HALTDOS SWIFT TECHSPECS

Base Models	HD-SFT-4100	HD-SFT-4600	HD-SFT-4620	HD-SFT-5100	HD-SFT-5400	HD-SFT-6200
MITIGATION PERFORMANCE						
L4 Throughput	upto 5 Gbps	upto 24 Gbps	upto 24 Gbps	upto 48 Gbps	upto 72 Gbps	upto 120 Gbps
L7 Throughput	upto 4 Gbps	upto 20 Gbps	upto 25 Gbps	upto 40 Gbps	upto 60 Gbps	upto 100 Gbps
WAF Throughput	upto 4 Gbps	upto 20 Gbps	upto 25 Gbps	upto 40 Gbps	upto 60 Gbps	upto 100 Gbps
SSL Throughput	4 Gbps	20 Gbps	50 Gbps	40 Gbps	50 Gbps	100 Gbps
Compression Throughput	4 Gbps	20 Gbps	37 Gbps	24 Gbps	37 Gbps	66 Gbps
Decompression Throughput	5 Gbps	20 Gbps	54 Gbps	30 Gbps	54 Gbps	120 Gbps
SSL/TLS Connections per Second	22K (RSA 2K) 5.5K (RSA 4K) 15K (ECC)	40K (RSA 2K) 10K (RSA 4K) 25K (ECC)	40K (RSA 2K) 10K (RSA 4K) 25K (ECC)	40K (RSA 2K) 10K (RSA 4K) 25K (ECC)	96K (RSA 2K) 24K (RSA 4K) 48K (ECC)	96K (RSA 2K) 24K (RSA 4K) 48K (ECC)
L4 Connection per Second	480 K	960 K	1.2 M	1.5 M	3 M	4.2 M
L7 Request per Second	750 K	3 M	3M	7 M	10 M	15 M
Max Concurrent Connections	24 M	24 M	32 M	56 M	96 M	160 M
Induced Latency	< 1 milli-second					
HARDWARE SPECS						
Processor	Intel Xeon	Intel Xeon	Intel Xeon	Intel Xeon	Intel Xeon	Intel Xeon
CPU Cores	8	20	64	32	40	64
Minimum Memory	16 GB	32 GB	256 GB	64 GB	128 GB	256 GB
Minimum Hard Disk	256 GB SSD	256 GB SSD	2 TB SSD	512 GB SSD	1 TB SSD	2 TB SSD
	Option available for RAID or dual partition					
Additional Specs	Built-in TPM Chip and Hardware HSM for SSL offloading & compression optimization. Option available for FIPS-140-2 (additional charge) or non-FIPS compliant HSM					
Form Factor	1U/2U Rack Mount Server (19-inch mounting)					
Power Supply	Redundant Power Supply (Hot Swappable) AC 170-240V, 50 Hz					
Operating Temperature	0° – 40° C					
Humidity	8% - 95% (non-condensing)					
Hardware Virtualization	NA	upto 15	upto 25	upto 25	upto 30	upto 50
INSPECTION PORTS						
1 GE PORTS	8	8	2	-	-	-
10 GE PORTS	-	2	4	4	8	8
25 GE PORTS	-	-	-	-	-	-
40 GE PORTS	-	-	-	2	2	4
100 GE PORTS	-	-	-	-	-	-
OUT OF BAND PORTS						
1 GE (RJ-45) Ports	2	2	2	2	2	2
Console (RS232/RJ45) Ports	1	1	1	1	1	1
HA Ports (RJ-45/SFP/SFP+)	1	1	1	1	1	1
Input/Output (USB)	2	2	2	2	2	2
TECHNOLOGY, CERTIFICATION & SUPPORT						
Platform	Haltdos Platform – hdPlatform (EAL 2+ Certified)					
Technology	Signature with Threat Intelligence, Machine Learning					
License	Unlimited applications. Bandwidth capping based on configured license. Upgrade possible without hardware replacement upto max supported bandwidth on hardware					
Certification	FCC, ROHS, CE compliant, Common Criteria EAL 2+					
Support	24x7 Support with dedicated Account Manager					
Warranty	1 year software and hardware maintenance. Additional changes for extended warranty					
Training	OEM driven hands-on training					
TAC Support	TAC support in India					
OPERATION MODE						
Network Operations	Inline Reverse Proxy, Inline Bridge, Inline Router Mode, Inline L2 Transparent, Offline					
Inline Modes	Proxy or Direct Server Return					
Deployment Modes	1-Arm or n-Arm					
Binding	Immediate or Delayed binding					
IP Stack	Dual IPv4 & IPv6 stack					
HTTP Protocols	HTTP 0.9/1.0/1.1/2.0 with translation (all versions of HTML, XHTML supported)					
Web Socket Support	Yes					
Virtual Matrix Architecture	Yes					
Direct Access Mode	Yes					
Mitigation Modes	Bypass, Record (Report Only), Learning, Mitigation (Block and Report)					
Dynamic Routing Protocols	BGP, OSFP, RIP v1, RIP v2					
Networking	Support for VLAN, VXLAN, Link Aggregation & Trunking (LACP)					
Block Actions	Drop Request, Terminate Connection or Session, Blacklist (temporary or permanent), Send Challenge (Captcha, JavaScript), Rate Limiting or Tarpit					
HIGH AVAILABILITY						
Multiple Appliances	N + 1 Active - Active or Active – Passive (VRRP)					
Management Modes	Standalone / Centralized Management (VM or appliance) with Haltdos Hawk					
Secure Communication	Secure communication between centralized management and HA appliances for state synchronization					
INTEGRATION FEATURES						
Custom Threat Intel	Integration with 3rd party Threat Intelligence (TI) feeds					
Storage and Export	Local retention of logs, reports and events. Support for export to 3rd party storage					
NIMS Integration	Support for SNMP, NTP / SNTP, DNS, Web Proxy integration					
3rd Party Integration	Notification & Logging via SNMP, SMTP, SMS Gateway and 3rd party integration via API hooks, CI/CD, Kubernetes					
SIEM Integration	Support for integration with SIEM and Syslog services					
AAA Integration	Support for integration via RADIUS and TACACS+					
Identity Management	Inbuilt with support for integration with AD / SAML / LDAP					
Security Tools Integration	Support for integration with SAST/DAST/IAST tools					
Export IOCs	Support for exporting attacking IOCs via STIX / TAXII					
MANAGEMENT FEATURES						
Graphical User Interface (GUI)	Secure web interface over HTTPs with support for all modern browsers					

Command Line Interface (CLI)	Command Line Interface over SSH or console port
API Integration	Yes (XML or JSON)
System Management	IPMI 2.0 Compliant
Audit Trail, Logging & Recovery	Centralized logging of system, services, MIS, incidents. Built-in MIS with policy recovery
Dashboards	Real-Time & historical dashboards with custom duration. Support for custom dashboards
System Status Dashboard	Status dashboard for 1-click health check
Reporting	Periodic daily, weekly or monthly reports (predefined or custom) in PDF or Excel
RBAC Administration	Configurable user profiles with role-based access control
Backup & restore	Automatic or manual backup and restore. CLI tool for pushing current snapshot to Haltdos Cloud for diagnostics
Snapshots & Cloud Sync	Automatic and/or manual policy snapshot for diagnosis, policy creation & enforcement using AI/ML via Haltdos cloud
Policy Management	On the fly configuration updates on mitigation appliances
Certificate Management	SSL certificate management with support for Let's Encrypt certificate generation
Events / Alerts	Detailed event and alert reporting on attack, health, etc.
Network Forensic	Network forensic with packet capture and traceroute
Attack Forensic	Built-in utilities for investigating attackers, attack payloads and identifying false positives
Haltdos Threat Stream	Periodic threat intel updates (Signatures, Geo IP, Bad IP, TOR IP, Anon Proxy, etc.) from Haltdos
Updates	Update and upgrade management on version releases and patch updates from Haltdos
WAF FEATURES	
Comprehensive Security	OWASP Top 10 Web Application Security Risks, OWASP Top 20 Automated Threats and SANS 25 Software Errors
Security Profiles	Multiple security profiles with support for different security status per application based on url, source, country, regex, etc.
Positive Security Model	Support for Form Rules for positive security model
Negative Security Model	Support for user defined Firewall Rules for REGEX based negative security model
Virtual Patching	Support for virtual patching through built-in web security scanner or upload of 3rd party SAST / DAST / IAST scan results
Built-in Signatures	Over 4000+ built-in signatures on various technologies, platforms and frameworks with pre-defined templates.
0-day Protection	Automatic learning and profiling application structure. Threat scoring and baseline creation for AI driven 0-day attack protection
Malicious Source Protection	Protection against TOR IP, Bad Reputation IP, dark IP, known Bots, proxies, spammers provided by Haltdos or user defined threat intel
Bot Management	Anti-bot protection with AI classification and scoring of bots based on advanced browser fingerprinting
Anti-Automation Protection	Protection against known and 0-day bots, account takeover attempts, brute force attempts, scraping, reconnaissance, cloaking, etc
Mobile App Protection	Anti-Bot mobile SDK for Android & iOS for protecting mobile apps and communication between apps and web APIs
AV Scanning	Built-in AV scanner for malicious file upload. Support for ICAP integration for 3rd party scanners
Minimize False Positives	Support for REGEX based whitelist rules and signature staging and deploy policies to minimize signature based false positives
HTTP Validations	Protocol validations, request normalization (encoding & evasion techniques) before inspection, managing security headers and cookies etc.
Policy Inspection	Policy validation such as HTTP methods, file extension, request size, etc
Blacklist / Whitelist	Support for temporary or permanent Blacklisting and Whitelisting based on IP, IP prefix, url, country, etc
Captcha Challenge	Support for JS or captcha challenge on suspicious user activity or known bots or malicious IPs
Rate Limiting	Rate Limit rules for implementing request, bandwidth or connection limits per source, IP prefix or user defined policy
API & WebSocket Protection	Built-in XML firewall, validation of XML / JSON / Ajax / SOAP / GraphQL/REST API requests and WebSocket requests
Security Breach Prevention	Built-in support for data leak prevention, response filtering for sensitive personal identifiable information
Tamper Proofing	Tamper rules for URL / parameter tamper protection, website defacement, hidden form field protection, cookie signing and encryption, etc.
Correlation Engine	Advanced correlation engine with support for custom correlation rules for detecting attack across user requests and sessions
Variables & Scripting	Support for user defined variables and scripts for building custom application specific security policy
Deception Technology	Implement decoys in web application to protect against advanced bots, profile attacks and trap attackers
Sensitive Data Masking	Support for Log Rules for masking sensitive information such as passwords in logs and events
Enforced Browsing	Protection against forceful browsing, access to predictable resources, unauthorized navigation with additional security enforcement with Two factor authentication (2FA)
Misc. Protection	Support for protection against buffer overflow attacks, man-in-the-middle attacks, blocking malware payload, buffer overflow, SQL, SSI, LDAP injection, etc
Enforce RFC Compliance	Protection against invalid HTTP requests
NAT & Routing	Support for client, server or full NAT, static routing for IPv4 & IPv6
SSL/TLS Management	Support for SSL v2/v3, TLS 1.0/1.1/1.2/1.3 offloading (and re-encryption) with custom cipher suites. Client certificate based authentication also supported, proxy SSL/TLS connections
Load Balancing	Layer 4 & Layer 7 load balancing (HTTP, TCP, UDP, etc.)
Advanced Load Balancing	Content based load balancing with upstream rules
Load Balancing Algorithms	Round robin (RR), weighted round robin, minimum misses, persistent hash (IP, Cookie, Header or Argument), tuneable hash, least connections, least response time, least bandwidth, SNMP metrics such as CPU, RAM, etc.
Network Optimization	Support for TCP buffering, multiplexing & optimization, connection pools, TCP keep alive & timeouts
HTTP Optimization	Support for content compression (gzip or brotili) and caching. Content minification and acceleration for mobile clients
Virtual Contexts	Support for multiple virtual contexts along with resource allocation
Failover Management	Automatic failover & recovery. Support for marking servers up / down / backup
Health Check	Periodic server or server group health check and alerting via TCP, SSL, ICMP, SNMP, HTTP, DNS or custom script
Client Visibility	Embedding Real IP information in X-* headers, client cert information, etc
Redirection Rules	REGEX based redirection rules to rewrite URLs
Variable Rules	Support for embedding and using variables for A/B testing or custom load balancing
Script Rules	Embedding user defined custom code for advanced routing
Error Handling	Error rules for custom error handling
Content Transformation	Transformation rules for data manipulation and Header rules for add / edit or delete headers in request or response
Fingerprinting & Authentication	Advanced user and device fingerprinting (Browser, OS related features) for user profiling and device authentication
Performance Monitoring	Real User Metrics (RUM) for performance monitoring
L3 – L7 DDoS Protection	Protection against volumetric and low & slow DDoS attacks
Compliance	Enforces PCI DSS 2.0 section 6.6, HIPAA, SOC2, GDPR, enforcement
API Security	Built-in API gateway for authentication, rate limiting, transformation, documentation and discovery
Authentication	Support for Single SignOn with multiple Auth type like Basic Auth, Form Auth, NTLM, LDAP, SAML, etc
Port Mirroring	Mirror traffic / specific traffic to another NIC port

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