INTRODUCTION TO THE OSM COMMUNITY
WHY IS OSM

• ETSI OSM is an operator lead ETSI community

• Delivering a production quality open source Management and Orchestration (MANO) stack

• Aligned with ETSI NFV Information Models

• Meets the requirements of production NFV networks.
RAPID GROWTH TO A LARGE COMMUNITY WITH 60+
MEMBERS

- 8 Global Service Providers
- Leading IT/Cloud players
OSM GUIDING PRINCIPLES

• Two interrelated objectives for OSM
  • Open ‘carrier-grade’ MANO implementation
  • Open learning by doing – iterative evolution

• EUAG gives vision and direction for OSM

• EUAG sets out release requirements
  • Release requirements have strong practical focus
  • 6 month release cycle

• Seeking to avoid the “all things to all people”
VALUE OF OPEN SOURCE

• ‘Learning by Doing’

• Traditional operator OSS is currently in-house or bespoke developed
  • Open source is a relatively logical next step

• Effective way of achieving systems which meet requirements
  • Standards are sometimes opaque to whether they meet requirements
  • Standards can be susceptible to different interpretations
  • Key requirements may not be addressed by standards
  • MANO standards are highly complex and still evolving
LONG TERM VISION - ARCHITECTURE

- Heterogeneous
  - Multi-VIM
  - Multi-SDN controllers
  - OSS Integration via API
  - Plug-in architecture

- Platform Intelligence
  - Contextual upgrades
  - Dynamic Service Graphs
  - Real Time Inventory Database

- Security
  - Role based access
  - Secure remote access
  - Secure inter-component communication
LONG TERM VISION - AUTOMATION

• Automation Evolution Over Time
  • Service Design and Deployment On-boarding
  • Platform Life Cycle
  • Service Life Cycle
  • Service Assurance

• Multi-Layer Recursive Framework
  • Policy Driven Automation
Rapid Feedback to Architecture and Standards

- Continuous Development
  - Rapid, continuous development with full support of CI/CD toolkit

- ETSI Interaction and Involvement
  - OSM successfully participated in the ETSI NFV Plugtest
  - Interaction with IFA standards and influence data models
OSM GOVERNANCE FLOW

LEADERSHIP GROUP
Sets the policies of the organization
Takes administrative decisions

END USER ADVISORY GROUP

Reports progress on features
Produces use cases
Produces feature requests

TSC
Sets the Information Model
Decide features per release

Confirms TSC Chair
Supports TSC work

Reports progress to the LG

Creates/removes MDG
Appoints/revokes MDG leads

Commits module releases
Commits project releases

Reports progress
on features

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CURRENT OSM LEADERSHIP

Leadership Group (LG)
Chair: FJ Ramón Salguero (Telefónica)
Vice-Chair: Andy Reid (BT)
Vice-Chair: Pål Grønsund (Telenor)

End User Advisory Group (EUAG)
Chair: Andy Reid (BT)

Technical Steering Committee (TSC)
Chair: Adrian Hoban (Intel)
Member: Gerardo García de Blas (Telefónica)
Member: Mark Shuttleworth (Canonical)
Member: Matt Harper (Rift.io)
Member: Vanessa Little (Vmware)

Marketing TF
Convenor: Chris Buerger (Intel)

User Interface MDG (UI)
MDG Lead: Kiran Kashalkar (RIFT.io)

VNF Config & Abstraction TF (VCA)
Convenor: Marco Ceppi (Canonical)

Nw Service Orchestration MDG (NSO)
MDG Lead: Rajesh Velandy (RIFT.io)

Interoperability Testing TF
Convenor: Noel Charath (RIFT.io)

Resource Orchestration MDG (RO)
MDG Lead: Alfonso Tierno Sepúlveda (Telefónica)
OSM ARCHITECTURAL PRINCIPLES
OSM ARCHITECTURAL PRINCIPLES

Layering  Abstraction
Modularity  Simplicity

Architectural Principles
ARCHITECTURAL PRINCIPLES FOR OSM

• LAYERING
  • Require clear delineation between the layers and modules.
  • Should be broadly aligned with ETSI-NFV

• ABSTRACTION
  • Moving up/down the layers should offer clear differentiation in the levels of abstraction/detail presented.

• MODULARITY
  • Even within layers, clear modularity enabled with a plugin model preferred to facilitate module replacements as OSM community develops.

• SIMPLICITY
  • Solution must have the minimal complexity necessary to be successful and no more.
**OSM SCOPE & MAPPING TO ETSI NFV MANO**

### Run-Time Scope
- Automated end-to-end Service Orchestration
- Superset of ETSI NFV MANO
- Plugin model for multiple VIMs/SDN Controllers
- Generic VNFM style functionality with support for integrating Specific VNFM
- Physical Network Function integration
- Greenfield and brownfield deployments
- GUI

### Design-Time Scope
- Network Service Definition (CRUD operations)
- Model-Driven Environment with Data Models aligned with ETSI NFV
- VNF Package Generation
- GUI

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**Extract from Figure 4: NFV Reference Architecture Framework, ETSI GS NFV 002 V1.2.1 (2014-12)**
OSM: DEVELOPMENT THEMES

- On-boarding & VNF Packaging
- Simplified install & upgrade process
- Improved development environment
- Service Modelling
- Enhanced Platform Awareness
- Multiple VIMs & SDN Controllers
- Multiple Sites
LOGICAL ARCHITECTURE

SO: Service Orchestrator
RO: Resource Orchestrator
VCA: VNF Configuration and Abstraction

OSM scope
INITIAL OSM ARCHITECTURE

NSO: Network Service Orchestrator
CM: Configuration Manager
RO: Resource Orchestrator
INITIAL OSM ARCHITECTURE

VNF Model (primitives & attributes)

VNF Configuration

VNF MODELLING & CONFIGURATION

Juju Server (VCA)

Riftware (NSO)

OpenMANO (RO)

OpenStack Controller

OpenVIM Controller

NSO: Network Service Orchestrator
CM: Configuration Manager
RO: Resource Orchestrator
INITIAL OSM ARCHITECTURE

Riftware (NSO)

OpenMANO (RO)

OpenVIM Controller

OpenStack Controller

VNF

Proxy Charm

Proxy Charm

Proxy Charm

Compute Node

VNF

VNF

VNF

E2E SERVICE ORCHESTRATION
(service primitives & attributes)

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NSO: Network Service Orchestrator
CM: Configuration Manager
RO: Resource Orchestrator
INITIAL OSM ARCHITECTURE

GUI (RIFT.io – Launchpad)

Service Orchestration (Riftware)
(Service Automation & Abstraction Workflow Engine)

VNF Configuration & Abstraction (Juju)

VNF Primitives and Attributes

Resource Or orchestrator (OpenMANO)

VIM

NFVI

P – Primitives
A - Attributes
THE OSM HIVE

- A network of Remote Labs offering different combinations of NFV Infrastructure and VIMs.

- These remote labs are part of the OSM CI/CD pipeline for dedicated ongoing integration testing.
## CURRENT MEMBERS

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<thead>
<tr>
<th>Location</th>
<th>Netblock</th>
<th>Status</th>
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<tr>
<td>ETSI (OSM CI/CD)</td>
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<tr>
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<td>172.21.2.0/24</td>
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<tr>
<td>VMware</td>
<td>172.21.6.0/24</td>
<td>Coming Soon!</td>
</tr>
</tbody>
</table>
• Separate server(s) for the VIM
• Separate server for the OSM components, SO, RO, VCA (juju server)
• Dedicated switch(s) capable of multiple vlans and SR-IOV and PCI-passthru configurations
• Edge firewall capable of GRE over IPSec VPN tunnels
HOW TO JOIN THE HIVE

• Join ETSI OSM as a Member or Participant

• Deploy the minimum required hardware and configuration

• Request access via email: OSMsupport@etsi.org
For more information, go to:

https://osm.etsi.org

THANK YOU!