



TECHNICAL SPECIFICATION

Haltdos Remote Access Gateway

Fast . Scalable . Reliable

Haltdos hardware appliances deliver a hardened and scalable, reliable platform to power Haltdos solutions. Haltdos Hardware Appliances offer exceptional performance, allowing organizations to consolidate device management and address future bandwidth requirements. Haltdos appliances can manage heavy traffic loads without impacting application or network performance.

Fault Tolerant Hardware Design

With multi-gigabit throughput, fail open interfaces, secure out-of-band management, and low latency, Haltdos appliances are high assurance, fast and easy to manage. To maximize system uptime, Haltdos appliances offer redundant, hot-swappable components including redundant power supplies and hard drives. In the event of a hardware failure, the redundant component will automatically take over, providing continuous system operations.

Flexible Expansion Options to Address Unique Business Needs

The appliances are built on a common hardware platform with flexibility in mind. Haltdos appliances can be extended to provide remote, out-of-band management and monitoring, performance acceleration, and more with expansion modules. Expansion modules include:

- Network Cards (copper or optical)
- Hardware Security Module (HSM) (non-FIPS and FIPS-140-2)
- SSL acceleration card
- Disk Space & RAM

FLEXIBLE DEPLOYMENT OPTIONS:

Haltdos Hardware Appliances can manage heavy traffic loads without impacting application or network performance. For customers who prefer a software-only form factor, Haltdos provides a cost effective and flexible **virtual appliance** option to deploy Haltdos security solutions on an enterprise virtualization platform or in an Infrastructure as a Service (IaaS) cloud environment.



MITIGATION FEATURES

Specifications	HD-RAG-1100	HD-RAG-4100	HD-RAG-4600
Layer 4 Throughput *	1 Gbps	5 Gbps	24 Gbps
Layer 7 Throughput	1 Gbps	4 Gbps	20 Gbps
SSL/TLS Throughput	1 Gbps	4 Gbps	20 Gbps
Compression Throughput	1 Gbps	4 Gbps	20 Gbps
Decompression Throughput	1 Gbps	5 Gbps	20 Gbps
SSL/TLS Transactions Rate (tps) *	10K (RSA 2K) 5K (ECC)	22K (RSA 2K) 15K (ECC)	40K (RSA 2K) 25K (ECC)
Concurrent Connections	7 M	16 M	24 M

HARDWARE SPECIFICATIONS

Processor	Intel Xeon		
CPU Cores	8	8	20
Memory *	12 GB	16 GB	32 GB
Hard Disk *	128 GB SSD	256 GB SSD	256 GB SSD
Form Factor	1U/2U		
Operating Temperature & Humidity	0 - 40 C with 8%-95% humidity (non-condensing)		
Power Supply	Redundant Power Supply (Hot Swappable) AC 170-240V, 50 Hz		
Inspection Ports *			
1 GE Ports	4	8	8
10 GE Ports	-	2	2
25 GE Ports	-	-	-
Out Of Band Ports *			
1 GE (RJ-45) Ports	2	2	2
Console (RS232/RJ45) Ports	1	1	1
HA Ports (RJ-45/SFP/SFP+)	1	1	1
Input/Output (USB)	2	2	2



MITIGATION FEATURES

Specifications	HD-RAG-5100	HD-RAG-5400	HD-RAG-6200
Layer 4 Throughput *	48 Gbps	72 Gbps	120 Gbps
Layer 7 Throughput	40 Gbps	60 Gbps	100 Gbps
SSL/TLS Throughput	40 Gbps	50 Gbps	100 Gbps
Compression Throughput	48 Gbps	48 Gbps	96 Gbps
Decompression Throughput	60 Gbps	60 Gbps	120 Gbps
SSL/TLS Transactions Rate (tps) *	95K (RSA 2K) 48K (ECC)	95K (RSA 2K) 48K (ECC)	190K (RSA 2K) 96K (ECC)
Concurrent Connections	56 M	96 M	160 M

HARDWARE SPECIFICATIONS

Processor	Intel Xeon		
CPU Cores	32	40	64
Memory *	64 GB	128 GB	256 GB
Hard Disk *	512 GB SSD	1 TB SSD	2 TB SSD
Form Factor	1U/2U/4U		
Operating Temperature & Humidity	0 - 40 C with 8%-95% humidity (non-condensing)		
Power Supply	Redundant Power Supply (Hot Swappable) AC 170-240V, 50 Hz		
Inspection Ports *			
10 GE Ports	4	8	8
24 GE Ports	-	-	-
40 GE Ports	2	2	4
Out Of Band Ports ***			
1 GE (RJ-45) Ports	2	2	2
Console (RS232/RJ45) Ports	1	1	1
HA Ports (RJ-45/SFP/SFP+)	1	1	1
Input/Output (USB)	2	2	2

Centralized Management

Depending upon the chosen deployment as standalone or cluster, Haltdos also offers a centralized management solution for management of Haltdos products. The centralized management is API first solution that comes in the following flavors:

- **HD-MGT-ST:** This model is a single tenant centralized management solution that supports only one license dedicated to a single customer.
- **HD-MGT-MT:** This model is a multi-tenant centralized management solution that supports multiple licenses that can be used by one or more customers.

Like the products, Haltdos Centralized Management solution can be deployed in Hardware or virtual form factor.

Virtual Appliances

All Haltdos products are built on top of Haltdos Platform. This allows the platform to be installed in various flavors - SaaS, Hardware, or virtual form factor. Regardless of the form factor chosen, the product have same technical capabilities.

Standalone Virtual Models	Cluster Virtual Model	Throughput (Mbps)
HD-VS-100	HD-VM-100	100
HD-VS-200	HD-VM-200	200
HD-VS-500	HD-VM-500	500
HD-VS-750	HD-VM-750	750
HD-VS-1000	HD-VM-1000	1000
HD-VS-2500	HD-VM-2500	2500
HD-VS-5000	HD-VM-5000	5000
HD-VS-7500	HD-VM-7500	7500
HD-VS-10000	HD-VM-10000	10000



Solution Features

Technology & Certification	
Platform & Technology	Haltdos Platform with Signature from Threat Intelligence & Machine Learning
License	Unlimited applications. Bandwidth capped by license. Upgrade possible without hardware replacement up to max supported hardware bandwidth
Additional Licenses	Optional license for GSLB, WAF, Anti-DDoS, SSL VPN and SLB
Certifications	FCC, ROHS, CE compliant, EAL 2+, IPv6 Ready Gold certifications
Support	24x7 via Online, Email , Telephone and Dedicated Account Manager
Warranty	1 year warranty. Additional charges for extended warranty
TAC Support	TAC support in India
Integration Features	
API Integration	Supporting XML and RESTFul (JSON) APIs
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
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. Integration with 3rd party Threat Intelligence (TI) feeds
SIEM Integration	Support for integration with SIEM and Syslog services
Export IOCs	Support for exporting attacking IOCs via STIX / TAXII
3rd Party Integration	Notification & Logging via SNMP, SMTP, SMS Gateway, and 3rd party integration via API hooks, CI/CD, Kubernetes
Operation Mode	
Network Operations	Offline, Inline Reverse Proxy, Inline Forward Proxy, Inline Bridge, Inline Router Mode, Inline L2 Transparent
Inline Modes	Proxy or Direct Server Return, Immediate or Delayed Binding
Supported HTTP Protocols	HTTP 0.9,1.0,1.1,2.0,3.0 (QUIC) with translation



Deployment Modes	1-Arm or n-Arm, Support for Virtual Matrix Architecture & Direct Access Mode
IP Stack	Dual IPv4 & IPv6 stack
Web Socket Support	Yes
Mitigation Modes	Bypass, Record (Report Only), Learning, Mitigation (Block & Report)
Dynamic Routing	BGP, OSFP, RIPv1/v2
Networking	VLAN, VXLAN, Link Aggregation & Trunking (LACP), Multiple Routing Tables, ARP Table etc
Block Actions	Drop Request, Terminate Connection / Session, Rate Limiting, Blacklist (Temporary or Permanent), Send Challenge, Tarpit
Virtualization	Multi-tenancy with isolated VMs with dedicated CPU, RAM and Disk. Support for multiple OS templates for customized deployments
Virtual Matrix Architecture	Yes
Direct Access Mode	Yes
High Availability	
Multiple Appliances	N + 1 Active - Active or Active – Passive (VRRP) with floating MAC
Management Modes	Standalone / Centralized Management (VM or appliance)
Secure Communication	Secure communication between centralized management and HA appliances for full state synchronization
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
System Management	IPMI 2.0 Compliant
Audit Trail, Logging & Recovery	Centralized logging of system, services, MIS, incidents. Built-in MIS with policy recovery
RBAC Administration	Configurable user profiles with role based access control
Policy Management	On the fly configuration updates on mitigation appliances
Dashboards & Reporting	Real-Time & historical dashboards with custom duration. Support for custom dashboards. Status dashboard for 1-click health check. Periodic daily, weekly or monthly reports in PDF or Excel



Events / Alerts	Detailed event and alert reporting on attack, health, etc.
Backup, Restore & Snapshots	Automatic or manual backup and restore. CLI tool for pushing current snapshot to Haltdos Cloud for diagnostics
Certificate Management	SSL/TLS certificate management with support for Let's Encrypt certificate generation
Forensics	Network forensic with packet capture and traceroute. Built-in utilities for investigating attacks, payloads and managing false positives
Updates	Periodic threat intel updates (Signatures, Geo IP, Bad IP, TOR IP, Anon Proxy, etc.) from Haltdos. Update and upgrade management on version releases and patch updates from Haltdos. Support for multiple OS Templates
VPN FEATURES (ADDITIONAL LICENSING)	
HTTP Protocols	HTTP 0.9/1.0/1.1/2.0 with translation
Client Support	Provides access for Windows, Linux, Mobile Apps (Android and iOS), and Web (via browser-based solutions, ActiveX & Java Applet)
Authentication	Supports Password, SAML, AD/LDAP, SSO, AAA, OAuth, Step-up Authentication and third-party integrations via Webhooks
NAT & Routing	Enables client, server, or full NAT and static routing for IPv4 and IPv6
User Grouping	Allows creation of multiple users and user groups with granular access control
Clientless Access	Offers secure resource access via web browsers without additional client installation
Granular Access Control	Configurable policies to control user access to specific resources and applications based upon time, country, user-group and IP addresses
Endpoint Security	Validates the security posture of devices before granting access by performing Antivirus and Malware Scan of the devices, Windows Registry checks etc
Multi-Factor Authentication (MFA)	Additional verification factors, such as Email based OTP, TOTP, while accessing resources remotely
Split Tunneling	Configurable options for routing only specific traffic through the secure tunnel



Zero Trust Principles	Strict verification of users and devices before granting access
Dual Stack Lite	Support for NAT 46 / 64 and DNS 46 / 64 with DNS Proxy