Unified Data Models

CLI-based YANG data models, also known as unified configuration models are introduced in Cisco IOS XR Software Release 7.0.1. The unified models provide a full coverage of the router functionality, and serves as a single abstraction for YANG and CLI commands. Unified models are generated from the CLI and replaces the native schema-based models.

The unified models are available in `pkg/yang` location. The presence of `um` in the model name indicates that the model is a unified model. For example, Cisco-IOS-XR-**um**-<feature>-cfg.yang.

You can access the models supported on the router using the following command:

```
Router#run
[node]$cd /pkg/yang
[node:pkg/yang]$ls
```

The unified models are also available in the Github repository.

Unified Configuration Models

Table 1: Feature History Table

Feature Name	Release Information	Description
Unified Data Model to map script file to the custom OID	Release 7.5.3	Use the `Cisco-IOS-XR-um-script-server-cfg.yang` unified data model to map script file to the custom OID.
Unified Data Model to Configure checksum in the custom OID	Release 7.5.3	Use the `Cisco-IOS-XR-um-script-cfg.yang` unified data model to configure checksum for the newly added file-name in the Custom OID.

Feature Name	Release Information	Description
Unified Data Model to Configure Encapsulated Ambiguous VLANs	Release 7.5.3	Use the `Cisco-IOS-XR-um-if-encap-ambiguous-cfg.yang` unified data model to configure encapsulated ambiguous VLANs with IEEE802.1ad Provider Bridging (PB) encapsulation type on an access-interface.
Unified Data Model to Configure MAC Address	Release 7.5.3	Use the `Cisco-IOS-XR-um-if-mac-address-cfg.yang` unified data model to set or delete a Media Access Control (MAC) address of the Management Ethernet interface, which acts as a unique identifier for the device in the network.
New Unified Models	Release 7.5.2	Unified models are CLI-based YANG models that are designed to replace the native schema-based models. This release introduces new unified models to configure the Fabric Interface ASIC (FIA), Link Aggregation Control Protocol (LACP), Cisco Express Forwarding (CEF) and controller fabric. You can access these new unified models from the Github repository.
Transitioning Native Models to Unified Models (UM)	Release 7.4.1	Unified models are CLI-based YANG models that are designed to replace the native schema-based models. UM models are generated directly from the IOS XR CLIs and mirror them in several ways. This results in improved usability and faster adoption of YANG models. You can access the new unified models from the Github repository.

The following table lists the unified models supported on Cisco IOS XR routers.

Table 2: Unified Models

Unified Models	Introduced in Release
Cisco-IOS-XR-um-script-server-cfg	Release 7.5.3
Cisco-IOS-XR-um-script-cfg	Release 7.5.3
Cisco-IOS-XR-um-if-mac-address-cfg	Release 7.5.3
Cisco-IOS-XR-um-if-encap-ambiguous-cfg	Release 7.5.3
Cisco-IOS-XR-um-cont-cpri-cfg	Release 7.5.2
Cisco-IOS-XR-um-lacp-cfg	Release 7.5.2

Unified Models	Introduced in Release
Cisco-IOS-XR-um-controller-fabric-cfg	Release 7.5.2
Cisco-IOS-XR-um-if-ipsubscriber-cfg	Release 7.5.1
Cisco-IOS-XR-um-session-redundancy-cfg	Release 7.5.1
Cisco-IOS-XR-um-subscriber-accounting-cfg	Release 7.5.1
Cisco-IOS-XR-um-subscriber-cfg	Release 7.5.1
Cisco-IOS-XR-um-subscriber-redundancy-cfg	Release 7.5.1
Cisco-IOS-XR-um-dyn-tmpl-opendns-cfg	Release 7.5.1
Cisco-IOS-XR-um-dynamic-template-cfg	Release 7.5.1
Cisco-IOS-XR-um-dynamic-template-cfg	Release 7.5.1
Cisco-IOS-XR-um-lpts-profiling-cfg	Release 7.5.1
Cisco-IOS-XR-um-ppp-cfg	Release 7.5.1
Cisco-IOS-XR-um-pppoe-cfg	Release 7.5.1
Cisco-IOS-XR-um-vpdn-cfg	Release 7.5.1
Cisco-IOS-XR-um-aaa-subscriber-cfg	Release 7.5.1
Cisco-IOS-XR-um-dynamic-template-ipv4-cfg	Release 7.5.1
Cisco-IOS-XR-um-dynamic-template-ipv6-cfg	Release 7.5.1
Cisco-IOS-XR-um-dynamic-template-vrf-cfg	Release 7.5.1
Cisco-IOS-XR-um-mibs-subscriber-cfg	Release 7.5.1
Cisco-IOS-XR-um-dyn-tmpl-monitor-session-cfg	Release 7.5.1
Cisco-IOS-XR-um-l2tp-class-cfg	Release 7.5.1
Cisco-IOS-XR-um-dynamic-template-dhcpv6d-cfg	Release 7.5.1
Cisco-IOS-XR-um-dyn-tmpl-service-policy-cfg	Release 7.5.1
Cisco-IOS-XR-um-snmp-server mroutemib send-all-cfg	Release 7.5.1
Cisco-IOS-XR-um-aaa-cfg	Release 7.4.1
Cisco-IOS-XR-um-aaa-diameter-cfg	Release 7.4.1
Cisco-IOS-XR-um-aaa-nacm-cfg	Release 7.4.1
Cisco-IOS-XR-um-aaa-tacacs-server-cfg	Release 7.4.1
Cisco-IOS-XR-um-aaa-task-user-cfg	Release 7.4.1

Unified Models	Introduced in Release
Cisco-IOS-XR-um-banner-cfg	Release 7.4.1
Cisco-IOS-XR-um-bfd-sbfd-cfg	Release 7.4.1
Cisco-IOS-XR-um-call-home-cfg	Release 7.4.1
Cisco-IOS-XR-um-cdp-cfg	Release 7.4.1
Cisco-IOS-XR-um-cef-accounting-cfg	Release 7.4.1
Cisco-IOS-XR-um-cfg-mibs-cfg	Release 7.4.1
Cisco-IOS-XR-um-cli-alias-cfg	Release 7.4.1
Cisco-IOS-XR-um-clock-cfg	Release 7.4.1
Cisco-IOS-XR-um-config-hostname-cfg	Release 7.4.1
Cisco-IOS-XR-um-cont-breakout-cfg	Release 7.4.1
Cisco-IOS-XR-um-cont-optics-cfg	Release 7.4.1
Cisco-IOS-XR-um-control-plane-cfg	Release 7.4.1
Cisco-IOS-XR-um-crypto-cfg	Release 7.4.1
Cisco-IOS-XR-um-domain-cfg	Release 7.4.1
Cisco-IOS-XR-um-ethernet-cfm-cfg	Release 7.4.1
Cisco-IOS-XR-um-ethernet-oam-cfg	Release 7.4.1
Cisco-IOS-XR-um-exception-cfg	Release 7.4.1
Cisco-IOS-XR-um-flowspec-cfg	Release 7.4.1
Cisco-IOS-XR-um-frequency-synchronization-cfg	Release 7.4.1
Cisco-IOS-XR-um-hostname-cfg	Release 7.4.1
Cisco-IOS-XR-um-hw-module-port-range-cfg	Release 7.4.1
Cisco-IOS-XR-um-hw-module-profile-cfg	Release 7.4.1
Cisco-IOS-XR-um-ip-virtual-cfg	Release 7.4.1
Cisco-IOS-XR-um-ipsla-cfg	Release 7.4.1
Cisco-IOS-XR-um-l2vpn-cfg	Release 7.4.1
Cisco-IOS-XR-um-line-cfg	Release 7.4.1
Cisco-IOS-XR-um-line-exec-timeout-cfg	Release 7.4.1
Cisco-IOS-XR-um-line-general-cfg	Release 7.4.1

Unified Models	Introduced in Release
Cisco-IOS-XR-um-line-timestamp-cfg	Release 7.4.1
Cisco-IOS-XR-um-lldp-cfg	Release 7.4.1
Cisco-IOS-XR-um-location-cfg	Release 7.4.1
Cisco-IOS-XR-um-logging-cfg	Release 7.4.1
Cisco-IOS-XR-um-logging-correlator-cfg	Release 7.4.1
Cisco-IOS-XR-um-lpts-pifib-cfg	Release 7.4.1
Cisco-IOS-XR-um-lpts-pifib-domain-cfg	Release 7.4.1
Cisco-IOS-XR-um-lpts-pifib-dynamic-flows-cfg	Release 7.4.1
Cisco-IOS-XR-um-mibs-cbqosmib-cfg	Release 7.4.1
Cisco-IOS-XR-um-mibs-fabric-cfg	Release 7.4.1
Cisco-IOS-XR-um-mibs-ifmib-cfg	Release 7.4.1
Cisco-IOS-XR-um-mibs-rfmib-cfg	Release 7.4.1
Cisco-IOS-XR-um-mibs-sensormib-cfg	Release 7.4.1
Cisco-IOS-XR-um-monitor-session-cfg	Release 7.4.1
Cisco-IOS-XR-um-mpls-oam-cfg	Release 7.4.1
Cisco-IOS-XR-um-ntp-cfg	Release 7.4.1
Cisco-IOS-XR-um-pce-cfg	Release 7.4.1
Cisco-IOS-XR-um-pool-cfg	Release 7.4.1
Cisco-IOS-XR-um-priority-flow-control-cfg	Release 7.4.1
Cisco-IOS-XR-um-rcc-cfg	Release 7.4.1
Cisco-IOS-XR-um-router-hsrp-cfg	Release 7.4.1
Cisco-IOS-XR-um-router-vrrp-cfg	Release 7.4.1
Cisco-IOS-XR-um-service-timestamps-cfg	Release 7.4.1
Cisco-IOS-XR-um-ssh-cfg	Release 7.4.1
Cisco-IOS-XR-um-tcp-cfg	Release 7.4.1
Cisco-IOS-XR-um-telnet-cfg	Release 7.4.1
Cisco-IOS-XR-um-tpa-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-bridgemib-cfg	Release 7.4.1

Unified Models	Introduced in Release
Cisco-IOS-XR-um-traps-config-copy-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-entity-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-entity-redundancy-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-entity-state-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-flash-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-fru-ctrl-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-ipsec-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-l2tun-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-otn-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-power-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-selective-vrf-download-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-syslog-cfg	Release 7.4.1
Cisco-IOS-XR-um-traps-system-cfg	Release 7.4.1
Cisco-IOS-XR-um-udp-cfg	Release 7.4.1
Cisco-IOS-XR-um-vty-pool-cfg	Release 7.4.1
Cisco-IOS-XR-um-xml-agent-cfg	Release 7.4.1
Cisco-IOS-XR-um-conflict-policy-cfg	Release 7.3.1
Cisco-IOS-XR-um-flow-cfg	Release 7.2.1
Cisco-IOS-XR-um-if-access-group-cfg	Release 7.2.1
Cisco-IOS-XR-um-if-ipv4-cfg	Release 7.2.1
Cisco-IOS-XR-um-if-ipv6-cfg	Release 7.2.1
Cisco-IOS-XR-um-if-service-policy-qos-cfg	Release 7.2.1
Cisco-IOS-XR-um-ipv4-access-list-cfg	Release 7.2.1
Cisco-IOS-XR-um-ipv6-access-list-cfg	Release 7.2.1
Cisco-IOS-XR-um-l2-ethernet-cfg	Release 7.2.1
Cisco-IOS-XR-um-multicast-routing-cfg	Release 7.2.1
Cisco-IOS-XR-um-object-group-cfg	Release 7.2.1
Cisco-IOS-XR-um-policymap-classmap-cfg	Release 7.2.1

Unified Models	Introduced in Release
Cisco-IOS-XR-um-router-igmp-cfg	Release 7.2.1
Cisco-IOS-XR-um-router-pim-cfg	Release 7.2.1
Cisco-IOS-XR-um-statistics-cfg	Release 7.2.1
Cisco-IOS-XR-um-ethernet-services-access-list-cfg	Release 7.2.1
Cisco-IOS-XR-um-if-l2transport-cfg	Release 7.2.1
Cisco-IOS-XR-um-ipv4-prefix-list-cfg	Release 7.2.1
Cisco-IOS-XR-um-ipv6-prefix-list-cfg	Release 7.2.1
Cisco-IOS-XR-um-router-amt-cfg	Release 7.2.1
Cisco-IOS-XR-um-router-mld-cfg	Release 7.2.1
Cisco-IOS-XR-um-router-msdp-cfg	Release 7.2.1
Cisco-IOS-XR-um-router-bgp-cfg	Release 7.1.1
Cisco-IOS-XR-um-mpls-te-cfg	Release 7.1.1
Cisco-IOS-XR-um-router-isis-cfg	Release 7.1.1
Cisco-IOS-XR-um-router-ospf-cfg	Release 7.1.1
Cisco-IOS-XR-um-router-ospfv3-cfg	Release 7.1.1
Cisco-IOS-XR-um-grpc-cfg	Release 7.0.1
Cisco-IOS-XR-um-if-bundle-cfg	Release 7.0.1
Cisco-IOS-XR-um-if-ethernet-cfg	Release 7.0.1
Cisco-IOS-XR-um-if-ip-address-cfg	Release 7.0.1
Cisco-IOS-XR-um-if-vrf-cfg	Release 7.0.1
Cisco-IOS-XR-um-interface-cfg	Release 7.0.1
Cisco-IOS-XR-um-mpls-l3vpn-cfg	Release 7.0.1
Cisco-IOS-XR-um-netconf-yang-cfg	Release 7.0.1
Cisco-IOS-XR-um-router-rib-cfg	Release 7.0.1
Cisco-IOS-XR-um-router-static-cfg	Release 7.0.1
Cisco-IOS-XR-um-snmp-server-cfg	Release 7.0.1
Cisco-IOS-XR-um-telemetry-model-driven-cfg	Release 7.0.1
Cisco-IOS-XR-um-vrf-cfg	Release 7.0.1

Unified Models	Introduced in Release
Cisco-IOS-XR-um-arp-cfg	Release 7.0.1
Cisco-IOS-XR-um-if-arp-cfg	Release 7.0.1
Cisco-IOS-XR-um-if-mpls-cfg	Release 7.0.1
Cisco-IOS-XR-um-if-tunnel-cfg	Release 7.0.1
Cisco-IOS-XR-um-mpls-ldp-cfg	Release 7.0.1
Cisco-IOS-XR-um-mpls-lsd-cfg	Release 7.0.1
Cisco-IOS-XR-um-rsvp-cfg	Release 7.0.1
Cisco-IOS-XR-um-traps-mpls-ldp-cfg	Release 7.0.1

LLDP global and interface-level configuration enhancement

LLDP (Link Layer Discovery Protocol) global and interface-level configuration enhancement

- prevents LLDP global parameters configuration from automatically enabling LLDP on all interfaces, and
- ensures that LLDP enablement is controlled explicitly at the interface level, maintaining granular control over LLDP behavior.

Table 3: Feature History Table

Feature Name	Release Information	Feature Description
LLDP global and interface-level configuration enhancement	Release 25.1.1	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200, P100], 8700 [ASIC: P100, K100]); Centralized Systems (8600 [ASIC:Q200]); Modular Systems (8800 [LC ASIC: Q100, Q200, P100]) You can now configure LLDP (Link Layer Discovery Protocol) global parameters without automatically enabling LLDP on all interfaces by default. This feature provides a granular operational control of the LLDP interface-level configurations. By aligning with OpenConfig models, this feature introduces a more efficient operational control where LLDP is enabled on an interface only when both global and interface-level LLDP configurations are enabled. Previously, LLDP was enabled if either configuration was present, potentially leading to inconsistent behavior. The feature introduces these changes: **CLI**: • **lldp interface-only** **YANG Data Model**: • `Cisco-IOS-XR-um-lldp-cfg` (see GitHub, YANG Data Models Navigator)

How does this feature affect the OpenConfig and native YANG model behavior?

When you configure OpenConfig global LLDP parameters, the `lldp interface-only` configuration is automatically added to the native `Cisco-IOS-XR-um-lldp-cfg` YANG model to retain consistent OpenConfig behavior. This ensures that modifying global LLDP parameters through OpenConfig does not unintentionally enable LLDP on all interfaces. This behavior provides seamless alignment between OpenConfig and the native YANG model, ensuring predictable and consistent LLDP behavior across interfaces.

What happens when LLDP is configured globally without using this feature?

Without the **lldp interface-only** option, enabling LLDP globally through OpenConfig adds the LLDP container with global parameters in the native `Cisco-IOS-XR-um-lldp-cfg` YANG model, which in turn activates LLDP on all interfaces. This can lead to inconsistent LLDP behavior, particularly when users expect interface-level configurations to remain in control.

How does the new behavior differ from the old behavior?

Use the table to understand the difference in LLDP operational states between the old and new behaviors.

Table 4: OpenConfig LLDP behavior changes

If OpenConfig global LLDP is...	And OpenConfig interface-level LLDP is...	Then the new LLDP interface state is...	And the old LLDP interface state was...
enabled (default)	container not added state	disabled	enabled.
enabled	enabled (default—after adding the interface container)	enabled	enabled.
enabled	disabled	disabled	enabled.
disabled	enabled	disabled	enabled.
disabled	disabled	disabled	disabled.

What is the effect of global and interface-level LLDP configurations on interface states?

The table provides an overview of how different configurations affect the operational state of the LLDP interfaces.

Table 5: LLDP state based on global and interface-level configuration

If global LLDP is...	And interface-level LLDP configuration is...	Then the interface LLDP state is...
lldp	not configured	enable.
lldp interface-only	not configured	disable.
lldp interface-only	**lldp enable**	enable.
lldp	**lldp enable**	enable.