Established VPN Gateway

IPsec-protected communication for
German national RESTRICTED (VS-NfD)

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 P100 has four network interfaces and is predestined for use in complex, central network nodes. Besides with the innovative SINA SOLID feature, the model achieves encryption performance of up to 20 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 offer various network interfaces, from copper to QSFP28 interfaces. This allows a demand-oriented use in a variety of network scenarios.

Secure system boot

The latest SINA L3 Box S hardware versions support secure boot. Using secure boot, the integrity of the system software is regularly checked at the start.

This prevents manipulation of software components and increases the level of security substantially.

IPv6 and Quality of Service

The SINA L3 Box S is IPv6-compatible and 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).

Dynamic autoconfiguration

The new innovative feature SINA SOLID enables the automatic configuration of very large IPsec networks at the highest security level. Various mechanisms are used to increase resilience, administration productivity and performance.

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.

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 as a 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 relia-bility of the SINA L3 Box S by means of redundant configurations. With the SINA SOLID feature, the models have a hotstandby-like mechanism, called SINA SOLID Cluster. This means that all models are active and can ensure automatic transfer of functions to the other cluster boxes in the event of an unexpected failure. In addition, the cluster functionality enables load sharing of the connected SINA L3 Box S.

The SINA L3 Box S enables geo-redundancy and load balancing, even for static configurations: 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, to enable further high availability.

System monitoring

The SINA L3 Box S logs all data related to monitoring during operation. Using SINA Monitoring, the information can be visualized and processed as required. The information can also be imported into other network management systems and processed there. 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 acquire SINA components from the framework contract of the Procurement Office of the German Federal Ministry of the Interior. secunet would also be pleased to serve all other national and international customers.

Construction statuses relevant for authorisation

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Performance data	
Level of authorisation	German national RESTRICTED (VS-NfD), NATO RESTRICTED, RESTREINT UE/ EU RESTRICTED
Software version	3.7 and 3.9
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 P200	SINA L3 Box S P100
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	19″ 2U
Weight	approx. 1.8 kg	approx. 6.5 kg (HA: approx. 8.0 kg)	approx. 8.0 kg	approx. 9.7 kg	approx. 9.7 kg
Power consumption	approx. 37 W	approx. 55 W (HA: approx. 75 W)	approx. 95 W	approx. 190 W	approx. 190 W
MTBF	approx. 8.1 years	approx. 9.0 years	approx. 9.0 years	approx. 9.0 years	approx. 9.0 years
Cryptography					
Encryption performance with SINA SOLID**	up to 250 MBit/s	up to 800 MBit/s	up to 7 GBit/s	up to 8 GBit/s	up to 40 GBit/s
Symmetrical processes	AES	AES	AES	AES	AES
Asymmetric encryption method	EC-GDSA, EC-DH	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+	2×10 GBit/s RJ45 8×25 GBit/s SFP28	2×10 GBit/s RJ45 4×100 GBit/s QSFP28
Temperature					
Operation	+5 °C to +40 °C	+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	–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.

More information:
secunet.com/en/sina

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