



Data Sheet

Cisco SCE 1000 Series Service Control Engine

The Cisco® SCE 1000 Series Service Control Engine is a network element specifically designed for carrier-grade deployments requiring high-capacity stateful application and session-based classification and control of application-level IP traffic per subscriber.

Figure 1. Cisco SCE 1010



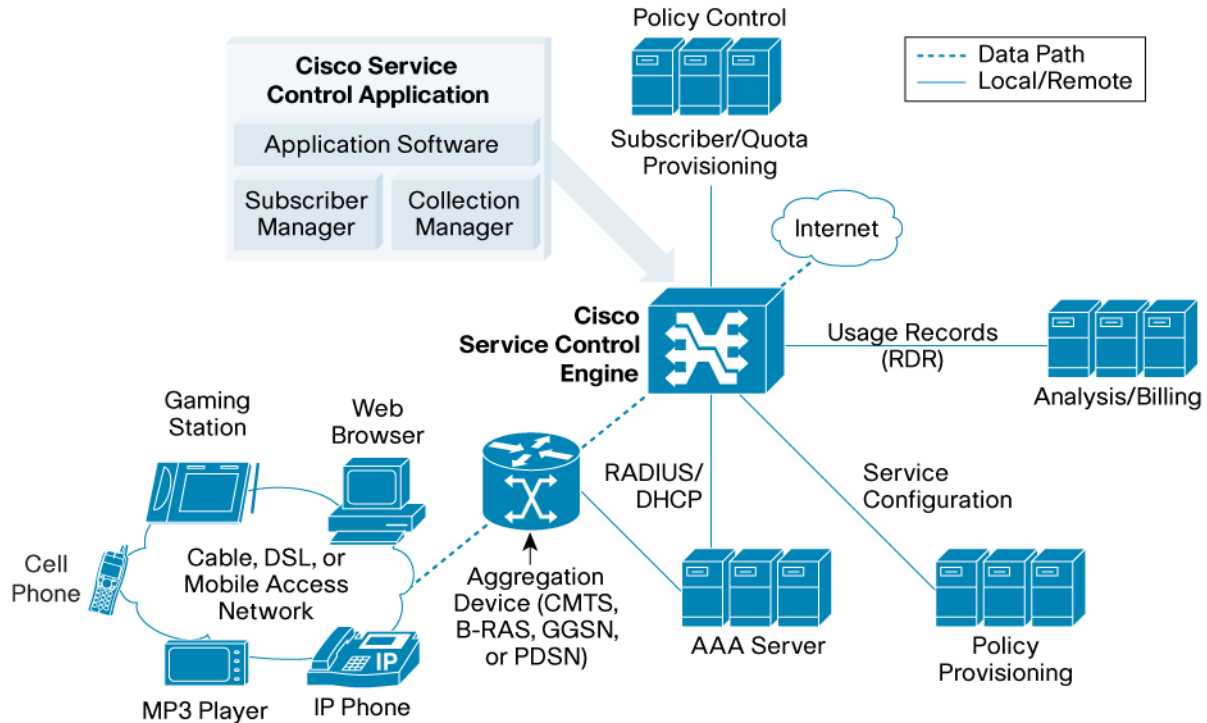
PRODUCT OVERVIEW

Service providers have an ever-increasing need to track subscriber traffic patterns, manage network bandwidth resources, and expand their service differentiation.

The Cisco SCE 1000 Series Service Control Engine is designed for carrier-grade deployments that require high-capacity stateful application- and session-based classification and control of all network traffic. Powered by a patented architecture employing hardware acceleration and multiple high-speed Reduced Instruction Set Computer (RISC) processors, the Cisco SCE 1000 Series is a key component of the Cisco Service Control technology solution. It is a high-performance, purpose-built traffic metering and control device with a highly programmable core that can track and manage up to 2 million concurrent unidirectional application flows over an IP network. This extensible network element is specifically designed for scalable control of application flows.

Carriers and service providers deploy the Cisco SCE 1000 Series in high-performance metropolitan-area (metro), cable, DSL, mobile, or Wi-Fi networks to provide advanced application-level bandwidth optimization, management, and service control functions. The Cisco SCE 1000 Series resides at the network edge, where aggregation access devices connect to the Internet backbone infrastructure.

Figure 2. Cisco Service Control Engine with Cisco Service Control Application



SERVICE APPLICATIONS

The Cisco SCE 1000 Series is a member of the Cisco SCE Family. Working in conjunction with the Cisco Service Control Application for Broadband, the Cisco SCE engines support application-level classification of IP traffic for the real-time control of content-based services for a given subscriber or group. The Cisco Service Control Application for Broadband offers programmable application detection and subscriber awareness.

This solution provides state-based protocol monitoring that allows for the detection and control of virtually any network application, including Web browsing, VoIP, gaming, multimedia streaming, and P2P. The result is overall control of network congestion by optimizing application-level traffic, thereby eliminating costly network link usage and infrastructure upgrades. Application and subscriber awareness become the foundation for the deployment of application tiers of service that can be based on content and premium IP service delivery.

KEY BENEFITS

Superior Performance

Cisco Service Control solutions analyze the payload of individual packets using stateful deep packet inspection at Layer 3–7. The Cisco SCE 1000 Series is an industry-leading IP service control solution offering throughput and capacity to support wire-speed processing of 2 Gbps of traffic over a gigabit link supporting 2 million unidirectional flows and using customized ASICs and hardware acceleration to help ensure carrier-grade performance.

Stateful Deep Packet Inspection

Instead of processing packets as individual events, the Cisco SCE 1000 Series fully reconstructs individual traffic flows and the Layer 7 state of each individual application flow. By maintaining state information, the Cisco SCE 1000 Series readily identifies applications that employ dynamically assigned port numbers and tracks applications that involve multiple inter-related or spawned flows commonly found in voice-over-IP (VoIP) or multimedia streaming protocols. The Service Control Engine applies rules as part of controlling the admission policies or session characteristics of a data flow.

Application-level classification of IP traffic helps ensure real-time analysis and control of content-based services for a given subscriber or group of subscribers. Real-time advanced control functions include granular bandwidth shaping, quota, and redirection that uses protocol-specific, state-based traffic flow analysis.

Programmability

The Cisco SCE 1000 Series is programmable and extensible, helping to ensure that the solution can be readily adapted to new protocols and IP traffic management requirements. SML, a programming language specifically developed for service delivery, provides the flexibility to adapt the Cisco SCE Family to the dynamic requirements of application-level analysis and traffic optimization while enabling the system to identify and manage complex protocols such as Session Initiation Protocol (SIP) and Real Time Streaming Protocol (RTSP).

The programmability of the Cisco SCE 1000 Series helps ensure that carriers can protect their network investments and adapt their service control infrastructure to meet the changing needs of new and emerging protocols and applications. This results in a decrease in the total cost of ownership of the Cisco SCE 1000 Series because capital equipment and operational costs can be reduced by deploying a flexible, extensible network element for overall service control of application traffic.

Integration and Management

The Cisco SCE 1000 Series Service Control Engine integrates with existing network infrastructure, management, provisioning, operation, and support systems using industry-standard APIs.

Powerful management and infrastructure supporting the CLI and SNMP for configuration, monitoring, and fault management are provided to facilitate transparent deployment and interoperability. Extensible Markup Language (XML) and GUI-based interfaces are provided for service management and delivery.

FEATURES

The Cisco SCE 1000 Series manages a wide variety of IP traffic while providing superior throughput and supporting a greater number of concurrent subscribers and flows than any competitive offering in its class. This powerful solution is provided in a compact 2 rack unit (RU) form factor (Table 1).

Table 1. Cisco SCE 1000 Series Features

Feature	Benefit
Traffic Handling	
Programmable Protocol Detection	<ul style="list-style-type: none"> • More than 600 protocols supported • Extensible to emerging protocols • Tracking port-hopping peer-to-peer (P2P) applications
Tunneling Support and Stateful Layer 7 Deep Packet Inspection	<ul style="list-style-type: none"> • Multiprotocol Label Switching traffic engineering (MPLS-TE) • MPLS-VPN • VLAN • Layer 2 Tunneling Protocol (L2TP)
Differentiated Classes of Service (CoSs)	Support for: <ul style="list-style-type: none"> • Differentiated Services (DiffServ) • Type-of-service (ToS) byte
Capacity and Performance	
Maximum Throughput	2 Gbps
Number of Concurrent Subscribers	Up to 40,000
Simultaneous Unidirectional Flows	Up to 2,000,000
Reliability, Availability, and Serviceability (RAS) and Failover	
Function Failover	2 Cisco SCE 1000 Series engines can be deployed in 2 active standby gigabit links
System Bypass for Link Preservation	<ul style="list-style-type: none"> • Internal electrical bypass mechanism (one per Gigabit Ethernet link) • Support for external optical bypass module (one per Gigabit Ethernet link)
Field-Replaceable Units	<ul style="list-style-type: none"> • Power supplies • Fan unit
Internal Redundancy	<ul style="list-style-type: none"> • Redundant power supplies • Redundant fans
Line Feeds	Dual AC and DC power
Integration and Management	
Integration	Industry-standard application programming interfaces (APIs) to ensure easy integration with: <ul style="list-style-type: none"> • Provisioning systems and policy servers • Operations support systems (OSSs) • Management systems • Billing systems
Management	Powerful management capabilities offering: <ul style="list-style-type: none"> • GUI-based interfaces for service management • Command-line interface (CLI) and Simple Network Management Protocol (SNMP) interfaces for configuration, monitoring, and fault management

PRODUCT SPECIFICATIONS

Table 2. Specifications of Cisco SCE 1000 Series

Specification	Description
Models	Cisco SCE 1010 Service Control Engine
Management Interfaces	2 x 10 / 100 / 1000 Mbps Ethernet RJ-45
Console Interface	2 x RS-232 RJ-45
Interfaces	2-port Gigabit Ethernet 1000BASE: SX, 850 nm or LX, 1310 nm
Weight	33.1 lb (15 kg)
Dimensions (H x W x D)	3.54 x 17.3 x 18 in. (9 x 44 x 46 cm)
Mounting	Standard 19 in. rack-mount (2 RU)
Temperature	Nominal 41 to 104°F (5 to 40°C), short term range 23 to 131°F (-5 to +55°C)
Humidity	5 to 95 percent (noncondensing)
Power	<ul style="list-style-type: none">• 100–240 VAC; 47–63 Hz; 200W• –36 to –72 VDC; 200W AC/DC; 683 BTU/hour; dual PSUs with dual line feeds
Cooling and Airflow	Redundant cooling fans
EMC	FCC part 15, Full CE Mark, EN500 82-1
Safety	UL 60950, ULC 60950, IEC 60950
Telecom Safety Compliance	NEBS Level 3 approved, ETS 300-019

ORDERING INFORMATION

Table 3. Ordering Information for Cisco SCE 1000 Series

Product Name	Part Number
SCE 1010 Multimode Chassis, 2 Multimode GBE Interfaces	SCE1010-2XGBE-MM
SCE 1010 Single-Mode Chassis, 2 Single-Mode GBE Interfaces	SCE1010-2XGBE-SM
Cisco Service Control Application View Only	SCA-BB-VO-R3
Cisco Service Control Application Capacity Control	SCA-BB-CC-R3
Cisco Service Control Application Tiered Control	SCA-BB-TC-XXX-R3*

* XXX represents number of subscribers: 10K, 50K, 250K, or 1M

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FOR MORE INFORMATION

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