

VPN gateway for secure data exchange

Approved for German national CONFIDENTIAL
(VS-VERTRAULICH)/NATO CONFIDENTIAL



As a VPN gateway, the SINA L3 Box E 400M-2 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 L3 Box E 400M-2 is designed for the transmission of classified information up to German national CONFIDENTIAL (VS-VERTRAULICH) and NATO CONFIDENTIAL. The focus is on national and international military and governmental high-security networks.

The SINA L3 Box E 400M-2 is substantially more powerful, lighter and more robust compared to the previous model SINA Box E 400M. The hardware platform has been reduced to 1U. Ease of use has been enhanced by a long-lasting battery and an improved emergency extinguishing switch. The SINA L3 Box E 400M-2 is flexible in many respects, as can be seen in enhanced temperature ranges, the network interfaces that can be reconfigured between 100 MBit and 1G and directly on the device and more modest power consumption. Another device variant supports copper network interfaces.

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 and smartcard configuration. In addition, remote access to the administrator interface is possible.

IT security concept

The SINA L3 Box E 400M-2 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 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

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 CONFIDENTIAL (VS-VERTRAULICH) and NATO CONFIDENTIAL
- Higher performance
- Optimized high availability
- IPv6 and IKEv2
- Comfortable Remote Management

Approval-related construction classes



SINA L3 Box E 400M-2 Z1 (LWL)



SINA L3 Box E 400M-2 Z1 (CU)



Performance data		
Approval	German national CONFIDENTIAL (VS-VERTRAULICH)/NATO CONFIDENTIAL	German national CONFIDENTIAL (VS-VERTRAULICH)/NATO CONFIDENTIAL
Boot integrity protection	coreboot	coreboot
Software versions	3.10	3.10
Emission protection	Zone 1	Zone 1
Authentication token	SINA Smartcard	SINA Smartcard

Technical data

General data		
Design	19" 1 HE	19" 1 HE
Weight	7,9 kg	7,9 kg
Power consumption	58 W	58 W
BTU/h	197,9	197,9
Cryptography		
Encryption performance	400 Mbit/s full duplex	400 MBit/s full duplex
Symmetrical encryption process	AES	AES
Asymmetrical encryption processes	EC-GDSA, EC-DH	EC-GDSA, EC-DH
LAN connections		
Network interfaces	3 × 100/1000 MBit LWL (switchable)	4 × 100/1000 MBit/s Autonegotiation
Plug type	LC	RJ-45
Temperature ranges		
Operation	+5 °C to +50 °C	+5 °C to +50 °C
Transport and storage	-20 °C to +60 °C	-20 °C to +60 °C

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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