Automate Bare-Metal Management Across Distributed Networks

CSPs turn to OpenStack Ironic for bare-metal automation/management and Dell EMC for optimized server configurations

Communications service providers (CSPs) who want to automate and optimize hardware deployment — either in the data center, at the far edge, or anywhere in between — are choosing OpenStack® Ironic to provision, deploy and manage bare metal more easily throughout the lifecycle.

An OpenStack project, Ironic is an interface that allows physical servers and switches to be managed as though they were virtual machines (VMs). It provides a vendor-neutral, standards-based management solution (used independently or as part of an OpenStack cloud) to drive automation across all server hardware — even at remote sites.

Ironic gives users complete open-source freedom to pick the hardware they want, optimize the configuration for specific workloads or needs and radically simplify lifecycle support.

Ironic-enabled Dell EMC PowerEdge servers

The good news for CSPs looking to modernize and simplify is that firmware on most Dell EMC servers is already Ironic-enabled, so it’s even easier for those running Dell EMC server hardware (such as Red Hat® OpenStack users and those in the Kubernetes® community) to automate and manage that hardware across its lifecycle.

Dell EMC servers include remote management support via Redfish, WS-MAN and IPMI. Ironic provides community-maintained drivers, like Redfish, IPMI and PXE, among others. In addition, Dell provides and supports the Ironic iDRAC driver, which delivers extended functionality beyond the community drivers. The iDRAC driver is designed as a hybrid that can be configured to use Redfish where possible, and WS-MAN in other cases, to provide extended functions.

“Ironic is important for edge computing user stories because edge computing requires a small footprint and the ability to manage and deploy application instances over WAN networks.”

Dell EMC provides third-party continuous integration (CI), making sure that enhancements to Ironic work with PowerEdge server hardware. We’re also continually adding support for new Dell EMC servers so that CSPs can choose from a broad range of Ironic-enabled Dell EMC server options. In addition to supporting existing hardware like Dell EMC PowerEdge R640 and R740 Servers, we plan on offering support for the Dell EMC PowerEdge XE2420 Edge Server, designed specifically for the network edge and telecommunications use cases.

Key benefits

- **Freedom to choose** infrastructure components for your specific configuration or workload requirement.
- **Peace of mind** with certified products that are ready and easy to use.
- **Investment protection** with long-life Intel® Xeon® processors in PowerEdge R-Series servers.
- **No vendor lock-in** with open technologies that enable access to components from a wide variety of commercial third-party vendors.

Dell EMC enhancements keep pace with latest OpenStack release

In addition to functionality enabled with the current OpenStack Train release, Dell EMC is offering the following enhancements with the Ussuri release:

- Continued iDRAC driver support for Redfish
- Support for the PowerEdge XE2420 Server
- Virtual media boot support
- Addition of Sushy CI and maintenance of Ironic CI
Why choose Dell EMC server hardware and Ironic?

Dell Technologies is a founding member of the OpenStack Ironic project. We’ve been working on this project since its inception, and we’re committed to making sure telco service providers who want to manage their bare-metal server assets more easily with Ironic — either independently or in the cloud — are getting the interoperability and carrier-grade performance they demand. Together, we bring integrated products to market that simplify management at scale, speed the lifecycle management process and help lower your operating costs along the way.

Dell Technologies and AT&T® are working in the Airship community to add support for bare-metal management by Airship utilizing Ironic. Read the article.

Resources

- Read our blog, "Back to Bare Metal with Dell EMC and Ironic," to learn about our first public Dell EMC product release with Ironic.
- Manage Dell EMC server hardware in an OpenStack environment. Read the Dell EMC technical guide, “Managing Dell EMC Hardware with the OpenStack Ironic iDRAC Driver.”