

New compact VPN gateway

Approved for German national SECRET (GEHEIM)/
NATO SECRET



As a VPN gateway, the SINA L3 Box H is a key component of the central IT infrastructure in high-security networks.

The data exchange between the SINA components is securely transmitted via encrypted VPN tunnels. SINA L3 Boxes connect public authority or corporate networks via the Internet. In addition, access to (terminal) servers by SINA clients is provided via pre-switched SINA L3 Boxes, which serve as cryptographic network access points.

The SINA CORE-based SINA L3 Box H 200M-2 and SINA L3 Box H 1G are designed for the transmission of classified information up to and including German national GEHEIM and STRENG GEHEIM* and NATO SECRET. The focus is on national and international military and governmental high-security networks.

Both gateways are substantially more powerful, lighter and more robust compared to the previous model SINA Box H 200M. The hardware platform has been reduced to 1U and the encryption throughput has already been more than doubled to 200 Mbit/s full duplex by the SINA L3 Box H 200M-2. Ease of use has been enhanced by a long-lasting battery and an improved emergency extinguishing switch. The SINA L3 Box H is flexible in many respects, as can be seen in the reloadable crypto device classes, enhanced temperature ranges, the network interfaces that can be reconfigured directly on the device and more modest power consumption.

In addition, the new software version supports IPv6, IKEv2, SHA-256 and VLAN as well as various remote functionalities. These include updates to the SINA software, the smartcard configuration and the operational parameters (data container D2) of the SINA CORE modules. In addition, remote access to the administrator interface is possible.

The SINA H portfolio is the world's only security solution approved up to German national SECRET (GEHEIM) fortified with post-quantum cryptography, making it resistant to future cyberattacks by potential quantum computers.

IT security concept

The SINA L3 Box H is based on a holistic IT security concept. It comprises in particular:

- A ruggedized, intensively tested SINA OS system platform
- Smartcard technology
- IPsec-based cryptography
- SINA CORE crypto module and
- Hardware, firmware and software that are dimensioned and configured in accordance with approval standards.

Secure system start and operation

The SINA L3 Box software is coreboot-protected and reliably loaded by the flash memory during system start. All initial configuration data and security associations for the SINA L3 Box are stored in a protected area of the SINA Smartcard. When a SINA L3 Box is started, the security associations to the SINA Management and the primary communications-related SINA L3 Boxes are set up as IPsec VPN tunnels. If necessary, additional security associations or configuration data from the SINA Management are loaded. This greatly simplifies configuration, installation and hardware replacement with the SINA L3 Box.

Systems monitoring

The SINA L3 Boxes log 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. In addition, selected data can be queried via SNMP.

High availability

It is possible to increase the availability and reliability of SINA L3 Boxes by means of redundant configurations. An automatic switchover for example triggers a second SINA L3 Box to take on the functions of the failed SINA L3 Box (hot standby) that was previously active. From software version 3.10, the switching times are significantly accelerated.

SINA L3 Boxes also support geo-redundant and load-balancing configurations. In geo-redundant scenarios, alternative communication channels – which can be prioritised as necessary – run via SINA L3 Boxes in different locations. For load-balancing configurations, the SINA L3 Boxes interact with commercially available load balancers.

Satellite communication

Use of SINA L3 Boxes requires IP-enabled transport networks, including satellite communication lines. The available bandwidth of the satellite lines is used effectively in tandem with satellite optimisers.

Central management

The SINA L3 Box is configured and controlled centrally by SINA Management. An integrated public key infrastructure (PKI) with associated user management supports essential administrative processes involving SINA Smartcards. This includes, in particular, their personalization, the generation or updating of keys and cryptographic parameters as well as the administration of the associated PINs and PUKs.

SINA products can be kept up to date via remote software updates initiated by SINA Management. This reduces the support overhead in the long term and they can be distributed quickly in the customer networks in the event of a security or bug fix. In addition, this means that users have access to all newly developed features at any time.

The Remote Configuration Update allows configurations for SINA L3 boxes, users, SINA clients as well as series clients to be changed without having to update the smartcards concerned.



Benefits

- Approved for German national SECRET (GEHEIM) and NATO SECRET, under evaluation for SECRET UE/EU SECRET
- Post-quantum cryptography
- Higher performance
- Optimized high availability
- IPv6 and IKEv2
- Comfortable Remote Management

Approval-related construction classes



SINA L3 Box H 200M-2 Z1
SINA L3 Box H 1G Z1

SINA L3 Box H 200M-2 27A
SINA L3 Box H 1G 27A



Performance data		
Approval	German national SECRET (GEHEIM), NATO SECRET	German national SECRET (GEHEIM) and TOP SECRET (STRENG GEHEIM*), NATO SECRET
	Under evaluation for SECRET UE/EU SECRET	Under evaluation for SECRET UE/EU SECRET
Boot integrity protection	coreboot	coreboot
Software versions	3.10	3.10
Manipulation protection	SINA CORE 2	SINA CORE 2
Emission protection	Zone 1	SDIP 27 Level A
Authentication token	SINA Smartcard	SINA Smartcard

Technical data of all model variants

General data	
Design	19" 1 HE
Weight	8.1 kg
Power consumption	65 W
BTU/h	221.6
Cryptography	
Module	SINA CORE 2 L3
Encryption performance	SINA L3 Box H 200M-2 200 MBit/s full duplex SINA L3 Box H 1G max. 900MBit/s full duplex
Symmetrical encryption process	Libelle, VEGAS
Asymmetrical encryption processes	EC-GDSA, EC-DH
LAN connections	
Network interfaces	3 × 100/1000 MBit LWL (switchable) 1 × 100/1000 MBit LWL in SINA CORE (switchable)
Plug type	LC
Temperature ranges	
Operation	+5 °C to +50 °C
Transport and storage	-25 °C to +60 °C

*In usage situations where data classified as German national STRENG GEHEIM is being processed, the usage scenario and IT security concept for the SINA L3 Box H 200M-2 and SINA L3 Box H 1G must be specifically agreed with the German Federal Office for Information Security (BSI).

Sources

Public authority customers can acquire SINA components via the framework contract with the Procurement Office of the German Federal Ministry of the Interior, or through the SINA supplemental contract with the German Federal Armed Forces. secunet would also be pleased to serve all other national and international customers.

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