

GNU/Screen comes to Debian Installer

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(since a few days ago)

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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

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Background

- 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]

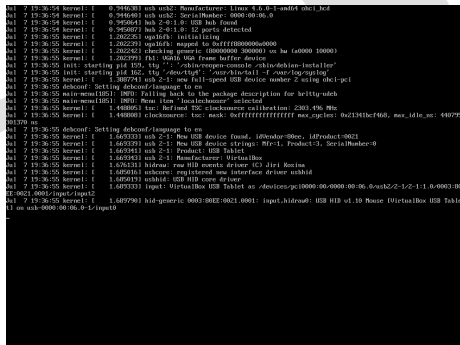
You must be whispering: Why bother the GNU/Screen for Debian Installer? What's the benefit?

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



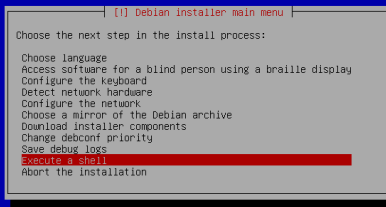
Main Console (Alt-F1)



Log Console (Alt-F4)

Installer's problem to resolve by adding GNU/Screen (cont.)

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.

A screenshot of the Debian installer main menu. The menu is displayed in a white box with a black border on a blue background. The title bar of the window reads "[!] Debian installer main menu". The text inside the box says "Choose the next step in the install process:" followed by a list of options. The option "Execute a shell" is highlighted with a red horizontal bar.

```
[!] Debian installer main menu

Choose the next step in the install process:

Choose language
Access software for a blind person using a braille display
Configure the keyboard
Detect network hardware
Configure the network
Choose a mirror of the Debian archive
Download installer components
Change debconf priority
Save debug logs
Execute a shell
Abort the installation
```

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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

udeb Support for Packages

- 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)

udeb Support for Packages (cont.)

- Action Item:
 - ▶ audit (libaudit1-udeb & libaudit-common-udeb): BTS#819358¹
 - ▶ pam (libpam0g): BTS#819359²
 - ▶ ncurses (libtinfo5-udeb): BTS#819397³
 - ▶ screen (screen-udeb): BTS#819988⁴
- 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#819988¹

¹<https://bugs.debian.org/819358>

²<https://bugs.debian.org/819359>

³<https://bugs.debian.org/819397>

⁴<https://bugs.debian.org/819988>

Add udeb to D-I image build

- 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.git⁵ repository.
 - ▶ add "screen-udeb" to related Arch/Flavour of echo image: build/pkg-lists⁶
 - ▶ 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>

Start/Resume GNU/Screen in D-I

- 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.git⁷ repository.

⁷<https://anonscm.debian.org/cgit/d-i/rootskel.git>

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Progress Updates

- I started from posting RFC to mailing-list to hear the voice from other developers and users, on February 20th, 2016⁸
- udeb support for all necessary packages and its dependencies
 - ▶ audit (libaudit1-udeb & libaudit-common-udeb) BTS#819358⁹: **Done**¹⁰
 - ▶ pam (libpam0g-udeb) BTS#819359¹¹: **Done**²
 - ▶ ncurses (libncurses5-udeb): BTS#819397¹²: **Uploaded** two weeks ago
 - ▶ screen (screen-udeb) BTS#819988¹³: **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 Daily¹⁴
- Start/Resume GNU/Screen in D-I: **Done**¹⁵

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/rootkel.git/tree/src/sbin/debian-installer>

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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

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- Encouragement through early RFC stage
- Various help on udeb support

Thanks for coming!

Any question or comment would be appreciated.

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