

EQUINIX

Equinix Network Automation

Roshan Shaik

Equinix Is the World's Leading Interconnection Platform

200
data centers

24
countries

17M+
square feet

170+
of Fortune 500
companies

99.9999%
reliability

52
markets

9,500+
customers

1,400
global networks

Leading
interconnection
solutions with
230,000+
cross connects

5
continents

Equinix

2,500
cloud and IT service
providers

2015 and 2014
Frost & Sullivan Best Practices Award
for Leadership in Green Innovation

6,300+
strong and globally
aligned voices

2016 Waters Technology
Best Data Center Provider
Award

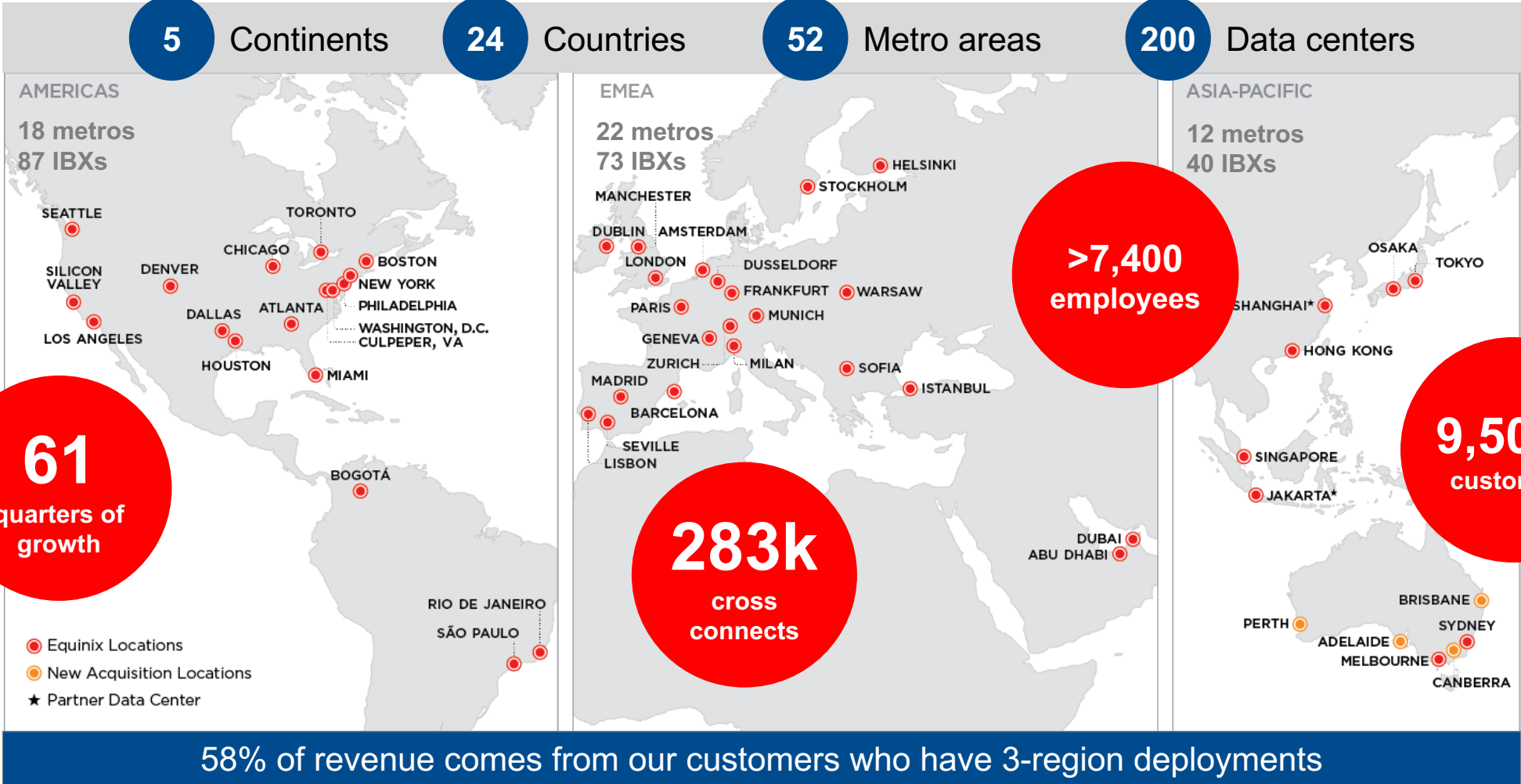
57
quarters
of growth

Member
S&P500

Committed to
servicing our communities
globally

Our global reach is unmatched

Broad geographic reach and significant scale within each region



Our value proposition centers around three pillars



REACH EVERYWHERE

Deploy digital infrastructure anywhere you need to be

COVERAGE
Scale across 24 countries and 52 metros

RELIABILITY
Depend on 99.9999% availability

SERVICE EXCELLENCE
Rely on globally standardized, high-quality operations and support



INTERCONNECT EVERYONE

Discover and reach anyone on demand, through one connection to the world

ECOSYSTEMS
Access the largest ecosystem of customers, partners and suppliers

PERFORMANCE
Create secure, direct, low-latency connections physically or virtually

DYNAMIC
Manage your connection portfolio in real time across the Equinix footprint



INTEGRATE EVERYTHING

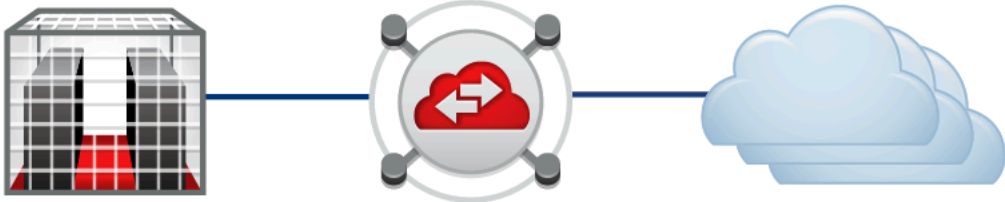
Activate your digital edge through leading technology tools, partners and services

EXPERTISE
Use our packaged solutions of professional services to design, implement and optimize

CONTROLS
Leverage software services to secure, view and manage your hybrid environment

ENABLEMENT
Accelerate your digital business with leading technology partners at Equinix

Interconnection – Network Services



Customer

Equinix Cloud Exchange

Cloud Service Providers

Virtual, private cloud connectivity with Cloud Exchange



Customer

Cross Connects or Metro Connects

Service Provider

Inter- and intra-data center connectivity with Cross Connect and Metro Connect



Customer

Equinix Connect

Internet

Optimal internet connectivity with Equinix Connect



Customer

Equinix Internet Exchange

Peering Partners

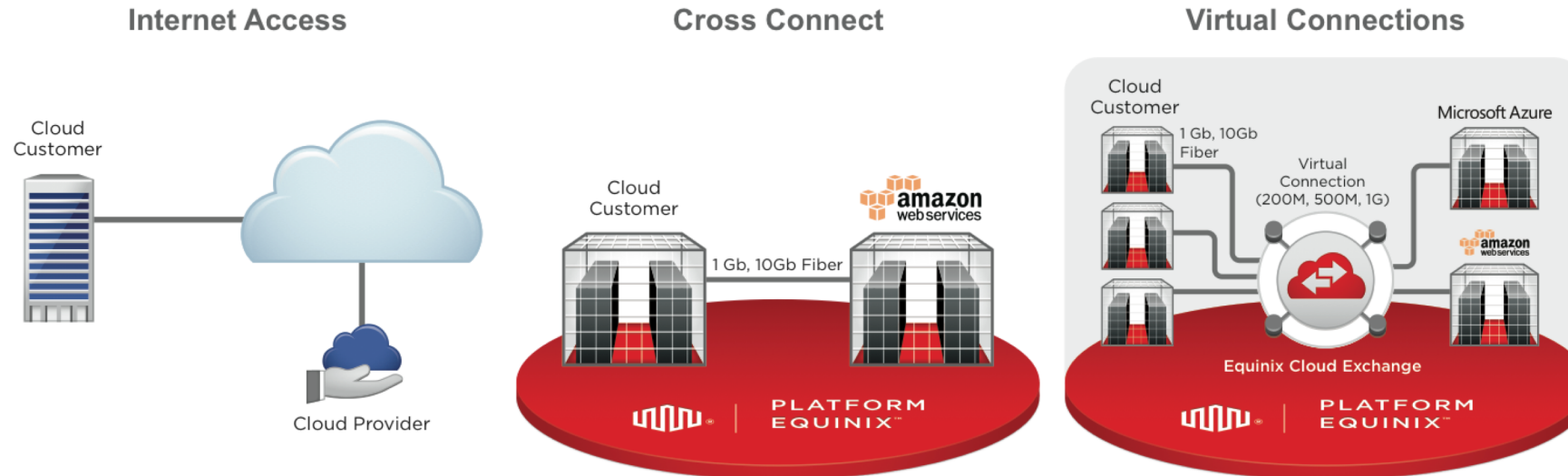
Public Peering with Internet Exchange



Cloud Exchange – Network Automation

Cloud Consumption Model

ECX unlocks the full potential of the cloud without the downside of the public internet.



Benefits

- Anywhere access
- Single network interface
- Flexible and dynamic
- Multi-cloud support

Challenges

- Best effort, low-throughput, high latency
- Least secure access
- Least reliable

Benefits

- Secure and private
- Highest bandwidth
- High performance, consistent throughput, low-latency
- Cost-effective for access to one CSP

Challenges

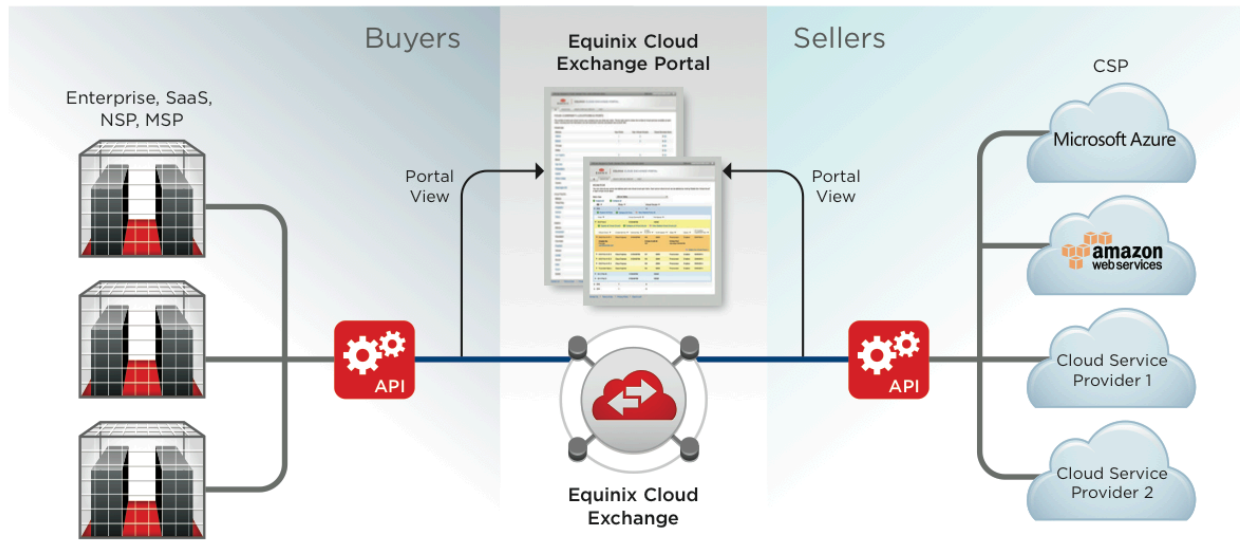
- Physical installations
- One-to-one connections, hard to scale

Benefits

- One-to-many connections
- Secure and private
- Consistent throughput, low-latency
- Very cost-effective with sub-1G access
- Flexible, dynamic, scalable
- Reduced provisioning times
- Multi-cloud support

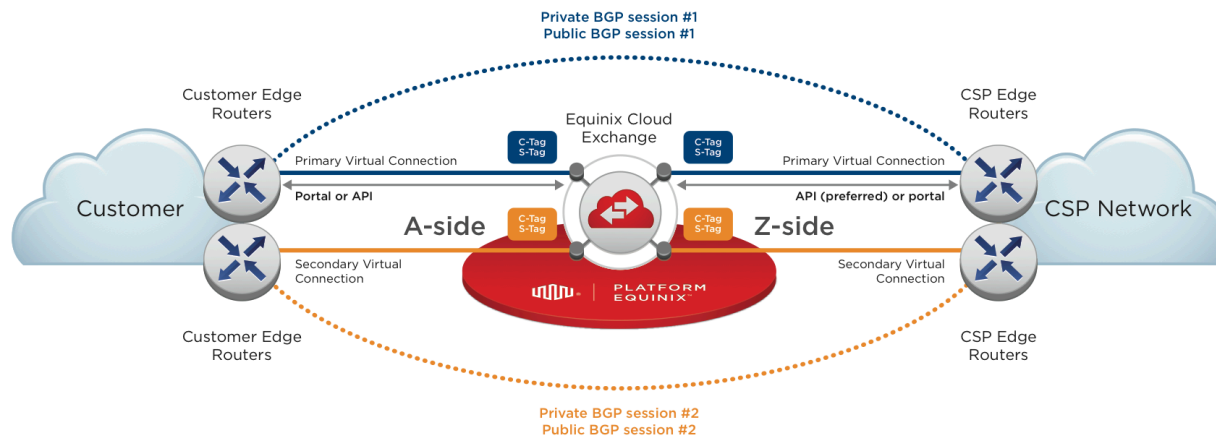
Equinix Cloud Exchange – Interconnection Automation

A private **Network Platform** coupled with a **Network Provisioning** engine for end-to-end automation...



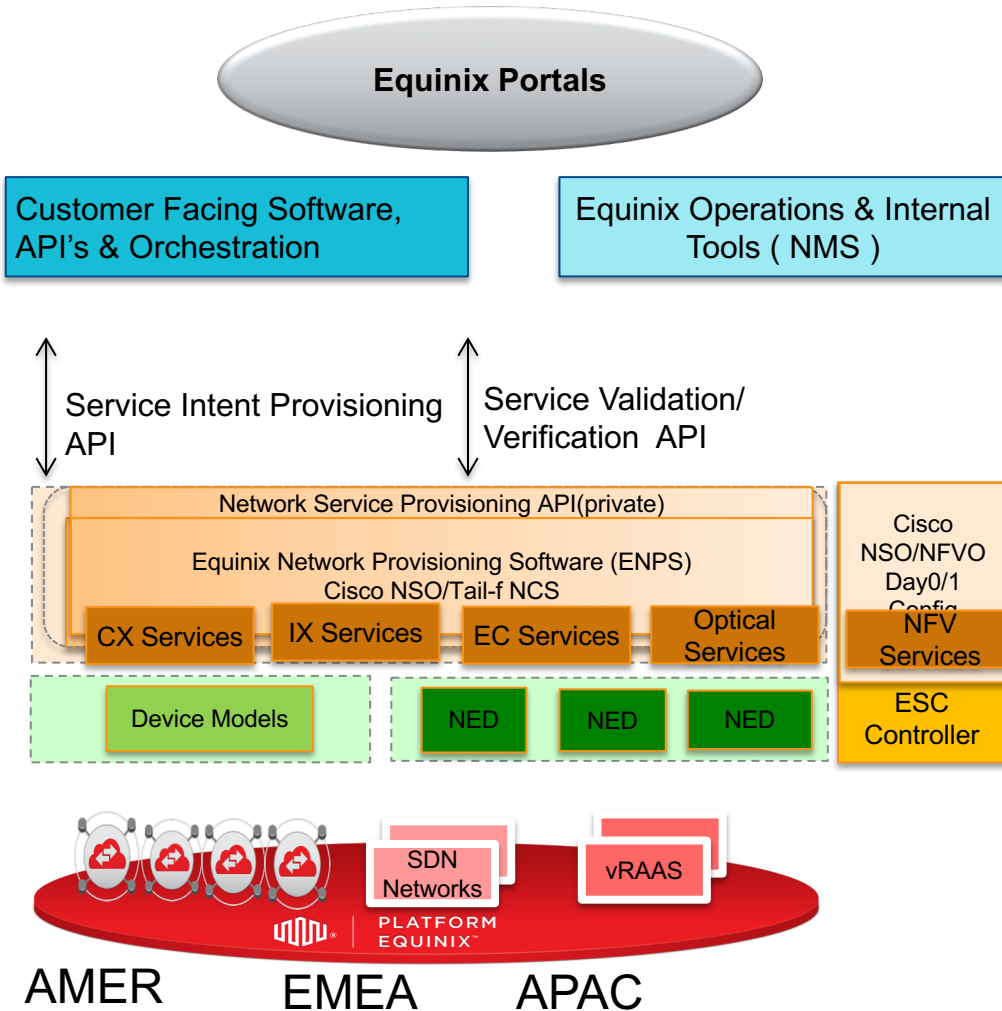
ECX Network Provisioning

- Logically centralized vendor-agnostic **SDN subsystem** for managing layer 2/3 virtual private network (VPN) and border gateway protocol (BGP) network services.
- Automated, near real-time provisioning process in order to deliver advanced on-demand connectivity services
- Programmable **multivendor network** configuration capabilities for heterogeneous, multivendor customer and cloud partner network devices through common **Service Models** using Netconf/Yang.
- Cisco/Tail-f NSO provided Equinix a vendor-neutral and **model-driven** network orchestration solution to accelerate Equinix's time to market
- Future-proof architecture for launching new services



Equinix Network Provisioning Systems (ENPS)

ENPS Provisioning for CX, IX, EC, vRAAS, Unified Packet, T-SDN



Today AMER has DR in SV and CH

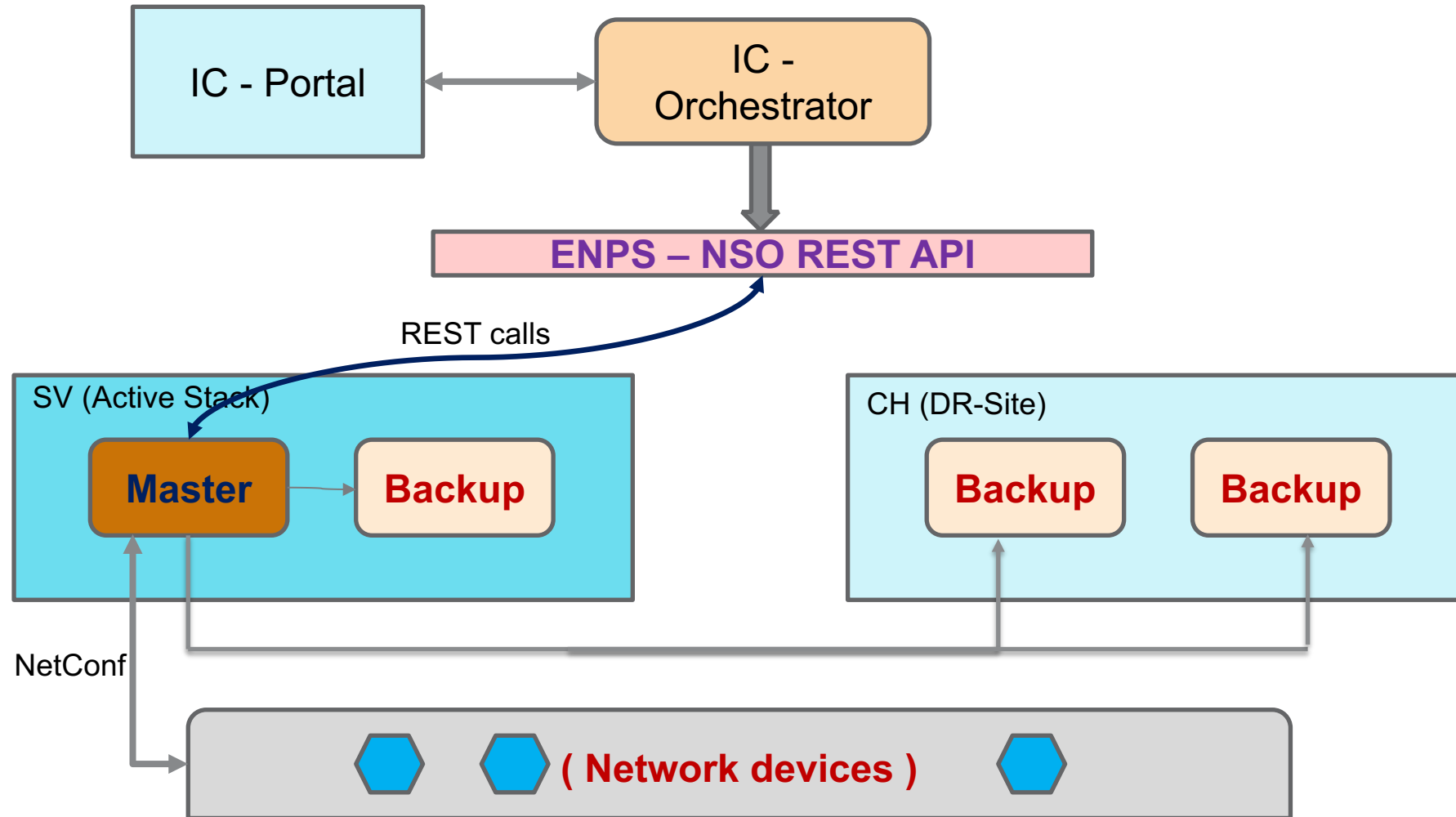
Network Automation using ENPS

- Equinix Initiatives to reduce provisioning time to < 5 minutes
- FedRAMP certification requires automation tools that have Audit, Logging and Playback features.
- Unified Portal for CX, IX, EC and other Equinix Services require a single point of contact for Service Provisioning
- Global and Multi Vendor Provisioning - using Carrier-Grade Provisioning Software from Cisco (NSO, formerly Tail-f NCS)
- Create new **Vendor-Agnostic Service(Intent) models** and quickly rollout new service offerings.
- Northbound systems can access service (Intent) provisioning via REST endpoints.
- We can deploy configurations to **multi-vendor-devices** in a fail-safe manner.
- Validates **integrity** of configurations before deploying to network.

ENPS Provisioning Roadmap

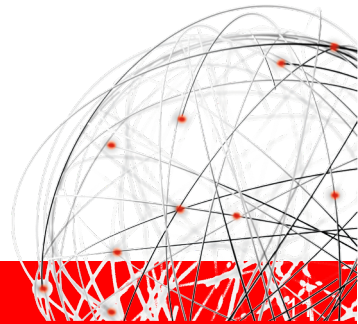
- ENPS is Service Provisioning System for ECX, and will be defacto provisioning tool for Equinix Services
 - ECX new features
 - IX Automation
 - EC Automation
 - NFV Cloud(vRAAS) Automation
 - Unified Packet Fabric Provisioning
 - Transport/Optical SDN Service Provisioning and Restoration

NSO Stack Deployment



Tools Interaction & Functions

- **Code Repositories**
 - GitLab
- **Continuous Build Systems**
 - Jenkins
- **Test Frameworks**
 - Robot Framework
- **Defect Management**
 - JIRA
- **Automation Deployment**
 - Ansible
- **Test case Management**
 - TestLink
- **Project Management**
 - JIRA





EQUINIX

WHERE OPPORTUNITY CONNECTS