Hello!

ICCLab

- Cloud Computing Research

"From Research Themes to Projects creating Impact and Transfer for Educational Excellence"

www.cloudcomp.ch
Got Servers, want Cloud!

Why?

How?

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Why?

Community

Sources:
http://www.slideshare.net/randybias/state-of-the-stack-april-2013
http://www.qyjohn.net/?m=201304
Why?

Top 3 Industry Support

- Top 3 router vendors: Cisco, Alcatel-Lucent, Juniper Networks
- Top 3 blade vendors: HP, IBM, Cisco
- Top 3 Linux vendors: Red Hat, SUSE, Canonical
- Top 3 switch vendors: Cisco, HP, Juniper Networks
- Top 3 storage vendors: IBM, EMCM, NetApp
- Top 3 hypervisors: VMware, Xen, KVM

Source: http://www.slideshare.net/randybias/state-of-the-stack-april-2013

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How?

AUTOMATE

ALL THE THINGS

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Automate All The Things
Workflow

Automate

● Only operations?
● Research too!

Approach to deployment

● Local: puppet, git & vagrant
● Research: all good use same puppet via git & foreman
● Stable: move if proven in research, repeat

Difference

● deployment tool: **vagrant** v.s. **foreman**

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Result

Second Swiss OS POC
Operational since May 2012

Compute & Storage
- Automating is easy
- Scale should not hurt us

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Result

Network

Not automated

We need tools to do this

SDN is one way
Used?

Investigate Themes and Initiatives
● cloudcomp.ch/research

Research Projects
● Mobile Cloud Networking
  ○ E2E Cloud for Telco
● KIARA
  ○ SDN for Middleware
● GEYSER
  ○ Service Relocation for Green Savings
● cloudcomp.ch/research/projects
Present ICCLab Activities

OpenStack
- Grizzly
- SDN
- Ceilometer
- HA
- SmartOS

Education
- Summer school
- Bachelor course

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Present ICCLab Activity Q's

Service Relocation
- HOWTO move one service (can be composed or atomic) from one service provider to another?

HaaS
- HOWTO provide on-demand customisable hadoop clusters using openstack?

SDN Interop
- HOWTO internetwork 2 networks hosted on different providers?
Present ICCLab Activity Q's

HOWTO extend PaaS → Domain Specific PaaS (Science)
Swiss-Focused Research Q's

Bigger/Wider Question:
Continue ghettoisation of "clouds"?

- Leverage lots of resources collectively?
- A Commons?
  - How to avoid "tragedy of the commons"?
- How best to federate?
- How to interoperate?

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Q: Federate?

Q: Interoperable, Really?!?

OpenStack?
Amazon EC2?
OpenNebula? etc....
Who's interoperable? **No one is!**
Even **OpenStack's** are not*...

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EGI FedCloud

Members
- 60 individuals.
- 23 institutions.
- 13 countries.

Technologies
- 7 OpenNebula.
- 3 StratusLab.
- 3 OpenStack.
- 1 Okeanos.
- 1 WNoDeS.

Stakeholders
- 15 Resource Providers.
- 7 Technology Providers.
- 5 User Communities.
- 3 Liaisons.

Fed & Interop Challenge!
A Solution? EGI FedCloud

Information
- GLUE 2.0 BDII
- Monitoring Nagios
- VM metadata Marketplace
- Accounting OGF UR UR+ & StAR

Resource Providers:
- GWDG (ON/OS) - OCC 1.1, CDMI 1.0
- CESNET (ON) - OCC 1.1, CDMI 1.0
- CYFRONET (ON) - OCC 1.1
- KTH (ON) - OCC 1.1, CDMI 1.0
- CESGA (ON) - OCC 1.1
- Venus-C - CDMI 1.0
- FZJ (OS) - OCC 1.1
- IN2P3-CC (OS) - OCC 1.1

Message Bus

Fed & Interop Implemented!

ON = OpenNebula.
OS = OpenStack.
MP = Marketplace.
UR = Usage Records.
But...

Let's be wary of past mistakes

Use what works

How federated do you want to be?

Asks the question of permissions (AAA)...

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Upcoming Cloud


Open Cloud Day: ch-open.ch

Interop in Madrid: bit.ly/mad-interop

Next CHOSUG: openstack.ch

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Questions?
@dizz
Thanks! :-)
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