



Product Overview

Enterprises and government agencies worldwide must keep their networks secure, authenticating, and managing users who require local and remote network access. Many of these organizations and their networks are authenticating more users daily or hourly than some of the world's busiest service providers. It's critical for global organizations to select and deploy the most powerful and reliable AAA and RADIUS solution to manage and authenticate local, remote, and wireless LAN (WLAN) users. A superior, robust, dependable device such as Juniper Networks Steel-Belted Radius Appliance delivers the ideal AAA/RADIUS solution with the easy integration and operational simplicity of a network appliance.

Product Description

Steel-Belted Radius Appliance is a stand-alone AAA/RADIUS network device that combines the power and flexibility of Juniper Networks[®] SBR Series Steel-Belted Radius Servers, the industry's leading family of AAA/RADIUS server products and a de facto standard, with the convenience of a dedicated appliance that easily integrates into any network environment.

Available for both the Juniper Networks Steel-Belted Radius Enterprise Edition and Juniper Networks Steel-Belted Radius Global Enterprise Edition, the SBR Appliance permits you to deliver and enforce a uniform, consistent security policy for all of your users—whether they access your network remotely via a VPN, through a firewall, or locally over a wireless or wired LAN secured by the 802.1X standard. The SBR Appliance also delivers the performance, scalability, and reliability to handle any traffic load, and fully supports any network infrastructure.

The Steel-Belted Radius Appliance is a complete implementation of the widely used RADIUS protocol in a network device. The SBR Appliance performs three vital functions:

- **Authentication**—Validating a user's login credentials against a central security database to ensure that only individuals with valid credentials are granted network access.
- **Authorization**—For each new connection, providing information to the network access device such as the IP address to use, session time-limit information, or which type of authentication protocol or method to use.
- **Accounting**—Logging all user and administrative connections, including user names and connection durations, for tracking and billing purposes.

The SBR Appliance enables you to centrally enforce your organization's security policies. From a single, centralized SBR Appliance, you can specify who is authorized to access your network, manage users' secure network connections, ensure that their connections are configured correctly, and control the way users connect to and what resources they can access on your network. It also aids in accounting for a user's actions while they are connected to your network.

The SBR Appliance ensures reliable network uptime, provides flexible and powerful user management, and is standards-based, delivering compatibility with virtually any and every network environment. Suitable for any organization that desires the reliability, flexibility, and interoperability necessary to authenticate, manage, and account for tens of thousands of users but prefers the ease of a network appliance, SBR Appliance delivers convenience and manageability. It lowers total cost of ownership through quick deployment, reducing maintenance and overhead, automating upgrades, and requires no parts sourcing. It also delivers the performance to handle the busiest networks or to easily scale to accommodate a growing network.

Value Proposition

Decreases Costs and Overhead While Increasing Return on Investment (ROI)

- Provides multivendor, multiple authentication method support
- Employs powerful, dynamic troubleshooting and diagnostic tools along with robust reporting features
- Provides strong security out-of-the box

Eases Deployment, Administration, and Maintenance

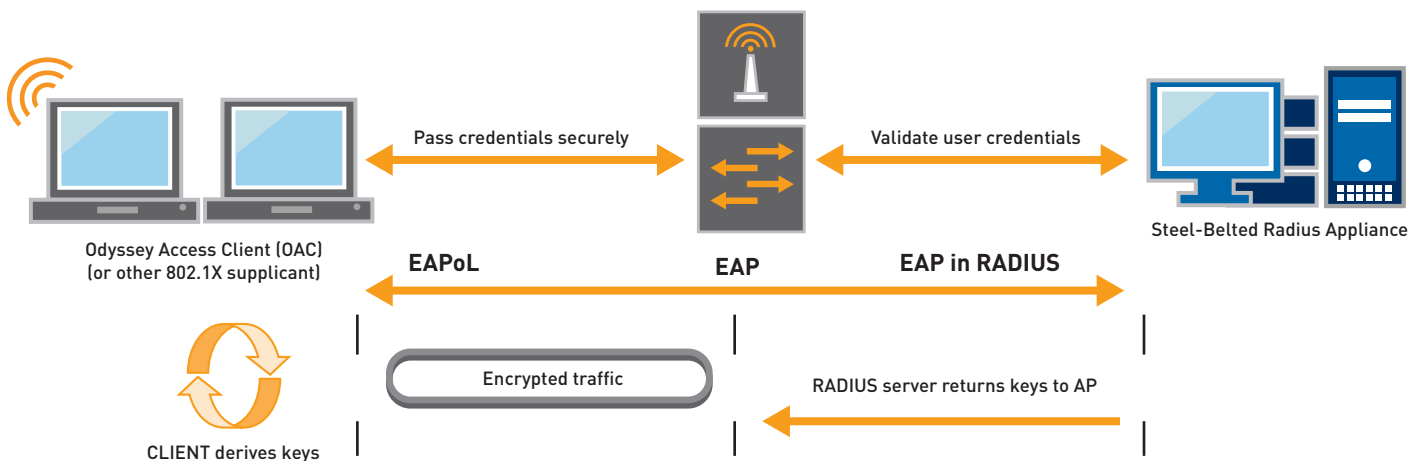
- Simplifies user and network configuration and maintenance
- Offers easy-to-use, customizable administrative controls
- Centralizes user management and key replication with innovative, time saving automated tools and processes
- Enables multiple user modifications and additions to be done simultaneously

Scalable, Robust Authentication and Access Control

- Offers the best, most appropriate functionality for your environment
- Supports wired and wireless network deployments
- Provides the latest standard security protocols
- Enforces any authentication method
- Empowers administrators through enhanced security controls

Table 1: SBR EE and SBR GE—Edition Description and Audience

SBR APPLIANCE EDITION	EDITION DESCRIPTION	AUDIENCE
Steel-Belted Radius Enterprise Edition	<ul style="list-style-type: none"> • Compatible with virtually any network environment. • Centrally manages and secures network access and enforces a uniform access security policy across an organization while ensuring reliable uptime, flexibility, and powerful user management. 	SBR EE is suitable for deployment in small to mid-size organizations.
Steel-Belted Radius Global Enterprise Edition	<ul style="list-style-type: none"> • Extends the robust capabilities of SBR EE, addressing the security and management needs of global organizations and government agencies, with the performance to tackle tens of thousands of remote/VPN or 802.1X-based wireless and/or wired users across multiple sites. • Can serve as the centerpiece of a network security and access control infrastructure. 	SBR GE significantly enhances network security and manageability for large, global organizations and government agencies.



Architecture and Key Components

Centrally Manage and Secure Network Authentication

When combined with the enterprise-built, 802.1X-compatible Juniper Networks Odyssey Access Client, the SBR Appliance provides a complete, seamless network security solution. The SBR Appliance and OAC combine to ensure that only authorized users access the network; that user connections are configured correctly, whether the user is connecting via WLAN, remote/VPN, or wired 802.1X; and that user and network credentials and data remain secure. Together, OAC and the SBR Appliance deliver powerful network access policy management, robust user authentication, and durable network security—with unparalleled network control, usability, and speedy deployment.

Features and Benefits

Appliance Simplicity with Robust Security

The dedicated SBR Appliance offers many security advantages that surpass standard, multipurpose servers. The hardened operating system of the SBR Appliance has been tailored specifically to support the RADIUS standard, providing strong security out-of-the box and eliminating most common avenues of operating system attack. Also, the removal of unnecessary operating system modules eradicates the need for constant patching, lowering an organization’s administrative burden.

Steel-Belted Radius Appliance with SBR Enterprise Edition

The SBR Appliance running SBR Enterprise Edition works with whatever network access equipment you’ve chosen for your network, regardless of vendor. It supports heterogeneous networks, easily interfacing with network access equipment from different vendors by automatically communicating with each device in the language it understands, based on customized dictionaries that describe each vendor’s and device’s extensions to the RADIUS protocol. Whether you’ve set up WLAN, remote/VPN, wired 802.1X, dial-in, outsourced, or any other form of network access in any combination, the SBR Appliance with SBR EE can manage the connection of all users regardless of access method.

The SBR Appliance with SBR EE logs all authentication transactions, so you’ll be able to view the entire history of authentication requests and the resulting responses. If your access device supports RADIUS accounting, you’ll also be able to track how long each user stays connected and even be able to see exactly who’s connected at any time and on which port. With the SBR Appliance, all of the information you need on RADIUS activity is at your fingertips.

Table 2: SBR Appliance with SBR EE Features and Benefits

FEATURE	FEATURE DESCRIPTION	BENEFITS
Standards-based	Strictly adheres to the RADIUS standard and provides complete AAA coverage.	Standards-based and vendor-agnostic, the SBR Appliance interfaces with network access equipment from different vendors simultaneously, effortlessly integrating and interoperating in heterogeneous network environments.
Cross-platform, multivendor support	<ul style="list-style-type: none"> • Works seamlessly with a variety of network access equipment, including WLAN, remote/VPN, wired 802.1X, dial-in, outsourced, or any other form of access—in any combination. • Customized dictionaries describe each vendor’s extensions to the RADIUS protocol; supports 100+ vendor-specific dictionaries, with updates or additions to the dictionaries easily accomplished. • Proxy realms can direct RADIUS requests to another AAA server. 	<ul style="list-style-type: none"> • Offers best-in-class AAA for virtually all deployment types and vendor products. • Simplifies AAA/RADIUS deployment and day-to-day operations. • Saves deployment time and additional expense.
Secure network access	<ul style="list-style-type: none"> • Supports most authentication protocols, including: <ul style="list-style-type: none"> – EAP-TTLS, EAP-PEAPv0/v1, EAP-TLS, EAP-FAST and LEAP, EAP-POTP, EAP-MD5, PAP, CHAP, MS-CHAP, MS-CHAPv2 	Delivers support for the authentication protocol or protocols that best fit your deployment.
Support for remote access	<ul style="list-style-type: none"> • The SBR Appliance centralizes the management and security of users connecting via firewall, VPN, or dial-in, delivering support for: <ul style="list-style-type: none"> – All standard RADIUS tunneling attributes, as well as vendor-specific attributes (VSA) supported by all popular network equipment. – MS-CHAP authentication for full support of Microsoft® RAS and Point-to-Point Tunneling Protocol (PPTP) connections. – Tunnel authorization based on username format (user@ tunnel, tunnel#user) or Dialed Number Identification Service (DNIS). 	Centrally manage VPN, dial-in, firewall, or other remote access to your network.

Table 2: SBR Appliance with SBR EE Features and Benefits (continued)

FEATURE	FEATURE DESCRIPTION	BENEFITS
Support for multiple authentication methods	<ul style="list-style-type: none"> • Authenticates users against virtually any authentication method or combination of methods. • Supports a native database of up to 20,000 users and their passwords. • Works seamlessly with most authentication databases and data stores, including: <ul style="list-style-type: none"> – Microsoft Windows® Domains and UNIX security systems, including Microsoft® Active Directory® (with full support for MS-CHAP extensions to support change of expired passwords). – Extensible Authentication Protocol Transport Layer Security (EAP-TLS) and Active Directory (AD) accounts, enabling Machine Authentication with EAP-TLS and User Authentication with EAP-TLS with AD. – UNIX local users and groups, and Solaris™ Network Information Services+. – Token-based authentication systems such as RSA® Security Authentication Manager (RSA SecurID®). – Lightweight Directory Access Protocol (LDAP) directories, including Novell® eDirectory™, Sun Java™ System Directory Server, and open LDAP. – TACACS+ authentication. – Other RADIUS servers for proxy authentication. 	<ul style="list-style-type: none"> • Saves time and cost by allowing you to use your existing authentication database or data store to authenticate LAN, WLAN, remote/VPN, and wired 802.1X users. • Authentication is not limited to just user name/password queries.
Dynamic statistics and reports	<ul style="list-style-type: none"> • View the entire history of authentication requests and responses. • Track the length of user connections with RADIUS accounting. • View statistics on authentication, accounting proxied requests, and more. • Compile information into informative, searchable reports. • Enjoy greater detail on the status of RADIUS transactions. • Save accounting records locally to a comma separated values (CSV) file. 	<ul style="list-style-type: none"> • Simplifies diagnostics and troubleshooting. • Decreased problem diagnosis time means decreased support costs. • Easy to view RADIUS and network activities from a variety of perspectives • Enhances the ability to address and comply with industry and government regulations.
Quick, easy provisioning, administration, and maintenance	<ul style="list-style-type: none"> • Browser-based management interface enables administrative operation from any supported platform accessible through any supported Web browser (for example Internet Explorer®, Netscape Navigator®, Firefox®). • Centralized administration (via Java-based administration program) enables administration of SBR Appliances from virtually any machine. • Manage multiple SBR Appliances from the same user interface. • An easy-to-use LDAP Interface is available for most SBR Appliance administrator functions. • RADIUS clients via IP address range. 	<ul style="list-style-type: none"> • Simplifies administration and maintenance. • Delivers multi-platform administrative support. • Drives administrative cost decreases through the use of automated and customized configuration tools and processes. • Diminishes administrative workload.
Centralized configuration management (CCM)	<p>Allows you to centrally configure and manage multiple SBR Appliances from a single station, enabling you to quickly and simply address increased traffic and distributed authentication.</p>	<ul style="list-style-type: none"> • Significantly reduces the time needed to bring devices and users online. • Eases configuration and deployment.
Simple cut-and-paste configuration settings	<p>Copy configurations simply and quickly.</p>	<p>Limits opportunities for administrative or configuration errors.</p>
IP address assignment via locally managed IP pool	<p>An IP address is assigned from one of the pools associated with the RADIUS client.</p>	<p>Easily and seamlessly integrates into any network environment, supporting and leveraging an existing data infrastructure.</p>

Steel-Belted Radius Appliance with SBR Global Enterprise Edition

The industry-tested SBR GE, operational around-the-clock in some of the most active networks in the world, continues to demonstrate the reliability, flexibility, and interoperability required to authenticate, manage, and account for tens of thousands of users.

With the SBR Appliance running SBR GE, organizations can take advantage of the breadth of capabilities available in the SBR Enterprise Edition, while enjoying many additional

features designed specifically for the world’s largest, most active networks. Organizations can safely implement an SBR Appliance running SBR GE as the centerpiece of their network security and access control environment.

In addition to the features listed above for the SBR Appliance running SBR EE, the SBR Appliance running SBR GE includes specialized features that exceed the unique AAA requirements of global organizations managing thousands of users across multiple sites:

Table 3: SBR Appliance with SBR GE Features and Benefits

FEATURE	FEATURE DESCRIPTION	BENEFITS
LDAP Configuration Interface (LCI)	Allows scripting and easy access to Current Sessions list.	Makes it simple to set up and manage large numbers of users.
Java Scripting for LDAP*	Combines the flexibility of JavaScript™ with the power of SBR GE’s LDAP Configuration Interface (LCI) plug-in to deliver a highly customizable solution.	Allows you to address even the most complicated business rules.
Directed realms	Provides virtualized instances of the appliance, allowing requests to be managed according to their nature.	Saves administrative and deployment time and cost by not requiring that you add additional appliances to your network.
Time-of-day and session time limits	Limit network usage based on the time-of-day of network access as well as placing time limits on network access sessions.	Provides you with additional control over who can access your network, when they can access your network, and for how long.
Account lockout and account blacklisting	<ul style="list-style-type: none"> Based on failed access attempts and authentication attributes. Set limits on the number of active connections per user, network access to specific accounts, and concurrent network connections by criteria such as user and group. 	<ul style="list-style-type: none"> Increases your control over user sessions and connections Provides you with additional granular control over who can access your network and how.
Attribute translation and mapping	<ul style="list-style-type: none"> Supports attribute translation from one type of network access equipment to another. Supports the mapping of different attributes with similar information to the same alias. 	<ul style="list-style-type: none"> Promotes use in heterogeneous environments by easily accommodating different network equipment. Ensures the appropriate level of AAA enforcement for each network access point.
Flexible user name handling	Handles user names of any format.	Eases the assimilation and integration of data for new or acquired employees.
Proxy filtering	Supports the selective modification of attributes as proxy packets flow to and from the appliance.	Easily distribute authentication and accounting to the appropriate RADIUS server or appliance.
IP address assignment via locally managed IP or Dynamic Host Configuration Protocol (DHCP) pool	An IP address is assigned from one of the IP pools associated with the RADIUS client; or an address is assigned from a DHCP server for a user-configurable period of time (DHCP lease) when a user connects.	Easily and seamlessly integrates into any network environment, supporting and leveraging an existing data infrastructure, and is extensible and flexible for future use, even with network changes.
Systems statistics log file	Provides a snapshot of SBR Appliance running SBR GE statistics at a given interval, configurable by an administrator.	Further simplifies and provides additional granularity to aid in appliance diagnostics and troubleshooting.
Reliable accounting	Supports the spooling of accounting data for delivery to a central repository.	The ability to compile a complete record of all access activity on your network for storage in a central, accessible location, providing a vital tool for diagnostics and security, and aiding in adherence to government and industry regulations.
Round robin authentication and accounting	Available across LDAP databases and directed realms for redundancy and load balancing.	Ensures that users will still be authenticated prior to network access even if your primary SBR Appliance or SBR Series Server is unavailable, or in the event of an immediate increase of users attempting network access.
Supports “failover” to backup LDAP database	If the primary database becomes unavailable, “failover” is invoked to a backup LDAP database.	Guarantees that users will still be authenticated prior to accessing your network, even if your primary LDAP authentication store becomes unavailable.

*Java Script™ license key required

Comparing Steel-Belted Radius Server and Appliance Features

The following is a comparison of the feature sets for SBR Series server products against the feature set for the Steel-Belted Radius Appliance:

Table 4: SBR Product Features Comparison

FEATURES	STEEL-BELTED RADIUS APPLIANCE	STEEL-BELTED RADIUS EE SERVER	STEEL-BELTED RADIUS GE SERVER
Microsoft Windows Server 2003 (SP2)	Yes	Yes	Yes
Microsoft Windows XP	No	Yes	Yes
Solaris	No	Yes (SBR for Solaris™ runs on Solaris 9 or 10 running on SPARC® or UltraSPARC)	Yes (SBR for Solaris™ runs on Solaris 9 or 10 running on SPARC or UltraSPARC)
Linux	No	Yes (SBR for Linux runs on Red Hat® Enterprise Linux® Enterprise Server and Advanced Server version 4)	Yes (SBR for Linux runs on Red Hat Enterprise Linux Enterprise Server and Advanced Server version 4)

Authentication methods supported include:

RSA® Security Authentication Manager®	Yes	Yes	Yes
Microsoft Windows Active Directory or Domains	Yes	Yes	Yes
Windows machine authentication	Yes	Yes	Yes
Solaris	No	Yes (On SBR Series for Solaris)	Yes (On SBR Series for Solaris)
Linux	No	Yes (On SBR Series for Linux)	Yes (On SBR Series for Linux)
SQL	No	Yes	Yes
LDAP	Yes	Yes	Yes
LDAP Java Scripting	Yes (Only on the SBR Appliance with SBR GE)	No	Optional add-on
Proxy RADIUS	Yes	Yes	Yes
Novell® eDirectory™	Yes	Yes	Yes

Authentication protocols supported include:

PAP	Yes	Yes	Yes
CHAP, MS-CHAP, MS-CHAP-V2	Yes	Yes	Yes
EAP-TTLS	Yes (PAP, CHAP, MS-CHAP, MS-CHAP-V2 as inner methods)	Yes (PAP, CHAP, MS-CHAP, MS-CHAP-V2 as inner methods)	Yes (PAP, CHAP, MS-CHAP, MS-CHAP-V2 as inner methods)
EAP-PEAP	Yes (GTC, MS-CHAP-V2 as inner methods)	Yes (GTC, MS-CHAP-V2 as inner methods)	Yes (GTC, MS-CHAP-V2 as inner methods)
EAP-TLS	Yes	Yes	Yes
EAP-POTP (32)	Yes	Yes	Yes
EAP-15	Yes	Yes	Yes
EAP-MD5	Yes	Yes	Yes
EAP-FAST	Yes	Yes	Yes
Cisco® LEAP	Yes	Yes	Yes

Table 4: SBR Product Features Comparison (continued)

FEATURES	STEEL-BELTED RADIUS APPLIANCE	STEEL-BELTED RADIUS EE SERVER	STEEL-BELTED RADIUS GE SERVER
Administration client	Yes (Runs on Microsoft Windows Server 2003 and Windows XP)	Yes (Runs on Microsoft Windows Server 2003, Windows XP, Solaris and Linux)	Yes (Runs on Microsoft Windows Server 2003, Windows XP, Solaris and Linux)
Centralized Configuration Management	Yes	Yes	Yes
LDAP Configuration Interface (LCI)	Yes (Optional add-on for the SBR Appliance with SBR EE)	Optional add-on	Yes
SNMP-based management	No	No	Yes (SBR Series for Solaris version only)
Server statistics via LCI	Yes (Only with the purchase of the LCI (SBR EE) and included with SBR Appliance with SBR GE)	Yes (Only with the purchase of the LCI)	Yes
Reports	Yes Includes reports for: <ul style="list-style-type: none"> • Current sessions • Successful/failed authentication requests • Unknown client requests • Invalid shared secret requests 	Yes Includes reports for: <ul style="list-style-type: none"> • Current sessions • Successful/failed authentication requests • Unknown client requests • Invalid shared secret requests 	Yes Includes reports for: <ul style="list-style-type: none"> • Current sessions • Successful/failed authentication requests • Unknown client requests • Invalid shared secret requests • Locked accounts
Multivendor RADIUS client support	Yes	Yes	Yes
IP address pools	Yes	Yes	Yes
IPX address pools	Yes	Yes	Yes
DHCP	Yes (Only on the SBR Appliance with SBR GE)	No	Yes
Configurable local accounting	Yes	Yes	Yes
Configurable debug logging to a local text file	Yes	Yes	Yes
SQL accounting	No	Yes	Yes
Report logs	Yes	Yes	Yes
Round robin authentication and accounting across SQL databases and directed realms	No	No	Yes
Round robin authentication and accounting across LDAP databases and directed realms	Yes (Only on the SBR Appliance with SBR GE, with LDAP)	No	Yes
“Failover” to backup SQL database	No	No	Yes
“Failover” to backup LDAP database	Yes (Only on the SBR Appliance with SBR GE, with LDAP)	No	Yes
Supports reliable database configuration	Yes (Only on the SBR Appliance with SBR GE, with LDAP)	No	Yes



so you can realize bigger productivity gains, faster rollouts of new business models and ventures, and greater market reach, while generating higher levels of customer satisfaction. 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/products-services.

Ordering Information

MODEL NUMBER	MODEL NAME AND DESCRIPTION
SBR Appliance/SBR Enterprise Edition	
SBR-WINSS-LIC	SBR Appliance/SBR Enterprise Edition and license key
SBR-EE-APP-UPG	SBR Appliance/SBR Enterprise Edition software upgrade – license and media kit
SBR-APP-UPG	SBR Appliance/SBR Enterprise Edition hardware upgrade kit
SBR Appliance/SBR Global Enterprise Edition	
SBR-GE-WINSS-LIC	SBR Appliance/SBR Global Enterprise Edition and license key
SBR-GE-APP-UPG	SBR Appliance/SBR Global Enterprise Edition software upgrade – license and media kit
SBR-GE-APP-HW-UPG	SBR Appliance/SBR Global Enterprise Edition hardware upgrade kit
LDAP Configuration Interface (LCI) Module	
SBR-LCI-MOD	SBR EE LCI Module (license key only)
SBR Java Scripting Module for LDAP	
SBR-JS-NT	SBR Java Scripting Module – Windows Single

For more information about the SBR Appliance or SBR Series Servers, please contact your Juniper Networks sales representative, Juniper authorized partner, or visit www.juniper.net/us/en/products-services/software/ipc/sbr-series/ and/or www.juniper.net/us/en/products-services/ipc/sbr/.

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.

Steel-Belted Radius Appliance Specifications

Hardware Specifications

Form Factor

- Mini 1U rack height

Dimensions (H x W x D)

- 1.7 x 16.8 x 14 in

Processor(s)

- Intel® Pentium® 4

Memory

- 1 GB DDR2 RAM

Disk space

- 160 GB SATA

Connectivity

- Two on-board dual 100/1000 NIC

Regulatory

- UL60950, CSA22.2 No.60950, EN60950, FCC Part 15 Class A, EN55024:1998, EN55022:1998, EN61004, VCC V-3/200.4, AS/NZS 3548, ICES-003 Class A, CISPR-22

Certifications

- cULus, CE, VCCI, FCC Part 15, RoHS 2002/95/EC

Software Specifications

- Steel-Belted Radius Enterprise Edition or Steel-Belted Radius Global Enterprise Edition server software
- Microsoft Windows Server 2003 (SP2), Security Hardened
- Secure, browser-based management console

Performance

- 1,500 transactions per second

Performance-Enabling 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

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