New and Changed Feature Information

This section lists all the new and changed features for the Programmability Configuration Guide.

New and Changed Programmability Features

Feature	Description	Changed in Release
Revised OpenConfig Data Model	This releases introduces revisions to OpenConfig data models. For the list of models, the revised version and details, see the *Release Notes for Cisco NCS 5500 Series Routers, IOS XR Release 7.5.3*	Release 7.5.3
New Unified Models	This release introduces 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.	Release 7.5.3
New Unified Models	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.	Release 7.5.2
Operational Data Model for EEM Script	You can programmatically retrieve the operational status of events, actions, and policy maps using the YANG data model. In earlier releases, you used the `show event manager` command to view the operational status of event scripts. This release introduces `Cisco-IOS-XR-ha-eem-policy-oper.yang` and `Cisco-IOS-XR-event-manager-policy-map-oper.yang` data models.	Release 7.5.2

Feature	Description	Changed in Release
Use gNMI Get Request With Wildcard Key to Retrieve Data	You use a gRPC Network Management Interface (gNMI) `Get` request with wildcard key to retrieve the configuration and operational data of all the elements in the data model schema paths. In earlier releases, you had to specify the correct key to retrieve data. The router returned a JSON error message if the key was not specified in a list node.	Release 7.5.2
Automation Scripts for gNMI RPCs	You can create automation scripts to connect to the gRPC Network Management Interface (gNMI) server and interact with the router using gNMIservices. Based on gNMI-defined RPCs, you can use the automation script to connect to the gNMI server, manage the configuration of network devices, and query the operational data.	Release 7.5.2
Add Multiple Events In a Policy Map With a Single EEM Script	With this feature, you can add multiple events to a policy-map with boolean (AND or OR) correlation. EEM triggers the script when correlation defined in the policy-map for the events is true. For example, a multi-event policy-map for `event1` and `event2` with `event1 AND event2` boolean operation is triggered only when both `event1` and `event2` are true.	Release 7.5.1
Debug Automation Scripts	Use this feature to collect logs that contain debug information for ltraces and tech-support data. These logs aid in troubleshooting whenever the scripts are not working as expected. This feature introduces the **show tech-support script** command.	Release 7.5.1
Github Repository for Automation Scripts	You now have access to sample scripts and templates published on the Github repository. You can leverage these samples to use the python packages and libraries developed by Cisco to build your custom automation scripts for your network	Release 7.5.1
Manage Common Script Actions Using YANG RPCs	This feature enables you to use YANG remote procedure calls (RPCs) on `Cisco-IOS-XR-infra-script-mgmt-act.yang` data model to perform actions on the automation scripts such as add or remove script from the script repository, run, or stop script from running.	Release 7.5.1
Update Automation Scripts from Remote Server	This feature lets you update automation scripts across routers by accessing the master script from a remote site. This eases script management, where you make changes to the master script and then copy it to routers where it is deployed. This feature introduces the **auto-update** keyword in the **script exec** command.	Release 7.5.1
Upgraded IOS XR Python from Version 3.5 to Version 3.9	This upgrade adds new modules and capabilities to create Python scripts and execute the scripts on routers running Cisco IOS XR software. Some of the modules added as part of the upgraded IOS XR Python 3.9 are: hashlib, idna, packaging, pyparsing, six, yaml.	Release 7.5.1

Feature	Description	Changed in Release
Validate Pre-configuration Using Config Scripts	This feature allows you to use config scripts to validate pre-configuration during a commit operation. You can configure any valid hardware resource such as line cards or interfaces without the resource installed on the router. At a later point, when the resource is available, the script recognises the resource and implements the configuration. This activity saves time, eliminates the need to update and re-validate the script.	Release 7.5.1
gRPC over Unix Domain Sockets	With this feature, a gRPC server listens for requests on Unix sockets for clients within containers on IOS XR to send gRPC requests. This feature provides an enhanced inter-process communication that allows an on-box client to connect to the server without passing the user credentials in the metadata.	Release 7.5.1

New and Changed Programmability Features