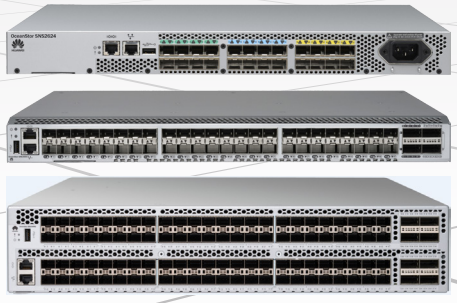
Data Sheet

OceanStor SNS2624/SNS3664/ SNS3696E FC Storage Switches



OceanStor SNS2624/SNS3664/SNS3696E

HUAWEI OceanStor SNS2624/SNS3664/SNS3696E Switches are the purpose-built network infrastructure for mission-critical storage. Use Gen 6 Fibre Channel, Fabric Vision technology deliver unmatched 32 Gbps perfor-mance, increased scalability, and operational stability to ensure hyper-scale virtualization, larger cloud infrastruc-tures, and growing flash-based storage environments.

Product Features

HIGHLIGHTS

- Powers up from 16 Gbps to 32 Gbps to deliver increased performance on demand. 32 Gbps links application performance barriers with up to 100 million IOPS
- Provides an affordable storage switch that redefines simplicity and flexibility
- Provides proactive, non-intrusive, real-time monitoring and alerting of storage IO health and performance with IO Insight（SNS3664 support IO Insight, SNS2624 not support IO Insight）, the industry's first built-in device latency and IOPS monitor
- Enables the seamless transition to next- generation NVMe flash arrays, without a disruptive rip and replace
- Proactively monitors and optimizes the health and performance of individual Virtual Machines (VMs), and identifies anomalies with VM Insight
- Increases resiliency by automatically discovering and recovering from common networking problems
- Leverages Fabric Vision technology to simplify administration, quickly resolve problems, increase uptime, and reduce costs

Purpose-Built for Enterprise Deployments

Today's mission-critical storage environments require greater consistency, predictability, and performance to keep pace with growing business demands. Faced with explosive data growth, data centers need more IO capacity to accommodate the massive amounts of data, applications, and workloads. In addition to this surge in data, collective expectations for availability continue to rise. Users expect applications to be available and accessible from anywhere, at any time, on any device.
To meet these dynamic and growing business demands, organizations need to deploy and scale up applications quickly. As a result, many are moving to higher Virtual Machine (VM) densities to enable rapid deployment of new applications and deploying flash storage to help those applications scale to support thousands of users. To increase agility, reduce expenses, and realize the full benefits of these architectures, organizations need the network to deliver the performance required by today's server and storage environments. In addition, storage networks are becoming increasingly important to application performance, which means that they also must become easier to administer and manage. By treating the network as a strategic part of a highly virtualized environment, organizations can increase optimization and efficiency even as they rapidly scale their environments.

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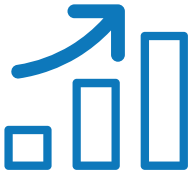
SNS2624 Features

SNS2624 provides an affordable storage switch without compromising on performance and reliability. Leveraging the power of Gen 6 Fibre Channel technology, it delivers a flash-ready solution for the always-on, digital business. With its combination of up to 32 Gbps performance, unmatched simplicity, and enterprise-class functionality, the SNS2624 provides exceptional price/performance value in an entry-level switch. The SNS2624 offers small to midsized data centers affordable access to industry-leading Gen 6 Fibre Channel technology. Organizations gain the best of both worlds: high-performance access to industry-leading storage technology,The SNS2624 is also easy to use and install, with a point-and-click user interface that simplifies deployment and saves time.

Designed in an efficient 1U package, starting with 8 ports and low energy consumption at 0.10 watts per Gbps and 3.2 watts per port, the switch delivers a low Total Cost of Ownership (TCO) for Gen 6. To help further control costs, the SNS2624 provides real-time monitoring to enable users to actively monitor the switch's power usage.

SNS3664 Features

SNS3664 is built for maximum flexibility, scalability, and ease of use.SNS3664 switch meets the demands of hyper-scale virtualization, larger cloud infrastructures, and growing flash-based storage environments by delivering market-leading Gen 6 Fibre Channel technology and capabilities. It provides a high-density building block for increased scalability, designed to support growth, demanding workloads, and data center consolidation in small to large-scale enterprise infrastructures. Delivering unmatched 32/128 Gbps performance, industry-leading port density, and built-in instrumentation, the SNS3664 accelerates data access, adapts to evolving requirements, and drives always-on business.



It provides a high-density building block for increased scalability, designed to support growth, demanding workloads, and data center consolidation in small to large-scale enterprise infrastructures. Delivering unmatched 32/128 Gbps performance, industry-leading port density, and built-in instrumentation, the SNS3664 accelerates data access, adapts to evolving requirements, and drives always-on business.

SNS3696E Features

The SNS3696E enterprise-class switch delivers industry-leading port density with 128 Fibre Channel ports in an elegant 2U form factor. Organizations can both increase scalability and optimize space utilization. With 96 32 Gbps SFP+ ports and 8 4×32 Gbps Q-Flex ports, the compact design of the switch enables data centers to scale efficiently and deliver more connectivity with fewer switches. With the SNS3696E, organizations can seamlessly transition to an all-flash data center and build a foundation to support future innovation and operational efficiency.

Performance for Solid State Storage Architectures

Faced with unpredictable virtualized workloads and growing flash storage environments, organizations need to ensure that the network does not become the bottleneck. The SNS FC switch delivers increased performance for growing and dynamic workloads through a combination of market-leading throughput and low latency across 32 Gbps links.
Administrators can achieve optimal bandwidth utilization, high availability, and load balancing by combining up to eight ISLs in a 256 Gbps framed-based trunk.
Moreover, exchange-based Dynamic Path Selection
(DPS) optimizes fabric-wide performance and load balancing by automatically routing data to the most efficient, available path in the fabric. This augments ISL Trunking to provide more effective load balancing in certain configurations.

Meet Critical SLAs

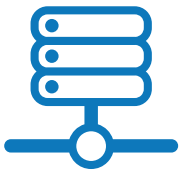
The SNS FC switch, with Gen 6 Fibre Channel technology and built-in instrumentation, helps organizations achieve greater control and insight to quickly identify root cause at the storage tier, reducing time to resolution so critical Service Level Agreements (SLAs) can be met. The IO Insight (SNS3664/SNS3696E support IO Insight, SNS2624 not support IO Insight) capability non-intrusively gathers IO statistics, which can be used within an intuitive, policy-based monitoring and alerting suite to configure thresholds and alarms. In-band device latency and IOPS monitoring detects degraded storage performance, allowing administrators to proactively optimize performance and availability to ensure maximum performance.

Simplify Management

The SNS3664 features up to 64 Fibre Channel ports (SNS2624 up to 24 ports) in an efficiently designed 1U form factor, SNS3696E enterprise-class switch delivers density with 128 Fibre Channel ports in an 2U form form factor, delivering industry-leading port density and space utilization for simplified scalability and data center consolidation. With this high-density design, organizations can pack more into a single data center with a smaller footprint, reducing costs and management complexity. Along with providing best-in-class scalability, the SNS2624/SNS3664/SNS3696E simplifies end-to-end network management by automating monitoring and diagnostics through Fabric Vision technology.

A Building Block for Virtualized, Private Cloud Storage

The SNS2624/SNS3664/SNS3696E provides a critical building block for today's highly virtualized and cloud environments. It both simplifies server virtualization and meets the high-throughput demands of Solid State Disks (SSDs). The SNS3664/SNS3696E also supports multitenancy in cloud environments through Virtual Fabrics, Quality of Service (QoS), and fabric-based zoning features. In addition, internal fault-tolerant and enterprise-class RAS features help minimize downtime to support mission-critical cloud environments.



Access Gateway Mode

SNS2624/SNS3664 can be deployed as a full-fabric switch or as a Access Gateway, which simplifies fabric topologies and heterogeneous fabric connectivity (the default mode setting is a switch). Access Gateway mode utilizes N_Port ID Virtualization (NPIV) switch standards to present physical and virtual servers directly to the core of SAN fabrics. This makes it transparent to the SAN fabric, greatly reducing man-agement of the network edge.

Technical Specifications

Model	SNS2624	SNS3664	SNS3696E
System Architecture			
Number of ports	Switch mode (default):8-port, 16-port, and 24-port configurations (8-port increment through Ports on Demand [PoD] license); Access Gateway default port mapping: 16 F_Ports, 8 N_Ports	Switch mode (default): Minimum of 24 ports and maximum of 64 ports. Port numbers above minimum are enabled through 12-port SFP+ increments via Ports on Demand (PoD) licenses and through one 4-port QSFP PoD; Access Gateway default port mapping: 40 SFP+ F_Ports, 8 SFP+ N_Ports	Offers a base configuration of 48 ports, two 24-port SFP+ PoD (Ports on Demand), and one 32-port QSFP PoD. The switch has a total of eight 32 Gbps QSPF ports. This allows users to grow from 48 ports to 128 ports.
Port types	F_Port,E_Port,M_Port, D_Port (ClearLink Diagnostic Port) on 24 SFP+ ports; Access Gateway mode: F_Port and NPIV-enabled N_Port	D_Port(ClearLink Diagnostic Port), E_Port, EX_Port, F_Port, AE_Port; optional port-type control ; Access Gateway mode: F_Port and NPIV-enabled N_Port	D_Port (ClearLink Diagnostic Port), E_Port, EX_Port, F_Port, AE_Port, optional port-type control
Scalability	Full-fabric architecture with a maximum of 239 switches		
Certified maximum	6,000 active nodes; 56 switches, 19 hops in Fabric OS® fabrics; larger fabrics certified as required		
Performance	Fibre Channel: 4.25 Gbps line speed, full duplex; 8.5 Gbps line speed, full duplex; 14.025 Gbps line speed, full duplex; auto-sensing of 4 Gbps, 8 Gbps, 16 Gbps, and 32 Gbps port speeds	Fibre Channel: 4.25 Gbps line speed, full duplex; 8.5 Gbps line speed, full duplex; 10.53 Gbps line speed, full duplex; 14.025 Gbps line speed, full duplex; 28.05 Gbps, full duplex; 112.2 Gbps, full duplex; auto-sensing of 4, 8, 16, 32 Gbps port speeds and capable of supporting 128 Gbps speeds; 10 Gbps optionally programmable to fixed port speed	Fibre Channel: 4.25 Gbps line speed, full duplex; 8.5 Gbps line speed, full duplex; 10.53 Gbps line speed, full duplex; 14.025 Gbps line speed, full duplex; 28.05 Gbps, full duplex; 112.2 Gbps, full duplex; auto-sensing of 4/8/10/16/32 Gbps port speeds and capable of supporting 128 Gbps speeds; 10 Gbps optionally programmable to fixed port speed.Auto-sensing of 4×32 / 4×16 / 4×8 / 4×4 Gbps speeds on the QSFP ports with FOS v8.2.0.
ISL Trunking	Frame-based trunking with up to eight 32 Gbps ports per ISL trunk; up to 256 Gbps per ISL trunk Exchange-based load balancing across ISLs with DPS included in Fabric OS	Frame-based trunking with up to eight 32 Gbps SFP+ ports per ISL trunk or up to two 128 Gbps QSFP ports per ISL trunk. Exchange-based load balancing across ISLs with DPS included in Fabric OS	Frame-based trunking with up to eight 32 Gbps SFP+ ports per ISL trunk or up to two 128 Gbps QSFP ports per ISL trunk. Exchange-based load balancing across ISLs with DPS included in Fabric OS
Aggregate bandwidth	768 Gbps end-to-end full duplex	2 Tbps	4 Tbps
Maximum fabric latency	Latency for locally switched ports is ≤ 900 ns (including FEC)	Latency for locally switched ports is < 780 ns (including FEC); compression is 1 µs per node	Latency for locally switched ports is < 780 ns (including FEC); Latency between port groups is 2.6 µs, cut-through routing at 32 Gbps between locally switched groups.compression is 1 µs per node
Maximum frame size	2,112-byte payload		
Frame buffers	2,000 dynamically allocated	15,360 dynamically allocated	15,360 dynamically allocated
Classes of service	Class 2, Class 3, Class F (inter-switch frames)		

Data traffic types	Fabric switches supporting unicast		
USB	One USB port for system log file downloads or firmware upgrades		
Extension		Integrated optional 10 Gbps Fibre Channel for DWDM MAN connectivity	Integrated optional 10Gbps Fibre Channel for DWDM MAN connectivity; Fibre Channel, in-flight compression (LZO) and encryption (AES-GCM-256)
Management			
Supported management software	HTTP, SNMP v1/v3 (FE MIB, FC Management MIB), SSH; Auditing, Syslog; Web Tools; Command Line Interface (CLI);SMI-S compliant; Administrative Domains; trial licenses for add-on capabilities	HTTP, SNMP v1/v3 (FE MIB, FC Management MIB), SSH; Auditing, Syslog; NTP v3; Web Tools; Command Line Interface (CLI); SMI-S compliant; REST API; Administrative Domains; trial licenses for add-on capabilities	HTTP, SNMP v1/v3 (FE MIB, FC Management MIB), SSH; Auditing, Syslog; NTP v3; Web Tools; Command Line Interface (CLI); SMI-S compliant; REST API; trial licenses for add-on capabilities
Management access	10/100/1000 Mbps Ethernet (RJ-45), in-band over Fibre Channel, serial port (RJ-45) and one USB port		
Mechanical			
Enclosure	Back-to-front airflow (non-port-side intake); power from back, 1U	Front-to-back airflow; non-port-side exhaust; power from back, 1U Back-to-front airflow; non-port-side intake; power from back, 1U	Front-to-back airflow; non-port-side exhaust; port-side intake; 2U Back-to-front airflow; non-port-side intake; port-side exhaust; 2U
Size	Width: 42.88 cm (16.88 in.) Height: 4.29 cm (1.69 in.) Depth: 30.66 cm (12.07 in.)	Width: 44 cm (17.32 in.) Height: 4.39 cm (1.73 in.) Depth: 35.56 cm (14 in.)	•Width: 44.0 cm (17.32 in.) •Height: 8.67 cm (3.41 in.) •Depth: 60.96 cm (24 in.)
System weight	5.75 kg (12.67 lb) with one integrated power supply, without transceivers	7.73 kg (17 lb) with two power supply FRUs, without transceivers	21.31 kg (47.00 lb) with two power supply FRUs,and three fan FRUs without transceivers
Environment			
Operating environment	Temperature: 0°C to 40°C/32°F to 104°F Humidity: 10% to 85% (non-condensing)		
Non-operating environment	Temperature: -25°C to 70°C/-13°F to 158°F Humidity: 10% to 90% (non-condensing)		
Operating altitude	Up to 3,000 m (9,842 ft)		
Storage altitude	Up to 12 km (39,370 ft)		
Shock	Operating: Up to 20 G, 6 ms half-sine Non-operating: Half sine, 33 G 11 ms, 3G axis	Operating: Up to 20 G, 6 ms half-sine Non-operating: Half-sine, 33 G 11 ms, 3/eg axis	Operating: Up to 20 G, 6 ms half-sine Non-operating: Half-sine, 33 G 11 ms, 3/eg axis
Vibration	Operating: 0.5 g sine, 0.4 grms random, 5 Hz to 500 Hz Non-operating: 2.0 g sine, 1.1 grms random, 5 Hz to 500 Hz		
Heat dissipation	24 ports at 215 BTU/hr	64 ports at 716 BTU/hr	128 ports at 3,512 BTU/hr
Power			
Power supply/Fan	Base switch includes a single, fixed power supply with four integrated system cooling fans	Dual, hot-swappable redundant power supplies with integrated system cooling fans	Dual, hot-swappable redundant power supplies with integrated system cooling fans Three hot-swappable redundant Fans
AC input	90 V to 264 V, Maximum input current is 2.2A	90 V to 264 V-3.5 A	90 V to 264 V-12 A
AC input line frequency	47 Hz to 63 Hz		
Power consumption	76.52 W with all 24 ports populated with 32 Gbps SWL optics 55.83 W for idle configuration (all optics loaded but not initialized)	204 W with all 64 ports populated with 48×32 Gbps SFP+ SWL optics and 4× (4×32 Gbps) QSFP SWL optics 85 W for empty chassis with no optics	Maximum 942 W with all 128 ports operating at 32 Gbps (96 ports populated with 32 Gbps SWL optics and 8 QSFP ports populated with 4×32 Gbps SWL optics) Maximum of 495 W for empty chassis with no optics in idle configuration

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For More Information

To learn more about Huawei storage, please contact the local office or visit Huawei Enterprise website http://e.huawei.com.

Huawei Enterprise APP

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