Cisco UCS Invicta Scaling System

Product Overview

What if you could accelerate the performance of your mission-critical workloads? Transactions could be processed instantaneously. Users could analyze data and make better decisions faster. Batch processing jobs would go faster. And other important processes would deliver better performance. And what if you could easily reshape your infrastructure as demands on it change? Now you can. Cisco's leadership in high-performance, scalable, solid-state systems is dramatically improving application performance while simplifying data center operations.

Meet the Cisco UCS Invicta™ Scaling System: the first truly enterprise-class, scalable, solid-state architecture. As a next-generation modular architecture, the Cisco UCS Invicta Series delivers the highest sustained write throughput in the industry. It supports all standard networking and file protocols. And it can serve up application workloads from a multitenant architecture in which applications coexist without performance degradation.

Compared to similar technologies, the Cisco UCS Invicta OS outperforms. It was designed to use NAND flash memory for sustained high throughput, a high rate of I/O operations per second (IOPS), ultra-low latency, and fast write performance.

Cisco's application-centric approach, combined with a modular, scalable, high-performance architecture, let you improve performance of many types of workloads:

- Analytics and intelligence: Extract, integrate, and analyze data up to 10 times faster.
- Batch processing: Run batches without interrupting other workflow.
- E-mail: Reduce time delays by a factor of up to 50.
- Online transaction processing: Remove performance bottlenecks between servers and memory.
- Video: Complete more transcoding tasks in significantly less time.
- Virtual desktops: Improve overall user experience with desktops that launch faster and respond quickly while virus scanning.
- Database loads: Dramatically reduce query response times.
- High-performance computing (HPC): Leverage low latency IO requests to speed time sensitive applications.

Features and Benefits

Table 1 summarizes the features and benefits of the Cisco UCS Invicta Scaling System.

Table 1. Features and Benefits

Feature	Benefit
Cisco UCS Invicta OS	• Enables the appliance to achieve high throughput, high IOPS rate, and ultra-low latency • Greatly extends useful life of multilevel cell (MLC) media • Optimizes write requests for flash-memory architecture-wear-leveling algorithms by committing all writes across the entire appliance • Reduces power consumption and floor space for energy and space savings

Feature	Benefit
Expandability and scalability	• Through scale-up and scale-out architecture, provides flexibility to increase throughput or capacity, based on workload demands
Data protection	• Through write protection buffer, delivers confirmed writes in the event of a power loss • Uses asynchronous and open target replication to let you replicate data to a variety of targets for increased flexibility, security, and availability
Connectivity	• Preserves existing investment without limiting options to build an enterprise infrastructure
Manageability	• Configures the appliance in a few easy steps • Simplifies performance monitoring, automated support setup, role assignment, and management with tools for mirroring, replication, and other functions
Data reduction	• Achieves a 10x deduplication rate • Reduces space requirements
Thin provisioning	• Eliminates cost of unused, over allocated memory • Saves space and resources

Product Specifications

Table 2 lists the hardware specifications for the Cisco UCS Invicta Scaling System.

Table 2. Cisco UCS Scaling System Specifications

Item	Specification
Capacity (TB)	6 to 240 TB RAW
Scaling architecture	• Up to 2 scaling system routers (SSRs) • Up to 10 scaling system nodes (SSNs)
IOPS	1.3 million (For 4000 cryptologically random writes)
Bandwidth	2.5 to 40 GBps
Latency	200 microseconds
Drive protection	RAID
Redundant fans and power supplies	• Dual-redundant fans and power supplies for enterprise-class reliability and uptime • Power efficiency through Cisco Common Form-Factor Platinum Power Supplies
Form factor	8RU base configuration; two 42RU racks fully expanded
Power consumption	• 250W per node • 1400W base unit • 3,000 fully expanded
Interfaces	Ethernet: 10 GB Ethernet Fibre Channel: 8 GB
OS support	Microsoft Windows, Linux, Red Hat, Solaris, VMware vSphere, and Citrix XenServer
Integration	VAAI
Management integration	Cisco UCS Director
Protocols	Fibre Channel, iSCSI, and NFS
Power-outage protection	Write-protection buffer
Processors	Intel Xeon processor E5-2680 v2
Memory	24 DIMM slots 16-GB dual-rank 1.35V
PCIe slots	2 PCIe Generation 3 x16 slots: both full height and 3/4 length (10.5 in.)
Drives	Up to 24 front-accessible, hot-swappable, 2.5-inch SATA drives
Front-panel connectors	One KVM console connector (supplies 2 USB ports, 1 VGA port, and 1 serial port)
Front-panel locator LED	Indicator to help direct administrators to specific servers in large data center environments
Additional rear connectors	Additional interfaces include a VGA video port, 2 USB 2.0 ports, 1 Gigabit Ethernet dedicated management port,

Item	Specification
	quad 1 Gigabit Ethernet ports, and an RJ-45 serial port
Physical dimensions (HxWxD per node or router)	2RU: 3.4 x 17.5 x 28.0 in. (8.7 x 44.5 x 71.2 cm)
Temperature: Operating	41 to 104℉ (5 to 40℃) derate the maximum temperat ure by 1℃ for every 305m of altitude above sea level
Temperature: Nonoperating	-40 to 158℉ (40 to 70℃)
Humidity: Operating	10 to 90% noncondensing
Humidity: Nonoperating	5 to 93% noncondensing
Altitude: Operating	0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1℃ per 300m)
Altitude: Nonoperating	40,000 ft (12,000m)

Regulatory Standards

Table 3 provides regulatory standards compliance information for the Cisco UCS Scaling System Appliance.

Table 3. Regulatory Standards Compliance: Safety

Specification	Description
Safety	• UL 60950-1 No. 21CFR1040 Second Edition • CAN/CSA-C22.2 No. 60950-1 Second Edition • IEC 60950-1 Second Edition • EN 60950-1 Second Edition • IEC 60950-1 Second Edition • AS/NZS 60950-1 • GB4943 2001
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR2 2 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A
EMC: Immunity	• EN55024 • CISPR24 • EN300386 • KN24

For More Information

- For additional information about the Cisco UCS Scaling System, visit http://www.cisco.com/go/ucsinvicta.

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