# 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.

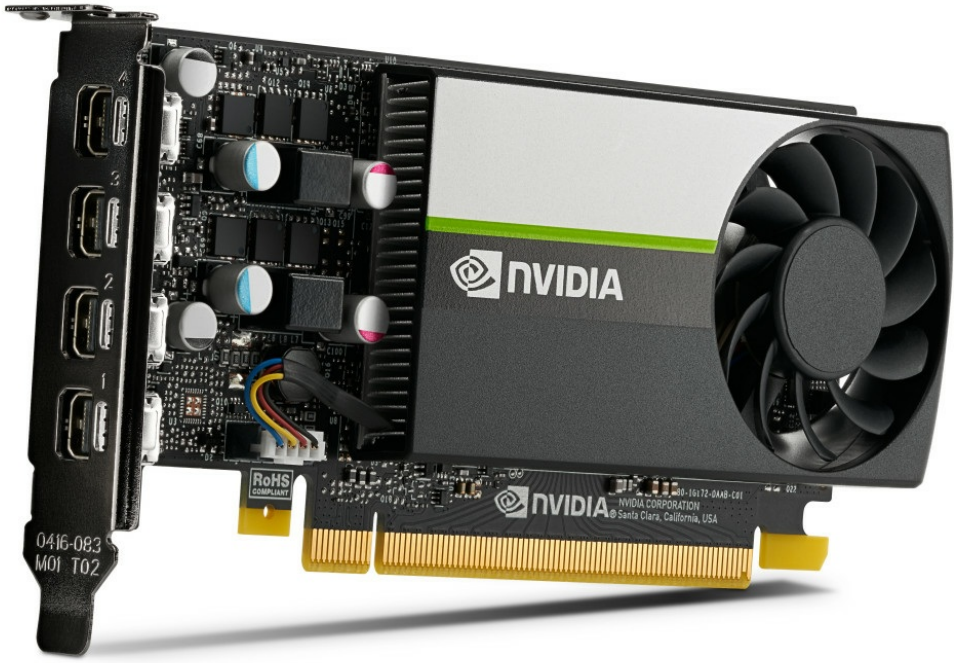


Figure 1. ThinkSystem NVIDIA T1000 8GB PCIe Active GPU

## 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 |
|---|---|---|
| 4X67A79777 | BMXD | ThinkSystem NVIDIA T1000 8GB PCIe Active GPU |

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<br>4x 5120 x 2880 @ 60Hz<br>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)

| | | 2S AMD V3 | | | | 2S Intel V3 | | | 4S 8S Intel V3 | | | Multi Node | | | GPU Rich | | | | 1S V3 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Part Number | Description | 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) | SR850 V3 (7D97 / 7D96) | SR860 V3 (7D94 / 7D93) | SR950 V3 (7DC5 / 7DC4) | SD535 V3 (7DD8 / 7DD1) | SD530 V3 (7DDA / 7DD3) | SD550 V3 (7DD9 / 7DD2) | SR670 V2 (7Z22 / 7Z23) | SR675 V3 (7D9Q / 7D9R) | SR680a V3 (7DHE) | SR685a V3 (7DHC) | ST250 V3 (7DCF / 7DCE) | SR250 V3 (7DCM / 7DCL) |
| 4X67A79777 | ThinkSystem NVIDIA T1000 8GB PCIe Active GPU | N | N | N | N | N | N | 8 | N | N | N | N | N | N | N | N | N | N | 1 | 1 |

Table 4. Server support (Part 2 of 4)

| Part Number | Description | Edge | | | | | Super Computing | | | | | 1S Intel V2 | | | 2S Intel V2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 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) | SR650 V2 (7Z72 / 7Z73) |
| 4X67A79777 | ThinkSystem NVIDIA T1000 8GB PCIe Active GPU | N | N | N | N | N | N | N | N | N | N | 1 | 1 | 1 | 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 | Y | N | N | N |
| Microsoft Windows 11 | N | N | Y | Y | N | N | N |
| Microsoft Windows Server 2019 | N | N | Y | Y | Y | Y | Y |
| Microsoft Windows Server 2022 | Y | Y | Y | Y | 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 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 |
| 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 | N | N |
| Ubuntu 22.04 LTS | N | N | Y | N | Y | Y | Y |

## 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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