

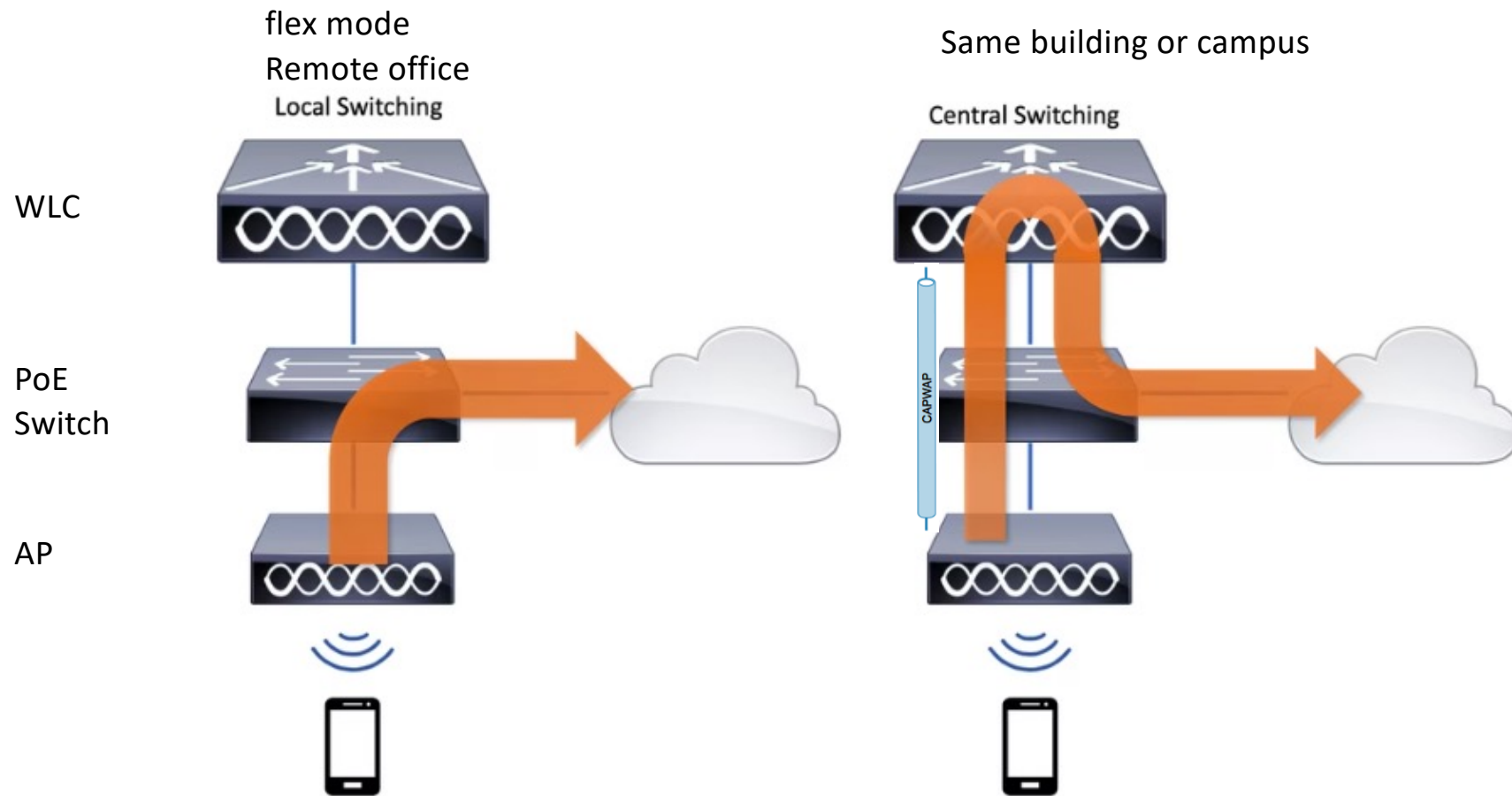
Cisco WLC 9800
#central mode
#17.9.4a

2024年 2月

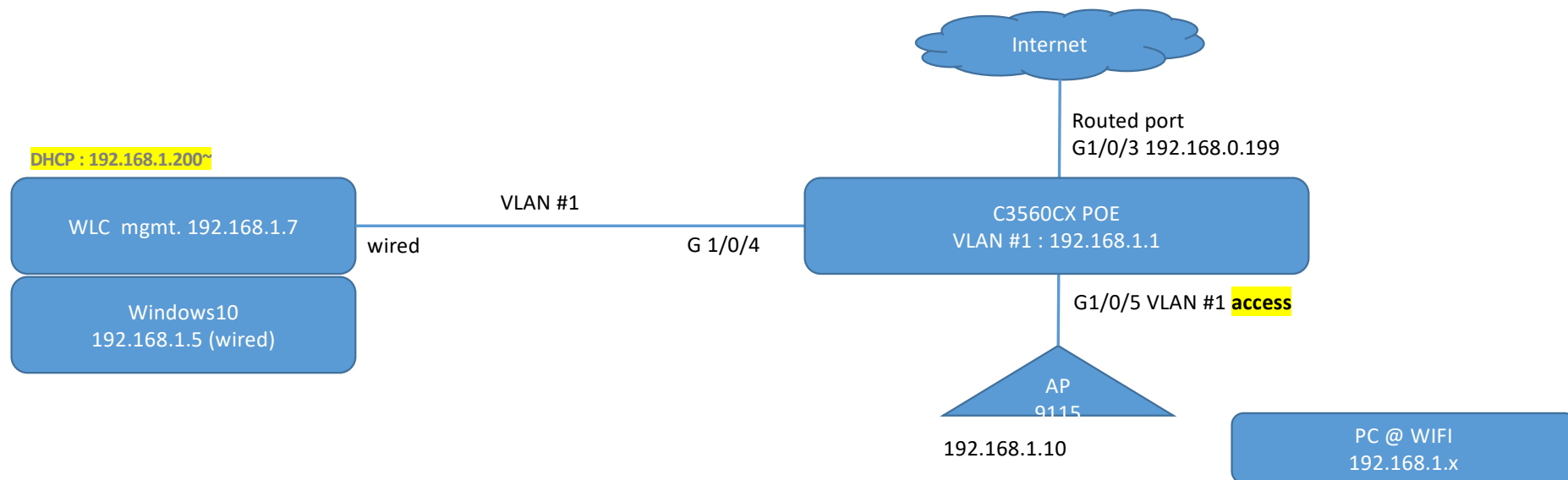
Reference

- English
 - <https://www.cisco.com/c/en/us/support/docs/wireless/catalyst-9800-series-wireless-controllers/213945-understand-flexconnect-on-9800-wireless.html>
- Korean
 - https://www.cisco.com/c/ko_kr/support/docs/wireless/catalyst-9800-series-wireless-controllers/213945-understand-flexconnect-on-9800-wireless.html

Flex mode or Central Mode



Topology #central mode



Only VLAN #1 is used because my Realtek NIC doesn't support trunk.
VLAN #1 : WLC, AP and client

Catalyst Switch Config

```
!  
interface GigabitEthernet1/0/4  
switchport mode access  
spanning-tree portfast edge  
!  
interface GigabitEthernet1/0/5  
switchport mode access  
spanning-tree portfast edge  
!  
interface Vlan1  
ip address 192.168.1.1 255.255.255.0  
!
```

WLC Install

C9800 trustpoint issue #reboot

<config after set up the mgmt. IP address of WLC>

```
wireless config vwlc-ssc key-size 2048 signature-algo sha256 password 0 <pwd>
```

```
C9800#show wireless management trustpoint
```

Trustpoint Name : ewlc-default-tp

Certificate Info : Available

Certificate Type : SSC

Certificate Hash : c4e57f728e523f64ade21597ab8ee472e7a7a8b7

Private key Info : Available

FIPS suitability : Not Applicable

[*10/21/2019 17:30:17.7700] CAPWAP State: Discovery

[*10/21/2019 17:30:17.7730] Discovery Request sent to 192.168.30.200, discovery type STATIC_CONFIG(1)

[*10/21/2019 17:30:17.7770] Discovery Request sent to 192.168.30.200, discovery type STATIC_CONFIG(1)

[*10/21/2019 17:30:17.7790] Discovery Request sent to 255.255.255.255, discovery type UNKNOWN(0)

[*10/21/2019 17:30:17.7790] Discovery Response from 192.168.30.200

[*10/21/2019 17:30:17.7800] Discovery Response from 192.168.30.200

- [*10/21/2019 17:30:17.7810] Discovery Response from 192.168.30.200

- [*10/21/2019 17:30:26.0000]

- [*10/21/2019 17:30:26.0000] CAPWAP State: DTLS Setup

- [*10/21/2019 17:31:23.0150]

- [*10/21/2019 17:31:23.0150] CAPWAP State: DTLS Teardown

- [*10/21/2019 17:31:23.0260] Aborting image download(0x0): Dtls cleanup,

- [*10/21/2019 17:31:23.0850] do ABORT, part1 is active part

WLC Config

Access Point

Configuration >
Tags & Profiles >
Tags

Policy tag

SSID

Policy Profile

SSIDs

Configuration >
Wireless >
WLANs

- **Security**
- Authentication Methods (RADIUS servers)
- Accounting Methods (RADIUS servers)
- Advanced settings

Policy Profile

Configuration >
Tags & Profiles >
Policy

- ✓ Access Policies (HTTP/DHCP Profiling, **VLAN**, IPv4/6 ACLs)
- QoS and AVC
- Anchors
- WLAN Timeouts
- AAA override / NAC State
- FlexConnect settings
- Local/Central Switching
- AAA Policy (NAS ID election)
- Local Subscriber Policy Map

Site Tag

Local Site

- Enabled = APs set as local mode, only AP Join Profile Available
- Disabled = AP set as FlexConnect Mode, Flex Profile is enabled

AP Join Profile

Configuration >
Tags & Profiles >
AP Join

- LED State
- TCP MSS
- Timer Statistics
- CAPWAP Timers
- Backup Controller Configuration
- User / Dot1x Credentials
- Telnet/SSH
- Rogue Detection
- CDP

Flex Profile

Configuration >
Tags & Profiles >
Flex

- HTTP Proxy
- ARP Caching
- Office Extended AP
- Local Authentication
- AAA servers
- Policy ACL (General or for CWA)
- VLAN / ACL Mapping
- Efficient Image Upgrade

RF Tag

RF Profiles

Configuration >
Tags & Profiles >
RF

- 2.4GHz
- 5GHz

For Tag assignment to APs you can:

Configuration >
Wireless >
Wireless Setup

Configuration >
Tags & Profile >
Tags >
AP

Or directly to the AP:
Configuration >
Wireless >
Access Points >
General

Step

- DHCP@WLC
- **Central** mode
 - WLAN (SSID)
 - Policy
 - Tag (policy) = WLAN + policy
- Tag AP apply

AdministrationMenu Items

Dashboard

Monitoring

Configuration

Administration

Licensing

Troubleshooting

Best Practices

Command Line Interface

Device

DHCP Pools

DNS

Management

- Backup & Restore
- File Manager
- HTTP/HTTPS/Netconf/VTY
- Logging
- SNMP

Reload

Smart Call Home

Software Management

Time

User Administration

Walk Me Through >

Search Menu Items

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Walk Me Through >

Interface

- Logical
- Ethernet
- Wireless

Layer2

- Discovery Protocols
- VLAN
- VTP

Radio Configurations

- CleanAir
- High Throughput
- Media Parameters
- Network
- Parameters
- RRM

Routing Protocols

- Static Routing

Security

- AAA
- ACL
- Advanced EAP
- PKI Management
- Guest User
- Local EAP

Services

- AireOS Config Translator
- Application Visibility
- Cloud Services
- Custom Application
- Location
- mDNS
- Multicast
- NetFlow
- QoS
- RA Throttle Policy

Tags & Profiles

- AP Join
- Calendar
- EoGRE
- Flex
- Multi BSSID
- Policy
- Power Profile
- Remote LAN
- RF/Radio
- Tags
- WLANs

Wireless

- Access Points

DHCP

Administration ▾ > DHCP Pools

Create DHCP Pool

Basic

Advanced

DHCP Pool Name*

192.168.1.x

(1-236 Characters)

IP Type

IPv4

VRF

☐

Network*

192.168.1.0

Subnet Mask*

255.255.255.0

Starting ip*

192.168.1.200

Ending ip*

192.168.1.249

Create DHCP Pool

Basic

Advanced

Default Router(s)

xxx.xxx.xxx.xxx

+

DNS Server(s)

xxx.xxx.xxx.xxx

+

IP Address	Remove
192.168.1.1	×

IP Address	Remove
8.8.8.8	×

WLAN (SSID)

[Configuration](#) ▾ > [Tags & Profiles](#) ▾ > [WLANs](#)

Add WLAN

General

Security

Advanced

Profile Name*

Oyame_central

SSID*

Oyame_central

WLAN ID*

1

Status

ENABLED

Broadcast SSID

ENABLED

Radio Policy ⓘ

Show slot configuration

6 GHz

Status

DISABLED

5 GHz

Status

ENABLED

2.4 GHz

Status

ENABLED

802.11b/g Policy

802.11b/g ▼

Add WLAN

General

Security

Advanced

Layer2

Layer3

AAA

☐ WPA + WPA2

☐ WPA2 + WPA3

☐ WPA3

☐ Static WEP

☒ None

MAC Filtering

☐

OWE Transition Mode

☐

Lobby Admin Access

☐

Protected Management Frame

PMF

Disabled

Fast Transition

Status

Disabled

Over the DS

☐

Reassociation Timeout *

20

Policy

[Configuration](#) > [Tags & Profiles](#) > [Policy](#)

Edit Policy Profile

⚠ Disabling a Policy or configuring it in 'Enabled' state, will result in loss of connectivity for clients associated with this Policy profile.

General Access Policies QOS and AVC Mobility Advanced

Name*	<input type="text" value="Oyame_central"/>	WLAN Switching Policy	
Description	<input type="text" value="Enter Description"/>	Central Switching	<input checked="" type="checkbox"/> ENABLED
Status	<input checked="" type="checkbox"/> ENABLED	Central Authentication	<input checked="" type="checkbox"/> ENABLED
Passive Client	<input type="checkbox"/> DISABLED	Central DHCP	<input checked="" type="checkbox"/> ENABLED
IP MAC Binding	<input checked="" type="checkbox"/> ENABLED	Flex NAT/PAT	<input type="checkbox"/> DISABLED
Encrypted Traffic Analytics	<input type="checkbox"/> DISABLED		

Edit Policy Profile

⚠ Disabling a Policy or configuring it in 'Enabled' state, will result in loss of connectivity for clients associated with this Policy profile.

General **Access Policies** QOS and AVC Mobility Advanced

RADIUS Profiling	<input type="checkbox"/>
HTTP TLV Caching	<input type="checkbox"/>
DHCP TLV Caching	<input type="checkbox"/>
WLAN Local Profiling	
Global State of Device Classification	Disabled ⓘ
Local Subscriber Policy Name	<input type="text" value="Search or Select"/> ⓘ
VLAN	
VLAN/VLAN Group	<input type="text" value="1"/> ⓘ
Multicast VLAN	<input type="text" value="Enter Multicast VLAN"/>

Policy Tag – WLAN profile mapping

Configuration > Tags & Profiles > Tags

Policy Site RF AP

Edit Policy Tag

⚠ Changes may result in loss of connectivity for some clients that are associated to APs with this Policy Tag.

Name* Oyame_central

Description Enter Description

✓ WLAN-POLICY Maps: 0

+ Add

× Delete

WLAN Profile	Policy Profile
No items to display	

Map WLAN and Policy

WLAN Profile* Oyame_central



Policy Profile* Oyame_central



AP config

AP config

- Use the factory default AP
 - Or push reset the button for 30 sec when booting
- ID / password : Cisco
- Use this command
 - `capwap ap primary-base wlc 192.168.1.7`
 - `capwap ap ip 192.168.1.10 255.255.255.0 192.168.1.1`

BootImage: MASTER

Button is pressed. Configuration reset activated..
Keep the button pressed for > 20 seconds for full reset

Wait for the button to be released
Button pressed for 20 seconds

AP tag change #AP rebooting

[Configuration](#) > [Wireless](#) > [Access Points](#)

Edit AP

General

Interfaces

High Availability

Inventory

ICap

Advanced

Support Bundle

General

Tags

AP Name*

APC4F7.D5E8.BF30

Location*

default location

Base Radio MAC

c4f7.d5e9.5560

Ethernet MAC

c4f7.d5e8.bf30

Policy

0yame_central

Site

default-site-tag

RF

default-rf-tag

Write Tag Config to AP

Monitoring

Monitoring


Dashboard


Monitoring >

Configuration


Dashboard


Wireless LANs

 0

 0

Access Points

 1

 0

Clients

Active 1

Excluded 0



Monitoring > Wireless > Clients

Clients Sleeping Clients Excluded Clients

[Delete](#)

Total Client(s) in the Network: 2

Number of Client(s) selected: 0

<input type="checkbox"/>	Client MAC Address		IPv4 Address	IPv6 Address	AP Name	SSID	WLAN ID	State
<input type="checkbox"/>	7ca1.ae94.d754		192.168.2.101	fe80::142e:a54c:fd82:b1a1	APC4F7.D5E8.BF30	yame	1	Run
<input type="checkbox"/>	8c85.9072.992e		192.168.2.100	fe80::1cc8:1595:c99d:1763	APC4F7.D5E8.BF30	yame	1	Run

1

10 items per page