

# Introduction to DT-400 A1

CenOS 5.0 Software Core

**CERIO**  
*Amplify your Wireless Network*



eXtreme 11n/ac, 2.4/5GHz 2x2 VLAN  
Captive Portal Router with Access Point

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File Transfers

HD Video Streaming

E-mail Sending

Web Surfing

Check E-mail

File Sharing

Viewing Photos

Online Meeting

File Download

HD Video Streaming

Online Chatting

2.4G WiFi Band

5G WiFi Band



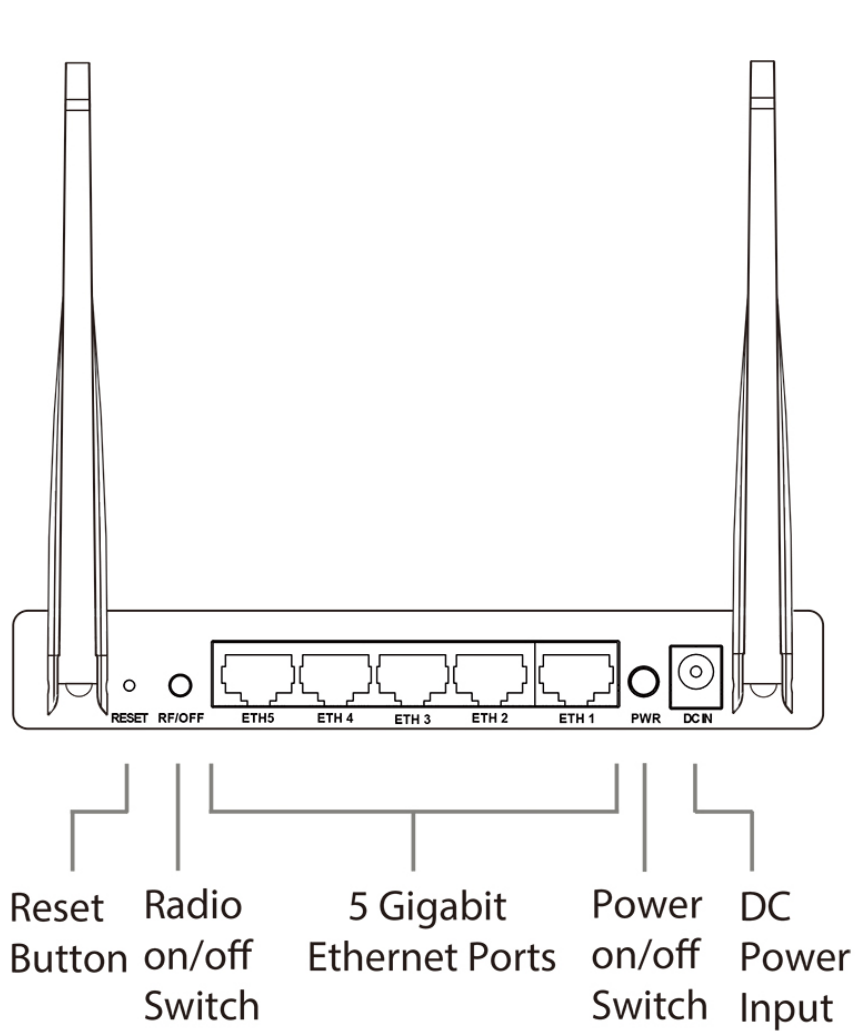
- **AC 1200** Wireless Dual Band Concurrent Access Point (2.4GHz Data Rate of up to 300Mbps)
- 5GHz Data Rate of up to 867Mbps
- Supports 2 external dual band Smart Omni-Antennas (2x2 for 2.4GHz and 5GHz radio)
- CAP Mode is Controller-less Access Point can centralize management of up to **64 units** of APs.
- Supports 5 Operation Modes (CenOS 5.0)
- 11ac chipset design provides enterprise grade CPU performance, allowing the device to handle up to **100** concurrent clients.

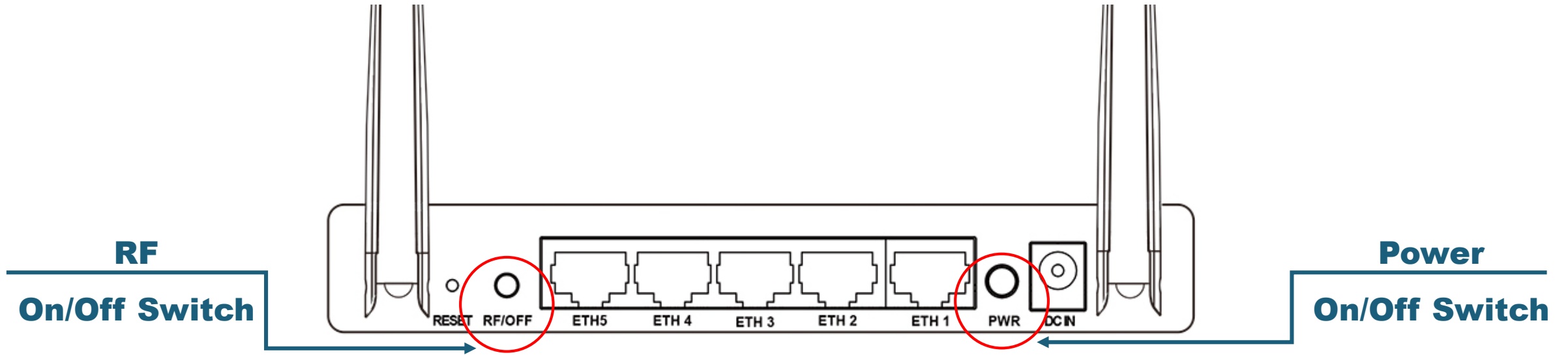
# Advanced Features



- Supports up to **100 concurrent users**
- Supports **802.11ac/11n/11an/11bg** wireless standards
- Operation modes include: Controller-less Access Point (CAP) Mode , Access Point Mode, Client Bridge and WISP / CPE Mode with Repeater function, VLAN Router AP Mode
- VLAN Router **built-in 8 VLANs** routing of 802.1q tag, different services rights can be configured for different VLANs
- Supports **5 Gigabit Ethernet ports**, administrator can change 1WAN/4LAN or 5 LAN
- Built-in **Time Policy function** can set multiple times schedule apply to RF on/off and IP/MAC filter or other security function.
- Incorporates **802.11r/k Fast Roaming** Protocol

# Hardware Overview





# Powerful Performance



2.4G WiFi Band , 11n

5G WiFi Band , 11ac

100 Concurrent Users  
Band Steering Technology

- 6Mbps
- 16Mbps
- 4Mbps
- 3Mbps
- 12Mbps
- 6Mbps
- 10Mbps
- 10Mbps
- 12Mbps
- 5Mbps
- 4Mbps
- 5Mbps
- 3M
- 1M
- 1M
- 3M
- 1M
- 1M
- 9M
- 10M
- 4M
- 2M
- 12M
- 15M
- 11Mbps
- 2M
- 3Mbps
- 4Mbps
- 4Mbps
- 2M
- 9M
- 6M
- 2M
- 3M
- 15Mbps
- 3Mbps
- 11Mbps
- 11Mbps
- 5Mbps



# Ideal Deployment



**Hotel Lobbies**



**Universities**

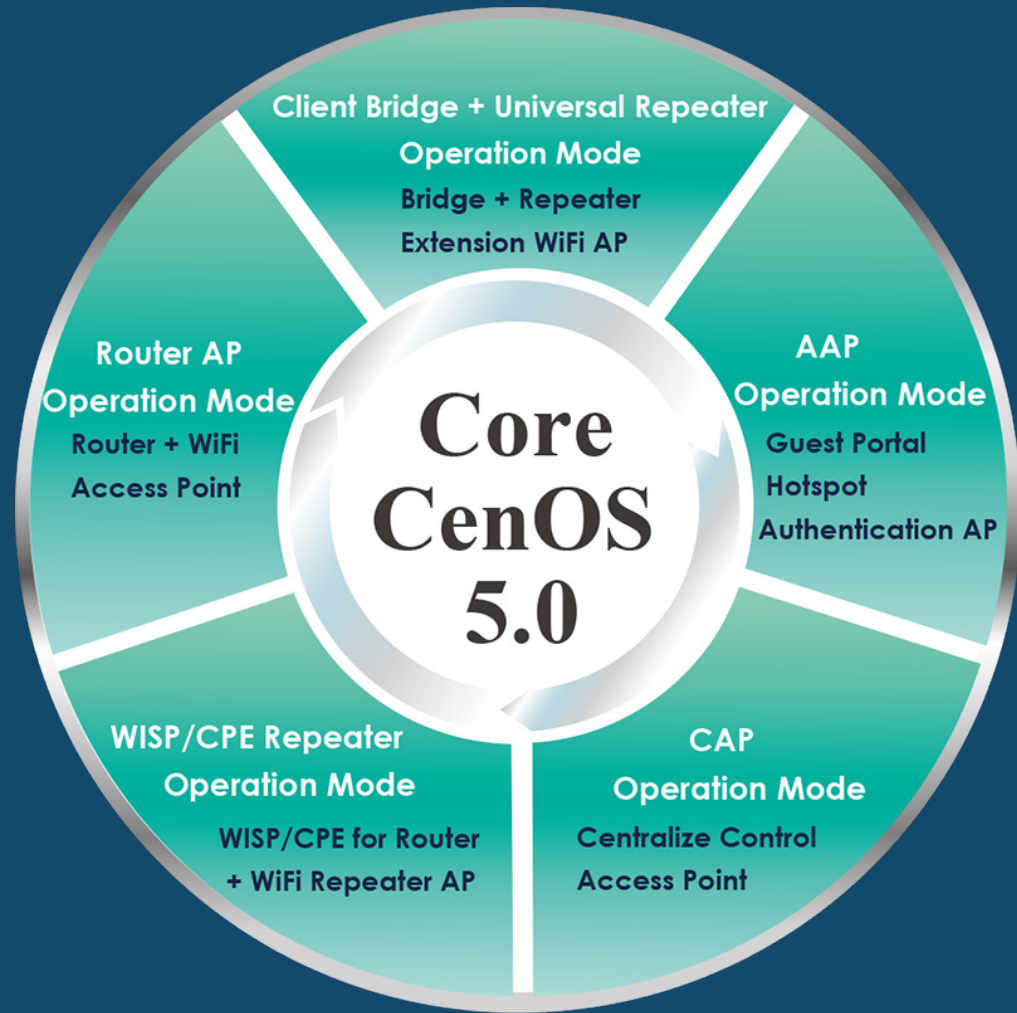


**Airports**



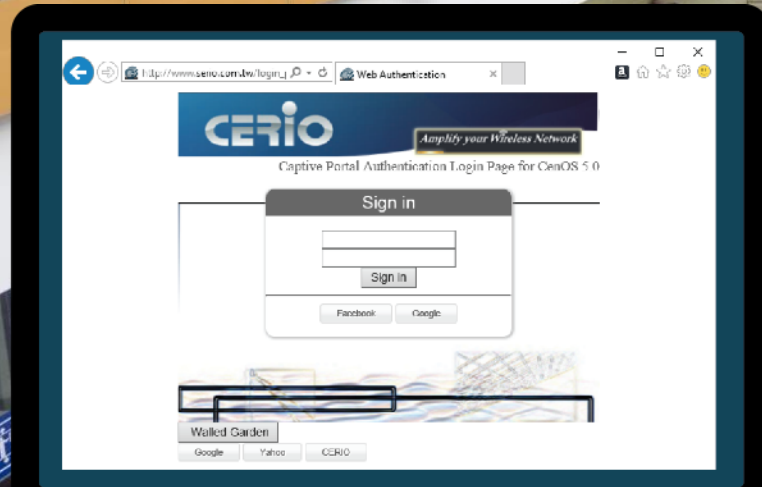
**Hospitals**

# Software Overview

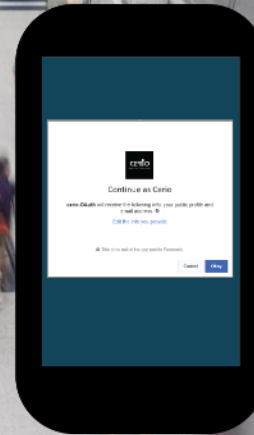


Only Cerio's special model supports CAP / Router mode

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.)

# Integrated AP Management

Centralized AP Management

AP Management

AP Controller

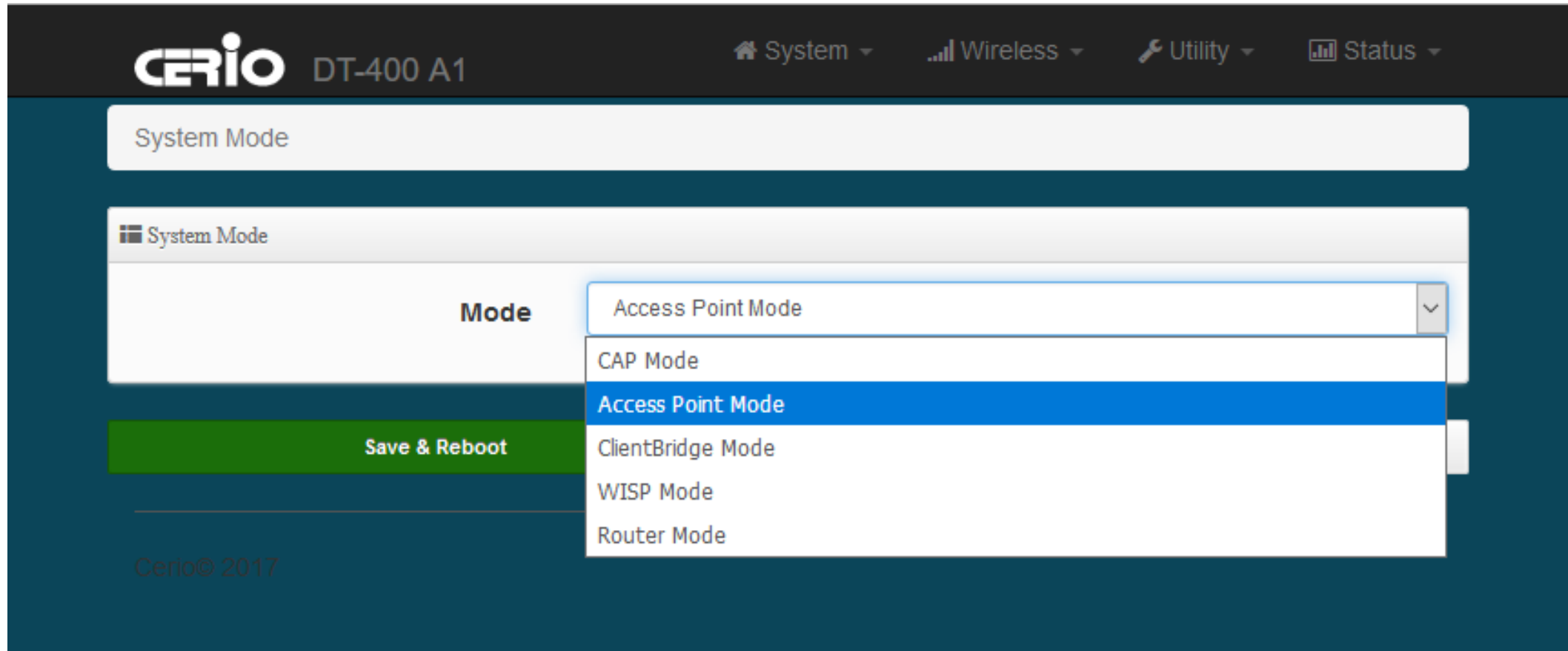


Fast and Convenient Client Login

Captive Portal Authentication



DT-400 A1 supports Operation Modes including: Controller-less Access Point (CAP) Mode , Access Point Mode, Client Bridge and WISP / CPE Mode with Repeater function, VLAN Router AP Mode.



The screenshot displays the CERIO DT-400 A1 web interface. At the top, the CERIO logo and device name 'DT-400 A1' are shown. Navigation tabs include 'System', 'Wireless', 'Utility', and 'Status'. The main content area is titled 'System Mode'. A dropdown menu labeled 'Mode' is open, showing the following options: 'Access Point Mode', 'CAP Mode', 'Access Point Mode' (highlighted in blue), 'ClientBridge Mode', 'WISP Mode', and 'Router Mode'. Below the dropdown, a green 'Save & Reboot' button is visible. The footer contains the text 'Cerio© 2017'.

# Control Access Point — CERIO

Control Access Point (CAP) Mode's converts the device into a centralized AP management controller. When DT-400 A1 is in CAP Mode, it can centrally manage up to **64 AP devices**.

The screenshot displays the CERIO web interface for a DT-400 A1 device. The top navigation bar includes the CERIO logo, the device name "DT-400 A1", and menu items for "System", "AP Control", "Utility", and "Status". The "AP Control" menu is expanded, showing options: "Scan Device", "Batch Setup", "AP Setup", "Group Setup", "Map Setup", "Authentication Profile", and "Status". The main content area shows an "Overview" section with a table of system parameters:

Parameter	Value
Mode	CAP Mode
System Name	DT-400_A1
System Time	2015/01/01 08:02:2
System Uptime	02:14

### Scan AP Device

#### Filter Device

**VLAN#**

**Default Password**

**Sort**

#### Update IP Address & Netmask

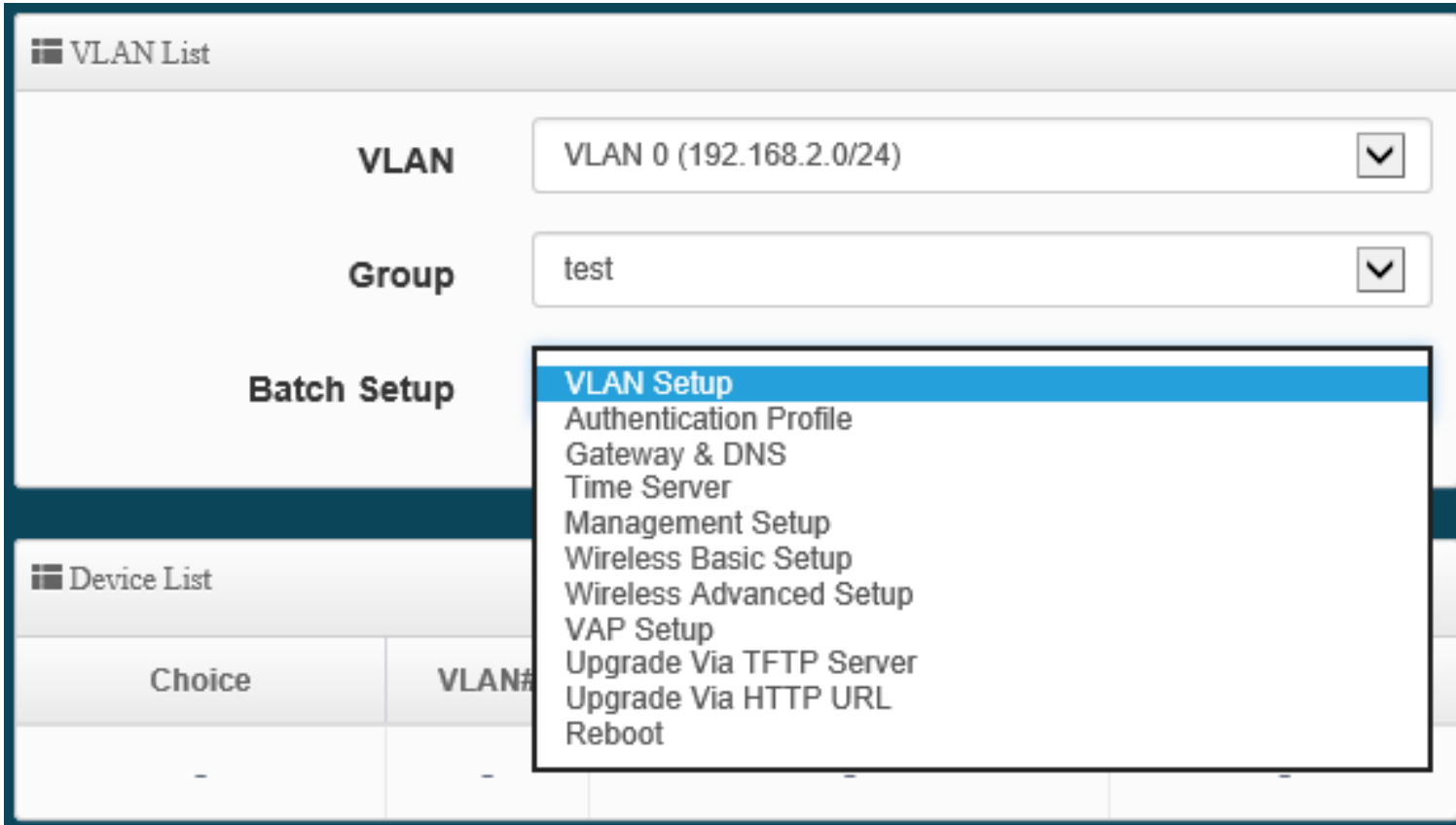
**Control Port**

**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, a 'Device List' table is partially visible with columns for 'Choice' and 'VLAN#', showing a single row with 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

**VLAN**

**VLAN Mode**  Enable  Disable

**Access Point 0**  Enable  Disable

**Access Point 1**  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**

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### ETH0 VLAN Tag Setup

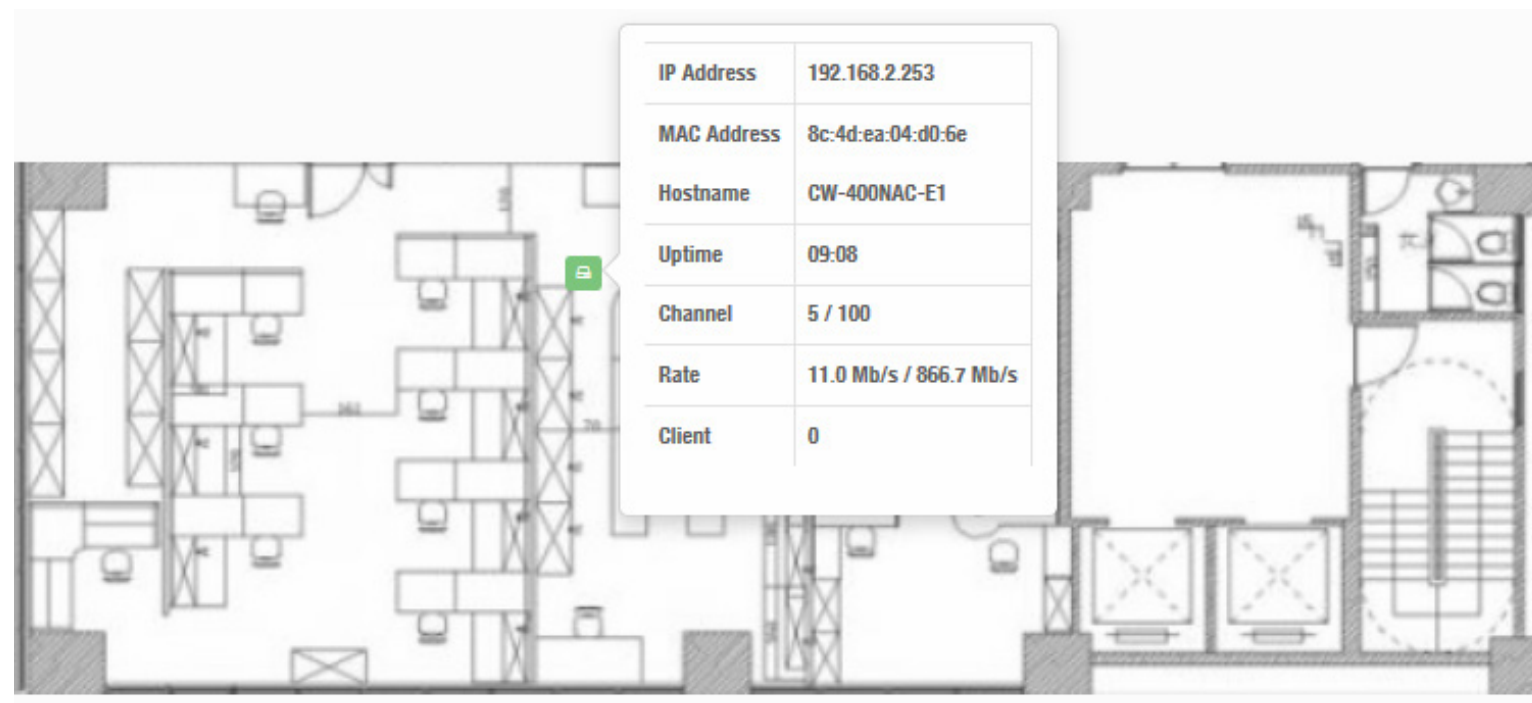
**ETH0**  Enable  Disable

**VLAN TAG**

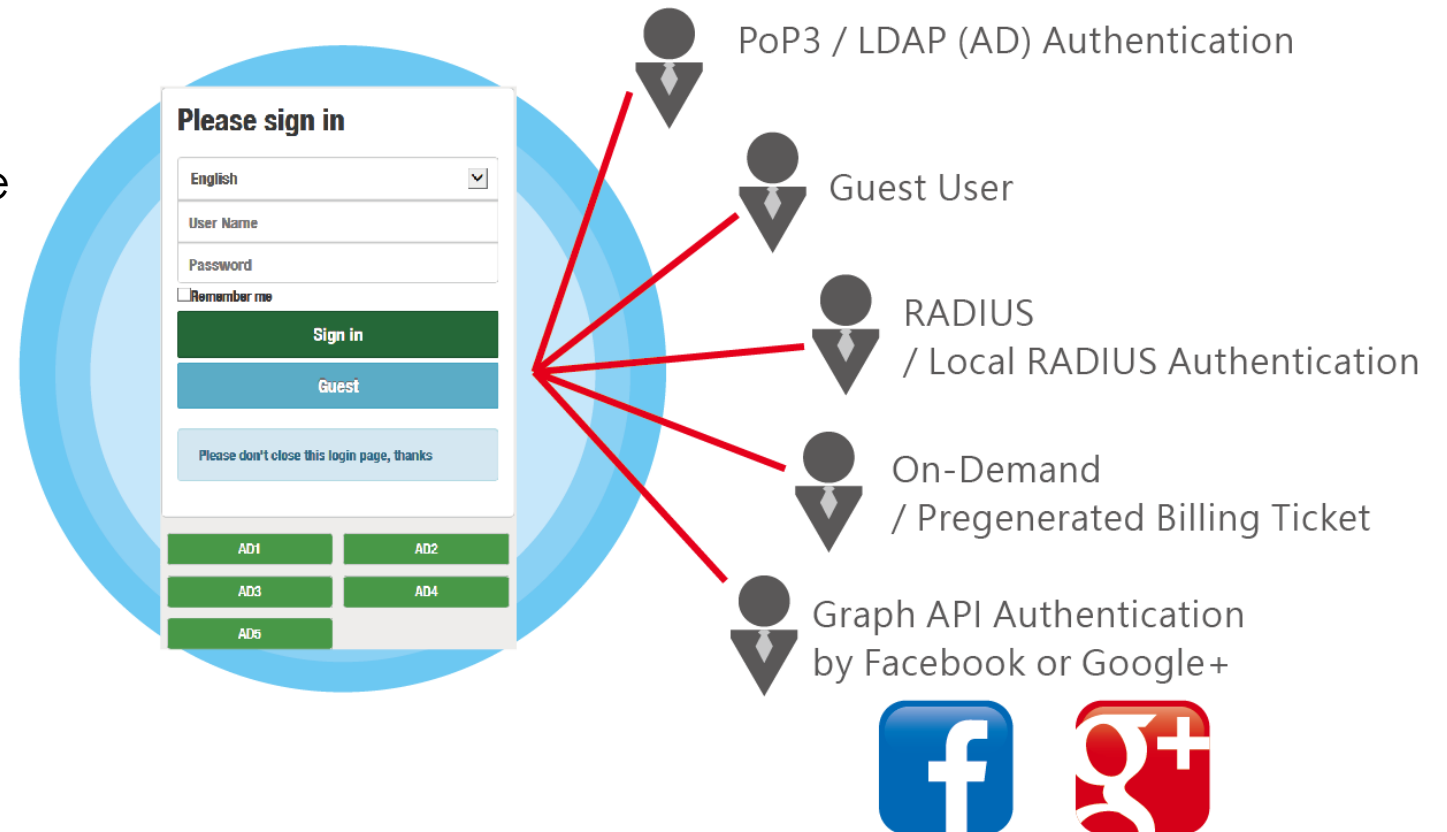
Administrators can enable VLAN Mode, Spanning tree, Control Port capabilities, IAPP Roaming, change IP settings and setup VLAN tag for batches of access points. These changes can be implemented differently for each VLAN, allowing for both centralized and organized control.

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 built-in Facebook and Google authentication of Third-party OAuth2.0. 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



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	<input checked="" type="checkbox"/>	Google	<input type="button" value="Edit"/>
2	<input checked="" type="checkbox"/>	Facebook	<input type="button" value="Edit"/>



**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

Service	<input checked="" type="radio"/> Enable	<input type="radio"/> Disable
Login Type	<input checked="" type="radio"/> One Time	<input type="radio"/> Multiple Time
Count Limit	<input type="text" value="10"/>	
Login Time	<input type="text" value="10"/>	Minutes
QoS	<input type="radio"/> Enable	<input checked="" type="radio"/> Disable
Upload	<input type="text" value="512"/>	Kbps
Download	<input type="text" value="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	<a href="#">Delete</a>
2	Test Account 2	<a href="#">Delete</a>

# Customized Login Page

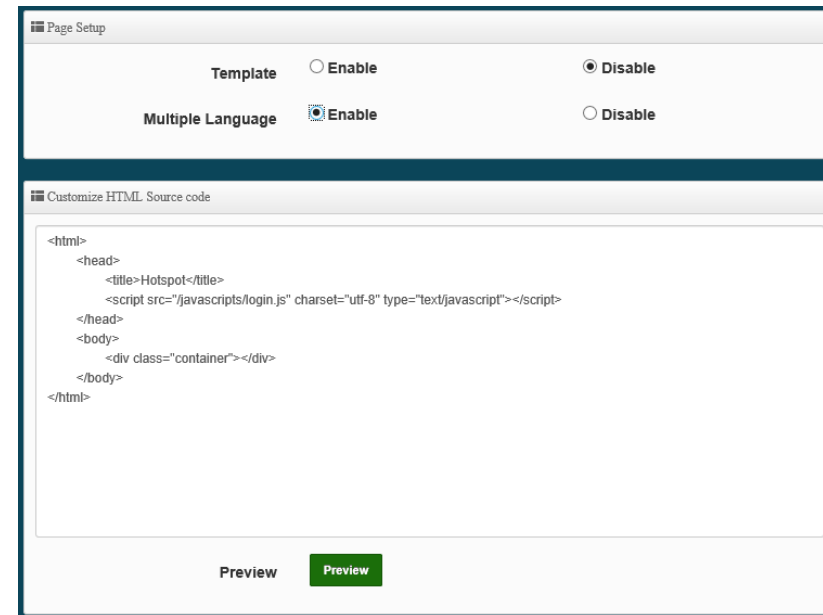
Administrators can create a customized Login Page which can become a platform for:

**(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

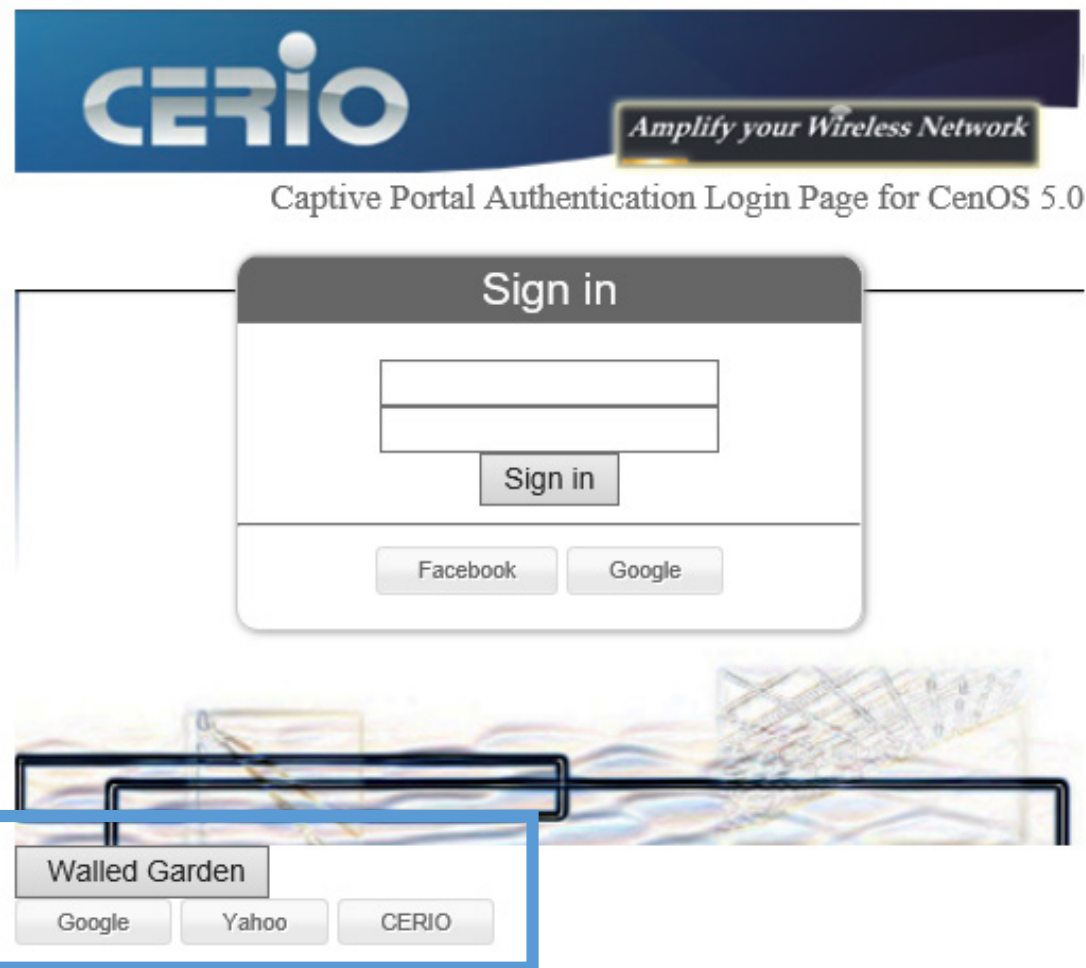
Walled Garden

Display Name (4 -32 chars)

IP Address/Domain

Full URL

Enabled Walled Garden Websites





# Built-in 802.1x RADIUS

Supports integrated 802.1x RADIUS Server authentication for small to medium network environments. This supports a maximum of 50 built-in RADIUS Users.

The screenshot displays the CERIO RADIUS management interface, divided into three main sections:

- Radius User:** A form for creating a new user. It includes a "User Name" field (3-32 chars) and a "Password" field (4-32 chars) with an "Add" button.
- Export/Import Users:** A section for managing user data. It features an "Export User File" button and an "Import From PC" section with a file selection field and a "Browse..." button, followed by an "Import" button.
- Radius List:** A table listing existing users. The table has columns for ID (#), Name, and Action.

#	Name	Action	#	Name	Action
1	test1	Delete	2	test2	Delete

**Increased Security-** Individual user sessions are encrypted uniquely, which prevents other users from acquiring private information

**Cost Efficient** – The built-in RADIUS server design removes the need to purchase additional equipment such as external servers.

# Virtual LANs & SSIDs

DT-400 A1's Dual Band radio design supports a total of 8 Virtual LANs (VLAN) and 16 ESSIDs. Each VLAN supports two SSIDs, one on the 2.4GHz frequency band and one on the 5GHz frequency band.

#	VLAN Mode	Flag	IP Address	Netmask	Radio 0	Radio 1	Action
0	On	Native ETH0 Native ETH1 Access Control	192.168.2.254	255.255.255.0	2.4G_0_0	5G_0_1	Network
1	Off	ETH0.101 ETH1.101	-	-	2.4G_1_0	5G_1_1	Network
7	Off	ETH0.107 ETH1.107	-	-	2.4G_7_0	5G_7_1	Network

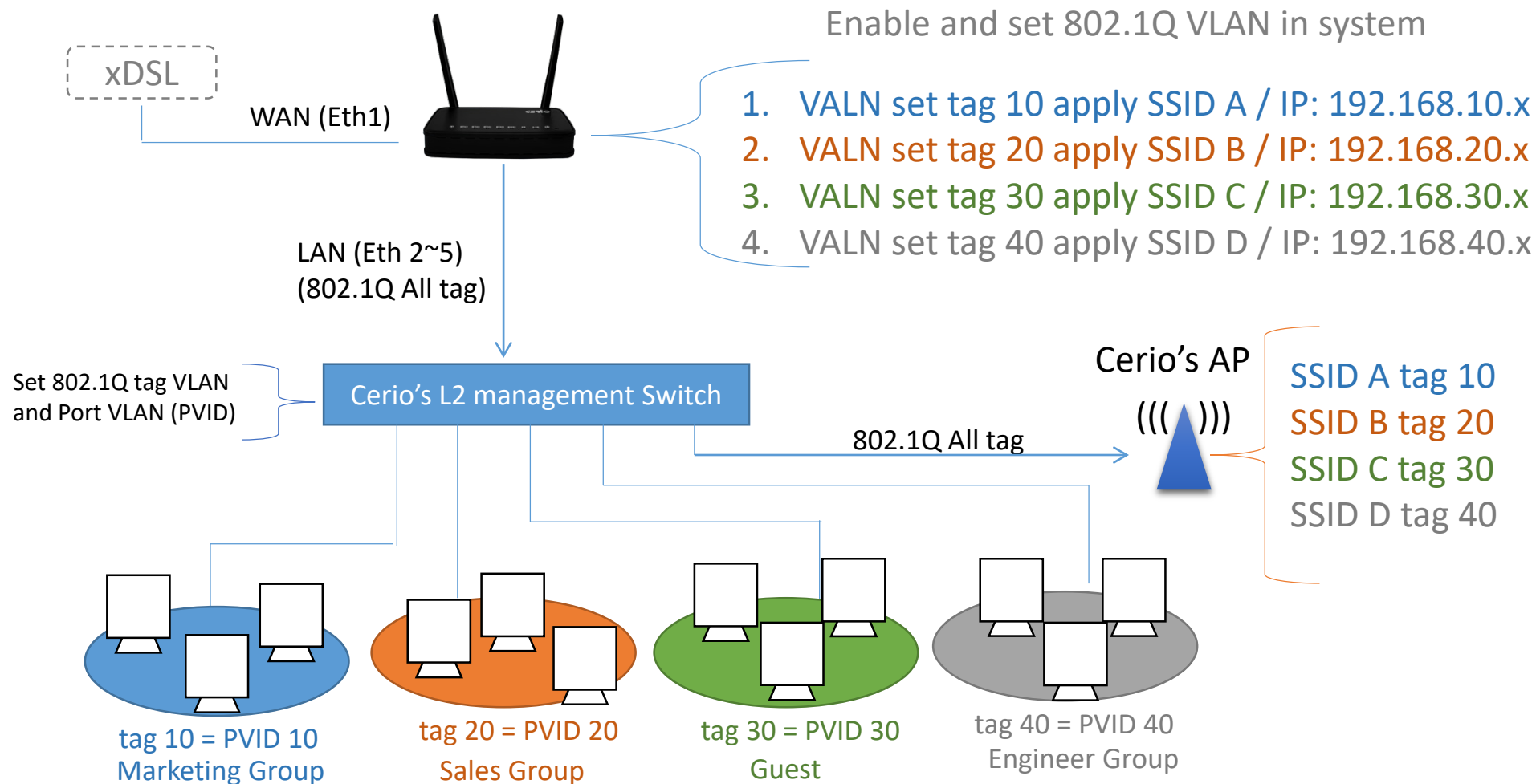


Supports 8 VLANS



Each VLAN supports 2 ESSIDs, one for 2.4G and one for 5G

Enable multi-VLAN application for VALN Router



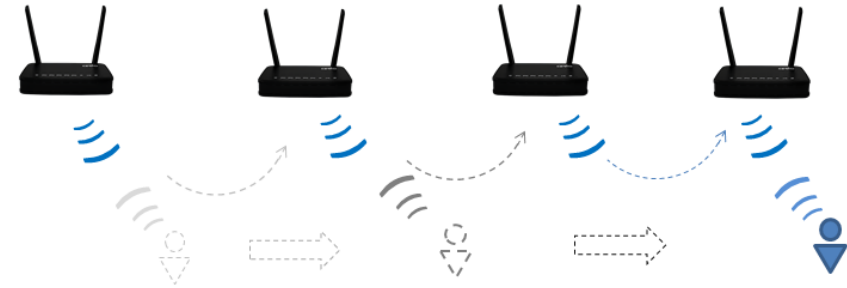
### 802.11r/802.11k Fast Roaming

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.

The screenshot shows the CERIO DT-400 A1 System menu. The 'Time Policy' option is highlighted with a red box. The 'Mode' dropdown menu is also highlighted with a red box and set to 'Access Point Mode'. The system name is 'DT-400\_A1', system time is '2015/01/01 08:18:09', system uptime is '14:07', and firmware version is 'Pme-MT76x2e V0.0.2'.

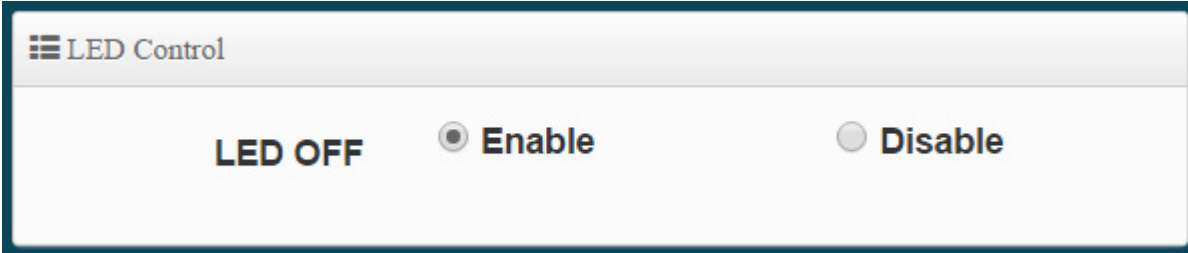
The screenshot shows the 'Time Policy Setup / Rule 1' configuration page. The 'Time Policy' menu item is highlighted with a red box. The 'Policy List' table shows three policies, all set to 'On Schedule'. The 'Time Policy Rules' section shows 'Policy 1' with 'On Schedule' selected. The 'Policy List' table below shows two active policies with their respective schedules.

#	Comment	Mode	Edit
1	Policy 1	On Schedule	Edit
2	Policy 2	On Schedule	Edit
3	Policy 3	On Schedule	Edit

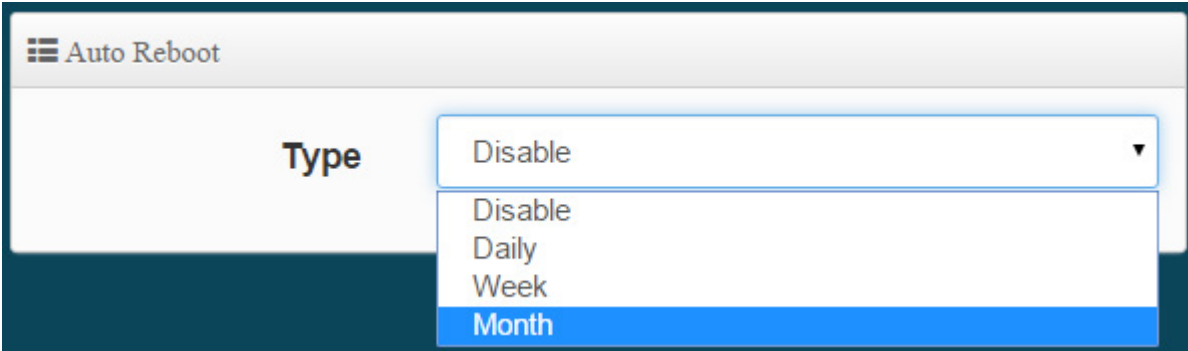
  

#	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Time	Action
1	-	Active	Active	Active	Active	Active	-	08:00 - 12:00	Edit
2	-	Active	Active	Active	Active	Active	-	13:00 - 18:00	Edit

The administrator can set the Time Policy function to manage and control the Internet enable time. It is very suitable for the school to control and management students use internet time.



**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.

# 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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