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# Compass – A Streamlined OpenStack Deployment System

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# Outline of This Talk

**1**

**Scope of Problem for Compass**

**2**

**Compass Explained**

**3**

**DRY, Truly Open Deployment**

# Compass at a Glimpse

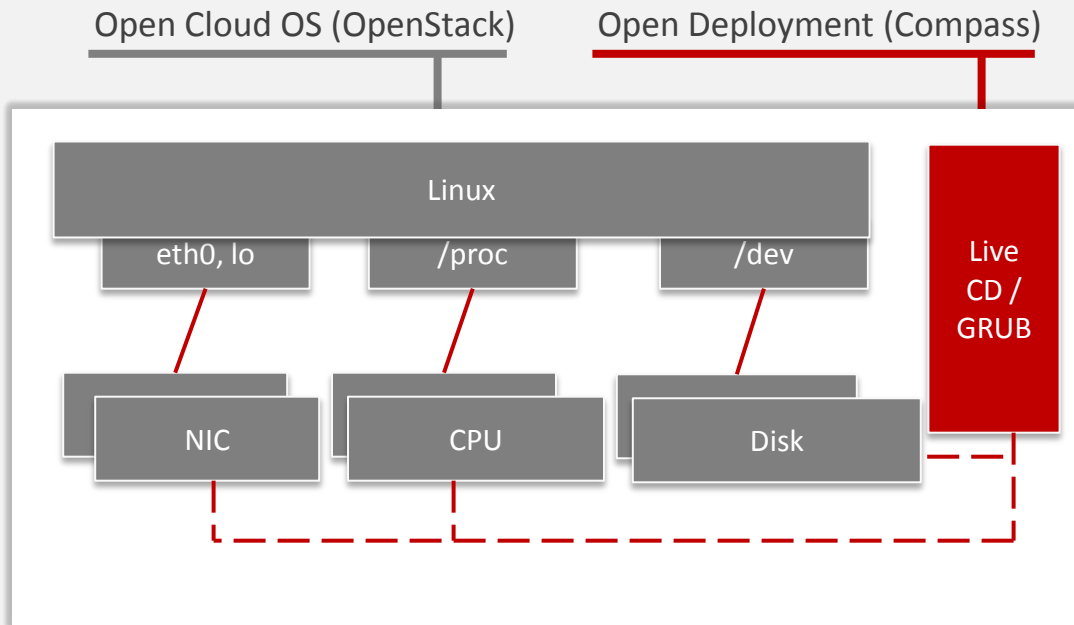
## Think Big, Start Small

- A General System to Deploy Distributed Systems, Extensibility as a Primary Design Goal
- Not Limited to OpenStack, but Streamlined Our OpenStack Deployment Like a Charm

## To Be Open Sourced – Apache 2.0 Soon

- 100% Python, 5000 Line of Python Code
- Successfully Deployed Several Dogfood Clusters
- Compass Wiki Page: <https://wiki.openstack.org/wiki/Compass>

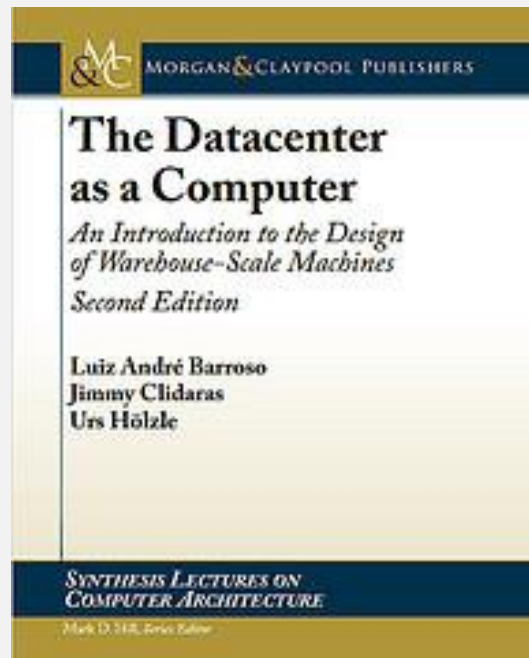
# Data Center as a Computer



— OpenStack Control Channel

- - - HW/SW Configuration Deployment Channel

■ LILO/GRUB/LiveCD for OpenStack



# Why We Are Doing This?

## Full HW Portfolio in Data Center

- No.1 as Storage Revenue Growth
- No. 2 as x86 Server Revenue Growth
- Needless to Say, Networking Gears..

## OpenStack Makes the Above a Full Cloud Solution



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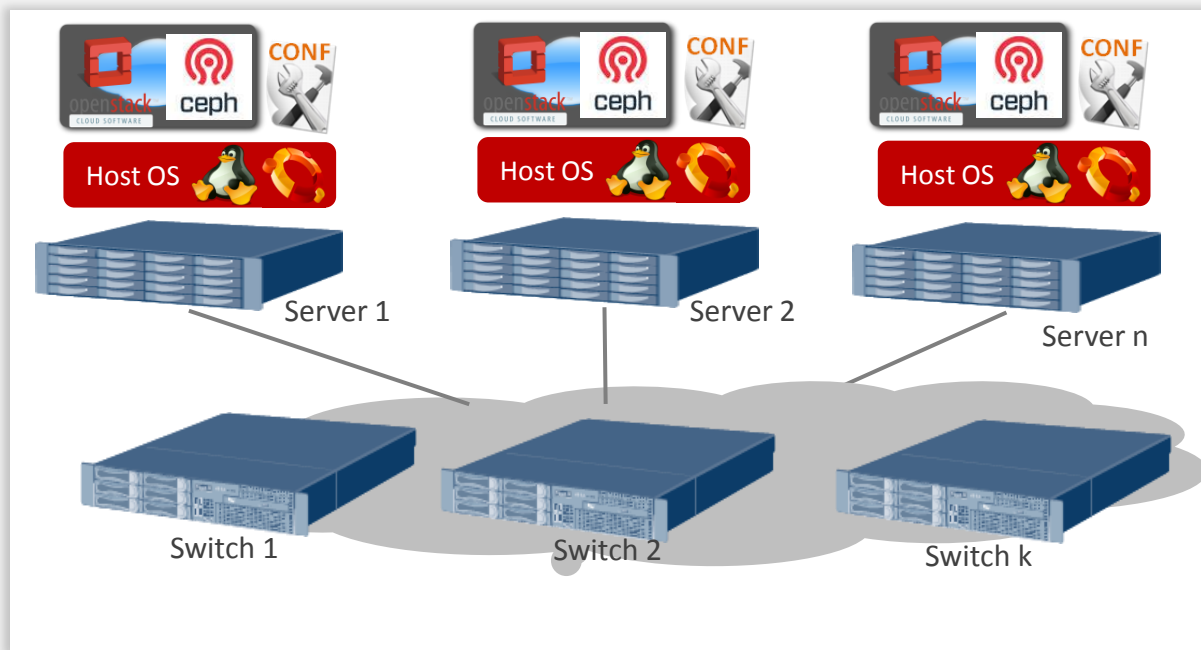
2

Compass Explained

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DRY, Truly Open Deployment

# A Life of Deployment – How to Streamline All Controls



Plus a lot of scripts:

- Boilerplate
- Target system description

— Chef / Puppet / ...

— Cobbler / Razor / ...

— IPMI

— SNMP

# Compass Philosophies – Programmability and Extensibility

## Programmability – To Be a Programmable Framework

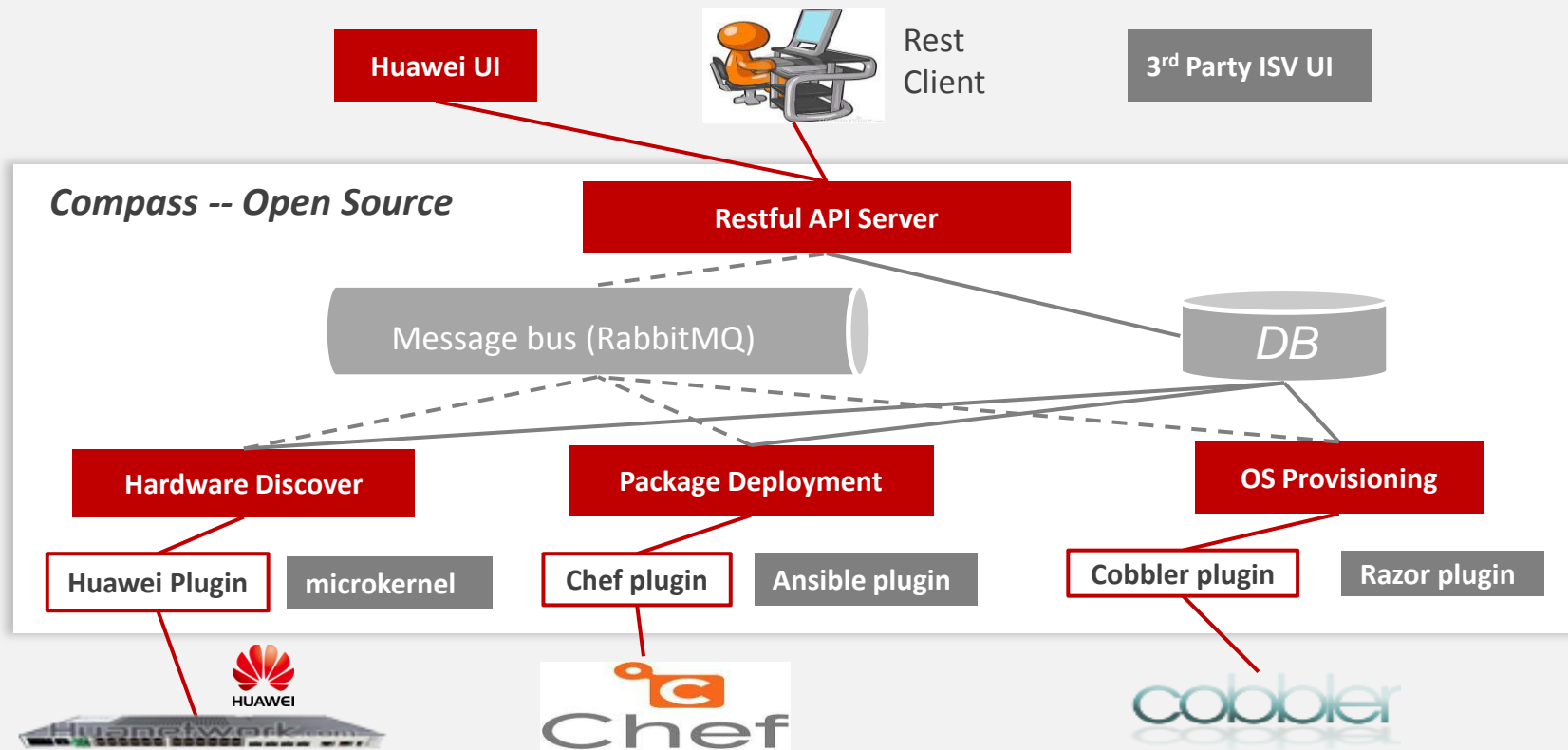
- A Restful API service instead of a web app

## Extensibility – NOT To Be A Conglomerate

- Functional modules with **plug-in architecture** (e.g., 200 Loc to support HP Switch)
- Carefully designed boundary to mature tools like Cobbler, Chef and etc.
- Work WITH the above tools, not to replace any of them.



# Compass Internals



# NOT to Be Conglomerate – Plug-in Architecture

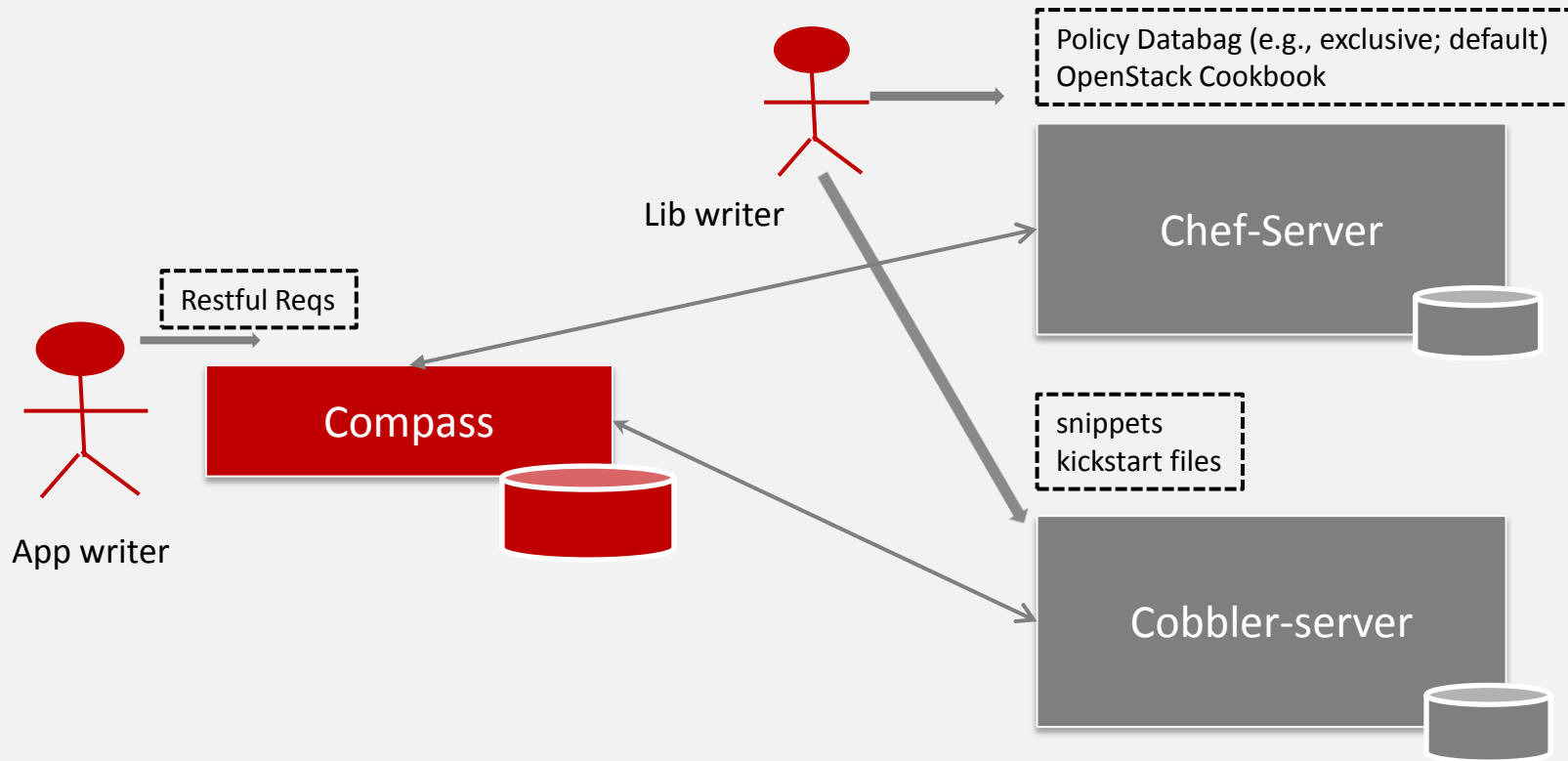
## Plug-in architecture for configuration management system

- Currently we use Chef as deployment management Engine
- Puppet or Ansible devopers, we want to work with you

## Plug-in architecture for Hardware vendors IPMI / SNMP

- Networking gear based bare metal discovery (topology awareness)
- Currently we are working on RAID Controller for Huawei
- OCP community, what's your thought

# NOT to Be Conglomerate – Roles in the System



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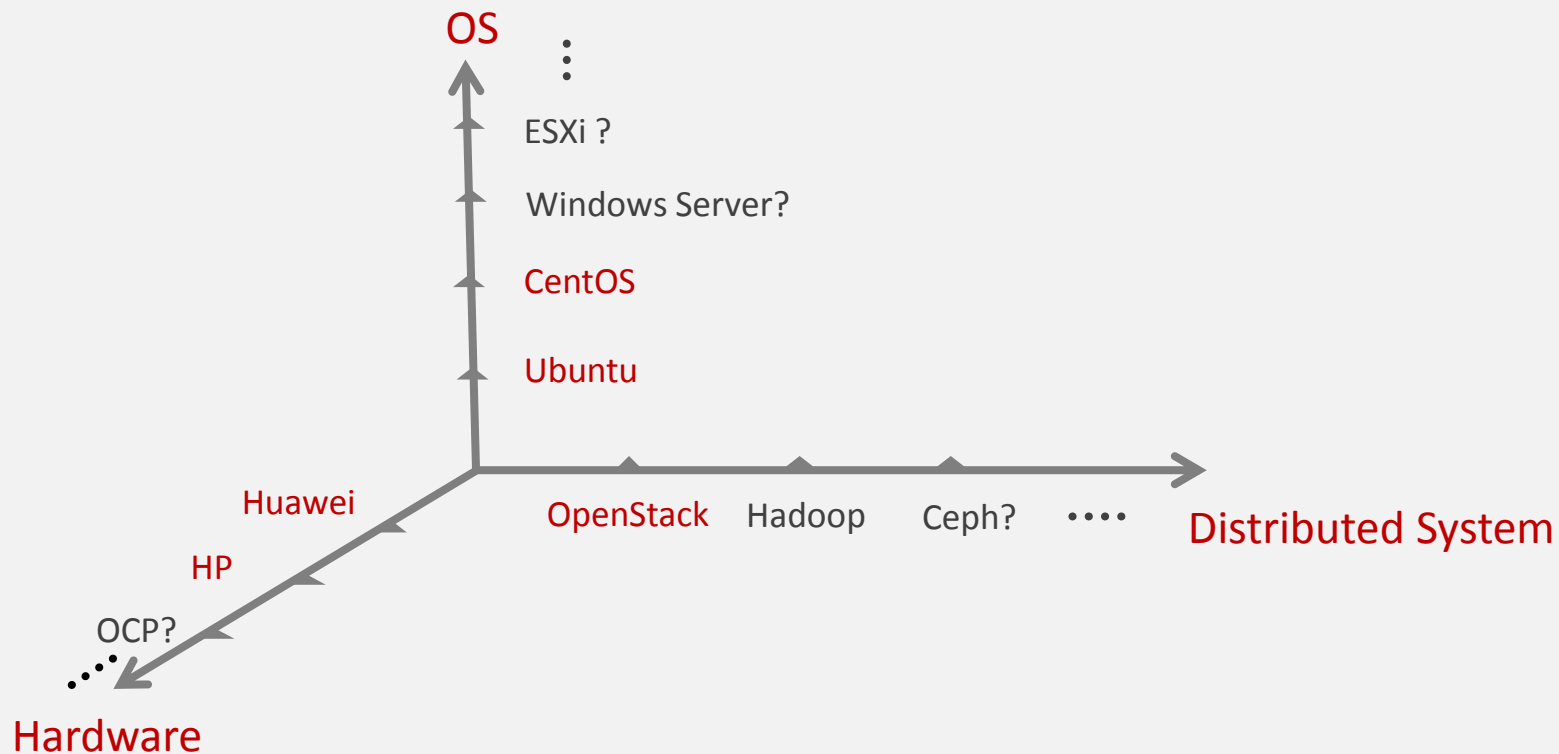
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Compass Explained

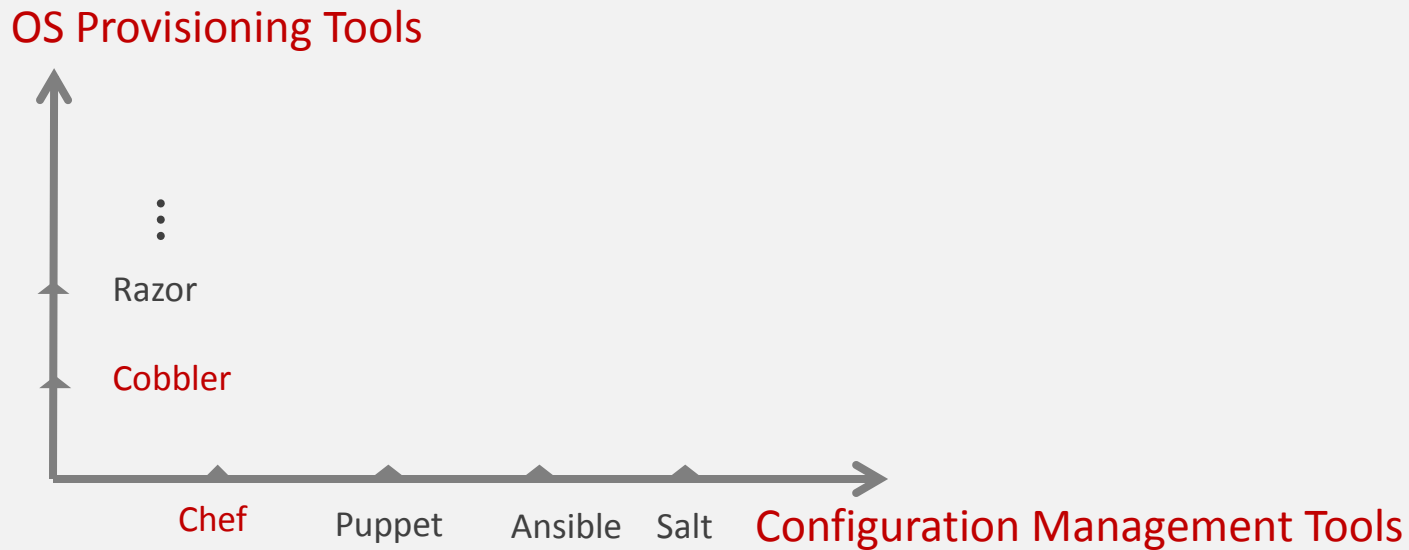
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DRY, Truly Open Deployment

# Extensible in Use Cases



# Extensible in Tool Chain



# To Summarize

## Open Sourced under Apache 2.0

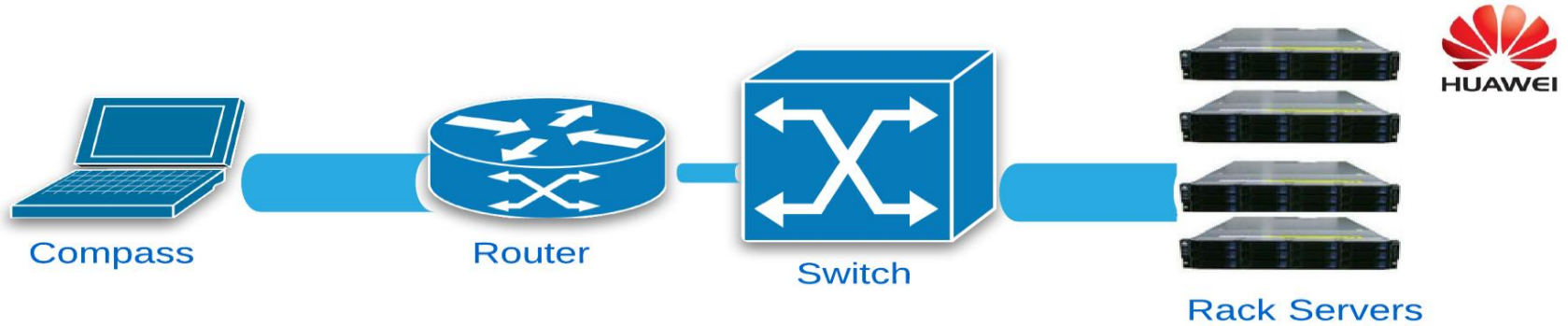
- General Purpose Deployment System (Ultimate Goal)
- Deploys OpenStack Cloud Infrastructure Smoothly (Dogfoods Done)
- Restful API: Allow Third-party UI Integration

## Open to Collaboration

Contact us: [shuo.yang@huawei.com](mailto:shuo.yang@huawei.com)

Santa Clara R&D Center, US

# Real Demo



- [Video Clips Recording Our First Deployment](#)





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