



Operational Data Parser Polling

YANG data models enables you to read operational state data from devices.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

Information About Operational Data

Operational Data Overview

You can use YANG data models to read operational state data from a device. The operational data allows you to determine the current state and behavior of a device, similar to IOS **show** commands.

You can perform NETCONF GET operations to retrieve read-only operational state data from a system. You must enable NETCONF, activate data parsers (where applicable), and then retrieve the data through an appropriate YANG model.

The *How to Configure Operational Data* section provides information on configuring operational data through a programmable interface and the CLI.

Operational Data Parsers and Corresponding YANG Models

There are two types of operational data parsers; one that is always on, and the other that must be configured to poll operational data at regular intervals. For the first type of operational data parser, no configuration is required. Data is always fetched from the device during a NETCONF GET request. These data parsers do not have a polling-interval, and operational data is updated as soon as a change occurs.

The second type of operational data parsers must be activated either via the CLI or a NETCONF message (For more information, see the *How to Enable Operational Data Parser Polling* section.). The operational data for these types of parsers is polled at regular polling intervals and this information is retrieved during a NETCONF GET request.

The following table lists the data parsers that must be activated, and the corresponding YANG model where the operational data is stored.

Table 1: Operational Data Parsers to be Activated and Corresponding Yang Models

Operational Data Parser Name	YANG Model to Access Operational Data
BGP	Cisco-IOS-XE-bgp-oper.yang
BFD	Cisco-IOS-XE-bfd-oper.yang
DiffServ	ietf-diffserv-target.yang
FlowMonitor	Cisco-IOS-XE-flow-monitor-oper.yang
IPRoute	ietf-routing.yang
MPLSLForwarding	Cisco-IOS-XE-mpls-fwd-oper.yang
MPLSLDPNeighbor	Cisco-IOS-XE-mpls-ldp.yang
MPLSStaticBinding	common-mpls-static.yang
OSPF	ietf-ospf.yang
PlatformSoftware	Cisco-IOS-XE-platform-software-oper.yang

How to Enable Operational Data Parser Polling

Enabling Operational Data Parser Polling Through a Programmable Interface

Perform this task to enable operational data parser polling through a programmable interface:

1. After enabling NETCONF-YANG, send an <edit-config> remote procedure call (RPC) using `cisco-odm.yang` (available in the [GitHub Repository](#)) to enable operational data polling. When the polling is enabled, all operational data parsers are activated by default. The default polling-interval of each parser is 120 seconds (120000 milliseconds). The polling interval decides the frequency at which the parser obtains the operational data and updates the corresponding YANG model in the datastore.

- After operational data polling is enabled, send a <get> RPC to obtain the operational data. Use the parser-to-YANG model mapping to determine which operational YANG model should be used to retrieve the operational data. The following RPC reply fetches access control list (ACL) operational data using Cisco-IOS-XE-acl-oper.yang:

```

CORRESPONDING RPC REPLY:
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101">
  <data>
    <access-lists xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-acl-oper">
      <access-list>
        <access-control-list-name>TEST</access-control-list-name>
        <access-list-entries>
          <access-list-entry>
            <rule-name>10</rule-name>
            <access-list-entries-oper-data>
              <match-counter>100</match-counter>
            </access-list-entry>
          <access-list-entry>
            <rule-name>20</rule-name>
            <access-list-entries-oper-data>
              <match-counter>122</match-counter>
            </access-list-entry>
          </access-list-entries>
        </access-list>
      </access-lists>
    </data>
  </rpc-reply>

```



Note For more information, see the `cisco-odm.yang` model in the [GitHub repository](#).

Enabling Operational Data Parser Polling Through the CLI

After enabling NETCONF-YANG, perform this task to enable operational data parser polling and to adjust the polling interval.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none">• Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	netconf-yang cisco-odm polling-enable Example:	Enables operational data polling.

	Command or Action	Purpose
	Device(config)# netconf-yang cisco-odm polling-enable	
Step 4	netconf-yang cisco-odm actions <i>action-name</i> Example: Device(config)# netconf-yang cisco-odm actions OSPF	Enables the specified action, and enters ODM-action configuration mode. <ul style="list-style-type: none"> Specify the operational data parser name to retrieve operational data.
Step 5	mode poll Example: Device(config-odm-action)# mode poll	Configures the data parser in poll mode.
Step 6	polling-interval <i>seconds</i> Example: Device(config-odm-action)# polling-interval 1000	Changes the default parser-polling interval. <ul style="list-style-type: none"> To stop the parser from polling data, configure the mode none command.
Step 7	end Example: Device(config-odm-action)# end	Exits ODM-action configuration mode and returns to privileged EXEC mode.

What to do next

After enabling operational data polling, send a <get> RPC to obtain operational data from the device.

Additional References for Operational Data Parser Polling

Related Documents

Related Topic	Document Title
YANG data models for Cisco IOS XE	To access Cisco YANG models in a developer-friendly way, please clone the GitHub repository , and navigate to the vendor/cisco subdirectory.
Programmability commands	<ul style="list-style-type: none"> Cisco Catalyst 3850 Command Reference

MIBs

MB	MIBs Link
	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<p>http://www.cisco.com/support</p>

Feature Information for Operational Data Parser Polling

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use the Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 2: Feature Information for Operational Data Parser Polling

Feature Name	Release	Feature Information
Operational Data Parser Polling	Cisco IOS XE Everest 16.5.1a	YANG data models, enables you to read operational state data from a device. In Cisco IOS XE Everest 16.5.1a, this feature was implemented on the following platforms: <ul style="list-style-type: none"> • Cisco Catalyst 3850 Series Switches

