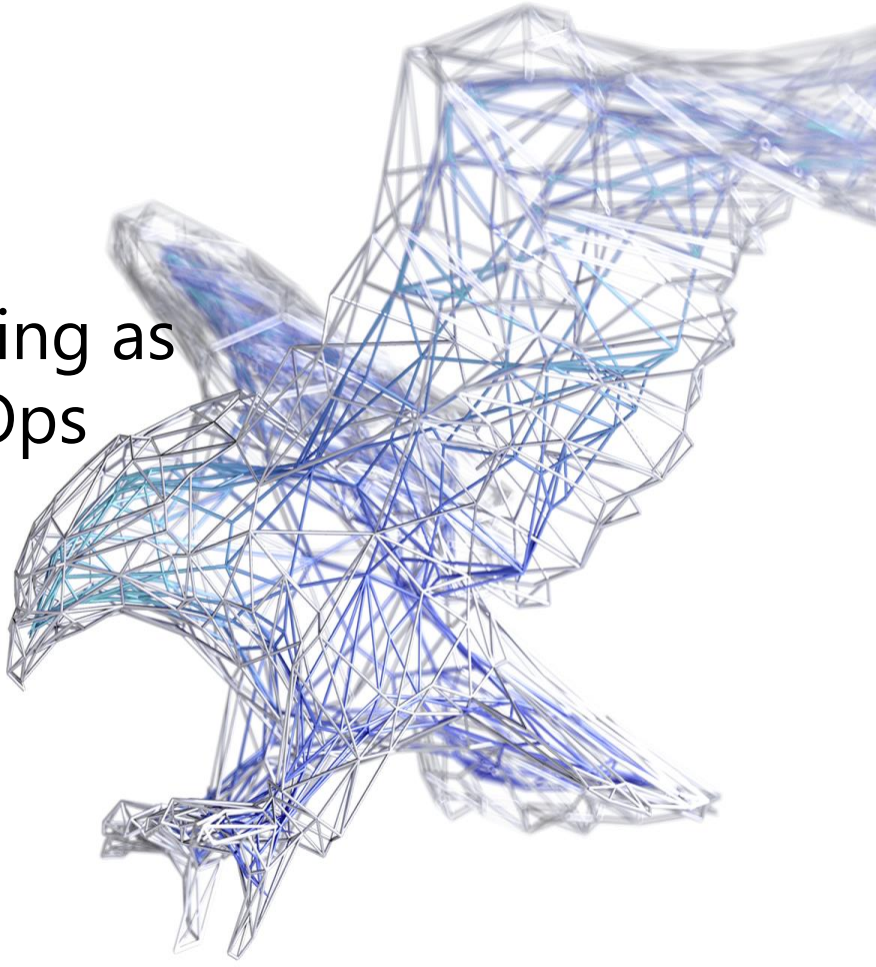
A1 Digital

Private Networking as Part of the DevOps Pipeline



{CODEMOTION} BERLIN, OCTOBER 2017

Member of Telekom Austria Group

Content

1. whoami
2. DevOps – my experiences
3. VPN Gateway Deployment

whoami

- IT Consultant Background
- Agile Practices & DevOps Fan
- Cloud Solution Architect in A1 Digital
- Work intensive together with Cloud Provider Exoscale

Where does DevOps come from?

DevOps

- Term DevOps exists since 2008 (Andrew Shafer, Patrick Debois)
- Involve from different concepts: Agile Operations, Lean Software Development, IaC
- Tools: Puppet, Chef, Ansible, Docker, Kubernetes, Rancher, Cloud Provider…
- Other DevOps initiatives: DevOpsSec, BizDevOps, WinOps

A1 Digital

What is DevOps?

A1 Digital

“DevOps is agile IT (operations) delivery, required to match the cadence of agile IT development. DevOps is a philosophy, not a method, or framework, or body of knowledge, or *shudder* vendor’s tool. DevOps is the philosophy of unifying Development and Operations at the culture, practice, and tool levels, to achieve accelerated and more frequent deployment of changes to Production.“

SOURCE: https://de.wikipedia.org/wiki/DevOps

A1 Digital

"DevOps is the practice of operations and development engineers participating together in the entire service lifecycle, from design through the development process to production support."

SOURCE: https://theagileadmin.com/what-is-devops/, Ernest Mueller, Aug 2 2010 – Last Revised Jul 24 2017

A1 Digital

DevOps isn't just IT

The Ideas apply to the whole Company

3 Pillars

Transparency
(visibility, communication,…)

Measurement
(monitoring, reports,…)

Optimization
(automation, business value,…)

Transparency

- Knowledge Management Tool
- Usage of a Task Tracking System
- Permissions that everyone is allowed to see information
- Appropriate Communication Tool
- Convenient places for meetings

A1 Digital

Measurement

- Agile Development Report
- Value Stream Mapping (Pipeline)
- Statistics how people communicate (which channels are used, how often)
- Surveys (own employees, customer)
- Board where everyone can raise a problem

A1 Digital

Optimization

- Process automation (CI, CD)
- Work on tasks which have the most value
- Remove/Change inefficient processes
- Introduce tools support people in their work

Common Problems to live the DevOps principles

1. Bottom-up but no Top-down

2. No Priority for Innovation

How would you try fix this?

What are your experiences?

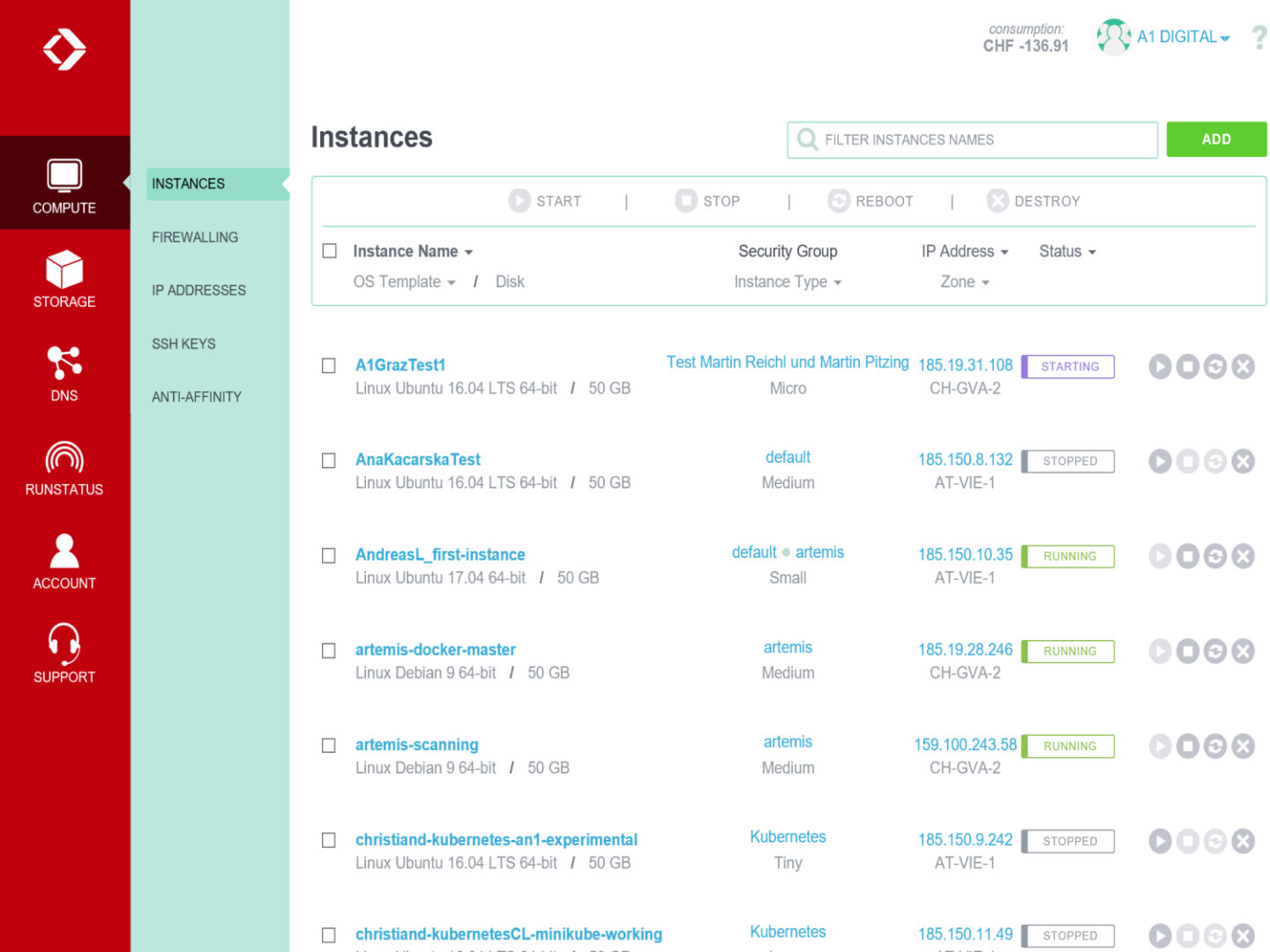
What about your own company?

VPN Gateway automatic deployment

Technology Stack

- Cloud Provider **Exoscale** as Infrastructure Provider
- **Ansible** as Configuration Management Tool
- **VPN Client** on Mac

A1 Digital


consumption:
CHF -136.91
A1 DIGITAL
COMPUTE
STORAGE
DNS
RUNSTATUS
ACCOUNT
SUPPORT
INSTANCES
FIREWALLING
IP ADDRESSES
SSH KEYS
ANTI-AFFINITY
Instances
FILTER INSTANCES NAMES
ADD
START | STOP | REBOOT | DESTROY
Instance Name
OS Template / Disk
Security Group
Instance Type
IP Address
Zone
Status
A1GrazTest1
Linux Ubuntu 16.04 LTS 64-bit / 50 GB
Test Martin Reichl und Martin Pitzing
Micro
185.19.31.108
CH-GVA-2
STARTING
AnaKacarskaTest
Linux Ubuntu 16.04 LTS 64-bit / 50 GB
default
Medium
185.150.8.132
AT-VIE-1
STOPPED
AndreasL_first-instance
Linux Ubuntu 17.04 64-bit / 50 GB
default • artemis
Small
185.150.10.35
AT-VIE-1
RUNNING
artemis-docker-master
Linux Debian 9 64-bit / 50 GB
artemis
Medium
185.19.28.246
CH-GVA-2
RUNNING
artemis-scanning
Linux Debian 9 64-bit / 50 GB
artemis
Medium
159.100.243.58
CH-GVA-2
RUNNING
christiand-kubernetes-an1-experimental
Linux Ubuntu 16.04 LTS 64-bit / 50 GB
Kubernetes
Tiny
185.150.9.242
AT-VIE-1
STOPPED
christiand-kubernetesCL-minikube-working
Kubernetes
185.150.11.49
STOPPED

```
PLAY [localhost] ***************************************************************************************************************************************
*********************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************
*********************************************************************************************************************************************************
ok: [localhost]

TASK [cloud-setup : Deploy SSH Key Pair on Cloud] ******************************************************************************************************
*********************************************************************************************************************************************************
changed: [localhost -> localhost]

TASK [cloud-setup : debug] *****************************************************************************************************************************
*********************************************************************************************************************************************************
ok: [localhost] => {
    "msg": ""
}

TASK [cloud-setup : copy] ******************************************************************************************************************************
*********************************************************************************************************************************************************
changed: [localhost -> localhost]

TASK [cloud-setup : file] ******************************************************************************************************************************
*********************************************************************************************************************************************************
changed: [localhost]

TASK [create-cloud-infrastructure : Create Security Group] *********************************************************************************************
*********************************************************************************************************************************************************
changed: [localhost -> localhost] => (item={u'name': u'vpn-gateway-default'})
changed: [localhost -> localhost] => (item={u'name': u'vpn-gateway-ipsec'})
changed: [localhost -> localhost] => (item={u'name': u'vpn-gateway-web'})

TASK [create-cloud-infrastructure : Add security Group Rules] ******************************************************************************************
*********************************************************************************************************************************************************
changed: [localhost -> localhost] => (item={u'protocol': u'tcp', u'name': u'vpn-gateway-default', u'port': 22})
changed: [localhost -> localhost] => (item={u'protocol': u'udp', u'name': u'vpn-gateway-ipsec', u'port': 500})
changed: [localhost -> localhost] => (item={u'protocol': u'udp', u'name': u'vpn-gateway-ipsec', u'port': 4500})
changed: [localhost -> localhost] => (item={u'protocol': u'esp', u'name': u'vpn-gateway-ipsec', u'port': 0})
changed: [localhost -> localhost] => (item={u'protocol': u'tcp', u'name': u'vpn-gateway-web', u'port': 80})
changed: [localhost -> localhost] => (item={u'protocol': u'tcp', u'name': u'vpn-gateway-web', u'port': 443})

TASK [create-cloud-infrastructure : Create Gateway Instance] *******************************************************************************************
*********************************************************************************************************************************************************
changed: [localhost -> localhost] => (item={u'name': u'vpn-gateway-ipsec', u'zone': u'ch-gva-2', u'root_disk_size': 50, u'instance_type': u
'Tiny', u'template': u'OpenBSD 6.1', u'template_filter': u'featured', u'security_groups': [u'vpn-gateway-default', u'vpn-gateway-ipsec']})

TASK [create-cloud-infrastructure : Create Web Nodes Instances] ****************************************************************************************
*********************************************************************************************************************************************************
changed: [localhost -> localhost] => (item={u'name': u'vpn-gateway-web-node01', u'zone': u'ch-gva-2', u'root_disk_size': 10, u'instance_typ
e': u'Tiny', u'template': u'Linux Ubuntu 16.04 LTS 64-bit', u'template_filter': u'featured', u'security_groups': [u'vpn-gateway-default', u
'vpn-gateway-web']})
changed: [localhost -> localhost] => (item={u'name': u'vpn-gateway-web-node02', u'zone': u'ch-gva-2', u'root_disk_size': 10, u'instance_typ
```

Repository for this example:
https://github.com/exoscale/quickstart-demos

Thank you.

Erik Auer, BSC
Cloud Solution Architect
DevOps Enthusiast

Contact
erik.auer@a1.digital
A1 Digital Lounge during Codemotion
LinkedIn
XING