# OpenStack Ironic
# for
# k8s Baremetal Cluster Provisioning

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# About Me

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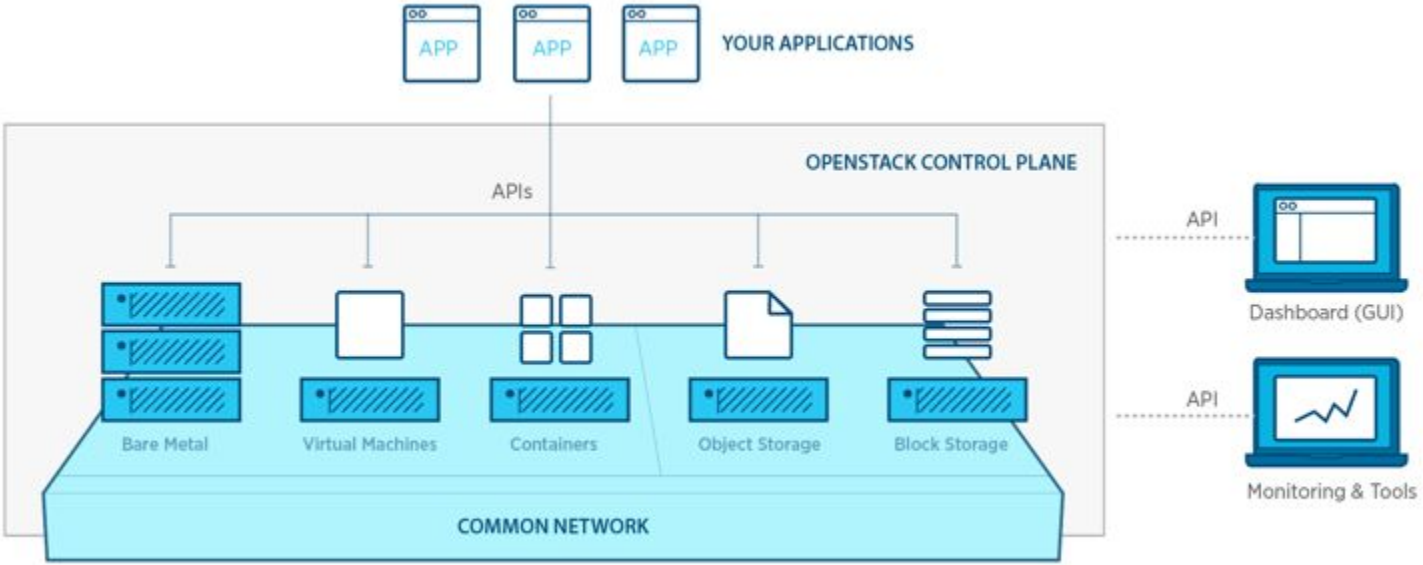
# What is OpenStack?



# The Open Source Application Stack

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- **Baremetal**

  Managing your hardware with ironic

- **Infrastructure Management**

  Deploying OpenStack with Infrastructure Containers

- **Application Management**

  Delivering Applications on OpenStack with k8s and Docker

# To Do

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- OpenStack + Ironic Setup
- Preparing Baremetal Node
- Build the Base Image
- Enroll and Provision the Baremetal Node
- Install Kubernetes

# Why Baremetal?

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Baremetal on trend

aws

## Announcing General Availability of Amazon EC2 Bare Metal Instances

Posted On: May 17, 2018

Amazon Elastic Compute Cloud (EC2) bare metal instances provide your applications with direct access to the processor and memory resources of the underlying server. These instances are ideal for workloads that require access to the hardware feature set (such as Intel® VT-x), or for applications that need to run in non-virtualized environments for licensing or support requirements. Bare metal instances are built on the Nitro system, a

**IRONIC BARE METAL SERVICE SEES SIGNIFICANT GROWTH AMONG PRODUCTION DEPLOYMENTS:**

From April 2017 to November 2017, there was a significant growth in production usage of Ironic from 9% to 20%; a notable increase was due to users running container orchestration frameworks on bare metal.

ORACLE Cloud

Infrastructure > Oracle Cloud Infrastructure > Compute

Compute

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## Fast and Scalable Compute Resources

From single-core VMs up to 52-core bare metal compute instances in large-scale clusters, Oracle Cloud Infrastructure compute instances scale for all your traditional and cloud-native

IBM

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Infrastructure

IBM brings the ease of containers to complex workloads with managed Kubernetes on bare metal

Among users who run Kubernetes on OpenStack, adoption of Ironic is even stronger with 37% relying on it.

***OpenStack User Survey 2018***

# Why Baremetal?

- High-performance (HPC) and data-intensive applications requiring minimal latency-related delays
- Big data analytic applications
- Container-based solutions
- SAP solutions
- GPU-intensive solutions
- Dedicated power for gaming
- Media, monitoring and streaming applications
- Applications requiring high degrees of security control
- Applications that have traditionally run in an on-premises environment

# OpenStack Ironic

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Ironic is an OpenStack project which provisions bare metal machines.

It may be used independently or as part of an OpenStack Cloud.

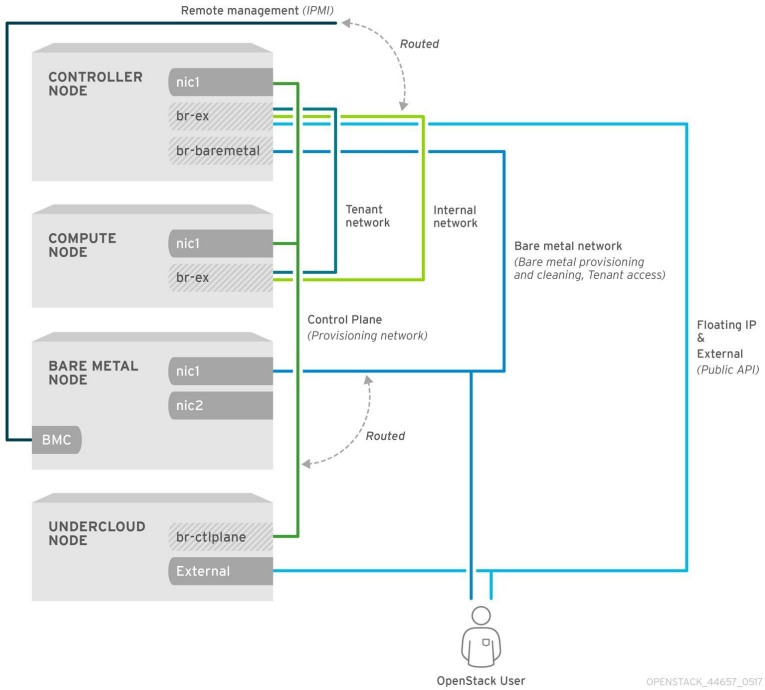
It integrates with the OpenStack Identity, Compute, Network, Image, and Object services.

https://docs.openstack.org/ironic/latest/install/

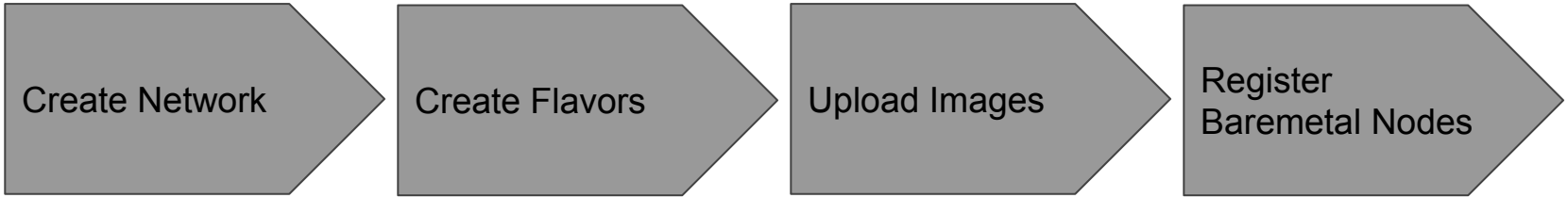
IRONIC

an OpenStack Community Project

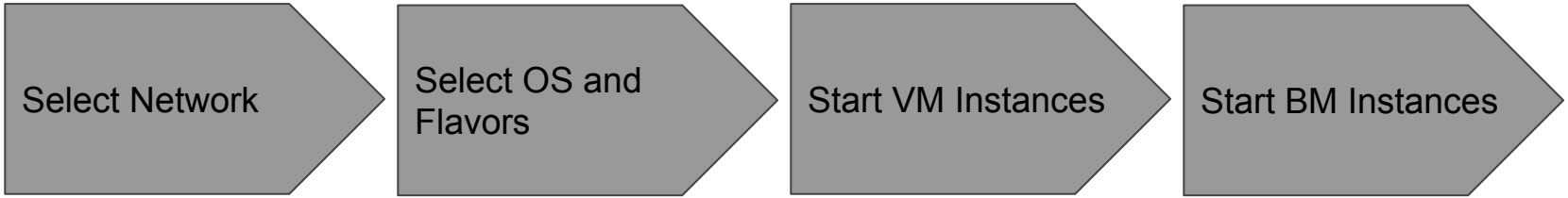
# OpenStack Ironic



# OpenStack Admin Workflow



# OpenStack Tenant Workflow



# Kubernetes on Baremetal

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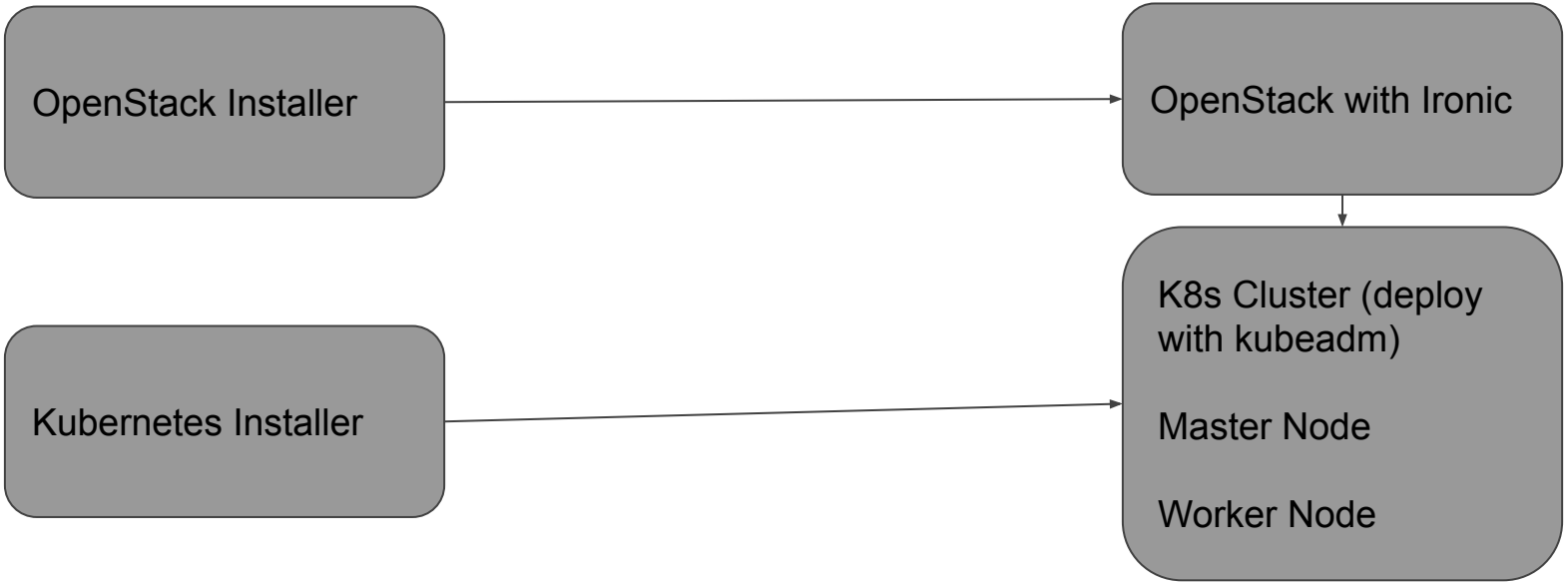
Deploy Kubernetes on OpenStack Ironic-managed baremetal nodes.

- https://github.com/openstack/magnum
- https://github.com/kubernetes/cloud-provider-openstack

# Kubernetes on Baremetal



https://www.btech.id/trainings

# BTECH TRAININGS GUIDE

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