Modernizing Network Management with NETCONF

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Agenda

Why do we need APIs for networks?

NETCONF RPCs

OpenConfig YANG on Cisco NX-OS

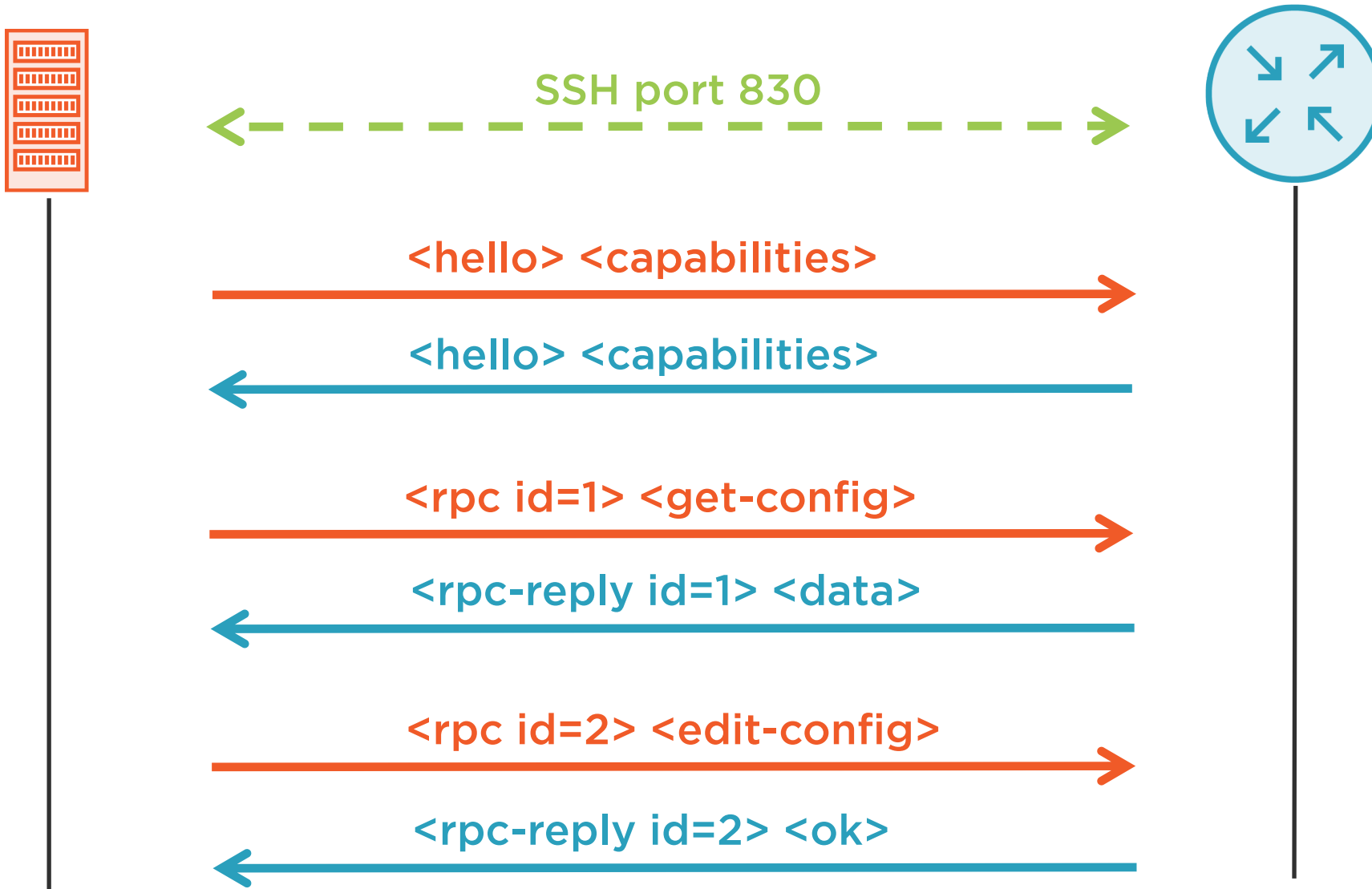VLAN management with NETCONF

Who Cares?

Simplified implementation

Structured data

Easily idempotent

Introducing NETCONF

SSH port 830

<hello> <capabilities>

<hello> <capabilities>

<rpc id=1> <get-config>

<rpc-reply id=1> <data>

<rpc id=2> <edit-config>

<rpc-reply id=2> <ok>

Demo

OpenConfig YANG NX-OS models

Demo

Interface "get-config" RPC with ncclient

Demo

Interface "edit-config" RPC with ncclient

Detour: Cisco NX-API CLI

HTTP wrapper for CLI commands

Only HTTP POST

Also available: NX-API REST

Summary

Model-driven programmability is the way

NETCONF + YANG = awesome

Powerful but complex