genuline

High-Speed VPN Appliance

Facts and Features

Definition

Field-programmable gate arrays (FPGA) make exceptionally fast signal processing possible. genua's new VPN gateway for securely encrypted high-speed transfers of larger quantities of data makes use of this advantage.

genuline is based on the Firewall & VPN Appliance genuscreen. The dedicated VPN interface focuses solely on throughput and latency.

As a VPN concentrator, genuline ensures that – especially in complex VPN structures – branch locations, offices and external properties can be connected to an appliance in a data center with very low latency and very high speed.

Reasons to Choose genuline

- Total performance up to 191.21 Gbit/s
- Up to 2048 bidirectional connections
- Future-proof VPN including quantum-resistant key exchange for IPsec/IKEv2 is approved for classification levels German VS-NfD, NATO RESTRICTED, and RESTREINT UE/EU RESTRICTED
- Simple and fast integration in existing ecosystems

Typical Use

Interconnection of data centers
- Interconnection with 2 x 100 Gbit/s Interfaces
- Encryption on layer 3 in accordance with IPsec standard

VPN concentrator
- Use in central data centers for the termination of up to 2048 bidirectional VPN connections
- Connection of branch offices

Customer Service

- Customer service directly from the manufacturer
- Security system management
- Hotline service/update service
- Comprehensive training courses

Excellence in Digital Security.

High-Performance Ports	
NAT traversal (NAT-T)	Supports connections between NATed devices
High-performance replay protection	Prevents replay attacks
Operation Modes	
Tunnel mode	The entire IP packet is encrypted and encapsulated
Layer 2 bridging	Use IPsec to connect two locations on layer 2
Algorithms	
Encryption	AES256-GCM with full 16 byte integrity check
Performance/Speed	
Performance	191.21 Gbit/s IPsec; 99.9% line rate @100G Ethernet for any frame size
2048 clients	Capability to concentrate up to 2048 remote clients using one appliance in the data center, providing complete protocol support from genuscreen

Standard Ports	
NAT for VPN	Connect locations with overlapping network ranges
High availability (sasync)	Synchronize security associations between multiple appliances to minimize downtime
Redundant network access	Multiple uplinks on standard ports
DNS	Enable local DNS caching
UMTS/WLAN option	External UMTS or WLAN interface
NTP client	Obtain time from NTP servers
DHCP server	Automatically assign IP address to clients
DHCP relay	Forward DHCP queries to central DHCP server
VLAN	Support virtual LANs to separate networks on the standard ports
Trunking	Aggregate multiple network interfaces on one virtual interface on the standard ports
PPPoE	DSL uplinks on the standard ports
Operation Modes	
Network mode	Supports routing protocols such as OSPF over VPN connections
Transparent IPsec router	Encrypt your WAN traffic without changing your topology
L2TP	Support for Android, Windows, iOS, Mac OS X (layer 2)
Algorithms	
Encryption	AES-128, AES-192, AES-256, 3DES, Blowfish, CAST
Performance/Speed	
10G	Full-duplex line rate

General	
Authentication	
RSA	De facto public-key standard
Elliptic curves	Fast key exchange
Pre-shared keys	Manually exchange secret pair of keys
PKI (X.509)	Use a certificate authority (CA) to verify keys
IKEv2	Connect mobile or third-party devices

High Availability

Hot standby	Supported setups: BGP, CARP

Monitoring

System	System status (memory, load)
VPN	Supervise VPN connection status
NetFlow export	Monitor network traffic with the NetFlow protocol
SNMP, SNMPv3	Retrieve information via SNMP GET requests, or send SNMP TRAPs

Extensibility

Optional modules	Cache (DNS, HTTP), URL filter

Administration

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Web GUI	Powerful web-based user interface secured with TLS/SSL (HTTPS)
Online help	Instant help via user interface
Shell access	Local access using console or serial interface, remotely using SSH
Cronjobs	Schedule jobs at specific times
Flexible configuration	Easily modify/add files to the system
USB update	Fix inaccessible systems with a USB stick
Patch Management	
GUI	Retrieve and install patches via GUI
Automatic updates	Automate the process of fetching updates for the appliance
Logging	
Syslog	Use a third-party syslog server to store logs
Hard drive	Use appliance's hard drive for storage, if available
Memory	Logs are recorded in memory
Central	Use genucenter to consolidate the logs on one system
Debugging	
Network	Powerful command-line tools: tcpdump, traceroute, ping, etc.
VPN	VPN connection status overview and problem analysis
Root shell	The shell offers full root access
Central Management	
Central management	Easy administration of several (hundred) systems with Central Management Station genucenter

Use Cases
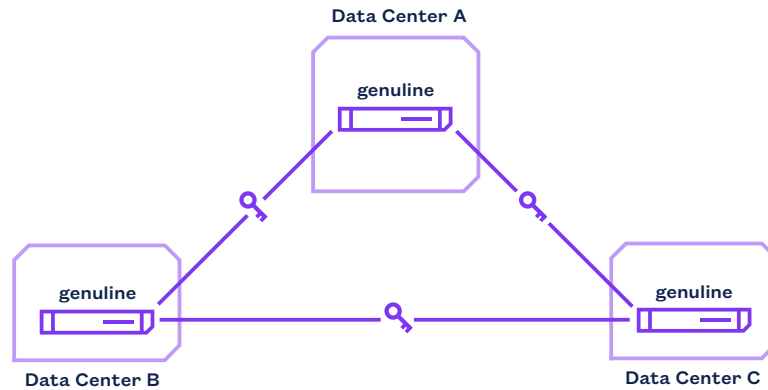
Secure, High-Speed Interconnection of Data Centers

- Interconnection of data centers or locations
- IPsec-standard-compliant encryption on layer 3 (network layer)
- If necessary, two networks can be bridged on layer 2 (data link layer); encrypted frames remain routable thanks to encapsulation in IP and IPsec ESP header
- Connection and backup of two data centers or locations

- Connection of external backup data centers in separate fire zones across property lines
- High-availability and geo-redundant data centers must be 200 km apart according to the directive of the German Federal Office for Information Security (BSI)
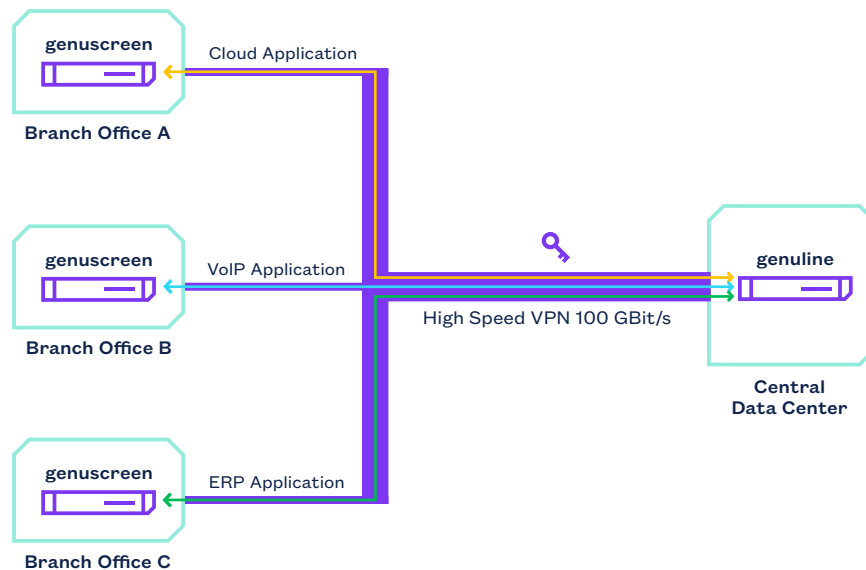
High-Speed Location Connection with VPN Concentrator

- Use in central data centers for the termination of a large number of VPN connections

- Connection of external properties, offices or locations with high-speed and very low latency

012026-04-E