

# Ribbon PSX SWe



Considered by service providers and enterprises to be the “gold standard” of network policy and routing management, Ribbon Communications’ Centralized Policy and Routing Server (PSX) is the industry’s most feature-rich policy and routing server, delivering unparalleled reliability in the world’s most demanding environments and scalability to millions of subscribers. The virtualized PSX SWe is cloud-native and provides the same features, exceptional scalability, and centralized policy/traffic control as the hardware-based PSX, for both Session Initiation Protocol (SIP) and legacy network elements, including Session Border Controllers (SBCs), media gateways and soft switches.

For Ribbon customers, the PSX SWe delivers a host of real-world benefits, including lower-cost Voice over Internet Protocol (VoIP) calls, intelligent routing, simplified network management and increased margins. In addition, the PSX SWe also functions as the Border Gateway Control Function (BGCF) in IMS networks. Ribbon customers can now seamlessly deploy the PSX SWe into their networks using commercial off-the-shelf (COTS) platforms. For customers planning and designing a cloud-based network architecture, the PSX can be deployed as a VNF in an Openstack cloud infrastructure, or as a VNF in a public cloud, such as Amazon Web Services (AWS). In such a deployment scenario, PSX instances can be created and deleted on demand, based on traffic requirements. When the PSX SWe is deployed in a cloud environment, common orchestration techniques can be used to service chain policy control with session management.



## System Capabilities

### Large Configurations

- Policy Lookup with an external ENUM dip: 4,500 cps
- Policy Lookup with an external TCAP dip: 2,000 cps
- SIP Proxy: 1,400 cps
- SIP Redirect: 3,000 cps

### Small Configurations

- Policy Lookup with an external ENUM dip: 900 cps
- Policy Lookup with an external TCAP dip: 900 cps
- SIP Proxy: 500 cps
- SIP Redirect: 1,000 cps

## Routing Engine Protocols

- Diameter+
- SIP Redirect
- SIP Proxy
- ENUM
- H.323
- DNS

## Transport Protocol Support

- Diameter+ over UDP
- SIP over UDP
- SIP over TCP
- SIP over SCTP
- ENUM over UDP
- H.323 over UDP
- IPv4
- IPv6

## Translation Services

- Address of Record
- Calling Name
- Local Number Portability
- Wireless Number Portability
- Toll Free

## SCP Signaling Protocols

- TCAP (ANSI & ITU) over SIGTRAN (SUA/SCTP)
- INAP CS2
- AIN 0.2
- IN (Toll-Free and CNAM)
- GSM-MAP/CAMEL
- IS41
- SIP
- ENUM
- DNS
- HTTPS/REST API

## Routing Configurations

- Calling party category routing
- Carrier cut through routing
- Casual call routing
- Codec based routing
- Direct-dial routing
- Emergency routing
- Fallback routing
- Generic number routing
- International routing
- Leading digit routing
- Least cost routing
- Nested routing labels
- Operator Services and Directory Assistance
- Origination entity routing
- Overflow ReRoute
- Percentage allocation routing
- Round robin routing
- Private call routing
- Private number routing
- Route hopping
- Routing to announcements
- Temporary alternate routing
- Time of Day/Time Zone and Day of Week routing
- Transmission Medium Requirements routing
- Trunk group prioritization routing

## Services

- Blocking (white, grey, blacklisting)
- Screening
- Authcode
- Custom scripts
- SAC/ Non-SAC routing
- Forced routing
- Toll bypass
- Voice VPNs
- Digit Manipulation
- Parameter Manipulation
- Customizable service logic
- Call Validation and Treatment

## Voice Services

- Auto Recall
- Business groups
- Conference and transfer
- Message waiting indication
- Service exception profiles
- Take back and transfer

## Number Portability Server

- Multi-Protocol Support
- ENUM
- SIP
- SS7
- Multi-Protocol Support
- Local DB
- External ENUM
- External TCAP
- External SIP
- Multi-country signaling support
- SIP-IX based LSMS in the North American market
- Direct feed support in India
- File-based input in other countries

## BGCF Functionality

- 3GPP Release 9 TS 24.229 compliance
- Mi interface toward S-CSCF
- Mj interface toward MGCF
- Mk interface toward peer BGCF
- Mx interface toward peer IBCF

## Overload Controls

- Adaptive Congestion Control Feedback
- Automatic Code Gapping
- CAMEL Call Gapping
- CANF
- CANT
- Code Control
- Immediate ReRoute (IRR)
- Overflow Reroute (ORR)
- SKIP
- SprayIRR
- SprayORR
- Temporary Alternate Routing

## High Availability and Reliability

- 99.999% availability
- Geo-redundancy
- N+1 master replica architecture
- Live data migration
- Shadow database
- Test database

## Regulatory Services

- Lawful Intercept
- Enhanced 911 – NENA i2
- Wireless Priority Service (WPS)
- Government Emergency Telecommunications Service (GETS)
- Japan Emergency Call Services (ECS)
- Hosted Emergency Database (German market)
- STIR/SHAKEN support for Call Authentication

## Hardware Specifications

### PSX Standalone

- vCPU -4
- vMemory - 16GB
- vHDD - 180GB
- vNIC - 1

### PSX High Availability

- vCPU - 4
- vMemory - 16GB
- vHDD - 450GB
- SAN Disk - 480 GB
- vNIC - 5

## Operating System

- Red Hat Enterprise Linux
- Openstack Train

## Software Platforms

- VMware 6.5 and higher
- KVM
- RHV
- Amazon Web Services (AWS)
- OpenStack

## External Storage System

- SAN with a shared LUN for PSX HA Master configuration

## Networking

- Support for SR-IOV
- Support for Interface Bonding and VLAN Tagging

Please note that the performance results could vary significantly based on the customer's specific network scenarios.

## About Ribbon

Ribbon Communications (Nasdaq: RBBN) delivers communications software, IP and optical networking solutions to service providers, enterprises and critical infrastructure sectors globally. We engage deeply with our customers, helping them modernize their networks for improved competitive positioning and business outcomes in today's smart, always-on and data-hungry world. Our innovative, end-to-end solutions portfolio delivers unparalleled scale, performance, and agility, including core to edge software-centric solutions, cloud-native offers, leading-edge security and analytics tools, along with IP and optical networking solutions for 5G. We maintain a keen focus on our commitments to Environmental, Social and Governance (ESG) matters, offering an annual Sustainability Report to our stakeholders. To learn more about Ribbon, please visit [rbbn.com](http://rbbn.com).

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