

The next iteration of the MOC

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Who am I?

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In the beginning...

- Original MOC deployment four years ago.
- OpenStack and installation tooling was not as mature then as it is now.
- Non-homogenous hardware configuration
- Based on Puppet modules originally from Red Hat's Astapor project
- Puppet modules were locally customized

Early success

- Original MOC environment was successful!
- Used to support hundreds of users across both classes and research projects.

Limitations and pressures

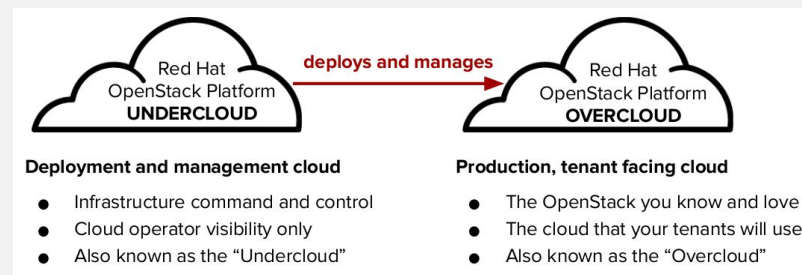
- The configuration of the original MOC environment had some limitations:
 - No high-availability
 - Difficult to introduce new features/new services
 - Difficult to upgrade
 - Difficult to support
- Increasing pressure on the MOC environment:
 - Increasing number of users on the MOC
 - Increased demand for resources

New hardware and a way forward

- In the spring of 2018, the MOC received a major hardware donation from Two Sigma
 - 100 servers
 - 2 x Intel Xeon CPU E5-2690 v2 @ 2.90GHz or similar
 - 384 GB per compute host
- The MOC decided to implement a new OpenStack environment on the Two Sigma hardware with the goal of addressing the limitations of the existing environment

Red Hat OpenStack Platform Director

- Based on the upstream “TripleO” project (OpenStack-On-OpenStack)
- A limited, opinionated OpenStack environment (the “undercloud”) manages the target hardware and OpenStack installation (the “overcloud”)



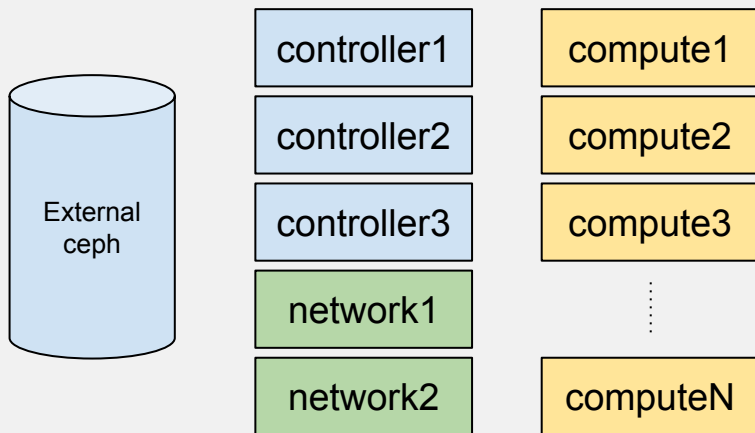
Advantages to Using Director

- Reduced manual effort
 - Easy to enable any Red Hat supported service.
- More robust infrastructure
 - HA configured “out of the box”
 - Recommended configuration settings are already in place
- More supportable
 - Configuration of the MOC hosts will be familiar to Red Hat support

Provisioning Models

- In a typical install, Director handles the entire process from system discovery, operating system provisioning, and software installation and configuration.
- In the “split stack” deployment model, local tools are used for operating systems provisioning, while Director is used only for the software installation and configuration aspect.

New Infrastructure



- Highly available network infrastructure (Brocade switch fabric)
- Highly available controllers
- Dedicated network hosts for better performance as environment grows

Current status

- Currently 15 nodes dedicated to OpenStack compute resources
 - Other hardware used for elastic bare metal environment (BMI/HIL)
- Internal testing over the next week
- Followed by limited external testing
- Followed by general availability

Thank you!