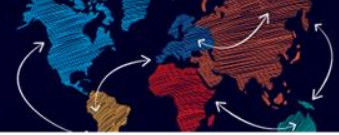# OPEN SOURCE NETWORKING DAYS

Tungsten Fabric Overview and Intel Contributions

Yi Yang@Intel

What's Tungsten Fabric?

Tungsten Fabric is an open source automated secure multi-cloud multi-stack network virtulization SDN and security solution for providing connectivity and security for virtual, containerized or bare-metal workloads.

Tungsten Fabric supports integrations with the following orchestrators:

- Openstack
- Kubernetes
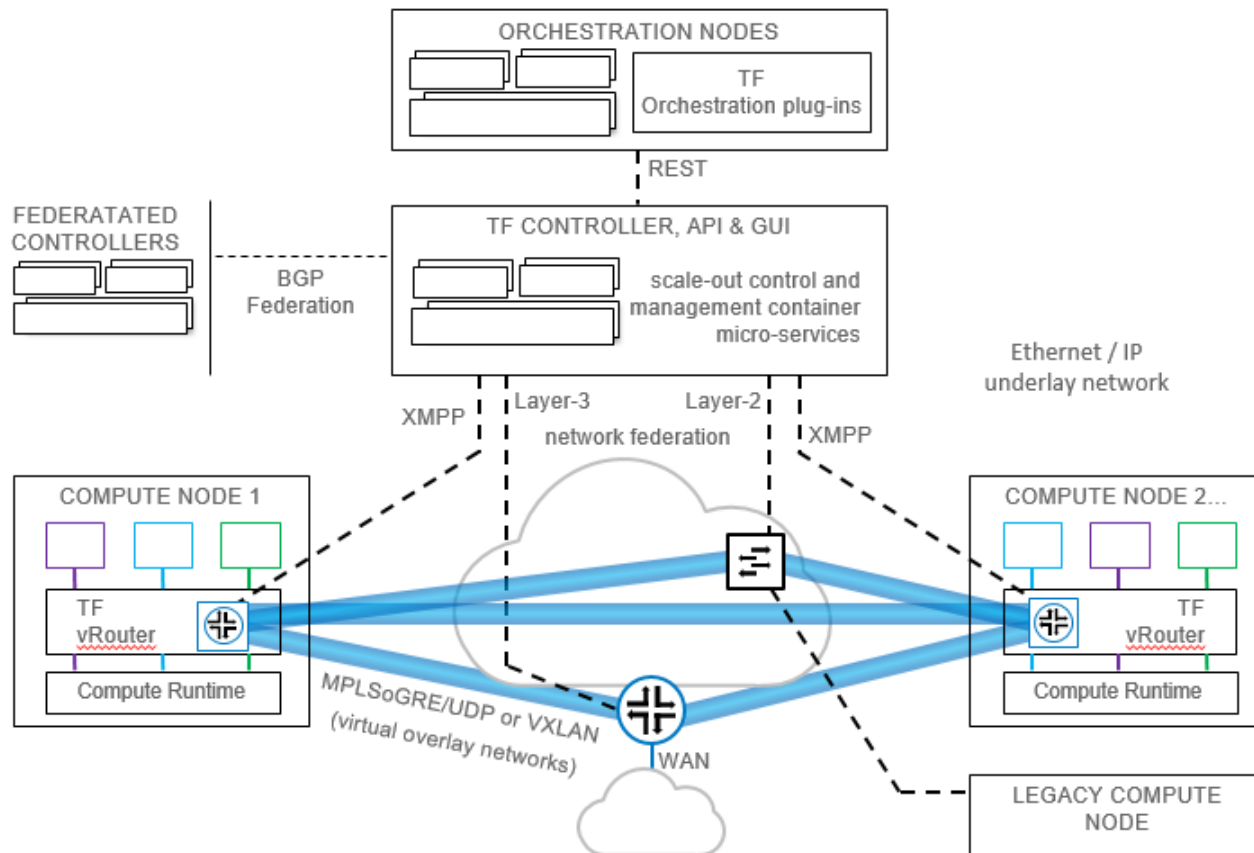- Redhat Openshift
- VMware vCenter

Tungsten Fabric Architecture
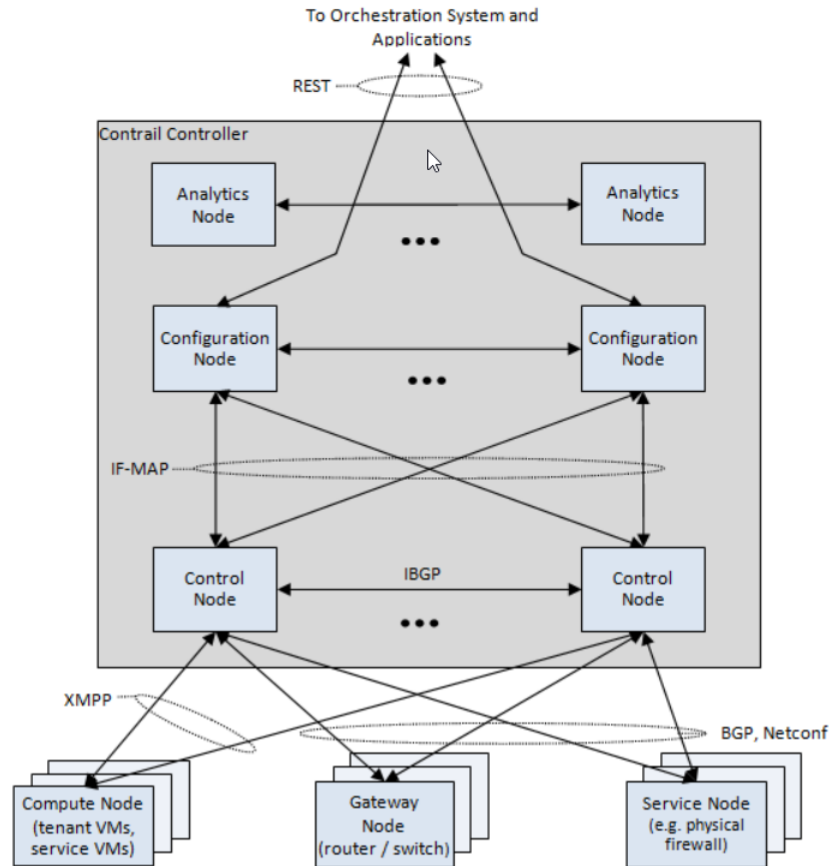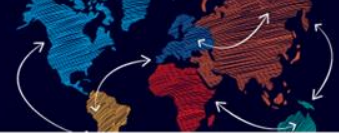
Tungsten Fabric Controller
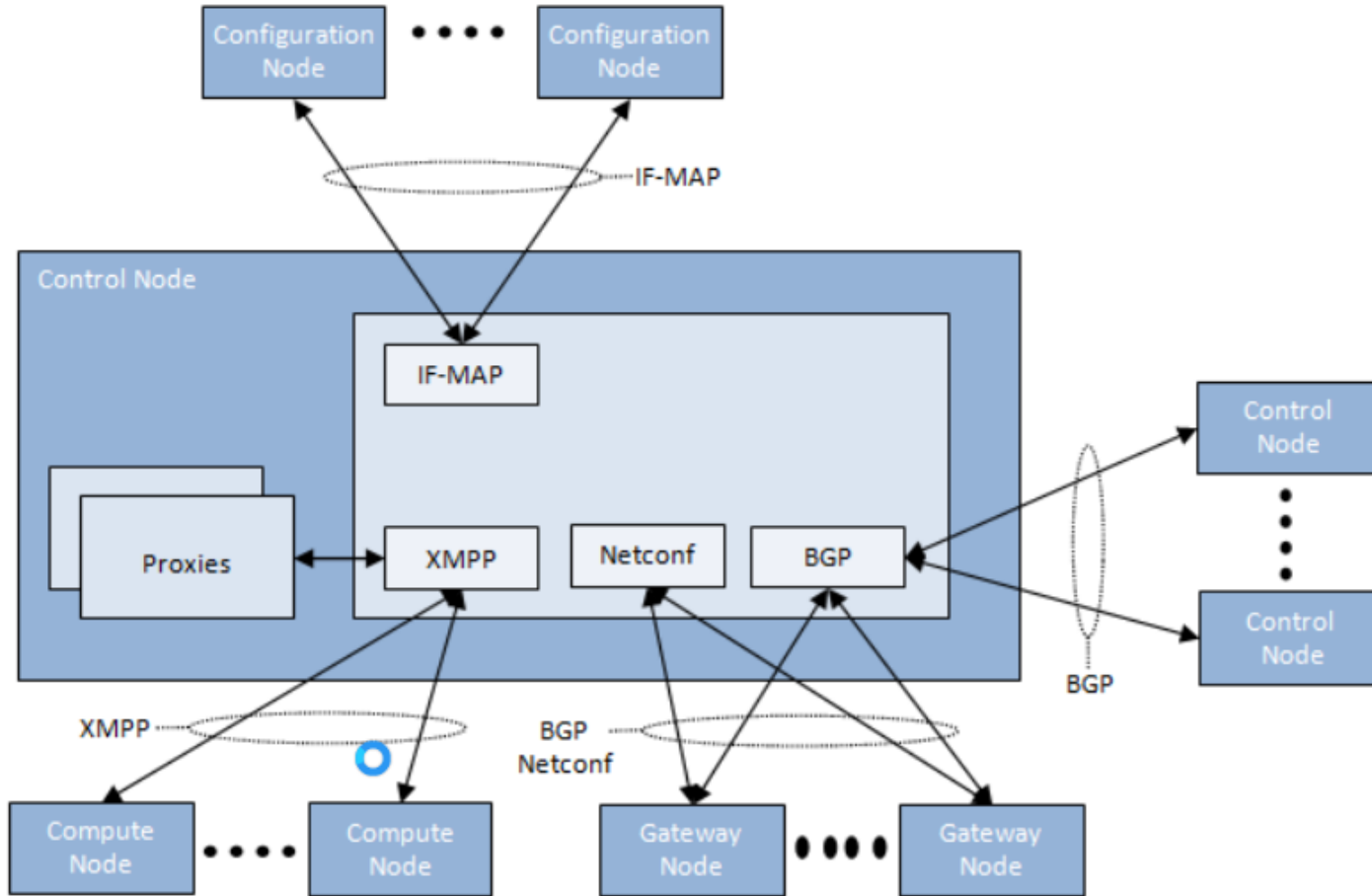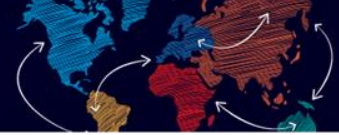
Tungsten Fabric Config Node in Controller
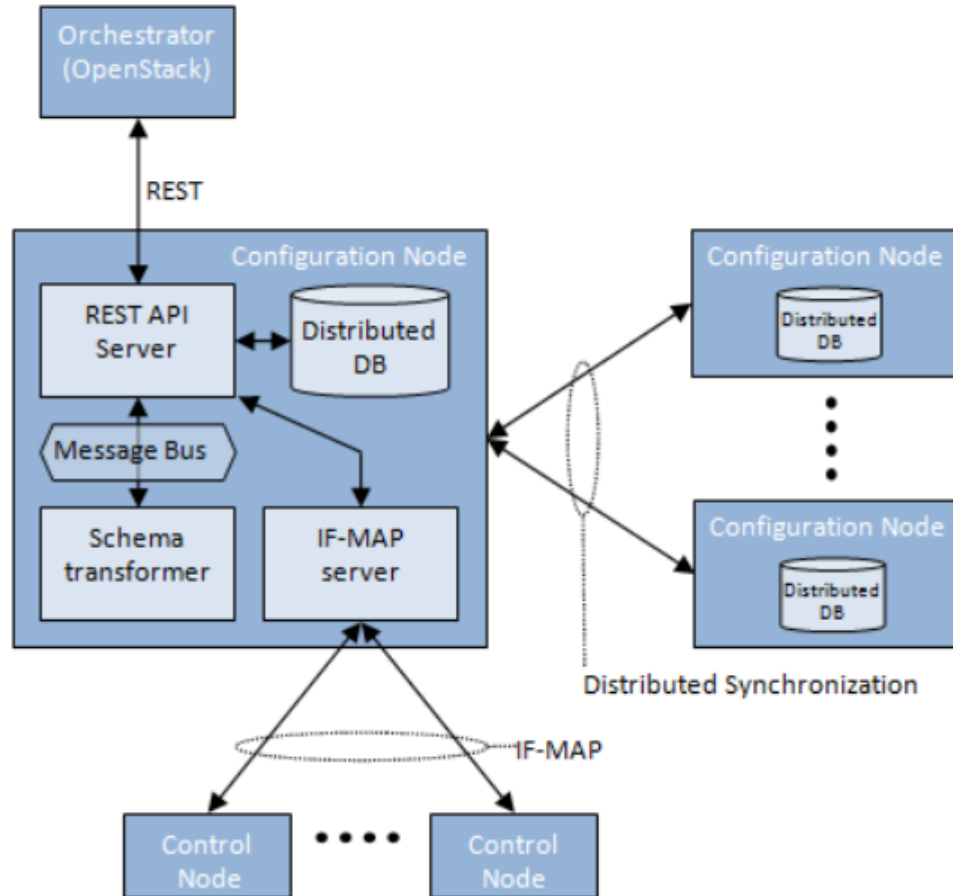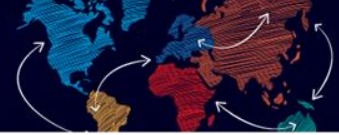
Tungsten Fabric Analytics Node in Controller
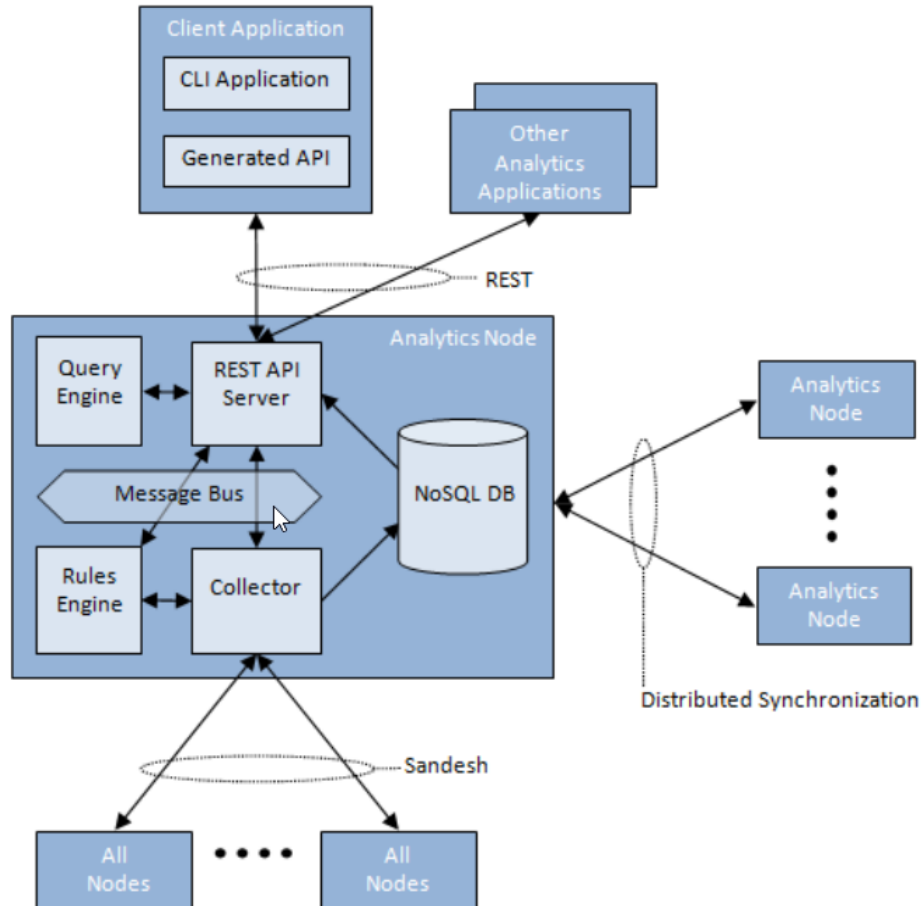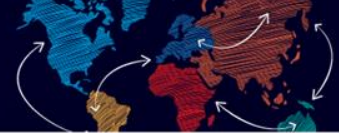
Tungsten Fabric Can Meet Cloud Trends and Challenges
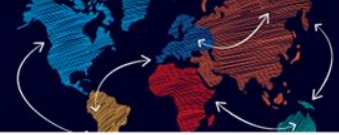
DEVOPS

MICROSERVICES

SELF-DRIVING CLOUD Automates Ops
Complexity of Cloud Interconnection, Operations and Service Delivery

COGNITIVE CLOUD Analyze Data for Insights
Complexity in Monitoring and Control

SECURE CLOUD Secures Applications
Complexity in Securing Cloud Applications

CI / CD / CR

APPLICATION SECURITY

Tungsten Fabric Can Integrate with Multi-vendor Clouds
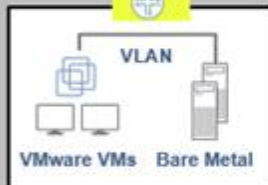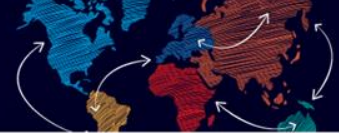
Tungsten Fabric Microservices

```
                                                +-------------+
                                                |             |
                                                | +---------+ |
                                                | |nodemgr  | |
                                                | +---------+ |
                                                | +---------+ |
                                                | |redis    | |
                                                | +---------+ |
                                                | +---------+ |
                                                | |api      | |
                    +-----------------+         | +---------+ |
                    |                 |         | +---------+ |
                    | +-------------+ |  +-----------+ +-------------+ | |collector| |
                    | |nodemgr      | | |           | |             | | +---------+ |
                    | +-------------+ | |           | |             | | +---------+ |
+--------------+    | +-------------+ | | +-------+ | | +---------+ | | |alarm    | |  +-----------+
|              |    | |api          | | | |nodemgr| | | |nodemgr  | | | +---------+ |  |           |
|              |    | +-------------+ | | +-------+ | | +---------+ | | +---------+ |  |           |
| +---------+  |    | +-------------+ | | +-------+ | | +---------+ | | +---------+ |  | +------+ |
| |rabbitmq |  |    | |svc monitor  | | | |control| | | |kafka    | | | |query    | |  | |redis | |+-----------+
| +---------+  |    | +-------------+ | | +-------+ | | +---------+ | | +---------+ |  | +------+ ||           |
| +---------+  |    | +-------------+ | | +-------+ | | +---------+ | | +---------+ |  | +------+ || +-------+ |
| |zookeeper|  |    | |device manager| | | |dns   | | | |zookeeper| | | |snmp     | |  | |job   | || |nodemgr| |
| +---------+  |    | +-------------+ | | +-------+ | | +---------+ | | +---------+ |  | +------+ || +-------+ |
| +---------+  |    | +-------------+ | | +-------+ | | +---------+ | | +---------+ |  | +------+ || +-------+ |
| |cassandra|  |    | |schema       | | | |named | | | |cassandra| | | |topology | |  | |server| || |agent  | |
| +---------+  |    | +-------------+ | | +-------+ | | +---------+ | | +---------+ |  | +------+ || +-------+ |
|              |    |                 | |          | |             | |             |  |         ||           |
| configdb     |    |  config         | |  control | | analyticsdb | |  analytics  |  | webui   || vrouter   |
|              |    |                 | |          | |             | |             |  |         ||           |
+--------------+    +-----------------+ +----------+ +-------------+ +-------------+  +---------++-----------+
```
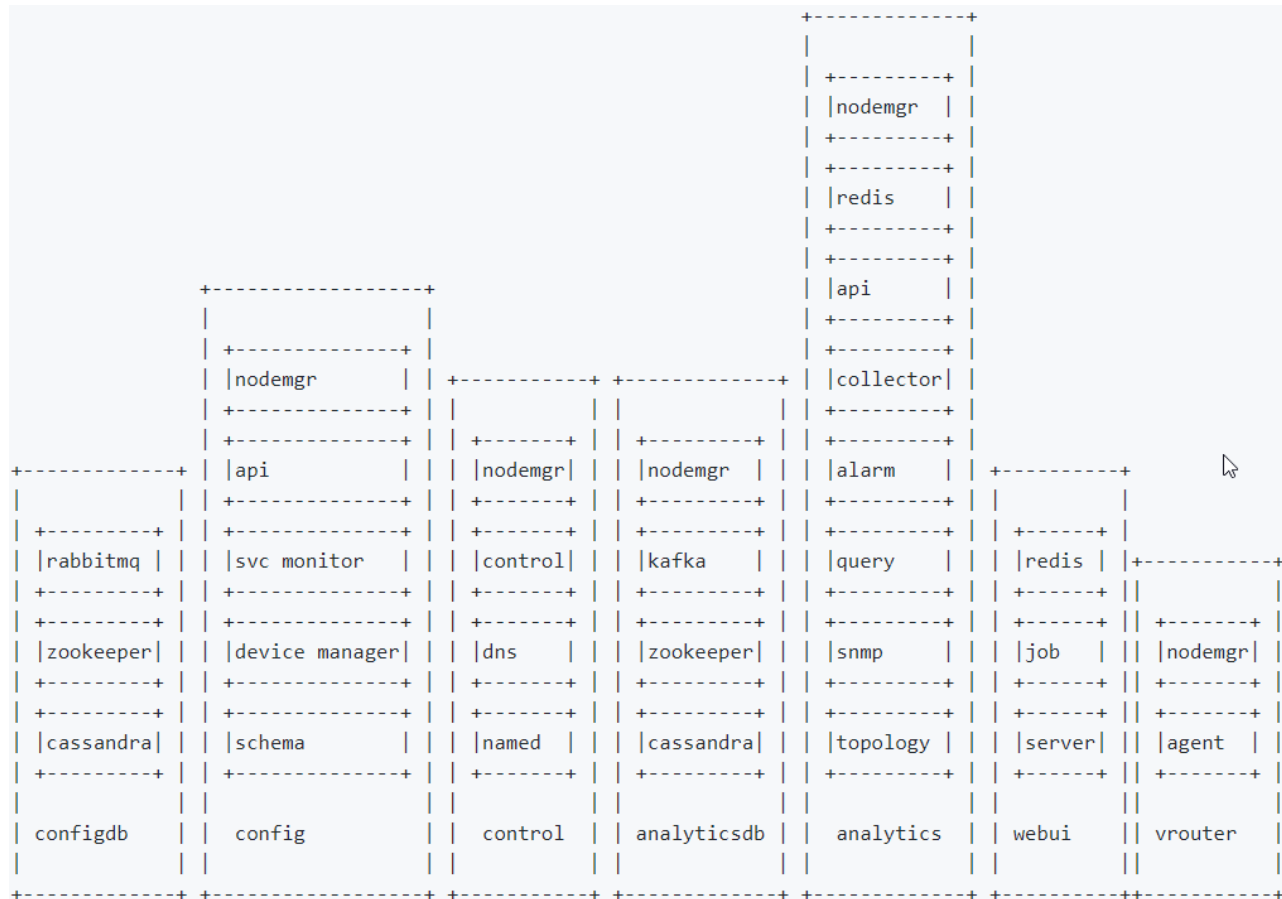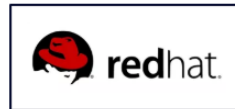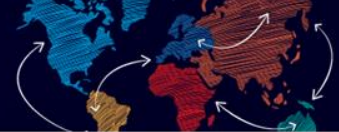
Tungsten Fabric Users

Tungsten Fabric Community
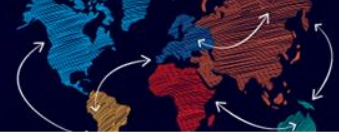
Governance Working Group

- Liza Fung (AT&T)
- Greg Elkinbard (Juniper)
- Ian Rae (Cloud Ops)
- Jim St. Leger (Intel)
- Doug Marschke (SDN Essentials)

Architectural Review Board

- Paul Carver (AT&T)
- Joseph Gasparakis (Intel)
- Anantharamu Suryanarayana (Juniper)
- Rudra Rugge (Juniper)
- Nachi Ueno (Juniper)
- Sachin Bansal (Juniper)
- Sukhdev Kapur (Juniper)

Marketing Working Group

- James Kelly (Juniper)
- Matt Oswalt (Juniper)
- Heqing Zhu (Intel)
- Robert Cathey (Cathy Co.)
- Jennifer Fowler (Cathey Co.)

TSC Working Group

- Joseph Gasparakis (Intel)
- Paul Carver (AT&T)
- Valentine Sinitsyn (Yandex)
- Masood Ul Amin (Aricent)
- Sukhdev Kapur (Juniper)

Goal: Optimize TF vRouter DPDK performance

- Upgrade supported DPDK versions
- Support more cores and Rx/Tx queues
- Use batch processing and flow cache to boost performance (>50%)
- Offload some functions to NIC (DDP)
- OpenLAB for performance test and verification on IA platforms

Tungsten Fabric Resources

- Homepage: https://tungsten.io/
- Tungsten Fabric Architecture Document: http://www.opencontrail.org/opencontrail-architecture-documentation/
- Tungsten Fabric Network Virtulization Architecture Deep Dive: http://www.opencontrail.org/network-virtualization-architecture-deep-dive/
- Tungsten Fabric Docker Images: https://hub.docker.com/u/tungstenfabric/
- Tungsten Fabric Golden Deck: https://drive.google.com/file/d/10ZPdjkh_kWbydKqfwKcWB2JSL2BHIUcJ/View
- Tungsten Fabric git repos: https://github.com/Juniper/
- Tungsten Fabric Community Drive: https://drive.google.com/drive/folders/0AM-bGoKiRBuTUk9PVA
- Tungsten Fabric Bugzilla: https://bugs.launchpad.net/opencontrail/
- Tungsten Fabric Code Review: https://review.opencontrail.org/
- Tungsten Fabric Blueprints: https://blueprints.launchpad.net/opencontrail/
- Tungsten Fabric IRC Channel: https://tungstenfabric.slack.com/
- Tungsten Fabric User Group: https://groups.google.com/forum/#!forum/tungsten-users
- Tungsten Fabric Developer Forum: https://groups.google.com/forum/#!forum/tungsten-dev

Q&A