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# IStaX™ Software Package for Vitesse's Managed Ethernet Family of Switches

A comprehensive software development kit (SDK) for Industrial Ethernet network and switch applications.

The IStaX (VSC6815SDK) software development kit is a turnkey Industrial Ethernet switch solution designed to support Vitesse's Managed Ethernet switch devices.

The software uses the latest eCos operating system for optimal performance, 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.

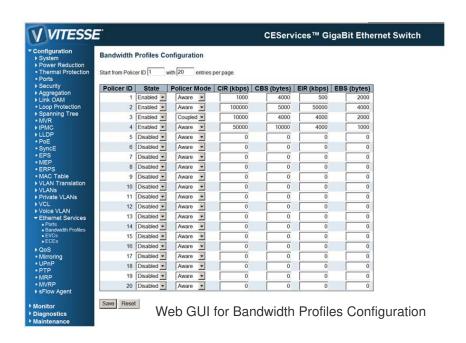
The VSC6815SDK is highly integrated with advanced L2 switch features such as QCLs and ACLs, and includes support for synchronization functions such as Synchronous Ethernet, IEEE 1588 and third-party servos, and protection functions including linear and ring protection.

#### **Highlights**

- Advanced L2 switching and L3 forwarding including VLANs, GVRP, IGMP, flow mirroring, and DHCP option 82
- SyncE and complete IEEE
   1588 solution with PTP
   protocol, packet delay filtering
   (PDV), and hardware-accurate
   time stamping
- G.8031 link protection and G.8032 ring protection

#### **Applications**

- Industrial automation
- · Smart grid
- Intelligent transportation systems



#### IStaX VSC6815SDK software release 3.60 includes the following features.

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
	Injection header
	Extraction header
	PCle
	Inband management (VRAP)
	On-the-fly SFP detection
	Digital diagnostics monitoring interface (DDMI)
	Unidirectional Detection Link (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, and BC
	Storm control for UC, BC, and unknown
	Random early discard (RED)
	Policers: port, service, queue, and global/VCAP (ACL)
	Port and queue egress shapers
	DiffServ (RF 2474) remarking
	Tag remarking
	Scheduler mode
L2 Switching	IEEE 802.10ad Provider Bridge (native or translated VLAN)
	EVC Classification of Layer 3 flow (SIP, IP Prot, SProt, DProt)-CE
	Service enabled PB (JPS)
	E-LINE (EPL, EVPL)
	E-LAN (EP-LAN, EVP-LAN)
	L2CP Tunneling
	IEEE 802.1Q-2005 Multiple Spanning Tree MSTP, RSTP, STP
	Loop guard
	IEEE 802.3ad link aggregation, static, and LACP
	BPDU guard and restricted role
	BPDU transparency and forwarding (customer-specific)
	Error disable discovery
	Unidirectional Link Detection (UDLD)
	IGMPv2 and IGMPv3 snooping
	MLDv1 and MLDv2 snooping

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Feature	Details
Synchronization	SNTP and client
(continued)	NTPv4 client
Power Savings	ActiPHY™
	PerfectReach™
	Ethernet Energy Efficient power management
	LED power management
	Thermal protection
	Adaptive fan control
Management	JSON-RPC
	Double VLAN tag management
	DHCP client and server
	DHCPv6 client
	DNS client and proxy
	HTTP server
	CLI – console port and Telnet
	Industry-standard CLI
	Industry-standard configuration
	Management access filtering
	HTTPS
	SSHv2
	IPv6 Management
	IPv6 Ready Logo Phase 2
	RFC4884 (ICMPv6)
	System Syslog
	Software upload through Web
	SNMP v1, v2c, v3 Agent
	RMON Group 1, 2, 3, and 9
	RMON alarm and event (CLI, Web)
	SNMP multiple trap destinations
	IEEE 802.10AB-2005 Link Layer Discovery – LLDP
	TIA 1057 LLDP-MED
	Cisco Discovery filtering, CDP
	sFlow
	Configuration download and upload: industry-standard formats
	Loop detection restore to default
	Symbolic Register Access
MIDa	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 3414 User based Sequrity Model for SNMPv3
	RFC 3414 User-based Security Model for SNMPv3

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Feature	Details
MIBs	RFC 3415 View-based Access Control Model for SNMP
(continued)	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 4678 Link OAM 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)
	TIA 1057 LLDP MED (MIB is part of the standard)
	Phase 1 private MIB support



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