

Adapting to Changing Network Conditions: How Modularity Works

Introduction

Network environments continue to evolve. Fiber, once restricted to enterprise data centers, is now widely available. Even small businesses have access to fiber connectivity options from their Internet Service Providers, and regularly deploy switch equipment that provides 1 Gb or 10 Gb fiber. While firewalls provide the benefit of an all-in-one appliance with advanced security controls, for broad effective protection of your entire network, they can limit network topologies – especially as the network evolves.

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

WatchGuard Firebox M Series and Firebox T85 appliances allow you to add network modules to define a configuration that meet the needs of almost any network configuration.

Each Firebox model has a different number of built-in interfaces and supports additional interface modules.

- **Firebox M5800:** One built-in interface and four interface module slots
- **Firebox M4800:** Eight built-in interfaces and two interface module slots
- **Firebox M290 /M390 /M590 /M690:** Eight to twelve built-in interfaces and one interface module slot
- **Firebox T85:** Eight built-in interfaces and one interface module slot

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Network Modules Available for WatchGuard Firebox

WatchGuard offers module options across our range of Firebox appliances. Modules can be used in any combination:

2ND GENERATION	
Module	Firebox M4800 /5800
8 Port 1Gb Copper	✓
8 Port SFP Fiber	✓
4 Port 10Gb SFP+ Fiber	✓
2 Port 40Gb QSFP+ Fiber	✓



3RD GENERATION			
Module	Firebox M290 /390	Firebox M590 /690	Firebox T85
8 Port 1Gb Copper	✓	✓	
4 Port 1Gb Copper	✓	✓	
4 Port SFP Fiber	✓	✓	
2 Port SFP+ Fiber	✓	✓	
4 Port Multi-speed PoE+	✓*	✓	
1 Port 10Gb SFP+ Fiber			✓
LTE Interface			✓

*Multi-speed module is available, however PoE+ not supported on M290/390.

How Does Modularity Work?

WatchGuard Firebox appliances, like all firewalls, are limited by the line speed of available network ports on the appliance. Adding more ports with network modules unlocks the performance capacity of the appliance, allowing it to achieve its maximum potential firewall throughput. For example, the line speed of a Firebox M4800 in base configuration (Figure 1) is limited by the line speed of the network ports to a total of 8 Gbps because additional modules have not been added. With the addition of modules (shown in Figure 2), the Firebox M4800 is able to achieve full firewall performance with throughput of 50 Gbps UDP1518.

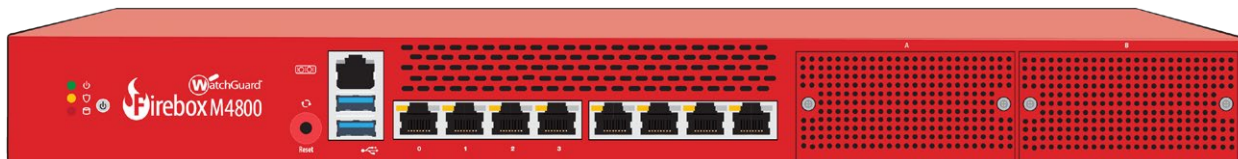


Figure 1: Firebox M4800 in base configuration



Figure 2: Firebox M4800 with modules: 2 x 40 Gb Fiber & 4 x 10 Gb Fiber

2 x 40 Gb Fiber

4 x 10 Gb Fiber

Installing Network Modules

Installing a network module into your Firebox is easy. The Firebox automatically detects installed interface modules when it is powered on. You must install an interface module before you can configure the interfaces. If your Firebox is managed in WatchGuard Cloud, it will update to match the correct port configuration automatically.

If you use Policy Manager, after you install or remove an interface module, you simply connect to the Firebox and launch a new Policy Manager instance to retrieve the Firebox configuration.

Note: 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 WatchGuard Cloud

In the image below you can see how a default interface configuration for Firebox M690, with two interface modules installed, looks in WatchGuard Cloud. WatchGuard Cloud automatically detects modules, and makes them available for management in the UI.

Name	Type	Interfaces	Devices	Wireless
External	External	0/WAN	0	
Main VLAN	Internal	1/LAN,2,3,4,5,6,7,8,9,10,1...	18	
Rihannin VLAN	Internal	12,13,14,15	10	
WPA2 Enterprise VLAN	Internal	12,13,14,15	0	

Figure 3: This image shows the standard list of ports for modules as listed in WatchGuard Cloud.

Network Interfaces by Appliance

Each Firebox model has a different number of built-in interfaces and supports additional interface modules.

Firebox M5800

Firebox 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 labeled with port numbers from 0–7 or 0–3.

Firebox M5800 Slot	Modular Interface Port Numbers	Interface Numbers in Firebox Configuration
A	A0–A7 (8 port) A0–A3 (4 port) A0-A1 (2 port)	0–7 (preinstalled) 0–3 0-1
B	B0–B7 (8 port) B0–B3 (4 port) B0-B1 (2 port)	8–15 8–11 (preinstalled) 8-9
C	C0–C7 (8 port) C0–C3 (4 port) C0-C1 (2 port)	16–23 16–19 16-17
D	D0–D7 (8 port) D0–D3 (4 port) D0-D1 (2 port)	24–31 24–27 24-25

Firebox M4800

Firebox M4800 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 labeled with port numbers from 0–7 or 0–3.

Firebox M4800 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

Firebox M290, M390, M590, and M690

Firebox M290, M390, M590, and M690 have eight built-in interfaces, and one interface module slot. On the interface module, ports are labeled with port numbers from 0-7 or 0-3.

Modular Interface Port Numbers	Interface Numbers in Firebox Configuration
A0–A7 (8 port)	8–15
A0–A3 (4 port)	8–11

Firebox T85

Firebox T85 has eight built-in interfaces, and one interface module slot.

Firebox Slot	Modular Interface Port Numbers	Interface Numbers in Firebox Configuration
A	A0	8

Note about Transceivers

Firebox M4800 and M5800 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](#).

Other off-the-shelf transceivers are compatible as well. Both multimode (Short Range, 1000Base-SX, 850nm) and singlemode (1000Base-LX, 1310nm, up to 10km) are supported. Direct attach cables have also been tested and confirmed to work.

For more information on WatchGuard's award-winning network security solutions, visit www.watchguard.com.

About WatchGuard

WatchGuard® Technologies, Inc. is a global leader in network security, endpoint security, secure Wi-Fi, multi-factor authentication, and network intelligence. The company's award-winning products and services are trusted around the world by over 18,000 security resellers and service providers to protect 250,000 customers. WatchGuard's mission is to make enterprise-grade security accessible to companies of all types and sizes through simplicity, making WatchGuard an ideal solution for midmarket businesses and distributed enterprises. The company is headquartered in Seattle, Washington, with offices throughout North America, Europe, Asia Pacific, and Latin America. To learn more, visit WatchGuard.com.

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