

Cisco UCS Common Platform Architecture Version 2 for Big Data

Solution Brief
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Extend Enterprise Application Ecosystems for Big Data

Highlights

Optimized for Big Data Applications

- Four Cisco UCS® Common Platform Architecture (CPA) configurations offer a balance of compute power and storage capacity. Use the solution as is or customize it to meet your specific needs.

Industry's First Flash-Memory-Accelerated Big Data Solution

- Cisco UCS CPA offers transparent storage acceleration with flash memory on the RAID card.

Unified and Centralized Management

- Consistent and easy-to-deploy configurations offer unified management to simplify deployment and operation tasks.

Scalable and Predictable Performance

- Cisco UCS CPA Version 2 (v2) for Big Data scales as processing and storage needs grow without increasing management challenges. It delivers predictable and consistent performance.

Integrates with Enterprise Applications

- You can host both enterprise applications and big data applications in the same management domain. This capability radically simplifies management, data center services, and data movement between applications.

Reduces Risk

- The pretested and validated architecture accelerates the time to value and reduces risk and deployment challenges.

Broad Independent Software Vendor Support

- Cisco is the first vendor to announce reference designs for all leading independent software vendor (ISV) distributions.

Imagine even more big data performance and capacity. Start with Cisco UCS® CPA v2 for Big Data and customize to meet your workload demands.

Cisco UCS Common Platform Architecture (CPA) is a popular big data solution. It has been widely adopted for finance, healthcare, service provider, entertainment, insurance, and public-sector environments. The new Cisco UCS CPA Version 2 (v2) for Big Data improves both performance and capacity. With complete, easy-to-order packages that include computing, storage, connectivity, and unified management features, Cisco UCS CPA v2 for Big Data helps enable rapid deployment, delivers predictable performance, and reduces total cost of ownership (TCO). Cisco UCS CPA v2 for Big Data offers:

- Cisco UCS servers with the versatile Intel® Xeon® E5-2600 v2 product family
- Transparent cache acceleration option with Cisco UCS Nytro MegaRAID technology
- Unified management and unified fabric across enterprise applications.

Four Optimized Configurations

Four configurations are optimized and tested with the leading big data software distributions to provide different balances of performance and storage capacity. Start with any configuration and scale as your workload demands.

Performance Optimized

This configuration provides higher performance and lower cost for demanding analytics engines and massively parallel processing (MPP) databases. Powered by high-end CPUs in the Intel Xeon processor E5-2600 v2 family, the configuration supports up to 21 GBps of I/O bandwidth in a compact, half-rack configuration—yet it can also scale to 80 servers. It is designed for applications including SAS, business analytics, Pivotal Greenplum Database, and Actian solutions.

Performance and Capacity Balanced

This configuration provides an excellent balance of computing power and storage capacity for Hadoop and NoSQL databases. It supports up to 32 GBps of I/O bandwidth and 384 GB of unformatted storage and scales to up to 10 racks without additional switches. The configuration is designed for ISV distributions including Cloudera, HortonWorks, Intel Distribution for Apache Hadoop, MapR, MarkLogic, Oracle NoSQL Database, and Pivotal HD solutions.

Capacity Optimized

This configuration provides a high-capacity storage configuration for storage-intensive Hadoop deployments. The configuration supports up to 768 TB of

Table 1. Cisco CPA v2 for Big Data Includes Four Optimized Configurations

	Performance Optimized (UCS-SL-CPA2-P)	Performance and Capacity Balanced (UCS-SL-CPA2-PC)	Capacity Optimized (UCS-SL-CPA2-C)	Capacity Optimized with Flash Memory (UCS-SL-CPA2-CF)
Connectivity	• 2 Cisco UCS 6248UP 48-Port Fabric Interconnects • 2 Cisco UCS 2232PP 10 GE Fabric Extenders	• 2 Cisco UCS 6296UP 96-Port Fabric Interconnects • 2 Cisco UCS 2232PP 10 GE Fabric Extenders	• 2 Cisco UCS 6296UP 96-Port Fabric Interconnects • 2 Cisco UCS 2232PP 10 GE Fabric Extenders	• 2 Cisco UCS 6296UP 96-Port Fabric Interconnects • 2 Cisco UCS 2232PP 10 GE Fabric Extenders
Management	• Cisco UCS Manager	• Cisco UCS Manager	• Cisco UCS Manager	• Cisco UCS Manager
Servers	8 Cisco UCS C240 M3 Rack Servers, each with: • 2 Intel Xeon processors E5-2680 v2 • 256 GB of memory • LSI MegaRaid 9271CV 8i card • 24 900-GB 10K SFF SAS drives (168 TB total)	16 Cisco UCS C240 M3 Rack Servers, each with: • 2 Intel Xeon processors E5-2660 v2 • 256 GB of memory • LSI MegaRaid 9271CV 8i card • 24 1-TB 7.2K SFF SAS drives (384 TB total)	16 Cisco UCS C240 M3 Rack Servers, each with: • 2 Intel Xeon processors E5-2640 v2 • 128 GB of memory • LSI MegaRaid 9271CV 8i card • 12 4-TB 7.2K LFF SAS drives (768 TB total)	16 Cisco UCS C240 M3 Rack Servers, each with: • 2 Intel Xeon processors E5-2660 v2 • 128 GB of memory • Cisco UCS Nytro MegaRAID 200-GB Controller • 12 4-TB 7.2K LFF SAS drives (768 TB total)

unformatted storage per rack for a total of 7.68 petabytes (PB) when scaled to a 10-rack configuration.

Capacity Optimized with Flash Memory

This is the industry's first big data solution to accelerate performance with a transparent, high-performance flash-memory cache powered by LSI Nytro MegaRAID technology. The card's 200 GB of flash memory can be used as a transparent cache tier for hard disk drives and operating system images, freeing all 12 hard disk drives for data. It offers 768 TB of unformatted storage and 3.12 TB of flash memory

per rack, for a total of 7.68 PB and 31.25 TB of flash memory per domain. It is designed for big data applications including Cloudera, HortonWorks, Intel Distribution for Apache Hadoop, MapR, MarkLogic, Oracle NoSQL Database, ParAccel, and Pivotal Greenplum Database Pivotal HD solutions.

Easy Ordering

Cisco UCS CPA v2 for Big Data is available through Cisco UCS Solution Accelerator Paks (Table 1). The program helps you quickly and easily deploy a powerful, secure big data environment in your enterprise without the expense

entailed in designing and building your own custom solution. The solution scales by adding servers as needed.

For More Information

For more information about Cisco UCS big data solutions, please visit <http://www.cisco.com/go/bigdata>.

For more information about the Cisco UCS CPA v2 for Big Data, please visit <http://blogs.cisco.com/datacenter/cpav2>.

Visit the Cisco big data design zone at http://www.cisco.com/go/bigdata_design.



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