SINA

L3 Box S

Established VPN Gateway

IPsec-protected communication for VS-NfD (RESTRICTED)

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As a VPN gateway, the SINA L3 Box S is a central core component in high-security networks. SINA L3 Box S connects both authorities and corporate networks securely via Internet.

The SINA L3 Box S is an IP-based cryptographic system approved by the German Federal Office for Information Security (BSI) for the transmission of classified VS-NfD, NATO RESTRICTED and RESTREINT UE information. National and international safety networks can be easily set up using the various hardware versions. SINA Clients also access the downstream server segments via SINA L3 Box S as cryptographic network access points.

Thanks to its lightweight and compact format, the SINA L3 Box S 30M is flexible in use and ideal for tabletop applications. The SINA L3 Box S 5G has ten network interfaces and is predestined for use in complex, central network nodes. Besides, the device model achieves an encryption performance of up to 5 GBit/s, which makes it the most powerful device model in the product range.

All models are equipped with an integrated touch display and are easy to operate. The 19" models are equipped with network interfaces for SFP or SFP+ modules to allow demand-oriented use in various network scenarios.

Secure system boot

The latest SINA L3 Box S 800M (HA) and SINA L3 Box S 2G hardware versions support secure boot. Secure boot regularly checks the integrity of the system software at boot time. This prevents manipulation of software components and increases the level of security substantially.

IPv6 and Quality of Service

The latest software version 3.7 maintains the IPv6 capability of the SINA L3 Box S. It also supports Quality of Service. In this way, QoS classes can be changed or transparently forwarded within SINA (e.g. Internet, VoIP telephony, video conferences and data traffic).

IT security concept

The SINA L3 Box S is based on a holistic IT security concept.

This comprises in particular:

- a hardened and evaluated SINA OS system platform
- Smartcard technology
- IPsec-based Virtual Private Networks (VPN) and
- software configured according to approval.

Benefits

- German national RESTRICTED (VS-NfD), NATO RESTRICTED, RESTREINT UE
- Established in complex security networks
- Several thousand security associations
- Maintenance-free operation
- High availability
- Capable of remote administration

Simple configuration and operation

Simple configuration and installation are crucial for efficient setup of SINA L3 Box S. Hardware can be exchanged smoothly by saving the configuration data on the SINA ID token security anchor.

The SINA L3 Box S software is loaded by the flash memory during system start. All the initial configuration data and security associations are stored in a protected area of the SINA ID token.

The security associations to the SINA Management and the SINA L3 Box S units responsible for communication are set up as IPSec VPN tunnels. Additional configuration data can be optimally loaded from the SINA Management. The SINA L3 Box S can be operated with several thousand security associations.

High availability

It is possible to increase the availability and reliability of the SINA L3 Box S by means of redundant configurations. In hot standby mode, the function of the failed, previously active SINA L3 Box S is automatically switched over to a second SINA L3 Box S without interruption.

Furthermore, the gateway facilitates georedundancy and load balancing: With georedundant scenarios, alternative communication paths can be prioritised and run via SINA L3 Box S units installed at different locations. In certain load balancing configurations, the SINA L3 Box S units interact with a variety of load balancers. All hardware versions of the SINA L3 Box S are also available with redundant power supplies.

System monitoring

The SINA L3 Box S logs all data related to monitoring during operation. This can be imported into network management systems where it can be processed and/or displayed as required. The SINA L3 Box S additionally supports the SNMPv2c and SNMPv3 management protocol.

Management

SINA Management is used centrally for system administration, remote configuration and SINA software updates for every SINA L3 Box S in the network. The configuration updates comprise network configurations and security associations. An integrated public key infrastructure (PKI) with the relevant user management supports the significant administrative processes related to the SINA ID Token of SINA L3 Box S. This includes in particular its customisation, generation and updating of keys and cryptographic parameters as well as the administration of the relevant PINs and PUKs.

Sources

Authority customers in Germany can obtain the SINA L3 Box S through the framework contract 5070 "Encryptors of the SINA Family" of the Procurement Office of the German Federal Ministry of the Interior, or through the SINA supplemental contract Q/IB1C/R6359 of the German Federal Armed Forces. secunet would also be pleased to serve all other national and international customers.

Construction statuses relevant for authorisation

	SINA L3 Box S
Performance data	
Level of authorisation	German national RESTRICTED (VS-NfD), NATO RESTRICTED, RESTREINT UE
Software version	3.7
Authentication tokens	SINA ID tokens

Additional performance data

	SINA L3 Box S 30M-2	SINA L3 Box S 800M	SINA L3 Box S 2G	SINA L3 Box S 5G
General technical data				
Design	Desktop unit*, 220.5 x 182 x 43.6 mm Optional: Rackmount Kit on 19" 1U	19" 1U Optional: redundant power supplies	19" 1U	19" 2U
Weight	approx. 1.8 kg	approx. 6.5 kg (HA: approx. 8.0 kg)	approx. 8.0 kg	approx. 10 kg
Power consumption	approx. 37 W	approx. 55 W (HA: approx. 75 W)	approx. 95 W	approx. 104 W
MTBF	8.1 years	9.0 years	9.0 years	5.8 years
Cryptography				
Encryption performance**	up to 30 MBit/s	up to 800 MBit/s	up to 2.000 MBit/s	up to 5.000 MBit/s
Symmetrical processes	AES	AES	AES	AES
Asymmetric encryption method	EC-GDSA, EC-DH	EC-GDSA, EC-DH	EC-GDSA, EC-DH	EC-GDSA, EC-DH
LAN connections				
Network interfaces***	4 × 10/100/1.000 MBit/s RJ45	4×10/100/1.000 MBit/s RJ45 2×1.000 MBit/s SFP	4×10/100/1.000 MBit/s RJ45 2×1.000/10.000 MBit/s SFP+	6×10/100/1.000 MBit/s RJ45 4×1.000/10.000 MBit/s SFP+
Temperature				
Operation	+5 °C to +40 °C	+5 °C to +40 °C	+5 °C to +40 °C	+5 °C to +40 °C
Transport	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C	-20 °C to +60 °C

* Double installation side by side with rack-mount kit to 19" 1U and expandable with two power supplies per unit.
** Bidirectional L2 power measurement with Spirent CHS N4U (10G) in the style of RFC2544 (software version 3.x – AES-256 SHA-256, no feature configuration, two SINA L3 Box S units in direct connection). Detailed measurement results only available upon request.
*** Due to the large number of product variants from different manufacturers, SFP modules are not included in the scope of delivery. secunet is happy to provide advice on compatible SFP modules.

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