delivering an in-office experience from anywhere. Remote workstation capabilities support workplace mobility, remote team collaboration, and enable business continuity.

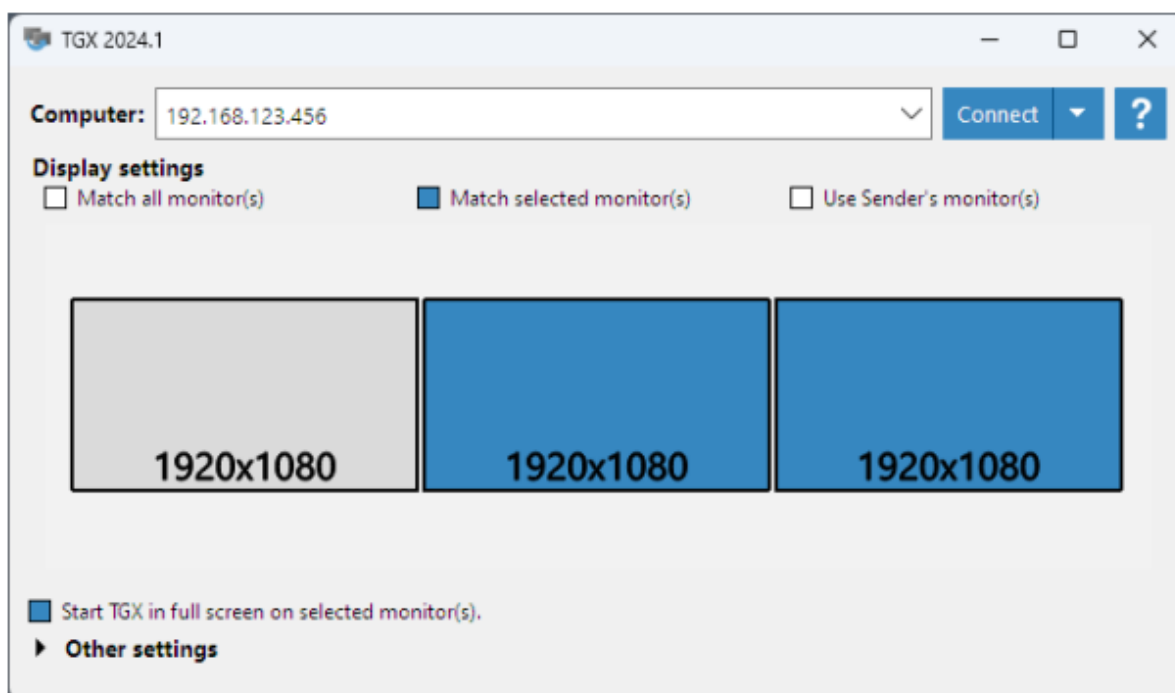
RDP is a proprietary protocol developed by Microsoft that allows a user to remotely connect to another Windows computer with a graphical interface. This is commonly used for remote administration, technical support, or accessing files and applications from afar.

Making a TGX Connection

Start the TGX Launcher to make a connection.

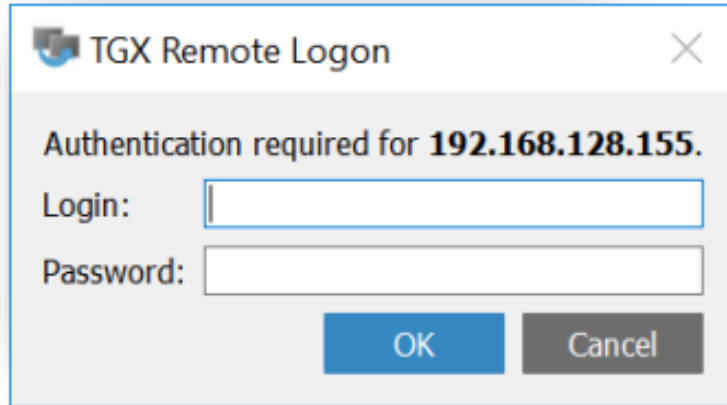
On Windows, the Launcher can be found in the Start menu.

On Linux, Click Applications > Internet > Mechdyne TGX



Enter the hostname or IP address of the computer running the TGX Sender or use the chevron to select from a list of previously visited senders

Click Connect then an authentication dialogue is provided for login credentials.



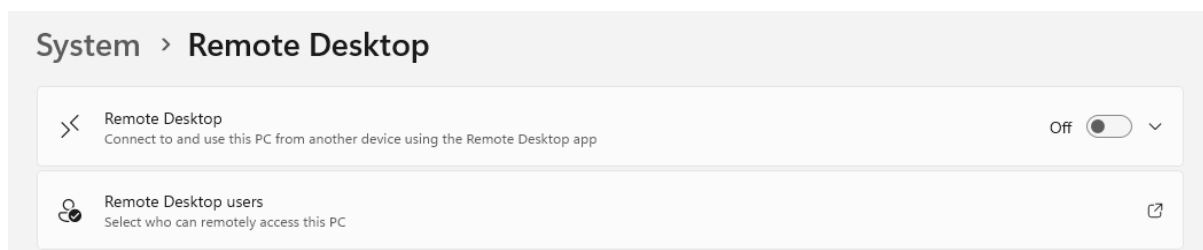
Upon successful connection, the TGX Launcher GUI is replaced by the TGX Receiver GUI which shows the Sender desktop according to the requested View Mode and Remote Display settings.

For more details on Mechdyne TGX please refer to the [TGX User Guide](#).

Making an RDP Connection

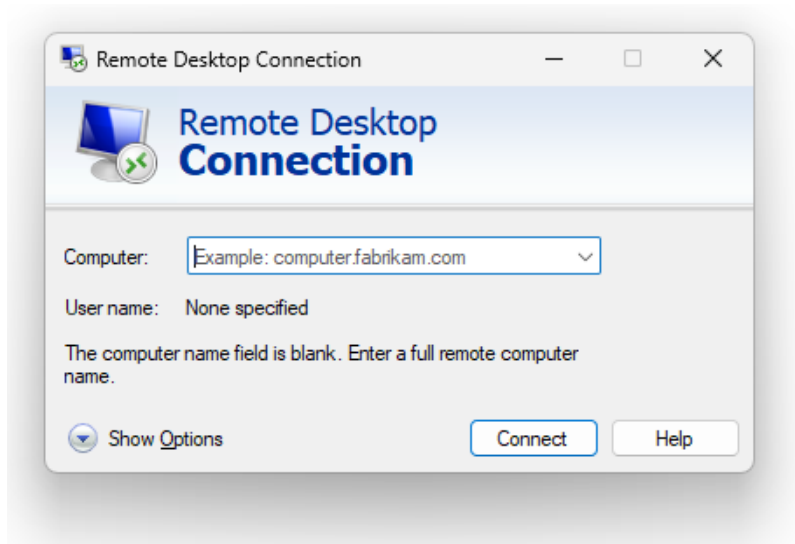
Set up the PC you want to connect to so it allows remote connections:

- Select Start, and open Settings. Then, under System, select Remote Desktop, set Remote Desktop to On, and then select Confirm.
- Make note of the name of this PC under PC name. You'll need this later.



Use Remote Desktop to connect to the PC you set up:

- On your local Windows PC: In the search box on the taskbar, type Remote Desktop Connection, and then select Remote Desktop Connection.



- In Remote Desktop Connection, type the name of the PC you want to connect to and then select Connect.

Connection Broker Recommendation

The Leostream Remote Desktop Access Platform lies at the heart of any hosted desktop deployment and is the key component for provisioning resources in the cloud, assigning and connecting end users to resources, and managing the end user's remote session.

Please refer to the [Leostream Quick Start Guide](#) for details.

Mechdyne TGX Part Numbers

Lenovo Part Number	Description
4L40T77800	TGX Perpetual License with maintenance and support for one year term
4L41A21633	TGX Perpetual License with maintenance and support for one year term (Minimum order quantity 50)
4L41A21635	TGX Perpetual License with maintenance and support for one year term (Minimum order quantity 150)
4L41A21638	TGX Perpetual License with maintenance and support for one year term (Minimum order quantity 300)
4L40T77801	TGX Perpetual License with maintenance and support for a 3-year term with multi-year discount
4L41A21639	TGX Perpetual License with maintenance and support for a 3-year term with multi-year discount (Minimum order quantity 50)
4L41A21641	TGX Perpetual License with maintenance and support for a 3-year term with multi-year discount (Minimum order quantity 150)
4L41A40242	TGX Perpetual License with maintenance and support for a 3-year term with multi-year discount (Minimum order quantity 300)
4L40T77802	Additional maintenance and support for one year term for an existing TGX Perpetual License
4L41A40243	Additional maintenance and support for one year term for an existing TGX Perpetual License (Minimum order quantity 50)
4L41A40245	Additional maintenance and support for one year term for an existing TGX Perpetual License (Minimum order quantity 150)
4L41A40248	Additional maintenance and support for one year term for an existing TGX Perpetual License (Minimum order quantity 300)
4L40T77803	TGX Subscription License, 1-year term, includes maintenance & support
4L41A40249	TGX Subscription License, 1-year term, includes maintenance & support (Minimum order quantity 50)
4L41A40251	TGX Subscription License, 1-year term, includes maintenance & support (Minimum order quantity 150)
4L41A40254	TGX Subscription License, 1-year term, includes maintenance & support (Minimum order quantity 300)



Leostream Part Numbers

Lenovo Part Number	Description
4L41T84990	Leostream Platform Subscription - User License
4L41T84991	Leostream Platform Subscription - Desktop License



Revision History

V.	Date	Author	Changes/Updates
1.0	7/24/2025	Zihan Dong & Alex Hunnicutt-La	Initial Release
2.0	9/29/2025	Zihan Dong & Alex Hunnicutt-La	Updated guide to match new power supply configuration scheme. Added recommended configurations section.

