clavister®

Net**Shield**

HIGH-CAPACITY
NEXT-GENERATION
FIREWALLS

300 Series

6000 Series

Uptime:
1230 days, 01:31

SECURITY BY
SWEDEN

9000 Series

SECURITY BY
SWEDEN

TABLE OF CONTENTS

High-capacity Next-Generation Firewalls

Clavister NetShield is our family of High-capacity Next-Generation Firewalls – designed and developed in Sweden – ideal for cyberprotecting datacentres and providing secure remote networking.

SECURITY BY DESIGN

We believe we offer the most robust cybersecurity solutions ever built. We build on 25 years of security track record – the result of a proven secure development lifecycle. The result? Record-few vulnerabilities and unparalleled uptime.

ALWAYS-UP VPN

Clavister NetShield delivers reliable and secure site-to-site VPN capabilities, designed to connect remote locations seamlessly. Built on industry-standard encryption protocols, it ensures excellent interoperability with other VPN solutions, providing secure data transmission across networks.

With Clavister's robust IPsec implementation, businesses can count on high performance, ease of configuration, and strong protection for their critical communications. Whether connecting branch offices or integrating with partner networks, Clavister NetShield simplifies secure connectivity while maintaining top-tier security and reliability.
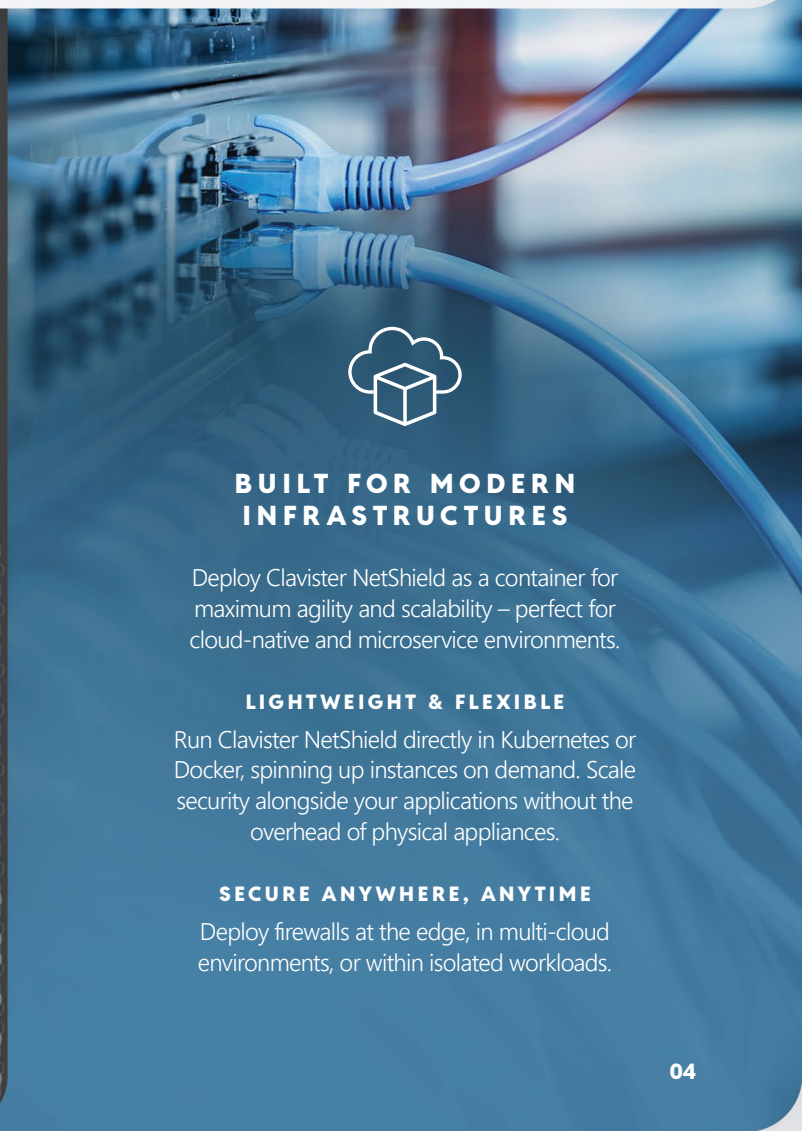
BUILT FOR MODERN INFRASTRUCTURES

Deploy Clavister NetShield as a container for maximum agility and scalability – perfect for cloud-native and microservice environments.

LIGHTWEIGHT & FLEXIBLE

Run Clavister NetShield directly in Kubernetes or Docker, spinning up instances on demand. Scale security alongside your applications without the overhead of physical appliances.

SECURE ANYWHERE, ANYTIME

Deploy firewalls at the edge, in multi-cloud environments, or within isolated workloads.

THE SWISS ARMY KNIFE OF ROUTING

With incredibly flexible routing capabilities, Clavister NetShield is designed to support the most complex network setups.

VIRTUAL & DYNAMIC ROUTING

Deploy multiple virtual routers with powerful policy flows. Dynamic routing protocols ensure interoperability with existing network equipment.

ALWAYS-UP PHILOSOPHY

Through a vast range of health monitors, balancing and fail-over methods, your traffic is guaranteed to reach its destination at all times.

BGP & HIGH-SPEED FAILOVER

Seamlessly handle large, distributed networks with BGP for intelligent path selection. BFD (Bidirectional Forwarding Detection) ensures ultra-fast link failure detection, minimising downtime and keeping connections stable.
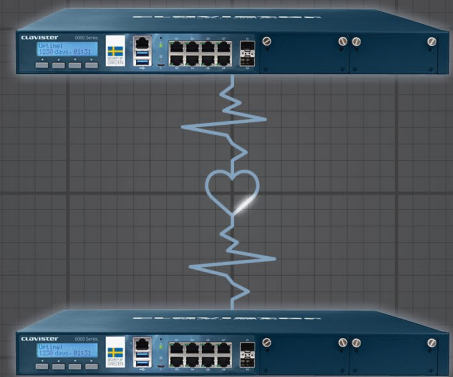
HIGHLY RESILIENT

We appreciate the mission-criticality of your network. That is why Clavister NetShield is built to provide the highest level of resiliency. Through our state-of-the-art high availability capability, seamless switch-over to a secondary device happens within milliseconds, without any interruption of traffic. Extensive health checks, not only on the Clavister NetShield device itself but also on links, routes, gateways and even third-party hosts, cater for prompt resolution in case of degradation.

7+ Years

AVERAGE NUMBER OF YEARS OF UNINTERRUPTED PROTECTION

ACTIONABLE SECURITY ANALYTICS

All Clavister NetShield products come with powerful security analytics capabilities. A single pane of glass console provides clear, actionable, and comprehensive evaluation of your organisation's cybersecurity readiness. Through a blend of sophisticated algorithms and real-time insights, the system pinpoints vulnerabilities, prioritises risks, and offers tailored recommendations to keep your business secure.
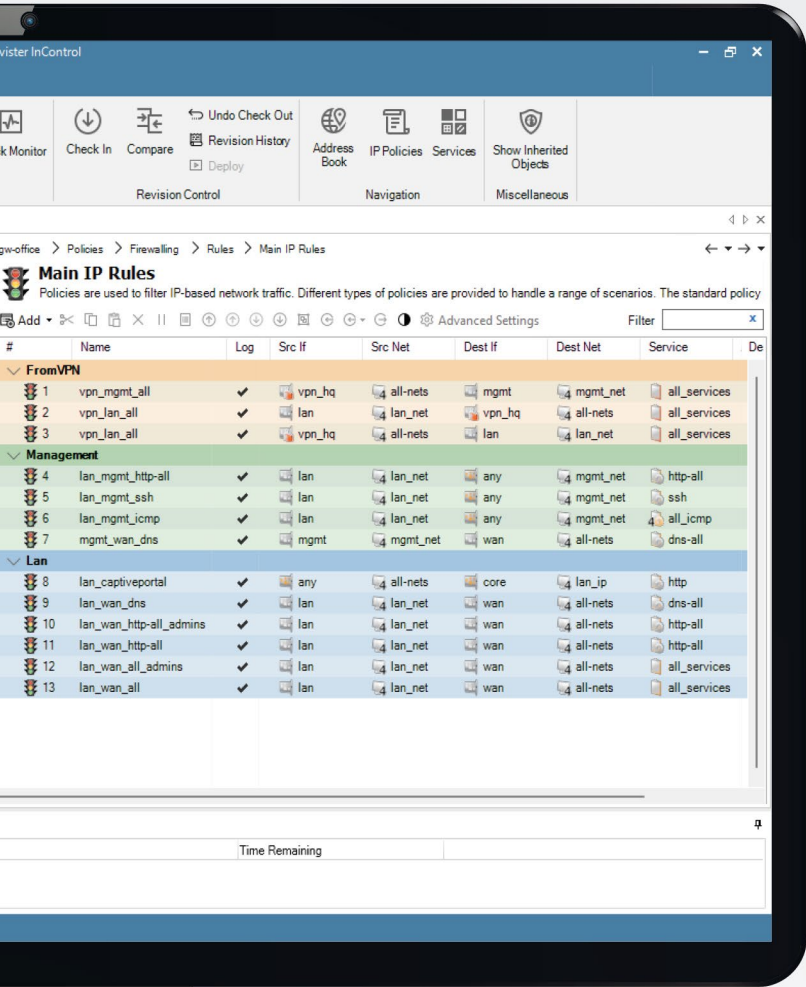
CENTRAL MANAGEMENT AND CONTROL

The Clavister InControl centralised management console, included in all Clavister NetShield licensing plans, makes managing Clavister NetShield firewalls easy and efficient, even for large networks.

With tools for firewall configuration, troubleshooting, firewall backups, and remote access, Clavister InControl is designed to save time and reduce complexity while keeping your network running smoothly.

Through a granular role and permission structure, Clavister InControl integrates well with your security policy framework.

Full | Batch
REVISION CONTROL | FIRMWARE UPGRADES

TRAFFIC MANAGEMENT

The advanced traffic management capability in Clavister NetShield ensures optimised bandwidth usage, enabling smoother network performance even during peak loads. With granular control and intelligent traffic prioritisation, businesses can secure critical applications while maintaining consistent service quality across their infrastructure.

DEEP APPLICATION AWARENESS

In-depth recognition and inspection of several thousands of applications allows for the most powerful and granular logging.

SELECTED APPLICATION-BASED CAPABILITIES

Inspection of, and policies for, granular application attributes.

Extensive logging for analytics and auditing.

4,500+
IDENTIFIED APPLICATIONS AND PROTOCOLS

BUILT FOR MASSIVE-SCALE VPN

Power your network with Clavister NetShield's high-performance VPN capabilities – designed to handle secure, large-scale connectivity with ease.

UNMATCHED TUNNEL CAPACITY

Support thousands of simultaneous VPN tunnels, making it easy to connect remote sites, branch offices, and remote users – all without compromising performance.

HIGH-PERFORMANCE ENCRYPTION

Leverage hardware-accelerated encryption and optimised packet handling for blazing-fast, ultra-secure VPN traffic, even under heavy loads.
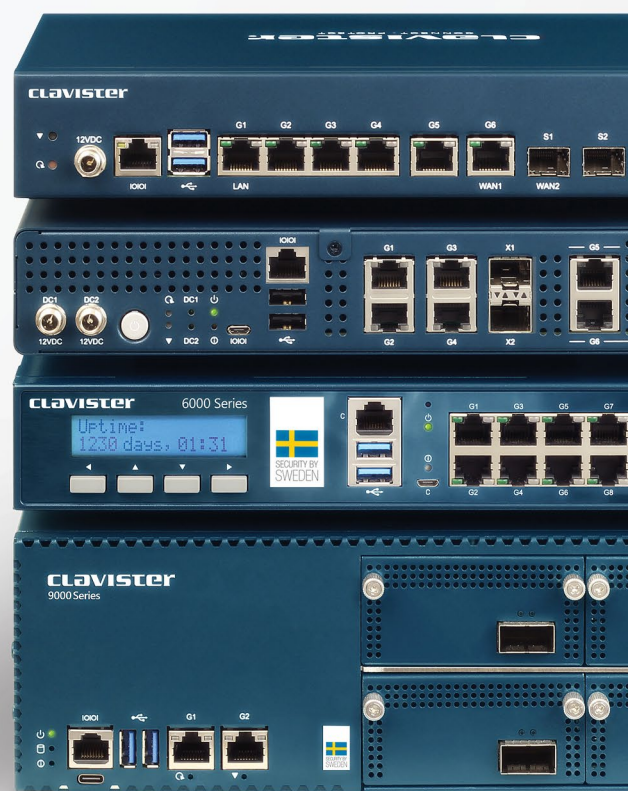
NetShield

FLEXIBLE DEPLOYMENT OPTIONS

Clavister NetShield is available in a number of models ranging from small desktop versions to large datacentre appliances. Clavister NetShield is also available on virtualised versions for deployment in public and private cloud environments. Turnkey appliances to fit all your needs.

openstack

KVM

vmware vSphere

DIMENSIONS & POWER

Form Factor	Desktop
Dimensions *(H x W x D)*	44 x 270 x 160 mm (1.73 x 10.62 x 6.29 in)
Rack Mountable	Yes (Included)
DIN-rail Mountable	-
Maximum Power Consumption	19.5 Watt
Power Supply *(AC)*	100-240 VAC, 50-60 Hz
Power Supply *(DC)*	-
Redundant Power Supplies	-
Hot-swappable Power Supplies	-

INTERFACES & MODULES

Ethernet Interfaces	6 x 1 GbE RJ45, 2 x 1 GbE SFP
Power-over-Ethernet Interfaces	-
Ethernet Bypass Interfaces	-
Console Port	1 x COM RJ45
Number of Expansion Slots	-

OPERATING ENVIRONMENT & CERTIFICATIONS

Safety	CE, UL
EMC	FCC, CE, VCCI
Operating & Storage Humidity	0 % to 95 % (Non-condensing)
Operating Temperature	5°C to 35°C (41°F to 95°F)

SYSTEM PERFORMANCE & CAPACITY

	NETSHIELD 320	NETSHIELD 380
Firewall Throughput[1] *(1518 / 512 / 64 byte, UDP)*	2 / 2 / 1 Gbps	8 / 6.26 / 1 Gbps
Firewall Throughput[1] *(Packets per Second)*	1.5 Mbps	1.5 Mbps
Real World Application Traffic	1 Gbps	1 Gbps
Concurrent Connections	1,000,000	2,000,000
New Connections/Second *(TCP)*	27,000	27,000
IPsec VPN Throughput[2] *(1420 / 512 / 64 byte, UDP)*	1 / 1 / 0.3 Gbps	2 / 1.8 / 0.3 Gbps
Gateway-to-Gateway or Roaming IPsec VPN Tunnels	1,000	2,000
VLANs	256	512
Virtual Routers	20	50

[1] Firewall Throughput tested according to RFC2544   [2] IPsec VPN performance test uses AES-256 SHA256

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08

DIMENSIONS & POWER

Form Factor	Rack Mounted / Desktop
Dimensions *(H x W x D)*	44 x 251 x 250 mm (1.73 x 9.88 x 9.84 in)
Rack Mountable	Yes (Simple Kit Included)
DIN-rail Mountable	-
Maximum Power Consumption	20.7 Watt
Power Supply *(AC)*	100-240 VAC, 50-60 Hz
Power Supply *(DC)*	-
Redundant Power Supplies	Yes (Optional)
Hot-swappable Power Supplies	Yes

INTERFACES & MODULES

Ethernet Interfaces	6 x 1 GbE RJ45, 2 x 10 GbE SPF+
Power-over-Ethernet Interfaces	Yes *(Enable PoE+ on two onboard RJ45 ports using optional PSU)*
Ethernet Bypass Interfaces	-
Console Port	1 x COM RJ45
Number of Expansion Slots	-

OPERATING ENVIRONMENT & CERTIFICATIONS

Safety	CE, UL
EMC	FCC, CE, VCCI
Operating & Storage Humidity	0 % to 95 % (Non-condensing)
Operating Temperature	5°C to 35° C (41°F to 95°F)

SYSTEM PERFORMANCE & CAPACITY

	NETSHIELD 520	NETSHIELD 580
Firewall Throughput[1] *(1518 / 512 / 64 byte, UDP)*	10 / 7 / 1.14 Gbps	15 / 7 / 1.14 Gbps
Firewall Throughput[1] *(Packets per Second)*	1.6 Mpps	1.6 Mpps
Real World Application Traffic	3 Gbps	3 Gbps
Concurrent Connections	2,000,000	4,000,000
New Connections/Second *(TCP)*	28,000	28,000
IPsec VPN Throughput[2] *(1420 / 512 / 64 byte, UDP)*	2 / 1.8 / 0.3 Gbps	4 / 1.8 / 0.3 Gbps
Gateway-to-Gateway or Roaming IPsec VPN Tunnels	2,000	2,500
VLANs	512	1,024
Virtual Routers	50	100

OPTIONAL PREMIUM RACK MOUNT KIT

Upgrade your NetShield 500 Series with this premium rack mount kit, that includes mounting for PSUs.

RACK-500S

[1] Firewall Throughput tested according to RFC2544   [2] IPsec VPN performance test uses AES-256 SHA256

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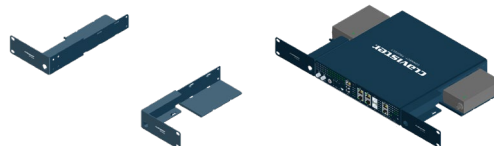
6000

DIMENSIONS & POWER

Form Factor	Rack Mounted
Dimensions (H x W x D)	44 x 438 x 508 mm (1.73 x 17.24 x 20.00 in)
Rack Mountable	Yes (Included)
DIN-rail Mountable	-
Maximum Power Consumption	140.3 Watt
Power Supply (AC)	100-240 VAC, 50-60 Hz
Power Supply (DC)	48 VDC (Optional)
Redundant Power Supplies	Yes (Optional)
Hot-swappable Power Supplies	Yes

INTERFACES & MODULES

Ethernet Interfaces	8 x 1 GbE RJ45, 2 x 10 GbE SFP+
Power-over-Ethernet Interfaces	Yes (Using optional Expansion Module)
Ethernet Bypass Interfaces	-
Console Port	1 x COM RJ45
Number of Expansion Slots	Two (2)

OPERATING ENVIRONMENT & CERTIFICATIONS

Safety	CE, UL, TUV
EMC	FCC, CE, VCCI
Operating & Storage Humidity	0 % to 95 % (Non-condensing)
Operating Temperature	0°C to 40°C (32°F to 104°F)

SYSTEM PERFORMANCE & CAPACITY

	NETSHIELD 6200	NETSHIELD 6600
Firewall Throughput[1] (1518 / 512 / 64 byte, UDP)	20 / 20 / 12 Gbps	80 / 62 / 12 Gbps
Firewall Throughput[1] (Packets per Second)	14.6 Mpps	14.6 Mpps
Real World Application Traffic	20 Gbps	36 Gbps
Concurrent Connections	5,000,000	10,000,000
New Connections/Second (TCP)	280,000	280,000
IPsec VPN Throughput[2] (1420 / 512 / 64 byte, UDP)	10 / 10 / 3.9 Gbps	30 / 22 / 3.9 Gbps
Gateway-to-Gateway or Roaming IPsec VPN Tunnels	5,000	10,000
VLANs	4,096	4,096
Virtual Routers	250	500

EXPANSION MODULES

8 x 1 GbE RJ45 Copper	8 x 1 GbE RJ45 SFP	PoE, 8 x 1 GbE RJ45 Copper	4 x 10 GbE SFP+	IPsec Accelerator & 4 x 10 GbE SFP+	2 x 25 GbE SFP28	2 x 40 GbE QSFP
	No Transceivers Incl.	*Incl. External 48V PoE PSU*	*No Transceivers Incl.*	*No Transceivers Incl.*	*No Transceivers Incl.*	*No Transceivers Incl.*
CM-NET84	CM-NET85	CM-POE86	CM-NET143	CM-SEC144	CM-NET220	CM-NET420

[1] Firewall Throughput tested according to RFC2544   [2] IPsec VPN performance test uses AES-256 SHA256

9000

DIMENSIONS & POWER

Form Factor	Rack Mounted
Dimensions *(H x W x D)*	88 x 443 x 600 mm (3.52 x 17.72 x 24.00 in)
Rack Mountable	Yes (Included)
DIN-rail Mountable	-
Maximum Power Consumption	345 Watt
Power Supply *(AC)*	100-240 VAC, 50-60 Hz
Power Supply *(DC)*	48 VDC (Optional)
Redundant Power Supplies	Yes (Optional)
Hot-swappable Power Supplies	Yes

INTERFACES & MODULES

Ethernet Interfaces	2 x 1 GbE RJ45
Power-over-Ethernet Interfaces	-
Ethernet Bypass Interfaces	-
Console Port	1 x COM RJ45
Number of Expansion Slots	Eight (8)

OPERATING ENVIRONMENT & CERTIFICATIONS

Safety	CE, UL
EMC	FCC, CE
Operating & Storage Humidity	5 % to 95 % (Non-condensing)
Operating Temperature	0°C to 40°C (32°F to 104°F)

SYSTEM PERFORMANCE & CAPACITY

SYSTEM PERFORMANCE & CAPACITY	NETSHIELD 9200	NETSHIELD 9400
Firewall Throughput[1] *(1518 / 512 / 64 byte, UDP)*	200 / 200 / 45 Gbps	399 / 355 / 45 Gbps
Firewall Throughput[1] *(Packets per Second)*	89 Mpps	89 Mpps
Real World Application Traffic	80 Gbps	80 Gbps
Concurrent Connections	20,000,000	40,000,000
New Connections/Second *(TCP)*	300,000	300,000
IPsec VPN Throughput[2] *(1420, UDP)*	25 Gbps	50 Gbps
Gateway-to-Gateway or Roaming IPsec VPN Tunnels	10,000	20,000
VLANs	4,096	4,096
Virtual Routers	250	500

[1] Firewall Throughput tested according to RFC2544 [2] IPsec VPN performance test uses AES-256 SHA256

Virtual

INTERFACES & MODULES	
Ethernet interfaces	Up to 10

SYSTEM PERF. & CAPACITY	5V	10V	25V	50V	100V	400V
Firewall Throughput*	5 Gbps	10 Gbps	25 Gbps	50 Gbps	100 Gbps	400 Gbps
Concurrent Connections	2,000,000	2,000,000	5,000,000	10,000,000	25,000,000	50,000,000
IPsec VPN Throughput *(1420 / 512 / 64 byte, UDP)**	2 Gbps	5 Gbps	10 Gbps	20 Gbps	50 Gbps	200 Gbps
Gateway-to-Gateway or Roaming IPsec VPN Tunnels	1,000	2,500	5,000	10,000	15,000	15,000
VLANs	4096	4096	4096	4096	4096	4096
Virtual Routers	25	25	50	50	100	100

VIRTUALIZATION SPECIFICATIONS						
Supported Hypervisors	VMware vSphere, KVM, Kubernetes					
Intel AES-NI Crypto Acceleration	Yes					
Intel DPDK and SR-IOV Support	Yes					
Recommended Available Storage	2 GB					
Minimum Recommended RAM	1 GB	2 GB	4 GB	8 GB	16 GB	16 GB

* Actual performance depends on host/server-hardware, hypervisor and similar

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12

Support Offering

Our multi-tiered model, Standard and Priority Support, provides tailored service levels to meet your needs. From technical assistance to 24/7 emergency support, we ensure reliable solutions for your business.

STANDARD SUPPORT

Included, without extra cost, for all customers with an active Licensing Plan.

Technical Support
via helpdesk at my.clavister.com

Technical Documentation
including Knowledge Base

Standard Availability
08:00-17:00 CET
(Swedish office hours)

English and Swedish
as supported languages

PRIORITY SUPPORT

Available for customers with an active subscription and a Priority Support Agreement.

STANDARD SUPPORT

+

Emergency Availability 24/7/365
When production network is down or is severely degraded in performance, functionality or management

Callback Option
Callback request via support ticket

SupportOps
10 h/year included

SUPPORT OPS

SupportOps is a personalised complement to Standard Support, designed to address specific needs efficiently. Whether you need help with configuration, design advice, or resolving an issue, our experts provide hands-on assistance. Sessions are scheduled promptly and are available to all partners and customers, regardless of support tier, at an hourly rate.

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13

Licensing Plans

We offer flexible licensing plans, designed to meet diverse business needs. Each plan unlocks powerful features and tools, ensuring your Clavister NetShield product is optimised for performance, protection, and scalability.

	★ ESSENTIALS	★★ ENHANCED	★★★ PREMIUM
Support and Maintenance			
Standard Support	•	•	•
Software Maintenance	•	•	•
Hardware Replacement	•	•	•
Networking Capabilities			
Advanced Routing	•	•	•
High Availability	•	•	•
Border Gateway Protocol (BGPv4)	•	•	•
Open Shortest Path First (OSPFv2)	•	•	•
Management and Analytics			
Centralised Management	•	•	•
Threat Prevention			
DoS Protection	•	•	•
Intrusion Prevention		•	•
Application Visibility		•	•
SIP ALG			•
SCTP Inspection			•
GTP Inspection			•
Carrier Grade NAT			•
Deterministic NAT			•
SSL Inspection			
SSL Inspection		•	•

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14

Technical Specifications

FIREWALL

Stateful Firewall	IPv4, IPv6
IP Rules	ALLOW, DROP and REJECT
IP Session Tracking	Stateful, Stateless
TCP Sequence Number Tracking	Yes
TCP Sequence Number Scrambling	Yes
ICMP Echo Sequence Number Tracking	ICMP, ICMPv6
IP Blacklisting / Whitelisting	Yes / Yes
Rule Filter Parameters (Generic)	Source and Destination Interface, Source and Destination IP Addresses, Protocols, Source and Destination Ports, ICMP Message Types and Codes
Logical Interface Types	Ethernet, VLAN, Service VLAN, Link Aggregation, IPsec, SSL VPN Server, GRE, Interface Group, Security Zone

Extended Rule Filters

FQDN Address	IP Rules, Access Rules, Threshold Rules, Traffic Shaping Rules
IP Geolocation	IP Rules

Ingress Filtering / IP Spoofing Protection

Access Rules	IPv4, IPv6
Strict Reverse Path Forwarding (Strict RPF)	Yes
Feasible Reverse Path Forwarding (Feasible RPF)	Yes, via Interface Equivalence

Threshold Rules

Threshold Trigger	Flow Count, Flow Rate
Threshold Actions	Audit, Drop, Random Drop, Reject, Blacklist
Threshold Grouping	Source or Destination IP / Network / Interface

Stream Control Transmission Protocol (SCTP)

SCTP Session Tracking (RFC4960)	Stateful, Stateless
SCTP Association Tracking (RFC4960)	Stateful with Multi-homing
SCTP Multi-Homing Redundancy	Yes, parallel SCTP paths on Inactive and Active HA node
SCTP Filtering	Alias Addresses, PPID Blacklisting / Whitelisting, Max Outbound / Inbound Streams per Association, Max Control and DATA Chunks per Packet

ADDRESS AND PORT TRANSLATION

Policy-Based	Yes
Dynamic NAT (Source)	IPv4
Symmetric NAT	IPv4
NAT Pools	IPv4, NAT64
Deterministic NAT Pools	IPv4
Port Block Allocation	IPv4
Static Source Translation	IPv4, IPv6
Static Destination Translation (Virtual IP / Port forward)	IPv4, IPv6
NAT Hairpinning	Yes

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15

IPv6 TRANSITION MECHANISMS

NAT64 (RFC6146)	Yes
Stateless IP / ICMP Translation (SIIT) (RFC7915)	Prefix, Explicit Address Mapping (EAM)

CONNECTIVITY

Ethernet Interfaces (IEEE 802.3)	1GbE, 10GbE, 25GbE, 40GbE
Ethernet Frame Sizes	Standard (1522 bytes), Jumbo Frames (9216 bytes)
VLAN Interfaces (IEEE 802.1Q)	Yes
Q-in-Q / Service VLAN Interfaces (IEEE 802.1ad)	Yes
Configurable MTU	Yes

Link Aggregation (Bonding)

Link Aggregation Group (LAG) Modes	Round-Robin, Active Backup, Balance XOR, Broadcast, LACP (IEEE 802.3ad / 802.1AX-2008), Adaptive Transmit Load Balancing, Adaptive Transmit and Receive Load Balancing
LAG Member Count	1-16

ROUTING

Static Routing	IPv4, IPv6
Policy-Based Routing (PBR)	IPv4, IPv6
Virtual Routing (VR)	Yes
Multiple Routing Tables	Yes
Asymmetric Routing	Yes
Source-Based Routing	Yes
Route Failover	IPv4, IPv6
Route Monitoring Methods	ARP, ND, ICMP Echo, ICMPv6 Echo
IPv6 Router Advertisement	Yes

Dynamic Routing

Route Import Filtering	Yes
Route Export Filtering	Yes
OSPFv2 Routing Process (RFC2328)	Yes, Multiple
OSPFv2 RFC1583 Compatibility Mode	Yes
OSPFv2 over VPN	Yes
BGP-4 (RFC4271)	IPv4, IPv6 (RFC4760)
BGP Features (Partial Support)	Route-maps, Community Lists, Prefix Lists, Route Aggregation, Route Reflection (RFC4456), Route Flap Damping (RFC2439), Four-Byte ASN (RFC4893), Confederations (RFC5065), Capability Negotiation (RFC5492), Graceful Restart (RFC4724), Standard and Extended Community Attribute, BGP Session protection using TCP MD5 (RFC2385, RFC4278), Equal-Cost Multipath (ECMP) Routes
BGP Neighbor Monitoring (BFD)	Bidirectional Forwarding Detection (BFD)
BFD Failure Detection Time (Configurable)	Default: < 1 sec. Min: < 200 ms
BFD Configuration Parameters	Transmit Interval, Receive Interval, Hello Multiplier, Slow Timer Interval

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16

INTERFACE IP ADDRESS ASSIGNMENT

Static	IPv4, IPv6
DHCPv4 Client	Ethernet, VLAN, Service VLAN, Link Aggregation
IPv6 Stateless Address Auto Configuration (SLAAC)	Ethernet, VLAN, Service VLAN, Link Aggregation
IKE Config Mode	IPsec Tunnels
Multiple IPv4 Addresses per Interface	Yes
Multiple IPv6 Addresses per Interface	Yes

NETWORK SERVICES

DHCPv4 Server	Yes, Multiple
DHCP Server Custom Options	Yes
IP Pool (DHCP populated)	IPv4
Address Resolution Protocol (ARP)	Yes
ARP Publish	Yes
Static ARP Entries	Yes
Proxy ARP	Yes
Neighbor Discovery (ND)	Yes
ND Publish	Yes
Static ND Entries	Yes
Proxy ND	Yes
Path MTU Discovery	IPv4, IPv6
Generic IP Packet Echo Function	Yes, e.g. for acting as a BFD responder

BANDWIDTH MANAGEMENT FOR (QoS)

DSCP Forwarding	Yes
DSCP Copy to Outer Header	VLAN, Service VLAN, IPsec
Static DSCP Assignment	VLAN, Service VLAN, IKE, IPsec, Traffic Shaping
Dynamic DSCP Assignment	Traffic Shaping
ECN Propagation to Inner Header	IPsec
ECN Copy to Outer Header	IPsec

Traffic Shaping

Policy-Based	IPv4, IPv6
Traffic Shaping Grouping	Traffic Profile, Previous Pipe, Source or Destination Port / IP / Network / Interface
DSCP-Based	Yes
Hierarchical Quality of Service (HQoS)	Yes
Traffic Limits	Bandwith (bps), Packet Rate (pps)
Traffic Guarantees	Bandwith (bps), Packet Rate (pps)
Traffic Prioritization	Bandwith (bps), Packet Rate (pps)

APPLICATION INSPECTION

Policy-Based	Yes
Recognizable Applications	4,500+
Recognition of SSL Based Applications	Yes
Audit Information per Flow	Identified Application, Application Packet Count, Application Byte Count
Statistics per Application	Classifications, Packets, Bytes

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17

INTRUSION PREVENTION SYSTEM (IPS)

Policy-Based	Yes
Signature Selection per Policy	Yes
Policy Actions	Audit, Protect
Stateful Pattern Matching	Yes
SSL / TLS Inspection	Yes
Custom Signatures	Yes, in Snort-like format

SSL / TLS INSPECTION

TLS Version	TLSv1.0, TLSv1.1, TLSv1.2
Virtual Server Support	Yes, SNI policy based
FQDN Filter	Yes
Perfect Forward Secrecy (PFS)	Yes
Auto TLS Detection / Opportunistic TLS	Yes
TLS / Server Offloading	Yes

GPRS TUNNELLING PROTOCOL (GTP) INSPECTION

3G / GRPS Interfaces	Gp
4G / LTE Interfaces	S8
Version Filtering	GTPv1-C, GTPv2-C
Message Validation	GTPv1-C, GTPv2-C, GTPv1-U
GTP-C Session Tracking	Stateful
GTP-U Bearer Tracking	Stateless
Dynamic GTP-U Bearer Pin-holing	Yes
GTP-in-GTP Tunneling Detection	Yes

APPLICATION LAYER GATEWAY (ALG)

FTP	IPv4, IPv6, ALLOW, NAT, SAT
SIP	IPv4, UDP, ALLOW, NAT
DNS	IPv4, IPv6, UDP, TCP, ALLOW, NAT, SAT
Syslog	IPv4, IPv6, ALLOW, NAT, SAT

IPSEC VPN

Key Exchange	Manual, IKEv1, IKEv2
Roaming Client Tunnels	Yes
NAT Traversal (NAT-T)	IKEv1, IKEv2, UDP Encapsulation
VPN Topology Examples	Roaming, Hub-and-Spoke, Subnet-to-Subnet, Site-to-Site, Mesh
Tunnel Selection Filter	Receive Interface, Remote IP Address, Local IP Address, Local ID, Remote ID
Dial-on-Demand	Yes
Routes to Remote Network	Manual, Automatic
Virtual Routing (VR)	User Data, IKE, ESP
Policy-Based Routing (PBR)	User Data, IKE, ESP
Asymmetric Routing	Yes
Configurable MTU	Yes
IPsec Pass-through	Yes

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18

IKE

IKE Encryption	AES-128-CBC, AES-192-CBC, AES-256-CBC, 3DES-CBC
IKE Authentication / Integrity	HMAC-SHA1-96, HMAC-SHA-256-128, HMAC-SHA-384-192, HMAC-SHA-512-256, HMAC-MD5-96, AES-XCBC-MAC-96
Diffie-Hellman (DH) Groups	1, 2, 5, 14, 15, 16, 17, 18, 19, 20, 21
IKE Identity	IP, FQDN, E-mail, X.500 Distinguished-Name (DN)
Rekey	IKEv1, IKEv2, IPsec
IKE SA Lifetime	Seconds
IKE SA Re-authentication Time	Seconds
IPsec SA Lifetime	Seconds
Perfect Forward Secrecy (PFS)	Yes
Dead Peer Detection (DPD)	Yes
IKE Config Mode	Client, Server
IKE Negotiation Over	IPv4, IPv6
IKE Traffic Selectors	IPv4, IPv6
IPsec Security Association (SA) Granularity	Net
DSCP Assignment	Static

IKEv1

Authentication	Pre-Shared Keys (PSK), X.509 Certificates, XAUTH
Phase 1	Main Mode, Aggressive Mode
Phase 2	Quick Mode
Initial Contact Notification	Yes

IKEv2

Authentication	Pre-Shared Keys (PSK), X.509 Certificates, EAP
Pseudo-Random Function (PRF)	PRF-HMAC-SHA1, PRF-HMAC-SHA-256, PRF-HMAC-SHA-384, PRF-HMAC-SHA-512, PRF-HMAC-MD5, AES-XCBC-PRF-128
Reauthentication	Yes

Certificates

Self-Signed Certificates	Yes
Certificate Signature Algorithms	RSA, ECDSA-256, ECDSA-384, ECDSA-521
Certificate Authority (CA) Issued Certificates	Yes, e.g. VeriSign, Entrust, Let's Encrypt™
Certificate Requests	PKCS#1, PKCS#3, PKCS#7, PKCS#10
Certificate Revocation List (CRL) Protocols	IPv4, LDAP, HTTP
CRL Distribution Points (CDP)	From Certificate, Static
CRL Fail-Mode Behavior	Conditional, Enforced
Certificate Management Protocols	CMPv2

IPsec

IPsec Protocols	ESP
IPsec Modes	Tunnel
IPsec Encryption	AES-128-CBC, AES-192-CBC, AES-256-CBC, 3DES-CBC, NULL
IPsec Authentication / Integrity	HMAC-SHA1-96, HMAC-SHA-256-128, HMAC-SHA-384-192, HMAC-SHA-512-256, HMAC-MD5-96, AES-XCBC-MAC-96
IPsec Outer Protocol	IPv4, IPv6
IPsec Inner Protocol	IPv4, IPv6
IPsec Pre-Fragmentation	IPv4, IPv6
IPsec Post-Fragmentation	IPv4, IPv6
Don't Fragment (DF) Bit	Copy to Outer Header, Static
DSCP Assignment	Copy to Outer Header, Static
ECN Propagation to Inner Header	Yes, Configurable
ECN Copy to Outer Header	Yes, Always
Replay Attack Prevention (Anti-Replay)	Yes
Traffic Flow Confidentiality (TFC)	Inbound

SSL VPN SERVER	
Compatibility	OpenVPN® compatible clients, version 2.4.6 or later. © 2002-2021 OpenVPN Inc. OpenVPN is a registered trademark of OpenVPN Inc.
Outer Transport Protocol	UDP, TCP
Outer Network Protocol	IPv4, IPv6
Inner Network Protocol	IPv4, IPv6
IP Address Provisioning	IP Pool
VPN Topology Examples	Roaming, Hub-and-Spoke
Tunnel Selection Filter	Receive Interface, Remote IP Address / Geolocation, Local IP Address, Transport Protocol, Local UDP / TCP Port
Virtual Routing (VR)	User Data, SSL
Policy-Based Routing (PBR)	User Data, SSL
Asymmetric Routing	Yes
Client Authentication	Client Certificate (Optional)
Server Authentication	Server Certificate
User Authentication	Username and Password, Multi-Factor Authentication (MFA)
User Authentication Source	Local User Database, RADIUS
Multi-Factor Authentication (MFA) Techniques	RADIUS Challenge/Response, eg. One-time Passwords (OTP) or RADIUS-initiated Out-of-Band Authentication (OOBA), eg. Clavister OneTouch
Control Channel Cipher Suites	ECDHE-RSA-AES256-GCM-SHA384, ECDHE-ECDSA-AES256-GCM-SHA384, DHE-RSA-AES256-GCM-SHA384, ECDHE-RSA-AES128-GCM-SHA256, ECDHE-ECDSA-AES128-GCM-SHA256, DHE-RSA-AES128-GCM-SHA256
Data Channel Cipher Suites	AES-128-GCM, AES-256-GCM
Configurable MTU	Yes
Pre-Fragmentation	IPv4, IPv6
Post-Fragmentation	IPv4, IPv6

Certificates

Self-Signed Certificates	Yes
Certificate Signature Algorithms	RSA, ECDSA-256, ECDSA-384, ECDSA-521
Certificate Authority (CA) Issued Certificates	Yes, e.g. VeriSign, Entrust, Let's Encrypt™

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20

GRE TUNNELS

Generic Routing Encapsulation (GRE) Support	GRE Version 0 (RFC2784)
Key and Sequence Number Extensions to GRE (RFC2890)	Session Key Supported, Sequence Number Ignored
Outer Network Protocol	IPv4, IPv6 (RFC7676)
Inner Network Protocol	IPv4, IPv6 (RFC7676)
Tunnel Selection Filter	Receive Interface, Remote IP Address, Local IP Address, Session Key
Virtual Routing (VR)	User Data, GRE
Policy-Based Routing (PBR)	User Data, GRE
Asymmetric Routing	Yes
GRE MTU Selection	Configurable Max, Path MTU Discovery
Pre-Fragmentation	IPv4, IPv6
Post-Fragmentation	IPv4, IPv6
GRE Pass-through	Yes

USER AUTHENTICATION

Local User Database	Yes, Multiple
Password Storage Modes (Local User Database)	Secure One-way Hash, Reversible, Plaintext
RADIUS Authentication	IPv4, IPv6, Multiple Servers
RADIUS Authentication Protocols	PAP, CHAP, EAP
RADIUS EAP Header Verification	EAP-SIM, EAP-AKA / AKA', EAP-MD5
Brute Force Attack Protection	Yes
XAUTH IKEv1 Authentication	Yes

SECURITY MANAGEMENT

Centralized Management	Clavister InCenter[1], Clavister InControl
SSH / SCP Management	IPv4, IPv6, Password, Pre-Shared Keys (PSK)
Management Authentication	Local User Database, RADIUS
Command Line Interface (CLI)	Yes
Access Levels	Admin, Auditor
Remote Fail-Safe Configuration	Yes
Cloud Deployment (cloud-init)	Config Drive v2 (2015-10-15)
Local Console (RS-232)	Yes
Traffic Simulation (CLI)	IPv4, IPv6, ICMP, TCP, UDP
Traceroute Network Diagnostics (CLI)	IPv4, IPv6, ICMP, TCP, UDP
Scripting (CLI)	Yes
Packet Capture (PCAP)	Yes, on any logical interface and with packet filters
System Upgrade	SSH / SCP
System and Configuration Backup	SSH / SCP
SNTP Time Sync Client	IPv4, NTPv3 (RFC1305), NTPv4 (RFC5905)
Configurable Time Zone	Location, UTC Offset
Daylight Saving Time (DST) Adjustment	Automatic

[1]See Clavister InCenter datasheet for compatible versions.

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21

SSH / SCP Server

Public Key Algorithms	DSA, RSA, ECDSA
Encryption	AES-128-CBC, AES-128-CTR, AES-128-GCM, AES-192-CBC, AES-192-CTR, AES-256-CBC, AES-256-CTR, AES-256-GCM, Cha-cha20-Poly1305, 3DES, Blowfish
Authentication / Integrity	HMAC-SHA1, HMAC-MD5, HMAC-SHA1-96, HMAC-MD5-96, HMAC-SHA2-256, HMAC-SHA2-512
Key Exchange Methods	diffie-hellman-group1-sha1, diffie-hellman-group14-sha1, diffie-hellman-group14-sha256, diffie-hellman-group16-sha512, diffie-hellman-group18-sha512, diffie-hellman-group-exchange-sha1, diffie-hellman-group-exchange-sha256, ecdh-sha2-nistp256, ecdh-sha2-nistp384, ecdh-sha2-nistp521, curve25519-sha256, curve25519-sha256@libssh.org

MONITORING

Syslog	IPv4, IPv6, Multiple Servers
Real-Time Log (CLI)	Yes, Filter
Log Settings per Policy	Yes
SNMPv2c Traps	IPv4, IPv6
SNMPv2c Polling	IPv4, IPv6
SNMPv3 Traps	IPv4, IPv6
SNMPv3 Polling	IPv4, IPv6
SNMPv3 Polling User Authentication	Local User Database
SNMPv3 Encryption	AES-CFB (RFC3826)
SNMPv3 Authentication / Integrity	HMAC-MD5-96, HMAC-SHA1-96 (RFC3414)
Real-Time Statistics	CLI, SNMP, InCenter
Key Metrics Monitoring	Yes, e.g. CPU Load and Memory
Hardware Key Metrics Monitoring	Fan Speeds, CPU and System Temperatures, Voltages, PSU Status etc

High Availability (HA)

Active Node with Passive Backup	Yes
Shared Virtual IP	IPv4, IPv6
Ethernet Address Modes	Shared Virtual MAC, Interface MAC
Configuration Synchronization	Yes
Device Failure Detection	Yes
Dead Interface Detection	ARP, ND
Average Failover Time (Default Settings)	< 2 sec
HA Peer Monitoring	HA Heartbeats at configurable interval
Configurable Failure Detection Times	HA Peer Dead, Interface Early Down, Interface Down

State Synchronization

Firewall Connection States (Flows)	IPv4, IPv6
Configurable Flow Sync Delay	Yes, per protocol
Firewalling Features	IP Blacklist Entries, FQDN Adresses
SCTP Associations	Yes, bidirectional between Inactive and Active HA node
Dynamic Routing	BGP Routes
Interface IP Address Assignment	DHCPv4 Client, IPv6 SLAAC
Network Services	DHCPv4 Server, IP Pool, DNS Client
GTP Inspection	GTP-C, GTP-U
ALGs	SIP
IPsec VPN	IKE SAs, IPsec SAs
Authenticated Users	XAUTH, EAP

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22

Hardware Appliance Line-up

	300	**500**	**6000**	**9000**

DIMENSIONS & POWER

	300	500	6000	9000
Form Factor	Desktop	Rack Mounted / Desktop	Rack Mounted	Rack Mounted
Dimensions *(H x W x D)*	44 x 270 x 160 mm (1.73 x 10.62 x 6.29 in)	44 x 251 x 250 mm (173 x 9.88 x 9.84 in)	44 x 438 x 508 mm (1.73 x 17.24 x 20.00 in)	88 x 443 x 600 mm (3.52 x 17.72 x 24.00 in)
Rack Mountable	Yes (Included)	Yes (Simple Kit Included)	Yes (Included)	Yes (Included)
DIN-rail Mountable	-	-	-	-
Maximum Power Consumption	19.5 Watt	20.7 Watt	140.3 Watt	345 Watt
Power Supply *(AC)*	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz
Power Supply *(DC)*	-	-	48 VDC (Optional)	48 VDC (Optional)
Redundant Power Supplies	-	Yes (Optional)	Yes (Optional)	Yes (Optional)
Hot-swappable Power Supplies	-	Yes	Yes	Yes

INTERFACES & MODULES

	300	500	6000	9000
Ethernet Interfaces	6 x 1 GbE RJ45, 2 x 1 GbE SFP	6 x 1 GbE RJ45, 2 x 10 GbE SPF+	8 x 1 GbE RJ45, 2 x 10 GbE SFP+	2 x 1 GbE RJ45
Power-over-Ethernet Interfaces	-	Yes	Yes *(Using optional Expansion Module)*	-
Ethernet Bypass Interfaces	-	-	-	-
Console Port	1 x COM RJ45	1 x COM RJ45	1 x COM RJ45	1 x COM RJ45
Number of Expansion Slots	-	-	Two (2)	Eight (8)

OPERATING ENVIRONMENT & CERTIFICATIONS

	300	500	6000	9000
Safety	CE, UL	CE, UL	CE, UL, TUV	CE, UL
EMC	FCC, CE, VCCI	FCC, CE, VCCI	FCC, CE, VCCI	FCC, CE
Operating & Storage Humidity	0 % to 95 % (Non-condensing)	0 % to 95 % (Non-condensing)	0 % to 95 % (Non-condensing)	5 % to 95 % (Non-condensing)
Operating Temperature	5°C to 35°C (41°F to 95°F)	5°C to 35° C (41°F to 95°F)	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)

SYSTEM PERFORMANCE & CAPACITY

	NETSHIELD 320	NETSHIELD 380	NETSHIELD 520	NETSHIELD 580	NETSHIELD 6200	NETSHIELD 6600	NETSHIELD 9200	NETSHIELD 9400
Firewall Throughput[1] *(1518 / 512 / 64 byte, UDP)*	2 / 2 / 1 Gbps	8 / 6.26 / 1 Gbps	10 / 7 / 1.14 Gbps	15 / 7 / 1.14 Gbps	20 / 20 / 12 Gbps	80 / 62 / 12 Gbps	200 / 200 / 45 Gbps	399 / 355 / 45 Gbps
Firewall Throughput[1] *(Packets per Second)*	1.5 Mbps	1.5 Mbps	1.6 Mpps	1.6 Mpps	14.6 Mpps	14.6 Mpps	89 Mpps	89 Mpps
Real World Application Traffic	1 Gbps	1 Gbps	3 Gbps	3 Gbps	20 Gbps	36 Gbps	80 Gbps	80 Gbps
Concurrent Connections	1,000,000	1,000,000	2,000,000	4,000,000	5,000,000	10,000,000	20,000,000	40,000,000
New Connections/Second *(TCP)*	27,000	27,000	28,000	28,000	280,000	280,000	300,000	300,000
IPsec VPN Throughput[2] *(1420 / 512 / 64 byte, UDP)*	1 / 1 / 0.3 Gbps	2 / 1.8 / 0.3 Gbps	2 / 1.8 / 0.3 Gbps	4 / 1.8 / 0.3 Gbps	10 / 10 / 3.9 Gbps	30 / 22 / 3.9 Gbps	25 Gbps *(1420 only)*	50 Gbps *(1420 only)*
Gateway-to-Gateway or Roaming IPsec VPN Tunnels	1,000	2,000	2,000	2,500	5,000	10,000	10,000	20,000
VLANs	256	512	512	1,024	4,096	4,096	4,096	4,096
Virtual Routers	20	50	50	100	250	500	250	500

[1] Firewall Throughput tested according to RFC2544   [2] IPsec VPN performance test uses AES-256 SHA256

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23

On a Mission to Cyber-Protect Europe

Clavister provides top-tier cybersecurity solutions made in Sweden.
For over 25 years, we are the trusted partner for customers with
mission-critical applications.

YOUR TRUSTED PARTNER

In today's rapidly evolving cyberthreat environment, everyone needs all the help they can get – but who do you trust? With over 20,000 satisfied customers and 25 years of innovation, Clavister has proven itself as the reliable choice, trusted by major brands and recognised for our strong partnerships.

SWEDISH ENGINEERING AT HEART

Clavister's solutions are rooted in the strong tradition of Swedish engineering, known for reliability, quality, and cutting-edge innovation. We believe we offer the most robust cybersecurity solutions, built on long-standing security expertise, resulting in record-low vulnerabilities and unparalleled uptime. Our commitment to innovation keeps us at the forefront of the industry.

A CARING RELATIONSHIP

At Clavister, cybersecurity is a team game. That's why we focus on building long-term relationships where you engage directly with our domain experts. Our presence in Europe includes a dedicated team and a strong reseller network, ready to support you.
We've got you covered!

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