

### Creating tailored Linux distributions

# Spin It

maddog considers the benefits of building your own spin distro. *By Jon "maddog" Hall*

I was recently in Nigeria attending Idlelo 5, which was attended by Free Software leaders from all of the countries of Africa. At the end of the conference, I was talking with a bright young man whom the conference attendees recognized as an "up and coming" programmer. I asked him what projects he was working on, and he told me he wanted to start a distribution. I admit that I winced because I know there are already more than 500 GNU/Linux distributions (some people say 600, but not all of them are active).

I asked why he wanted to create his own distribution, and he said he wanted one that was "tailored for Africa," with African screen savers, desktop backgrounds, translations, and various other things. He also told me that he wanted to learn how to create a distribution.

Although I can appreciate that he wants to learn, I pointed out that creating a distribution was a lot of work and he might be able to spend his time better if he did another project or helped another distribution make their distribution better. After all, when you have your own distribution (particularly one you want others to use), you have to set up servers to download it, write documentation, do your own testing and bug tracking, and so on. Thus, it's much harder to leverage what other people have done.

Creating a full distribution not only requires a lot of work but also involves people using the distribution and becoming dependent upon it. If that distribution is only for your use, then that means a lot of work for a small audience.

Of course, today what a lot of people call a distribution, other people call a "spin" – a repackaging of a distribution into a tailored set of packages for a particular use. This approach takes advantage of all of the work of the underlying distribution and allows you to tailor the packages and installation to your needs. Many, if not all, of the major distributions support making a spin, and some even have tools for creating spins. OpenSUSE

has SUSE Studio [1], which allows you to build a spin from their stock components, and Fedora has "Revisor" with a nice graphical interface. Debian has a web-based build mechanism called "Debian Live Project" [2] that allows you to specify your base packages.

By creating a spin, you may eliminate the need to download the entire eight (or nine, I have lost count) DVDs of binaries for a complete distribution like Debian, perhaps getting all you initially need to fit on one CD-R or DVD. Once you have created the .iso image, you can download it one time, put it on a DVD-R or thumb drive, and install as many systems as you want. Unfortunately, most of these tools work only in the Intel/AMD instruction sets, and ARM, Motorola, and other architectures are left out in the cold, even if the base installation supports them.

Another way to create a tailored distribution is to use a tailored startup script, answering a series of questions as if you were typing them at the console. This ability has been around for a number of years and is usually used to install a lot of servers at one time in a standard way, but it could also be used to create a custom distribution by having the script install a standard distribution, pull additional packages off the net or elsewhere, and execute the commands needed to tailor the distribution the way you want. This approach has the added advantage of being able to utilize distributions of different architectures (e.g., ARM, Motorola, PowerPC, MIPS), usually with either the same installation script or minor changes.

Installation scripts is the technique Project Cauã [3] will be using to install millions of servers, thin clients, and virtual systems. The project members considered creating their own distribution, but using this technique, the same result can be achieved with far less work. And, it will maintain the necessary closeness to the base distribution for sending bug fixes and enhancements upstream.

At this point in the life of GNU/Linux, I would encourage those people that want to create their own distribution to seriously consider working with an existing distribution instead. Join their team and learn how they create a distribution, then put your own spin on it. ■■■

#### INFO

- [1] SUSE Studio: <http://susestudio.com/>
- [2] Debian Live Project: <http://live-build.debian.net/cgi-bin/live-build>
- [3] Project Cauã v0.5: <http://www.linuxpromagazine.com/Issues/2011/130/Doghouse-Business-Incubator>

