Huawei FusionCube Specifications

FusionCube virtualization appliance

Application scenario	Virtualization, cloud, hybrid load, VDI
Node specifications	2-socket compute node (2 x E5-2600 v3 CPUs) 4-socket computer node (4 x E7-4800 v2 or E7-4800/8800 v3 CPUs) 2-socket compute and storage converged node (2 x E5-2600 v3 CPUs, 2–6 x PCIe SSDs with 2.4 TB/3.2 TB per SSD) 2-socket compute and storage converged node (2 x E5-2600 v3 CPUs, 12 x SAS HDDs)
Network	10GE, IB 56G FDR switching (storage network)
Storage	FusionStorage distributed storage
Maximum specifications	256 server nodes
Management software	FusionCube Center
Virtualization software	FusionSphere 5.1/VMware vSphere 5.5 or later
Cabinet height	42 U (customizable)
Power consumption	6000 W (maximum per chassis)

The number of virtual machines (VMs) is calculated based on the statistics provided by the light-loaded office desktop load lab.

FusionCube database infrastructure

Application scenario	Data warehouse, database integration, midrange computer replacement
Database type	Oracle DB, IBM DB2, SAP Sybase IQ, Dameng database
Database node	2-socket database node (2 x E5-2600 v3 CPUs), or 4-socket database node (4 x E7-4800 v2 or E7-4800/8800 v3 CPUs)
Storage node	Large-capacity storage node (12 x 1.2 TB/1.8 TB SAS disks, 3.2 TB SSD cache, 2 x 10GE ports, 2 x 56G IB ports) High-performance storage node (4/6 x 3.2 TB SSDs, 2 x 10GE ports, 4 x 56G IB ports)
Management node	1 or 2 management nodes (2 x E5-2620 v3 CPUs, 128 GB memory, 2 x 10GE ports)
Network	IB 56G FDR switching, 10GE
Storage	FusionStorage distributed storage
IOPS	7200,000 (maximum per cabinet)
Throughput	192 GB/s (maximum per cabinet)
Management software	FusionCube Center
Cabinet height	42 U (customizable)
Maximum specifications	10 chassis
Power consumption	6000 W (maximum per chassis)

Typical Configuration

	Typical Configuration for Virtualization	Typical Configuration for Hybrid Load
Node specifications	4–8 x 2-socket compute and storage converged nodes (2 x E5-2600 v3 CPUs, 12 x SAS HDDs)	4 x 2-socket compute and storage converged nodes (2 x E5-2600 v3 CPUs, 12 x SAS HDDs) 2 x 4-socket compute nodes (4 x E7-4800 v2 or E7-4800/8800 v3 CPUs)
Network	10GE	10GE, IB 56G FDR switching (storage network)
Storage	FusionStorage distributed storage	FusionStorage distributed storage
Management software	FusionCube Center	FusionCube Center
Virtualization software	FusionSphere 5.1/VMware vSphere 5.5 or later	FusionSphere 5.1/VMware vSphere 5.5 or later

FusionCube for SAP HANA

Database	SAP HANA
Operating system	SLES for SAP 11 SP3
HANA specifications	1 TB/512 GB 16-node cluster
Database node	2–16 database nodes (4 x E7-8880/8890 v2 CPUs, 1 TB/512 GB memory, 2 or 4 x 10 GE ports, 2 x 56G IB ports)
Storage node	3–15 storage nodes (2 x E5-2630 v2 CPUs, 64 GB memory, 12 x 900 GB SAS disks, 4 GB NVDIMMs, 2 x 10GE ports, 2 x 56G IB ports)
Management node	1 or 2 management nodes (2 x E5-2620 v2 CPUs, 128 GB memory, 2 x 10GE ports)
Network	IB 56G FDR switching, 10GE
Storage	FusionStorage distributed storage
Management software	FusionCube Center
Cabinet height	42 U (customizable)
Power consumption	6000 W (maximum per chassis)

General Disclaimer

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Simply Powerful

Huawei FusionCube Hyper-Converged Infrastructure

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BUILDING A BETTER CONNECTED WORLD

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Hyper-Converged Infrastructure

Cloud brings business efficiency but also complexity

More than half of the x86 servers being installed by businesses are virtualized. Virtualization reduces costs, increases efficiency, and improves the agility of businesses, but it also requires more highly skilled administrators for the basic system and the software applications. This results in a transformation not only in technology but also in business operation. Removing the connection between physical servers and applications reshapes the traffic paradigm in the data center, making it more difficult to implement security measures, perform network management, and enforce application SLAs. It is not unusual to find that managing a virtual environment for a mid-sized data center may require double the cost of a data center composed of only physical servers.

FusionCube brings simplicity and power

Huawei FusionCube is a pre-integrated solution designed to simplify deployment of a powerful, virtualized IT infrastructure. It features fully converged computing, storage and networking, with a highly automated virtualization and management system. The resulting system improves application and business efficiency beyond what was previously possible.

FusionCube reduces capital expenses as a result of higher utilization, less cabling, and fewer network connections, while also lowering operating costs by reducing administration labor through automated data center management. By unifying Ethernet and Fiber Channel networking, all components in the data center can be managed from a single console. FusionCube can even allow the consolidation of storage and network management teams. In addition to providing linear increases of computing and storage resources, FusionCube also provides a linear increase in system caching, by pooling memory and SSD storage across all devices in the cube, increasing application performance.

FusionCube is ideal for server virtualization, desktop virtualization, private clouds, and application hosting. Expanding existing cloud data centers will also be much easier when using FusionCube.

Customer Benefits

Simplicity

- Pre-integrated compute and storage blades, and network
- Pre-validated infrastructure, virtualization, and management
- Unified physical and virtual resource management
- Auto-discovery and auto-configuration

FusionCube creates a simple and powerful cloud. Installation consists of connecting a few cables and turning on the power. All physical and virtualized resources, servers and network switches, virtual machines, storage volumes, and even your applications can be managed from a single console.

Agility

- Reduce deployment time from months to days
- Flexible compute/storage configuration
- Linear scalability, quick expansion on demand

The compute and storage blades can be mixed in any configuration, allowing much greater flexibility and making the system adaptable to all types of workload. Up to 20% of the cost can also be saved by eliminating a separate SAN.

Efficiency

- Unified management, automation and one-click deployment reduce OPEX by 30%
- Hardware-software synergy to achieve application optimization
- Improve storage I/O performance by 3 to 5 times
- Improve network performance by 3 times

FusionCube does not stack standard equipment. A unique, distributed technology-based storage engine, intelligent network adaptor, SSD caching mechanism, and other innovations work together to achieve unrivaled performance at an affordable cost.

Highlights

Highly converged platform

FusionCube uses an innovative hardware platform composed of flexible slots for compute/storage blades and GE/10 GE/IB switching modules. The compute and storage resources can be configured to adapt to various workloads. A single 12U chassis supports 64 CPUs and 12 TB of memory, making it especially suitable for situations requiring high computing density and virtualization. Converged storage and SSD cache accelerate application and database performance.

Elastic cloud platform

The FusionSphere software virtualizes and schedules compute, storage, and network resources and provides IaaS services such as elastic computing, load balancing, and a virtual private cloud.

The unified management system allows access to everything in FusionCube, from switch to Virtual Machine (VM), from storage volumes to applications, from provisioning to automation and security.

The scale of FusionCube systems that can be managed by the cloud platform range from a single box up to a complete data center. The management system also supports auto-discovery, so expanding the cloud is as simple as plugging in a new cube. Simple, but powerful.

Accelerated storage engine

The cluster scale-out storage engine provides storage virtualization of three-tier (Memory-SSD-DAS) storage and eliminates the vulnerable RAID controller while providing high availability and scalability.

The data is striped and stored across all (hundreds or thousands of) disks in FusionCube, increasing both the utilization of the disk storage and I/O performance for different applications. The storage engine delivers 3-to-5 times higher peak time IOPS to applications with same number of disks, improving performance 100% to 300%. Utilizing advanced features such as thin provisioning does not reduce performance. The on-demand scale-out cluster architecture enables you to handle new virtualization needs without re-planning or re-architecting the system.