Windows Storage Server 2012 R2 on Supermicro High-Performance 2U Cluster-in-a-Box

Supermicro's 2U SuperStorage Bridge Bay running Windows Storage Server 2012 R2 Standard is a fully redundant, fault-tolerant Cluster-in-a-Box designed to provide mission-critical, low latency storage for enterprise applications.

Mission-Critical, Enterprise Storage at an Affordable Price

Part of Supermicro's SuperStorage Bridge Bay (Super SBB) line, the SSG-2027B-CIB020H is designed to provide reliable, continuous availability storage with high transactional performance for SMB and remote office environments. Key features and benefits include:

- **Hot-swappable modules for all active components** – including storage controllers, power supplies, and disk drives.
- **Ready-to-deploy** – delivered with Windows Storage Server 2012 R2 Standard preinstalled and Failover Clustering preconfigured across the two compute nodes.
- **High-performance, tiered storage** – incorporates 4x SAS SSD drives for lightning-fast performance by using the new Storage Tiers feature in Windows Storage Server 2012 R2 Standard.
- **Native integration with Active Directory** – enabling fast and easy deployment in existing Windows Server-based IT infrastructures.
- **Easily expanded** – built-in expansion ports make it easy to connect up to four Super SBB 937R-E2JB JBODs, each of which supports 16x 3.5" SAS2/SATA3 drives.
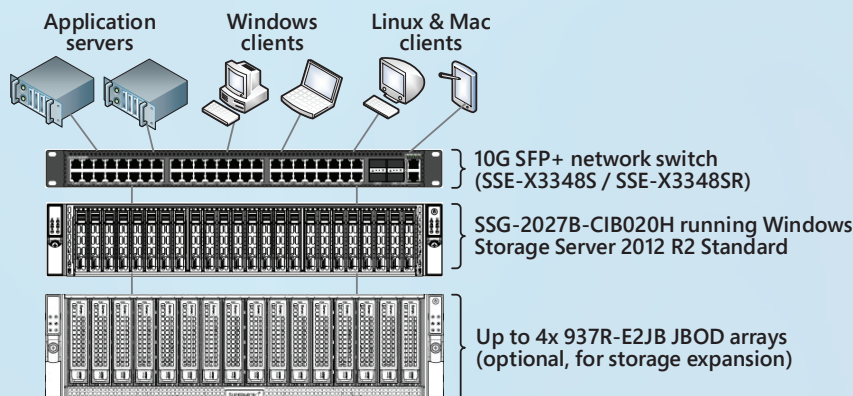
With the SSG-2027B-CIB020H running Windows Storage Server 2012 R2 Standard, you'll have access to the latest storage innovations from Microsoft, including:

- **Data Deduplication and Storage Spaces** – for maximizing and scaling your storage capacity.
- **Storage Tiers, SMB Direct, SMB Multichannel, and NIC Teaming** – for maximum performance.
- **Enhancements to Failover Clustering and Hyper-V** – for improved reliability.

For more information on all the capabilities built into Windows Storage Server 2012 R2 Standard, visit www.microsoft.com/windowsserver

Typical Deployment Model

The following diagram shows a typical deployment model for the SSG-2027B-CIB020H running Windows Storage Server 2012 R2 Standard in a datacenter environment.

Application servers

Windows clients

Linux & Mac clients

10G SFP+ network switch (SSE-X3348S / SSE-X3348SR)

SSG-2027B-CIB020H running Windows Storage Server 2012 R2 Standard

Up to 4x 937R-E2JB JBOD arrays (optional, for storage expansion)

SSG-2027B-CIB020H AT-A-GLANCE

- **Two hot-pluggable systems (nodes) in a 2U form factor**
- **2 Intel Xeon E5-2403 v2 1.8GHz processors per node**
- **20TB raw capacity with SSD and HDD storage tiers**
- **Windows Storage Server 2012 R2 Standard preinstalled on internal SATA DOM (one DOM per node)**
- **64GB system memory per node (user expandable)**
- **3x PCI-E 3.0 x8 slots per node**
- **6 Gbps LSI 2308 SAS2 controller per node (daughtercard on motherboard)**
- **1x hot-plug JBOD expansion port per node**

Base System Specifications

The SSG-2027B-CIB020H is a preconfigured system, built to the following specifications. Full specifications can be found at:
http://www.supermicro.com/products/system/2U/2027/SSG-2027B-DE2R24L.cfm

PRODUCT SKU	
SSG-2027B-CIB020H	SuperServer SSG-2027B-CIB020H (Black)
MOTHERBOARD (PER NODE)	
1x Super X9DBS-F-2U	
PROCESSOR / CACHE (PER NODE)	
CPU	2x Intel® Xeon® E5-2403 v2 processors (1.8GHz)
Cache	10MB/processor
System Bus	6.4GT/s QPI
SYSTEM MEMORY (PER NODE)	
Memory Capacity	• 6x 240-pin DIMM sockets • 64GB installed (4x 16GB DIMMs) • Memory Mirroring supported
Memory Type	1600 ECC Registered / ECC DDR3 SDRAM 72-bit, 240-pin gold-plated DIMMs
Memory Voltage	1.35V
EXPANSION SLOTS (PER NODE)	
PCI-Express	3x PCI-E 3.0 x8 slots (on riser)
NETWORKING (PER NODE)	
LAN Ports	2x GbE LAN ports (One for IPMI 2.0)
Server Management	• Intelligent Platform Management Interface (IPMI 2.0) with internal node to node link • Virtual media and KVM-over-LAN support See www.supermicro.com/products/nfo/IPMI.cfm for more information

CHASSIS AND DIMENSIONS	
Form Factor	2U Rackmount
H x W x D	3.5" (88mm) x 17.2" (437mm) x 25.5" (679mm)
INTEGRATED STORAGE	
Hot-swap	20TB raw capacity (24x hot-swap 2.5" drive bays populated with 20x 1TB 7200 RPM nearline SAS drives and 4x 200GB SAS SSDs)
Internal	64GB SATA DOM (disk on module) per node with Windows Storage Server 2012 R2 Standard preinstalled
JBOD EXPANSION	
1x SAS2 expansion port per node (mini-SAS HD)	
BACKPLANE	
SAS2 dual expander architecture, featuring: • Scalability through cascading • 6Gb SAS2/SATA3 HDD support • Inband SES-2 enclosure management • Redundancy dual ported SAS architecture • Robust AirMax server node connections (SBB specification)	
SYSTEM COOLING	
Fans	10x PWM Fans
POWER SUPPLY WITH POWER DISTRIBUTOR	
920W high-efficiency (94%+) Redundant power supplies with PMBus and I2C	

Networking Options

The high performance and low latency provided by this model make it ideal for high-volume transactional workloads such as database and email storage. For even greater performance, the following Supermicro networking cards are supported and can be added in pairs to the PCI-E expansion slots:

DESCRIPTION	QUALIFIED MODELS
Quad-port 1G	AOC-SG-i4
Dual-port 10G Base-T	AOC-STG-i2T
Dual-port 10G SFP+	AOC-STGN-i2S
Dual-port 10G SFP+ with RDMA	Emulex OCe14102-NX

More information on Supermicro networking products can be found at www.supermicro.com/products/nfo/networking.cfm

Easy Expansion

The use of Data Deduplication in Windows Storage Server 2012 R2 Standard can provide a significant increase in storage efficiency for many common storage workloads. After maximum capacity is reached, the SSG-2027B-CIB020H can easily be expanded by connecting its built-in JBOD expansion port to a Super SBB JBOD (Supermicro P/N SYS-937R-E2JB), which supports 16x 3.5" SAS2/SATA3 drives. Up to four JBODs can be attached, providing up to an additional 384TB of raw disk capacity when populated with 6TB nearline SAS drives.

For more information, call your sales representative and ask about **P/N SSG-2027B-CIB020H**.

Windows Server 2012