I

G C I A

A B PD

J

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

G C I

A

C

C E

1

D

A C L A

A A G

C I A G

G A I G

A

C

E

Definitions

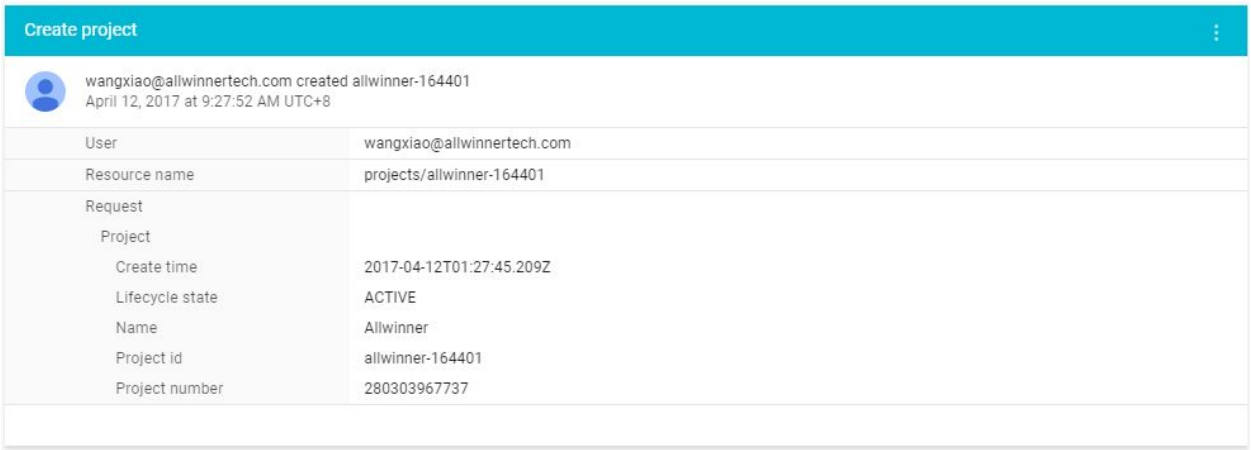
GPIO D AM
PM DK A D

AP B F B P

L F M

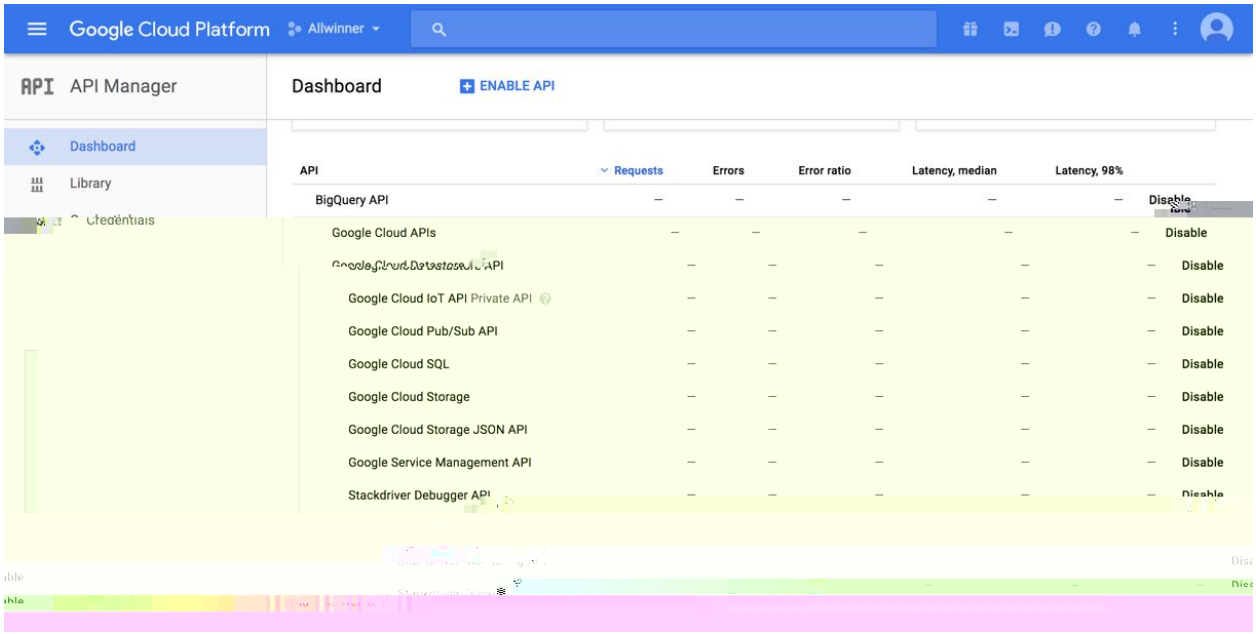
Prerequisites

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



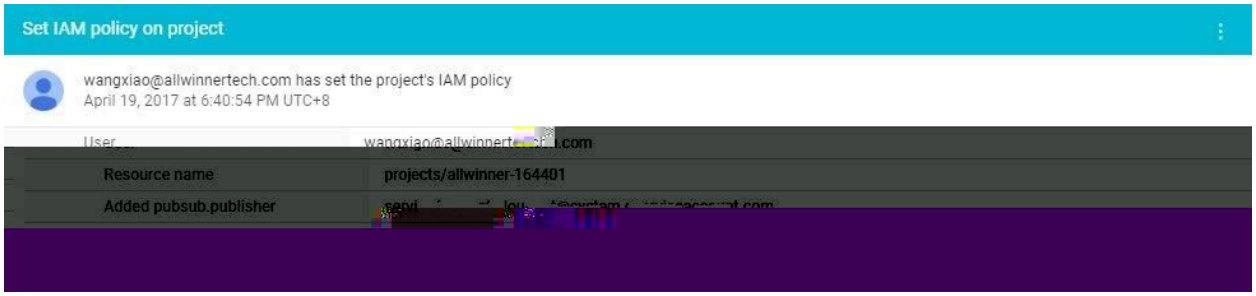
F P G C P

E



F E API

IAM D C I A G



F IAM

C D C I A G

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

L G H A
I

```
$ 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
```

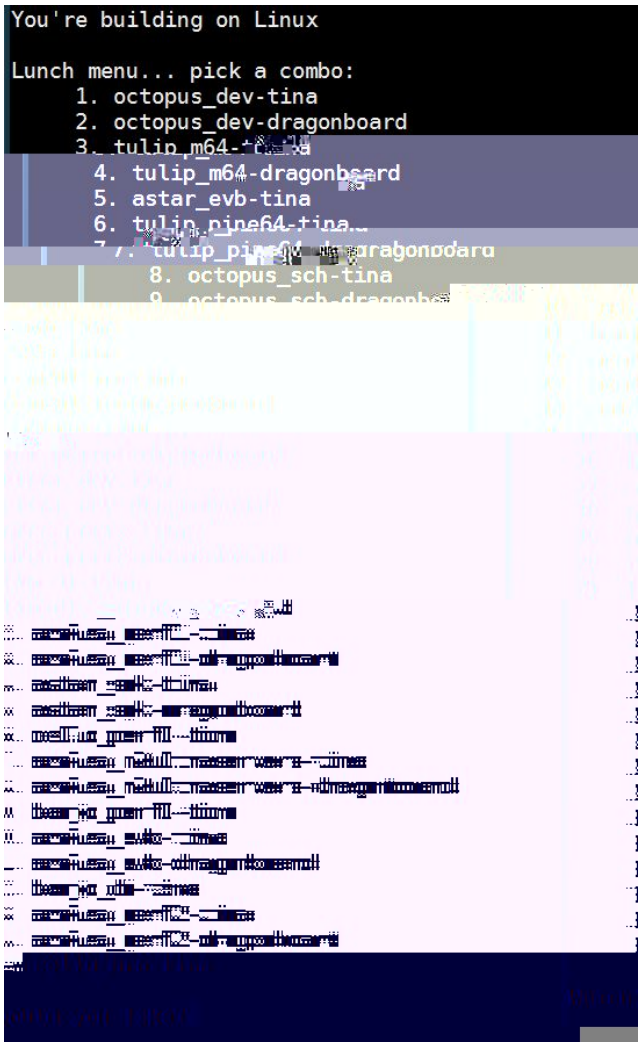
F D L C DN C

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

P L
O L DK
M

L

DK L O



F

N I P

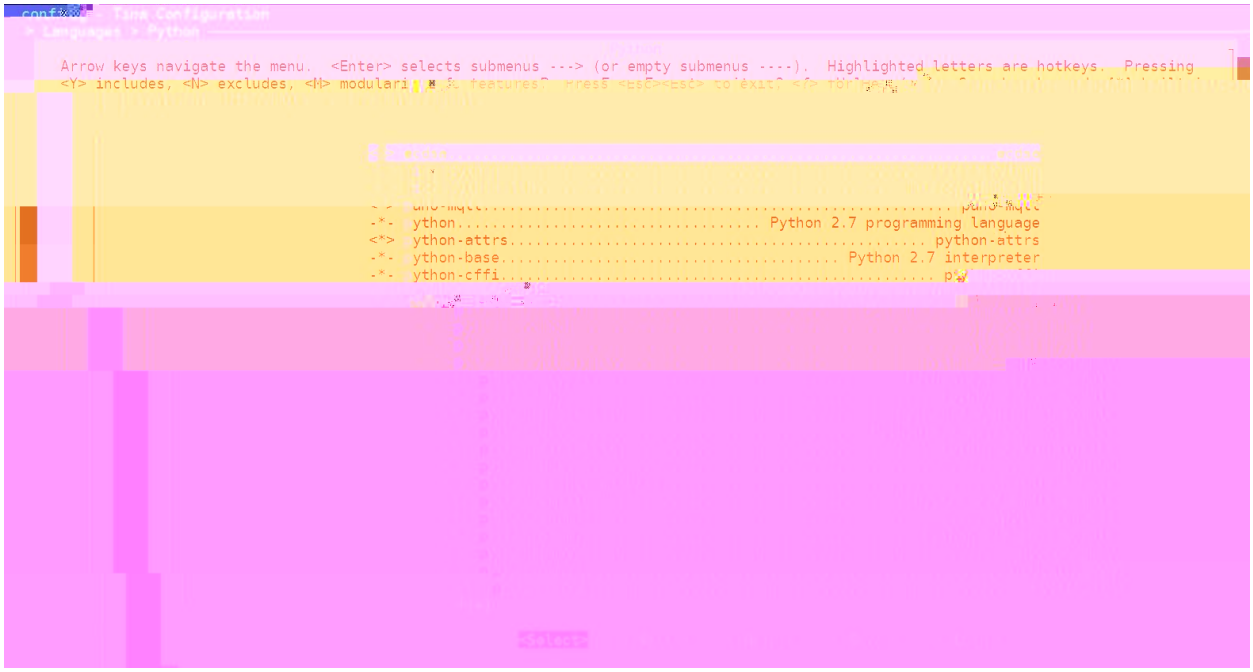
P

L P

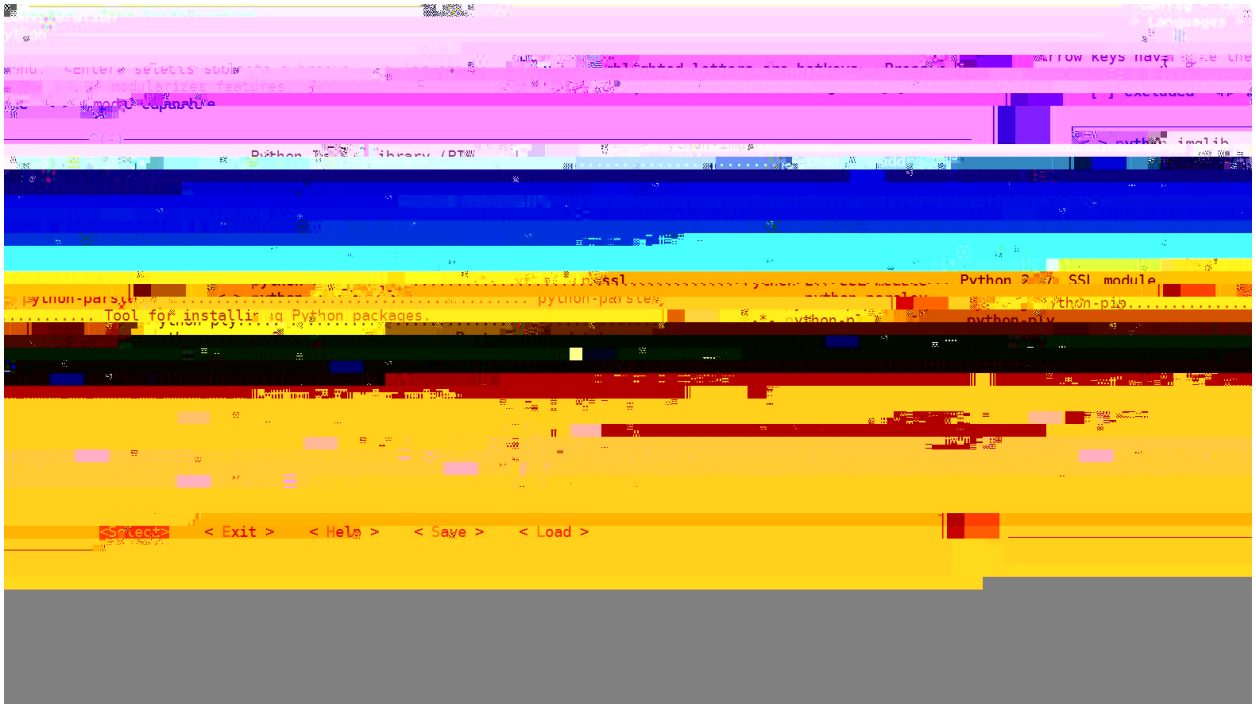
M

P

G C I


Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing
<Y> includes, <N> excludes, <M> modulari
ython..... Python 2.7 programming language
ython-attrs..... python-attrs
ython-base..... Python 2.7 interpreter
ython-cffi.....

F N P



F N P

E

F AP L

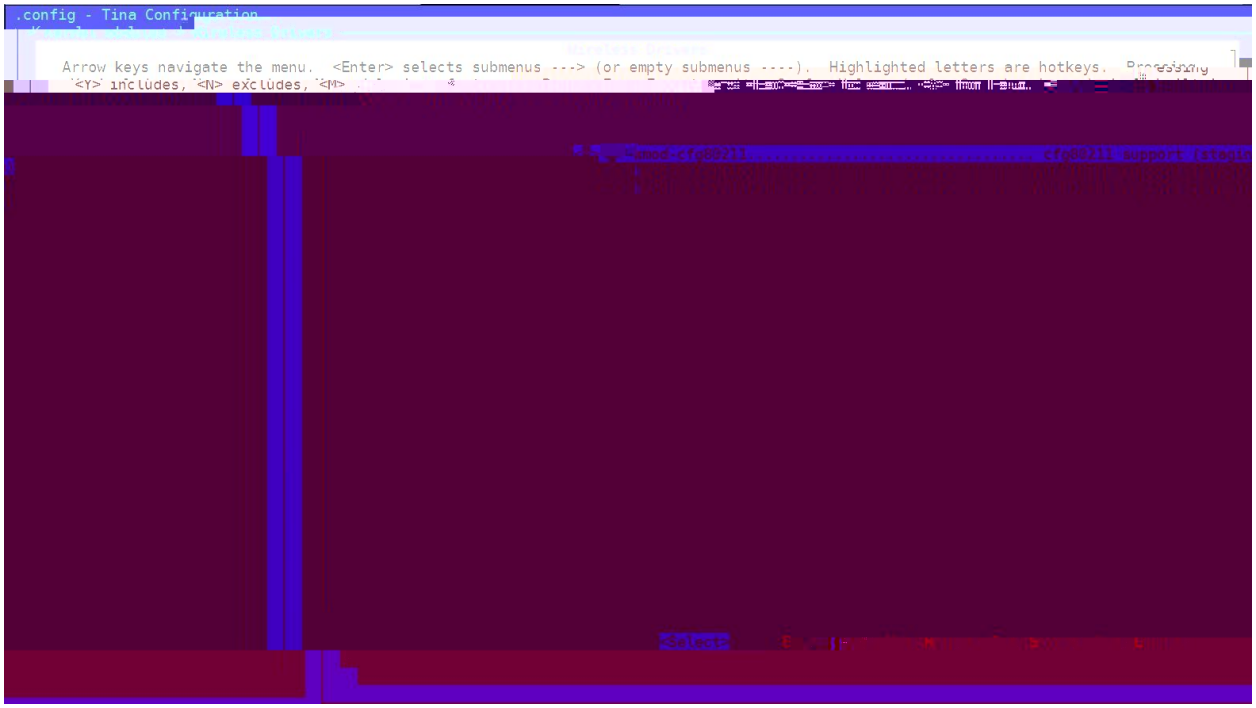
O

A CH I

F L L

F

E L


.config - Tina Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys.
<Select>

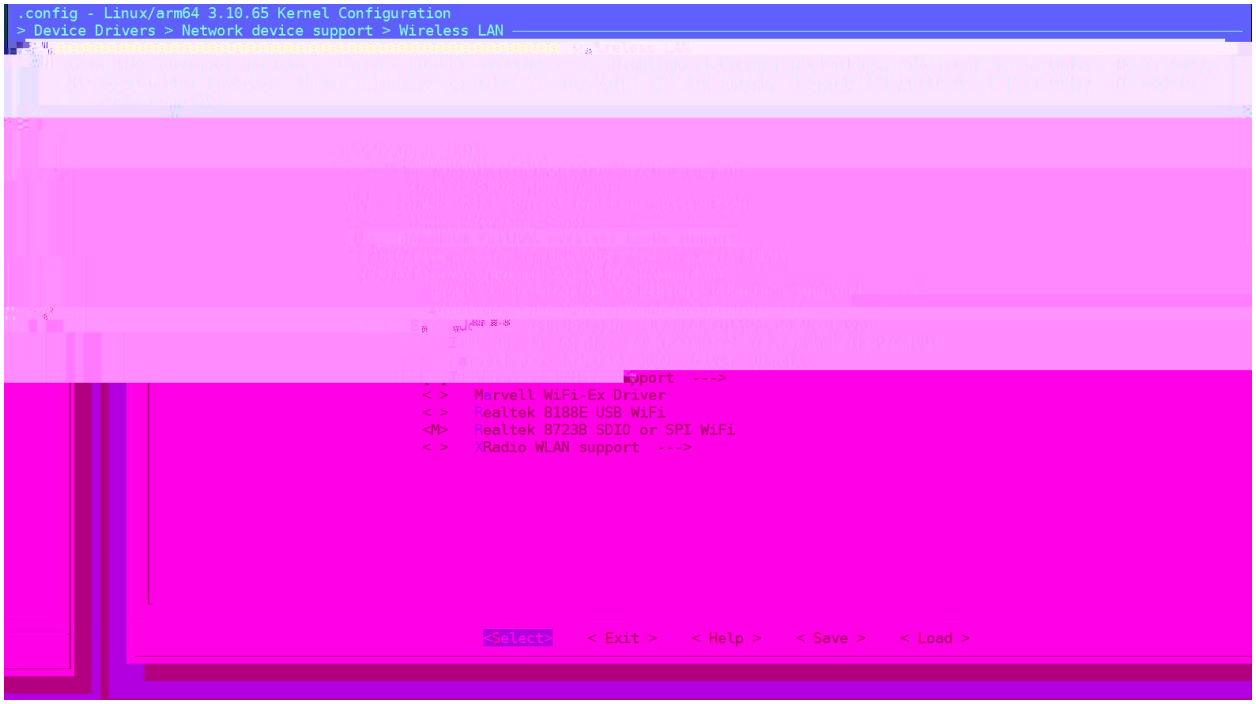
F

F F F

F

F B P M F AP
LAN

C B F MAC M



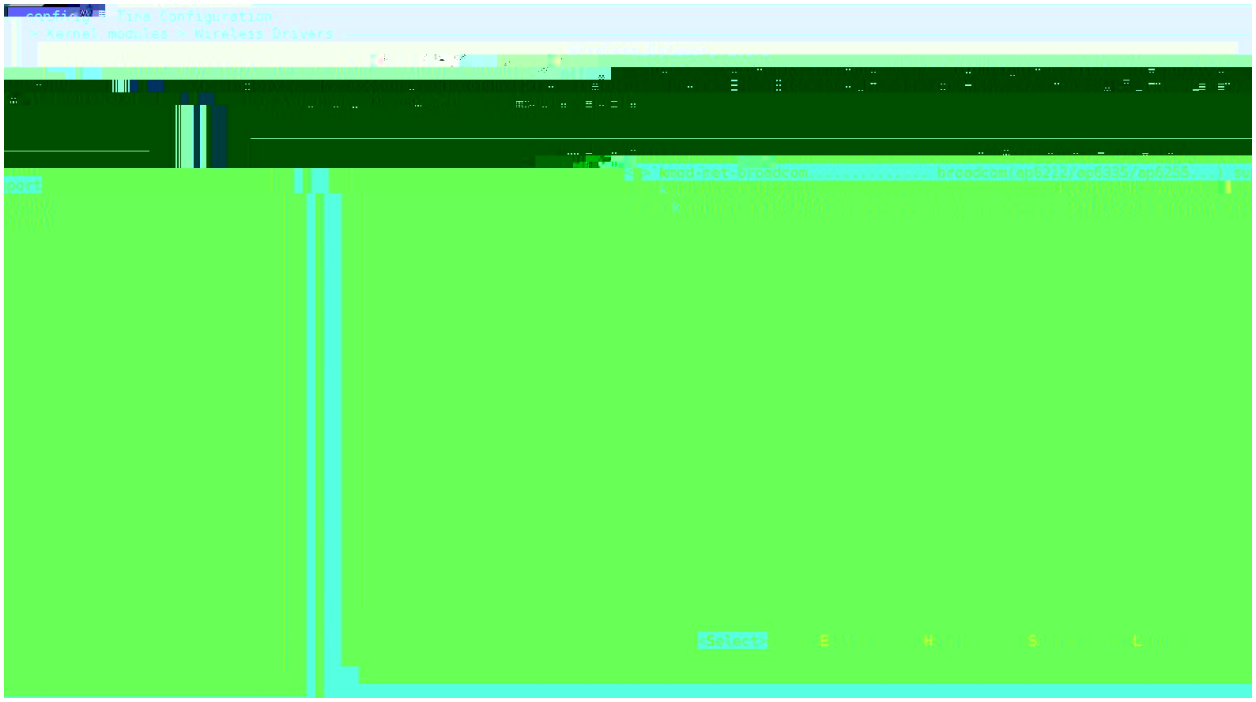
F B F MAC

M F N AM

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

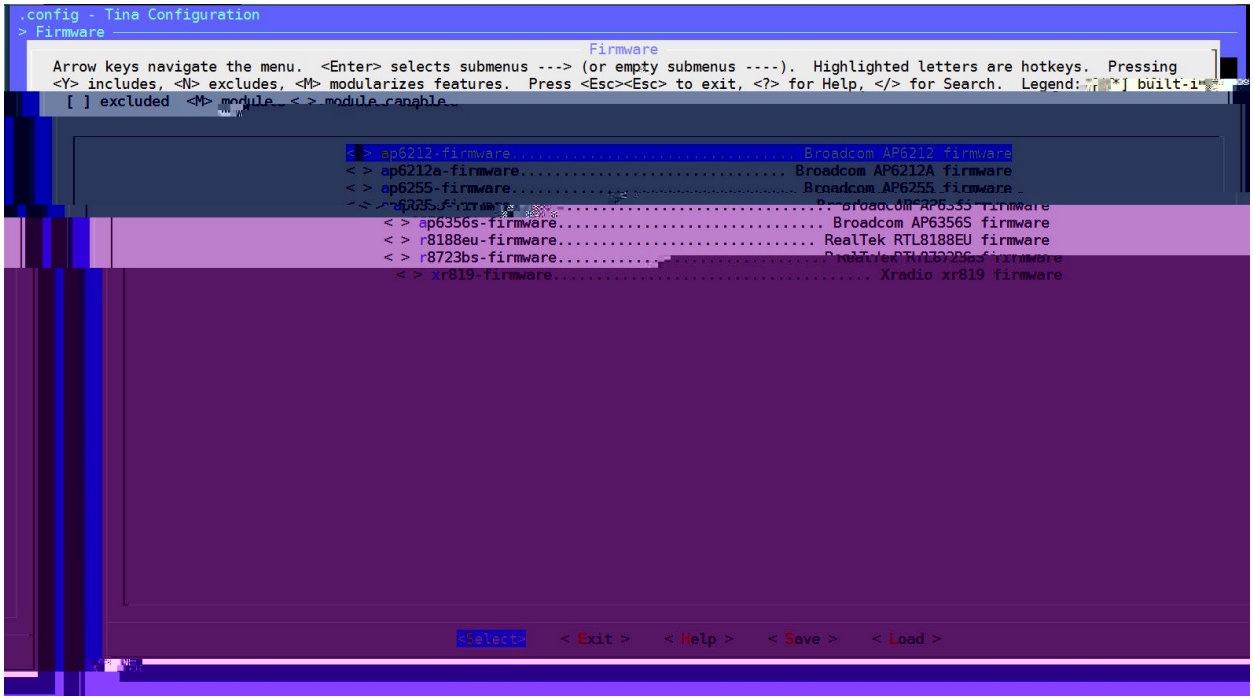
F C I B I



F K

P AP

AP



F AP

B F F I

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PC

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3 Compile the Tina Linux and flash the firmware on board

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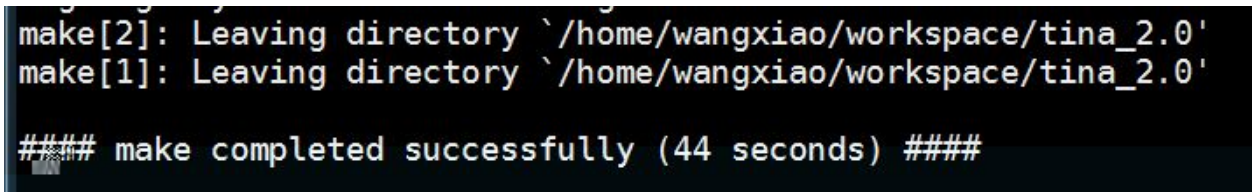
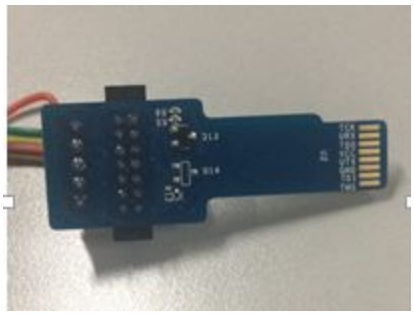
O



F

A F



F A F

F

```
/home/wangxiao/workspace/tina_2.0/out/tulip-d1/tina_tulip-d1_card0.img

pack finish
```

F

P

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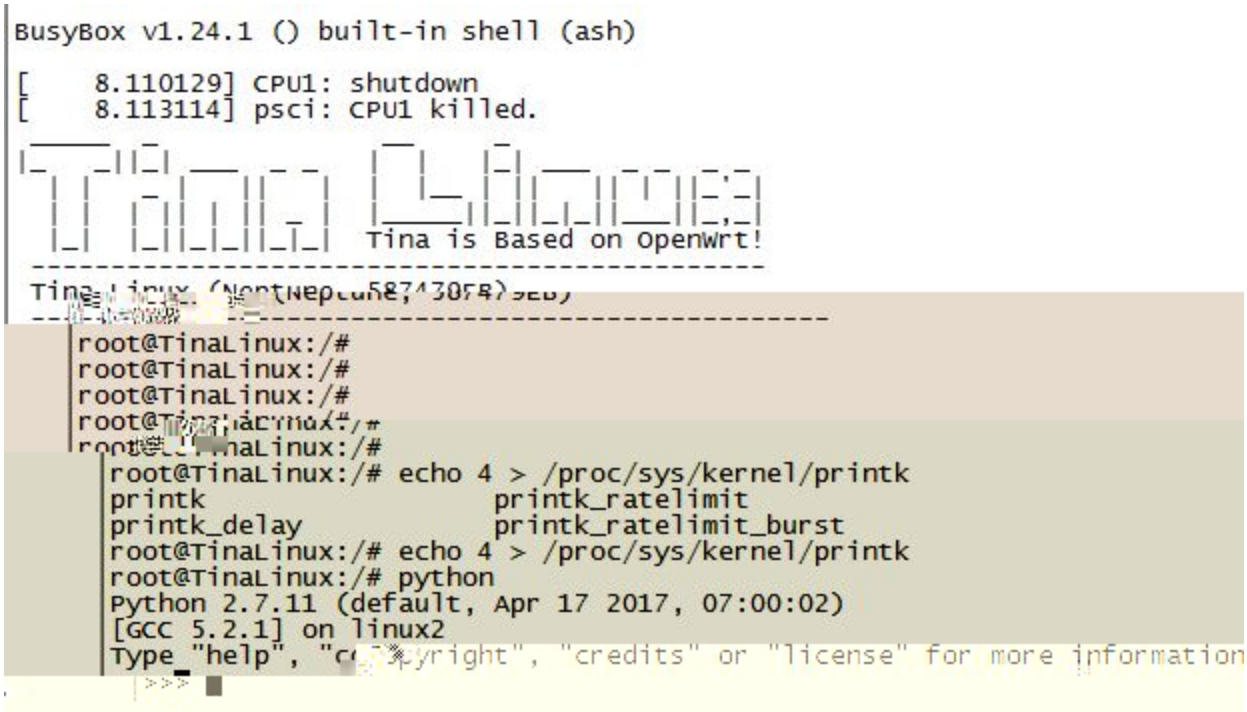
4 Run Google Cloud IoT Demo on Tina

A O P C I



F P

C I ID PA O D
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
```

F C I

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A A

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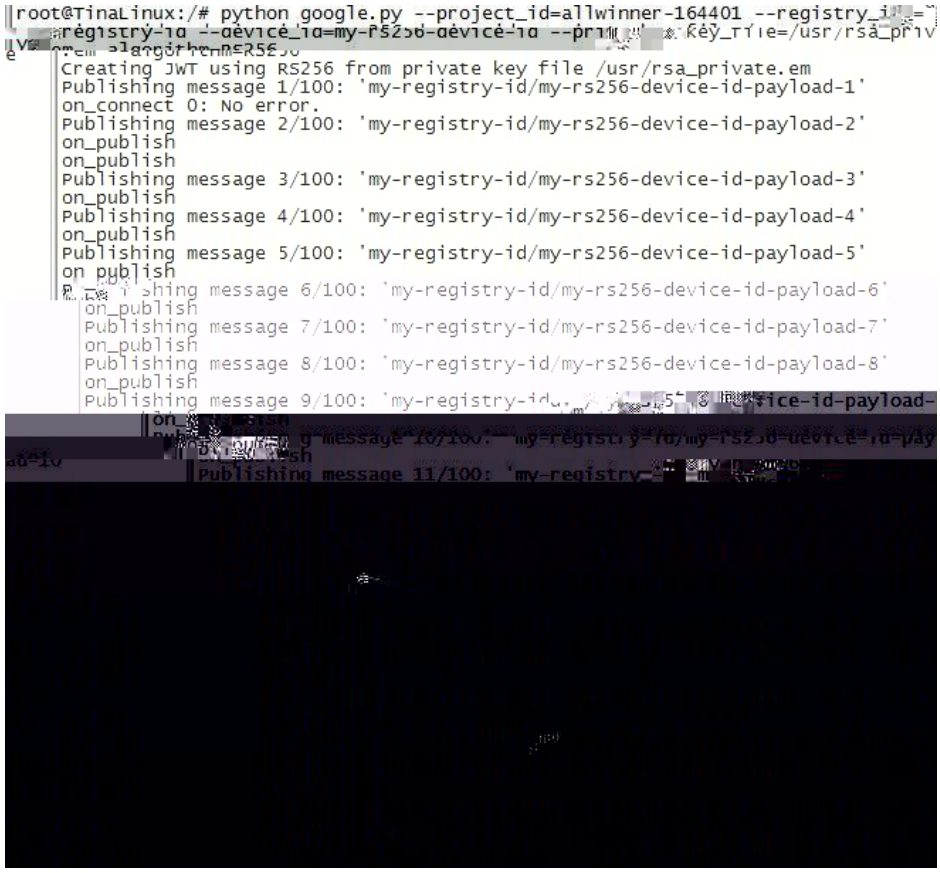
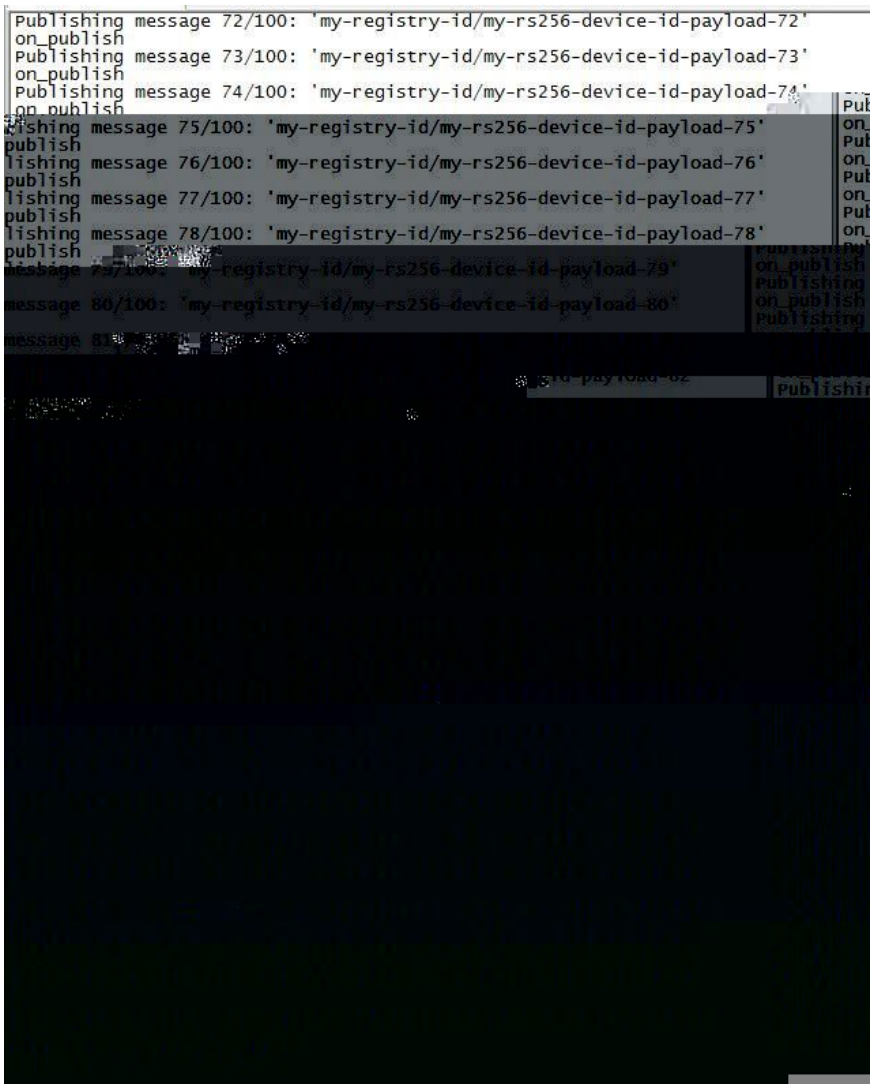
E

G C I

F


root@TinaLinux:/# python google.py --project_id=allwinner-164401 --registry_id=
--registry_id --device_id=my-rs256-device-id --private_key_file=/usr/rsa_priv
e --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 11/100: 'my-registry-

F D


Publishing message 72/100: 'my-registry-id/my-rs256-device-id-payload-72'
on_publish
Publishing message 73/100: 'my-registry-id/my-rs256-device-id-payload-73'
on_publish
Publishing message 74/100: 'my-registry-id/my-rs256-device-id-payload-74'
on_publish
lishing message 75/100: 'my-registry-id/my-rs256-device-id-payload-75'
publish
lishing message 76/100: 'my-registry-id/my-rs256-device-id-payload-76'
publish
lishing message 77/100: 'my-registry-id/my-rs256-device-id-payload-77'
publish
lishing message 78/100: 'my-registry-id/my-rs256-device-id-payload-78'
publish
message 80/100: 'my-registry-id/my-rs256-device-id-payload-80'

F D L

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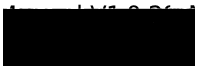
DATA
MESSAGE_ID
ATTRIBUTES
56-device-id deviceNumId=2647740481950093 deviceRegistryId=my-registry-id devi
RegistryLocation=us-central1 projectId=allwinner-164401 subFolder=

F

roots.pem