Trellis
Multi-purpose leaf-spine fabric designed for NFV

Open Source Software
White Box Hardware
SDN Based
Trellis – Multi-purpose Leaf-Spine Fabric

ONOS Cluster

Access & Trunk VLANs
IPv4 & IPv6 & MPLS SR
IPv4 & IPv6 Multicast
DHCP L3 relay (IPv4/v6)
vRouter BGPv4/v6(extended)

Dual-homing
PWs

Multi-stage Fabrics
QinQ termination

L2 bridged
L3 routed
IP multicast
Trellis – Towards Production Readiness

- Analyse issues reported by Harmonic in their setups
- Code review patches they submit to ONOS
- Design discussions for new features
- Bringing up ONF pod housed in San Jose

- Report issues found: ~75 cases
- Create automated tests to reproduce
- Validate fixes / releases
- Help with issues in their setup
- Design discussions for new features
- Daily scrum

- Deliver features; meet ops needs
- Deliver stability, scale, perf, tools
- 7 releases in last 4 months
- Support Comcast design/dev/QA teams – issue analysis; root-cause;
  recommend best-practices/training
- Design discussions for new features
- Daily scrum
- Documentation

- Report issues found in hw
- Validate T2 versions of switch software EdgeCore builds for us

- Design discussions for apps/features created by Nokia
- Code review submitted patches (40 changesets; 4-5 patchsets/change)
- Validate some features; report issues

- Bringing up ONF pod hosted by Flex
- QA collaboration

- Support Comcas design/dev/QA teams – issue analysis; root-cause;
  recommend best-practices/training
- Design discussions for new features
- Daily scrum
- Documentation
Treillis – Towards Production Readiness

December ‘17 – March ‘18

Support Comcast
- Support Comcast design/dev/QA/ops teams – issue analysis; root-cause;
- Recommend best-practices/ training
- Design discussions for new features & architectural improvements
- Daily scrum
- Documentation

Support Other teams
- Broadcom
- Nokia
- Harmonic

Deliver New Features
- Pseudo wires for in-band control
- Routing in H-Agg based topologies
- Multicast improvements
- Dual-homing improvements
- Other smaller features
- ISSU architectural discussions/progress

ONOS Stability & Scale
- Focus on stability of ONOS distributed stores (9 releases of Atomix in last 4 months)
- Scale investigation ongoing

Tooling
- T3 – Trellis Troubleshooting Tool
- onos-diag: Diagnostics collection tool

QA
- Developing automated feature tests (220 new tests in the last 4 months)
- Extending framework for hardware based tests
Enhanced with P4 program deployment and pipeline configuration

Same set of Trellis applications on ONOS

Enabled on P4 capable hardware

Allowing new functionality on hardware (demo at MWC ‘18)
Trellis – CORD Network Infrastructure

Trellis Provides Common control over underlay & overlay networks, including:

- Service Composition for Tenant Networks
- Distributed Virtual Routing
- Optimized Delivery of Multicast Traffic Streams

Trellis is the enabling Network Infrastructure for CORD
Thank you! and more...