hp IT contributes to open source

As the worldwide Linux market leader, HP understands the role open-source technology should play in today's IT environments. End-to-end Linux solutions from HP allow companies to build always-on infrastructures with an open, stable foundation. HP's Linux and open-source strategy, the most comprehensive in the industry, covers systems, software, services, and peripherals. It also includes a commitment to continually contributing key technologies to the open-source community.

The success of Linux and other open-source software requires an ongoing exchange of ideas between consumers and producers. Increasingly, HP is playing both roles--and even blurring the distinction between the two. Like many HP customers, HP counts on open-source to save time and money. HP's IT professionals rely on existing Linux and open-source solutions every day, but they also contribute to those solutions and even create them, always returning their innovations to the rest of the open-source community.

trusting DNS to open source

Few systems are more critical to a company than its domain name system (DNS), and HP runs the open-source DNS software BIND (Berkeley Internet Name Domain) on more than 60 Linux servers throughout its network. Relying entirely on open source for DNS wouldn't be surprising news for most Internet companies, but it's not so common for a company of HP's size.

Beyond using BIND, HP IT professionals have also contributed to its evolution. "One recent contribution," says Enterprise Network Solutions DNS Architect LaMont Jones, "was sorting forwarders to improve response time for the client and spread server load in installations similar to HP's DNS infrastructure."

HP also relies on open-source software to handle incoming Internet e-mail. All messages addressed to user@hp.com are handled by an open-source messaging application called Postfix, which has provided better performance and security than commercial alternatives while remaining highly amenable to ongoing development.

"Postfix's upstream maintainer is very open to useful enhancements, and its design gives you many small building blocks with which you can build a solution to most challenges," says Jones, who helped enhance Postfix to natively support dynamic groups defined in an LDAP directory ("all IT employees in the U.S.," for example).

The benefits of software such as BIND and Postfix go beyond such functional improvements. Instead of paying a vendor for ongoing support, HP's own staff continually enhances and customizes the software. Jones works on open-source code on his own time, but considers that work an important part of his mission to make HP's DNS infrastructure as cost-effective as possible. "We push code changes upstream not just because it's the right thing to do--it's also the inexpensive thing to do," says Jones. "Eliminating the locally maintained version of the code all but eliminates long-term maintenance costs by making them part of the aggregated maintenance cost shared by the community."

LinuxCOE simplifies system deployment

LinuxCOE (common operating environment) is an implementation standard developed by an HP team to more effectively manage the deployment of large-scale Linux boxes within HP—a task that became more important than ever when HP began shifting its network infrastructure to Linux.

"By making all systems similar from a support perspective," explains HP LinuxCOE Program Manager Craig Lamparter, "LinuxCOE saves time and money." LinuxCOE provides the tools, processes, and recommendations that enable operations engineering teams to choose the optimal Linux hardware platforms, install standardized Linux systems with predefined or customized Linux service definitions, and administer Linux platforms throughout their production lifecycles.

LinuxCOE has helped HP achieve some of the same types of cost benefits as its Linux-using customers. For example, solutions that formerly had to be deployed on high-end servers at HP can now be deployed on more affordable Netserver LPr or ProLiant servers, at a savings of about $25,000 each.

Samba solution protects investment

The @HP Portal gives HP employees one-stop access to all kinds of employment, compensation, benefits, and other information. As it was being developed, HP needed a way to authenticate employees' passwords. HP's enterprise directory ran exclusively on HP-UX and Linux, but the company already had a large-scale, enterprise-wide Windows NT domain infrastructure with effective mechanisms for password management.

Kartik Subbarao, HP's Enterprise Directory Architect, recalls, "We weren't too eager to come up with a new password infrastructure that we'd have to manage and maintain. We thought, 'Look, we've already paid for this NT domain infrastructure--is there any way we can leverage that?'"

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Enter Samba--open-source software that enables all types of Unix to work seamlessly with Windows. "Rather than implementing an additional password mechanism locally in the directory," Subbarao explains, "we took a small piece of code from Samba, which provides the ability to bind to NT domain controllers. That saved us a lot of money, both in software costs and in the labor costs of implementing a new password mechanism." HP shares the innovation, officially called the NT Authentication Plug-In, with the rest of the open-source community. It is available at http://sourceforge.net/projects/dsntauth.

Linux tools replace commercial apps

HP Customer Engineers (CEs) working at customer sites need a wide range of easily accessible networking and security tools. They used to pack around a set of various commercial software tools with their laptops. Recognizing that most of the tools CEs needed were available in open-source versions, HP Customer Engineer Bruce Kives came up with a better way. He developed the Linux Omnibook Toolkit on CD (LOT-CD), a self-contained toolset that boots into Linux and replaces many formerly used commercial equivalents.

LOT-CD not only gives CEs easier access to powerful tools, it also saves HP a lot of money. "Say you need to look at the actual data packets to figure out a LAN problem," Kives explains. "You could use tcpdump from an HP-UX system, but it's command-line oriented and slightly difficult to use. You could pay a few hundred--or a few thousand--dollars for a commercial tool. Or you could use Ethereal, an open-source tool that's point-and-click easy. And you don't have to install anything--you just boot off the LOT-CD."

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The idea behind LOT-CD is to provide the best, most accessible tools, whatever the task. To Kives' surprise, one of LOT-CDs most popular features has been Windows backup and recovery.

jabbering away

Jabber is an open-source XML messaging platform that enables users to communicate through different instant messaging (IM) servers and platforms without separately logging in to each of them. While on Jabber, you can easily plug in a connector to any major IM server, including MSN, AOL, Yahoo, or ICQ. You can be simultaneously accessible through all these different IM platforms while retaining your company's internal communications on your own servers.

HP employees use a commercial version of Jabber from Jabber Inc., but HP IT pros have also contributed enhancements to Jabber's security and directory integration. Enhancements that are accepted by the Jabber community are typically integrated into the commercial implementations of Jabber fairly quickly. That allows HP to get the benefits of a commercial app while maintaining the ability to positively influence the development of the underlying open-source software framework. In effect, HP is helping to design the software it buys.

HP's day-to-day experience creating, using, and enhancing open-source software helps the company distinguish solutions that will save time and money from those that aren't worth the effort. Just as producing open-source solutions has made HP a smarter user of those solutions, using them has made HP a better producer.

For more information about HP Linux Solutions, visit: www.hp.com/Linux

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