Cisco UCS Common Platform Architecture for Big Data

Exceptional Big Data Solution for Today and Tomorrow

Businesses are mining vast stores of data and converting it into actionable intelligence. These insights can help you identify trends and predict customer behavior to empower decision makers to innovate faster.

But not all big data infrastructure solutions are alike. Cisco UCS® Common Platform Architecture (CPA) for Big Data is a highly efficient and scalable high-performance solution, helping your organization grow quickly and cost effectively, deliver insights faster, and reduce total cost of ownership (TCO).

Challenge: The Inevitable Growth of Big Data Deployments

Big data implementations will get much bigger. By 2020, there will be 50 billion objects connected to the Internet – and each object will become a potential source of data. That is why some large enterprises already have big data environments that require thousands of servers.

The growth in the size of big data environments has significant implications:

- Management and operation efficiency of big data infrastructure will become essential.
- Larger data clusters will require dramatic increases in capacity and scalability.
- As use of big data becomes more critical to day-to-day decision making, high performance and availability of big data solutions will become more important.

Traditional servers are not designed to support the long-term growth, efficiency, and performance requirements of big data solutions:

- Siloed computing solutions lack easy integration with network and storage resources and are time-consuming to manage, slow to deploy, and expensive to operate.
- As the size of your data clusters increase over time, you may not be able to scale sufficiently, limiting the effectiveness of your big data solution and your server ROI.

Cisco UCS Common Platform Architecture for Big Data

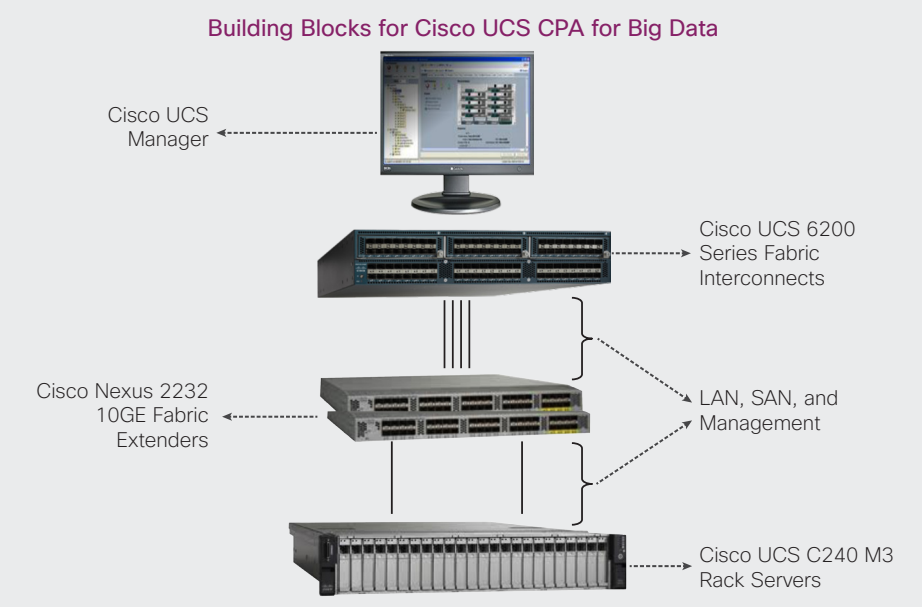
To deliver optimal long-term value to your business, a big data solution must be capable of meeting your needs both now and in the future. Cisco UCS CPA for Big Data is:

- Fabric-based to easily integrate computing, networking, and storage resources
- Programmable to accelerate infrastructure deployment and automate management
- Designed for high performance and availability to accelerate delivery of insights, with a lower TCO

Cisco UCS CPA for Big Data integrates industry-leading computing, networking, and management capabilities into a unified, fabric-based architecture optimized for big data workloads today and tomorrow (Figure 1):

- **Accelerate infrastructure deployment for fast, easy growth:** Cisco UCS Manager abstracts all configuration, identity, and I/O connectivity information into a Cisco Unified Computing System™ (Cisco UCS) service profile to rapidly and consistently deploy new data servers in minutes.
- **Deliver big data infrastructure in a small, efficient footprint to reduce TCO:** The capability to conserve capital expenditures (CapEx), reduce operating expenses (OpEx) through efficient power use, and adopt simplified operation processes has helped customers save more than 50 percent of the cost of using traditional servers.
- **Handle the most complex workloads with big data clusters supported by hundreds of servers and petabytes of storage:** The solution can easily support up to 160 Cisco UCS servers in a single switching domain, and customers can add Cisco UCS Central Software to connect up to 10,000 servers.
- **Quickly load terabytes of data into the system over a high-bandwidth unified fabric:** The combination of direct access to SANs, the efficiency and easy scalability of Cisco® SingleConnect technology, and the capability to host and manage big data workloads together with enterprise applications eliminates complexity and reduces costs.
- **Quickly gain insights to enable faster innovation:** Cisco UCS is designed to deliver outstanding big data performance supported by Cisco innovations down to the application-specific integrated circuit (ASIC) level. These innovations use the power of Intel Xeon processors, allowing Cisco to capture more than 82 world-record benchmarks, including the rigorous TeraSort test: a leading indicator of big data performance.
- **Automate your big data process to deliver reliable, cost-effective intelligence:** Cisco Tidal Enterprise Scheduler facilitates the flow of large quantities of data between a wide variety of applications such as Hadoop, enterprise resource planning (ERP), database, data warehouse, and business intelligence applications. It then automates the scheduling of processes that move data in and out of your big data file systems, running data feeds from inside and outside your firewall and processing big data workloads.

Figure 1. Cisco UCS Common Platform Architecture for Big Data



Why Cisco?

The revolutionary architecture of Cisco UCS has transformed data center and cloud environments for more than 23,000 customers and earned Cisco UCS the number-2 position in worldwide x86 blade server market share. Its simplified, programmable design allows you to cost-effectively grow and manage your infrastructure as your data clusters increase in size. With the capability to scale up to 10,000 high-performance servers, you can deliver the capacity and fast insights that your business requires to compete effectively, while protecting your infrastructure investment. Our solution has been proven to support a variety of software and storage providers, including Cloudera, MapR, Intel, Hortonworks, Pivotal, Oracle, MarkLogic, DataStax, ParAccel, NetApp, and EMC. And getting started is easy. Choose from three Cisco UCS CPA for Big Data starter bundles to deploy your solution quickly with the right configuration to match your requirements.

For More Information

http://www.cisco.com/en/US/netsol/ns1199/index.html
(or you can use www.cisco.com/go/bigdata)

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