

## Baracus: Novell's New Open Source Network Boot Project

By Sean Michael Kerner, InternetNews.com

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Novell officially announced the Baracus open project this week as a new effort to provide a network-based boot manager for provisioning and managing systems. Baracus includes remote boot, provisioning and power management as well as the ability to image, clone and backup systems. With Baracus, Novell is aiming to provide expanded remote boot capabilities beyond what is currently available in open source by way of the Etherboot project and its related technologies.

"Baracus leverages etherboot/gpxe as a network-aware BIOS bootloader to chain a managed payload," Daniel Westervelt, principal architect of the Baracus project told InternetNews.com. "Legacy pxe had become too limiting in its ability to scale and provide higher level networking functions necessary for modern data center deployments."

The Baracus server runs on Novell's SUSE Linux Enterprise Server (SLES) as well as on the Novell sponsored openSUSE community Linux distribution. Westervelt noted that supported client endpoints include x86, x86\_64, amd, amd64, s390x/mainframe or virtual KVM, Xen, XenServer, Vmware ESX and Virtualbox.

"We also support a wide variety of OS targets including SLES, SLED, openSUSE, RHEL, Fedora, Ubuntu, Windows, XenServer, ESX and Solaris-x86," Westervelt said. "A specific 'one-off' type driver or configuration requirement can be easily managed via Baracus configuration containers. These containers are used to define things like hardware and/or network classes."

Baracus can also be tied into Novell's SUSE Studio effort which enables developers to build custom Linux software appliances. In terms of leveraging an existing system, Baracus provides cloning capabilities.

"We also support a clone feature that can automatically generate a golden image of a system to be deployed and booted elsewhere," Westervelt said.

In terms of data storage, no user data is stored on the local machine, all data is stored within Baracus. Westervelt noted that the Baracus database is based on the open source PostgreSQL database. He added that PostgreSQL has now been integrated to the point that it can be viewed as a 'black box' datastore.

In developing Baracus, there are a number of key challenges that the project faces. Westervelt said that the biggest technical challenge is balancing features with usability and stability.

"One of our goals is to support the widest variety of hardware platforms and operating system distributions, but with that comes a lot of complexity that we need to manage," Westervelt said. "In addition, given the need for this type of system management solution, we are sometimes challenged to meet the demands of our diverse user base for internal product consumption, partner driven integration and community use."

While Baracus is being announced by Novell, it's not intended to be a Novell-only effort.

"We are currently collaborating with some other open source projects and will continue to work to build an active, thriving Baracus development community," Westervelt said. "We are also working with some key Novell partners on delivering Baracus enhanced offerings to the market."

According to Westervelt, Baracus is currently production ready for the command line interface. Moving forward Baracus Version 2.0 will have complete REST API and version 2.1 is targeted to have new web interface. The target for the Baracus 2.0 release is mid January 2011.

Sean Michael Kerner is a senior editor at InternetNews.com, the news service of Internet.com, the network for technology professionals.