



How Modularity Works

Technical Brief

WatchGuard® Technologies, Inc.

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INTRODUCTION

WatchGuard UTM (Unified Threat Management) appliances provide the protection that midsize businesses and distributed enterprises need today to prevent infection from malware, ransomware, and advanced threats. UTM capabilities provide the benefit of an all-in-one appliance with advanced security controls, and WatchGuard Dimension, which ships standard on all WatchGuard appliances, provides advanced threat visibility and network intelligence. But organizations need this protection from an appliance that fits into their existing network. They cannot change network topology to fit their new security appliance.

Network environments are getting more diverse with a vast array of options to choose from. Fiber is not just found in the enterprise datacenter. Even small and midsize businesses have fiber connections from their Internet Service Providers (ISPs), and switch equipment that provides 1 Gb or 10 Gb fiber.

WatchGuard's Firebox M4600 and Firebox M5600 appliances both provide two empty bays that can be used to add network modules to define a configuration that meet the needs of almost any network configuration. There are three modular interface types to choose from, and they can be used in any combination.

- 4 x 10 Gb Fiber
- 8 x 1 Gb Copper
- 8 x 1 Gb Fiber

Expandable network modules offer room to grow for the future. If the need for more network ports into the firewall grows, the business doesn't have to do a costly rip-and-replace. The network admin can simply add a new module to the existing appliance to increase port density.

How Does Modularity Work?

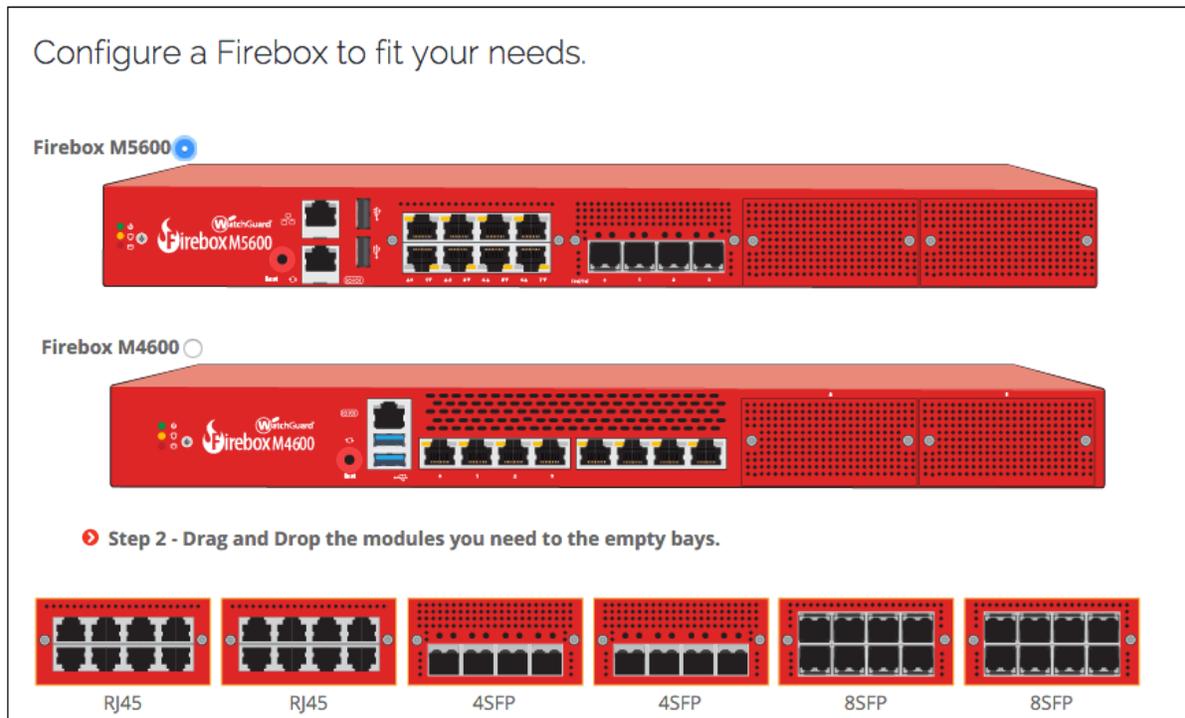


Figure 1: Optional modules to support the appropriate M4600 or M5600 configuration.

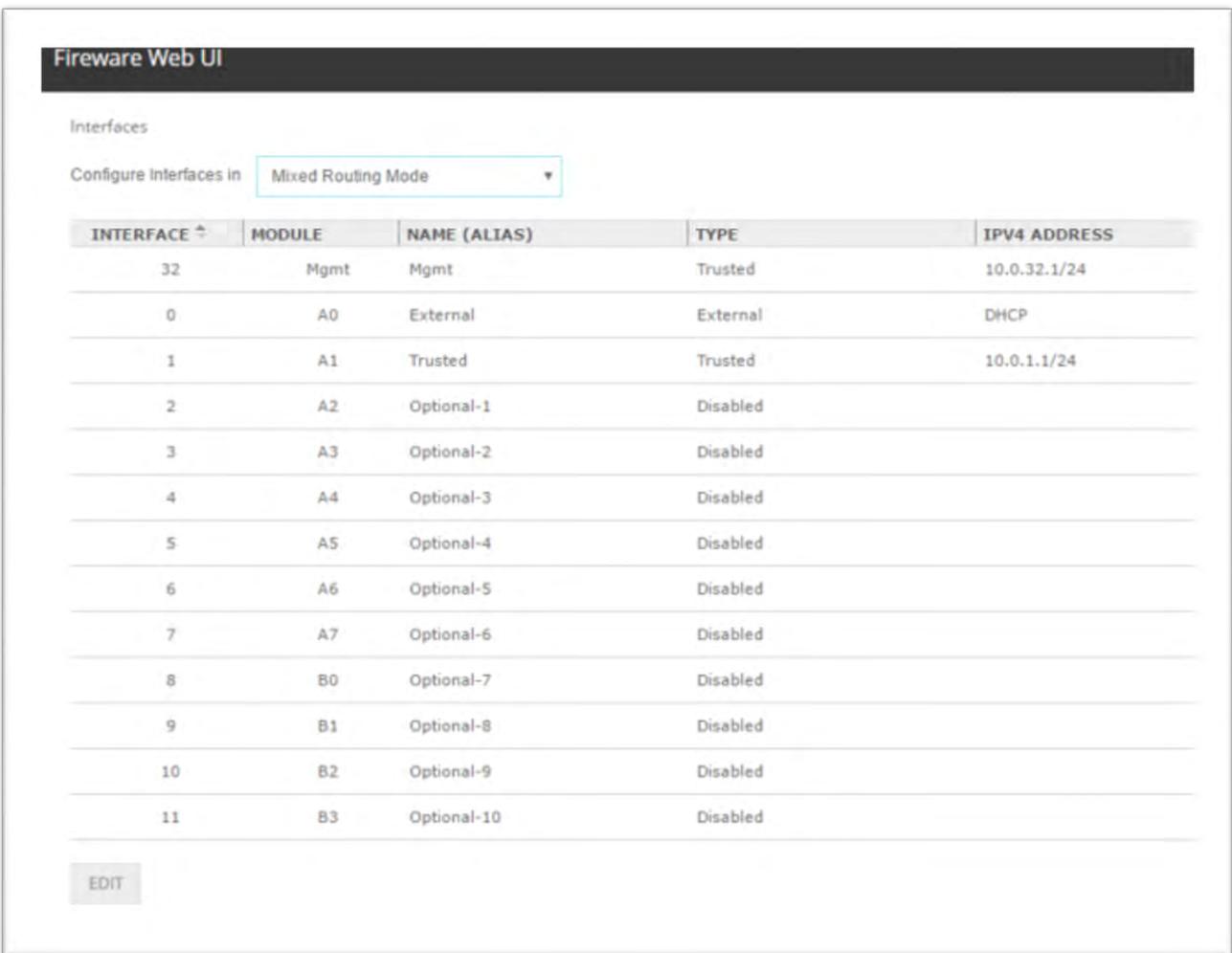
The image above is from the modular configuration tool on the WatchGuard website at <http://www.watchguard.com/wgrd-products/firebox-m4600-m5600/overview>. This tool displays the modules that are available for each appliance, and allows the user to interactively drag a module to an empty bay to explore configuration options.

Note that the base configuration for an M4600 includes 8 x 1 G Ethernet ports. The maximum throughput for that appliance is limited by the line speed of the network ports to a total of 8 Gbps. Adding more ports with network modules unlocks the performance capacity of the appliance, allowing it to achieve its maximum potential firewall throughput of 40 Gbps. Firewall throughput is measured using 1518 byte UDP packets through multiple port pairs.

The Firebox automatically detects installed interface modules when it is powered on. Interface modules are not hot-swappable. To avoid damage to the system, admins need to power off the Firebox before installing or removing interface modules.

Modularity in the UI

The image below shows the default interface configuration for a Firebox M5600 appliance in the Web UI. The **Module** column lists the port numbers for each modular interface. The letter indicates the Firebox slot where the interface module is installed. The number indicates the port number as it is labeled on the interface module. For example module **A6** refers to port 6 on the interface module installed in slot A.



INTERFACE ↕	MODULE	NAME (ALIAS)	TYPE	IPV4 ADDRESS
32	Mgmt	Mgmt	Trusted	10.0.32.1/24
0	A0	External	External	DHCP
1	A1	Trusted	Trusted	10.0.1.1/24
2	A2	Optional-1	Disabled	
3	A3	Optional-2	Disabled	
4	A4	Optional-3	Disabled	
5	A5	Optional-4	Disabled	
6	A6	Optional-5	Disabled	
7	A7	Optional-6	Disabled	
8	B0	Optional-7	Disabled	
9	B1	Optional-8	Disabled	
10	B2	Optional-9	Disabled	
11	B3	Optional-10	Disabled	

EDIT

Figure 2: This image shows the standard list of ports that correspond to slots A and B.

Fireware Web UI

Interfaces

Configure Interfaces in Mixed Routing Mode

INTERFACE 	MODULE	NAME (ALIAS)	TYPE	IPV4 ADDRESS
32	Mgmt	Mgmt	Trusted	10.0.32.1/24
0	A0	External	External	DHCP
1	A1	Trusted	Trusted	10.0.1.1/24
2	A2	Optional-1	Disabled	
3	A3	Optional-2	Disabled	
4	A4	Optional-3	Disabled	
5	A5	Optional-4	Disabled	
6	A6	Optional-5	Disabled	
7	A7	Optional-6	Disabled	
8	B0	Optional-7	Disabled	
9	B1	Optional-8	Disabled	
10	B2	Optional-9	Disabled	
11	B3	Optional-10	Disabled	
16	C0	Optional-15	Disabled	
17	C1	Optional-16	Disabled	
18	C2	Optional-17	Disabled	

Figure 3: This image shows how the list expands as a module is added to slot C.



Network Interfaces on the Firebox M4600

The Firebox M4600 has eight built-in interfaces, and two interface module slots, A and B. You can install an interface module in each slot. For each interface module, ports are numbered from 0–7 or 0–3.

Firebox M4600 Slot	Modular Interface Port Numbers	Interface Numbers in Firebox Configuration
A	A0 – A7 (8 port) A0 – A3 (4 port)	8 – 15 8 – 11
B	B0 – B7 (8 port) B0 – B3 (4 port)	16 – 23 16 – 19

If any slot is empty, those interface numbers do not appear in the configuration, and the interface numbers for other installed modular interfaces do not change.

Network Interfaces on the Firebox M5600

The Firebox M600 has one built-in interface, and four interface module slots, A, B, C, and D. Two interface modules come preinstalled in slots A and B. For each interface module, ports are numbered from 0–7 or 0–3.

Firebox M600 Slot	Modular Interface Port Numbers	Interface Numbers in Firebox Configuration
A	A0 – A7 (8 port) A0 – A3 (4 port)	8 – 15 8 – 11
B	B0 – B7 (8 port) B0 – B3 (4 port)	16 – 23 16 – 19
C	C0 – C7 (8 port) C0 – C3 (4 port)	16 – 23 16 – 19
D	D0 – D7 (8 port) D0 – D3 (4 port)	24 – 31 24 – 27

If any slot is empty, those interface numbers do not appear in the configuration, and the interface numbers for other installed modular interfaces do not change.



Note about Transceivers

The M4600 and M5600 appliances do not include fiber transceivers. The 1 Gb ports support the SFP standard, and the 10 Gb ports support the SFP+ standard. Transceivers and direct attach cables that support these standards will work in the appliance. WatchGuard maintains a current hardware compatibility list of transceivers that have been tested and confirmed to work with our appliances in our [Knowledge Base](#). That said, other off-the-shelf transceivers should work too.

Both Multi-Mode (Short Range, 1000Base-SX, 850nm) and Single-mode (1000Base-LX, 1310nm, up to 10km) are supported. Direct attach cables have also been tested and confirmed to work.

Product Information

WatchGuard SKUs for Network Modules

WatchGuard Firebox M 8 Port 1Gb Copper Module	WG8592
WatchGuard Firebox M 8 Port 1Gb SFP Fiber Module	WG8593
WatchGuard Firebox M 4 Port 10Gb SFP+ Fiber Module	WG8594

WatchGuard SKUs for Transceivers

Transceiver 1Gb Short-Range SFP for WatchGuard Firebox M	WG8585
Transceiver 10Gb Short-Range SFP+ for WatchGuard Firebox M	WG8583

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ABOUT WATCHGUARD

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