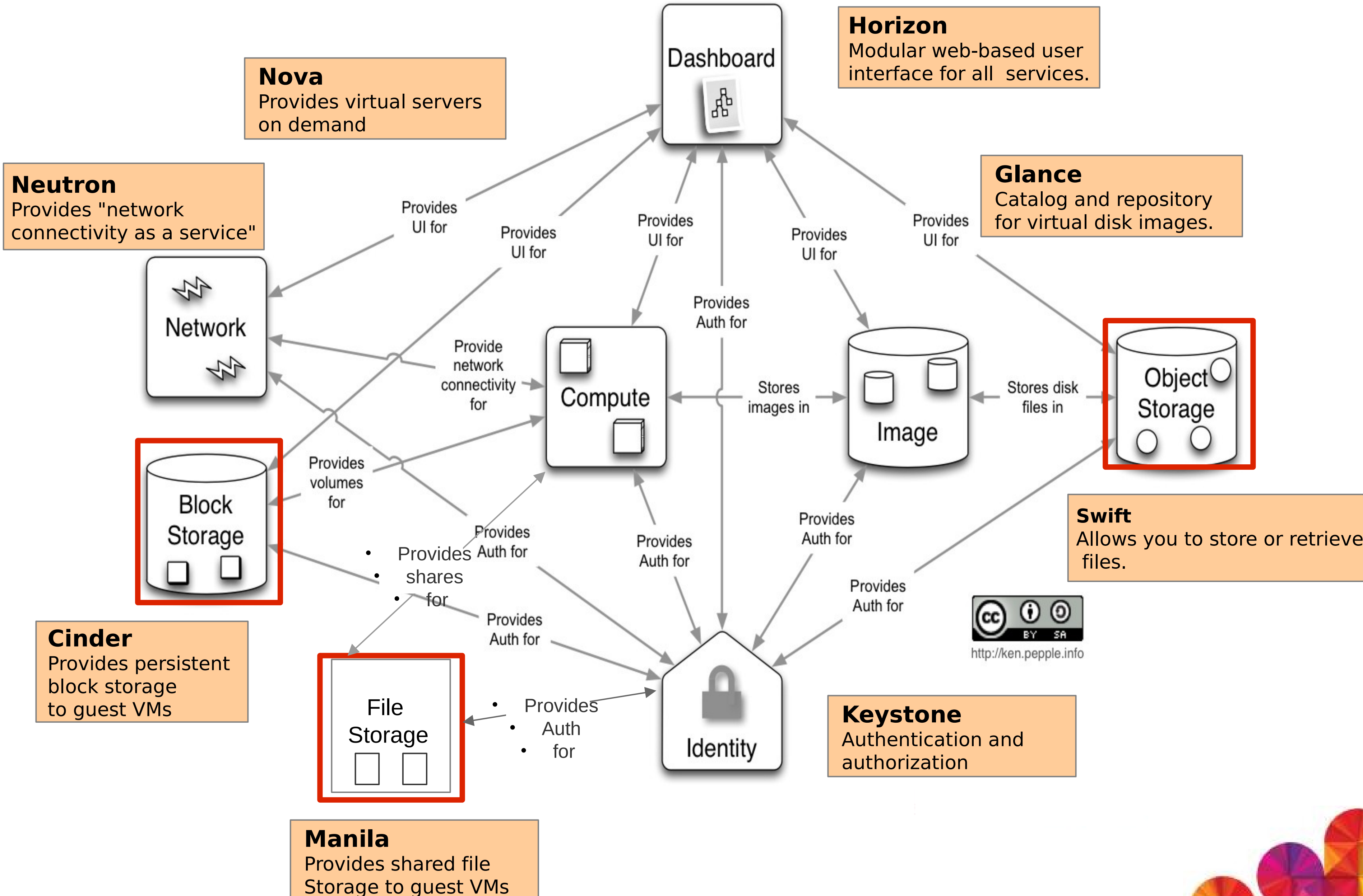
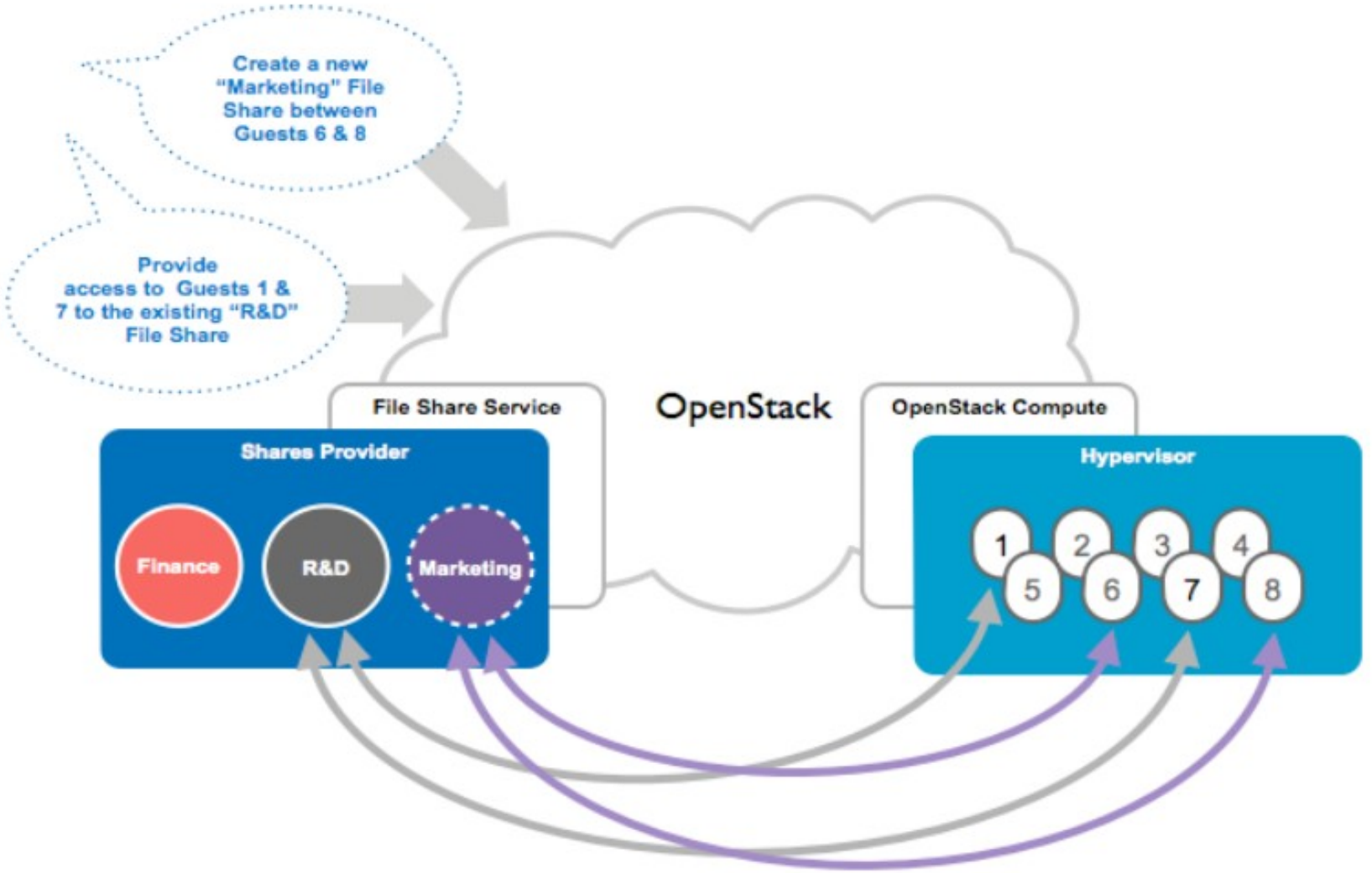
Openstack Manila
Shared File Systems Service
with IBM GPFS

OpenStack: Storage components



Manila Example



Manila Goals

- Provide **shared filesystem** service across OpenStack Compute instances
- **Vendor neutral API** for provisioning and attaching filesystem-based storage such as NFS, CIFS, and other network filesystems
- **Supported operations**:
  - Create/Delete/List file system shares
  - List, show, allow and deny access to file system shares
  - List share access rules
  - Create, list, and delete snapshots / clones of file systems shares
- See: https://wiki.openstack.org/wiki/Shares_Service
- Graduation Target – Review will happen before Kilo release
  - Progress: https://wiki.openstack.org/wiki/Manila/Graduation

GPFS Manila Driver

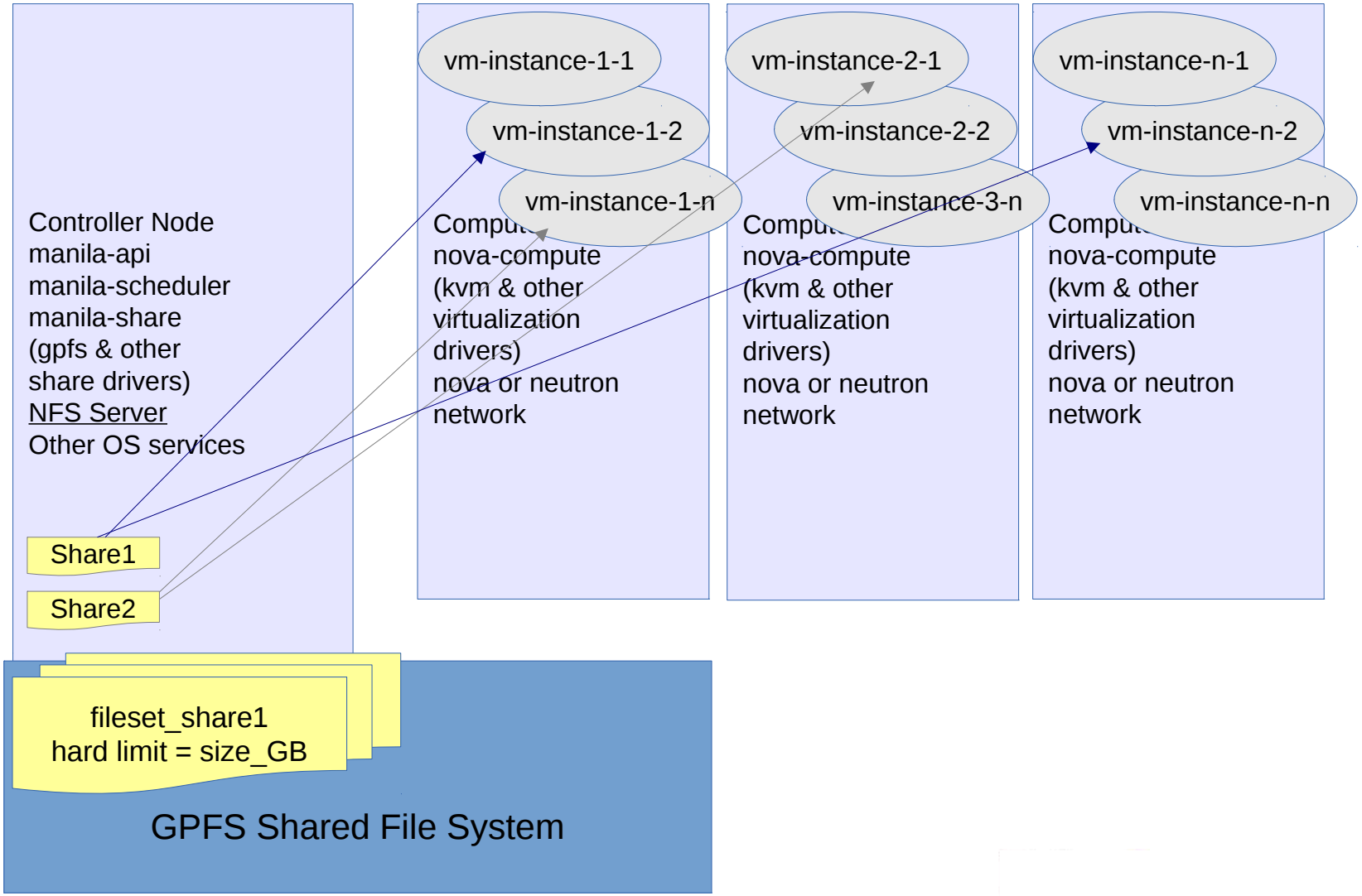
Current Functionality

- Added in OpenStack Kilo release
  - Supports kNFS and NFS Ganesha v2.0 protocols

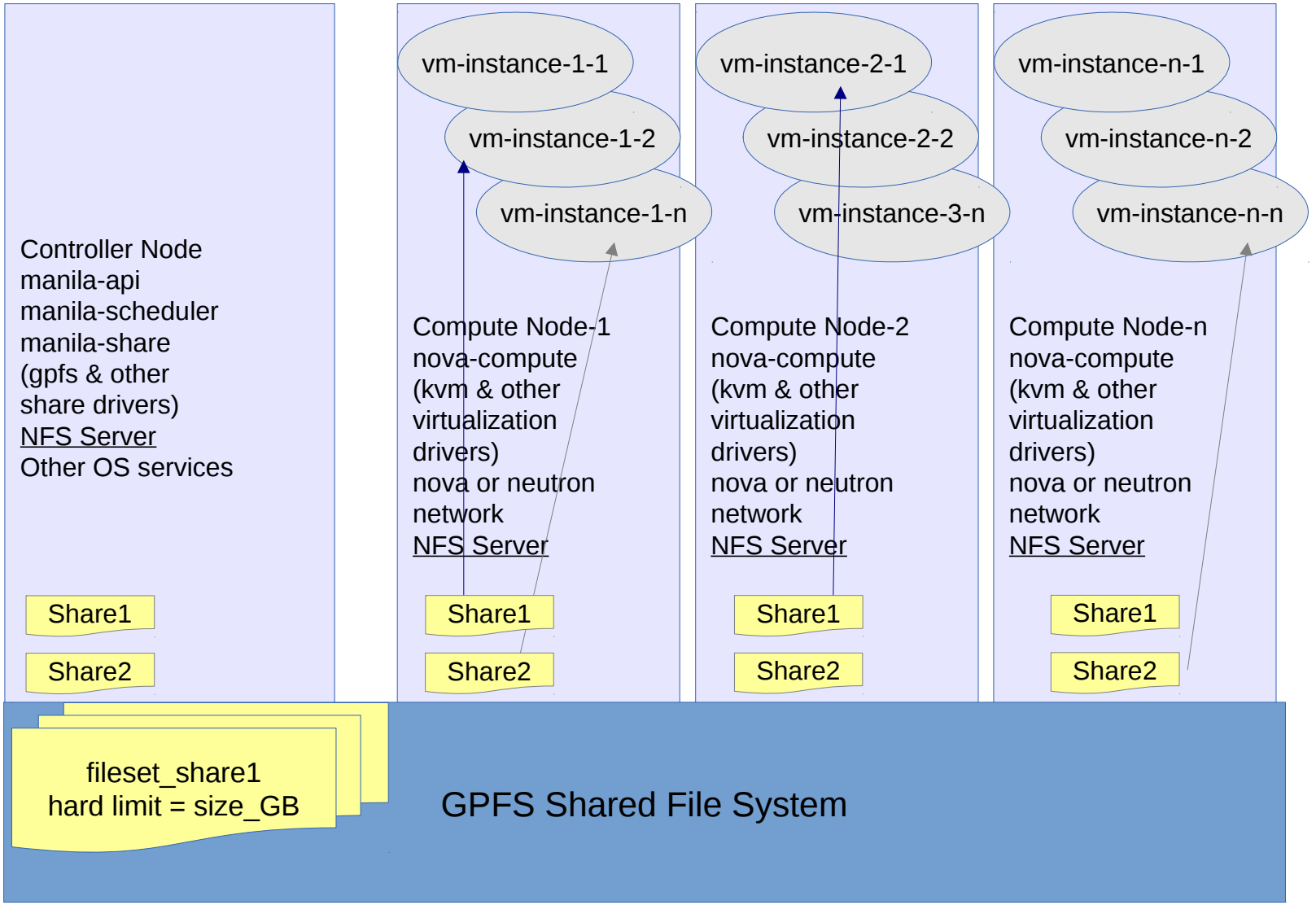
Future Roadmap

- Plan to add Ganesha v2.2 support
- Support for GPFS as a protocol
- Support Multi-tenancy
- Chef Cookbook support

Compute nodes not part of GPFS Cluster or Not running NFS Servers



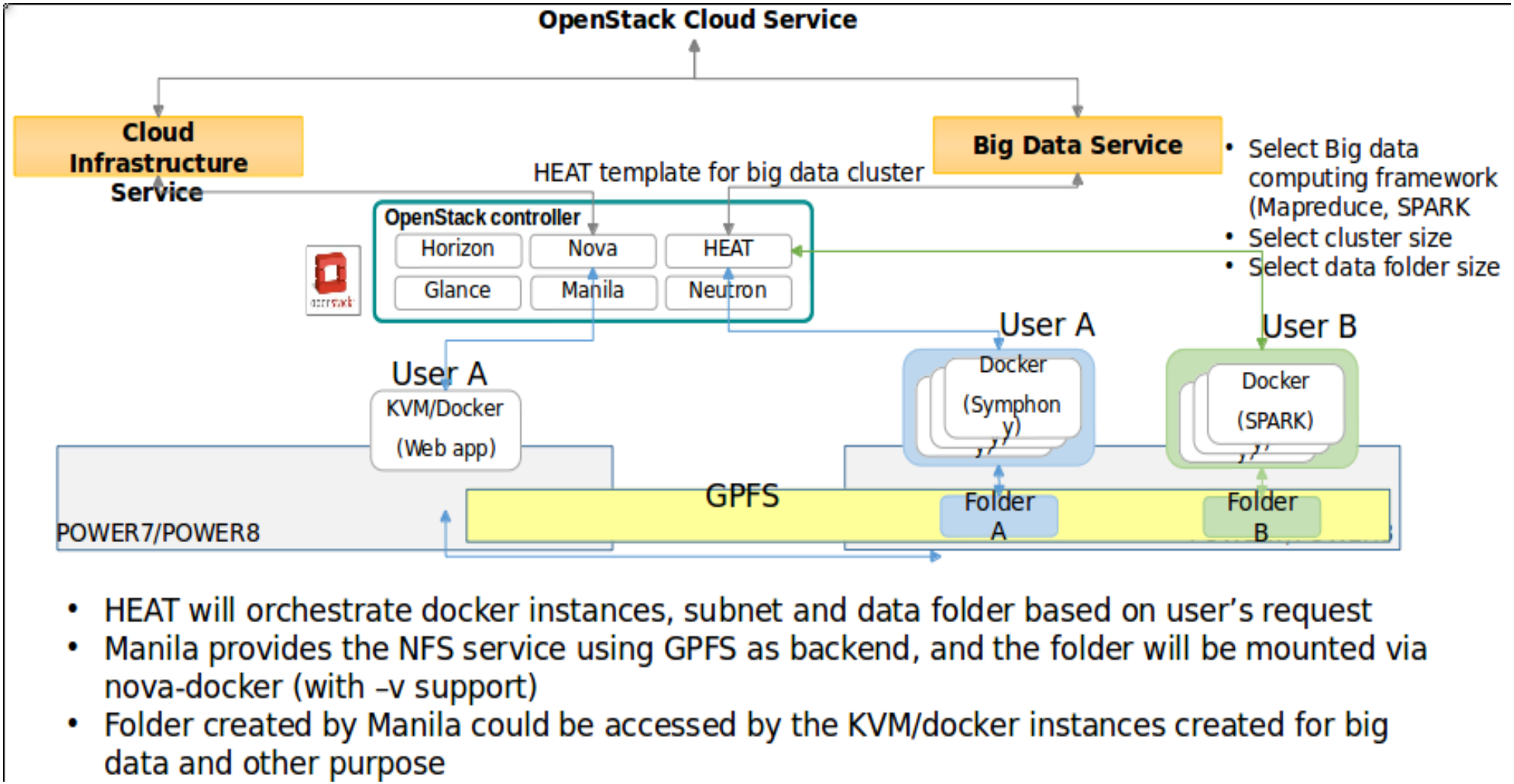
Compute nodes part of GPFS Cluster and Running NFS Servers



OpenStack
GPFS Manila Drivers
in-use

University focussed Cloud offering

Working on GPFS integration using OpenStack GPFS Cinder and Manila drivers



- HEAT will orchestrate docker instances, subnet and data folder based on user's request
- Manila provides the NFS service using GPFS as backend, and the folder will be mounted via nova-docker (with –v support)
- Folder created by Manila could be accessed by the KVM/docker instances created for big data and other purpose

References

OpenStack Manila wiki: https://wiki.openstack.org/wiki/Manila
OpenStack Manila demo: youtube video
OpenStack Manila on github: https://github.com/openstack/manila/