

# **GWN76xx Firmware Release Notes**

## **IMPORTANT UPGRADING NOTE**

- [7/15/2021] [GWN7610 / GWN7600 / GWN7600LR] Please upgrade to 1.0.19.29 for security fix against Wi-Fi FragAttacks.
- [6/4/2021] [GWN7630 / GWN7630LR / GWN7605 / GWN7605LR / GWN7615] Please upgrade to 1.0.19.29 for security fix against Wi-Fi FragAttacks.
- [3/14/2020] [All APs 1.0.15.x] Due to the security enhancement, unless Legacy TLS Compatibility (only available on 1.0.15.4 or higher version) is enabled, master AP on 1.0.15.4 or higher firmware will not compatible with slave AP on firmware lower than 1.0.15.4. Master AP on firmware lower than 1.0.15.4 will also not be compatible with slave AP on firmware 1.0.15.4 or higher. Cloud and GWN Manager will still support both firmwares.
- 4. [3/14/2020] [All APs 1.0.15.x] Do not use 1.0.15.x AP firmware with GWN7000 1.0.9.x or lower version.
- [12/14/2018] [All APs 1.0.8.17] In order to enable your AP's capability of connecting GWN Cloud EU server, AP needs to be upgraded to 1.0.8.17 or above.
- 6. [6/15/2018] [GWN7600&7600LR 1.0.6.41] Starting from 1.0.6.x, GWN7600 and GWN7600LR will share same firmware file name gwn7600fw.bin. As a result, when GWN7600LR upgrades from pre-1.0.6.x to latest firmware, it will still retrieve firmware with name gwn7600lrfw.bin, and when GWN7600LR upgrades from 1.0.6.x or post-1.0.6.x to other firmware, it will retrieve firmware with name gwn7600lrfw.bin. So, when your GWN7600LR upgrades from pre-1.0.6.x firmware, you will need to manually modify the target firmware name to gwn7600lrfw.bin.
- [1/26/2017] [All APs 1.0.5.15] For firmware 1.0.5.15 (GWN7610) and 1.0.5.13 (GWN7600& GWN7600LR), this is only for GWN7610/GWN7600/GWN7600LR master deployment. All



users with GWN7000 as master are NOT encouraged to upgrade until 1.0.5.x matching firmware is available for GWN7000, due to the compatibility of new features.

- [8/11/2017] [All APs 1.0.4.22] Please upgrade to 1.0.4.12 or higher version to get the patch for WPA2 4-way handshake vulnerability.
- [8/11/2017] [GWN7610 1.0.3.21] Before starting to upgrade to latest firmware, please make sure your GWN7610's firmware version is 1.0.2.108 or higher. Also, please make sure your GWN7000 master (if any)'s firmware version is 1.0.2.71 or higher.



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# [GWN7625]FIRMWARE VERSION 1.0.21.5

## **PRODUCT NAME**

GWN7625

## DATE

6/9/2022

## **FIRMWARE FILE INFORMATION**

• GWN7625 Firmware file name: gwn7625fw.bin

MD5 checksum: ac0df7d3d1307da7721068bb3070f4d8

## **CHANGES/ENHANCEMENT**

• This is the first release of GWN7625.



# [GWN7602]FIRMWARE VERSION 1.0.19.36

## PRODUCT NAME

GWN7602

## DATE

5/25/2022

## **FIRMWARE FILE INFORMATION**

• GWN7602 Firmware file name: gwn7602fw.bin

MD5 checksum: b6003a8e10a157dd6dca8d173b105bcb

- Enabled band 3 and band 4 channels for Israel
- Added support of SMS authentication



## PRODUCT NAME

GWN7660 / GWN7664

## DATE

2/24/2022

## FIRMWARE FILE INFORMATION

- GWN7660 Firmware file name: gwn7660fw.bin
   MD5 checksum: 040e78c4cc84cd4001ec9fd5a740fa7f
- GWN7664 Firmware file name: gwn7664fw.bin

MD5 checksum: 2b220767ed88abcd6218240747c134ae

- Fixed a radio issue that US module of GWN7660&7664 may not be able to select DFS channel.
- Internal bug fixes



## **PRODUCT NAME**

GWN7630 / GWN7630LR

## DATE

1/19/2022

## **FIRMWARE FILE INFORMATION**

GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin – 1.0.21.15
 MD5 checksum: 89f9df9ca91e25ed3ba8f21d2b81bae8

## **CHANGES/ENHANCEMENT**

• Added support of Hotspot 2.0 R3 Beta for GWN7630/GWN7630LR



## PRODUCT NAME

GWN7605 / GWN7605LR / GWN7615 / GWN7630 / GWN7630LR / GWN7660 / GWN7664

### DATE

1/7/2022

### FIRMWARE FILE INFORMATION

- GWN7615 Firmware file name: gwn7615fw.bin 1.0.21.14
   MD5 checksum: 84811f268ad70fe8cb40b18e5c23a54e
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin 1.0.21.14
   MD5 checksum: d89d9cc7653dcb8cda568c6eff01e944
- GWN7660 Firmware file name: gwn7660fw.bin 1.0.21.14
   MD5 checksum: f83ccfe41843464d429f596cec7c0f87
- GWN7605/7605LR Firmware file name: gwn7605fw.bin 1.0.21.15
   MD5 checksum: 09928b531736123b1efdd4b56fd99be5
- GWN7664 Firmware file name: gwn7664fw.bin 1.0.21.15
   MD5 checksum: ed78b0a7b8a5f54d83adcbd6d58b48ce

## **CHANGES/ENHANCEMENT**

- Added support of Hotspot 2.0 R3 Beta for GWN7660
- Added support of **Bonjour Gateway**
- Internal bug fixes

#### **NEW FEATURE OVERVIEW**

• Bonjour Gateway

This feature will allow Bonjour protocol to be broadcast into configured VLAN.



Configuration is available at:

Network $\rightarrow$ SSID $\rightarrow$ Edit  $\square \rightarrow$ Wi-Fi $\rightarrow$ Advanced $\rightarrow$ Enable Bonjour Gateway



## PRODUCT NAME

GWN7600 / GWN7600LR / GWN7610 / GWN7660

## DATE

11/5/2021

### FIRMWARE FILE INFORMATION

- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: 9e4f2b4b2acf9f96d650af91e38a0963
- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: d9e7eda4f64270a5e1800b1f7ff71757
- GWN7660 Firmware file name: gwn7660fw.bin

MD5 checksum: 435d918cc98c429ac3a2036c67169ec7

## **CHANGES/ENHANCEMENT**

- Sync new features of 1.0.21.6 from other models
- Enable FCC **DFS channels** for gwn7660
- Internal bug fixes

#### **NEW FEATURE OVERVIEW**

#### • DFS channels

Now SSID max number is separately counter in each band (2.4GHz or 5Ghz). The maximum allowed SSID for each band now is as below:

1.0.21.7	CE	RCM	FCC	IC	ANATEL(Brazil)
GWN7610	-	-	-	-	-
GWN7600	-	-	-	-	Yes
GWN7600LR	Yes	-	-	-	-



1.0.21.7	CE	RCM	FCC	IC	ANATEL(Brazil)
GWN7630	Yes	Yes	Yes	Yes	Yes
GWN7630LR	Yes	Yes	Yes	Yes	-
GWN7602	Yes	Yes	Yes	Yes	Yes
GWN7605	Yes	Yes	Yes	Yes	-
GWN7605LR	Yes	Yes	Yes	Yes	-
GWN7615	Yes	Yes	Yes	Yes	-
GWN7660	N	Coming	Vac	Coming	
GWN7000	Yes	soon	Yes	soon	-



## PRODUCT NAME

GWN7630 / GWN7630LR / GWN7605 / GWN7605LR / GWN7615

## DATE

10/27/2021

## FIRMWARE FILE INFORMATION

- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: dbb89a9e9398d7a475c28c8b0f377665
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: d33aa163653518b0f6e4e8c845d3595e
- GWN7615 Firmware file name: gwn7615fw.bin
- MD5 checksum: 6deab7cb22653691db67342e438cd0c2

- Upgraded the max number of supported SSIDs
- Added Option to turn off U-APSD function
- Added feature of reporting Probe request RSSI information (Requires GWN.Cloud)
- Added IPv6 support for internal GWN services
- Added feature to Transfer AP to GWN manager
- Added feature to allow Each AP to disable/Enable 2.4GHz or 5GHz independently
- Added feature of **TR-069**
- Added feature of Google Authentication
- Added feature to **Delete inbound and outbound rules in batches**
- Added feature to Save network abnormal log to Flash
- Added feature of Web lock for failed login



## **NEW FEATURE OVERVIEW**

#### • Upgraded the max number of supported SSIDs

Now SSID max number is separately counter in each band (2.4GHz or 5Ghz). The maximum allowed SSID

for each band now is as below:

Model	MAX SSID on each band without Mesh/with Mesh
GWN7600/7600LR	16/14
GWN7602	4/4
GWN7605/7605LR	8/6
GWN7610	16/14
GWN7615	16/14
GWN7630/7630LR	16/14
GWN7660/7660LR	16/14
GWN7664	16/14

Interfaces are also updated according to the new limit.

Add



#### • Option to turn off U-APSD function

U-APSD (Unscheduled Automatic Power Save Delivery) now can be turned of by option from

Network  $\rightarrow$  SSID  $\rightarrow$  Edit  $\square \rightarrow$  Wi-Fi $\rightarrow$  Advanced  $\rightarrow$  Enable U-APSD



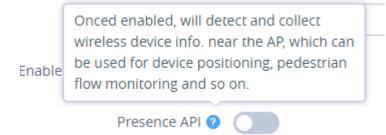
#### • Probe request RSSI information

This information is mainly used for client geo analytics, so that further service can be provided based on

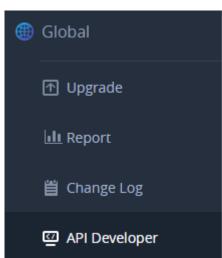
client location.

To turn on this feature, configuration option is available at GWN.Cloud:

Network→System→Settings→General→Presence API



#### The API information is available from GWN Cloud



Detail for this API is under API Reference→Client→7. Obtain the signal strength of the clients around the AP

#### • IPv6 support for internal GWN services

Now GWN AP will not only pass IPv6 packets, AP will be able to take IPv6 address for internal services. If dynamic IPv6 assignment is not available in your network, you can configure static IPv6 address on AP management interface. Configuration is available at

Access Point→Configuration→Edit G → Fixed IPv6



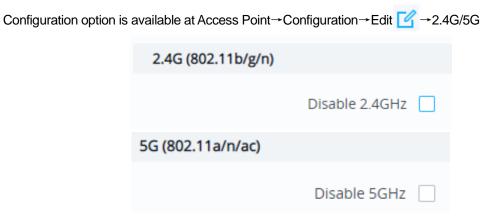
#### • Transfer AP to GWN manager

GWN manager option is available in Transfer AP feature now.

Transfer AP	×
Transferable devices (Online and supported by cloud or GWN Manager): C0:74:AD:14:27:08	
Untransferable devices:	
There are no untransferable devices.	
Transfer To GWN Cloud	
Transfer         Cancel	

• Each AP to disable/Enable 2.4GHz or 5GHz independently

Each AP now can independently disable/enable its 2.4GHz band or 5GHz band.





#### • TR-069

Configuration options are available at Service  $\rightarrow$  TR069.

TR-069 feature is mutual exclusive to some GWN.Cloud and Master features. For detail please refer to GWN User Manual.

Enable TR-069			
ACS URL			
ACS User Name			
ACS Password			
Periodic Inform Enable			
Periodic Inform Interval (s)			
CPE Cert File			
CPE Cert Key			
	Save	Reset	
			J

#### Google Authentication

Google Authentication now is added to Captive Portal. Related configuration options are available at

Captive Portal→Policy List→Add/Edit→Basic

Select Authentication Type to Social Login Authentication, and then you can select Google.

Next, you will need to configure on Google cloud platform,

Go to https://console.developers.google.com/apis/credentials, and setup your App.



Retrieve you Client ID and Client Key and copy them onto your GWN.

Google 🔅	
Google Client ID	
Google Client Key	

Meanwhile configurate your Oauth redirect URI:

'https://cwp.gwn.cloud:8443/GsUserAuth.cgi?GsUserAuthMethod=4'.

#### • Delete inbound and outbound rules in batches

Now you can delete inbound/outbound rules in batches by checking the box in front of the rules.

≡ Se	Security / Firewall					
Outbo	Outbound Rules Inbound Rules					
(+ A	dd <u> </u> Delete					
	Priority	Service Protocol	Policy			
<ul> <li>Image: A set of the set of the</li></ul>	0	dhcp	Permit			
_	1		Permit			

#### • Save network abnormal log to Flash

When slave APs lost upper link network to its Master, Master will have no way to get log from Slaves. This scenario is especially common during a Mesh network troubleshooting. Now, with this feature, network can login slave AP's webUI to retrieve the log from interface below:

5	GWN7630LR	1	Ξ System / Debug					
≡			Core Files	Ping/Traceroute	One Key Debug	SSH Remote Access	Log	
٥	System ^							One Key Export
	Manager Settings							
	Debug							



## • Web lock for failed login

Now, GWN AP's webUI access will be locked for 15 mins after 5 login failures.



## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

## DATE

7/15/2021

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: 3523fcfccbf1d0ad3a06cb4389340fdb
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: b576f7bd25f3728574c885acdb2bd8a4
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: 9e37d1d485ba06bc990cc93540a18123
- GWN7602 Firmware file name: gwn7602fw.bin
   MD5 checksum: a3fcb6dcfbfb086ec89c2c9d59bee6df
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: ebaa7f81a22e33829e1db4d23ee9e9df
- GWN7615 Firmware file name: gwn7615fw.bin
- MD5 checksum: 14883d6401e978630d250ad32f7af563

- Fixed the security issue from Wi-Fi FragAttacks (GWN7610 / GWN7600 / GWN7600LR).
- Fixed a NAT issue causing some client with fixed IP unable to access external network.
- Fixed a MESH link issue caused by ipv6 environment.



## PRODUCT NAME

GWN7630 / GWN7630LR / GWN7605 / GWN7605LR / GWN7615

## DATE

6/4/2021

## FIRMWARE FILE INFORMATION

- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: a741ea98e0248271a61cdc331a77cc0d
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: c9c8d6b79c38b917351192b8f6061957
- GWN7615 Firmware file name: gwn7615fw.bin
   MD5 checksum: b86e8467e3a88470456f0f7b151be7a0

## **CHANGES/ENHANCEMENT**

Fixed the security issue from Wi-Fi FragAttacks (GWN7630 / GWN7630LR / GWN7605 / GWN7605LR / GWN7615).



## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

## DATE

3/29/2021

### FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: 033447bf5c51f20099bbf1e3b35dfde8
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: 2e5200b8b62891f456fbef68e5613eef
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: 8b3528dfb29a671f6fa588cf12df3798
- GWN7602 Firmware file name: gwn7602fw.bin
   MD5 checksum: 013e13b41757790c3f4ec84decb67fde
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: 1db0b79c378d3071e9d8846fdf0bff82
- GWN7615 Firmware file name: gwn7615fw.bin
   MD5 checksum: f2f2477224dca9a29d14ad07c17cdf3a

- Fixed an issue of GWN7602 LAN port incorrect status display.
- Fixed an issue that GWN7630 broadcast an unknown SSID when client bridge is setup.
- Fixed an issue that causes AP to go offline when channel width is changed.



- Fixed an issue of Email SMTP settings not working.
- Fixed an issue of GWN7605Ir's 5G radio interface incorrect when Country/Region select Europe and Scene select outdoor.
- Fixed an issue that causes WP810 disconnection when roaming between GWN APs.
- Internal bug fixes.



## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

## DATE

2/3/2021

### FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin 1.0.19.23
   MD5 checksum: ecb2557fd35d59515c7751a3cadd9f9d
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin 1.0.19.23
   MD5 checksum: 3a53f81c433bec5a9d158e26b47ee25f
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin 1.0.19.22
   MD5 checksum: 841cdd8ce3ce1bd997d725926239b9de
- GWN7602 Firmware file name: gwn7602fw.bin 1.0.19.22
   MD5 checksum: 638ac9849fafad42cce401576466a508
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin 1.0.19.22
   MD5 checksum: 990963089c1eb2c81f0dda9618d1691d
- GWN7615 Firmware file name: gwn7615fw.bin 1.0.19.22
   MD5 checksum: 8d27194e45c15d78dae61865363a08d5

- Added support of **WPA3** (gwn7600/7600lr/7610/7602 does NOT support)
- Added support of Secondary RADIUS Server
- Added support of Rogue AP Alert



• Added support of **NET port VLAN settings** (gwn7600/7600lr/7610 does NOT support)

## **NEW FEATURE OVERVIEW**

• WPA3

Configuration is available at SSID $\rightarrow$ Edit $\rightarrow$ Wi-Fi $\rightarrow$ Access Security $\rightarrow$ Security Mode.

Access Security	
Security Mode	WPA2 ^
WPA Key Mode 🕐	WEP 64-bit
WPA Encryption Type	WEP 128-bit
51 51	WPA/WPA2
WPA Pre-Shared Key 🕐	WPA2
802.11w 🕐	OSEN
	Open
Enable Captive Portal	WPA2/WPA3

## • Secondary RADIUS Server

Configuration is available at SSID  $\rightarrow$  Edit  $\rightarrow$  Wi-Fi  $\rightarrow$  Access Security. Once you choose 802.1x mode, secondary radius server can be configured additional to the primary.

Secondary RADIUS Accounting Server	<b>V</b>
RADIUS Accounting Server Address 🕐	
RADIUS Accounting Server Port 🕐	1813
RADIUS Accounting Server Secret ⑦	
RADIUS NAS ID 🕐	



## Rogue AP Alert

Configuration is available at System  $\rightarrow$  Alert  $\rightarrow$  Alert configuration  $\rightarrow$  Rogue AP.

Email	Alert Configure		
		Memory Usage ⑦	
		AP Throughput ⑦	
		SSID Throughput ⑦	
		Admin password change 🕐 🗌	
		Firmware Upgrade ⑦	
		Rogue AP ⑦	
		AP Offline ⑦	
		Save	et

#### • NET port VLAN settings

Configuration is available at Access Points  $\rightarrow$  Configuration  $\rightarrow$  Edit  $\rightarrow$  NET port Type.

You can configure Trunk port or Access port. When chose Access, you also need to specify its VLAN ID.

NET Port Type 🕐	Access ^
VLAN (NET) 🕐	Trunk
	Access



## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

## DATE

1/20/2021

### **FIRMWARE FILE INFORMATION**

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: 8a8265aab6d3bd03b0f76a0e6a73691e
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: a69514b2d275ace4d67c041d0e1a0cb4
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: 073577079373c78e9e8f535ffb2d95a3
- GWN7602 Firmware file name: gwn7602fw.bin
   MD5 checksum: 4a8edca192626f8c13455676912536a0
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: 5b51ddfd8b8f43aa75625298dc1cc187
- GWN7615 Firmware file name: gwn7615fw.bin
   MD5 checksum: 5170b60090e052f517c9355d995096d5

- Fixed a RRM bug that failed to adjust power and channel due to adjacent AP detection failure
- Fixed a NAT mode issue causing client cannot get IP address
- Fixed an issue that illegal IP assigned to AP causes AP to go offline



## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

### DATE

12/23/2020

## **FIRMWARE FILE INFORMATION**

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: f1f997996b45afc86a258949152506aa
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: 6b2cad61637d70af024501febbfcd615
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: d8c46486e455a952f22cf709627b7a53
- GWN7602 Firmware file name: gwn7602fw.bin
   MD5 checksum: dcdf2c2a4a458a27f4fd8e21ff47edc9
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: a88ee8d9358f44e2ed480f07f13d83ad
- GWN7615 Firmware file name: gwn7615fw.bin
   MD5 checksum: c1d4e91a9133d932d761a4c680c0f176

- Fixed a system crash for GWN7630
- Fixed an always offline issue of Mesh RE-AP
- Fixed a bug causes packet random drops on SSID with VLAN tag



- Fixed an AP database issue cause no top statics displays on controller
- Fixed an issue that snmpd could not be stopped, which leads to AP unable to reboot
- Fixed an issue that AP may response on DHCP client discover



## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

### DATE

11/23/2020

### **FIRMWARE FILE INFORMATION**

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: 91ff30b55a7bce19b907a062bc5961e5
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: f8c3c17cd66d2bad98cf7f0160b34b5d
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: 7677853facb5b3e289f327778223646d
- GWN7602 Firmware file name: gwn7602fw.bin
   MD5 checksum: ae82645da8244ac4bc2c145340154720
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: ee5d903f4ab6675e2ff7e049c6b8569b
- GWN7615 Firmware file name: gwn7615fw.bin
   MD5 checksum: c3b579fa79b130ae63bc31ac1469a75a

- Fixed a system crash
- Fixed TCP connection closes randomly when SSID Mode is set to NAT mode



## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

### DATE

10/26/2020

### **FIRMWARE FILE INFORMATION**

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: a262250fc097ef0b813fb763cfa1e1da
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: 8291180c86dbcefc98ce632f19cd55d5
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: 23966c749f4c8620ed91886a81cc8aaf
- GWN7602 Firmware file name: gwn7602fw.bin
   MD5 checksum: b16e2e12cc31af8cc00be07bf402723f
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: 28d6bc126effbb57e751589484d19b76
- GWN7615 Firmware file name: gwn7615fw.bin
   MD5 checksum: fe9e32ed72a645c2330b4f63818848ae

## **CHANGES/ENHANCEMENT**

• Fixed a memory leak in syslog.



# FIRMWARE VERSION 1.0.19.4

## PRODUCT NAME

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 / GWN7605 / GWN7605LR / GWN7615

## DATE

10/14/2020

## **FIRMWARE FILE INFORMATION**

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: c65e623737970a8d7c424f1ce3952e6f
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: 77720de92704ba7a0f4055c4edc80997
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: a5791f5336690abcdebea8f909c0bcd6
- GWN7602 Firmware file name: gwn7602fw.bin
   MD5 checksum: ccda6948a0ae687ce8394440fa9f6c38
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: 3471df0289af7b0d61d44560e715faba
- GWN7615 Firmware file name: gwn7615fw.bin
   MD5 checksum: 81414c1a8b3893def9da843e6f1e7132

## **CHANGES/ENHANCEMENT**

- Added support of Multicast/Broadcast Suppression
- Extended support of **RRM** to GWN Cloud and remaining AP models
- Added support of Active IGMP for feature Convert IP multicast to unicast enhancement



- Added support of **Rogue AP Detection**
- Added support of 802.11w
- Added support of Auto TX Power
- Added Captive Portal Enhancement
- Added support of **SNMP**
- Added support of Allow DHCP Option 43 to override GWN Manager Address
- Added enhancement as **AP local master Email/Notification optimization**
- Added enhancement as AP local master WebUI optimization
- Added support of more DFS Channels
- FCC and IC DFS for 7605/7605LR/7615
  - ANATEL(Brazil) DFS for 7600/7630/7602
- Added support of **NAT** (GWN7610 not supported)
- Added support of Firewall
- Added support of Hotspot 2.0 Beta (GWN7610 & GWN7602 not supported)



### **NEW FEATURE OVERVIEW**

#### Multicast/Broadcast Suppression

Broadcast or Multicast packet consumes a lot of air bandwidth. By enable Multicast/Broadcast Suppression, all the broadcast and multicast packages will be discarded except DHCP/ARP/IGMP/ND. Enable with ARP Proxy is also available. Configuration is available at SSIDs→Wi-Fi→Advanced as below:

Edit	×
Wi-Fi Device Membership	
Wireless Client Limit ③	•
Client Inactivity Timeout(s) ③  300	
Client Bridge Support ⑦	
Client Time Policy None	~
Multicast/Broadcast Suppression ⑦ Disabled	^
Convert IP multicast to unicast ⑦ Disabled	
Enable Schedule Enable Schedule Enable with Proxy ARP enabled	
Enable Voice Enterprise	-
Enable 11R 🕘 🗌	
Enable 11K ⑦	
Enable 11V ③	
ARP Proxy	
Save Cancel	

#### • Active IGMP

This option will optimize the multicast to unicast feature in the case that there is no multicast router in LAN.

By enable it, AP will initiatively broadcast IGMP queries to keep updating of the IGMP snooping items.

Configuration is available at SSIDs  $\rightarrow$  Wi-Fi $\rightarrow$  Advanced.

Multicast/Broadcast Suppression 🕐	Disabled
Convert IP multicast to unicast ⑦	Active mode
Enable Schedule	Disabled
Enable Voice Enterprise	Passive mode
	Active mode
Enable 11R 🕐 🛛	



# Rogue AP Detection

S GWN7615	E Security / Rogue AP Time 2020-10-07 15:53 Firmware	e 1.0.19.3 🔎
II Overview	Configuration Detected	
🗢 Access Points 🗸 🗸	Enable Rogue AP Detection	
	Detect range ⑦ • Same channel O All channels	
Clients	Countermeasure level 🛞 🛛 High 🗸 🗸	
럼 Access Control ↔	Containment Range ⑦ • Same channel O All channels	
$\Xi$ Captive Portal $\checkmark$	Sub-string for Spoofing SSID ⑦	] 🖨
🔞 Radio	Add new item	•
Security ^	Trusted AP ⑦	] 🗢
Rogue AP	Add new item	•
Firewall	Untrusted AP 🕐	] 🗢
E Service ~	Add new item	•
🗘 System 🗸 🗸	Save Reset	

New security feature to detect rogue AP in the service area.

#### • 802.11w

Configuration is available under SSIDs→Wi-Fi→Access Security.

2 modes are available for 802.11w: Optional and Required.

Optional: Either 802.11w supported or unsupported clients can have the network access authority.

Required: only the client supported 802.11w have the network access authority.

Access Security	
Security Mode	WPA2 $\lor$
WPA Key Mode 🕐	PSK V
WPA Encryption Type ⑦	AES $\lor$
WPA Pre-Shared Key 🕐	
802.11w 🕐	Disabled ^
Enable Captive Portal	Disabled
Use MAC Filtering	Optional
Client Isolation	Required



#### • Auto TX Power

 Radio Power ⑦
 High

 rt Guard Interval ⑦
 Low

 rcy Devices(802.11b)
 Medium

 High
 High

 le Minimum RSSI ⑦
 Custom

 Access Rate Limit ⑦
 Dynamically Assigned by RRM

Configuration is available under Radio→2.4G/5G→Radio Power

#### Captive Portal Enhancement

1) Enable HTTPS Function Optimization

Original "Enable HTTPS" is divided into two options

- a. Enable HTTPS Redirection: If enabled, both HTTP and HTTPS requests sent from stations will be redirected by using HTTPS protocol. And station may receive an invalid certification error while doing HTTPS browsing before authentication. If disabled, only the http request will be redirected.
- b. Enable Secure Portal: If enabled, unauthorized guests will be redirected to the splash page by using HTTPS protocol. If not, the HTTP protocol will be used.
- New option Idle Timeout: Specify the idle timeout value for guest network connection. Once timed out, guest should re-authenticate for further network use. Please note that this option is not applicable to voucher guests.
- 3) Portal Page loading optimization: resolved some loading issue



#### • SNMP

٢	GWN7615	1	E Service / SNMP	Time 2020-10-0	8 11:35 Firmware 1.0.19.3 (🕬
ч			SNMPv1, SNMPv2c		
-			Enable 🚺		
(;			Community String p	public	
Ę			SNMPv3		
Ħ			Enable 🧲	D	
≔			Username		
(14	Radio		Authentication mode	MD5 ~	
•			Authentication password		
≡	Service ^		Privacy mode D	DES ~	
	Hotspot 2.0		Privacy password		
	SNMP		•	Save	
	DHCP Server				
a					

Configuration is available under Service→SNMP

#### Allow DHCP Option 43 to override GWN Manager Address

This configuration is available when admin login in Slave mode. It is enabled by default.

S GWN7615	Ξ System / Manager Settings	Time 2020-10-09	11:02
🗘 System 🔿	Manager Address		
Manager Settings	Manager Port	10014	
Debug	Allow DHCP Option 43 Override Manager Address ⑦		
		Save	

• AP local master Email/Notification optimization

Now Master AP centralize all events from slaves and send Email/Notification events, instead of having each slave send independently.

## AP local master WebUI optimization

Now local master WebUI matches GWN Cloud and GWN Manager WebUI.



### • FCC and IC DFS for 7605/7605LR/7615

### ANATEL(Brazil) DFS for 7600/7630/7602

Below it the current DFS table for GWN APs as of 1.0.19.4

1.0.19.4	CE	RCM	FCC	IC	ANATEL(Brazil)
GWN7610	-	-	-	-	-
GWN7600	-	-	-	-	Yes
GWN7600LR	Yes	-	-	-	-
GWN7630	Yes	Yes	Yes	Yes	Yes
GWN7630LR	Yes	Yes	Yes	Yes	-
GWN7602	Yes	Yes	Yes	Yes	Yes
GWN7605	Yes	Yes	Yes	Yes	-
GWN7605LR	Yes	Yes	Yes	Yes	-
GWN7615	Yes	Yes	Yes	Yes	-

## • NAT (GWN7610 not supported)

NAT feature is added to GWN AP. Along with DHCP server and firewall feature, GWN AP now can perform

as a lightweight home router.

Configuration is available at Service→DHCP Server→NAT Pool

#### • Firewall

Configuration is available at Security→Firewall→Outbound/Inbound Rules

S GWN7615	E Security / Firewall			Firmware 1.0.19.3 🚥 🛛 🕐 📿
II Overview	Outbound Ru		Add	×
👄 Access Points 🛛 🗸	+ Add	Service Protocol	any	
	Priority	Policy	Permit ~	
Clients	-	Destination	All	
🚔 Access Control 🛛 🗸			All	
ः≣ Captive Portal ∽			GWN1DCA84	
🔞 Radio			Save	
Security ^				



• Hotspot 2.0 <sup>Beta</sup> (GWN7610 & GWN7602 not supported)

Configuration is available at Service→Hotspot 2.0

5	GWN7615		Service / Hotspot 2.0 / Add		Time 2020-10-08 15:40	Firmware 1.0.19.3 🚥	? Q
ali (	Overview		General Settings				
-	Access Points	~		Name			
((•				Domain ID	0		
Ċ,	Clients			HESSID 🕐			
# /	Access Control	~		Network Access 🕐	Internet Access		
	Captive Portal	~		Network Type	Private network	$\sim$	
	Radio			IPv4 Type	Address type not available	$\checkmark$	
		~		ІРv6 Туре	Address type not available	$\sim$	
	Service	^		Network Auth Type 🕐	Not configured	~	
	Hotspot 2.0						
	SNMP		Venue				
	DHCP Server		Operator Name				
۰	System	~	Roaming Consortium				
			Domain				
			Realm				
			Cellular Network Information				
			Port Configuration				
			Advanced				
					Save		



# FIRMWARE VERSION 1.0.15.18

# **PRODUCT NAME**

GWN7605LR / GWN7615 - 1.0.15.18

## DATE

6/18/2020

## FIRMWARE FILE INFORMATION

- GWN7605LR Firmware file name: gwn7605fw.bin
   MD5 checksum: f2950a672756cf906076965a3bffe3ba
- \_\_\_\_\_
- GWN7615 Firmware file name: gwn7615fw.bin

MD5 checksum: e57ff82ddac585f005ff327de9fd58f3

# **CHANGES/ENHANCEMENT**

• Added GWN7605LR and GWN7615 two models into GWN AP family

Please refer to below table for the up to date DFS support matrix.

GWN7610 / GWN7600 / GWN7600LR / GWN7630								
/ GWN7630LF	/ GWN7630LR / GWN7602 – 1.0.15.20							
GWN7605 / GWN7	605LR /	GWN76	15 – 1.0	.15.18				
6/18/2020	CE	RCM	FCC	IC				
GWN7610	-	-	-	-				
GWN7600	-	-	-	-				
GWN7600LR Yes								
GWN7630	Yes	Yes	Yes	Yes				
GWN7630LR	Yes	Yes	Yes	Yes				
GWN7602	Yes	Yes	Yes	Yes				
GWN7605	GWN7605 Yes Yes							
GWN7605LR	GWN7605LR Yes Yes							
GWN7615	Yes	Yes	-	-				



# FIRMWARE VERSION 1.0.15.18 & 1.0.15.20

## **PRODUCT NAME**

GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 - 1.0.15.20

GWN7605-1.0.15.18

## DATE

5/21/2020

## FIRMWARE FILE INFORMATION

- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: d490a7c670e15c67698b64949196fe77
- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: d1b97769ef66cde9793a2ec8e763a513
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: 54e00a2d6610c690e51822f2f4c29ebd
- GWN7605 Firmware file name: gwn7602fw.bin
   MD5 checksum: 2b142615d2598570c65eaec0427a8d5d
- GWN7605 Firmware file name: gwn7605fw.bin
   MD5 checksum: f2950a672756cf906076965a3bffe3ba



# **CHANGES/ENHANCEMENT**

- Added support of more DFS channels
- Fixed internal bugs

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Please refer to below table for the up to date DFS support matrix.

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GWN7610 / GWN7600 / GWN7600LR / GWN7630 / GWN7630LR / GWN7602 – 1.0.15.20 GWN7605 – 1.0.15.18							
5/21/2020 CE RCM FCC IC							
GWN7610	-	-	-	-			
GWN7600	-	-	-	-			
GWN7600LR	Yes	-	-	-			
GWN7630	Yes	Yes					
GWN7630LR Yes Yes Yes Yes							
GWN7602 Yes Yes Yes Yes							
GWN7605	Yes	Yes	-	-			



# FIRMWARE VERSION 1.0.15.15

## **PRODUCT NAME**

GWN7602

## DATE

4/24/2020

## **IMPORTANT UPGRADING NOTE**

- Due to the security enhancement, unless Legacy TLS Compatibility (only available on 1.0.15.4 or higher version) is enabled, master AP on 1.0.15.4 or higher firmware will not compatible with slave AP on firmware lower than 1.0.15.4. Master AP on firmware lower than 1.0.15.4 will also not be compatible with slave AP on firmware 1.0.15.4 or higher. Cloud and GWN Manager will still support both firmwares.
- Do not use 1.0.15.x AP firmware with GWN7000 1.0.9.4 or lower version. Only GWN7000 1.0.9.5 or higher supports TLS 1.2.

## FIRMWARE FILE INFORMATION

• GWN7602 Firmware file name: gwn7602fw.bin

MD5 checksum: 8546ca24b002c1e429557d7a920a1a3f

## **PRODUCT LIMITATION**

GWN7602 Feature Difference with other GWN APs:

- GWN7602 captive portal does not support https.
- GWN7602 can't be master and can only be slave.
- GWN7602 mesh feature only support Re (Repeater) roll and cannot cascading downward.
- GWN7602 support switching and VLAN on LAN ports.
- GWN7602 only support 4 SSID.



- Right now, other GWN AP's local master has not supported 7602 management yet.
- GWN7602 does not support advance GWN AP features: band steering/client steering/RRM/wireless bridge/airtime fairness/minimum rate.

## **CHANGES/ENHANCEMENT**

- Added LED pattern of yellow to indicate Mesh disconnection
- Added support of FCC DFS for gwn7602
- Added support of CE DFS for gwn7602
- Added support of RCM DFS for gwn7602
- Added support of IC DFS for gwn7602
- Fixed Social Facebook Auth issue
- Fixed TLS Security Issue
- Improved Wi-Fi stability



# FIRMWARE VERSION 1.0.15.4 & 1.0.15.6

## **PRODUCT NAME**

GWN7300/GWN7630LR - 1.0.15.6

GWN7610/GWN7600/GWN7600LR - 1.0.15.4

## DATE

3/16/2020

## **IMPORTANT UPGRADING NOTE**

- Due to the security enhancement, unless Legacy TLS Compatibility (only available on 1.0.15.4 or higher version) is enabled, master AP on 1.0.15.4 or higher firmware will not compatible with slave AP on firmware lower than 1.0.15.4. Master AP on firmware lower than 1.0.15.4 will also not be compatible with slave AP on firmware 1.0.15.4 or higher. Cloud and GWN Manager will still support both firmwares.
- Do not use 1.0.15.x AP firmware with GWN7000 1.0.9.x or lower version.

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
  - MD5 checksum: 907ec3840d2f85e35ef6498a0f1e19c6
- GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: a735272124f62b34ab90a286200a705e
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
   MD5 checksum: 8d5cea02bea2ea5e6aff299d3995ba02

## **CHANGES/ENHANCEMENT**

- Added Support for GWN Manager
- Added support for FCC DFS channels on gwn7630/gwn7630lr



- Added LED pattern of yellow to indicate Mesh disconnection
- Security enhancement: Upgraded TLS to version 1.2
- Internal bug fixes

### **NEW FEATURE OVERVIEW**

- Support for GWN Manager
  - 1) Now APs can be discovered by GWN Manager.
  - 2) With the support for GWN Manager being added, a layer 3 discovery feature has been added too.

S GWN7610	Time 2020-03-14 20:58		English 🗸	admin <b>[</b> →
System Settings 🔻	Manager Settings			
Manager Settings	Manager Address	97.84.123.33	)	
	Manager Port	10014		
		Save		

When device boot in factory default, by login in Slave mode, you can add the IP address of your GWN

GWN7610	
admin	
Slave 🔹	
Sign In	

Manager. After save and apply, it may take few minutes for GWN Manager to be able to adopt the AP.

#### • FCC DFS channels

Below is the DFS channel support table for GWN APs.



3/16/2020	CE	FCC
GWN7610	No	No
GWN7600	No	No
GWN7600LR	Yes	No
GWN7630	Yes	Yes
GWN7630LR	Yes	Yes
GWN7602	Yes	No

### • Security enhancement: Upgraded TLS to version 1.2

Due to the security enhancement, unless **Legacy TLS Compatibility** (only available on 1.0.15.4 or higher version) is enabled, master AP on 1.0.15.4 or higher firmware will not compatible with slave AP on firmware lower than 1.0.15.4. Master AP on firmware lower than 1.0.15.4 will also not be compatible with slave AP on firmware 1.0.15.4 or higher. Cloud and GWN Manager will still support both firmwares.

	Maintenance				
Overview	Basic	Upgrade	Access	Syslog	Logserver
Access Points				Rebind Protection 🧿	
Clients	··•		Leo	gacy TLS Compatibility 🧿	
Captive Portal	•			web HTTPS D	disabled, master AP can only ge the slave APs with
Bandwidth Rules				Country/Region	are version 1.0.15.x or higher.
System Settings	· •			Time Zone ③	(UTC) Coordinated Universal Time
				0	
<b>Maintenance</b> Debug				NTP Server ③	0.pool.ntp.org



# FIRMWARE VERSION 1.0.11.8

## **PRODUCT NAME**

GWN7630

## DATE

11/14/2019

## **FIRMWARE FILE INFORMATION**

• GWN7630 Firmware file name: gwn7630fw.bin

MD5 checksum: b62ebfd577024eb6cfb05ce54be7b9e8

# **CHANGES/ENHANCEMENT**

- Added support of DFS channel in EU for GWN7630. Now both GWN7600LR and GWN7630 support DFS channel in EU.
- Internal fix for possible re-association of expired Vouchers.



# FIRMWARE VERSION 1.0.11.2

## PRODUCT NAME

GWN7610; GWN7600; GWN7600LR; GWN7630

## DATE

10/16/2019

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: bc53beca73855b62103797b252aaa2d7
- GWN7600/7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: 50bcfa41627545b098ef1cbca0af1ac4
- GWN7630 Firmware file name: gwn7630fw.bin

MD5 checksum: b62ebfd577024eb6cfb05ce54be7b9e8

## **CHANGES/ENHANCEMENT**

- Internal fix for network capture uploading issue from Access Point to Cloud.
- Internal fix for possible re-association of expired Vouchers.
- Added feature of **Site Survey** at GWN Cloud only
- Added feature of Minimum Rate Control
- Added feature of **SSH Remote Access**
- Added feature of External Portal Support Socifi Platform
- Added feature of **Client inactivity timeout**
- Added feature of Upgrade Regularly at Cloud
- Added feature of Client Steering Beta: Sticky Client Steering and Load Balancing Steering
- Enhanced feature of Voucher: display of remaining bytes
- Enhanced feature of Takeover: Supports batch operations



- Enhanced feature of **Dynamic VLAN**
- Changed LED pattern
  - When AP is not managed, AP will show solid purple instead of flashing purple
- Changed Local Master External Portal configuration
  - Combine all supported platforms into one configuration
- Changed default setting of Mesh to OFF
- Removed Wechat from Wi-Fi portal authentication
  - Tencent shut down the service.

## **NEW FEATURE OVERVIEW**

• Site Survey

This feature will allow Network Administrator to scan the Wi-Fi environment. The scan result will provide useful information for Admin to plan and adjust the Wi-Fi deployment or settings, in order to optimize the Wi-Fi performance of the site.

Site survey is only available on GWN cloud. It's located at **NETWORK→Insight→Site Survey**.

#### • Minimum Rate Control

The settings of this feature are located at NETWORK $\rightarrow$ SSIDs $\rightarrow$ Configuration $\rightarrow$ Edit $\rightarrow$ Wi-Fi Settings $\rightarrow$ Enable Minimum Rate. By enable this, it will help to eliminated the legacy connection which slow the total performance of the Wi-Fi network.

#### • Client Steering Beta

This feature will help Wi-Fi client to roam to other APs within same Network. Roaming threshold can be configured under NETWORK→Access Points→Configuration→Edit→Client Steering by parameters of RSSI Threshold and Client Access Threshold. Both parameters will show up only when Client Steering is enabled.



#### • SSH Remote Access

This feature enables SSH access from GWN cloud to your AP device, and this is mainly for extra troubleshooting method. To enable this, you can find configuration at **NETWORK** $\rightarrow$ **Access Points** $\rightarrow$ **Status** $\rightarrow$ **Click on the AP** $\rightarrow$ **Debug**.

#### • External Portal Support Socifi Platform

This is supported by Universal Platform configuration under NETWORK→Captive Portal→Policy List→ Add→Splash Page: External→Platform: Universal Platform.

#### • Client inactivity timeout

This feature will remove the Client record from current Client list, in order to generate accurate report. Default was 300 seconds, and now it's configurable at NETWORK→SSIDs→Configuration→Edit→Wi-Fi Settings→Client Inactivity Timeout.

#### • Upgrade Regularly at Cloud

This feature allows APs to check latest firmware and upgrade by a preassigned schedule. Configuration is available at NETWORK  $\rightarrow$  System  $\rightarrow$  Upgrade  $\rightarrow$  Upgrade Time  $\rightarrow$  Upgrade Regularly. Schedule is configured at NETWORK  $\rightarrow$  System  $\rightarrow$  Schedule.

#### • Enhanced feature of Dynamic VLAN

Now when using 802.1X authentication on your SSID with dynamic VLAN assignment. Admin does not need to create all VLAN SSIDs to match destination VLAN. On 1.0.11.1, AP will trunk its Ethernet with the VLAN assigned to Wi-Fi client through 802.1X.



# FIRMWARE VERSION 1.0.9.13

# **PRODUCT NAME**

GWN7610; GWN7600; GWN7600LR;

# DATE

6/24/2019

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: 1aefac86dc272944c05d2557c63dd190
- GWN7600/7600LR Firmware file name: gwn7600fw.bin

MD5 checksum: f411e92c88a0ede5a48329963ac96682

# **CHANGES/ENHANCEMENT**

 Added new OUI "C0:74:AD" support for GWN7610, GWN7600, and GWN7600LR. GWN7630LR already supported it on 1.0.9.12.



# FIRMWARE VERSION 1.0.9.12

## PRODUCT NAME

GWN7610; GWN7600; GWN7600LR; GWN7630

## DATE

6/11/2019

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: a1c0e58525efa9513c0581dab3059496
- GWN7600/7600LR Firmware file name: gwn7600fw.bin
   MD5 checksum: 05fcb911ef517b1ab6e423e7abee5de8
- GWN7630 Firmware file name: gwn7630fw.bin

MD5 checksum: 5cd325ecc1278d547e4643fe00e19330

## **CHANGES/ENHANCEMENT**

- Added feature of **Slave AP Transfer**
- Added feature of Client Negotiate Speed Display
- Added feature of **One Key Debugging**
- Enhanced Captive Portal by feature of HTTPS Portal Trusted Certificate with Auto Update

## **NEW FEATURE OVERVIEW**

• Slave AP Transfer

This is an enhancement feature upon Failover Master

. Now, when a master fails, even there is no failover master configured, Admin can still bring up a new

Master and uses the old master key (admin password) to take over old slaves.



When admin add a new master into the master-failed network. New master will be able to discover the paired old slave as below.

S GWN7610							? Q 15s v	
Overview	Access Points	Discovered Devices					×	
SSIDs	Device Type 🔻	Device Type	MAC	IP Address	Firmware	Туре	Actions work group	fransfer AP
Access Points	🕣 Upgrade 🛛 📿 Re	GWN7610	00:0B:82:A8:66:B8	192.168.253.103	1.0.9.12	Wired	S 📮	
Clients 🔻	Device Type	Showing 1-1 of 1 record	l(s).				Per Page: 10 V	
Captive Portal 🔻	GWN7610							C
System Settings •	Showing 1-1 of 1 record(s)							

By Clicking on the "Takeover the selected device", admin will be asked for the takeover key, which is the old

 WOWN7610
 Numer 1.8.21
 The 2014 0.121 101
 Image: A log image

master admin password.

Once takeover key is validated, slave AP will be transferred to the new master.



# • Client Negotiate Speed Display

S GWN7610													admin	Ð
Overview	All SSIDs 🔻	All Radios	*									Clear	Online : 1 Total : 1	٥
SSIDs	MAC	Hostname	Туре	IP Address	Radio/Channel	Status	RSSI	SSID	AP	Link Rate 👻	Throughput	Aggregate	Actions	
Access Points	60:E3:27:30:67:28		Wireless		5GHz 44	Online 00:00:11	-32	GWNA1ABBC	00:0B:82:A8:66:B8	TX:48Mbps RX:1170Mbps	TX:249B/s RX:5B/s	TX:29.72KB RX:2.53KB	<b>년 66</b> 은	
Clients 👻	Showing 1-1 of 1 record(s).												Per Page: 10	٣
Clients														
Client Access														
Time Policy														
Banned Clients														
Captive Portal 👻														
Bandwidth Rules														
System Settings 👻														
Alert/Notification						C 2018 Grands	tream Nets	vorks, Inc. All Rights Reserv	ved					

This is displayed as Link Rate under Clients page.

### • One Key Debugging

For better local troubleshooting data collection, now slave APs all have their own web page login.

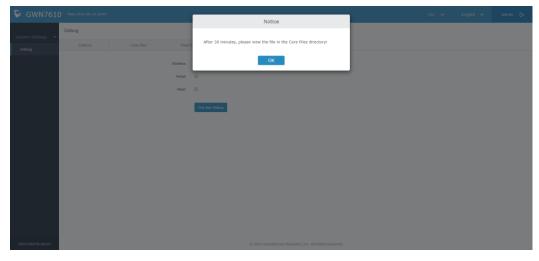
CONNECTING THE WORLD		English 🗸
	GWN7610	
	Username	
1.770	Password	
	Sign In	
and the second		



Once login, you will see Debug page as below

GWN7610	Time 2019-05-10 16:40					15s 🗸	English 🗸	admin [+
System Settings 👻	Debug							
Debug	Capture	Core Files	Ping/Traceroute	Syslog One Key Debug				
			Wireless 🗷					
			Portal					
			Mesh 🗐					
			One Key Debug					
Alert/Notification				© 2018 Grandstream Networks, Inc. All Rights	Reserved			

Besides original debugging methods. Now you have new method as One Key Debug.



Once activated, in 30 minutes, this AP will generate local debug core file.

S GWN7610							
System Settings 🔻	Debug Capture	Core Files	Ping/Traceroute	Syslog	One Key Debug		
Debug							Clear
	Path					Last Modified	Actions
	corefiles/core.onekeydeb	ug.000882A86688.GWN7610.1.	0.9.12.f3a55f5a78a7ba8c1055deffc	:74dcbf5.gz		2019/06/10 05:05 PM	也 🔟
Alert/Notification				© 2018 Grands	tream Networks, Inc. All Rights	Reserved	



# • HTTPS Portal Trusted Certificate with Auto Update

This feature will solve the untrusted certificate warning reported by web browser in your HTTPS enabled captive portal deployment.



# FIRMWARE VERSION 1.0.8.18

# PRODUCT NAME

GWN7610; GWN7600; GWN7600LR

# DATE

1/10/2019

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: 0057d240a1dee02e126d80308f5395c4
- GWN7600/7600LR Firmware file name: gwn7600fw.bin

MD5 checksum: f1166de7f2a1a51ca96f242c8da518f2

## **IMPORTANT UPGRADING NOTE**

• In order to enable your AP's capability of connecting GWN Cloud EU server, AP needs to be upgraded to 1.0.8.17 or above. Otherwise, your AP will always be offline from your EU server portal.

## **CHANGES/ENHANCEMENT**

- Added feature of **Advertisement**<sup>1</sup> for Captive Portal
- Added feature of **Custom Field**<sup>1</sup> for Captive Portal Splash Page
- Added feature of **ARP Proxy**
- Added feature of Clear client data<sup>1</sup>
- Enhanced Event log by WiFi authentication event<sup>1</sup>
- Enhanced Bandwidth Rules by adding option to limit bandwidth Per-Client and adding Total Bandwidth
   Usage<sup>1</sup> on Overview Bandwidth Chart
- Added EU Server support<sup>1</sup>
  - <sup>1</sup> This feature is only available on GWN Cloud, and local master does not have it.



## **NEW FEATURE OVERVIEW**

#### • Advertisement

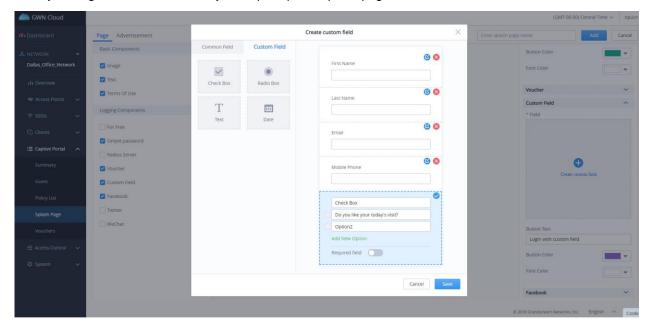
Marketing feature to play advertisement upon captive portal login for WiFi users.

Configurations are available at Cloud menu: Captive Portal → Splash Page → Advertisement

GWN Cloud		(GMT-06:00)	Central Time 👻	
M Dashboard	Page Advertisement	Enter splash page name	Add	c
A NETWORK -	Enable advertisement. Force user to view media content on each access			
	Advertisement Settings			
ili Overview	* Force to watch duration 0 5 second(s)			
🗢 Access Points 🗸 🗸	* Rotation 🔘 Random			
হু SSIDs 🗸 🗸	* Preset Time 🕼 Select date			
एत Clients 🗸 🗸	* Media Content + Add			
i≣ Captive Portal ∧				
Summary	Advertisement 🔲 🛄 🖾 🗇			
Guest				
Policy List				
Splash Page				
Vouchers				
≓ Access Control 🗸				
🗘 System 🗸 🗸				
	* 🚳 Random			
		© 2018 Grandstream Networks, Inc.	English	÷

#### • Custom Field

By adding customizable field to your captive portal splash page to collect user information.





### • ARP Proxy

This feature will enable GWN AP to answer the ARP requests from its LAN for its connected WiFi client. This

is mainly to reduce the airtime consumed by ARP packets.

To enable this feature, configuration is available at

Cloud:

NETWORK → SSIDs → Configuration → Wi-Fi Settings → ARP Proxy

Local Master:

SSIDs  $\rightarrow$  Configuration  $\rightarrow$  Wi-Fi  $\rightarrow$  ARP Proxy

### Clear client data

This feature will allow admin to clear collected data from Wi-Fi clients. This is mainly for certain data security regulation compliance.

#### • WiFi authentication event

This is an enhancement for WiFi troubleshooting.

2018-12-13 16:30:19	74:DA:EA:84:CD:28	gs_internal	WPA-PSK deauthentication (four-way handshake failure)
2018-12-13 16:30:19	74:DA:EA:84:CD:28	gs_internal	gs_internal WPA-PSK authentication failure



#### • limit bandwidth Per-Client

This is an enhancement for bandwidth control upon all the other available types.

	Edit Bandwidth Ru	lles		
Enable Bandwidth Rules				
* SSID	Select All			
	gs_internal	gs_internal_vlan		
	AB800_Option43_V500	PPPoE_709_VLAN		
	GS_Guest			
Range Constraint	Per-SSID		]	
Schedule	Per-SSID		1	
*	Single MAC			
	Single IP Address			
Upstream Rate	Per-Client		Mbps 💌	
Downstream Rate	20		Mbps 🔻	
			Cancel	a

### • EU Server support

User now will be able to choose US server or EU server to store their data at. This is mainly for GDPR regulation compliance.





# FIRMWARE VERSION 1.0.8.9

## PRODUCT NAME

GWN7610

GWN7600

GWN7600LR

# DATE

11/21/2018

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: e35fdb2803278d2305cee46c1c436deb
- GWN7600/7600LR Firmware file name: gwn7600fw.bin

MD5 checksum: f934883870b24d911b604fedfc7a5fed

## **CHANGES/ENHANCEMENT**

- Added feature of URL Logging<sup>1</sup>
- Added feature of Dynamic Transmit Power Control as WP820 RF enhancement
- Enhanced Mesh by adding feature of Switching RE & CAP according to network
- Enhanced Core File Debugging by adding feature of **OopsTrack**
- Fixed the bug that manual configured Mesh topology may change after reboot
- Fixed a memory leak

## **NEW FEATURE OVERVIEW**

URL Logging<sup>1</sup>

GWN AP know can log user URL visiting history onto GWN server, and report to Admin on timely schedule.

<sup>1</sup> URL Logging is only available at GWN Cloud, and local master configuration does not support this feature.



Clients ✓   IE Captive Portal ✓   IE Captive Portal ✓   IE Access Control ✓   Export URL Access Log ② ✓   Email Frequency Daily   Settings * URL Log Receiver ②   Schedule Image: Add Receiver   Mesh Save						
<ul> <li>E Captive Portal ∨</li> <li>Export URL Access Log </li> <li>Export URL Access Log </li> <li>Email Frequency Daily</li> <li>Settings * URL Log Receiver </li> <li>abc@grandstream.com</li> <li>Add Receiver</li> </ul>		$\sim$				
Access Control     Image: Control       System     Email Frequency       Daily       Settings       * URL Log Receiver @       abc@grandstream.com       Generalized       Add Receiver	:三 Captive Portal	~	URL Access Log 🕗			
Settings     * URL Log Receiver ②     abc@grandstream.com       Schedule           Add Receiver	럌 Access Control	~	Export URL Access Log 📀			
Schedule  Add Receiver	🗘 System	^	Email Frequency	Daily	•	
	Settings		* URL Log Receiver 📀	abc@grandstream.com		9
Mesh Save Reset	Schedule			➡ Add Receiver		
	Mesh			Save		

### To enable configuration, option is available at Cloud menu: System $\rightarrow$ Settings

### • Dynamic Transmit Power Control

This feature will enhance the RF performance of WP8xx Grandstream WiFi handset. No configuration is needed.

### • Switching RE & CAP according to network

This is enhancement to GWN Mesh setup. Now mesh topology will be more precise on identifying the CAP or RE APs. System will not only detect the network cable connection for CAP election, but also check the IP address acquiring.

#### OopsTrack

This is enhancement on the core file debugging. It will collect and save kernel stack information for debugging when AP crashes.



# FIRMWARE VERSION 1.0.7.13

## **PRODUCT NAME**

GWN7610&GWN7600&7600LR

## DATE

10/18/2018

## FIRMWARE FILE INFORMATION

- GWN7610 Firmware file name: gwn7610fw.bin
   MD5 checksum: c13f4e003ff70e6b4e37627b0e7d2013
- GWN7600 Firmware file name: gwn7600fw.bin
   MD5 checksum: c425a264b8053aac9cef33644db23477
- GWN7600LR Firmware file name: gwn7600fw.bin

MD5 checksum: c425a264b8053aac9cef33644db23477

# **IMPORTANT UPGRADING NOTE**

Facebook and Twitter captive portal authentication backend changed. This change will lead to following result:

- If Facebook authentication is configured on older GWN Cloud version. You will need to log in your Facebook account of <u>https://developers.facebook.com/apps</u>, and set the OAuth redirect URI to <u>https://cwp.gwn.cloud:8443/GsUserAuth.cqi?GsUserAuthMethod=3</u>
- If Twitter authentication is configured on older GWN Cloud version. You will need to log in your Twitter account of <u>https://apps.twitter.com/app</u>, and set the callback URLs to <u>http://cwp.gwn.cloud:8080/GsUserAuth.cgi?GsUserAuthMethod=5</u>
- Also, you will need to make sure your AP is upgraded to 1.0.7.x, since the older AP firmware will not work with new GWN Cloud for Facebook Login or Twitter Login only.



## **CHANGES/ENHANCEMENT**

- Added feature of **RRM**<sup>Beta 1</sup>
- Added feature of **Mesh** for GWN7610<sup>2</sup>
- Added feature of External Captive Portal Support
- Added feature of AP Scheduling Reboot
- Added feature of Change Log<sup>3</sup>
- Added feature of WiFi Statistic Report<sup>3</sup>
- Added feature of Configuration Quick Navigation<sup>3</sup>
- Added feature of Captive Portal Guest Summary
- Changed SSID limit<sup>3</sup>
- Enhanced Access Point Status
- Enhanced WiFi Service by adding configurable options of Beacon Interval, DTIM Period, and Convert IP multicast to unicast.
- Enhanced Client Information
- Enhanced Captive Portal features
- Enhanced GWN Cloud mobile app

## **NEW FEATURE OVERVIEW**

• RRM<sup>Beta</sup>

Radio Resource Management (RRM), includes three major features below. This feature is only available

Local Master: Access Point  $\rightarrow$   $\square$  Edit  $\rightarrow$  Configuration

- **Dynamic Channel Assignment**<sup>4</sup> Once enabled, AP will try to allocate and move to the best channel during operation, unlike Auto Channel Selection (ACS) which online scan and assign channel when

WiFi interface goes up for one.

- <sup>2</sup> Mesh is already supported on GWN7600 and GWN7600LR in previous feature pack
- <sup>3</sup>GWN Cloud only
- <sup>4</sup> Dynamic Channel Assignment is not supported on GWN7610.

<sup>&</sup>lt;sup>1</sup> Local Master only



- **Transmit Power Control** TPC algorithm runs every 10 minutes. AP acquires the RSSI information of the neighbor by wireless scanning and establishes the neighbor table. The algorithm requires that there must be at least 3 neighbor APs with larger than -70dbm in RSSI. Otherwise, power will not be adjusted.
- **Coverage Hole Detection** CHD enables AP to decide whether to increase the AP power by the current SNR and SNR threshold of the connected clients.

### • External Captive Portal Support

Linkyfi<sup>1</sup> and Purple<sup>2</sup> as external captive portal are supported now on GWN APs for both local master and GWN Cloud. Configurations now are available at Captive Portal  $\rightarrow$  Policy List  $\rightarrow$  Add/Edit  $\rightarrow$  Splash Page

Choose **External**, and then choose platform to configure.

#### • AP Scheduling Reboot

You can schedule reboot for your APs. Configuration is available at:

- Local Master: System Settings → Maintenance → Basic → Reboot Schedule
- GWN Cloud: NETWORK → System → Settings → Reboot Schedule

You will need to have a time schedule defined for this feature to adopt.

#### Change Log

Change log is now recorded on GWN Cloud. You can access the log from **[Your account]** on top right corner → Change Log.

Note: <sup>1</sup>Linkyfi <u>https://www.avsystem.com/products/linkyfi/</u> <sup>2</sup>Purple <u>https://purple.ai/</u>



### • Statistic Report

On GWN Cloud, you can configure server to send report to you periodically. Configuration is available at:

GWN Cloud	Report							(GMT-C	5:00) Central Time 👻 🕴 tqi	iucn
@Dashboard	Schedule Generated Report									
👗 NETWORK 🗸 👻	Create Report	Create Report X				×		Q Search		
Dallas_Office_Network	Title Φ	* Title 😡				- i	port Frequency		Actions	
ili Overview	Report	* Network	default	Home_te	est	- 1	dty		R 🗊	
🖙 Access Points 🗸 🗸			Dallas_Office_Networ	k 🗌 test_upg	rade			Total 1	10/page 👻 🤇 🚹	
🕆 SSIDs 🗸 🗸			test_upgrade_2							
Fig Clients 🗸 🗸										
i 🗉 Captive Portal 🗸 🛩		* Report Contents	Bandwidth Usage			- 1				
🛱 Access Control 🗸			Client Statistics							
🗘 System 🔷			(Client Manufacturer, Cl Average Duration)	int OS , New Clients,	Resum Clients,					
Settings			Guest Statistics (Guest New Session, Gu	est Session, Max Conc	urrent New					
Schedule			Session, Login Failure)	5						
Mesh			Top Clients	s +		- 1				
Maintenance			Top SSIDs To	15 -						
Alert		Report Frequency	Daily							
Upgrade			Daily Cancel OK							
			Weekly Monthly							
			Custom Range					© 2018 Grandstream Network	1, Inc. English = c	ookie

[Your account] on top right corner → Report → Schedule → Create Report

## Configuration Quick Navigation

Now on GWN Cloud support Configuration Quick Navigation. This feature will help to quick move to

prerequisite settings during configuration. For example, when you configure a AP scheduling reboot, but you

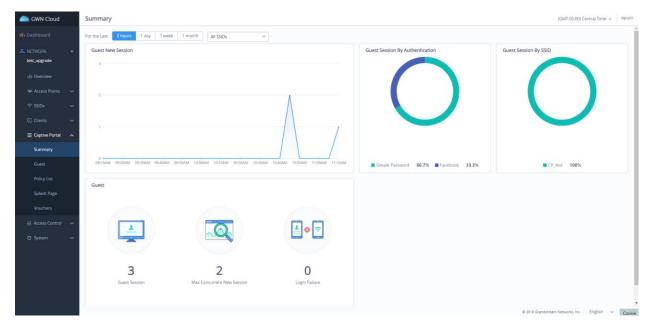
don't have a time schedule reconfigured. Then you will see an option as Add New Schedule.

Reboot Schedule 🕖	None			
	None			
	WorkD9to6			
	Add New Schedule			



### Captive Portal Guest Summary

GWN Cloud now gives a summary of captive portal login Guest Summary as below:



#### • SSID limit changes

In previous GWN Cloud version, every Network has limit of 16 SSID. In FP6 GWN Cloud version, limit in Network has been removed, but when any AP has reach to its limit of 16 SSID, it will be shown in grey in the new SSID's available devices, and cannot be added to new SSID anymore.

### • Access Point Status Enhancement

CPU and Memory information is added in Access Points Status.

For Email Alert, feature is enhanced for AP offline event to report when AP goes back online.

### • WiFi Service Enhancement

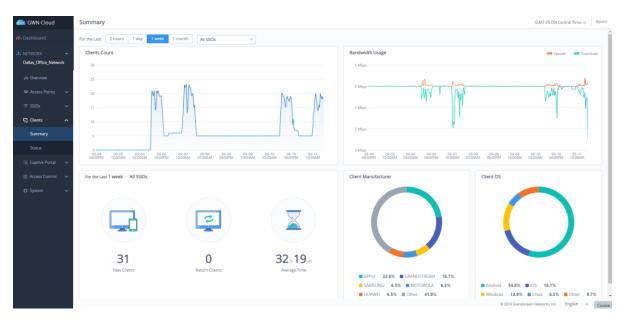
Three configurable options, as **Beacon Interval**, **DTIM Period**, and **Convert IP multicast to unicast**, are available at



- Local Master: SSID -> Add/Edit -> Beacon Interval / DTIM Period / Multicast to Unicast
- GWN Cloud: NETWORK → SSID → Add/Edit → Advanced → Beacon Interval / DTIM Period / Convert IP Multicast to Unicast
- Client Information Enhancement

More WiFi client's information is collected on GWN AP. And statistic is shown in graphic on GWN Cloud and text only format on Local Master.

- Local Master: Information is available at Clients → Clients, and information can be checked to display at the top right gear icon.
- GWN Cloud:



And now, admin can name the clients not only on local master but also on GWN Cloud page NETWORK →

Clients  $\rightarrow$  Status  $\rightarrow \square \rightarrow$  Hostname

- Captive Portal features Enhancement
  - **Failsafe mode:** AP will grant access to STA if AP can't reach to external authentication server. This feature only available in radius authentication and voucher authentication.



- **Byte limit** and **Daily limit**: Captive portal now can limit user connection by measuring data amount and times of a day.
- Twitter authentication enhanced: Twitter splash page has been redesigned, and Force To Follow option added. By enabling Force To Follow option, admin can request login WiFi user to follow his Twitter account when getting authenticated.
- GWN Cloud mobile app enhancement
  - Dashboard, on GWN Cloud Mobile app, now allow admin to select different Network to display, while all Networks' information is combined to display.
  - Deleting AP, on GWN Cloud Mobile app, now allow admin to delete APs from Networks.



# [GWN7610]FIRMWARE VERSION 1.0.6.43

# **PRODUCT NAME**

GWN7610

# DATE

6/15/2018

# FIRMWARE FILE INFORMATION

GWN7610 Firmware file name: gwn7610fw.bin
 MD5: ae52aea470e6bf0fdcca95b1537df8e9

# **ENHANCEMENT**

- Added support for GWN.Cloud
- Added support Outdoor/Indoor Scene WiFi channel configuration
- Added feature for Transfer AP and Transfer Network Group to Cloud
   Newly designed
- Feature Schedulingg
- Split Network Group into separate SSID and DHCP server configurations



## **NEW FEATURE OVERVIEW**

### GWN.Cloud

Since FP5, GWN AP can be managed by your **GWN.Cloud** account. **GWN.Cloud** web interface now can be accessed at <a href="https://www.gwn.cloud">https://www.gwn.cloud</a>. Please refer to **GWN Cloud User Guide** for how to add your GWN AP to **GWN.Cloud**.



• Outdoor/Indoor **Scene** configuration

This configuration is available on your Master web, when your country has different outdoor/indoor WIFI channel regulations.

Overview	Maintenance					
Access Points	Basic	Upgrade	Access	Syslog	Logserver	
SSIDs			Web HTTP Access			
Clients 🔻			Web HTTPS Port 443			
Captive Portal 🔹			Country Uni	ed Kingdom		×
Bandwidth Rules			Scene 📀 Ind	DOL		•
Schedule			Time Zone ⑦ (UT	C-06:00) Central Time (US & Canad	da)	•
System Settings 🔻			NTP Server ⑦ 0.pc	ol.ntp.org		
Maintenance				ol.ntp.org		
Debug			2.pc	ol.ntp.org		
Email/Notification			3.pc	ol.ntp.org		
						Add new item
LEDs		I.	Date Display Format ⑦ MM	/DD/YYYY		Ŧ
DHCP Server						
Mesh				Save Reset		
About						



### • Transfer AP and Transfer Network Group

**Transfer AP** feature will allow you to easily transfer your AP from local master to your GWN.Cloud account. When you already have network/WiFi configurations on your cloud account, use this feature will let you to choose cloud existing network/SSID to adopt your local AP. Note: local configurations will not be transferred. **Transfer Network Group** feature will allow you to transfer your local configurations to your cloud account.

Access Points Device Type Φ Device 1 IP Addre Firmwar Actions Front\_AP\_unlocked GWN7610 192.168.254.35 🕵 Master 13d 1h 57m 50s 1.0.6.40 🕑 🖓 🖽 🗶 🚠 🕹 00:0B:82:A1:A6:AC Back\_AP\_locked\_EU C 🖉 🔁 & A 🗛 11d 20h 26m 0s GWN7610 192.168.254.36 1.0.6.40 00:0B:82:A8:66:A8

### • Feature Scheduling

We have newly designed feature scheduling. Please refer to user manually for configuration details.

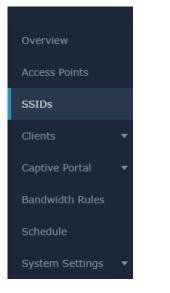
	Wee	khe							
Click + to create new schedule	wee								
		Select All	Sun	Mon	Tues	Wed	Thur	Fri	s
		00:00-00:30							
		00:30-01:00							
		01:00-01:30							
		01:30-02:00							
		02:00-02:30							
		02:30-03:00							
		03:00-03:30							
		03:30-04:00							
		04:00-04:30							
		04:30-05:00							
		05:30-05:30							
		06:00-06:30							
		06:30-07:00							
		07:00-07:30							
	Abso	olute							
					<b></b>				
									Add ne
									Add fie
									Ad



• **SSID** and **DHCP server** configurations

Now the original **Network Group** configuration is split into **SSID** and **DHCP server** configurations.

**SSID** is located at below menu bar.



DHCP server configuration is moved to System settings.

	+ Add				
Overview			Add	$\times$	
Access Points	Name				Actions
SSIDs	Default	Name 💮	GWN_DHCP		C 🗊
Clients 🔹		Enable	8		
		VLAN ID	500		
Captive Portal 🔻		DHCP Server Static Address	172.16.0.2		
Bandwidth Rules		DHCP Server Subnet Mask	255.255.255.0		
Schedule		DHCP Start Address	172.16.0.100		
System Settings 🔻		DHCP End Address	172.16.0.199		
Maintenance		DHCP Lease Time ③	12h		
Debug		DHCP Options ③	•		
Email/Notification			Add new item 🛨		
LEDs		DHCP Gateway 💮	172.16.0.1		
DHCP Server		DHCP Preferred DNS			
Mesh		DHCP Alternate DNS			
About					
			Save		
Alert/Notification					



# [GWN7600&7600LR]FIRMWARE VERSION 1.0.6.41

# **PRODUCT NAME**

GWN7600&7600LR

### DATE

6/15/2018

# **FIRMWARE FILE INFORMATION**

- GWN7600&7600LR Firmware file name: gwn7600fw.bin
   MD5: 8659930c6fe9601f551d87df9ae381ed
- GWN7600LR Firmware file name: gwn7600lrfw.bin
   MD5: 61784977a1a698e3d85f376200124010

# **ENHANCEMENT**

- Added support for **GWN.Cloud**
- Added support Outdoor/Indoor Scene WiFi channel configuration
- Added feature for Transfer AP and Transfer Network Group to Cloud

Newly designed

- Feature Schedulingg
- Split Network Group into separate SSID and DHCP server configurations

# **IMPORTANT UPGRADING NOTE**

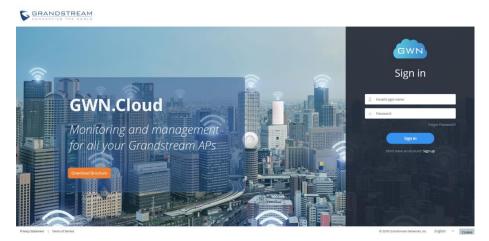
1. Starting from 1.0.6.x, GWN7600 and GWN7600LR will share same firmware file name gwn7600fw.bin. As a result, when GWN7600LR upgrades from pre-1.0.6.x to latest firmware, it will still retrieve firmware with name gwn7600lrfw.bin, and when GWN7600LR upgrades from 1.0.6.x or post-1.0.6.x to other firmware, it will retrieve firmware with name gwn7600fw.bin. So, when your GWN7600LR upgrades from pre-1.0.6.x firmware, you will need to manually modify the target firmware name to gwn7600lrfw.bin.



## **NEW FEATURE OVERVIEW**

### GWN.Cloud

Since FP5, GWN AP can be managed by your **GWN.Cloud** account. **GWN.Cloud** web interface now can be accessed at <a href="https://www.gwn.cloud">https://www.gwn.cloud</a>. Please refer to **GWN Cloud User Guide** for how to add your GWN AP to **GWN.Cloud**.



• Outdoor/Indoor **Scene** configuration

This configuration is available on your Master web, when your country has different outdoor/indoor WIFI channel regulations.

Overview	Maintenance						
Access Points	Basic	Upgrade	Access	Syslog	Logserver		
SSIDs			Web HTTP Access				
Clients 🔻			Web HTTPS Port 443				
Captive Portal 🔻			Country Unite	d Kingdom		•	
Bandwidth Rules			Scene 📀 Indoc	pr		•	
Schedule			Time Zone ⑦ (UTC-	-06:00) Central Time (US & Canad	da)		
System Settings 🔻			NTP Server ⑦ 0.pool	.ntp.org			
Maintenance			1.pool	.ntp.org			
Debug			2.pool	.ntp.org			
Email/Notification			3.pool	.ntp.org			
						Add new iter	n 🛨
LEDs		c.	Date Display Format ⑦ MM/D	D/YYYY			
DHCP Server							
Mesh			Sa	Reset			
About							



### • Transfer AP and Transfer Network Group

**Transfer AP** feature will allow you to easily transfer your AP from local master to your GWN.Cloud account. When you already have network/WiFi configurations on your cloud account, use this feature will let you to choose cloud existing network/SSID to adopt your local AP. Note: local configurations will not be transferred.

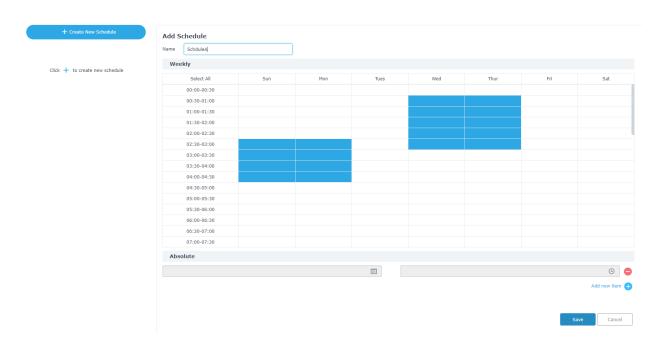
Transfer Network Group feature will allow you to transfer your local configurations to your cloud account.

Accession	105						
Device Type	•	Search				Transfer network	c group) Transfer AP Discover AP Failover
🕢 Upgrade	C Reboot	+ Add to SSIDs X Configure					•
	Device Type	Name/MAC	IP Address	Status	Uptime	Firmware	Actions
	GWN7610	Front_AP_unlocked 00:0B:82:A1:A6:AC	192.168.254.35	🔝 Master	13d 1h 57m 50s	1.0.6.40	🗹 🕸 🖽 & 🚠 🌡
	GWN7610	Back_AP_locked_EU 00:0B:82:A8:66:A8	192.168.254.36	Offline	11d 20h 26m 0s	1.0.6.40	<b>1</b> 22 53 23 45 36

#### • Feature Scheduling

Access Points

We have newly designed feature scheduling. Please refer to user manually for configuration details.

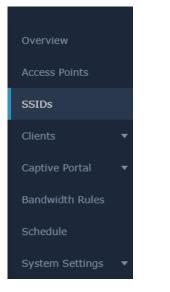




• **SSID** and **DHCP server** configurations

Now the original **Network Group** configuration is split into **SSID** and **DHCP server** configurations.

**SSID** is located at below menu bar.



DHCP server configuration is moved to System settings.

	+ Add				
Overview	Name		Add	×	Actions
Access Points		Name ③	GWN_DHCP		
SSIDs	Default	Enable	Ø		<b>Ľ</b> 🗑
Clients 👻					
Contine Dentel		VLAN ID	500		
Captive Portal 🔹		DHCP Server Static Address	172.16.0.2		
Bandwidth Rules		DHCP Server Subnet Mask	255.255.255.0		
Schedule		DHCP Start Address	172.16.0.100		
System Settings 🛛 🔻		DHCP End Address	172.16.0.199		
Maintenance		DHCP Lease Time ⑦	12h		
Debug		DHCP Options ③			
Email/Notification			Add new item 😝		
LEDs		DHCP Gateway 🧑	172.16.0.1		
DHCP Server		DHCP Preferred DNS			
Mesh		DHCP Alternate DNS			
About					
			Save Cancel		
Alert/Notification					



# [GWN7610]FIRMWARE VERSION 1.0.5.15

# PRODUCT NAME

GWN7610

# DATE

1/26/2017

# **IMPORTANT UPGRADING NOTE**

 For firmware 1.0.5.15, this is only for GWN7610/GWN7600/GWN7600LR master deployment. All users with GWN7000 as master are NOT encouraged to upgrade until 1.0.5.x matching firmware is available for GWN7000, due to the compatibility of new features.

### **ENHANCEMENT**

- Added support for New Firmware Reminder on Master Web
- Added support for Sequential Upgrade
   Added support for
- Feature Scheduling
- Added support for Master Direction
- Added support for Master Transfer
- Added support for Airtime Fairness
- Added support for **Social login/Voucher**

## **BUG FIX**

- Wifi client may fail to connect if SSID uses 2.4G only with WEP authentication.
- The Bandwidth Rules schedule configurations require a reboot to take effect.

## **NEW FEATURE OVERVIEW**



SGWN7610 Firmware 1.0.5.11 🕬

• New Firmware Reminder on Master

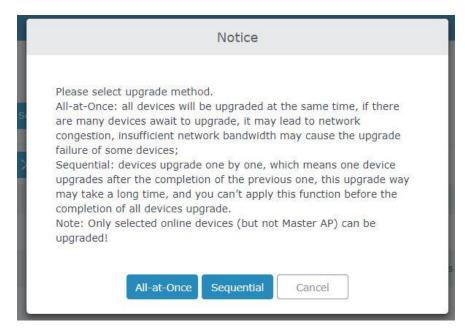
#### Web

Once a different OFFICIAL firmware than current running firmware is detected on Grandstream Network website by master GWN7610, a "NEW" icon will appear to remind network administrator to upgrade. Clicking on the "NEW" icon will open the new firmware's release note.

### • Sequential Upgrade



Now if you choose multiple slave devices to upgrade their firmware, two options as "All-at-Once" and "Sequential" are available. "All-at-Once" will trigger the traditional way that all checked slaves will try to retrieve and change their firmware at the same time, while "Sequential" upgrade will let the slaves to





upgrade one by one in order to 1) avoid entire wifi service interruption by full system firmware upgrade; 2)

reduce network stress caused by firmware downloading.

Access Points	1	/ 2
---------------	---	-----

Once you choose sequential upgrade, the number with beside the green upgrading icon will tell you how many slaves have done its upgrading.

### • Feature Scheduling

Scheduled bandwidth control or client access control is available now under System Settings -> Schedule

	Add
Enabled	
Name	The field should not be empty
Scheduled Feature	Bandwidth
Bandwidth Rules	
Schedule Type	The field should not be empty Daily
Month for Turn On 🤋	*
Month for Turn Off 💮	*
iy of Month for Turn On 🤅	*
ay of Month for Turn Off 흿	*
Day of Week for Turn On 흿	*
Day of Week for Turn Off 🥐	*
Schedule On Time	



Please be noted that you will need a Bandwidth rule (can be created in Bandwidth Rules) or a Client Access list (can be created under Client→Client Access), in order to create a schedule.

### Master Direction

When GWN7610 slave is not in the same broadcast domain with its master, this feature is available for all factory configured GWN7610 to find its master IP address offered by local DHCP option 43. GWN7610 accepts option 224 encapsulated in option43, and the syntax is in TLV format. So, the for a simple example of DHCP 43 configuration would be:

224(Type)12(Length)10.157.0.234(Value) translated into Hex as e00c31302e3135372e302e323334 For DHCP server configuration on GWN7000, which translates the values automatically, is as follows:

DHCP Enabled for IPv4		
DHCP Start Address	192.168.1.10	
DHCP End Address	192.168.1.254	
DHCP Lease Time 🕐	12h	
DHCP Options ⑦	encap:43,224,"172.168.10.128"	•
	Add new item	Ð

#### • Master Transfer

Access Poin	ts							
Device Type	T		Search					Discover AP Failover
🕢 Upgrade	C Reboot	+ Add to Network Groups	X Configure					٥
	Device Type	Name/MAC		IP Address	Status	Uptime	Firmware	Actions
	GWN7610	00:0B:82:A1:AB:BC		192.168.253.230	Online	52m 53s	1.0.5.11	C 🕫 🕾 & 👧
	GWN7610	00:0B:82:A1:A5:20		192.168.253.175	10 Master	6m 57s	1.0.5.11	Transfer to Master
Showing 1-2 c	of 2 record(s).							Per Page: 10 •



Now an easier way to transfer your master authority from one unit to another available unit is available on Access Point management page. By clicking the Transfer to Master button above in red circle, the designated slave unit will be upgraded to master and current master will be downgraded to slave accordingly.

### • Airtime Fairness

Turning Airtime Fairness ON or OFF options can be found under Access Point→Edit→Configuration→ Airtime Fairness.

### Social login/Voucher

As an enhancement of Captive Portal, social Login as Wechat/Facebook/Twitter have been added.

Name		
	The field should not be empty	
Authentication Type	Social Login Authentication	¥
Expiration (	0	seconds 🔻
	The field should not be empty	
WeChat		
WeChat Facebook (		
	3	
Facebook 🤆	3	
Facebook ( Twitter (		*

Add



Also, Voucher is added as another Captive Portal authentication option.

# Voucher management interface is available under Captive Portal→Vouchers

S GWN7610								
Overview	+ Add							0
Access Points	Code +	Created Time	Downstream	Upstream	Duration	Status	Notes	Actions
ietwork Group 🔻	1426826538	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
Jients 👻	7785479056	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0
Captive Portal 👻	0935723987	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0 1
Captive Portal	9036163747	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
Vouchers	6293078667	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		00
andwidth Rules	2690325894	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		
vstem Settings 👻	1553881009	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0 0
	9783954316	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0
	5030651023	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0 1
	4911437021	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0 0
	5620511395	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		-
	9348287024	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0 0
	2805433719	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0 1
	8077656863	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		0 0
	0416562441	2017-12-18 21:09:32	IMbps	1Mbps	1h Os	Not used		01
	1004007004		****		ab a.	Make and		
Alert/Notification				© 2017 Grandstre	sam Networks, Inc. All Rights R			



# [GWN7600&7600LR]FIRMWARE VERSION 1.0.5.13

# **PRODUCT NAME**

GWN7600/GWN7600LR

# DATE

2/12/2018

# FIRMWARE FILE INFORMATION

- GWN7600 Firmware file name: gwn7600fw.bin
   MD5: 0e02717ca35b7563df41091fdbd1612c
- GWN7600LR Firmware file name: gwn7600lrfw.bin
   MD5: 9acb5a9db5ce4f179ec7bb5c4be596cd

## **IMPORTANT UPGRADING NOTE**

 For firmware 1.0.5.13, this is only for GWN7610/GWN7600/GWN7600LR master deployment. All users with GWN7000 as master are NOT encouraged to upgrade until 1.0.5.x matching firmware is available for GWN7000, due to the compatibility of new features.

### **ENHANCEMENT**

- Added support for New Firmware Reminder on Master Web
- Added support for Sequential Upgrade

Added support for

- Feature Scheduling
- Added support for Master Direction
- Added support for Master Transfer
- Added support for Airtime Fairness



- Added support for **Social login/Voucher**
- Added support for **Mesh Network**

# **BUG FIX**

- There is low probability that auto pop-up portal page of the iOS couldn't be displayed normally.
- "Hostname" on client page and the "Top AP" \ "Top SSID" \ "Top Clients" on overview page may show empty occasionally.

# **KNOWN ISSUE**

- Configuring Radius server address with domain name instead of IP will cause the WIFI under configuration become open without authentication. Note: issue will be addressed in next feature packet release.
- After clicking on the reset button in maintenance page, there is chance to prompt "Reset failed!" wrongly.

### **NEW FEATURE OVERVIEW**

• New Firmware Reminder on Master Web

Once a different OFFICIAL firmware than current running firmware is detected on Grandstream Network website by master GWN7610, a "NEW" icon will appear to remind network administrator to upgrade. Clicking on the "NEW" icon will open the new firmware's release note.

	S GV	VN7600	Firmware 1.0.5.13 new
Sequential Upgrad	e		
	🕣 Upgrade	C Reboot	+ Add to Network Groups
		Device Type	Name/MAC
		GWN7610	00:0B:82:A1:AB:BC
		GWN7610	00:0B:82:A1:A5:20
GRANDSTREAM NET		GWN7610	00:0B:82:97:90:8C



Now if you choose multiple slave devices to upgrade their firmware, two options as "All-at-Once" and "Sequential" are available. "All-at-Once" will trigger the traditional way that all checked slaves will try to retrieve and change their firmware at the same time, while "Sequential" upgrade will let the slaves to upgrade one by one in order to 1) avoid entire wifi service interruption by full system firmware upgrade; 2) reduce network stress caused by firmware downloading.



Once you choose sequential upgrade, the number with beside the green upgrading icon will tell you how many slaves have done its upgrading.

	Notice
50 2	Please select upgrade method. All-at-Once: all devices will be upgraded at the same time, if there are many devices await to upgrade, it may lead to network congestion, insufficient network bandwidth may cause the upgrade failure of some devices; Sequential: devices upgrade one by one, which means one device upgrades after the completion of the previous one, this upgrade way may take a long time, and you can't apply this function before the completion of all devices upgrade. Note: Only selected online devices (but not Master AP) can be upgraded!
	All-at-Once Sequential Cancel

• Airtime Fairness

Turning Airtime Fairness ON or OFF options can be found under Access Point→Edit→Configuration→

Airtime Fairness.

• Feature Scheduling



Scheduled bandwidth control or client access control is available now under System Settings - Sched
---

Enabled	
Name	The field should not be empty
Scheduled Feature	Bandwidth
Bandwidth Rules	•
Schedule Type	The field should not be empty Daily
Month for Turn On 🥎	*
Month for Turn Off 📀	*
ay of Month for Turn On 🧿	*
ay of Month for Turn Off 🤊	*
Day of Week for Turn On 📀	*
Day of Week for Turn Off 💮	*
Schedule On Time	

Please be noted that you will need a Bandwidth rule (can be created in Bandwidth Rules) or a Client Access

list (can be created under Client→Client Access), in order to create a schedule.



### Master Direction

When GWN7610 slave is not in the same broadcast domain with its master, this feature is available for all factory configured GWN7610 to find its master IP address offered by local DHCP option 43. GWN7610 accepts option 224 encapsulated in option43, and the syntax is in TLV format. So, the for a simple example of DHCP 43 configuration would be:

224(Type)12(Length)10.157.0.234(Value) translated into Hex as e00c31302e3135372e302e323334

For DHCP server configuration on GWN7000, which translates the values automatically, is as follows:

	Edit	>
Basic Wi-Fi	Device Membership	Schedule
DHCP Enabled for IPv4		
DHCP Start Address	192.168.1.10	
DHCP End Address	192.168.1.254	
DHCP Lease Time 🕐	12h	
DHCP Options ③	encap:43,224,"172.168.10.128"	
	Add new iten	
	Cancel	

### • Master Transfer

Access Point	IS							
Device Type	•		Search					Discover AP Failover
🕢 Upgrade	C Reboot	+ Add to Network Groups	X Configure					0
	Device Type	Name/MAC		IP Address	Status	Uptime	Firmware	Actions
	GWN7610	00:0B:82:A1:AB:BC		192.168.253.230	Online	52m 53s	1.0.5.11	C 🖉 🕫 L 🚱
	GWN7610	00:0B:82:A1:A5:20		192.168.253.175	🔝 Master	6m 57s	1.0.5.11	Transfer to Master
Showing 1-2 o	f 2 record(s).							Per Page: 10 *

Now an easier way to transfer your master authority from one unit to another available unit is available on Access Point management page. By clicking the Transfer to Master button above in red circle, the designated slave unit will be upgraded to master and current master will be downgraded to slave accordingly.



# • Social login/Voucher

As an enhancement of Captive Portal, social Login as Wechat/Facebook/Twitter have been added.

	Add	
Name		
	The field should not be empty	
Authentication Type	Social Login Authentication	
Expiration (?)		seconds 🔻
	The field should not be empty	
WeChat		
Facebook ③		
Twitter 📀		
Use Default Portal Page		
rtal Page Customization	/social_auth.html	Ţ
	Redirect to the Original URL	

Also, Voucher is added as another Captive Portal authentication option.

GWN7610								
verview	+ Add							0
ccess Points	Code .	Created Time	Downstream	Upstream	Duration	Status	Notes	Actions
work Group 👻	1426826538	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
uts 👻	7785479056	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
tive Portal 🔫	0935723987	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
aptive Portal	9036163747	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
ouchers	6293078667	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		-
iwidth Rules	2690325894	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		
em Settings 👻	1553881009	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
	9783954316	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
	5030651023	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
	4911437021	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		•
	5620511395	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		00
	9348287024	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		<b>© 1</b>
	2805433719	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		
	8077656863	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		• •
	0416562441	2017-12-18 21:09:32	1Mbps	1Mbps	1h Os	Not used		
ert/Notification			146		an Networks, Inc. All Rights R	West courd		

Voucher management interface is available under Captive Portal→Vouchers



### Mesh Network

Mesh feature is now available for your GWN7600/7600LR wireless deployment!

With Mesh setup, APs can connect wirelessly to each other and cooperate with one another to efficiently

route data from/to clients.

To use Mesh feature, here is some basic instructions:

- 1) Add all APs you want to use to form a mesh network in to a same network group.
- 2) Configure mesh under System Settings  $\rightarrow$  Mesh

00			⑦   Q   15s
	Mesh		
1	Settings		
		Scan Interval(s)	300
	Mes	sh Enabled on 2.4G Radio Interface	When MESH is opened, the number of additional SSID for each network group can not be more than 4!
	м	esh Enabled on 5G Radio Interface	$\ensuremath{\mathcal{C}}$ When MESH is opened, the number of additional SSID for each network group can not be more than 4!
L		Wireless Cascades 🤶	3
			Save

- Disconnect network of those APs, except the root AP or APs for uplink internet access, and power those back on at the location you want to install.
- 4) Wait... The process of forming Mesh network may take several minutes. Once one AP has allocated itself into the Mesh network, its status will change from "online" to
- 5) At this moment, you can check the Mesh topology by clicking
- Mesh topology is automatically calculated; however, you still can modify it manually by specifying each AP's wireless uplink in AP edit page tag "Uplink".



# [GWN7610]FIRMWARE VERSION 1.0.4.22

# PRODUCT NAME

GWN7610

# DATE

11/14/2017

# **BUG FIX**

- Fixed the WPA2 4-way handshake vulnerability\*
- Fixed the WPA2 802.11r vulnerability\*

\*Note: Please refer to our white paper of "WPA Security Vulnerability" here:

http://www.grandstream.com/sites/default/files/Resources/WPA%20Security%20Vulnerability.pdf



# [GWN7610]FIRMWARE VERSION 1.0.4.20

# PRODUCT NAME

GWN7610

# DATE

10/31/2017

# **IMPORTANT UPGRADING NOTE**

- Before starting to upgrade, please make sure your GWN7610's firmware version is 1.0.2.108\* or higher.
- Before starting to upgrade, please make sure your GWN7000 (the master device)'s firmware version is 1.0.2.71\* or higher.

\*GWN7610 firmware 1.0.2.108 package is available for downloading at

http://firmware.grandstream.com/Release\_GWN7610\_1.0.2.108.zip

\*GWN7000 firmware 1.0.2.75 package is available for downloading at

http://firmware.grandstream.com/Release\_GWN7000\_1.0.2.75.zip

# **ENHANCEMENT**

- Added support for Timed Client Disconnect and Enhanced Client Blocking
- Added support for **Client Bridge**
- Added support for Syslog Server
- Added support for Configurable web UI access port
- Added support for E-mail notifications

## **BUG FIX**

- Internal bug fixes.
- Banned Band steering feature does not affect wireless Black/White/Banned client list feature anymore.



# **KNOWN ISSUE**

 After blocking wireless client, blocked client will be displayed as wired in the clients list instead of showing in the Blocked client list. The client can still be unblocked from Global Blacklist under Client Access.

# **NEW FEATURE OVERVIEW**

•	Timed Client Disconnect and Enhanced Client Blocking		
	The Client Connection Permissions Management enhanced client	Clients 🔻	
	blocking provides a more manageable method for Wi-Fi client whitelist		
	and blacklist configuration. It allows any combination of	Clients	
	globally-maintained connection access control lists to be applied to	Client Access	
	network groups as desired for blacklisting and whitelisting WIFI clients.		
	The timed client disconnect feature allows the system administrator to set	Time Policy	
	a fixed time for which clients should be allowed to connect to the access	Banned Clients	
	point, after which the client will no longer be allowed to connect for a user co	nfigurable cooldown period.	-

- 1) New Client bar (See picture on the right)
- 2) Client Access

+ Add		
Name	MAC Addresses	Actions
Global Blacklist		
Access List 1	(4) 00:00:02:14:56, 00:00:00:12:34:57, 00:00:00:12:34:58, 00:00:00:12:34:59	<b>C</b>

# 3) Time Policy

+ Add					
Name 🔺	Enabled	Connection Time	Reconnect Type	Reconnect Time	Actions
TEST_POLICY	~	Зh	Reset Daily	23:00	<b>1</b>

- 4) Banned Client This list is moved from original Client page to a separate page now.
- Client Bridge



The Client Bridge feature allows an access point to be configured as a client for bridging wired only clients wirelessly to the network. When an access point is configured in this way, it will share the wifi connection to the LAN ports transparently. This is not to be confused with a mesh setup. The client will not accept wireless clients in this mode.

Once a Network Group has an Client Bridge Support enabled, the AP adopted in this Network Group can be turned in to Bridge Client mode by click the Bridge button:

Please be noted that once an AP it turned into Client Bridge mode, it cannot be controlled by a Master

8	Device Type	Name/MAC	IP Address	Status	Uptime	Firmware	Actions
8	GWN7610	00:0B:82:97:90:8C	192.168.1.146	Online	1d 17h 51m 13s	1.0.4.19	C 27 56 &
Showing 1	I-1 of 1 record(s).						Per Page: 10 V

anymore, and a factory reset is required to turn it back into normal AP mode.

### Syslog Server

Syslog Server is now available on GWN7000. Configuration page is as below:

S GWN7000								
Overview	Maintenance							
Router 👻	Basic	Upgrade	Access	Syslog	Logsen	ver		
Access Points		Enable the WAN Firewall Rule	WAN Port 1 WAN Port 2					
Clients 👻		Logrotate File Size	5		M •			
VPN +		Logrotate File Count	56					
Firewall •		Logrotate Mode	Every X hours		•			
Bandwidth Rules		Hours						
Network Group +		Devices	please choose					
System Settings 👻		Enable Logserver						
Maintenance			Save Reset					
Debug Email/Notification		Syslog File List						
LEDs		Device	please choose		٠	List		
Cert. Manager							Download	Clear
File Sharing	File Name	File Size		Last Modified				Actions
SNMP			)	There are no syslog files.				
User Manager								
About Alert/Notification			© 2017 Grandst	ream Networks, Inc. All Rights Reserved				

### • Configurable web UI access port

Under System  $\rightarrow$  Maintenance, following configuration is available now:



1) Web WAN Access; 2) Web HTTP Access; 3) Web HTTPS Port

### • E-mail notifications

Email notification allows the administrator to select a predefined set of system events and to send notification upon the change of the set events.

Email notification configuration is under System  $\rightarrow$  Email/Notification.

Selectable system events are listed as below:

	Notification	Email
	Enabled	
	Memory Usage 🧿	
	CPU Usage 🍞	
	WAN Port 1 Usage	
	WAN Port 2 Usage	
	Firmware Upgrade 💮	
	Add/Remove Network Group 🥐	
	Additional SSID (?)	
	Time Zone Change 💮	
	Administrator Password Change 💮	
	AP Offline 🤉	



# [GWN7600&7600LR]FIRMWARE VERSION 1.0.4.12

# **PRODUCT NAME**

GWN7600, GWN7600LR

### DATE

10/31/2017

# **ENHANCEMENT**

- Added support for Timed Client Disconnect and Enhanced Client Blocking
- Added support for Client Bridge
- Added support for Syslog Server
- Added support for Configurable web UI access port
- Added support for E-mail notifications

# **BUG FIX**

- Fixed the WPA2 4-way handshake vulnerability\*
- Fixed the WPA2 802.11r vulnerability\*

\*Note: "Out of the box" Grandstream Access Points are not affected by this issue. APs with old firmware are

only affected after changing into client-bridge mode. Please refer to our white paper of "WPA Security

Vulnerability" here:

### http://www.grandstream.com/sites/default/files/Resources/WPA%20Security%20Vulnerability.pdf

- Fixed the issue that "Band Steering" option requires a system reboot to take effect.
- Fixed the issue that "Gateway MAC address" options and requires a system reboot to take effect.
- Fixed the issue that when Facebook and WeChat authentication are enabled at the same time, client cannot redirect to landing page after Facebook auth success.



• Fixed the issue that after many times of enabling and disabling Captive Portal, there is chances that WIFI clients can access to Internet without authentication challenge.

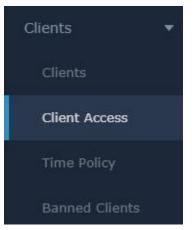
# **KNOWN ISSUE**

- Configuring Radius server address with domain name instead of IP will cause the WIFI under configuration become open without authentication.
- "Hostname" on client page and the "Top AP" \ "Top SSID" \ "Top Clients" on overview page may show empty occasionally.
- After clicking on the reset button in maintenance page, it may prompt "Reset failed!".

# **NEW FEATURE OVERVIEW**

### • Timed Client Disconnect and Enhanced Client Blocking

The Client Connection Permissions Management enhanced client blocking provides a more manageable method for Wi-Fi client whitelist and blacklist configuration. It allows any combination of globally-maintained connection access control lists to be applied to network groups as desired for blacklisting and whitelisting WIFI clients. The timed client disconnect feature allows the system administrator to set a fixed time for which clients should be allowed to connect to the access



point, after which the client will no longer be allowed to connect for a user configurable cooldown period.

- 5) New Client bar (See picture on the right)
- 6) Client Access

+ Add		
Name	MAC Addresses	Actions
Global Blacklist		
Access List 1	(4) 00:00:00:12:34:56, 00:00:00:12:34:57, 00:00:00:12:34:58, 00:00:00:12:34:59	r 🗊

# 7) Time Policy

+ Add					
Name 🔺	Enabled	Connection Time	Reconnect Type	Reconnect Time	Actions
TEST_POLICY	~	Зh	Reset Daily	23:00	<b>1</b>



8) Banned Client This list is moved from original Client page to a separate page now.

### Client Bridge

The Client Bridge feature allows an access point to be configured as a client for bridging wired only clients wirelessly to the network. When an access point is configured in this way, it will share the wifi connection to the LAN ports transparently. This is not to be confused with a mesh setup. The client will not accept wireless clients in this mode.

Once a Network Group has an Client Bridge Support enabled, the AP adopted in this Network Group can be turned in to Bridge Client mode by click the Bridge button:

Please be noted that once an AP is turned into Client Bridge mode, it cannot be controlled by a Master

Devic	te Type Name/	e/MAC I	IP Address	Status	Uptime	Firmware	Actions
GWN	7610 00:0B	B:82:97:90:8C 1	192.168.1.146	Online	1d 17h 51m 13s	1.0.4.19	C 2 2 2 2
Showing 1-1 of 1 i	record(s).						Per Page: 10 V

anymore, and a factory reset is required to turn it back into normal AP mode.

### • Syslog Server

Syslog Server is now available on GWN7600 and GWN700LR. Configuration page is as below:

S GWN7600	DLR Firmware 1.0.4.12				0	Q	15s 🗸	English 🗸	admin [+
Overview	Maintenance								
Access Points	Basic	Upgrade	Access	Syslog	Logserver				
Network Group		Web HTTP Access							
Clients 🔻		Web HTTPS Port	443						
Captive Portal		Country	United States		~				
Bandwidth Rules		Time Zone 🧿	(UTC) Coordinated Universal Time		~				
System Settings 🔻		NTP Server (?)	129.6.15.28		•				
Maintenance					Add new item 🕂				
Debug		Date Display Format	YYYY/MM/DD		~				
Email/Notification			Save						
LEDs									
About									
Alert/Notification			© 2017 Grands	tream Networks, Inc. All Rights Reserved					



### • Configurable web UI access port

Under System  $\rightarrow$  Maintenance, following configuration is available now:

2) Web WAN Access; 2) Web HTTP Access; 3) Web HTTPS Port

### • E-mail notifications

Email notification allows the administrator to select a predefined set of system events and to send notification upon the change of the set events.

Email notification configuration is under System  $\rightarrow$  Email/Notification.

Selectable		Email/Notification				system even	ts are
		Email	Notification				
listed	as					below:	
			Enabled				
			Memory Usage 🤄	2			
			CPU Usage 🤅	)			
			WAN Port 1 Usage				
			WAN Port 2 Usage				
			Firmware Upgrade 🤇	)			
			Add/Remove Network Group 🤆	)			
			Additional SSID (	2			
			Time Zone Change 🤅	?			
			Administrator Password Change 🤅	2			
			AP Offline 🤅	?			
				1	Devet		
				Save	Reset		



# [GWN7600&7600LR]FIRMWARE VERSION 1.0.3.25

# **PRODUCT NAME**

GWN7600, GWN7600LR

# DATE

9/20/2017

# **IMPORTANT UPGRADING NOTE**

This is the initial official release of GWN7600LR

# **BUG FIX**

- Fixed issue that GWN7600's 5G radio power won't take effect after select frequency to only 5G.
- Fixed issue that WiFi client cannot connect to the 802.11g AP WIFI when it uses the 802.11b protocol.
- Fixed issue that WeChat authentication for Captive portal sometimes behaves abnormal and it will be hard for WIFI client to authenticate when issue happens.
- Fixed issue that Captive Portal Policy changes require a reboot to take effect.
- Fixed issue that device cannot catch packet if a value is set in "File Size" option.
- Fixed issue that 2.4GHz mode need to be enabled for changing Channel Width and Active Spatial Streams.
- Fixed issue that WeChat authentication of Captive portal does not work, when adopting WIFI has WEP security mode.
- Fixed issue that If only 802.11r is enabled, Voice enterprise feature will not take effect.
- Fixed issue that iPhone does not work with current Minimum RSSI design.
- Internal bug fixes



# **KNOWN ISSUE**

- "Band Steering" and "Gateway MAC address" options and requires a system reboot to take effect.
- Configuring Radius server address with domain name instead of IP will cause the WIFI under configuration become open without authentication.
- "Hostname" on client page and the "Top AP" \ "Top SSID" \ "Top Clients" on overview page may show empty occasionally.
- After clicking on the reset button in maintenance page, it may prompt "Reset failed!".
- When Facebook and WeChat authentication are enabled at the same time, client cannot redirect to landing page after Facebook auth success.
- After many times of enabling and disabling Captive Portal, there is chances that WIFI clients can access to Internet without authentication challenge.



# [GWN7610]FIRMWARE VERSION 1.0.3.21

# **PRODUCT NAME**

GWN7610

# DATE

8/11/2017

# **IMPORTANT UPGRADING NOTE**

- Before starting to upgrade, please make sure your GWN7610's firmware version is 1.0.2.108 or higher.
- Before starting to upgrade, please make sure your GWN7000 (the master device)'s firmware version is 1.0.2.71 or higher.

# **ENHANCEMENT**

## **BUG FIX**

• Fixed the issue that beacon frame has a random information element

### **KNOWN ISSUE**

 Banned Band steering feature still affect wireless Black/White/Banned client list feature. Please use Band steering or Black/White/Banned client list feature exclusively.

GRANDSTREAM NETWORKS GWN76xx Firmware Release Notes



# [GWN7600&7600LR]FIRMWARE VERSION 1.0.3.19

## **PRODUCT NAME**

GWN7600

## DATE

7/14/2017

#### **ENHANCEMENT**

- Added support for Captive Portal Enhancement
- Added support for 802.11k/r/v (Enable Voice Enterprise)
- Added support for Failover Master
- Added support for VLAN assignment via RADIUS
- Added support for Select Band per SSID Added support for Exact Radio Power Configuration in dBm
- Added support for AP Locating by Blinking LED
- Added support for Per-Client/Per-SSID Bandwidth Management
- Added support for Limit Client Count per SSID
- Added support for WIFI schedule
- Added support for LED control
- Added support for Enabling/Disabling DHCP option 66 for firmware upgrade

#### **BUG FIX**

• Internal bug fixes



## **KNOWN ISSUE**

- "Band Steering" and "Gateway MAC address" options and requires a system reboot to take effect.
- Configuring Radius server address with domain name instead of IP will cause the WIFI under configuration become open without authentication.
- "Hostname" on client page and the "Top AP" \ "Top SSID" \ "Top Clients" on overview page may show empty occasionally.
- GWN7600's 5G radio power won't take effect after select frequency to only 5G.
- Client cannot connect to the 802.11g AP WIFI when it uses the 802.11b protocol.
- After clicking on the reset button in maintenance page, it may prompt "Reset failed!".
- WeChat authentication for Captive portal sometimes behaves abnormal and it will be hard for WIFI client to authenticate when issue happens.
- When Facebook and WeChat authentication are enabled at the same time, client cannot redirect to landing page after Facebook auth success.
- After many times of enabling and disabling Captive Portal, there is chances that WIFI clients can access to Internet without authentication challenge.
- Device cannot catch packet if a value is set in "File Size" option.
- Captive Portal Policy changes require a reboot to take effect.
- 2.4GHz mode need to be enabled for changing Channel Width and Active Spatial Streams.
- WeChat authentication of Captive portal does not work, when adopting WIFI has WEP security mode.
- If only 802.11r is enabled, Voice enterprise feature will not take effect.
- iPhone does not work with current Minimum RSSI design.

#### **NEW FEATURE OVERVIEW**

Captive Portal

You can configure different portal policies with names and adopt one policy while configuring your Network groups. Captive portal now also supports authentication by Radius and WeChat/Facebook.



	Add	×
Name	The field should not be empty	
Expiration(s) ③		
Authentication Type	The field should not be empty Third Authentication	
WeChat Authentication		
Facebook Authentication		
Portal Page Customization	/third_auth.html	
Landing Page	Redirect to the original URL	
Enable HTTPS		
Pre Authentication Rule(s) (?)	please choose -	•
	Add new item	•
Post Authentication Rule(s) (?)	please choose - 🔻	•
	Add new item	•
	Save	
	Cancer	

• 802.11k/r/v (Enable Voice Enterprise)

Configuration available at Network Group->Add/Edit->WIFI-> Enable Voice Enterprise / Enable 11R /

#### Enable 11K / Enable 11V

Enable Voice Enterprise	
Enable 11R 🕐	
Enable 11K 🕐	
Enable 11V ?	



• Failover Master

Failover Master is supported on GWN7600LR now. You can specify a slave AP as failover master. Whenever it detects the master is down, it will promote itself to be as failover master. After then, if master comes back, failover master will automatically go back to slave mode, or if the master doesn't come back to alive, Administrator can login to turn the failover master to true master and take over all controls.

Access Points	Configure Failover AP	×	
Device Type 🔻	Failover AP None   None		Discover AP Failover
🕀 Upgrade 📿 Re	00/08/92/98/4E11C		٥
Device Type		rmware	Actions
GWN7610		0.3.15	C 2 &
GWN7610		0.3.15	C 2 &
Showing 1-2 of 2 record(s).			Per Page: 10 *

• AP Locating by Blinking LED

Now, when you can't match your AP list on web with your real AP deployment in the field. This feature will

help you to find your AP.

🕞 Up	grade 📿 Reboot	+ Add to Network Groups 🔀 Co	nfigure				0
	Device Type	Name/MAC	IP Address	Status	Uptime	Firmware	Actions
	GWN7610	00:0B:82:97:90:8C	192.168.1.146	Master	1d 16h 3m 1s	1.0.3.15	C 8 &
	GWN7610	00:0B:82:8B:4E:1C	192.168.1.21	Online	1d 16h 6m 15s	1.0.3.15	Locate the device

• Select Band per SSID

Configuration available at Network Group->Add/Edit->WIFI-> **SSID band.** 

SSID Band	Dual-Band 🔻
	Dual-Band
SSID Hidden	2.4GHz
	5GHz



• Exact Radio Power Configuration in dBm

Configuration available at Access Point->Edit->Configuration-> Custom 2.4GHz Wireless Power (dBm).

Custom 2.4GHz Wireless Power(dBm)		
	Save	Cancel

• Per-Client/Per-SSID Bandwidth Management

#### Configuration available at

Per-SSID: Network Group->Add/Edit->WIFI-> Upstream Rate / Downstream Rate.

Upstream Rate		Mbps v
Downstream Rate		Mbps v
	Save Cancel	

#### Per-Client: Client->Edit->Bandwidth Rules-> Add new item.

	User Conf	figuration		$\times$
Status	Bandwidth	Rules	Configuration	
Network Group	Upstream Rate	Downstream F	Rate	
			Add new item  🕂	
	Save	Cancel		



	Add		
Туре	SSID	v	
SSID	GWNA6435C (group0)	•	
Upstream Rate		Mbps 🔻	
	The field should not be empty	2	
Downstream Rate		Mbps 🔻	
	The field should not be empty		
	Save Cancel		

#### General configuration: Bandwidth Rules on left root menu bar.

• Limit Client Count per SSID

Configuration available at Network Group->Add/Edit->WIFI-> Wireless Client Limit.

Wireless Client Limit 🕐	

• WIFI schedule

User can configure WIFI on/off schedule under Network Group->Edit->**Schedule.** 

			Edit		$\times$
Basic	Wi-Fi		Device Membershi	p Schedul	e
Enable Wirele	ss Schedule				
	Sunday				
	Monday				
	Tuesday				
	Wednesday				
	Thursday				
	Friday				
	Saturday				
		Save	Cancel		



#### LED control

User can define the LED on/off schedule in following page.

S GWN7600	0 Firmware 1.0.3.19			
Overview	LEDs			
Access Points	LEDs Always Off 💮 🗉			
Network Group 🔫	Schedule Start Hour ①			
Clients	Schedule Start Minute (?)			
Captive Portal	Schedule Stop Hour 🛞			
Bandwidth Rules	Schedule Stop Minute ③			
System Settings 💌	Schedule Weekdays List of Weekdays All None			
Maintenance Debug	🔝 Sunday			
LEDs	🔲 Monday			
About	🔲 Tuesday			
	Thursday			
	🔲 Friday			
	Saturday			
	Save			
Alert/Notification	© 2017 Grandstream Networks, Inc. All Rights Reserved			

• Enabling/Disabling DHCP option 66 for firmware upgrade

Configuration available at System Settings->Maintenance->Upgrade-> Allow DHCP options 66 and 43 override.

Allow DHCP options 66 and 43 override 💿 🗷



# [GWN7610]FIRMWARE VERSION 1.0.3.19

## **PRODUCT NAME**

GWN7610

### DATE

6/20/2017

### **IMPORTANT UPGRADING NOTE**

- Before starting to upgrade, please make sure your GWN7610's firmware version is 1.0.2.108 or higher.
- Before starting to upgrade, please make sure your GWN7000 (the master device)'s firmware version is 1.0.2.71 or higher.

#### **ENHANCEMENT**

- Added support for Captive Portal EnhancementAdded support for 802.11k/r/v (Enable Voice Enterprise)Added support for Failover Master
- Added support for VLAN assignment via RADIUS
- Added support for Select Band per SSIDAdded support for Selectively Enable b/g/n
- Added support for Exact Radio Power Configuration in dBm
- Added support for AP Locating by Blinking LED
- Added support for Per-Client/Per-SSID Bandwidth Management
- Added support for Limit Client Count per SSID
- Added support for Enabling/Disabling DHCP option 66 for firmware upgrade

#### **BUG FIX**

• Internal bug fixes



#### **KNOWN ISSUE**

 Banned Band steering feature still affect wireless Black/White/Banned client list feature. Please use Band steering or Black/White/Banned client list feature exclusively.

#### **NEW FEATURE OVERVIEW**

- Captive Portal Enhancement
- Now you can configure different portal policies with names and adopt one policy while configuring your Network groups.
- 2. Now captive portal starts to support authentication by Radius and WeChat.

S GWN7610					admin [+
Overview	Captive Portal Policy		Add	×	
Access Points Network Group -	+ Add	Name	grandstream		
Clients	Name	Expiration	0		Actions
Captive Portal	grandstream	Authentication Type	No authentication   No authentication Radius Server		<b>K B</b>
Bandwidth Rules		Portal Page Customization	WeCh at		
System Settings •			Save		
Alert/Notification			© 2017 Grandstream Networks, Inc. All Rights Reserved		

#### Failover Master

ccess Points		Configure Failover AP	×	
Device Type	Failover AP	None		Discover AP Failover
🕞 Upgrade 💽 C+ Re		None 00:08:87:88:4E:1C		¢
Device Type			mware	Acti
GWN7610			0.3.15	<b>C</b> 8
GWN7610			0.3.15	C 2
owing 1-2 of 2 record(s).				Per Page: 10

Failover Master is supported on GWN7610 now. You can specify a slave AP as failover master. Whenever it detects the master is down, it will promote itself to be as failover master. After then, if master comes back,



failover master will automatically go back to slave mode, or if the master doesn't come back to alive, Administrator can login to turn the failover master to true master and take over all controls.

#### • AP Locating by Blinking LED

Now, when you can't match your AP list on web with your real AP deployment in the field. This feature will help you to find your AP.

🕞 Up	ograde 🔿 Reboot	+ Add to Network Groups 🔀 Confi	gure				¢
۵	Device Type	Name/MAC	IP Address	Status	Uptime	Firmware	Actions
	GWN7610	00:0B:82:97:90:8C	192.168.1.146	Master	1d 16h 3m 1s	1.0.3.15	C 8 2
	GWN7610	00:0B:82:8B:4E:1C	192.168.1.21	Online	1d 16h 6m 15s	1.0.3.15	Locate the device

• 802.11k/r (Enable Voice Enterprise)

Configuration available at Network Group->Add/Edit->WiFi-> Enable Voice Enterprise.

• Select Band per SSID

Configuration available at Network Group->Add/Edit->WiFi-> **SSID band.** 

• Selectively Enable b/g/n

Configuration available at Access Point->Edit->Configuration-> Mode (2.4G).

• Exact Radio Power Configuration in dBm

Configuration available at Access Point->Edit->Configuration-> Custom 2.4GHz Wireless Power (dBm).

• Per-Client/Per-SSID Bandwidth Management

Configuration available at

Per-SSID: Network Group->Add/Edit->WiFi-> Upstream Rate / Downstream Rate.

Per-Client: Client->Edit->Bandwidth Rules-> Add new item.

Limit Client Count per SSID

Configuration available at Network Group->Add/Edit->WiFi-> Wireless Client Limit.



• Enabling/Disabling DHCP option 66 for firmware upgrade

Configuration available at System Settings->Maintenance->Upgrade-> Allow DHCP options 66 and 43 override.



# [GWN7610]FIRMWARE VERSION 1.0.2.108

## **PRODUCT NAME**

GWN7610

## DATE

4/19/2017

### **IMPORTANT UPGRADING NOTE**

Controller protocol security enhancement is important for secured provision from Master to Slave. So once a
master with 1.0.2.108 found a slave with 1.0.2.15, it will disable the slave's wifi and show the slave's
firmware version in RED BOLD to remind user to upgrade the salve. (This is implemented on GWN7000
version 1.0.2.71 too)

#### **ENHANCEMENT**

- Controller protocol security enhancement
- LED control
- Captive Portal
- Additional SSID
- WIFI schedule
- Client Isolation enhancement
- Syslog stored on unit and displayed on web is available now
- Few web enhancement.

#### **KNOWN ISSUE**

 Banned Band steering feature still affect wireless Black/White/Banned client list feature. Please use Band steering or Black/White/Banned client list feature exclusively.



### **NEW FEATURE OVERVIEW**

LED control

User can define the LED on/off schedule in following page.

S GWN7610	) Firmware 1.0.2.108			nglish 🗸	admin [+
Overview	LEDs				
	LEDs Always Off 💮 🗐				
	Schedule Start Hour 🛞				
	Schedule Start Minute 🛞				
	Schedule Stop Hour 🛞				
	Schedule Stop Minute 🛞				
Debug	Schedule Weekdays List of Weekdays All None				
LEDs	Sunday				
	Monday				
	Tuesday				
	Wednesday     Thursday				
	inursay				
	Saturday				
	Save				
Alert/Notification	All Rights Reserved Grandstream Networks, Inc. 2017				

Captive Portal

Configurations are is available under System settings. Now user can customize the portal web page including their service terms by uploading splash.html and related web files in "Files" tag. (The blank window below is left for the service term to be customized)

I accept the license agreement.	

Additional SSID



S GWN7610	Firmware 1.0.2.108					0	Q:   151	i 🗸 🛛 English 🗸	admin [+
Overview	Add								
Access Points	SSID	Enabled	Network Group	Hidden	Security Mode	MAC Filtering	Client Isolation	RSSI	Actions
Network Group 👻	108_test_add	~	group0	×	WPA2	Disabled	×	×	<b>ď</b>
Network Group									
Additional SSID									
Clients									
System Settings 🔻									
Alert/Notification				All Rights Reserve	d Grandstream Networks, Inc.	2017			

Now user can add additional SSID to any network group by configuring the following page.

• WIFI schedule

-

User can configure WIFI on/off schedule under Network Group->Edit->Schedule

• Client Isolation enhancement

Now, 3 client isolation modes (Radio/Internet/Gateway MAC) are available now. Please refer to user manual for the detailed features.

	Edit	×
Basic Wi-Fi	Device Membership	Schedule
Enable Wi-Fi	8	
SSID (?)	108_test_2	
SSID Hidden		
Security Mode	WPA2	•
WPA Key Mode	PSK	T
WPA Encryption Type	AES	•
WPA Pre-Shared Key 🛞	······	•
Use MAC Filtering	Disabled	¥
Client Isolation ⑦	2	
Client Isolation Mode	Radio Radio	•
Enable RSSI 📀	Internet Gateway MAC	
Minimum RSSI (dBm) 🕐		
	Save Cancel	



# [GWN7600&7600LR]FIRMWARE VERSION 1.0.1.36

**PRODUCT NAME** 

GWN7600

## DATE

3/15/2017

## **IMPORTANT UPGRADING NOTE**

This is the initial official release of GWN7600



# [GWN7610]FIRMWARE VERSION 1.0.2.15

# PRODUCT NAME

GWN7610

## DATE

1/31/2017

## **IMPORTANT UPGRADING NOTE**

This is the initial official release of GWN7610