

**CERIO**  
*Amplify your Wireless Network*

# CERIO

## Introduction to IW-100GX-N

CenOS 5.0 Software Core



eXtreme Power 11n 2.4GHz 1x1  
In Wall PoE Access Point (800mW)





- 800mW at 2.4Ghz eXtreme High Power Access Point
- Supports 5 Operation Modes (CenOS 5.0)
- 1x1 Built-in 2.4Ghz Omni-Directional Antenna
- Two 10/100Mbps Fast Ethernet RJ45 Ports
- Two RJ-11 Phone Line Ports ( In / Out )
- Supports IEEE802.3af Power over Ethernet
- Integrates a long-range power amplifier and high sensitivity receiver to deliver unmatched reliability and performance at large coverage application
- Includes two Faceplates for US / EU Mounting standards
- Includes mounting bracket for Ceiling / Wall / Desktop

- Supports 802.11n/11g/11b wireless standards
- Operation modes include: Router Mode, AP with WDS Mode, Control Access Point Mode, Client Bridge Mode, and WISP Mode
- Can broadcast up to 8 SSIDs, all of which support VLAN tagging
- Control Access Point mode can centrally manage up to 16 AP devices without the need for an additional AP Controller
- Supports Captive Portal Authentication for easy client login
- Supports OAuth2.0 for user login through Facebook/Google+
- Supports Ping Watchdog feature, the OS smartly reboots the system before a major crash.
- LED Control Supported for hotel installation



# Hardware Overview

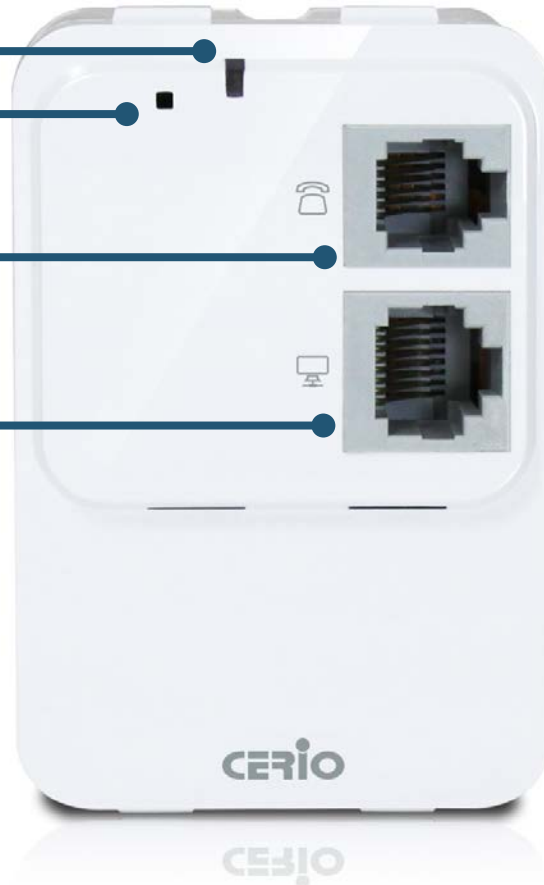
Front Panel

Power / LAN LED

Reset Button

PHONE Line OUT  
Port

ETH2 (LAN)  
Ethernet Port



Rear Panel



ETH1 Port (PoE)

PHONE Line IN  
Port



Main In-Wall Unit with  
EU-Type Faceplate  
For Europe & China Standards

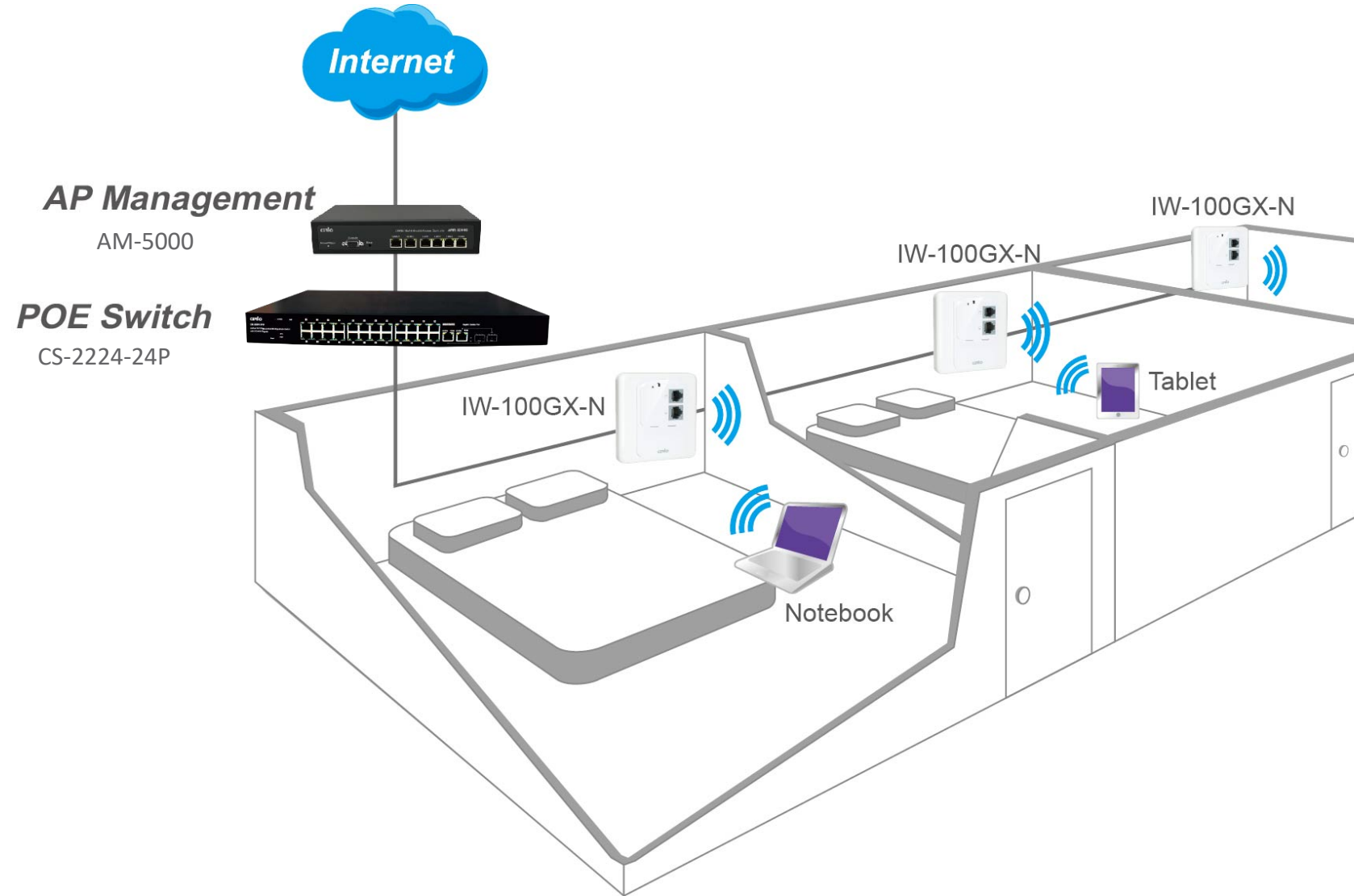


Main In-Wall Unit with  
US-Type Faceplate  
For U.S.A & Japan Standards



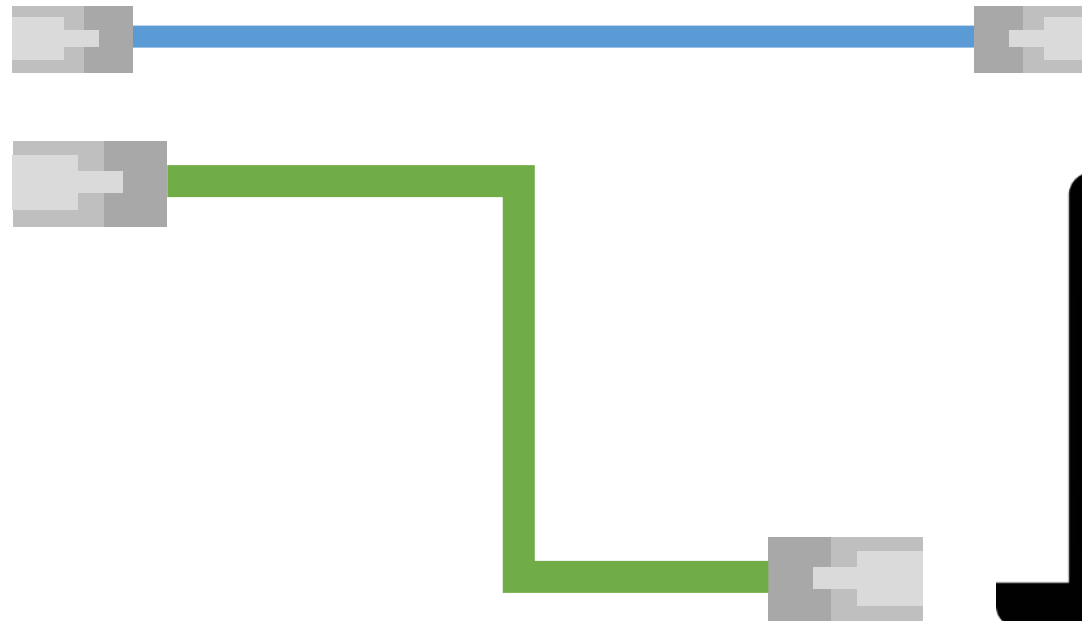
Bundled Mounting  
Bracket  
Supports Ceiling / Wall / Desktop

# Hotel Application



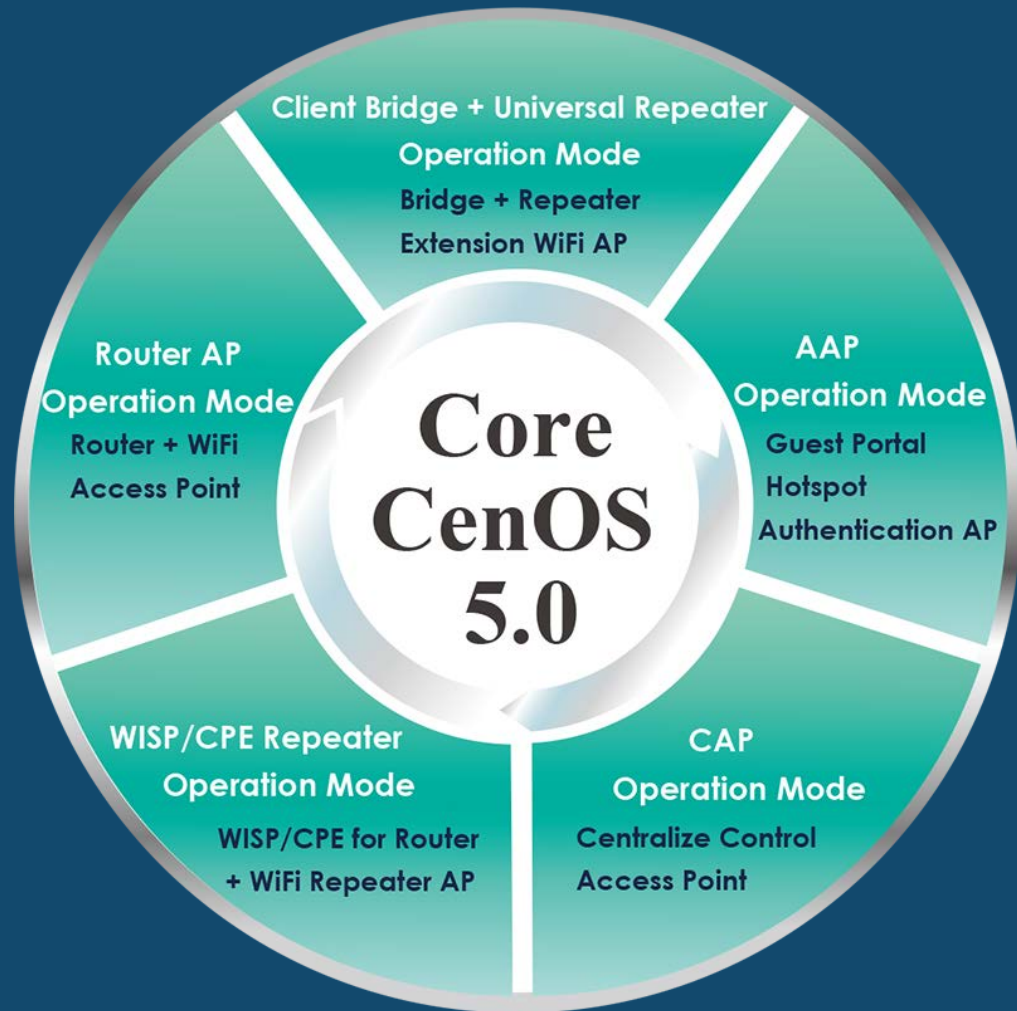
Output Power	800mW
Wi-Fi Standards	IEEE 802.11n b/g
Multiple-ESSID	x8
Tag VLAN	Supports 4096 VLAN Tags per SSID
IAPP Roaming	✓
Antenna	1x1 Built-in Omnidirectional Antenna
Management	CAP Mode, AM-5000
Ethernet Configuration	RJ-45 Ethernet Port x 2
Telephone Configuration	RJ-11 Line-In x 1 RJ-11 Line-Out x1
Input Power Requirement	803.3af 48V PoE Ethernet Interface Power In
Power Supply	PoE Device (Optional Purchase)
Form Factor	In Wall Installation: US Type and EU Type Faceplate Supports Desktop Stand & Wall/Ceiling Mounting

**IW-100GX-N** includes 2 RJ11 ports for Phone Line and 2 RJ45 Ports for POE-IN and Ethernet connection. This hardware design makes this in wall access point perfect for environments such as hotels and luxury homes.





# Software Overview



Only Cerio's special model supports CAP / Router mode

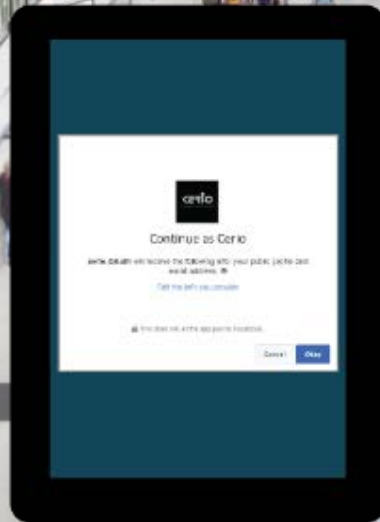
# Captive Portal Authentication



Captive Portal Authentication conveniently allows wireless clients to access the network through a customized web login portal.



Local Account Login



Facebook Login



Administrators can deploy a customized Captive Portal with the following login methods

1. Guest Login
2. Local Account Login
3. OAuth2.0 Login (Facebook/Google/etc.)



\*Router Mode does **NOT support** Captive Portal Login\*

# Integrated AP Management

Centralized AP Management

AP Management

AP Controller

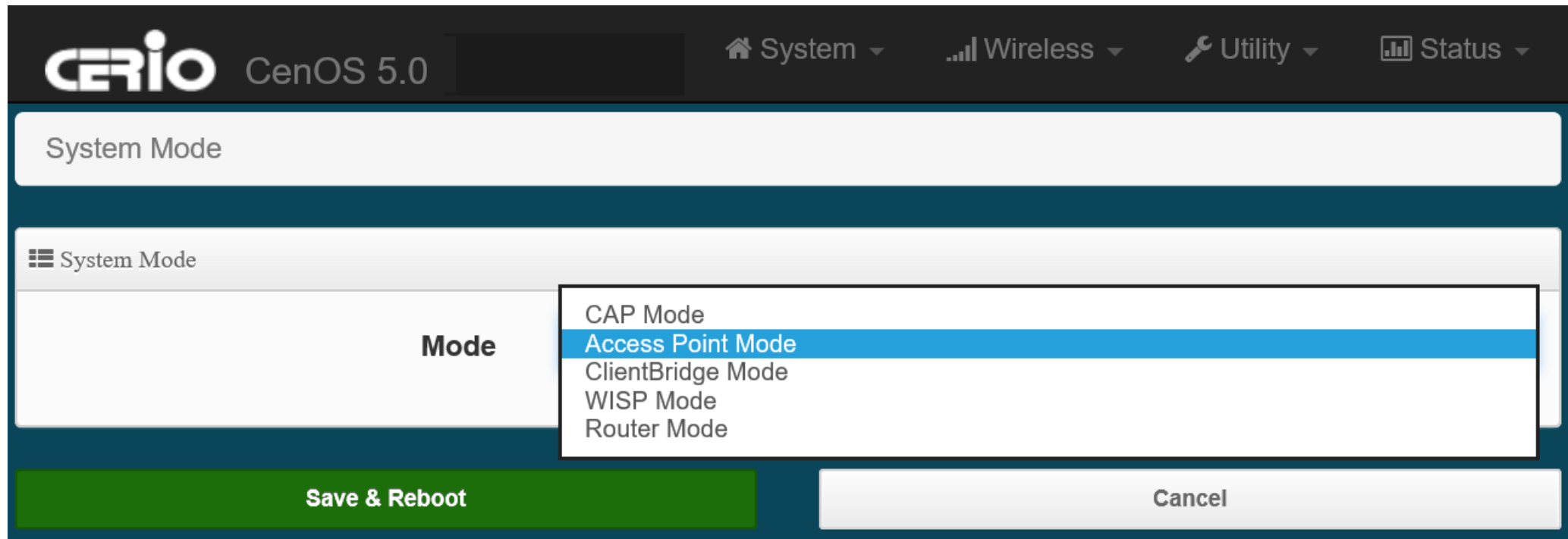


Fast and Convenient Client Login

Captive Portal Authentication



IW-100GX-N supports five different Operation Modes: Control Access Point, Access Point Mode with WDS, Client Bridge + Repeater Mode, WISP/CPE Repeater AP Mode, and Router Mode



\*Notice: Router Mode does **NOT support** Client Authentication\*

Control Access Point (CAP) Mode's converts the device into a centralized AP management controller. When IW-100GX-N is in CAP Mode, it can centrally manage up to **16 AP devices**.

The screenshot displays the CERIO web interface. At the top, there is a navigation bar with the CERIO logo on the left and menu items for System, AP Control, Utility, and Status on the right. The AP Control menu is currently expanded, showing options: Scan Device, Batch Setup, AP Setup, Group Setup, Map Setup, Authentication Profile, and Status. The main content area is divided into two panels. The left panel, titled 'Overview', shows system configuration details: Mode is set to 'CAP Mode', System Name is 'Cerio's CenOS5.0 Core', System Time is '2015/01/01 08:02:42', and System Uptime is '01:44'. The right panel, titled 'Information', features a 'Memory' gauge showing 76% usage, with a scale from 0 to 100.

### Scan AP Device

#### Filter Device

**VLAN#**

**Default Password**

**Sort**

#### Update IP Address & Netmask

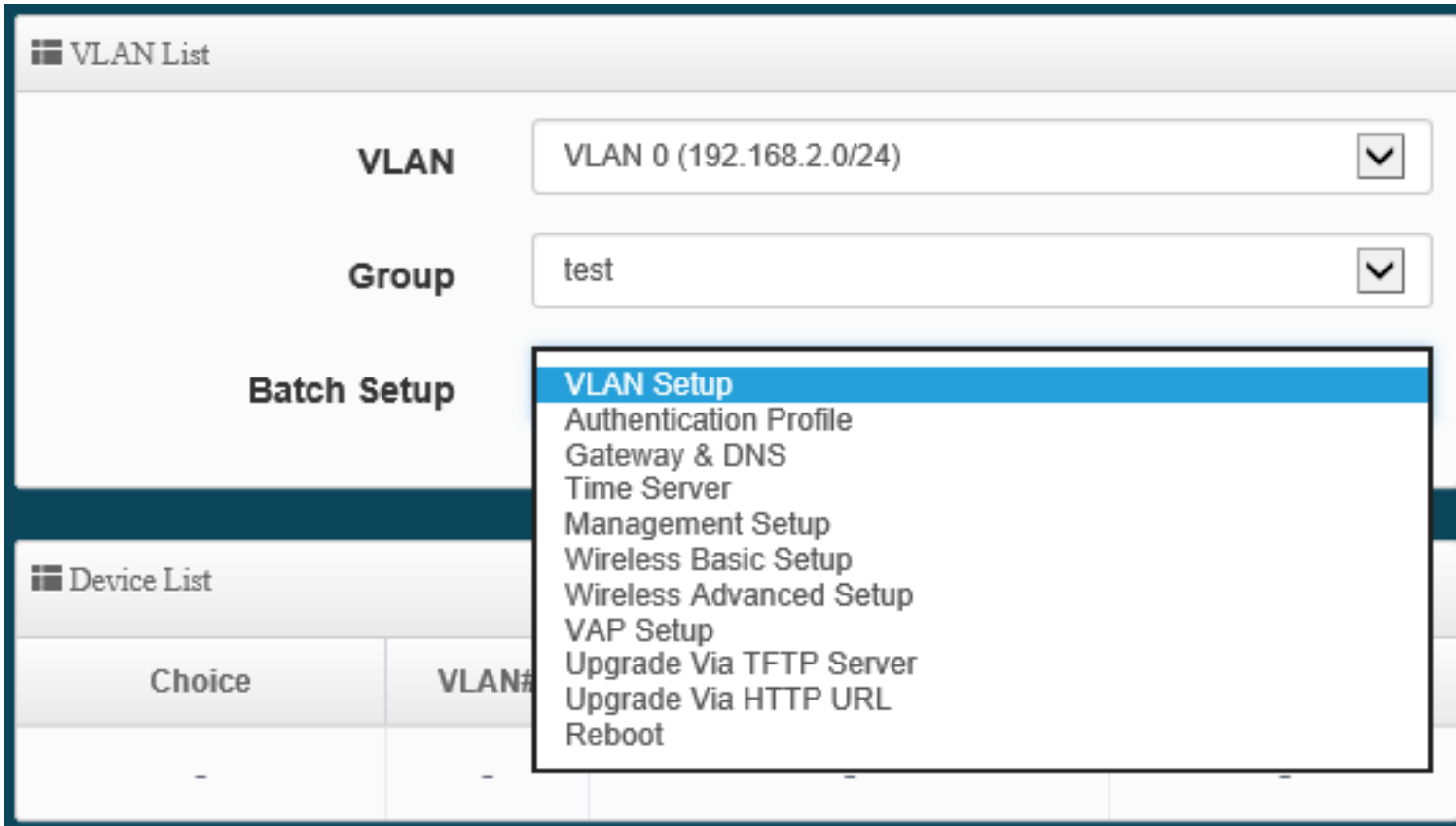
**Control Port**

**VLAN TAG**

**IP Address**

**Netmask**

CAP Mode allows administrators to scan for AP devices within their virtual LAN and import them into the management database. Once imported, administrators can make quick changes such as changing IP addresses for organization and easy management



The screenshot shows the 'Batch Setup' interface in CERIO. It features a 'VLAN List' section with two dropdown menus: 'VLAN' set to 'VLAN 0 (192.168.2.0/24)' and 'Group' set to 'test'. Below these is a 'Batch Setup' dropdown menu that is open, showing a list of configuration options: 'VLAN Setup' (highlighted), 'Authentication Profile', 'Gateway & DNS', 'Time Server', 'Management Setup', 'Wireless Basic Setup', 'Wireless Advanced Setup', 'VAP Setup', 'Upgrade Via TFTP Server', 'Upgrade Via HTTP URL', and 'Reboot'. At the bottom, there is a 'Device List' table with columns for 'Choice' and 'VLAN#', both containing dashes.

Choice	VLAN#
-	-

CAP Mode's control function supports centralized configuration of managed APs. This allows administrators to make convenient batch changes to the network of AP devices from one centralized location. This main function of CAP mode can save time and cost by reducing servicing and installation time.

### VLAN Setup

**Apply**

**VLAN**

**VLAN Mode**  Enable  Disable

**Access Point 0**  Enable  Disable

**802.1d Spanning Tree**  Enable  Disable

**Control Port**  Enable  Disable

**IAPP**

### IP Setup

**Apply**  Enable  Disable

**IP Mode**  Enable  Disable

**IP Address**

**Netmask**

### ETH0 VLAN Tag Setup

**ETH0**  Enable  Disable

**VLAN TAG**

Administrators can enable VLAN Mode, Spanning tree, Control Port capabilities, IAPP Roaming, change IP settings and setup VLAN tag for batches of access points. These changes can be implemented differently for each VLAN, allowing for both centralized and organized control.



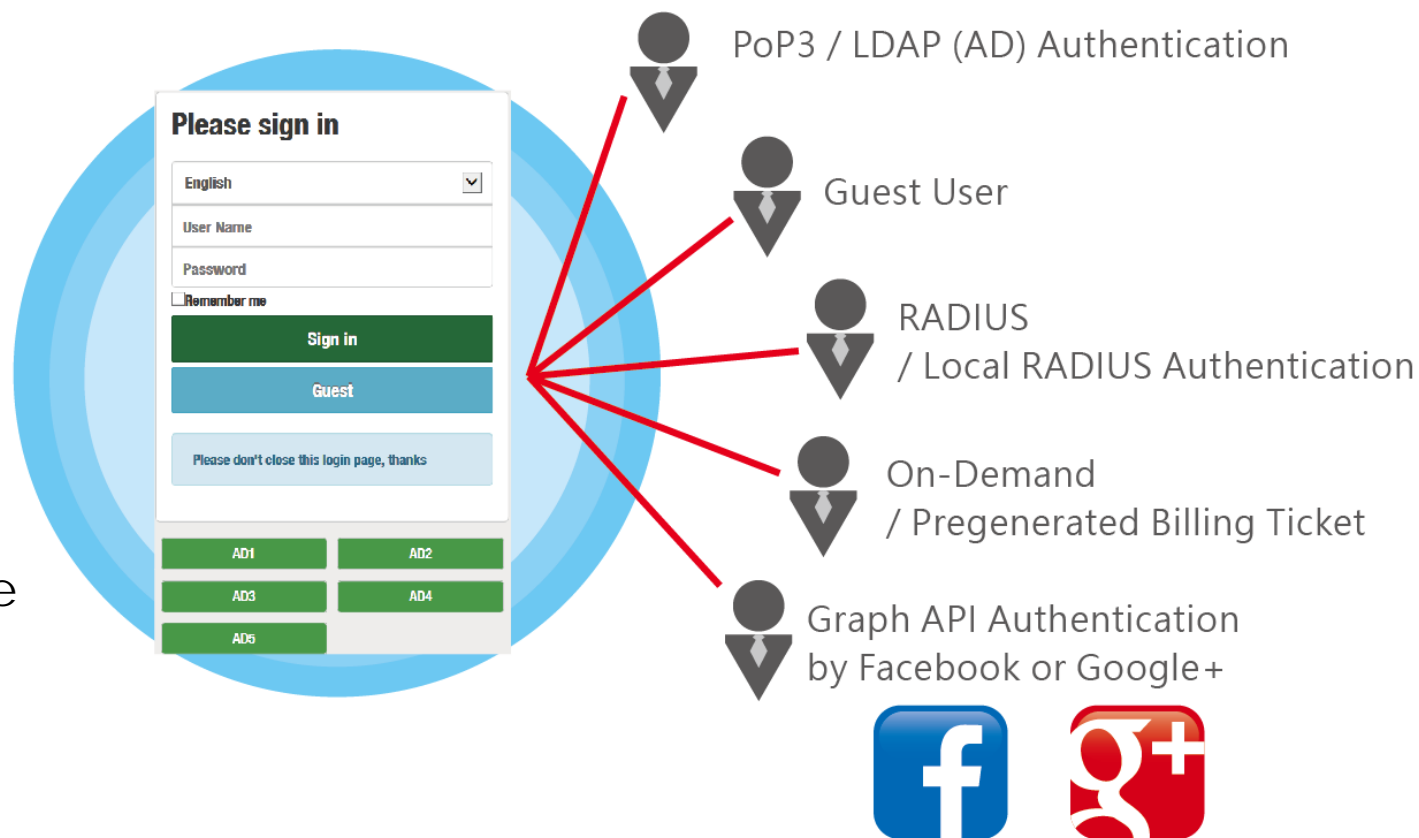
CAP Mode also supports Map Setup function for organizing your AP network. Administrators can create maps by uploading floor plan URLs and dragging APs to the correct location. Once complete, administrators can monitor AP statuses such as uptime, data rates, and connected clients

Map List				Create New Map
#	Name	Description	Action	
1	1F_plan	Location Map for man...	View	▼



CenOS 5.0 supports Authentication Access Point Mode for versatile AP deployment. Administrators can choose from many authentication options to best suit their network needs.

This enables convenient access to the wireless network for public clients, as well as improved management and organization for network administrators



\*Notice: Router Mode does **NOT support** Client Authentication\*

CenOS 5.0 supports multiple methods of authentication for user management, security and convenience.

**OAuth2.0** : Allows devices to use third-party credentials such as Facebook and Google+ for user authentication. This provides login convenience for public clients and also allows administrators to collect data through Facebook / Google analytics.

OAuth 2.0 Provider List <span style="float: right;">Create New Provider</span>			
#	Active	Provider	Action
1	<span>On</span>	Google	<span>Edit</span> ▼
2	<span>On</span>	Facebook	<span>Edit</span> ▼



**Guest Login** : Provides limited Wifi connection to clients to an open network. Limitations can be put in place to manage client limits, connection time, and control bandwidth

Guest configuration interface showing the following settings:

- Service:  Enable  Disable
- Login Type:  One Time  Multiple Time
- Count Limit: 10
- Login Time: 10 Minutes
- QoS:  Enable  Disable
- Upload: 512 Kbps
- Download: 512 Kbps

**Local User**: Provides fixed authentication user accounts for controlled client login and data management. Administrators can track Local Account usage, connection time, etc. CenOS 5.0 supports up to 10 Local User accounts

#	Name	Action
1	Test Account 1	Delete
2	Test Account 2	Delete

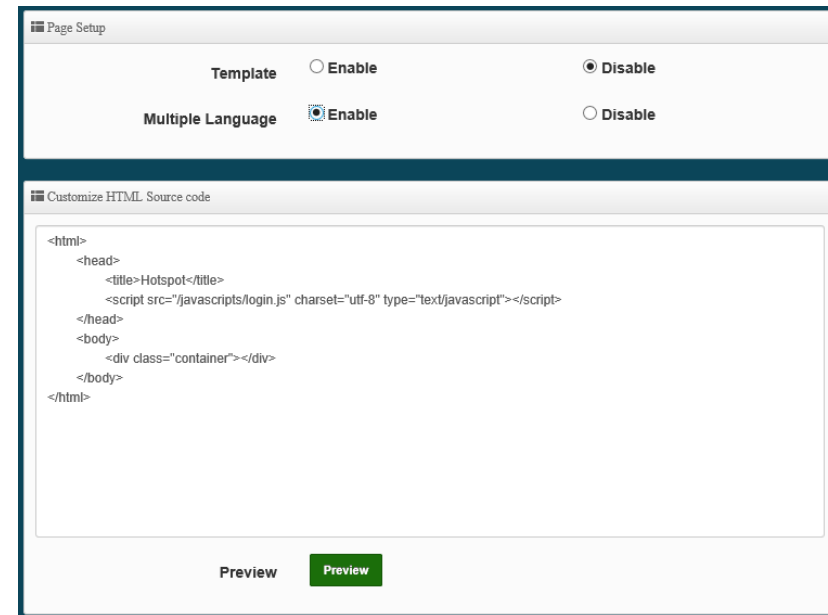
Administrators can create a customized Login Page which can become a platform for:

(1.) Promotions (2.) Brand Exposure (3.) Advertisements (4.) Platform for providing Information

This customized Captive Portal supports login through 1. Guest Users 2. Local Accounts  
3. Facebook, Google+, etc using OAuth2.0.




Customized Login Page



Customize through HTML Code

Bandwidth Control of connected clients allows administrators to control individual user upload and download speeds, as well as set a maximum limit on the total amount of bandwidth that can be used at a single time.

 Bandwidth Control

Peer Users	<input checked="" type="radio"/> Enable	<input type="radio"/> Disable
Upload	<input type="text" value="512"/>	Kbps
Download	<input type="text" value="512"/>	Kbps
Total	<input checked="" type="radio"/> Enable	<input type="radio"/> Disable
Upload	<input type="text" value="1024"/>	Kbps
Download	<input type="text" value="1024"/>	Kbps

Modes Walled Garden function allows administrators to create a browsing environment that controls user access and accessible information. This function is ideal for directing users to specific parts of the Web such as;

1. Paid Content
2. Self-Promotions
3. Free access to specific websites
4. Advertisement web pages

Walled Garden

Display Name (4 -32 chars)

IP Address/Domain

Full URL

Enabled Walled Garden Websites



IW-100GX-N's design supports a total of 8 Virtual LANs (VLAN) and 8 SSIDs.

VLAN Setup						
VLAN List						
#	VLAN Mode	Flag	IP Address	Netmask	Radio 0	Action
0	<span>On</span>	<span>Native ETH0</span> <span>Native ETH1</span> <span>Access Control</span>	192.168.2.254	255.255.255.0	<span>NGS_AP0</span>	<span>Network</span>
1	<span>Off</span>	<span>ETH0.101</span> <span>ETH1.101</span>	-	-	<span>NGS_AP1</span>	<span>Network</span>



Supports 8 VLANs

Each VLAN supports 1 SSIDs



ETH1 VLAN Tag Setup	
ETH1	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
ETH1 Tag	<input checked="" type="checkbox"/> 1-4096

IW-100GX-N supports up to **4096** Tags. This is a crucial feature that ensures successful directing of packet traffic for VLANs that span across multiple switches.



### WDS Setup

WDS Setup  Enable  Disable

Authentication

PassPhrase

### WDS Client Setup

Enable	MAC Address
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>

**IW-100GX-N** with **CenOS 5.0** supports **WDS Setup** when operating in **Access Point Mode**

**IW-100GX-N's Access Point mode** supports up to **8** WDS links, and includes a WDS Status page to monitor the WDS connection strength.  
( *8x WDS on the 2.4GHz frequency band* )

The screenshot shows a configuration page for 802.11r/802.11k Fast Roaming. It is divided into two main sections: a top section for enabling/disabling the feature and a bottom section for detailed settings.

**802.11r/802.11k Fast Roaming**

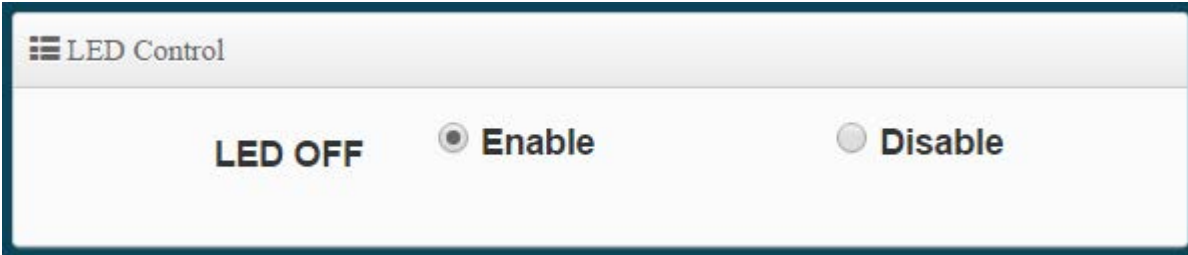
Fast Roaming  Enable  Disable

**Fast Roaming Settings**

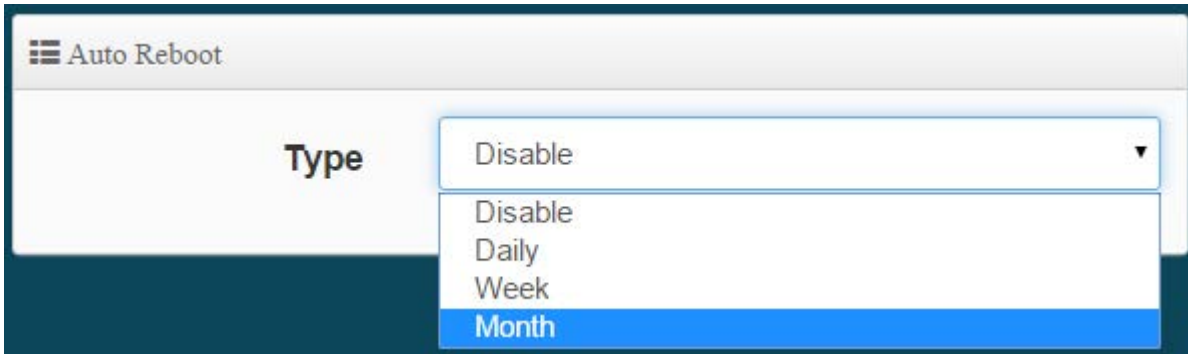
Mobility Domain	<input type="text" value="a1b2"/>
R0 Key Lifetime	<input type="text" value="10000"/>
Reassoc deadline	<input type="text" value="1000"/>
R0/NAS Identifier	<input type="text" value="ap.example.com"/>
R1 Identifier	<input type="text" value="000102030405"/>
R1 Push	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

**802.11k-** Smartly provides roaming client with information regarding nearby APs and their channels, which prepares the client for easier roaming.

**802.11r-** Stores encryption keys on all the APs within the network. This simplifies the authentication process when clients roam to new APs, greatly reducing CPU loading and latency.



**LED Control-** Allows the devices LED lights to be disabled to reduce blinking irritation in sensitive environments.



**Auto Reboot-** Setup device auto reboot schedule to reduce CPU overloading and device crashes.



**PoE Bridge-** Supply power to subsequent devices such as IP Cameras and Access Points through RJ45 cabling.

# What we do



## Innovation & Design

Our R&D team continues to incorporate the newest wireless protocols and features to make our products perfect for enterprise deployment.



## Wireless Solutions

Our Field Application Engineers and Specialists have unparalleled experience providing the perfect solution for any wireless projects (e.g. Hotels, Long Distance PTP Backhaul, Universities)



## Software Development & Design

Our software provides a high featured and easily operated User Interface and also supports centralized AP Management for convenient device deployment.



## Outstanding Customer Service

CERIO's customer service staff are experts on our products and possess clear and patient communication skills.

# Contact Information

**CERIO**

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