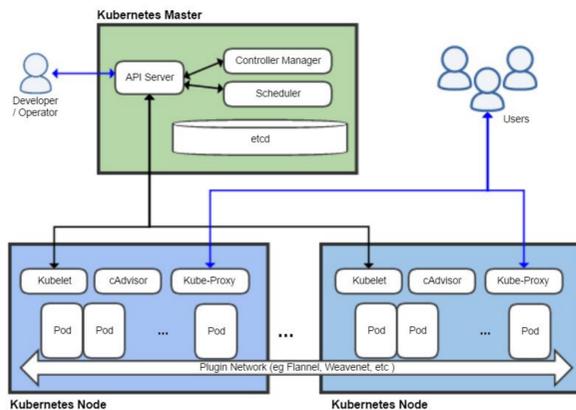


KUBERNETES



- Kubernetes is an open-source system for automating deployment, scaling, and management of containerized applications.
- The basic scheduling unit in Kubernetes is a pod. It adds a higher level of abstraction by grouping containerized components.
- A pod consists of one or more containers that are guaranteed to be co-located on the host machine and can share resources.



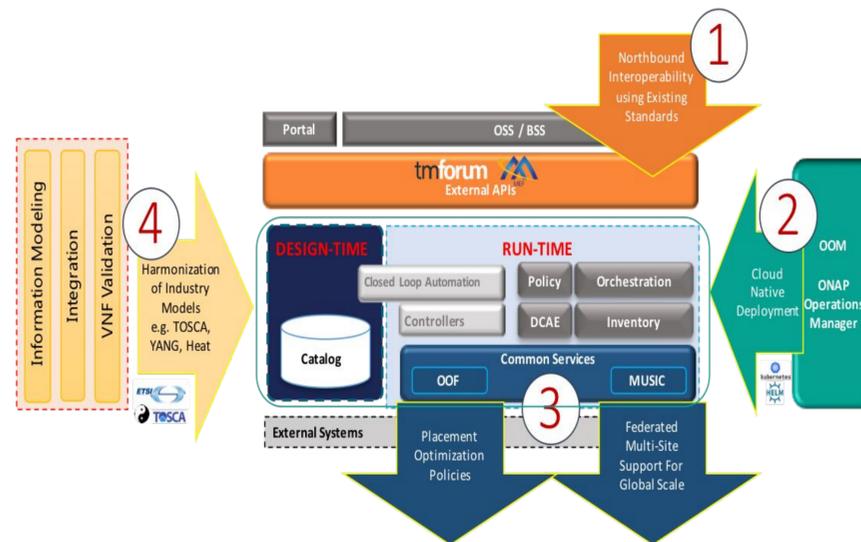
- Kubernetes provides a container-centric management environment. It orchestrates computing, networking, and storage infrastructure on behalf of user workloads.

RANCHER



- Rancher is a management platform for Docker containers.
- It makes use of Docker as the underlying container runtime and coordinates running containers between multiple discrete physical nodes.
- Rancher also includes modular infrastructure services including networking, load balancing, service discovery, monitoring and recovery.

- ONAP provides a platform for real-time, policy-driven orchestration and automation of physical and virtual network functions that will enable developers to rapidly automate new services and support complete lifecycle management.
- It consists of both design-time and run-time instances.



OOM is the lifecycle manager of the ONAP platform and uses the Kubernetes container management system and Consul to provide the following functionality:

1. *Deployment* - with built-in component dependency management
2. *Configuration* - unified configuration across all ONAP components
3. *Monitoring* - real-time health monitoring feeding to a Consul GUI and Kubernetes
4. *Restart* - failed ONAP components are restarted automatically
5. *Clustering and Scaling* - cluster ONAP services to enable seamless scaling
6. *Upgrade* - change out containers or configuration with little or no service impact
7. *Deletion* - clean up individual containers or entire deployments



HELM

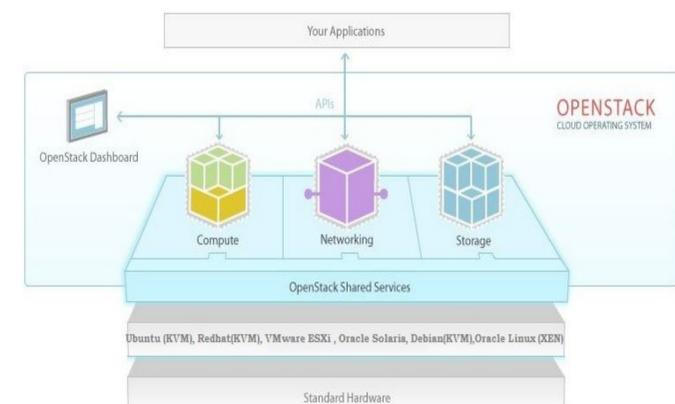


- Helm fills the need to quickly and reliably provision container applications through easy install, update, and removal.
- It provides a vehicle for developers to package their applications and share them with the Kubernetes community.

OpenStack



- The cloud is about providing computing for end users in a remote environment, where the actual software runs as a service on reliable and scalable servers rather than on end-user's computer.
- Openstack provides infrastructure that makes it easy for users to quickly add new instance, upon which other cloud components can run.



Future Work and References

- This work can be extended to deploying the Casablanca release of ONAP.
- De Talhouët, Alexis.. "Confluence." *ONAP on Kubernetes on OpenStack - Developer Wiki - Confluence*, ONAP, 2 May 2018, [wiki.onap.org/display/DW/ONAP on Kubernetes on OpenStack](http://wiki.onap.org/display/DW/ONAP+on+Kubernetes+on+OpenStack).