Introduction to OSM

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OSM#15

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Some requirements for the evolution of Telco Clouds...
How OSM Simplifies Telco Cloud Management...

...while keeping flexibility
OSM provides a platform to create Networks as a Service and to manage them conveniently later...

OSM manages the low-level setup for Network Functions, so that they are ready for use.

- It covers in 100% the role of a kind of **specialized PaaS for Network Functions**, with 2 key features:
  1. **Complex connectivity** setup, including EPA and underlay scenarios.
  2. Solve **inter-NF relations**.

- Returns: **NS/NF ready for its use and properly connected**:
  - Exposes the “function” and its lifecycle, not its components.
  - Presented as a whole (i.e., abstracts from low-level details of the NF).
  - Easy (standardized) access to NF's lifecycle operations, via **primitives**.

- This follows well-known paradigms in **IT and public clouds**.
... on different types of infrastructure and across different locations...

... with NFs composed of **VMs**, **containers** and/or **physical elements**...

**MULTI-VIM & MULTI-SDN**

**MULTI-SITE**

**Open Source MANO**

**a)** All VMs

- **VNF**
  - VM
  - VM

**b)** All Containers

- **VNF**
  - VM
  - VM
  - VM

  - **Container Network Function (CNF)**
    - KBs
    - KBs
    - KBs

**c)** All Physical

- **PnF**
  - Phy
  - Phy
  - Phy

**d)** Hybrid cases

- **Hybrid Network Function (HNF)**
  - Phy
  - VM
  - VM

  - **Hybrid Network Function (HNF)**
    - KBs
    - KBs
    - VM
... and ready for network-specific workloads whenever needed

Huge Pages

72 GB RAM

24 GB RAM

48 GB HugePages

CPU Pinning

NUMA Topology Awareness

Line rate with all frame sizes

Data Plane assignment

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Using the exact same packages, the same service can be deployed in multiple types of clouds and sites.

DEPLOYMENTS:
- 5G NF #1 (x2 sites)
- 5G NF #2 (1 site)
Using the exact same packages, the same service can be deployed in multiple types of clouds and sites.
As a result, OSM brings big operational benefits for the challenges of a modern Telco Cloud
A Vibrant and Thriving Community
ETSI OSM community is really LARGE AND DIVERSE, with 153 members today

- 15 Global Service Providers
- Leading IT/Cloud players
- VNF providers

... with a significant number of commercial offers related to OSM ("OSM Ecosystem")

https://osm.etsi.org/wikipub/index.php/OSM_Ecosystem
… which benefit from the feedback of a strong user community, adding to existing commercial deployments...

Stats of OSM’s community installer:

![Graph showing total installations per release with points at (6255, 2022-01) and (2593, 2022-07).]
... and the large size of the research projects using OSM as their orchestrator of choice

https://osm.etsi.org/wikipub/index.php/Research
A new release is coming!
Release FOURTEEN brings a whole set of new functionalities ...

Closed-loop life cycle architecture
• GA of new monitoring architecture for closed loops.
• Service KPI of VNF using exporter endpoint.
• Autoheal switch and autoscale switch.

Security enhancements
• Replacement Pycrypto with PycryptoDome.
• Pod Admission Policy for Helm-based EE.
• Authenticated gRPC for Helm-based EE.

Usability and platform management
• User management enhancements.
• Audit logs generation for OSM

Infra modelling and NF lifecycle
• RO performance optimization.
• IPv6 support.
• Transport API (TAPI) WIM connector
• Support of volume multi-attach.
• IP address and hostname for horizontally scaled VM.
• Use existing flavor-id as an instantiation parameter.
• Instantiation parameters for Juju bundles.

OSM installation
• Helm Charts for deploying OSM on K8s.
• Update/Upgrade of OSM services.
... which are added on top of an already long set of features...
Release FOURTEEN is our 3\textsuperscript{rd} LTS release

LTS Releases (Long Term Support)
- 24 months community support
- Oriented to production
- Focus on stability
- Community grants upgrade between LTS's

STS Releases (Short Term Support)
- 6 months community support
- Oriented to innovation & development
- Focus on innovation & agility
- Upgrade on a best effort basis

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- Release TEN LTS: 2021 December
- Release ELEVEN STS: 2022 June
- Release TWELVE LTS: 2022 December
- Release THIRTEEN STS: 2023 June
- Release FOURTEEN LTS: 2024 December
- Release FIFTEEN STS: 2024 December

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At this point, it is becoming easier explaining OSM features in practice.
Thank You!

osm.etsi.org
osm.etsi.org/docs/user-guide
osm.etsi.org/wikipub