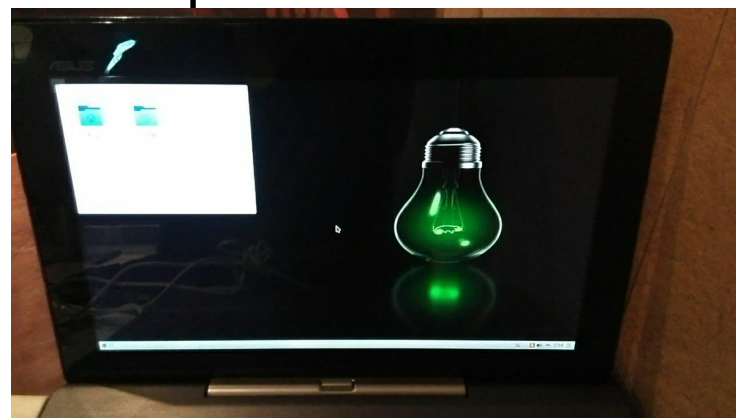


openSUSE42.2 on Windows Tablet T100TA

1

- 1、自己紹介 Self introduction
- 2、最近やっている事 To Do
- 3、WindowsタブレットにopenSUSEを移植
Install openSUSE on WindowsTablet
- 5、grub2のCUI設定
Setting and install grub2 on openSUSE.
- 6、インストールトラブル他
Install trouble
- 7、結論
Conclusion

Windows Tablet
+openSUSE42.2



This Presentation:
Slideshare & PDF files
publication of my HP
<http://kapper1224.sakura.ne.jp>

Speaker:
Kapper

東海道らぐ 2017年?月
2017/?/? 13:00~
Place: どこか

自己紹介 Self Introduction

- My name: Kapper
- Twitter account: [@kapper1224](https://twitter.com/kapper1224)
- HP: <http://kapper1224.sakura.ne.jp>
- Slideshare: <http://www.slideshare.net/kapper1224>
- ニコナレ: <http://niconare.nicovideo.jp/users/59379263>
- My Hobby: Linux, *BSD, and Mobile ARM Devices
- My favorite words: Record than experiment important
- Test Model: Netwalker(PC-Z1,T1)、Nokia N900、DynabookAZ、RaspberryPi
Nexus7(2012、2013)、OpenPandora、ARM Chromebook、
台湾Android電子辞書 無敵CD-920、CD-928、TW708、GPD-WIN
Surface3、Asus T100TA、WIN-10B、Photon2
- Recent Activity:
 - Hacking Linux on Windows10 Tablet (Intel Atom base).
 - I have been active in the Tokaido Linux User Group.
 - Hacking Linux on GPD-WIN and many Atom Devices.
 - I have recently often use the Asus T100TA and GPD-WIN.

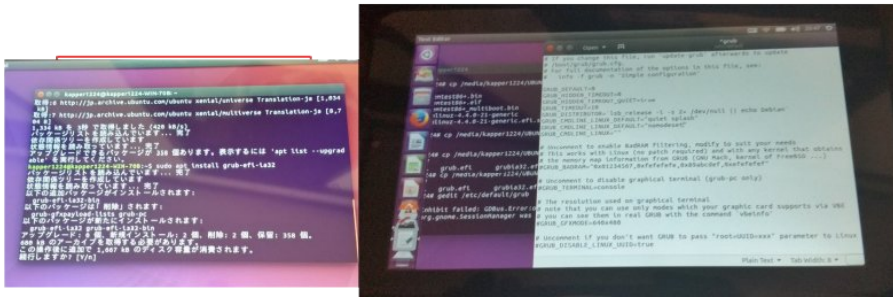


Recently my test

1. Linux distro on x86 Windows Tablet

Install ISO for Ubuntu 16.04

- After boot Ubuntu16.04, connect USB-Wifi and wait 5min. Install 「sudo apt-get install grub2-efi-ia32」
- Edit Grub2, 「sudo gedit /etc/default/grub」 add 「GRUB_CMDLINE_LINUX_DEFAULT="nomodeset"」 and saved.
- Upgrade grub.cfg 「sudo update-grub」
- Reboot Ubuntu16.04



3. Linux distributions on Android

Debian KitとComplete Linux

- Android上でchroot環境を構築してapt-getしてパッケージを入れるアプリ。Debian化が出来る。
- Androidをシンプルにサーバ化できる。root化が出来るものといらないものと。
- Debian KitはAndroidの親プロセスのルート環境でapt-getが使える仕組みなので、自由度が高い(ハイリスク?)
- Debian Norootが入れられない古い環境向けも

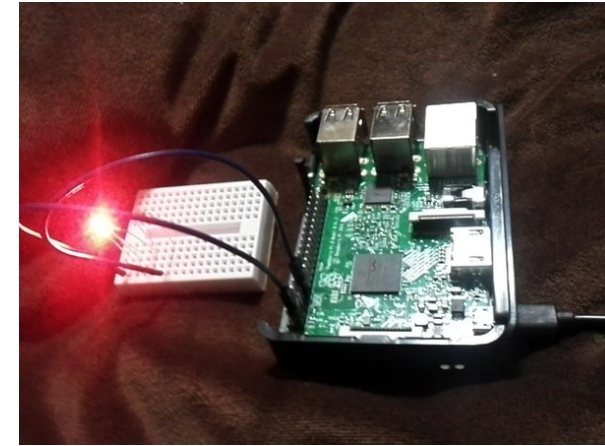


Complete Linux

こんな事やっています³

2. Electronic Circuit on ARM

RaspberryPiを使ってLチカ
昔に戻って、電子回路工作を楽しんでいます



4. Presentations in Asia(HongKong,Taiwan)

Opensource Conference

台湾MOPCON2015 Kapperセミナー

- 今回の通訳さん、Field Pan氏。本職ゲームクリエイター 通訳とかコーディネーターも出来るハイスキルな方 台湾でビジネスする人には頼りになるはず
- 視聴者 推定500人前後。
- 日本人の活動の宣伝資料追加。
- 若いエンジニアさん多数。質問多い Mainly many young engineer's



OpenSuseにWindowsタブレットの課題⁴

openSUSE problems on Windows Tablet


- OpenSuse42.2はどうよ? What's openSUSE on WindowsTablet?
 - Kernel4.4は古くてTurboモード過剰発熱のバグがある Freeze Bug
 - Xorgがちゃんと動かない Xorg have some troubles.
 - ドライバが古く周辺機種が動かない Firmware was too old.
 - Kernelを最新LTSにアップグレードする必要あり Need upgrade kernel
 - UEFI32bitのブートローダーパッケージがない。コマンド起動必須
No UEFI32bit bootloader Grub2 and packages on openSUSE.
Need to boot grub2 commandline on UEFI32bit and openSUSE
 - Wifi Firmwareがインストール時に機能しないのでUSB有線LAN推奨
When install openSUSE, No Wifi and zypper. Recommended
Wired USB LAN.
- Tumbleweed ISOの動作NG
No boot Tumbleweed ISO x86-64 on Windows Tablet.

まあとにかく入れてみましょう
Let's install openSUSE.

推奨テスト機

Recommended Test Model PC

- ASUS T100TA (Bay-Trail) 2014/8 UEFI32bit **おすすめ**
初期のBay-Trail UEFI32bitタブレットで海外で大人気モデル
- ドライバ、移植情報が特に多くT100Linux専用コミュニティがある
- USBが2個、充電しながら使える、長時間バッテリー、キーボード



LATEST STEPS TO INSTALL UBUNTU ON THE ASUS T100TA

get a fully-ormer T100TA. I, and we had to monitoring, or pain? How

new kernels has over at the [Asus](#) way moving or not being

the latest ing machine.

[Installation post](#) steps, you e many helpful

11/2016)



ASUS

try Ubuntu

install Ubuntu

メンバー 2,059 人 - 一般公開

Asus T100 Ubuntu

This is how to run the Ubuntu OS on the Asus T100

メンバー

コミュニティ内を検索

s2.googleusercontent.com を待機しています...



Brain Wreck オーナー Discussion

T100TA Install 64bit ISO Final ISO

Thanks to +John Brodie +Дмитрий Карих +Lionel Dor +Kirill Belyaev +Helder Filho +LinuxMachine 2016 and others for all your help in getting things going for us

Please download and follow the install instructions i created (with pictures) to complete this install

翻訳

+1 41

146

Joel Pike: For step 12 on post installation this is what comes up for my grub


Gustavo Manuel Espindola Discussion 14時間

Hi, there's any video that teaches me how to install Ubuntu on T100tas? Thanks.

実はここに書いてあります


Check debian T100TA Website

<https://wiki.debian.org/InstallingDebianOn/Asus/T100TA>



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その他のアクション: ▼

InstallingDebianOn Asus T100TA

Translation(s): none

[DebianOn](#) is an effort to document how to install, configure and use Debian on some specific hardware. Therefore potential buyers would know if that hardware is supported and owner would know how get the best out of that hardware.

The purpose is not to duplicate the Debian [Official Documentation](#), but to document how to install **Debian on** some **specific** hardware.

Models covered

	ASUS Transformer Book T100TA-DK002DH	T100TAM-BING-DK016B
CPU:	Intel Atom Bay Trail Z3740 (BYT-T)/BGA	Intel Atom Bay Trail Z3775 (BGA)
Video card:	Intel HD Graphics (Atom Processor Z36xxx/Z37xxx Series Graphics & Display)	
Screen:	10.1" HD SLIM WV (GL, LED-TP)	
Wireless card:	Broadcom 43241b4 SDIO	
Disks:	eMMC 32 GB (/dev/mmcblk0)	eMMC 64GB (/dev/mmcblk0)
	internal USB Disk 7.5GB (/dev/sda, hidden, Windows recovery)	
RAM:	LPDDR3 1067 2GB (on-board)	
Bluetooth:	Broadcom (on-board BCM2035 HCI?)	

目次

- 1. Overall Status in Debian Stretch (testing)
- 2. Important Notes
- 3. Configuration
 - 1. Power Management

Driverの動作状況 Kernel4.9LTS

Overall Status in Debian Stretch (testing)

	Core Components
Boot Standard Kernel:	👍
Detect hard drives:	👍
CPU:	📘 (Bay Trail C-state issue, workaround available)
	Extra Features
Shutdown	👍
Reboot	👍
Hibernation	⚠️
Sleep / Suspend	⚠️
Battery monitor	👍
Xorg	👍
- OpenGL	👍
- Resize-and-Rotate(randr)	📘
Screen backlight	❌ (always at full brightness)
Light sensor	❌
Switch to External Screen (HDMI)	👍
Accelerometers	👍
Mouse	
- Built-in (Touchpad)	👍 (but no multitouch)
- Built-in (Touchscreen)	👍 (but no multitouch)
Bluetooth	📘 ⚠️
Wireless/Wifi	📘 🚫
Keyboard's Hotkeys	👍 (only some keys)
Sound	📘 🚫
MicroSD card reader	⚠️ since kernel 4.8
Built-in camera	❌

Legend :

👍 = OK ; ❌ Unsupported(No Driver) ; ⚠️ = Error (Couldn't get it working); 📘 Unknown, Not Test ; [-] Not-applicable

📘 = Configuration Required; 🚫 = Only works with a non-free driver and or firmware

Install ISO for openSUSE42.2

- Required
 1. Windows Tablets
 2. USB Memory(>2GB) install openSUSE42.2 x86-64 ISO
 3. USB-MicroUSB OTG cable
 4. USB hub
 5. USB keyboard
 6. USB mouse
 7. USB Wired LAN adapter



Install openSUSE 42.2 on Tablet

- Disable 「Secure boot」 on UEFI. And boot USB on UEFI.
- Type Grub2 and Boot openSUSE 42.2 install ISO on USB memory.

```
Linux (hd0,msdos1)/boot/x86_64/loader/linux  
root=/dev/mmcblk0p2 nomodeset reboot=pci  
initrd (hd1,msdos1)/boot/x86_64/loader/initrd  
boot
```

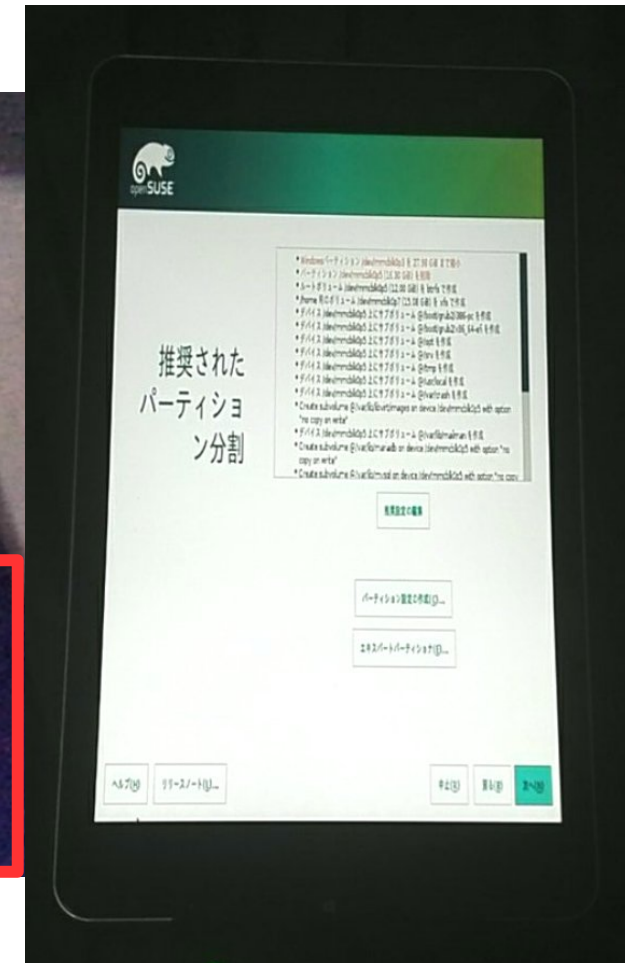
Install GUI

GNU GRUB version 2.02~beta2

Minimal BASH-like line editing is supported. For the first word, TAB lists possible command completions. Anywhere else TAB lists possible device or file completions.

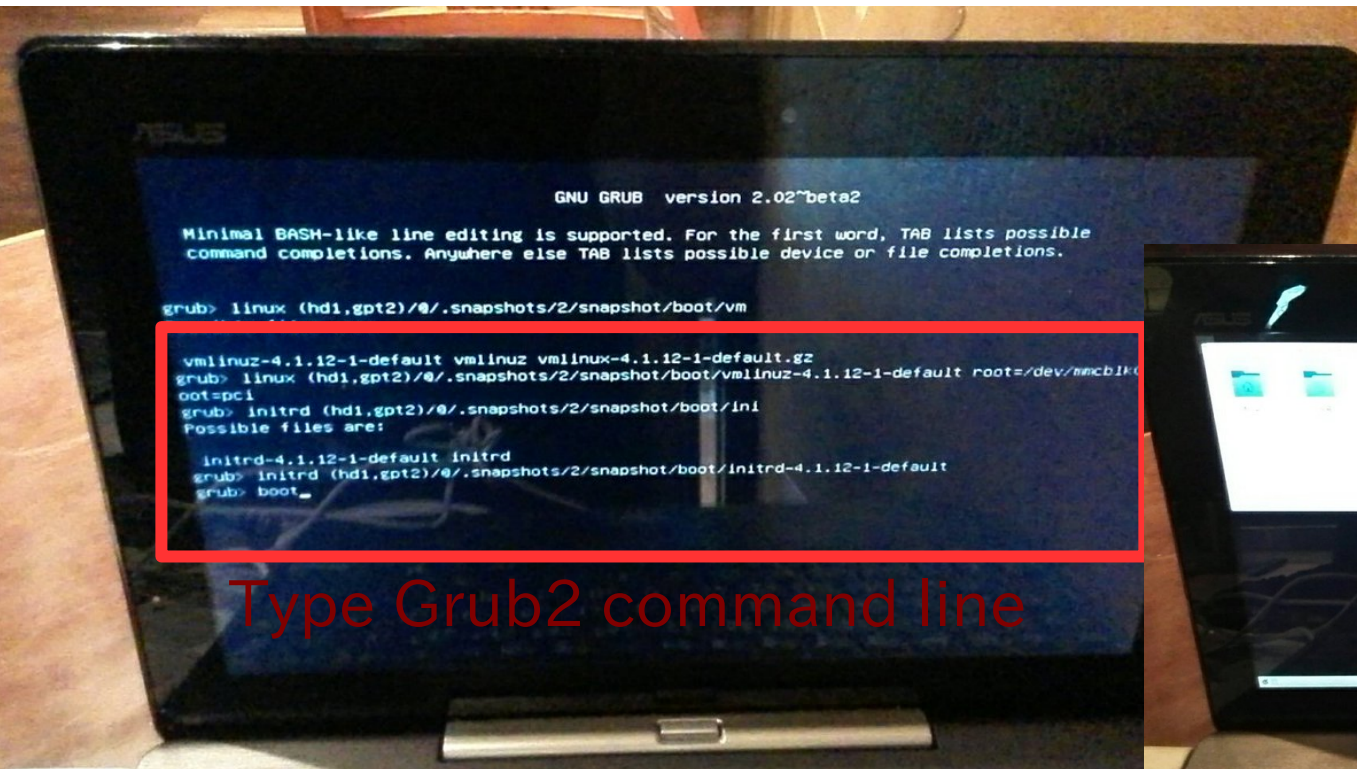
```
grub> linux (hd0,msdos1)/boot/x86_64/loader/linux root=/dev/mmcblk0p2 nomodeset reboot=pci  
grub> initrd (hd0,msdos1)/boot/x86_64/loader/initrd  
grub> boot_
```

Type Grub2 command line

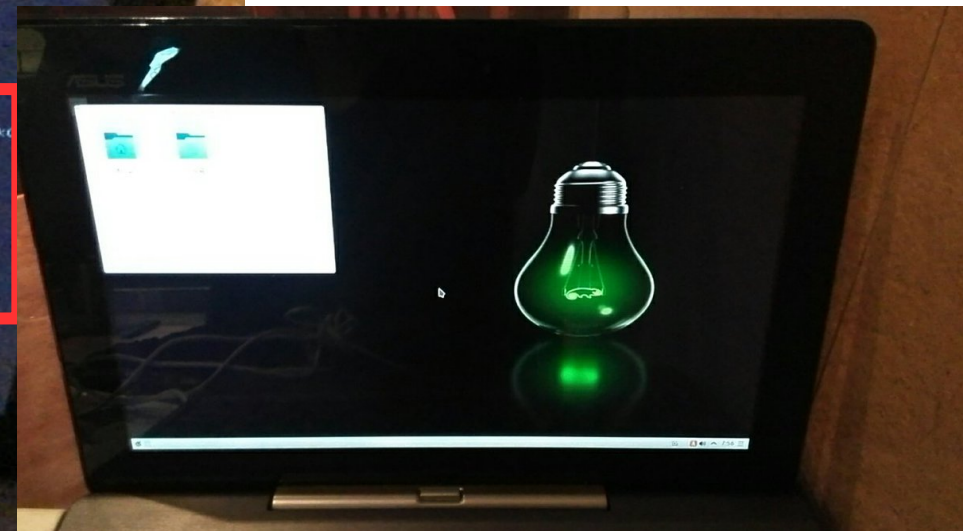


2ndboot openSUSE 42.2 on Tablet ¹¹

- Type Grub2 and Boot openSUSE 42.2 install ISO on USB memory, after reboot. If you don't use Wired LAN and internet, then openSUSE install error on Tablet. select gpt?=installed partations. Install partations single 「gpt2」, dual 「gpt6」? folder⇒/@/.snapshots~ are openSUSE when install error.
- linux (hd1,gpt2)/@/.snapshots/2/snapshot/boot/x86_64/loader/vmlinuz-4.4.49-16-default root=/dev/mmcblk0p2 nomodeset intel_idle.max_csate=1 reboot=pci
initrd (hd1,gpt2)/@/.snapshots/2/snapshot/boot/x86_64/loader/initrd-4.4.49-16-default
boot



Type Grub2 command line



Grub2を自分でビルドして実装する

Install grub2 i386 UEFI32bit on openSUSE

- openSUSEでgrub2をビルドに必要なパッケージをインストール
zypper install autogen automake autoconf bison gcc flex make git git-cvs nano
- でgrub2をダウンロードしてビルドします。コピペするだけ。
sudo su
git clone git://git.savannah.gnu.org/grub.git
cd grub
./autogen.sh
./configure --with-platform=efi --target=i386 --program-prefix=""
make
make install

cd grub-core
../grub-install -d . --efi-directory /boot/efi --target=i386
../grub-mkimage -d . -o bootia32.efi -O i386-efi -p /boot/grub ntfs hfs appleldr
boot cat efi_gop efi_uga elf fat hfsplus iso9660 linux keylayouts memdisk
minicmd part_apple ext2 extcmd xfs xnu part_bsd part_gpt search
search_fs_file chain btrfs loadbios loadenv lvm minix minix2 reiserfs memrw
mmap msdospart scsi loopback normal configfile gzio all_video efi_gop efi_uga
gfxterm gettext echo boot chain eval

cp /boot/efi/EFI/opensuse/grubia32.efi ../grub/

Grub2を自分でビルドして実装する

Install grub2 i386 UEFI32bit on openSUSE

- openSUSEを例に起動設定ファイルを作成。自動設定ファイルでは起動しない
nano /boot/grub/grub.cfg
- で下記文章を貼り付けて保存。linux～、initrd～以下の文章は機種に合わせて変更する。どうやらGUI関係の文章は使えないらしい。そこを削除すると使える
Copy under text on grub.cfg

```
if loadfont /boot/grub/font.pf2 ; then
  set gfxmode=auto
  insmod efi_gop
  insmod efi_uga
  insmod gfxterm
  terminal_output gfxterm
fi
set menu_color_normal=white/black
set menu_color_highlight=black/light-gray
menuentry "Boot OpenSuse42.2" {
  set gfxpayload=keep
  linux (hd1,gpt2)/@/.snapshots/2/snapshot/boot/vmlinuz-4.4.49-16-
default root=/dev/mmcblk0p2 nomodeset reboot=pci,force quiet splash ---
  initrd (hd1,gpt2)/@/.snapshots/2/snapshot/boot/initrd-4.4.49-16-default
}
```

Grub.cfgを書き換えてブート画面設定

Edit grub.cfg and change boot screen

- 毎回grub.cfgを手入力するのは面倒なので設定
Edit grub.cfg and boot openSUSE.
- /etc/default/grubの設定を端末から書き換え
sudo nano /etc/default/grub
- GRUB_CMDLINE_LINUX_DEFAULT="intel_idle.max
_cstate=1 reboot=pci resume=/dev/mmcblk0p2
splash=silent quiet showopts"

自動設定「update-grub」作成 autoconfig「update-grub」

- Kernelの設定が変わると面倒なので「update-grub」スクリプトを作成する
- 端末からnano update-grub
- コピペして保存。copy and paste「update-grub」
#!/bin/sh
set -e
exec grub2-mkconfig -o /boot/grub/grub.cfg "\$@"
- 実行形式に変換。change chmod.
- sudo chmod +x update-grub
sudo cp update-grub /usr/sbin/
- 実行。update grub.cfg
- sudo update-grub

自動設定「update-grub」作成 autoconfig「update-grub」

- 「update-grub」スクリプトで作られるgrub.cfgは相対パス
絶対パスに変更しないと起動しないので修正
change grub.cfg ⇒ Need absolute path
- Linuxefi ⇒ linux (hd1,gpt2)
initrdefi ⇒ initrd (hd1,gpt2)
- 端末から、sudo nano /boot/grub/grub.cfg
- linux (hd1,gpt2)/@/boot/vmlinuz-4.4.49-16-default
intel_idle.max_cstate=1 reboot=pci
initrd (hd1,gpt2)/@/boot/vmlinuz-4.4.49-16-default
boot
- 保存したら終了。Save file and END.

結論 conclusion

ブートローダーさえ何とかできればOK

Kernel4.9LTSお待ちしております。

It is difficult for beginner on openSUSE now.

But you can be setting grub2 CUI 「copy and paste」

The other WindowsTablet is needed to Kernel4.9LTS.

openSUSEもWindowsタブレットの
時代が来たるなう!!!

Let's install openSUSE on Tablet!