

Open Source Data Center Virtualisierung mit OpenNebula

22.05.2013 | LinuxTag Berlin



Bernd Erk
www.netways.de

VORSTELLUNG NETWAYS

VORSTELLUNG OPENNEBULA

CHALLENGES

ARCHITEKTUR

TECHNISCHER ÜBERBLICK

VERTEILTE UMGEBUNGEN

WEB INTERFACE DEMO

ZUSAMMENFASSUNG

F&A



VORSTELLUNG NETWAYS

NETWAYS

- Firmengründung 1995
- GmbH seit 2001
- Open Source seit 1997

- 38 Mitarbeiter

- Spezialisierung in den Bereichen Open Source Systems Management und Open Source Datacenter Infrastructure



NETWAYS Kompetenzen

OPEN SOURCE SYSTEMS MANAGEMENT

- Monitoring & Reporting
- Configuration Management
- Service Management
- Knowledge Management
- Backup & Recovery

OPEN SOURCE DATA CENTER

- High Availability & Clustering
- Cloud Computing
- Load Balancing
- Virtualization
- Database Management

MANAGED SERVICES

MONITORING HARDWARE

KONFERENZEN

NETWAYS Konferenzen



OpenNebula Conf 2013

24 - 26 September in Berlin

OpenNebulaConference 2013 24 – 26 September 2013

- www.opennebula.conf
- Aktuell läuft gerade der CFP



Open Source Monitoring Conference 23 – 24 Oktober 2013

- 250 Teilnehmer (2012)
- Monitoring Best Practice
- Aktuell läuft gerade der CFP

Jobs

■ NETWAYS[®]▲

jobs.netways.de

www.netways.de



VORSTELLUNG OPENNEBULA

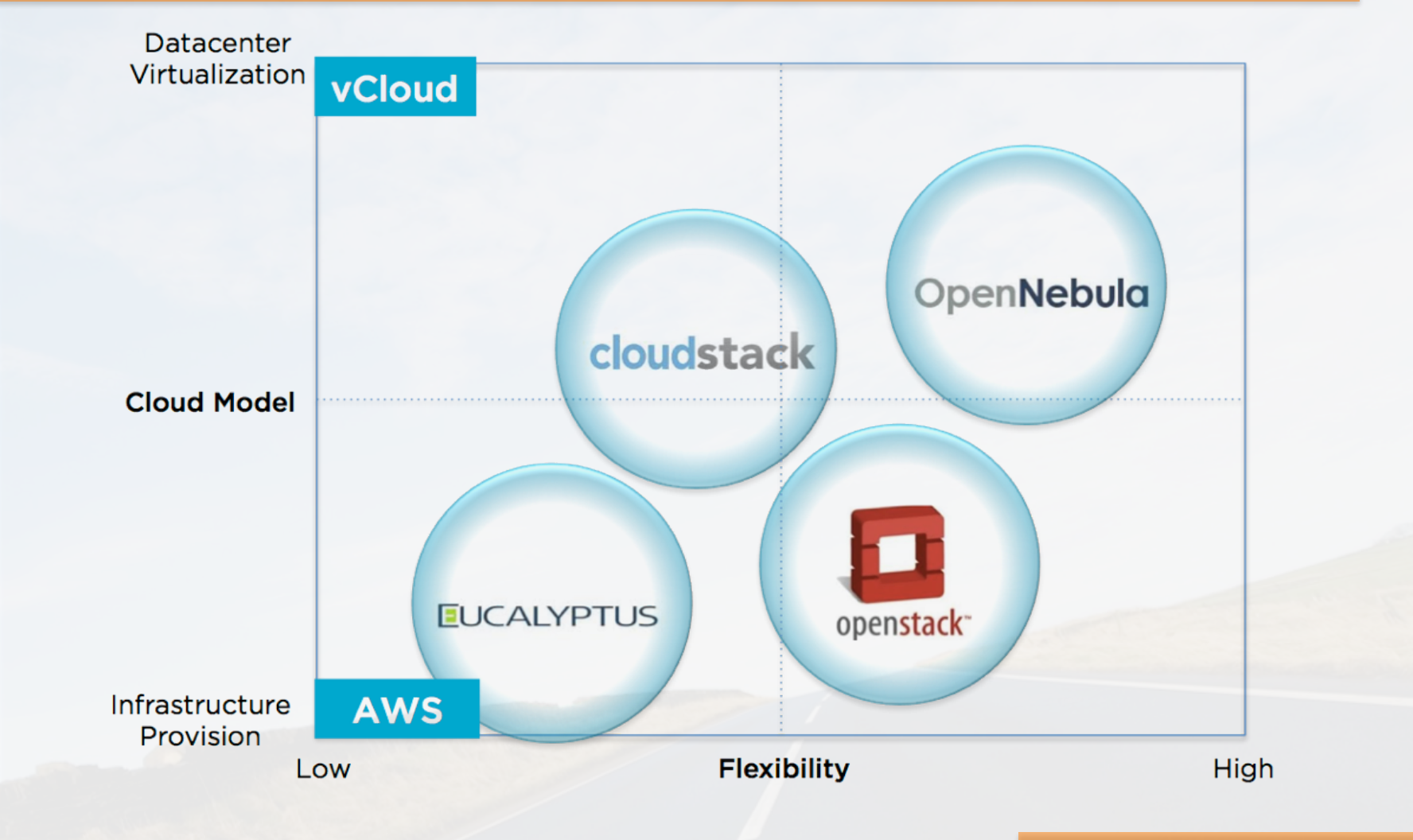
OpenNebula - Überblick

OpenNebula.org

Multi-tenancy, Elasticity and Automatic Provision on
Virtualized Environments

Geht einfach!

OpenNebula - Ausrichtung



OpenNebula - Vergleich

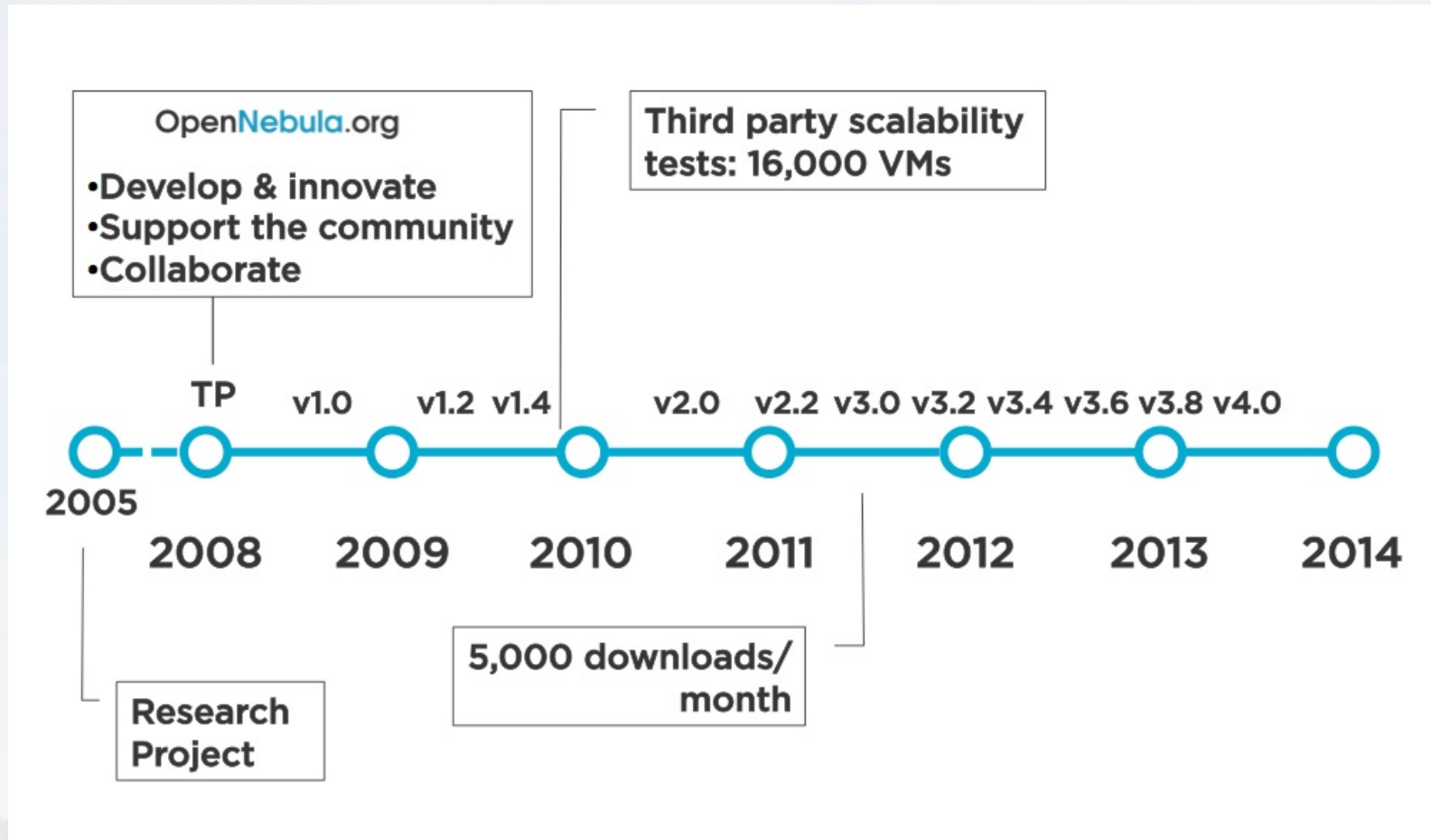


OpenStack
Eucalyptus



OpenNebula

OpenNebula - Geschichte





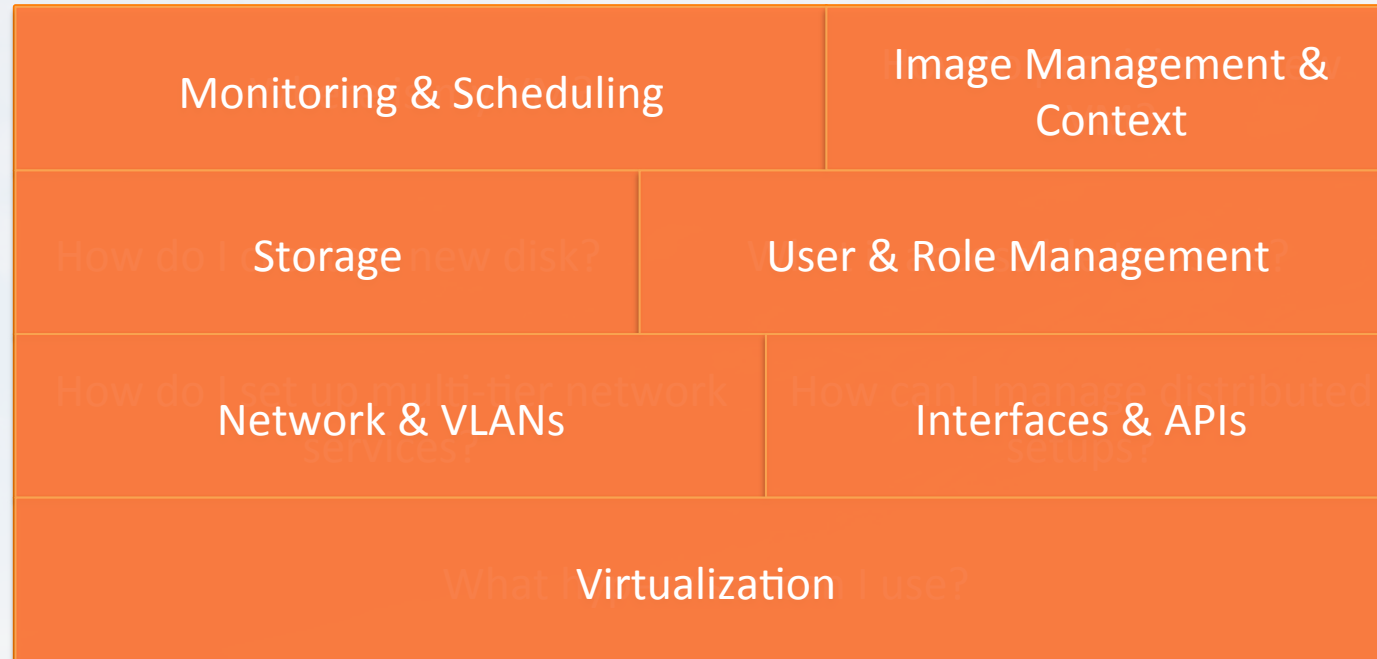
CHALLENGES

Cloud Challenges

Cloud != Virtualisierung

No Peak != No (Public) Cloud

Cloud Challenges



OpenNebula.org

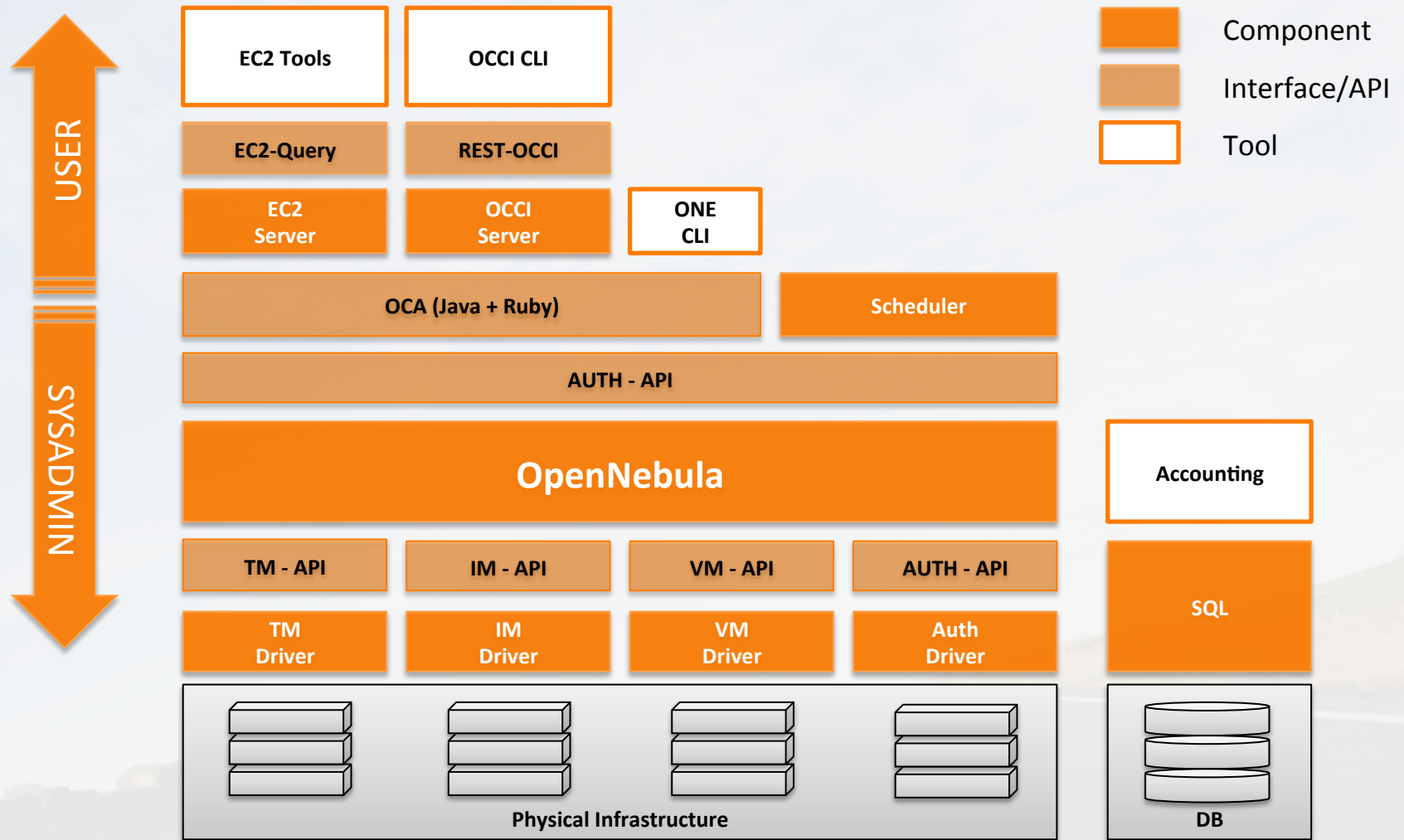
The logo for NETWAYS, featuring the word "NETWAYS" in a bold, white, sans-serif font. To the left of the text is a vertical orange bar with a white triangle pointing to the right at the top. A small registered trademark symbol (®) is located to the right of the top of the orange bar.

NETWAYS®

ARCHITEKTUR



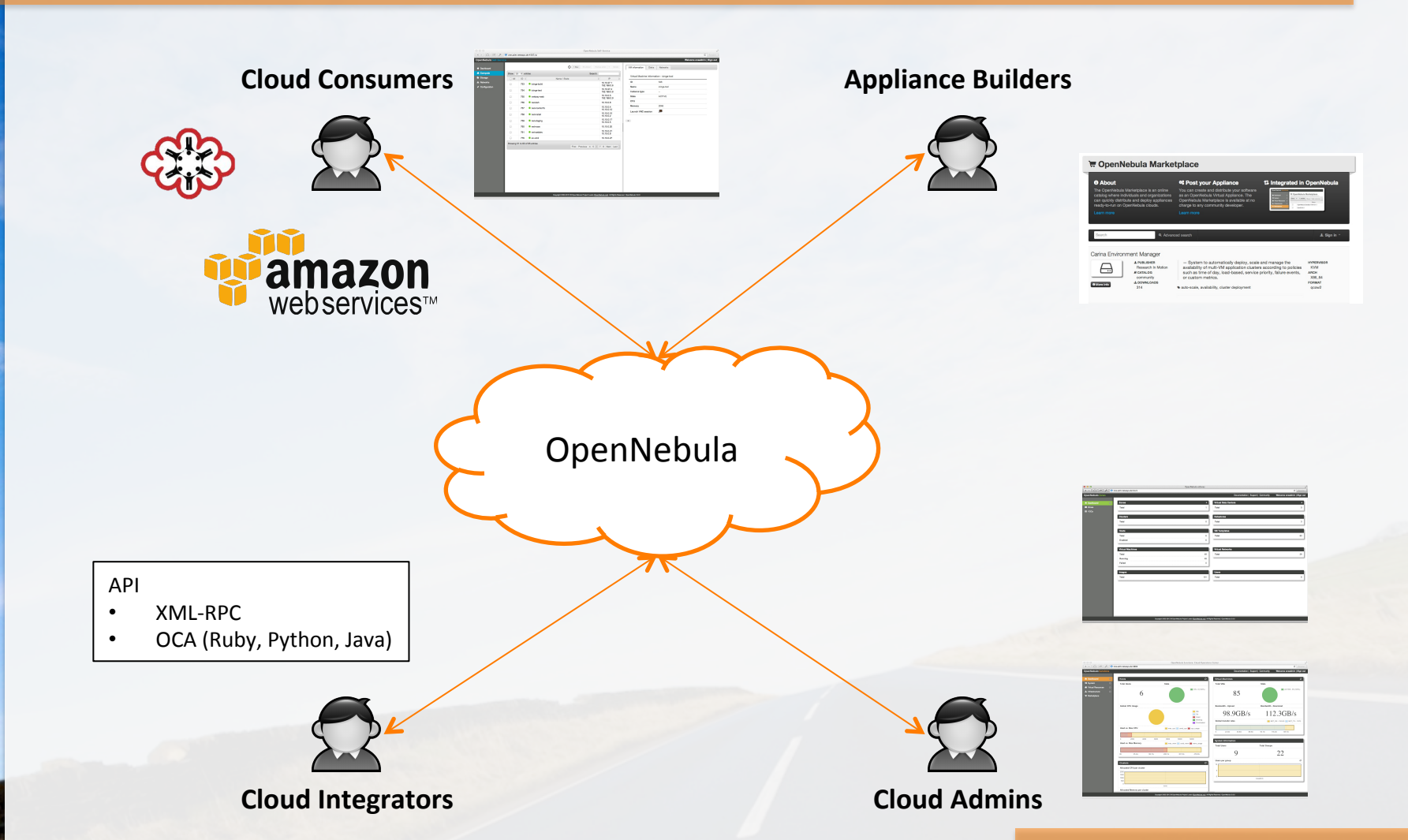
OpenNebula – Übersicht





TECHNISCHER ÜBERBLICK

OpenNebula – Interfaces



OpenNebula – Standards

Monitoring

- Internal
- Ganglia

Storage

- DFS like Lustre, GlusterFS, ZFS, GPFS, MooseFS
- iSCSI, LVM
- VMware

Network

- 802.1Q VLANS
- Etable
- Open vSwitch
- VMware network

Virtualization

- Xen
- KVM
- VMWare

Hybrid

- Amazon EC2

Auth

- Password
- ssh
- X509
- LDAP/AD

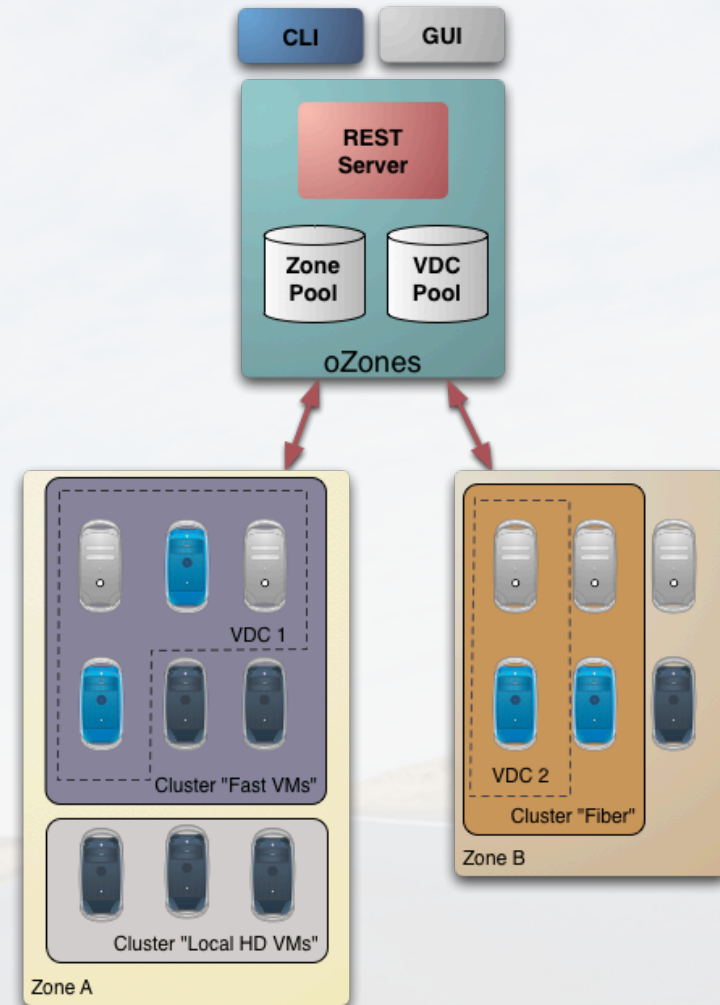
SQLite / MySQL



VERTEILTE UMGEBUNGEN

Cluster, VDC's und Zones

- Cluster
 - ▶ Gruppe von Hosts mit entsprechenden Ressourcen
- VDC's
 - ▶ Virtueller Zusammenschluss innerhalb eines Clusters
- Zonen
 - ▶ Virtueller Zusammenschluss verschiedener Gruppen und Einzelressourcen

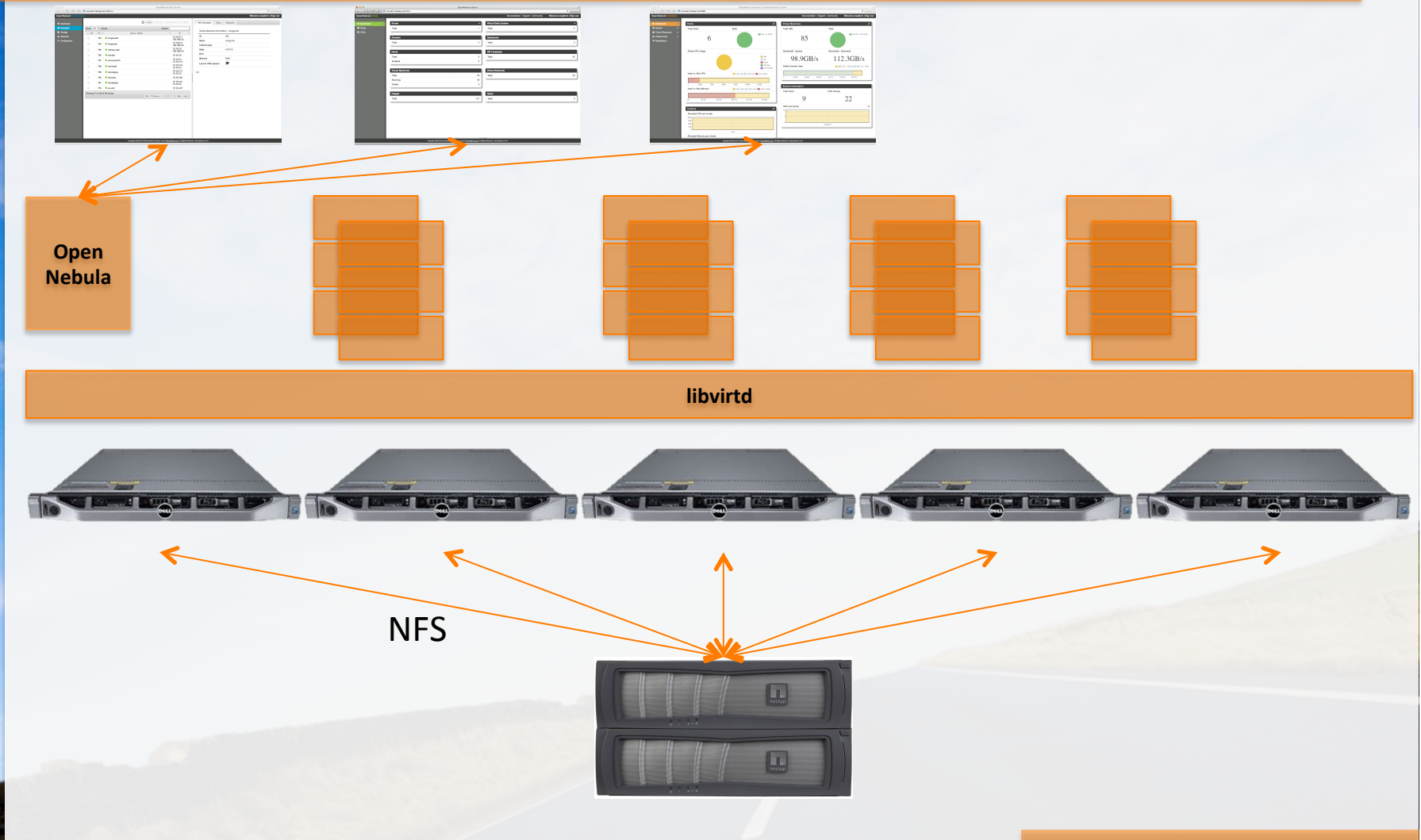


The logo for NETWAYS, featuring the word "NETWAYS" in a bold, white, sans-serif font. To the left of the text is a small orange square, and to the right is a small orange triangle pointing to the right. A registered trademark symbol (®) is located at the top right of the word.

NETWAYS®

DEMO

NETWAYS – Cloud



The logo for NETWAYS, featuring the word "NETWAYS" in a bold, white, sans-serif font. To the left of the text is a vertical orange bar with a white triangle pointing to the right at the top. A registered trademark symbol (®) is located to the right of the text.

NETWAYS®

OPENNEBULA 4.0

OpenNebula – Sunstone 4.0

OpenNebula Sunstone

- Dashboard
- System
- Virtual Resources
 - Virtual Machines
 - Templates
 - Images**
- Infrastructure
- Marketplace

Images

[Refresh](#) [Create](#) [Clone](#) [More](#) [User](#) [Delete](#)

<input type="checkbox"/>	ID	Owner	Group	Name	Datastore	Type	Persistent	Status	#VMS
<input type="checkbox"/>	0	serveradmin	oneadmin	Ubuntu.12.10	default	CDROM	no	USED	1
<input type="checkbox"/>	1	oneadmin	oneadmin	CentOS.6.5	default	OS	no	USED	1

Showing 1 to 2 of 2 entries « Previous **1** Next »

Information

Image "Ubuntu.12.10" information	
ID	0
Name	Ubuntu.12.10 edit
Datastore	default
Type	CDROM edit
Register time	12:04:00 02/20/2013
Persistent	no edit
Path	/etc/hosts
Filesystem type	--
Size (MB)	1
State	USED
Running VMS	1

Permissions:	Use	Manage	Admin
Owner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ownership

Owner	serveradmin edit
Group	oneadmin edit

Extended Template

<input type="text"/>	<input type="text"/>	Add
DEV_PREFIX	e	edit delete

OpenNebula – Sunstone 4.0

OpenNebula Sunstone

- Dashboard
- System
- Virtual Resources
 - Virtual Machines
 - Templates
 - Images**
- Infrastructure
- Marketplace

Images

[Refresh](#) [Create](#) [Clone](#) [More](#) [User](#) [Delete](#)

<input type="checkbox"/>	ID	Owner	Group	Name	Datastore	Type	Persistent	Status	#VMS
<input type="checkbox"/>	0	serveradmin	oneadmin	Ubuntu.12.10	default	CDROM	no	USED	1
<input type="checkbox"/>	1	oneadmin	oneadmin	CentOS.6.5	default	OS	no	USED	1

Showing 1 to 2 of 2 entries « Previous **1** Next »

Information

Image "Ubuntu.12.10" information	
ID	0
Name	Ubuntu.12.10 edit
Datastore	default
Type	CDROM edit
Register time	12:04:00 02/20/2013
Persistent	no edit
Path	/etc/hosts
Filesystem type	--
Size (MB)	1
State	USED
Running VMS	1

Permissions:	Use	Manage	Admin
Owner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ownership

Owner	serveradmin edit
Group	oneadmin edit

Extended Template

<input type="text"/>	<input type="text"/>	Add
DEV_PREFIX	e	edit delete

Support für Ceph

```
# The 'one' pool must exist  
> ceph osd lspools  
0 data,1 metadata,2 rbd,6 one,
```

```
> cat ds.conf  
NAME = "cephds"  
DS_MAD = ceph  
TM_MAD = ceph  
POOL_NAME = one  
HOST = cephfrontend
```

```
> onedatastore create ds.conf  
ID: 101
```

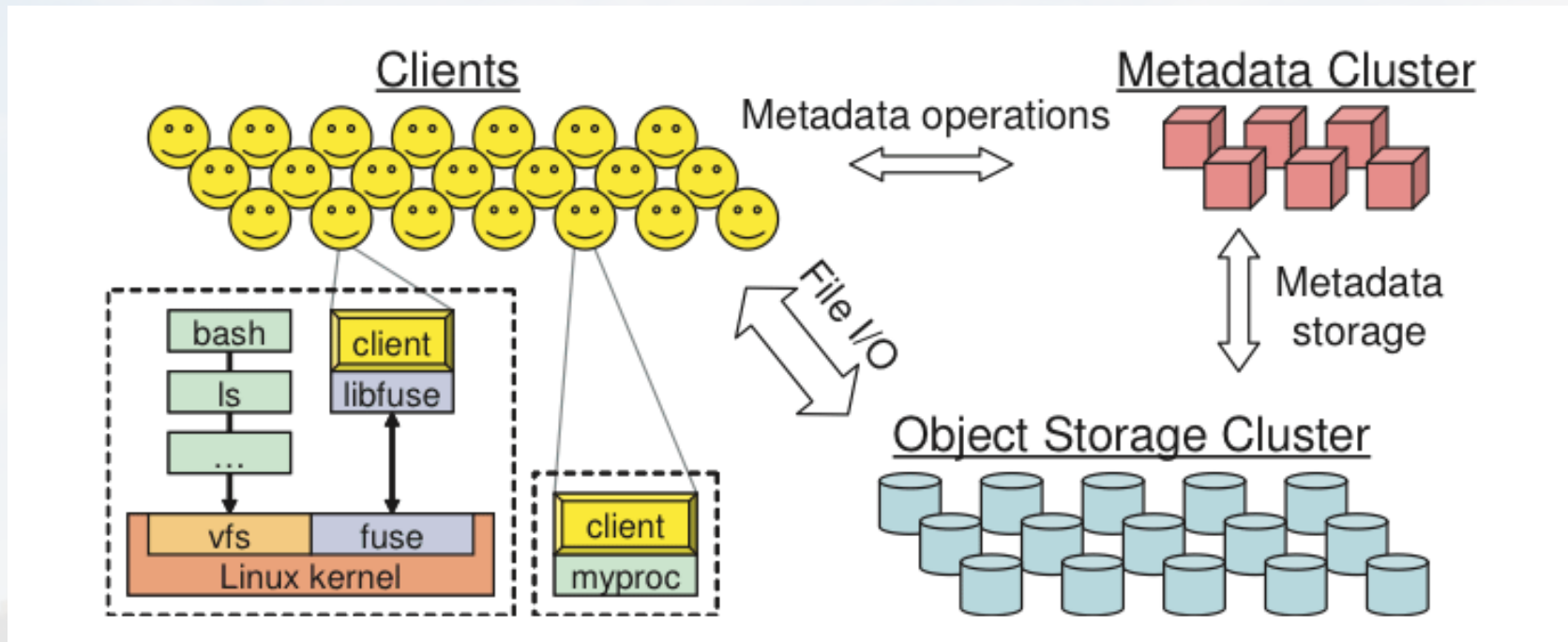
```
> onedatastore list
```

ID	NAME	CLUSTER	IMAGES	TYPE	TM
0	system	none	0	fs	shared
1	default	none	3	fs	shared
100	cephds	none	0	ceph	ceph

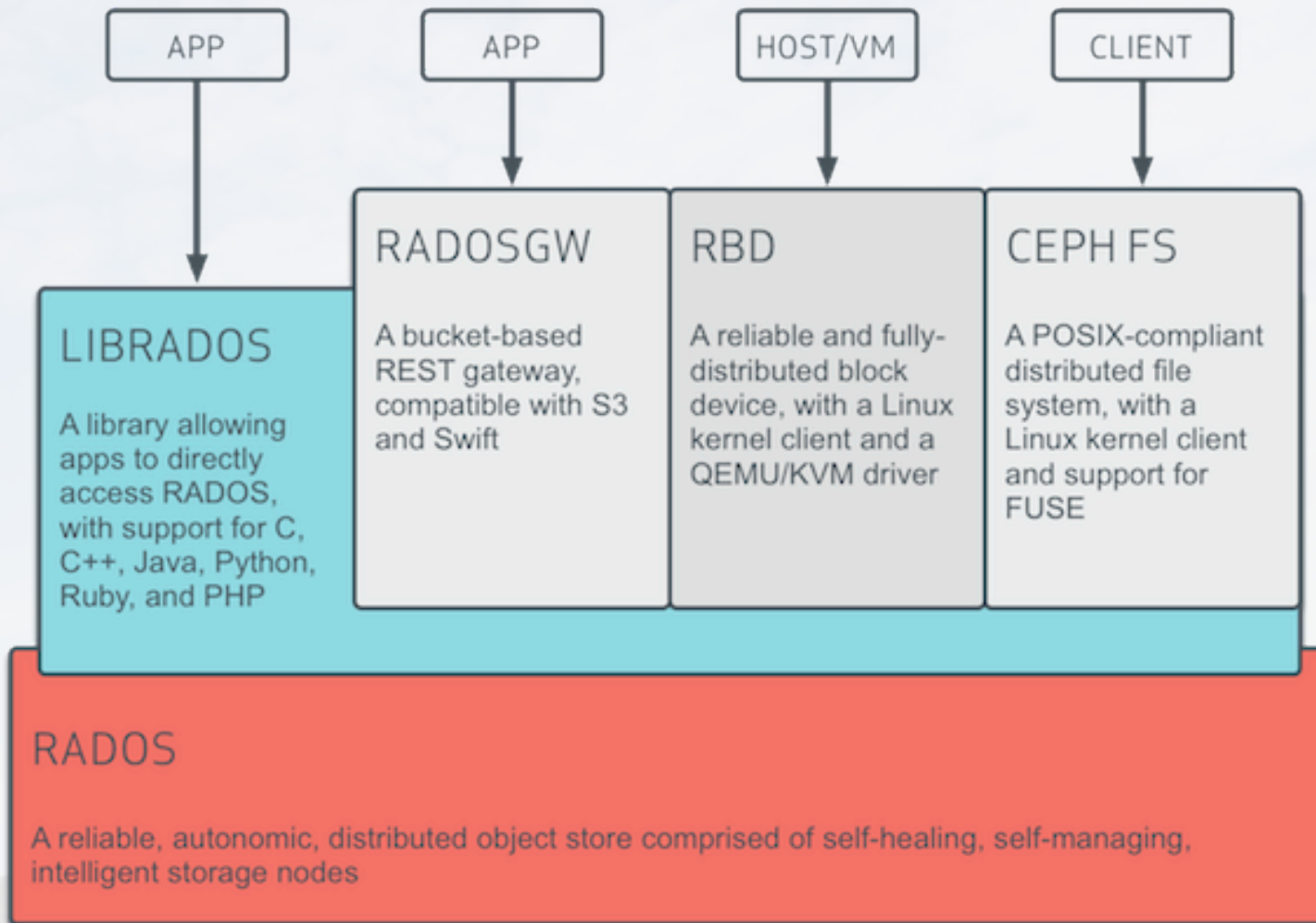
Ceph



<http://ceph.com/docs/master/start/>



Ceph



Globaler Scheduler

```
$ onevm shutdown 0 --schedule "05/25 17:45"  
VM 0: shutdown scheduled at 2013-05-25 17:45:00  
+0200
```

```
$ onevm cancel 0 --schedule "05/25 18:00"  
VM 0: cancel scheduled at 2013-05-25 18:00:00  
+0200
```

```
$ onevm show 0
```

SCHEDULED ACTIONS

ID	ACTION	SCHEDULED	DONE	MESSAGE
0	shutdown	05/25 17:45	-	
1	cancel	05/25 18:00	-	



ZUSAMMENFASSUNG

Warum OpenNebula?

Weil OpenNebula...

- ... sich auf Datacenter Virtualisierung spezialisiert
- ... als produktionsfähiges Paket bereitgestellt wird
- ... sehr schnell weiterentwickelt wird
- ... infrastrukturunabhängig ist
- ... praxisprobleme löst!



FRAGEN & ANTWORTEN



OpenNebula
Conf

24 - 26 Sept 2013

in BERLIN

Enterprise Cloud
and Datacenter
Virtualization

CALL FOR
PAPERS
until June 15th

EARLY BIRD
until June 30th

opennebulaconf.com

presented by



OpenNebula

Halle 7.1B, Stand 209

NETWAYS GmbH

**Deutschherrnstrasse 15-19
90429 Nuremberg**

Tel: +49 911 92885-0

Fax: +49 911 92885-77

Email: info@netways.de

Twitter: twitter.com/netways

Blog: blog.netways.de

www.netways.de