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The bridge to possible

Manage your Cisco NX-OS Fabric with OpenConfig

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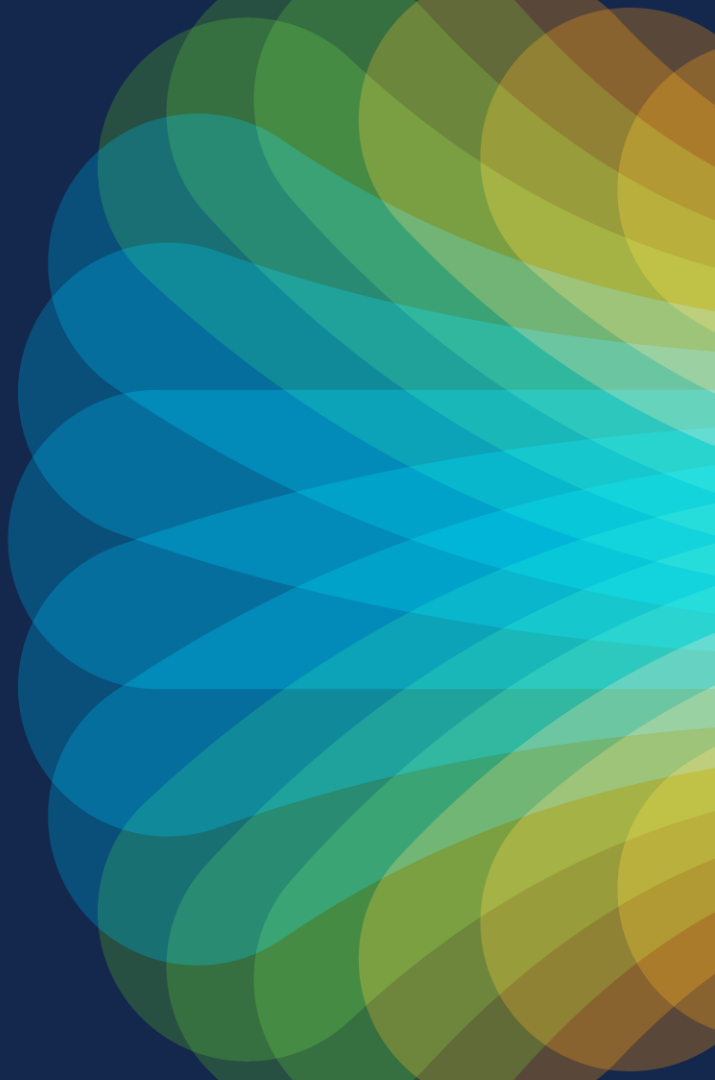
DEVNET-1677

Agenda

- Introduction
- What is OpenConfig?
- Tools and Integrations
- Transports and Protocols
- Walk-Through
- Conclusion

Introduction



What is OpenConfig?

OpenConfig YANG Models

- Models defined using YANG data modeling language
- Define both configuration and operational data models
- OpenConfig YANG – vendor-neutral common data models
- Cisco partnered to define a VXLAN EVPN model in OpenConfig

Tools and Integrations

Pyang

An extensible YANG (RFC 6020/7950) validator. Provides a framework for plugins that can convert YANG modules to other formats.

https://pypi.org/project/pyang/

```
┌─gsheehan ~/workspace/devnet-1677/10.4-1
└─➤  pyang -f tree openconfig-interfaces.yang

module: openconfig-interfaces
  +--rw interfaces
     +--rw interface* [name]
        +--rw name                -> ../config/name
        +--rw config
        |  +--rw name?            string
        |  +--rw type             identityref
        |  +--rw mtu?             uint16
        |  +--rw loopback-mode?   boolean
        |  +--rw description?     string
        |  +--rw enabled?         boolean
        +--ro state
        |  +--ro name?            string
        |  +--ro type             identityref
        |  +--ro mtu?             uint16
        |  +--ro loopback-mode?   boolean
        |  +--ro description?     string
        |  +--ro enabled?         boolean
        |  +--ro ifindex?         uint32
        |  +--ro admin-status     enumeration
```

Pyang

Modules YANG structures data models into modules and submodules

Containers group related nodes in subtree

Lists a sequence of list entries

Leaf simple data node with one value

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YANG Suite

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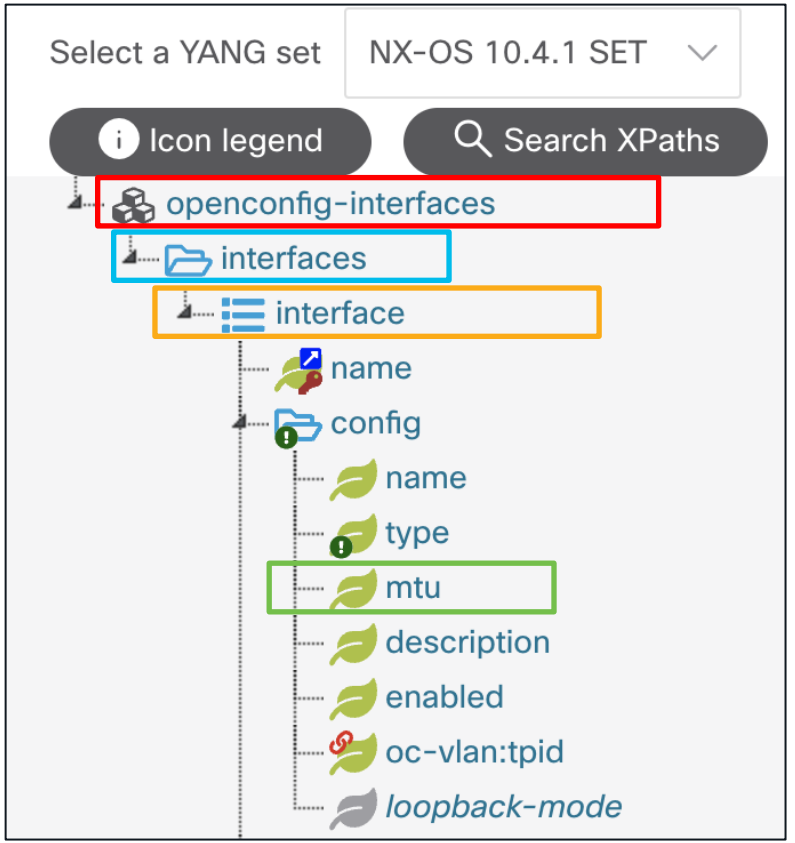
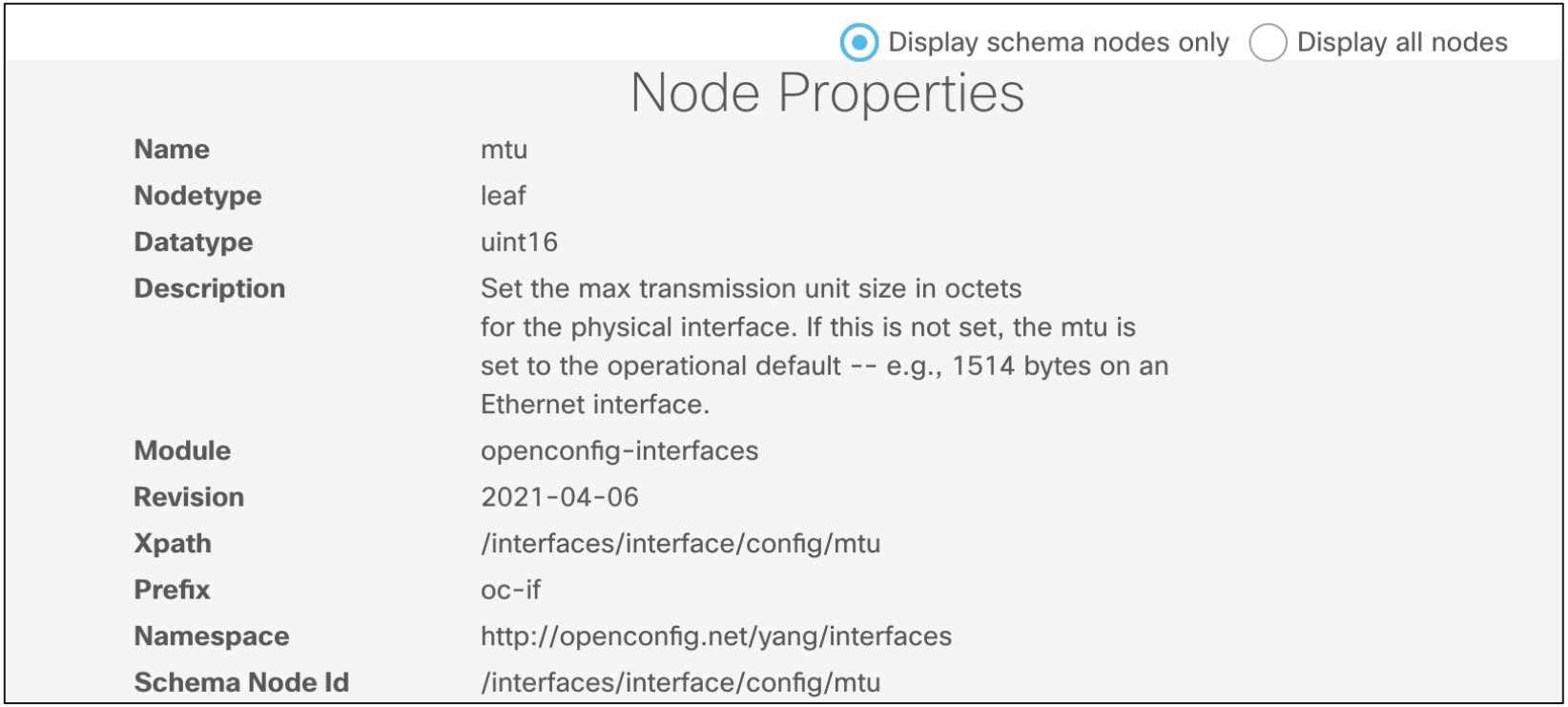


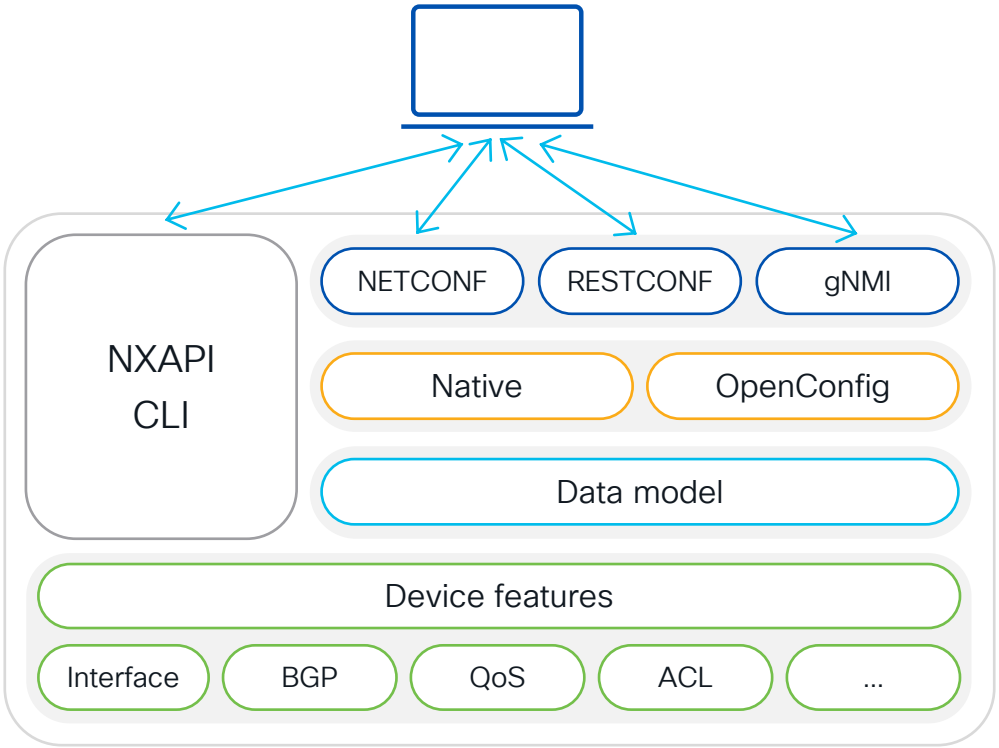
YANG Suite



Transports and Protocols

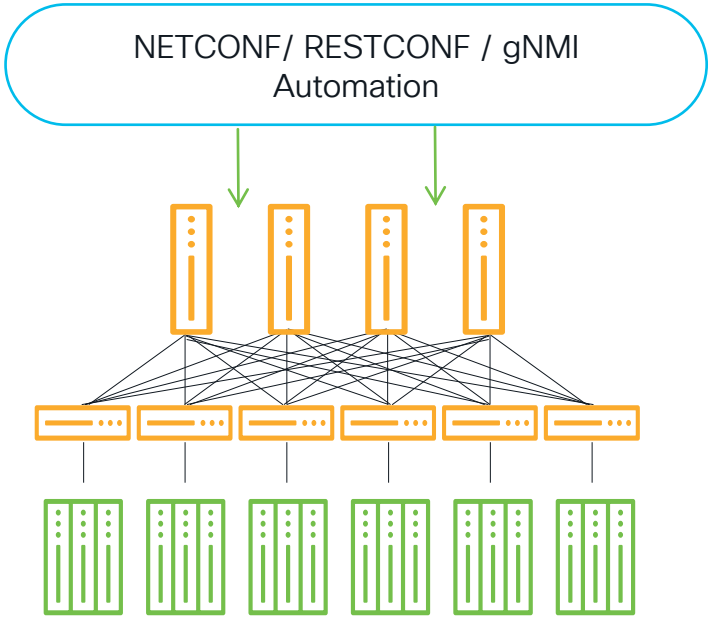
Open programmable APIs

Simplified view



Shipping

Automating NX-OS Fabrics



Operational Control

- Enhanced automation flexibility
- Inbuilt mechanisms to prevent inconsistent state

Operation Flexibility

- BYO Controller (Custom Built)
  - Leverage 3rd Commercial tools

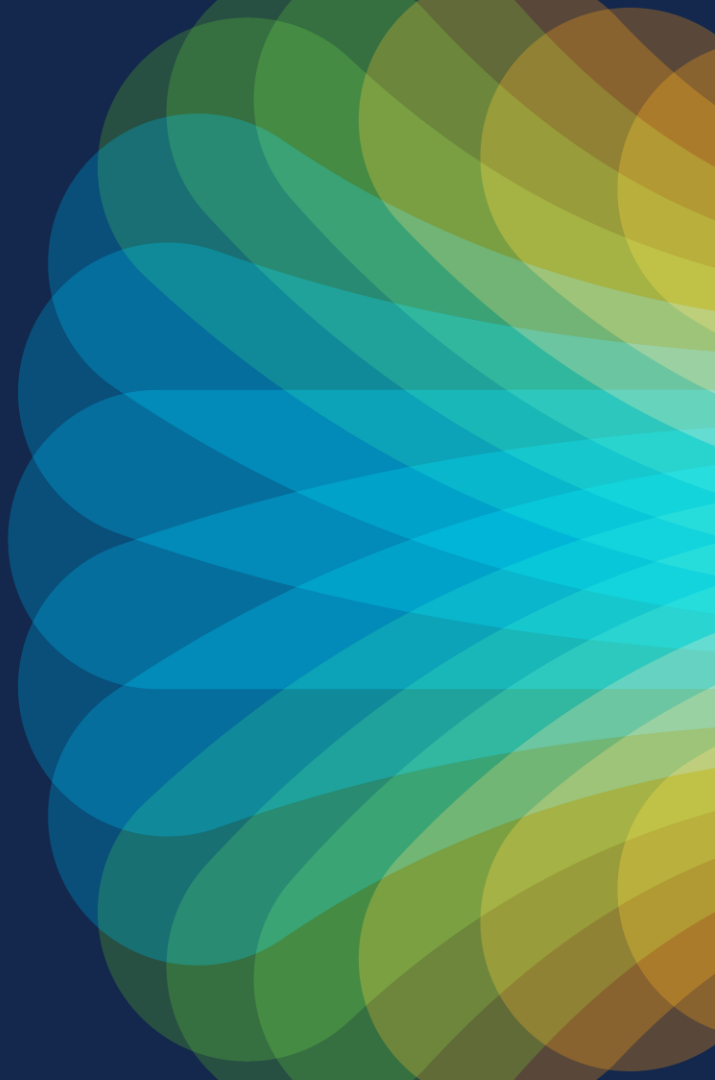
Operational Simplicity

- Consistent “look and feel” across platforms
- Industry standard transport and encoding

Walk-Through

The bridge to possible

Thank you



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