

Power Your Data-Intensive Applications with Cisco UCS S-Series Storage Servers

Solution Brief
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Highlights

Optimized for Storage-Intensive Workloads

- Modular, high-storage-density 1- or 2-node highly available storage server for use cases such as big data, databases, data protection, email, software-defined storage, and video

Modular Design

- Designed so that computing, storage, and networking components can be upgraded independently, helping ensure long-term investment protection

Excellent Cost per Terabyte with Superior Computing Performance

- Support for up to 600 terabytes (TB) of storage across up to sixty 10-TB large-form-factor (LFF) drives when configured with a single node
- Superior performance with a balanced core-to-spindle ratio, saving the expense of multiple servers and licenses and reducing total operations cost

High Network Throughput

- Dual-port 40 Gigabit Ethernet unified fabric connectivity through each node in a modular-LAN-on-motherboard (mLOM) form factor for combined network throughput of 160 Gbps

Cisco Unified Computing System™ (Cisco UCS®) Management

- Managed by Cisco UCS Manager, giving you a uniform management platform for your Cisco UCS blade, rack, and storage servers

Store more data for less money while protecting your long-term investment.

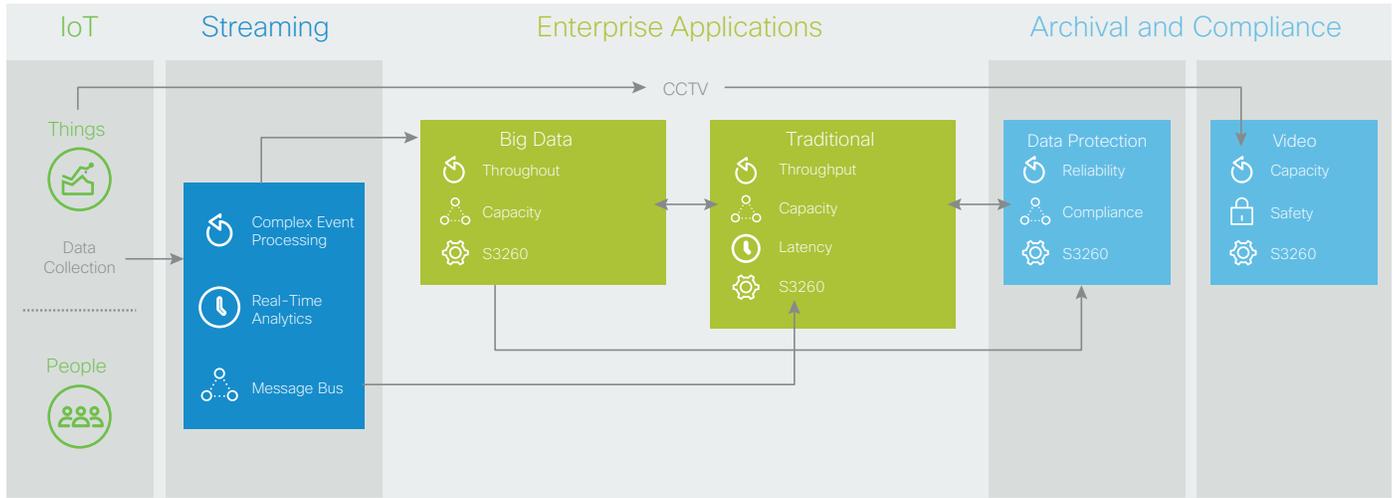
Business organizations are collecting more data than ever. Data is being generated at an unprecedented scale, and more information is being collected faster and stored longer. Ordinary transactional data is supplemented with data from high-speed real-time streaming systems and then stored for longer periods of time for both archival and regulatory purposes. Sensors, Internet of Things (IoT) devices, social media, online transactions, and video are all generating data that needs to be efficiently captured, processed, and stored. Only then can you get the full value of all this data.

The need for more storage capacity is clear, but traditional storage arrays are expensive, don't scale well, and don't work efficiently with distributed data processing architectures. And the amount of data that you need to store and process is continuing to grow. You should protect your long-term investment in technology with a scalable, modular design, in which storage, computing, and networking resources can be upgraded independently, choosing a solution that gives you more for your investment.

Less Is More with the Cisco UCS S3260 Storage Server

The Cisco UCS® S3260 Storage Server is the first in a series of application-influenced server designs. It is specifically optimized for data-intensive workloads, including big data, database management systems, data protection, email, logging, media, and video streaming. The server plays a role in every step of your data ingestion, processing, and output processes (Figure 1). Its innovative architecture is the foundation for an agile infrastructure: computing, storage, and network components can be refreshed independently, protecting your long-term investment (Figure 2).

Power Your Data-Intensive Applications
With Cisco UCS S-Series Storage Servers



Management: Cisco Application Centric Infrastructure (Cisco ACI™), Cisco UCS Central Software, Cisco UCS Director, Cisco UCS Manager, and Cisco UCS Express for Big Data

Figure 1 The Cisco UCS S3260 Storage Server Plays an Important Role in Data-Intensive Workloads

Flexible Computing and Storage Balance

Flexible and cost effective, the S3260 can be configured with one server node for capacity-intensive workloads or two

server nodes if higher performance is needed. Designed for high performance (with two Intel® Xeon® processor E5-2600 series CPUs per server node) and capacity of up to 600 terabytes (TB)

per chassis, the S3260 gives you the flexibility to handle large variations in demand.

You can optimize the server to concentrate hot data onto solid-state drives while leaving cold data on spinning disks. The server can support up to 60 large form-factor (LFF) drives with capacities of 4, 6, 8, and 10 TB each, and solid-state disk (SSD) drives with capacities of 400 and 800 GB and 1.6 and 3.2 TB. The optional expansion tray holds four more drives and can be installed in single-node configurations.

Designed for Data-Intensive Workloads
Designed for large unstructured data repositories, media streaming, and content distribution

Modular Design with Advanced Management
Option of 1 or 2 server blades depending on your workload
Managed by Cisco UCS, with standalone Cisco Integrated Management Controller (IMC) and IMC Supervisor

Industry-Leading Flexibility, Density, and Protection
Support for up to 60 LFF HDDs and SSDs
Advanced RAID options, global hot spares, and flexible drive mapping

Designed for Performance
High-bandwidth storage system and dual 40-Gbps connectivity with Cisco SingleConnect technology

Figure 2 Introducing the Cisco UCS S3260 Storage Server

Lower TCO

The S3260 helps you significantly reduce total cost of ownership (TCO). A single 4-rack-unit (4RU) chassis is equivalent to four 2RU servers in storage capacity, and each server is

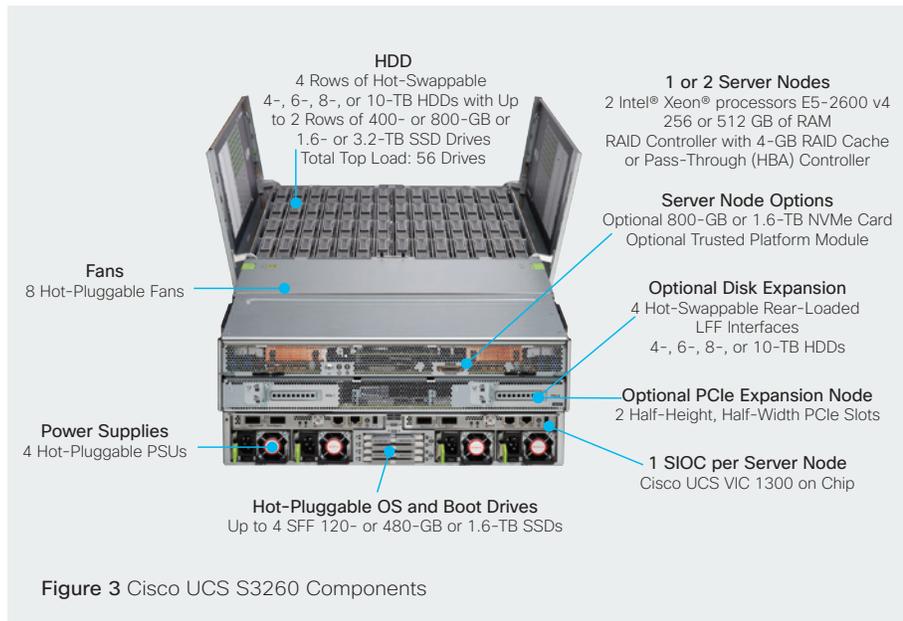


Figure 3 Cisco UCS S3260 Components

equipped with dual 40 Gigabit Ethernet for superior performance. With fewer servers, you save on the costs of rack space, servers, operating system licenses, software licenses, network ports, cabling, power, and cooling, getting a much better return on your overall technology investment without compromising on performance.

Long-Term Investment Protection Through a Modular Design

The S3260 protects your infrastructure investment. Its modular design allows you to upgrade individual components—computing nodes, I/O infrastructure, and storage devices—as technology advances. This capability allows you to decouple your server purchases from the independent refresh cycles of different server technologies. Now you can update components rather than the entire server, helping provide long-term

investment protection. For example, you can upgrade server nodes without migrating data—a critical feature for big data systems.

Excellent Consolidation Platform

The enterprise-class S3260 storage server extends the capabilities of the Cisco Unified Computing System™ (Cisco UCS) portfolio in a 4RU form factor fully managed by Cisco UCS Manager. It delivers an optimal combination of high availability, performance, flexibility, and efficiency gains.

Through its design innovations, this 4RU server provides almost twice the performance of traditional 2RU small-form-factor (SFF) servers while providing between 11 to 20 times the storage capacity, significantly reducing the cost per terabyte.

Simplified Management and Advanced Monitoring

The S3260 is part of the Cisco UCS platform, integrating transparently with new and existing Cisco UCS deployments.

This Cisco® innovation is a highly efficient, linearly scalable, high-performance infrastructure solution that can help organizations grow quickly and cost effectively.

Cisco UCS Manager simplifies many of the most time-consuming daily IT activities, including configuration, provisioning, monitoring, and problem resolution.

Server Components

The S3260 chassis uses a modular architecture consisting of the following components (Figure 3):

- **Base chassis:** The base chassis contains four redundant, hot-pluggable power supply units (PSUs); eight redundant, hot-pluggable fans; and a rail kit.
- **Server bay:** The server bay holds up to 56 LFF 7200-rpm disk drives with capacity of 4, 6, 8, or 10 TB. Up to two rows (28 drives) can be populated with SSD drives with capacity of 400 or 800 GB or 1.6 or 3.2 TB. This flexible configuration gives you freedom to partition storage into “hot” and “cold” areas. It also gives you a sufficient number of drives so that you can have hot spares ready for use in the event of a failure.

- **One or two server nodes:** The chassis consists of one or two server nodes, each with dual-socket Intel Xeon processor E5-2600 series CPUs, up to 512 GB of main memory, and a pass-through SAS controller or a RAID card with a 4-GB cache. The server node can accommodate an optional 800-GB or 1.6-TB Non-Volatile Memory Express (NVMe) card and an optional Trusted Platform Module (TPM). The S3260 can be deployed with a single node, with 60 LFF drives, or as a dual server with 28 drives connected to each server node, for a total of 56 drives in the chassis.
- **System I/O controller (SIOC):** One or two controllers are used, each including a Cisco UCS Virtual Interface Card (VIC) 1387 with dual-port Enhanced Quad Small Form-Factor Pluggable (QSFP+) 40 Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) in a modular-LAN-on-motherboard (mLOM) form factor.

- **PCI Express (PCIe) Generation 3 slots:** The chassis supports up to two x8 half-height, half-width PCIe slots through an optional I/O expansion board that populates a server slot (optional only in single-node configurations)
- **SSD boot drives:** Up to two SSD drives per server node are supported for booting.
- **Cisco UCS Manager:** The server provides full Cisco UCS management, allowing transparent integration into existing Cisco UCS deployments.

Conclusion

Data is the new strategic asset for most digital enterprises. The past decade has seen the emergence of many data-centric applications: big data applications such as Hadoop, Splunk, and Kafka; object stores such as Ceph; and software-defined storage and video applications. The S3260 is designed for these data-intensive

applications focused on the following requirements:

- Low cost per terabyte
- High storage density
- Balanced ratio of CPU core to drive spindles
- Full management by Cisco UCS Manager
- High network connectivity (dual 40 Gigabit Ethernet per server)
- High I/O bandwidth per server (I/O bandwidth of 8 Gbps per server)
- High availability

For More Information

- cisco.com/go/ucs
- cisco.com/go/storage
- cisco.com/go/bigdata
- cisco.com/go/bigdata_design



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