STEEL-BELTED RADIUS SERVICE PROVIDER EDITION

Service Overview

The Juniper Networks Steel-Belted Radius Service Provider Edition is a high-performance RADIUS/AAA server that enables wireless and fixed line operators to gain control over the way subscribers access their networks. It significantly enhances the security and manageability of any network by centralizing user authentication, delivering the appropriate level of access, and ensuring compliance with security policies—and it packs the performance and reliability to handle any traffic load.

Product Description

Already in use on some of the world's busiest networks and managing millions of user transactions per day, Juniper Networks® Steel-Belted Radius Service Provider Edition (SBR SP) is the gold standard for RADIUS/Authentication, Authorization and Accounting (AAA) servers.

The SBR SP enables service providers to provide high-quality network access, offer differentiated services, participate in new revenue models, and manage network resources. Whatever type of network access you provide, whether it is wireless or wired, 2G or 3G (second or third-generation). SBR SP sits at the core of your service delivery and customer care infrastructure—authenticating subscribers to the network, authorizing the appropriate level of service delivery, and reliably delivering accounting data to your billing system.

SBR SP integrates easily into your operations support systems (OSS), allowing you to centrally manage the authentication of all your subscribers—both locally and via proxy RADIUS—to deliver the appropriate level of service to each. SBR SP incorporates the most flexible and powerful integration with authentication databases, and can interface with your subscriber data system, however you've chosen to organize it.

SBR SP also allows you to meet your stringent uptime requirements. It includes state-of-the-art reliability features, including load balancing and redundancy across your authentication and accounting systems. It also offers complete scalability and the ability to handle thousands of RADIUS requests per second on suitable hardware, easily accommodating the busiest networks.

And, SBR SP provides high-reliability accounting capabilities, ensuring delivery of all accounting data to your billing systems, and allowing you to bill for usage-based and premium services.

Architecture and Key Components

Scalable to any Service Level

SBR SP is a complete implementation of the widely-used Internet Engineering Task Force (IETF) RADIUS protocols, and is a full-function AAA server. It is fully compliant with all RADIUS RFCs.

SBR SP provides a universal user management platform that scales to meet the rigorous requirements of the largest carrier or service provider. It serves:

- 2G (CDMA/ GPRS)/3G (UMTS/HS(D)SPA) Wireless Operators: SBR SP verifies the credentials of subscribers accessing the mobile services/Internet, manages service delivery, and integrates seamlessly with billing and provisioning systems.
- Broadband Providers: SBR SP makes it easy to deliver the appropriate level of service to each user, and provides routing to offer open or wholesale access or services.
- Carriers/Wholesale Service Providers: SBR SP can handle the busiest network at a market-leading transaction rate and makes it possible to easily provide wholesale services to any customer, regardless of network infrastructure.
- Wholesale Service Customers: With SBR SP, you can source capacity from any selection of carriers you choose, to expand your geographic reach and deliver your own branded services. Flexible accounting lets you introduce usage-based premium services.
- Outsource Service Providers: SBR SP lets you manage all customer data and service delivery requirements. You can also source the enterprise version of Steel-Belted Radius Appliance to your customers, enabling them to maintain control of their own authentication databases at the lowest support cost to you.

Broad Multi-Vendor Support and Integration

SBR SP works in any network environment.

- Works with the widest variety of network access equipment, from industry's leading vendors. This broad multi-vendor support lets you easily integrate legacy systems with new systems, and purchase equipment based on best price/performance.
- Supports the most backend authentication databases for instant compatibility with the authentication and billing systems you're using today.
- Provides the most flexibility in interoperating with other RADIUS servers, to easily communicate with other service providers and enterprise customers.

Flexible Authentication Methods

SBR SP can authenticate remote user names and passwords against a wide range of backend authentication databases, for ensured compatibility in your network. SBR SP also offers extraordinary power and flexibility when interfacing with your Structured Query Language (SQL)- or LDAP-based authentication, billing and provisioning systems.

In particular, SBR SP:

- Fully supports authentication against credentials stored in LDAP directories including Novell's eDirectory, Sun Java System Directory Server, and open LDAP and SQL databases from Oracle, MySQL, and any Open Database Connectivity (ODBC)- or Java Database Connectivity (JDBC)-compliant database.
- Works with any SQL table structure or LDAP schema; no database redesign is likely to be necessary.
- Can authenticate against one or more SQL or LDAP databases, even if they're from different vendors.
- Runs any LDAP filter or SQL query you specify, for the greatest flexibility in retrieving information.
- Can load balance authentication requests among several SQL or LDAP databases, to eliminate the risk of a single point of failure and increase performance on busy networks.
- Supports concurrent access limits for users set up in SQL or LDAP.
- Can retrieve stored RADIUS attributes and Profiles from the SQL database or LDAP directory to return to the network access equipment.

SBR SP can also authenticate remote users against the following databases:

- Windows Domains and UNIX security systems, including Active Directory (with full support for MS-CHAP, Microsoft's implementation of the Challenge Handshake Authentication Protocol, extensions to support change of expired passwords), UNIX local users and groups, and Solaris Network Information Services +.
- Token systems, including RSA Security's Authentication Manager.
- TACACS +

Finally, SBR SP can authenticate remote users via proxy RADIUS requests to RADIUS servers at other sites that have the necessary database to perform authentication.

Advanced Proxy RADIUS Capabilities

SBR SP includes the most advanced proxy RADIUS support available. It can act as a proxy target server, and can forward proxy requests to other RADIUS servers. With SBR SP, you have several ways of setting up proxy RADIUS users. You can:

- Specify a user-name decorator to indicate a proxy target (for example, a user would connect using george@myisp rather than simply george).
- Configure proxy by Dialed Number Information Service (DNIS).
- Direct incoming proxy requests to a specific authentication or accounting method based on user name decoration or DNIS.

In addition, SBR SP can forward proxy RADIUS requests to multiple target servers within an organization ("realm"). This capability lets you set up back-up target servers within your central site, introduce redundancy into your network, and eliminate the risk of service interruption.

Finally, SBR SP provides proxy packet filtering. With filtering, you can set up rules that govern how SBR SP handles packets that are forwarded to or received from target servers.

These proxy RADIUS capabilities are essential if you are providing roaming services, are part of an ISP consortium, or if you already have smaller, special-purpose RADIUS servers in place on your network that you would like to continue to use.

Features and Benefits

Easily Deliver Differentiated Services

SBR SP simplifies the process of managing service delivery to your customers. It allows you to define user profiles to easily assign a set of connection attributes to a user or group of users. It also makes it easy to standardize profiles across different types of network access equipment so that you can deliver the appropriate level of service to all customers, regardless of the network access equipment to which they connect.

In addition, SBR SP can integrate with a WAP gateway or other Internet server to provide subscriber connection details, including each user's credentials and currently assigned IP address. With this information, the Internet server is able to deliver the appropriate level of service to each subscriber.

With SBR SP, you can even associate multiple IP address pools to a single network access server, to establish different address pools for different packages and reduce your IP configuration chores.

Reliable, Real-Time Accounting

SBR SP fully supports RADIUS accounting, seamlessly integrates with your accounting and billing system, and provides complete flexibility. RADIUS accounting log files can easily be exported to spreadsheets, databases and specialized billing software. You can also log accounting data directly to a single SQL database or specify multiple SQL target servers.

In addition, SBR SP can be configured to spool accounting data from distributed RADIUS servers to a central billing system, thereby guaranteeing delivery in the event of a system failure. This feature also eliminates lost accounting records and duplicate entries, removes the need for local data backup and batch processing, and facilitates real-time usage tracking for services such as prepaid Internet access cards.

Carrier-Grade Reliability

SBR SP allows you to meet your stringent uptime requirements with state-of-the-art reliability features, including load balancing and redundancy across your authentication and accounting systems. It also offers complete scalability and the ability to handle thousands of RADIUS requests per second on suitable hardware, easily accommodating the busiest networks.

Easy Diagnostics with Dynamic Statistics and Reports

SBR SP 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 have the security of being able to see exactly who's connected at any time and on which port.

What's more, all of the information you need on RADIUS activity is at your fingertips. You can dynamically view RADIUS statistics on authentication, accounting, proxied requests and more.

Or, view the entire history of authentication requests and the resulting responses, and generate such reports as Current Sessions, Successful/Failed Authentication Requests, Unknown Client Requests, and Invalid Shared Secret Requests. All reports are fully searchable and can be easily exported to spreadsheets or SQL databases.

Simple to Configure and Maintain

SBR SP's XML-based GUI lets you administer the server from any machine, not just the one on which SBR is installed. Easy configuration of the server settings lets you significantly reduce the amount of time required to bring new devices and users online. Simply cut and paste existing configuration settings for users, RADIUS clients, profiles and proxy RADIUS targets, and only update specific information required for new settings.

Table 1: Features and Benefits

FEATURE	FEATURE DESCRIPTION	BENEFIT
High-performance Carrier-grade reliability	Proven reliability and performance	· High-performance operation easily handles any volume of subscribers. · Helps ensure 99.999% uptime. · Complete scalability and the ability to handle thousands of RADIUS requests per second on suitable hardware.
Network and database integration	Seamless integration with infrastructure	· Leverage your existing subscriber data and billing systems, however they're set up. · Fully compliant with RADIUS and RADIUS accounting RFCs. · Supports any service delivery model, including pre-paid. · Integrates with new mobile service platforms such as pre-paid, WAP, Wi-Fi, Unlicensed Mobile voice (UMA) and MMS.
Accounting	Reliable, real-time accounting	· Guaranteed delivery of RADIUS accounting records ensures billing accuracy. · Facilitates real-time tracking usage for services such as prepaid Internet access cards. · Eliminates lost and duplicate records.

In addition, you can centrally configure and manage multiple copies of SBR SP, using the Centralized Configuration Management (CCM) feature. With CCM, you can configure a "Primary" copy of SBR, and replicate that configuration across all valid registered SBR SP replicas—saving you time and reducing the possibility of configuration errors. Configuration data on replicas cannot be modified, except by pushing changes from the master server, preventing unanticipated configuration issues at a local level.

Specifications

System Requirements

- SBR SP for Windows runs on Windows XP Workstation, Windows Server 2003 and Windows Vista.
- SBR SP for Solaris runs on Solaris 9 or 10 SPARC Edition.
- SBR SP for Linux runs on the SuSE Enterprise Server 9 or 10 and Red Hat (Enterprise and Advanced Server 3 or 4) versions of Linux.

SBR SP is administered via an XML-based administration program which runs on Windows, Solaris and Linux, and lets you administer any copy of SBR Appliance, regardless of platform.

Juniper Networks Service 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

SBR SP is orderable per server. The base license comes with 10 directed realms. Additional directed realms are available for purchase on a per-realm basis. An optional Javascripting module is also available.

MODEL NUMBER	DESCRIPTION
SBR-SPE-UN	Steel-Belted Radius Service Provider Edition Solaris - Single Server (license key only)
SBR-SPE-LX	Steel-Belted Radius Service Provider Edition Linux - Single Server (license key only)
SBR-SPE-NT	Steel-Belted Radius Service Provider Edition Windows - Single Server (license key only)
SBR-DIREALM	Add a single directed Realm to SBR SP (license key only)
SBR-SPE-JS-UN	SBR SP Javascripting Module - Solaris - Single Server license
SBR-SPE-JS-LX	SBR SP Javascripting Module - Linux - Single Server license
SBR-SPE-JS-NT	SBR SP Javascripting Module - Windows - Single Server license
SBR-SPE-MEDKT	Steel-Belted Radius Service Provider Edition Media Kit

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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