Cisco Firepower 1000, 2100 FXOS, Secure Firewall 3100 and 4200 MIB Reference Guide

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CONTENTS

About This Guide

Conventions

Text Type	Indication
GUI elements	GUI elements such as tab titles, area names, and field labels appear in **this font**. Main titles such as window, dialog box, and wizard titles appear in **this font**.
User input	Text the user should enter exactly as shown or keys a user should press appear in `this font`.
Document titles	Document titles appear in *this font*.
TUI elements	In a Text-based User Interface, text the system displays appears in `this font.`
System output	Terminal sessions and information that the system displays appear in `this font.`
CLI commands	CLI command keywords appear in **this font**. Variables in a CLI command appear in *this font*.
[ ]	Elements in square brackets are optional.
{x | y | z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	Nonprinting characters such as passwords are in angle brackets.

Text Type	Indication
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note   Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.

Tip   Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Timesaver   Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Caution   Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.

Warning   IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

SAVE THESE INSTRUCTIONS

Related Documentation

For more information, see Cisco Firepower 2100 Series Useful Links

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at Cisco Profile Manager.

- To get the business impact you're looking for with the technologies that matter, visit Cisco Services.

- To submit a service request, visit Cisco Support.

- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit Cisco Marketplace.

- To obtain general networking, training, and certification titles, visit Cisco Press.

- To find warranty information for a specific product or product family, access Cisco Warranty Finder.

Cisco Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

C H A P T E R 1

About Cisco FXOS MIB Files

This chapter includes the following sections:

Cisco FXOS MIB Files

FXOS MIB files are a set of objects that are private extensions to the IETF standard MIB II. MIB II is documented in RFC 1213, *Management Information Base for Network Management of TCP/IP-based Internets: MIB-II*. Portions of MIB-II have been updated since RFC 1213. See the IETF website http://www.ietf.org for the latest updates to this MIB.

If your NMS cannot get requested information from FXOS, then the MIB that allows that specific data collection might be missing. Typically, if an NMS cannot retrieve a particular MIB variable, either the NMS does not recognize that MIB variable, or the agent does not support the MIB variable. If the NMS does not recognize a specific MIB variable, you might need to load the MIB into the NMS, usually with a MIB compiler. For example, you might need to load the Cisco FXOS private MIB or the supported RFC MIB into the NMS to execute the required data collection. If the agent does not support a specific MIB variable, you must find out what version of system software you are running. Different software releases support different MIBs.

Note Cisco and IETF MIBs are updated frequently. You should download and install the latest FXOS MIBs from Cisco.com whenever you upgrade the FXOS software. Unique versions of the FXOS MIBs are generated for each software release and are posted with the release.

Downloading Cisco FXOS MIB Files from Cisco.com

Before you begin

Cisco FXOS MIBs are generated for each software release and are posted with the release.

Procedure

Step 1 Open a browser and go to the following URL:

https://software.cisco.com/download/navigator.html?mdfid=286291275&flowid=79503

Step 2 In the lower-right list, select your Security Appliance series: **Firepower 2100 Series**, **Firepower 1000 Series**, or **Secure Firewall 3100 Series**.

The lower-right list changes to show the available models for the selected series.

Step 3 Select your Security Appliance model from the list.

The Download Software page lists available categories of software for your security appliance.

Step 4 In the Select a Software Type list, select **Firepower Threat Defense Software**.

Step 5 Select your software version from the menu on the left and then click **Download** for the Firepower Threat Defense MIBs item.

Note MIB files are not posted with patch software releases.

Cisco FXOS Faults

A fault is a mutable object that is managed by the FXOS. Each fault represents a failure or an alarm threshold that has been raised. During the life cycle of a fault, it can change from one state or severity to another.

Each fault includes information about the operational state of the affected object at the time the fault was raised. If the fault is transitional and the failure is resolved, then the object transitions to a functional state.

A fault remains in FXOS until the fault is cleared and deleted according to the settings in the fault collection policy.

The following table lists the FXOS traps included in the CISCO-FIREPOWER-AP-NOTIFS-MIB.

Table 1: CISCO-FIREPOWER-AP-NOTIFS-MIB Traps

Trap	Description
cfprApFaultActiveNotif The OID for this SNMP trap is .1.3.6.1.4.1.9.9.826.2.0.1.	This notification is generated by FXOS whenever a fault is raised.
cfprApFaultClearNotif The OID for this SNMP trap is .1.3.6.1.4.1.9.9.826.2.0.2.	This notification is generated by FXOS whenever a fault is cleared.

All FXOS faults are available with SNMP using the cfprApFaultInstTable table and the CISCO-FIREPOWER-AP-FAULT-MIB. The table contains one entry for every fault instance. Each entry has variables to indicate the nature of a problem, such as its severity and type. The same object is used to model all FXOS fault types, including equipment problems, FSM failures, configuration or environmental

issues, and connectivity issues. The cfprApFaultInstTable table includes all active faults (those that have been raised and need user attention), and all faults that have been cleared but not yet deleted because of the retention interval.

The **cfprApFaultInstTable** table contains cfprApFaultInstEntry objects that can be queried through the XML API.Chassis Manager

The following table describes the attributes exposed by the cfprApFaultInstTable.

Table 2: cfprApFaultInstEntry Attritubes

Attribute	Description
Fault Instance ID (Table Index)	A unique integer that identifies the fault.
Affected Object DN	The distinguished name of the mutable object that has the fault.
Affected Object OID	The Object identifier (OID) of the mutable object that has the fault.
Creation Time	The time that the fault was created, depicted in UTC format.
Last Modification	The time when any of the attributes were modified.
Code	A code that provides information specific to the nature of the fault.
Type	The fault type.
Cause	The probable cause of the fault.
Severity	The severity of the fault. Fault severity transitions throughout the lifecyle of the fault, so several different fault severities can be reported during the lifecyle of a fault. These include: • Original severity reported when the fault was first detected • Current severity reported for the fault • Previous severity reported for the fault • Highest severity reported for the fault
Occurrence	The number of times that a fault has occurred since it was created.
Description	A human readable string that contains all information related to the fault.

FXOS sends a cfprApFaultActiveNotif event notification whenever a fault is raised. There is one exception to this rule: FXOS does not send event notifications for FSM faults. The trap variables indicate the nature of the problem, including the fault type. FXOS sends a cfprApFaultClearNotif event notification whenever a fault has been cleared. A fault is cleared when the underlying issue has been resolved.

The cfprApFaultActiveNotif and cfprApFaultClearNotif traps are defined in the CISCO-FIREPOWER-AP-NOTIFS-MIB. All faults can be polled using SNMP GET operations on the cfprApFaultInstTable, which is defined in the CISCO-FIREPOWER-AP-FAULT-MIB.

> **Note** The Data Management Engine (DME) generates the OID values dynamically. Due to this default behaviour, some of the OIDs in SNMP MIBs change after a reboot.
>
> An example of SNMP OID values, before and after a reboot, from FP 9300:
>
> **Before reboot**
>
> ```
> cfprEtherFtwPortPairOperMode.31623 .1.3.6.1.4.1.9.9.826.1.21.33.1.22.31623
> CISCO-FIREPOWER-ETHER-MIB
>
> cfprEtherFtwPortPairOperMode.31625 .1.3.6.1.4.1.9.9.826.1.21.33.1.22.31625
> CISCO-FIREPOWER-ETHER-MIB
> ```
>
> **After reboot**
>
> ```
> cfprEtherFtwPortPairOperMode.31623 .1.3.6.1.4.1.9.9.826.1.21.33.1.22.31625
> CISCO-FIREPOWER-ETHER-MIB
>
> cfprEtherFtwPortPairOperMode.31625 .1.3.6.1.4.1.9.9.826.1.21.33.1.22.31627
> CISCO-FIREPOWER-ETHER-MIB
> ```

For more details about FXOS faults, see *Cisco Firepower 2100 Series Faults and Error Messages*.

Use Cases for Cisco FXOS MIBs

Common use cases for Cisco FXOS MIBs are described below.

Receiving Fault Event Notifications

If you want to use SNMP traps for fault event notification in your NMS, you must first load the prerequisite MIBs (see Prerequisite MIBs, on page 9), then load the MIBs listed below.

> **Important** You should load the MIBs in the order listed to eliminate most of the load-order issues.

- CISCO-FIREPOWER-AP-MIB.my

- CISCO-FIREPOWER-AP-TC-MIB.my

- CISCO-FIREPOWER-AP-FAULT-MIB.my

- CISCO-FIREPOWER-AP-NOTIFS-MIB.my

The following table describes the traps included in the CISCO-FIREPOWER-AP-NOTIFS-MIB.

Table 3: CISCO-FIREPOWER-AP-NOTIFS-MIB Traps

Trap	Description
cfprApFaultActiveNotif The OID that corresponds to this SNMP trap is .1.3.6.1.4.1.9.9.826.2.0.1.	This notification is generated by FXOS whenever a fault is raised.
cfprApFaultClearNotif The OID that corresponds to this SNMP trap is .1.3.6.1.4.1.9.9.826.2.0.2.	This notification is generated by FXOS whenever a fault is cleared.

Gathering Inventory Information

FXOS MIBs can be used to gather information about the compute equipment in your Firepower 2100 series appliance, Firepower 1000 series, or Secure Firewall 3100 series. Inventory information includes data such as security modules, serial numbers, DIMMs, and other intelligence related to system equipment.

See Purpose of the Cisco FXOS MIBs, on page 13, to learn more about which MIBs you need to add to your NMS to collect the inventory data that interests you.

Gathering Statistics

If you want to use SNMP as a way to gather statistics, use the table below as a guide to which MIBs to load and which tables in each MIB to query.

Note The table lists the statistics most commonly monitored in FXOS, but it does not contain an exhaustive list of all statistics that can be monitored. To gather statistics beyond those listed below, refer to Purpose of the Cisco FXOS MIBs, on page 13, review the content of the various packages, and download the additional MIB files necessary to meet your specific needs.

Table 4: MIBs to Use for Gathering Statistics

Statistics Type	MIB that Gathers the Statistic	Statistics Table Name and Objects in SNMP
Ethernet	CISCO-FIREPOWER-AP-ETHER-MIB .1.3.6.1.4.1.9.9.826.2.1.21 is the parent OID where the key statistics reside.	**cfprApEtherPauseStatsTable**—Packet pause stats **cfprApEtherLossStatsTable**—Packet loss stats **cfprApEtherErrStatsTable**—Packet error stats **cfprApEtherTxStatsTable**—Packet transmission stats Objects in **cfprApEtherTxStatsTable**—cfprApEtherTxStatsEntry, cfprApEtherTxStatsInstanceId, cfprApEtherTxStatsJumboPackets, cfprApEtherTxStatsMulticastPackets, cfprApEtherTxStatsSuspect, cfprApEtherTxStatsThresholded, cfprApEtherTxStatsTimeCollected, cfprApEtherTxStatsTotalBytes, cfprApEtherTxStatsTotalPackets, cfprApEtherTxStatsUnicastPackets, cfprApEtherTxStatsUpdate, cfprApEtherTxStatsBroadcastPackets, cfprApEtherTxStatsIntervals **cfprApEtherRxStatsTable**—Packet reception stats
Adapter	CISCO-FIREPOWER-AP-ADAPTOR-MIB .1.3.6.1.4.1.9.9.826.2.1.3 is the parent OID where the key statistics reside.	**cfprApAdaptorEthPortBySizeLargeStatsTable** **cfprApAdaptorEthPortBySizeSmallStatsTable** **cfprApAdaptorEthPortStatsTable** **cfprApAdaptorEthPortOutsizedStatsTable** **cfprApAdaptorEthPortMcastStatsTable**
Blade and rack level	CISCO-FIREPOWER-AP-COMPUTE-MIB .1.3.6.1.4.1.9.9.826.2.1.12 is the parent OID where the key statistics reside.	**cfprApComputeMbPowerStatsTable**—Provides all motherboard power statistics for every security module. **cfprApComputeMbTempStatsTable**—Provides all motherboard temperature statistics for every security module.
Processor	CISCO-FIREPOWER-AP-PROCESSOR-MIB .1.3.6.1.4.1.9.9.826.2.1.66 is the parent OID where the key statistics reside.	**cfprApProcessorEnvStatsTable**—Provides all CPU power and temperature statistics for every CPU socket.

Statistics Type	MIB that Gathers the Statistic	Statistics Table Name and Objects in SNMP
Equipment	CISCO-FIREPOWER-AP-EQUIPMENT-MIB .1.3.6.1.4.1.9.9.826.2.1.20 is the parent OID where the key statistics reside.	**cfprApEquipmentFanStatsTable**—Provides all statistics for every physical fan. **cfprApEquipmentFanModuleStatsTable**—Provides all fan module temperature statistics for every fan module. **cfprApEquipmentChassisStatsTable**—Provides all chassis level temperature statistics. **cfprApEquipmentPsuStatsTable**—Provides all chassis level power and temperature statistics for every power supply. **cfprApEquipmentIOCardStatsTable**—Provides all chassis level power and temperature statistics for the fabric interconnect.
Memory statistics	CISCO-FIREPOWER-AP-MEMORY-MIB .1.3.6.1.4.1.9.9.826.2.1.50 is the parent OID where the key statistics reside.	**cfprApMemoryUnitEnvStatsTable**—Provides all memory DIMM temperature statistics for every memory module.
Switching statistics	CISCO-FIREPOWER-AP-SW-MIB .1.3.6.1.4.1.9.9.826.2.1.75 is the parent OID where the key statistics reside.	**cfprApSwEnvStatsTable**—Provides configuration and status information on the switch configuration.
Security Module statistics	CISCO-FIREPOWER-AP-SM-MIB .1.3.6.1.4.1.9.9.826.2.1.71 is the parent OID where key security-module statistics reside.	**cfprApSmMonitorTable**—Provides disk, CPU, and memory utilization statistics for each security module.
Storage statistics	CISCO-FIREPOWER-AP-STORAGE-MIB .1.3.6.1.4.1.9.9.826.2.1.74.20 is the parent OID where storage statistics reside.	**cfprApStorageItemTable**—Provides storage element statistics.
Interface statistics	IF-MIB 1.3.6.1.2.1.2.2.1 is the parent OID where the interface statistics reside.	**ifTable**—Provides a list of interface entries. An entry contains management information applicable to a particular interface. It includes **ifInDiscards**, **ifInErrors**, **ifOutDiscards**, **ifOutErrors**, and so on.
Process statistics	CISCO-PROCESS-MIB 1.3.6.1.4.1.9.9.109 is the parent OID where the process statistics reside.	**cpmCPUTotalTable** contains **cpmCPUTotalEntry** which provides overall information about the CPU load. Entries in this table come and go as CPUs are added and removed from the system.

Statistics Type	MIB that Gathers the Statistic	Statistics Table Name and Objects in SNMP
System statistics	CISCO-SYSTEM-EXT-MIB 1.3.6.1.4.1.9.9.305 is the parent OID where the CPU availability and bandwidth information resides	**cseSysCPUUtilization** —Provides the average utilization of CPU on the active supervisor.

Configuring snmpwalk Retry and Timeout Values

When you use snmpwalk to gather metrics of the device in bulk, you might experience long waiting hours. There is a default timeout, where the command waits for a response from device. You can change this default timeout and retry values:

```
$ time snmpwalk -v2c -c cisco123 -r 1 -t 5 <IP Address> system
```

Here, -r 1 and -t 5 indicates retry for one time and timeout of 5 seconds respectively. Thus, a total timeout of 10 seconds is configured.

Types of MIBs

Chassis Management is based on the XML over HTTP model, which provides a rich data model to configure and monitor the system. This model includes polices, service profiles, configuration and monitoring data, and statistics.

To simplify the integration of FXOS with SNMP-based NMS, FXOS exposes the model through SNMP. The entire FXOS data model is exposed through the read-only Cisco FXOS MIBs. All objects that can be retrieved through the FXOS XML API can also be retrieved through FXOS MIBs.

✎

Note   Each release maintains complete coverage of the XML API model through private MIBs.

Cisco Extensions to the IF-MIB

The IF-MIB supports basic management status and control of interfaces and sublayers within a network switch. Multiple standard and Cisco-specific MIBs use ifIndex from the IF-MIB to extend management for specific interface types. Cisco MIBs also enhance the two interface notifications, linkUp and linkDown, from the IF-MIB to provide a clearer indication of the reason for these notifications. Cisco MIBs add two varbinds to **linkUp** and **linkDown** as shown in the following table.

Table 5: Varbinds Added to IF-MIB Notifications

Notification	Varbinds Added
linkUp	ifDescr
linkDown	ifDescr

Loading Cisco FXOS MIBs Into a Network Management System

This chapter includes the following sections:

Load Cisco FXOS MIBs

Before loading FXOS MIBs into an NMS, you must first load the prerequisite MIBs into the NMS. This enables you to receive the FXOS Fault Traps in the NMS.

Prerequisite MIBs

The MIBs in this section are required for all use cases and need to be loaded before other Cisco MIBs are loaded.

👉

Important   You should load the MIBs in the order listed to eliminate most of the load-order issues.

The following is a list of MIBs from which many other MIBs import definitions:

- SNMPv2-SMI.my
- SNMPv2-TC.my
- SNMP-FRAMEWORK-MIB.my
- RFC1213-MIB.my
- IF-MIB.my
- CISCO-SMI.my
- ENTITY-MIB.my

- INET-ADDRESS-MIB.my

- CISCO-TC.my

> **Note** The CISCO-SMI MIB defines the iso.org.dod.internet.private.enterprise.cisco.ciscoMgmt object (1.3.6.1.4.9.9), which is the parent node of all Cisco FXOS MIBs. Several MIBs, including the CISCO-SMI MIB, must be loaded before other Cisco FXOS MIBs. Attempting to load other Cisco FXOS MIBs before the CISCO-SMI MIB generally results in a MIB compiler error stating that a MIB node has no parent node.

MIB Loading Order

Most of the MIB use definitions are defined in other MIBs. These definitions are listed in the IMPORTS section near the top of the MIB.

For example, if MIB B imports a definition from MIB A, some MIB compilers require you to load MIB A before loading MIB B. If you get the MIB loading order wrong, you might get an error message that a MIB is undefined or not listed in IMPORTS. If you receive an error message, look at the loading order of MIBs defined in the IMPORTS section. Ensure that you have the appropriate load order.

Order for Loading MIBs in Cisco FXOS

FXOS supports network MIBs and a series of MIBs to access all of the objects stored in the FXOS Management Information Tree.

All managed objects that can be accessed through the FXOS XML API can also be retrieved through read-only SNMP GET operations.

> **Important** You should load the MIBs in the order listed to eliminate most of the load-order issues.

If you want to receive Cisco FXOS traps in your NMS, first load the prerequisite MIBs (see Prerequisite MIBs, on page 9), then load the following Cisco MIBs:

- CISCO-FIREPOWER-AP-MIB.my

- CISCO-FIREPOWER-AP-TC-MIB.my

- CISCO-FIREPOWER-AP-FAULT-MIB.my

- CISCO-FIREPOWER-AP-NOTIFS-MIB.my

If you want to retrieve FXOS managed objects using read-only SNMP GET operations, you need to load all additional Cisco FXOS MIBs. The additional FXOS MIBs are generally used to retrieve inventory and configuration information using SNMP GET operations. To learn more about all of the FXOS MIBs, see Purpose of the Cisco FXOS MIBs, on page 13.

Note   In environments running multiple versions of FXOS, load the latest FXOS MIBs in the NMS, because all FXOS MIBs are developed to be backward-compatible with previous versions.

Purpose of the Cisco FXOS MIBs

This chapter describes the purpose of the Cisco FXOS MIBs.

Purpose of the Cisco FXOS MIBs

The following table describes the purpose of each Cisco FXOS MIB.

Table 6: MIB Purposes

MIB	Purpose
CISCO-FIREPOWER-AP-AAA-MIB	This package contains data about configuring and monitoring the AAA operation within FXOS. It includes the following information: • Identities of external AAA servers such as LDAP, TACACS, and RADIUS. These servers are used as authoritative repositories to authenticate FXOS users. • Local users • User roles and locales • Mappings between users, roles, and locales • Prelogin banner configuration • Audit logs • AAA policies, such as password policies

MIB	Purpose
CISCO-FIREPOWER-AP-ADAPTOR-MIB	This package contains configuration and statistics information that reflect the state of physical network adapters within a Firepower 2100 series appliance, Firepower 1000 series appliance, or Secure Firewall 3100 series appliance. It includes the following information: • Ethernet and Ethernet port channel Interfaces • Network statistics per adapter
CISCO-FIREPOWER-AP-BIOS-MIB	This package contains configuration objects for BIOS settings. It includes the following information: • Boot order parameters for the Firepower 2100 series Firepower 1000, or Secure Firewall 3100 appliance. • Policy-based BIOS parameters that can be applied to service profiles
CISCO-FIREPOWER-AP-BMC-MIB	This package reports Power-On Self Test (POST) statistics.
CISCO-FIREPOWER-AP-CALLHOME-MIB	This package contains configuration objects for the Call Home feature. It includes the following information: • Contact information • Customer ID and contract ID • Email address • SMTP servers • Call Home profiles and policies • System inventory
CISCO-FIREPOWER-AP-CAPABILITY-MIB	This package contains configuration objects for the capability catalog. This catalog contains the characteristics of various physical components in the Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance including fabric interconnect (supervisor), network adapters, security modules, chassis, network modules, CPUs, memory units, fan modules, local disks, power supply modules, and storage controllers. FXOS is designed to support new hardware by uploading a new capability catalog that includes the following information: • Capability catalog objects • Objects to manage the capability catalog, such as uploading a new catalog to an existing system

MIB	Purpose
CISCO-FIREPOWER-AP-COMM-MIB	This package contains configuration objects that control global configurations, such as DNS, HTTP, and SNMP. It includes the following information: • Date and time management • DNS management • Configuration of REST API over HTTP and HTTPS • NTP management • Shell access configuration • SNMP management • Telnet management
CISCO-FIREPOWER-AP-COMPUTE-MIB	This package contains configuration, inventory, and statistics objects for computing resources. It includes the following information: • Inventory objects for security modules and components • Chassis connectivity policies • Security module discovery and autoconfiguration policies • Pool objects
CISCO-FIREPOWER-AP-DCX-MIB	This package contains operational information about virtual interfaces and circuits. It includes the following information: • Virtual interfaces configured for each security module network adapter • Virtual circuits configured for each security module adapter, chassis, or network module
CISCO-FIREPOWER-AP-DHCP-MIB	This package contains DHCP subsystem details. It includes information on DHCP leases obtained by the Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance subcomponents.

MIB	Purpose
CISCO-FIREPOWER-AP-DIAG-MIB	This package contains diagnostics information about Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance subcomponents. • Diagnostic policies • Network test objects • Diagnostic results
CISCO-FIREPOWER-AP-DOMAIN-MIB	This package contains details about the Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance and security module storage media.
CISCO-FIREPOWER-AP-EPQOS-MIB	This package contains details about network Quality of Service (QoS). It includes the following information: • Egress QoS policy • Internal object to manage the network QoS
CISCO-FIREPOWER-AP-EQUIPMENT-MIB	This package contains details about the Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance inventory. Objects in this package are defined to model the physical components. It includes the following information: • Network adapters • Beacon LEDs • Board controllers • Fabric Interconnect fixed and extension modules • Firepower 2100 series chassis, Firepower 1000 appliance, or Secure Firewall 3100 appliance • Fan • SSD • IO card • Memory unit • Power supply module

MIB	Purpose
CISCO-FIREPOWER-AP-ETHER-MIB	This package contains details about the Ethernet port inventory and statistics about the Ethernet ports. It includes the following information: • Objects that represent inventoried Ethernet ports and port channels • Statistics about Ethernet ports
CISCO-FIREPOWER-AP-EVENT-MIB	This package contains details about the event log. An event is any significant occurrence in FXOS that may require users to be notified. Events can help users identify and diagnose the source of problems. It includes the following information: • Object to model the event log • Object to model an entry in the event log • Event log policy, which specifies the number of events that need to be maintained in the event log and the event retention policy.
CISCO-FIREPOWER-AP-EXTMGMT-MIB	This package contains details about management interfaces. It includes the following information: • Management interfaces • Gateway ping policy • Interface monitoring policy • ARP targets
CISCO-FIREPOWER-AP-EXTPOL-MIB	This package contains details about external clients that are connected to FXOS.
CISCO-FIREPOWER-AP-EXTVMM-MIB	This package contains information about certificate and private key stores.

MIB	Purpose
CISCO-FIREPOWER-AP-FABRIC-MIB	This package contains information about the configuration and policies on the Firepower 2100 series appliance fabric (supervisor). The Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance fabric define Ethernet, storage, port configuration, and VLANs.
	It includes the following information:
	• VLANs
	• Required Ethernet configuration for uplink ports and port channels
	• VLAN port membership
	• VCON policies
CISCO-FIREPOWER-AP-FAULT-MIB	This package provides information about FXOS faults. A fault is an abnormal condition or defect at the component, equipment, or subsystem level, which may lead to a failure as defined in ISO/CD 10303-226.
	Each managed object in the management tree may have one or more faults that indicate a particular problem with this object.
	It includes the following information:
	• Fault objects
	• Fault policy, including fault retention, flapping, and clear action
CISCO-FIREPOWER-AP-FIRMWARE-MIB	This package contains details about the firmware management of the Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance components. This includes objects to download firmware packages, manage firmware images and firmware packages, firmware packs, and to control firmware upgrades or downgrades.
	It includes the following information:
	• Downloader object to download firmware packages
	• Objects to model firmware and firmware packages
	• Firmware packs
	• Control of firmware upgrades and downgrades
CISCO-FIREPOWER-AP-FLOWCTRL-MIB	This package contains the network flow control policy details.
CISCO-FIREPOWER-AP-IPPOOL-MIB	This package contains details about pools of IP addresses that are reserved for internal use.

MIB	Purpose
CISCO-FIREPOWER-AP-LLDP-MIB	This package contains details about the Link Layer Discovery Protocol (LLDP) object. It includes information on the objects that provide inventory information about peer links through LLDP.
CISCO-FIREPOWER-AP-LS-MIB	This package contains the top-level objects for FXOS service profiles. It includes the following information: • FXOS service profile • Binding between a service profile and a security module/engine • Requirements that a physical security module must satisfy to be associated with a service profile
CISCO-FIREPOWER-AP-LSBOOT-MIB	This package contains information about the boot objects for FXOS service profiles. It contains the following information: • Service profile boot policy • Boot images • Virtual Media
CISCO-FIREPOWER-AP-LSMAINT-MIB	This package contains details about FXOS service profile maintenance policy. The FXOS service profile maintenance policy specifies what you can do when a requested change requires a reboot.
CISCO-FIREPOWER-AP-MACPOOL-MIB	This package contains details about pools of MAC addresses. Pools of MAC addresses are used to assign virtual MAC addresses to service profile vNICs. It includes the following information: • Pools of MAC addresses • MAC addresses that can be assigned to service profile vNICs

MIB	Purpose
CISCO-FIREPOWER-AP-MAPPINGS-MIB	This package contains information about the relationships between the FXOS Managed Objects. It includes the following information: • The cfprApMappingsMoContainmentTable provides containment information to navigate from a parent-managed object to the child-managed objects. • The cfprApMappingsMoInverseContainmentTable provides information to navigate from a child-managed object to the parent-managed object. • The cfprApMappingsDnToOidTable provides a mapping from the Managed Object Distinguished Name to the SNMP OID.
CISCO-FIREPOWER-AP-MEMORY-MIB	This package contains details about memory units that are installed in security modules. It includes the following information: • Memory arrays • Memory units • Memory qualification • Statistics
CISCO-FIREPOWER-AP-MGMT-MIB	This package contains FXOS provisioning details. It includes the following information: • Objects to perform backups and imports of chassis manager configuration • Access policies • Process Monitor entries
CISCO-FIREPOWER-AP-MIB	This package defines the top-level FXOS Managed Object.
CISCO-FIREPOWER-AP-NETWORK-MIB	This package provides information about Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance fabric interconnect (supervisor). It includes the following information: • Objects to specify the IP addresses of the Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance fabric interconnect • Network statistics

MIB	Purpose
CISCO-FIREPOWER-AP-NOTIFS-MIB	This MIB contains the definitions of the SNMP notifications that are supported by FXOS. The following notifications are defined: • FXOS fault raised • FXOS fault cleared
CISCO-FIREPOWER-AP-NWCTRL-MIB	This package provides information about network control policies.
CISCO-FIREPOWER-AP-ORG-MIB	This package provides information about the organizational hierarchy in the FXOS Management Information Tree.
CISCO-FIREPOWER-AP-OS-MIB	This package contains guest OS agent details. It includes the following information: • Guest OS instance • Guest OS agent
CISCO-FIREPOWER-AP-PCI-MIB	This package contains details about inventory PCI cards. It includes the following information: • Inventory PCI card • Equipment slot
CISCO-FIREPOWER-AP-PKI-MIB	This package contains details about Public Key Infrastructure (PKI) objects. It includes the following information: • Certificate requests • Key ring
CISCO-FIREPOWER-AP-PORT-MIB	This package provides information about physical ports on the fabric interconnect (supervisor) and the port groups on the fabric interconnect. It includes the following information: • Port groups • Abstract objects for physical ports on the fabric interconnect (supervisor) • Port trust mode

MIB	Purpose
CISCO-FIREPOWER-AP-POWER-MIB	This package contains details about chassis power capping policies and statistics. It includes the following information: • Chassis power capping • Chassis power statistics
CISCO-FIREPOWER-AP-PROC-MIB	This package contains details about the internal components of FXOS. It includes the following information: • Statistics about Cisco FXOS transactions • Information about Cisco FXOS processes
CISCO-FIREPOWER-AP-PROCESSOR-MIB	This package provides information about Central Processing Units that can be installed on the Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance. It includes the following information: • CPU characteristics • CPU statistics
CISCO-FIREPOWER-AP-QOSCLASS-MIB	This package provides information about QoS classes.
CISCO-FIREPOWER-AP-SM-MIB	This package contains monitoring data for the security modules in the system. It includes the following information: • Application software version • Memory usage • Disk usage • CPU utilization
CISCO-FIREPOWER-AP-STATS-MIB	This package contains details about statistics. It includes the following information: • Objects to specify statistics collection • Objects to specify threshold policies

MIB	Purpose
CISCO-FIREPOWER-AP-STORAGE-MIB	This package contains details about storage elements that can be installed or accessed from a Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance.
	It includes following information:
	• Local disks
	• Storage controllers
	• Storage enclosures
CISCO-FIREPOWER-AP-SW-MIB	This package contains details about how the system should be configured. Objects in this package are created implicitly by the system based on user-specified data from the "fabric" package. For example, the "fabric" package may specify high-level fabric policies, and the "sw" package may specify individual VLAN membership for each physical port.
	It includes the following information:
	• VLANs
	• VLAN membership
	• Ethernet ports
CISCO-FIREPOWER-AP-SYSDEBUG-MIB	This package provides information to help troubleshoot FXOS.
	It includes the following information:
	• Objects for accessing and exporting core files
	• Backup behavior
	• Log policies
	• Tech support file repository
CISCO-FIREPOWER-AP-SYSFILE-MIB	This package provides information to manage the import or export of system files.
	It includes abstract classes that support the import and export of FXOS files.
CISCO-FIREPOWER-AP-TC-MIB	This MIB contains all the SNMP textual conventions that are used in other FXOS MIBs.
CISCO-FIREPOWER-AP-TOP-MIB	This package contains the definition of the root object in the FXOS management information tree.

MIB	Purpose
CISCO-FIREPOWER-AP-TRIG-MIB	This package contains information to manage scheduled and triggered activities. It includes the following objects: • Objects to schedule activities • Objects to monitor activities that have been scheduled • Objects to track activities that require user acknowledgment
CISCO-FIREPOWER-AP-UUIDPOOL-MIB	This package contains details about the pools of UUID identifiers. Pools of UUID identifiers are used to assign virtual UUIDs to service profiles. It includes the following information: • Pools of UUID identifiers • Block of UUID identifiers • UUID identifiers, which can be assigned to service profiles
CISCO-FIREPOWER-AP-VERSION-MIB	This package reports the FXOS software version.
CISCO-FIREPOWER-AP-VM-MIB	This package contains details specific to the inventory and monitoring of virtual machines. FXOS keeps track of virtual machines if the VM vNIC is provided.
CISCO-FIREPOWER-AP-VNIC-MIB	This package contains details about Firepower 2100 series appliance, Firepower 1000 appliance, or Secure Firewall 3100 appliance network adapters, including Ethernet vNICs. It includes the following information: • Objects to model a Service Profile Ethernet vNIC • Policies that control the behavior of vNICs • Policies for dynamic vNICSs • Boot targets