



# Grandstream Networks, Inc.

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## GWN76xx Command Line Guide



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## INTRODUCTION

The GWN76xx Wireless Access Points Series can be managed locally and remotely, through Web access or via Command Line, offering more flexibility along with secured login sessions. The various features and operations on the GWN7600 and GWN76XX access points can now be managed either through Web GUI offering a friendly user interface, or via Command Line through SSH access.

SSH is a secure protocol used for the connection to a remote host, through command lines and text-based interface. Once authenticated and connected, all typed commands on the terminal are sent to the remote device and executed there.

The CLI (Command Line Interface) on GWN76xx provides access to many advanced diagnostic commands as well as configuration, and allows discovering / pairing nearby access points, managing connected clients, managing Network Groups and SSIDs, maintaining and updating the AP.

This guide will describe the usage of Command Line to manage the GWN76xx access points, and will be illustrated using Putty tool, as SSH client Console.



## PREREQUISITES

Along this guide, the user is supposed to be familiar with GWN76xx series, with knowledge of how to configure GWN7600 and GWN76XX APs, and basic knowledge of SSH.

The information in this document is based on the following software and hardware:

- GWN76XX Series AP that runs firmware 1.0.3.21.
- PC or laptop with PuTTY tool available [here](#).

**Note:** In this document, we will use PuTTY client tool in order to verify / run / save the configuration, users can use any third-party client to login and manage the AP through SSH.

The deployed diagram in our scenario is the below one:

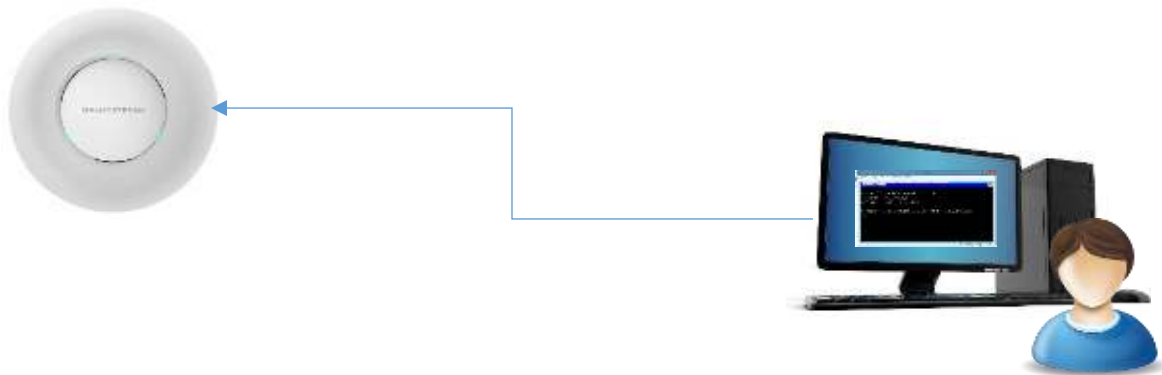


Figure 1 : Command Line Schema

## DISCOVERING AND CONNECTING TO THE AP

### Discovering the AP

Once the GWN76xx is powered up and connected to the LAN network, you can discover it using [GWNDiscoveryTool](#) to get the IP address of the AP which will be used for SSG access.

For more details on how to discover your GWN76xx, please refer to the product user manual:

[http://www.grandstream.com/sites/default/files/Resources/GWN76XX\\_usermanual\\_1.pdf](http://www.grandstream.com/sites/default/files/Resources/GWN76XX_usermanual_1.pdf)

### Connecting to the AP

Secure Shell (SSH) provides both secure authentication and secure communications to the CLI. First step to do is to run the SSH client application (PuTTY in our case) and set the following:

- **Host Name or IP Address:** GWN76xx's IP Address, (ex: 192.168.6.96).
- **Port:** 22, this is the by default port for SSH protocol.
- **Connection type:** Set this to SSH

The settings should be similar to the following figure:

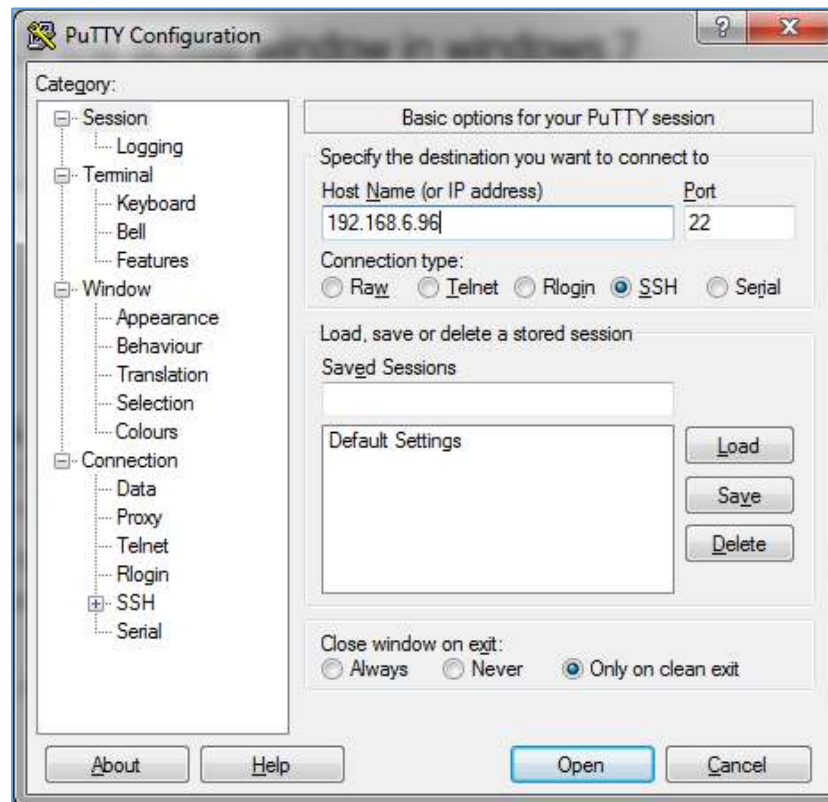


Figure 2 : Putty SSH Configuration

Once done, you can press **Open** to start the SSH session and open the console.



## RUNNING THE CLI

### Login to the CLI

Once pressing **Open** to start the session, the login prompt will appear on the CLI, type in “admin” followed by the AP admin password:



Figure 3 : CLI Login

### Main Menu

Once the authentication is done and validated, the SSH client will connect to the GWN76xx, and will display the following main menu:

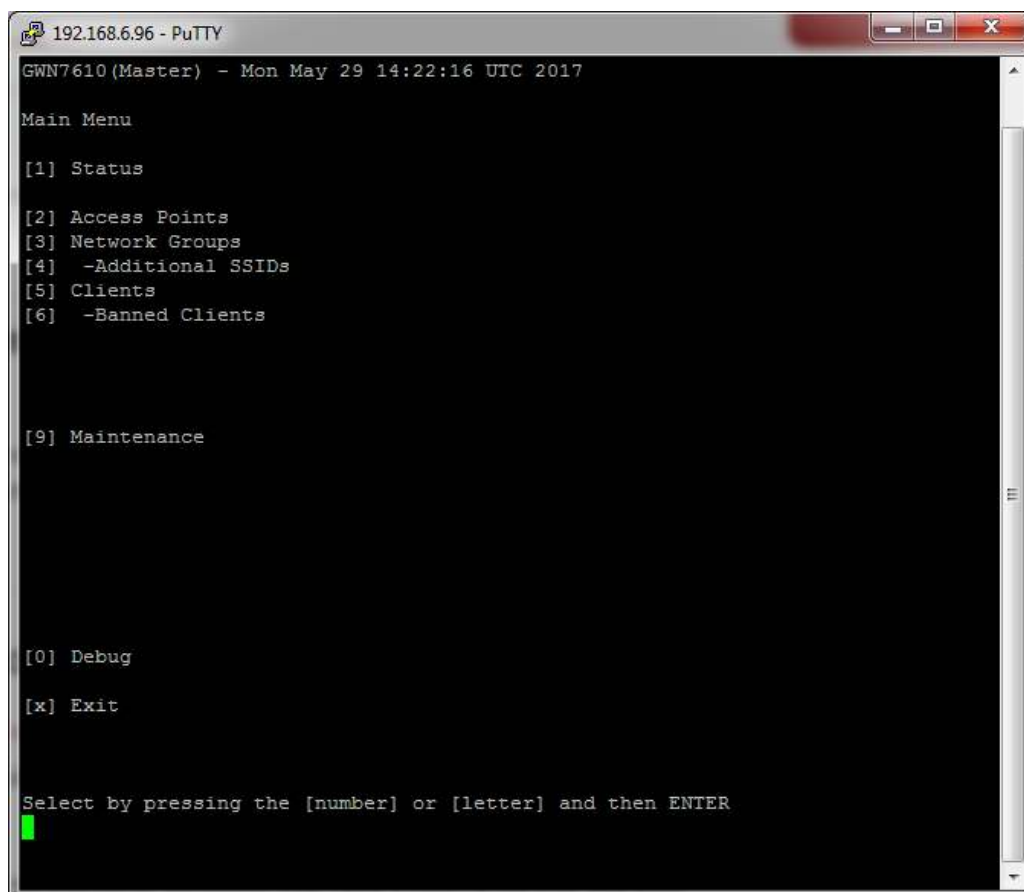


Figure 4 : CLI Main Menu



The main menu includes the following sections:

**Table 1 : CLI Main Menu**

| Section               | Description   |
|-----------------------|---|
| <b>Status</b>         | Shows the device's status information such as Firmware version, IP Address, Link Speed, Uptime, and Users count via different Radio channels. |
| <b>Access Points</b>  | This section is mainly to discover / pair other access points.  |
| <b>SSIDs</b>          | When using GWN76xx as Master Access Point, users have the ability to create different SSIDs and adding GWN76xx Slave Access Points.           |
| <b>Clients</b>        | Access clients list connected to GWN76xx zone.  |
| <b>Banned Clients</b> | Display the list of clients blocked to connect.   |
| <b>DHCP</b>           | Edit the default DHCP server or add new VLAN.   |
| <b>Mesh</b>           | Scan and change the Interface (2.4GHz/5GHz) and number of cascades.   |
| <b>Email</b>          | Set the STMP settings.  |
| <b>Maintenance</b>    | Configuration and maintenance details of the AP.  |
| <b>Debug</b>          | Tools for managing and monitoring connected clients to network groups, as well as debugging and troubleshooting.                              |
| <b>Exit</b>           | Typing "x" will exit the session.   |

**Note:** If this is the first time you are connecting to the GWN76xx, or the device was reset to factory settings, the main screen will not display the options above, and most of those options shall be hidden. The main screen in this case show only the Status, Clients, and an option to set the GWN76xx as a Master:





```
192.168.5.193 - PuTTY
GWN7630 (Master) - Thu Jun 27 11:41:19 UTC 2019

Main Menu

[1] Status

[2] Access Points
[3] SSIDs
[4] Clients
[5] -Banned Clients

[6] DHCP
[7] Mesh
[8] Email

[9] Maintenance

[0] Debug

[x] Exit

Select by pressing the [number] or [letter] and then ENTER
█
```

Figure 5 : GWN76xx First Connection



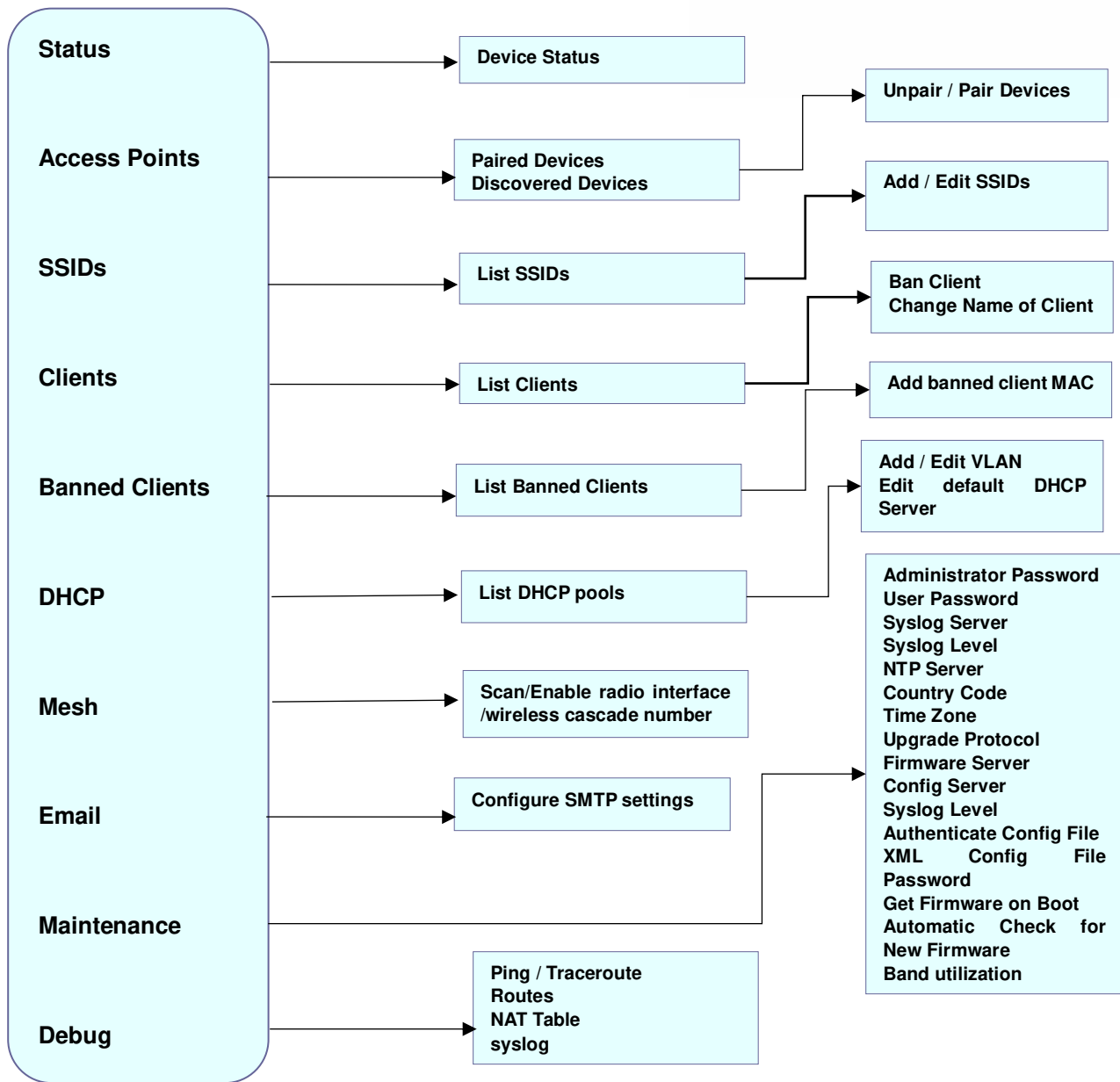


Figure 6 : CLI Menu Configuration



## USING THE CLI EXAMPLES

### Example 1: Managing Access points

This section will display all the paired and discovered access points in the zone, and allow to pair a GWN76xx access point connected to the same Network.

On the main menu press 2 to select Access Points, the following options will be displayed:

```

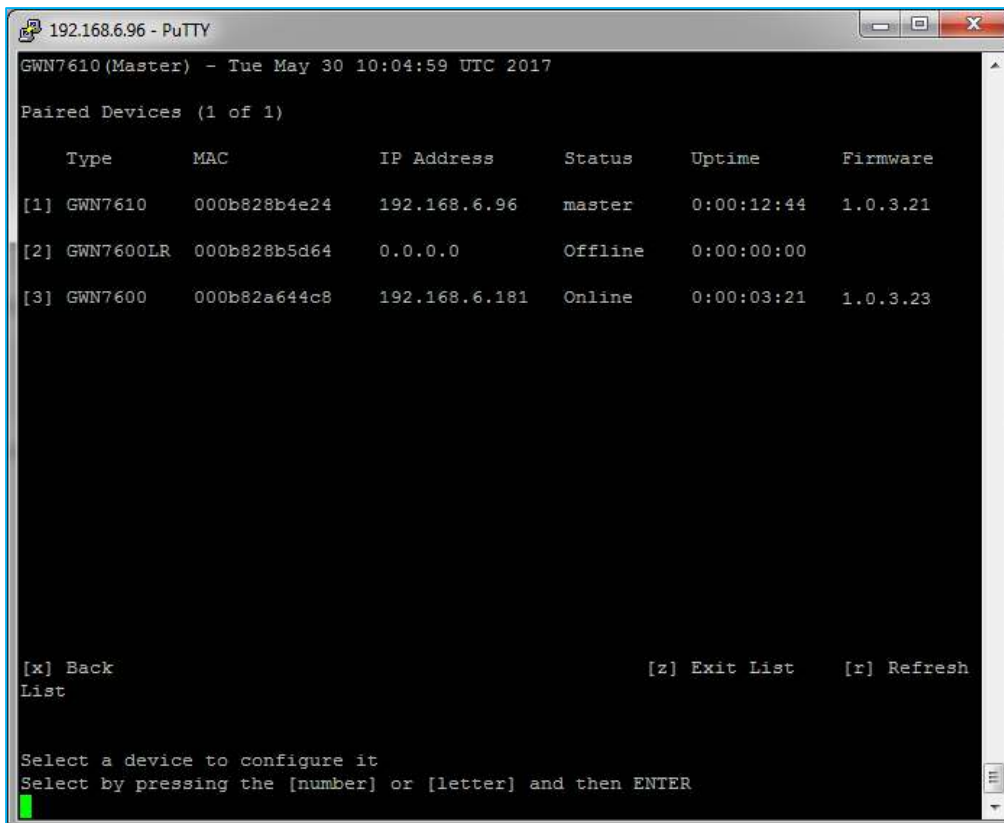
Access Points

[1] Paired Devices: 2
    Online: 1
    Offline: 1

[2] Discovered Devices: 3
  
```

#### [1] Paired Devices

Selecting and pressing “1” for paired devices will lead to the following interface:



```

192.168.6.96 - PuTTY
GWN7610 (Master) - Tue May 30 10:04:59 UTC 2017

Paired Devices (1 of 1)

   Type      MAC           IP Address   Status   Uptime   Firmware
[1] GWN7610  000b828b4e24  192.168.6.96  master  0:00:12:44  1.0.3.21
[2] GWN7600LR 000b828b5d64  0.0.0.0      Offline  0:00:00:00
[3] GWN7600  000b82a644c8  192.168.6.181 Online   0:00:03:21  1.0.3.23

[x] Back                               [z] Exit List   [r] Refresh
List

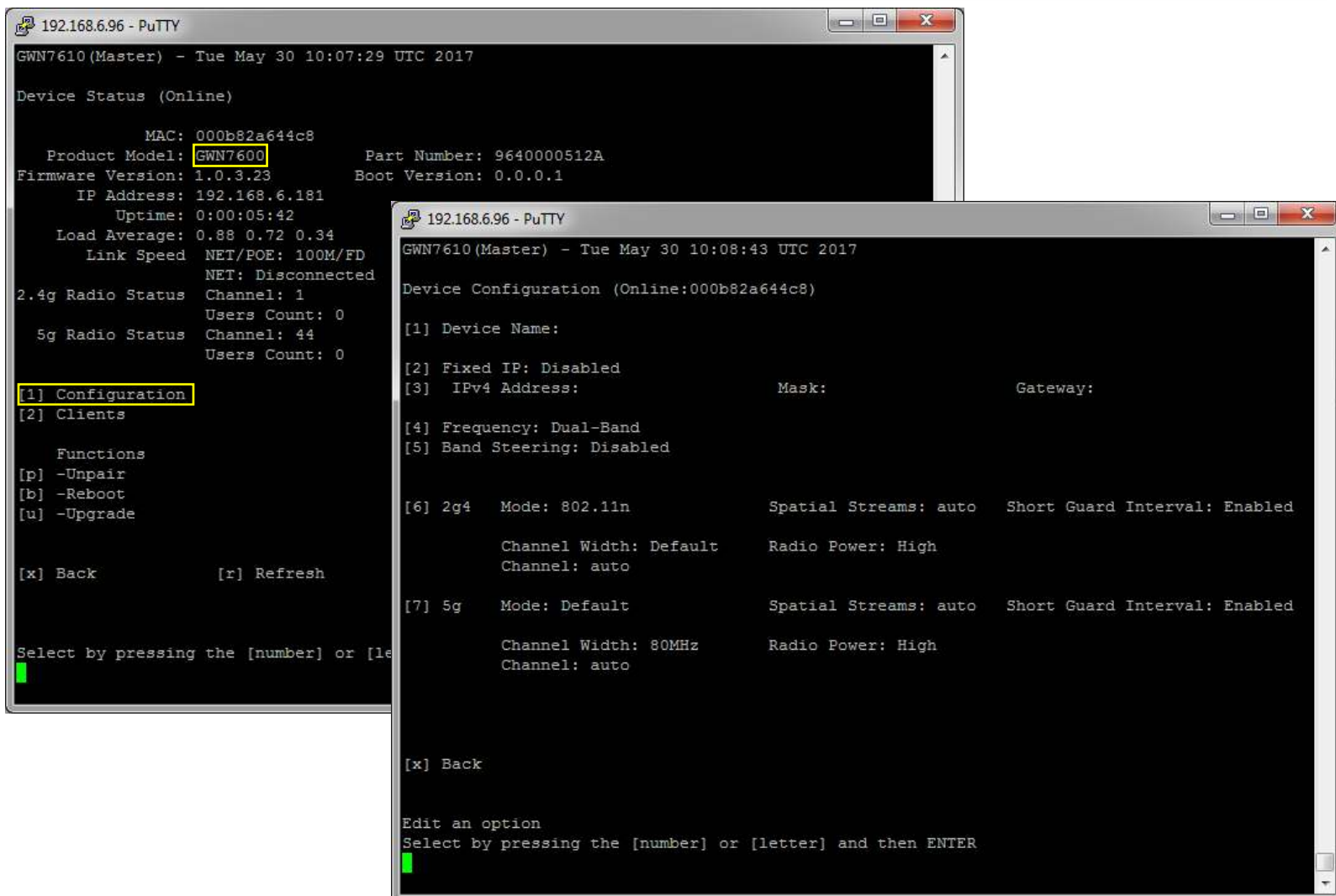
Select a device to configure it
Select by pressing the [number] or [letter] and then ENTER
  
```

Figure 7 : Paired Devices

The above interface shows the paired APs, with corresponding Type / MAC Address / IP Address / Status / Uptime and Firmware.



You can select a device among the listed ones, and then you will have a list of the available operations to perform on the selected AP, the following screenshots show the available details when selecting device 3 from the above list (GWN7600), and then selecting Configuration (Option 1):



```

192.168.6.96 - PuTTY
GWN7610 (Master) - Tue May 30 10:07:29 UTC 2017

Device Status (Online)

      MAC: 000b82a644c8
Product Model: GWN7600      Part Number: 9640000512A
Firmware Version: 1.0.3.23  Boot Version: 0.0.0.1
IP Address: 192.168.6.181
Uptime: 0:00:05:42
Load Average: 0.88 0.72 0.34
Link Speed NET/POE: 100M/FD
NET: Disconnected
2.4g Radio Status Channel: 1
Users Count: 0
5g Radio Status Channel: 44
Users Count: 0

[1] Configuration
[2] Clients

Functions
[p] -Unpair
[b] -Reboot
[u] -Upgrade

[x] Back      [r] Refresh

Select by pressing the [number] or [letter] and then ENTER

```

```

192.168.6.96 - PuTTY
GWN7610 (Master) - Tue May 30 10:08:43 UTC 2017

Device Configuration (Online:000b82a644c8)

[1] Device Name:
[2] Fixed IP: Disabled
[3] IPv4 Address:      Mask:      Gateway:
[4] Frequency: Dual-Band
[5] Band Steering: Disabled

[6] 2g4  Mode: 802.11n      Spatial Streams: auto  Short Guard Interval: Enabled
      Channel Width: Default  Radio Power: High
      Channel: auto

[7] 5g   Mode: Default      Spatial Streams: auto  Short Guard Interval: Enabled
      Channel Width: 80MHz    Radio Power: High
      Channel: auto

[x] Back

Edit an option
Select by pressing the [number] or [letter] and then ENTER

```

**Figure 8 : Paired Device Configuration**

Besides Configuration option, users can select other options as displayed on the CLI, for example pressing “2” will display the device clients, pressing “p” will unpair the AP, and “b” will reboot the device. etc.

## [2] Discovered Devices

This section lists the discovered APs, click on [2] to show discovered access points within GWN76XX's Network, the following page will appear:



```

192.168.6.96 - PuTTY
Discovered Devices (1 of 1)

   Type      MAC           IP Address    Firmware
[1] GWN7610   000b828b4e28  192.168.6.46  1.0.3.21
[2] GWN7610   000b828b4dd4  192.168.6.163 1.0.3.21
[3] GWN7600   000b82a644c8  192.168.6.181 1.0.3.23

[x] Back          [z] Exit List   [r] Refre
sh List

Select a device to pair it
Select by pressing the [number] or [letter] and then ENTER
  
```

**Figure 9 : Discovered Devices**

You can select the discovered device by pressing the corresponding number, pressing Option 3 in above screenshot will display the following message which indicates successful pairing:

```
Pair succeeded!
```

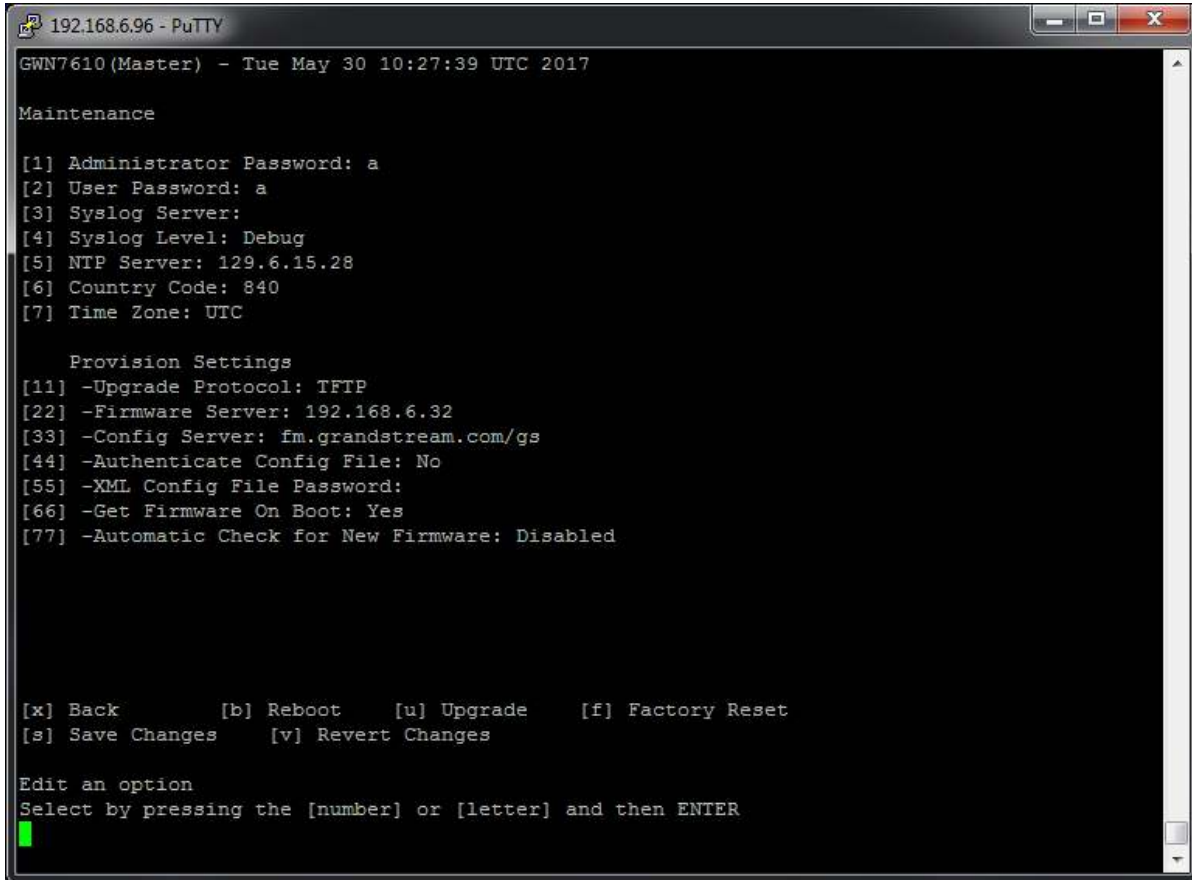
The paired device will be listed on Paired Devices section, and you can then enter to the related configuration options of the device.

## Example 2: Maintenance Operations

This section is mainly for maintenance purposes, it allows to maintain the GWN76xx working properly and up to date, you can refer to the user manual for more details about the Maintenance options on GWN76xx.

From the main menu, you can enter Maintenance option by pressing “9”, the following interface will be displayed:





```
192.168.6.96 - PuTTY
GWN7610 (Master) - Tue May 30 10:27:39 UTC 2017

Maintenance

[1] Administrator Password: a
[2] User Password: a
[3] Syslog Server:
[4] Syslog Level: Debug
[5] NTP Server: 129.6.15.28
[6] Country Code: 840
[7] Time Zone: UTC

Provision Settings
[11] -Upgrade Protocol: TFTP
[22] -Firmware Server: 192.168.6.32
[33] -Config Server: fm.grandstream.com/gs
[44] -Authenticate Config File: No
[55] -XML Config File Password:
[66] -Get Firmware On Boot: Yes
[77] -Automatic Check for New Firmware: Disabled

[x] Back      [b] Reboot   [u] Upgrade   [f] Factory Reset
[s] Save Changes  [v] Revert Changes

Edit an option
Select by pressing the [number] or [letter] and then ENTER
█
```

Figure 10 : Maintenance

Several options are available under Maintenance menu, those options are detailed on the user manual. For example, once selecting option “1”, the user will be prompted to change the admin password, and the following messages will be gradually displayed:

```
Enter administrator password
```

```
Re-enter administrator password
```

```
Successfully changed administrator password!
```

**Note:** Any configuration change on the CLI needs to be saved, therefore two options are always displayed on the CLI after each change, in order to allow users to save or discard the changes:

```
[s] Save Changes    [v] Revert Changes
```

