Cisco UCS Integrated Infrastructure for Big Data and Analytics

CISCO

Cisco's Fourth Generation of Big Data Solutions

Highlights

Optimized for Enterprise Big Data and Analytics Deployments

- Cisco UCS® Integrated Infrastructure for Big Data and Analytics is a platform for emerging solutions, including the edge, streaming, and data center core analytics applications.
- It is based on a fully redundant, high-performance fabric-based architecture with high computing power, I/O bandwidth, and storage capacity. Use the solution as is, or customize or scale it to meet your specific needs.
- Cisco UCS Director Express for Big Data offers end-to-end provisioning and deployment of Hadoop clusters

Built on Cisco UCS Advantages

- The solution includes Cisco® unified fabric, unified management, and advanced monitoring capabilities.
- Consistent and rapid deployment using Cisco UCS service profiles delivers consistency and out-of-the-box performance.
- The solution offers a global inventory view, one-click system software management, and one-click configuration changes.

A Solution with Less Risk

- Engineering innovations, prevalidation, and tighter integration of software stacks reduce integration and deployment risk.
- Extensive testing and validation of software distributions allow you to deploy the solution with confidence.

Our industry-leading solutions are designed to deliver out-of-the-box performance while scaling from small to very large as your business needs grow.

Cisco UCS® Integrated Infrastructure for Big Data and Analytics offers a comprehensive solution for enterprise-class deployments. This fourth-generation solution builds upon the previous generation and has been widely adopted for agriculture, education, entertainment, finance, healthcare, industrial, insurance, public-sector, and service provider environments. The Cisco UCS Integrated Infrastructure solution offers complete solutions with industry-leading partnerships.

With complete, easy-to-order packages that include computing, storage, connectivity, and unified management features, Cisco UCS Integrated Infrastructure for Big Data and Analytics accelerates deployment, delivers predictable performance, and reduces total cost of ownership (TCO). Our newest offering is powered by the Intel® Xeon® processor E5-2600 v4 product family.

Seven Reference Architectures

Our reference architectures are carefully designed, optimized, and tested with the leading big data 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® 7000 and 9000 Series Switches. The configurations vary in disk capacity, bandwidth, and price and performance characteristics. Base configurations for each solution are listed in Table 1.

For More Information

- For more information about Cisco UCS big data solutions, please visit http://www.cisco.com/go/bigdata.
- Visit the Cisco® big data design zone at http://www.cisco.com/go/bigdata_design.
- Read the blog on our fourth-generation big data and analytics solutions at http://blogs.cisco.com/datacenter/cpav4.

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Table 1. Cisco UCS Solution Accelerator Paks for Big Data

Solution Solution SKU Server SKU	Starter UCS-SL-CPA4-S UCS-SPBD-C220M4-S1	High Performance UCS-SL-CPA4-H UCS-SPBD-C220M4-H1	Performance Optimized Option 1 UCS-SL-CPA4-P1 UCS-SPBD-C240M4-P1	Performance Optimized Option 2 UCS-SL-CPA4-P2 UCS-SPBD-C240M4-P2	Performance Optimized Option 3 UCS-SL-CPA4-P3 UCS-SPBD-C240M4-P3	Capacity Optimized Option 1 UCS-SL-CPA4-C1 UCS-SPBD-C240M4-C1	Capacity Optimized Option 2 UCS-SL-CPA4-C2 UCS-SPBD-C240M4-C2
Supported platforms	Actian Matrix, DataStax Enterprise (with high performance solution), ElasticSearch, Hortonworks, IBM BigInsights, MapR, MongoDB, Oracle NoSQL Database, Pivotal Greenplum DB, Pivotal HD, Platfora, SAS Analytics, and Splunk Enterprise,		Actian Matrix, Cloudera, Hortonworks, IBM BigInsights, MapR, Pivotal Greenplum DB, Pivotal HD, SAS Analytics, Splunk Enterprise, and MarkLogic			Actian Matrix, Cloudera, Hortonworks, IBM BigInsights, MapR, MarkLogic, Pivotal HD, and Splunk Enterprise	
Connectivity	2 Cisco UCS 6248UP 48-Port Fabric Interconnects	2 Cisco UCS 6332 Fabric Interconnects	2 Cisco UCS 6296UP 96-Port Fabric Interconnects	2 Cisco UCS 6296UP 96-Port Fabric Interconnects	2 Cisco UCS 6332 Fabric Interconnects	2 Cisco UCS 6296UP 96-Port Fabric Interconnects	2 Cisco UCS 6296UP 96-Port Fabric Interconnects
Servers	8 Cisco UCS C220 M4 Rack Servers, each with: · 2 Intel Xeon processor E5-2620 v4 CPUs (8 cores) · 128 GB of memory · 8 x 1.2-TB 10K SFF SAS drives · Total of 10 TB of storage capacity and 1.4 GBps of I/O bandwidth · Cisco UCS VIC 1227	· 8 Cisco UCS C220 M4 Rack Servers, each with: · 2 Intel Xeon processor E5-2680 v4 CPUs (14 cores; 224 cores for solution) · 256 GB of memory · 8 x 960-GB SFF SSDs · Total of 7.5 TB of flash storage and 4 GBps of I/O bandwidth · Cisco UCS VIC 1387	16 Cisco UCS C240 M4 Rack Servers, each with: · 2 Intel Xeon processor E5-2680 v4 CPUs (14 cores; 448 cores for solution) · 256 GB of memory · 2 x 240-GB 6-Gbps SSDs · 24 x 1.2-TB 10K SFF SAS drives · Total of 29 TB storage and 4.1 GBps of I/O bandwidth · Cisco UCS VIC 1227	16 Cisco UCS C240 M4 Rack Servers, each with: · 2 Intel Xeon processor E5-2680 v4 CPUs (14 cores; 448 cores for solution) · 256 GB of memory · 2 x 240-GB 6-Gbps SSDs · 24 x 1.8-TB 10K SFF SAS drives · Total of 43 TB of storage and 5.5 GBps of I/O bandwidth · Cisco UCS VIC 1227	16 Cisco UCS C240 M4 Rack Servers, each with: · 2 Intel Xeon processor E5-2680 v4 CPUs (14 cores; 448 cores for solution) · 256 GB of memory · 2 x 240-GB 6-Gbps SSDs · 24 x 1.8-TB 10K SFF SAS drives · Total of 43 TB of storage and 5.5 GBps of I/O bandwidth · Cisco UCS VIC 1387	16 Cisco UCS C240 M4 Rack Servers, each with: · 2 Intel Xeon processor E5-2620 v4 CPUs (8 cores; 256 cores for solution) · 128 GB of memory · 2 x 240-GB 6-Gbps SSDs · 12 x 6-TB 7.2K LFF SAS drives · Total of 72 TB of storage and 2.5 GBps of I/O bandwidth · Cisco UCS VIC 1227	16 Cisco UCS C240 M4 Rack Servers, each with: · 2 Intel Xeon processor E5-2620 v4 CPUs (8 cores; 256 cores for solution) · 256 GB of memory · 2 x 240-GB 6-Gbps SSDs · 12 x 8-TB 7.2K LFF SAS drives · Total of 96 TB of storage and 2.3 GBps of I/O bandwidth · Cisco UCS VIC 1227
Storage controller	· Cisco 12-Gbps SAS Modular RAID Controller with 2-GB flash-based write cache (FBWC)						
Rack space	· 10RU	· 10RU	· 36RU	· 36RU	· 34RU	· 36RU	· 36RU
Scaling	· Up to 32 servers per domain with no additional switching infrastructure	· Up to 24 servers per domain with no oversubscription	· Up to 80 servers per domain with no oversubscription	· Up to 80 servers per domain with no oversubscription	· Up to 24 servers per domain with no oversubscription	· Up to 80 servers per domain with no oversubscription	· Up to 80 servers per domain with no oversubscription
	· Scalability to thousands of servers with Cisco Nexus 7000 or 9000 Series Switches						
Key to abbreviations: 10,000-rpm (10K); 7200-rpm (7.2K) large form factor (LFF); rack units (RU); small form factor (SFF); terabyte (TB); and virtual interface card (VIC)							