



# Clavister E80

## Feature-rich, entry-level next-generation firewall in a slim form factor

### FEATURES AT-A-GLANCE

- Cost-effective next-generation firewall for any organization, housed in a convenient desktop form-factor
- Next-generation firewall services, including Clavister True Application Control, Clavister Content Security Services and User Identity Awareness
- Powerful stateful firewall with deep-packet inspection gives you a high level of security
- Flexible, dynamic routing and connectivity with support for link aggregation
- Built-in support for both IPsec and SSL VPN offers easy to use remote connectivity
- Centralized Security Management System included free-of-charge in the Clavister Security Subscription package
- High-end network infrastructure, such as traffic management, High Availability (HA), server load balancing and WAN load balancing, are all included with Clavister Subscriptions
- The perfect solution for small office, branch offices and customer premise equipment (CPE) solutions

The Clavister E80 is a set of next-generation security appliances, built to deliver comprehensive and powerful enterprise-grade firewall services for small branch offices, remote locations and as customer premise equipment (CPE). The Clavister E80 is perfectly suited for solutions where multiple firewalls are deployed, often over geographically dispersed areas, and where there is a strong need for a centralized managed, scalable network security solution.

### Next-Generation Firewall Services

#### True Application Control

Do not be fooled by the small package, this is a real next-generation firewall, providing powerful throughput even when using the advanced security features. It proves that you can get next-generation firewall functionality without having to buy the biggest box on the market. Clavister E80 fully supports True Application Control – one of our next-generation firewall security services.

Enabling True Application Control will help you to manage applications used in your network more safely. With added security you lower your overall risk exposure and as a result, costly security incidents and downtime can be avoided. It also gives you valuable insight in which applications are used by which user, and can therefore prioritize business critical application and increase your overall business productivity.

True Application Control not only recognize more application and data, it understands how these application behave and can act immediately on malicious behavior.

With its unique support for Deep Application Content Control (DACC) technology, our application control can perform in-depth analysis and control of application content with higher degree of control. DACC enables you



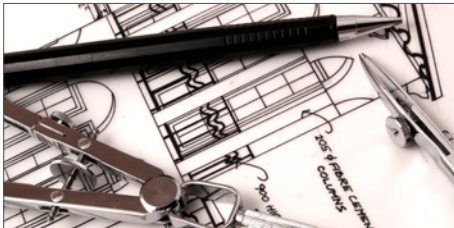
### Connectivity Choices

The Clavister E80 is equipped with six 1GbE (RJ45) interfaces. All six of the interfaces are real, individual interfaces and not a switch block with limited flexibility.

This means that the Clavister E80 offers great port configurability and that each port can manage VLANs, routing and similar without limitations.

Clavister E80 also support link aggregation, which means that you have the added benefit of maximizing throughput and increase the resilience of your system.

Thanks to the flexible routing available in Clavister E80, you can assign any port to act as your High Available port for a fully supported High Availability solution.



### Advanced Routing

The Clavister E80 provide an advanced routing engine, including Policy-Based Routing, with seamless route failover. This allow for Dynamic Policy-Based Routing where traffic can be routed based on dynamic events, such as User Identity, latency, HTTP Get responses, etc.

This enable you to create truly flexible and sophisticated policies that reflect the true requirements of your network.

to understand and visualize Skype IDs, SQL queries, Facebook chat text, VoIP call information and much more.

Clavister SSL Inspection for Application Control provides a high performance and non-intrusive way to identify and control even SSL encrypted applications.

True Application Control is included in the Clavister Security Subscription (CSS) service.

### Content Security Services

Having a regular firewall is not enough to prevent attacks from happening on your network. As attacks become more severe and the threat landscape becomes more dynamic, additional measures need to be in place to protect your network. Clavister offers best-of-breed content security services, including Intrusion Detection and Prevention System, network-centric Anti-Virus from Kaspersky Labs, and Web Content Filtering to add an additional security layer to your firewall. These content security services protect your network from advanced threats your firewall alone cannot stop. The Content Security Services are included in the Clavister Security Subscription (CSS) service.

### User Identity Awareness

User Identity Awareness (UIA) provides granular visibility of user identity, and enables you to control network access at the user level. The User Identity Awareness together with our True Application Control functionality will provide you with an extremely powerful and versatile tool for granular visibility and control of “who-does-what-and-when” in your networks. You will have the ability to pinpoint user access to applications across both wired and wireless networks regardless of connecting device.

## True Security Values

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### Clavister Subscriptions

We believe our customers should have choices. We also believe you should have it all. Therefore we offer you a choice between our comprehensive Clavister Product Subscription (CPS), or our all-inclusive, full service option, Clavister Security Subscription (CSS).

#### Clavister Product Subscription

The Clavister Product Subscription contains a high number of product services, such as software updates, centralized management support and flexible service plans.

CPS includes a hardware replacement service to offer you the best possible protection in case a hardware failure should occur. Finally to ensure you get the best out of your Clavister security gateway, we provide you with around-the-clock support from our award-winning technical support team – your dedicated resource with highly skilled engineers that help you out in case of need. The Clavister Product Subscription keeps your Clavister updated, online and ready for business twenty-four-seven.

#### Clavister Security Subscription

Clavister Security Subscription is a complete, all inclusive suite of product services. It contains all the services you get with Clavister Product Subscription, but extends the service offering by including a full set of next-generation firewall services, such as Clavister True Application Control, Web Content Filtering, Anti-Virus and Intrusion Detection and Prevention (IDP).

CSS offers best-in-class content services, which protect you from the more advanced types of malware and exploits. It grants you access to the latest software and signature updates keeping your infrastructure up to date and increasingly more stable and secure.

All Clavister Subscriptions are available in 12, 24, 36, 48 and 60 months service terms, offering you maximum security and flexibility.

For more information about Clavister Subscriptions, see the separate [Clavister Subscriptions](#) brochure.

## True Flexibility – Get more performance when you need it

Clavister E80 is available in two models, each addressing specific customer requirements. Should your performance needs increase, Clavister offers you the flexibility to upgrade to the more powerful Clavister E80 Pro without having to invest in new hardware. Just simply order the upgrade to your preferred Clavister E80 model and install the new license file. It is as simple as that.

This makes Clavister E80 a low risk choice in dynamic business environments where requirements can change overnight. Clavister provides you the performance when you need it, avoiding high up front investment costs to your security infrastructure or having to worry about costly upgrades.

## Uptime Technologies

Clavister E80 comes with powerful features to ensure that your network infrastructure is online and ready for work. Features like High Availability (HA) is fully supported, as well as Fast Route Failover technologies and link aggregation, which ensures that your business is not affected by network downtime caused by link failure or hardware problem. It also support flood protection technologies to increase uptime in case your network is subjected to a Denial-of-Service (DoS) attack.

## Powerful Firewall

The Clavister E80 is a next-generation firewall, but it also has all the traditional security features, such as stateful firewall with deep-packet inspection, and it is powered by our own in-house developed network security operating system, the Clavister cOS Core. As well as providing all traditional firewall functions, such as port blocking and proxy server, all Clavister firewall solutions incorporate next-generation firewall features to detect and block sophisticated application-level attacks. This means higher level of security, higher traffic throughput and minimal use of system resources.

## Performance

Clavister E80 provides next-generation security services across all points of your network without sacrificing performance throughput. Purpose-built hardware running on our highly efficient network security operating system ensures that the firewall performance throughput is one of the highest in the industry, making sure that your Clavister firewall will not be a bottleneck in your network infrastructure.

## Simplicity

We strive to make things easy to understand and easy to use. This includes everything from hardware design to security management. We build highly customizable enterprise-grade firewalls, and despite the inherent complexity, we make an effort of making it easy to use. For example, our highly acclaimed centralized security management system, Clavister InControl uses color-coded attribute groups to provide a clear overview over dependencies that the firewall rules have to each other, making human errors less likely to occur. By combining policies and services into one, firewall policy management can be simplified and more easy to use. This results in fewer policy rules, making it easier to manage and less likely to cause a security breach.

# All-Inclusive Security Management

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For any network, security management is one of the more important aspects. It has to be intuitive, efficient and easy to use for large enterprises, with multiple firewalls at multiple sites, and even in geographical disperse areas, keeping your security management consistent and cohesive, and up to date is a non-trivial task. All these security management systems are included with our Clavister cOS Core products – free of charge.

## Clavister InControl - Centralized Security Management

Clavister InControl offers a comprehensive centralized management solution that will assist and help administrators perform their daily tasks faster, easier and in a more streamlined way. Its intuitive user interface and support for task-driven workflow management guides administrators through complex and repetitive tasks, thereby alleviating the burden of managing large installations. With support for triple-AAA (Authentication, Authorization and Audit) the integrity and configurations managed by the Clavister InControl system is kept under strict control. This level of control makes it easy to use delegated manage-

ment, allowing specific teams and personnel to access only designated parts of the system.

Clavister InControl can be extended to collaborate with a vast number of other management system with the use of the Clavister InControl Software Development Kit (SDK). The Clavister InControl SDK enables organizations to integrate and extend existing system management tools with Clavister InControl management. For example, optimized provisioning systems or integrated help desk functionality.

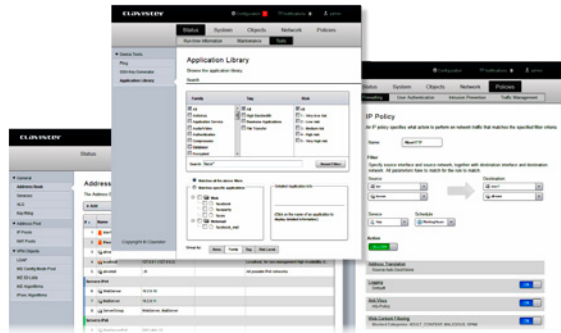
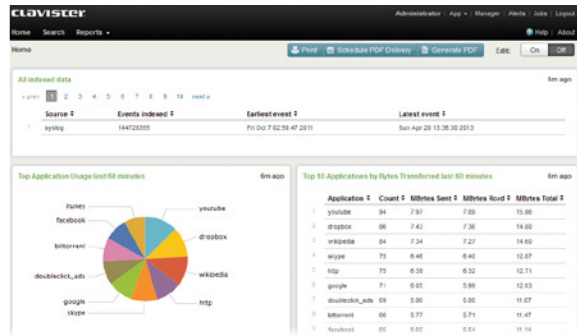
## Splunk for Clavister

Splunk for Clavister is a comprehensive Web-based reporting system that offers enterprise-level reporting with tight integration with all Clavister cOS Core-based products. Splunk supports real-time data analysis, with Key Performance Indicators (KPI), graphs, tables and long-term trending, scaling from a single Clavister security gateway to large data centers.

Splunk for Clavister enables you to visualize your Clavister security solution, including pinpointing problem areas, thwarted attacks and other security issues, and then turn them into business-level reports. You can also take advantage of the built-in scheduling and distribution features to make sure the right people get the right reports on time.

## Other Management Options

In addition to our centralized management solution, we also provide the Clavister Web Management system, an easy-to-use Web-based security management solution that works for smaller installations with just a few firewalls. Each product also supports our comprehensive command-line interface (CLI), enabling you to script common tasks.



### Next-Generation Firewall Security

By integrating world-class Next-Generation Firewall functionality, such as our Clavister True Application Control, Intrusion Detection and Prevention (IDP), Anti-Virus, Anti-Spam and Web Content Filtering with a stateful firewall with deep packet inspection, IPsec and SSL VPN connectivity, we are able to protect your organization against everything from network layer attacks to application layer threats, and even viruses and worms. While you have full control of who does what, when and with what.

### Clavister cOS Core

Clavister cOS Core is our in-house developed, high-performance security network operating system. Every line of code is carefully crafted to ensure that it delivers maximum performance at all times. We take pride in delivering a product that we have full control over, rather than a mashup of open-source components.

### Flexibility and Adaptability

Not all networks are created equally. Vast differences in network topology and configuration require a network security gateway to be able to accommodate all these differences. Our security gateways gives you the freedom to set routing policies with extreme granularity. A large number of parameters can be used to construct policies and rules to meet even the most demanding network installation.

### Big on Performance - Low on Maintenance

All Clavister security gateways share a common trait: they all support Clavister Service Provisioning Network (CSPN). This secure, high-speed network ensures that all Clavister Security Subscription services are kept updated and current from newly emerging threats. This gives system administrators the freedom to concentrate on running their network without having to worry about having the latest security patches installed.

### License Scalability

One important aspect of our products is scalability. Our licensing model offers you the ability to start with your performance needs today and upgrade your product incrementally as your organization grows. You also have the choice of two subscriptions models: the Clavister Security Subscription, our all-inclusive subscription, or the regular Clavister Product Subscription.

### Low Total Cost of Ownership

Our goal is to provide a complete security solution that is more cost efficient than our competitors. Clavister security gateways, with their unique set of integrated security features, world-class service and support, and their powerful administration system, enables you to spend less time managing your security environment and keep your network defenses up to date, and thereby lower your network security infrastructure TCO significantly.

| <b>Performance* and Capacity</b>                   | <b>Clavister E80</b> | <b>Clavister E80 Pro</b> |
|--|----------------------|--------------------------|
| Firewall Performance (plaintext throughput)        | 2 Gbps               | 4 Gbps                   |
| IPsec VPN Performance (large packets)              | 0,5 Gbps             | 1 Gbps                   |
| Maximum Concurrent Connections                     | 250,000              | 500,000                  |
| Maximum Concurrent IPsec VPN Tunnels               | 100                  | 200                      |
| Maximum Concurrent L2TP/PPTP/SSL VPN Tunnels       | 100                  | 200                      |
| Maximum Number of Users                            | Unrestricted         | Unrestricted             |
| Maximum Number of Routing Tables (Virtual Routers) | 5                    | 10                       |

| <b>Connectivity</b>                                | <b>Clavister E80</b>                     | <b>Clavister E80 Pro</b> |
|--|--|--------------------------|
| Ethernet Interfaces                                | 6 x 1GbE (RJ45)                          |                          |
| Expansion Slot                                     | No                                       |                          |
| Interfaces for Management / High Availability (HA) | Configurable                             |                          |
| Configurable Internal / External / DMZ Ports       | Yes                                      | Yes                      |
| Local Console Port                                 | Virtual Console <sup>1</sup> - Micro USB |                          |
| Link Aggregation IEEE 802.1AX-2008 (Static/LACP)   | Yes                                      | Yes                      |
| Maximum Number of VLAN Interfaces IEEE 802.1Q      | 64                                       | 128                      |
| Support for High Availability (HA)**               | Yes                                      | Yes                      |
| Service-VLAN Interfaces IEEE 802.1ad (Q-in-Q)      | Yes                                      | Yes                      |

<sup>1</sup> The Virtual Console Port requires a system driver to be installed on the workstation to get access to the device local console.

#### Product Specific Specification

|   |  |
|---|--|
| Form Factor / Rack Mountable              | Desktop /  |
| Dimensions (height x width x depth)       | 44 mm x 280 mm x 180 mm (1.73 in x 11.02 in x 7.09 in)                             |
| Hardware Weight / Package Weight          | 1,7 kg (3.75 lb) / 2,6 kg (5.73 lb)  |
| <b>Regulatory and Safety Standards</b>    |  |
| Safety / EMC                              | CE class A, FCC class A, EN/IEC 60950-1  |
| <b>Power Specifications</b>               |  |
| Power Supply (AC) / PSU Rated Power (W)   | 100-240 VAC, 50-60 Hz, 0.3A / 25 W   |
| Average Power Consumption / Redundant PSU | 12 W/41 BTU / No   |
| Appliance Input                           | 100-240VAC   |
| <b>Environmental</b>                      |  |
| Cooling / Humidity                        | Passive cooling (fanless), no moving parts / 5% to 90% non-condensing              |
| Operational Temperature                   | 5° to 45° C (41° to 113° F)  |
| Vibration (operating) / Shock (operating) | 10 ~ 500 Hz, 2G 10min/1 cycle, period for 60min, each along X, Y, Z axes / n/a     |
| Warranty                                  | All Clavister Eagle Series products include a two (2) years standard RMA warranty. |

\* Performance based on Clavister cOS Core 11.00.

\*\* When using High Availability clusters, the hardware settings for each interface must be identical on both cluster nodes (bus, slot and port)

## Where to Buy Clavister

For more information about where to buy Clavister products, visit [www.clavister.com/partners](http://www.clavister.com/partners). Additional resources and customer testimonials can be found at [www.clavister.com/resources](http://www.clavister.com/resources).

# Product Features

## Firewall

|  |                        |
|--|------------------------|
| Stateful Firewall / Deep Packet Inspection         | Yes / Yes              |
| IP Policies  | ALLOW, DROP and REJECT |
| Multiple IP Rule Sets                              | Yes                    |
| User- and Group-Based Policies                     | Yes                    |
| Scheduled Policies                                 | Yes                    |
| DoS and DDoS Detection and Prevention              | Yes                    |
| Threshold Rules (Connection Count and Rate Limits) | Yes                    |
| IP Blacklisting / Whitelisting                     | Yes / Yes              |
| TCP Sequence Number Tracking                       | Yes                    |
| <b>Ingress Filtering / IP Spoofing Protection</b>  |                        |
| Access Rules                                       | Yes                    |
| Strict Reverse Path Forwarding (RPF)               | Yes                    |
| Feasible RPF by using Interface Equivalence        | Yes                    |

## Address and Port Translation

|  |   |
|--|---|
| Policy-Based   | Yes   |
| Dynamic NAT (Source)                                     | Yes   |
| Symmetric NAT  | Yes   |
| NAT Pools  | Yes   |
| Static Source Translation                                | Yes   |
| Static Destination Translation (Virtual IP/Port Forward) | Yes   |
| NAT Hairpinning  | Yes   |
| <b>Server Load Balancing (SLB)</b>                       |   |
| SLB Distribution Methods                                 | Round-Robin, Connection-Rate                      |
| SLB Monitoring Methods                                   | ICMP Echo, Custom TCP Port, HTTP Request/Response |
| SLB Server Stickiness                                    | State, IP Address, Network                        |

## Mode of Operations

|                                    |     |
|------------------------------------|-----|
| Transparent Mode (Layer 2)         | Yes |
| Routing Mode (Layer 3)             | Yes |
| Mixed Transparent and Routing Mode | Yes |

## Routing

|   |  |
|---|--|
| Static Routing                              | Yes  |
| Policy-Based Routing (PBR)                  | Yes  |
| Scheduled Policy-Based Routing              | Yes  |
| Virtual Routing                             | Yes  |
| Multiple Routing Tables                     | Yes  |
| Loopback Interfaces                         | Yes  |
| Route Load Balancing (Equal-Cost Multipath) | Yes  |
| Route Failover                              | Yes  |
| Route Monitoring Methods                    | ARP, ICMP Echo, Custom TCP Port, HTTP Request/Response |
| Source-Based Routing                        | Yes  |
| Path MTU Discovery                          | Yes  |

## Dynamic Routing

|                                   |               |
|-----------------------------------|---------------|
| Policy-Based Dynamic Routes       | Yes           |
| OSPFv2 Routing Process (RFC2328)  | Yes, multiple |
| OSPFv2 RFC1583 Compatibility Mode | Yes           |
| OSPFv2 over VPN                   | Yes           |

## Multicast

|                                     |     |
|-------------------------------------|-----|
| Multicast Forwarding                | Yes |
| IGMPv2 Compatibility Mode (RFC2236) | Yes |
| IGMPv3 (RFC3376)                    | Yes |
| IGMP Proxy Mode                     | Yes |
| IGMP Snoop Mode                     | Yes |

## Transparent Mode (L2 Bridge Mode)

|  |  |
|--|--|
| Policy-Based                             | Yes  |
| MPLS Pass-through                        | Yes  |
| DHCP Pass-through                        | Yes  |
| Layer 2 Pass-through of Non-IP Protocols | Yes  |
| Spanning Tree BPDU Relaying              | Normal (STP), Rapid (RSTP), Multiple (MSTP), Per VLAN Spanning Tree Plus (PVST+) |

## IP Address Assignment

|                                  |                                  |
|----------------------------------|----------------------------------|
| Per Interface Address Assignment | Yes                              |
| Static                           | Yes                              |
| DHCP Client                      | Ethernet, VLAN, Link-Aggregation |
| PPPoE Client                     | Ethernet, VLAN, Link-Aggregation |

|   |   |
|---|---|
| PPTP/L2TP Client                                  | Yes   |
| <b>Network Services</b>                           |   |
| DHCP Server                                       | Yes, multiple   |
| DHCP Server Custom Options                        | Yes   |
| DHCP Relay  | Yes, multiple   |
| IP Pool   | Yes   |
| Proxy ARP   | Yes   |
| Dynamic DNS Services                              | DynDNS.org, Dyns.cx, CJB.net, Peanut Hull                           |
| Custom HTTP Poster                                | Yes   |
| <b>Bandwidth Management</b>                       |   |
| Policy-Based Bandwidth Management                 | Yes   |
| Scheduled Policies                                | Yes   |
| Bandwidth Guarantees / Limits / Prioritization    | Yes / Yes / Yes   |
| DSCP- / ToS-Based                                 | Yes   |
| Bandwidth Management per Group                    | Yes   |
| Dynamic Bandwidth Balancing between Groups        | Yes   |
| Packet Rate Limits                                | Yes   |
| DSCP Forwarding                                   | Yes   |
| DSCP Copy to Outer Header                         | VLAN, IPsec   |
| <b>Application Control</b>                        |   |
| Recognizable Applications                         | < 2,000   |
| Recognition of SSL Based Applications             | Yes   |
| Application Content Control                       | 2,400   |
| Policy-Based                                      | Yes   |
| Policy Matching on Application                    | Yes   |
| Policy Matching on Application Content (Metadata) | Yes   |
| Policy Actions                                    | Audit, DROP, Bandwidth Management                                   |
| <b>Intrusion Detection and Prevention</b>         |   |
| Policy-Based                                      | Yes   |
| Signature Selection per Policy                    | Yes   |
| Policy Actions                                    | Audit, DROP, Bandwidth Management                                   |
| Stateful Pattern Matching                         | Yes   |
| Protocol and Rate Anomaly Detection               | Yes   |
| Insertion and Evasion Protection                  | Yes   |
| Dynamic IP Blacklisting                           | Yes   |
| Automatic Signature Updates                       | Yes   |
| <b>Content Security</b>                           |   |
| Policy-Based                                      | Yes   |
| Protocol Validation                               | HTTP, HTTPS, FTP, SMTP, POP3, IMAP, TFTP, SIP, H.323, PPTP, TLS/SSL |
| <b>Web Content Filtering</b>                      |   |
| HTTP / HTTPS                                      | Yes / Yes   |
| Audit / Blocking Mode                             | Yes / Yes   |
| Classification Categories                         | 32  |
| URL Whitelisting / Blacklisting                   | Yes / Yes   |
| Customizable Restriction Pages                    | Yes   |
| Cloud-Based URL Classification Source             | Yes   |
| SafeSearch Enforcement                            | Google, Yahoo, Bing   |
| User-Agent Filter                                 | Yes   |
| <b>Anti-Virus</b>                                 |   |
| Supported Protocols                               | HTTP, HTTPS, FTP, SMTP, POP3  |
| Stream-Based Scanning                             | Yes   |
| File Type Whitelisting                            | Yes   |
| Scanning of Files in Archives (ZIP/GZIP)          | Yes   |
| Nested Archives Support (ZIP/GZIP)                | Yes, up to 10 levels  |
| Automatic Updates                                 | Yes   |
| <b>Anti-Spam</b>                                  |   |
| Supported Protocols                               | SMTP, POP3, IMAP  |
| <b>Anti-Spam Detection Mechanisms</b>             |   |
| Reply Address Domain Verification                 | SMTP, POP3, IMAP  |
| Malicious Link Protection                         | SMTP, POP3, IMAP  |
| Distributed Checksum Clearinghouses (DCC)         | SMTP, POP3, IMAP  |
| DNS Blacklisting                                  | SMTP, POP3, IMAP  |
| <b>Anti-Spam Actions</b>                          |   |
| Strip Malicious Links                             | SMTP, POP3, IMAP  |
| Tag Subject and Headers                           | SMTP, POP3, IMAP  |

|   |  |
|---|--|
| Send to Quarantine E-mail Address           | SMTP   |
| E-mail Rate Limiting                        | SMTP   |
| <b>File Integrity</b>                       |  |
| Supported Protocols                         | HTTP, HTTPS, FTP, SMTP, POP3                         |
| File Type Whitelisting / Blacklisting       | Yes / Yes  |
| File Extension and MIME Type Verification   | Yes  |
| <b>Application Layer Gateway</b>            |  |
| HTTP / HTTPS (Content Security)             | Yes  |
| FTP (Content Security, NAT / SAT)           | Yes  |
| TFTP (NAT / SAT)                            | Yes  |
| SIP (NAT / SAT)                             | Yes  |
| H.323 / H.323 Gatekeeper (NAT / SAT)        | Yes  |
| SMTP (Content Security)                     | Yes  |
| POP3 (Content Security)                     | Yes  |
| IMAP (Content Security)                     | Yes, using Email Control Profile                     |
| SSL / TLS (Offloading)                      | Yes  |
| PPTP (Passthrough, NAT / SAT)               | Yes  |
| <b>IPsec VPN</b>                            |  |
| Internet Key Exchange                       | IKEv1, IKEv2   |
| IKEv1 Phase 1                               | Main Mode, Aggressive Mode                           |
| IKEv1 Phase 2                               | Quick Mode   |
| IPsec Modes                                 | Tunnel, Transport (IKEv1 only)                       |
| IKE Encryption                              | AES, 3DES, DES, Blowfish, Twofish, Cast-128          |
| IPsec Encryption                            | AES, 3DES, DES, Blowfish, Twofish, Cast-128, NULL    |
| AES Key Size                                | 128, 192, 256  |
| IKE/IPsec Authentication                    | SHA-1, SHA-256, SHA-512, MD-5, AES-XCBC (IKEv2 only) |
| Perfect Forward Secrecy (DH Groups)         | 1, 2, 5, 14, 15, 16, 17, 18                          |
| IKE Config Mode                             | Yes  |
| IKE DSCP Assignment                         | Static   |
| Dead Peer Detection (DPD)                   | Yes  |
| Pre-Shared Keys (PSK)                       | Yes  |
| X.509 Certificates                          | Yes  |
| XAuth (IKEv1)                               | Yes, Client and Server                               |
| EAP (IKEv2)                                 | Yes, Server (RADIUS only)                            |
| PKI Certificate Requests                    | PKCS#1, PKCS#3, PKCS#7, PKCS#10                      |
| Self-Signed Certificates                    | Yes  |
| Certificate Authority Issued Certificates   | Yes, VeriSign, Entrust etc.                          |
| Certificate Revocation List (CRL) Protocols | LDAP, HTTP   |
| CRL Fail-Mode Behavior                      | Conditional, Enforced                                |
| IKE Identity                                | IP, FQDN, E-mail, X.500 Distinguished-Name           |
| Security Association Granularity            | Net, Host, Port                                      |
| Replay Attack Prevention                    | Yes  |
| Policy-Based Routing                        | Yes  |
| Virtual Routing                             | Yes  |
| Roaming Client Tunnels                      | Yes  |
| NAT Traversal (NAT-T)                       | Yes  |
| IPsec Dial-on-Demand                        | Yes  |
| IPsec Tunnel Selection Through              | Firewall Rule Set, Routing, Policy-Based Routing     |
| Redundant VPN Tunnels                       | Yes  |
| IPsec Passthrough                           | Yes  |
| <b>SSL VPN</b>                              |  |
| TLS/SSL VPN                                 | Yes  |
| One-Time Client Installation                | Yes  |
| Browser Independent                         | Yes  |
| VPN Policy Selection Through                | Firewall Rule Set, Routing and Policy-Based Routing  |
| Split Tunneling                             | Yes  |
| SSL VPN IP Provisioning                     | IP Pool, Static                                      |
| <b>L2TP VPN</b>                             |  |
| L2TPv2 Client (LAC)                         | Yes  |
| L2TPv2 Server (LNS)                         | Yes  |
| L2TPv3 Client (LAC)                         | Yes  |
| L2TPv3 Server (LNS)                         | Yes  |
| L2TP over IPsec                             | Yes  |
| L2TP Tunnel Selection Through               | Firewall Rule Set, Routing, Policy-Based Routing     |
| L2TP Client Dial-on-Demand                  | Yes  |



**Other Tunnels**

|   |  |
|---|--|
| PPPoE Client (RFC2516)                          | Yes  |
| Unnumbered PPPoE                                | Yes  |
| PPPoE Client Dial-on-Demand                     | Yes  |
| PPTP Client (PAC)                               | Yes  |
| PPTP Client Dial-on-Demand                      | Yes  |
| PPTP Server (PNS)                               | Yes  |
| PPTP Server IP Provisioning                     | IP Pool, Static                                  |
| MPPE Encryption (PPTP/L2TP)                     | RC4-40, RC4-56, RC4-128                          |
| Generic Router Encapsulation (RFC2784, RFC2890) | Yes  |
| 6in4 Tunneling (RFC4213)                        | Yes  |
| Tunnel Selection Through                        | Firewall Rule Set, Routing, Policy-Based Routing |

**User Authentication**

|                                     |                                 |
|-------------------------------------|---------------------------------|
| Local User Database                 | Yes, multiple                   |
| RADIUS Authentication               | Yes, multiple servers           |
| RADIUS Accounting                   | Yes, multiple servers           |
| LDAP Authentication                 | Yes, multiple servers           |
| RADIUS Authentication Protocols     | PAP, CHAP, MS-CHAPv1, MS-CHAPv2 |
| XAUTH IKE/IPsec Authentication      | Yes                             |
| Web-Based HTTP/HTTPS Authentication | Yes                             |
| Configurable HTTP/HTTPS Front-End   | Yes                             |
| L2TP/PPTP/SSL VPN Authentication    | Yes                             |

**Single Sign-On**

|   |  |
|---|--|
| Device-Based Authentication (MAC Address) | Yes  |
| ARP Authentication                        | Yes  |
| RADIUS Relay                              | Yes  |
| Active Directory Integration              | Microsoft Windows Server 2003, 2008 R2, 2012 |
| Client-less Deployment                    | Yes  |
| Client Support                            | iOS, Android, Windows, OSX, Linux            |

**Security Management**

|                                 |  |
|---------------------------------|--|
| Centralized Management          | Clavister InControl <sup>1</sup>                                   |
| Web User Interface (WebUI)      | HTTP and HTTPS   |
| SSH / SCP Management            | Yes / Yes  |
| Command Line Interface (CLI)    | Yes  |
| Management Authentication       | Local User Database, RADIUS  |
| Remote Fail-Safe Configuration  | Yes  |
| Local Console (RS-232)          | Yes  |
| Traffic Simulation (CL)         | ICMP, TCP, UDP   |
| Scripting (CL)                  | Yes  |
| Packet Capture (PCAP)           | Yes  |
| System Upgrade                  | SSH / WebUI / Clavister InControl. From version 9.00.01 and later. |
| System and Configuration Backup | SSH / WebUI / Clavister InControl                                  |
| SNTP Time Sync                  | Yes  |

**Monitoring**

|                                       |   |
|---------------------------------------|---|
| Syslog                                | Yes, multiple servers                                 |
| Clavister Log                         | Yes, multiple servers                                 |
| Real-Time Log                         | WebUI, Clavister InControl                            |
| Log Settings per Policy               | Yes   |
| Log Export via WebUI                  | Yes   |
| SNMPv2c Polling / SNMPv2c Traps       | Yes / Yes   |
| Real-Time Monitor Alerts (Log Action) | Yes   |
| Real-Time Performance Monitoring      | WebUI, Clavister InControl                            |
| Hardware Key Metrics Monitoring       | CPU Load, CPU Temperature, Voltage, Memory, Fan, etc. |

**NOTE:** Several third-party log monitoring plug-ins are available for Clavister firewalls. These monitoring plug-ins are either commercially available or via open source.

**IPv6**

|                           |                                |
|---------------------------|--------------------------------|
| IPv6 Ready Certification  | Core Protocols, Phase-2 Router |
| Neighbor Discovery        | Yes                            |
| Proxy Neighbor Discovery  | Yes                            |
| IPv6 Path MTU Discovery   | Yes                            |
| ICMPv6                    | Yes                            |
| IPv6 Router Advertisement | Yes                            |
| <b>Interfaces</b>         | Yes                            |
| Ethernet Interfaces       | Yes                            |
| VLAN Interfaces (802.1q)  | Yes                            |

|   |                        |
|---|------------------------|
| Link Aggregation IEEE 802.1AX-2008 (Static/LACP)  | Yes                    |
| Static IPv6 Address Assignment                    | Yes                    |
| IPv6 DHCP Client                                  | Yes                    |
| <b>Firewall</b>                                   |                        |
| IP Policies                                       | ALLOW, DROP and REJECT |
| Stateful Firewall                                 | Yes                    |
| Ingress Filtering                                 | Yes                    |
| IPv6 Routing / Policy-Based Routing               | Yes / Yes              |
| <b>Functionality</b>                              |                        |
| DHCPv6 Server                                     | Yes                    |
| Application Control                               | Yes                    |
| <b>High Availability</b>                          |                        |
| Active Mode with Passive Backup                   | Yes                    |
| Firewall Connection State Synchronization         | Yes                    |
| IKE / IPsec State Synchronization                 | Yes / Yes              |
| User and Accounting State Synchronization         | Yes                    |
| DHCP Server and Relay State Synchronization       | Yes                    |
| Synchronization of Dynamic Routes                 | Yes                    |
| IGMP State Synchronization                        | Yes                    |
| Server Load Balancing (SLB) State Synchronization | Yes                    |
| Configuration Synchronization                     | Yes                    |
| Device Failure Detection                          | Yes                    |
| Dead Link / Gateway / Interface Detection         | Yes / Yes / Yes        |
| Average Failover Time                             | < 800 ms               |

Specifications subject to change without further notice.

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<sup>1</sup> See Clavister InControl datasheet for compatible versions.



### About Clavister

Clavister (NASDAQ: CLAV) is a leading security provider for fixed, mobile and virtual network environments. Its award-winning solutions give enterprises, cloud service providers and telecoms operators the highest levels of protection against threats, with unmatched reliability. Clavister's performance in the security sector was recognized with the Product Quality Leadership Award from Frost & Sullivan. The company was founded in Sweden in 1997, with its solutions available globally through its network of channel partners. To learn more, visit [www.clavister.com](http://www.clavister.com).

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