Internship at PatientSky

## OpenStack Cloud Computing Service

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Overview

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- OpenStack founders & partners
- OpenStack Core & Optional Components
- OpenStack Components
- PatientSky OpenStack setup
- New tools
- Project Management & Scheduling
- Documentation & Communication

PatientSky AS & PatientSky Denmark

- Distance Healthcare system
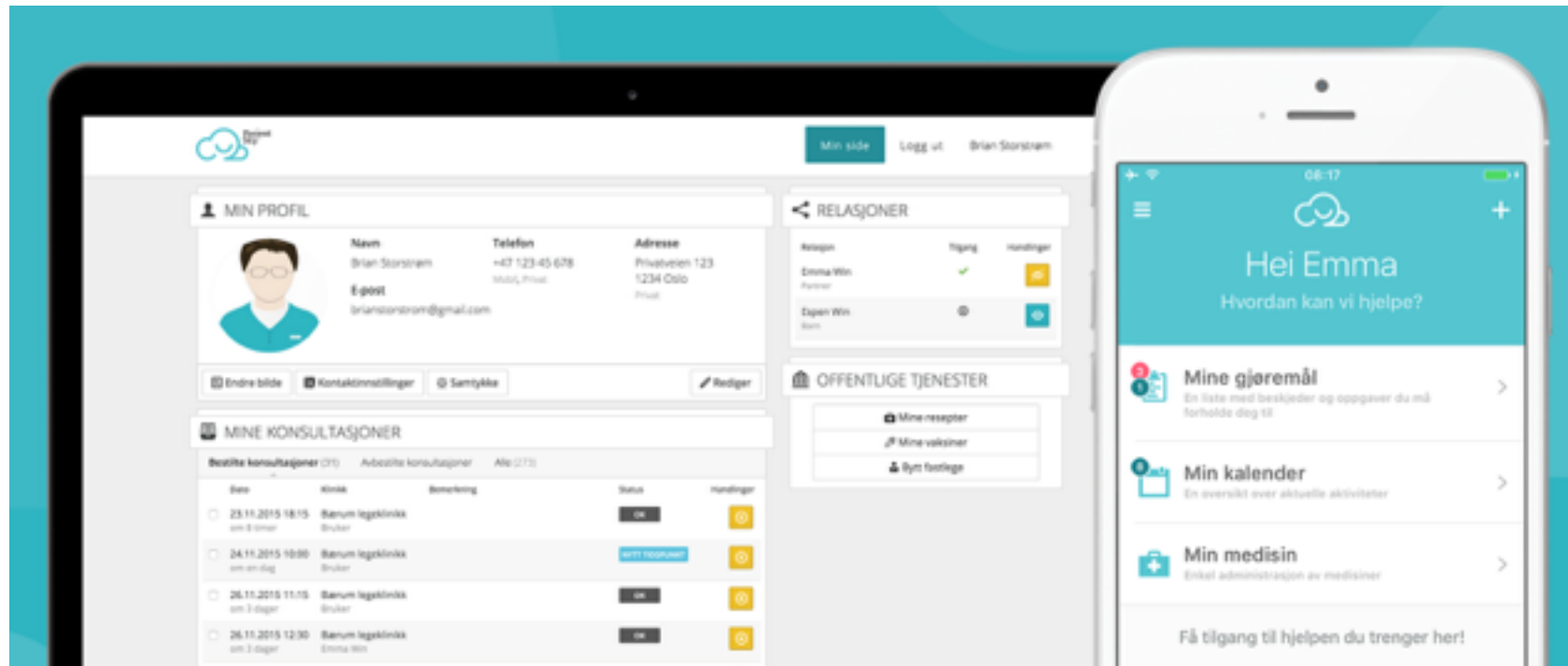
Goals & Objectives

- Provide a control-panel for developers/local-admins to serve themselves
  (Virtual Servers, Private networks, Public Network, Virtual switches/routers/ firewalls, Install OSs on VSs, Backup, VSs connections)
- DigitalOcean / AWS / Rackspace Cloud Service
  (Fulfil companies policies, Cost effective, Mature & Fast enough)

Cloud Computing Vs. Virtualisation

Cloud Computing

- Self-Service
- Automated management out of the box
- On-demand Computing
- On-demand Computing
- Distributed Control
- Made for end-users

Virtualisation

- Hardware Utilisation & flexibility
- Hardware abstraction from user interface
- Infrastructure as a Service (IaaS)

OpenStack founders & partners

- Rackspace & NASA
- Free & Open-Source
- Infrastructure-as-a-Service (IaaS)
- Released Versions: (Austin, Bexar, Cactus, Diablo, Essex, Folsom, Grizzly, Havana, Icehouse, Juno, Kilo, _Liberty_, _Mitaka_ & **Newton**)
- Platinium & Gold partners - DropBox, CERN

OpenStack Core & Optional Components

OpenStack Components (Our Setup)

- Identity service (KeyStone)
- Image service (Glance)
- Compute service (Nova)
- Networking service (Neutron)
- Dashboard service (Horizon)
- Block Storage service (Cinder)
- Telemetry service (Ceilometer)
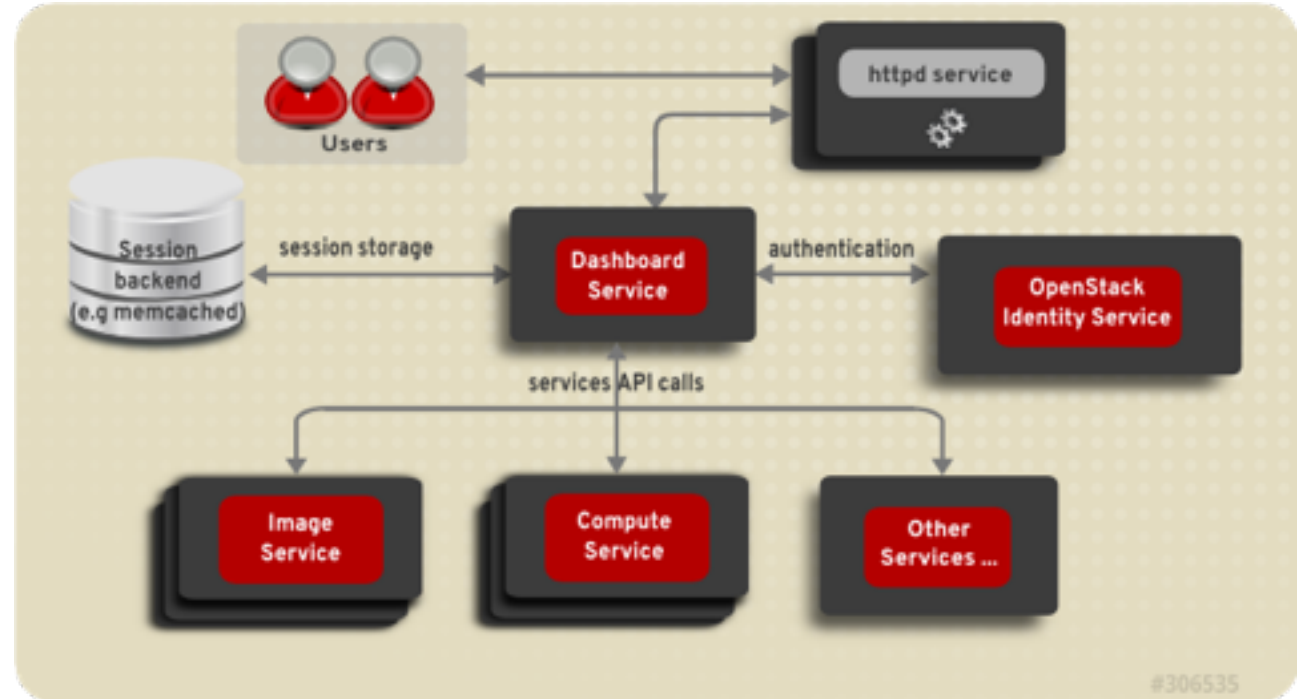
Possible platforms:
Ubuntu/Redhat/_CentOS_/OpenSUSE/SUSE Linux Enterprise

Identity Service (KeyStone)

Keystone is an OpenStack project that provides Identity, Token, Catalog and Policy services for use specifically by projects in the OpenStack family. It implements OpenStack's Identity API.

Image Service (Glance)

The Glance project provides a service where users can upload and discover data assets that are meant to be used with other services. This currently includes images and metadata definitions.

Compute Service (Nova)

The OpenStack Compute Service (Nova) is a cloud computing fabric controller, which is the main part of an IaaS system. You can use OpenStack Compute to host and manage cloud computing systems.

Network Service (Neutron)

Neutron is an OpenStack project to provide "networking as a service" between interface devices (e.g., vNICs) managed by other Openstack services (e.g., nova). Neutron allows you to create and attach interface devices managed by other OpenStack services to networks.

Dashboard Service (Horizon)

Horizon is the canonical implementation of Openstack's Dashboard, which provides a web based user interface to OpenStack services including Nova, Swift, Keystone, etc.

Block-storage Service (Cinder)

Cinder is a Block Storage service for OpenStack. It's designed to present storage resources to end users that can be consumed by the OpenStack Compute Project (Nova).

Telemetry service (Ceilometer)

The Telemetry service performs the following functions:

- Efficiently polls metering data related to OpenStack services.
- Collects event and metering data by monitoring notifications sent from services.
- Publishes collected data to various targets including data stores and message queues.
- Creates alarms when collected data breaks defined rules.

PatientSky OpenStack setup
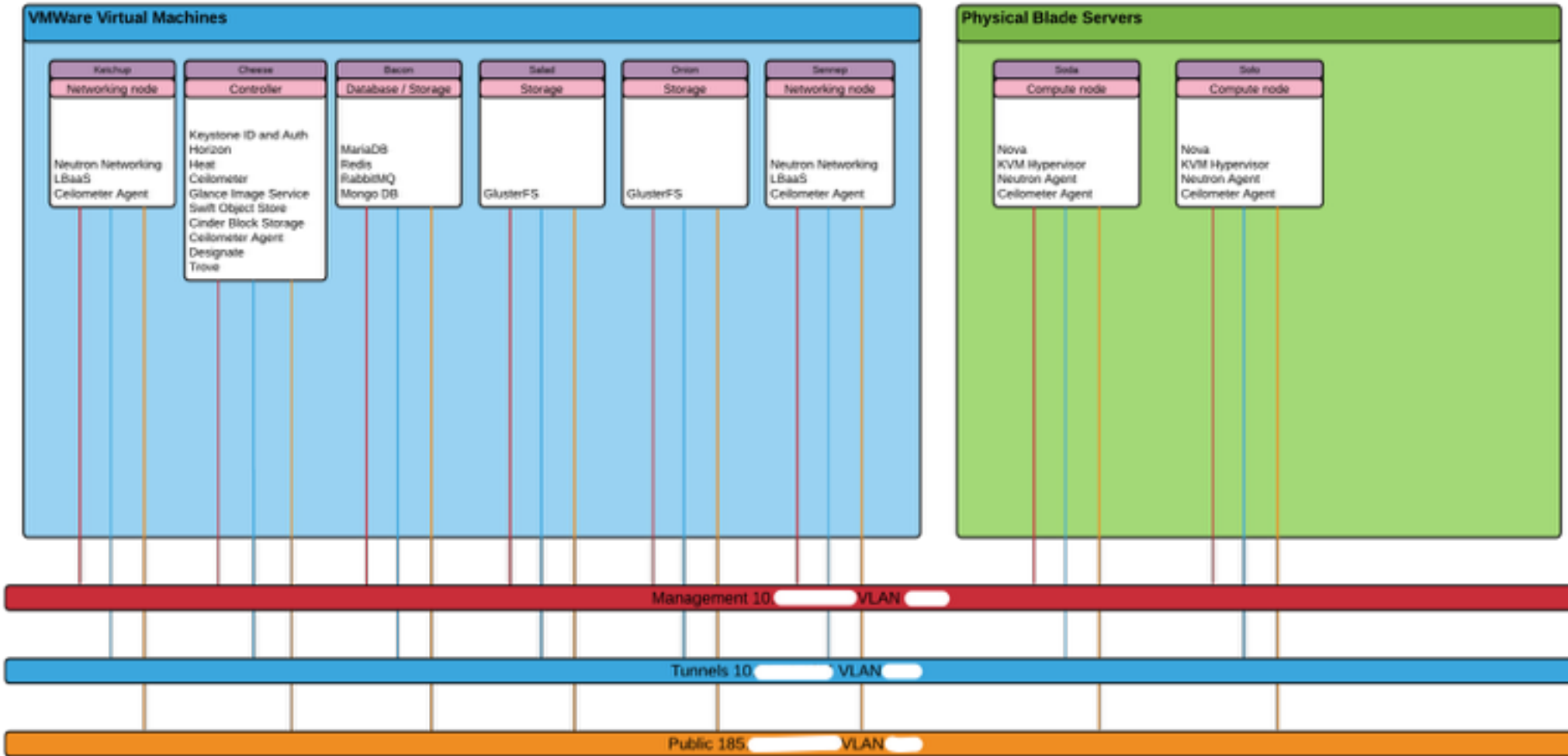
New tools (indirectly used in the project)

GlusterFS, LVM, Chrony, iperf, TCPdump, SSK-KYS, Known-Hosts, CoreOS, RedHat, Cirros OS, Linux LXCs, Linux Containers, Docker, OpenBSD, VMware ESXi, VMware Vcenter, PHP, JSON, Linux Bridge, VXLAN, SetUID, SetGID, Virtual Connect, Open vSwitch, AWS, Ansible Playbooks, Python PEP8 and many more..
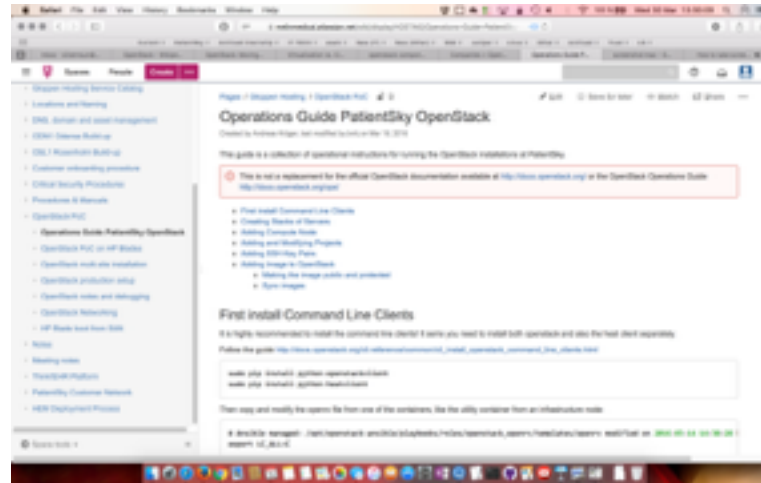
Project Management/Task Scheduler

- PatientSky Policies
- Morning meetings
- JIRAs
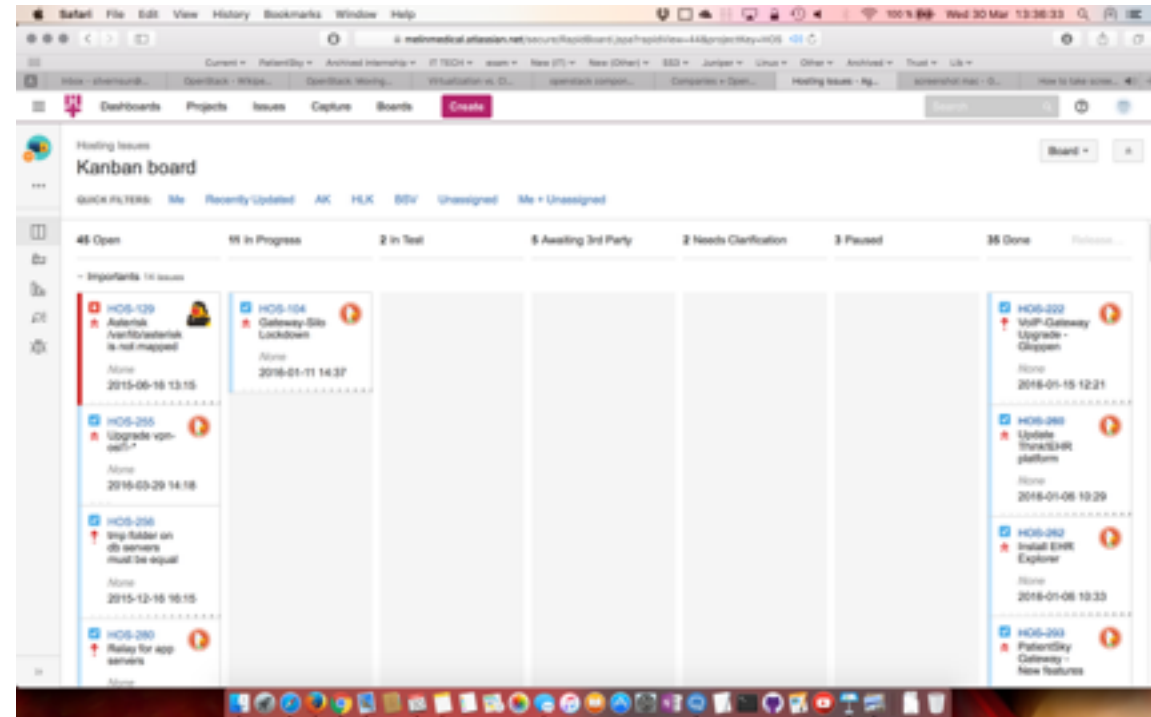
Documentation and Communication

- PatientSky Policies
- Confluence
- HipChat

Any Questions

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