VSC6812SDK and VSC6813SDK

WebStaX and SMBStaX Software Development Kits for Vitesse's Managed Enterprise Switches

Best-in-class software development kit (SDK) for standalone and stackable enterprise network switches.

WebStaX (VSC6812SDK) and SMBStaX (VSC6813SDK) software development kits are turnkey, fully managed L2 switch applications designed to support all managed enterprise switches, including devices that support stacking (hardware stacking integrated in a chip).

WebStaX and SMBStaX include the full source code, compiler, and tools. The SDKs are customizable to support various port configurations, with or without stacking. They deliver a superior stacking solution, with support for up to 16 units in a single stack, single point of management, and shortest path forwarding. All slave units are backup masters. Worst-case master re-elect across the stack is less than 10 ms for stackable enterprise switches.

WebStaX and SMBStaX software use the latest eCos operating system for optimal performance and cost effective implementation, and RedBoot bootloader for reliability. Management is performed using a Web GUI, Command Line Interface (CLI), Simple Network Management Protocol (SNMP), or Java Script Object Notation Remote Procedure Call (JSON-RPC), running on the internal MIPS24Kec CPU.

WebStaX and SMBStaX are highly integrated with switch features such as QCLs, ACLs, HW MACtable synchronization across the stack, and super priority management queue.

Highlights

- Multiple spanning tree for efficient load sharing and redundancy
- Strong security features for authentication, authorization, and accounting

Applications

- Stackable managed L2 switch for small to medium-sized enterprise networks
- Standalone managed L2 switch for small enterprise networks
- Industrial Ethernet switch for rough environments
- Aviation equipment for passenger entertainment
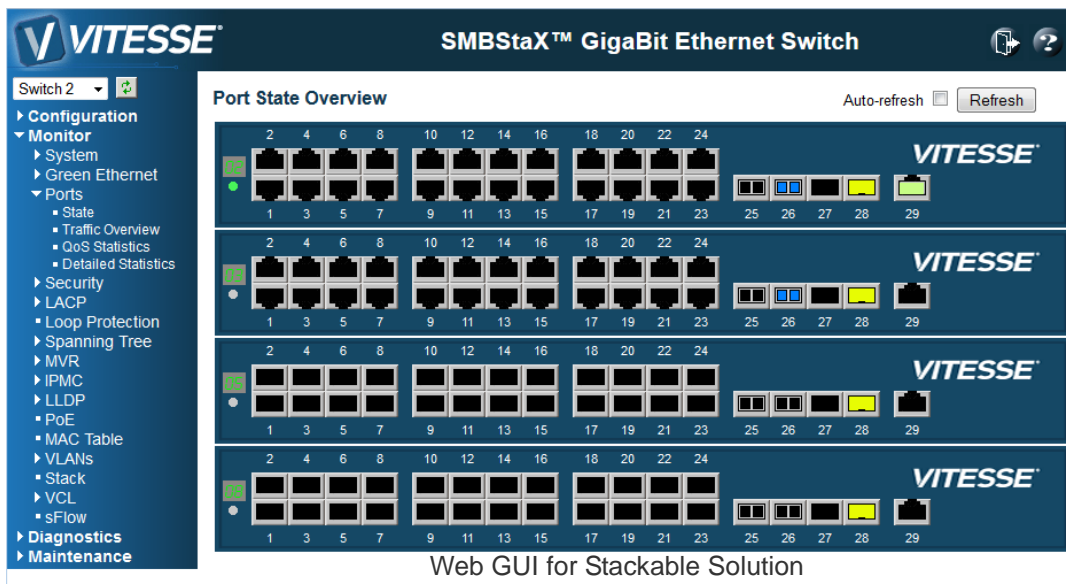
Web GUI for Stackable Solution

www.vitesse.com
Making next-generation networks a reality.

VSC6812SDK (WebStaX) and VSC6813SDK (SMBStaX) Software Release 3.6x includes the following features.

Features		WebStaX	SMBStaX
Port Control	Port speed, duplex mode, and flow control	•	•
	Port frame size (jumbo frames)	•	•
	Port state (administrative status)	•	•
	Port status (link monitoring)	•	•
	Port statistics (MIB counters)	•	•
	Port VeriPHY (cable diagnostics)	•	•
	POE/POE+	•	•
	POE/POE+ with LLDP	•	•
	Node Processor Interface (NPI) port		•
	PCIe		•
	Inband management (VRAP)		•
	On-the-fly SFP detection	•	•
	Unidirectional Link Detection (UDLD)		•
QoS	Traffic classes (8 active priorities)	•	•
	Port default priority	•	•
	User priority	•	•
	Input priority mapping		•
	QoS control list (QCL mode)	•	•
	Storm control for UC, MC, BC, and unknown	•	•
	Random Early Detection (RED)	•	•
	Policers—port policers and global/VCAP (ACL) policers	•	•
	Port and queue egress shapers	•	•
	DiffServ (RF 2474) remarking		•
	Tag remarking		•
	Scheduler mode	•	•
L2 Switching	IEEE 802.1D Bridge, auto MAC address learning/aging and MAC addresses (static)	•	•
	IEEE 802.1Q Virtual LAN	•	•
	Private VLAN (static)	•	•
	Port isolation (static)	•	•
	MAC-based and protocol-based VLAN		•
	IP subnet-based VLAN		•
	VLAN trunking	•	•
	GARP VLAN registration (GVRP)		•
	IEEE 802.1ad Provider Bridge (native or translated VLAN)	•	•
	IEEE 802.1Q-2005 Multiple spanning tree—MSTP, TSTP, STP		•
	Rapid spanning tree—RSTP, STP	•	•
	Loop guard	•	•
	IEEE 802.3ad Link Aggregation, static and LACP	•	•
	BPDU guard and restricted role		•

Features		WebStaX	SMBStaX
L2 Switching *(continued)*	BPDU transparency and forwarding (customer specific)	•	•
	Error disable recovery		•
	IGMPv2 snooping	•	•
	IGMPv3 snooping		•
	MLDv1 snooping		•
	MLDv2 snooping		•
	IGMP filtering profile		•
	IPMC throttling, filtering, and leave proxy		•
	Multicast VLAN registration (MRV) and MRV profile		•
	Voice VLAN		•
	DHCP snooping		•
	ARP inspection		•
	Port mirroring	•	•
	Flow mirroring		•
	Rmirror		•
L3 Switching	DHCP option 82 relay		•
	Universal Plug and Play (UPnP)		•
	IPv4 unicast static routing		•
	IPv4 unicast static routing (hardware accelerated)		•
	IPv6 unicast static routing		•
	IPv6 unicast static routing (hardware accelerated)		•
Security	Network Access Server (NAS)		
	Port-based 802.1X	•	•
	Single 802.1X		•
	Multiple 802.1X		•
	MAC-based authentication	•	•
	VLAN assignment		•
	QoS assignment		•
	Guest VLAN		•
	RADIUS accounting		•
	MAC address limit		•
	MAC freeze (customer specific)		•
	MAC spoofing (customer specific)		•
	IP MAC binding, dynamic to static		•
	TACACS+ Accounting, authentication and authorization, command authorization		•
	Web and CLI authentication	•	•
	Authorization (15 levels)		•
	ACLs for filtering, policing, and port copy	•	•
	IP source guard		•
Stacking	Topology	•	•
	SPOM (single point of management)	•	•
	SPROUT (stacking protocol using routing technology), shortest path forwarding	•	•
	Master re-election	•	•

Features		WebStaX	SMBStaX
Stacking *(continued)*	VStaX+ (12G)	•	•
	Basic forwarding (VStaX, VStaX+)	•	•
	Advanced forwarding (VStaX+)	•	•
	Congestion management (VStaX+)	•	•
	48-port stacking (VStaX+)	•	•
	Mixed 24/48 GbE port stacking (VStaX+)	•	•
Synchronization	SNTP and client	•	
	NTPv4 client		•
Robustness	Cold start	•	•
	Cool start	•	•
Power Savings	ActiPHY™, PerfectReach™	•	•
	Ethernet Energy Efficient (EEE) power management	•	•
	LED power management	•	•
	Thermal protection	•	•
	Adaptive fan control	•	•
Management	JSON-RPC		•
	Stack IP address	•	•
	DHCP client	•	•
	DHCP server		•
	Double VLAN tag management	•	•
	DNS client, proxy		•
	HTTP server and HTTPS	•	•
	Web with stack management	•	•
	CLI console port	•	•
	CLI Telnet		•
	CLI stack management		•
	Industry-standard CLI	•	•
	Industry-standard CLI debug commands	•	•
	Industry-standard configuration	•	•
	Management access filtering	•	•
	SSHv2		•
	IPv6 Management		•
	IPv6 Ready Logo Phase 2		•
	RFC 4884 (ICMPv6)		•
	System Syslog	•	•
	Software upload through Web	•	•
	SNMPv1/v2c/v3 Agent	•	•
	RMON Group 1, 2, 3, and 9		•
	RMON alarm and event (CLI, Web)		•
	SNMP multiple trap destinations	•	•
	IEEE 802.1AB-2005 Link Layer Discovery, LLDP	•	•

Features		WebStaX	SMBStaX
Management *(continued)*	TIA 1057 LLDP-MED		•
	Cisco Discovery filtering, CDP		•
	sFlow		•
	Configuration download and upload	•	•
	Loop detection default restore	•	•
	Symbolic Register Access	•	•
	Daylight savings		•
MIBs	RFC 1213 MIB II	•	•
	RFC 1215 A Convention for Defining Traps for Use with the SNMP	•	•
	RFC 2613 SMON MIB: VLAN statistics and port copy		•
	RFC 2674 VLAN MIB		•
	RFC 2819 RMON (Group 1, 2, 3, and 9)		•
	RFC 2863 Interface Group MIB using SMI v2		•
	RFC 3411 SNMP Management Frameworks	•	•
	RFC 3414 User-based Security Model for SNMPv3		•
	RFC 3415 View-based Access Control Model for SNMP		•
	RFC 3621 LLDP-MED Power	•	•
	RFC 3635 Ethernet-like MIB	•	•
	RFC 3636 802.3 Medium Attachment Units (MAUs) MIB		•
	RFC 4133 Entity MIB v3		•
	RFC 4188 Bridge MIB	•	•
	RFC 4292 IP Forwarding Table MIB		•
	RFC 4293 Management Information Base for the Internet Protocol (IP)		•
	RFC 4668 RADIUS Authentication Client MIB		•
	RFC 4670 RADIUS Accounting MIB		•
	RFC 5519 Multicast Group Membership Discovery MIB		•
	IEEE 802.1 MSTP MIB	•	•
	IEEE 802.1AB LLDP MIB (LLDP MIB included in clause of standard)	•	•
	IEEE 802.1X MIB (PAE MIB included in clause of standard)		•
	IEEE 802.1Q Bridge MIB 2008		•
	IEEE 802.3ad MIB (LACP MIB included in clause of standard)		•
	Phase 1 Private MIB support		•
	TIA 1057 LLDP MED (MIB is part of the standard)		•