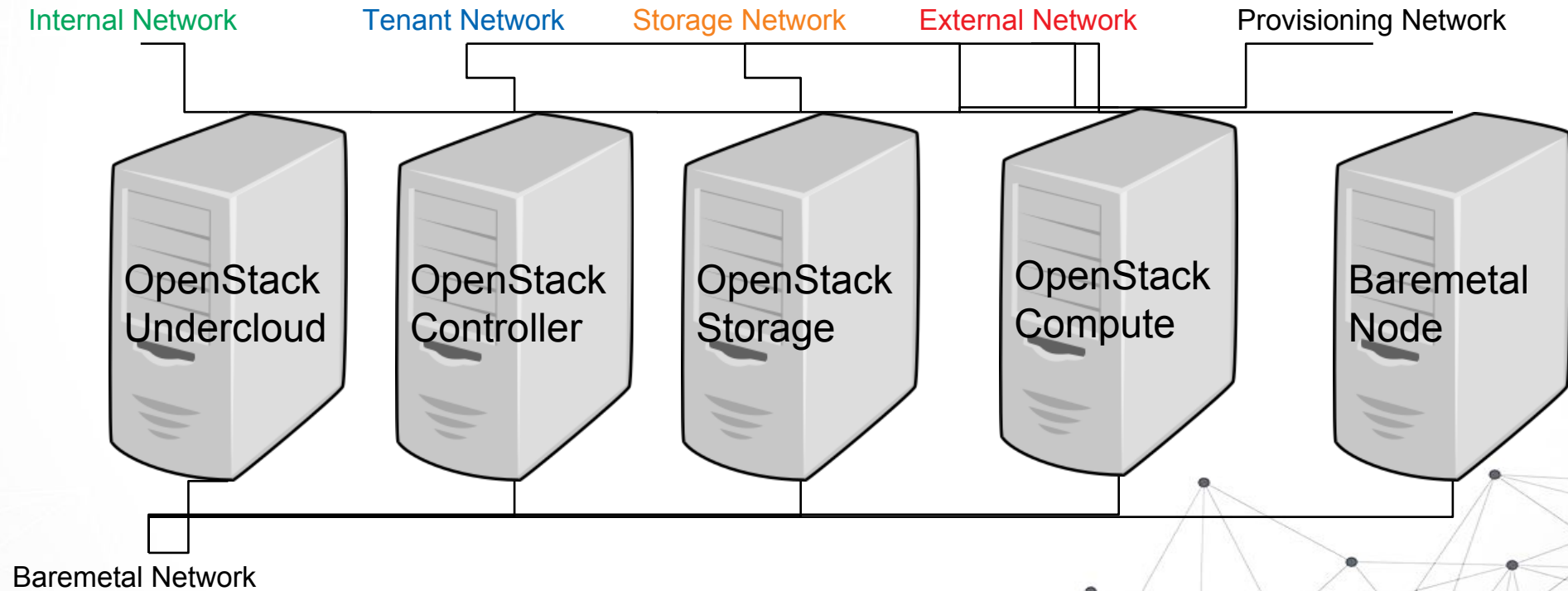


A decorative background featuring a network of interconnected nodes and lines, with some nodes highlighted in black and others in white. A thick horizontal line is positioned above the main text.

# cloudWerkstatt

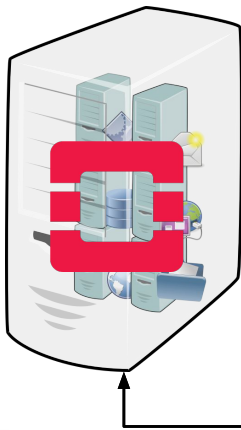
Cloudwerkstatt GmbH – Lassallestraße 7b – 1020 Vienna – Austria

# OpenStack Environment

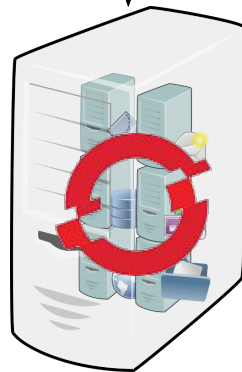


# Baremetal Nodes

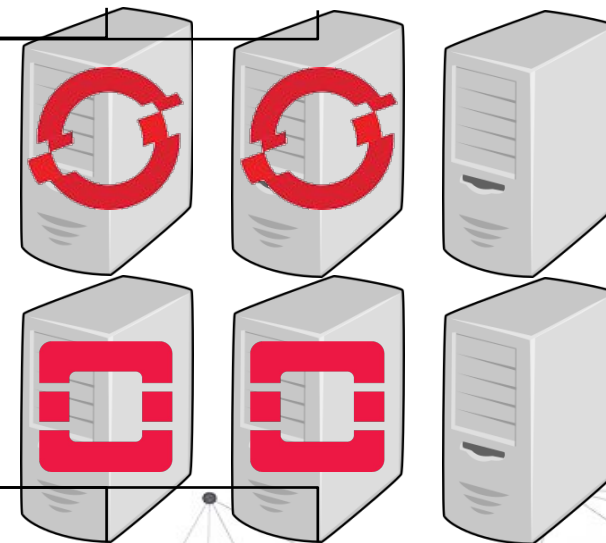
OpenStack  
Environment



OpenShift  
Environment

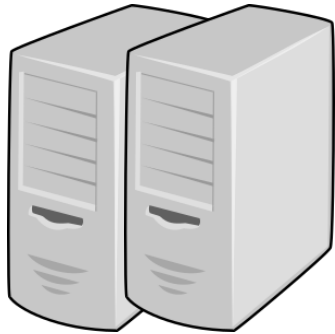


Baremetal Nodes

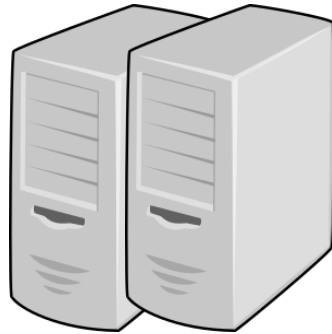


# OpenShift Environment

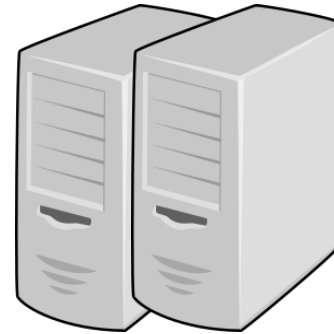
Master  
Nodes



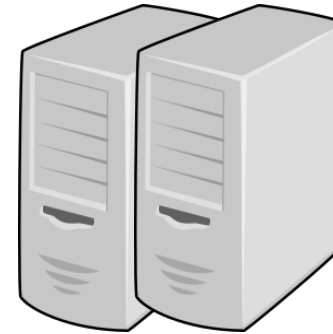
Infra  
Nodes



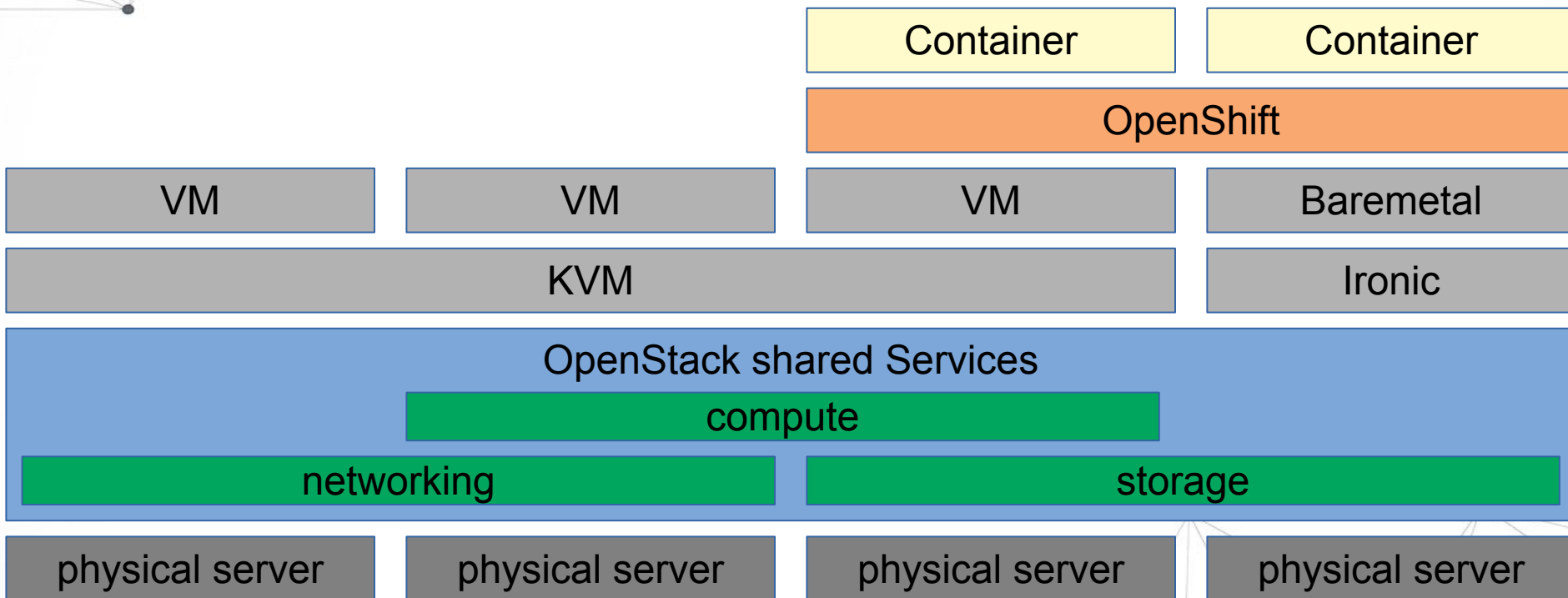
App  
Nodes



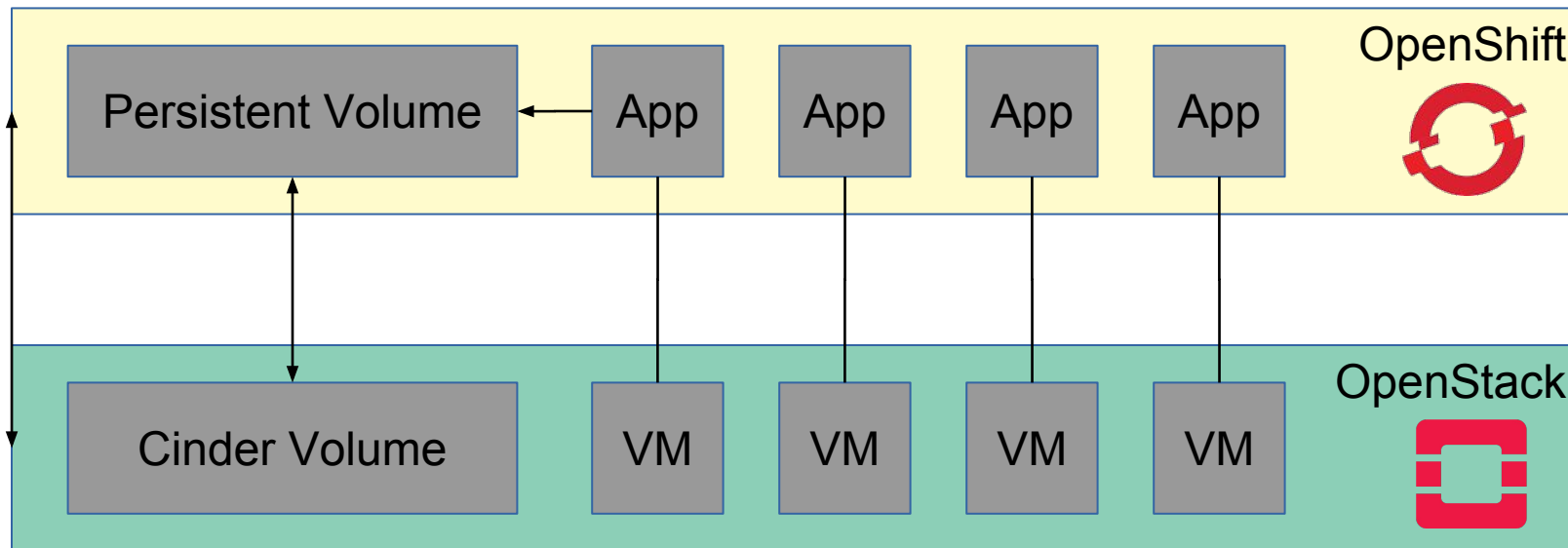
Baremetal  
AppNodes



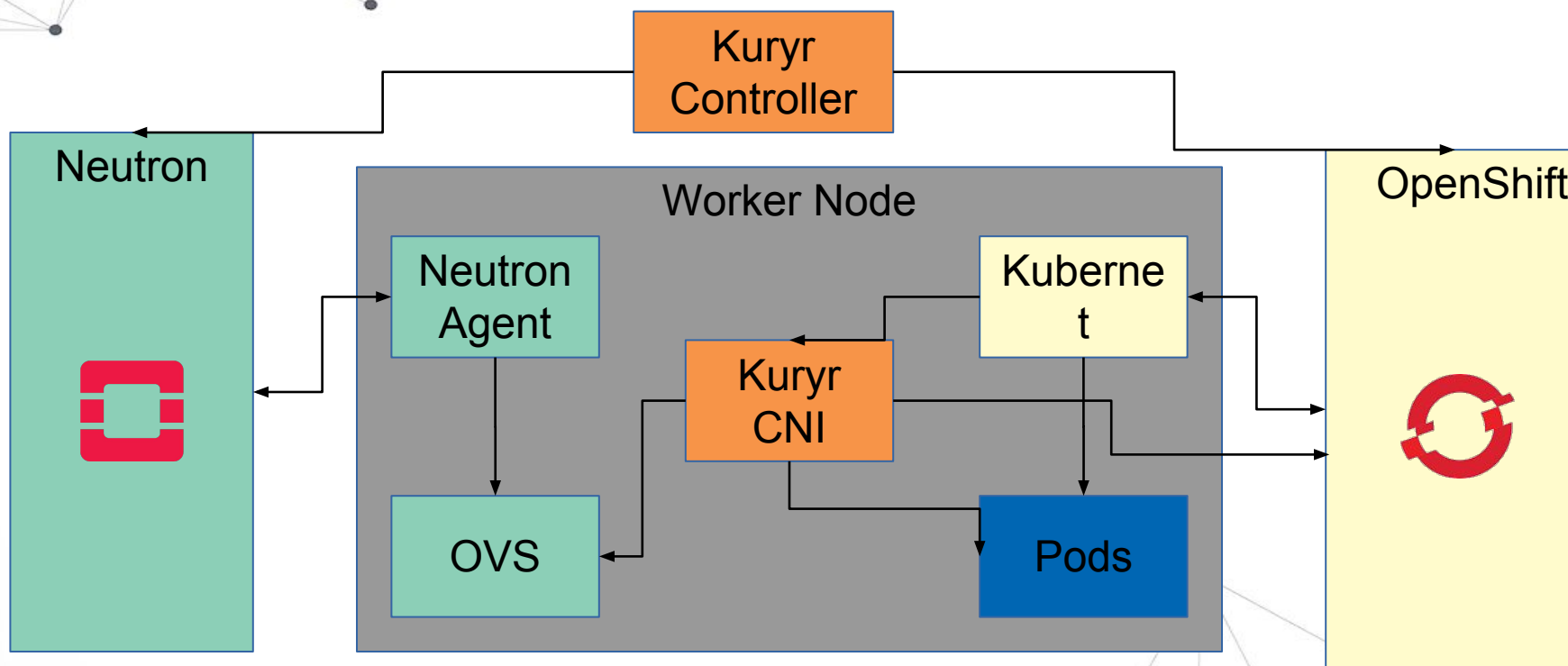
# Layer Overview



# Shared Storage



# Shared Networking



A background network diagram consisting of numerous nodes (dots) of varying sizes and colors (black, white, grey) connected by thin, light grey lines. The nodes are distributed across the slide, with a higher density in the top-left and bottom-right corners. A thick horizontal grey line runs across the middle of the slide, separating the title area from the list area.

# Shared Resources

- Virtualization
- Storage
- Networking
- Security



## • **Virtualization**

- Nova: OpenShift nodes are created in OpenStack as virtual machines (VMs).

## • Storage

- **Cinder:** Storage Class in OpenShift and Persistent Volumes (PV) can consume volumes implemented by OpenStack Block Storage service.
- **Swift:** Internal registry in OpenShift uses OpenStack Object Storage service as its storage backend.

## • Networking

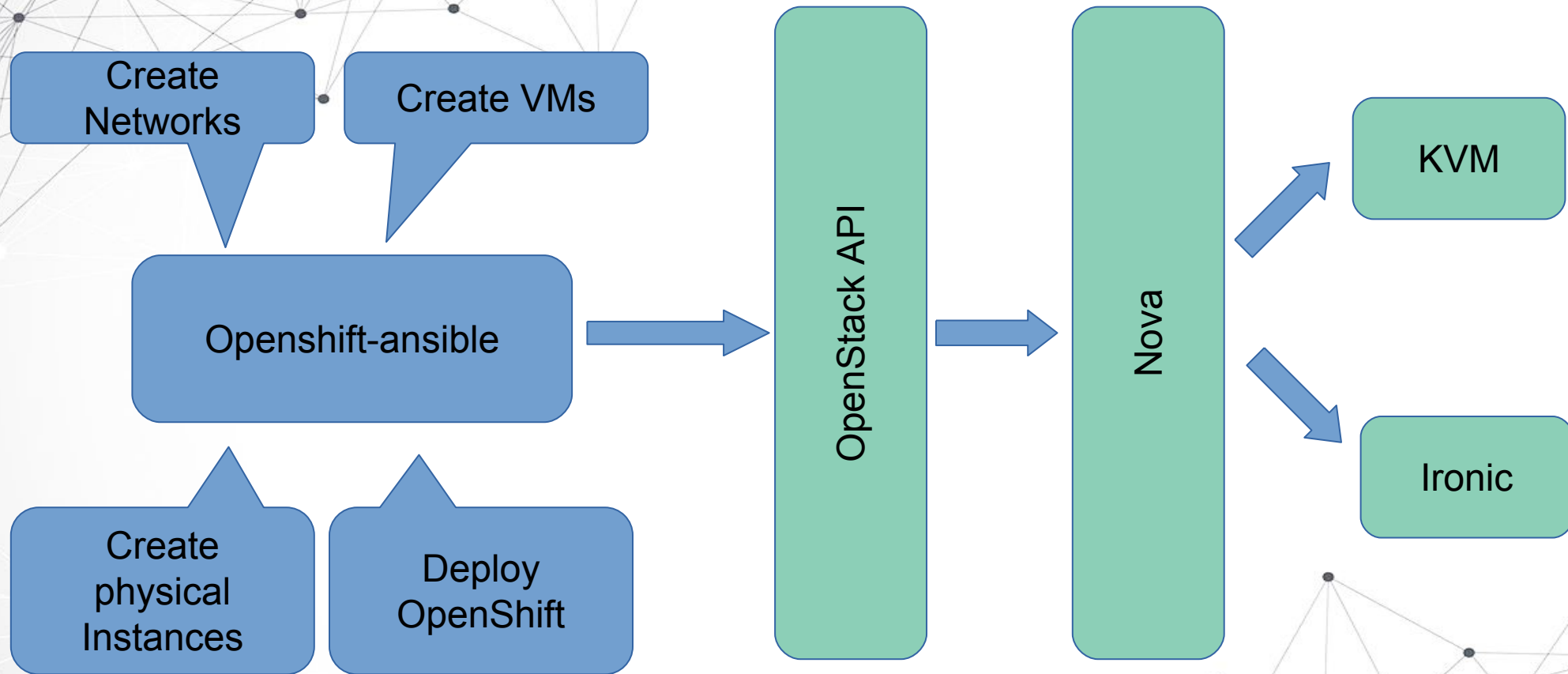
- **Neutron:** OpenShift uses OpenStack Networking to implement the service and pod networks.
- **Octavia:** Services inside OpenShift use OpenStack Load Balancer service to expose the applications.

## . Security

- . **Security groups:** Allow or deny internal and/or external communications with the OpenShift cluster.
- . **Barbican:** Consuming a Cinder volume can involve encryption of the disk using Barbican for key management.

- **Calls OpenStack API**
- **OpenStack provisions resources**
- **Deploys OpenShift**
- **Configures OpenShift**

# Provisioning Process



- **Increase Number of Nodes in Inventory**

- `openshift_openstack_num_nodes: x+new_nodes`

```
$ ansible-playbook --user openshift \  
-i openshift-ansible/playbooks/openstack/scaleup_inventory.py \  
-i inventory \  
  openshift-ansible/playbooks/openstack/openshift-cluster/node-scaleup.yml
```



## Upcoming features

- **Auto-scaling on OpenStack**
- **Designate (DNSaaS) Integration**



A decorative background featuring a network of interconnected nodes and lines, resembling a cloud or data network, in shades of gray and white. The nodes vary in size and are connected by thin lines, creating a complex web-like structure.

# cloudWerkstatt

Cloudwerkstatt GmbH – Lassallestraße 7b – 1020 Vienna – Austria