

# **NutsBoard - Almond SoM**

## **Ubuntu Runtime Image User Manual**

**Rev 1.0    20170120**

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## Revision History

Revision	Date	Description
V1.0	01/20/2017	First Release

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# 1. Overview

## 1.1 Support List

Release date: 2017/1/20

- 16.04-LTS Minimal
- U-boot 201605
- Linux Kernel 4.4.32
- Login account: username:password=ubuntu:ubuntu username:password=root:root
- Features:
  - Ajenti Web UI service
  - WiFi AP mode support
  - NAT mode on LAN ports
  - 3G/4G communications

## 1.2 Partition Layout of Software Image

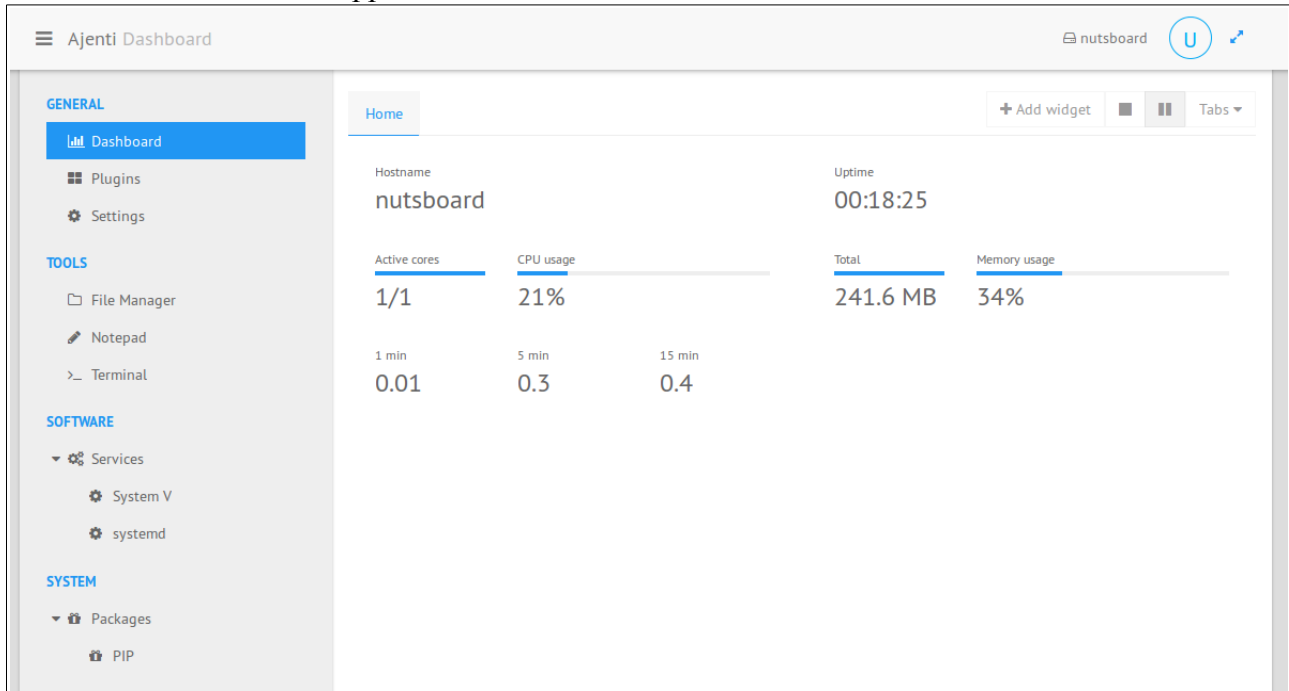
Section	Description
MBR	Partition information
MLO	First stage u-boot image
u-boot.img	
Partition 1 (FAT32) Under /boot directory <ul style="list-style-type: none"><li>● uEnv.txt</li><li>● zImage</li><li>● dtb</li></ul>	<ul style="list-style-type: none"><li>● u-boot.img: Second stage u-boot image</li><li>● uEnv.txt: U-boot environment, you can set boot arguments in this file.</li><li>● dtb: linux device tree file, it's platform-specific.</li></ul>
Partition 2 (EXT4) rootfs	Ubuntu rootfs

## 2. About Features

### 2.1 Ajenti Web UI service:

Ajenti is a Web Admin UI tool base on python language, the features as following:

- PIP manager support: You can plug-in your applications easier.
- Low resource usage.
- Terminal on-line support .



- How to Connect Ajenti when boot up (Ajenti port:8000):
  1. plug-in your cable to a LAN port, and connect: <https://192.168.30.1:8000>
  2. plug-in your cable to a WAN port, and connect: <https://<your WAN IP from board>:8000>
  3. connect Ajenti via WiFi: <https://<your WiFi IP from board>:8000>

## 2.2 WiFi AP mode support

**Step 1. NutsBoard team offer a change mode dynamically tool, please issue the commands:**

**1. AP mode (default SSID:Password=nutsboard-ap:qwerty0987)**

```
root@nutsboard:~# sudo wifi_mode_change ap
```

**2. Station mode**

```
root@nutsboard:~# sudo wifi_mode_change client <target SSID> < target password>
```

**Step 2. Change the WiFi AP input, output, SSID or password**

```
root@nutsboard:~# sudo ap-hotspot configure
```

## 2.3 NAT mode on LAN ports

**Step 1. Default is eth0 (LAN ports) as input, eth1 (WAN port) as output.**

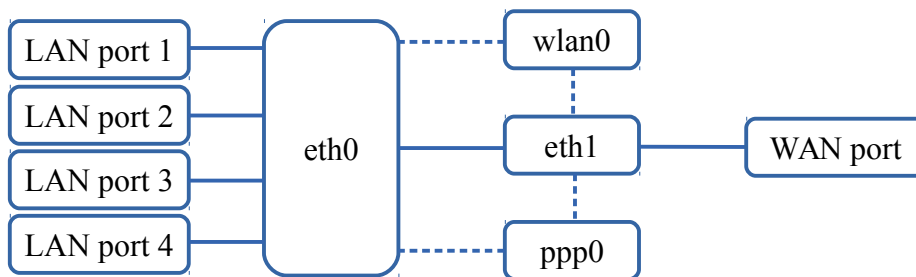
```
root@nutsboard:~# eth1_nat.sh (it's auto running when boot up, so no need do it manually).
```

**Step 2. You also can change the input and output interfaces as following:**

```
edit /usr/bin/eth1_nat.sh
```

```
edit /etc/udhcpd.conf
```

**NOTE: eth0 could as input only.**



## 2.4 3G/4G communications

**Ex: Quectel UC-20 3G module**

**Step 1. Please make sure your 3G/4G module already working on kernel space.**

**Step 2. Please generate 3 files as following paths:**

```
/etc/ppp/peers/wcdma-chat-connect
```

```
/etc/ppp/peers/wcdma-chat-disconnect
```

```
/etc/ppp/peers/wcdma
```

welcome to connect us if you want to know the file detail content.

**Step 3. Issue the command to make a connection.**

```
root@nutsboard:~# sudo pppd call wcdma
```

**NOTE: Please check you SIM card is pin blocked or not first when you connection failed.**