



Cisco UCS Integrated Infrastructure for Big Data and Analytics

Cisco's fifth generation of big data and analytics solutions

The latest generation of the Cisco Unified Computing System™ (Cisco UCS®) empowers customers to refine increasing amounts and varieties of data into business value faster than ever before, accelerating the journey toward digital transformation.

The capability to analyze petabytes of data and gain insights in real time is critical for digital enterprises.

The fifth-generation Cisco UCS Integrated Infrastructure for Big Data and Analytics solution builds on the previous generation, which has been widely adopted in agriculture, education, entertainment, finance, healthcare, industrial, insurance, manufacturing, public-sector, service provider, and utilities environments.

It features complete solutions with industry-leading partnerships. The new offering features new Cisco UCS M5 servers powered by Intel Skylake family of processors, 20% more cores, memory speed of 2666MHz and broad support for Non-Volatile Memory express (NVMe), Solid-State Disks (SSDs), Hard Disk Drives (HDD) 40-Gbps connectivity delivering significant performance and efficiency gains.

Highlights

Optimized for enterprise deployments

- Cisco Unified Computing System™ (Cisco UCS®) M5 servers powered by the Intel® Xeon® Processor Scalable Family offers industry-leading performance and expandability for a wide range of analytics applications.
- Cisco Integrated Infrastructure for Big Data and Analytics has been validated with major software vendors.

Built on Cisco UCS advantages

- As part of Cisco UCS, the solution provides seamless integration of computing, storage, and networking resources. It includes Cisco unified fabric, unified management, and advanced monitoring capabilities.
- Cisco UCS service profiles deliver consistency, rapid deployment, and out-of-the-box performance.
- The solution offers a global inventory view, one-click system software management, and one-click configuration changes.

High Performance

- The M5 servers use the new Intel

Xeon Processor Scalable Family with up to 28 cores per socket.

- Supports Cisco UCS Virtual Interface Card (VIC) 1387, offering dual-port 40 Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) in a modular LAN-On-Motherboard (mLOM) form factor.
- The servers support up to 24 DDR4 DIMMs for improved performance and lower power consumption. The DIMMS slots are also 3D XPoint ready, supporting next-generation nonvolatile memory technology.

Reference architectures

Our reference architectures are carefully designed, optimized, and tested with the leading big data and analytics software distributions to achieve a balance of performance and capacity to address specific application requirements. You can deploy these configurations as is or use them as templates for building custom configurations. You can scale your solution as your workloads demand, including expansion to thousands of servers through the use of Cisco Nexus® 9000 Series Switches. The configurations vary in disk capacity, bandwidth, price, and performance characteristics. Base configurations for each solution are listed in Table 1.

Table 1. Cisco UCS Big Data and Analytics Reference Architecture

Bundle	Blade	High performance	Performance	Capacity	High capacity
Server SKU		UCS-SP-C220M5-A2	UCS-SP-C240M5-A2	UCS-SP-C240M5L-S1	UCSS-SP-S3260-BV
Supported platform	Scale out databases such as DataStax Enterprise, Elasticsearch, MongoDB, Oracle NoSQL Database, Pivotal Greenplum DB, MemSQL and Couchbase	Scale out systems such as Cloudera, Hortonworks, MapR, Transwarp, Pivotal Greenplum DB, Pivotal HD, SAS Analytics, Splunk Enterprise, Vertica, Elasticsearch and MarkLogic	Cloudera, Hortonworks, MapR, Splunk Enterprise, MapR-XD, Cisco VSOM, Milestone, Genetec, SDS like Scality, IBM Cloud Object Storage and SwiftStack		
Servers	8 x Cisco UCS B200 M5 Blade Servers	8 x Cisco UCS C220 M5 Rack Servers	16 x Cisco UCS C240 M5 Rack Servers with Small-Form-Factor (SFF) drives	16 x Cisco UCS C240 M5 Rack Servers with Large-Form-Factor (LFF) drives	8 x Cisco UCS S3260 Storage Server, each server node with
CPU	2 x Intel Xeon Processor Scalable Family 6132 (2 x 14 cores and 2.6 GHz)	2 Intel Xeon Processor Scalable Family 6132 (2 x 14 cores and 2.6 GHz)	2 Intel Xeon Processor Scalable Family 6132 (2 x 14 cores and 2.6 GHz)	2 Intel Xeon Processor Scalable Family 4110 (2 x 8 cores and 2.1 GHz)	2 Intel Xeon processor E5-
Memory	12 x 16 GB 2666 MHz (192 GB)	12 x 16 GB 2666 MHz (192 GB)	12 x 16 GB 2666 MHz (192 GB)	12 x 16 GB 2666 MHz (192 GB)	8 x 32 GB 2400MHz (256 GB)
Boot	M.2 with 2 x 480-GB SSDs	M.2 with 2 x 480-GB SSDs	M.2 with 2 x 480-GB SSDs	M.2 with 2 x 480-GB SSDs	2 x 480-GB Enterprise Value Boot SSDs
Storage	2 x Cisco 2.5-inch 7.7-TB HGST SN200 NVMe High-Performance Enterprise Value	8 drives of 1.6-TB Enterprise Value SATA SSD SFFs	26 drives of 1.8-TB 10,000-rpm SFF SAS HDDs or 12 x 1.6-TB Enterprise Value SATA SSDs	12 x 8-TB 7200-rpm LFF SAS drives and 2 x 1.6 -TB Enterprise Value SATA SSDs	24 x 6-TB 7200-rpm LFF SAS drives
VIC	40-Gbps Cisco UCS VIC 1340 mLOM	40-Gbps Cisco UCS VIC 1387	40-Gbps Cisco UCS VIC 1387	40-Gbps Cisco UCS VIC 1387	40-Gbps Cisco UCS VIC 1387
Storage controller	Cisco FlexStorage PCIe SSD passthrough module with Hard-Disk-Drive (HDD) cage	Cisco 12-Gbps SAS Modular RAID Controller with 2-GB Flash-Based Write Cache (FBWC) or Cisco 12-Gbps Modular SAS Host Bus Adapter (HBA)	Cisco 12-Gbps SAS Modular RAID Controller with 4-GB FBWC or Cisco 12-Gbps Modular SAS HBA	Cisco 12-Gbps SAS Modular RAID Controller with 2-GB FBWC or Cisco 12-Gbps Modular SAS HBA	Cisco 12-Gbps SAS Modular RAID Controller with 4-GB FBWC
Network connectivity	Cisco UCS 6332 Fabric Interconnect	Cisco UCS 6332 Fabric Interconnect	Cisco UCS 6332 Fabric Interconnect	Cisco UCS 6332 Fabric Interconnect	Cisco UCS 6332 Fabric Interconnect

For more information