HALTDOS FALCON TECHSPECS

Base Models	HD-FAL-4120	HD-FAL-4620	HD-FAL-5120	HD-FAL-5420	HD-FAL-6220	HD-FAL-6700
MITIGATION PERFORMANCE						
Throughput Range	upto 4 Gbps	upto 24 Gbps	upto 48 Gbps	upto 64 Gbps	upto 120 Gbps	upto 150 Gbps
Supported TCP Sessions	Unlimited					
DDoS Attack Flood Prevention Rate	1M – 5M	5M – 20M	10M – 30M	25M – 50M	30M – 80M	30M – 80M
SSL / TLS Connections per Second	22K (RSA 2K) 15K (ECC)	40K (RSA 2K) 25K (ECC)	40K (RSA 2K) 25K (ECC)	95K (RSA 2K) 48K (ECC)	95K (RSA 2K) 48K (ECC)	95K (RSA 2K) 48K (ECC)
SSL Throughput	4 Gbps	20 Gbps	40 Gbps	50 Gbps	100 Gbps	100 Gbps
TCP Connection Tracking	1M – 4M	4M – 10M	10M – 15M	10M – 25M	20M – 35M	20M – 35M
Induced Latency	< 50 microseconds (µs)					
Attack Detection Time	< 18s					
Attack Mitigation Time	< 10s					
HARDWARE SPECS						
Processor	Intel Xeon	Intel Xeon	Intel Xeon	Intel Xeon	Intel Xeon	Intel Xeon
CPU Cores	12	24	32	40	48	48
Minimum Memory	32 GB	64 GB	64 GB	96 GB	128 GB	128 GB
Minimum Hard Disk	256 GB SSD	512 GB SSD	1 TB SSD	2 TB SSD	2 TB SSD	2 TB SSD
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)					
Inspection Ports	Customized as per the customer's requirements					
INSPECTION PORTS						
1G	8	8	-	-	-	-
10G	-	2	4	8	8	8
25G	-	-	-	-	-	2
40G	-	-	2	2	4	-
100G	-	-	-	-	-	2
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					
Bandwidth License	Bandwidth capping on provided license. Upgrade possible without hardware replacement upto max supported bandwidth on hardware					
Additional Licenses	Optional license for WAF, LLB, GSLB, SLB & DNS Firewall					
Certification	FCC, ROHS, CE compliant, Common Criteria EAL 2+					
Support	24x7 Support with dedicated Account Manager					
Warranty	1 year software and hardware maintenance					
TAC Support	TAC support in India					
OPERATION MODE						
Network Operations	Transparent L2 or Inline L3					
Stateful Mode	Stateful (Symmetric) or Stateless (Asymmetric) mode					
Deployment Modes	Offline (SPAN port or Flow), Inline, Out-of-path					
Supported Flow Ingestion	Netflow v5, Netflow v9, sFlow, IPFIX					
IP Stack	Dual IPv4 & IPv6 stack					
IP Fragmentation	IP defragmentation & TCP stream assembly					
Jumbo Frames	Yes					
Mitigation Modes	Bypass, Record (Report Only), Learning, Mitigation (Block and Report)					
Tunnelling Protocols	VLAN, MPLS, GRE, L2TP, GTP, IPinIP					
Dynamic Routing Protocols	BGP, OSFP, RIP v1, RIP v2					
Link Aggregation	Support for link bundling via LACP					
Block Actions	Drop Packet, Terminate Connection (RST), Blacklist (temporary or permanent), Send Challenge (TCP, HTTP, DNS), Rate Limiting					
HIGH AVAILABILITY						
Hardware Bypass	Internal or External					
Software Bypass	Yes					
Multiple Appliances	N + 1 Active - Active or Active – Passive with VRRP equivalent					
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					
Notification 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					
Hybrid DDoS Integration	Support for integration with Haltdos Cloud Scrubbing or ISP clean pipe services					
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
Logging	Centralized logging of system, services, MIS, incidents
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 in PDF or Excel
RBAC Administration	Configurable user profiles with role based access control
Backup	Automatic or manual backup and restore
Policy Management	On the fly configuration updates on mitigation appliances
Events / Alerts	Detailed event and alert reporting on attack, health, etc.
Network Forensic	Network forensic and packet capture capability for traffic examination and diagnosis
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
DDOS MITIGATION FEATURES	
Comprehensive Protection	Layer 3 to Layer 7 protection covering Network, Protocol, Application, Reflection / Amplification and 0-day DDoS attacks
Bi-directional	Support for both inbound and outbound traffic protection
Deep Packet Inspection	Protection against malformed packets (TCP, UDP, ICMP, Ping of death, DNS, HTTP, SIP, SNMP, IPv4, IPv6, Fragmented packets, etc.)
Enforce RFC Compliance	Protection against misbehaving clients sending invalid or out of state packets
Bot Protection	Automatic detection and blocking of bot traffic with support for manual bot policy
Behaviour Analysis	Network behaviour analysis for anomaly detection and packet scoring technology
Multiple Security Profiles	Support for multiple security profiles for enforcing different policy for different sub-networks (Src, Dst IP Prefix, VLAN)
Rate Limit & QoS Management	Rate limit capability for bandwidth and QoS management
Blacklist / Whitelist	Support for temporary or permanent Blacklisting and Whitelisting based on IP, IP prefix, domain, country, etc
Malicious Source Protection	Protection against TOR IP, Bad Reputation IP / domain, dark IP, malicious Bots, proxies, resolvers, etc
Custom Signatures	Support for user defined custom rules with support for REGEX and byte matching
SYN Flood Protection	TCP SYN flood protection with SYN Proxy and connection aging
Challenge & Response	Support for TCP, HTTP, DNS challenge and response for validation of traffic from suspicious sources
Connection Based Protection	Protection against TCP connection DDoS attacks such as sockstress, connection / src, zombie flood, SSL renegotiations, etc
DNS Protection	Built-in DNS firewall capability for protecting DNS infrastructure against DNS DDoS attacks (Water Torture, NXDomain, etc.)
L7 DDoS Protection	Protection against low & slow attacks such as Slowloris, R.U.D.Y., slow HTTP GET / POST, etc
Machine Learning Protection	Automatic learning counter measures and dynamic signature creation upon attack detection
Signatures for Known Vulnerabilities	Built-in rules for known vulnerabilities (server, web, mail, FTP, SIP, SQL, DNS, etc.)
LLB FEATURES (ADDITIONAL LICENSING)	
NAT Rules	Support for static NAT, dynamic NAT, SNAT, DNAT, PAT, Full NAT
Health Monitoring	Link monitoring with instant failover (<1s). Support for TCP, HTTP, DNS, ICMP or script based monitoring
Routing Rules	Custom rules for Static and Policy based routing
Dual Stack Lite	Support for NAT 46 / 64 and DNS 46 / 64 with DNS Proxy
Traffic Shaping	Traffic shaping and QoS on inbound and outbound links
GSLB FEATURES (ADDITIONAL LICENSING)	
Global Load Balancing	Routing traffic across multiple data centers based on health checks
Local Load Balancing	Outbound WAN link selection based on link health
Operation Mode	Option for Authoritative or Recursive operational modes
Routing Rules	Custom rules for Static and Policy based routing
Network Mode	Support DNS over HTTP, UDP, TCP & SSL as well as DNSSEC
DNS Firewall	Protecting DNS infrastructure from bot attacks

Version: v6.1