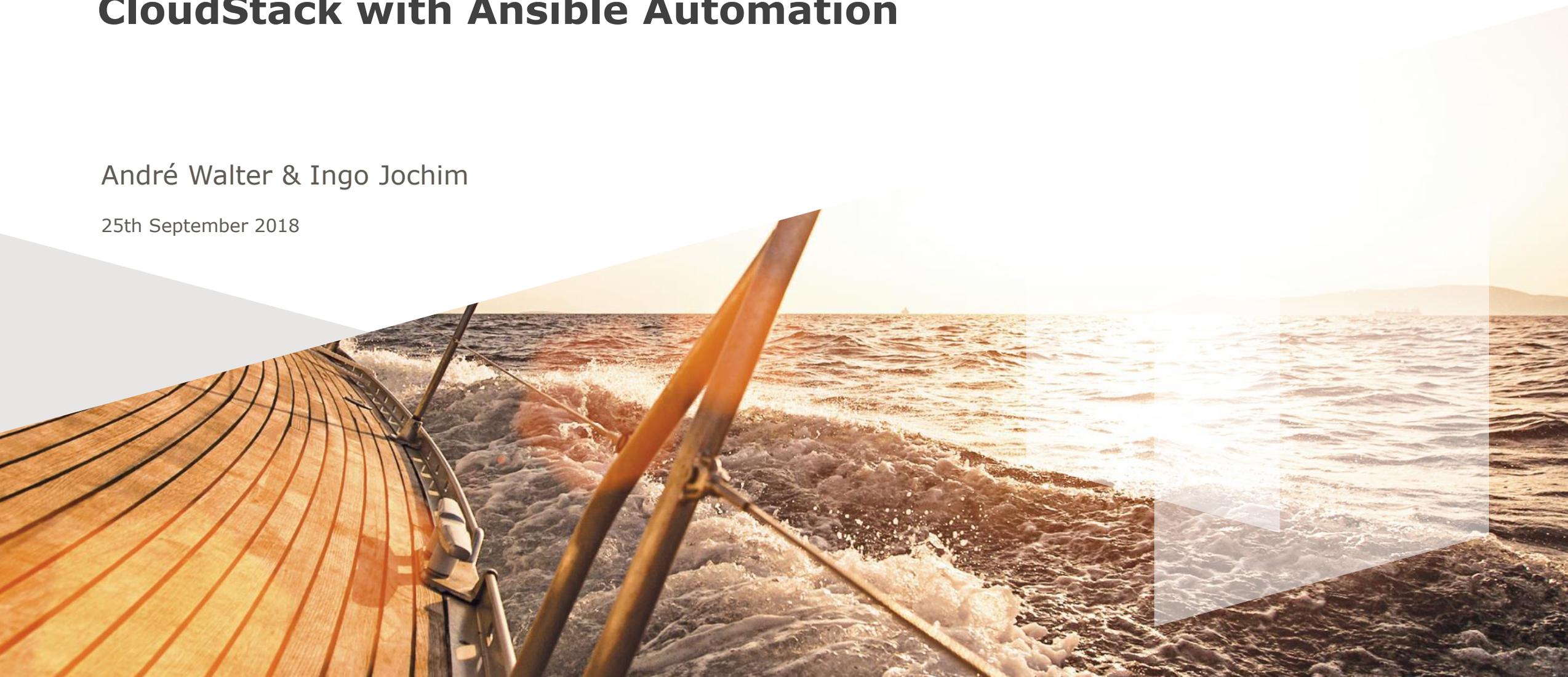


# CloudStack with Ansible Automation

André Walter & Ingo Jochim

25th September 2018



# Agenda

- 1. Talk André
- 2. Talk Ingo



# About André

- Head of itelligence GMS Cloud Infrastructure Services

-  @meradioc

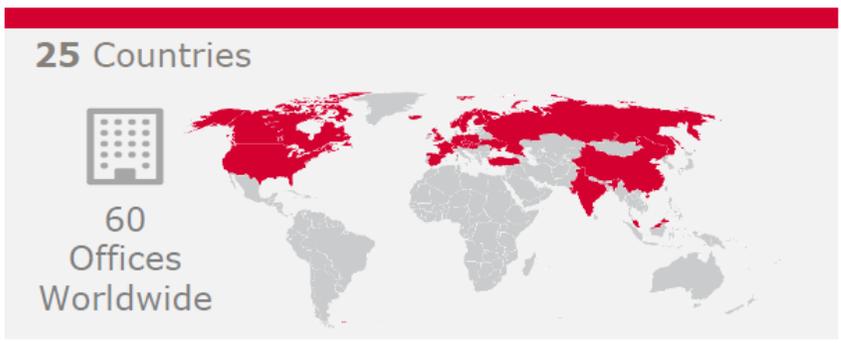
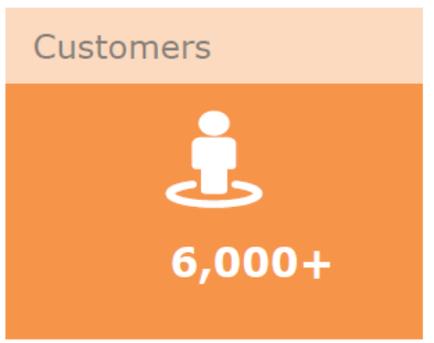
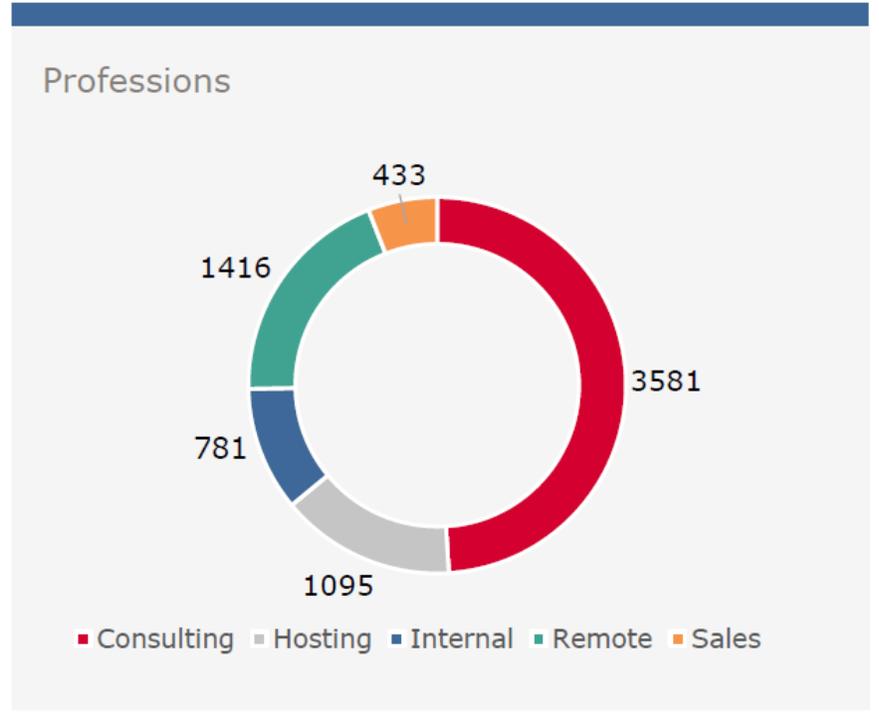
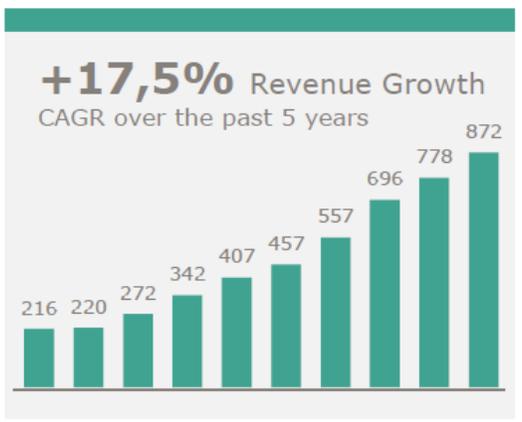
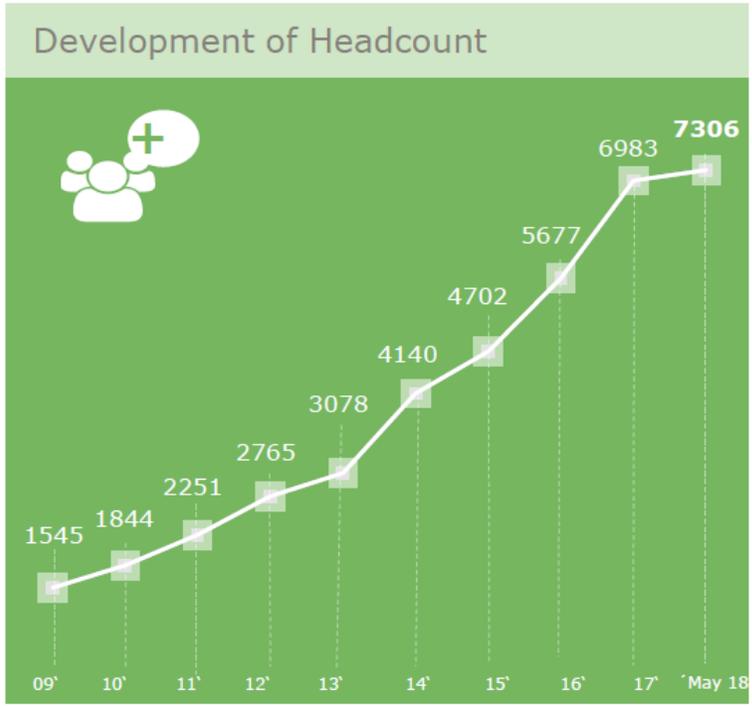
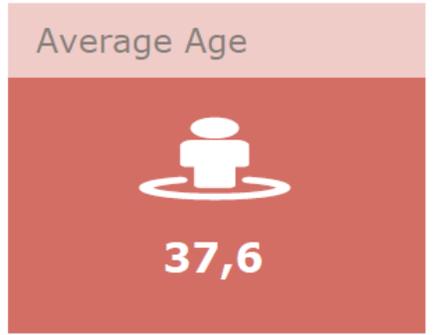
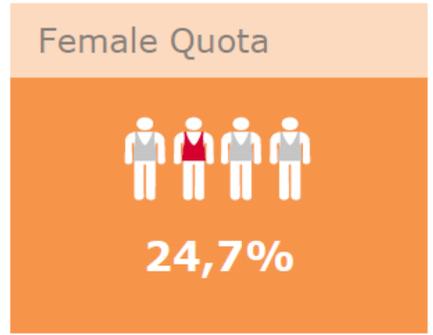
-  <https://www.linkedin.com/in/andre-walter-87215a35/>



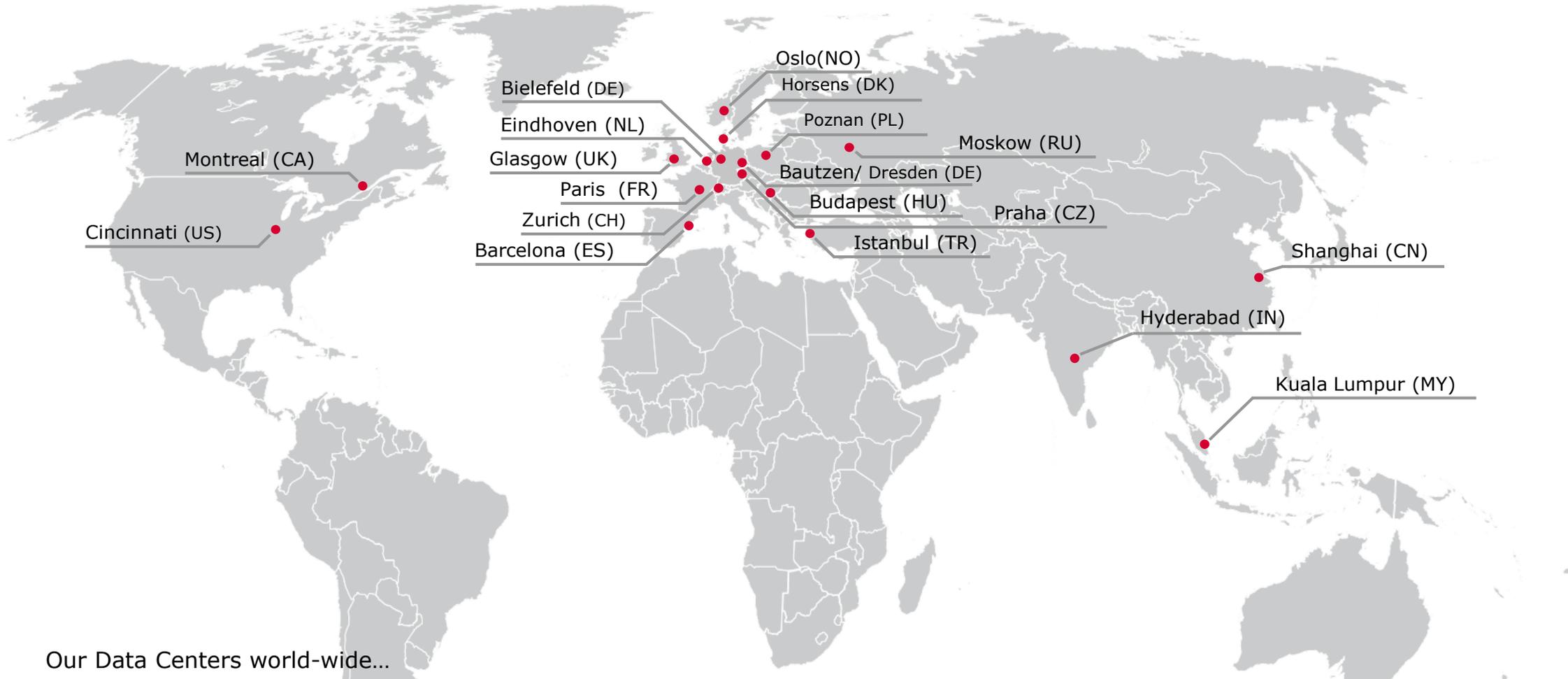
# Agenda - André

1. About itelligence and our focus
2. Typical use case (SAP HANA)
3. Resulting requirements
4. Why Apache CloudStack

# itelligence Worldwide - Numbers



# itelligence Managed Services – Service Centers Worldwide



Our Data Centers world-wide...



Bielefeld



Kuala Lumpur



Bautzen



Poznan

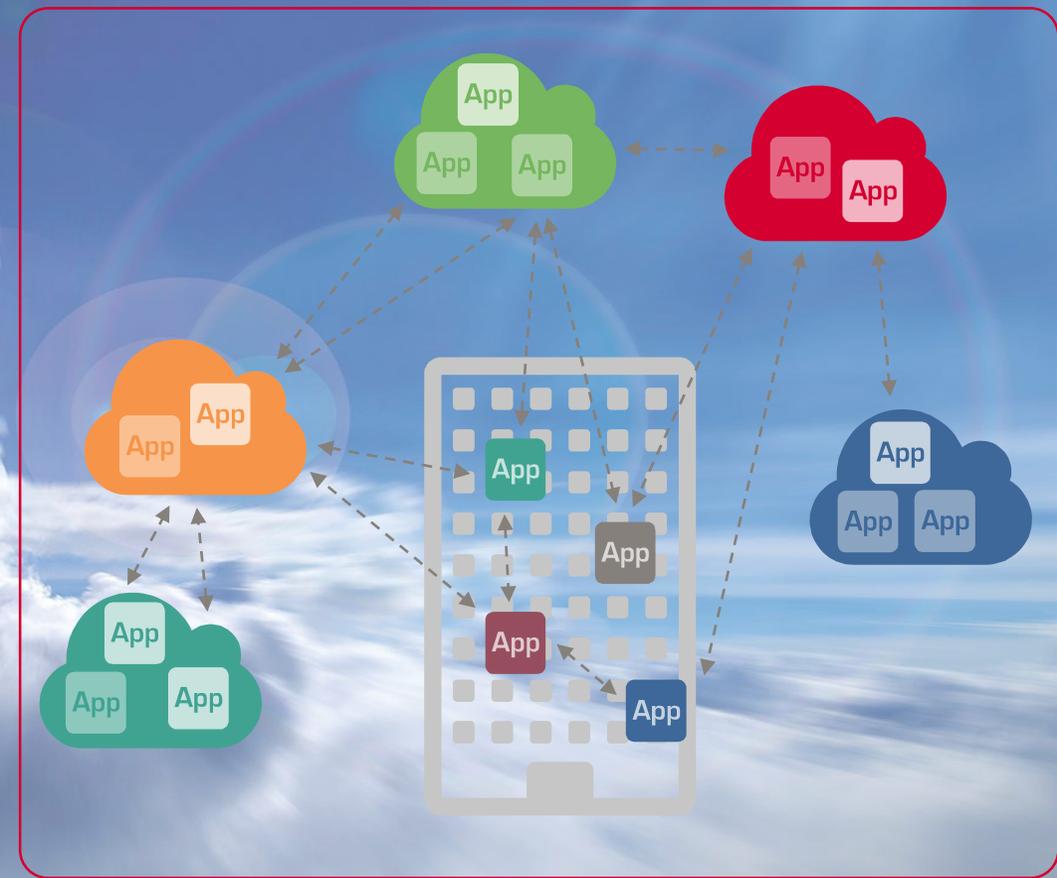


Cincinnati

# GMS Cloud Strategy | Change of Customer Application Landscape

„We manage your (SAP) Cloud!“

- As many customers are planning to use public or hybrid cloud services, combination of cloud services is key for success
- Use of cloud infrastructure capabilities of NTT Group
- itelligence partnership with  as the leading Hyperscaler
- High quality Technical and Application Management Services are foundation for smart Cloud Management



# Use Case - SAP Hana

The SAP HANA database is a hybrid, relational in-memory database that combines row-based, column-based, and object-based database technologies and has been optimized for the use of parallel processing functionality of modern multi-core and CPU architectures.

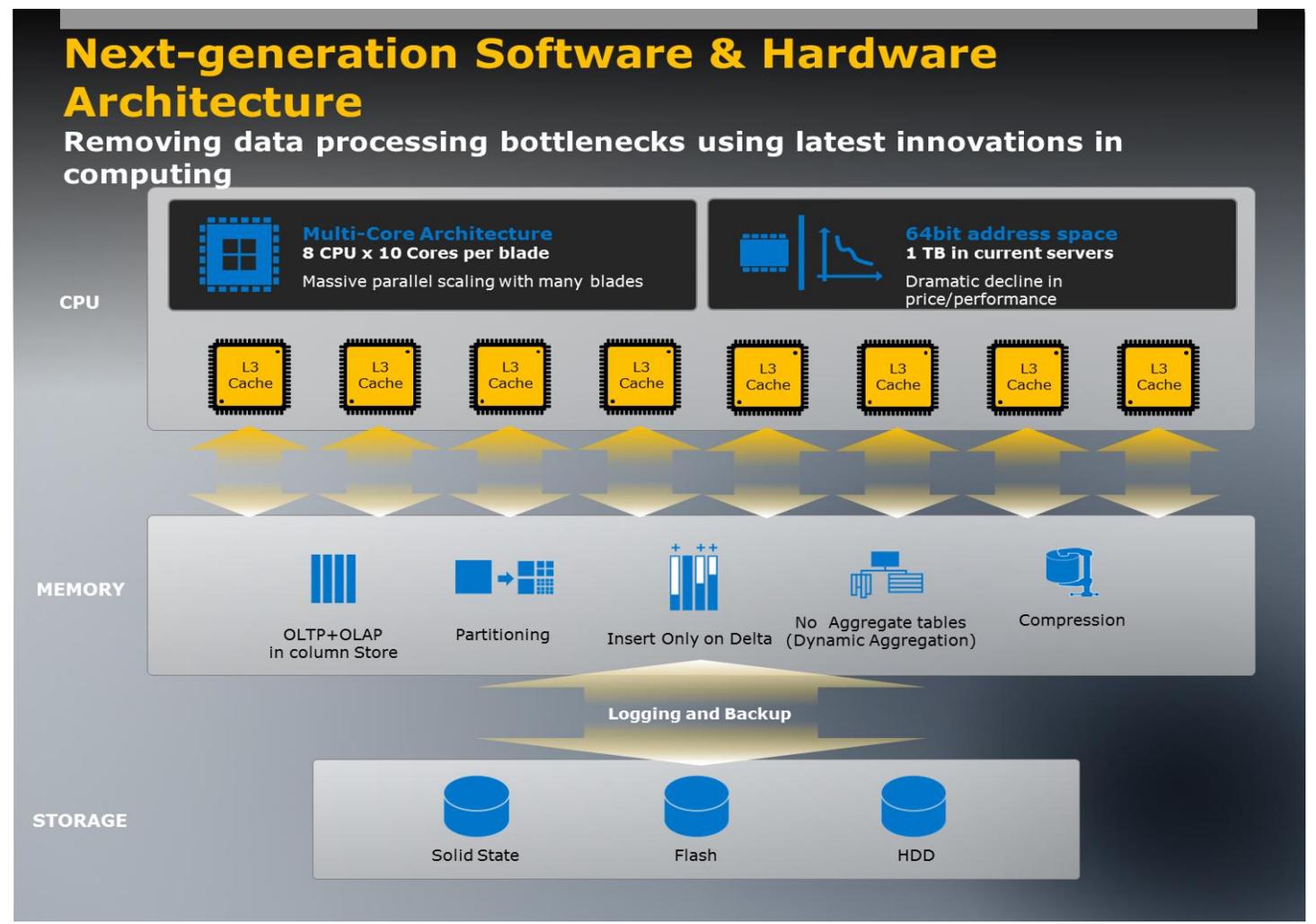
This architecture enables SAP applications to benefit from current hardware technologies.

The SAP HANA database is a central component of SAP products that help customers make their processes more efficient, flexible, and profitable.



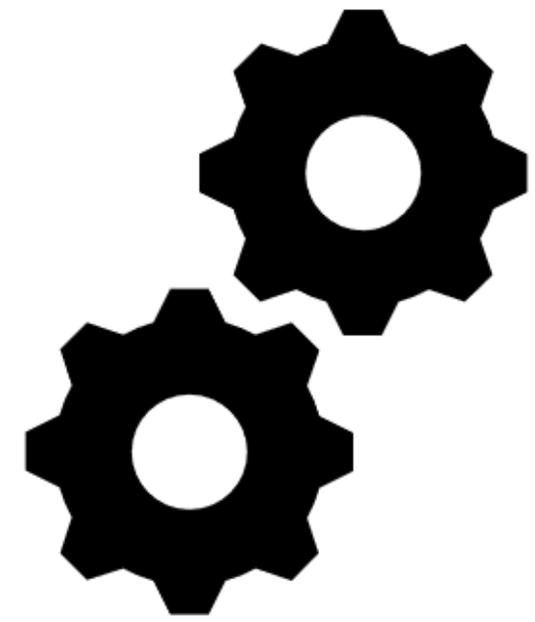
# Resulting Requirements

- Often physical servers.
- No containers.
- All data are in memory.
- Machines with lot's of RAM.
- Huge workloads.
- Complex backup and disaster recovery scenarios.



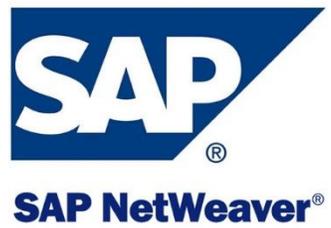
# Resulting Requirements - Private Cloud

- Complete control over tools and technology.
- Full data control.
- SLAs important.
- Special use cases.



# What we do with our cloud?

- Mostly running SAP systems / IaaS.
- Production / Training / Demo / Development.



# Why Apache CloudStack?

- Our requirements:
  - Multi tenancy.
  - OpenSource.
  - Powerful API.
  - Easy to use.
  - Frequent updates.
  - Good community.
  - Multi hypervisor support.



# #cloudstackworks – Our Experience, What We Like?

- Made good experience because #cloudstackworks.
- Easy to upgrade.
- Stable, simple, easy to maintain.
- Great community.
- Free, OpenSource.

We



Questions?



# About Ingo

- Head of CIS - Cloud Implementation

-  @ingojochim

-  <https://www.linkedin.com/in/ingo-jochim-b30b8590/>

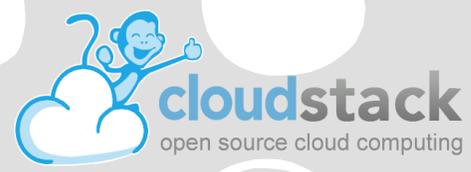
-  CloudStack user since 2014



# Agenda - Ingo

1. Big picture of our cloud.
2. CloudStack THE central component.
3. Customer portal.
4. Portal - How it works?
5. Ansible daemon.
6. Response in user interface.
7. Dynamical user interface.
8. Automation host - network setup.
9. Scalable setup.
10. Application installation automation.

# Big Picture of Our Cloud



# Talk Reference

- **CloudStack + Ceph** (Sebastian Bretschneider - Monday, 24th Sep, 15:40)

*Abstract:*

This is about our way from NFS to CEPH as primary Storage in CloudStack. Disadvantages about NFS as primary Storage - recommendations for CEPH - what can go wrong. Stories of a Sysadmin.

<https://apachecon.dukecon.org/acna/2018/#/scheduledEvent/d3b061c4a120801e8>

- **Billing with CloudStack** (Alexander Stock - Monday, 24th Sep, 16:40)

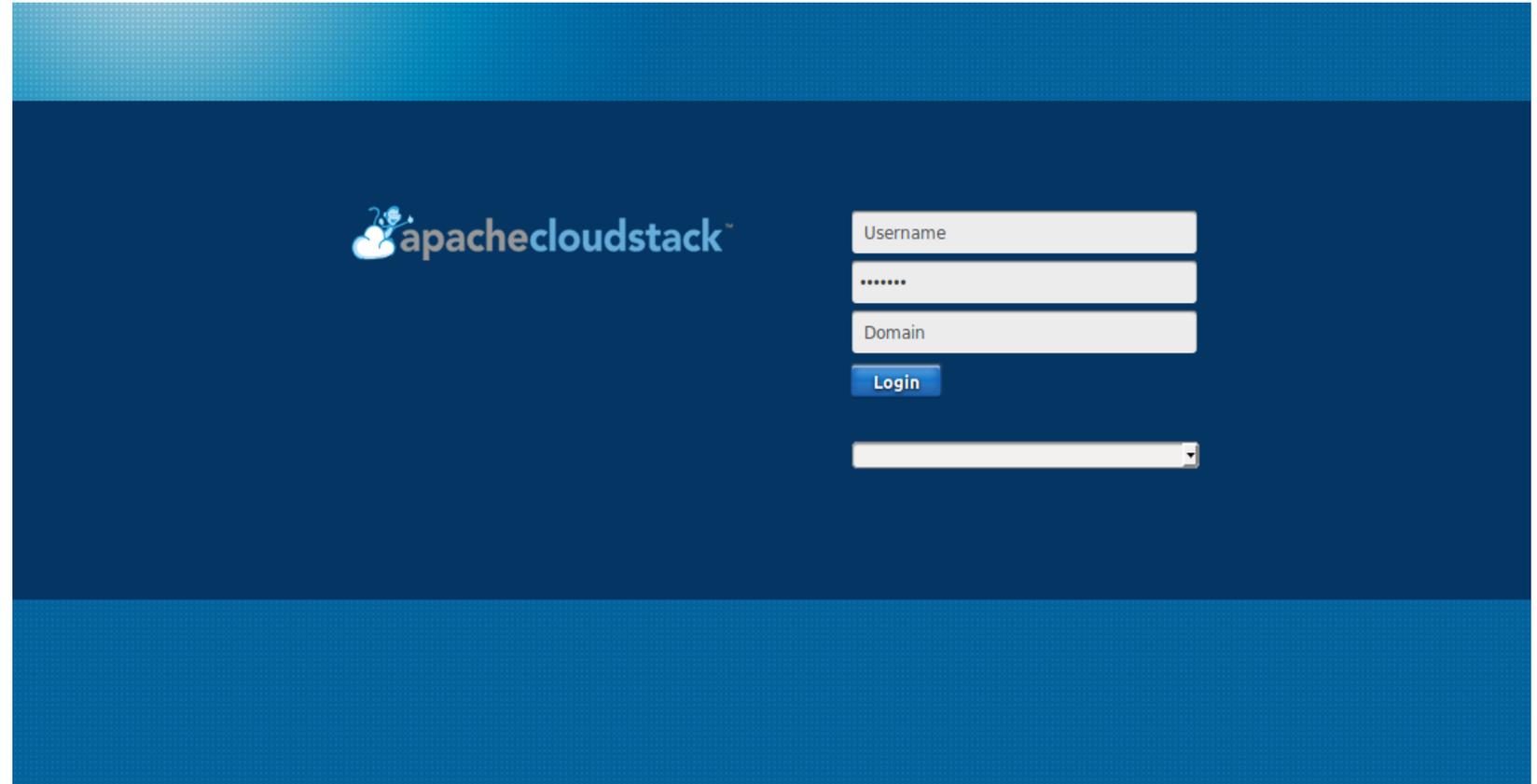
*Abstract:*

In this talk you will see which tools we use to generate billing reports for cloudstack and what were the difficulties which we discovered during the implementation.

<https://apachecon.dukecon.org/acna/2018/#/scheduledEvent/dcf32b078a6d4f21d>

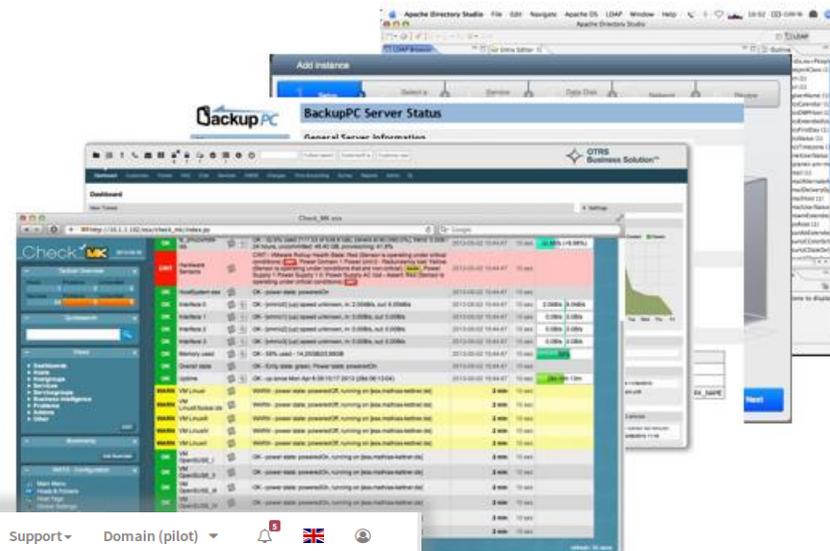
# CloudStack The central component

- Used via API.
- We use it for:
  - Compute.
  - Block storage.
  - Network.
  - Usage recording.
  - Tagging.



# Customer Portal

- Consolidate the varying systems with their individual design and functions.
- Facilitate process automation.



**itelligence** NTT DATA Business Solutions

Cloud Services | Tools | Management | Support | Domain (pilot)

System Landscape | Quick Links

- List Virtual Machines
- List Volumes
- List Users
- Create Virtual Machine
- Create Volume
- Create User

### Dashboard

<b>VIRTUAL MACHINES</b> 5 / 59 54 Remaining - 3 Running - 2 Not Running	<b>CPU</b> 13 / 98 85 Remaining	<b>RAM</b> 52.00 GB / 135.66 GB 83.66 GB Remaining
<b>IP ADDRESSES</b> 7 / 20 13 Remaining	<b>VOLUMES</b> 16 / 60 44 Remaining	<b>STORAGE SPACE</b> 685.00 GB / 1.95 TB 1.28 TB Remaining

### Virtual Machines:

Name	Operating System	Status
atacama	Linux	Running
gobi	Linux	Stopped
horstname1	Linux	Running
kalahari	Linux	Running
orch-pilot-test	Linux	Running

Showing page 1 of 2

[View All Virtual Machines](#)

### News:

**Welcome**

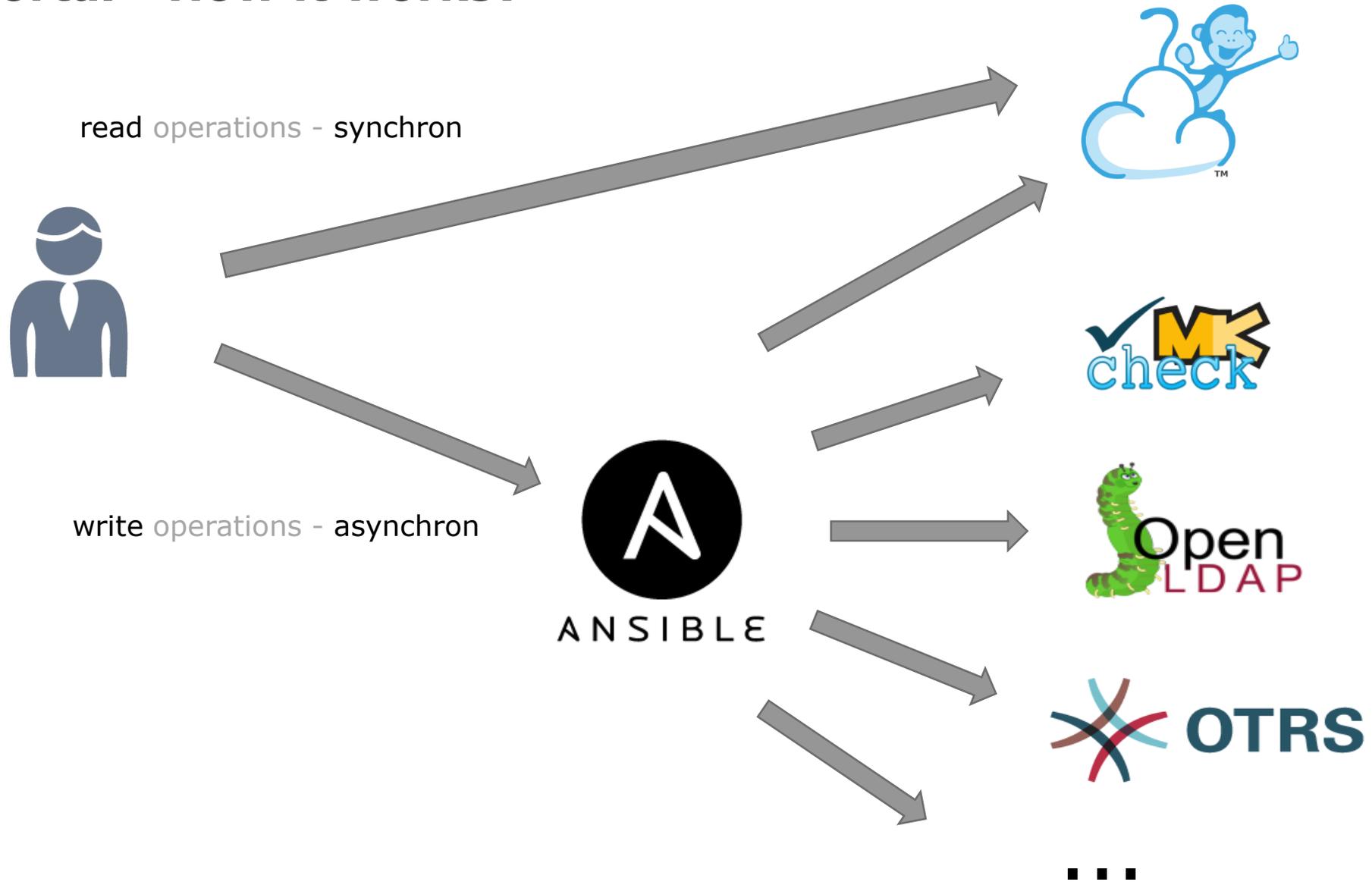
**First News**

Welcome to the BIT.Cloud Portal.  
Please try everything out and report any errors to [portal@bitcloud.cloud](mailto:portal@bitcloud.cloud)  
Many Thanks,  
Your BIT.Cloud Development Team

[View All News](#)

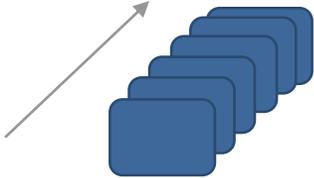
Copyright © 2017 itelligence IT.cloud Version 0.3

# Portal - How it works?

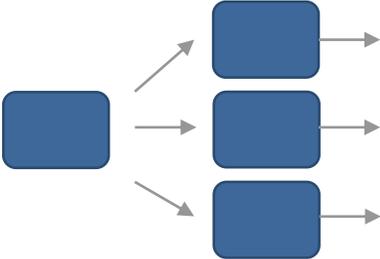


# Ansible Daemon

- Self written application.
- Functionality:
  - Queueing jobs.
  - Parallel execution.
  - Status response of jobs.
  - Reading automation playbooks (header information).



*Queue*



*Parallel execution*



*Playbook header*

# Response in User Interface – Asynchron Jobs

Management ▾ Support ▾ Domain (demo) ▾

**Notifications** [View All](#)

- Attach Volume s4h-app01-install2 finished** ✓  
[View](#) [Dismiss](#)
- Detach Volume s4h-app01-install2 finished** ✓  
[View](#) [Dismiss](#)
- Attach Volume restorer4y-restore finished** ✓

**RAM**  
0.00 B / 60.01 GB  
60.01 GB Remaining

**STORAGE SPACE**  
305.00 GB / 990.00 GB  
685.00 GB Remaining

# Dynamical User Interface by Playbooks

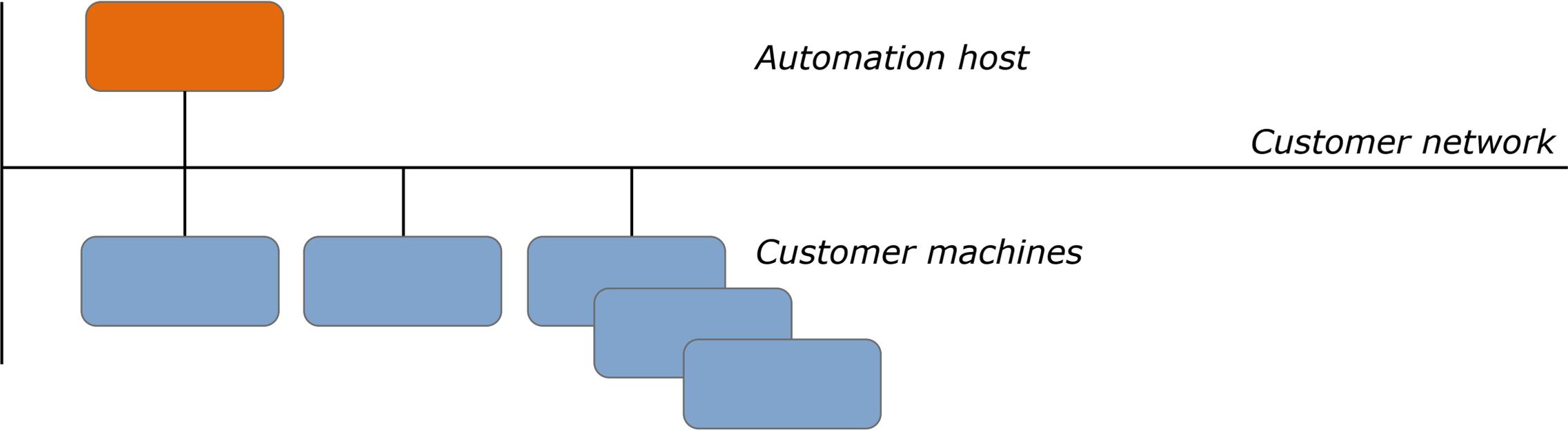
- Defined in playbook header
  - Category
  - Available playbooks
  - Required values
  - Dependencies

The screenshot displays the 'Install Application' interface for System Landscape 'tools'. It is organized into several sections:

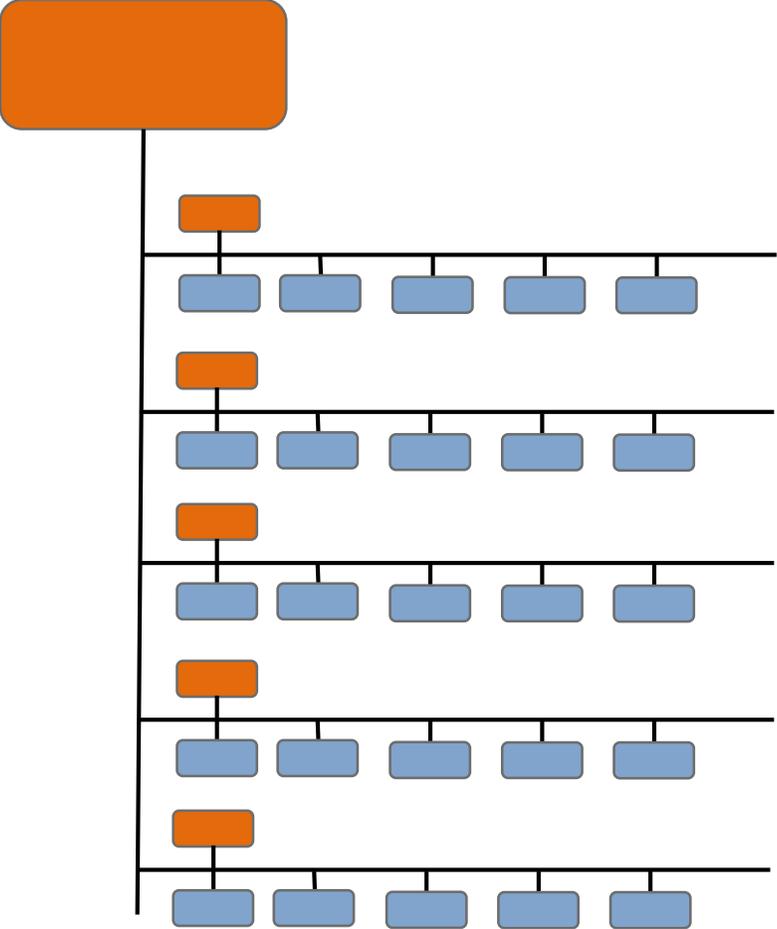
- Main Variables:** Includes a 'Version' dropdown set to 'Hana Version 2.0 (200.020.00)' and an 'Operating System Template' dropdown set to 'SLES 12 SP3'.
- Extra Variables:** Contains a 'Hostname' text input field with a red border, a 'Network' dropdown set to '-- Please select an option --', a 'Costcenter' text input field with 'b0000', and checkboxes for 'Monitoring' and 'Backup', both of which are currently unchecked.
- Hana Variables:** Features an 'Instance Number' text input with '00', a 'SID' text input with 'SID' (highlighted with a red border), a 'DB Size' dropdown set to '64 GB', a 'Hana Password' text input with a toggle icon, and a 'System Usage' dropdown set to 'development'.
- Email Notifications:** Includes checkboxes for 'Notify Me' and 'Notify other persons', both of which are unchecked.

At the bottom of the interface, there are two buttons: a green 'Reset' button on the left and a green 'Install Application' button on the right.

# Automation Host and Network Setup



# Scalable Setup



*portal, LDAP, monitoring*

*scaleable: ansible, LDAP, monitoring*

# Application Installation Automation

*Complete automation in a single step*



Compute

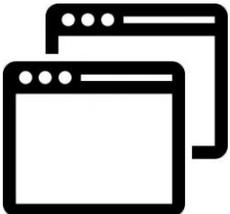
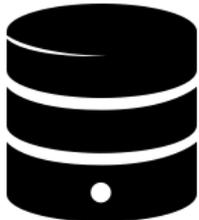
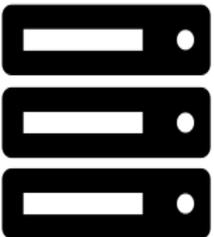
Storage

Application

Firewall

Monitoring

Backup



**Questions?**



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