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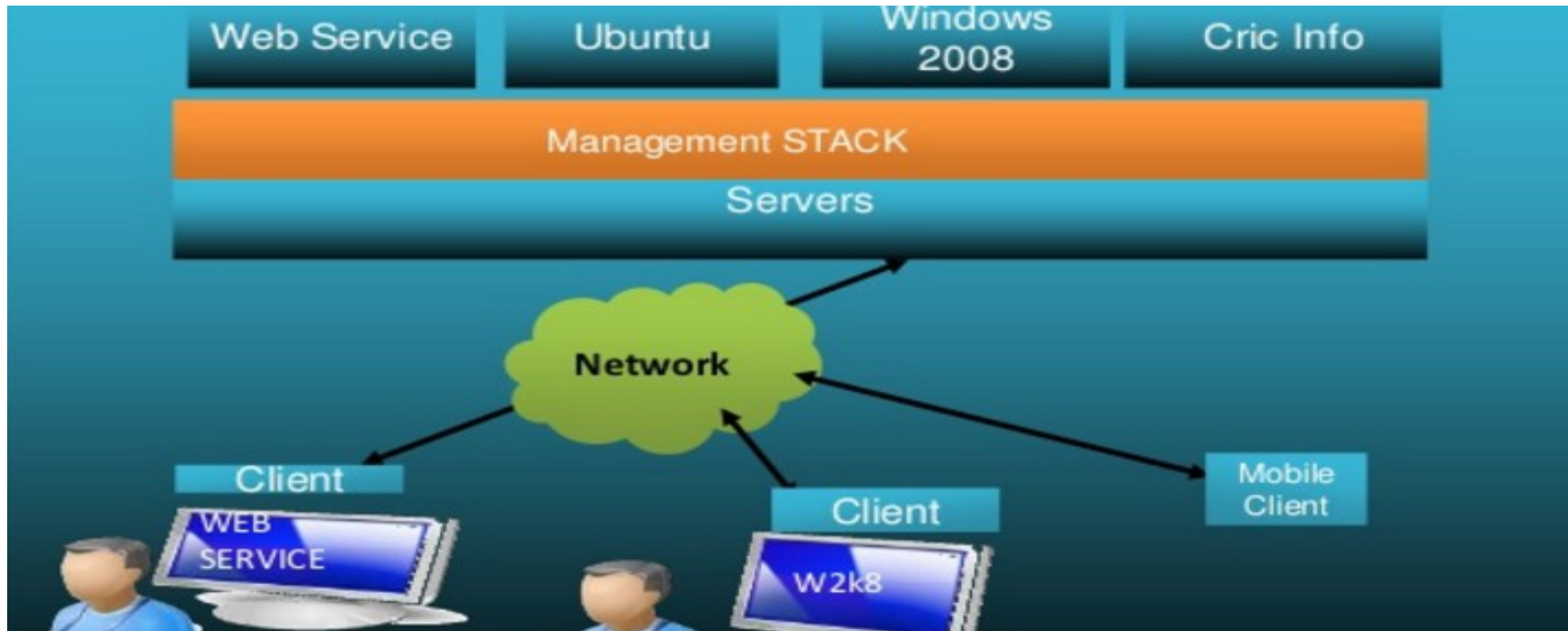
Himanshu Nailwal

I.T., 4th year

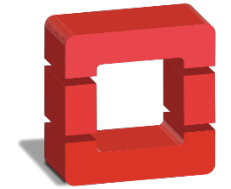
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What is cloud computing?

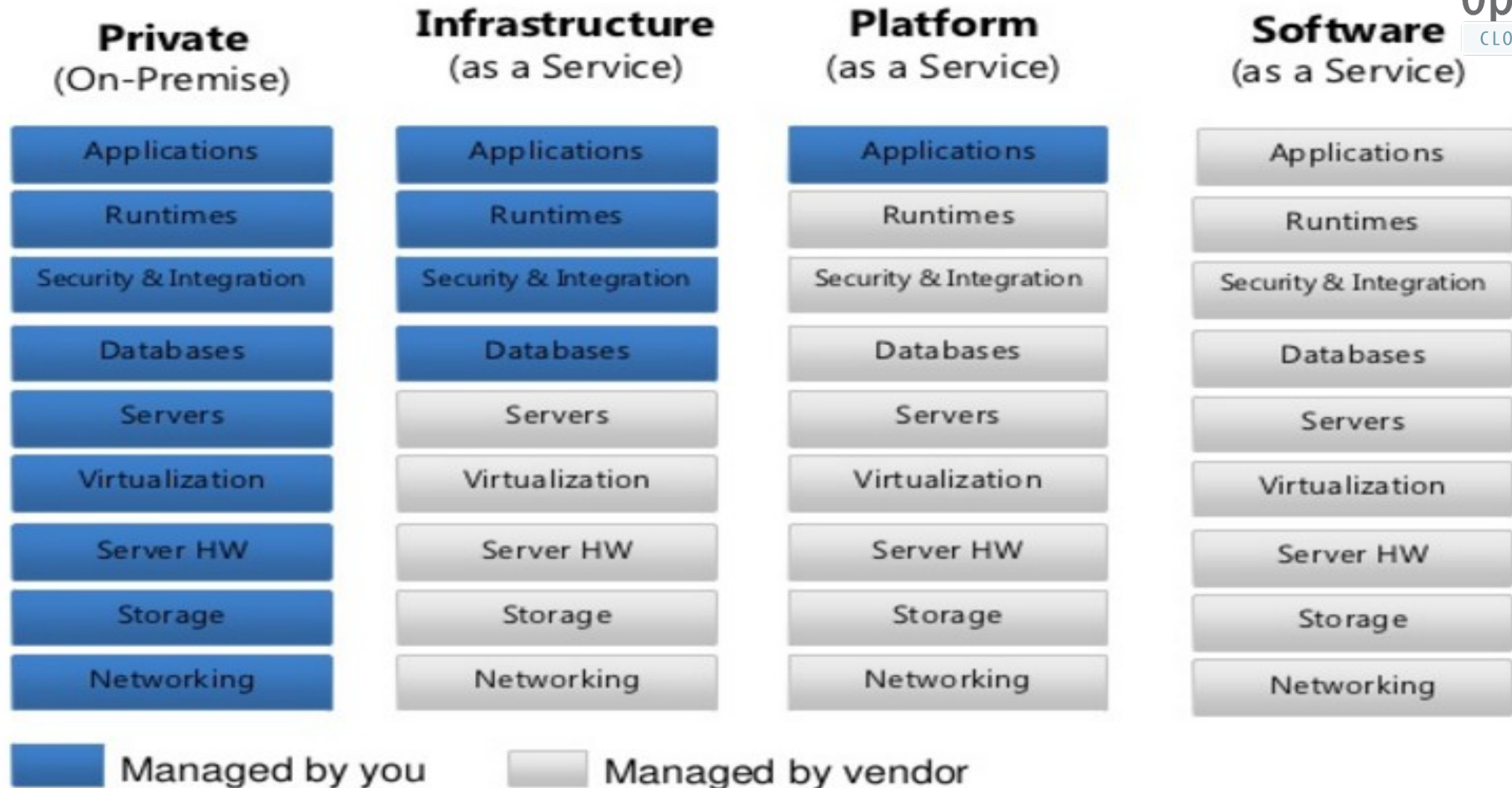
Cloud computing is the set of services offered through the internet.



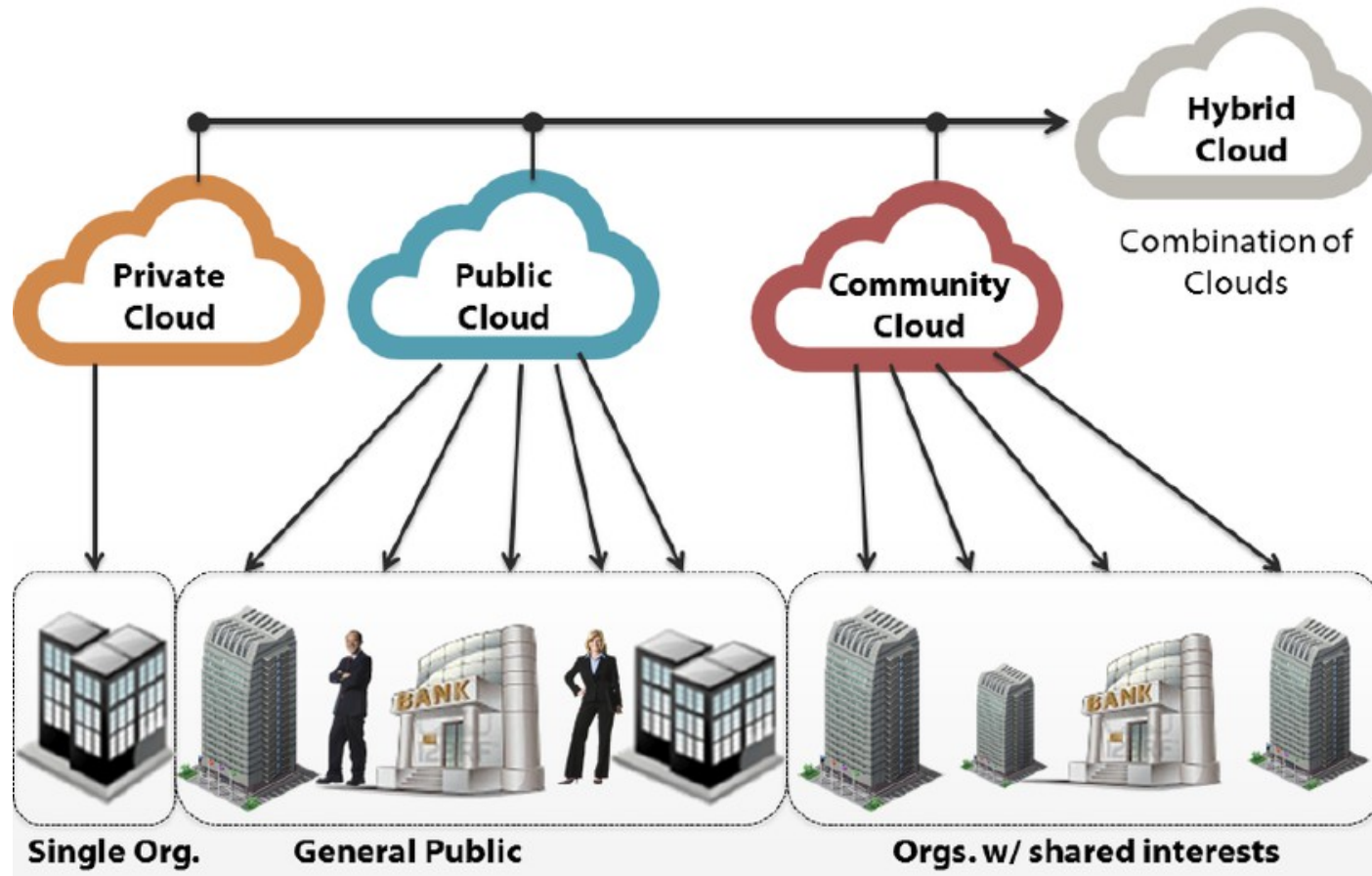
Cloud Service Model



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Cloud Deployment models

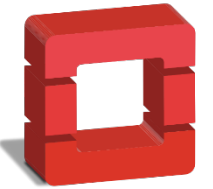


What is OpenStack?

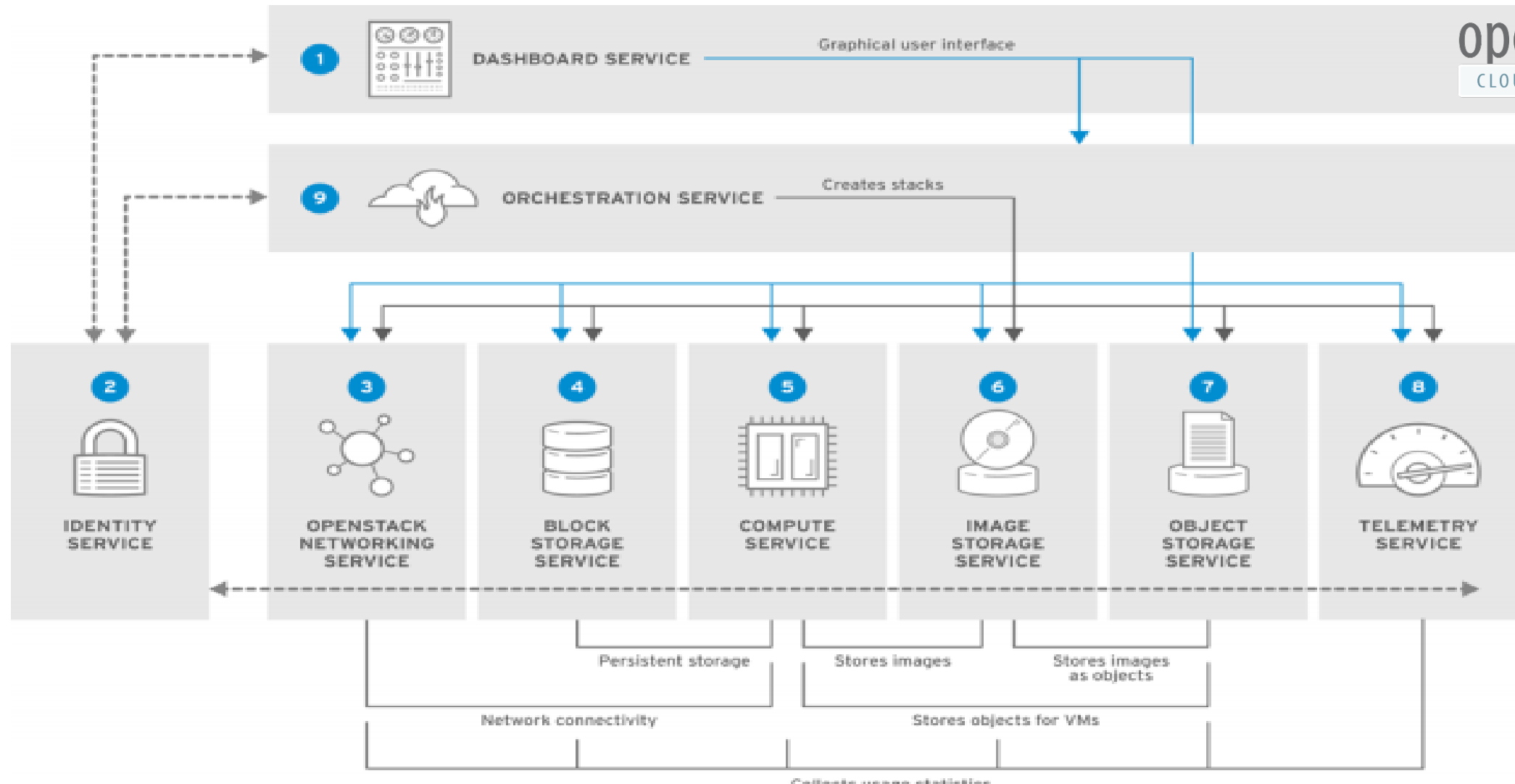


OpenStack is a free and open-source software platform for cloud computing, mostly deployed as an **infrastructure-as-a-service (IaaS)**. The software platform consists of interrelated components that control diverse, multi-vendor hardware pools of processing, storage, and networking resources throughout a data center.

Components



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OpenStack Networking (neutron)

- handles creation and management of a virtual networking infrastructure
- provides cloud administrators with flexibility to decide which individual services to run on which physical systems
- All service daemons can be run on a single physical host for evaluation purposes

OpenStack Block Storage (cinder)

- provides persistent block storage management for virtual hard drives
- Block Storage enables the user to create and delete block devices, and to manage attachment of block devices to servers.
- OpenStack Block Storage advantages include:
 - Creating, listing and deleting volumes and snapshots.
 - Attaching and detaching volumes to running virtual machines.

OpenStack Object Storage (swift)

- provides an HTTP-accessible storage system for large amounts of data, including static entities such as videos, images, email messages, files, or VM images.
- distributed architecture supports horizontal scaling as well as failover redundancy with software-based data replication

OpenStack Database-as-a-Service (trove)



- allows users to select, provision, and operate a variety of relational and non-relational databases and handles more complex database administration tasks out-of-the-box.
- Users and database administrators can provision and manage multiple database instances in the cloud.
- High-performance resource isolation while automating complex administrative tasks such as deployment, configuration, patching, backup, restore, and monitoring.

OpenStack Compute (nova)



- serves as the core of the OpenStack cloud by providing virtual machines on demand.
- Compute schedules virtual machines to run on a set of nodes by defining drivers that interact with underlying virtualization mechanisms, and by exposing the functionality to the other OpenStack components

OpenStack Bare Metal Provisioning (ironic)

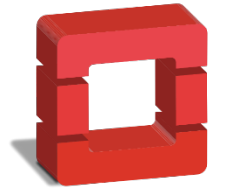


- enables the user to provision physical, or bare metal machines, for a variety of hardware vendors with hardware-specific drivers.
- Bare Metal Provisioning uses the Compute service for scheduling and quota management, and uses the Identity service for authentication.

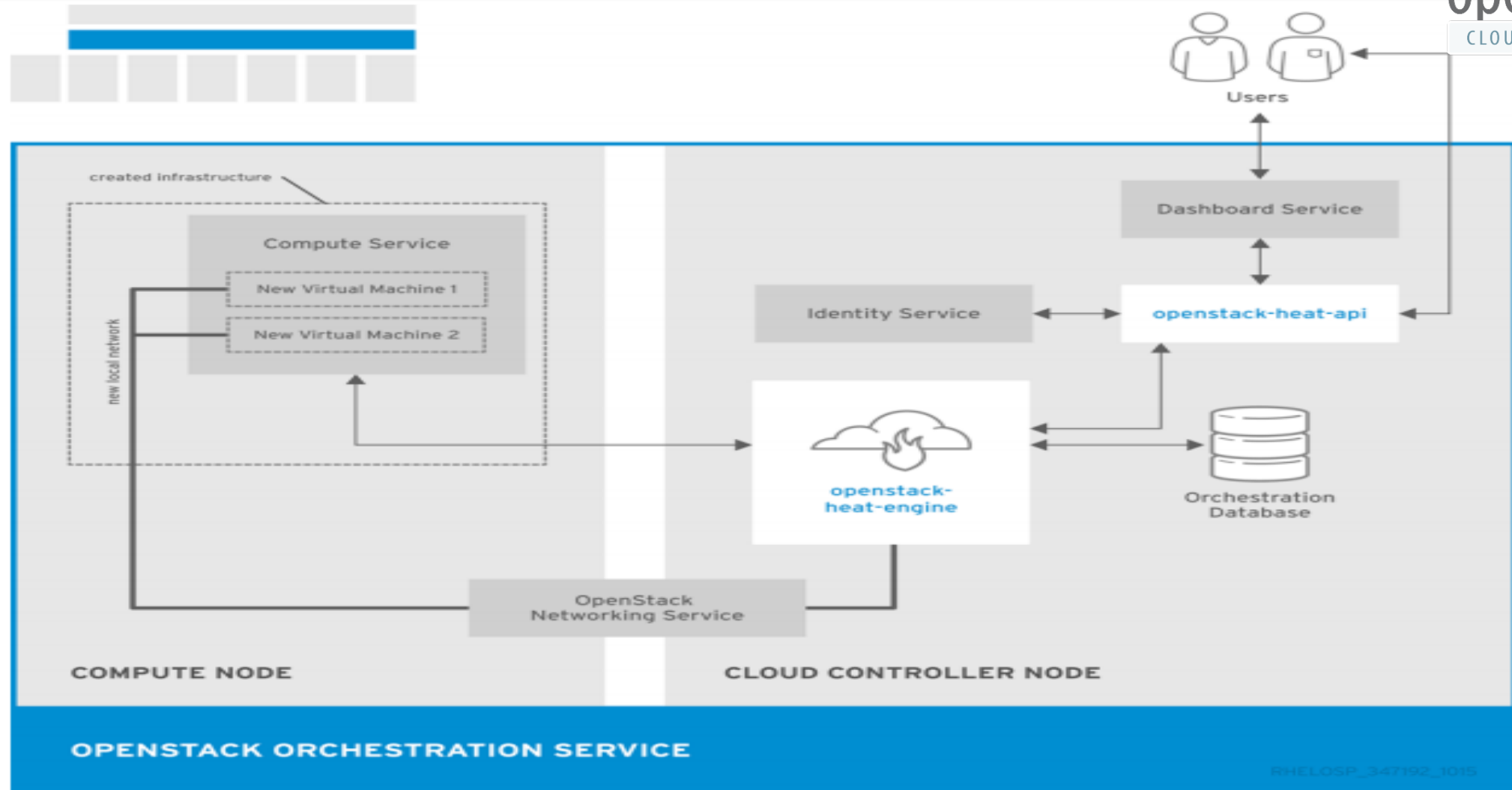
OpenStack Image (glance)

- OpenStack Image acts as a registry for virtual disk images.
- Users can add new images or take a snapshot of an existing server for immediate storage.
- You can use the snapshots for backup or as templates for new servers.

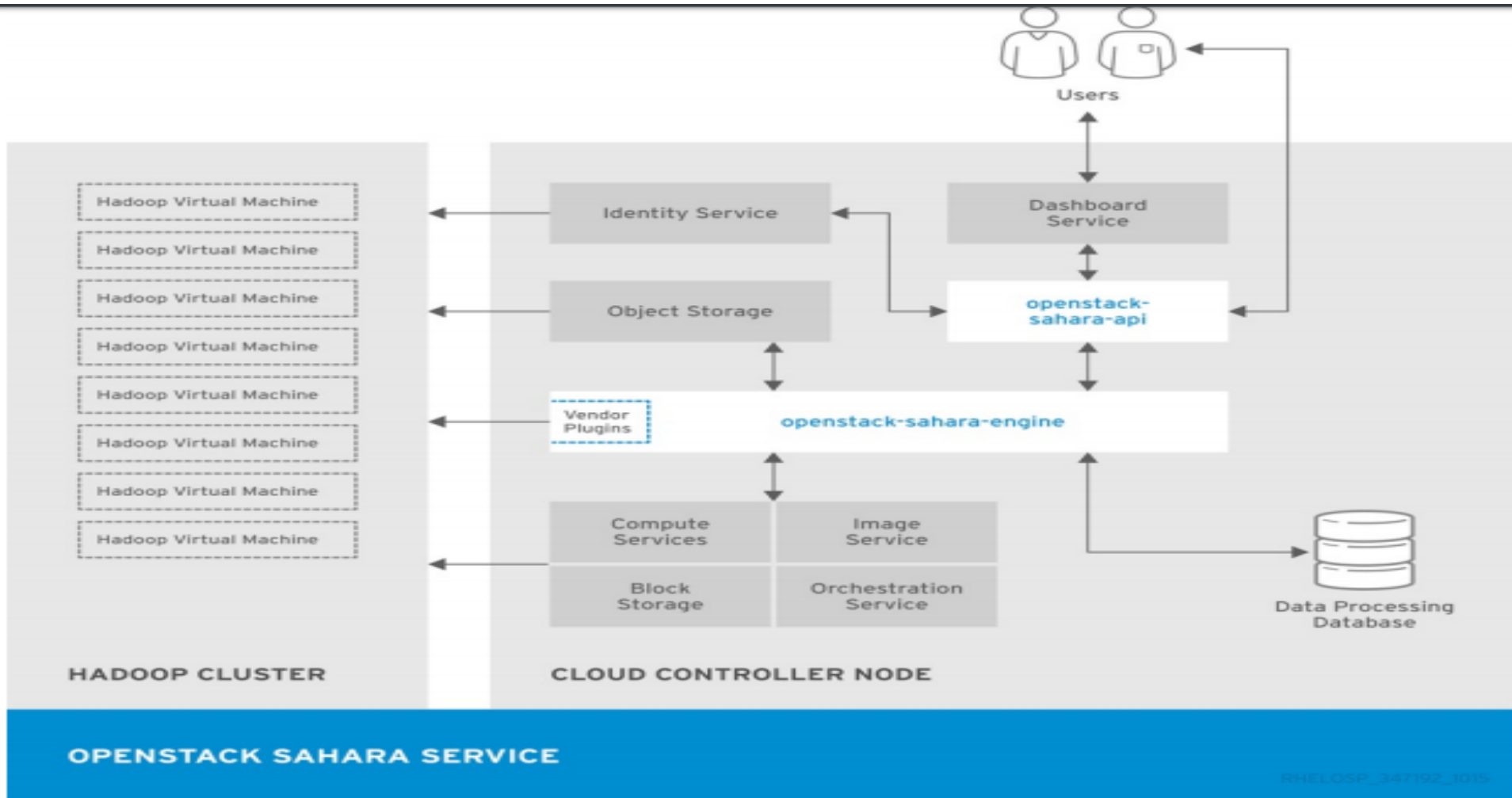
OpenStack Orchestration (heat)



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OpenStack Data Processing (sahara)



CONCLUSION



- OpenStack is an early project but it is fully open source and based on open cloud standards.
- Hundreds of the world's largest brands rely on OpenStack
- reducing costs and helping them move faster
- OpenStack has a strong ecosystem