GNU/Screen comes to Debian Installer

Roger Shimizu

Debian Maintainer
(since a few days ago)

July 8th, 2016
DebConf16, Cape Town
Outline

1. Background
   - Debian Installer and GNU/Screen
   - Problem to resolve

2. Add screen support for D-I
   - Action Item List
   - udeb Support for Packages
   - Add udeb to D-I image build
   - Start/Resume GNU/Screen in D-I

3. Progress Updates

4. Devices will be Benefit

5. Credit

Roger Shimizu
Outline

1 Background
   - Debian Installer and GNU/Screen
   - Problem to resolve

2 Add screen support for D-I
   - Action Item List
     - udeb Support for Packages
     - Add udeb to D-I image build
     - Start/Resume GNU/Screen in D-I

3 Progress Updates

4 Devices will be Benefit

5 Credit
What’s **Debian Installer** (a.k.a. D-I)?

- A bootable Debian environment, which is minimized
- Partitioner (or even RAID or/and dm-crypt)
- Debootstrap
- Install boot loader, e.g. Grub/EFI, flash-kernel
What’s GNU/Screen?

- Terminal multiplexer - virtual terminals in one terminal
- Switch virtual terminal by key shortcut
- Screen uses: Ctrl-A [Number]
- There’re a few alternatives, such as Tmux, which uses Ctrl-B [Number]

You must be whispering: Why bother the GNU/Screen for Debian Installer? What’s the benefit?
Installer’s problem to resolve by adding GNU/Screen

For common PC, it’s easy to switch console to command line or log checking by Alt+F1 ~ F4

Main Console (Alt-F1)  Log Console (Alt-F4)
For embedded device, serial console or SSH is used to install, so there’s no way to switch console by Alt-F[Number]. We have to go <Back>, and use command line shell from menu.
Outline

1 Background
   - Debian Installer and GNU/Screen
   - Problem to resolve

2 Add screen support for D-I
   - Action Item List
     - udeb Support for Packages
     - Add udeb to D-I image build
     - Start/Resume GNU/Screen in D-I

3 Progress Updates

4 Devices will be Benefit

5 Credit

Roger Shimizu
Action Item List

- udeb support for all necessary packages and its dependencies
- Add udeb to D-I image build
- Start/Resume GNU/Screen in D-I
Add udeb binary for GNU/Screen and it’s dependencies.
It’s in each package’s debian/control
Usually debian/\(<pkg>\)-udeb.install is the same as debian/\(<pkg>\).install. Remove non-related files if any.
Submit patch, and ask each package maintainers’ help.
> Usually DM can upload to archive without sponsoring.
> However, for adding udeb case, unfortunately we have to find a DD to sponsor the upload because we add a new package (udeb).
> Due to the same reason, we also need to wait for approval from ftp-master (NEW queue)
Action Item:
- audit (libaudit1-udeb & libaudit-common-udeb): BTS#819358
- pam (libpam0g): BTS#819359
- ncurses (libtinfo5-udeb): BTS#819397
- screen (screen-udeb): BTS#819988

Besides, we also need a proper ".screenrc" profile to emulate D-I on common PC with 4 active console.
- This change is included together with the upload of screen-udeb BTS#819988

---

1https://bugs.debian.org/819358
2https://bugs.debian.org/819359
3https://bugs.debian.org/819397
4https://bugs.debian.org/819988
Before we can invoke screen command within D-I environment, screen-udeb and it's dependency package is required to be included in the image.

The package list of each D-I image is managed by d-i/debian-installer.git\(^5\) repository.

- add "screen-udeb" to related Arch/Flavour of echo image: build/pkg-lists\(^6\)
- Some image-size sensitive platform, such as armel/orion5x/qnap, can be excluded to avoid problem

\(^5\)https://anonscm.debian.org/cgit/d-i/debian-installer.git

\(^6\)https://anonscm.debian.org/cgit/d-i/debian-installer.git/tree/build/pkg-lists
Suppose binaries are already in place, so we can hack the scripts to invoke GNU/screen when D-I starts.

The logic is that resume previous screen session if possible, or we just start a new one.

D-I boot scripts are mainly managed by d-i/rootskel.git repository.

https://anonscm.debian.org/cgit/d-i/rootskel.git
Outline

1. Background
   - Debian Installer and GNU/Screen
   - Problem to resolve

2. Add screen support for D-I
   - Action Item List
     - udeb Support for Packages
     - Add udeb to D-I image build
     - Start/Resume GNU/Screen in D-I

3. Progress Updates

4. Devices will be Benefit

5. Credit

Roger Shimizu

GNU/Screen comes to Debian Installer

DebConf16 11 / 17
Progress Updates

- I started from posting RFC to mailing-list to hear the voice from other developers and users, on February 20th, 2016.
- udeb support for all necessary packages and its dependencies
  - audit (libaudit1-udeb & libaudit-common-udeb) BTS#819358: Done
  - pam (libpam0g-udeb) BTS#819359: Done
  - ncurses (libninfo5-udeb): BTS#819397: Uploaded two weeks ago
  - screen (screen-udeb) BTS#819988: Uploaded two weeks ago
- Add udeb to D-I image build: Commit pushed after D-I Stretch Alpha 7, so you can test D-I Daily.
- Start/Resume GNU/Screen in D-I: Done

---

8 https://lists.debian.org/debian-boot/2016/02/msg00547.html
9 https://bugs.debian.org/819358
10 Thanks to Laurent Bigonville for his idea to build screen-udeb with less dependency, this udeb is not necessary anymore.
11 https://bugs.debian.org/819359
12 https://bugs.debian.org/819397
13 https://bugs.debian.org/819988
14 https://d-i.debian.org/daily-images
15 https://anonscm.debian.org/cgit/d-i/rootskel.git/tree/src/sbin/debian-installer
Outline

1. Background
   - Debian Installer and GNU/Screen
   - Problem to resolve

2. Add screen support for D-I
   - Action Item List
     - udeb Support for Packages
     - Add udeb to D-I image build
     - Start/Resume GNU/Screen in D-I

3. Progress Updates

4. Devices will be Benefit

5. Credit
Devices will be Benefit

- Devices install via serial console, e.g. some ARM boards, and Sparc64 machine
- Devices install via SSH, e.g. some ARM boards, Mainframe s390/s390x
- Headless PC
Outline

1 Background
   - Debian Installer and GNU/Screen
   - Problem to resolve

2 Add screen support for D-I
   - Action Item List
     - udeb Support for Packages
     - Add udeb to D-I image build
     - Start/Resume GNU/Screen in D-I

3 Progress Updates

4 Devices will be Benefit

5 Credit
Credit

- Encouragement through early RFC stage
- Various help on udeb support
Thanks for coming!

Any question or comment would be appreciated.

Roger Shimizu
rogershimizu@gmail.com
https://wiki.debian.org/RogerShimizu

about the slides:
template from http://git.upsilon.cc/?p=talks.git
copyright © 2014 Stefano Zacchiroli
license CC BY-SA 4.0 — Creative Commons Attribution-ShareAlike 4.0