

# Trustwave Web Application Firewall (WAF)

## APPLIANCE SPECIFICATIONS

Trustwave WAF is the only Web Application Firewall that can protect Web applications against attacks and data loss with bi-directional traffic correlation and policy enforcement even in out-of-line mode.

Trustwave WAF can be deployed as a physical appliance or a virtual appliance, and a managed service is available.

### Physical Appliances

Trustwave WAF physical appliances can be deployed as sensors, managers, stand-alone appliances, or as a managed WAF service.

	TS151	TS250	TS500	TS750	TS-500 WAF MGR
<b>Hardware</b>					
<b>CPU</b>	1 Xeon 3.0Ghz 8MB cache Intel E3-1225 v5	1 Xeon 2.4 Ghz 15M cache Intel E5-2620v3	2 Xeon 2.4 Ghz 15M cache Intel E5-2620v3	2 Xeon 2.6Ghz 25MB Cache 8-Core Intel E5-2640v3	2 Xeon 2.4 Ghz 15M cache Intel E5-2620v3
<b>RAM</b>	8GB	8GB	16GB	32GB	16GB
<b>Disk</b>	Single Disk 1TB SATA, no RAID	Single Disk 1TB disk, no RAID	Two 1TB SATA, RAID-1	Two 1TB SATA, RAID-1	Two 1TB SATA, RAID-1
<b>Dimensions</b>	14.5 X 17.2 X 1.7 in	19.8 x 17.2 x 1.7 in	25.6 x 17.2 x 1.7 in	25.51 x 17.2 x 3.5 in	25.6 x 17.2 x 1.7 in
	369 x 437 x 43 mm	503 x 437 x 43 mm	650 x 437 x 43 mm	648 x 437 x 89 mm	650 x 437 x 43 mm
<b>Form Factor</b>	1U	1U	1U	2U	1U
<b>Weight</b>	21 lb	37 lb	45 lb	71 lb	45 lb
	9.54 kg	16.82 kg	20.45 kg	32.27 kg	20.45 kg
<b>Power Supply</b>	Single 350W	Dual 400W	Dual 700W	Dual 740W	Dual 700W
<b>AC Power</b>	350W - 100-240 V, 50-60 Hz, 4.2-1.8 Amp	400W - 100-240 V, 50-60 Hz, 6-3 Amp	700W - 100-240 V, 50-60 Hz, 8.5-3.8 Amp	740W - 100-240 V, 50-60 Hz, 9-3.5 Amp	700W - 100-240 V, 50-60 Hz, 8.5-3.8 Amp
<b>Heat at Rated Power</b>	1474 BTU/hr	2455 BTU/hr	3110 BTU/hr	3069 BTU/hr	3110 BTU/hr
<b>SSL Acceleration</b>			Included	Included	
<b>Management Port</b>	2 x 10/100/1000 Copper	2 x 10/100/1000 Copper	2 x 10/100/1000 Copper	2 x 10/100/1000 Copper	2 x 10/100/1000 Copper
<b>Default NIC</b>	Silicom 2 x GigE Bypass Copper 10/100/1000	Silicom 2 x GigE Bypass Copper 10/100/1000	Silicom 4 x GigE Bypass Copper 10/100/1000	Silicom 4 x GigE Bypass Copper 10/100/1000	
<b>Optional NIC Configurations (in place of default NIC)</b>			Silicom Quad Port Fiber 1GbE Silicom Quad Port Fiber 10GbE	Silicom Quad Port Fiber 1GbE Silicom Quad Port Fiber 10GbE 2 x Silicom Content Director Dual Port Fiber 10GbE 2 x Silicom Quad Port Fiber 10GbE	
<b>Inline Bypass</b>	1 segment	1 segment	2+ segments	2+ segments	
<b>Capacity*</b>					
<b>Throughput</b>	600Mbps SSL - 50% degradation	750Mbps SSL - 50% degradation	2 Gbps SSL - 30% degradation	4 Gbps SSL - 30% degradation	
<b>Transactions/sec</b>	18,000	18,500	35,000	40,000+	
<b>Concurrent connections</b>	35,000	40,000	40,000+	40,000+	
<b>Websites</b>	60	60	Up to 200	Up to 200	

\* Real capacity can vary significantly depending on underlying hardware, the Web application environment, HTTP compression rates, and selected modules.

## Virtual Appliances

With virtual appliances, you can use the hardware of your choice and help reduce costs and effort in aligning with your organization's data center strategy. The simplicity and flexibility of virtual appliances allow you to quickly provision and configure new security services as requirements change.

Trustwave WAF virtual appliances can be deployed as sensors, managers, or standalone appliances.

	VX15i	VX30i	VX60i	VX110i	Manager
<b>Host Minimal Requirements</b>					
<b>Hypervisor</b>	VMware ESX/ESXi Microsoft Hyper-V	VMware ESX/ESXi Microsoft Hyper-V	VMware ESX/ESXi Microsoft Hyper-V	VMware ESX/ESXi Microsoft Hyper-V	VMware ESX/ESXi Microsoft Hyper-V
<b>CPU</b>	Dual Core Server Intel VT-x or AMD-V	Dual Core Server Intel VT-x or AMD-V	Dual Core Server Intel VT-x or AMD-V	Dual Core Server Intel VT-x or AMD-V	Dual Core Server Intel VT-x or AMD-V
<b>Guest Recommended Settings</b>					
<b>Virtual Cores</b>	4	8	12	16	8
<b>Memory</b>	8GB	8GB	8GB	12GB	8GB
<b>Disk</b>	50GB	50GB	50GB	50GB	50GB
<b>Capacity*</b>					
<b>Throughput</b>	100Mbps SSL – 50% degradation	500Mbps SSL – 50% degradation	1Gbps SSL – 50% degradation	2Gbps SSL – 50% degradation	
<b>Transactions/ sec</b>	Up to 9,000	Up to 9,000	Up to 16,000	Up to 30,000	
<b>Websites</b>	60 (out of the box)	60 (out of the box)	60 (out of the box)	200 (out of the box)	

All models support 30,000 concurrent connections.

\* Real capacity can vary significantly depending on underlying hardware, the Web application environment, HTTP compression rates, and selected modules.

## Amazon Web Services (AWS)

Trustwave WAF virtual appliances for Amazon Web Services (AWS) can be deployed as sensors, managers, or standalone appliances.

	AWS15i	AWS30i	AWS60i	AWS110i
<b>AWS Instance Type</b>	c3.xlarge	c3.2xlarge	c3.4xlarge	c3.8xlarge
<b>Throughput</b>	100Mbps SSL – 50% degradation	500Mbps SSL – 50% degradation	1Gbps SSL – 50% degradation	2Gbps SSL – 50% degradation
<b>Transactions/sec</b>	Up to 8,000	Up to 15,000	Up to 33,000	Up to 34,000
<b>Websites</b>	30 (out of the box)	45 (out of the box)	200 (out of the box)	200 (out of the box)

Disk size is provided on instance configuration with a minimum requirement of 50GB. (No RAID protection is available.)

Trustwave WAF requires at least two network interfaces, one for management and one for traffic protection. AWS allows only one network interface per subnet per instance.

## Microsoft Azure

Trustwave WAF virtual appliances for Microsoft Azure can be deployed as sensors, managers, or standalone appliances.

	MA15i	MA30i	MA60i	MA110i
<b>Instance Type</b>	A3 Standard	A4 Standard	A11	A11
<b>Throughput</b>	100Mbps SSL – 50% degradation	500Mbps SSL – 50% degradation	1Gbps SSL – 50% degradation	2Gbps SSL – 50% degradation
<b>Transactions/sec</b>	Up to 5,500	Up to 7,000	Up to 16,000	Up to 30,000
<b>Websites</b>	30 (out of the box)	60 (out of the box)	200 (out of the box)	200 (out of the box)

Disk size is provided on instance configuration with a minimum requirement of 50GB. (No RAID protection is available.)

Trustwave WAF requires at least two network interfaces, one for management and one for traffic protection. Azure allows only one network interface per subnet per instance.

**Warning:** Not providing the minimum requirements listed in this section may lead to unexpected Trustwave WAF behavior.