



OpenNebula Conference 2014

Bootstrapping a virtual infrastructure using OpenNebula from scratch

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Berlin, 04.12.14

- ▶ IT Systems Engineer at inovex GmbH (Germany)
- ▶ Small to large Open Source datacenter management solutions
- ▶ High available web-based applications
- ▶ Contributing to various Open Source projects

Goal:

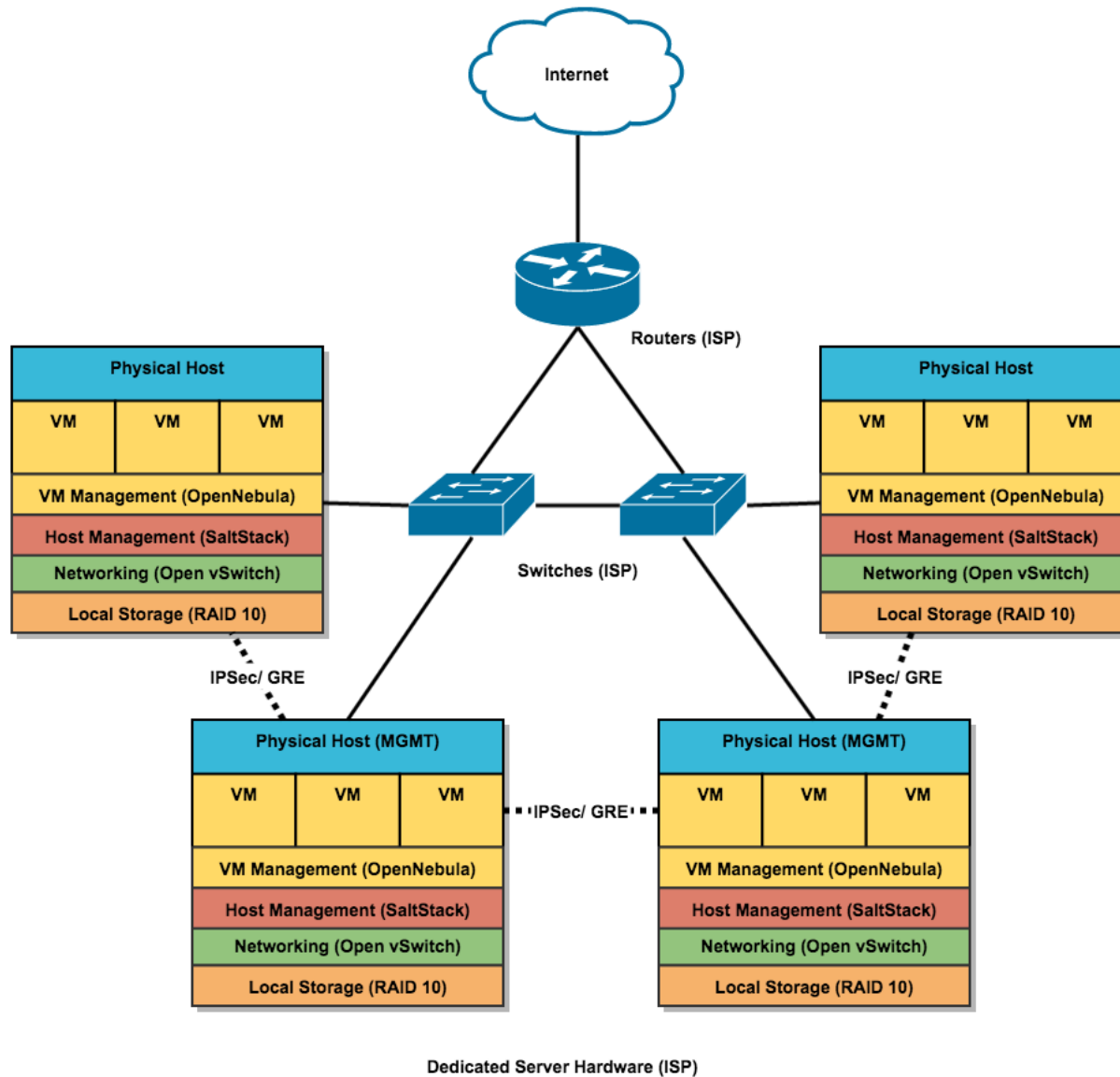
- ▶ Setup a lightweight hosting platform to run web applications
- ▶ Virtual machines (VMs) instead of plain bare-metal
- ▶ Infrastructure should be easy to maintain

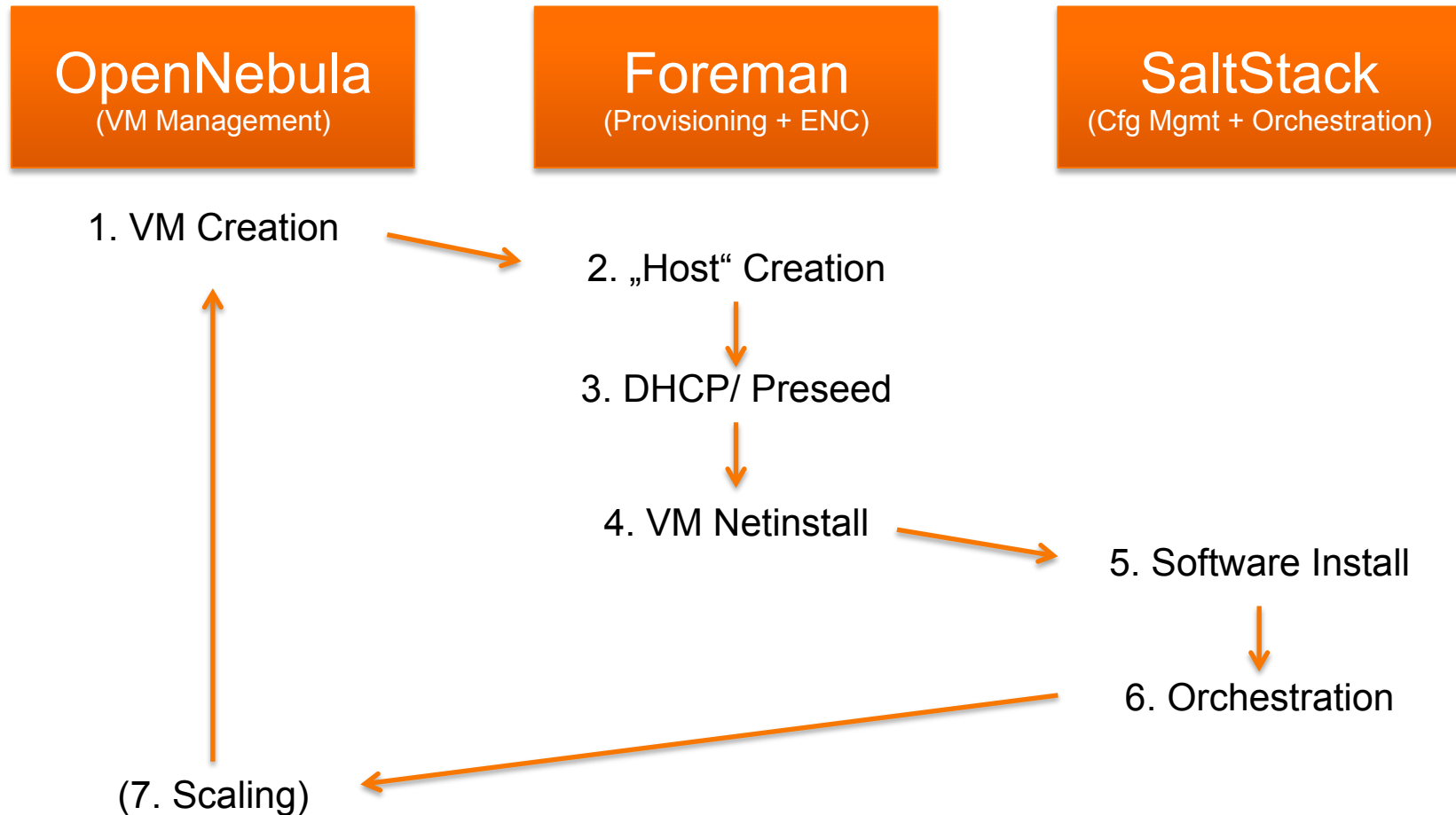
Outlines:

- ▶ Create a new infrastructure from scratch
- ▶ Individual VM deployment (Preseed/ Kickstart)
- ▶ No shared storage available (yet)
- ▶ Small network bandwidth (2 x 1 GigE per node)

Concept

Network Topology





Storage:

- ▶ HW-RAID 10
- ▶ QCOW2 VM disk images
- ▶ Creation of disk during VM deployment (custom TM driver)

Networking:

- ▶ „Ethernet“ address range in ONE, IPAM by Foreman/ SaltStack
- ▶ Open vSwitch (custom VNM driver)
- ▶ STP management via VNM driver
- ▶ IPSec/ GRE tunneling between compute nodes (MTU 9000)

Pros:

- + Low (cloud) infrastructure requirements
- + High degree of automation (Automate everything!)
- + „Cloud“-like feature set

Cons:

- No VM live migration due to non-shared storage
 - No experiences in Open vSwitch (GRE) scaling
 - VM deployment takes ~ 10 minutes (deployment + software install)
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- ▶ VM Images vs. individual deployment/ netinstall
 - ▶ DHCP vs. OpenNebula contextualization
 - ▶ IPAM in OpenNebula vs. Foreman vs. Salt
 - ▶ Pets vs. cattles

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Thank You!

Questions?

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