Juniper Networks Steel-Belted Radius Service Provider Edition

RADIUS/AAA Server for Service Providers

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 how subscribers access their networks. It significantly enhances the security and manageability of any network – centralizing user authentication, delivering the appropriate level of access, and ensuring compliance with security policies – and packs the performance and reliability to handle any traffic load.

Already in use on some of the world's busiest networks, managing millions of user transactions per day, Juniper Networks SBR SP is the gold standard for RADIUS/AAA servers.

Juniper's 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 – wireless or wired, 2G or 3G – 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 OSS, allowing you to centrally manage the authentication of all your subscribers – both locally and via proxy RADIUS – and deliver the appropriate level of service to each. SBR SP incorporates the most flexible and powerful integration with authentication databases available, 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.

Features	Benefits
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
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
Reliable accounting	· Guaranteed delivery of RADIUS accounting records ensures billing accuracy · Facilitates real-time tracking usage for services such as prepaid Internet access cards · Eliminate lost and duplicate records

Scalable to any Service Level

SBR SP is a complete implementation of the widely-used IETF RADIUS (Remote Authentication Dial-In User Service) protocols, and is a full-function AAA (authentication, authorization, accounting) 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 Wireless Operators. SBR SP verifies the credentials of subscribers accessing the 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 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 back-end 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 back-end authentication databases, for ensured compatibility in your network. SBR SP also offers extraordinary power and flexibility when interfacing with your 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 ODBC- or 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 database, 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 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
- ACACS +

Finally, SBR SP can authenticate remote users via proxy RADIUS requests to RADIUS servers at other sites which 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 (i.e., a user would connect using george@myisp rather than simply george)
- Configure proxy by DNIS (Dialed Number Information Service).
- 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 which you would like to continue to use.

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 you can deliver the appropriate level of service to all customers, regardless of which network access equipment they connect to.

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 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 SBR is installed on. 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.

And, 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.

System Requirements

- SBR SP for Windows XP/2000/NT runs on Windows NT 4.0 with Service Pack 6, Windows 2000 (all editions), Windows XP (all editions), and Windows Server 2003 (all editions).
- SBR SP for Solaris runs on Solaris 8 or 9 running on SPARC or UltraSPARC.
- SBR SP for Linux runs on the SuSE Enterprise Server 9 (SLES9) and Red Hat (Enterprise and Advanced Server 3) 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, regardless of platform.

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