

# Hillstone A-Series

## Next-Generation Firewall



The Hillstone A-Series next-generation firewall features high security performance, expansion as needed, complete advanced threat detection and prevention, and smart and automated policy operation. This future-ready NGFW series is based on a brand-new hardware architecture that offers industry-leading application layer performance to meet real-world network security needs. High-density ports ensure excellent access capability, and large storage options offer better visibility and analytics. As part of the ZTNA solution, A-Series NGFW granularly controls the application access with eliminated implicit trust and continuous verification. The Hillstone A-Series NGFW offers complete, advanced defenses against known and unknown threats, coupled with smart, automated and efficient policy operation that makes security operations easy.

### Product Highlights

#### Advanced Threat Detection and Protection

The Hillstone A-Series NGFW includes a full arsenal of mechanisms to provide real-time detection and protection across the full lifecycle of network attacks and malwares. Before a breach can even occur, proactive protections like IPS block the vulnerabilities exploitation. IP reputation services block requests from risky sites potentially involved in malware and spamming. URL filtering prevents users from inadvertently accessing sites associated with phishing, malware downloads and other exploits. Anti-virus detects and blocks known malwares at the network level with an advanced signature database that is continuously updated. Anti-spam provides real-time spam classification and prevention for both inbound and outbound traffic.

During a breach, anti-virus plays an important role as well by continuing to detect and block known malwares. A cloud

sandbox provides sophisticated detection and prevention of malicious files through static analysis and pre-processing, followed by behavioral analysis that includes detection of evasive maneuvers. Cloud intelligence then identifies and blocks malicious files, generates logs and reports, and shares threat intelligence back to the cloud.

Completing protections across the full threat lifecycle, the A-Series continues to defend even after a breach has occurred. Hillstone's advanced Botnet C&C prevention feature prevents communication to the control channel, and detect and block bots within the intranet as well.

In addition, A-Series NGFW leverages machine learning technology for intelligent security protection against known and unknown threats, such as intelligent DDoS, DGA, and encrypted traffic detection without decryption.

Further, the system's unified threat detection and analytics

## Product Highlights (Continued)

engine coordinates across all built-in security mechanisms to dramatically enhance efficiency while reducing network latency.

### High-Performance Hardware Architecture

The future-ready A-Series features compact form factor and a powerful computing foundation that ensures high performance with uncompromising security. A-Series NGFWs offer robust performance for firewall throughput, concurrent and new sessions, and blazing fast performance for application layer, which is critical in meeting the needs of current security environments. Powered with Hillstone proprietary hardware acceleration engine, A-Series NGFW high-end models enable fast packet forwarding with high throughput and ultra-low latency by traffic offloading. It also offers a friendly software ecology for third-party integration to support additional security features if desired. All rackmount models feature front and rear ventilation to assist in heat dissipation, which is a concern in networks of almost any size.

### Excellent Access Capability and Storage Expansion

The Hillstone A-Series offers high I/O port density, allowing the NGFW to act as a switch or router as needed, lowering deployment and management costs. In addition, expansion slots are available for a number of A-Series models to further increase performance. Bypass pairs on most A-Series models help ensure business continuity.

All models, including the desktop versions, include a large onboard storage and have expansion options for very-large

hard disk storage up to 2 TB.

With more storage the system can save more logs and data for longer time, enabling deeper analysis. In addition, the expanded storage allows the system to provide richer reports with far more information, including visualized results and actionable recommendations.

Further, with deeper threat analysis the WebUI can display much richer threat detection information, which in turn gives admins better visibility. The increased visibility lets admins quickly zero in on anomalies and other suspicious network events or traffic, analyze them and respond.

### Smart Policy Operation

The A-Series includes intelligent management and operation across the full policy lifecycle, from deployment to management, optimization and operation. The system features automated user policy deployment using RADIUS dynamic authorization. Policy management is made far more efficient through policy groupings based on business requirements. In addition, policies can be aggregated to allow a set of policies to act as a single policy. An innovative policy assistant analyzes traffic patterns and recommends refined policies for faster, easier and more accurate policy management.

Policy operation is made more efficient and precise through policy redundancy checks, which identify redundant policies for deactivation or deletion, and policy hit count analysis, that helps further refine and adjust policies.

# Features

## Network Services

- Dynamic routing (OSPF, OSPFv3, BGP with graceful restart, RIPv2)
- Static and policy-based routing
- Route controlled by application
- Support Service Level Agreement (SLA)-based WAN path control
- Support Multi-path Packet Duplication
- Support Forward Error Correction (FEC)
- Built-in DHCP, NTP, DNS Server and DNS proxy
- Tap mode – connects to SPAN port
- Interface modes: sniffer, port aggregated, loopback, VLANs (802.1Q and Trunking)
- L2/L3 switching & routing
- Multicast (PIM-SSM)
- Virtual wire (Layer 1) transparent inline deployment

## Firewall

- Operating modes: NAT/route, transparent(bridge), and mixed mode
- Policy objects: predefined, custom, aggregate policy, object grouping
- Security policy based on application, role and geo-location
- Application-Level Gateways and session support: MSRPC, PPTP, RAS, RSH, SIP, FTP, TFTP, HTTP, dcerpc, dns-tcp, dns-udp, H.245 0, H.245 1, H.323, tcp full proxy
- NAT and ALG support: NAT46, NAT64, NAT444, SNAT, DNAT, PAT, Full Cone NAT (IPv4 and IPv6), STUN
- NAT configuration: per policy and central NAT table
- VoIP: SIP/H.323/SCCP NAT traversal, RTP pin holing
- Global policy management view
- Security policy redundancy inspection, policy group, policy configuration rollback, aggregate policy
- Policy Assistant for service-based or application-based policy recommendation
- Policy analyzing and invalid policy cleanup
- Comprehensive DNS policy
- External dynamic list
- Schedules: one-time and recurring
- Support policy import and export
- Support NAT redundancy detection

## Intrusion Prevention

- Protocol anomaly detection, rate-based detection, custom signatures, manual, automatic push or pull signature updates, integrated threat encyclopedia
- IPS Actions: default, monitor, block, reset (attackers IP or victim IP, incoming interface) with expiry time
- Packet logging option
- Filter Based Selection: severity, target, OS, application or protocol
- IP exemption from specific IPS signatures
- IDS sniffer mode
- Predefined prevention configuration
- IPS threat packet capture (with expansion storage only)

## Antivirus

- Manual, automatic push or pull signature updates
- [www.hillstonetworks.com](http://www.hillstonetworks.com) MD5 signature to the AV

- database
- MD5 signature support uploading to cloud sandbox, and manually add or delete on local database
- Flow-based antivirus: protocols include HTTP, SMTP, POP3, IMAP, FTP, SMB
- Compressed file virus scanning

## Attack Defense

- Abnormal protocol attack defense
- Flood attack defense, including ICMP flood, UDP flood, DNS query flood, recursive DNS query flood, DNS reply flood, SYN flood, SIP flood
- ARP spoofing and ND spoofing defense
- Scan and spoof defense, including IP address spoof, IP address sweep, port scan
- Intelligent DoS/DDoS defense with ML-based baseline establishment, including ping of death attack, teardrop attack, IP fragment, IP option, Smurf or Fragile attack, Land attack, large ICMP packet, WinNuke attack
- DoH (DNS over HTTPS) anti-hijacking
- Allow list for destination IP address
- Integrate with dynamic blocklists for one-click domain blocking
- Active bypass with bypass interfaces
- Support protection of brute force attacks including VNC, RDP, SSH, LDAP, IMAP, SMB, etc.
- Support protection of sensitive file scanning attack
- Support reverse shell detection
- Support weak password detection
- Support HTTP application detection

## URL Filtering

- Flow-based web filtering inspection
- Manually defined web filtering based on URL, web content and MIME header
- Dynamic web filtering with cloud-based real-time categorization database: over 500 million URLs with 64 categories (8 of which are security related)
- Additional web filtering features:
  - Filter Java Applet, ActiveX or cookie
  - Block HTTP Post
  - Log search keywords
- Exempt scanning encrypted connections on certain categories for privacy
- Web filtering profile override: allows administrator to temporarily assign different profiles to user/group/IP
- Web filter local categories and category rating override
- Support URL allow list and block list

## Anti-Spam <sup>(1)</sup>

- Realtime Spam Classification and Prevention
- Confirmed Spam, Suspected Spam, Bulk Spam, Valid Bulk
- Protection Regardless of the language, format, or content of the message
- Support both SMTP and POP3 email protocols
- Inbound and outbound detection
- White lists to allow emails from trusted domains

## Cloud-Sandbox

- Upload malicious files to cloud sandbox for analysis
- Support protocols including HTTP/HTTPS, POP3, IMAP, SMTP, FTP and SMB
- Support file types including PE, ZIP, RAR, Office, PDF, APK, JAR, SWF and Script

- Provide complete behavior analysis report for malicious files
- Global threat intelligence sharing, real-time threat blocking
- Support detection only mode without uploading files
- URL allow / block list configuration

## Botnet C&C Prevention

- Discover intranet botnet host by monitoring C&C connections and block further advanced threats such as botnet and ransomware
- Regularly update the botnet server addresses
- Prevention for C&C IP, domain name and URL
- Support TCP, HTTP, and DNS traffic detection
- Allow and block list based on IP address, domain name, and URL
- Support DGA and DNS tunnel detection
- Support DNS sinkhole

## IP Reputation

- Identify and filter traffic from risky IPs such as botnet hosts, spammers, Tor nodes, breached hosts, and brute force attacks
- Logging, dropping packets, or blocking for different types of risky IP traffic
- Periodical IP reputation signature database upgrade

## SSL Decryption

- Application identification for SSL encrypted traffic
- IPS enablement for SSL encrypted traffic
- AV enablement for SSL encrypted traffic
- URL filter for SSL encrypted traffic
- SSL encrypted traffic whitelist
- SSL proxy offload mode
- SSL proxy supports IP whitelist and predefined whitelist
- SSL proxy supports session re-use
- Support AD/LDAP server connection via SSL encryption
- Support TLSV1.0, TLSV1.2, TLSV1.3
- Support application identification, DLP, IPS sandbox, AV for SSL proxy decrypted traffic of SMTPS/POP3S/IMAPS

## Endpoint Identification and Control

- Support to identify endpoint IP, endpoint quantity, on-line time, off-line time, and on-line duration
- Support 10 operating systems including Windows, iOS, Android, etc.
- Support query based on IP, endpoint quantity, control policy and status etc.
- Support the identification of accessed endpoints quantity across layer 3, logging and interference on overrun IP
- Redirect page display after custom interference operation
- Supports blocking operations on overrun IP
- User identification and traffic control for remote desktop services of Windows Server

## Data Security

- File transfer control based on file type, size and name
- File protocol identification, including HTTP, FTP, SMTP, POP3 and SMB
- File signature and suffix identification for over 100 file types
- Content filtering for HTTP-GET, HTTP-POST, FTP and SMTP protocols
- Content filtering for predefined keywords and file contents

## Features (Continued)

- IM identification and network behavior audit
- Filter files transmitted by HTTPS using SSL Proxy and SMB

### Application Control

- Over 6,000 applications that can be filtered by name, category, subcategory, technology and risk
- Each application contains a description, risk factors, dependencies, typical ports used, and URLs for additional reference
- Actions: block, reset session, monitor, traffic shaping
- Identify and control cloud applications in the cloud
- Provide multi-dimensional monitoring and statistics for cloud applications, including risk category and characteristics

### Quality of Service (QoS)

- Max/guaranteed bandwidth tunnels or IP/user basis
- Tunnel allocation based on security domain, interface, address, user/user group, server/server group, application/app group, TOS, VLAN
- Bandwidth allocated by time, priority, or equal bandwidth sharing
- Type of Service (TOS) and Differentiated Services (DiffServ) and traffic-class support
- Prioritized allocation of remaining bandwidth
- Maximum concurrent connections per IP
- Bandwidth allocation based on URL category
- Bandwidth limit by delaying access for user or IP
- Automatic expiration cleanup and manual cleanup of user used traffic

### Server Load Balancing

- Weighted hashing, weighted least-connection, and weighted round-robin
- Session protection, session persistence and session status monitoring
- Server health check, session monitoring and session protection

### Link Load Balancing

- Bi-directional link load balancing
- Outbound link load balancing: policy-based routing including ECMP, time, weighted, and embedded ISP routing; Active and passive real-time link quality detection and best path selection
- Inbound link load balancing supports SmartDNS and dynamic detection
- Automatic link switching based on bandwidth, latency, jitter, connectivity, application etc.
- Link health inspection with ARP, PING, and DNS

### VPN

- Failover:
  - IPsec Phase 1 mode: aggressive and main ID protection mode
  - Peer acceptance options: any ID, specific ID, ID in dialup user group
  - Supports IKEv1 and IKEv2 (RFC 4306)
  - Authentication method: certificate and pre-shared key
  - IKE mode configurations support (as server or client)
  - DHCP over IPsec
  - Configurable IKE encryption key expiry, NAT traversal keep alive frequency
  - Phase 1/Phase 2 Proposal encryption: DES, 3DES, AES128, AES192,

- authentication: MD5, SHA1, SHA256, SHA384, SHA512
- IKEv1 support DH group 1,2,5,18,19,20,21,24
- IKEv2 support DH group 1,2,5,14,15,16,18,19,20,21,24
- XAuth as server mode and for dialup users
- Dead peer detection
- Replay detection
- Autokeykeep-alive for Phase 2 SA
- IPsec VPN realm support: allows multiple custom SSL VPN logins associated with user groups (URL paths, design)
- IPsec VPN supports configuration guide. Configuration options includes: route-based or policy based
- IPsec VPN deployment modes: gateway-to-gateway, full mesh, hub-and-spoke, redundant tunnel, VPN termination in transparent mode
- IPsec supports custom ports
- IPsec VPN supports DPD On-Demand mode
- LLB and failover support over IPsec tunnels
- One time login prevents concurrent logins with the same username
- SSL portal concurrent users limiting
- SSL VPN port forwarding module encrypts client data and sends the data to the application server
- Supports clients that run iOS, Android, Microsoft Windows, MacOS and Linux
- Host integrity checking and OS checking prior to SSL tunnel connections
- MAC host check per portal
- Cache cleaning option prior to ending SSL VPN session
- L2TP client and server mode, L2TP over IPsec, and GRE over IPsec
- View and manage IPsec and SSL VPN connections
- PnVVPN
- VTEP for VxLAN static unicast tunnel

### IPv6

- Management over IPv6, IPv6 logging, HA and HA peer mode, twin-mode AA and AP
- IPv6 tunneling: DNS64/NAT64, IPv6 ISATAP, IPv6 GRE, IPv6 over IPv4 GRE, 6RD
- IPv6 routing including static routing, policy routing, ISIS, RIPng, OSPFv3 and BGP4+
- IPv6 support on LLB
- IPS, Application identification, URL filtering, Antivirus, Access control, ND attack defense, iQoS, SSL VPN
- IPv6 jumbo frame support
- IPv6 Radius and sso-radius supports
- IPv6 is supported in Active Directory whitelist
- IPv6 support on the following ALGs: TFTP, FTP, RSH, HTTP, SIP, SQLNETv2, RTSP, MSRPC, SUNRPC
- IPv6 support on distributed iQoS
- Track address detection

### VSYS (only available on rackmount models)

- System resource allocation to each VSYS
- CPU virtualization
- Non-root VSYS support firewall, IPsec VPN, SSL VPN, IPS, URL filtering, app monitoring, IP reputation, QoS
- VSYS monitoring and statistic, app monitoring, IP reputation, AV, QoS

### High Availability

- Redundant heartbeat interfaces
- Active/Active peer mode with Hillstone Virtual Redundancy Protocol (HSVRP) support, and Active/Passive mode
- Standalone session synchronization
- HA reserved management interface
- Failover:
  - Port, local & remote link monitoring
  - Stateful failover
  - Sub-second failover
  - Failure notification
- Deployment options:
  - HA with link aggregation
  - Full mesh HA
  - Geographically dispersed HA
- Dual HA data link ports

### Twin-mode HA (only available on A2715, A2815, A3000 and above models)

- High availability mode among multiple devices
- Multiple HA deployment modes
- Configuration and session synchronization among multiple devices

### User and Device Identity

- Local user database
- Remote user authentication: TACACS+, LDAP, Radius, Active Directory, OAuth2
- Single-sign-on: Windows AD
- 2-factor authentication: 3rd party support, integrated token server with physical and SMS
- User and device-based policies
- User group synchronization based on AD and LDAP
- Support for 802.1X, SSO Proxy
- WebAuth: page customization, force crack prevention, IPv6 support
- SSL VPN, ZTNA, WebAuth support Azure Active Directory (AD) authentication
- Interface based authentication
- Agentless ADSSO (AD Polling)
- Use authentication synchronization based on SSO-monitor
- Support IP-based and MAC-based user authentication
- Radius server issues user security policy via CoA message

### Administration

- Management access: HTTP/HTTPS, SSH, telnet, console, Restful API, NETCONF
- Central Management: Hillstone Security Manager (HSM), web service APIs
- System Integration: SNMP, syslog, alliance partnerships
- Rapid deployment: USB and email-based zero-touch provisioning (ZTP), local and remote script execution
- Dynamic real-time dashboard status and drill-in monitoring widgets
- Language support: English
- Administrator authentication: Active Directory and LDAP
- Support CLI access from WebUI

## Features (Continued)

### Logs & Reporting

- Logging facilities: local storage; up to 6 months log storage with expansion storage (SSD hard drive), syslog server, Hillstone HSM or HSA
- Encrypted logging and log integrity with HSA scheduled batch log uploading
- Reliable logging using TCP option (RFC 3195)
- Detailed traffic logs: forwarded, violated sessions, local traffic, invalid packets, URL etc.
- Comprehensive event logs: system and administrative activity audits, routing & networking, VPN, user authentications, DNS requests and blocking events, Wi-Fi related events
- IP and service port name resolution option
- Brief traffic log format option
- Three predefined reports: Security, Flow and Network reports
- User defined reporting
- Reports can be exported in PDF, Word and HTML via Email and FTP
- Support policy configuration auditing

### Statistics and Monitoring

- Application, URL, threat events statistic and monitoring
- RealTime traffic statistic and analytics
- System information such as concurrent session, CPU, memory and temperature
- iQOS traffic statistic and monitoring, link status monitoring
- Support traffic information collection and forwarding via Netflow (v9.0)

### Zero Trust Network Access (ZTNA)

- Support intranet access
- Support end-user access with a Zero-Trust principle
- ZTNA tags support account password and terminal status
- Support Zero-Trust policy configuration based on ZTNA tags and application resources, with optional security protection and data security
- Support application resource management
- Support application resource configuration based on domain name
- Support dynamic adjustment of authorization in policy when the endpoint state changes
- Support application publishing, and displaying authorized applications to end-users over ZTNA portal
- Support single packet authentication (SPA)
- Support domain name level permission management

- Support auto-selection of the optimal gateway
- Support configuring multiple ZTNA instances on a single device
- Support anti-DDoS protection for ZTNA traffic
- Support IPv4/IPv6 dual stack
- Support smooth transition from current SSL VPN to ZTNA solution
- Support operating systems including iOS, Android, Microsoft Windows, MacOS and Linux
- Support centralized ZTNA management by HSM, including upload monitoring data and statistics, and accept the configuration delivered
- Support Restful APIs

### CloudView

- Cloud-based security monitoring
- 24/7 access from web or mobile application
- Device status, traffic and threat monitoring
- Cloud-based log retention and reporting

### IoT Security

- Identify IoT devices such as IP Cameras and Network Video Recorders
- Support query of monitoring results based on filtering conditions, including device type, IP address, status, etc.
- Support customized whitelists

# Specifications

|                                             | SG-6000-A200-IN                                                                   | SG-6000-A200W-IN                                                                  | SG-6000-A1000-IN                                                                  | SG-6000-A1100-IN                                                                   | SG-6000-A2000-IN                                                                    | SG-6000-A2600-IN                                                                    |
|---------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |  |  |  |  |  |  |
| Firewall Throughput <sup>(2)</sup>          | 1 Gbps                                                                            | 1 Gbps                                                                            | 4 Gbps                                                                            | 5 Gbps                                                                             | 5 Gbps                                                                              | 5 Gbps                                                                              |
| NGFW Throughput <sup>(3)</sup>              | 400 Mbps                                                                          | 400 Mbps                                                                          | 1.5 Gbps                                                                          | 1.7 Gbps                                                                           | 2 Gbps                                                                              | 3 Gbps                                                                              |
| Threat Protection Throughput <sup>(4)</sup> | 200 Mbps                                                                          | 200 Mbps                                                                          | 800 Mbps                                                                          | 800 Mbps                                                                           | 1 Gbps                                                                              | 2.5 Gbps                                                                            |
| Maximum Concurrent Sessions <sup>(5)</sup>  | 450,000                                                                           | 450,000                                                                           | 450,000                                                                           | 450,000                                                                            | 1.5 Million                                                                         | 1.85 Million                                                                        |
| New Sessions/s <sup>(6)</sup>               | 14,000                                                                            | 14,000                                                                            | 48,000                                                                            | 48,000                                                                             | 48,000                                                                              | 120,000                                                                             |
| IPS Throughput <sup>(7)</sup>               | 610 Mbps                                                                          | 610 Mbps                                                                          | 3 Gbps                                                                            | 2.8 Gbps                                                                           | 3 Gbps                                                                              | 3.5 Gbps                                                                            |
| AV Throughput <sup>(8)</sup>                | 550 Mbps                                                                          | 550 Mbps                                                                          | 1.8 Gbps                                                                          | 1.8 Gbps                                                                           | 2 Gbps                                                                              | 3 Gbps                                                                              |
| IPsec VPN Throughput <sup>(9)</sup>         | 0.59 Gbps                                                                         | 0.59 Gbps                                                                         | 2.5 Gbps                                                                          | 2.7 Gbps                                                                           | 3 Gbps                                                                              | 3 Gbps                                                                              |
| SSL Proxy Throughput <sup>(10)</sup>        | 15 Mbps                                                                           | 15 Mbps                                                                           | 250 Mbps                                                                          | 250 Mbps                                                                           | 250 Mbps                                                                            | 750 Mbps                                                                            |
| Virtual Systems (Default/Max)               | N/A                                                                               | N/A                                                                               | N/A                                                                               | N/A                                                                                | 1/5                                                                                 | 1/5                                                                                 |
| Firewall Policy Number                      | 4000                                                                              | 4000                                                                              | 4,000                                                                             | 4,000                                                                              | 8,000                                                                               | 12,000                                                                              |
| SSL VPN Users (Default/Max)                 | 8/128                                                                             | 8/128                                                                             | 8/128                                                                             | 8/128                                                                              | 8/1,000                                                                             | 8/2,000                                                                             |
| IPsec Tunnel Number                         | 2,000                                                                             | 2,000                                                                             | 2,000                                                                             | 2,000                                                                              | 4,000                                                                               | 6,000                                                                               |
| Management Ports                            | 1 × Console Port, 1 × USB 2.0 Port                                                | 1 × Console Port, 1 × USB 2.0 Port                                                | 1 × Console Port, 2 × USB3.0 Ports                                                | 1 × Console Port, 2 × USB3.0 Ports, 1 × MGT Port (RJ45)                            | 1 × Console Port, 2 × USB3.0 Ports, 1 × MGT Port (RJ45)                             | 1 × Console Port, 2 × USB3.0 Ports, 1 × MGT Port (RJ45)                             |
| Fixed I/O Ports <sup>(11)</sup>             | 1×SFP, 5×GE                                                                       | 1×SFP, 5×GE                                                                       | 4 × GE                                                                            | 8 × GE (including 1 bypass pair)                                                   | 8 × GE (including 1 bypass pair)                                                    | 8 × GE (including 1 bypass pair)                                                    |
| Wi-Fi/ 4G Dongle <sup>(12)</sup>            | 4GDongle                                                                          | Wifi (IEEE802.11a/b/g/n/ac), 4G Dongle                                            | 4GDongle                                                                          | 4GDongle                                                                           | 4GDongle                                                                            | 4GDongle                                                                            |
| Available Slots for Expansion Modules       | N/A                                                                               | N/A                                                                               | N/A                                                                               | N/A                                                                                | N/A                                                                                 | N/A                                                                                 |
| Expansion Module Option                     | N/A                                                                               | N/A                                                                               | N/A                                                                               | N/A                                                                                | N/A                                                                                 | N/A                                                                                 |
| Twin-mode HA                                | N/A                                                                               | N/A                                                                               | N/A                                                                               | N/A                                                                                | N/A                                                                                 | N/A                                                                                 |
| Local Storage                               | 4 GB                                                                              | 4 GB                                                                              | 8 GB                                                                              | 8 GB                                                                               | 8 GB                                                                                | 8 GB                                                                                |
| Expansion Storage Options                   | N/A                                                                               | N/A                                                                               | 256 GB SSD                                                                        | 256 GB SSD                                                                         | 480GB/ 960GB/ 1.92TB SSD                                                            | 480GB/ 960GB/ 1.92TB SSD                                                            |
| Power Specification                         | 24W, Single AC (default)                                                          | 24W, Single AC (default)                                                          | 36W, Single AC                                                                    | 65W, Single AC                                                                     | 60W, Single AC (default), Dual AC (optional)                                        | 60W, Single AC (default), Dual AC (optional)                                        |
| Power Supply                                | AC 100-240 V 50/60 Hz                                                             | AC 100-240 V 50/60 Hz                                                             | AC 100-240 V 50/60 Hz                                                             | AC 100-240 V 50/60 Hz                                                              | AC 100-240 V 50/60 Hz                                                               | AC 100-240 V 50/60 Hz                                                               |
| Form Factor                                 | Desktop                                                                           | Desktop                                                                           | Desktop                                                                           | Desktop                                                                            | Rackmount, 1U                                                                       | Rackmount, 1U                                                                       |
| Dimensions (W × D × H, mm)                  | 180 × 110 × 28                                                                    | 180 × 110 × 28                                                                    | 270 × 160 × 44                                                                    | 270 × 160 × 44                                                                     | 436 × 320 × 44                                                                      | 436 × 320 × 44                                                                      |
| Dimensions (W × D × H, inches)              | 7.1 × 4.3 × 1.1                                                                   | 7.1 × 4.3 × 1.1                                                                   | 10.6 × 6.3 × 1.7                                                                  | 10.6 × 6.3 × 1.7                                                                   | 17.2 × 12.6 × 1.7                                                                   | 17.2 × 12.6 × 1.7                                                                   |
| Weight                                      | 2.2lb (0.6 kg)                                                                    | 2.2lb (0.6 kg)                                                                    | 3.1lb (1.4 kg)                                                                    | 3.1lb (1.4 kg)                                                                     | 8.6lb (3.9 kg)                                                                      | 8.6lb (3.9 kg)                                                                      |
| Working Temperature                         | 32-104°F (0-40°C)                                                                 | 32-104°F (0-40°C)                                                                 | 32-104°F (0-40°C)                                                                 | 32-104°F (0-40°C)                                                                  | 32-104°F (0-40°C)                                                                   | 32-104°F (0-40°C)                                                                   |
| Relative Humidity                           | 10-95% non-condensing                                                             | 10-95% non-condensing                                                             | 10-95% non-condensing                                                             | 10-95% non-condensing                                                              | 10-95% non-condensing                                                               | 10-95% non-condensing                                                               |

## Specifications (Continued)

|                                             | SG-6000-A2700-IN                                                                  | SG-6000-A2715-IN                                                                  | SG-6000-A2800-IN                                                                   | SG-6000-A2815-IN                                                                    |
|---------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |  |  |  |  |
| Firewall Throughput <sup>(2)</sup>          | 10 Gbps                                                                           | 10 Gbps                                                                           | 16 Gbps                                                                            | 16 Gbps                                                                             |
| NGFW Throughput <sup>(3)</sup>              | 5 Gbps                                                                            | 6 Gbps                                                                            | 6.5 Gbps                                                                           | 6 Gbps                                                                              |
| Threat Protection Throughput <sup>(4)</sup> | 3 Gbps                                                                            | 3 Gbps                                                                            | 3 Gbps                                                                             | 3 Gbps                                                                              |
| Maximum Concurrent Sessions <sup>(5)</sup>  | 2.2 Million                                                                       | 2.2 Million                                                                       | 2.4 Million                                                                        | 2.4 Million                                                                         |
| New Sessions/s <sup>(6)</sup>               | 130,000                                                                           | 130,000                                                                           | 130,000                                                                            | 130,000                                                                             |
| IPS Throughput <sup>(7)</sup>               | 8 Gbps                                                                            | 9 Gbps                                                                            | 10 Gbps                                                                            | 10 Gbps                                                                             |
| AV Throughput <sup>(8)</sup>                | 5 Gbps                                                                            | 6 Gbps                                                                            | 6.5 Gbps                                                                           | 6 Gbps                                                                              |
| IPsec VPN Throughput <sup>(9)</sup>         | 5 Gbps                                                                            | 5.2 Gbps                                                                          | 6 Gbps                                                                             | 6 Gbps                                                                              |
| SSL Proxy Throughput <sup>(10)</sup>        | 800 Mbps                                                                          | 850 Mbps                                                                          | 800 Mbps                                                                           | 850 Mbps                                                                            |
| Virtual Systems (Default/Max)               | 1/5                                                                               | 1/5                                                                               | 1/5                                                                                | 1/5                                                                                 |
| SSL VPN Users (Default/Max)                 | 8/4,000                                                                           | 8/4,000                                                                           | 8/4,000                                                                            | 8/4,000                                                                             |
| IPsec Tunnel Number                         | 6,000                                                                             | 6,000                                                                             | 6,000                                                                              | 6,000                                                                               |
| Firewall Policy Number                      | 12,000                                                                            | 12,000                                                                            | 12,000                                                                             | 12,000                                                                              |
| Management Ports                            | 1 × Console Port, 2 × USB3.0 Ports, 1× MGT Port (RJ45)                            | 1 × Console port, 2 × USB3.0 ports, 1 × HA port (RJ45), 1 × MGT port (RJ45)       | 1 × Console Port, 2 × USB3.0 Ports, 1× MGT Port (RJ45)                             | 1 × Console port, 2 × USB3.0 ports, 1 × HA port (RJ45), 1 × MGT port (RJ45)         |
| Fixed I/O Ports <sup>(11)</sup>             | 2 × SFP+, 8 × SFP, 8 × GE                                                         | 8 × SFP, 8 × GE (including 2 bypass pairs)                                        | 2 × SFP+, 8 × SFP, 8 × GE                                                          | 8 × SFP, 8 × GE (including 2 bypass pairs)                                          |
| Wi-Fi/ 4G Dongle <sup>(12)</sup>            | 4G Dongle                                                                         | 4G Dongle                                                                         | 4G Dongle                                                                          | 4G Dongle                                                                           |
| Available Slots for Expansion Modules       | N/A                                                                               | 1                                                                                 | N/A                                                                                | 1                                                                                   |
| Expansion Module Option                     | N/A                                                                               | IOCAF4SFP+IN IOCAF-8SFP+IN IOC-AF-8GE-IN                                          | N/A                                                                                | IOCAF4SFP+IN IOCAF-8SFP+IN IOC-AF-8GE-IN                                            |
| Twin-mode HA                                | N/A                                                                               | Yes                                                                               | N/A                                                                                | Yes                                                                                 |
| Local Storage                               | 8 GB                                                                              | 8 GB                                                                              | 8 GB                                                                               | 8 GB                                                                                |
| Expansion Storage Options                   | 480GB/ 960GB/ 1.92TB SSD                                                          | 480GB/ 960GB/ 1.92TB SSD                                                          | 480GB/ 960GB/ 1.92TB SSD                                                           | 480GB/ 960GB/ 1.92TB SSD                                                            |
| Power Specification                         | 60W, Single AC (default), Dual AC (optional)                                      | 60W, Single AC (default), Dual AC (optional)                                      | 60W, Single AC (default), Dual AC (optional)                                       | 150W, Single AC (default), Dual AC (optional)                                       |
| Power Supply                                | AC 100-240V, 50/60 Hz                                                             | AC 100-240V, 50/60 Hz                                                             | AC 100-240V, 50/60 Hz                                                              | AC 100-240V, 50/60 Hz                                                               |
| Form Factor                                 | Rackmount, 1U                                                                     | Rackmount, 1U                                                                     | Rackmount, 1U                                                                      | Rackmount, 1U                                                                       |
| Dimensions (W × D × H, mm)                  | 440 x 320 x 44                                                                    | 440 × 340 × 44.4                                                                  | 440 x 320 x 44                                                                     | 440 × 340 × 44.4                                                                    |
| Dimensions (W × D × H, inches)              | 17.3 x 12.6 x 1.7                                                                 | 17.3 × 13.4 × 1.75                                                                | 17.3 x 12.6 x 1.7                                                                  | 17.3 × 13.4 × 1.75                                                                  |
| Weight                                      | 9 lb (4.1 kg)                                                                     | 10.0 lb (4.55 kg)                                                                 | 9 lb (4.1 kg)                                                                      | 10.0 lb (4.55 kg)                                                                   |
| Working Temperature                         | 32-104°F (0-40°C)                                                                 | 32-104°F (0-40°C)                                                                 | 32-104°F (0-40°C)                                                                  | 32-104°F (0-40°C)                                                                   |
| Relative Humidity                           | 10-95% non-condensing                                                             | 10-95% non-condensing                                                             | 10-95% non-condensing                                                              | 10-95% non-condensing                                                               |

# Specifications (Continued)

|                                             | SG-6000-A3000-IN                                                                     | SG-6000-A3600-IN                                                                     | SG-6000-A3615-IN                                                                                            | SG-6000-A3700-IN                                                                     | SG-6000-A3800-IN                                                                     | SG-6000-A3815-IN                                                                                            |
|---------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|                                             |     |     |                            |    |   |                          |
| Firewall Throughput <sup>(2)</sup>          | 20 Gbps                                                                              | 20 Gbps                                                                              | 20 Gbps                                                                                                     | 20/30 Gbps                                                                           | 20/30 Gbps                                                                           | 20 Gbps                                                                                                     |
| NGFW Throughput <sup>(3)</sup>              | 6.5 Gbps                                                                             | 6.5 Gbps                                                                             | 6.5 Gbps                                                                                                    | 6.5 Gbps                                                                             | 12 Gbps                                                                              | 13 Gbps                                                                                                     |
| Threat Protection Throughput <sup>(4)</sup> | 3 Gbps                                                                               | 3 Gbps                                                                               | 3 Gbps                                                                                                      | 3.1 Gbps                                                                             | 6 Gbps                                                                               | 6.5 Gbps                                                                                                    |
| Maximum Concurrent Sessions <sup>(5)</sup>  | 3 Million                                                                            | 4.5 Million                                                                          | 4.5 Million                                                                                                 | 7 Million                                                                            | 8.2 Million                                                                          | 8 Million                                                                                                   |
| New Sessions/s <sup>(6)</sup>               | 135,000                                                                              | 135,000                                                                              | 135,000                                                                                                     | 140,000                                                                              | 310,000                                                                              | 310,000                                                                                                     |
| IPS Throughput <sup>(7)</sup>               | 10 Gbps                                                                              | 11 Gbps                                                                              | 11 Gbps                                                                                                     | 11 Gbps                                                                              | 16 Gbps                                                                              | 14 Gbps                                                                                                     |
| AV Throughput <sup>(8)</sup>                | 6.5 Gbps                                                                             | 6.5 Gbps                                                                             | 6.5 Gbps                                                                                                    | 6.5 Gbps                                                                             | 12 Gbps                                                                              | 11 Gbps                                                                                                     |
| IPsec VPN Throughput <sup>(9)</sup>         | 6 Gbps                                                                               | 6 Gbps                                                                               | 6 Gbps                                                                                                      | 6.5 Gbps                                                                             | 12 Gbps                                                                              | 12 Gbps                                                                                                     |
| SSL Proxy Throughput <sup>(10)</sup>        | 950 Mbps                                                                             | 950 Mbps                                                                             | 1 Gbps                                                                                                      | 950 Mbps                                                                             | 2.8 Gbps                                                                             | 2.8 Gbps                                                                                                    |
| Virtual Systems (Default/Max)               | 1/50                                                                                 | 1/100                                                                                | 1/100                                                                                                       | 1/250                                                                                | 1/250                                                                                | 1/250                                                                                                       |
| SSL VPN Users (Default/Max)                 | 8/4,000                                                                              | 8/8,000                                                                              | 8/8,000                                                                                                     | 8/10,000                                                                             | 8/10,000                                                                             | 8/10,000                                                                                                    |
| IPsec Tunnel Number                         | 8,000                                                                                | 10,000                                                                               | 10,000                                                                                                      | 20,000                                                                               | 20,000                                                                               | 20,000                                                                                                      |
| Firewall Policy Number                      | 20,000                                                                               | 20,000                                                                               | 20,000                                                                                                      | 20,000                                                                               | 40,000                                                                               | 40,000                                                                                                      |
| Management Ports                            | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA Port (RJ45) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA Port (RJ45) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA Port (RJ45)                        | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA Port (RJ45) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA Port (RJ45) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA Port (RJ45)                        |
| Fixed I/O Ports <sup>(11)</sup>             | 2 × SFP+, 8 × SFP,<br>16 × GE (including<br>2 bypass pairs)                          | 2 × SFP+, 8 × SFP,<br>16 × GE (including<br>2 bypass pairs)                          | 8 × SFP, 8 × GE<br>(including 2 bypass pairs)                                                               | 2 × SFP+, 8 × SFP,<br>16 × GE (including<br>2 bypass pairs)                          | 2 × SFP+, 8 × SFP,<br>16 × GE (including<br>2 bypass pairs)                          | 8 × SFP, 8 × GE<br>(including 2 bypass pairs)                                                               |
| Wi-Fi/ 4G Dongle <sup>(12)</sup>            | 4G Dongle                                                                            | 4G Dongle                                                                            | 4G Dongle                                                                                                   | 4G Dongle                                                                            | 4G Dongle                                                                            | 4G Dongle                                                                                                   |
| Available Slots for Expansion Modules       | N/A                                                                                  | N/A                                                                                  | 2                                                                                                           | 1                                                                                    | 1                                                                                    | 2                                                                                                           |
| Expansion Module Option                     | N/A                                                                                  | N/A                                                                                  | IOCAF4SFP+IN<br>IOCAF8SFP+IN<br>IOCAF8GEIN<br>IOCA4SFP+IN<br>IOCA2QSFP+IN<br>IOCA2MM-BE-IN<br>IOCA2SM-BE-IN | IOCA4SFP+IN<br>IOCA2MM-BE-IN<br>IOCA2SM-BE-IN<br>IOCA2QSFP+IN                        | IOCA4SFP+IN<br>IOCA2MM-BE-IN<br>IOCA2SM-BE-IN<br>IOCA2QSFP+IN                        | IOCAF4SFP+IN<br>IOCAF8SFP+IN<br>IOCAF8GEIN<br>IOCA4SFP+IN<br>IOCA2QSFP+IN<br>IOCA2MM-BE-IN<br>IOCA2SM-BE-IN |
| Twin-mode HA                                | Yes                                                                                  | Yes                                                                                  | Yes                                                                                                         | Yes                                                                                  | Yes                                                                                  | Yes                                                                                                         |
| Local Storage                               | 8 GB                                                                                 | 8 GB                                                                                 | 8 GB                                                                                                        | 8 GB                                                                                 | 8 GB                                                                                 | 8 GB                                                                                                        |
| Expansion Storage Options                   | 480GB / 960GB<br>/1.92TB SSD                                                         | 480GB / 960GB<br>/1.92TB SSD                                                         | 480GB / 960GB<br>/1.92TB SSD                                                                                | 480GB / 960GB<br>/1.92TB SSD                                                         | 480GB / 960GB<br>/1.92TB SSD                                                         | 480GB / 960GB<br>/1.92TB SSD                                                                                |
| Power Specification                         | 150W, Single AC<br>(default) Dual AC<br>(optional)                                   | 150W, Single AC<br>(default) Dual AC<br>(optional)                                   | 150W, Single AC<br>(default) Dual AC<br>(optional)                                                          | 150W, Single AC<br>(default) Dual AC<br>(optional)                                   | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                    | 550W, Dual AC<br>(default) Dual DC<br>(optional)                                                            |
| Power Supply                                | AC 100-240 V 50/60 Hz                                                                | AC 100-240 V 50/60 Hz                                                                | AC 100-240V, 50/60 Hz                                                                                       | AC 100-240 V 50/60 Hz                                                                | AC 100-240 V 50/60 Hz                                                                | AC 100-240V, 50/60 Hz                                                                                       |
| Form Factor                                 | Rackmount, 1U                                                                        | Rackmount, 1U                                                                        | Rackmount, 1U                                                                                               | Rackmount, 1U                                                                        | Rackmount, 1U                                                                        | Rackmount, 1U                                                                                               |
| Dimensions (W × D × H, mm)                  | 436 × 437 × 44                                                                       | 436 × 437 × 44                                                                       | 436 × 459.5 × 44.4                                                                                          | 436 × 437 × 44                                                                       | 436 × 437 × 44                                                                       | 436 × 459.5 × 44.4                                                                                          |
| Dimensions (W × D × H, inches)              | 17.2 × 17.2 × 1.7                                                                    | 17.2 × 17.2 × 1.7                                                                    | 17.2 × 18.1 × 1.75                                                                                          | 17.2 × 17.2 × 1.7                                                                    | 17.2 × 17.2 × 1.7                                                                    | 17.2 × 18.1 × 1.75                                                                                          |
| Weight                                      | 13.2 lb (6 kg)                                                                       | 13.2 lb (6 kg)                                                                       | 13.7 lb (6.2 kg)                                                                                            | 13.4 lb (6.1 kg)                                                                     | 15 lb (6.8 kg)                                                                       | 19.8 lb (8.98 kg)                                                                                           |
| Working Temperature                         | 32-104°F (0-40°C)                                                                    | 32-104°F (0-40°C)                                                                    | 32-104°F (0-40°C)                                                                                           | 32-104°F (0-40°C)                                                                    | 32-104°F (0-40°C)                                                                    | 32-104°F (0-40°C)                                                                                           |
| Relative Humidity                           | 10-95%<br>non-condensing                                                             | 10-95%<br>non-condensing                                                             | 10-95%<br>non-condensing                                                                                    | 10-95%<br>non-condensing                                                             | 10-95%<br>non-condensing                                                             | 10-95%<br>non-condensing                                                                                    |

# Specifications (Continued)

|                                             | SG-6000-A5100-IN                                                                      | SG-6000-A5155-IN                                                                    | SG-6000-A5200-IN                                                                      | SG-6000-A5255-IN                                                                    | SG-6000-A5500-IN                                                                      | SG-6000-A5555-IN                                                                    |
|---------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |      |    |      |   |    |  |
| Firewall Throughput <sup>(2)</sup>          | 25/50 Gbps                                                                            | 25/50 Gbps                                                                          | 32/65 Gbps                                                                            | 32/65 Gbps                                                                          | 40/80 Gbps                                                                            | 40/80 Gbps                                                                          |
| NGFW Throughput <sup>(3)</sup>              | 20 Gbps                                                                               | 20 Gbps                                                                             | 25 Gbps                                                                               | 25 Gbps                                                                             | 30 Gbps                                                                               | 30 Gbps                                                                             |
| Threat Protection Throughput <sup>(4)</sup> | 12 Gbps                                                                               | 12 Gbps                                                                             | 14 Gbps                                                                               | 15 Gbps                                                                             | 17 Gbps                                                                               | 17 Gbps                                                                             |
| Maximum Concurrent Sessions <sup>(5)</sup>  | 9 Million                                                                             | 9 Million                                                                           | 15 Million                                                                            | 15 Million                                                                          | 18 Million                                                                            | 18 Million                                                                          |
| New Sessions/s <sup>(6)</sup>               | 480,000                                                                               | 490,000                                                                             | 600,000                                                                               | 650,000                                                                             | 700,000                                                                               | 700,000                                                                             |
| IPS Throughput <sup>(7)</sup>               | 20/30 Gbps                                                                            | 21/30 Gbps                                                                          | 25/35 Gbps                                                                            | 27/40 Gbps                                                                          | 35/45 Gbps                                                                            | 35/50 Gbps                                                                          |
| AV Throughput <sup>(8)</sup>                | 15 Gbps                                                                               | 15 Gbps                                                                             | 20 Gbps                                                                               | 25 Gbps                                                                             | 30 Gbps                                                                               | 29 Gbps                                                                             |
| IPsec VPN Throughput <sup>(9)</sup>         | 15 Gbps                                                                               | 18 Gbps                                                                             | 25 Gbps                                                                               | 25 Gbps                                                                             | 30 Gbps                                                                               | 30 Gbps                                                                             |
| SSL Proxy Throughput <sup>(10)</sup>        | 3 Gbps                                                                                | 3 Gbps                                                                              | 5 Gbps                                                                                | 5 Gbps                                                                              | 5 Gbps                                                                                | 5 Gbps                                                                              |
| Virtual Systems (Default/Max)               | 1/250                                                                                 | 1/250                                                                               | 1/250                                                                                 | 1/250                                                                               | 1/250                                                                                 | 1/250                                                                               |
| SSL VPN Users (Default/Max)                 | 8/10,000                                                                              | 8/10,000                                                                            | 8/10,000                                                                              | 8/10,000                                                                            | 8/10,000                                                                              | 8/10,000                                                                            |
| IPsec Tunnel Number                         | 20,000                                                                                | 20,000                                                                              | 20,000                                                                                | 20,000                                                                              | 20,000                                                                                | 20,000                                                                              |
| Firewall Policy Number                      | 40,000                                                                                | 40,000                                                                              | 40,000                                                                                | 40,000                                                                              | 60,000                                                                                | 60,000                                                                              |
| Management Ports                            | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>2 × HA ports (SFP+) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA port (SFP) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>2 × HA ports (SFP+) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA port (SFP) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>2 × HA ports (SFP+) | 1 × Console Port,<br>2 × USB3.0 Ports,<br>1 × MGT Port (RJ45),<br>1 × HA port (SFP) |
| Fixed I/O Ports <sup>(11)</sup>             | 6 × SFP+, 16 × SFP,<br>8 × GE (including 2<br>bypass pairs)                           | 2 × QSFP+, 16 × SFP+,<br>8 × GE (including 4<br>bypass pairs)                       | 6 × SFP+, 16 × SFP,<br>8 × GE (including 2<br>bypass pairs)                           | 2 × QSFP+, 16 × SFP+,<br>8 × GE (including 4<br>bypass pairs)                       | 6 × SFP+, 16 × SFP,<br>8 × GE (including 2<br>bypass pairs)                           | 2 × QSFP+, 16 × SFP+,<br>8 × GE (including 4<br>bypass pairs)                       |
| Wi-Fi/ 4G Dongle <sup>(12)</sup>            | 4G Dongle                                                                             | 4G Dongle                                                                           | 4G Dongle                                                                             | 4G Dongle                                                                           | 4G Dongle                                                                             | 4G Dongle                                                                           |
| Available Slots for Expansion Modules       | 1                                                                                     | 1                                                                                   | 1                                                                                     | 1                                                                                   | 1                                                                                     | 1                                                                                   |
| Expansion Module Option                     | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                     | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                   | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                     | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                   | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                     | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                   |
| Twin-mode HA                                | Yes                                                                                   | Yes                                                                                 | Yes                                                                                   | Yes                                                                                 | Yes                                                                                   | Yes                                                                                 |
| Local Storage                               | 64 GB                                                                                 | 64 GB                                                                               | 64 GB                                                                                 | 64 GB                                                                               | 64 GB                                                                                 | 64 GB                                                                               |
| Expansion Storage Options                   | 480GB / 960GB<br>/1.92TB SSD                                                          | 480GB / 960GB<br>/1.92TB SSD                                                        | 480GB / 960GB<br>/1.92TB SSD                                                          | 480GB / 960GB<br>/1.92TB SSD                                                        | 480GB / 960GB<br>/1.92TB SSD                                                          | 480GB / 960GB<br>/1.92TB SSD                                                        |
| Power Specification                         | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                     | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                   | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                     | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                   | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                     | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                   |
| Power Supply                                | AC 100-240V, 50/60<br>Hz DC 36~72V                                                    | AC 100-240V, 50/60<br>Hz DC 36~72V                                                  | AC 100-240V, 50/60<br>Hz DC 36~72V                                                    | AC 100-240V, 50/60<br>Hz DC 36~72V                                                  | AC 100-240V, 50/60<br>Hz DC 36~72V                                                    | AC 100-240V, 50/60<br>Hz DC 36~72V                                                  |
| Form Factor                                 | Rackmount, 1U                                                                         | Rackmount, 1U                                                                       | Rackmount, 1U                                                                         | Rackmount, 1U                                                                       | Rackmount, 1U                                                                         | Rackmount, 1U                                                                       |
| Dimensions (W × D × H, mm)                  | 436 × 437 × 44                                                                        | 436 × 437 × 44                                                                      | 436 × 437 × 44                                                                        | 436 × 437 × 44                                                                      | 436 × 437 × 44                                                                        | 436 × 437 × 44                                                                      |
| Dimensions (W × D × H, inches)              | 17.2 × 17.2 × 1.7                                                                     | 17.2 × 17.2 × 1.7                                                                   | 17.2 × 17.2 × 1.7                                                                     | 17.2 × 17.2 × 1.7                                                                   | 17.2 × 17.2 × 1.7                                                                     | 17.2 × 17.2 × 1.7                                                                   |
| Weight                                      | 18.7 lb (8.5 kg)                                                                      | 18.7 lb (8.5 kg)                                                                    | 18.7 lb (8.5 kg)                                                                      | 18.7 lb (8.5 kg)                                                                    | 18.7 lb (8.5 kg)                                                                      | 18.7 lb (8.5 kg)                                                                    |
| Working Temperature                         | 32-104°F (0-40°C)                                                                     | 32-104°F (0-40°C)                                                                   | 32-104°F (0-40°C)                                                                     | 32-104°F (0-40°C)                                                                   | 32-104°F (0-40°C)                                                                     | 32-104°F (0-40°C)                                                                   |
| Relative Humidity                           | 10-95%<br>non-condensing                                                              | 10-95%<br>non-condensing                                                            | 10-95%<br>non-condensing                                                              | 10-95%<br>non-condensing                                                            | 10-95%<br>non-condensing                                                              | 10-95%<br>non-condensing                                                            |

# Specifications (Continued)

|                                             | SG-6000-A5600-IN                                                                  | SG-6000-A5800-IN                                                                  | SG-6000-A6800-IN                                                                   | SG-6000-A7600-IN                                                                    |
|---------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                             |  |  |  |  |
| Firewall Throughput <sup>(2)</sup>          | 60/85 Gbps                                                                        | 80/95 Gbps                                                                        | 200 Gbps                                                                           | 280/320 Gbps                                                                        |
| NGFW Throughput <sup>(3)</sup>              | 40 Gbps                                                                           | 50 Gbps                                                                           | 80 Gbps                                                                            | 80 Gbps                                                                             |
| Threat Protection Throughput <sup>(4)</sup> | 25 Gbps                                                                           | 25 Gbps                                                                           | 30 Gbps                                                                            | 30 Gbps                                                                             |
| Maximum Concurrent Sessions <sup>(5)</sup>  | 25 Million                                                                        | 30 Million                                                                        | 35 Million                                                                         | 42 Million                                                                          |
| New Sessions/s <sup>(6)</sup>               | 900,000                                                                           | 1,000,000                                                                         | 900,000                                                                            | 900,000                                                                             |
| IPS Throughput <sup>(7)</sup>               | 45/65 Gbps                                                                        | 50 Gbps                                                                           | 80 Gbps                                                                            | 80 Gbps                                                                             |
| AV Throughput <sup>(8)</sup>                | 35 Gbps                                                                           | 35 Gbps                                                                           | 45 Gbps                                                                            | 45 Gbps                                                                             |
| IPsec VPN Throughput <sup>(9)</sup>         | 40 Gbps                                                                           | 45 Gbps                                                                           | 45 Gbps                                                                            | 45 Gbps                                                                             |
| SSL Proxy Throughput <sup>(10)</sup>        | 8.5 Gbps                                                                          | 8.5 Gbps                                                                          | 8.5 Gbps                                                                           | 8.5 Gbps                                                                            |
| Virtual Systems (Default/Max)               | 1/500                                                                             | 1/500                                                                             | 1/500                                                                              | 1/500                                                                               |
| SSL VPN Users (Default/Max)                 | 8/10,000                                                                          | 8/10,000                                                                          | 8/10,000                                                                           | 8/10,000                                                                            |
| IPsec Tunnel Number                         | 20,000                                                                            | 20,000                                                                            | 20,000                                                                             | 20,000                                                                              |
| Firewall Policy Number                      | 60,000                                                                            | 80,000                                                                            | 80,000                                                                             | 80,000                                                                              |
| Management Ports                            | 1 × Console Port, 2 × USB3.0 Ports,<br>1 × MGT Port (RJ45), 1 × HA port<br>(SFP)  | 1 × Console Port, 2 × USB3.0 Ports,<br>1 × MGT Port (RJ45), 1 × HA port<br>(SFP)  | 1 × Console Port, 2 × USB3.0 Ports,<br>1 × MGT Port (RJ45), 1 × HA port<br>(SFP)   | 1 × Console Port, 2 × USB3.0 Ports,<br>1 × MGT Port (RJ45), 1 × HA port<br>(SFP)    |
| Fixed I/O Ports <sup>(11)</sup>             | 2 × QSFP+, 16 × SFP+, 8 × GE<br>(including 4 bypass pairs)                        | 2 × QSFP+, 16 × SFP+, 8 × GE<br>(including 4 bypass pairs)                        | 4 × QSFP28 (or 2 × QSFP+, 2 ×<br>QSFP28),<br>12 × SFP+, 8 × SFP+/SFP               | 4 × QSFP28 (or 2 × QSFP+,<br>2 × QSFP28),<br>12 × SFP+, 8 × SFP+/SFP                |
| Wi-Fi/ 4G Dongle <sup>(12)</sup>            | 4G Dongle                                                                         | 4G Dongle                                                                         | N/A                                                                                | N/A                                                                                 |
| Available Slots for Expansion<br>Modules    | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |
| Expansion Module Option                     | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                 | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                 | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                  | IOCA-4SFP+IN<br>IOCA-2QSFP+IN<br>IOCA-2MM-BE-IN<br>IOCA-2SM-BE-IN                   |
| Twin-mode HA                                | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |
| Local Storage                               | 64 GB                                                                             | 64 GB                                                                             | 64 GB                                                                              | 64 GB                                                                               |
| Expansion Storage Options                   | 480GB / 960GB / 1.92TB SSD                                                        | 480GB / 960GB / 1.92TB SSD                                                        | 480GB / 960GB / 1.92TB SSD                                                         | 480GB / 960GB / 1.92TB SSD                                                          |
| Power Specification                         | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                 | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                 | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                  | 550W, Dual AC<br>(default), Dual DC<br>(optional)                                   |
| Power Supply                                | AC 100-240V, 50/60<br>Hz DC 36~72 V                                               | AC 100-240V, 50/60<br>Hz DC 36~72 V                                               | AC 100-240V, 50/60<br>Hz DC 36~72 V                                                | AC 100-240V, 50/60<br>Hz DC 36~72 V                                                 |
| Form Factor                                 | Rackmount, 1U                                                                     | Rackmount, 1U                                                                     | Rackmount, 1U                                                                      | Rackmount, 1U                                                                       |
| Dimensions (W × D × H, mm)                  | 436 × 437 × 44                                                                    | 436 × 437 × 44                                                                    | 436 × 542 × 44                                                                     | 436 × 542 × 44                                                                      |
| Dimensions (W × D × H, inches)              | 17.2 × 17.2 × 1.7                                                                 | 17.2 × 17.2 × 1.7                                                                 | 17.2 × 21.3 × 1.7                                                                  | 17.2 × 21.3 × 1.7                                                                   |
| Weight                                      | 18.7 lb (8.5 kg)                                                                  | 18.7 lb (8.5 kg)                                                                  | 20.3 lb (9.2 kg)                                                                   | 20.3 lb (9.2 kg)                                                                    |
| Working Temperature                         | 32-104°F (0-40°C)                                                                 | 32-104°F (0-40°C)                                                                 | 32-104°F (0-40°C)                                                                  | 32-104°F (0-40°C)                                                                   |
| Relative Humidity                           | 10-95% non-condensing                                                             | 10-95% non-condensing                                                             | 10-95% non-condensing                                                              | 10-95% non-condensing                                                               |

## Module Options

IOC-A-4SFP+IN



IOC-A-2MM-BE-IN



IOC-A-2SM-BE-IN

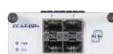


IOC-A-2QSFP+IN



| Names                    | 4SFP+ Expansion Module for Back Panel | 4SFP Multi-mode Bypass Expansion Module for Back Panel | 4SFP Single-mode Bypass Expansion Module for Back Panel | 2QSFP+ Expansion Module for Back Panel |
|--------------------------|---------------------------------------|--------------------------------------------------------|---------------------------------------------------------|----------------------------------------|
| I/O Ports <sup>(1)</sup> | 4 × SFP+, SFP+ module not included    | 4 × SFP, MM bypass (2 pairs of bypass ports)           | 4 × SFP, SM bypass (2 pairs of bypass ports)            | 2 × QSFP+                              |
| Dimension                | 1U                                    | 1U                                                     | 1U                                                      | 1U                                     |
| Weight                   | 2.09 lb (0.96 kg)                     | 2.09 lb (0.96 kg)                                      | 2.09 lb (0.96 kg)                                       | 2.09 lb (0.96 kg)                      |

IOC-A-F-4SFP+IN



IOC-A-F-8SFP+IN



IOC-A-F-8GE-IN



| I/O Ports <sup>(1)</sup> | 4SFP+ Expansion Module for Front Panel | 8SFP+ Expansion Module for Front Panel | 8GE (including 4 bypass pairs) Expansion Module for Front Panel |
|--------------------------|----------------------------------------|----------------------------------------|-----------------------------------------------------------------|
| Dimension                | 1U                                     | 1U                                     | 1U                                                              |
| Weight                   | 0.55 lb (0.25 kg)                      | 0.62 lb (0.28 kg)                      | 0.6 lb (0.27 kg)                                                |

### NOTES:

(1) Anti-Spam feature is not available on SG-6000-A200-IN and SG-6000-A200W-IN;

(2) Firewall throughput data is obtained under UDP traffic with 1518-byte packet size. The firewall throughput for A3700-IN/A3800-IN can be increased to 30 Gbps via additional IOC-A-4SFP+IN or IOC-A-2QSFP+IN expansion module. The firewall throughput for A5100-IN/A5155-IN/A5200-IN/A5255-IN/A5500-IN/A5555-IN/A5600-IN/A5800-IN/A7600-IN can be increased to 50/50/65/65/80/80/85/95/320 Gbps via additional IOC-A-2QSFP+IN expansion module;

(3) NGFW throughput data is obtained under 64 Kbytes HTTP traffic with application control and IPS enabled;

(4) Threat protection throughput data is obtained under 64 Kbytes HTTP traffic with Application Control, IPS, AV and URL filtering enabled;

(5) Maximum concurrent sessions is obtained under HTTP traffic;

(6) New sessions/s is obtained under HTTP traffic;

(7) IPS throughput data is obtained under bi-direction HTTP traffic detection with all IPS rules being turned on;

(8) AV throughput data is obtained under HTTP traffic with file attachment;

(9) IPsec throughput data is obtained under Preshare Key AES256+SHA-1 configuration and 1400-byte packet size;

(10) SSL proxy throughput data is obtained based on StoneOS 5.5R9 using AES128-GCM-SHA256 with all IPS rules being turned on; The data of A2715-IN/A2815-IN/A3615-IN/A3800-IN/A3815-IN is based on StoneOS R11 with IPS being turned off.

(11) SFP+ ports support SFP+ 10Gbps optical module, SFP 1000Mbps optical module and SFP 1000Mbps copper module; QSFP+ ports support 40GE 1×40Gbps module and can be split to 4 ×10Gbps tunnel.

(12) 4G dongle is connected via the USB port; 4G dongle is a third-party device that needs to be purchased separately, as the Hillstone A-Series NGFW does not include built-in 4G dongle.

All perimeter of A2715-IN/A2815-IN/A3615-IN/A3815-IN are obtained with additional IOC-A-F-4SFP+IN or IOC-A-F-8SFP+IN front panel expansion module. Unless specified otherwise, all performance, capacity and functionality are based on StoneOS 5.5R11. Results may vary based on StoneOS® version and deployment.

# Hillstone S-Series

## Network Intrusion Prevention System (NIPS)



As the threat landscape continues to evolve aggressively, an increasing number of network protection technologies have quickly emerged. Among these various technologies, Intrusion Prevention System (IPS) remains one of the most widely deployed solutions, regardless of platform or form factor. Hillstone Network-based IPS (NIPS) appliance operates in-line, and at wire speed, performing deep packet inspection, and assembling inspection of all network traffic. It also applies rules based on several methodologies, including protocol anomaly analysis and signature analysis to block threats. In addition, NIPS leverages AI technology to achieve DDoS protection and encrypted traffic detection without decryption for intelligent and efficient threat protection. Hillstone NIPS can be deployed in the network to inspect traffic left undetected by perimeter solutions, and is an integral part of network security systems for its high-performance, no compromise, best-of- breed protection capability and broad and flexible deployment scenarios.

## Product Highlights

### Unparalleled Threat Protection without Performance Compromise

The Hillstone NIPS platform has the most comprehensive high performance inspection engine, combined with the best- of-breed signature partnering with leading technology partners, providing customers the highest threat detection rate with the lowest total cost of ownership (TCO). Hillstone IPS engine has 99.6% blocking rate of static exploits and 98.325% blocking rate of live exploits (reported by NSS Labs).

The Hillstone NIPS platform provides high throughput, low latency and maximum availability to maintain efficient security operations without compromising network performance. NIPS combines protocol analysis, threat reputation and other features that deliver threat protection from Layer 2 to Layer 7, including ARP attack, Dos/DDoS attack, abnormal protocols, malicious URLs, malwares and web attacks.

### Ease of Deployment and Centralized Management

Deploying and managing the Hillstone NIPS is simple, with minimum overhead. It can be deployed in the following modes to meet security requirements and ensure optimal network connectivity:

- Active protection (intrusion prevention mode), real time monitoring and blocking.
- Passive detection (intrusion detection mode), real time monitoring and alert.

The Hillstone NIPS can be managed by the Hillstone Security Management Platform (HSM). Administrators can centrally register, monitor, and upgrade NIPS devices deployed in different branches or locations, with a unified management policy across the network for maximum efficiency.

### Granular Reporting with User Targeted Viewpoints

Hillstone NIPS provides comprehensive visibility based on protocol, application, user and content. It can identify more than 7,000 applications, including hundreds of mobile and cloud applications.

Bringing multiple sources together, the system can identify contextual information to make proper blocking decisions. With a granular and robust reporting function, it offers visibility across different views:

- Unique templates, based on whether you are a business system administrator, a security administrator or the CIO or executive.
- Organized Threat Content – whether a security, system risk, network threat or traffic view – in order to help you clearly understand the risk and make the right decision.

## Features

### Intrusion Prevention

- 12,700+ signatures, protocol anomaly detection, rate-based detection, custom signatures, manual, automatic push or pull signature updates, integrated threat encyclopedia
- IPS Actions: monitor, block, reset (attackers IP or victim IP, incoming interface) with expiry time
- Packet logging option
- Filter based selection and review: severity, target, OS, application or protocol
- IP exemption from specific IPS signatures
- IDS sniffer mode
- IPv4 and IPv6 rate-based DoS protection with threshold settings against TCP Syn flood, TCP/UDP/SCTP port scan, ICMP sweep, TCP/UDP/SCIP/ICMP session flooding (source/destination)
- Active bypass with bypass interfaces
- Predefined prevention configuration
- Support web server protection, including CC attack, external link attack, iframe, cross-site request forgery (CSRF) attack, sensitive file scanning attack, etc.
- Support protection of brute force attack including FTP, MSRPC, POP3, SMTP, SUNRPC, telnet, VNC, RDP, SSH, SMB, LDAP, IMAP and HTTP, SVN, CVS, RSH, MongoDB, Oracle, MSsql, NNTP, REDIS, IRC, RTSP, Cassandra, Rlogin, FireBird, Kerberos, SIP, RADIUS, DB2, PGSQL, Sybase, REXEC, SOCKET5 protocols
- Support weak password detection for FTP, POP3, SMTP, Telnet, IMAP, HTTP, Cassandra, DB2, PGSQL, RLOGIN, Sybase, REXEC, SOCKET5, NNTP, REDIS, IRC, RTSP protocols
- Support advanced evasion detection for port remapping, IP/TCP fragmentation, and URL/Unicode encoded malicious payloads
- Support user-defined protocol inspection depth with configurable scan lengths exceeding 4KB
- Support importing/exporting custom weak passwords in the weak password dictionary, with a maximum capacity of 200,000 items
- Support HTTP plaintext password detection
- Threat Details support URI and Attack Data Decoding
- Support MPLS frame inspection
- Support scanning and parsing base64-encoded data
- Detect abnormal encrypted traffic without decryption
- Support global IP whitelist

### Threat Correlation Analytics

- Correlation among unknown threats, abnormal behavior and application behavior to discover potential threat or attacks
- Multi-dimension correlation rules, automatic daily update from the cloud

### Advanced Threat Detection

- Behavior-based advanced malware detection
- Detection of more than 2000 known and unknown malware families including Virus, Worm, Trojan, Spyware, Overflow etc.
- Real-time, online, malware behavior model database update
- Support mapping detected threats to MITRE ATT&CK tactics
- Support automated Attack Surface Management (ASM)
- Support parsing of X-Forwarded-For (XFF), X-Real-IP, and cdn-src-ip headers

### Abnormal Behavior Detection

- Behavior modeling based on L3-L7 baseline traffic to reveal anomalous network behavior, such as HTTP scanning, Spider, SPAM, SSH/FTP weak password, and spyware
- Detection of DDoS including Flood, Sockstress, zip of death, reflect, DNS query, SSL DDoS and application DDoS
- Supports inspection of encrypted tunneling traffic for unknown applications
- Real-time, online, abnormal behavior model database update

### Antivirus

- Manual, automatic push or pull signature updates
- Flow-based antivirus: protocols include HTTP/HTTPS, SMTP, POP3, IMAP, FTP, SMB, support virus filtering and blocking of files transferred with SMB protocol when resuming from breakpoint

- Compressed file virus scanning
- Intelligent virus detection for PE, ELF, PDF and Microsoft Office files
- Support custom MD5 and URL blocklists/allowlists with external dynamic list integration
- Support compressed file scanning across multiple archive formats including Zip, Rar, 7z, and Tar, with up to 100 recursive decompression layers
- Support dual Antivirus detection engines, including MD5-based detection and AI-powered detection

### Attack Defense

- Abnormal protocol attack defense
- Anti-DoS/DDoS, including SYN Flood, DNS Query Flood defense, SIP Flood defense, etc.
- IP scanning and port scanning
- Intelligent DoS/DDoS defense with ML-based baseline establishment
- Attack defense for Internet Control Message Protocol (ICMP) redirection, ARP, and Malformed Packet

### URL Filtering

- Flow-based web filtering inspection
- Manually defined web filtering based on URL, web content and MIME header
- Dynamic web filtering with cloud-based real-time categorization database: over 500 million URLs with 64 categories (8 of which are security related)
- Additional web filtering features:
  - Filter Java Applet, ActiveX or cookie
  - Block HTTP Post
  - Log search keywords
  - Exempt scanning encrypted connections on certain categories for privacy
- Web filtering profile override: allows administrator to temporarily assign different profiles to user/group/IP
- Web filter local categories and category rating override
- Support allow/block list
- Customizable alarm

### Anti-Spam

- Real-time spam classification and prevention
- Confirmed spam, suspected spam, bulk spam, valid bulk
- Protection regardless of the language, format, or content of the message
- Support both SMTP and POP3 email protocols
- Inbound and outbound detection
- Whitelists to allow emails from trusted domain/email addresses
- User-defined blacklists

### Cloud-Sandbox

- Upload malicious files to cloud sandbox for analysis
- Support protocols including HTTP/HTTPS, POP3, IMAP, SMTP and FTP
- Support file types including PE, ZIP, RAR, Office, PDF, APK, JAR and SWF
- File transfer direction and file size control
- Provide complete behavior analysis report for malicious files
- Global threat intelligence sharing, real-time threat blocking
- Support detection only mode without uploading files

### Data Security

- Content filtering: file types include doc, docx, xls, xlsx, ppt, pptx, txt; file protocols include FTP, HTTP(S), SMTP(S), POP3(S), IMAP(S), SMB
- Support file filtering with over 100 file formats
- Support network behavior recording

### Botnet C&C Prevention

- Discover intranet botnet host by monitoring C&C connections and block further advanced threats such as botnet and ransomware
- Regularly update the botnet server addresses
- Prevention for C&C IP and domain
- Support TCP, HTTP, DNS and TLS protocols detection
- Support Domain Generation Algorithm (DGA) detection
- IP and domain whitelists
- Support manually/automatically imports multiple C2 threat intelligence, and exporting custom threat intelligence

## Features (Continued)

### IP Reputation

- Identify and filter traffic from risky IPs such as botnet hosts, spammers, Tor nodes, breached hosts, and brute force attacks
- Logging, dropping packets, or blocking for different types of risky IP traffic
- Regular IP reputation signature database upgrade

### Application Control

- Over 4,000 applications that can be filtered by name, category, subcategory, technology and risk
- Each application contains a description, risk factors, dependencies, typical ports used, and URLs for additional reference
- Actions: block, monitor
- Provide multi-dimensional monitoring and statistics for applications running in the cloud, including risk category and characteristics
- Support encrypted application

### Quality of Service (QoS)

- Support encrypted application
- Max/guaranteed bandwidth tunnels or IP/user basis
- Tunnel allocation based on security domain, interface, address, user/user group, server/server group, application/app group, TOS, VLAN
- Bandwidth allocated by time, priority, or equal bandwidth sharing
- Type of Service (TOS) and Differentiated Services (DiffServ) support
- Prioritized allocation of remaining bandwidth
- Maximum concurrent connections per IP
- Bandwidth allocation based on URL category
- Bandwidth limit by delaying access for user or IP

### IPv6

- Management over IPv6, IPv6 logging and HA
- IPv6 tunneling, DNS64/NAT64 etc.
- IPv6 routing protocols, static routing, policy routing, ISIS, RIPng, OSPFv3 and BGP4+
- IPS, Application identification, Antivirus, Access control, ND attack defense

### VSYS

- System resource allocation to each VSYS
- CPU virtualization
- Non-root VSYS support IPS, URL filtering, Policy, QoS, etc.
- VSYS monitoring and statistics
- Support backup of all VSYS configurations at once

### SSL Proxy

- SSL offload: SSL traffic decryption
- SSL require/ exempt: SSL traffic allowed or block based on the policy rules without decryption
- IP and domain whitelists

### Flexible Traffic Analysis and Control

- Support 3 operation modes: Route/NAT (layer 3), Transparent (layer 2) with optional bypass interface, and TAP mode (IDS Mode) with Hillstone Firewall Integration
- Traffic analysis and control based on policy rules by source/destination zone, source/destination IP address, users, service or applications

### High Availability

- Redundant heartbeat interfaces
- AP and peer mode
- Standalone session synchronization
- HA reserved management interface
- Failover:
  - Port, local & remote link monitoring
  - Stateful failover
  - Sub-second failover
  - Failure notification
- Deployment Options:
  - HA with link aggregation
  - Full mesh HA

- Geographically dispersed HA

### Visible Administration

- Management access: HTTP/HTTPS, SSH, telnet, netconf, console
- Central Management: Hillstone Security Manager (HSM), web service APIs
- Two-factor authentication: username/password, HTTPS certificates file
- System Integration: SNMP, syslog, alliance partnerships
- Upload threat data to iSource for analysis
- Rapid deployment: USB auto-install, local and remote script execution
- Dynamic real-time dashboard status and drill-in monitoring widgets
- Storage device management: storage space threshold customization and alarm, old data overlay, stop recording
- Support packet upload and reply via WebUI
- Language support: English
- Support CLI access from WebUI

### Logs and Reporting

- Logging facilities: local storage for up to 6 months, multiple syslog servers and multiple Hillstone Security Audit (HSA) platforms
- Encrypted logging and log integrity with HSA scheduled batch log uploading
- Reliable logging using TCP option (RFC 3195)
- Detailed traffic logs: forwarded, violated sessions, local traffic, invalid packets
- Comprehensive event logs: system and administrative activity audits, routing & networking, VPN, user authentications, WiFi related events
- Support displaying attack result and associated user account in threat logs
- Threat log evidence display and highlighting
- Log aggregation: support aggregation of AV and C&C logs
- IP and service port name resolution option
- Brief traffic log format option
- Granular Reporting with User Targeted Viewpoints
  - HA Management/C-level View
  - Business System Owner View
  - Network Security Administrator View
- Send alert notifications of event logs via SMS, WeCom, Feishu, and Ding Talk; Send alert notifications of threat logs via WeCom, Feishu, and Ding Talk

### Statistics and Monitoring

- Application, URL, threat events statistic and monitoring
- Real-time traffic statistic and analytics
- System information such as concurrent session, CPU, Memory and temperature
- iQOS traffic statistic and monitoring, link status monitoring
- Support traffic information collection and forwarding via Netflow (v9.0)
- Cloud-based threat intelligence push service
- Geographical distribution of external network attacks
- Statistical analysis and retrospective analysis of threat events from asset-centric, attacker-centric, and threat-centric perspectives
- Specialized risk monitoring for mining, ransomware, and weak password
- Support threat remediation

### Network Configuration

- Support Jumbo Frame forwarding

### CloudView

- Cloud-based security monitoring
- 24/7 access from web or mobile application
- Device status, traffic and threat monitoring
- Cloud-based log retention and reporting

## Specifications

|                                                                               | S1115-IN<br> | S1200-IN<br> | S1215-IN<br> | S1900-IN<br> | S2100-IN<br> |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>IPS Throughput <sup>(1)</sup></b>                                          | 2 Gbps                                                                                        | 3 Gbps                                                                                        | 3 Gbps                                                                                        | 3 Gbps                                                                                          | 5 Gbps                                                                                          |
| <b>Maximum Concurrent Connections, TCP (Standard/with AEL) <sup>(2)</sup></b> | 1.2 Million                                                                                   | 1.2 Million                                                                                   | 1.2 Million                                                                                   | 1.2 Million                                                                                     | 1.2 Million                                                                                     |
| <b>New Connections per Second, HTTP <sup>(3)</sup></b>                        | 30,000                                                                                        | 40,000                                                                                        | 40,000                                                                                        | 50,000                                                                                          | 60,000                                                                                          |
| <b>Stoneshield</b>                                                            | N/A                                                                                           | N/A                                                                                           | N/A                                                                                           | N/A                                                                                             | N/A                                                                                             |
| <b>Virtual Systems (Default/Max)</b>                                          | 1/5                                                                                           | 1/5                                                                                           | 1/5                                                                                           | 1/5                                                                                             | 1/5                                                                                             |
| <b>Storage <sup>(4)</sup></b>                                                 | 500 GB / 1 TB SSD                                                                             | 500 GB / 1 TB SSD                                                                             | 500 GB / 1 TB SSD                                                                             | 500 GB / 1 TB SSD                                                                               | 500 GB / 1 TB SSD                                                                               |
| <b>Form Factor</b>                                                            | 1U                                                                                            | 1U                                                                                            | 1U                                                                                            | 1U                                                                                              | 1U                                                                                              |
| <b>Management Ports</b>                                                       | 2 × USB port, 1 × MGT port, 1 × Console port, 1 × HA                                          | 2 × USB port, 1 × MGT port, 1 × Console port                                                  | 2 × USB port, 1 × MGT port, 1 × Console port, 1 × HA                                          | 2 × USB Port, 1 × MGT, 1 × Console Port                                                         | 2 × USB port, 1 × MGT port, 1 × Console port                                                    |
| <b>Fixed I/O Ports</b>                                                        | 8 × SFP, 8 × GE (including 2 pairs Bypass port),                                              | 2 × SFP+, 8 × SFP, 8 × GE                                                                     | 8 × GE (including 2 pairs Bypass port), 8 × SFP                                               | 8 × GE (including 1 pair Bypass port)                                                           | 2 × SFP+, 8 × SFP, 8 × GE                                                                       |
| <b>Available Slots for Expansion Modules</b>                                  | 1 x Generic Slot                                                                              | N/A                                                                                           | 1 x Generic Slot                                                                              | N/A                                                                                             | N/A                                                                                             |
| <b>Expansion Module Option</b>                                                | IOC-S-F-4SFP+-A-IN<br>IOC-S-F-8SFP+-A-IN<br>IOC-S-F-8GE-B-A-IN                                | N/A                                                                                           | IOC-S-F-4SFP+-A-IN<br>IOC-S-F-8SFP+-A-IN<br>IOC-S-F-8GE-B-A-IN                                | N/A                                                                                             | N/A                                                                                             |
| <b>Latency</b>                                                                | <300 μs                                                                                       | <300 μs                                                                                       | <300 μs                                                                                       | <70 μs                                                                                          | <350 μs                                                                                         |
| <b>Bypass Support (Default/Max.)</b>                                          | 4/12                                                                                          | N/A                                                                                           | 4/12                                                                                          | 2/2                                                                                             | N/A                                                                                             |
| <b>Power Supply</b>                                                           | AC 100-240V 50/60 Hz                                                                          | AC 100~240V 50/60Hz                                                                           | AC 100-240 V 50/60 Hz                                                                         | DC-36~72V<br>AC100-240V50/60Hz                                                                  | AC 100-240 V 50/60 Hz                                                                           |
| <b>Maximum Power Consumption</b>                                              | 60W<br>1 × AC power supply<br>2 × AC power supply                                             | 50W<br>1 × AC power supply<br>2 × AC power supply                                             | 60W<br>1 × AC power supply<br>2 × AC power supply                                             | 50W<br>1 × AC power supply<br>2 × AC power supply                                               | 50W<br>1 × AC power supply<br>2 × AC power supply                                               |
| <b>Dimension (WxDxH, mm)</b>                                                  | 17.3 × 13.4 × 1.7 in<br>(440 × 340 × 44 mm)                                                   | 17.3 × 12.6 × 1.7 in<br>(440 × 320 × 44 mm)                                                   | 17.3 × 13.4 × 1.7 in<br>(440 × 340 × 44 mm)                                                   | 17.1 × 12.6 × 1.7 in<br>(436 × 320 × 44 mm)                                                     | 17.3 × 12.6 × 1.7 in<br>(440 × 320 × 44 mm)                                                     |
| <b>Weight</b>                                                                 | 10.0 lb (4.55 kg)                                                                             | 17 lb (7.7 kg)                                                                                | 10.0 lb (4.55 kg)                                                                             | 14.33 lb (6.5 kg)                                                                               | 16.9 lb (7.7 kg)                                                                                |
| <b>Temperature</b>                                                            | 32-104°F (0-40°C)                                                                             | 32-104°F (0-40°C)                                                                             | 32-104°F (0-40°C)                                                                             | 32-104°F (0-40°C)                                                                               | 32-104°F (0-40°C)                                                                               |
| <b>Relative Humidity</b>                                                      | 10-95% (no dew)                                                                               | 10%~95% (no dew)                                                                              | 10-95% (no dew)                                                                               | 10%-95% (no dew)                                                                                | 10%-95% (no dew)                                                                                |

## Specifications (Continued)

|                                                                               | S2115-IN<br> | S2300-IN<br> | S2700-IN<br> | S3500-IN<br> | S3805-IN<br> |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>IPS Throughput <sup>(1)</sup></b>                                          | 5 Gbps                                                                                        | 9 Gbps                                                                                        | 11 Gbps                                                                                       | 15 Gbps                                                                                         | 20 Gbps                                                                                         |
| <b>Maximum Concurrent Connections, TCP (Standard/with AEL) <sup>(2)</sup></b> | 1.2 Million                                                                                   | 3 Million                                                                                     | 6 Million                                                                                     | 8 Million                                                                                       | 12 Million                                                                                      |
| <b>New Connections per Second, HTTP <sup>(3)</sup></b>                        | 60,000                                                                                        | 60,000                                                                                        | 60,000                                                                                        | 140,000                                                                                         | 250,000                                                                                         |
| <b>Stoneshield</b>                                                            | N/A                                                                                           | N/A                                                                                           | N/A                                                                                           | N/A                                                                                             | N/A                                                                                             |
| <b>Virtual Systems (Default/Max)</b>                                          | 1/5                                                                                           | 1/5                                                                                           | 1/50                                                                                          | 1/50                                                                                            | 1/50                                                                                            |
| <b>Storage <sup>(4)</sup></b>                                                 | 500 GB / 1 TB SSD                                                                             | 500 GB / 1 TB SSD                                                                             | 500 GB / 1 TB SSD                                                                             | 1 TB SSD                                                                                        | 1 TB SSD                                                                                        |
| <b>Form Factor</b>                                                            | 1U                                                                                            | 1U                                                                                            | 1U                                                                                            | 1U                                                                                              | 1U                                                                                              |
| <b>Management Ports</b>                                                       | 2×USB port, 1×MGT port, 1×Console port, 1×HA port                                             | 2×USB port, 1×MGT port, 1×Console port, 1×HA port                                             | 2×USB port, 1×MGT port, 1×Console port, 1×HA port                                             | 2×USB port, 1×MGT port, 1×Console port, 1×HA port                                               | 2×USB port, 1×MGT port, 1×Console port, 1×HA port                                               |
| <b>Fixed I/O Ports</b>                                                        | 8×SFP, 8×GE (including 2 pairs Bypass port)                                                   | 2×SFP+, 8×SFP, 16×GE (including 2 pairs Bypass port)                                          | 2×SFP+, 8×SFP, 16×GE (including 2 pairs Bypass port)                                          | 2×SFP+, 8×SFP, 16×GE (including 2 pairs Bypass port)                                            | 2×QSFP+, 16×SFP+, 8×GE (including 4 pairs Bypass port)                                          |
| <b>Available Slots for Expansion Modules</b>                                  | 1×Generic Slot                                                                                | N/A                                                                                           | 1×Generic Slot                                                                                | 1×Generic Slot                                                                                  | 1×Generic Slot                                                                                  |
| <b>Expansion Module Option</b>                                                | IOC-S-F-4SFP+-A-IN<br>IOC-S-F-8SFP+-A-IN<br>IOC-S-F-8GE-B-A-IN                                | N/A                                                                                           | IOC-S-4SFP+-A-IN<br>IOC-S-2MM-BE-A-IN<br>IOC-S-2SM-BE-A-IN<br>IOC-S-2QSFP+-A-IN               | IOC-S-4SFP+-A-IN<br>IOC-S-2MM-BE-A-IN<br>IOC-S-2SM-BE-A-IN<br>IOC-S-2QSFP+-A-IN                 | IOC-S-4SFP+-A-IN<br>IOC-S-2MM-BE-A-IN<br>IOC-S-2SM-BE-A-IN<br>IOC-S-2QSFP+-A-IN                 |
| <b>Latency</b>                                                                | <300 μs                                                                                       | <300 μs                                                                                       | <300 μs                                                                                       | <300 μs                                                                                         | <300 μs                                                                                         |
| <b>Bypass Support (Default/Max.)</b>                                          | 4/12                                                                                          | 4/4                                                                                           | 4/4                                                                                           | 4/4                                                                                             | 8/8                                                                                             |
| <b>Power Supply</b>                                                           | AC 100-240 V 50/60 Hz                                                                         | AC 100~240V 50/60Hz                                                                           | AC 100-240 V 50/60 Hz                                                                         | DC -36~-72 V<br>AC 100-240 V 50/60Hz                                                            | DC -36~-72 V<br>AC 100-240 V 50/60Hz                                                            |
| <b>Maximum Power Consumption</b>                                              | 60W<br>1×AC power supply<br>2×AC power supply                                                 | 100W<br>1×AC power supply<br>2×AC power supply                                                | 100W<br>1×AC power supply<br>2×AC power supply                                                | 100W<br>2×AC power supply<br>2×DC power supply                                                  | 280W<br>2×AC power supply<br>2×DC power supply                                                  |
| <b>Dimension (WxDxH, mm)</b>                                                  | 17.3×13.4×1.7 in<br>(440×340×44 mm)                                                           | 17.2×17.2×1.7 in<br>(436×437×44mm)                                                            | 17.1×17.2×1.7 in<br>(436×320×44mm. Not include expansion module)                              | 17.1×17.2×1.7 in<br>(436×320×44mm, Including power module handle)                               | 17.1×21.3×1.7 in<br>(436×542×44mm, Including power module handle)                               |
| <b>Weight</b>                                                                 | 10.0 lb (4.55kg)                                                                              | 20.7 lb (9.4 kg)                                                                              | 20.9 lb (9.5kg, Including accessories and all packages)                                       | 26.0 lb (11.8kg, Including accessories and all packages)                                        | 32.6 lb (14.8kg, Including accessories and all packages)                                        |
| <b>Temperature</b>                                                            | 32-104°F (0-40°C)                                                                             | 32-104°F (0-40°C)                                                                             | 32-104°F (0-40°C)                                                                             | 32-104°F (0-40°C)                                                                               | 32-104°F (0-40°C)                                                                               |
| <b>Relative Humidity</b>                                                      | 10-95% (no dew)                                                                               | 10%~95% (no dew)                                                                              | 10%~95% (no dew)                                                                              | 10%~95% (no dew)                                                                                | 10%~95% (no dew)                                                                                |

## Specifications (Continued)

|                                                                               | <b>S3900-IN</b><br> | <b>S3915-IN</b><br> | <b>S5500-IN</b><br> |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>IPS Throughput <sup>(1)</sup></b>                                          | 25/40 Gbps                                                                                           | 30 Gbps                                                                                              | 45/75 Gbps                                                                                             |
| <b>Maximum Concurrent Connections, TCP (Standard/with AEL) <sup>(2)</sup></b> | 12 Million                                                                                           | 15 Million                                                                                           | 24 Million                                                                                             |
| <b>New Connections per Second, HTTP <sup>(3)</sup></b>                        | 380,000                                                                                              | 380,000                                                                                              | 550,000                                                                                                |
| <b>Stoneshield</b>                                                            | N/A                                                                                                  | N/A                                                                                                  | N/A                                                                                                    |
| <b>Virtual Systems (Default/ Max)</b>                                         | 1/50                                                                                                 | 1/50                                                                                                 | 1/50                                                                                                   |
| <b>Storage <sup>(4)</sup></b>                                                 | 1 TB SSD                                                                                             | 1 TB SSD                                                                                             | 1 TB SSD                                                                                               |
| <b>Form Factor</b>                                                            | 1U                                                                                                   | 1U                                                                                                   | 1U                                                                                                     |
| <b>Management Ports</b>                                                       | 2 x USB port, 1 x MGT port, 1 x Console port<br>2 x HA port (SFP+)                                   | 2 x USB Port, 1 x MGT port, 1 x Console port,<br>1 x HA port                                         | 2 x USB port, 1 x MGT port, 1 x Console port,<br>1 x HA port (SFP+)                                    |
| <b>Fixed I/O Ports</b>                                                        | 6 x SFP+, 16 x SFP, 8 x GE (including 2 pairs Bypass port)                                           | 2 x QSFP+, 16 x SFP+, 8 x GE (including 4 pairs Bypass port)                                         | 2 x QSFP+, 16 x SFP+, 8 x GE (including 4 pairs Bypass port)                                           |
| <b>Available Slots for Expansion Modules</b>                                  | 1 x Generic Slot                                                                                     | 1 x Generic Slot                                                                                     | 1 x Generic Slot                                                                                       |
| <b>Expansion Module Option</b>                                                | IOC-S-4SFP+-A-IN<br>IOC-S-2QSFP+-A-IN<br>IOC-S-2MM-BE-A-IN<br>IOC-S-2SM-BE-A-IN                      | IOC-S-4SFP+-A-IN<br>IOC-S-2QSFP+-A-IN<br>IOC-S-2MM-BE-A-IN<br>IOC-S-2SM-BE-A-IN                      | IOC-S-4SFP+-A-IN<br>IOC-S-2QSFP+-A-IN<br>IOC-S-2MM-BE-A-IN<br>IOC-S-2SM-BE-A-IN                        |
| <b>Latency</b>                                                                | <300 $\mu$ s                                                                                         | <300 $\mu$ s                                                                                         | <300 $\mu$ s                                                                                           |
| <b>Bypass Support (Default/Max.)</b>                                          | 4/4                                                                                                  | 8/8                                                                                                  | 8/8                                                                                                    |
| <b>Power Supply</b>                                                           | DC -36~ -72 V<br>AC 100-240 V 50/60 Hz                                                               | DC -36~ -72 V<br>AC 100-240 V 50/60 Hz                                                               | DC -36~ -72 V<br>AC 100-240 V 50/60 Hz                                                                 |
| <b>Maximum Power Consumption</b>                                              | 280W<br>2 x AC power supply<br>2 x DC power supply                                                   | 280W<br>2 x AC power supply<br>2 x DC power supply                                                   | 320W<br>2 x AC power supply<br>2 x DC power supply                                                     |
| <b>Dimension (WxDxH, mm)</b>                                                  | 17.1 x 21.3 x 1.7 in (436 x 542 x 44mm. Including power module handle)                               | 17.1 x 21.3 x 1.7 in (436 x 542 x 44mm. Including power module handle)                               | 17.1 x 21.3 x 1.7 in (436 x 542 x 44mm)                                                                |
| <b>Weight</b>                                                                 | 32.6 lb (14.8kg, Including accessories and all packages)                                             | 32.6 lb (14.8kg, Including accessories and all packages)                                             | 32.6 lb (14.8kg, Including accessories and all packages)                                               |
| <b>Temperature</b>                                                            | 32-104°F (0-40°C)                                                                                    | 32-104°F (0-40°C)                                                                                    | 32-104°F (0-40°C)                                                                                      |
| <b>Relative Humidity</b>                                                      | 10%~95% (no dew)                                                                                     | 10%~95% (no dew)                                                                                     | 10%~95% (no dew)                                                                                       |

## Module Options

| Module    | IOC-S-F-4SFP+-A-IN               | IOC-S-F-8SFP+-A-IN               | IOC-S-F-8GE-B-A-IN                                 | IOC-S-4SFP+-A-IN                   |
|-----------|----------------------------------|----------------------------------|----------------------------------------------------|------------------------------------|
| I/O Ports | 4 x SFP+ Ports (for Front Panel) | 8 x SFP+ Ports (for Front Panel) | 8 x GE, including 4 bypass pairs (for Front Panel) | 4 x SFP+, SFP+ module not included |
| Dimension | 1U                               | 1U                               | 1U                                                 | 1U                                 |
| Weight    | 0.55 lb (0.25 kg)                | 0.62 lb (0.28 kg)                | 0.6 lb (0.27 kg)                                   | 2.09 lb (0.96 kg)                  |

| Module    | IOC-S-2MM-BE-A-IN                            | IOC-S-2SM-BE-A-IN                            | IOC-S-2QSFP+-A-IN |
|-----------|----------------------------------------------|----------------------------------------------|-------------------|
| I/O Ports | 4 x SFP, MM bypass (2 pairs of bypass ports) | 4 x SFP, SM bypass (2 pairs of bypass ports) | 2 x QSFP+         |
| Dimension | 1U                                           | 1U                                           | 1U                |
| Weight    | 2.09 lb (0.96 kg)                            | 2.09 lb (0.96 kg)                            | 2.09 lb (0.96 kg) |

### NOTES:

- (1) IPS throughput data is obtained under HTTP traffic with all IPS rules being turned on. The data for S3900-IN/S5500-IN can be increased to 40/75 Gbps via additional IOC-S-2QSFP+-A-IN expansion module;
  - (2) Maximum concurrent connections are obtained under TCP traffic; and it can be upgraded with Additional Enhanced License (AEL);
  - (3) New Connections per Second are obtained under HTTP traffic with all IPS rules being turned off;
  - (4) 1TB storage for S1115-IN, S1200-IN, S1215-IN, S1900-IN, S2100-IN, S2115-IN, S2300-IN and S2700-IN is only available on devices equipped with dual AC power supplies; The actual available space is smaller and may vary depending on the operating system for management space reservation.
- Unless specified otherwise, all performance, capacity and functionality are based on NIPS 6.1. Results may vary based on NIPS version and deployment.



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