HITACHI
Inspire the Next

Hitachi Advanced Server DS7000 series scalable servers are optimized to tackle the most demanding IT challenges. They deliver the highest levels of scalability, availability, reliability and performance, to power business-critical applications such as in-memory database environments, artificial intelligence and machine learning.

DATASHEET

# Hitachi Advanced Server DS7000 Series Scalable Servers

## The Power Behind Your Digital Transformation

To take advantage of the latest developments in artificial intelligence (AI), data analytics and machine learning, organizations require an infrastructure with high reliability, extreme performance and agile scalability. Hitachi Advanced Server DS7000 series servers deliver on those requirements with a unique modular architecture. This architecture allows systems to be configured and scaled to meet the needs of a wide variety of application workloads, from in-memory data analytics processing to virtualization and hybrid cloud.

Hitachi Advanced Server DS7000 series servers are built on a common compute module, based on two Intel Xeon Scalable processors per module. Because of this, each DS7000 model can be smoothly upgraded to the next, preserving your investment in hardware and software as you grow, and making reconfiguration and scaling simple. Compute modules can be individually configured to support a variety of internal compute and storage options.

The DS7000 server family is the ideal platform to deliver the high availability and scalability needed for Hitachi's solutions for business-critical applications.

- Hitachi Solution for the SAP HANA Platform makes full use of the huge memory capacity of DS7000 to deliver real-world business benefits from data analytics.
- Hitachi Solution for Databases relies on the powerful performance and massive I/O capacity of the DS7000 series. Meet demanding service level agreements (SLAs) and support rapidly changing workloads, including Oracle Database, and enable your business to thrive and grow.

Hitachi Advanced Server DS7080

Rely on the DS7000 series to power your business-critical applications, including in-memory database environments, artificial intelligence and machine learning. Hitachi Advanced Server DS7000 systems provide a flexible foundation that not only meets existing requirements but also scales to meet future needs of your IT department.

## TABLE 1. HITACHI ADVANCED SERVER DS7000 SERIES TECHNICAL SPECIFICATIONS

| | DS7020 | DS7040 | DS7080 |
|---|---|---|---|
| **Form Factor** | 19" 2U | 19" 4U | 19" 8U |
| **Processors** | 2 | Up to 4 | Up to 8 |
| **Maximum (max) Cores** | 48 | 96 | 192 |
| **Processor Type** | Intel Xeon C627 Chipset | | |
| **Hardware Partitioning** | No | Yes | Yes |
| **Memory Slots** | 24 | 48 | 96 |
| **Max Memory** | 3TB | 6TB | 12TB |
| **Network Interface Controller (NIC)** | 4x 10Gb Ethernet over copper (EoC) ports | 8x 10Gb EoC ports | 16x10Gb EoC ports |
| **I/O Slots** | Up to 7 PCIe Gen3 slots:<br>5x PCIe modules x8 (4+1 dedicated for SAS controller per 2 CPUs) | Up to 14 PCIe Gen3 slots:<br>10x PCIe modules x8 (4+1 dedicated for SAS controller per 2 CPUs)<br>+ 4x internal PCIe Gen3 x16 (including GPUs post RTS) | Up to 28 PCIe Gen3 slots:<br>20x PCIe modules x8 (4+1 dedicated for SAS controller per 2 CPUs)<br>+ 8x internal PCIe Gen3 x16 (including GPUs post RTS) |
| **I/O Availability** | Hot-swap PCIe modules depending on OS or hypervisor | | |
| **NIC PCIe Module** | 1GbE: 2 or 4 ports per PCIe module; 10GbE: 2 ports per PCIe module | | |
| **HBA PCIe Module** | 8Gb/s: 2 ports per PCIe module; 16Gb/s: 2 or 4 ports per PCIe module | | |
| **SAS PCIe Module** | 12Gb/s: 2 ext. ports per PCIe module | | |
| **Storage (lower unit)** | Up to 8x 2.5" SSD/HDDs | Up to 16x 2.5" SSD/HDDs | Up to 32x 2.5" SSD/HDDs |
| **Storage (upper unit option)** | Up to 12x 2.5" SSDs/HDDs or up to 4x 3.5" HDDs | Up to 24x 2.5" SSDs/HDDs or up to 8x 3.5" HDDs | Up to 48x 2.5" SSDs/HDDs or up to 16x 3.5" HDDs |
| **GPUs (upper GPU unit option)** | Up to 2 GPUs | Up to 4 GPUs | Up to 8 GPUs |
| **Security Features** | TPM 2.0, secure boot, 2-level password | | |
| **Hot-Swap PSU** | 1 + 1 per compute module | | |
| **Power Supply Number** | 2, redundant | Up to 4, redundant | Up to 8, redundant |
| **Power Supply Type** | 2000 watts auto-sensing 220V 60/50Hz, label 80+ titanium and platinum, 96% efficient | | |
| **Fan Specifications** | Up to 14 hot swap, N+1 redundant | Up to 28 hot swap, N+1 redundant | Up to 56 hot swap, N+1 redundant |
| **Dimensions (HxLxW) (max)** | 89 (2U) x 446 mm (19") x 850 mm | 175 (4U) x 446 mm (19") x 850 mm | 352 (8U) x 446 mm (19") x 850 mm |
| **Weight (max)** | Up to 43 kg | Up to 81 kg | Up to 160 kg |
| **Operating Constraints** | 10°C at 35°C, gradient 20°C/h, 20% at 60%, gradient 5%/h | | |
| **Operating System** | VMware vSphere (ESXi), Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Microsoft Windows Server, Oracle Linux, Oracle VM Server | | |
| **RAS Features** | Advanced error detection and correction (AEDC), viral mode of error containment, PCI Express (PCIe) "stop and scream," virtual (soft) partitioning, PCIe ECRC, PCIe corrupt data containment (data poisoning), PCIe link CRC error check and retry, PCIe link retraining and recovery, PCIe live error recovery, DDR4 Wr data CRC check/retry, DDR4 command/address parity check and retry, Intel UltraPath Interconnect (UPI) link-level retry, Intel UPI protocol protection via 16-bit rolling CRC, Intel UPI dynamic link width reduction, core disable for fault resilient boot, power up, post package repair, failed DIMM isolation, PCIe card hot plug (add/remove/swap), PIROM for system information storage | | |
| **Serviceability** | Hot-swap devices: PCIe modules (depending on OS), disks, power supplies, fans, front access disks, compute box design | | |
| **Redundancy** | Power supplies, fans, disks with RAID | | |
| | **DS7160** | | |
| **Form Factor** | 19" 21U | | |
| **Processors** | Up to 16 | | |
| **Maximum (max) Cores** | 448 | | |
| **Processor Type** | Intel Xeon C627 Chipset | | |
| **Hardware Partitioning** | Yes | | |
| **Memory Slots** | 192 | | |
| **Max Memory** | 24TB | | |
| **Network Interface Controller (NIC)** | 32x10Gb EoC ports | | |

## TABLE 1. HITACHI ADVANCED SERVER DS7000 SERIES TECHNICAL SPECIFICATIONS (CONTINUED)

| | |
|---|---|
| **I/O Slots** | Up to 40 PCIe Gen3 slots<br>40x PCIe modules x8 (4+1 dedicated for SAS controller per 2 CPUs)<br>+ 16x internal PCIe Gen3 x16 (including GPUs post RTS) |
| **I/O Availability** | Hot-swap PCIe modules depending on OS or hypervisor |
| **NIC PCIe Module** | 1GbE: 2 or 4 ports per PCIe module; 10GbE: 2 ports per PCIe module |
| **HBA PCIe Module** | 8Gb/s: 2 ports per PCIe module; 16Gb/s: 2 or 4 ports per PCIe module |
| **SAS PCIe Module** | 12Gb/s: 2 ext. ports per PCIe module |
| **Storage (lower unit)** | Up to 64x 2.5" SSD/HDDs |
| **Storage (upper unit option)** | Up to 96x 2.5" SSDs/HDDs or up to 32x 3.5" HDDs |
| **GPUs (upper GPU unit option)** | Up to 16 GPUs |
| **Security Features** | TPM 2.0, secure boot, 2-level password |
| **Hot-Swap PSU** | 1 + 1 per compute module |
| **Power Supply Number** | Up to 16, redundant |
| **Power Supply Type** | 2000 watts auto-sensing 220V 60/50Hz, label 80+ titanium and platinum, 96% efficient |
| **Fan Specifications** | Up to 112 hot swap, N+1 redundant |
| **Dimensions (HxLxW) (max)** | 352 (8U) x 446 mm (19") x 850 mm |
| **Weight** | Up to 347 kg |
| **Operating Constraints** | 10°C at 35°C, gradient 20°C/h, 20% at 60%, gradient 5%/h |
| **Operating System** | VMware vSphere (ESXi), Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Microsoft Windows Server, Oracle Linux, Oracle VM Server |
| **RAS Features** | Advanced error detection and correction (AEDC), viral mode of error containment, PCI Express (PCIe) "stop and scream," virtual (soft) partitioning, PCIe ECRC, PCIe corrupt data containment (data poisoning), PCIe link CRC error check and retry, PCIe link retraining and recovery, PCIe live error recovery, DDR4 Wr data CRC check/retry, DDR4 command/address parity check and retry, Intel UltraPath Interconnect (UPI) link-level retry, Intel UPI protocol protection via 16-bit rolling CRC, Intel UPI dynamic link width reduction, core disable for fault resilient boot, power up, post package repair, failed DIMM isolation, PCIe card hot plug (add/remove/swap), PIROM for system information storage |
| **Serviceability** | Hot-swap devices: PCIe modules (depending on OS), disks, power supplies, fans, front access disks, compute box design |
| **Redundancy** | Power supplies, fans, disks with RAID |

SAS = serial-attached SCSI, OS = operating system, HBA = host bus adapter, PCI= peripheral component interconnect express, NVMe = nonvolatile memory express, GPU = graphical processing unit, HDD = hard disk drives, RTS = real-time system, EoC = Ethernet over copper

Learn about about the ways that Hitachi solutions can deliver performance and scalability, and power your digital transformation.

**Hitachi Vantara**

Corporate Headquarters
2535 Augustine Drive
Santa Clara, CA 95054 USA
hitachivantara.com | community.hitachivantara.com

Contact Information
USA: 1-800-446-0744
Global: 1-858-547-4526
hitachivantara.com/contact



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