



# BEACON

## Enabling Federated Cloud Networking

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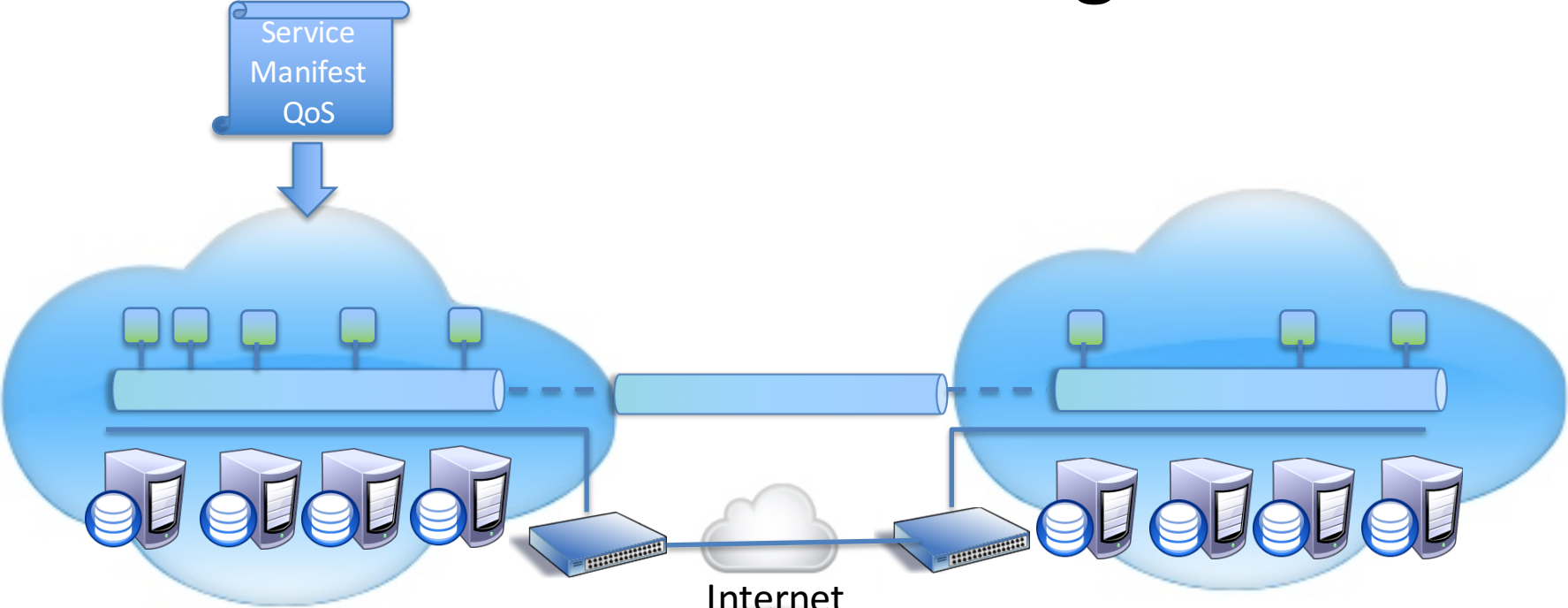
Project Coordinator



CloudExpo, 12-13 April 2016, London, UK



# Federated Cloud Networking Scenario



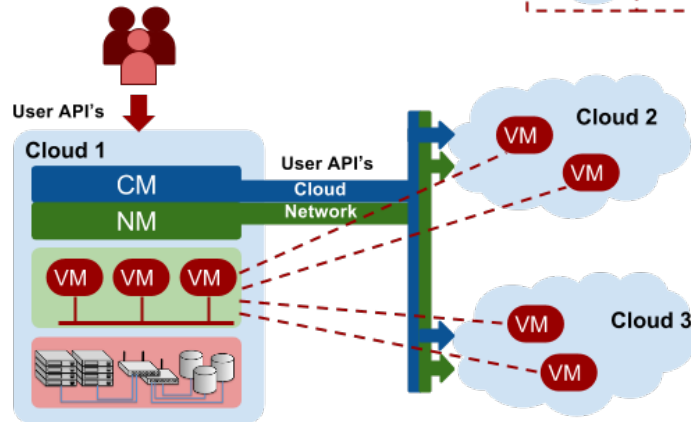
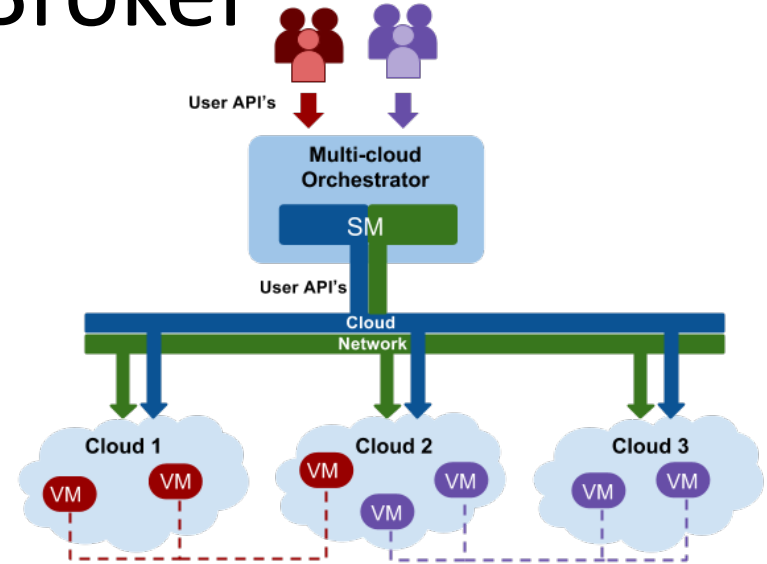
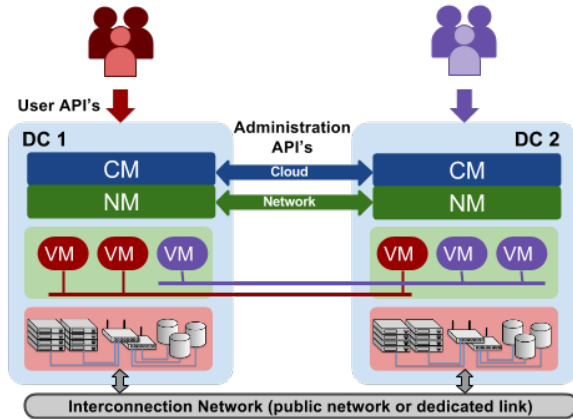
OVN



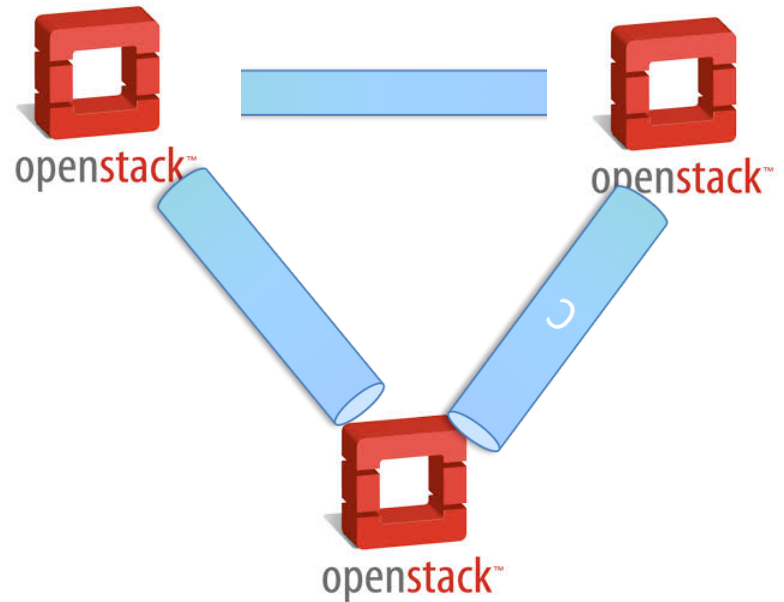
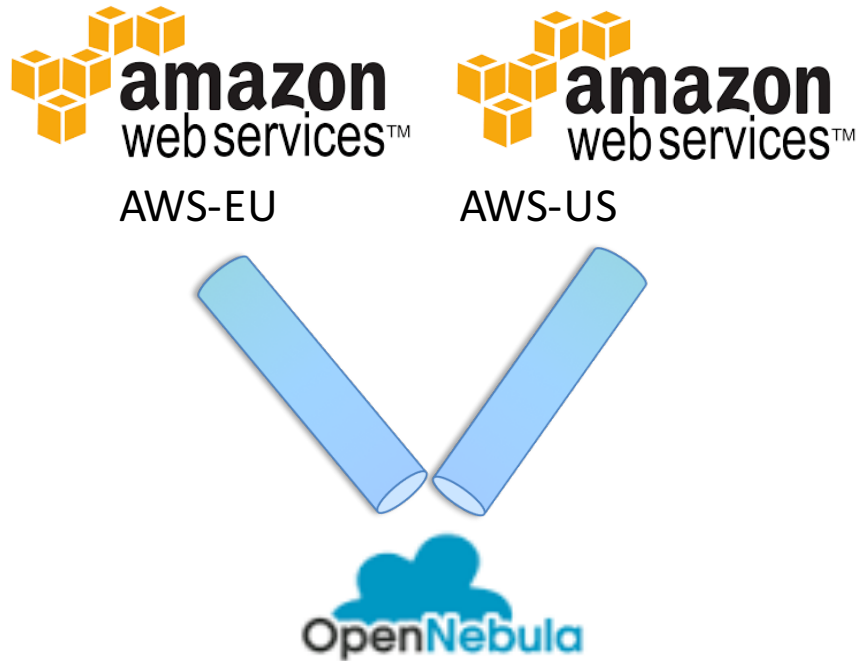
With advanced features such as automated high availability, location aware elasticity and automated service function chaining.



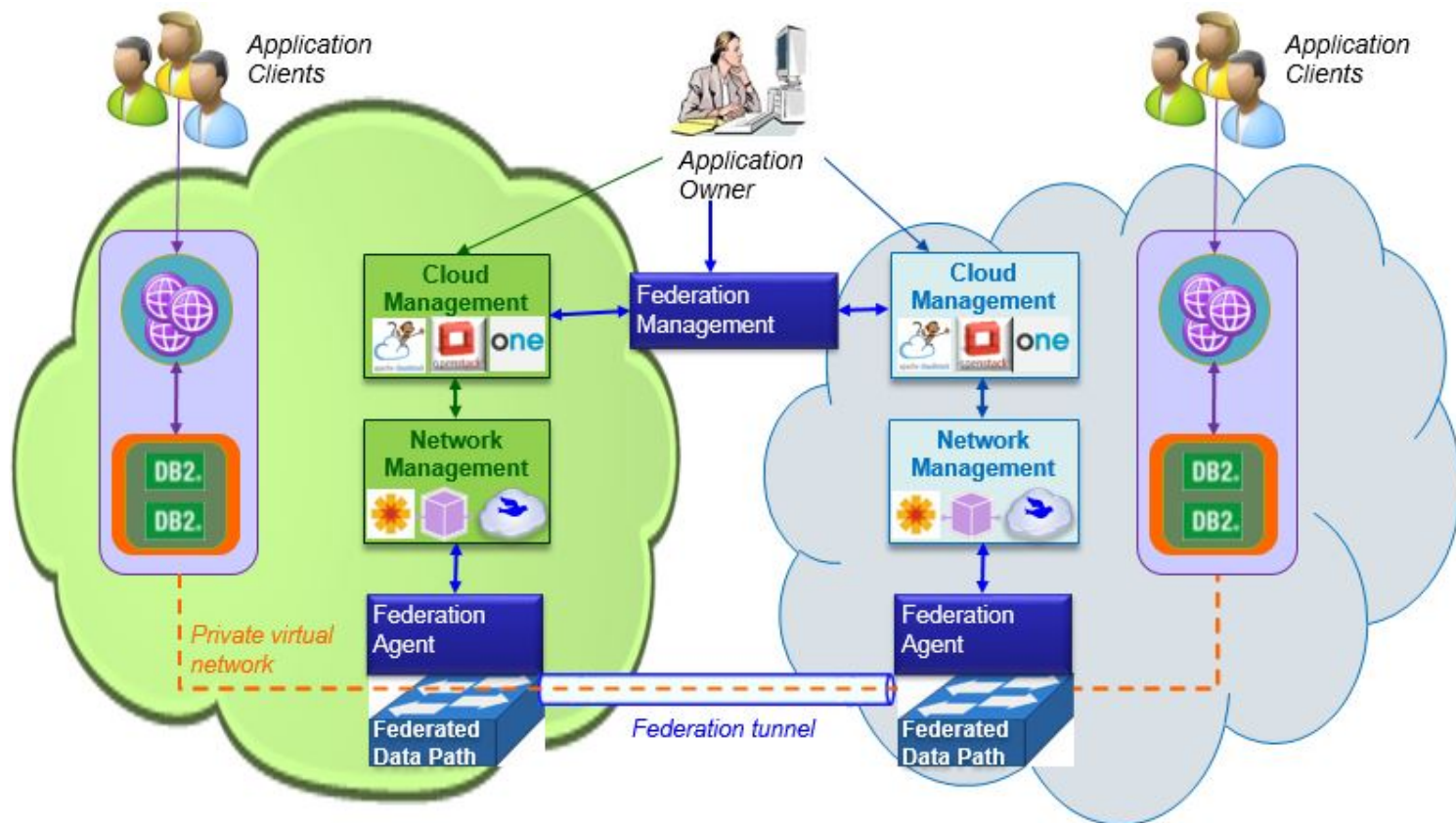
# Types of Cloud Federations: Peer, Hybrid, Broker



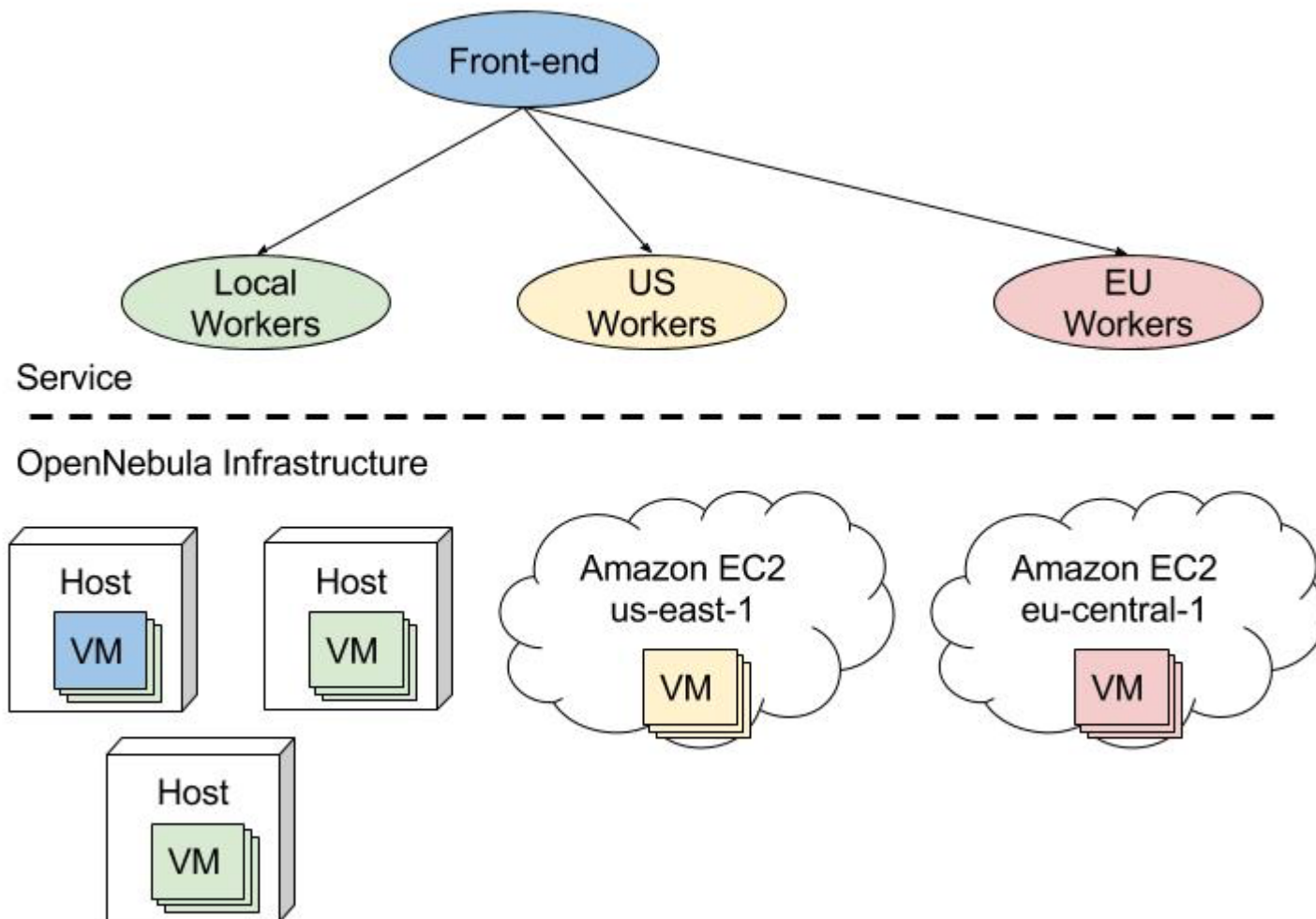
# Current Focus: Loosely Coupled Federations



# BEACON Federated Networking Architecture

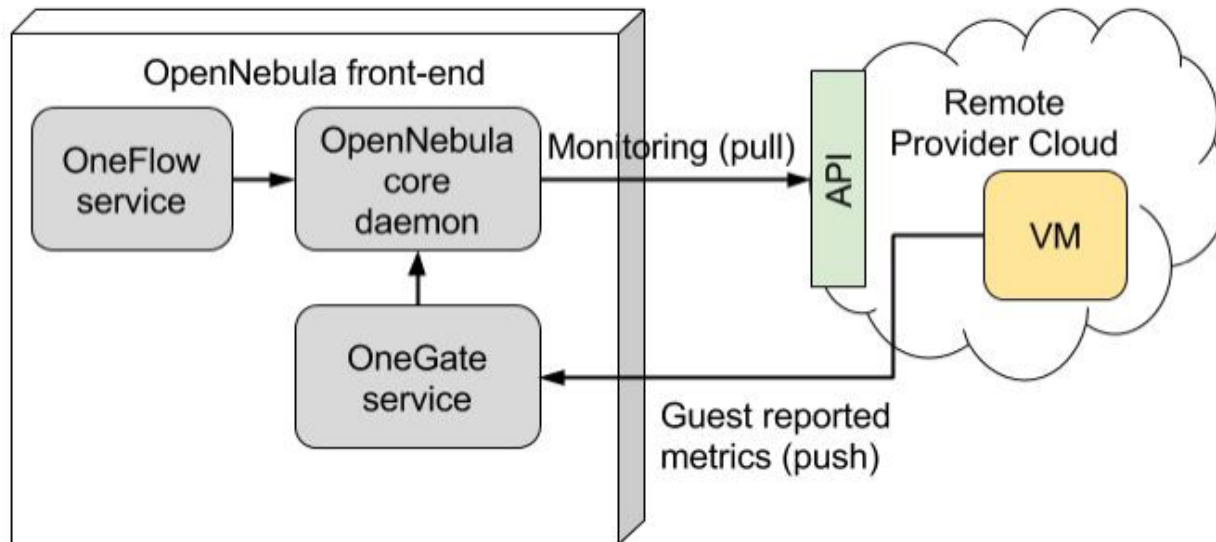


# OpenNebula OneFlow Enhancements



# Remote Cloud Monitoring

- OpenNebula hybrid drivers has been extended to obtain more information from remote clouds, namely from the CloudWatch service in Amazon EC2



# Virtual Routers in OpenNebula


For the Virtual Router management, new modules were developed to create and manage the Virtual Router lifecycle in a user-friendly fashion, as well as a new graphical network topology representation



## Create Virtual Router



← ⌵ Reset Create Wizard Advanced

Name:


Description <sup>?</sup>

 Network

INTERFACE private-net    
 Floating IP <sup>?</sup>

INTERFACE dmz-3    
 Floating IP <sup>?</sup>

Add another Network Interface



ID	Owner	Group	Name	Registration time
5	oneadmin	oneadmin	fedagent	16:51:24 15/12/2015

Showing 1 to 1 of 1 entries (filtered from 3 total entries) Previous  Next

You selected the following Template:

VM Name <sup>?</sup>  Number of instances <sup>?</sup>   Hold <sup>?</sup>





# OpenNebula OneFlow Enhancements

- OpenNebula OneFlow allows users and administrators to define, execute and manage services (multi-tiered applications) composed of interconnected Virtual Machines with deployment dependencies between them
- This component has been enhanced to support “Service Placement policies with location constraints” and “location-aware scalability” requirements in BEACON



# Impact and benefits to the audience

- Integration of Network virtualisation and Software defined networking with Cloud Middleware
- Research results will be open source
- Some results pushed back into OVN, OpenStack and Open Nebula
- Also available via AppHub



# BEACON Web Site

test - Google Search x WP2 Federated Clou x Home | BEACON x

www.beacon-project.eu

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Enabling Federated Cloud Networking

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## Home

Beacon is a Research and Development project, which receives funding from the EU through its **Horizon 2020** framework programme.

The main goal of this project is two-fold: research and develop techniques to federated cloud network resources, and to derive the integrated management cloud layer that enables an efficient and secure deployment of federated cloud applications.

BEACON will deliver an homogeneous virtualization layer, on top of heterogeneous underlying physical networks, computing and storage infrastructures, providing enablement for automated federation of applications across different clouds and datacenters.

The BEACON project is fully committed to open source software, the research and development activities of the consortium will be based on existing open source projects. Cloud networking aspects will be based on OpenDayLight, a collaborative project under The Linux Foundation, and specifically we will leverage and extend the OpenDOVE project with new rich intercloud APIs to provision cross-site virtual networks overlays

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CloudExpo, 12-13 April 2016, London, UK



