



SSE-T8032S

Supermicro SSE-T8032 400G Ethernet Switch

In the realm of cutting-edge applications like hyper-scale cloud computing and AI/ML clusters, one key requirement is the scale and robustness of 400 Gigabit Ethernet technology. With the industry pursuit of faster CPU, NIC, GPUs, and lightning-fast storage solutions, the landscape is primed for the evolution of larger, more sophisticated clusters. These clusters demand nothing short of high bandwidth, low latency, lossless, and other expansive network capabilities to unleash their full potential. With the capability of its 25.6 Tbps throughput the Supermicro SSE-T8032 delivers the highest density of 400G switching in a 1U platform. SSE-T8032 will be an ideal choice for high performance applications and large-scale clustering requirements.

SSE-T8032 exposes 2x400G on each of its 32 physical OSFP ports, offering dense 64x400G in just 1U form factor. The interfaces also provide the flexibility to meet a variety of speed and use cases such as 400G, 200G, 100G, 50G, 40G and 25G using many combinations of splitter cables and appropriate transceivers. The SSE-T8032 has an additional 10G SFP+ to meet the other connectivity needs.

With Broadcom Enterprise Advanced SONiC OS support, the SSE-T8032S switch provides greater flexibility to applications such as large-scale enterprises, AI/ML and high performance cloud computing. Supermicro provides user friendly enhancements to the OS that suits the various data center application and deployment.

SSE-T8032S model provides a data-center-friendly standard (front to back) air-flow model along with AC Power supply option and the included rail kit facilitates rack-mounting installations.

Supermicro SSE-T8032 Switch Benefit & Advantages

Target Use Cases

Data Center Core, Edge, ToR and DCI applications

Key Advantages

- The most optimized ethernet solution with leading low latency for Datacenter, HPC, and AI industry.
- Open Network OS supported system to maximize flexibility.
- High performance 25GbE / 40GbE / 50GbE / 100GbE / 200GbE / 400GbE capable switching in HPC, AI, DC high bandwidth application.

- High density, high efficiency, multi rate 2x400G/400G/200G/100G switching through either direct and/or breakout cables in ToR application access with server/storage data center environments.
- Switch capacity with large buffers
- Support AC PSU option.

Key Switch Specs

- Form Factor: 1 RU
- Switch Fabric Capacity: 25.6Tbps
- 112MB memory packet buffer
- Operating System: Broadcom Advanced Enterprise SONiC OS

Hardware Specifications

Physical Ports

- 32 x 2x400G OSFP Ports
 - Each 400G is 4 x PAM4-100G
- RJ45 console and OOB Ethernet management ports
- 1x USB 2.0 Type A interface
- 1+1 hot swappable AC PSUs
- 6+1 field replaceable fans

Onboard CPU Engine

- Broadcom Tomahawk-4
- Intel Xeon-D x86 CPU, 4C / 8C at 2.9GHz / 2.3GHz
- 32GB DDR4
- 128GB SSD

Data Forwarding

- 25.6Tbps switching capacity
- Non-Blocking, wire-speed

Power

- 1+1 Hot-pluggable, load sharing, and redundant 2000W power supply
- Input Voltage: 100-240VAC, 50/60Hz

- Optics/Cables: Up to 20W/26W transceivers

Physical and Environmental

- 1U, Mountable in 19" or 21" racks
- Dimensions: (WxDxH) 438.5 x 657.5 x 43.1mm
- Weight: 14kg
- Front airflow
- Hot Swappable 6+1 redundant Fan Modules
- Temperature: Operating 0C to 40C
- Humidity: Operating: 5% to 95%

IEEE compliance

- 802.1p QOS/COS
- 802.1Q VLAN Tagging
- 802.1AB Link Layer Discovery Protocol
- 802.3ad Link Aggregation with LACP
- 802.3ae 10 Gigabit Ethernet
- 802.3ba 100 Gigabit Ethernet
- 802.3bs 400 and 200 Gigabit Ethernet
- 802.3cm 400 Gigabit over multimode fiber
- 802.1Qbb PFC 802.1Qaz ETS
- 802.1 X Network Access Control
- 802.3x Flow Control

Safety and Compliance

Safety

EU:

- EN 60950-1
- IEC 60950-1
- EN 62368-1
- IEC 62368-1

North America:

- UL 60950-1
- CAN/CSA-C22.2 No. 60950
- UL 62368-1
- CAN/CSA-C22.2 No. 62368-1

China (CCC):

- GB4943.1

Electromagnetic Compatibility

EU:

- CISPR 32

- EN 55032
- BS EN 55032
- CISPR 35
- EN 55035
- BS EN 55035
- EN6100-3-2
- BS EN 6100-3-2
- EN6100-3-3
- BS EN 6100-3-3
- EN 300 386

Japan (VCCI)

- VCCI CISPR 32-1

Environmental

- EU (RoHS)
- EU (REACH)
- EU (WEEE)
- China (RoHS)

Software Features

System and Platform Infrastructure Features

- Dynamic Port Breakout
- DOM Information Display
- System Locator LED Support (Beacon)
- CMIS 4.0 Optics Support
- Hardware Watchdog
- CoPP (Control Plane Policing)
- Transceiver Parameter Tuning
- Third-Party Container Management
- PDDF and PDK Framework
- Interface Aliasing (IS-Standard and IS-Standard-Extended Interface Naming)
- Kdump Support
- Maintenance Mode
 - LACP Graceful Shut
 - BGP Graceful Shut
 - OSPFv2 Maximum Metrics
- Multi-Instance Redis DB
- Hardware Resource Allocation and Reservation
- Zero Touch Provisioning (ZTP)
- Auto Negotiation and Link Training
- Link Statistics Enhancements
- Link-Down Reason Codes
- Link Flap Error-Disable
- Forwarding Plane Drop Counters
- Time Zone Command Support
- 2 × 50G Speed Support
- Broadcom Debug Tool
- Memory Histogram
- System Ready for Services and Applications
- Secure Boot Process and Reference Implementation
- Syslog High Threshold notifications and clear for CPU/Temperature
- Per Platform CoPP
- Interface Beacon LED
- ZTP Provisioning using a USB Drive
- Flexible DPB
- Support Option to Bind the Third Party Container to the Management VRF
- Limiting CPU/Memory/Disk Usage for Third Party Containers
- Patching Support in SONiC (Patch

- 1 Million Route Scale
- Route Updates Performance Improvements
- Drop Neighbor Entry to Protect CPU from Unknown IP Packets Hitting the CPU
- CPU Offload for Neighbor Suppression
- CPU Offload for Slowpath ARP Flooding
- OSPFv2 GR
- Router Advertisement
- KLISH/REST/gNMI Support
 - CLI Commands for RA Retransmission Interval, RADv Disable
 - RFE-8106

ACL and Flow-Based Services

- PBR Enhancements for Service Chaining
- ACL-based CoPP
- ACL DSCP Map/Remarking
- ACL Rate Limiting
- Control Plane ACL
- Policy-based Routing (IPv4 and IPv6)
- ACL-based Packet Replication
- ACL Consistency Checker

Security Features

- RADIUS and TACACS
- RADIUS/TACACS Password Obfuscation
- NTP Server and NTP Authentication
- NTP Prefer Option
- LDAP Integration
- AAA Authorization support with TACACS+

Manageability Features

- Industry Standard CLI (IS-CLI)
- REST and gNMI Interfaces via OpenConfig YANG (OC-YANG)
- Role-Based Access Control (RBAC)
- RBAC and HAMd Enhancements
- SNMP Configuration Traps and OIDs
- gNMI Subscription Support for Limited YANG Paths (OnChange, Interval, Once, Poll, Target defined)

<ul style="list-style-type: none"> • Host/Containers) <ul style="list-style-type: none"> • Option to Send Audit Log Messages to Syslog Server • Ability to Filter Logs based on Facility and Severity • Media AutoFEC for FEC Type automation <p>Layer 2 Features</p> <ul style="list-style-type: none"> • VLAN Auto-state • Interface Hold-Down • LACP Graceful Shutdown • link Tracking • LACP Fast Rate and LACP Fallback • Static LAG • LLDP • UDLD • PVST and RPVST+ • MSTP • DHCP snooping • Port Channel Min-Links configuration enhancement <p>Layer 3 Features</p> <ul style="list-style-type: none"> • DHCP Relay Enhancements <ul style="list-style-type: none"> ○ Overlay Interfaces ○ DHCP Relay Source Interface Selection (e.g. loopback) ○ DHCP Relay over IPv6 Link-Local Interfaces with RFC5549 Routes ○ DHCP Relay Hop Count Configuration ○ DHCP Relay Over IPv4 Unnumbered Interfaces ○ DHCP Relay Option 82, Sub Option 151 VRF Name/ID Option ○ DHCP Relay Option 82, Sub Option 5 Link-Selection Option RFC3527 ○ Support for Circuit-Id Formats ○ DHCP Relay Circuit-Id Option ○ DHCP Relay and DHCP snooping support on the same VLAN • RoCEv2 • Dynamic BGP Neighbor • IP Fabric over IPv6 underlay 	<ul style="list-style-type: none"> • Bulking support in both REST(YANG patch) and gNMI • Query parameter for REST and filtering support for gNMI • Scalar encoding support for gNMI • Support to Read Service Tag via SNMP • SNMP Trap Enablement on Interface Instead of Global <p>Multicast Features / Enhancements</p> <ul style="list-style-type: none"> • L3 Multicast with PIM operates on L3 interfaces only • IGMP • IGMP Snooping (v1, v2, v3) • IPv4 PIM-SSM Support <p>Debuggability / Serviceability features</p> <ul style="list-style-type: none"> • In-memory Debug Logging • Audit Logging and Syslogs • Command to Return Interfaces to the Default Configuration • Port Mirroring on Port Channel and VLAN <p>Scalability improvements</p> <ul style="list-style-type: none"> • L3 VLAN Scale to 4K • Host Table Resource Reservation for Local Hosts <p>QoS</p> <ul style="list-style-type: none"> • DSCP Marking Preservation for • QoS Map Support for Remarking and SVI • Port and Priority Shaping <p>Telemetry and Instrumentation</p> <ul style="list-style-type: none"> • sFlow on Management VRF • BST – Watermarks, • Port MAC Security • LLDP-MED <p>Warmboot</p>
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RFC5549

- IP Helper
- Route Leaking across VRFs including Management VRF
- BGP Docker Warm Restart
- Avoid Netlink for Handling IPv6 Link-Local Address
- BFD Optimizations to Support 5x100msec Aggressive Timers in SW
- IP SLA (ICMP and TCP tracker)
- IPv4 Unnumbered Interfaces
- RPVST+ over MC-LAG
- RPVST+ Scaling to 3500 VLAN Ports
- Symmetric Hashing
- BFD IS-CLIs
- BFD with VRF
- VRF support for syslog
- VRF support for SSH.in
- VRRPv3, VRRP/VRRPv3 over VRF
- Management VRF Hardening
- OSPFv2
- Multi Site Data Center Interconnect (DCI)
- RIB/FIB Consistency Checker
- Next Hop Group (NHG) Support
- RIF Counters for L3 Interfaces
- BFD Profile

Optics & Cables Supported

Speed	Type	Description	Length	SMC P/N
800G to 400G	DAC Splitter	800G OSFP to 2x400G QSFP112 Splitter	1.5M	CBL-NTWK-0976-15
800G	Transceiver	OSFP Multimode SR8 Transceiver	upto 50M	TRX-MMA4Z00-NS
800G	Transceiver	OSFP single-mode DR4 Transceiver	upto 500M	TRX-800G-DR4
800G	Transceiver	OSFP Multimode	upto 100M	TRX-800G-SR8-02