

Sun™ Secure Application Switches— N1000 Family

High-Performance Application Delivery



Highlights

- Virtual Switching technology
- Radical simplification through consolidation
- Integrated application switching, load balancing, SSL acceleration, and attack protection
- Advanced security—full port 80/443 proxy and inspect
- High-performance SSL—up to 15,000 CPS and two Gbps crypto throughput
- Up to three Gbps of high performance L2-L7 switching, routing, load balancing, and application switching
- Up to 125,000 CPS for high performance applications
- High-availability configurations via active/hot-standby or active/active topologies
- Bidirectional application inspection for improved server health checking
- Flexible management interfaces for ease of use
- Automated configuration synchronization to simplify redundant deployments



The Sun Secure Application Switches—N1000 Family consists of the N1216 and N1400 configurations. The switches provide high-performance Layer 4-7 application switching, network virtualization, Secure Sockets Layer (SSL) acceleration, and more. With these switches, Sun leverages innovative hardware to drastically improve the efficiency of essential load-balancing and encryption/decryption, while protecting against attacks and security breaches.

High Performance, High Security, and Virtual Switching

The Sun Secure Application Switches—N1000 Family provides gigabit-scaled TCP termination and policy processing, with an architecture that includes high-performance network processing elements and customized software. Sun offers an option that adds Virtual Switching technology to facilitate the creation of multiple Virtual Switches within each physical switch. This technology allows the virtualization of switch services—routing, application switching, security services, and management capabilities—into multiple secure network domains. Virtual Switches can be dynamically added, removed, and configured as needed by network administrators, further optimizing data center operations by helping to enable real-time capacity delivery.

The Sun Secure Application Switches—N1000 Family is designed for deployment and consolidation of network infrastructure at all tiers of the modern data center. These flexible switches can be deployed anywhere from the distribution layer to the server rack. With Virtual Switching technology, each switch can also function simultaneously in multiple data center tiers. The result is enhanced infrastructure utilization through consolidation, unprecedented price/performance, and a secure and virtualized network environment that is easy to manage.

Sun Secure Application Switches—N1000 Family

Performance

- Up to three Gbps application switching throughput
- Up to two Gbps cryptographic throughput

Virtual Switches (option)

- 10 Virtual Switches per system partition switch resources dynamically and securely

Application switching/load balancing

- Up to 56,000 L7 connections/second
- Up to 125,000 new L4-L7 connections/second
- Up to 875,000 concurrent L4-L7 connections
- Application switch bidirectionally on HTTP headers, URI, cookie, payload, content
- Client stickiness with client source address and port, and switch managed cookies
- Load balancing algorithms—round-robin, weighted random, least connections, weighted least connections, source hashing
- Load balance transparent caches
- Stateful load balancing of external Layer 3 firewalls
- Layer 3 load balancing
- Flash crowd support

SSL acceleration

- Up to 13,000 new connections/second
- Up to 240,000 concurrent connections/second
- Up to 1.8 Gbps symmetric key SSL crypto-throughput
- SSL 3.0, TLS 1.0
- Client-side and server-side support
- Reencryption for end-to-end security
- X.509 certificates

Access control lists

- L3-L4: Filter by protocol, IP address, port
- L5-L7: Filter by URI, headers, content
- Separate rule sets for each Virtual Switch

High availability

- Active/hot-standby and active/active topologies
- VRRP combined with Sun's Virtual Services Redundancy Protocol (VSRP) for instant failover

Common attack protection

- URL filtering to help stop HTTP worms
- Rate and connection limiting to reduce flooding
- Frame filtering for poison data: Filter frames for virtually any "poison" or unexpected data
- SYN flood attack mitigation
- "SMURF" attack nullification
- "FRAGGLE" attack nullification
- Land attack suppression
- IP packets with multicast or broadcast source IP address
- TCP server resource release
- Filter TCP traffic with SYN and FIN bits set
- Source/destination IP is a loop-back address
- "Ping of Death" attack
- Fragmentation reassembly errors
- Source spoofed frames
- SYN cookie support to suppress programmatic TCP static attacks

Management

SNMP v1/v2/v3, HTTPS, Telnet, SSH, industry-standard command line interface, configuration logging, multiple images, multiple syslog servers

Security

Secure Shell V2.0, Secure Shell file transfer protocol, TACACS+, Radius

System interfaces

- N1400: Four SFF Gigabit Ethernet ports
- N1216: Two SFF Gigabit Ethernet ports plus 16 10/100Base-T ports

Learn More

For more details about Sun Secure Application Switches—N1000 Family, contact your Sun representative or visit sun.com/n1000.

Power

Input current: 5.4 A at 115 V AC; 2.7 A at 230 V AC 90 to 135/180 to 265 V AC automatic select 47 Hz to 63 Hz

Weight

20 lbs. fully configured

Dimensions

- N1400: 1.75 x 17.4 x 26 in. (4.45cm x 44.2 cm x 66.0cm)
- N1216: 1.75 x 17.4 x 28 in. (4.45cm x 44.2 cm x 70.0cm)
- One RU enclosure; two- or four-post, rack-mount STD EIA/NEMA rack

Environmental

- Operating temperature: 32° F to 104° F (0° C to 40° C)
- Storage temperature: -22° F to 176° F (-30° C to 80° C)
- Operating humidity: 0 to 95 percent relative humidity, non-condensing
- Maximum heat dissipation, fully populated: 2,050 BTU/hr.

Certifications

FCC Part 15, Subpart B, Class A limits; Industry-Canada ICES-003, Class A limits; VCCI Class A; EN 60950, EN 55022 Class A; EN 55022: 1998/CISPR-22 Class A; CE; UL60950 UL/CUL; IEC60950; CSA-C22.2; EN55024:1998

Warranty

- One year, parts exchange