

ThinkSystem NVIDIA T1000 8GB PCIe Active GPU Product Guide

The NVIDIA® T1000, built on the NVIDIA Turing™ GPU architecture, is a powerful, low profile solution that delivers the full-size features, performance and capabilities required by demanding professional applications in a compact graphics card.

Featuring 896 CUDA cores and 8GB of GDDR6 memory, the T1000 enables professionals to tackle multi-app workflows, from 3D modeling to video editing. Support for up to four 5K displays gives you the expansive visual workspace to view your work in stunning detail.

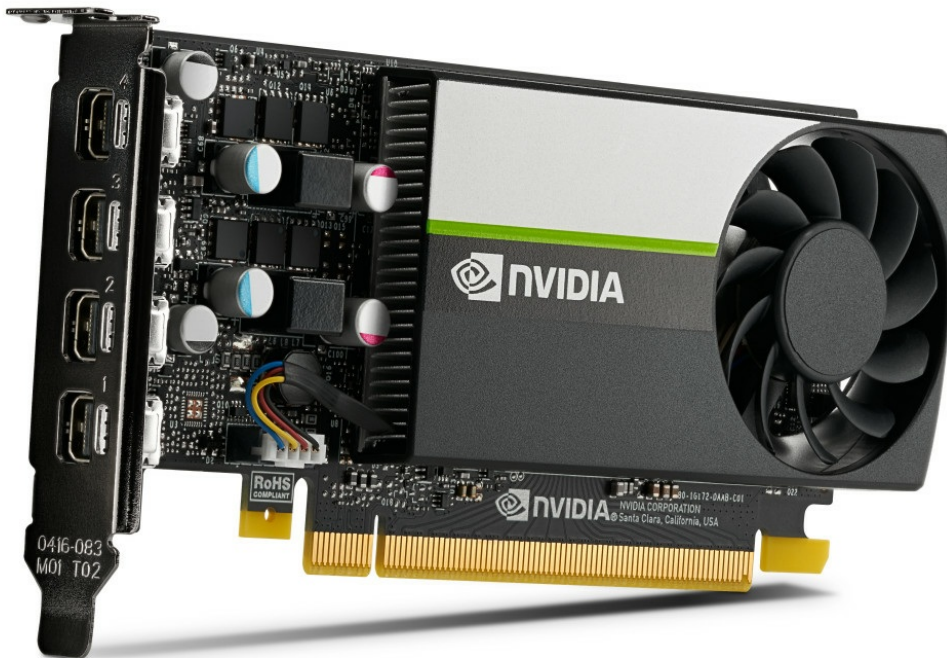


Figure 1. ThinkSystem NVIDIA T1000 8GB PCIe Active GPU

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 T1000 GPU.

Tip: NVIDIA Quadro branding is now NVIDIA RTX.

Table 1. Ordering information

Part number	Feature code	Description	Controlled GPU status
4X67A79777	BMXD	ThinkSystem NVIDIA T1000 8GB PCIe Active GPU	No

The T1000 GPU is not Controlled which means the GPU is unrestricted and is available in all markets.

The PCIe option part numbers includes the following:

- One T1000 GPU with full-height (3U) adapter bracket attached
- Low profile bracket
- Documentation

Features

With 896 CUDA cores, the NVIDIA T1000 GPU is a powerful single-slot professional solution for CAD, DCC, financial service industry (FSI) and visualization professionals in general looking to reach excellence performance in a compact and efficient form factor.

The Turing GPU architecture features advanced shader technologies, including mesh shading, a compute-based geometry pipeline to speed geometry processing and culling on geometrically complex models and scenes. Mesh shading provides up to 2x performance improvement on geometry-bound workloads.

Key features:

- Architecture: Built on the Turing architecture.
- CUDA Cores: Equipped with 896 CUDA cores.
- Memory: 4 GB of GDDR6 memory.
- Base Frequency: Operates at a base frequency of 1065 MHz.
- Boost Clock: Can be boosted up to 1395 MHz.
- Memory Interface: Features a 128-bit memory interface.
- Form Factor: Designed as a single-slot card.
- Power Consumption: Draws a maximum power of 50 without additional connectors.
- Connectivity: Offers 4x mini-DisplayPort 1.4a outputs.

Technical specifications

The following table lists the specifications of the ThinkSystem NVIDIA T1000 8GB PCIe Active GPU.

Table 2. Technical specifications

Feature	Specification
GPU Memory	8 GB GDDR6
Memory Interface	128-bit
Memory Bandwidth	Up to 160 GB/s
NVIDIA CUDA Cores	896
System Interface	PCI Express 3.0 x16
Max Power Consumption	50 W
Thermal Solution	Active
Display Connectors	4x Mini Display Port (mDP) 1.4 with latching mechanism
Max Simultaneous Displays	4x 3840 x 2160 @ 120Hz 4x 5120 x 2880 @ 60Hz 2x 7680 x 4320 @ 60Hz
Graphics APIs	DirectX 12.07, Shader Model 5.17, OpenGL 4.68, Vulkan 1.2
Compute APIs	CUDA, DirectCompute, OpenCL
Form factor	PCIe Low profile, single slot - 2.7 inches x 6.1 inches

Server support

The following tables list the ThinkSystem servers that are compatible.

Table 3. Server support (Part 1 of 4)

Part Number	Description	AMD V3				2S Intel V3/V4			4S 8S Intel V3			Multi Node V3/V4			GPU Rich						
		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)	SR850 V3 (7D97 / 7D96)	SR860 V3 (7D94 / 7D93)	SR950 V3 (7DC5 / 7DC4)	SD535 V3 (7DD8 / 7DD1)	SD530 V3 (7DDA / 7DD3)	SD550 V3 (7DD9 / 7DD2)	SD520 V4 (7DFZ / 7DFY)	SR670 V2 (7Z22 / 7Z23)	SR675 V3 (7D9Q / 7D9R)	SR680a V3 (7DHE)	SR685a V3 (7DHC)	SR780a V3 (7DJ5)
4X67A79777	ThinkSystem NVIDIA T1000 8GB PCIe Active GPU	N	N	N	N	N	8 ¹	N	N	N	N	N	N	N	N	N	N	N	N	N	N

1. Windows does not support more than 16 displays attached to the server

Table 4. Server support (Part 2 of 4)

Part Number	Description	1S V3		Edge				Super Computing				1S Intel V2		2S Intel V2					
		ST50 V3 (7DF4 / 7DF3)	ST250 V3 (7DCF / 7DCE)	SR250 V3 (7DCM / 7DCL)	SE350 (7Z46 / 7D1X)	SE350 V2 (7DA9)	SE360 V2 (7DAM)	SE450 (7D8T)	SE455 V3 (7DBY)	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)
4X67A79777	ThinkSystem NVIDIA T1000 8GB PCIe Active GPU	N	1	1	N	N	N	N	N	N	N	N	1	1	1	N	N	N	N

Table 5. Server support (Part 3 of 4)

Part Number	Description	AMD V1				Dense V2			4S V2	8S	4S V1		1S Intel V1							
		SR635 (7Y98 / 7Y99)	SR655 (7Y00 / 7Z01)	SR655 Client OS	SR645 (7D2Y / 7D2X)	SR665 (7D2W / 7D2V)	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)
4X67A79777	ThinkSystem NVIDIA T1000 8GB PCIe Active GPU	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Table 6. Server support (Part 4 of 4)

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)
4X67A79777	ThinkSystem NVIDIA T1000 8GB PCIe Active GPU	N	N	N	N	N	N	N	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 7. Operating system support for ThinkSystem NVIDIA T1000 8GB PCIe Active GPU, 4X67A79777

Operating systems	SR250 V3	ST250 V3	SR650 V3 (4th Gen Xeon)	SR650 V3 (5th Gen Xeon)	SR250 V2	ST250 V2	ST50 V2
Microsoft Windows 10	N	N	Y ¹	Y ¹	N	N	N
Microsoft Windows 11	N	N	Y ²	Y ²	N	N	N
Microsoft Windows Server 2019	N	N	Y ³	Y ³	Y	Y	Y
Microsoft Windows Server 2022	Y	Y	Y ⁴	Y ⁴	Y	Y	Y
Red Hat Enterprise Linux 8.4	N	N	N	N	Y	Y	Y
Red Hat Enterprise Linux 8.5	N	N	N	N	Y	Y	Y
Red Hat Enterprise Linux 8.6	N	N	Y	N	Y	Y	Y
Red Hat Enterprise Linux 8.7	N	N	Y	N	Y	Y	Y
Red Hat Enterprise Linux 8.8	Y	Y	Y	Y	Y	N	N
Red Hat Enterprise Linux 8.9	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.0	N	N	Y	N	Y	Y	Y
Red Hat Enterprise Linux 9.1	N	N	Y	N	Y	Y	Y
Red Hat Enterprise Linux 9.2	Y	Y	Y	Y	Y	N	N
Red Hat Enterprise Linux 9.3	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3	N	N	N	N	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4	N	N	Y	N	Y	Y	Y
SUSE Linux Enterprise Server 15 SP5	Y	Y	Y	Y	Y	Y	Y
Ubuntu 22.04 LTS	N	N	Y	Y ⁵	Y	Y	Y

¹ Windows 10 does not support more than 16 displays attached to the server.

² Windows 11 does not support more than 16 displays attached to the server.

³ Windows Server 2019 does not support more than 16 displays attached to the server.

⁴ Windows Server 2022 does not support more than 16 displays attached to the server.

⁵ Ubuntu 22.04.3 LTS/Ubuntu 22.04.4 LTS

NVIDIA GPU software

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 L40, L40S or A40 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 8. NVIDIA Omniverse Software (OVE)

Part number	Feature 7S02CTO1WW	Description
7S02003ZWW	SCX0	NVIDIA Omniverse Enterprise Subscription per GPU, 1 Year
7S020042WW	SCX3	NVIDIA Omniverse Enterprise Subscription per GPU, 3 Years
7S020044WW	SD5T	NVIDIA Omniverse Enterprise Subscription per GPU, 5 Year
7S020041WW	SCX2	NVIDIA Omniverse Enterprise Subscription per GPU, INC, 1 Year
7S020040WW	SCX1	NVIDIA Omniverse Enterprise Subscription per GPU, EDU, 1 Year
7S020043WW	SCX4	NVIDIA Omniverse Enterprise Subscription per GPU, EDU, 3 Years
7S020045WW	SD5U	NVIDIA Omniverse Enterprise Subscription per GPU EDU, 5 Year

Auxiliary power cables

The T1000 GPU does not require an auxiliary power cable.

Regulatory approvals

The T1000 GPU has the following regulatory approvals:

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

Operating environment

The T1000 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 in Professional Workstations :
<https://www.nvidia.com/desktop-graphics/>

Related product families

Product families related to this document are the following:

- [GPU adapters](#)

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