

## ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU Product Guide (withdrawn product)

The NVIDIA RTX™ A6000, built on the NVIDIA Ampere architecture, delivers everything designers, engineers, scientists, and artists need to meet the most graphics and compute-intensive workflows. The RTX A6000 is equipped with the latest generation RT Cores, Tensor Cores, and CUDA® cores for unprecedented rendering, AI, graphics, and compute performance.

Unlock the next generation of revolutionary designs, scientific breakthroughs, and immersive entertainment with the NVIDIA RTX A6000, the world's most powerful visual computing GPU. With cutting-edge performance and features, the RTX A6000 lets you work at the speed of inspiration—to tackle the urgent needs of today and meet the rapidly evolving, compute-intensive tasks of tomorrow.



Figure 1. ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU

### Did you know?

Certified with a broad range of professional applications, tested by leading independent software vendors (ISVs) and workstation manufacturers, and backed by a global team of support specialists, NVIDIA RTX is the visual computing solution of choice for demanding enterprise deployments.

## Part number information

The following table shows the part numbers for the RTX A6000 GPU.

**Withdrawn:** The NVIDIA RTX A6000 GPU is now withdrawn from marketing.

Table 1. Ordering information

Part number	Feature code	Description
4X67A71310	BFT0	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU

The PCIe option part numbers includes the following:

- One RTX A6000 GPU with full-height (3U) adapter bracket attached
- Documentation

## Features

The ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU offers the following features:

- **NVIDIA Ampere Architecture**  
NVIDIA® RTX™ technology revolutionized professional visual computing forever. The NVIDIA Ampere architecture builds on the power of RTX to significantly enhance the performance of rendering, graphics, AI, and compute workloads. Engineered to perfection and featuring cutting-edge innovations, the NVIDIA Ampere architecture takes RTX to new heights for professional workloads.
- **Third-Generation Tensor Cores**  
New Tensor Float 32 (TF32) precision provides up to 5X the training throughput over the previous generation to accelerate AI and data science model training without requiring any code changes. Hardware support for structural sparsity doubles the throughput for inferencing. Tensor Cores also bring AI to graphics with capabilities like DLSS, AI denoising, and enhanced editing for select applications.
- **Second-Generation RT Cores**  
With up to 2X the throughput over the previous generation and the ability to concurrently run ray tracing with either shading or denoising capabilities, second-generation RT Cores deliver massive speedups for workloads like photo-realistic rendering of movie content and virtual prototyping of product designs. This technology also speeds up the rendering of ray-traced motion blur for faster results with greater visual accuracy.
- **Third-Generation NVLink**  
Third-generation NVIDIA NVLink® technology enables users to connect two GPUs together to share GPU performance and memory. With up to 112 gigabytes per second (GB/s) of bidirectional bandwidth and combined graphics memory of up to 96 GB, professionals can tackle the largest rendering, AI, virtual reality, and visual computing workloads. The new NVLink connector also features a shorter Z height, which enables NVLink functionality in a wider range of chassis.
- **NVIDIA Ampere Architecture-based CUDA Cores**  
The NVIDIA Ampere architecture's CUDA® cores bring double-speed processing for single-precision floating point (FP32) operations and are up to 2X more power efficient than Turing GPUs. This provides significant performance gains for graphics workflows like 3D model development and compute workflows like desktop simulation for computer-aided engineering (CAE).
- **PCI Express Gen 4.0**

NVIDIA Ampere architecture-based GPUs support PCIe Gen 4.0, which provides 2X the bandwidth of PCIe Gen 3.0. This improves data transfer speeds from CPU memory for data-intensive tasks such as AI and data science. Faster PCIe performance also accelerates GPU direct memory access (DMA) transfers, enabling faster video data transfers from GPUDirect® for video-enabled devices and faster input/output I/O) with GPUDirect Storage.

## Technical specifications

The following table lists the specifications of the RTX A6000 GPU.

Table 2. NVIDIA RTX A6000 specifications

Feature	Specification
GPU Memory	48 GB GDDR6
Memory Interface	384-bit
Memory Bandwidth	Up to 768 GB/s
ECC	Yes
NVIDIA CUDA Cores	10,752
NVIDIA Tensor Cores	336
NVIDIA RT Cores	84
Single-Precision Performance	38.7 TFLOPS (peak)
RT Core performance	75.6 TFLOPS (peak)
Tensor Performance	309.7 TFLOPS (peak)
Host Interface	PCI Express 4.0 x 16
NVLink support	Yes; 1x NVLink Bridge supported per pair of GPUs
Power Consumption	300 W
Thermal Solution	Active cooling
Form Factor	4.4" H x 10.5" L, Dual Slot, Full Height, Full Length
Display Connectors	4x DisplayPort 1.4a
Maximum simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
Encode / Decode Engines	1x encode, 2x decode (+AV1 decode)
VR Ready	Yes
vGPU software support	NVIDIA vPC/vApps, NVIDIA RTX Virtual Workstation, NVIDIA Virtual Compute Server
vGPU profiles supported	1 GB, 2 GB, 3 GB, 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 24 GB, 48 GB
Graphics APIs	DirectX 12.07, Shader Model 5.17, OpenGL 4.68, Vulkan 1.18
Compute APIs	CUDA, DirectCompute, OpenCL

## Server support

The following tables list the ThinkSystem servers that are compatible.

Table 3. Server support (Part 1 of 5)

Part Number	Description	AMD V3				2S Intel V3/V4				Multi Node V3	1S V3						
		SR635 V3 (7D9H / 7D9G)	SR655 V3 (7D9F / 7D9E)	SR645 V3 (7D9D / 7D9C)	SR665 V3 (7D9B / 7D9A)	ST650 V3 (7D7B / 7D7A)	SR630 V3 (7D72 / 7D73)	SR650 V3 (7D75 / 7D76)	SR630 V4 (7DG8 / 7DG9)	SR650 V4 (7DGC / 7DGD)	SR650a V4 (7DGC / 7DGD)	SD535 V3 (7DD8 / 7DD1)	SD530 V3 (7DDA / 7DD3)	SD550 V3 (7DD9 / 7DD2)	ST45 V3 (7DH4 / 7DH5)	ST50 V3 (7DF4 / 7DF3)	ST250 V3 (7DCF / 7DCE)
4X67A71310	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	N	3	N	3	4	N	3	N	N	N	N	N	N	N	N	N

Table 4. Server support (Part 2 of 5)

Part Number	Description	4S 8S Intel V3/V4				GPU Rich				Edge								
		SR850 V3 (7D97 / 7D96)	SR860 V3 (7D94 / 7D93)	SR950 V3 (7DC5 / 7DC4)	SR850 V4 (7DJT / 7DJS)	SR860 V4 (7DJQ / 7DJN)	SR670 V2 (7Z22 / 7Z23)	SR675 V3 (7D9Q / 7D9R)	SR680a V3 (7DHE)	SR680a V3 B200 (7DM9)	SR685a V3 (7DHC)	SR780a V3 (7DJ5)	SR680a V4 (7DMK)	SE100 (7DGR)	SE350 (7Z46 / 7D1X)	SE350 V2 (7DA9)	SE360 V2 (7DAM)	SE450 (7D8T)
4X67A71310	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	2	4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Table 5. Server support (Part 3 of 5)

Part Number	Description	Super Computing						1S Intel V2		2S Intel V2		AMD V1						
		SC750 V4 (7DDJ)	SC777 V4 (7DKA)	SD665 V3 (7D9P)	SD665-N V3 (7DAZ)	SD650 V3 (7D7M)	SD650-I V3 (7D7L)	SD650-N V3 (7D7N)	ST50 V2 (7D8K / 7D8J)	ST250 V2 (7D8G / 7D8F)	SR250 V2 (7D7R / 7D7Q)	ST650 V2 (7Z75 / 7Z74)	SR630 V2 (7Z70 / 7Z71)	SR650 V2 (7Z72 / 7Z73)	SR635 (7Y98 / 7Y99)	SR655 (7Y00 / 7Z01)	SR645 (7D2Y / 7D2X)	SR665 (7D2W / 7D2V)
4X67A71310	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	N	N	N	N	N	N	N	N	N	4	N	3	N	N	N	N	N

Table 6. Server support (Part 4 of 5)

Part Number	Description	Dense V2				4S V2	8S	4S V1		1S Intel V1					
		SD630 V2 (7D1K)	SD650 V2 (7D1M)	SD650-N V2 (7D1N)	SN550 V2 (7Z69)	SR850 V2 (7D31 / 7D32)	SR860 V2 (7Z59 / 7Z60)	SR950 (7X11 / 7X12)	SR850 (7X18 / 7X19)	SR850P (7D2F / 2D2G)	SR860 (7X69 / 7X70)	ST50 (7Y48 / 7Y50)	ST250 (7Y45 / 7Y46)	SR150 (7Y54)	SR250 (7Y52 / 7Y51)
4X67A71310	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Table 7. Server support (Part 5 of 5)

Part Number	Description	2S Intel V1						Dense V1					
		ST550 (7X09 / 7X10)	SR530 (7X07 / 7X08)	SR550 (7X03 / 7X04)	SR570 (7Y02 / 7Y03)	SR590 (7X98 / 7X99)	SR630 (7X01 / 7X02)	SR650 (7X05 / 7X06)	SR670 (7Y36 / 7Y37)	SD530 (7X21)	SD650 (7X58)	SN550 (7X16)	SN850 (7X15)
4X67A71310	ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU	N	N	N	N	N	N	2	N	N	N	N	N

## Operating system support

The following table lists the supported operating systems:

**Tip:** These tables are automatically generated based on data from [Lenovo ServerProven](#).

Table 8. Operating system support for ThinkSystem NVIDIA RTX A6000 48GB PCIe Active GPU, 4X67A71310

Operating systems	SR650 (Xeon Gen 2)	SR655	SR665 V3	SR650 V2	ST650 V2	ST650 V2	SR650 V3 (4th Gen Xeon)	SR655 V3	SR850 V3	SR860 V3	ST650 V3 (4th Gen Xeon)	SR650 V3 (5th Gen Xeon)	ST650 V3 (5th Gen Xeon)
Microsoft Windows 10	N	N	Y	N	N	N	Y	Y	N	N	N	Y	N
Microsoft Windows 11	N	N	Y	N	N	N	Y	Y	N	N	N	Y	N
Microsoft Windows Server 2016	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N
Microsoft Windows Server 2019	Y	N	Y	Y	Y	Y	Y	Y	Y <sup>2</sup>	Y <sup>2</sup>	Y	Y	Y
Microsoft Windows Server 2022	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2025	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Red Hat Enterprise Linux 7.7	Y	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.8	Y	N	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 7.9	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N
Red Hat Enterprise Linux 8.1	Y	Y <sup>1</sup>	N	N	N	N	N	N	N	N	N	N	N
Red Hat Enterprise Linux 8.2	Y	Y <sup>1</sup>	N	Y	Y	Y	N	N	N	N	N	N	N
Red Hat Enterprise Linux 8.3	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N
Red Hat Enterprise Linux 8.4	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N
Red Hat Enterprise Linux 8.5	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N
Red Hat Enterprise Linux 8.6	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Red Hat Enterprise Linux 8.7	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Red Hat Enterprise Linux 8.8	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.9	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Red Hat Enterprise Linux 8.10	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Red Hat Enterprise Linux 9.0	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Red Hat Enterprise Linux 9.1	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Red Hat Enterprise Linux 9.2	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Red Hat Enterprise Linux 9.4	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Red Hat Enterprise Linux 9.5	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Red Hat Enterprise Linux 9.6	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Red Hat Enterprise Linux 10.0	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 15 SP1	Y	N	N	N	N	N	N	N	N	N	N	N	N

	SR650 (Xeon Gen 2)	SR655	SR665 V3	SR650 V2	ST650 V2	ST650 V2	SR650 V3 (4th Gen Xeon)	SR655 V3	SR850 V3	SR860 V3	ST650 V3 (4th Gen Xeon)	SR650 V3 (5th Gen Xeon)	ST650 V3 (5th Gen Xeon)
<b>Operating systems</b>													
SUSE Linux Enterprise Server 15 SP2	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 15 SP3	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 15 SP4	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
SUSE Linux Enterprise Server 15 SP5	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP6	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 15 SP7	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Ubuntu 18.04.5 LTS or later with HWE kernel	N	N	N	Y	Y	Y	N	N	N	N	N	N	N
Ubuntu 20.04.5 LTS or later with HWE kernel	N	N	Y	N	N	N	N	Y	Y	Y	N	N	N
Ubuntu 20.04 LTS or later with HWE kernel	N	N	N	Y	N	N	N	N	N	N	N	N	N
Ubuntu 22.04.3 LTS or later with HWE kernel	N	N	N	N	N	N	N	N	N	N	N	N	Y
Ubuntu 22.04.5 LTS or later with HWE kernel	N	N	Y	N	N	N	N	N	N	N	N	N	N
Ubuntu 22.04 LTS or later with HWE kernel	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y <sup>3</sup>	N
Ubuntu 24.04 LTS or later with HWE kernel	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U3	Y	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U1	Y	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U2	Y	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U3	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 7.0	Y	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 7.0 U1	Y	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 7.0 U2	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 7.0 U3	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0	Y	N	Y	Y	Y	Y	Y	Y	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 8.0 U1	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
VMware vSphere Hypervisor (ESXi) 8.0 U2	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0 U3	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 9.0	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y

<sup>1</sup> The OS is not supported with EPYC 7003 processors.

<sup>2</sup> For limitation, please refer [Support Tip TT1591](#)

<sup>3</sup> Ubuntu 22.04.3 LTS/Ubuntu 22.04.4 LTS

## NVIDIA GPU software

This section lists the NVIDIA software that is available from Lenovo.

- [NVIDIA vGPU Software \(vApps, vPC, RTX vWS\)](#)
- [NVIDIA Omniverse Software \(OVE\)](#)
- [NVIDIA Enterprise Software](#)
- [NVIDIA HPC Compiler Software](#)

## NVIDIA vGPU Software (vApps, vPC, RTX vWS)

Lenovo offers the following virtualization software for NVIDIA GPUs:

- **Virtual Applications (vApps)**

For organizations deploying Citrix XenApp, VMware Horizon RDSH or other RDSH solutions. Designed to deliver PC Windows applications at full performance. NVIDIA Virtual Applications allows users to access any Windows application at full performance on any device, anywhere. This edition is suited for users who would like to virtualize applications using XenApp or other RDSH solutions. Windows Server hosted RDSH desktops are also supported by vApps.

- **Virtual PC (vPC)**

This product is ideal for users who want a virtual desktop but need great user experience leveraging PC Windows® applications, browsers and high-definition video. NVIDIA Virtual PC delivers a native experience to users in a virtual environment, allowing them to run all their PC applications at full performance.

- **NVIDIA RTX Virtual Workstation (RTX vWS)**

NVIDIA RTX vWS is the only virtual workstation that supports NVIDIA RTX technology, bringing advanced features like ray tracing, AI-denoising, and Deep Learning Super Sampling (DLSS) to a virtual environment. Supporting the latest generation of NVIDIA GPUs unlocks the best performance possible, so designers and engineers can create their best work faster. IT can virtualize any application from the data center with an experience that is indistinguishable from a physical workstation — enabling workstation performance from any device.

The following license types are offered:

- **Perpetual license**

A non-expiring, permanent software license that can be used on a perpetual basis without the need to renew. For each perpetual license, customers are also required to purchase a 5-year SUMS support contract. Without this contract, the perpetual license cannot be ordered.

- **Annual subscription**

A software license that is active for a fixed period as defined by the terms of the subscription license, typically yearly. The subscription includes Support, Upgrade and Maintenance (SUMS) for the duration of the license term.

- **Concurrent User (CCU)**

A method of counting licenses based on active user VMs. If the VM is active and the NVIDIA vGPU software is running, then this counts as one CCU. A vGPU CCU is independent of the connection to the VM.

The following table lists the ordering part numbers and feature codes.

Table 9. NVIDIA vGPU Software

Part number	Feature code 7S02CTO1WW	NVIDIA part number	Description
<b>NVIDIA vApps offerings</b>			
7S02005TWW	SEGS	711-VAP001+P3CMI00	vAPPS Perpetual License 1CCU + 5 Years SUMS 1CCU
7S020046WW	SDHB	711-VAP001+P3CMI00	NVIDIA vApps Perpetual License, 1 CCU
7S020003WW	B1MP	712-VAP003+P3CMI60	NVIDIA vApps SUMS ONLY 5Yr, 1 CCU
7S020004WW	B1MQ	711-VAP002+P3CMI12	NVIDIA vApps Subscription License 1 Year, 1 CCU
7S020005WW	B1MR	711-VAP002+P3CMI36	NVIDIA vApps Subscription License 3 Years, 1 CCU
7S02003DWW	S832	711-VAP002+P3CMI48	NVIDIA vApps Subscription License 4 Years, 1 CCU
7S02003EWW	S833	711-VAP002+P3CMI60	NVIDIA vApps Subscription License 5 Years, 1 CCU
<b>NVIDIA vPC offerings</b>			
7S02005UWW	SEGT	711-VPC021+P3CMI00	vPC Perpetual License 1CCU + 5 Years SUMS 1CCU
7S020047WW	SDHC	711-VPC021+P3CMI00	NVIDIA vPC Perpetual License, 1 CCU
7S020009WW	B1MV	712-VPC003+P3CMI60	NVIDIA vPC SUMS 5Yr ONLY, 1 CCU
7S02000AWW	B1MW	711-VPC022+P3CMI12	NVIDIA vPC Subscription License 1 Year, 1 CCU
7S02000BWW	B1MX	711-VPC022+P3CMI36	NVIDIA vPC Subscription License 3 Years, 1 CCU
7S02003FWW	S834	711-VPC022+P3CMI48	NVIDIA vPC Subscription License 4 Years, 1 CCU
7S02003GWW	S835	711-VPC022+P3CMI60	NVIDIA vPC Subscription License 5 Years, 1 CCU
<b>NVIDIA RTX vWS offerings</b>			
7S02005VWW	SEGU	711-DWS021+P3CMI00	vWS Perpetual License 1CCU + 5 Years SUMS 1CCU
7S02005WWW	SEGV	711-DWS021+P3EDI00	vWS EDU Perpetual License 1CCU + 5 Years EDU SUMS 1CCU
7S020048WW	SDHD	711-DWS021+P3CMI00	NVIDIA RTX vWS Perpetual License, 1 CCU
7S02000FWW	B1N1	712-DWS003+P3CMI60	NVIDIA RTX vWS SUMS ONLY 5Yr, 1 CCU
7S020049WW	SDHE	711-DWS021+P3EDI00	NVIDIA RTX vWS EDU Perpetual License, 1 CCU
7S02000LWW	B1N6	712-DWS003+P3EDI60	NVIDIA RTX vWS EDU SUMS ONLY 5Y, 1CCU
7S02000GWW	B1N2	711-DWS022+P3CMI12	NVIDIA RTX vWS Subsc Lic 1Yr 1 CCU
7S02000HWW	B1N3	711-DWS022+P3CMI36	NVIDIA RTX vWS Subscription License 3 Years, 1 CCU
7S02000XWW	S6YJ	711-DWS022+P3CMI48	NVIDIA RTX vWS Subscription License 4 Years, 1 CCU
7S02000YWW	S6YK	711-DWS022+P3CMI60	NVIDIA RTX vWS Subscription License 5 Years, 1 CCU
7S02000MWW	B1N7	711-DWS022+P3EDI12	NVIDIA RTX vWS EDU Subscription License 1 Year, 1 CCU
7S02000NWW	B1N8	711-DWS022+P3EDI36	NVIDIA RTX vWS EDU Subscription License 3 Years, 1 CCU
7S02003BWW	S830	711-DWS022+P3EDI48	NVIDIA RTX vWS EDU Subscription License 4 Years, 1 CCU
7S02003CWW	S831	711-DWS022+P3EDI60	NVIDIA RTX vWS EDU Subscription License 5 Years, 1 CCU
<b>NVIDIA RTX vWS Support &amp; Services</b>			
7S020015WW	S6YS	712-DWSA24+P3CMI12	24X7 Support Services for NVIDIA RTX vWS Production SUMS, 1CCU, 1 Year
7S02005CWW	SDZB	712-DWSA24+P3CMI60	24X7 Support Services for NVIDIA RTX vWS Production SUMS 1CCU 5 Years

Part number	Feature code 7S02CTO1WW	NVIDIA part number	Description
7S020016WW	S6YT	712-DWSA24+P3EDI12	24X7 Support Services for NVIDIA RTX vWS Production SUMS, 1CCU, EDU, 1 Year
7S02005DWW	SDZC	712-DWSA24+P3EDI60	24X7 Support Services for NVIDIA RTX vWS Production SUMS 1CCU EDU 5 Years
7S02005EWW	SDZD	712-DWSB24+P3CMI12	24X7 Support Services for NVIDIA RTX vWS SUMS 4 CCU 1 Year
7S020017WW	S6YU	712-DWSD24+P3CMI12	24X7 Support Services for NVIDIA RTX vWS Subscription License, 1CCU, 1 Year

## NVIDIA Omniverse Software (OVE)

NVIDIA Omniverse™ Enterprise is an end-to-end collaboration and simulation platform that fundamentally transforms complex design workflows, creating a more harmonious environment for creative teams.

NVIDIA and Lenovo offer a robust, scalable solution for deploying Omniverse Enterprise, accommodating a wide range of professional needs. This document details the critical components, deployment options, and support available, ensuring an efficient and effective Omniverse experience.

Deployment options cater to varying team sizes and workloads. Using Lenovo NVIDIA-Certified Systems™ and Lenovo OVX nodes which are meticulously designed to manage scale and complexity, ensures optimal performance for Omniverse tasks.

Deployment options include:

- Workstations: NVIDIA-Certified Workstations with RTX 6000 Ada GPUs for desktop environments.
- Data Center Solutions: Deployment with Lenovo OVX nodes or NVIDIA-Certified Servers equipped with A40, L40, or L40S GPUs for centralized, high-capacity needs.

NVIDIA Omniverse Enterprise includes the following components and features:

- Platform Components: Kit, Connect, Nucleus, Simulation, RTX Renderer.
- Foundation Applications: USD Composer, USD Presenter.
- Omniverse Extensions: Connect Sample & SDK.
- Integrated Development Environment (IDE)
- Nucleus Configuration: Workstation, Enterprise Nucleus Server (supports up to 8 editors per scene); Self-Service Public Cloud Hosting using Containers.
- Omniverse Farm: Supports batch workloads up to 8 GPUs.
- Enterprise Services: Authentication (SSO/SSL), Navigator Microservice, Large File Transfer, User Accounts SAML/Account Directory.
- User Interface: Workstation & IT Managed Launcher.
- Support: NVIDIA Enterprise Support.
- Deployment Scenarios: Desktop to Data Center: Workstation deployment for building and designing, with options for physical or virtual desktops. For batch tasks, rendering, and SDG workloads that require headless compute, Lenovo OVX nodes are recommended.

The following part numbers are for a subscription license which is active for a fixed period as noted in the description. The license is for a named user which means the license is for named authorized users who may not re-assign or share the license with any other person.

Table 10. NVIDIA Omniverse Software (OVE)

Part number	Feature 7S02CTO1WW	NVIDIA part number	Description
7S02003ZWW	SCX0	721-OV7006+P3CMI12	NVIDIA Omniverse Enterprise Subscription per GPU, 1 Year
7S020042WW	SCX3	721-OV7006+P3CMI36	NVIDIA Omniverse Enterprise Subscription per GPU, 3 Years
7S020044WW	SD5T	721-OV7006+P3CMI60	NVIDIA Omniverse Enterprise Subscription per GPU, 5 Year
7S020041WW	SCX2	721-OV7006+P3INI12	NVIDIA Omniverse Enterprise Subscription per GPU, INC, 1 Year
7S020040WW	SCX1	721-OV7006+P3EDI12	NVIDIA Omniverse Enterprise Subscription per GPU, EDU, 1 Year
7S020043WW	SCX4	721-OV7006+P3EDI36	NVIDIA Omniverse Enterprise Subscription per GPU, EDU, 3 Years
7S020045WW	SD5U	721-OV7006+P3EDI60	NVIDIA Omniverse Enterprise Subscription per GPU EDU, 5 Year

### NVIDIA Enterprise Software

Lenovo offers the NVIDIA Enterprise cloud-native enterprise software, comprised of NVIDIA AI Enterprise (NVAIE) and NVIDIA Omniverse Enterprise. NVIDIA Enterprise is an end-to-end, cloud-native suite of AI and data analytics software, optimized, certified, and supported by NVIDIA to run on VMware vSphere and bare-metal with NVIDIA-Certified Systems™. It includes key enabling technologies from NVIDIA for rapid deployment, management, and scaling of AI workloads in the modern hybrid cloud.

NVIDIA Enterprise is licensed on a per-GPU basis. NVIDIA Enterprise products can be purchased as either a perpetual license with support services, or as an annual or multi-year subscription.

- The perpetual license provides the right to use the NVIDIA Enterprise software indefinitely, with no expiration. NVIDIA Enterprise with perpetual licenses must be purchased in conjunction with one-year, three-year, or five-year support services. A one-year support service is also available for renewals.
- The subscription offerings are an affordable option to allow IT departments to better manage the flexibility of license volumes. NVIDIA Enterprise software products with subscription includes support services for the duration of the software’s subscription license

The features of NVIDIA Enterprise Software are listed in the following table.

Table 11. Features of NVIDIA Enterprise Software

Features	Supported in NVIDIA Enterprise
Per GPU Licensing	Yes
Compute Virtualization	Supported
Windows Guest OS Support	No support
Linux Guest OS Support	Supported
Maximum Displays	1
Maximum Resolution	4096 x 2160 (4K)
OpenGL and Vulkan	In-situ Graphics only
CUDA and OpenCL Support	Supported
ECC and Page Retirement	Supported

Features	Supported in NVIDIA Enterprise
MIG GPU Support	Supported
Multi-vGPU	Supported
NVIDIA GPUDirect	Supported
Peer-to-Peer over NVLink	Supported
GPU Pass Through Support	Supported
Baremetal Support	Supported
AI and Data Science applications and Frameworks	Supported
Cloud Native ready	Supported

Note: Maximum 10 concurrent VMs per product license

The following table lists the ordering part numbers and feature codes.

Table 12. NVIDIA Enterprise Software

Part number	Feature code 7S02CTO1WW	Description	NVIDIA part number
<b>AI Enterprise Perpetual License</b>			
7S02001BWW	S6YY	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Perpetual License & Support per GPU, 5 Years	731-AI7004+P3CMI60
7S02001EWW	S6Z1	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Perpetual License & Support per GPU, EDU, 5 Years	731-AI7004+P3EDI60
<b>AI Enterprise Subscription License</b>			
7S02001FWW	S6Z2	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, 1 Year	731-AI7003+P3CMI12
7S02005XWW	SENY	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, 2 Years	731-AI7003+P3CMI24
7S02001GWW	S6Z3	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, 3 Year	731-AI7003+P3CMI36
7S02005YWW	SENZ	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, 4 Years	731-AI7003+P3CMI48
7S02001HWW	S6Z4	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, 5 Year	731-AI7003+P3CMI60
7S02001JWW	S6Z5	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, EDU, 1 Year	731-AI7003+P3EDI12
7S02005ZWW	SEP0	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, EDU, 2 Years	731-AI7003+P3EDI24
7S02001KWW	S6Z6	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, EDU, 3 Year	731-AI7003+P3EDI36
7S020060WW	SEP1	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, EDU, 4 Years	731-AI7003+P3EDI48
7S02001LWW	S6Z7	NVIDIA Enterprise (NVIDIA AI Enterprise and NVIDIA Omniverse Enterprise) Subscription per GPU, EDU, 5 Year	731-AI7003+P3EDI60

Part number	Feature code 7S02CTO1WW	Description	NVIDIA part number
Business Critical Support Services for NVIDIA Enterprise			
7S02001MWW	S6Z8	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, 1 Year	731-AI7007+P3CMI12
7S02001NWW	S6Z9	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, 3 Year	731-AI7007+P3CMI36
7S020061WW	SEP2	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, 4 Years	731-AI7007+P3CMI48
7S02001PWW	S6ZA	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, 5 Year	731-AI7007+P3CMI60
7S02001QWW	S6ZB	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, EDU, 1 Year	731-AI7007+P3EDI12
7S02001RWW	S6ZC	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, EDU, 3 Year	731-AI7007+P3EDI36
7S020062WW	SEP3	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, EDU, 4 Years	731-AI7007+P3EDI48
7S02001SWW	S6ZD	Business Critical Support Services for NVIDIA Enterprise (NVIDIA AI Enterprise and Omniverse Enterprise) per GPU, EDU, 5 Year	731-AI7007+P3EDI60

Find more information in the [NVIDIA Enterprise Sizing Guide](#).

## NVIDIA HPC Compiler Software

Table 13. NVIDIA HPC Compiler

Part number	Feature code 7S09CTO6WW	Description
HPC Compiler Support Services		
7S090014WW	S924	NVIDIA HPC Compiler Support Services, 1 Year
7S090015WW	S925	NVIDIA HPC Compiler Support Services, 3 Years
7S09002GWW	S9UQ	NVIDIA HPC Compiler Support Services, 5 Years
7S090016WW	S926	NVIDIA HPC Compiler Support Services, EDU, 1 Year
7S090017WW	S927	NVIDIA HPC Compiler Support Services, EDU, 3 Years
7S09002HWW	S9UR	NVIDIA HPC Compiler Support Services, EDU, 5 Years
7S090018WW	S928	NVIDIA HPC Compiler Support Services - Additional Contact, 1 Year
7S09002JWW	S9US	NVIDIA HPC Compiler Support Services - Additional Contact, 3 Years
7S09002KWW	S9UT	NVIDIA HPC Compiler Support Services - Additional Contact, 5 Years
7S090019WW	S929	NVIDIA HPC Compiler Support Services - Additional Contact, EDU, 1 Year
7S09002LWW	S9UU	NVIDIA HPC Compiler Support Services - Additional Contact, EDU, 3 Years
7S09002MWW	S9UV	NVIDIA HPC Compiler Support Services - Additional Contact, EDU, 5 Years
HPC Compiler Premier Support Services		

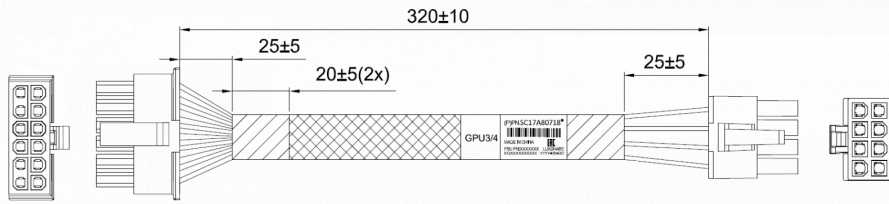
<b>Part number</b>	<b>Feature code 7S09CTO6WW</b>	<b>Description</b>
7S09001AWW	S92A	NVIDIA HPC Compiler Premier Support Services, 1 Year
7S09002NWW	S9UW	NVIDIA HPC Compiler Premier Support Services, 3 Years
7S09002PWW	S9UX	NVIDIA HPC Compiler Premier Support Services, 5 Years
7S09001BWW	S92B	NVIDIA HPC Compiler Premier Support Services, EDU, 1 Year
7S09002QWW	S9UY	NVIDIA HPC Compiler Premier Support Services, EDU, 3 Years
7S09002RWW	S9UZ	NVIDIA HPC Compiler Premier Support Services, EDU, 5 Years
7S09001CWW	S92C	NVIDIA HPC Compiler Premier Support Services - Additional Contact, 1 Year
7S09002SWW	S9V0	NVIDIA HPC Compiler Premier Support Services - Additional Contact, 3 Years
7S09002TWW	S9V1	NVIDIA HPC Compiler Premier Support Services - Additional Contact, 5 Years
7S09001DWW	S92D	NVIDIA HPC Compiler Premier Support Services - Additional Contact, EDU, 1 Year
7S09002UWW	S9V2	NVIDIA HPC Compiler Premier Support Services - Additional Contact, EDU, 3 Years
7S09002VWW	S9V3	NVIDIA HPC Compiler Premier Support Services - Additional Contact, EDU, 5 Years

## Auxiliary power cables

The RTX A6000 option part number does not ship with auxiliary power cables. For the SR650, the needed cable is part of ThinkSystem SR650 GPU Cable Kit, 4XH7A08794.

Table 14. Auxiliary power cables for RTX A6000 (click images to show larger versions)

Auxiliary power cables needed with the SR665, SR650 V2, SR650 V3, SR655 V3, SR665 V3	
<p><b>360mm 8pin (2x4) cable</b></p> <p><b>Option*:</b>            SR665: 4M17A80478 or 4M17A11759            SR650 V2: 4H47A38666 or 4H47A80491            SR650 V3: 4X67A82883            SR655 V3: 4X67A86438            SR665 V3: 4X67A85856</p> <p><b>Feature:</b> BAD8  <b>SBB:</b> SBB7A49792 or SBB7A21691  <b>Base:</b> SC17A59596  <b>FRU:</b> 02YE420</p> <p>* The option part numbers are for thermal kits and include other components needed to install the GPU. See the <a href="#">SR650 V2 product guide</a> for details.</p>	
Auxiliary power cables needed with the ST650 V2, ST650 V3	



**320mm power cable for slots 1-4**

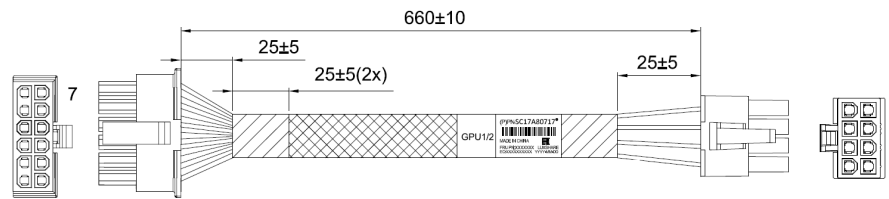
**Option:** 4Z57A60816\*

**Feature:** BE4Q

**SBB:** SBB7A29294

**Base:** SC17A80718

**FRU:** 02JJ693



**660mm power cable for slots 5-8**

**Option:** 4Z57A60816\*

**Feature:** BE4R

**SBB:** SBB7A29293

**Base:** SC17A80717

**FRU:** 02JJ692

\* The option part number is for ThinkSystem ST650 V2/V3 RTX A6000 GPU Power Cable Kit and includes both the 320mm and 660mm cables needed to install the GPU. See the [ST650 V2 product guide](#) for details.

**Auxiliary power cables needed with the SR850 V3, SR860 V3**

**200mm power cable**

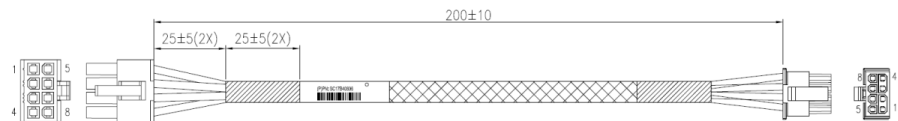
**Option:** 4X97A88017

**Feature:** BW29

**SBB:** SBB7A72760

**Base:** SC17B40606

**FRU:** 03LF917



**Auxiliary power cables needed with the SR650 (configure-to-order or field upgrade)**

**300mm 8pin (2x4) cable**

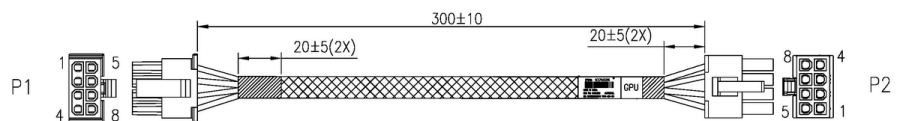
**Option:** 4XH7A08794,  
ThinkSystem SR650 GPU  
Cable Kit

**Feature:** AUSR

**SBB:** SBB7A00299

**Base:** SC17A02296

**FRU:** 01KN066



## Regulatory approvals

The RTX A6000 GPU has the following regulatory approvals:

- RCM
- BSMI
- CE
- FCC
- ICES
- KCC
- cUL, UL
- VCCI

## Operating environment

The RTX A6000 GPU has the following operating characteristics:

- Ambient temperature
  - Operational: 0°C to 50°C (-5°C to 55°C for short term\*)
  - Storage: -40°C to 75°C
- Relative humidity:
  - Operational: 5-85% (5-93% short term\*)
  - Storage: 5-95%

\* A period not more than 96 hours consecutive, not to exceed 15 days per year.

## Warranty

One year limited warranty. When installed in a Lenovo server, the GPU assumes the server's base warranty and any warranty upgrades.

## Related publications

For more information, refer to these documents:

- ThinkSystem and ThinkAgile GPU Summary:  
<https://lenovopress.lenovo.com/lp0768-thinksystem-thinkagile-gpu-summary>
- ServerProven compatibility:  
<https://serverproven.lenovo.com/>
- NVIDIA RTX A6000 product page:  
<https://www.nvidia.com/en-us/design-visualization/rtx-a6000/>
- NVIDIA Ampere Architecture page  
<https://www.nvidia.com/en-us/data-center/ampere-architecture/>

## Related product families

Product families related to this document are the following:

- [GPU adapters](#)

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