ONAP Beijing Release and Future Plan

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ONAP announces availability of Beijing release, enabling a deployment ready platform for Network Automation and Orchestration

ONAP, as part of LF Networking now accounts for over 65% global subscriber participation through carriers creating a harmonized, de-facto Open Source platform.

San Francisco, June 12, 2018– The Open Network Automation Platform (ONAP) Project, which delivers a unified platform for end-to-end, closed-loop network automation, today announced the availability of ONAP “Beijing,” its second software release. Beijing accelerates ease of ONAP deployment for modern network operators and comes as more leading global ......
ABCs of ONAP, the de-facto Automation platform

<table>
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<tr>
<th>Release</th>
<th>Amsterdam</th>
<th>Beijing</th>
<th>Casablanca</th>
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<tbody>
<tr>
<td>Q2 2017</td>
<td>Q4 2017 in production</td>
<td>Deployment Ready</td>
<td>Q4 2018</td>
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<tr>
<td>Theme</td>
<td>Harmonization 1.0</td>
<td>ONE Modular Platform</td>
<td>&lt;In planning&gt;</td>
</tr>
<tr>
<td>Participation</td>
<td>34%</td>
<td>60%</td>
<td>&gt; 65%</td>
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<tr>
<td>Diversity</td>
<td>29 members</td>
<td>60 members</td>
<td>&gt;100 members</td>
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ONAP Beijing: Accelerating Global Deployment
Summary of Enhancements in the Release

1. Architecture
   • Enhancements of External APIs
   • Enhancements towards microservices
   • Extensions for integration & deployability

2. Deployability (The Seven Dimensions)
   • Kubernetes based platform management along with HEAT
   • Usability, Security (CII badging), Manageability
   • Stability, Scalability, Performance, Resiliency (OOM, MUSIC)*

3. Functional Enhancements
   • Change management foundation
   • Hardware Platform Awareness
   • Auto-scaling out with manual trigger

* OOM – ONAP Operations Manager
* MUSIC - Multi-Site State Coordination Service
Architecture
ONAP Architecture – Functional View Beijing

1. Northbound Interoperability using Existing Standards
2. Cloud Native Deployment
3. Placement Optimization Policies
4. Harmonization of Industry Models e.g. TOSCA, YANG, Heat

DESIGN-TIME
- Catalog
- Closed Loop Automation
- Controllers
- DCAE
- Inventory
- OOF
- MUSIC
- Common Services
- External Systems

RUN-TIME
- Policy
- Orchestration
- OSS / BSS
- Portal

NEW
Deployability
ONAP Deployability – The Seven Dimensions

Usability
- Enhanced Documentation/User Guides, process maturity

Security
- CII badging, Vulnerability Mitigation

Manageability
- Kubernetes & HEAT based platform management

Stability
- 72 hour soak with random transactions, all 31 projects participating

Scalability
- Disruptive Testing, Parallel Request processing – closed loop resilient (Multi-VIM/VFC)

Performance
- Ecosystem testing scale out, criteria set up

Resiliency
- OOM, MUSIC - multi-site scalability and HA
- Auto detection/recovery – all run time projects
A Day in the Life of an ONAP Service

VNF

1. Vendor provided VNF (cloud-hosted, optimized or native)

2. Vendor packages VNF as per ONAP requirements; can use VNF SDK

Design

3. Design/test teams onboard VNFs

4. Designers create products, services, recipes

Run-Time

5. OSS/BSS system triggers service deployment

6. Service lifecycle management

7. Constant data collection, analytics, event monitoring; S3P

Credit: Aarna Networks, ONAP Training course
# Beijing Functional Enhancements

## Change Management

- Initial version; executes in-place upgrade workflow for the virtual gateway (vG) VNF

## Hardware Platform Awareness

- Policy driven placement - Places VNFs in the right cloud/region based on capacity, location, hardware platform awareness (HPA defines rules such as DPDK, SR-IOV etc.)

## Auto Scaling with Manual Trigger

- Manually triggered scale-out and scale-in; utilizes sVNFMVs

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**Residential vCPE**

**VoLTE**
ONAP Casablanca Release: Global Adoption

• Architecture
  - Extension of External APIs for full BSS/OSS integration
  - Enhancement to microservices-architecture and multi-VIM, multi-clouds & service mesh (OPNFV & Kubernetes collaboration)

• Deployability
  - VNF Ecosystem certification (OVP)
  - Continued enhancements of Seven Deployability dimensions
  - End User input – complete the cycle (EUAG operational)

• Platform Enhancements (in planning)
  - New feature enhancements (features) – functional requirements
    • Network slicing, optimization in support of 5G
  - New blue prints
    • Connectivity use cases (e.g. CCVPN which combines OTN with enterprise vCPE and SD-WAN service enterprise vCPE, SD-WAN)

www.onap.org/home/community
ONAP Ecosystem

Global, Diverse, Growing
ONAP Deployment updates

1. **Leading contribution**
   Successful transition from dominant role (ECOMP) to community-led project ONAP

2. **POC & deployment continue with ONAP**
   SDN & Virtualization journey. ONAP is a critical element of Cross Project transformation including AcumosAI, DANOS (NOS) and Akraino (Edge)

3. **CI/CD – ONAP**
   Pulling from ONAP into their internal environment

1. **VoLTE Trials** ongoing in Zhejiang province with Amsterdam. CMCC built α release including NFVO, did customization & contribution to Beijing release.

2. **Beijing Release** now aligned with China Mobile's enterprise requirements. (NFVO+/GVNFM products will be used for China Mobile pilot test)

3. **Cross Carrier ONAP** - Casablanca release for SOTN/SD-WAN including interconnection between ONAPs. (prototype pilot Vodafone, Huawei & CMCC)

1. **Demonstrate a complete VNF lifecycle management**: create VNF Descriptor, Validate Package, On-board and deploy commercial vMRF and vProbe

2. **Demonstrate how to automate network operation tasks** for SD-WAN and SDN network connectivity

3. **Opening first ONAP Open Lab** with 70+ users from operators, VNF vendors and academics

4. **Development of 3 external APIs** to ease integration with BSS (Order, Inventory, Catalog)
ONAP deployment updates

1. **Network-Cloud integration** PoC of vCPE use case in CT lab

2. **ONAP Maturity test**: build up auto test environment and contribute on ONAP S3P tests.

3. **Development and deployment**: add intelligence and automation for agile provisioning and onboarding, introduce SO MSB A&AI into practice, and engage in Service Model definition

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1. **Driving modularity and pluggability** of ONAP Components within Verizon SDN architecture. Contribute code with emphasis on SDC, SO, SDN-C, A/AI, DCAE and web scale evolution support

2. **Striving for SO/VNFM ETSI MANO-compliant** interface to external VNFMs

3. **CI/CD enabled ONAP Verizon developer test bed** and onboarding internal VNF’s to validate platform and vendors to participate in the journey

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1. Amsterdam Release in **production** since Q42017

2. Heavy focus on simplified deployment & OOM contribution

3. Expanding use cases across Carrier and Internal IT Data Center automation.
## ONAP Deployment updates

| **1. Lab** | **1. ** | **vodafone**
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<tr>
<td>Focus on SDC, A&amp;AI, SO, DCAE. Vodafone sees ONAP as a crucial platform for standardization across various areas for Telco Cloud adoption</td>
<td><strong>Last Mile Enabler</strong></td>
<td><strong>Africa &amp; Middle East</strong></td>
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| **2. POC** | **2. ** | **BringCom**
| ONAP based TM Forum Catalyst projects - Blade Runner, Automating Network As A Service, 5G Intelligent Service Operations - for the first time built on a common reference architecture of ONAP, TM Forum open-APIs and MEF-defined service payloads. | **POCs with ONAP** | by modifying community vFW blueprint to separate PG and vFW_SINC across two OpenStack regions connected by E-Line |
| **3. On-Boarding** | **3. ** | **Türk Telekom**
| Focus on SDC, Compliance & Verification(On-Boarding) of Resources and Services - an industry standard for On-Boarding at various levels | **Demonstrated at MEF** | **Athens meeting on 4/19** |

1. **Last Mile Enabler**  
   Africa & Middle East

2. **POCs with ONAP**  
   by modifying community vFW blueprint to separate PG and vFW_SINC across two OpenStack regions connected by E-Line

3. **Demonstrated at MEF**  
   Athens meeting on 4/19

1. **POC/Production to start delivering security services through SD-WAN by using ONAP Beijing release in Q3**

2. **Testbeds and POC**  
   Upgrading current lab environment into Beijing. Starting the selected use case testing. Increasing VNF onboarding testing for service modelling

3. **Focus use cases vFirewall on vCPE/SD-WAN, Voltha (OSAM), Gi-Lan**
ONAP Commercial Ecosystem – Early Leadership

1. NFV Orchestration Platform is a packaged software and services solution for end to end NFV service lifecycle management and orchestration. Offers a portfolio of modular capabilities that accelerate service design, virtualization and operation.

2. Addresses the full range of ONAP use cases: vCPE, SD-WAN + security, vEPC, vRAN, more

3. Foundation of Amdocs service portfolio addressing domain orchestration, mobile services orchestration and Enterprise services orchestration.

1. ONAP Startup
   Products, services, training (½ day, full day)

2. Created ONAP all-in-one
   Packaged ONAP and OPNFV in one Google Cloud VM for training labs; image can also be used as a “sandbox” for developers

1. Ericsson Orchestration and Ericsson Network Manager both incorporate ONAP components

2. Delivering key technology to enable Network Slicing and VoLTE.

3. Ericsson is intimately involved in driving industry alignment between ONAP and ETSI-NFV.

4. ONAP improves time to market for Ericsson and for its operator customers
1. **Service on Demand**
   - Virtuora Network Controller collects E-line performance data
   - Fujitsu microservice within ONAP manages threshold alarms to respond to needs such as add’l bandwidth
   - Automatically resets to normal allocations when typical traffic patterns re-emerge

2. **E2E digital transformation** in progress with HKT
   - Automating Mobile CloudVPN service
   - Ties into backend operations systems
   - Huawei is building a Digital Transformation service portfolio for Telcos around their ONAP-based AIDO/IES platforms

3. **ONAP on IBM Cloud Private**
   IBM Cloud Private is fully Kubernetes-based deployment for on-premise, bundled with capabilities from open source & IBM for core operational services

4. **IBM Services for ONAP**
   Focus on SDN and NFV deployments & integrations worldwide, including work on ONAP for Operators. Services are augmented with IBM cloud and cognitive software and services
Enabling the Next Generation Software Defined Networking vision with ONAP
LF Networking Vision: Automating Cloud, Network, & IOT Services

<table>
<thead>
<tr>
<th>Services</th>
<th>Cloud Services</th>
<th>Residential Services</th>
<th>Enterprise Services</th>
<th>IOT Services</th>
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<tr>
<td>Software &amp; Automation</td>
<td>Cloud Automation</td>
<td>IOT Automation</td>
<td></td>
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<tr>
<td>Infrastructure</td>
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- **Cloud Services**
  - Data Centers
  - Carrier Network
  - Cloud Network

- **Residential Services**

- **Enterprise Services**
  - Data Centers
  - Carrier Network
  - Cloud Network

- **IOT Services**
  - (ONAP, ONFV, ODL, FD.io, SNAS, PNDA)

**Public/Hybrid**
  - Cloud Service Providers
  - Cloud Hosting
  - Private Cloud Providers
  - Web Service Providers

**Service Providers**
  - MSO/CableCo

**Software**
  - Software Defined Data Centers (SDDC)

Under embargo June 12, 2018, 9.00 AM PST
Summary – ONAP Beijing Release available now

1. Beijing is deployment ready – focus on architecture, seven dimensions of deployment & functional enhancements

2. Global Support, Diversity & Ecosystem expansion making ONAP the de-facto Network Automation platform

3. ONAP along with other LF Networking projects continue to drive Open Source Networking momentum & harmonization across industry