NETSCOUT®

Arbor Threat Mitigation System

Proven, Comprehensive Threat Protection and Service Enablement

KEY FEATURES & BENEFITS

Surgical Mitigation

Automatically remove only the attack traffic without interrupting the flow of non-attack business traffic.

Full Portfolio of Mitigation Platforms and Capacities

Choose from a variety of mitigation platforms and capacities including: 2U appliances, 6U chassis, virtualized in Cisco ASR 9000 Router, KVM & VMware hypervisor, and baremetal.

Unified Command and Control of Eight Tbps of Mitigation

Scale DDoS defenses to an unprecedented level. Deploy up to 40 Tbs of aggregate, centrally-managed mitigation capacity per deployment.

Managed Services Enabler

Meet rapidly growing demand for DDoS protection services. Use Arbor TMS to deliver profitable in-cloud DDoS protection services, including a pay-as-you-grow always-on or on-demand flexible subscription based licensing model with TMS Guardian.

Comprehensive List of Attack Countermeasures

Scale DDoS defenses to an unprecedented level. Deploy up to 40 Tbs of aggregate, centrally-managed mitigation capacity per deployment.

Flexible Deployment

Deploy application-layer intelligence, threat detection and surgical mitigation in different portions of your network for infrastructure protection and more profitable managed DDoS protection services.

Internet Service Providers (ISPs), Cloud Providers and Enterprises face a common problem. Distributed Denial of Service (DDoS) attacks are a major risk to service availability. The power, sophistication and frequency of DDoS attacks continue to increase. Data center operators and network providers need a defense that is effective, cost-efficient and easily managed. Arbor Threat Mitigation System™ (TMS) is the acknowledged leader in DDoS protection. More Service Providers, Cloud Providers and large Enterprises use Arbor TMS for DDoS mitigation than any other solution.

Arbor TMS DDoS Defense Specifications

Simultaneous Sessions	Not session limited
Deployment Modes	Inline Active, Inline Monitoring, SPAN port, Diversion/Reinjection
Block Actions	Source blocking/source suspend; per packet blocking; combination of source, header and rate based blocking; Automated BGP Flowspec Source/Destination Blocking
Attack Protections	Reflection Amplification Flood Attacks (TCP, UDP, ICMP, DNS, mDNS, Memcached, SSDP, NTP, NetBIOS, RIPv1, rpcbind, SNMP, SQL RS, Chargen, L2TP, Microsoft SQL Resolution Service); Fragmentation Attacks (Teardrop, Targa3, Jolt2, Nestea); TCP Stack Attacks (SYN, FIN, RST, ACK, SYN-ACK, URG-PSH, other combinations of TCP Flags, slow TCP attacks); Application Attacks (HTTP GET/POST Floods, slow HTTP Attacks, SIP Invite Floods, DNS Attacks, HTTPS Protocol Attacks); SSL/TLS Attacks (Malformed SSL Floods, SSL Renegotiation, SSL Session Floods); DNS Cache Poisoning; Vulnerability Attacks; Resource Exhaustion Attacks (Slowloris, Pyloris, LOIC, etc.); Flash Crowd Protection; Attacks on Gaming Protocols
DDoS Countermeasure	Invalid Packets, IP Address Filter Lists, Black/White Filter Lists, Packet Header Filtering, IP Location Filter Lists, Zombie Detection, UDP Reflection/Amplification Protection, Per Connection Flood Protection, Spoofed TCP SYN Flood, TCP SYN Authentication, TCP Connection Limiting, TCP Connection Reset, Payload Regular Expression Filter, Shaping, IP Location Policing, Inline Filter, Blacklist Fingerprints, Protocol Baselines HTTP Authentication, HTTP Malformed, HTTP Scoping, HTTP Rate Limiting, HTTP/URL Regular Expression, DNS Authentication, DNS Malformed, DNS Scoping, DNS Rate Limiting, DNS Regular Expression, SIP Malformed, SIP Request Limiting, SSL Negotiation, ATLAS Intelligence Feed (AIF)

Arbor TMS Appliances

	8100	HD1000
Throughput and Mitigation	Licenses for 1 Gbps, 2 Gbps, 5 Gbps, 10 Gbps, 20 Gbps, 30 Gbps & 40 Gbps, up to 37 Mpps	Up to eight Packet Processing Modules (PPMs); Any combination of 20 Gbps (up to 14 Mpps) or 50 Gbps (up to 25 Mpps) of mitigation throughput, up to 400 Gbps, 198 Mpps
Average Latency	< 80µs	
Power Requirements	**AC:** 2 x AC redundant, hot swap capable power supplies; AC Power Ratings: 100 to 240 VAC, 50 to 60 Hz 12/6 A max; **DC:** 2 x DC redundant, hot swap capable power supplies; DC Power Ratings: -40 to -72 Vdc, 28/14 A max (per DC input).	**AC:** Two 1500-watt redundant power supplies; 100-240V AC, 15-10 A, 50-60 Hz (x2); **DC:** Two 1500-watt redundant power supplies; -48 to -60 V dc, 44 A (x2)
Power Requirements and Heat	400 Watts (max.) and 350 Watts (nom.) Heat at 1195 BTU/hr @ 350 Watts	(1) MM, (5) fans, (2) QSFP+, (4) QSFP28; (x1) PPM: @ 327 Watts, 1116 BTU/ hr; (x4) PPM: @ 569 Watts, 1940 BTU/ hr ; (x8) PPM: @ 932 Watts, 3180 BTU/ hr
Dimensions	**Chassis:** 2U rack height **Weight:** 36.95 lbs. (17.76 kg) **Height:** 3.45 in (8.67 cm) **Width:** 17.14 in (43.53 cm) **Depth:** 20 in (50.8 cm)	**Chassis:** 2U rack height **Weight:** 45.2 lbs (20.5 kg) with 1 PPM, add 1.6 lb (.73 kg) per PPM (up to eight) **Height:** 3.5 in (8.89 cm) **Width:** 17.6 in (44.70 cm) **Depth:** 21 in (53.34 cm)
Network Interfaces	8 x 10GE SFP+ and 8 x 1 GE SFP 2 x 10GE or 2 x 1GE copper management ports (Auto-negotiates to 10GE)	4 x 100 GigE + 8x 10 GigE = One to four 100 GbE QSFP28 (SR or LR) optical transceivers + One or two 4 x 10 GbE QSFP+ (SR or LR Lite) optical transceivers with one 4 x 10 GbE breakout cable on each transceiver 16 x 10 GigE = One to eight 10 GbE SFP+ (SR or LR) optical transceivers + One or two 4 x 10 GbE QSFP+ (SR or LR Lite) optical transceivers with one 4 x 10 GbE breakout cable on each transceiver
Hardware Bypass	External	
Storage	2 x 240GB SSD drives, RAID 1	2 x 480GB SSD drives, RAID 1
Environmental	**Operating temperature:** 41°F to 104°F (5° to 40°C) **Relative humidity (operating):** 5 to 85% non-condensing **Non-Operating: Temperature:** -40° to 158°F (-40° to 70°C); Humidity 95%	**Operating temperature:** 41° to 104°F (5° to 40°C) **Relative humidity (operating):** 5 to 93%, non-condensing
Regulatory	UL/cUL/EN/IEC 62368-1; EN 55032; EN 55035; CISPR 32, 35; ETSI EN 300 386; cULus Mark; IC ICES-003 Class A; EN 61000-3-2; EN 61000-3-3; EMC Directive 2014/30/EU; Low Voltage Directive 2014/35/EU; UL 60950-1 2nd edition/CSA C22.2 No.60950-1-07 2nd Edition; FCC 47 CFR Parts 15, Class A; CB Certificate & Report including all international deviations; RoHS 2011/65/EU; Moroccan Conformity Mark; VCCI (Japan); BIS (India); CCC (China); RCM (Australia/New Zealand); KCC (South Korea); EAC-R Approval (Russia); South Africa LoA; Mexico (UL-CoC for Mexico); NEBS-ready	RoHS 6/6, IEC/EN/UL/CSA 60950-1, FCC Part 15 Subpart B Class A, EN 55022, EN55024, ETSI EN 300 386, cCSAus Mark, CE Mark, KN22, KN24, RCM Mark, KCC Mark, EAC Mark, BIS, CCC Mark, Moroccan Conformity Mark

Arbor TMS Appliances (continued)

	2600	2800
Throughput and Mitigation	Licenses for 1 Gbps, 2 Gbps, 5 Gbps, 10 Gbps (add-on to 20 Gbps), all up to 15 Mpps	Licenses for 10 Gbps, 20 Gbps, 30 Gbps, 40 Gbps, all up to 30 Mpps
Average Latency	< 80µs	
Power Requirements	Redundant Power Supplies **AC:** 100-240 VAC, 50/60 Hz, 12/6 A max.; **DC:** -40 to -72 Vdc, 28/14 A max.	
Power Requirements and Heat	325 Watts (max.), 280 Watts (nom.): @ 280 Watts, 955 BTU/hr	
Dimensions	**Chassis:** 2U rack height **Weight:** 36.95 lbs (17.76 kg) **Height:** 3.45 in (8.76 cm) **Width:** 17.14 in (43.53 cm) **Depth:** 20 in (50.8 cm)	**Chassis:** 2U rack height **Weight:** 45.2 lbs (20.5 kg) with 1 PPM, add 1.6 lb (.73 kg) per PPM (up to eight) **Height:** 3.5 in (8.89 cm) **Width:** 17.6 in (44.70 cm) **Depth:** 21 in (53.34 cm)
Network Interfaces	4 x 10 GigE (SFP+) + 8 x 1 GigE (SFP) ports	8 x 10 GigE (SFP+ for SR or LR or mixed fiber)
Hardware Bypass	External	
Storage	2 x 150GB SSD drives, RAID 1	2 x 240GB SSD drives, RAID 1
Environmental	**Operating temperature:** 41° to 104°F (5° to 40°C) **Relative humidity (operating):** 5 to 85% non-condensing	
Regulatory	UL60950-1/CSA 60950-1 (USA/Canada); EN60950-1 (Europe); IE60950 (International), CB Certificate & Report including all international deviations; GS Certificate (Germany); EAC-R Approval (Russia); CE – Low Voltage Directive 73/23/EEE (Europe); BSMI CNS 13436 (Taiwan); KCC (South Korea); RoHS Directive 2002/95/EC (Europe), Moroccan Conformity Mark	UL 60950-1 2nd edition/CSA C22.2 No. 60950-1-07 2nd Edition, Low Voltage Directive 2006/95/EC, Safety Directive 2001/95/EC, CB Certificate and Report to IEC60950-1, 2nd edition and all international deviations, FCC 47CFR Parts 15, Verified Class A limit, ICES-003 Class A Limit, EMC Directive, 2004/108/EC, EN55022, EN55024, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11,EN61000-3-2, EN61000-3-3, VCCI Class A ITE (CISPR 22, Class A Limit), BSMI Approval, CNS 13438, Class A and CNS13436 Safety, KCC Approval, Gost Approval, CISPR 22 Class A Limit, CISPR 24 Immunity, RoHS (recast) Directive 2011/65/EU, Moroccan Conformity Mark

Software TMS

Deployment	VMWare ESXi or Linux KVM, x86_64	Bare metal
CPU Cores	3-128 virtual CPU cores	4-64 physical CPUs with hyperthreading enabled
RAM	9.5-197GB	14-194GB
Storage	100GB minimum	100GB minimum
Management Interfaces	1-2	1-2
Mitigation Interfaces	1-16	1-16
Mitigation Throughput	50 Mbps up to 55 Gbps Up to 11 Mpps	50 Mbps up to 110 Gbps or more based on hardware performance Up to 29 Mpps
Average Latency	<3ms	<1ms
Supported NFV Management and Orchestration	OpenStack (Heat, Tacker), Ansible, Cisco NSO/ESC, Nokia CloudBand, AWS CloudFormation	

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