

The background features a vibrant, abstract design with a color gradient from dark blue on the left to bright yellow and white on the right. The design consists of overlapping, wavy horizontal bands and a radial pattern of lines emanating from a bright white point on the right side, creating a sense of motion and energy.

CISCO *Live!*

Let's go



The bridge to possible

Manage your Cisco NX-OS Fabric with OpenConfig

Gerard Sheehan, Product Manager

CISCO *Live!*

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


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

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

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

```
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
```

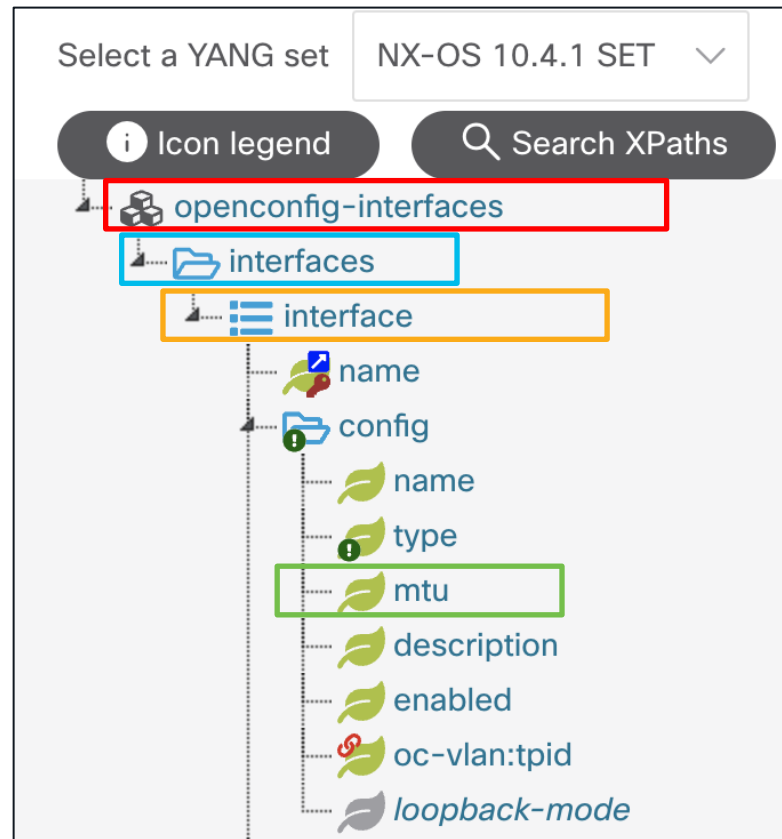
YANG Suite

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



YANG Suite

☒ Display schema nodes only ☐ Display all nodes

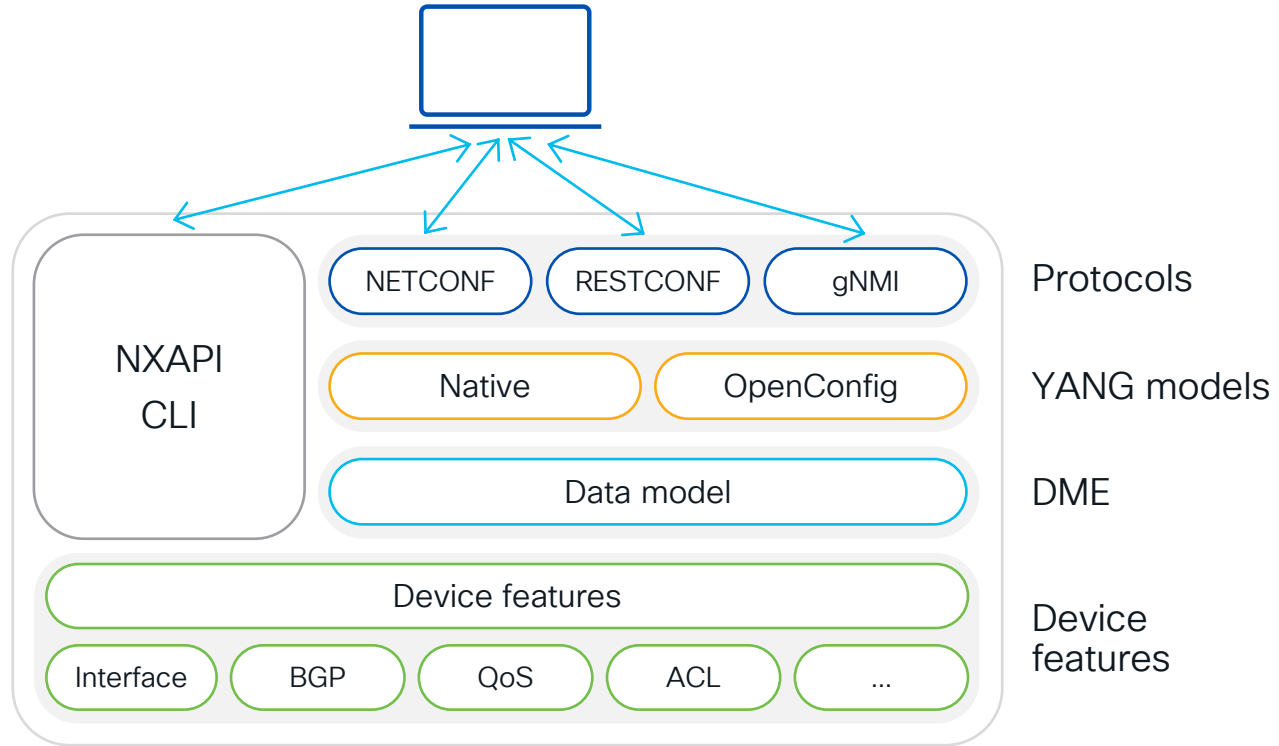
Node Properties

Name	mtu
Nodetype	leaf
Datatype	uint16
Description	Set the max transmission unit size in octets for the physical interface. If this is not set, the mtu is set to the operational default -- e.g., 1514 bytes on an Ethernet interface.
Module	openconfig-interfaces
Revision	2021-04-06
Xpath	/interfaces/interface/config/mtu
Prefix	oc-if
Namespace	http://openconfig.net/yang/interfaces
Schema Node Id	/interfaces/interface/config/mtu

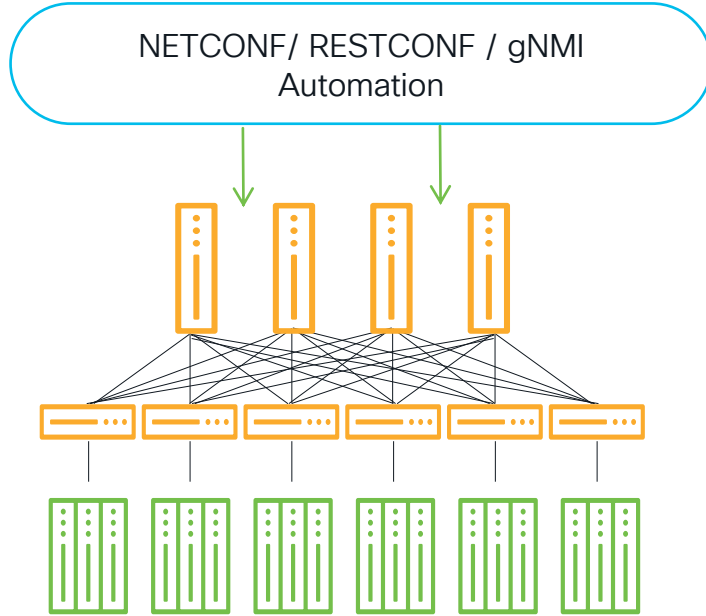
Transports and Protocols

Open programmable APIs

Simplified view



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

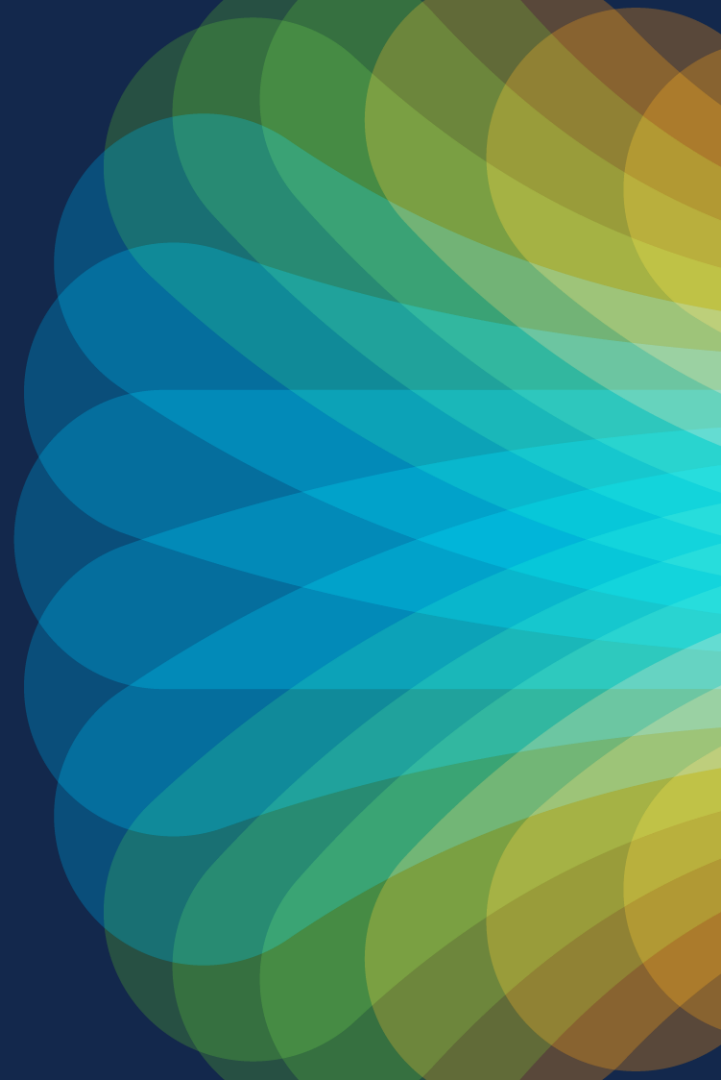
Walk-Through



The bridge to possible

Thank you

CISCO *Live!*



The background of the slide is a vibrant, abstract graphic. It features a large, stylized cloud shape on the left side, composed of overlapping, semi-transparent layers of orange, red, and yellow. To the right of the cloud, a bright, multi-colored sunburst or starburst pattern radiates from a central point, with rays extending towards the right edge of the frame. The colors in the sunburst transition through a spectrum from blue and purple on the left to yellow and orange on the right. The overall effect is energetic and colorful.

cisco *Live!*

Let's go