Tungsten Fabric Overview

VISION

- Tungsten Fabric seeks to become a ubiquitous global network fabric, agnostic to underlay infrastructure and able to extend across all cloud infrastructure.
- It will provide a single point of control, visibility, and management, globally or through open standards-based federation, for all networks and network security.
- It will become the most broadly adopted and highest quality SDN overlay technology available.

MISSION

Build the world's most ubiquitous, easy-to-use, scalable, secure, and cloud-grade SDN stack, providing a network fabric connecting all environments, all clouds, all people.

CODE & COMMUNITY

tungsten fabric

CODE

- 2013-Today: >300 years of work
- 200-300 developer contributions
- ~100 active developers
- Languages: C++, Python, Node, Go
- Apache 2.0 license
- GitHub repositories
- Gerrit review processes
- Launchpad bug tracking and blueprints
- Other OSS used: Cassandra, Kafka, HAproxy, Docker, Keystone

COMMUNITY

Principles:

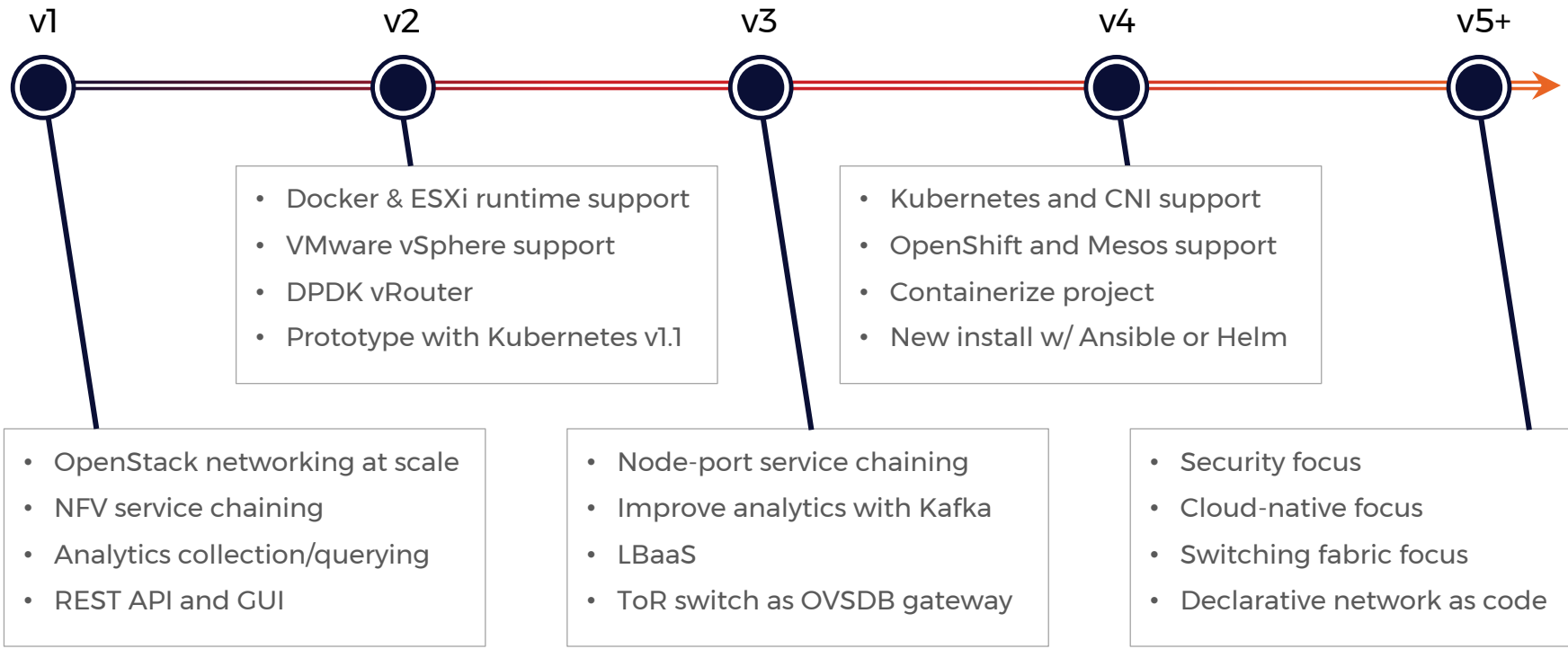
- Open and inclusive
- Provide strong technical and architectural oversight
- Competitive ideas welcome
- Rough consensus and running code will always win
- Iterate and evolve

COMMUNITY

- Online:
  - Downloads and trial sandbox
  - Talk with 700+ people: Slack, Mailing lists
  - Follow: Blog, YouTube, Facebook, Twitter
  - GitHub: Presentations, Tutorials
- Live (see calendar) :
  - Conferences: OpenStack, KubeCon, ONS, Re:invent and GC Next
  - Meetups: host your own or join some
  - User Group events: often at conferences
  - Governance summits
- Groups: Governance, Technical, Infrastructure
- Community manager: Greg Elkinbard

COMMUNITY MEMBERS

PAST, PRESENT & FUTURE



FEATURES

Routing & Switching

Network Services

Load Balancing

Security & Policies

Performance & Scale

Gateway Services

Rich Analytics

Service Chaining

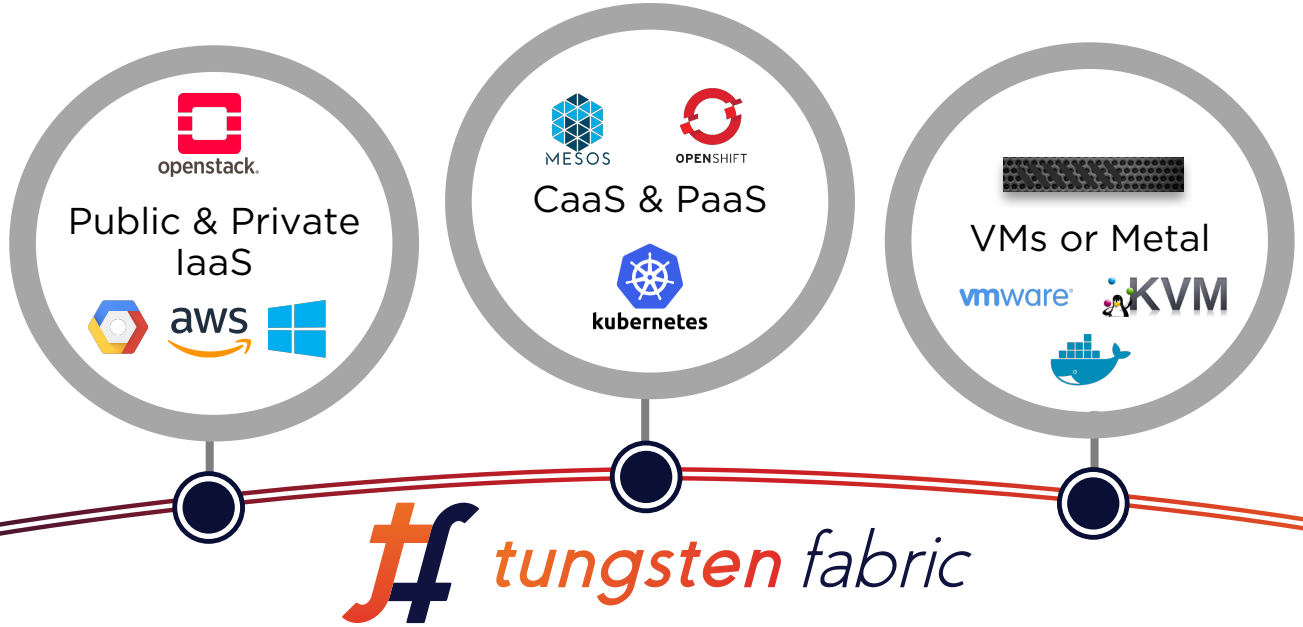
HA & Upgrades

APIs/Orchestrations

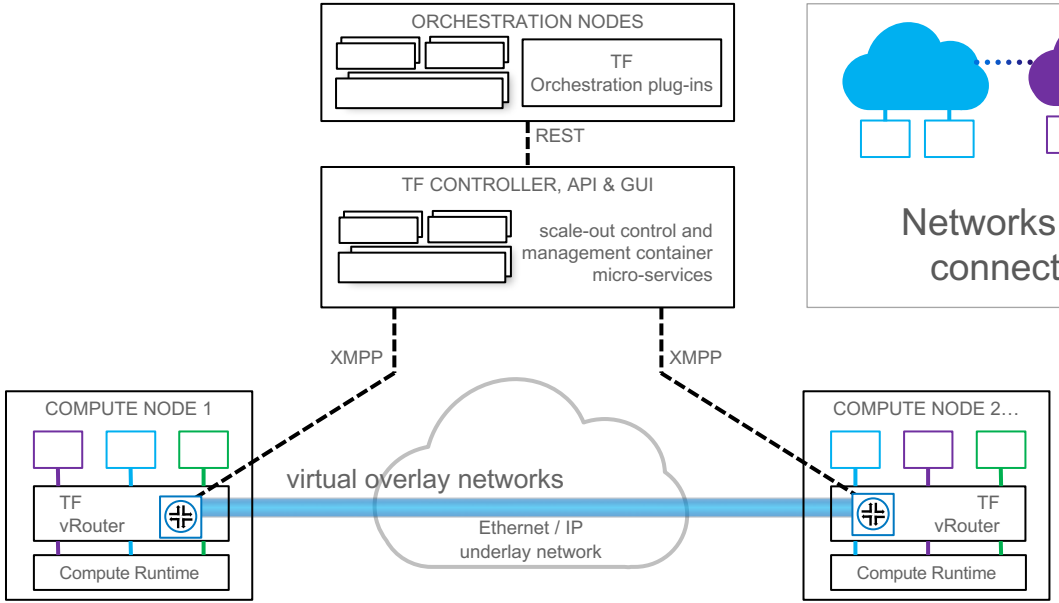
1 LESS VARIABLE IN BIMODAL IT & MULTICLOUD

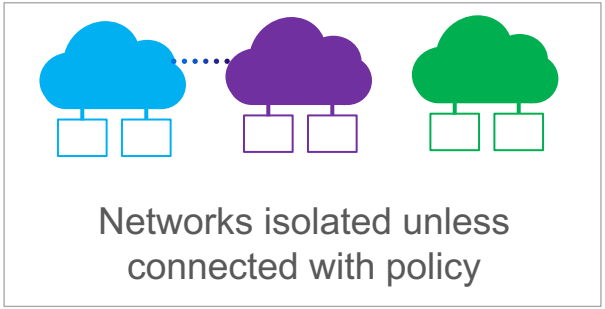
RULE THEM ALL WITH ONE

automated secure open SDN

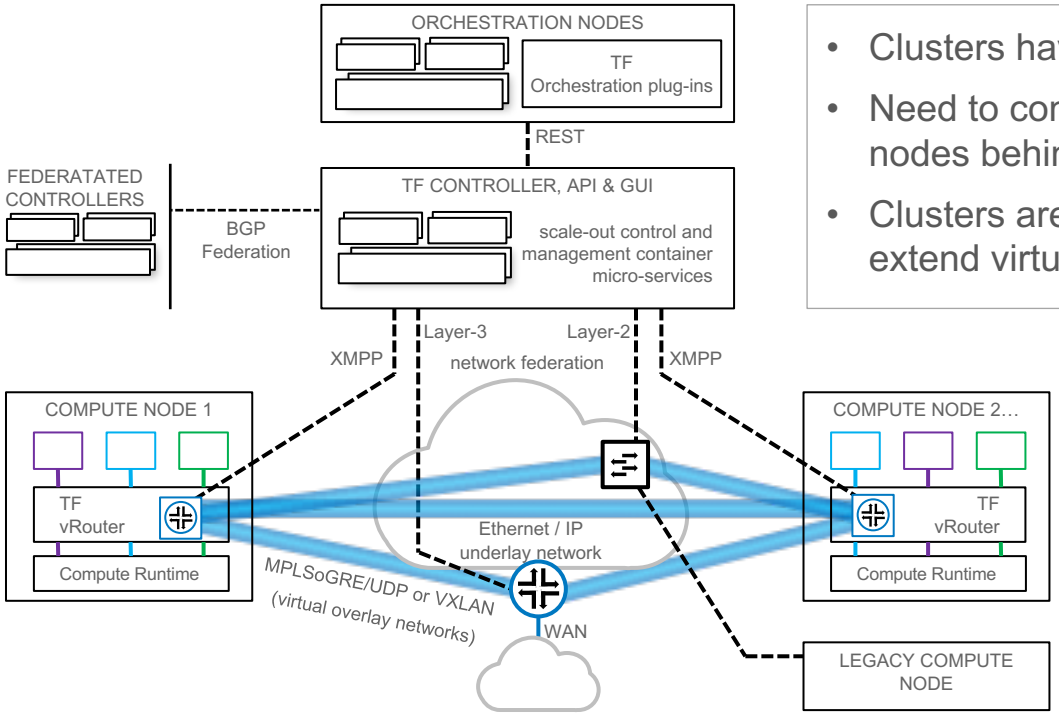


ARCHITECTURE OVERVIEW





ARCHITECTURE EXPANDED



- Clusters have gateway (WAN)
- Need to connect legacy metal nodes behind switches
- Clusters are federated to extend virtual networks

INSTALLATION

- Ansible playbook to flexibly deploy Tungsten Fabric binaries

- Helm charts to easily operate Tungsten Fabric components on Kubernetes

- Install-time option with OpenShift to deploy with Tungsten Fabric

- Tungsten Fabric binaries available on DockerHub and we're improving CI/CD

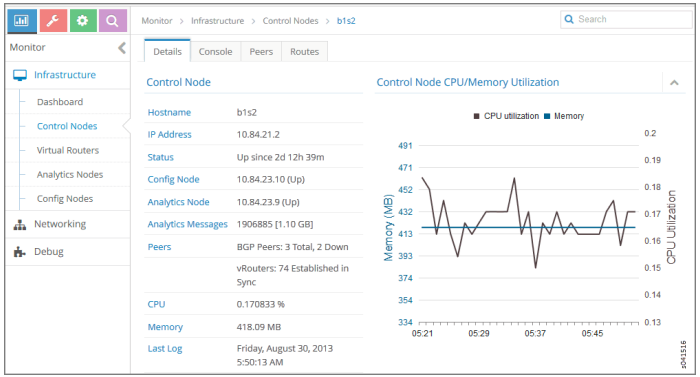
- Commercial integrations into lifecycle tools like RH OpenStack Director

USER EXPERIENCE

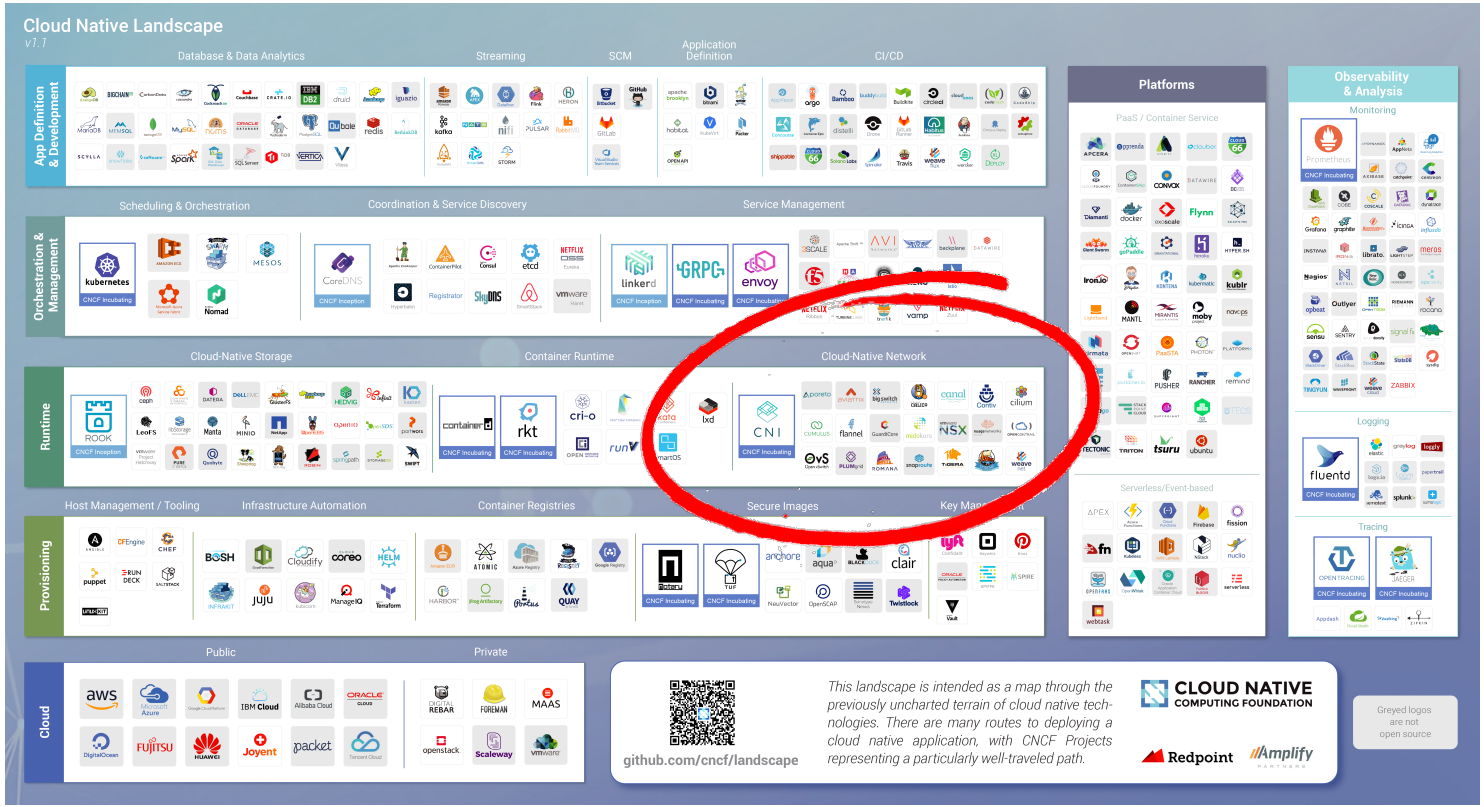
NORTH-BOUND API

- REST API
- HTTPS authentication and role-based authorization
- Used for GUI
- Used for declarative configurations as code
- Generated from data model

GUI



SDN ECOSYSTEM in CNCF



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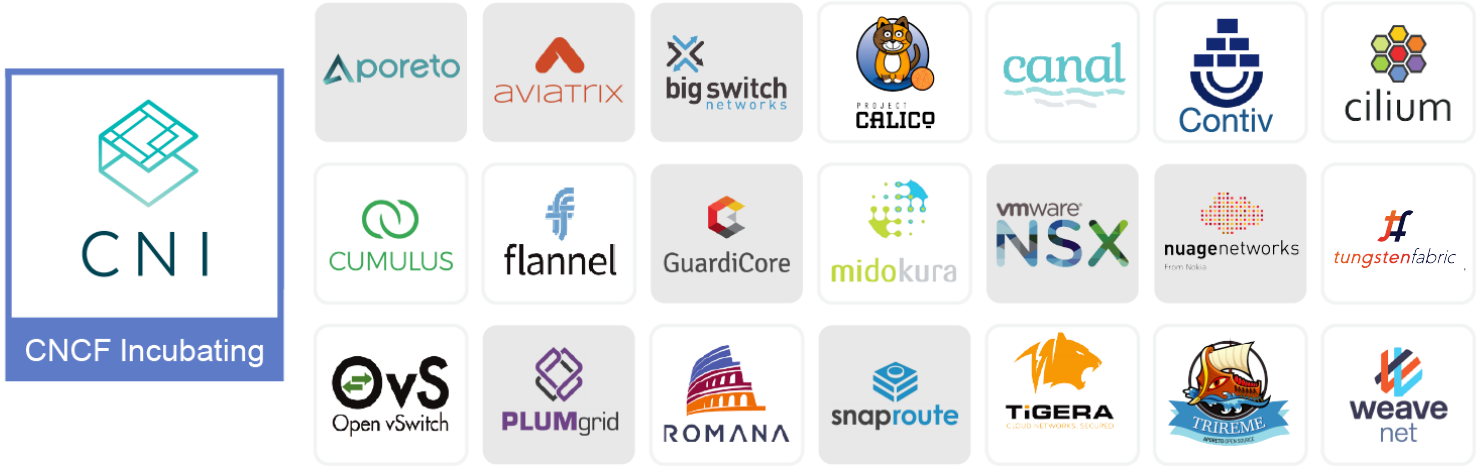

Beyond cloud-native… Do you care about:

- High-performance forwarding
- Proven cloud-grade, carrier-grade scale
- Feature rich for Kubernetes and LB, beyond CNI
- Feature rich in general for net + sec
- Multi-tenancy
- Open source / community
- Open standards-based federation
- Multiple orchestrator support
- Solid vendor backing and optional services
- Collapsing stacked SDNs: e.g. K8s on OpenStack
- Ease of use

SDN ECOSYSTEM in LF

Why we've joined the LF and are working to join the LF-N:

- We're cloud-native—run in containers, cloud and Kubernetes—but also support more outside the CNCF
- Cross-project integrations already exist with OPNFV, ONAP, DPDK and other LF projects
- Enlarge open community, eliminating network vendor / developer hold-outs over "openness" FUD
- Easy for LF and LF-N members to join our project, and most of our members are also LF members
- Events, infrastructure and idea collaboration economies of scale inside large foundation
- Trusted foundation operations solve ad hoc funding and marketing support

SHAPE THE FUTURE