

Shared-Delusion

CORD Platform

Improve Developer Experience

(In general, working design notes are collected in a [Google Drive folder](#).)

- Incremental Build Environment ([Design Notes](#))
 - Single source of config specification ([Design Notes](#))
 - Support limited scope (laptop) development workflows
 - Support full configuration (CiaB, POD) development workflows
 - Use same tool chain across all development workflows
 - Leverage existing frameworks, tools, and best practices
 - Optimize build times (for all workflows)
 - Predictable/repeatable build success / easy to diagnose failures
 - Decouple hardware/software deployment targets
- Cleanup / Refactor Follow-Through
 - Clean up data models (rename, remove) and model policies
 - Reconcile Service/Instance models ([Design Notes](#))
 - Eliminate hard-coded service dependencies
 - Categorize, unify, document synchronizers
 - Do exception handling, error handling, logging right ([Design Notes](#))
 - Create new model policy framework
 - Dynamically on-board xproto into core
 - Replace legacy xos-ui with generative tool chain
 - Reconcile use of event bus(es)
 - Refactor/reimplement synchronizers
 - Everything-as-a-Ansible Playbook (isolate Ansible Runner)
- Upgrade Components
 - ONOS 1.11
 - OpenStack
 - Ubuntu
 - MaaS
- Fabric Enhancements
- Benchmark and Scale Performance
 - Integrate Intel's DPDK/OvS optimizations into the CORD platform
 - Micro-Benchmarks / Tuning
 - Benchmark M-CORD performance (specifically EPC)
 - Scale number of subscribers (at average throughput each)
 - Maximum end-to-end throughput for a single subscriber
 - Benchmark R-CORD performance (specifically vSG)
 - Scale number of subscribers (at average throughput each)
 - Maximum end-to-end throughput for a single subscriber
- Integrate Kubernetes as Infrastructure Provider
- Comprehensive Testing
 - Unit tests plugged into a coverage framework
 - End-to-End tests for CORD-in-a-Box
 - End-to-End tests for Physical POD
 - Functional tests as necessary (address biggest points-of-pain)

QA

Theme...

- Framework Enhancements
- Support framework for VOLTHA
- Functional Tests for VOLTHA, vRouter
- Enhance CI/CD tests/framework
- Tests on Physical POD
- Enhance End-end tests
- Performance and Scale framework
- Base framework for M-CORD
- Performance Test platform

VOLTHA

Theme: Management and Operations of vendor OLT solutions (XGS.PON)

- VOLTHA Security
 - Local Access Control - Least Privilege Access (Install, Instantiate, Maint.)
 - Least Privilege Access (Install, Instantiate, Maint)
 - East/West Container Secure Communication
 - Northbound API Secure Communication
 - Soundbound gRPC, Twisted, NetConf Interfaces Secure Communication
 - No Open Ports
- VOLTHA Remove Internet network access dependency
 - No external internet dependency for deployment, installation or instantiation of services
- PON Management & Configuration
 - AutoDetect ONU
 - ONU Registration
 - Control Plane
- VOLTHA High Availability
- VOLTHA Backup /Restore
- VOLTHA Software Component Upgrade
- PON Simulator Update
- Default Edgecore Adapter (XGS.PON)
- ONOS 1.10 Integration

Exploratory/Foundational Work:

YANG Common Data Model - NETCONF/YANG

G.Fast (DPU Driver)

Harmonizing PM KPI's

K8s Container Management

Enterprise CORD

Hardening and Analytics

- vCPE
 - OAM metrics for A-CORD
 - Different types and capabilities
- vEE
 - Ethernet Edge whitebox switch variety
 - OpenFlow vs generic QoS model
- Value-Add Services
 - Firewall
 - WAN-X
 - Hw acceleration
- Connectivity Services
 - L3VPN
 - SD-WAN
- Global XOS
 - Converged global service model
 - Multi-site VNF chaining
- Transport ~ Bandwidth On Demand
 - SPTN (Software-define Packet Transport Network)
 - T-API (Transport API)
 - VPLS
- Security
 - Hardened NBI / security services

Dependencies on Platform

- Pseudowire / VTN integration
- Upgrade to use xproto (for 3.0.1 Release)
- Security / Access Control (Roles)

Mobile CORD

Theme...

- ...

Dependencies on CORD

- ...

Analytics for CORD

Scale + Close Feedback Loops

- Adaptive analytics framework
- Scalable deployments
- BroadView analytics/sFlow analytics
- A-CORD in standalone deployments
- Unify Monitoring-, Test-, and Assurance-as-a-Service
- PoC of SD-Collectors
- Ingeration of A-CORD with ONAP

Dependencies on CORD

- Traffic TAP