Where is Ironic?
And where is it going?

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Project background

The “Bare Metal as a Service” project for OpenStack.

First released six nearly six years ago.

Ironic became part of OpenStack five years ago.

Since starting, 808 people from 96 organizations have contributed.

Train release: 103 people from 36 organizations contributed.
Ironic Adoption
Project integrations with Ironic today

IRONIC
an OpenStack Community Project

NOVA
an OpenStack Community Project

TRIPLEO
an OpenStack Community Project

KOLLA
an OpenStack Community Project
Ironic is growing with Metal³
Metal³

“Metal Kubed” was founded this year as a project to provide “Kubernetes-Native” interfaces to managing Bare Metal machines.

Metal³ leverages a Custom Resource Definition (CRD) to drive Ironic. This relationship has helped drive several of the new features in Ironic.

See: https://metal3.io
Ironic Tomorrow - Increasing use!
Velocity
Operator commits and total commits

Source: Ironic project repository commit logs
Committers

Source: Ironic project repository commit logs
Code added and Deleted

Source: Ironic project repository commit logs
Ironic is stable!

Clusters of 100s of machines are common

Ironic runs at scale!

Clusters of 4000 to 150,000+ physical machines are in production all around the world.
Train
New Features & Enhancements - Train

➡ Software RAID
  • Software RAID-1 root volumes and RAID-[0, 1, 1+0] data volumes can now be created using clean steps.

➡ Multicast DNS based discovery
  • Ironic's agent can now find ironic services via mDNS.

➡ Nova Power State Notifications
  • Less nova-compute and ironic-api overhead
  • Ironic is now authoritative for power state
New Features & Enhancements - Train

- **Deploy Steps support**
  - iLo, iLo5, iDRAC, Redfish now have steps for BIOS Setting/RAID configuration where applicable.

- **iDRAC Redfish interfaces**
  - Dell iDRAC operators can now choose between via WSMAN or RedFish.
New Features & Enhancements - Train

➡ Redfish Virtual Media

• Redfish compliant virtual media device support has been added for booting the ironic agent. This is known to work in cases where special actions are not required after attachment.

➡ Redfish Sensor data collection

• Sensor data such as fan speed, temperature, power, drive health.

• Sensor data can now be sent for undeployed nodes!
New Features & Enhancements - Train

- Running machine introspection data may now be updated
- [i]PXE Boot retries
- Global “deploy_kernel” and “deploy_ramdisk” settings
Ussuri
Under Development
Ussuri Features/Enhancements

- idrac Virtual Media support
- Automatic Serial Console port allocation
- Continuing Software RAID
  - Raid 5 and 6 added for data volumes.
  - We may also see the ability to constrain the raid sets as well before the end of the current development cycle.
- Multitenancy concepts of the Ironic API through ownership and lease relationships
  - More privilege delegation will be possible.
Ussuri Features/Enhancements

- Baremetal node Retirement support!
- Security enhancements for "Edge" machine management
- Indicator LED control is on track to merge after security enhancements.
Under development!

- DHCP-Less Provisioning using Virtual Media
- Kexec for Deployments
- Persistent Agent
Questions? Want to contribute?

Join #openstack-ironic on irc.freenode.net

Say “Good Morning!” and feel free to ask questions!
More Information

Documentation

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

Storyboard

https://storyboard.openstack.org/#!/project_group/ironic

Release notes

https://docs.openstack.org/releasenotes/ironic/unreleased.html
THANKS.
Questions?