Flowmon Probe Specification

MODELS LIST

Flowmon Probe

Flowmon Probe is a high-performance appliance that monitors network traffic and generate IP flow statistics. The flow statistics are then exported to storage for further analysis by a Flowmon Collector or other NetFlow/IPFIX compatible application. The Probe provides NetFlow/IPFIX data necessary for network operations, troubleshooting, performance, and security monitoring.

Flowmon Probe is available in the form of a hardware appliance of 1U rack unit size and as a virtual appliance for deployment into VMware, Hyper-V, and KVM virtual environments.

Hardware Appliance

Flowmon Probe in the form of a hardware appliance is a high-performance stand-alone device for monitoring all types of networks from 10 Mbps to 100 Gbps. Flowmon Probe comes in a **standard** or **Pro model** with a different number and type of monitoring ports. A hardware-based Flowmon Probe provides a **built-in flow collector** and Flowmon Monitoring Center (FMC) – application for flow collection, visualization, reporting, and analysis. The built-in collector is restricted to receive flow data only from the Probe itself. It is necessary to use a stand-alone Flowmon Collector for collecting data from other/multiple sources.

Flowmon Probe is equipped with two copper 10/100/1000 Mbps Ethernet **management ports** (except for IFP-1000-CU with only one management port) which can be used for appliance configuration, management, and flow data export. On the IFP-200000PRO-QSFP28 model, management ports can be upgraded to 10 Gbps Ethernet by purchasing an upgrade package. The upgrade package can be purchased only for new appliances (at the moment of purchase).

Flowmon Probe is also equipped with a **remote control** feature for remote monitoring of device conditions. The **express** version offers command-line access and a web GUI. The **enterprise** version additionally offers a dedicated network interface and a virtual console. For details, see the

Pre-installation Manual document available at https://support.kemptechnologies.com.

Virtual Appliance

Flowmon Probe in the form of a virtual appliance (VA) is a network monitoring appliance designed for deployment into a virtual environment (VMware, Hyper-V, KVM). Flowmon Probe VA provides functionality similar to the hardware-based Flowmon Probe appliance. Flowmon Probe VA models differ in the number and speed of supported monitoring ports. In contrast wtih the hardware-based appliance, a Flowmon Probe VA **does not include a built-in collector**, hence it is necessary to use a dedicated collector for NetFlow/IPFIX data storage and analysis.

Flowmon Probe VA supports up to two **management ports** (except for IFP-1000-VA with only one supported management port) which can be used for appliance configuration, management, and flow data export.

Flowmon IPFIX Extensions

Flowmon Probe, a hardware-based or virtual appliance, supports **Flowmon IPFIX Extensions** which extend IPFIX information elements with monitoring of network performance statistics (Round-Trip Time, Server Response Time, delays, jitter, etc.) and application protocols such as HTTP, DNS, DHCP, SMB, E-mail, MSSQL, MySQL, PostgreSQL, VoIP SIP statistics, SSL/TLS, CoAP, IEC104 and others. For more information about Flowmon IPFIX Extensions, see the Flow Standards Specification document available at https://support.kemptechnologies.com.

Supported L2 and Tunneling Protocols

Besides MAC addresses monitoring, Flowmon Probe also supports various L2 protocols and encapsulations such as VLAN, QinQ, MPLS, GRE, OTV, ESP, Avaya SPB, TRILL, and VxLAN. The monitoring interfaces of IFP-1000-CU, IFP-2000-CU, IFP-4000-CU, IFP-4000-SFP, IFP-10000-SFP+, IFP-20000-SFP+, IFP-4000PRO-CU and IFP-4000PRO-SFP can be used as targets for ERSPAN/GRE or VxLAN monitoring sessions.

Hardware Appliances

P/N[1]	Model	Performance Per Port[2]	Performance Per Appliance[2]	Monitoring Port	Flow Cache[3]	RAID	Disk Type	CPU[4]	RAM	Remote Control
IFP-1000-CU	Flowmon Probe 1000	1.48 Mpps	1.48 Mpps	1 x 10/100/1000 Mbps Ethernet	0.5 M	-	1 x SATA	8	32 GB	Express
IFP-2000-CU	Flowmon Probe 2000	1.48 Mpps	2.96 Mpps	2 x 10/100/1000 Mbps Ethernet	0.5 M	-	1 x SATA	8	32 GB	Express
IFP-4000-CU	Flowmon Probe 4000	1.48 Mpps	3 Mpps	4 x 10/100/1000 Mbps Ethernet	0.5 M	-	1 x SATA	8	32 GB	Express
IFP-4000-SFP	Flowmon Probe 4000 SFP	1.48 Mpps	3 Mpps	4 x 1 Gbps Ethernet	0.5 M	-	1 x SATA	8	32 GB	Express
IFP-10000-SFP+	Flowmon Probe 10000 SFP+	1.5 Mpps	1.5 Mpps	1 x 10 Gbps Ethernet	4 M	-	1 x SATA	12	64 GB	Enterprise
IFP-20000-SFP+	Flowmon Probe 20000 SFP+	1.5 Mpps	3 Mpps	2 x 10 Gbps Ethernet	4 M	-	1 x SATA	12	64 GB	Enterprise
IFP-40000-SFP+	Flowmon Probe 40000 SFP+	5 Mpps	20 Mpps	4 x 10 Gbps Ethernet	4 M	RAID1	2 x SATA	48	64 GB	Enterprise
IFP-4000PRO-CU	Flowmon Probe 4000 Pro	1.48 Mpps	3 Mpps	4 x 10/100/1000 Mbps Ethernet	0.5 M	RAID1	2 x SATA	8	32 GB	Enterprise
IFP-4000PRO-SFP	Flowmon Probe 4000 Pro SFP	1.48 Mpps	3 Mpps	4 x 1 Gbps Ethernet	0.5 M	RAID1	2 x SATA	8	32 GB	Enterprise
IFP-20000PRO-SFP+	Flowmon Probe 20000 Pro SFP+	14.8 Mpps	29.6 Mpps	2 x 10 Gbps Ethernet	4 M	RAID1	2 x SATA	48	128 GB	Enterprise
IFP-40000PRO-SFP+	Flowmon Probe 40000 Pro SFP+	14.8 Mpps	59.2 Mpps	4 x 10 Gbps Ethernet	4 M	RAID1	2 x SATA	48	128 GB	Enterprise
IFP-200000PRO-QSFP28	Flowmon Probe 200000 Pro QSFP28	100 Mpps[5]	150 Mpps[5]	2 x 40/100 Gbps Ethernet	32 M	RAID1	2 x SATA	40[6]	256 GB	Enterprise

[1] CU indicates a copper-based monitoring interface. SFP, SFP+ and QSFP28 interfaces require the use of a transceiver module chosen from Flowmon Accessories Price List according to the characteristics of the monitored network.

[2] Performance is measured in our test environment using the smallest supported packet size of 64 bytes. Flowmon Probe is configured without any optional L2/L3/L4/L7 protocol analysis, tunnel decapsulation or additionally installed packages. All RX/TX traffic of the monitored network is sent to a single monitoring port of the appliance. There are several other factors that may affect your specific performance, such as traffic type, average packet size, distribution of packet arrival times, number and type of L2/L3/L4/L7 protocols being analyzed or additionally installed packages. In deployments that split RX/TX traffic of the monitored network to different monitoring ports of the appliance, e.g. by using an optical TAP, NPM metrics will not be computed correctly, the quality of L2/L3/L4/L7 protocol analysis may be negatively impacted and the overall performance may not be optimal. While we do our best to represent the data as fairly and accurately as possible, your environment may experience different limits.

[3] The number of flow entries in flow cache per monitoring port.

[4] The number of CPU cores, with Hyper-Threading enabled.

[5] Performance is measured for IP traffic or IP traffic encapsulated in MPLS (up to 2 layers), VLAN or QinQ, without any optional L2/L3/L4/L7 protocol analysis or additionally installed packages. If other encapsulation protocols or appliance configuration options are used, performance may vary based on the encapsulation protocol and network traffic distribution and mixture. For example, the observed performance of an appliance monitoring a network with up to 100000 flows per second whilst performing DNS, HTTP, NBAR2, TLS and NPM metrics analysis is approx. 6 Mpps per port.

[6] Model IFP-200000PRO-QSFP28 has Hyper-Threading disabled.

Flowmon Probe **IFP-200000PRO-QSFP28** can operate in **2x 100G** or **2x 40G** modes. We recommend to use transceivers from Flowmon Accessories Price List:
• 2x 100G mode: 2x 100G-QSFP28-SR4 or 2x 100G-QSFP28-LR4 transceivers.   • 2x 40G mode: 2x 40G-QSFP-SR4 or 2x 40G-QSFP-LR4 transceivers.

All models of a hardware-based Flowmon Probe are equipped with a built-in collector capable of processing **50 000 fps** (flows per second) and come with **1 TB storage capacity**

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Hardware Appliances – Operating conditions

P/N	Model	Dimensions (H x W x D) cm	Weight (kg)	PSU		Power Consumption		Heat Dissipation (max.)
				Power	Hot Swap	CPU Idle	CPU max	
IFP-1000-CU	Flowmon Probe 1000	1U, 4.3 x 43.4 x 57.3	12.2	450 W	no	68 W	154 W	1725 BTU/h
IFP-2000-CU	Flowmon Probe 2000	1U, 4.3 x 43.4 x 56.3	12.5	450 W	no	59 W	126 W	1725 BTU/h
IFP-4000-CU	Flowmon Probe 4000	1U, 4.3 x 43.4 x 56.3	12.5	450 W	no	59 W	126 W	1725 BTU/h
IFP-4000-SFP	Flowmon Probe 4000 SFP	1U, 4.3 x 43.4 x 57.3	12.2	450 W	no	68 W	154 W	1725 BTU/h
IFP-10000-SFP+	Flowmon Probe 10000 SFP+	1U, 4.3 x 43.4 x 56.3	13.1	600 W	no	72 W	156 W	2250 BTU/h
IFP-20000-SFP+	Flowmon Probe 20000 SFP+	1U, 4.3 x 43.4 x 56.3	13.1	600 W	no	72 W	156 W	2250 BTU/h
IFP-40000-SFP+	Flowmon Probe 40000 SFP+	1U, 4.3 x 43.4 x 69.3	17.5	2 x 550 W	yes	153 W	300 W	2559 BTU/h
IFP-4000PRO-CU	Flowmon Probe 4000 Pro	1U, 4.3 x 43.4 x 57.3	12.2	450 W	no	79 W	165 W	1725 BTU/h
IFP-4000PRO-SFP	Flowmon Probe 4000 Pro SFP	1U, 4.3 x 43.4 x 57.3	12.2	450 W	no	79 W	165 W	1725 BTU/h
IFP-20000PRO-SFP+	Flowmon Probe 20000 Pro SFP+	1U, 4.3 x 43.4 x 71.2	18.6	2 x 800 W	yes	127 W	354 W	2730 BTU/h
IFP-40000PRO-SFP+	Flowmon Probe 40000 Pro SFP+	1U, 4.3 x 43.4 x 71.2	18.6	2 x 800 W	yes	127 W	354 W	2730 BTU/h
IFP-200000PRO-QSFP28	Flowmon Probe 200000 Pro QSFP28	1U, 4.3 x 43.4 x 77.3	21.9	2 x 750 W	yes	175 W	475 W	2559 BTU/h

Continuous Operation:

- Temperature: 10°C ÷ 35°C
- Relative Humidity[1]: 10% ÷ 80% at 29°C

Expanded Operation[2]:

- Temperature: 5°C ÷ 40°C
- Relative Humidity[1]: 5% ÷ 85% at 29°C

[1] The specified temperature is the maximum dew point temperature.

[2] When operating in the expanded temperature range, system performance may be impacted. Device can work in this condition for up to 1% of annual operating hour

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Virtual Appliances

P/N	Model	Performance Per Port [1] (fps)	Performance Per Appliance [1]	Monitoring Interfaces	Flow Cache [2]	VMware ESXi	Microsoft Hyper-V	KVM	Minimum Configuration [3]
IFP-1000-VA	Flowmon Probe 1000 VA	Up to 0.3 Mpps	Up to 0.3 Mpps	1 x 1 Gbps Ethernet	0.5 M				4 CPU cores, 8 GB RAM, min. 25 GB HDD
IFP-2000-VA	Flowmon Probe 2000 VA	Up to 0.3 Mpps	Up to 0.6 Mpps	2 x 1 Gbps Ethernet	0.5 M			KVM 3.10.0 and higher QEMU 1.5.3 and higher libvirt 4.5.0 and higher	4 CPU cores, 8 GB RAM, min. 25 GB HDD
IFP-4000-VA	Flowmon Probe 4000 VA	Up to 0.3 Mpps	Up to 1.2 Mpps	4 x 1 Gbps Ethernet	0.5 M	5.5 and later	2012 R2 and higher		6 CPU cores, 8 GB RAM, min. 25 GB HDD
IFP-6000-VA	Flowmon Probe 6000 VA	Up to 0.3 Mpps	Up to 1.8 Mpps	6 x 1 Gbps Ethernet	0.5 M				6 CPU cores, 8 GB RAM, min. 25 GB HDD
IFP-10000-VA	Flowmon Probe 10000 VA	Up to 0.7 Mpps	Up to 0.7 Mpps	1 x 10 Gbps Ethernet	4 M				8 CPU cores, 8 GB RAM, min. 25 GB HDD
IFP-20000-VA	Flowmon Probe 20000 VA	Up to 0.7 Mpps	Up to 1.4 Mpps	2 x 10 Gbps Ethernet	4 M				8 CPU cores, 8 GB RAM, min. 25 GB HDD

[1] Performance is measured in our test environment using the smallest supported packet size of 64 bytes. Flowmon Probe is configured without any optional L2/L3/L4/L7 protocol analysis, tunnel decapsulation or additionally installed packages. In virtual environments, the performance depends on allocated resources, overall system load, and environment of deployment. There are several other factors that may affect your specific performance, such as traffic type, average packet size, distribution of packet arrival times, number and type of L2/L3/L4/L7 protocols being analyzed or additionally installed packages. While we do our best to represent the data as fairly and accurately as possible, your environment may experience different limits.

[2] A number of flow entries in flow cache per monitoring port.

[3] Some configuration options, such as supported disk size, may be limited by the customer's virtual environment regardless of which Flowmon Probe model has been selected. Any such limitations should be consulted with the vendor/distributor of the virtual environment.

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