GWN76xx Firmware Release Notes

IMPORTANT UPGRADING NOTE

1. [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.

2. [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.

3. [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.

4. [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 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.

5. [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.

6. [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.
7. [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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FIRMWARE VERSION 1.0.19.15

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: 073577079373c78e9e8f535ff2d95a3

- GWN7602 Firmware file name: gwn7602fw.bin
  MD5 checksum: 4a8edca192626f8c13455676912536a0

- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
  MD5 checksum: 5b51ddf88b8f43aa75625298dc1cc187

- GWN7615 Firmware file name: gwn7615fw.bin
  MD5 checksum: 5170b60090e052f517c9355d995096d5

CHANGES/ENHANCEMENT

- 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.
FIRMWARE VERSION 1.0.19.14

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: 6b2cad61637d70af024501f6bbfcd615
- GWN7630/GWN7630LR Firmware file name: gwn7630fw.bin
  MD5 checksum: d8c46486e455a952f2709627b7a53
- GWN7602 Firmware file name: gwn7602fw.bin
  MD5 checksum: dcd2c2a4a458a27f4d8e21ff47edc9
- GWN7605/GWN7605LR Firmware file name: gwn7605fw.bin
  MD5 checksum: a88ee8d9358f44e2ed480f07f13d83ad
- GWN7615 Firmware file name: gwn7615fw.bin
  MD5 checksum: c1d4e91a9133d932d761a4c680c0f176

CHANGES/ENHANCEMENT
- 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 causing no top statics to display on the controller.

• Fixed an issue that snmpd could not be stopped, which leads to the AP unable to reboot.

• Fixed an issue that AP may respond on DHCP client discover.
FIRMWARE VERSION 1.0.19.9

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

CHANGES/ENHANCEMENT
- Fixed a system crash
- Fixed TCP connection closes randomly when SSID Mode is set to NAT mode
FIRMWARE VERSION 1.0.19.5

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: a262250fc097ef0b813f763cfa1e1da
• GWN7600/GWN7600LR Firmware file name: gwn7600fw.bin
  MD5 checksum: 8291180c86dbecfc98ce632f19cd55d5
• 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: 28d6bc126cbfbb57e751589484d19b76
• 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: a5791f536690abcdebea8f909c0bcd6

- 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: 81414c1a8b3893de9da843e6f1e7132

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:

![Multicast/Broadcast Suppression Configuration](image)

- **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→Wi-Fi→Advanced.

![Active IGMP Configuration](image)
• **Rogue AP Detection**

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

![Rogue AP Detection Configuration](image)

• **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.

![802.11w Configuration](image)
• **Auto TX Power**

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

![Auto TX Power Configuration](image)

• **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.

2) 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**

  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.

- **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 is the current DFS table for GWN APs as of 1.0.19.4

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<th>RCM</th>
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</table>

• **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
• **Hotspot 2.0 Beta** (GWN7610 & GWN7602 not supported)

Configuration is available at Service→Hotspot 2.0
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: f2950a672756cf906076965a3bfe3ba
- GWN7615 Firmware file name: gwn7615fw.bin
  MD5 checksum: e57f82ddac585f005f327de9fd58f3

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.

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<th>CE</th>
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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:  54e00a2d6610c690e51822f214c29ebd

- GWN7605 Firmware file name: gwn7602fw.bin
  MD5 checksum:  2b142615d2598570c65eaec0427a8d5d

- GWN7605 Firmware file name: gwn7605fw.bin
  MD5 checksum:  f2950a672756cf906076965a3bfe3ba
### CHANGES/ENHANCEMENT

- Added support of more DFS channels
- Fixed internal bugs

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

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<td>GWN7602</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GWN7605</td>
<td>Yes</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
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: 8d5cea02bea2ea5e6afa299d3995ba02

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.

When device boot in factory default, by login in Slave mode, you can add the IP address of your GWN 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.
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.
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→SSIDs→Configuration→Edit→Wi-Fi Settings→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→Access Points→Status →Click on the AP→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→System→Upgrade→Upgrade Time→Upgrade Regularly. Schedule is configured at NETWORK→System→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.

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

Once takeover key is validated, slave AP will be transferred to the new master.
• **Client Negotiate Speed Display**

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.
Once login, you will see Debug page as below

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.
• **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\(^1\) for Captive Portal
- Added feature of Custom Field\(^1\) for Captive Portal Splash Page
- Added feature of ARP Proxy
- Added feature of Clear client data\(^1\)
- Enhanced Event log by WiFi authentication event\(^1\)
- Enhanced Bandwidth Rules by adding option to limit bandwidth Per-Client and adding Total Bandwidth Usage\(^1\) on Overview Bandwidth Chart
- Added EU Server support\(^1\)

\(^1\) 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

- 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 → Configuration → Wi-Fi → 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.

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>MAC Address</th>
<th>State</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-12-13 16:30:19</td>
<td>74:DA:EA:CD:28</td>
<td>gs_internal</td>
<td>WPA-PSK deauthentication (four-way handshake failure)</td>
</tr>
<tr>
<td>2018-12-13 16:30:10</td>
<td>74:DA:EA:CD:28</td>
<td>gs_internal</td>
<td>WPA-PSK authentication failure</td>
</tr>
</tbody>
</table>
• **limit bandwidth Per-Client**

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

![Edit Bandwidth Rules](image)

• **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.

![Sign in](image)
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: e35fbd2803278d2305cee46c1c436deb
- GWN7600/7600LR Firmware file name: gwn7600fw.bin
  MD5 checksum: f934883870b24d911b604f6d77a5fed

CHANGES/ENHANCEMENT
- Added feature of URL Logging\(^1\)
- 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\(^1\)
  GWN AP know can log user URL visiting history onto GWN server, and report to Admin on timely schedule.

\(^1\) URL Logging is only available at GWN Cloud, and local master configuration does not support this feature.
To enable configuration, option is available at Cloud menu: **System → 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:

1. If Facebook authentication is configured on older GWN Cloud version. You will need to log in your Facebook account of https://developers.facebook.com/apps, and set the OAuth redirect URI to https://cwp.gwn.cloud:8443/GsUserAuth.cgi?GsUserAuthMethod=3

2. If Twitter authentication is configured on older GWN Cloud version. You will need to log in your Twitter account of https://apps.twitter.com/app, and set the callback URLs to http://cwp.gwn.cloud:8080/GsUserAuth.cgi?GsUserAuthMethod=5

3. 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\textsuperscript{Beta} \(^1\)
- Added feature of Mesh for GWN7610\(^2\)
- Added feature of External Captive Portal Support
- Added feature of AP Scheduling Reboot
- Added feature of Change Log\(^3\)
- Added feature of WiFi Statistic Report\(^3\)
- Added feature of Configuration Quick Navigation\(^3\)
- Added feature of Captive Portal Guest Summary
- Changed SSID limit\(^3\)
- 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\textsuperscript{Beta}**

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

  Local Master: Access Point → (&nbsp; Edit → Configuration)

  - **Dynamic Channel Assignment**\(^4\) 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.

\(^1\) Local Master only  
\(^2\) Mesh is already supported on GWN7600 and GWN7600LR in previous feature pack  
\(^3\) GWN Cloud only  
\(^4\) Dynamic Channel Assignment is not supported on GWN7610.
- **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**
Linkyfi¹ and Purple² as external captive portal are supported now on GWN APs for both local master and GWN Cloud.

Configurations now are available at **Captive Portal → Policy List → Add/Edit → 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**.

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Note: ¹ Linkyfi [https://www.avsystem.com/products/linkyfi/](https://www.avsystem.com/products/linkyfi/)
² Purple [https://purple.ai/](https://purple.ai/)
- **Statistic Report**

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

[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.
• 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:

![GWN Cloud Client Information Enhancement](image)

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

- **Captive Portal feature** 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: ae52aea470e6bf0fddca95b1537df8e9

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 Scheduling
• 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 [https://www.gwn.cloud](https://www.gwn.cloud). 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.
• 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.

• Feature Scheduling

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.
[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: 61784977a1a698e3d85f37620124010

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 [https://www.gwn.cloud](https://www.gwn.cloud). 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.
- **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.

- **Feature Scheduling**

  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.
[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
• **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  

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

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[Save]  [Cancel]
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 e0c31302e3135372e302e323334

  ![DHCP Configuration Example](image)

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

- **Master Transfer**

  ![Master Transfer Configuration](image)
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.
Also, Voucher is added as another Captive Portal authentication option.

Voucher management interface is available under Captive Portal → Vouchers
[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: 0e02717ca35b7563df41091fbd1612c

- 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.

• **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.

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

- **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 → Schedule

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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: encap:43,224,"172.168.10.128"
```

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](image)

  - **Name**: 
    - The field should not be empty
  - **Authentication Type**: Social Login Authentication
  - **Expiration**: 
    - The field should not be empty
  - **WeChat**: 
  - **Facebook**: 
  - **Twitter**: 
  - **Use Default Portal Page**: 
  - **Portal Page Customization**: /social_auth.html
  - **Landing Page**: Redirect to the Original URL

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

  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 → Mesh

3) 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

6) 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:

[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 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.

1) New Client bar (See picture on the right)

2) Client Access

3) Time Policy

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 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:

- **Configurable web UI access port**

  Under System →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 → Email/Notification.

  Selectable system events are listed as below:
[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:


- 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

7) Time Policy
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 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:
- **Configurable web UI access port**
  
  Under System → 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 → Email/Notification.

  Selectable system events are listed as below:
[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.

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

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

• 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.

• Select Band per SSID

Configuration available at Network Group->Add/Edit->WIFI-> **SSID band.**
• **Exact Radio Power Configuration in dBm**

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

![Custom 2.4GHz Wireless Power Configuration](image)

• **Per-Client/Per-SSID Bandwidth Management**

Configuration available at

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

![Upstream Rate / Downstream Rate Configuration](image)

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

![User Configuration](image)
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**.

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

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

• 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 1.0.3.19

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 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 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
  1. 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.

- Failover Master

  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.

- **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.
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 slave. (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.

- Captive Portal

Configurations are available under System settings. Now the 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)

- Additional SSID
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.
[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