



 H3C WLAN製品Anchor-ACハンズオントレーニング



01 アクセスポイントをAnchor-acに設定する

02 Anchor-acの定義をする

03 FITをバックアップ用のAnchor-acに設定

アクセスポイントの動作モードの違い

アクセスポイントの動作モードには **FIT**、**Anchor-ac**、**Cloud**の3通りがあります。

FITモード

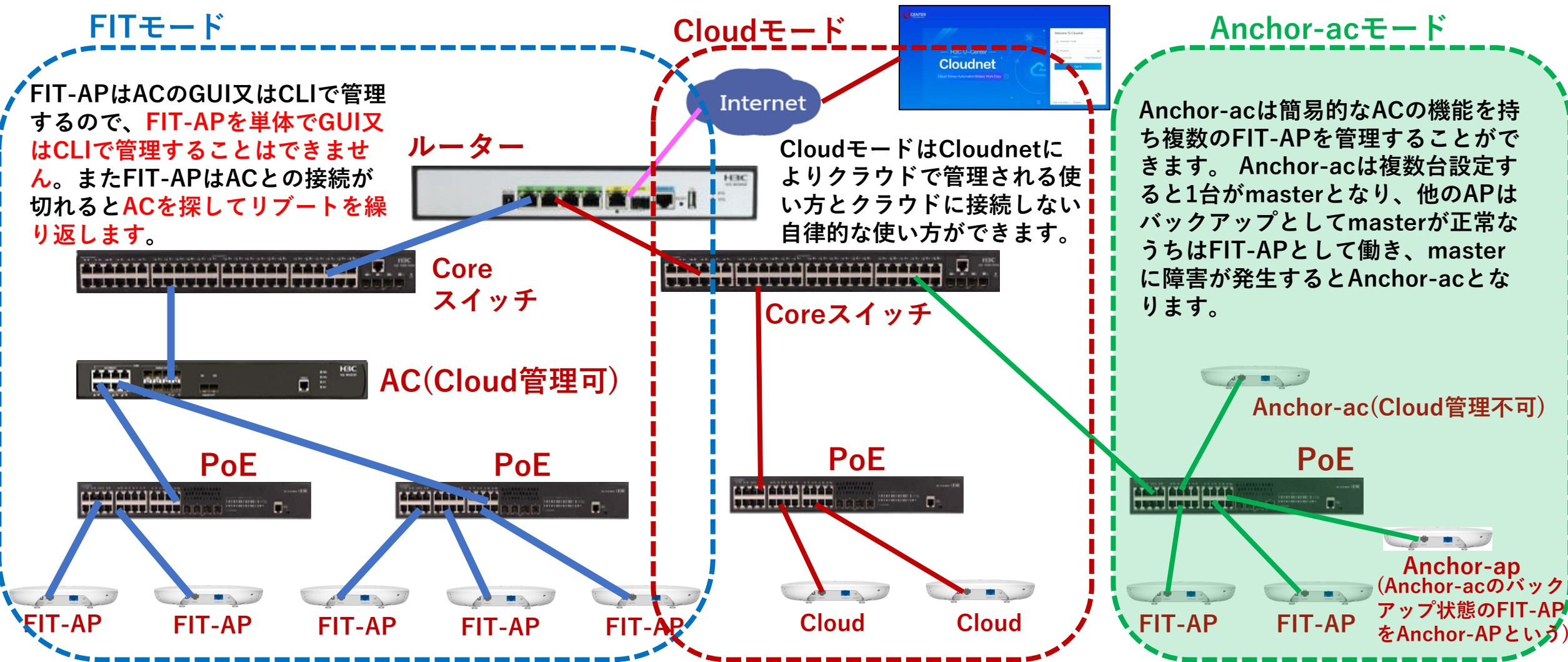
FIT-APはACのGUI又はCLIで管理するので、**FIT-APを単体でGUI又はCLIで管理することはできません**。またFIT-APはACとの接続が切れるとACを探してリブートを繰り返します。

Cloudモード

CloudモードはCloudnetによりクラウドで管理される使い方とクラウドに接続しない自律的な使い方があります。

Anchor-acモード

Anchor-acは簡易的なACの機能を持ち複数のFIT-APを管理することができます。Anchor-acは複数台設定すると1台がmasterとなり、他のAPはバックアップとしてmasterが正常なうちはFIT-APとして働き、masterに障害が発生するとAnchor-acとなります。



アクセスポイントの動作モードのコマンドによる変更

手順：現在の動作モードの確認 → 動作モードの変更 → 変更されたかどうかの確認

#現在のモードを確認(工場出荷状態ではFITモード)

<H3C> **display wlan device role**

Current running mode: FIT AP.

system-viewにてap-modeコマンドでAnchor-acモードに変更

<H3C> **system-view**

System View: return to User View with Ctrl+Z.

[H3C] **ap-mode anchor-ac**

Changing working mode will reboot system. Continue? [Y/N]:y

注：APモードには以下の3つのモード
が選択できます。

ap-mode { anchor-ac | cloud | fit }

#モード変更のためにAPは自動的にrebootします。

System is starting...

Press Ctrl+D to access BASIC-BOOTWARE MENU...

Booting Normal Extended BootWare

リブート中メッセージ省略

Image file flash:/wa6600-boot.bin is self-decompressing.....

.....Done.

System image is starting...

Line con0 is available.

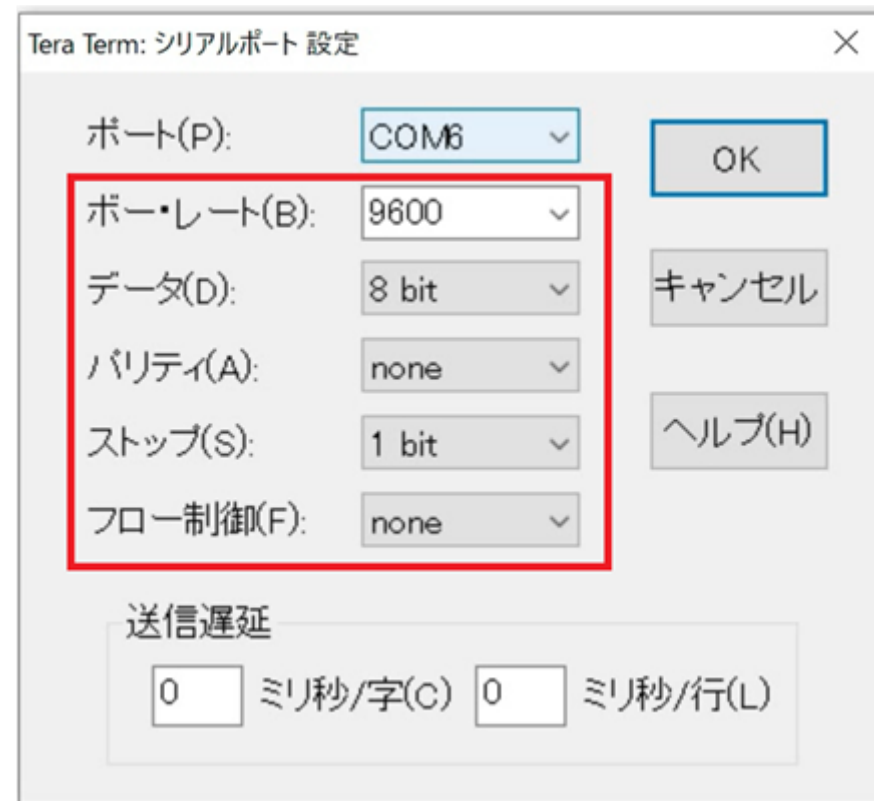
Press ENTER to get started.

#起動後Cloudモードになったことを確認します。

<H3C> **display wlan device role**

Current running mode: Anchor AC.

<H3C> **save force**



コンソール接続の通信設定は、9600ボー、データ8ビット、パリティなし、ストップビット1、フロー制御なし

アクセスポイントの動作モードのBootWareメニューによる変更

1. APをリブートします。出力例を次に示します。

```
System is starting...
Press Ctrl+D to access BASIC-BOOTWARE MENU... Booting Normal
Extended BootWare
The Extended BootWare is self-decompressingDone.
```

```
*****
```

```
*
```

```
*
```

```
*H3C WA6638 BootWare, Version 7.12
```

```
*
```

```
*
```

```
*
```

```
*****
```

```
Copyright (c) 2004-2021 New H3C Technologies Co., Ltd.
```

```
Compiled Date: Jan 28 2021
```

```
CPU L1 Cache: 32KB
```

```
CPU L2 Cache: 256KB
```

```
CPU Clock Speed: 2200MHz Memory Type: DDR3 SDRAM
```

```
Memory Size: 1024MB
```

```
Memory Speed: 933MHz
```

```
Flash Size: 256MB
```

```
PCB Version: Ver.A BootWare Validating...
```

```
Press Ctrl+B to access EXTENDED-BOOTWARE MENU...
```

2. プロンプトでCtrl+Bを押して、EXTENDED-BOOTWAREメニューを入力します。

```
Password recovery capability is enabled. Note: The current operating device is
flash
```

```
Enter < Storage Device Operation > to select device.
```

```
===== <EXTENDED-BOOTWARE MENU> =====
```

```
|<1> Boot System |
|<2> Enter Serial SubMenu |
|<3> Enter Ethernet SubMenu |
|<4> File Control |
|<5> Restore to Factory Default Configuration 工場出荷時の状態に戻す |
|<6> Skip Current System Configuration |
|<7> BootWare Operation Menu |
|<8> Skip Authentication for Console Login |
|<9> Storage Device Operation |
|<0> Reboot |
```

```
=====
Ctrl+Z: Access EXTENDED ASSISTANT MENU
```

```
Ctrl+F: Format File System
```

```
Ctrl+C: Display Copyright
```

```
Ctrl+Y: Change AP Mode
```

```
Enter your choice(0-9):
```

3. Ctrl+Yキーを押してAPモードを変換します。

```
Please select the new mode Current mode is Fit
```

```
=====
|NO. | Mode |
|1 | Fit Mode |
|2 | Anchor-AC (Virtual AC mode) |
|3 | Cloud Mode |
|0 | Exit |
```

```
=====
```

```
Enter your choice(0-3): 2
```

4. モード番号を入力します。



01 アクセスポイントをAnchor-acに設定する

02 Anchor-acの定義をする

03 FITをバックアップ用のAnchor-acに設定

想定ネットワーク構成(以下は設定例で設定の参考にしてください)

この資料はWA6638-JP及びWA6320-JPをAnchor-acとして使う場合の操作をGUIで行います。ただし、WA6638-JPのAnchor-acはWA6320-JPの管理はできません。

APの管理はVLAN1を使い、VLAN1に設定されているAnchor-acのデフォルトのIPアドレス192.168.0.50/24が管理用IPアドレスとなります。

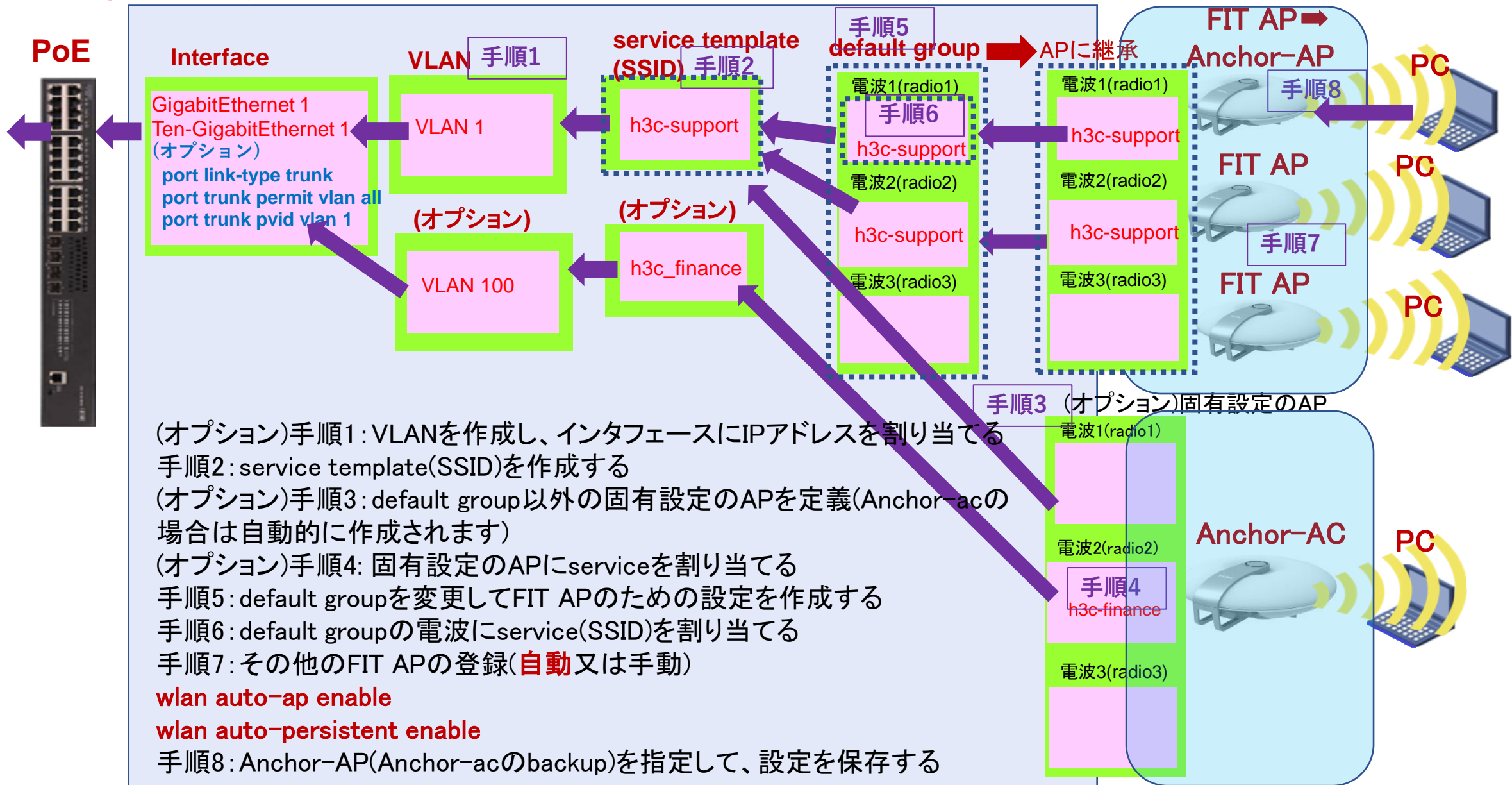
送出する電波とSSID、パスワード、VLAN、hiddenモードなどは以下の通りとします。

SSID	Password	VLAN	Hidden	Radio
h3c-support	@helpdesk99	1	no	radio1, radio2 5GHz

(オプション)

SSID	Password	VLAN	Hidden	Radio
h3c-finance	-	100	no	radio2 5GHz

無線の設定はテンプレートにより行われます

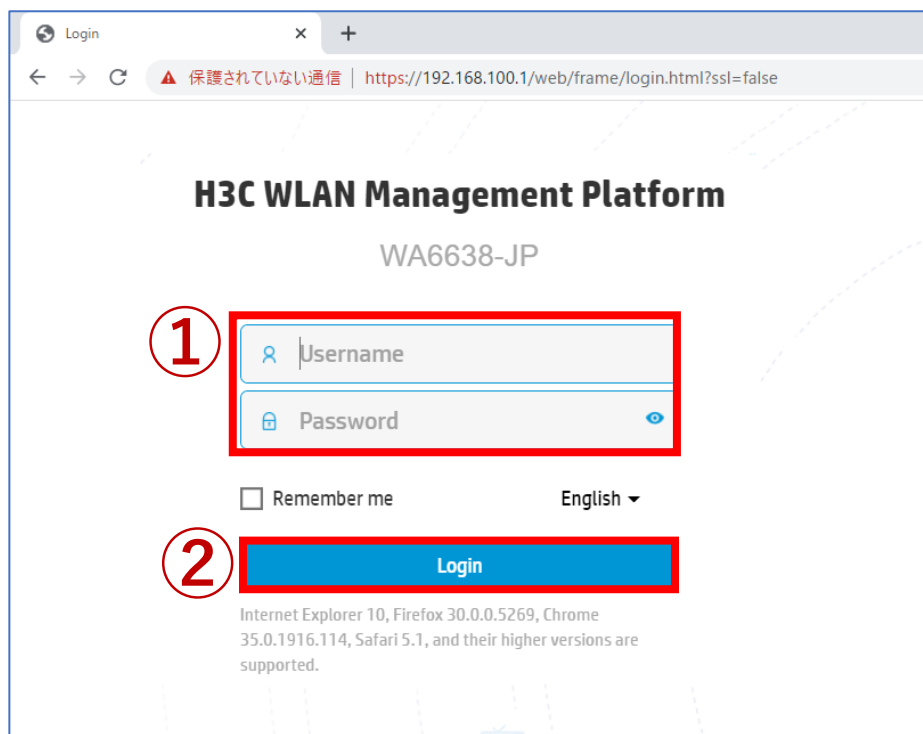


Anchor-acのGUIにログインする方法

PCのブラウザを起動し以下のURLを入力します。

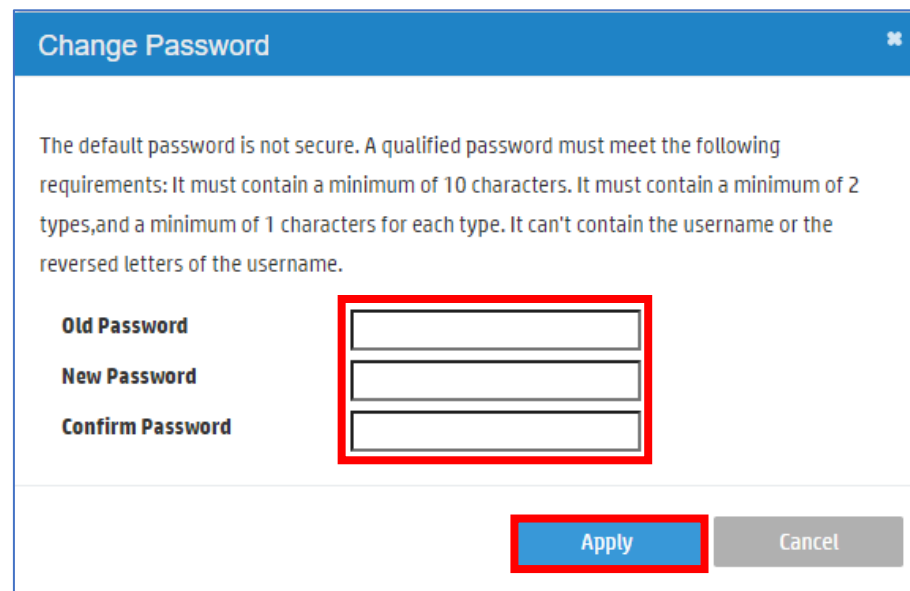
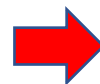
<http://192.168.0.50/>

デフォルトのユーザー名: admin、パスワード: h3capadmin



1

2



Change Password

The default password is not secure. A qualified password must meet the following requirements: It must contain a minimum of 10 characters. It must contain a minimum of 2 types, and a minimum of 1 characters for each type. It can't contain the username or the reversed letters of the username.

Old Password

New Password

Confirm Password

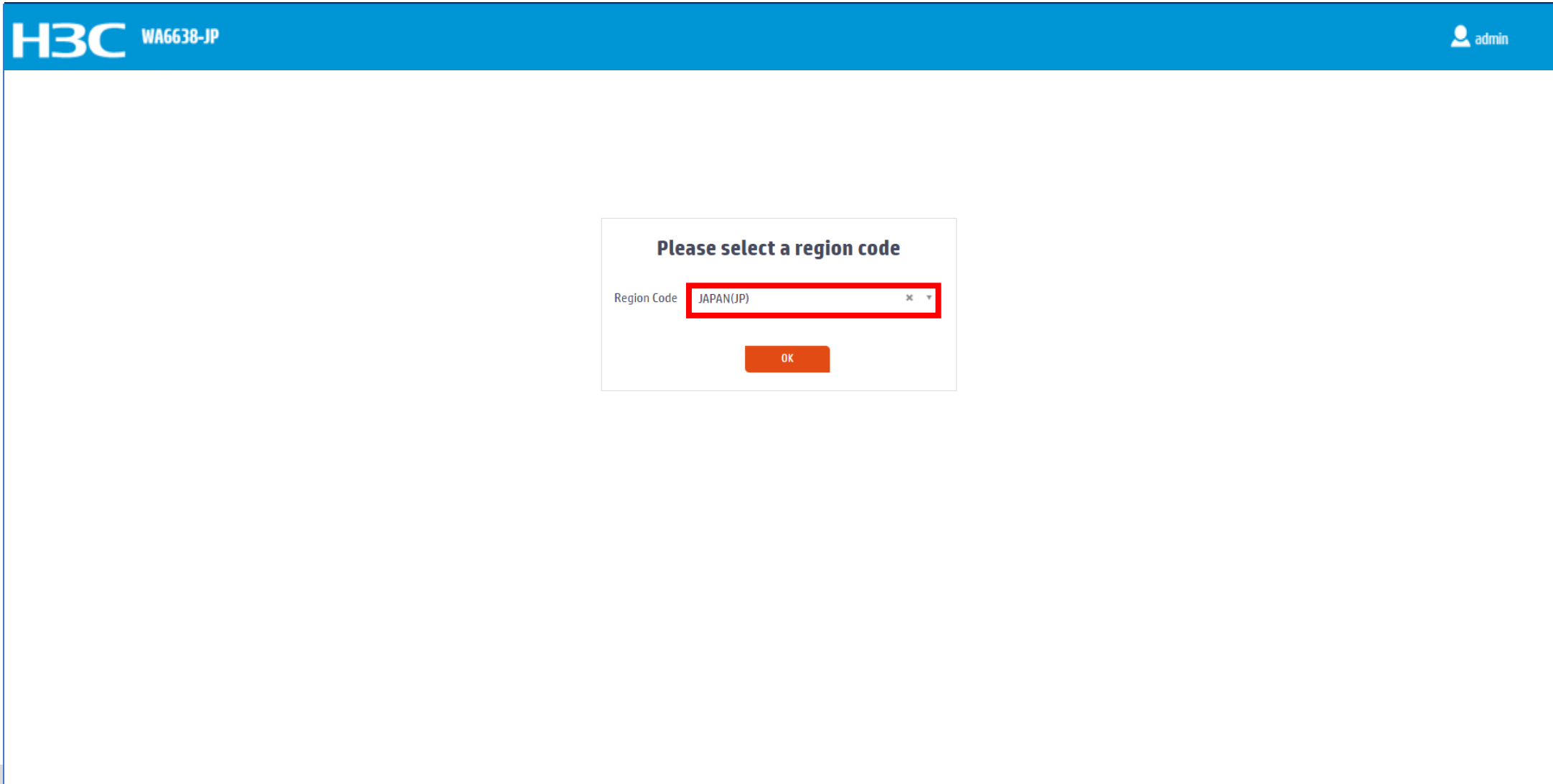
Apply Cancel

パスワードは10文字以上で、英数字記号などの2種類を含み、登録されているユーザー、adminなどの文字を含まないこと。

Anchor-acのGUIにログインする方法

初めてログインした際は、region-codeを設定する必要があります。

※region-codeにより送信する電波の国別の制約に従います。日本はJAPAN(JP)です。



H3C WA6638-JP

admin

Please select a region code

Region Code JAPAN(JP) × ▾

OK

ログインするとDashboardが表示されます

The screenshot displays the H3C WA6638-JP dashboard interface. The top navigation bar includes the H3C logo, the model number WA6638-JP, and the user name 'admin'. The main content area is divided into several sections:

- System Logs:** A summary bar showing 0 Emergency, 5 Critical, and 8 Warning events.
- APs:** A chart showing the status of Access Points (Online, Offline, Unhealthy) over time.
- System usage:** Two circular gauges showing 0% CPU usage and 68% Memory usage. To the right, system details are listed: Serial ID: 219801A2KF8209E00068, Hardware: Ver.A, Boot ROM: 7.12, Software: 7.1.064, ESS 2442.
- Wireless services:** A chart showing the number of clients connected to different SSIDs on 2.4GHz and 5GHz bands.
- Clients:** A large circular gauge showing 'N/A' for the quantity of clients.

A red box highlights the left sidebar menu, which includes options like Actions, Dashboard, Quick Start, Monitoring, Wireless Configuration, Network Security, System, Tools, and Reporting. A red arrow points from the 'Menu' text to this sidebar.

At the bottom of the dashboard, there are two buttons: 'System View' and 'Network View'. A red arrow points from the 'Network View' button to the text 'ビューの切換え [System View | Network View]'. The bottom status bar shows 'Access Points' (1 green, 0 grey, 1 red, 0 blue), 'Clients' (0), and 'Event Logs' (1 green, 0 red, 5 yellow, 8 blue, 12 grey).

GUIのメニュー一覽

• Network view

Actions
Dashboard
Quick Start >
Monitoring >
Wireless Configuration >
Network Security >
System >
Tools >
Reporting >

Dashboard

Quick Start

- Add New AP
- Add New SSID
- Add New User

Monitoring

- Wireless Network
- Clients
- Wireless Security
- Client Proximity Sensor
- Application Monitoring

Wireless Configuration

- Wireless Networks
- AP Management
- Wireless QoS

Wireless Security

- WIPS
- Allowlist and denylist

Radio Management

- 802.11n/802.11ax settings ,transmission distance

Applications

- Mesh, Multicast

Network Security

Packet Filter

Traffic Policy

- Qos Policies, Priority Mapping

Access Control

- 802.1x

Authentication

- RADIUS

User Management

Access Control

- MAC Authentication
- Port Security
- Portal

System

Resource

- ACL, Time Range
- Cloud Platform

Tools

- Debug

Reporting

- Client Statistics
- Wireless Service Statistics

System View

Network View

GUIのメニュー一覽

• System view

Actions	
Dashboard	
Network Configuration	>
Network Security	>
System	>
Tools	>

Dashboard Network Configuration

Network Interfaces

VLAN

Network Routing

Routing table

Static Routing

Network Services

IP services

DHCP/DNS

Multicast

ARP

ND(Neighbor Discovery)

NAT

Network Security

Packet Filter

Traffic Policy

Access Control

802.1x

Authentication

RADIUS

User Management

Local users

System

Event Logs

Resource

ACL

Administrators

Management

Configuration save, import

Upgrade

Reboot

Tools

Debug

System View

Network View

SSID(h3c-support)を作成する

画面左側を設定 ← → 画面右側

1 Quick Start

2 Add Services

3 Wireless service name * h3c-support (1-63 chars)

SSID * h3c-support (1-32 chars)

Description (1-64 chars)

Wireless Service **4** ON OFF **テンプレート**
を有効にする

Default VLAN 1 (default) (1-4094, 1 by default)

Hide SSID **5** Yes No

User Isolation **5** Yes No

Forwarding type **5** Centralized Local } client forwarding-location ac/ap

Authentication Settings

Authentication mode **6** Static PSK

Authenticator **7** AC } client-security authentication-location ac/ap

Security mode WPA WPA2 WPA or WPA2 WPA3-Personal WPA3-Enterprise

Management Frame Protection ON OFF

PSK key * (8-63 alphanumeric chars)

Confirm password

Apply and Configure Advanced Settings Apply

SSID(h3c-support)を作成する

画面左側 ← Authentication settings → 画面右側を設定

① Quick Start

② Add Services

Wireless service name * ③ h3c-support (1-63 chars)

SSID * h3c-support (1-32 chars)

Description (1-64 chars)

Wireless Service ④ ON OFF

Default VLAN 1 (default) (1-4094, 1 by default)

Hide SSID Yes No

User Isolation Yes No

Forwarding type Centralized Local } client forwarding

Apply and Configure Advanced Settings Apply

Authentication mode

Open (no authentication)

⑥ Static PSK

802.1X

802.1X (clear)

Static WEP

MAC Authentication

IPv4 Portal Authentication

IPv6 Portal Authentication

Authenticator

⑦ AC } client-security authentication-location ap

AP

Security mode

WPA WPA2 WPA or WPA2 WPA3-Personal WPA3-Enterprise

Management Frame Protection ON OFF

PSK key *

Passphrase Rawkey

..... (8-63 alphanumeric chars)

..... Confirm password

⑧ Apply and Configure Advanced Settings Apply

FIT APのための設定であるAPのdefault groupを変更する

The screenshot shows the H3C WA6638-JP web interface. The top navigation bar includes the H3C logo, the model number WA6638-JP, and user information (Save, Roadmap, admin). The left sidebar contains navigation options: Actions, Dashboard, Quick Start, Monitoring, Wireless Configuration (highlighted with a red box and circled '1'), Wireless Networks, AP Management (highlighted with a red box and circled '2'), and Wireless QoS. The main content area shows the breadcrumb path: All Networks > Wireless Configuration > AP Management > AP Groups. The 'AP Groups' link is highlighted with a red box and circled '3'. Below the breadcrumb, there are refresh and add (+) icons, a search bar, and a table with columns for Name, Description, and Actions. The table contains one entry: 'default-group'. The 'Actions' column for this entry has a red box and circled '4' around the edit icon.

Actions

All Networks > Wireless Configuration > AP Management > AP Groups

AP AP Groups AP Global Settings

3

4

1 Wireless Configuration

2 AP Management

Name	Description	Actions
default-group		4

FIT APのための設定であるAPのdefault groupに装置を指定する

H3C WA6638-JP

画面左側を設定 ←

Actions All Networks > Wireless Configuration > AP Management > AP Groups > Edit AP Group(default-group)

Dashboard **3** General AC Backup WLAN Service Map Files

Quick Start >

Monitoring >

1 Wireless Configuration

Wireless Networks

2 AP Management

Wireless QoS

Wireless Security >

Radio Management

Applications

Network Security >

System >

Group name * default-group (1-31 chars)

Description (1-64 chars)

Region code **4** JAPAN(JP) x v

LED mode Normal x v

AP model **5** WA6638-JP x v
WA6638-JP x

AP connection priority 4 (0-7, 4 by default)

CAPWAP tunnel keepalive Echo interval 10 seconds (0,5-255, 10 by default)

Apply Cancel

画面右側 →

Request retransmission interval 5 seconds (3-8, 5 by default)

Retransmission attempts 3 (2-5, 3 by default)

Statistics report interval 50 seconds (0-240, 50 by default)

CAPWAP tunnel encryption Enable Disable

NAS-ID (1-63 chars)

Firmware upgrade Enable Disable Inherit (Enabled)

AP model

AP Model	Radio	Enable
WA6638-JP	5GHz(1)	<input checked="" type="checkbox"/>
WA6638-JP	5GHz(2)	<input type="checkbox"/>
WA6638-JP	2.4GHz(3)	<input type="checkbox"/>

FIT APのための設定であるAPのdefault groupで電波を有効にする

H3C WA6638-JP

All Networks > Wireless Configuration > AP Management > AP Groups > Edit AP Group(default-group)

画面左側

General AC Backup WLAN Service

Group name (1-31 chars)

Description (1-64 chars)

Region code x

LED mode x

AP model x

AP connection priority (0-7, 4 by default)

CAPWAP tunnel keepalive seconds (0,5-255, 10 by default)

7

画面右側を設定

Request retransmission Interval seconds (1-8, 5 by default)

Retransmission attempts (2-5, 3 by default)

Statistics report interval seconds (0-240, 50 by default)

CAPWAP tunnel encryption Enable Disable

NAS-ID (1-63 chars)

Firmware upgrade Enable Disable Inherit (Enabled)

AP model

AP Model	Radio	Enable
WA6638-JP	5GHz(1)	6 <input checked="" type="checkbox"/>
WA6638-JP	5GHz(2)	<input type="checkbox"/>
WA6638-JP	2.4GHz(3)	<input type="checkbox"/>

FIT APのための設定であるdefault group にサービス(SSID)を追加する

画面左側を設定 ←————→ 画面右側

The screenshot shows the configuration page for the 'default-group' AP Group. The 'WLAN Service' tab is selected, indicated by a red circle '1'. The 'Add' button is highlighted with a red circle '2'. The 'Add binding' dialog box is open, showing the following fields:

- AP Group Name: default-group
- AP Type: WA6638
- Radio: 5GHz(1)
- Bind WLAN Service: h3c-support (highlighted with a red circle '3')
- Bound VLAN: 1 (highlighted with a red circle '4')
- Buttons: Apply (highlighted with a red circle '5') and Cancel

The screenshot shows the advanced configuration options for the FIT AP. The following settings are visible:

- Request retransmission interval: 5 seconds (3-8, 5 by default)
- Retransmission attempts: 3 (2-5, 3 by default)
- Statistics report interval: 50 seconds (0-240, 50 by default)
- CAPWAP tunnel encryption: Enable Disable
- NAS-ID: (1-63 chars)
- Firmware upgrade: Enable Disable Inherit (Enabled)
- AP model table:

AP Model	Radio	Enable
WA6638-JP	5GHz(1)	<input checked="" type="checkbox"/>
WA6638-JP	5GHz(2)	<input type="checkbox"/>
WA6638-JP	2.4GHz(3)	<input type="checkbox"/>

Anchor-ac自身の電波 (radio 1:5GHz)にサービスを割り当てて有効にします²⁰

The screenshot shows the H3C WA6638-JP management interface. The left sidebar contains a navigation menu with the following items: Actions, Dashboard, Quick Start, Monitoring, **Wireless Configuration** (highlighted with a red box and circled '1'), Wireless Networks, **AP Management** (highlighted with a red box and circled '2'), Wireless QoS, Wireless Security, Radio Management, Applications, Network Security, System, Tools, and Reporting. The main content area is titled 'All Networks > Wireless Configuration > AP Management > AP' and shows 'AP Groups' configuration. A table lists AP Groups with columns: Name, Installation Date, Description, AP Group, Type, Model, Serial ID, MAC Address, Radios, Status, and Actions. One entry is visible: Name '00dd-b6b1-9260', Installation Date '2021-11-13', Description, AP Group 'default-group', Type 'Manual AP (E...', Model 'WA6320-JP', Serial ID '219801A2YF821B...', MAC Address '00-DD-B6-B1-92-60', Radios '802.11ax(5GHz)(1...', Status 'Online', and Actions (highlighted with a red box and circled '3'). The footer shows 'Total 1 entries, 1 matched, 0 selected. Page 1 / 1.' and a status bar with 'Access Points' (1 green, 0 grey, 0 red), 'Clients' (0), and 'Event Logs' (0 red, 4 yellow, 5 blue, 9 grey).

Anchor-ac自身の電波 (radio 1:5GHz)にサービスを割り当てます

The screenshot displays the H3C WA6320-JP web management interface. The breadcrumb navigation path is: All Networks > Wireless Configuration > AP Management > AP > Edit AP (00dd-b6b1-9260). The 'WLAN Service Settings' tab is selected and highlighted with a red box and the number 1. Below this, the 'Bind Wireless Services to Radios' section is visible. A modal window titled 'Add binding' is open, showing the following configuration details:

- AP name: 00dd-b6b1-9260
- Radio: 5GHz(1)
- Bind WLAN Service: h3c-support (highlighted with a red box and the number 2)
- Bound VLAN: VLAN (selected), 1 (highlighted with a red box and the number 3)
- VLAN Group (1-4094)

The 'Apply' button in the modal is also highlighted with a red box and the number 3. The interface includes a sidebar on the left with various navigation options, and a status bar at the bottom right showing system metrics like Access Points, Clients, and Event Logs.

Anchor-ac自身の電波 (radio 1:5GHz)を有効にします

The screenshot shows the H3C WA6638-JP web interface for configuring an AP. The breadcrumb path is: All Networks > Wireless Configuration > AP Management > AP > Edit AP (00dd-b6b1-9260). The interface is divided into several sections:

- Left Sidebar:** Contains navigation menus for Actions, Dashboard, Quick Start, Monitoring, Wireless Configuration (selected), Wireless Networks, AP Management (selected), Wireless QoS, Wireless Security, Radio Management, Applications, Network Security, System, Tools, and Reporting.
- Form Fields:** Includes installation position (province/municipality, city/district/county, street), detail installation position, AP description, and Remarks.
- Configuration Parameters:** Includes Region code (JAPAN(JP)(Inherit)), LED mode (Normal(Inherit)), Map File (Select...), AP connection priority (4(Inherit)), CAPWAP tunnel keepalive (Echo interval: 10(Inherit) seconds), Request retransmission (Interval: 5(Inherit) seconds, Retransmission attempts: 3(Inherit)), Statistics report interval (50(Inherit) seconds), AC Election (OFF), CAPWAP tunnel encryption (Inherit (Disabled)), and Firmware upgrade (ON).
- Radio Configuration:** A table at the bottom of the configuration area shows the status of two radios:

5GHz(1) radio	<input checked="" type="radio"/> ON
2.4GHz(2) radio	<input type="radio"/> ON
- Buttons:** An 'Apply' button is highlighted with a red box and a circled '3'.
- Annotations:** A red arrow labeled '1' points to the bottom of the configuration area, with the text '画面の最下までスクロールダウン' (Scroll down to the bottom of the screen). A circled '2' is placed near the radio configuration table.

System View | Network View | Access Points: 1 0 1 0 | Clients: 0 | Event Logs: 1 0 4 5 1 11

Auto AP(自動的にFIT APを見つけて登録する)を有効にする

The screenshot displays the 'AP Global Settings' page. The left sidebar contains a navigation menu with the following items: Actions, Dashboard, Quick Start, Monitoring, **Wireless Configuration** (highlighted with a red box and circled '1'), Wireless Networks, **AP Management** (highlighted with a red box and circled '2'), Wireless QoS, Wireless Security, Radio Management, and Applications. The main content area shows the breadcrumb 'All Networks > Wireless Configuration > AP Management > AP Global Settings' and tabs for 'AP', 'AP Group', and 'AP Global Settings' (highlighted with a red box and circled '3'). The 'Basic Settings' section includes:

- Region code: JAPAN(JP)
- Region code lock: OFF
- Software upgrade: ON
- Auto AP**: ON (highlighted with a red box and circled '4'). Description: ※ONにすると同一セグメントのFIT APを自動的に登録する
- Auto AP conversion: ON. Description: ※ONにすると自動的に登録された情報を保存する
- Persistent AC Role: ON. Description: ※ONにすると障害後、復帰するとAnchor-acとして機能する(OFFにするとFIT APとなる)

最後に今まで設定したコンフィグを保存(save)してログアウト

admin > Save そして Logout

The screenshot displays the H3C WA6638-JP web management interface. The user is logged in as 'admin'. The interface shows various system status indicators and charts. A dropdown menu is open, highlighting the 'Save' and 'Logout' options.

System Status Indicators:

- Emergency: 0
- Critical: 5
- Warning: 8

System Logs:

System usage:

- CPU: 0%
- Memory: 68%

System Information:

- Serial ID: 219801A2KF8209E00068
- Hardware: Ver.A
- Boot ROM: 7.12
- Software: 7.1.064, ESS 2442

Wireless services:

Clients: Quantity 0

User Menu:

- admin
- Save
- Logout
- Change Password
- Roadmap
- Scan and Look Me

Footer:

192.168.0.50/wnm/frame/index.php?sessionid=20000146350de2b50aaec29e5d8e4c3eae86#

System View Network View

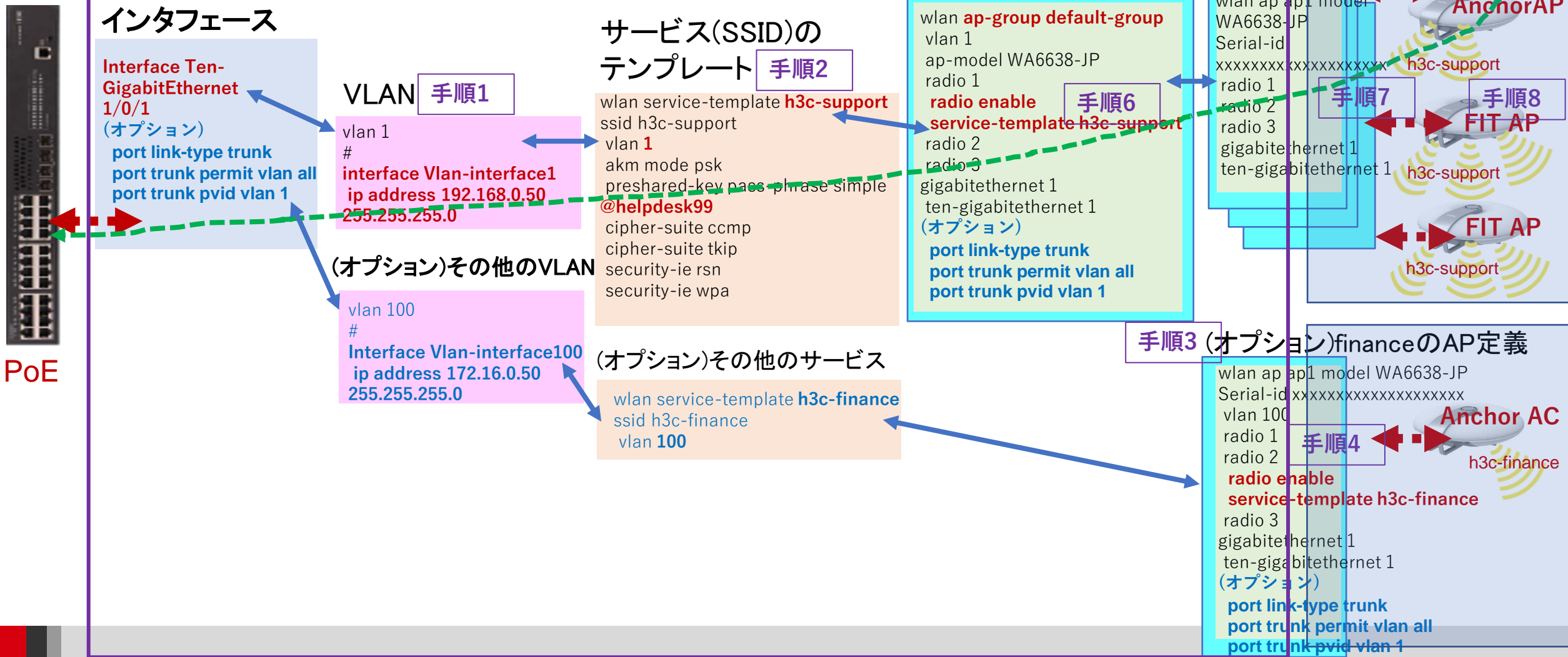
Access Points: 1 (green), 0 (grey), 0 (red)

Clients: 0

Event Logs: 1 (info), 0 (warning), 5 (critical), 8 (warning), 12 (info)

Anchor-ACの設定の構成要素

Anchor-ACの設定を図解



ここまでで完成したコンフィグをCLIでは以下の通り

```

#
sysname H3C
#
wlan global-configuration
region-code JP
#
telnet server enable
#
port-security enable
#
lldp global enable
lldp hold-multiplier 8
#
password-recovery enable
#
vlan 1
#
wlan service-template h3c-support
ssid h3c-support
akm mode psk
preshared-key pass-phrase cipher
$c$3$zs+U2ZKGrV+AOA/7O+oDgf
tZKtAUOCZUYQkw7Ew=
cipher-suite ccmp
cipher-suite tkip
security-ie rsn
security-ie wpa
service-template enable
#
interface NULL0
#
interface Vlan-interface1
ip address 192.168.0.50 255.255.255.0
#
interface GigabitEthernet1/0/1
interface Ten-GigabitEthernet1/0/1
(オプション)
port link-type trunk
port trunk permit vlan all
port trunk pvid vlan 1
#
interface WLAN-Radio1/0/1
#
interface WLAN-Radio1/0/2
#
interface WLAN-Radio1/0/3
#
scheduler logfile size 16
#
line class console
user-role network-admin
#
line class vty
user-role network-operator
#
line con 0
user-role network-admin
#
line vty 0 31
authentication-mode scheme
user-role network-operator
line vty 32 63
user-role network-operator
domain system
#
domain default enable system
#
role name level-0
description Predefined level-0 role
#
途中省略 level-2～ level-13
#
role name level-14
description Predefined level-14 role
#
user-group system
#
local-user admin class manage
password hash
$h$h$6$ZnoxQVIKKyL8o4IT$ service-
type telnet http https
authorization-attribute user-role
network-admin
#
ip http enable
ip https enable
#
undo attack-defense tcp fragment
enable
#
wlan auto-ap enable
wlan auto-persistent enable
wlan anchor-ap persistent-mode ac
#
wlan ap-group default-group
region-code JP
vlan 1
ap-model WA6638-JP
radio 1
radio enable
service-template h3c-support vlan 1
radio 2
radio 3
gigabitethernet 1
ten-gigabitethernet 1
(オプション)
port link-type trunk
port trunk permit vlan all
port trunk pvid vlan 1
#
wlan ap f010-903e-f7e0 model WA663-JP
serial-id 219801A24F8201E0000J
mac-address f010-903e-f7e0
vlan 100
anchor-ap enable #デフォルトはdisableだが
# enableにすると障害復旧後master選挙に参加
radio 1
radio 2
radio enable
service-template h3c-finance
radio 3
gigabitethernet 1
ten-gigabitethernet 1
(オプション)
port link-type trunk
port trunk permit vlan all
port trunk pvid vlan 1
#
その他のFIT APの定義
.....
return

```

Anchor-acのバックアップとなるAPをVLAN1のネットワークへ接続

工場出荷状態のAPをネットワークへ接続する

- ① FIT APをAnchor-acと同じセグメントのネットワークに接続します。
- ② **FIT APにコンソールでAnchor-acと同じセグメントのIPアドレスを割り当てます。**

```
<H3C>system-view
```

```
System View: return to User View with Ctrl+Z.
```

```
[H3C]interface vlan 1
```

```
[H3C-Vlan-interface1]ip address 192.168.0.10 24
```

```
[H3C-Vlan-interface1]quit
```

```
[H3C]save force
```

```
Validating file. Please wait...
```

```
Configuration is saved to device successfully.
```

- ③ APがCAPWAPをブロードキャストして**Anchor-acとつながる**
- ④多くの場合、APのファームウェアがAnchor-acより古い（工場出荷時のバージョン）ので、**Anchor-acがバージョンを検知して自動的にAnchor-acの持っている最新バージョンをAPにダウンロードしてリブートさせます。**
- ⑤Anchor-acよりSSID, VLAN, 電波を出す設定などの設定がAPにダウンロードされる。
- ⑥FIT APが電波を出してクライアントと接続できます。



01 アクセスポイントをAnchor-acに設定する

02 Anchor-acの定義をする

03 FITをバックアップ用のAnchor-acに設定

FITの1台をAnchor-acのバックアップに設定する

バックアップにするAPのActionで編集記号をクリック

The screenshot shows the H3C WA6320-JP management interface. The sidebar on the left has 'Wireless Configuration' (1) and 'AP Management' (2) highlighted. The main content area shows 'AP Groups' with a table of APs. The table has columns: Name, Description, AP Group, Type, Model, Serial ID, MAC Address, Radios, Status, and Actions. Two APs are listed: 'Manual AP' and 'Manual AP (Embedded AP)'. A red arrow labeled '現在のマスター' (Current Master) points to the 'Manual AP (Embedded AP)' entry. Another red arrow labeled '3' points to the edit icon in the 'Actions' column of the 'Manual AP (Embedded AP)' row. The bottom status bar shows 'System View' and 'Network View' (highlighted), along with statistics for Access Points (2 online, 0 offline, 1 error, 0 warning), Clients (0), and Event Logs (0 error, 4 warning, 18 info, 87 total).

Name	Description	AP Group	Type	Model	Serial ID	MAC Address	Radios	Status	Actions
00dd-b6b1-7ca...		default-group	Manual AP	WA6320-JP	219801A2YF821...	00-DD-B6-B1-7C-A0	2,802.11ax(5GHz...	Online	[Edit] [Delete]
00dd-b6b1-8f4...		default-group	Manual AP (Embedded AP)	WA6320-JP	219801A2YF821...	00-DD-B6-B1-8F-40	2,802.11ax(5GHz...	Offline	[Edit] [Delete]

FITの1台をAnchor-acのバックアップに設定する

AC ElectionをONにします

※③のSaveを忘れるとrebootすると設定が保存されておりませんので注意してください
 この操作を行うとbackup-acに設定が同期され、マスターに障害が発生した際に同じ設定で起動します

① AC Election ON OFF
 CAPWAP tunnel encryption Enable Disable Inherit (Disabled)
 Firmware upgrade Enable Disable Inherit (Enabled)
 5GHz(1) radio ON OFF Inherit(Enabled)
 2.4GHz(2) radio ON OFF Inherit(Enabled)

② Apply

③ Save Roadmap | admin

System View

Access Points: 2 (green), 0 (grey), 0 (red) | Clients: 0 | Event Logs: 0 (red), 4 (yellow), 18 (blue), 87 (blue)

Anchor-acの障害時の新たなAnchor-acへの切換え動作

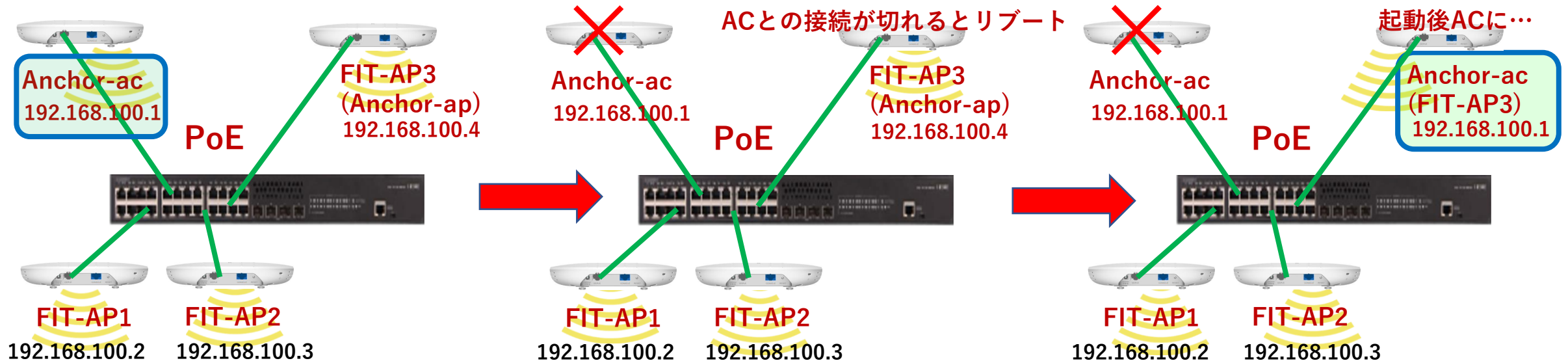
Anchor-ac障害発生時の挙動

1. Anchor-acに障害が発生 -> FIT-AP3がAnchor-acとのCAPWAPトンネルのダウンを検知
2. FIT-AP3がリブート -> Anchor-acモードに切り替わって起動

注) Anchor-acの障害発生からあらたなAnchor-acが機能するまで約3分30秒程度
その間、クライアントの通信は継続しますが、新たな接続はできません。

※Anchor-ap

(Anchor-acのバックアップに設定されているFIT-APをAnchor-apという)



障害時のAnchor-apからAnchor-acへの切り替わり時間

Anchor-acに障害発生

```
%Aug 25 13:23:07:839 2021 office CWC/4/CWC_AP_DOWN: Master CAPWAP tunnel to AC 192.168.1.1 went down. Reason: Neighbor dead timer expired.
```

```
%Aug 25 13:23:07:876 2021 office STAMGR/6/SERVICE_OFF: BSS f010-903e-f7e0 was deleted after service template officeuse with SSID h3cofficeuser was unbound from radio 1 on AP FitAP. Reason: AP down.
```

```
%Aug 25 13:23:07:876 2021 office STAMGR/6/SERVICE_OFF: BSS f010-903e-f7f0 was deleted after service template officeuse with SSID h3cofficeuser was unbound from radio 2 on AP FitAP. Reason: AP down.
```

```
%Aug 25 13:23:07:877 2021 office STAMGR/6/SERVICE_OFF: BSS f010-903e-f800 was deleted after service template officeuse with SSID h3cofficeuser was unbound from radio 3 on AP FitAP. Reason: AP down.
```

Anchor-apがAnchor-acになるためにリブート開始

```
%Aug 25 13:26:21:346 2021 office APMGR/6/APMGR_LOG_SETROLE_SUCCESS: [Anchor Fit] Reboot to AC, Reason: Have Not Recv Query Resp.
```

```
%Aug 25 13:26:21:488 2021 office APMGR/6/APMGR_LOG_REBOOTCAUSE: Set Wlan Reboot Cause, SubSlot = 65535, DevRebootCause = 0, WlanRebootCause = 24, ulRet = 0.
```

```
%Aug 25 13:26:21:604 2021 office DEV/5/BOARD_REBOOT: Board is rebooting on.
```

新たなAnchor-acが動作開始(約3分30秒後)

```
%Aug 25 13:26:39:991 2021 H3C SHELL/5/SHELL_LOGIN: Console logged in from con0.  
<office>
```




補足資料
(オプション)物理ポートを
trunkポートに設定する

物理インタフェースにport trunk設定を追加するには以下の手順を行う

The screenshot displays the H3C WA6638-JP web management interface. The left sidebar contains a navigation menu with the following items: Actions, Dashboard, Network Configuration (highlighted with a red box and circled '2'), Network Interfaces (highlighted with a red box and circled '3'), VLAN, Network Routing, Network Services, Management Protocols, Network Security, System, and Tools. The main content area shows the 'Interfaces' configuration page. At the top of this page, there are tabs for 'Interfaces' and 'Link Aggregation'. Below the tabs is a search bar with a dropdown menu set to 'Ethernet' (highlighted with a red box and circled '4') and a search button. A table lists the interfaces:

Interface	Status	IP Address	Speed(Kbps)	Duplex	Description	Actions
<input type="checkbox"/> GE1/0/1	Down	--	0	Auto	GigabitEthernet1/0/1 Interface	<input type="checkbox"/>
<input type="checkbox"/> XGE1/0/1	Up	--	1000000	Full	Ten-GigabitEthernet1/0/1 Interface	<input checked="" type="checkbox"/> (highlighted with a red box and circled '5')

At the bottom of the interface, there is a status bar with a 'System View' button (highlighted with a red box and circled '1') and a 'Network View' button. The status bar also displays statistics for Access Points (1 green, 0 grey, 0 red), Clients (0), and Event Logs (0 red, 5 grey, 4 yellow, 10 blue).

物理インタフェースにport trunk設定を追加するには以下の手順を行う

The screenshot shows the H3C WA6638-JP web interface for configuring the interface **Ten-GigabitEthernet1/0/1 (XGE1/0/1)**. The interface status is **up**. The configuration details are as follows:

- Link type:** Trunk (highlighted with a red box and circled number 1)
- PVID:** 1 (highlighted with a red box and circled number 2)
- Permit VLAN List:** 1-4094 (highlighted with a red box and circled number 3)

Other configuration options visible include Description, MAC address, Link speed (Auto), Duplex (Full), Bandwidth (Auto), and Link mode (Bridge selected).

※この設定で以下の設定が追加されます
interface Ten-GigabitEthernet1/0/1
port link-type trunk
port trunk permit vlan all
port trunk pvid vlan 1

物理インタフェースにport trunk設定を追加するには以下の手順を行う

The screenshot shows the H3C WA6638-JP web interface for configuring a network interface. The breadcrumb trail is: System > Network Configuration > Network Interfaces > Interfaces > Edit Interface. The left sidebar contains navigation menus: Actions, Dashboard, Network Configuration (expanded), Network Interfaces (selected), VLAN, Network Routing, Network Services, Management Protocols, Network Security, System, and Tools. The main configuration area includes: Duplex (Auto), Bandwidth (Auto), Link mode (Bridge selected), Jumbo frame (1600 selected), BPDU interception (disabled), Flow control (Disable), and Traffic suppression (Broadcast, Multicast, and Unknown unicast, all set to ratio 100). At the bottom left, the 'Apply' button is circled with a red '2'. At the bottom right, a red arrow points down from the top right to a circled '1'.

画面の最下までスクロールダウン

1

2

Apply Cancel

System View Network View

Access Points 1 0 0 0 Clients 0 Event Logs 1 0 5 4 10




補足資料
(オプション) default groupのポート/AP定義のポートをtrunkポートに設定する

Ap-groupのdefault-groupにport trunk設定を追加するにはCLIで設定 他のAPのport trunk設定も同様


GUIで生成できるのは
ここまで

CLIで設定したい項目

CLIでTen-Gigabitethernet 1をtagポートに設定する手順



 wlan ap-group default-group
 vlan 1
 ap-model WA6320-JP
 radio 1
 radio enable
 service-template guest
 radio 2
 radio enable
 service-template guest
 gigabitethernet 1
 Ten-gigabitethernet 1
 #



 [H3C] display current-configuration

 wlan ap-group default-group
 vlan 1
 ap-model WA6320-JP
 radio 1
 radio enable
 service-template guest
 radio 2
 radio enable
 service-template guest
 gigabitethernet 1
 Ten-gigabitethernet 1
 port link-type trunk
 port trunk permit vlan all
 port trunk pvid vlan 1

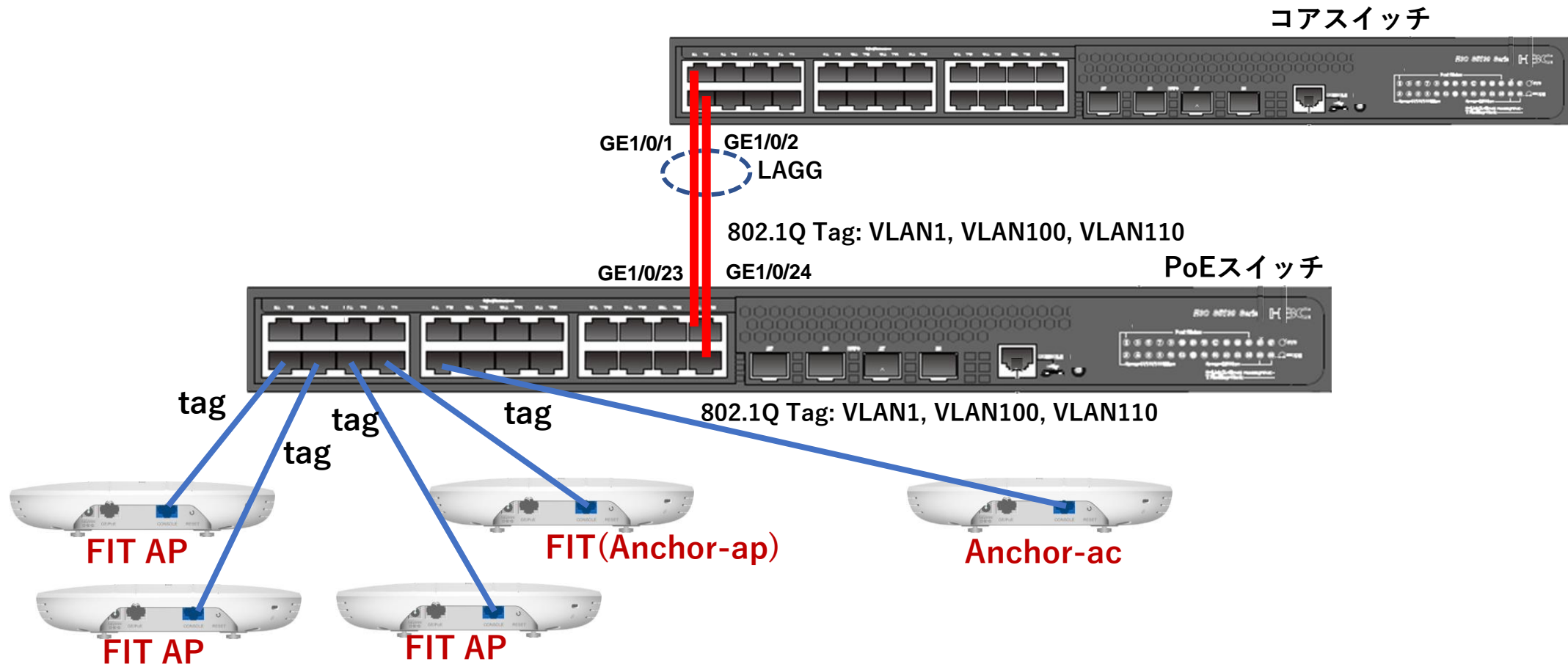
 [H3C]

[H3C]**wlan ap-group default-group**
 [H3C-wlan-ap-group-default-group]**ap-model WA6320-JP**
 [H3C-wlan-ap-group-default-group-ap-model-WA6320-JP]**Ten-gigabitethernet 1**
 [H3C-wlan-ap-group-default-group-ap-model-WA6320-JP-Ten-Gigabitethernet-1]**port link-type trunk**
 For the configuration to take effect, specify a PVID for the port and configure the port to allow traffic from the PVID.
 [H3C-wlan-ap-group-default-group-ap-model-WA6320-JP-Ten-Gigabitethernet-1]**port trunk permit vlan all**
 [H3C-wlan-ap-group-default-group-ap-model-WA6320-JP-Ten-Gigabitethernet-1]**port trunk pvid vlan 1**
 [H3C-wlan-ap-group-default-group-ap-model-WA6320-JP-Ten-Gigabitethernet-1]quit
 [H3C-wlan-ap-group-default-group-ap-model-WA6320-JP]**quit**
 [H3C-wlan-ap-group-default-group]**quit**
 [H3C]



補足資料
PoEスイッチのポートを
trunk設定し、PoEとコア
スイッチ間をLAGGにする

PoEスイッチの設定



PoEスイッチの設定

```

<H3C>system-view
System View: return to User View with Ctrl+Z.
[H3C]vlan 100
[H3C-vlan100]port GigabitEthernet 1/0/1 to GigabitEthernet 1/0/8
GigabitEthernet 1/0/23 GigabitEthernet 1/0/24
[H3C-vlan100]quit
[H3C]vlan 110
[H3C-vlan110]port GigabitEthernet 1/0/1 to GigabitEthernet 1/0/8
GigabitEthernet 1/0/23 GigabitEthernet 1/0/24
[H3C-vlan110]quit
[H3C]interface GigabitEthernet 1/0/1
[H3C-GigabitEthernet1/0/1]port link-type trunk
[H3C-GigabitEthernet1/0/1]port trunk permit vlan all
[H3C-GigabitEthernet1/0/1]quit
[H3C]interface GigabitEthernet 1/0/2
[H3C-GigabitEthernet1/0/2]port link-type trunk
[H3C-GigabitEthernet1/0/2]port trunk permit vlan all
[H3C-GigabitEthernet1/0/2]quit
[H3C]interface GigabitEthernet 1/0/3
[H3C-GigabitEthernet1/0/3]port link-type trunk
[H3C-GigabitEthernet1/0/3]port trunk permit vlan all
[H3C-GigabitEthernet1/0/3]quit
....
ポート4から8と23, 24まで同様
....

```

```

[H3C]display vlan 100
VLAN ID: 100
VLAN type: Static
Route interface: Not configured
Description: VLAN 0100
Name: VLAN 0100
Tagged ports:
    GigabitEthernet1/0/1      GigabitEthernet1/0/2
    GigabitEthernet1/0/3      GigabitEthernet1/0/4
    GigabitEthernet1/0/5      GigabitEthernet1/0/6
    GigabitEthernet1/0/7      GigabitEthernet1/0/8
    GigabitEthernet1/0/23     GigabitEthernet1/0/24
Untagged ports: None
[H3C]interface Bridge-Aggregation 1
[H3C-Bridge-Aggregation1]quit
[H3C]interface GigabitEthernet 1/0/23
[H3C-GigabitEthernet1/0/23]port link-aggregation group 1
[H3C-GigabitEthernet1/0/23]quit
[H3C]interface GigabitEthernet 1/0/24
[H3C-GigabitEthernet1/0/24]port link-aggregation group 1
[H3C-GigabitEthernet1/0/24]quit
[H3C]save force
Validating file. Please wait...
Saved the current configuration to mainboard device successfully.
[H3C]

```

H3C

www.h3c.com