

## What's New - August 2023

### Article

#### ThinkSystem DG Series storage

The ThinkSystem DG Series All-Flash QLC storage systems are built on high-density NVMe QLC flash technology, making them ideal for non-latency-sensitive deployments with a small storage footprint — including data lakes, backup consolidation, or transitioning from hybrid/HDD to all-flash storage. Reduce your data center costs with a more sustainable and more efficient solution than hybrid flash and HDD systems.

Learn about the new ThinkSystem DG5000 and ThinkSystem DG7000 with these Lenovo Press resources:

- [ThinkSystem DG5000 product guide](#) (just published)
- [ThinkSystem DG7000 product guide](#) (just published)
- [ThinkSystem DG Series datasheet](#)

Learn about our new [data management solutions](#) that include the new ThinkSystem DG and the rest of our storage portfolio, delivering faster time-to-insight, simplifying business operations, and maximizing data resiliency from edge to cloud.



Figure 1. ThinkSystem DG Series All-Flash QLC Array

## Intel On Demand processor licensing

Intel On Demand is a new licensing offering from Intel and Lenovo for certain 4th Gen Intel Xeon Scalable processors that implements software-defined silicon (SDSi) features. The licenses allow customers to activate the embedded accelerators and to increase the SGX Enclave size in specific processor models as their workload and business needs change.

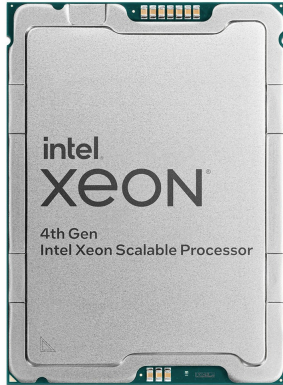


Figure 2. 4th Gen Intel Xeon Scalable processors now support Intel On Demand

The available upgrades are the following:

- Up to 4x QuickAssist Technology (Intel QAT) accelerators
- Up to 4x Intel Dynamic Load Balancer (Intel DLB) accelerators
- Up to 4x Intel Data Streaming Accelerator (Intel DSA) accelerators
- Up to 4x Intel In-Memory Analytics Accelerator (Intel IAA) accelerators
- 512GB SGX Enclave, an encrypted memory space for use by Intel Software Guard Extensions (SGX)

The upgrades are offered on the following servers:

- [ThinkSystem SR630 V3](#)
- [ThinkSystem SR650 V3](#)
- [ThinkSystem SD650 V3](#)
- [ThinkSystem SD650-I V3](#)

Check the respective server product guides (click the above links) for the specifics about what upgrades are available and what feature codes or part numbers to order.

## New AMD EPYC 7003 "Milan" processors

The following new EPYC 7003 Series "Milan" processors have been announced, to enhance the family of 3rd Gen AMD EPYC processors:

- ThinkSystem AMD EPYC 7203 8C 120W 2.8GHz Processor
- ThinkSystem AMD EPYC 7203P 8C 120W 2.8GHz Processor
- ThinkSystem AMD EPYC 7303 16C 130W 2.4GHz Processor
- ThinkSystem AMD EPYC 7303P 16C 130W 2.4GHz Processor
- ThinkSystem AMD EPYC 7643P 48C 225W 2.3GHz Processor
- ThinkSystem AMD EPYC 7663P 56C 240W 2.0GHz Processor

These processors are supported on the following servers. Click the links to view the product guide.

- [ThinkSystem SR635](#)
- [ThinkSystem SR655](#)
- [ThinkSystem SR645](#)
- [ThinkSystem SR665](#)

## New front PCIe slots on SR650 V3 and SR630 V3

The following servers now support front PCIe slots for additional I/O support:

- ThinkSystem SR650 V3 - now supports up to 12 slots (10 rear, 2 front) + OCP slot
- ThinkSystem SR630 V3 - now supports up to 5 slots (3 rear, 2 front) + OCP slot

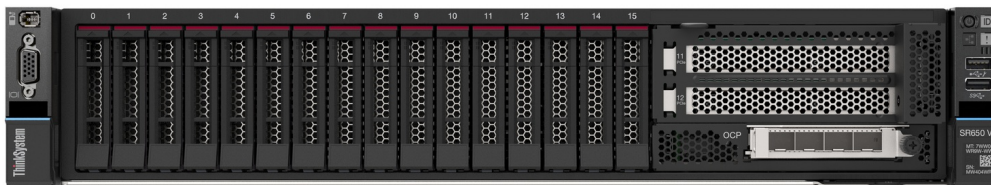


Figure 3. ThinkSystem SR650 V3 with front PCIe slots



Figure 4. ThinkSystem SR630 V3 with front PCIe slots

The support of front slots also means that customers can deploy servers with all drives and adapter at the front of the server, thereby reducing the need for IT support personnel to work in the rear of the server (hot-aisle), which has the potential of reducing infrastructure costs.

Learn more in the updated product guides:

- [ThinkSystem SR650 V3](#)
- [ThinkSystem SR630 V3](#)

## New open-loop liquid cooling on SR650 V3 and SR630 V3

For customers looking to maximize energy efficiency in the data center without sacrificing CPU performance, the SR630 V3 and SR650 V3 servers now offer advanced direct-water cooling (DWC) capability with the **Lenovo Neptune Processor DWC Module**.

With the Neptune Processor DWC Module, all heat generated by the processors is removed from the server using water. This means that the server fans and data center air conditioning units only need to remove the heat generated by the other components. This results in lower air conditioning costs and it enables the use of slower fans which results in lower overall power consumption.

Typical power saving of 26% (up to 17.2KW per rack) are possible, based on 35x SR630 V3 servers in a rack (DC level PUE weighted) at 30°C ambient temperature. With 18x SR650 V3 servers in a rack, typical power saving of 23% (up to 9.9KW per rack) are possible. Power savings are configuration dependent.

The following figure shows the Lenovo Neptune Processor DWC Module, suitable for both the SR630 V3 and SR650 V3.

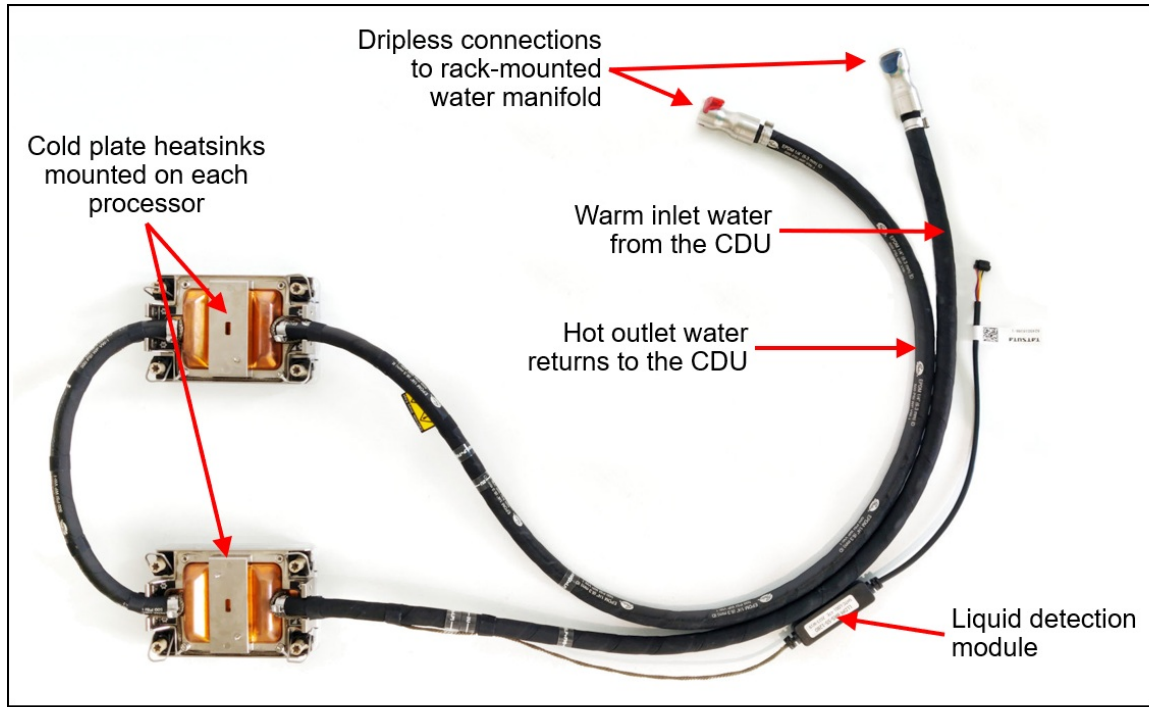


Figure 5. Lenovo Neptune Processor DWC Module

The following figure shows the Neptune Processor DWC Module installed in the SR630 V3

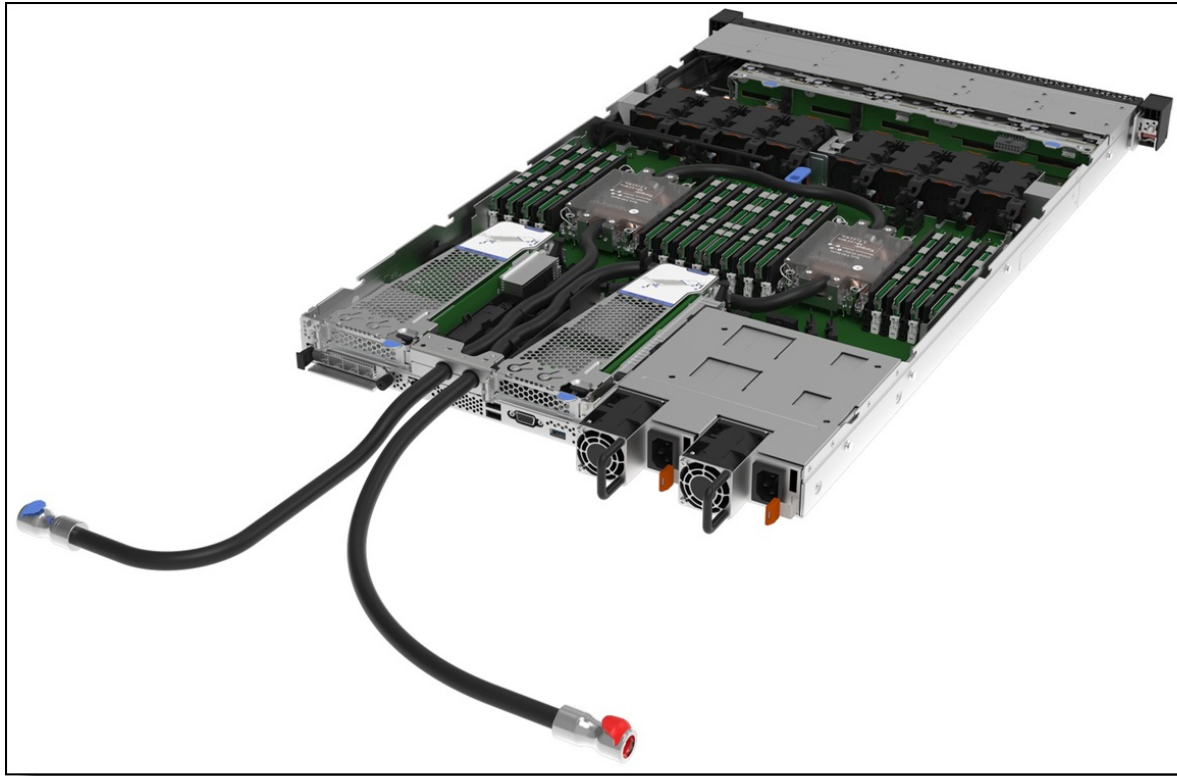


Figure 6. Lenovo Neptune Processor DWC Module installed in the SR630 V3

Learn more about the offering, including details about the water cooling infrastructure needed in the server product guides:

- [SR630 V3 product guide](#)
- [SR650 V3 product guide](#)

## Drive updates for ThinkSystem servers

In August, we announced the following new drives. Click the links to view the product guides:

- [CM893a Read Intensive SATA SSDs](#):
  - ThinkSystem 2.5" CM893a 2TB Read Intensive SATA 6Gb HS SSD, 4XB7A89423
- [PM893a Read Intensive SATA SSDs](#):
  - ThinkSystem 2.5" PM893a 480GB Read Intensive SATA 6Gb HS SSD, 4XB7A87524
  - ThinkSystem 2.5" PM893a 960GB Read Intensive SATA 6Gb HS SSD, 4XB7A87525
  - ThinkSystem 2.5" PM893a 1.92TB Read Intensive SATA 6Gb HS SSD, 4XB7A87526
  - ThinkSystem 2.5" PM893a 3.84TB Read Intensive SATA 6Gb HS SSD, 4XB7A87527
- [DC4800 E1.S Read Intensive NVMe SSDs](#)
  - ThinkSystem E1.S 5.9mm DC4800 3.84TB Read Intensive NVMe PCIe 4.0 x4 HS SSD, 4XB7A90580
  - ThinkSystem E1.S 5.9mm DC4800 7.68TB Read Intensive NVMe PCIe 4.0 x4 HS SSD, 4XB7A90581

We also announced the following HDD for SR645 and SR665 servers:

- ThinkSystem 3.5" 4TB 7.2K SAS 12Gb Hot Swap 512e HDD, 4XB7A88064

See the [HDD Reference](#) for this and other HDDs supported in ThinkSystem servers

The following existing drives are now supported by additional servers:

- New support for SR645 V3 and SR665 V3:
  - ThinkSystem 3.5" 20TB 7.2K SAS 12Gb Hot Swap 512e HDD, 4XB7A80353
  - ThinkSystem 3.5" 20TB 7.2K SATA 6Gb Hot Swap 512e HDD, 4XB7A80354
  - ThinkSystem 3.5" 22TB 7.2K SAS 12Gb Hot Swap 512e HDD, 4XB7A83766
  - ThinkSystem 3.5" 22TB 7.2K SATA 6Gb Hot Swap 512e HDD, 4XB7A83765
  - ThinkSystem 2.5" U.3 PM1743 1.92TB Read Intensive NVMe PCIe 5.0 x4 HS SSD, 4XB7A82366
  - ThinkSystem 2.5" U.3 PM1743 15.36TB Read Intensive NVMe PCIe 5.0 x4 HS SSD, 4XB7A82369
  - ThinkSystem 2.5" U.3 PM1743 3.84TB Read Intensive NVMe PCIe 5.0 x4 HS SSD, 4XB7A82367
  - ThinkSystem 2.5" U.3 PM1743 7.68TB Read Intensive NVMe PCIe 5.0 x4 HS SSD, 4XB7A82368
- New support for the SE450:
  - ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD, 4XB7A13967
  - ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD, 4XB7A13970
  - ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD, 4XB7A13971
  - ThinkSystem 2.5" U.2 7mm PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 Trayless SSD, 4XB7A90115
  - ThinkSystem 2.5" U.2 7mm PM9A3 1.92TB Read Intensive NVMe PCIe 4.0 x4 Trayless SSD, 4XB7A90116
  - ThinkSystem 2.5" U.2 7mm PM9A3 3.84TB Read Intensive NVMe PCIe 4.0 x4 Trayless SSD, 4XB7A90117
- New support for the ST50 V2:
  - ThinkSystem M.2 PM9A3 960GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD, 4XB7A90102

## SD650 V3 and SD650-I V3 updates

The following components were added to the SD650 V3 and SD650-I V3 water-cooled servers:

- New special-order processor
  - Intel Xeon Platinum 8480CL 56C 350W 2.0GHz Processor, BXNW
- New NVMe storage cage feature codes
  - ThinkSystem SD650, SD650-I, SD650-N V3 1x2.5" 15mm NVMe Storage Cage, BY1F
  - ThinkSystem SD650, SD650-I, SD650-N V3 1x2.5" 7mm NVMe Storage Cage, BY1H
  - ThinkSystem SD650, SD650-I, SD650-N V3 2x2.5" 7mm NVMe Storage Cage, BY1G

For details, see the server product guides:

- [ThinkSystem SD650 V3](#)
- [ThinkSystem SD650-I V3](#)

## ThinkAgile VX updates

Various ThinkAgile VX systems now support Fibre Channel HBAs:

- 16Gb FC HBAs:
  - QLogic 16Gb Enhanced Gen5 FC Single-port HBA, 01CV750
  - QLogic 16Gb Enhanced Gen5 FC Dual-port HBA, 01CV760
  - Emulex 16Gb Gen6 FC Dual-port HBA, 01CV840
  - Emulex 16Gb Gen6 FC Single-port HBA, 01CV830
- 32Gb FC HBAs:
  - ThinkSystem QLogic QLE2770 32Gb 1-Port PCIe Fibre Channel Adapter, 4XC7A08279
  - ThinkSystem QLogic QLE2772 32Gb 2-Port PCIe Fibre Channel Adapter, 4XC7A08276
  - ThinkSystem Emulex LPe35000 32Gb 1-port PCIe Fibre Channel Adapter v2, 4XC7A76498
  - ThinkSystem Emulex LPe35002 32Gb 2-port PCIe Fibre Channel Adapter V2, 4XC7A76525
- 64Gb FC HBA:
  - ThinkSystem Emulex LPe36002 64Gb 2-port PCIe Fibre Channel Adapter, 4XC7A77485

The VX7820 supports the following drives:

- ThinkSystem 2.5" U.2 P5520 15.36TB Read Intensive NVMe PCIe 4.0 x4 HS SSD, 4XB7A13631
- ThinkSystem 2.5" U.3 7450 MAX 800GB Mixed Use NVMe PCIe 4.0 x4 HS SSD, 4XB7A79639
- ThinkSystem 2.5" U.3 7450 MAX 1.6TB Mixed Use NVMe PCIe 4.0 x4 HS SSD, 4XB7A13967
- ThinkSystem 2.5" U.3 7450 MAX 3.2TB Mixed Use NVMe PCIe 4.0 x4 HS SSD, 4XB7A13970
- ThinkSystem 2.5" U.3 7450 MAX 6.4TB Mixed Use NVMe PCIe 4.0 x4 HS SSD, 4XB7A13971

For details, see the [ThinkAgile VX product guides](#).

## Additional ThinkSystem option support

New server options and extended support for existing options:

- New [ThinkSystem AMD \(Xilinx\) X3522 Low Latency 10/25Gb Ethernet Adapter](#)
  - ThinkSystem AMD X3522 10/25GbE DSFP28 2-Port PCIe Ethernet Adapter (Low Latency), 4XC7A84827
- New memory options for [SR650 V3](#) and [SR630 V3](#):
  - ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM v1, BY8F (CTO only)
- New memory options for [SR635 V3](#), [SR655 V3](#), [SR645 V3](#), [SR665 V3](#):
  - ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM-A v1, BYEE (CTO only)
  - ThinkSystem 96GB TruDDR5 4800MHz (2Rx4) 10x4 RDIMM-A, 4X77A81448
- Additional drive support in the [SD665-N V3](#):
  - ThinkSystem 2.5" 15mm U.2 P5520 7.68TB Read Intensive NVMe PCIe 4.0 x4 Trayless SSD, 4XB7A83978
  - ThinkSystem 2.5" 15mm U.2 P5620 6.4TB Mixed Use NVMe PCIe 4.0 x4 Trayless SSD, 4XB7A72437
- Additional server support for GPUs:
  - ThinkSystem NVIDIA H100 80GB PCIe Gen5 Passive GPU, 4X67A82257 - supported in [SR665](#), [SR650 V2](#), [SR670 V2](#)
  - ThinkSystem NVIDIA L4 24GB PCIe Gen4 Passive GPU, 4X67A84824 - supported in [SE350](#)
- Additional NVMe retimer adapter in [SR655](#):
  - ThinkSystem 4-Port PCIe Gen4 NVMe Retimer Adapter, 4C57A65446
- New storage cage for [SD665 V3](#) and [SR665-N V3](#):
  - ThinkSystem SD665, SD665-N V3 2x2.5" 7mm NVMe Storage Cage, BYAU
- Support for VROC NVMe RAID Standard in [SE450](#):
  - Intel VROC (VMD NVMe RAID) Standard, 4L47A83669
  - Intel VROC (VMD NVMe RAID) Standard for M.2, BS7M
- New options for [SE450](#) for field upgrades:
  - ThinkEdge SE450 1x2 SATA Cable For Backplane, 4X97A90163
  - ThinkEdge SE450 Internal 2x1 SATA Cable, 4X97A90164
  - ThinkEdge SE450 Internal 2x2 SATA Cable, 4X97A90165
  - ThinkEdge SE450 Internal RAID 1x2 SATA Cable, 4X97A90161
  - ThinkEdge SE450 Internal RAID 2x2 SATA Cable, 4X97A90162
  - ThinkEdge SE450 RAID 1x2 SATA Cable For Backplane, 4X97A90160
  - ThinkEdge SE450 Bezel Dust Filter with Frame, 4XF7A90166
  - ThinkEdge SE450 OCP Filler, 4XF7A90167
- Support for an additional 750W Platinum power supply in the [SR630 V2](#) and [SR650 V2](#):
  - ThinkSystem 750W 230V/115V Platinum Hot-Swap Gen2 Power Supply v3, 4P57A72670



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