

ROCK Linux Build System 2.0: Towards A Meta-Distribution

by Chris Hamilton & Jocelyn Yeo

Abstract

This poster explains the proposed 2.0 Build System of the ROCK Linux distribution, by means of which ROCK is evolving into a meta-distribution. This will be of particular interest to sysadmins and advanced users, especially obsessive control freaks.



ROCK Linux is a scripted build-from-source distribution, founded by Clifford Wolf in 1998 and maintained with the help of several volunteers from all over the world. It was designed to be easy to customize, and is usually described as an “admin-friendly” rather than “user-friendly” distribution.

Simplicity, clean builds, security, and flexibility are the major points of its philosophy. This poster will illustrate how these principles are upheld in the proposed 2.0 build system.

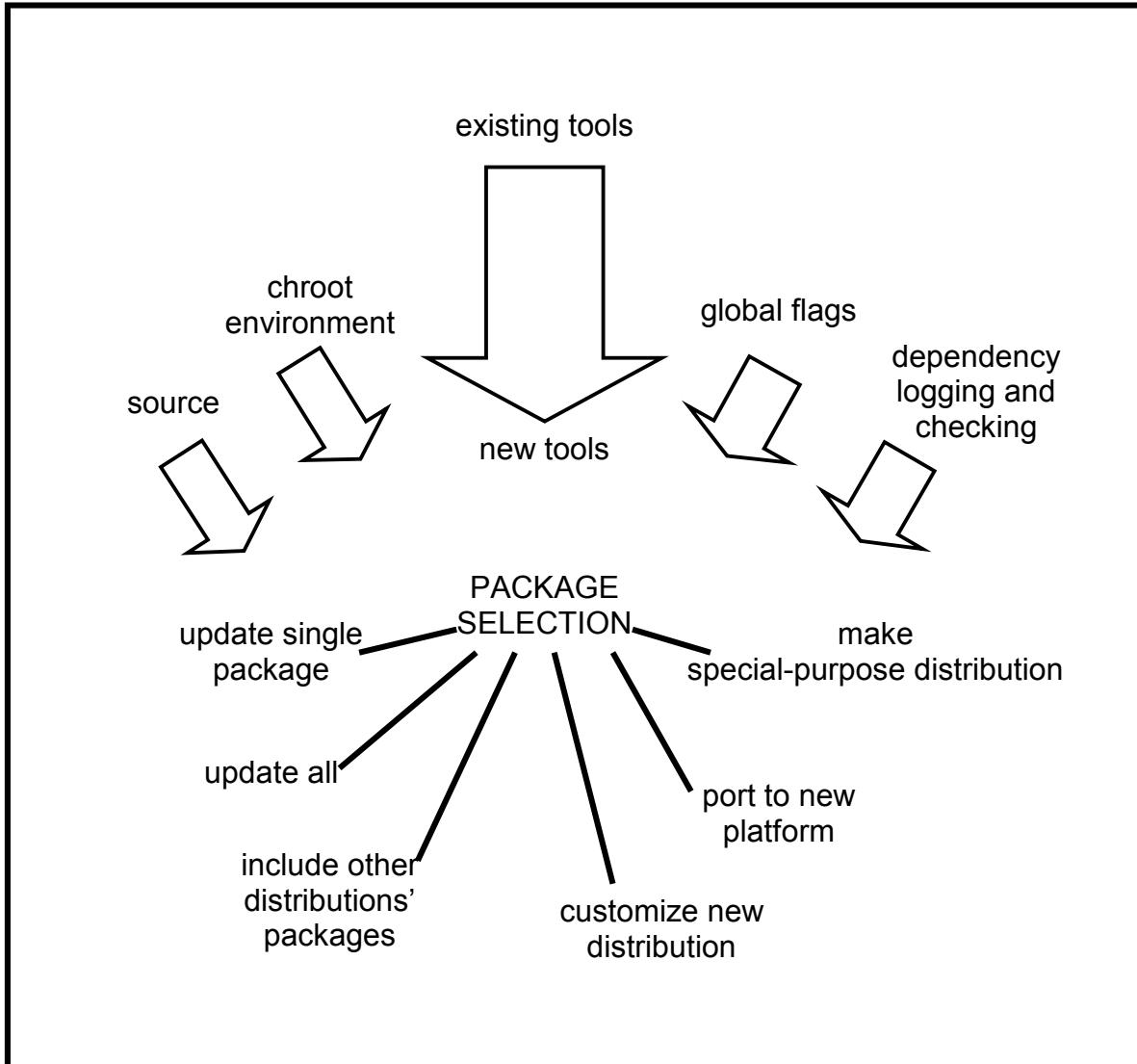
ROCK already implements building under chroot, and uses a clean environment to remove host-dependent environment settings. An important concept unique to ROCK is the bootstrapping build sequence, where the existing build toolchain is used to compile a new toolchain. This is then used to compile the rest of the source code, thus sidestepping problems with legacy code and incompatibilities.

The 2.0 build system will have several new features including the use of global flags to specify compiler, configure, environment and/or make options, as well as full dependency logging and checking. The package maintenance system will implement various methods, including individual package updates from source and complete system updates via a BSD “make world”-like method.

ROCK is working towards becoming a “distribution toolset”. Customizable distributions and ports, including the existing sub-distributions of ROCK, will all be derivable from a common framework. Package selection will be separate from the build system. Because dependencies are handled outside the actual build script, even other distributions’ package systems may be included. The common framework will streamline development, simplify package maintenance and limit the problem of long-unmaintained packages.

An outline of these design principles and implementation plans will be given, together with brief examples. We believe that the clean toolset concept of the new system, which has the potential to benefit all Linux users regardless of their distribution preferences, is the logical conclusion in the natural evolution of source-based distributions. Discussion is welcomed from all members of the Linux community.

ROCK Linux Build System 2.0: A Very Bad Graphic Illustrating The Major Points



For those interested in the current incarnation of ROCK Linux, CDs will also be given away at the exhibition. Please also see the ROCK website (www.rocklinux.org).

About the authors

Chris Hamilton (chris@rocklinux.org) has been part of the ROCK Linux team since 1999. He has worked on some aspects of ROCK including the parallel processing project and the proposed 2.0 build system. Chris manages a system-integration company, which operates in the USA and Singapore. Jocelyn Yeo (jocelyn@rocklinux.org) is in charge of Public Relations for ROCK Linux, and works as an R&D engineer.