I

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A B PD

J

	I **B**	**D**	**B**	**D**	
					P F P DK
	J C				

G C I

A

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C E

1

D

A C L A

A A G

C I A G

G A I G

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C

Definitions

GPIO DRAM

PM DK A D

AP B F B P

R L R F M

Prerequisites

P

O D L DK D C

O D A F P

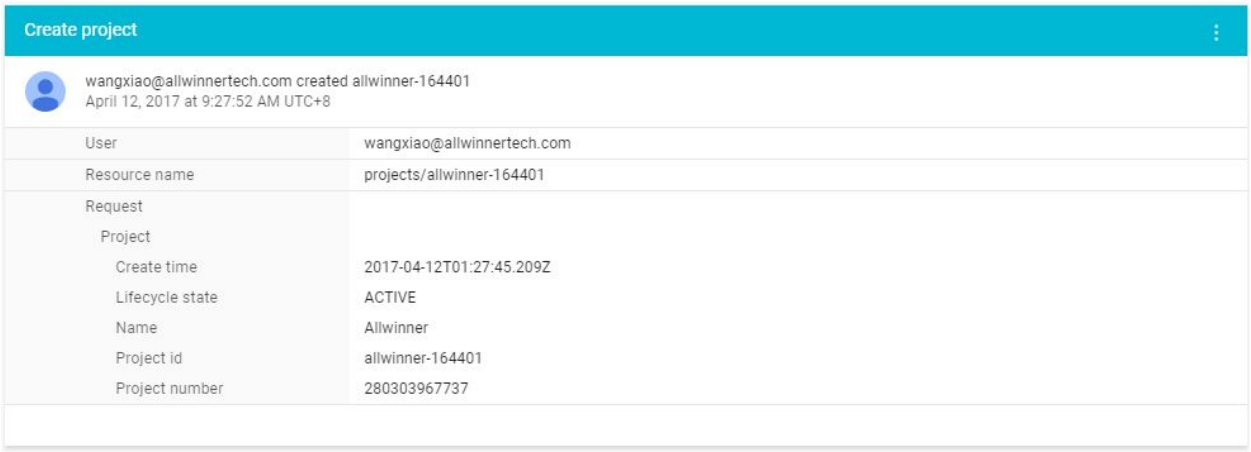
C

D G C I PC D C I A

G

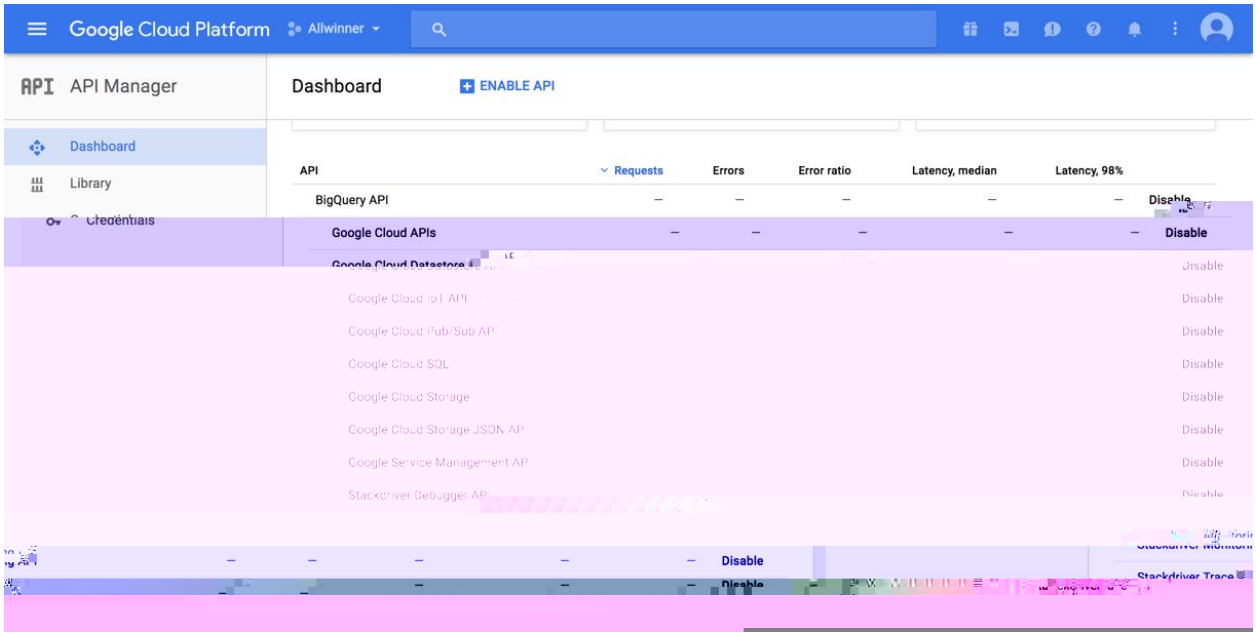
C G C I C P

D C I A G



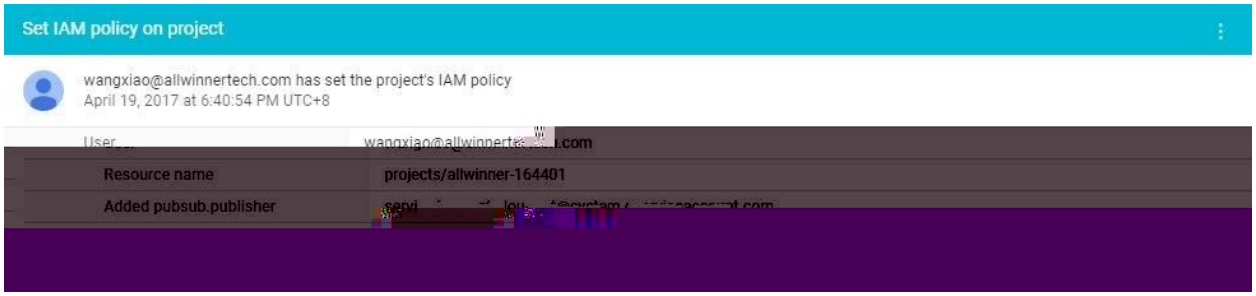
F P G C P

E



F E API

IAM D C I A G



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F C

C D C I A G

O C I A G

B G C I I C I A G

1 Download Tina Linux from GitHub or FTP server

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```
$ curl https://raw.githubusercontent.com/tinalinux/repo/stable/repo > ~/bin/repo
$ chmod +x ~ /bin/repo
$ export PATH=$PATH:~/bin/
$ mkdir tina && cd tina
$ repo init - u https://github.com/tinalinux/manifest -b r18-v0.9 -m r18/v0.9.xml
$ repo sync
$ repo start r18-v0.9 --all
```

F C L

F C DK C DN

```
$ curl http://code.csdn.net/tinalinux/repo/blob/stable/repo > ~/bin/repo
$ chmod +x ~ /bin/repo
$ export PATH=$PATH:~/bin/
$ mkdir tina && cd tina
$ repo init - u https://code.csdn.net/tinalinux/manifest.git -b r18-v0.9 -m r18/v0.9-csdn.xml
$ repo sync
$ repo start r18-v0.9 --all
```

F D L C DN C

2 Necessary modules needed by Google Cloud IoT demo on Tina SDK

P L

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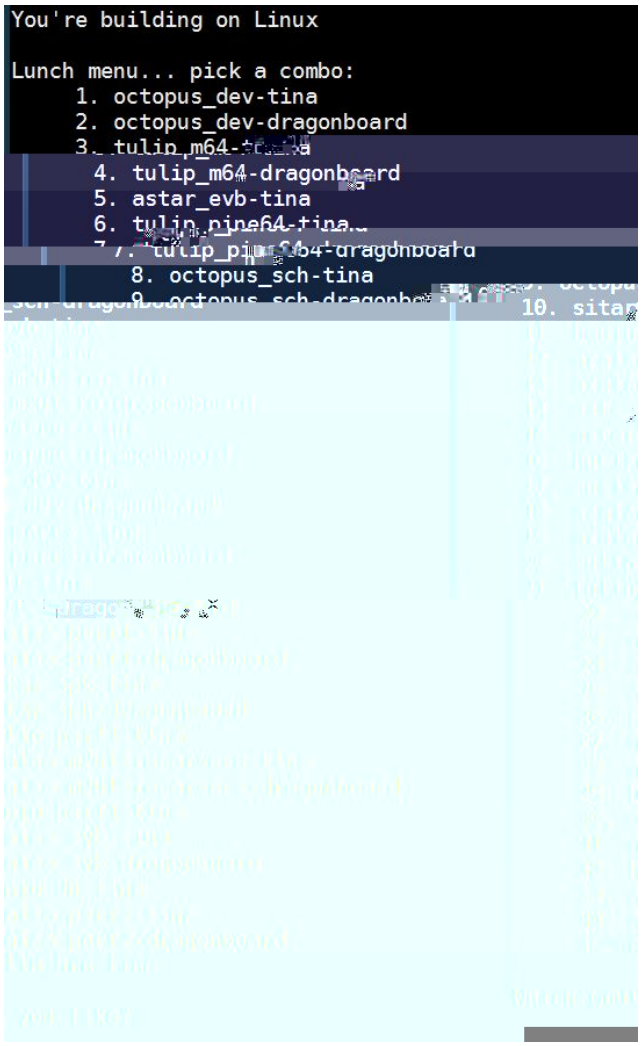
You're building on Linux
Lunch menu... pick a combo:
1. octopus_dev-tina
2. octopus_dev-dragonboard
4. tulip_m64-dragonboard
5. astar_evb-tina
8. octopus_sch-tina

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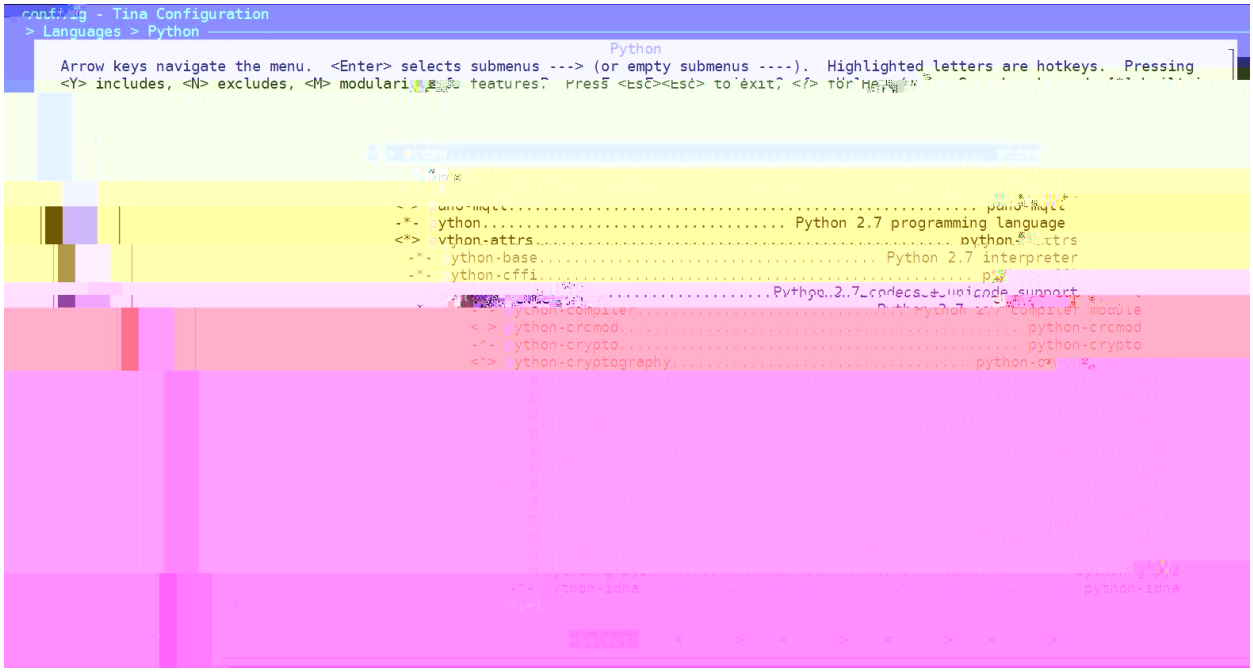
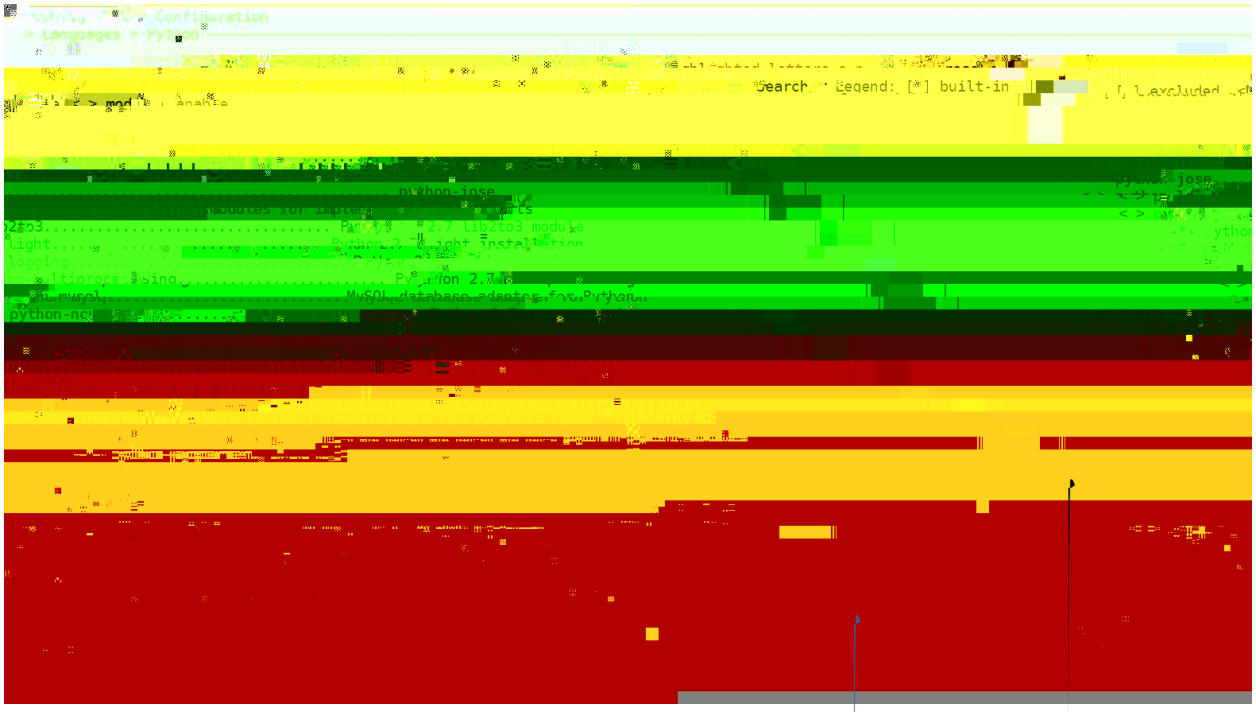

Python
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing
python ..... Python 2.7 programming language
python-attrs
python-base ..... Python 2.7 interpreter
python-cffi
python-crcmod
python-crypto
python-cryptography
python-idna

F N P



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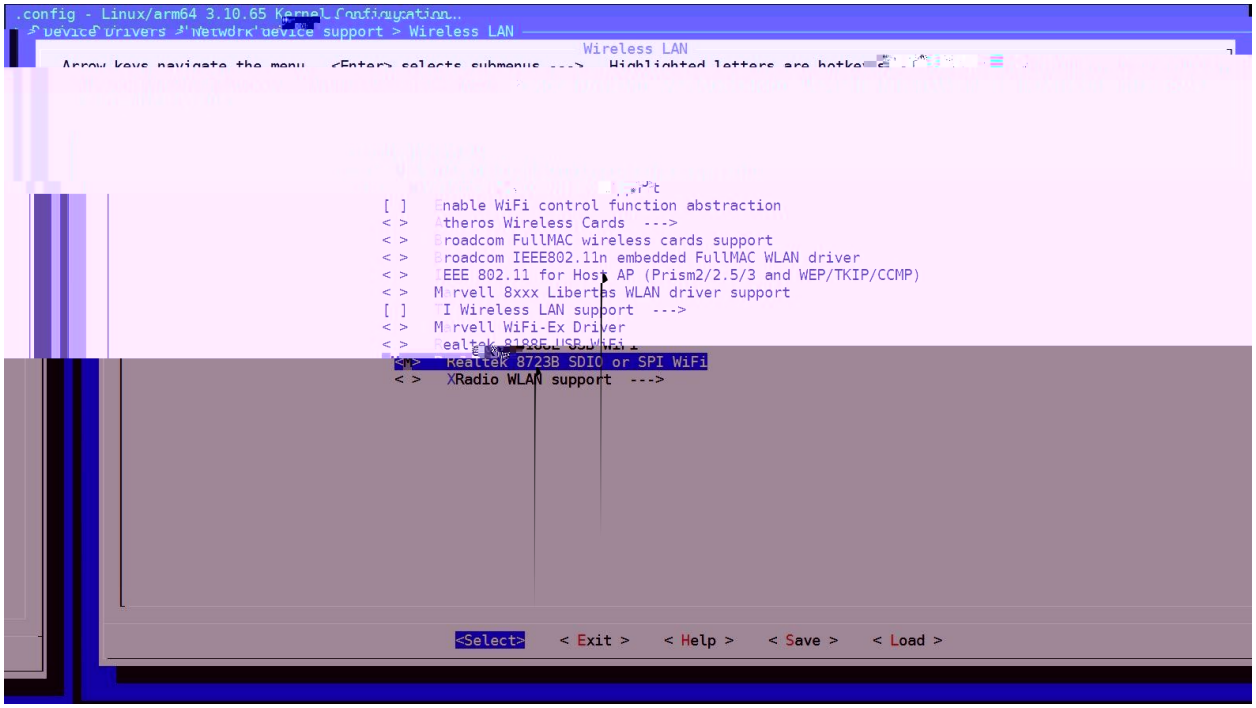
.config - Linux/arm64 3.10.65 Kernel Configuration
Device Drivers > Network device support > Wireless LAN
Wireless LAN
Arrow keys navigate the menu. <Enter> selects submenus --->. Highlighted letters are hotkeys.
[ ] Enable WiFi control function abstraction
< > Atheros Wireless Cards --->
< > Broadcom FullMAC wireless cards support
< > Broadcom IEEE802.11n embedded FullMAC WLAN driver
< > IEEE 802.11 for Host AP (Prism2/2.5/3 and WEP/TKIP/CCMP)
< > Marvell 8xxx Libertas WLAN driver support
[ ] TI Wireless LAN support --->
< > Marvell WiFi-Ex Driver
< > Realtek 8188E USB WiFi
<M> RealtekRTL8723B SDIO or SPI WiFi
< > XRadio WLAN support --->
<Select> < Exit > < Help > < Save > < Load >

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F F F

F

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LAN

C B F MAC M

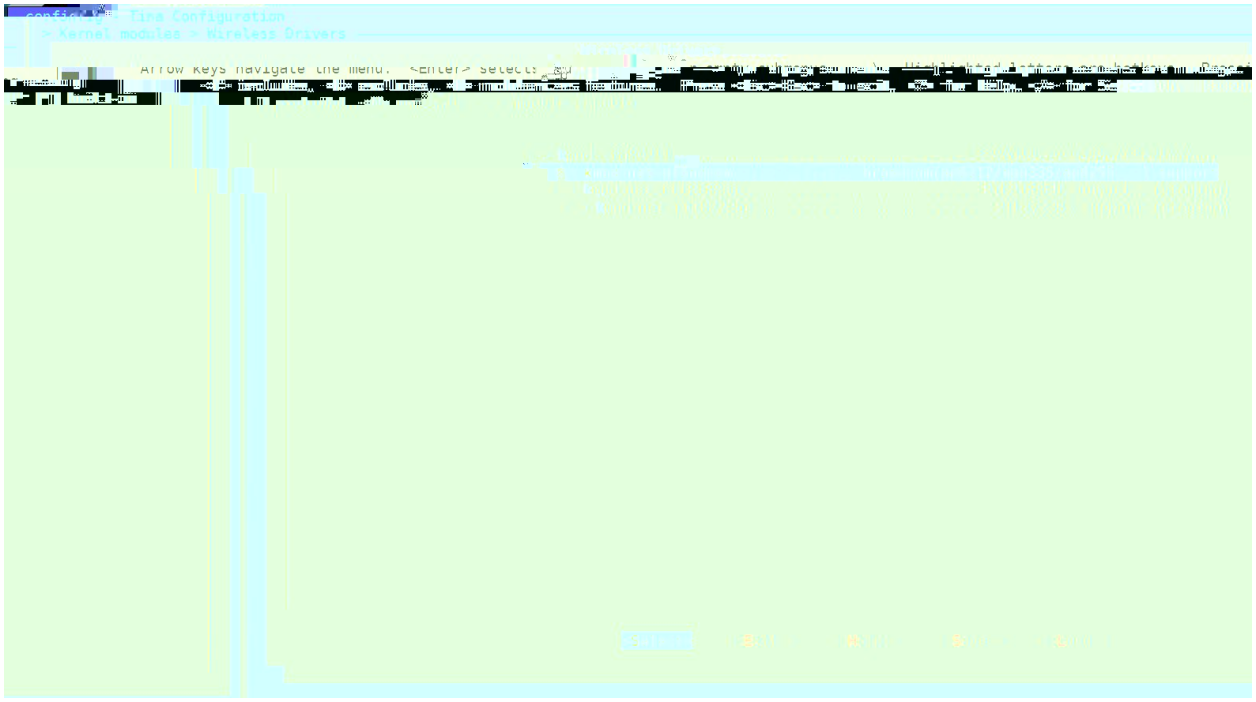
F B F MAC

M F N RAM

C I I B I

> Device Drivers > Network device support
Interrupt type
Use the arrow keys to navigate this window or press the hotkey of
the item you wish to select followed by the <SPACE BAR>. Press
<?> for additional information about this option.
( ) Out-of-Band Interrupt
(X) In-Band Interrupt

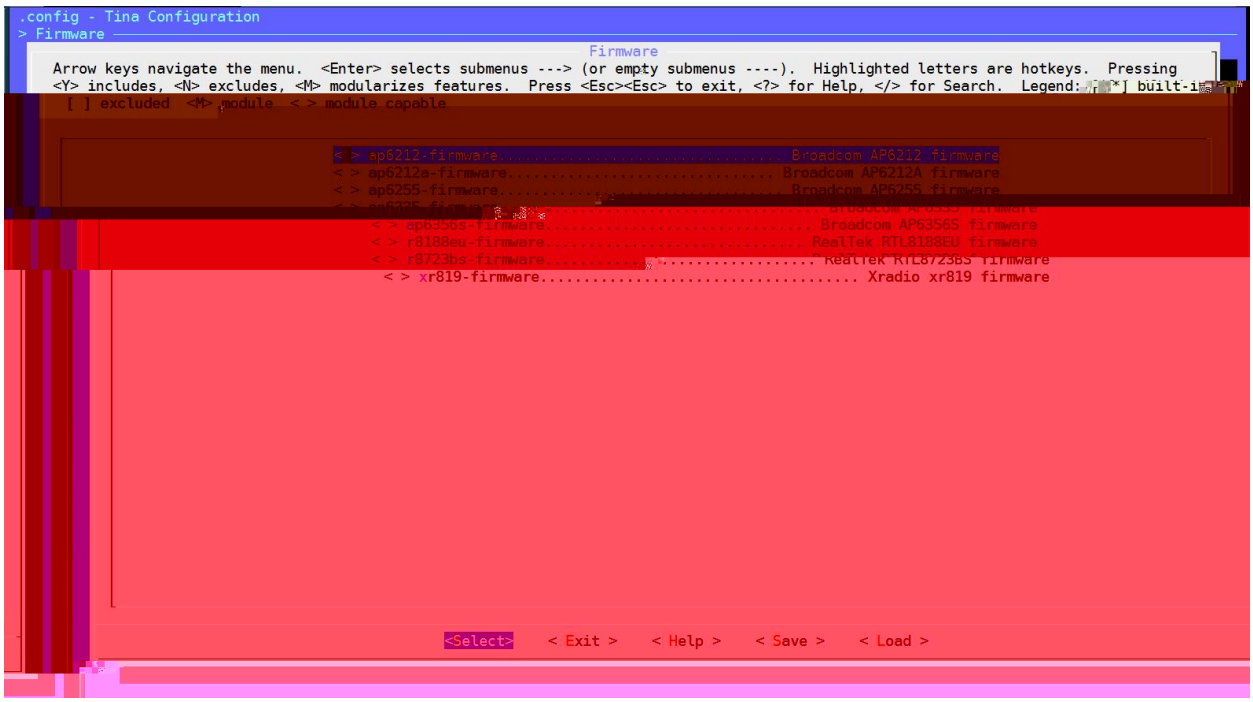
F C I B I



F K

P AP

AP



F AP

B F F I

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PC

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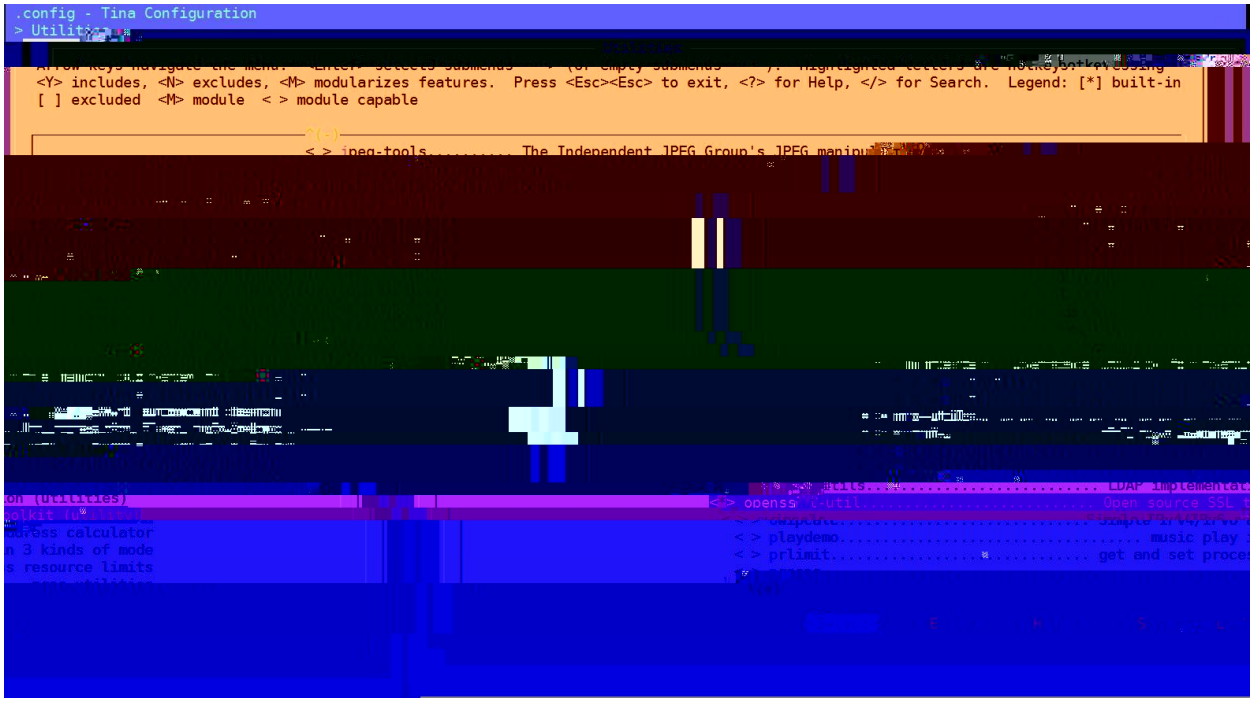

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3 Compile the Tina Linux and flash the firmware on board

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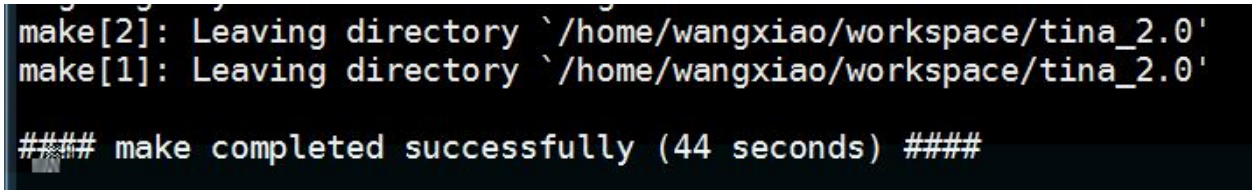

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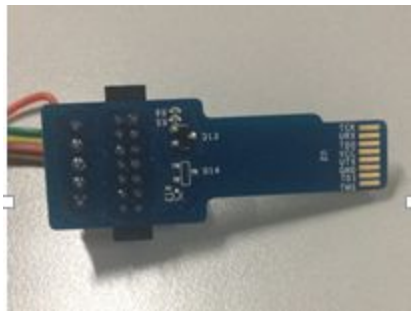
A F



F A F

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```
/home/wangxiao/workspace/tina_2.0/out/tulip-d1/tina_tulip-d1_card0_ima
pack finish
```

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4 Run Google Cloud IoT Demo on Tina

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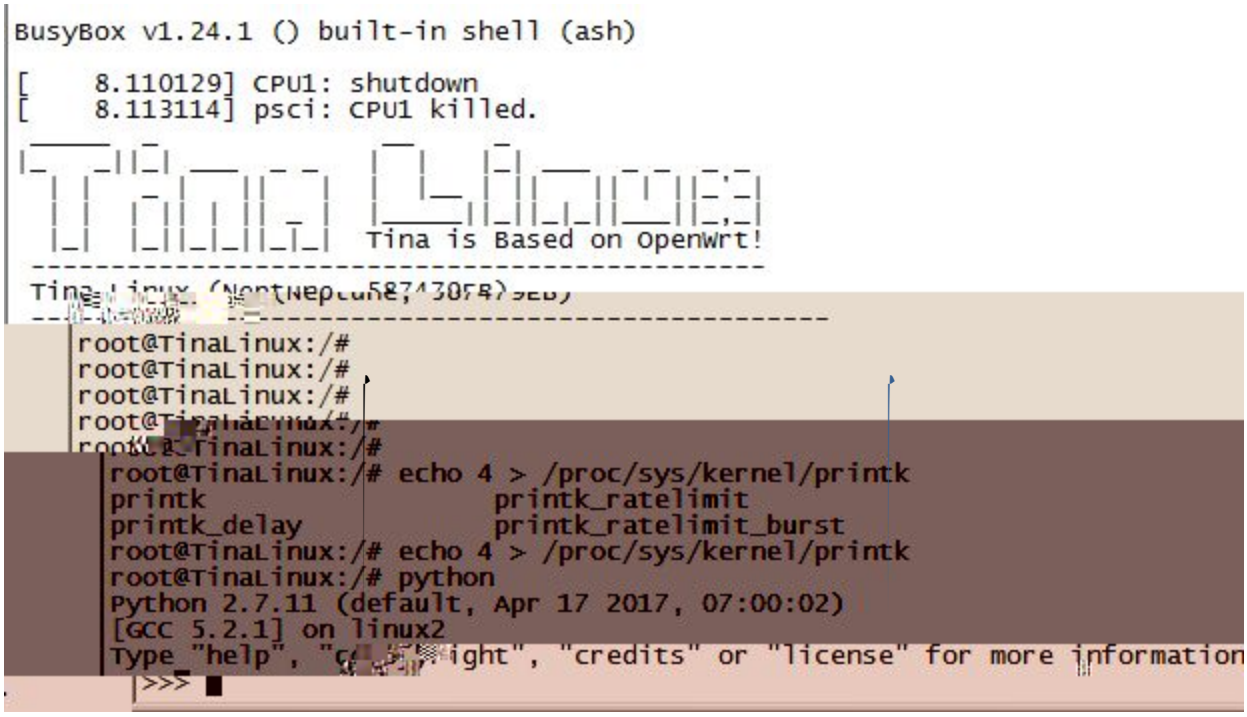

F P

C I ID PA OD

F ID P

```
root@TinaLinux:/# wifi_connect_ap_test "SSID" "PASSWORD"

**********************************
***Start wifi connect ap test!***
**********************************
wpa_suppplicant not running!
ctrl_interface != /etc/wifi/sockets
```

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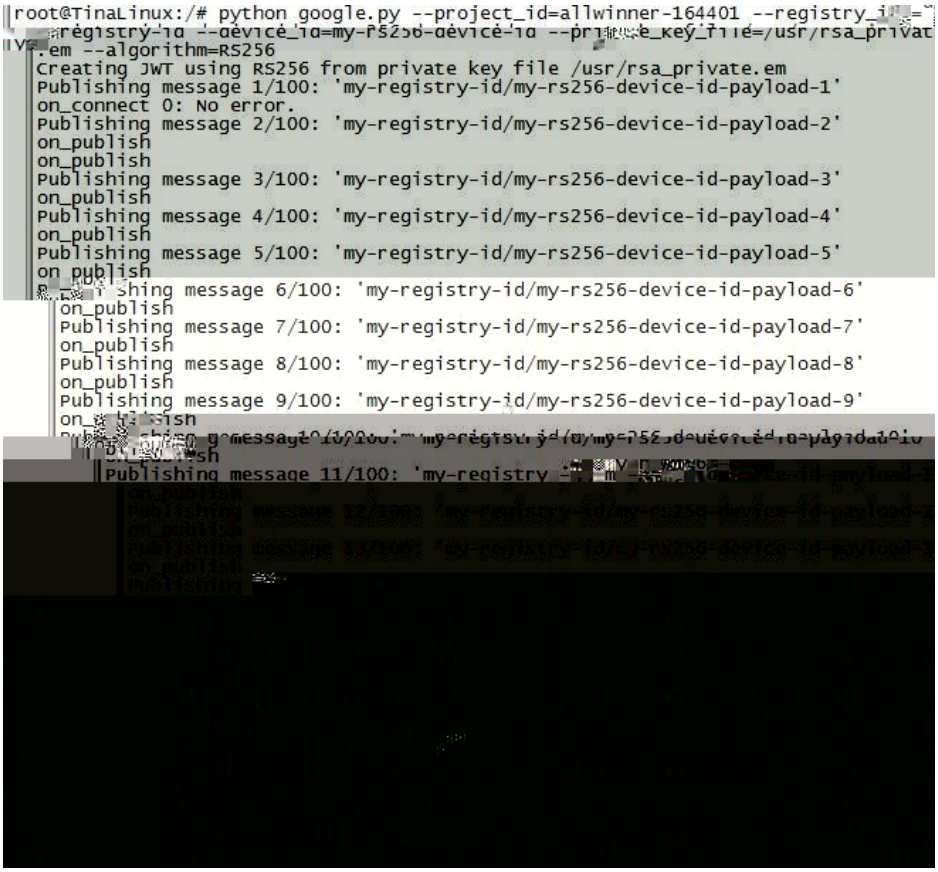
root@TinaLinux:/# python google.py --project_id=allwinner-164401 --registry_id=
--registry_id my-registry --device_id=my-rs256-device-id --private_key_file=/usr/rsa_privat
e.em --algorithm=RS256
Creating JWT using RS256 from private key file /usr/rsa_private.em
Publishing message 1/100: 'my-registry-id/my-rs256-device-id-payload-1'
on_connect 0: No error.
Publishing message 2/100: 'my-registry-id/my-rs256-device-id-payload-2'
on_publish
on_publish
Publishing message 3/100: 'my-registry-id/my-rs256-device-id-payload-3'
on_publish
Publishing message 4/100: 'my-registry-id/my-rs256-device-id-payload-4'
on_publish
Publishing message 5/100: 'my-registry-id/my-rs256-device-id-payload-5'
on_publish
Publishing message 6/100: 'my-registry-id/my-rs256-device-id-payload-6'
on_publish
Publishing message 7/100: 'my-registry-id/my-rs256-device-id-payload-7'
on_publish
Publishing message 8/100: 'my-registry-id/my-rs256-device-id-payload-8'
on_publish
Publishing message 9/100: 'my-registry-id/my-rs256-device-id-payload-9'
on_publish

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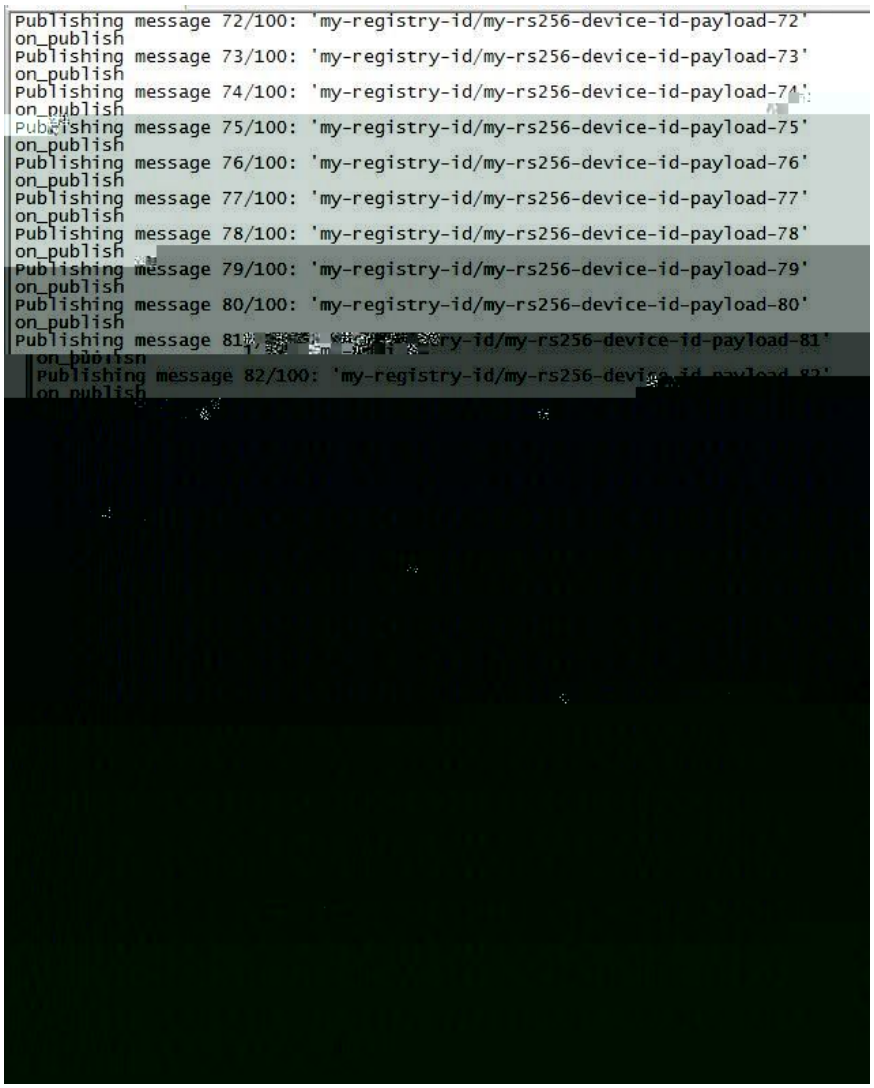

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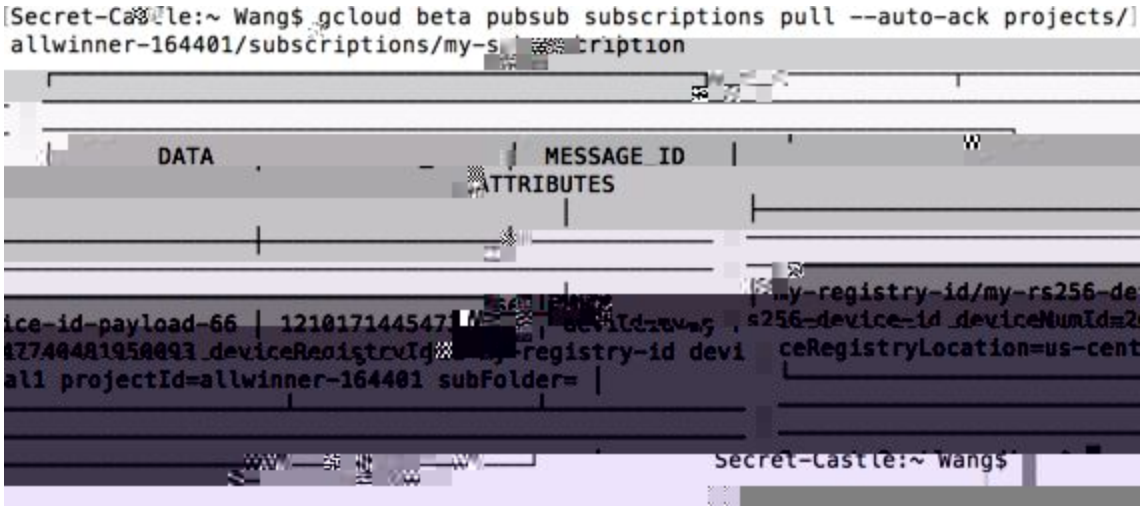

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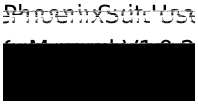
“Cloud IoT (Alpha) - User Guide”, handrei@, eschapira@, mkess@,malter@, indchak@google.com02/20/2017

roots.pem