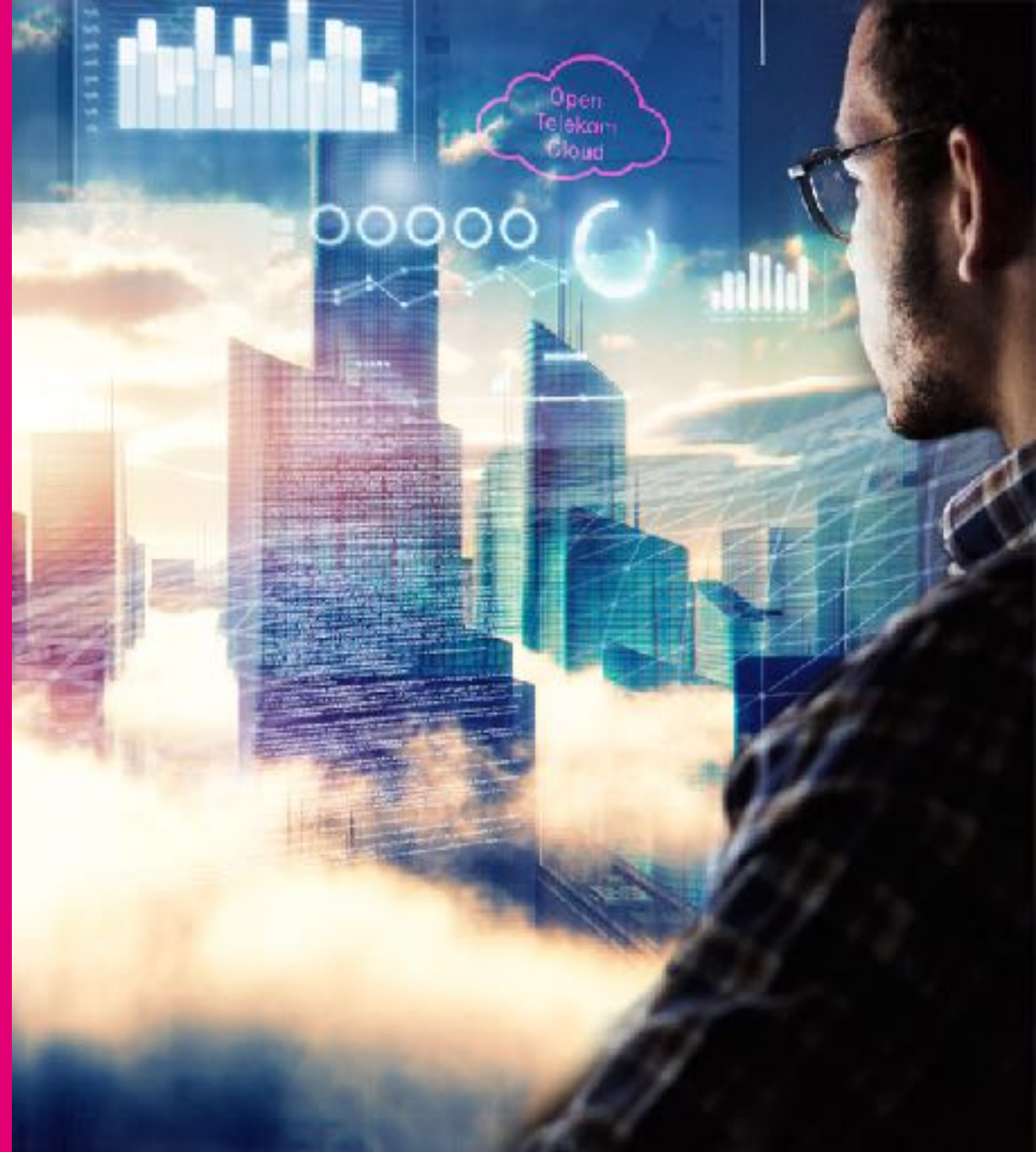


# Operating OpenStack in a 'bit larger' scale.

Openstack Day  
Budapest  
07.06.2017

Csaba Kókai  
Architect



# OTC in nutshell

- **Launched in 2016 March ,on CEBIT.**
- **2 DC in Germany.**
- **2 DC in Singapure ( Launch date: 31.05.2017 ).**
- **Cooperation agreement with Huawei.**
- **More than 2000 physical servers.**
- **40 Gbps Internet Bandwith.**
- **99.95% Availability.**

# Automation

- Everybody hates the repeating tasks.
- Automation framework ( Ansible ).
- Reduce deployment time.
- Less errors within installation.
- Use the framework to create VM, Bare metal, etc
- Easy to use to create standard environment.

```
- name: Add PostgreSQL repo key
  apt_key: url=http://apt.postgresql.org/pub/repos/apt/ACCC4CF8.asc
  sudo: yes

- name: Add PostgreSQL repo
  apt_repository: repo='deb http://apt.postgresql.org/pub/repos/apt/ p
  sudo: yes


- name: Install postgresql, libpq-dev, python-psycopg2
  action: apt pkg={{item}} state=latest update_cache=true
  sudo: yes
  with_items:
    - postgresql
    - libpq-dev
    - python-psycopg2

- name: Copy valid pg_hba.conf
  template: src=pg_hba.conf.j2 dest=/etc/postgresql/9.3/main/pg_hba.conf
  sudo: yes


- name: Restart PostgreSQL
  # NOTE: If conf files were updated here, need to FORCE a RESTART!
  service: name=postgresql state=started
```

# Openstack in otc

## Computing

 **Elastic Cloud Server (58)**  
Elastic, scalable computing servers

 **Cloud Container Engine**  
Container service with high availability and elastic scalability

 **Image Management Service (6)**  
Self-service image management

 **Auto-Scaling (2)**  
Dynamic adjustment of computing resources

 **Dedicated Host (3)**  
Dedicated physical servers

## Security

 **Anti-DDoS**  
Provides Anti-DDoS protection

 **Key Management Service (0)**  
Easy-to-use key management services for on-the-cloud encryption

## Databases

 **Relational Database Service (0)**  
Highly reliable relational database service

## Storage

 **Elastic Volume Service (89)**  
Elastic, scalable block storage


 **Volume Backup Service (6)**  
Secure, reliable block storage backup


 **Object Storage Service**  
Scalable cloud storage

## Mgmt. & Deployment


 **Cloud Eye**  
Resource monitoring and alarm notification

 **Identity and Access Management**  
User access and encryption key management

 **Cloud Trace Service**  
Logging of operations performed on cloud resources

 **Migration as a Service**  
Flexible application(object) migration

## Data Analysis

 **MapReduce Service (0)**  
High Performance Hadoop Platform

## Network

 **Virtual Private Cloud (28)**  
Secure, isolated virtual networks

 **Elastic Load Balance (4)**  
Traffic distribution across multiple ECSs

 **Direct Connect (0)**  
High-speed, stable network access service


 **Domain Name Service (2)**  
Stable, secure, fast domain name resolution

## Application

 **Distributed Message Service (0)**  
Convenient, low-cost message queuing service

 **Simple Message Notification**  
Simple and reliable message notification service

## Enterprise Application

 **Workspace (7)**  
Cloud managed desktops



# Security



- **German Data Privacy compliance.**
- **Multi-tier WAF and Firewall solutions.**
- **Ethical security tested.**
- **Honeypots.**
- **Object storage encryption.**
- **EVS encryption.**

# Certifications

## TÜV TRUSTED CLOUD SERVICE

(specially for Open Telekom

Cloud)

CSA STAR level

2

(specially for Open Telekom  
Cloud)

ISO 9001

Quality management system

ISO 20000

Service management system

ISO 22301

Business continuity management system

ISO 27001

Information security management system

ISO 27017

Cloud security

ISO 27018

Cloud privacy

Zero Outage

Certified service process

# The present

- Production system runs Openstack Mitaka with OTC patches.
- In this month, the German DC storage stack extend to **150 Petabytes** capacity.
- GPU Pass-through
- RDS (MS SQL 2014, PostgreSQL 9.6, MySQL 5.7) and Multi-AZ HA
- Distibuted Cache service ( Redis )
- BigData environment ( Kafka, Streaming [Storm], CarbonData )
- Bitnami
- Workspace ( Windows 10 based on Server 2016 )
- SAP HANA



# The Future

2017  
Q4

- Based on Openstack **Ocata**
- Elastic File Storage
- OBS Multi-AZ Active-Active
- Science Computing ( Nvidia P100 )
- ECS Backup Service
- RDS ( NoSQL server )
- BigData enhancement ( Data Warehouse )





- Collect data from everywhere.
- Help to analyse these data.
- IOT Hubs.
- Apache Storm .

# Hybrid cloud

