

**CERIO**

*Amplify your Wireless Network*

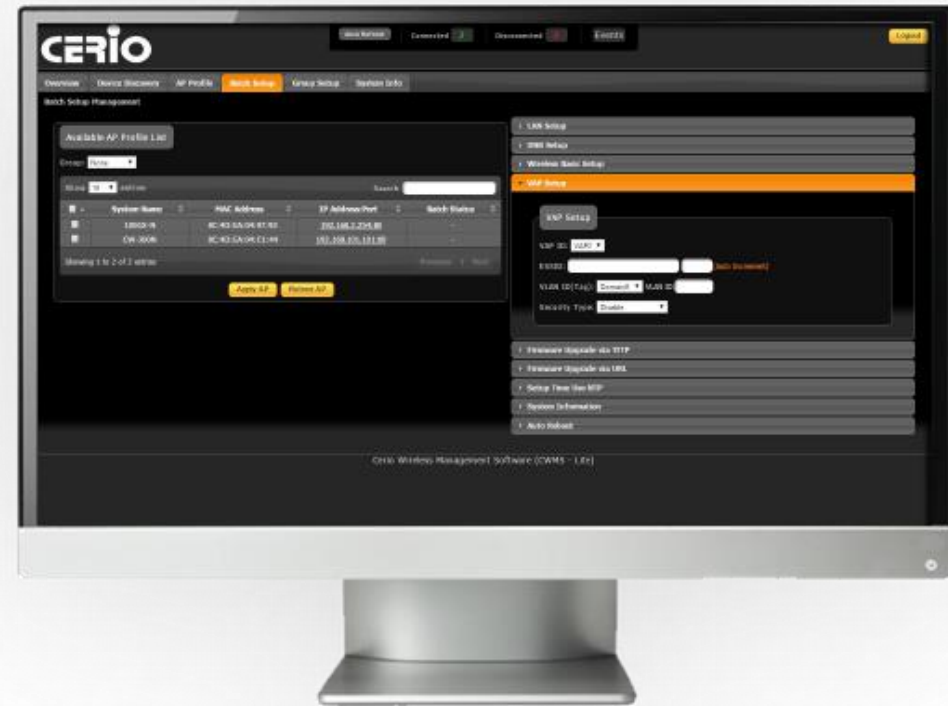
# Introduction to



# CWMS CERIO Wireless Management Software

**CWMS Pro** Supports a Max of **500 APs**

**CWMS Lite** Supports a Max of **10 APs**



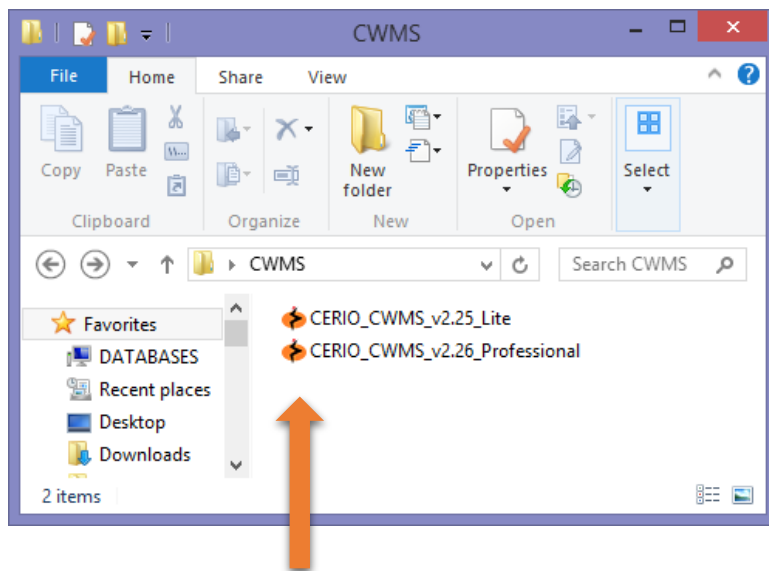
Centralized remote **management** for your AP network

**CWMS** provides UNIFIED management of APs, allowing administrators to **monitor** and **manage** high density client deployment with convenience and ease.



- Supports a Maximum of **500 APs (Pro)** or **10 APs (Lite)**.
- Discover all access points in the local area network for **centralized management**
- Software Kernel : Cross-Platform base ( Supports **Microsoft Windows** and **Linux base** )
- AP Profile– Maintains a set of setting templates/profiles that simplify the task of assigning settings to multiple managed APs or **restoring broken/replacement AP settings**
- Batch Setup- Make device setting changes to single, group, or all devices. Setting changes include **basic wireless settings, VAP setup, Auto Reboot, etc.**
- **Centralized firmware Upgrade**-Select multiple APs and upgrade their firmware simultaneously , conveniently upgrading an entire network system
- Overview- Provides detailed monitoring information on **online users and device statuses**, and also allows admins to enter individual device's **CenOS 3.0 Software UI**
- Supports both **English** and **Chinese** Language Option Interfaces

CWMS allows for simple software installation and login. Use the default username “**admin**” to enter the user interface. There is **NO default password**.

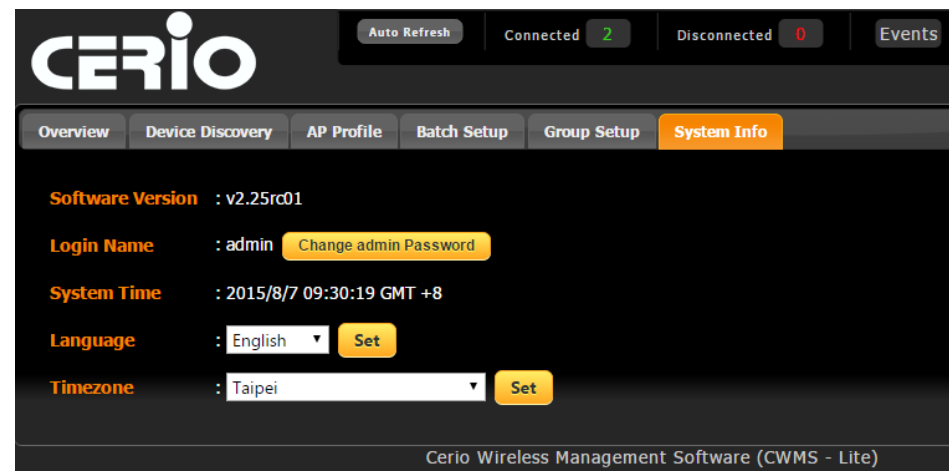


Simply double click on the provided installation file to install the CWMS AP Management software

Once successfully logged in, administrators can simply set/change their username and password in the System Info tab.

A screenshot of the 'AP Management Login' web interface. It features a title 'AP Management Login' at the top. Below the title are two input fields: 'Username' with the text 'admin' and 'Password' which is empty. A 'Login' button is positioned below the password field. An orange arrow points from the text 'No initial password' to the empty password field.

No initial password



The screenshot shows the CERIO Device Discovery interface. At the top, there are tabs for Overview, Device Discovery (selected), AP Profile, Batch Setup, Group Setup, and System Info. Below the tabs, there are buttons for Auto Refresh, Connected (2), Disconnected (0), and Events. A Logout button is in the top right corner. The main content area is titled "Device Discovery" and has two tabs: Unmanaged (2) (highlighted with a red box) and Managed (0). Below the tabs, there is a "Show 25 entries" dropdown and a search bar. A row of action buttons includes Discover AP, Default, AP Mode, Get Info, Set IP & Reboot, Manage, and Manage All. A table lists two unmanaged devices:

|                                     | Host Name | MAC Address       | Mode | FW/Ver               | IP              | HTTP Port | Netmask       | Gateway         | Login Name | Password | Operation |
|-------------------------------------|-----------|-------------------|------|----------------------|-----------------|-----------|---------------|-----------------|------------|----------|-----------|
| <input checked="" type="checkbox"/> | CW-300N   | 8C:4D:EA:04:C1:44 | AP   | Cen-OS V3.0.7        | 192.168.101.101 | 80        | 255.255.255.0 | 192.168.101.254 | root       | *****    | Manage    |
| <input checked="" type="checkbox"/> | 100GX-N   | 8C:4D:EA:04:97:93 | AP   | Cen-AP-N2H8A V1.0.18 | 192.168.2.254   | 80        | 255.255.255.0 | 192.168.2.1     | root       | *****    | Manage    |

At the bottom, it says "Showing 1 to 2 of 2 entries" and "Cerrio Wireless Management Software (CWMS - Professional)".

**Discover** new APs within the local area network with a simple click of a button, then click **Manage** to import them into your management database

The screenshot shows the CERIO Device Discovery interface after the devices have been managed. The tabs are the same as in the previous screenshot. The "Unmanaged (0)" tab is now greyed out, and the "Managed (2)" tab is highlighted with a red box. Below the tabs, there are buttons for UnManage and UnManage All. A table lists two managed devices:

|                          | Status    | Host Name | MAC Address       | IP              | Netmask       | Gateway         | F/W Version          | F/W Date            |
|--------------------------|-----------|-----------|-------------------|-----------------|---------------|-----------------|----------------------|---------------------|
| <input type="checkbox"/> | Connected | CW-300N   | 8C:4D:EA:04:C1:44 | 192.168.101.101 | 255.255.255.0 | 192.168.101.254 | Cen-OS V3.0.7        | 2015/06/10 14:15:31 |
| <input type="checkbox"/> | Connected | 100GX-N   | 8C:4D:EA:04:97:93 | 192.168.2.254   | 255.255.255.0 | 192.168.2.1     | Cen-AP-N2H8A V1.0.18 | 2014/10/03 15:05:31 |

At the bottom, it says "Showing 1 to 2 of 2 entries" and "Previous 1 Next".

Device Discovery

Unmanaged (2) Managed (0)

Show 25 entries

Discover AP Default AP Mode Get Info Set IP & Reboot Manage Manage All Search

|                                     | Host Name | MAC Address       | Mode | FW/Ver               | IP              | HTTP Port | Netmask       | Gateway         | Login Name | Password | Operation |
|-------------------------------------|-----------|-------------------|------|----------------------|-----------------|-----------|---------------|-----------------|------------|----------|-----------|
| <input checked="" type="checkbox"/> | CW-300N   | 8C:4D:EA:04:C1:44 | AP   | Cen-OS V3.0.7        | 192.168.101.101 | 80        | 255.255.255.0 | 192.168.101.254 | root       | .....    | Manage    |
| <input checked="" type="checkbox"/> | 100GX-N   | 8C:4D:EA:04:97:93 | AP   | Cen-AP-N2H8A V1.0.18 | 192.168.2.254   | 80        | 255.255.255.0 | 192.168.2.1     | root       | .....    | Manage    |

Showing 1 to 2 of 2 entries

Previous 1 Next

Cerio Wireless Management Software (CWMS - Professional)

Before importing devices into the database, administrators can carry out a number of operations to better organize and operate the AP network structure.

- **Discover AP:** Simply discovers AP devices within the vicinity
- **Default:** Resets the selected device/devices to default settings
- **AP Mode:** Changes the operation mode of selected devices to Access Point Mode
- **Get Info:** Retrieves updated device information such as MAC Address
- **Set IP & Reboot:** Sets and organizes devices into subsequent IP Addresses
- **Manage:** Imports device into management database
- **Manage All:** Imports all devices into management database.

The screenshot displays the CERIO Wireless Management Software (CWMS - Lite) interface. At the top, there is a navigation bar with the CERIO logo, an 'Auto Refresh' button, and status indicators for 'Connected' (2) and 'Disconnected' (0). A 'Logout' button is located in the top right corner. Below the navigation bar, there are tabs for 'Overview', 'Device Discovery', 'AP Profile', 'Batch Setup', 'Group Setup', and 'System Info'. The 'Overview' tab is selected, showing a 'Managed AP Overview' section. This section includes a search bar and a table with the following data:

| Status    | Host Name | MAC Address       | IP              | Model Name | SSID  | Group   | Online Users | Operation            |
|-----------|-----------|-------------------|-----------------|------------|-------|---------|--------------|----------------------|
| Connected | CW-300N   | 8C:4D:EA:04:C1:44 | 192.168.101.101 | CW-300N    | CERIO | Group 3 | 5            | Info, Detail, AP Web |
| Connected | 100GX-N   | 8C:4D:EA:04:97:93 | 192.168.2.254   | 100GX-N    | AP00  |         | 0            | Detail, AP Web       |

At the bottom of the table, it says 'Showing 1 to 2 of 2 entries' and 'Previous 1 Next'. The footer of the interface reads 'Cerrio Wireless Management Software (CWMS - Lite)'.

### Overview Tab:

CERIO Wireless Management Software's "overview" tab allows for monitoring **managed** device and client statuses. Each device displays multiple columns of information, as well as provides 3 buttons for detailed client/device overview and software operations

- **Info:** Provides detailed information of "Online Users" that are currently connected to the device
- **Detail:** Opens a detailed overview window for the device with statuses and basic information
- **AP Web:** Opens a window into the device's CenOS 3.0 User interface.



Online User Info

Online User Status

IP Address: 192.168.101.101 | SSID: CERIO | MAC Address: 8C:4D:EA:04:C1:44

Show 25 entries Reconnect Search

|                          | Client MAC Address | RSSI | TX/RX Rate | TX/RX SEQ     | TX/RX Bytes     | Connect Time | Operation              |
|--------------------------|--------------------|------|------------|---------------|-----------------|--------------|------------------------|
| <input type="checkbox"/> | 30:3a:64:73:08:2a  | 30   | 150M / 30M | 1049 / 11712  | 3.9 M / 64.1 K  | 27:35        | <span>Reconnect</span> |
| <input type="checkbox"/> | 24:fd:52:ad:49:50  | 34   | 13M / 5M   | 1067 / 62464  | 164.4 M / 1.5 M | 05:16:44     | <span>Reconnect</span> |
| <input type="checkbox"/> | 8c:64:22:a0:3c:d0  | 19   | 65M / 12M  | 13 / 6336     | 18.8 K / 15.8 K | 04:34:25     | <span>Reconnect</span> |
| <input type="checkbox"/> | 70:f3:95:ad:51:37  | 40   | 65M / 5M   | 17530 / 22368 | 5.4 M / 1.3 K   | 01:13:25     | <span>Reconnect</span> |

Showing 1 to 4 of 4 entries Previous 1 Next

**Info:** This button brings up current information on each connected Online User or “client”

- Client information includes MAC Filter, RSSI, TX/RX Rates / SEQs / Bytes, connection time and also a reconnect operation button.

AP Information Overview

**CW-300N**

- Status : Connected
- System Up Time : 0 days, 5: 10: 01
- System Time : 2015/8/3 19 : 25 : 17
- Online Users : 3
- CPU Loading : 0 %
- Memory Used : 74 %

ETH1 ETH2  
PoE IN

**Device Information**

- Host Name : CW-300N
- Host Description : 2.4Ghz 300Mbps 11nbg 1000mW High Power Bridge/AP
- Group : Group 1
- Country : US
- Firmware Date : 2015/06/10 14:15:31
- Firmware Version : Cen-OS V3.0.7
- ETH1 / ETH2 MAC : 8C:4D:EA:04:C1:44 / 8C:4D:EA:04:C1:44
- Wireless MAC : 8C:4D:EA:04:C1:45

**LAN Information**

- Connection Type : Static IP
- IP Address : 192.168.101.101
- IP Netmask : 255.255.255.0
- IP Gateway : 192.168.101.254
- DNS : 192.168.101.11

**Wireless Information**

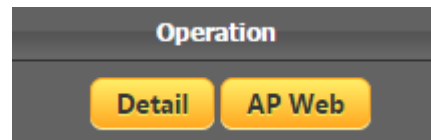
- WiFi : On
- SSID : CERIO
- Band : 802.11b/g/n
- Channel : 5
- Data Rate : Auto (300Mb/s)

**Detail :** Provides an AP Information Overview for administrators to monitor Device, LAN, and Wireless information.

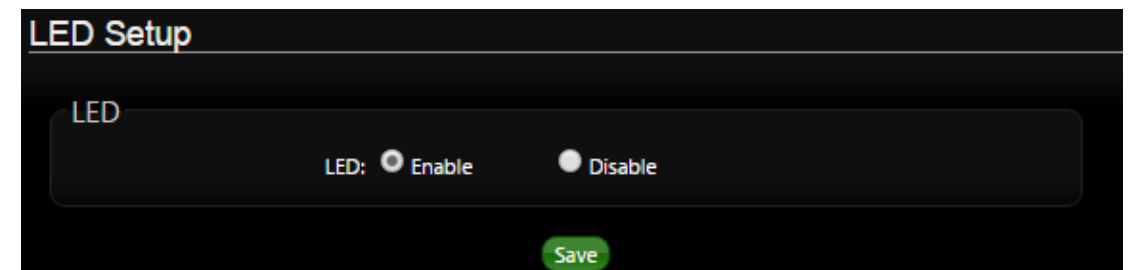
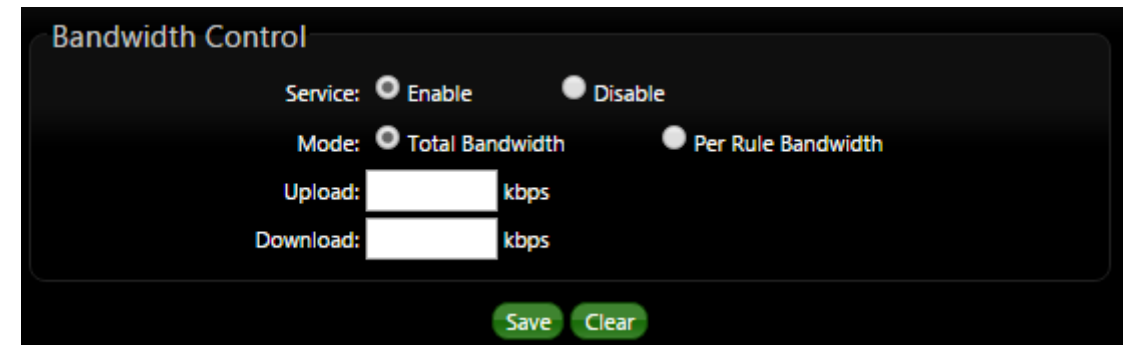
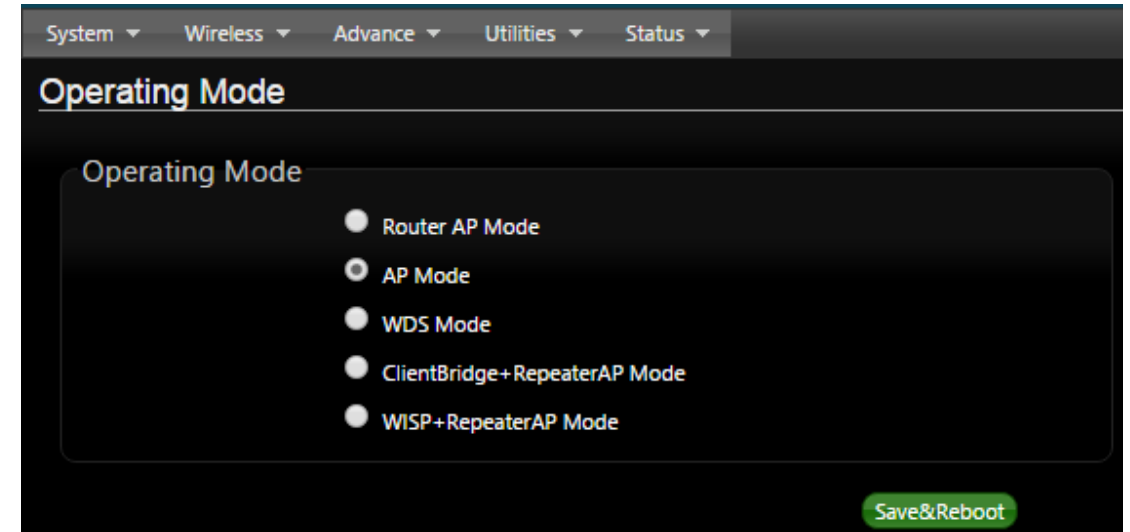
**AP Web:** This operation opens a window into the devices CenOS 3.0 Software interface. From here, administrators can easily alter more specific/advanced settings that are found in the CenOS 3.0 User Interface.

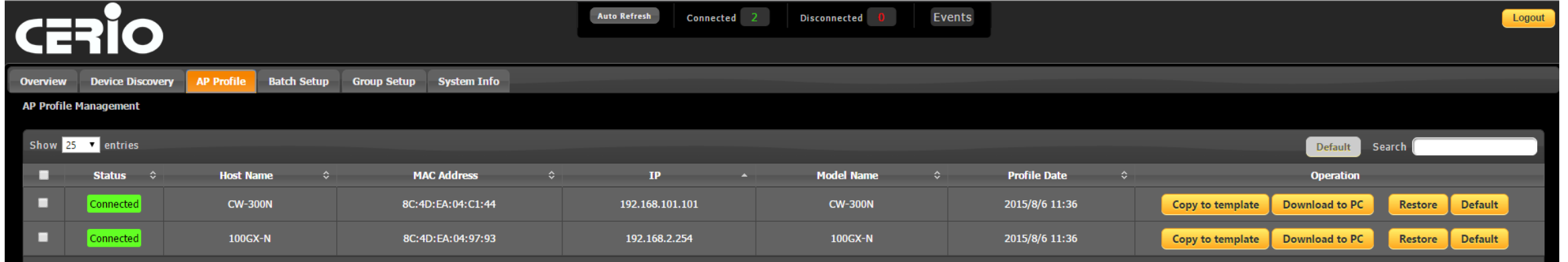
**AP Web** allows administrators to change features such as:

- Changing **Operation Modes**
- **LED** Control
- **VLAN** setup
- **Bandwidth** Control
- **Ping Watchdog**



**Note:** The accessible features through AP Web differ based on the functions supported by the selected Access Point device software.





AP Profile Management

Show 25 entries

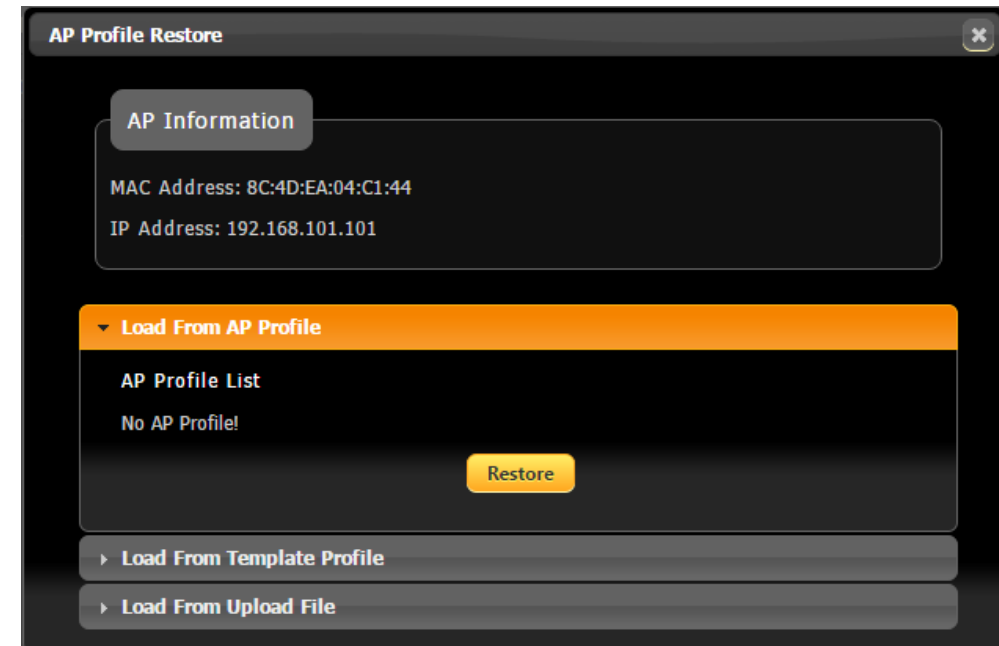
| Status    | Host Name | MAC Address       | IP              | Model Name | Profile Date   | Operation                                       |
|-----------|-----------|-------------------|-----------------|------------|----------------|---|
| Connected | CW-300N   | 8C:4D:EA:04:C1:44 | 192.168.101.101 | CW-300N    | 2015/8/6 11:36 | Copy to template Download to PC Restore Default |
| Connected | 100GX-N   | 8C:4D:EA:04:97:93 | 192.168.2.254   | 100GX-N    | 2015/8/6 11:36 | Copy to template Download to PC Restore Default |

**AP Profile** allows administrators to organize setting templates of managed access points by copying, downloading, or restoring profiles. Admins can also reset devices to default settings.

In situations where access points crash or additional devices are added to the wireless network, administrators can use preset template profiles to quickly get APs up and running.

**AP Profile Restore** options include

- Load from AP Profile
- Load from Template Profile
- Load from Upload File



AP Profile Restore

AP Information

MAC Address: 8C:4D:EA:04:C1:44  
IP Address: 192.168.101.101

Load From AP Profile

AP Profile List  
No AP Profile!

Restore

Load From Template Profile

Load From Upload File

**Batch Setup** allows administrators to change settings for single devices, groups, or all devices. Users must check desired access point(s), select a group, or select all devices before applying the setting changes.

**CERIO** Auto Refresh Connected 2 Disconnected 0 Events Logout

Overview Device Discovery AP Profile **Batch Setup** Group Setup System Info

Batch Setup Management

Available AP Profile List

Group: **None**

Show All Device Group 1 Group 2 Group 3 Search

| Item Name | MAC Address       | IP Address:Port    | Batch Status |
|-----------|-------------------|--------------------|--------------|
| 100GX-N   | 8C:4D:EA:04:97:93 | 192.168.2.254:80   | -            |
| CW-300N   | 8C:4D:EA:04:C1:44 | 192.168.101.101:80 | -            |

Showing 1 to 2 of 2 entries Previous 1 Next

Apply AP Reboot AP

**LAN Setup**

IP Address: 192.168.2.60 (Auto Increment)

Netmask: 255.255.255.0

Gateway: 192.168.2.1

▶ DNS Setup

▶ Wireless Basic Setup

▶ VAP Setup

▶ Firmware Upgrade via TFTP

▶ Firmware Upgrade via URL

▶ Setup Time Use NTP

▶ System Information

▶ Auto Reboot

Cerio Wireless Management Software (CWMS - Professional)

Administrators can use **Batch Setup** to adjust many settings before applying them to single devices, groups, or all devices. Some highlights include **Wireless Basic Setup**, which allows for channel and power control, as well as **VAP Setup** for customizing ESSIDs and security types.

The screenshot shows the 'Wireless Basic Setup' configuration page. The left sidebar contains a navigation menu with the following items: LAN Setup, DNS Setup, Wireless Basic Setup (highlighted), VAP Setup, Firmware Upgrade via TFTP, Firmware Upgrade via URL, Setup Time Use NTP, System Information, and Auto Reboot. The main content area is titled 'Wireless Basic Setup' and includes the following fields and controls:

- Band Mode: 802.11bgn
- Country: United States
- Channel BandWidth:  20  20/40
- Extension Channel:  Upper  Lower
- Channel: A dropdown menu with two tabs: 'Auto Assign' (selected) and 'One Channel'. The dropdown list shows the following options:
  - 1 (2.412 Ghz)
  - 2 (2.417 Ghz)
  - 3 (2.422 Ghz)
  - 4 (2.427 Ghz)
  - 5 (2.432 Ghz)
  - 6 (2.437 Ghz)
  - 7 (2.442 Ghz)
- Tx Power: Level 9

The screenshot shows the 'VAP Setup' configuration page. The left sidebar contains a navigation menu with the following items: LAN Setup, DNS Setup, Wireless Basic Setup (highlighted), VAP Setup (highlighted), Firmware Upgrade via TFTP, Firmware Upgrade via URL, Setup Time Use NTP, System Information, and Auto Reboot. The main content area is titled 'VAP Setup' and includes the following fields and controls:

- VAP ID: VAP1
- Enable VAP:  Enable  Disable
- ESSID: [Text Input] (Auto Increment)
- VLAN ID(Tag): Domain0 | VLAN ID: [Text Input]
- Security Type: A dropdown menu with the following options:
  - Disable (selected)
  - WEP
  - WPA-PSK
  - WPA2-PSK
  - WPA-Enterprise
  - WPA2-Enterprise
  - WEP 802.1X

The screenshot shows the 'Group Setup' interface. It has two main sections: 'Group Setup' and 'AP List'. The 'Group Setup' section contains a 'Group Name' field with the value 'Group 3' and a 'Group Description' field with the value 'Test Group'. The 'AP List' section contains a table with columns for 'System Name', 'MAC Address', and 'IP Address'. The table lists two APs: 'CW-300N' and '100GX-N'. There are also 'Show 10 entries' and 'Search' controls at the top of the table.

|                                     | System Name | MAC Address       | IP Address      |
|-------------------------------------|-------------|-------------------|-----------------|
| <input checked="" type="checkbox"/> | CW-300N     | 8C:4D:EA:04:C1:44 | 192.168.101.101 |
| <input checked="" type="checkbox"/> | 100GX-N     | 8C:4D:EA:04:97:93 | 192.168.2.254   |

**Group Setup** supports automatic channel assignment and power setting for managed APs, as well as real time wireless clients limitations for managed AP Groups.

The screenshot shows the 'AP Group List' interface. It features a 'Create New Group' button at the top. Below it is a table with columns for 'Select', 'Group Name', and 'Description'. The table lists three groups: 'Group 3', 'Group 2', and 'Group 1'. There are 'Edit', 'Del', and 'AP Sync' buttons at the top right. The interface also includes 'Show 10 entries' and 'Search' controls.

| Select                | Group Name | Description |
|-----------------------|------------|-------------|
| <input type="radio"/> | Group 3    |             |
| <input type="radio"/> | Group 2    |             |
| <input type="radio"/> | Group 1    |             |

Once a group is created, admins can edit settings such as **Dynamic Channel Allocation** and **MAC Filtering**.

The **AP Sync** button synchronizes group functions for new entrant devices, applying settings to all APs within the group.

**Dynamic Channel Allocation**

Service:  Enable  Disable

Band Mode: 2.4GHz

Channel:

| Free Channel  | Move | Select Channel |
|---------------|------|----------------|
| 1 (2.412 Ghz) |      |                |
| 2 (2.417 Ghz) | >>   |                |
| 3 (2.422 Ghz) | >    |                |
| 4 (2.427 Ghz) |      |                |
| 5 (2.432 Ghz) | <    |                |
| 6 (2.437 Ghz) | <<   |                |
| 7 (2.442 Ghz) |      |                |
| 8 (2.447 Ghz) |      |                |

RSSI Threshold: 40

High Power Level: 100%

Low Power Level: 100%

**MAC Filter Control**

Service:  Enable  Disable

MAC Address:  Add

| # | MAC Address | Actions |
|---|-------------|---------|
|---|-------------|---------|

### Dynamic Channel Allocation:

This function allows CWMS software to assign channels dynamically to **minimize channel interferences** generated by nearby access points. This ultimately results in **higher throughput** and **greater network stability**. Administrators can select between radio frequencies and power levels for the optimal setup.

### MAC Filter Control:

Network administrators can block specified wireless clients by simply adding their MAC address to the MAC Filter Control list. This allows for **greater network control** and ultimately creates **network organization and security**.

# CERIO

*Amplify your Wireless Network*

