



SRC SERIES SESSION AND RESOURCE CONTROL MODULES

Product Overview

To ensure high-quality delivery of IPTV, video on demand (VOD), gaming, and multimedia services, service providers must allocate and control network resources in real-time. The Juniper Networks suite of SRC Series Session and Resource Control Modules and task-optimized C Series Controllers address these requirements with high performance and reliability at carrier scale. Building on Juniper's long-standing technology and market leadership, and leveraging the Open IP Service Creation Program to integrate with industry-leading policy and control applications, the advanced SRC Series and C Series Controllers offer a comprehensive, customizable, and automated policy management, subscriber management, bandwidth management and resource control solution.

Product Description

Service providers are placing significant focus and investment on policy and control as the deployment of high-value multiplay services accelerates and the evolution to next-generation PacketCable, 3rd Generation Partnership Project IP Multimedia Subsystem (3GPP IMS), and the European Telecommunications Standardization Institute's Telecoms and Internet Converged Services and Protocols for Advanced Networks (ETSI TISPAN) architectures continues. Key policy and control functions include policy management; subscriber management and authentication, authorization, and accounting (AAA); bandwidth management and network resource control. The Juniper Networks® SRC Series Session and Resource Control Modules provide these critical functions, harmonizing subscribers and applications with the network layer and integrating with operations support systems and business support systems (OSS/BSS).

The SRC Series consists of advanced hardware and sophisticated software that extend Juniper's network layer expertise to the policy and control layer. The portfolio includes the widely deployed Juniper Networks SDX300 Service Deployment System and Juniper Networks SBR Service Provider Series platforms, as well as the recently introduced SRC Series which takes the SDX software to the C Series Controllers.

The SRC Series of advanced software modules – the SRC Policy Engine, the SRC Diameter Gateway, the SRC SOAP Gateway, the SRC Volume Tracking Application, and the SRC Threat Mitigation Portal – run on purpose-built C Series Controllers, and use widely adopted standards-based open interfaces to maximize interoperability with the broadest range of elements, applications, and platforms.

- At the network layer, SRC Series modules are fully integrated with Juniper Networks routing platforms and security solutions, and extend support to third-party network elements via RADIUS CoA (Change of Authorization), PCMM (Packet Cable Multimedia, for cable modem termination system – CMTS) and Scripting services.
- The SRC Series modules easily integrate with external repositories and related systems that support billing, customer care, order entry, provisioning, billing, and security.
- SRC Series gateway modules use standards-based interfaces to integrate with a broad set of service layer applications, enabling application-driven control of network resources.

This open approach also underpins the Juniper Networks Open IP Service Creation Program (OSCP), a J-Partner Solutions Alliance program that enables content providers, application providers, independent software vendors, and system integrators to use the SRC Series portfolio to develop solutions that permit the application-driven control of network resources.

As key components of the SRC Series Session and Resource Control portfolio, the SRC Series modules and C Series Controllers offer a carrier-grade policy and control solution that, together with Juniper routing and security products, and third-party applications, supports the delivery of high-value differentiated services across multivendor network infrastructures, enables the smooth migration to next-generation network architectures, and provide Juniper customers with a broad set of open, agile, and customizable policy and control options to address their diverse and unique business and technical requirements.

Architecture and Key Components

SRC Series Software Modules

The SRC Series of advanced software modules consists of:

- The SRC Policy Engine (SRC PE), which maintains a directory of customer, network, and service configuration information that it uses to enable automated, policy-based service and subscriber provisioning. The SRC PE also allocates network resources in response to subscriber and application requests, to ensure quality of service (QoS) and quality of experience (QoE) and to protect the quality of previously accepted sessions.
- The SRC Diameter Gateway (SRC DG) provides a Diameter interface that enables the SRC PE to perform Access Resource and Admission Control Functions (A-RACF), and to provision policies for Session Initiation Protocol (SIP) services, across the IP/MPLS network infrastructure.
- The SRC SOAP Gateway (SRC SG), which uses the Simple Object Access Protocol (SOAP) to provide a simple, straightforward, and standard-based interface that allows non-SRC Series applications to integrate with, and make use of, SRC Series software modules.

- The SRC Volume Tracking Application (SRC VTA): The SRC VTA tracks subscribers, sessions and applications based on granular, customer-configurable thresholds for volumes and durations, enabling fair resource usage. The SRC VTA supports tiered service offerings and can invoke a policy-based actions based on predefined thresholds, including rate-limiting of traffic, activation of additional resources, and removal of abusive users and applications.
- The SRC Threat Mitigation Portal (SRC TMP), which works with Juniper Networks IDP Series Intrusion Detection and Prevention Appliances, Juniper Networks Network and Security Manager (NSM), and routing platforms to dynamically detect and proactively subvert threats to subscribers and to the network, and can automatically redirect subscribers and filter traffic based on predefined policies.

C Series Controllers

The Juniper Networks C2000 Controller and the C4000 Controller are specialized, task-optimized servers purpose built to host selected SRC Series software modules. The C Series Controllers simplify the deployment of SRC Series software modules and have a fully bounded total cost of ownership (TCO), which helps customers identify costs and, calculate return on investment (ROI). The combination of SRC Series software modules and C Series Controllers provides a prepackaged, purpose-built policy and control solution that offers easily dimensioned and predictable performance and scalability as well as operating efficiencies associated with maintenance, upgrade, and sparing activities.

The C2000 Controller is a dual-CPU hardware platform designed to support up to 200,000 concurrent sessions. It is rack mountable, with hot-swappable AC and DC power options, and has two Gigabit Ethernet ports for physical network connectivity.

The C4000 Controller is a quad-CPU hardware platform designed to support up to 500,000 concurrent sessions. It is rack mountable (2RU high), with hot-swappable AC and DC power options, and has two Gigabit Ethernet ports for physical network connectivity.

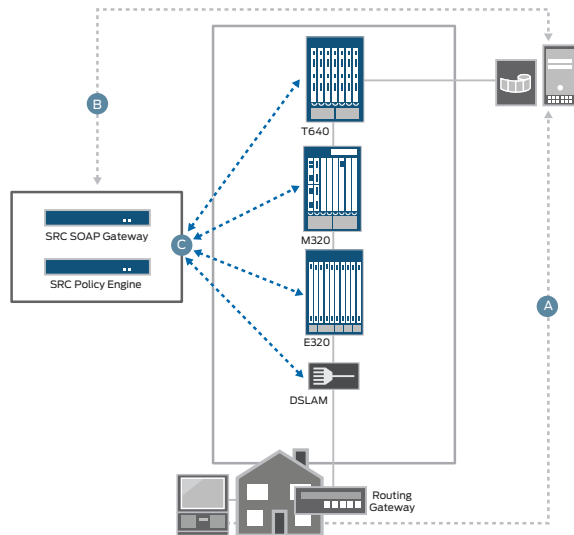
Features and Benefits

FEATURES	ADVANTAGES	BENEFITS
Prepackaged solution	Easy to dimension, test, install, configure, upgrade, troubleshoot, and spare	Simplifies the operating environment
Intelligent call admission control	Considers multiple criteria (subscriber privileges, service profile, application requirements, network availability) to make per-session admission control decisions	Ensures high service quality for requested and pre-existing sessions, and provides subscriber QoE
Real-time bandwidth management and dynamic bandwidth adjustment end-to-end	The SRC PE allocates and reserves resources and bandwidth across the IP/MPLS network, and provides policy-based dynamic traffic engineering mechanisms to create and resize MPLS LSPs in response to subscriber and application requests	Adjusts network resources based on real-time network state information to efficiently provide QoS to sessions and ensure efficient network resource utilization
Synchronized per serviceaccounting	Tracks and accounts for dynamically initiated services for OSS/BSS handoff	Supports unique service models

FEATURES	ADVANTAGES	BENEFITS
Flexible service activation	Provides identity-based, application-based, and subscriber self-service selection	Provides mass service customization, stronger customer relationships, and competitive differentiation without increasing operating complexity or costs
Open interfaces	Integrates with third-party network elements and applications to enable end-to-end, application-driven network resource control	Enables application-driven resource control over multivendor networks
Subscriber self-provisioning and service creation tools	Provides policy-driven subscriber and service automation at carrier scale	Enables decreased time to market and reduced costs to roll out new services
C Series Controller	This purpose-built, task-optimized platform provides carrier-grade performance, scale, and reliability for SRC Series modules	Provides an easily dimensioned solution with predictable performance and scale

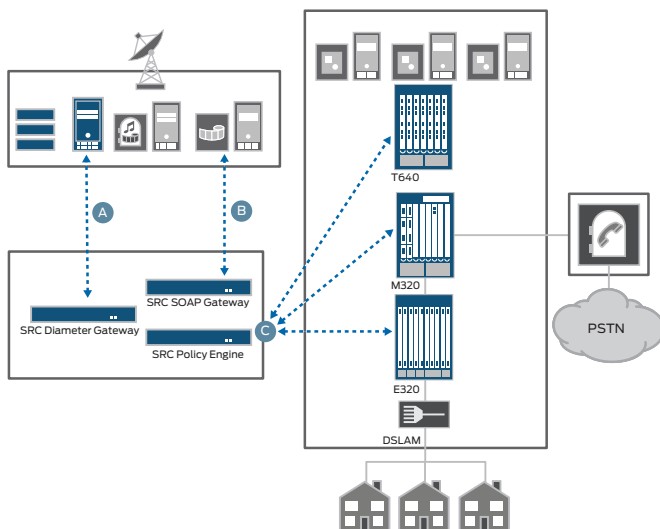
Applications

The SRC Series Session and Resource Control Modules support a suite of applications that enable the creation of myriad services limited only by the creativity of service providers, system integrators, and the enterprise. Several examples are described here.



Multiplay Services: Assured Video

When a subscriber requests a video service (A), the video server notifies the SRC Policy Engine via the SRC SOAP Gateway (B). The SRC Policy Engine monitors the network (C) to determine whether adequate resources are available to support the request. If the resources exist, the SRC Policy Engine reserves them (C) and notifies the video server to initiate the service (B); if sufficient resources are not available, the SRC Policy Engine can resize existing LSPs or create new ones to handle the additional traffic, or gracefully reject the request and notify the subscriber, depending on the service provider's defined policy. The SRC Policy Engine also dynamically rate limits other services that the subscriber may concurrently consume to assure high video QoE.



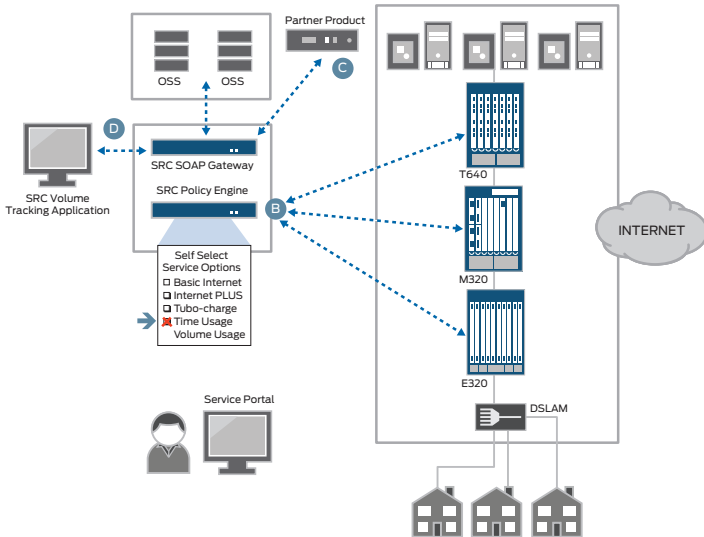
Multiplay Services: Assured Voice

In this example, the service provider has implemented a multiplay network that supports both IMS and non-IMS services over a converged infrastructure. The policy and control solution consists of the SRC Policy Engine, the SRC SOAP Gateway, and the SRC Diameter Gateway, in addition to OSCP partner products. Video and data applications communicate with the SRC Policy Engine via the SRC SOAP Gateway (A), and voice over IP (VoIP) service requests are conveyed to the SRC Policy Engine by the a Session Border Controller via the SRC Diameter Gateway (B). The SRC Policy Engine provides traffic engineering for VoIP and video sessions based on real-time LSP awareness and can allocate, resize, and create network resources in response to application requirements (C). The sessions are gracefully rejected if sufficient resources are unavailable.

Tiered Access Services and Subscriber Self-Provisioning

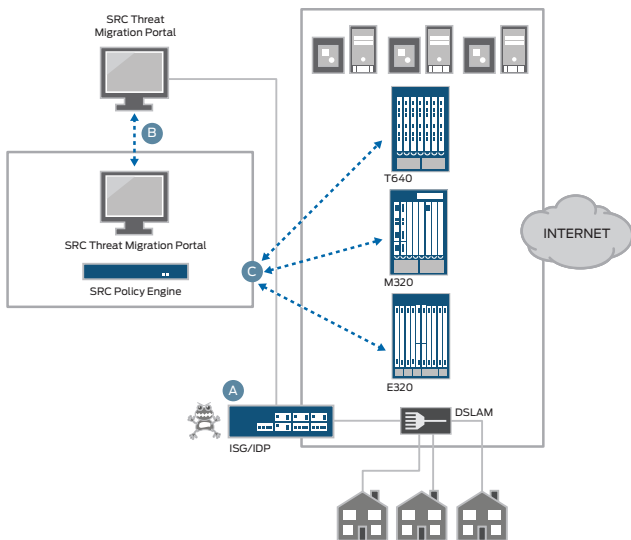
In this example, the service provider uses the SRC Policy Engine with the built-in, self-service portal, the SRC SOAP Gateway, and the SR Volume Tracking Application to offer tiered subscriber-selectable service packages based on traffic volume, connection speed, and duration. Subscribers use the self-service portal (A) to make a service selection that the SRC Policy Engine configures on the network (B). A partner application monitoring the xDSL train rate is integrated into the solution via the

SRC SOAP Gateway (C). Changes in the train rate trigger the SRC Policy Engine to make changes to the subscriber's service profile. The SRC Volume Tracking Application monitors and accounts for subscriber use, and this accounting information is also provided to OSS/BSS accounting, billing, and customer care systems (D).



Enhanced Security Services

In this example, the service provider has implemented an advanced security solution based on the SRC Policy Engine, the SRC Threat Mitigation Portal, and elements of the Juniper Networks IDP Series appliances. The IDP Series appliances detect offending traffic and notifies the IDP Series management system (A), which communicates these events to the network operations staff via the SRC Threat Mitigation Portal (B). The network operations staff can use the SRC Threat Mitigation Portal to select and push predefined policies to the SRC Policy Engine, which in turn pushes the policies to the network for action and enforcement (C). Actions can include rate limiting, session redirection or filtering, and quarantine of the infected subscriber. Additional value-added services such as a subscriber PC virus removal service can also be offered.



C2000



C4000

Specifications

	C2000 CONTROLLER	C4000 CONTROLLER
Dimensions (W x H x D)	16.7 x 3.5 x 16.2 in (42.4 x 8.9 x 41.2 cm)	16.7 x 3.5 x 16.2 in (42.4 x 8.9 x 41.2 cm)
CPU	2-way dual core (1.8 GHz per core)	4-way dual core (1.8 GHz per core)
Memory	80 GB RAID 1 mirror (2 drives)	147 GB RAID 1 mirror (2 drives)
Maximum configuration	200,000 concurrent sessions	500,000 concurrent sessions
Power	AC and DC options	AC and DC options
Reliability	<ul style="list-style-type: none"> • Dual redundant hot-swappable power supplies • Externally accessible removable hot-swappable hard drives • Redundant RAID mirrored hard drive configuration • GigabitEthernet port redundancy • Inter C Series hot standby 	<ul style="list-style-type: none"> • Dual redundant hot-swappable power supplies • Externally accessible removable hot-swappable hard drives • Redundant RAID mirrored hard drive configuration • GigabitEthernet port redundancy • Inter C Series hot standby
Network connection	2 Gigabit Ethernet ports, extensible to 4 (option)	2 Gigabit Ethernet ports, extensible to 4 (option)
Management	<ul style="list-style-type: none"> • RS232 DB9 management port • LAN management port • USB port • IPMI management module 	<ul style="list-style-type: none"> • RS232 DB9 management port • LAN management port • USB port • IPMI management module
Safety	<ul style="list-style-type: none"> • CAN/CSA-C22.2 No.60950-00/UL 60950 Third Edition • EN 60950 Safety of Information Technology Equipment • EN 60825-1 Safety of Laser Products - Part 1 • EN 60825-2 Safety of Laser Products - Part 2 	<ul style="list-style-type: none"> • CAN/CSA-C22.2 No.60950-00/UL 60950 Third Edition • EN 60950 Safety of Information Technology Equipment • EN 60825-1 Safety of Laser Products - Part 1 • EN 60825-2 Safety of Laser Products - Part 2
Temperature	Normal: 0° to 40° C Short duration: -5° to 55° C EMC	Normal: 0° to 40° C Short duration: -5° to 55° C EMC

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services and support, which are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to bring revenue-generating capabilities online faster so you can realize bigger productivity gains and faster rollouts of new business models and ventures. At the same time, Juniper Networks ensures operational excellence by optimizing your network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services/.

Ordering Information

MODEL NUMBER	DESCRIPTION
SRC-C2KPE-BND	C2000 bundle includes base system with dual power supplies, SRC PE on hard drive, pen drive, software license for 50,000 service sessions and accessory kit.
SRC-C2KPE-SYS	C2000 base system with dual power supplies, SRC PE on hard drive, accessory kit and quick start guide.
SRC-C4KPE-BND	C4000 bundle includes base system with dual power supplies, SRC PE on hard drive, pen drive, software license for 200,000 service sessions and accessory kit.
SRC-C4KPE-SYS	C4000 hardware base system with dual power supplies includes Policy Engine software on hard drive, accessory kit and quick start guide.
SRC-PE10-SW	SRC Policy Engine software release 1.0 on PEN Drive.
SRC-PE20-SW	SRC Policy Engine software release 2.0 on PEN Drive.
SRC-PE30-SW	SRC Policy Engine software release 3.0 on PEN Drive.
SRC-PE1000K-LIC	1,000,000 Service Session License for SRC Policy Engine.
SRC-PE500K-LIC	500,000 Service Session License for SRC Policy Engine.

MODEL NUMBER	DESCRIPTION
SRC-PE200K-LIC	200,000 Service Session License for SRC Policy Engine.
SRC-PE100K-LIC	100,000 Service Session License for SRC Policy Engine.
SRC-PE50K-LIC	50,000 Service Session License for SRC Policy Engine.
SRC-C2KPEACP-LIC	Feature license for admission control plug-in, one required per C2000 SRC Policy Engine.
SRC-C2KPEHA-LIC	Feature license for HA on policy engine on C2000, one required per standby C2000 SRC PE controller.
SRC-C4KPEACP-LIC	Feature license for admission control plug-in one required per C4000 SRC Policy Engine.
SRC-C4KPEHA-LIC	Feature license for HA on SRC Policy Engine on C4000, one required per standby C4000 SRC PE controller.
SRC-CXKDG-LIC	SRC Diameter (A-RACF Rq Interface) Gateway software license for use on C Series Controllers. One required per C Series running Diameter Gateway software.
SRC-CXKSG-LIC	SRC SOAP Gateway software license for use on C Series Controllers. One required per C Series running SRC SOAP Gateway software.
SRC-TMP-APP	SRC Threat Mitigation Portal application software lifetime license, for Solaris platforms.
SRC-VTA-APP	SRC Volume Tracking application software lifetime license, for Solaris platforms.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

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