H3C 無線製品トレーニング トラブルシュート演習ガイド v1.0

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実習内容と目標

この実習を修了すると、以下のことが可能になります。

- HCL シュミレータの操作に慣れる
- 起動した装置へのコマンドの投入
- 無線のトラブルシュート



図1 完成実習ネットワーク

SSID	Password	VLAN	Hidden	Radio
h3c-support	@helpdesk99	100	yes	radio1 5GHz
h3c-sales	@bigsale	100	yes	Radio2 5GHz
h3c-lobby	thankyou	110	no	Raido3 2.4GHz

図 2 設定してある SSID 一覧



図3 誤った実習ネットワーク(HCL で作図)

なお、設定に関する詳しい説明は以下のリンクから「H3C_WLAN 製品 AC ハンズオントレーニ ング(GUI 編)v2.0」をダウンロードして確認してみてください。

https://knowledge-jp.h3c.com/TechDoc/details/203

現状

● ルーター、無線コントローラ、PoE スイッチ、FIT AP、WiFi 端末は、上の図 2 のように 配線します。

実習装置

本実験に必要な主な設 備機材 実験装置名前とモデル 番号	バージョン	数量	特記事項
MSRルーター	Version 7.1.064, Release 0427P22	1	なし
PoEスイッチ	Version 7.1.075, Alpha 7571	1	なし
無線コントローラ	Version 7.1.064, Alpha 7165	1	なし
FIT AP WA6320-HCL	Version 7.1.064, Alpha 7165	2	なし
WiFi端末		1	なし
ホスト		1	なし
ネットワークケーブル の接続		5	なし

実習手順

手順1:各装置を図のように配置します

HCLはお絵描きツールのように配置は自由にレイアウトできますので、トポロジーがわかり やすいように配置してください。

手順2:各装置を図のように配線します



手順3:それぞれの装置を起動します

HOST は常に起動している状態なので、起動も停止も行えません。

手順4:それぞれの装置の CLI を起動してそれぞれの装置に課題のコンフィグを流し込みます

装置を起動したら CLI にアクセスします。

次にそれぞれの装置のコンフィグを初期化します。

<SWA>reset saved-configuration

The saved configuration file will be erased. Are you sure? [Y/N]:y

Configuration file in flash: is being cleared.

Please wait ...

Configuration file is cleared.

<SWA>reboot

Start to check configuration with next startup configuration file, please wait......DONE!

Current configuration may be lost after the reboot, save current configuration? [Y/N]:y Please input the file name(*.cfg)[flash:/startup.cfg] (To leave the existing filename unchanged, press the enter key):y

```
以下のコンフィグをコピーして MSR ルーターへ貼り付けます
```

.....

```
#
 version 7.1.064, Release 0427P22
#
 sysname MSR36
#
 telnet server enable
#
 system-working-mode standard
 xbar load-single
 password-recovery enable
 lpu-type f-series
#
vlan 1
#
interface Serial1/0
#
interface Serial2/0
#
interface Serial3/0
#
interface Serial4/0
#
interface NULL0
#
interface GigabitEthernet0/0
 port link-mode route
 combo enable copper
 ip address 192.168.56.20 255.255.255.0
#
interface GigabitEthernet0/1
 port link-mode route
```

combo enable copper # interface GigabitEthernet0/2 port link-mode route combo enable copper

#

interface GigabitEthernet5/0 port link-mode route combo enable copper

#

interface GigabitEthernet5/1 port link-mode route combo enable copper

#

interface GigabitEthernet6/0 port link-mode route combo enable copper

#

interface GigabitEthernet6/1 port link-mode route combo enable copper #

scheduler logfile size 16

line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty

user-role network-operator

#

line aux 0 user-role network-operator # line con 0 user-role network-admin # line vty 0 63 authentication-mode scheme user-role network-operator # domain system # domain default enable system # role name level-0 description Predefined level-0 role # role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4 description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7

```
description Predefined level-7 role
#
role name level-8
description Predefined level-8 role
#
role name level-9
description Predefined level-9 role
#
role name level-10
description Predefined level-10 role
#
role name level-11
description Predefined level-11 role
#
role name level-12
description Predefined level-12 role
#
role name level-13
description Predefined level-13 role
#
role name level-14
description Predefined level-14 role
#
user-group system
#
local-user admin class manage
                                                                                 hash
password
$h$6$h7h81/KXwCRCcgNM$TaMXtmtDGRSvjOyxCfLeouU2//wdU5uBAsFTvLFISZJug+
n3GBTdrzuDCGUjmv2F8om0PnD0Bh2fJaf1t8LI+w==
service-type telnet
authorization-attribute user-role network-admin
authorization-attribute user-role network-operator
#
```

```
return
```

以下のコンフィグをコピーして無線コントローラへ貼り付けます

```
version 7.1.064, Alpha 7165
```

#

#

sysname WX5540H

#

wlan global-configuration region-code JP region-code-lock enable

#

telnet server enable

#

irf mac-address persistent timer irf auto-update enable undo irf link-delay irf member 1 priority 1

#

xbar load-single password-recovery enable lpu-type f-series # vlan 1 # vlan 100 # vlan 110 # dhcp server ip-pool "for ap management" gateway-list 192.168.56.254 network 192.168.56.0 mask 255.255.255.0 address range 192.168.56.51 192.168.56.100 dns-list 8.8.8.8 # dhcp server ip-pool "for vlan100"

gateway-list 192.168.100.254

network 192.168.100.0 mask 255.255.255.0

address range 192.168.100.51 192.168.100.100 dns-list 8.8.8.8 # dhcp server ip-pool "for vlan110" gateway-list 192.168.110.254 network 192.168.110.0 mask 255.255.255.0 address range 192.168.110.51 192.168.110.100 dns-list 8.8.8.8 # wlan service-template h3c-hcl ssid h3c-hcl # wlan service-template h3c-lobby ssid h3c-lobby vlan 110 client forwarding-location ap user-isolation enable akm mode psk preshared-key pass-phrase cipher \$c\$3\$FYnBqv8eHOwvCnMvMOoYswW4u0ZYz4KjUPjj0oc= cipher-suite ccmp cipher-suite tkip security-ie rsn security-ie wpa service-template enable # wlan service-template h3c-sales ssid h3c-sales vlan 100 beacon ssid-hide client forwarding-location ap user-isolation enable akm mode psk preshared-key pass-phrase cipher \$c\$3\$2UhOVibyIWPyzpPasuyzh+b4qPdIfzntG9QN/uU= cipher-suite ccmp

cipher-suite tkip security-ie rsn security-ie wpa service-template enable # wlan service-template h3c-support ssid h3c-support vlan 100 beacon ssid-hide client forwarding-location ap user-isolation enable akm mode psk preshared-key pass-phrase cipher \$c\$3\$au2v+x8y/fNWGF1gtPvXraB6XFtDRUizvJUnEME= cipher-suite ccmp cipher-suite tkip security-ie rsn security-ie wpa service-template enable # interface Bridge-Aggregation1 port link-type trunk port trunk permit vlan 1 100 110 link-aggregation load-sharing mode destination-ip # interface NULL0 # interface Vlan-interface1 ip address 192.168.56.254 255.255.255.0 # interface Vlan-interface100 ip address 192.168.100.254 255.255.255.0 # interface Vlan-interface110 ip address 192.168.110.254 255.255.255.0 #

interface GigabitEthernet1/0/0 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/1 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber port link-aggregation group 1 # interface GigabitEthernet1/0/2 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber port link-aggregation group 1 # interface GigabitEthernet1/0/3 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/4 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/5 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/6 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/7 port link-mode bridge

combo enable fiber

#

interface GigabitEthernet1/0/8 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/9 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/10 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/11 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/12 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/13 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/14 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/15 port link-mode bridge combo enable fiber #

interface GigabitEthernet1/0/16 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/17 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/18 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/19 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/20 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/21 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/22 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/23 port link-mode bridge combo enable fiber

#

interface Ten-GigabitEthernet1/0/24
 port link-mode bridge
 combo enable fiber
#
interface Ten-GigabitEthernet1/0/25

port link-mode bridge

combo enable fiber # interface Ten-GigabitEthernet1/0/26 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/27 port link-mode bridge combo enable fiber # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty authentication-mode scheme user-role network-operator # line aux 0 user-role network-operator # line con 0 user-role network-admin # line vty 0 31 authentication-mode scheme user-role network-operator # domain system

domain default enable system # role name level-0 description Predefined level-0 role # role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4 description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7 description Predefined level-7 role # role name level-8 description Predefined level-8 role # role name level-9 description Predefined level-9 role # role name level-10 description Predefined level-10 role

role name level-11 description Predefined level-11 role # role name level-12 description Predefined level-12 role # role name level-13 description Predefined level-13 role # role name level-14 description Predefined level-14 role # user-group system # local-user admin class manage password hash \$h\$6\$Vxq7dMRF1nV67+WG\$Eaq1Yq0krdH7s3UV84YSZk2tswZr0IJjzR80C88z/XnrWju Z6kl37M9AQHfszySuZmIEUvsGbUmFMTkLal8HFg== service-type telnet http https authorization-attribute user-role network-admin authorization-attribute user-role network-operator # ip http enable ip https enable # wlan ap-group default-group region-code JP vlan 1 ap-model WA6638-JP radio 1 radio enable service-template h3c-sales vlan 100 radio 2 radio enable service-template h3c-support vlan 110 radio 3

radio enable service-template h3c-lobby vlan 110 gigabitethernet 1 ten-gigabitethernet 1 port link-type trunk port trunk permit vlan all port trunk pvid vlan 1 # wlan virtual-ap-group default-virtualapgroup # wlan ap ROOM-101 model WA6638-JP serial-id 219801A2KF8209E0007R region-code JP vlan 1 radio 1 service-template h3c-lobby vlan 1 radio 2 radio 3 radio enable gigabitethernet 1 ten-gigabitethernet 1 # wlan ap ROOM-102 model WA6320-HCL serial-id H3C_66-EA-50-9B-04-00 vlan 1 radio 1 service-template h3c-hcl radio 2 gigabitethernet 1 port link-type trunk port trunk permit vlan all port trunk pvid vlan 1 #

```
wlan ap ROOM-201 model WA6320-HCL
serial-id H3C_8C-CE-8A-5A-06-00
vlan 1
```

radio 1 radio enable radio 2 gigabitethernet 1 port link-type trunk port trunk permit vlan all port trunk pvid vlan 1

```
return
```

以下のコンフィグをコピーして PoE スイッチへ貼り付けます

version 7.1.075, Alpha 7571 # sysname POE # telnet server enable # irf mac-address persistent timer irf auto-update enable undo irf link-delay irf member 1 priority 1 # lldp global enable # system-working-mode standard xbar load-single password-recovery enable Ipu-type f-series # vlan 1 # vlan 100 # vlan 110

interface Bridge-Aggregation1 port link-type trunk port trunk permit vlan 1 100 110 link-aggregation mode dynamic # interface NULL0 # interface Vlan-interface1 ip address 192.168.56.2 255.255.255.0 # interface FortyGigE1/0/53 port link-mode bridge # interface FortyGigE1/0/54 port link-mode bridge # interface GigabitEthernet1/0/1 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/2 port link-mode bridge port link-type trunk port trunk permit vlan all combo enable fiber # interface GigabitEthernet1/0/3 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/4 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/5 port link-mode bridge

combo enable fiber # interface GigabitEthernet1/0/6 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/7 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/8 port link-mode bridge port link-type trunk port trunk permit vlan all combo enable fiber # interface GigabitEthernet1/0/9 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/10 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/11 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/12 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/13

#

port link-mode bridge combo enable fiber

interface GigabitEthernet1/0/14 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/15 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/16 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/17 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/18 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/19 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/20 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/21 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/22 port link-mode bridge combo enable fiber

```
#
```

interface GigabitEthernet1/0/23 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber port link-aggregation group 1 # interface GigabitEthernet1/0/24 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber # interface GigabitEthernet1/0/25 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/26 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/27 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/28 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/29 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/30 port link-mode bridge

combo enable fiber

interface GigabitEthernet1/0/31 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/32 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/33 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/34 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/35 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/36 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/37 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/38 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/39 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/40 port link-mode bridge combo enable fiber

#

#

interface GigabitEthernet1/0/41 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/42 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/43 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/44 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/45 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/46 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/47 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/48 port link-mode bridge combo enable fiber # interface M-GigabitEthernet0/0/0 # interface Ten-GigabitEthernet1/0/49 port link-mode bridge combo enable fiber # port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/51 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/52 port link-mode bridge combo enable fiber # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty user-role network-operator # line aux 0 user-role network-operator

interface Ten-GigabitEthernet1/0/50

#

line con 0 user-role network-admin # line vty 0 63 authentication-mode scheme user-role network-operator # radius scheme system user-name-format without-domain # domain name system # domain default enable system # role name level-0 description Predefined level-0 role # role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4 description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7

```
description Predefined level-7 role
#
role name level-8
description Predefined level-8 role
#
role name level-9
description Predefined level-9 role
#
role name level-10
description Predefined level-10 role
#
role name level-11
description Predefined level-11 role
#
role name level-12
description Predefined level-12 role
#
role name level-13
description Predefined level-13 role
#
role name level-14
description Predefined level-14 role
#
user-group system
#
local-user admin class manage
                                                                                  hash
password
$h$6$sKh9znnSNsxLZynH$ZBwdDPMGh0MT0ZmXl5J82rAWkVe4NjaFHdd/ks6yoluoH
YSCLDZ338fD3CI/4fOC11KR8t9l2ulYrRGR00/cow==
service-type telnet http https
authorization-attribute user-role network-admin
authorization-attribute user-role network-operator
#
ip http enable
ip https enable
```

```
#
```

return

以下のコンフィグをコピーして ROOM-102 の AP へ貼り付けます

version 7.1.064, Alpha 7165 # sysname ROOM-102 # telnet server enable # system-working-mode standard xbar load-single password-recovery enable lpu-type f-series # vlan 1 # interface NULL0 # interface Vlan-interface1 ip address dhcp-alloc ipv6 address auto ipv6 address dhcp-alloc # interface GigabitEthernet0/0/0 port link-mode bridge combo enable fiber # interface GigabitEthernet0/0/1 port link-mode bridge combo enable fiber # interface WLAN-Radio0/0/2 # interface WLAN-Radio0/0/3

```
scheduler logfile size 16
```

#

line class aux

user-role network-operator

#

line class console

user-role network-admin

#

line class tty

user-role network-operator

#

line class vty

user-role network-operator

#

line aux 0

user-role network-operator

#

line con 0

user-role network-admin

#

line vty 0 4

user-role network-admin

user-role network-operator

set authentication password hash

\$h\$6\$7UpPAzew7VURnsBg\$KHP8kBjwRI/IQe4PN8JqgbljRaW5E3bJxi4N9RLg6qfSota

```
W12QnTmDuiRnmodYg7Bn7itJbmZBAJbHROdw6aw==
```

#

line vty 5 63

user-role network-operator

#

domain system

#

domain default enable system

#

role name level-0

description Predefined level-0 role

role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4 description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7 description Predefined level-7 role # role name level-8 description Predefined level-8 role # role name level-9 description Predefined level-9 role # role name level-10 description Predefined level-10 role # role name level-11 description Predefined level-11 role # role name level-12 description Predefined level-12 role

```
#
role name level-13
description Predefined level-13 role
#
```

role name level-14

description Predefined level-14 role

#

user-group system

#

return

以下のコンフィグをコピーして-201の AP へ貼り付けます

version 7.1.064, Alpha 7165 # sysname ROOM-201 # telnet server enable # system-working-mode standard xbar load-single password-recovery enable lpu-type f-series # vlan 1 # interface NULL0 # interface Vlan-interface1 ip address dhcp-alloc ipv6 address auto ipv6 address dhcp-alloc # interface GigabitEthernet0/0/0 port link-mode bridge combo enable fiber

interface GigabitEthernet0/0/1 port link-mode bridge combo enable fiber # interface WLAN-Radio0/0/2 # interface WLAN-Radio0/0/3 # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty user-role network-operator # line aux 0 user-role network-operator # line con 0 user-role network-admin # line vty 0 4 user-role network-admin user-role network-operator set authentication password hash

\$h\$6\$NkRcYeqrsxiKVqLm\$QctQUu2Rdi7OYqZOqJDo9BloQjhaonX10kbsz+P0yeqn5qg
yJpEFdgCs/rBoLJW0tCmfEJ9euzdVgqyx5iHNFg==

#

line vty 5 63 user-role network-operator # domain system # domain default enable system # role name level-0 description Predefined level-0 role # role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4 description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7 description Predefined level-7 role # role name level-8 description Predefined level-8 role # role name level-9 description Predefined level-9 role
```
#
role name level-10
 description Predefined level-10 role
#
role name level-11
 description Predefined level-11 role
#
role name level-12
 description Predefined level-12 role
#
role name level-13
 description Predefined level-13 role
#
role name level-14
 description Predefined level-14 role
#
user-group system
#
```

return

手順 5:では、CLI のコマンドを駆使してトラブルシュート をしましょう

携帯端末の WiFi を有効にする:



WiFi がスタートしたら、Configure をクリックします。

		Stop
Phor	۵	Configure
	$\langle \rangle$	Start Capturing
	Ť.	Delete
	\bigtriangledown	Lower One Layer
	۵	Raise One Layer

Open WiFiを Yes にして、WiFiを有効にします。

🔾 Yes 🛛 No			
SSID	signalLevel	connected	MAC address
MAC: 00:e0:05:02:	12:35		Refres
MAC: 00:e0:05:02:	12:35	Ping	Refres
MAC: 00:e0:05:02: Pv4 configuration: O DHCP	12:35	Ping	Refres
MAC: 00:e0:05:02: IPv4 configuration: DHCP IPv4 address:	12:35	Ping	Refres
MAC: 00:e0:05:02: IPv4 configuration: O DHCP IPv4 address: Subnet mask:	12:35	Ping	Refres

Yes にしても SSID は表示されません。AP が電波を出していないので当然です。

テストの結果:

AP が電波を出していません。その結果、当然 WiFi 端末は AP に接続できませんでした。



図 4 トラブルのある実習ネットワーク

トラブルのある設定は何が間違いか:

何が間違いかは、トラブルコンフィグと模範解答コンフィグを比べてみてください。 自分で間違いを探すことが大事です。

トラブルシュートに役立つコマンド:

バグのあるコンフィグでは:

<WX5540H>dis wlan ap all Total number of APs: 3 Total number of connected APs: 0 Total number of connected manual APs: 0 Total number of connected auto APs: 0 Total number of connected common APs: 0 Total number of connected WTUs: 0 Total number of inside APs: 0 Maximum supported APs: 60000 Remaining APs: 60000 Total AP licenses: 60000 Local AP licenses: 60000 Server AP licenses: 0 Remaining local AP licenses: 60000 Sync AP licenses: 0 AP information State : I = Idle, J = Join, IL = ImageLoad JA = JoinAck, C = Config,DC = DataCheck, R = Run, M = Master, B = Backup AP name APID State Model Serial ID WA6638-JP ROOM-101 219801A2KF8209E0007R 2 Т ROOM-102 3 WA6320-HCL H3C_66-EA-50-9B-04-00 I ROOM-201 WA6320-HCL Т H3C_8C-CE-8A-5A-06-00 1 <WX5540H>dis wlan ap all address Total number of APs : 3 Total number of connected APs : 0 Total number of connected manual APs : 0 Total number of connected auto APs : 0 Total number of inside APs : 0 AP name IP address MAC address **ROOM-101** N/A N/A **ROOM-102** N/A N/A **ROOM-201** N/A N/A

<WX5540H>dis wlan client <WX5540H>

<WX5540H>display logbuffer Log buffer: Enabled Max buffer size: 1024 Actual buffer size: 512 Dropped messages: 0 Overwritten messages: 0 Current messages: 10 %May 28 05:16:31:142 2024 WX5540H SYSLOG/6/SYSLOG_RESTART: System restarted --H3C Comware Software. %May 28 05:16:36:862 2024 WX5540H APMGR/6/RADIO: [APID:1,Radio:1] Channel was changed to 52. %May 28 05:16:36:866 2024 WX5540H APMGR/6/RADIO: [APID:1,Radio:2] Channel was changed to 6. %May 28 05:16:36:867 2024 WX5540H APMGR/6/RADIO: [APID:2,Radio:1] Channel was changed to 36. %May 28 05:16:36:868 2024 WX5540H APMGR/6/RADIO: [APID:2,Radio:2] Channel was changed to 100. %May 28 05:16:36:877 2024 WX5540H APMGR/6/RADIO: [APID:3,Radio:2] Channel was changed to 1. %May 28 05:16:38:031 2024 WX5540H SCMD/5/PROCESS_ABNORMAL: The process hcld exited abnormally. %May 28 05:16:46:129 2024 WX5540H LAGG/6/LAGG_ACTIVE: Member port GE1/0/1 of aggregation group BAGG1 changed to the active state. %May 28 05:16:46:140 2024 WX5540H LAGG/6/LAGG_INACTIVE_PARTNER: Member port GE1/0/1 of aggregation

group BAGG1 changed to the inactive state, because the aggregation configuration of its peer port is incorrect. %May 28 05:16:46:142 2024 WX5540H LAGG/6/LAGG_ACTIVE: Member port GE1/0/1 of aggregation group BAGG1 changed to the active state.

模範解答のコンフィグでは:

<WX5540H>dis wlan ap all Total number of APs: 3 Total number of connected APs: 2 Total number of connected manual APs: 2 Total number of connected auto APs: 0 Total number of connected common APs: 2 Total number of connected WTUs: 0 Total number of inside APs: 0 Maximum supported APs: 60000 Remaining APs: 59998 Total AP licenses: 60000 Server AP licenses: 0 Remaining local AP licenses: 59998 Sync AP licenses: 0

AP information State : I = Idle, J = Join, JA = JoinAck, IL = ImageLoad C = Config, DC = DataCheck, <mark>R = Run, M = Master</mark> , B = Backup												
AP name ROOM-101 ROOM-102 ROOM-201	APIDStateModel2IWA6638-JP3R/MWA6320-HCL1R/MWA6320-HCL			JP HCL HCL	Serial ID 219801A2KF8209E0007R H3C_66-EA-50-9B-04-00 H3C_8C-CE-8A-5A-06-00							
<wx5540h>dis wlan ap all address Total number of APs : 3 Total number of connected APs : 2 Total number of connected manual APs : 2 Total number of connected auto APs : 0 Total number of inside APs : 0</wx5540h>												
AP name ROOM-101 ROOM-102 ROOM-201	IP address N/A 192.168.56.52 192.168.56.51				MAC address N/A 66ea-509b-0400 8cce-8a5a-0600							
<wx5540h>dis wlan client Total number of clients: 2</wx5540h>												
MAC address 00e0-0502-1235 N 00e0-0702-1235 N	AP name ROOM-201 ROOM-102				R IP address 1 192.168.56.53 1 192.168.56.54	VLAN 1 1						
<wx5540h>display dhcp server ip-in-use IP address Client identifier/ Lease expiration Type</wx5540h>												
192.168.56.51 192.168.56.52 192.168.56.53 192.168.56.54	nardware addres 018c-ce8a-5a06- 0166-ea50-9b04- 0100-e005-0212- 0100-e007-0212-	•02 •02 •02 •35 •35	May 2 May 2 May 2 May 2 May 2	9 04:55:53 9 04:56:00 9 04:56:08 9 04:56:14	3 2024) 2024 3 2024 4 2024	Auto(C) Auto(C) Auto(C) Auto(C)						

<WX5540H>dis wlan client status Total number of clients: 2 RSSI Rx/Tx(bps) AP name RID MAC address Speed(bps) Discard 0.00% 00e0-0502-1235 22 OM/OM **ROOM-201** N/A 1 00e0-0702-1235 22 OM/OM N/A 0.00% **ROOM-102** <WX5540H>dis wlan license Installed common AP licenses:200 Installed WTU licenses :0 <WX5540H>dis wlan ap name ROOM-102 connection-record AP name IP address State Time **ROOM-102** 192.168.56.52 05-28 20:23:11 Run <WX5540H>dis wlan ap name ROOM-201 connection-record AP name IP address State Time **ROOM-201** 05-28 20:23:02 192,168,56,51 Run <WX5540H>display logbuffer Log buffer: Enabled Max buffer size: 1024 Actual buffer size: 512 Dropped messages: 0 Overwritten messages: 0 Current messages: 19 %May 28 04:55.20:088 2024 WX5540H SYSLOG/6/SYSLOG_RESTART: System restarted --H3C Comware Software. %May 28 04:55:25:902 2024 WX5540H APMGR/6/RADIO: [APID:2,Radio:2] Channel was changed to 116. %May 28 04:55:25:902 2024 WX5540H APMGR/6/RADIO: [APID:2,Radio:3] Channel was changed to 1. %May 28 04:55:25:904 2024 WX5540H APMGR/6/RADIO: [APID:3,Radio:1] Channel was changed to 52. %May 28 04:55:27:070 2024 WX5540H SCMD/5/PROCESS_ABNORMAL: The process hcld exited abnormally. %May 28 04:55:35:484 2024 WX5540H LAGG/6/LAGG_ACTIVE: Member port GE1/0/1 of aggregation group BAGG1 changed to the active state. %May 28 04:55:35:498 2024 WX5540H LAGG/6/LAGG_INACTIVE_PARTNER: Member port GE1/0/1 of aggregation group BAGG1 changed to the inactive state, because the aggregation configuration of its peer port is incorrect. %May 28 04:55:35:499 2024 WX5540H LAGG/6/LAGG_ACTIVE: Member port GE1/0/1 of aggregation group BAGG1 changed to the active state. %May 28 04:55:35:504 2024 WX5540H LAGG/6/LAGG ACTIVE: Member port GE1/0/2 of aggregation group BAGG1 changed to the active state. %May 28 04:55:57:854 2024 WX5540H APMGR/6/APMGR_AP_ONLINE: AP ROOM-201 came online. State changed to Run. %May 28 04:55:57:854 2024 WX5540H CWS/6/CWS AP UP: Master CAPWAP tunnel to AP ROOM-201 went up. %May 28 04:55:57:895 2024 WX5540H STAMGR/6/SERVICE_ON: BSS 8cce-8a5a-0610 was created after service template h3c-hcl with SSID h3c-hcl was bound to radio 1 on AP ROOM-201. %May 28 04:56:05:086 2024 WX5540H APMGR/6/APMGR AP ONLINE: AP ROOM-102 came online. State changed to Run. %May 28 04:56:05:087 2024 WX5540H CWS/6/CWS_AP_UP: Master CAPWAP tunnel to AP ROOM-102 went up. %May 28 04:56:05:217 2024 WX5540H STAMGR/6/SERVICE_ON: BSS 66ea-509b-0410 was created after service template h3c-hcl with SSID h3c-hcl was bound to radio 1 on AP ROOM-102. %May 28 04:56:07:273 2024 WX5540H STAMGR/6/STAMGR_CLIENT_ONLINE: Client 00e0-0502-1235 went online from BSS 8cce-8a5a-0610 vlan 1 with SSID h3c-hcl on AP ROOM-201 Radio ID 1. State changed to Run. %May 28 04:56:08:924 2024 WX5540H STAMGR/6/STAMGR CLIENT SNOOPING: Detected client IP change: Client MAC: 00e0-0502-1235, IP: 192.168.56.53, -NA-, -NA-, -NA-, Username: -NA-, AP name: ROOM-201, Radio ID: 1, Channel number: 36, SSID: h3c-hcl, BSSID: 8cce-8a5a-0610. %May 28 04:56:13:783 2024 WX5540H STAMGR/6/STAMGR_CLIENT_ONLINE: Client 00e0-0702-1235 went online from BSS 66ea-509b-0410 vlan 1 with SSID h3c-hcl on AP ROOM-102 Radio ID 1. State changed to Run. %May 28 04:56:15:035 2024 WX5540H STAMGR/6/STAMGR_CLIENT_SNOOPING: Detected client IP change: Client MAC: 00e0-0702-1235, IP: 192.168.56.54, -NA-, -NA-, Username: -NA-, AP name: ROOM-102, Radio ID: 1, Channel number: 149, SSID: h3c-hcl, BSSID: 66ea-509b-0410.

AP に telnet してダイアグ情報を取得し、ftp 機能を有効にした POE に ftp で put する:

< WX5540H >sys System View: return to User View with Ctrl+Z. [WX5540H]**probe** [WX5540H-probe]**wlan ap-execute all exec-console enable** [WX5540H-probe]**quit** [WX5540H]**quit**

<WX5540H>display wlan ap all address Total number of APs : 3 Total number of connected APs : 2 Total number of connected manual APs : 2 Total number of connected auto APs : 0 Total number of inside APs : 0 AP name IP address MAC address ROOM-101 N/A N/A 66ea-509b-0400 **ROOM-102** 192.168.56.53 ROOM-201 192.168.56.51 8cce-8a5a-0600 <WX5540H>telnet 192.168.56.53 Trying 192.168.56.53 ... Press CTRL+K to abort Connected to 192.168.56.53 ... * Copyright (c) 2004-2023 New H3C Technologies Co., Ltd. All rights reserved.* * Without the owner's prior written consent, * no decompiling or reverse-engineering shall be allowed. Password: h3capadmin <ROOM-102>display diagnostic-information Save or display diagnostic information (Y=save, N=display)? [Y/N]:y Please input the file name(*.tar.gz)[flash:/diag_ROOM-102_20240528-133909.tar.gz]:ROOM-102.tar.gz Diagnostic information is outputting to flash:/ROOM-102.tar.gz. Please wait... Save successfully. <ROOM-102> dir Directory of flash: 119 May 28 2024 13:39:19 0 -rw-ROOM-102.tar.gz 1 drw-- Feb 18 2024 07:07:12 diagfile 2 -rw-139 May 28 2024 13:22:56 ifindex.dat 3 -rw-43136 Feb 18 2024 07:07:12 licbackup 4 drw-- Feb 18 2024 07:07:12 license 43136 Feb 18 2024 07:07:12 5 -rwlicnormal - Feb 18 2024 07:07:12 6 drwlogfile 7 drw-- Feb 18 2024 07:07:12 seclog 8 -rw-0 Feb 18 2024 07:07:12 simware-cmw710-boot-a6429.bin 9 -rw-0 Feb 18 2024 07:07:12 simware-cmw710-system-a6429.bin 10 -rw-2101 May 28 2024 13:22:56 startup.cfg 11 -rw-38511 May 28 2024 13:22:56 startup.mdb 1046512 KB total (1046340 KB free) <ROOM-102> ftp 192.168.56.2 Press CTRL+C to abort. Connected to 192.168.56.2 (192.168.56.2). %May 28 13:40:11:943 2024 WX5540H FTP/6/AUTH: -MDC=1; User N/A@192.168.56.53 for connection. 220 FTP service ready. User (192.168.56.2:(none)): admin 331 Password required for admin. Password: trouble.123 230 User logged in. Remote system type is UNIX. Using binary mode to transfer files. %May 28 13:40:25:312 2024 POE FTP/6/AUTH: -MDC=1; User admin@192.168.56.53 login. ftp> put ROOM-102.tar.gz 227 Entering Passive Mode (192,168,56,2,191,38) 150 Accepted data connection. 226 File successfully transferred 119 bytes sent in 0.001 seconds (116.21 Kbytes/s) ftp> quit 221-Goodbye. You uploaded 1 and downloaded 0 kbytes. 221 Logout. <ROOM-102>quit The connection was closed by the remote host!

解説:

AC に足りない設定

以下の設定がないと DHCP サーバー機能は有効になりません

dhcp enable

service-template enable を設定しないとこの SSID は有効になりません wlan service-template h3c-hcl ssid h3c-hcl service-template enable

dhcp server apply が設定されている方が、どのプールでアドレスが割り当てられるかが明白となります。

interface Vlan-interface1

ip address 192.168.56.254 255.255.255.0

dhcp server apply ip-pool "for ap management"

#

interface Vlan-interface100

ip address 192.168.100.254 255.255.255.0

dhcp server apply ip-pool "for vlan100"

#

interface Vlan-interface110 ip address 192.168.110.254 255.255.255.0 dhcp server apply ip-pool "for vlan110"

多くの AP を最初に登録する際に、以下の設定があると自動的に AP 定義が登録されます。 数台をマニュアルで登録する際には必要ではありませんが、マニュアルではシリアル番号とか MAC ア ドレスをしていするので 間違いが起こりやすく AP に接続できないことがあります。 wlan auto-ap enable wlan auto-persistent enable

これはよく忘れやすいのですが、電波のハードウェアを ON にしないと電波は出ません。 GUI では忘れやすいので CLI で確認することも有効です。 wlan ap ROOM-102 model WA6320-HCL serial-id H3C_66-EA-50-9B-04-00 vlan 1

radio 1

radio enable

service-template h3c-hcl radio 2 gigabitethernet 1 port link-type trunk port trunk permit vlan all port trunk pvid vlan 1

これも GUI で設定しているとよく忘れやすいのですが、電波のハードウェアを ON にしても どの SSID を送信するか指示しないと SSID が電波に乗って送信されることはありません。 wlan ap ROOM-201 model WA6320-HCL serial-id H3C_8C-CE-8A-5A-06-00 vlan 1 radio 1 radio enable **service-template h3c-hcl** radio 2 gigabitethernet 1 port link-type trunk port trunk permit vlan all

port trunk pvid vlan 1

PoE スイッチに足りない設定

Link aggregation グループはポート 23 と 24 で成り立っていますが、ポート 24 で グループの設定が抜けていますので、24 番ポートはグループに入っていないため、 実質 1 ポートだけで AC と接続されています。 しかし、通信はできるため気づかないことがあります。 interface GigabitEthernet1/0/24 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber

port link-aggregation group 1

模範コンフィグ:

以下のコンフィグをコピーして MSR ルーターへ貼り付けます # version 7.1.064, Release 0427P22 # sysname MSR36 # telnet server enable # system-working-mode standard xbar load-single password-recovery enable lpu-type f-series # vlan 1 # interface Serial1/0 # interface Serial2/0 # interface Serial3/0 # interface Serial4/0 # interface NULL0 # interface GigabitEthernet0/0 port link-mode route combo enable copper ip address 192.168.56.20 255.255.255.0 # interface GigabitEthernet0/1 port link-mode route combo enable copper

```
#
```

interface GigabitEthernet0/2 port link-mode route combo enable copper # interface GigabitEthernet5/0 port link-mode route combo enable copper # interface GigabitEthernet5/1 port link-mode route combo enable copper # interface GigabitEthernet6/0 port link-mode route combo enable copper # interface GigabitEthernet6/1 port link-mode route combo enable copper # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty user-role network-operator # line aux 0

user-role network-operator

```
#
line con 0
 user-role network-admin
#
line vty 0 63
 authentication-mode scheme
 user-role network-operator
#
domain system
#
 domain default enable system
#
role name level-0
 description Predefined level-0 role
#
role name level-1
 description Predefined level-1 role
#
role name level-2
 description Predefined level-2 role
#
role name level-3
 description Predefined level-3 role
#
role name level-4
 description Predefined level-4 role
#
role name level-5
 description Predefined level-5 role
#
role name level-6
 description Predefined level-6 role
#
role name level-7
 description Predefined level-7 role
#
```

```
role name level-8
description Predefined level-8 role
#
role name level-9
description Predefined level-9 role
#
role name level-10
description Predefined level-10 role
#
role name level-11
description Predefined level-11 role
#
role name level-12
description Predefined level-12 role
#
role name level-13
description Predefined level-13 role
#
role name level-14
description Predefined level-14 role
#
user-group system
#
local-user admin class manage
                                                                                 hash
password
$h$6$h7h81/KXwCRCcgNM$TaMXtmtDGRSvjOyxCfLeouU2//wdU5uBAsFTvLFISZJug+
n3GBTdrzuDCGUjmv2F8om0PnD0Bh2fJaf1t8LI+w==
service-type telnet
authorization-attribute user-role network-admin
authorization-attribute user-role network-operator
#
return
```

以下のコンフィグをコピーして無線コントローラへ貼り付けます

version 7.1.064, Alpha 7165

```
sysname WX5540H
```

#

#

wlan global-configuration region-code JP region-code-lock enable

#

telnet server enable

#

irf mac-address persistent timer irf auto-update enable undo irf link-delay irf member 1 priority 1

#

dhcp enable

#

xbar load-single password-recovery enable lpu-type f-series # vlan 1 # vlan 100 # vlan 110 # dhcp server ip-pool "for ap management" gateway-list 192.168.56.254 network 192.168.56.0 mask 255.255.255.0 address range 192.168.56.51 192.168.56.100 dns-list 8.8.8.8 # dhcp server ip-pool "for vlan100" gateway-list 192.168.100.254 network 192.168.100.0 mask 255.255.255.0 address range 192.168.100.51 192.168.100.100

dns-list 8.8.8.8 # dhcp server ip-pool "for vlan110" gateway-list 192.168.110.254 network 192.168.110.0 mask 255.255.255.0 address range 192.168.110.51 192.168.110.100 dns-list 8.8.8.8 # wlan service-template h3c-hcl ssid h3c-hcl service-template enable # wlan service-template h3c-lobby ssid h3c-lobby vlan 110 client forwarding-location ap user-isolation enable akm mode psk preshared-key pass-phrase cipher \$c\$3\$FYnBqv8eHOwvCnMvMOoYswW4u0ZYz4KjUPjj0oc= cipher-suite ccmp cipher-suite tkip security-ie rsn security-ie wpa service-template enable # wlan service-template h3c-sales ssid h3c-sales vlan 100 beacon ssid-hide client forwarding-location ap user-isolation enable akm mode psk preshared-key pass-phrase cipher \$c\$3\$2UhOVibyIWPyzpPasuyzh+b4qPdIfzntG9QN/uU= cipher-suite ccmp

cipher-suite tkip security-ie rsn security-ie wpa service-template enable # wlan service-template h3c-support ssid h3c-support vlan 100 beacon ssid-hide client forwarding-location ap user-isolation enable akm mode psk preshared-key pass-phrase cipher \$c\$3\$au2v+x8y/fNWGF1gtPvXraB6XFtDRUizvJUnEME= cipher-suite ccmp cipher-suite tkip security-ie rsn security-ie wpa service-template enable # interface Bridge-Aggregation1 port link-type trunk port trunk permit vlan 1 100 110 link-aggregation mode dynamic # interface NULL0 # interface Vlan-interface1 ip address 192.168.56.254 255.255.255.0 dhcp server apply ip-pool "for ap management" # interface Vlan-interface100 ip address 192.168.100.254 255.255.255.0 dhcp server apply ip-pool "for vlan100" # interface Vlan-interface110

ip address 192.168.110.254 255.255.255.0 dhcp server apply ip-pool "for vlan110" # interface GigabitEthernet1/0/0 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/1 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber port link-aggregation group 1 # interface GigabitEthernet1/0/2 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber port link-aggregation group 1 # interface GigabitEthernet1/0/3 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/4 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/5 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/6

```
port link-mode bridge combo enable fiber
```

interface GigabitEthernet1/0/7 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/8 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/9 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/10 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/11 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/12 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/13 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/14 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/15 port link-mode bridge combo enable fiber #
interface GigabitEthernet1/0/16
port link-mode bridge
combo enable fiber
#
interface GigabitEthernet1/0/17
port link-mode bridge
combo enable fiber

#

interface GigabitEthernet1/0/18 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/19 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/20 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/21 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/22 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/23 port link-mode bridge combo enable fiber

#

interface Ten-GigabitEthernet1/0/24 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/25 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/26 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/27 port link-mode bridge combo enable fiber # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty authentication-mode scheme user-role network-operator # line aux 0 user-role network-operator # line con 0 user-role network-admin # line vty 0 31

authentication-mode scheme

user-role network-operator # domain system # domain default enable system # role name level-0 description Predefined level-0 role # role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4 description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7 description Predefined level-7 role # role name level-8 description Predefined level-8 role # role name level-9 description Predefined level-9 role #

```
role name level-10
description Predefined level-10 role
#
role name level-11
description Predefined level-11 role
#
role name level-12
description Predefined level-12 role
#
role name level-13
description Predefined level-13 role
#
role name level-14
description Predefined level-14 role
#
user-group system
#
local-user admin class manage
password
                                                                                 hash
$h$6$Vxq7dMRF1nV67+WG$Eaq1Yq0krdH7s3UV84YSZk2tswZr0IJjzR80C88z/XnrWju
Z6kl37M9AQHfszySuZmIEUvsGbUmFMTkLal8HFg==
service-type telnet http https
authorization-attribute user-role network-admin
authorization-attribute user-role network-operator
#
ip http enable
ip https enable
#
wlan auto-ap enable
wlan auto-persistent enable
#
wlan ap-group default-group
region-code JP
vlan 1
ap-model WA6638-JP
  radio 1
```

service-template h3c-sales vlan 100 radio 2 radio enable service-template h3c-support vlan 110 radio 3 radio enable service-template h3c-lobby vlan 110 gigabitethernet 1 ten-gigabitethernet 1 port link-type trunk port trunk permit vlan all port trunk pvid vlan 1 wlan virtual-ap-group default-virtualapgroup wlan ap ROOM-101 model WA6638-JP serial-id 219801A2KF8209E0007R region-code JP vlan 1 radio 1 service-template h3c-lobby vlan 1 radio 2

radio 3

#

#

radio enable

gigabitethernet 1

radio enable

ten-gigabitethernet 1

#

wlan ap ROOM-102 model WA6320-HCL

serial-id H3C_66-EA-50-9B-04-00

vlan 1

radio 1

radio enable

service-template h3c-hcl

radio 2

gigabitethernet 1

port link-type trunk port trunk permit vlan all port trunk pvid vlan 1

#

wlan ap ROOM-201 model WA6320-HCL
serial-id H3C_8C-CE-8A-5A-06-00
vlan 1
radio 1
radio 1
radio enable
service-template h3c-hcl
radio 2
gigabitethernet 1
port link-type trunk
port trunk permit vlan all
port trunk pvid vlan 1
#

return

以下のコンフィグをコピーして PoE スイッチへ貼り付けます

version 7.1.075, Alpha 7571 # sysname POE # telnet server enable # irf mac-address persistent timer irf auto-update enable undo irf link-delay irf member 1 priority 1 # lldp global enable # system-working-mode standard xbar load-single

password-recovery enable

```
lpu-type f-series
#
vlan 1
#
vlan 100
#
vlan 110
#
interface Bridge-Aggregation1
 port link-type trunk
 port trunk permit vlan 1 100 110
 link-aggregation mode dynamic
#
interface NULL0
#
interface Vlan-interface1
 ip address 192.168.56.2 255.255.255.0
#
interface FortyGigE1/0/53
 port link-mode bridge
#
interface FortyGigE1/0/54
 port link-mode bridge
#
interface GigabitEthernet1/0/1
 port link-mode bridge
 combo enable fiber
#
interface GigabitEthernet1/0/2
 port link-mode bridge
 port link-type trunk
 port trunk permit vlan all
 combo enable fiber
#
interface GigabitEthernet1/0/3
 port link-mode bridge
```

combo enable fiber

#

interface GigabitEthernet1/0/4 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/5 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/6 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/7 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/8 port link-mode bridge port link-type trunk port trunk permit vlan all combo enable fiber

#

interface GigabitEthernet1/0/9 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/10 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/11 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/12 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/13 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/14 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/15 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/16 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/17 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/18 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/19 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/20 port link-mode bridge combo enable fiber

```
#
```

interface GigabitEthernet1/0/21 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/22 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/23 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber port link-aggregation group 1 # interface GigabitEthernet1/0/24 port link-mode bridge port link-type trunk port trunk permit vlan 1 100 110 combo enable fiber port link-aggregation group 1 # interface GigabitEthernet1/0/25 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/26 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/27 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/28 port link-mode bridge

combo enable fiber

#

interface GigabitEthernet1/0/29 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/30 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/31 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/32 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/33 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/34 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/35 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/36 port link-mode bridge combo enable fiber #

interface GigabitEthernet1/0/37 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/38 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/39 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/40 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/41 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/42 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/43 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/44 port link-mode bridge combo enable fiber

#

interface GigabitEthernet1/0/45 port link-mode bridge combo enable fiber #

interface GigabitEthernet1/0/46 port link-mode bridge

combo enable fiber # interface GigabitEthernet1/0/47 port link-mode bridge combo enable fiber # interface GigabitEthernet1/0/48 port link-mode bridge combo enable fiber # interface M-GigabitEthernet0/0/0 # interface Ten-GigabitEthernet1/0/49 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/50 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/51 port link-mode bridge combo enable fiber # interface Ten-GigabitEthernet1/0/52 port link-mode bridge combo enable fiber # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin #

line class tty user-role network-operator # line class vty user-role network-operator # line aux 0 user-role network-operator # line con 0 user-role network-admin # line vty 0 63 authentication-mode scheme user-role network-operator # radius scheme system user-name-format without-domain # domain name system # domain default enable system # role name level-0 description Predefined level-0 role # role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4

description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7 description Predefined level-7 role # role name level-8 description Predefined level-8 role # role name level-9 description Predefined level-9 role # role name level-10 description Predefined level-10 role # role name level-11 description Predefined level-11 role # role name level-12 description Predefined level-12 role # role name level-13 description Predefined level-13 role # role name level-14 description Predefined level-14 role # user-group system # local-user admin class manage password

\$h\$6\$sKh9znnSNsxLZynH\$ZBwdDPMGh0MT0ZmXl5J82rAWkVe4NjaFHdd/ks6yoluoH YSCLDZ338fD3Cl/4fOC11KR8t9l2ulYrRGR00/cow==

service-type ftp

service-type telnet http https

authorization-attribute user-role network-admin

authorization-attribute user-role network-operator

#

ftp server enable

#

ip http enable

ip https enable

#

return

以下のコンフィグをコピーして ROOM-102 の AP へ貼り付けます

version 7.1.064, Alpha 7165 # sysname ROOM-102 # telnet server enable # system-working-mode standard xbar load-single password-recovery enable lpu-type f-series # vlan 1 # interface NULL0 # interface Vlan-interface1 ip address dhcp-alloc ipv6 address auto ipv6 address dhcp-alloc

```
#
```

interface GigabitEthernet0/0/0 port link-mode bridge combo enable fiber # interface GigabitEthernet0/0/1 port link-mode bridge combo enable fiber # interface WLAN-Radio0/0/2 # interface WLAN-Radio0/0/3 # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty user-role network-operator # line aux 0 user-role network-operator # line con 0 user-role network-admin # line vty 0 4 user-role network-admin user-role network-operator

authentication

set

password

hash
\$h\$6\$7UpPAzew7VURnsBg\$KHP8kBjwRI/IQe4PN8JqgbljRaW5E3bJxi4N9RLg6qfSota W12QnTmDuiRnmodYg7Bn7itJbmZBAJbHROdw6aw== # line vty 5 63 user-role network-operator # domain system # domain default enable system # role name level-0 description Predefined level-0 role # role name level-1 description Predefined level-1 role # role name level-2 description Predefined level-2 role # role name level-3 description Predefined level-3 role # role name level-4 description Predefined level-4 role # role name level-5 description Predefined level-5 role # role name level-6 description Predefined level-6 role # role name level-7 description Predefined level-7 role # role name level-8 description Predefined level-8 role

```
#
role name level-9
 description Predefined level-9 role
#
role name level-10
 description Predefined level-10 role
#
role name level-11
 description Predefined level-11 role
#
role name level-12
 description Predefined level-12 role
#
role name level-13
 description Predefined level-13 role
#
role name level-14
 description Predefined level-14 role
#
user-group system
#
return
```

以下のコンフィグをコピーして ROOM-201 の AP へ貼り付けます

version 7.1.064, Alpha 7165 # sysname ROOM-201 # telnet server enable # system-working-mode standard xbar load-single password-recovery enable

lpu-type f-series

#

vlan 1 # interface NULL0 # interface Vlan-interface1 ip address dhcp-alloc ipv6 address auto ipv6 address dhcp-alloc # interface GigabitEthernet0/0/0 port link-mode bridge combo enable fiber # interface GigabitEthernet0/0/1 port link-mode bridge combo enable fiber # interface WLAN-Radio0/0/2 # interface WLAN-Radio0/0/3 # scheduler logfile size 16 # line class aux user-role network-operator # line class console user-role network-admin # line class tty user-role network-operator # line class vty user-role network-operator # line aux 0

```
user-role network-operator
#
line con 0
 user-role network-admin
#
line vty 0 4
 user-role network-admin
 user-role network-operator
 set
                      authentication
                                                      password
                                                                                  hash
$h$6$NkRcYeqrsxiKVqLm$QctQUu2Rdi7OYqZOqJDo9BloQjhaonX10kbsz+P0yeqn5qg
yJpEFdgCs/rBoLJW0tCmfEJ9euzdVgqyx5iHNFg==
#
line vty 5 63
 user-role network-operator
#
domain system
#
 domain default enable system
#
role name level-0
 description Predefined level-0 role
#
role name level-1
 description Predefined level-1 role
#
role name level-2
description Predefined level-2 role
#
role name level-3
 description Predefined level-3 role
#
role name level-4
 description Predefined level-4 role
#
role name level-5
 description Predefined level-5 role
```

```
#
role name level-6
 description Predefined level-6 role
#
role name level-7
 description Predefined level-7 role
#
role name level-8
 description Predefined level-8 role
#
role name level-9
 description Predefined level-9 role
#
role name level-10
 description Predefined level-10 role
#
role name level-11
 description Predefined level-11 role
#
role name level-12
 description Predefined level-12 role
#
role name level-13
 description Predefined level-13 role
#
role name level-14
 description Predefined level-14 role
#
user-group system
#
return
```

模範コンフィグでのテストの結果:

Open WiFi を Yes にして、WiFi を有効にします。

SSID	signalLevel	connected	MAC address
MAC: 00:e0:05:02	12:35		Refre
Pv4 configuration:		Ping	
Pv4 configuration:DHCP		Ping	
 Pv4 configuration: DHCP Pv4 address: 		Ping	
Pv4 configuration: DHCP Pv4 address: Gubnet mask:		Ping	

Connected をクリックしてボタンが水色に変わるのを確認してください。

PoE スイッチの DHCP 機能が有効であれば、DHCP 項目に IP アドレスとサブネットマスクが表示されます。

SSID	signalLevel	connected	MAC address
h3c-hcl	(([-		66:ea:50:9b:04:10
h3c-hcl	((;-	8	8c:ce:8a:5a:06:10
MAC: 00:e0:05:02:1	12:35		Refres
MAC: 00:e0:05:02:1	12:35	Ping	Refres
MAC: 00:e0:05:02: Pv4 configuration: • DHCP	12:35	Ping	Refres
MAC: 00:e0:05:02:1 Pv4 configuration: ODHCP Pv4 address: 192.1	1 <u>2:35</u> 68.56.103	Ping	Refres
MAC: 00:e0:05:02: Pv4 configuration: ODHCP Pv4 address: 192.1 Subnet mask: 255.2	12:35 168.56.103 255.255.0	Ping	Refres

WiFi 端末は ROOM-102, ROOM-201 の AP に接続し、別の AP の電波範囲に移動する とローミングに成功(約 10 秒程度で再検索)しました。



図4 正しい実習ネットワーク

オプション: GUI にアクセスしてみましょう:

GUI にアクセスするには、まず VM-HOST と PoE スイッチの間を接続します。 次に、ブラウザを開いて以下の URL を入力します。

http://192.168.56.254/ ログイン画面からログインしてみます。 ユーザ名: admin パスワード: trouble.123 図 5 ログイン画面

. 0	Login		× +			8	- 0	×
+ >	c	ົດ	 保護されていない通信 	https://192.168.56.10/web/frame/login.html	* 9	0 D	= 1	0 :
					<u>ج</u>			
				H3C WLAN Management Platform				
				R admin	Wa 11			
				Remember username English - Login				
		1		Internet Explorer 10, Printfox 30.0.0.5269, Chrome 35.0.1916.142, Safari 5.1, and their higher versions are supported.				
				Countering 2004-2023 How TRC Technologies Fair Ltd. 48 States Revenued				

図 6 SSID が 4 つ定義されています

H3C	нзс	WX5540H-HCL								💾 Save 🗳 R	oadmap 🚨 admin
Actions		All Networks > Monitorin	g > Wireless Network	ks > Wireless Services							
Dashboard		Wireless Services									
Quick Start	>	C							Se	arch	Q, Q
Monitoring	~	Wireless Servic	SSID	Forwarding Typ	Authenticator	Clients	Authentication	Cipher Suite	Default VLAN	Wireless Service	Bound Radios 🛛 📰
Wireless Networks	۲	h3c-hcl	h3c-hcl	Centralized	Local AC	1	Open		1	ON	View
WIELESS NELWORKS	4	h3c-lobby	h3c-lobby	Local	Local AC	0	Static PSK	TKIP & CCMP	110	ON	View
Access Points		h3c-sales	h3c-sales	Local	Local AC	0	Static PSK	TKIP & CCMP	100	ON	View
Clients		h3c-support	h3c-support	Local	Local AC	0	Static PSK	TKIP & CCMP	100	ON	View
Wireless Security											
RF Monitoring											
Client Proximity Sensor											
DPI											
Application Monitoring		Total 4 entries, 4 ma	atched.Page 1/1.								্ৰ বৰ ৮৯ ৮। 😜
Wireless Configuration	>				Syn	stem View Network V	/lew			Access Points Clien	ts Event Logs



НЗС НЗСТ	WX5540H-HCL			💾 Save 🗳 Road	fmap 🚨 admin
Actions	All Networks > Monitoring > Access Points > APs				
Dashboard	APs AP Groups				
Quick Start >	AP quantity				
Monitoring ~	Online APs	Offline APs		Unhealthy APs	.=
Wireless Networks	2	0	1	0	
Access Points	By AP model		By AP type		
Clients			 Online manual APs 		
Wireless Security	WA6320-HCL		 Auto APs Offline manual APs 	33.33%	
RF Monitoring	- WA8638 JP		 Unauthenticated APs 	66 67%	
Client Proximity Sensor	0 1 2 3 4	5			
DPI					
Application Monitoring					
Wireless Configuration >				Access Points Clients	Event Logs
		System View Network View		😕 2 💿 1 🚺 0 1	0 0 0 △ 2 0 16
図 8 クライス	アント(WiFi 端末)に接続さ	されています	-		
	WX5540H-HCL			💾 Save 🎲 Road	imap 🔔 admin
Actions	All Networks > Monitoring > Clients > Clients				
Dashboard	Clients				
Quick Start >					
Monitoring 🗸 🗸					
Wireless Networks	1/5		1/1		
Access Points	1/1		10		
Clients	By Authentication Mode		By radio type		
Wireless Security	Cpen		 802.11a(5GHz) 802.11n(5GHz) 		
RF Monitoring	BUZ-1X MAC Portal		 802.11ac(5GHz) 802.11ax(5GHz) 		
Client Proximity Sensor	Portel MAC + Portal 100% PSK + WEP		 802.11b(2.4GHz) 802.11g(2.4GHz) 		
DPI			 802.11n(2.4GHz) 802.11ac(2.4GHz) 802.11ar(2.4GHz) 	100%	
Application Monitoring			002.110x(2.40HZ)		
Wireless Confiduration >		Contract Lines - Marked Million		Access Points Clients	Event Logs
https://192.168.56.10/wnm/frame/index	php?sessionid=2000011448d84109/c86af7871e5c8faec7d#M_MonClients	System View Network View		😋 2 💿 1 🚺 0 1	O O 🗘 O 🗛 2 🕕 16

HCL の便利な機能:

プロジェクトの説明を書きこむ

Design	Profile	Configuration	File		
					Edit
	プロジェク	' ト名			
Ę	寝習トラブルシュート	~			
Ī	前提条 <mark>件:</mark>				
F	ICLの操作に慣れてい	いること			
ŧ	無線コントローラを誘	设定してSSIDに載せて	「電波を出すコン」	フィグの学習を始めた方	
5	実習手順:				
5	ワークスペース上のす	すべての機器の電源を	投入する		
∰ d	無線コントローラでフ isplay wlan ap all { a	アクセスポイントが登 iddress }	録されているか確	認する	
ŧ	Fェックする項目				
:	L. APが登録されて	いるか? wlan auto-aj	p enable及びwlan	auto-persistent enableの設定がされているのか。	
:	2. service-template;	が有効になっているの	つか? service-te	mplate enable	
:	3.wlan ap ap名 mo	del WAaa6320-HCL0	Dビューでradio1た	が有効になっているか?	
r	adio enable				
4	4. 電波を出すradio(C service-template S	SID名の設定が入・	っているか?	

実習結果:							
説明:							
SSID一覧 送出する電波とSSID、パス	SSID一覧 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	100	yes	radio1 5GHz			
h3c-sales	@bigsale	100	yes	Radio2 5GHz			
h3c-lobby	thankyou	110	no	Raido3 2.4GHz			



コンフィグファイルの取り出し

完成したコンフィグファイルは File タブで DeviceConfig フォルダーをクリックすると一覧がでてきます。 各.cfg ファイル名をダブルクリックするとテキストエディタが開きますので、ファイルとして保存すること ができます。

	HCL - lab_troubleshoot [c:lusersimarkiixihciliprojectsilab_troubleshoot] 🛛 🔻 🚽 🗖 🗡							
HCL		A) \$ ± ± 8 8	🛞 == 0, 0, 🕨 🔳 📑 🖬 🖓 🔞	ଣ୍ଟ ର 🔅 👾 🕐 🥦 🎩				
	Design Profile	Configuration File	1					
DIM	Name	Update	Time					
\mathbf{v}	> 📜 ConfigDisk							
ন্দ্র	✓							
R.UI	FIT-AP.cfg							
<i>.</i> \$.	FIT-AP2.cfg							
÷ڳ	MSR.cfg							
~	PoE_Switch.cfg							
	WX5540H.cfg							
_	> 📜 SerialFile							
<u></u>	ConfigDisk_backup.zip							
	deviceversion.txt							
	lab_troubleshoot.net							
	lab_troubleshoot.png							
	project.json							
-	README.md							
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52	> 📜 ConfigDisk	🔚 WX5540H.cfg 🗵								
	 DeviceConfig 	1 #								
.念、	MSR.cfg	2 version 7.1.064, Alpha 7165								
ւ*	PoE Switch.cfg	4 sysname WX5540H								
	BOOM 102 cfg	5 #								
	ROOM-TUZ.tig	6 wlan global-configuration								
~	ROOM-201.cfg	7 region-code JP								
\bigcirc	WX5540H.cfg	8 region-code-lock enable								
<u></u>	> 📜 Media	"telnet server enable #								
	> 📜 SerialFile									
	ConfigDisk backup zip	12 irf mac-address persistent timer								
		13 III auto-update enable								
	deviceversion.txt	15 irf member 1 priority 1								
<u>v</u>	lab_ac_best_praictice_tr	16 #								
	lab_ac_best_praictice_tr	17 xbar load-single								
\triangle	project.json	18 password-recovery enable								
ш	README.md	20 #								
		21 vlan 1								
E (F)		22 #								
		23 vlan 100								
ব্ৰিচ		24 # 25 vlan 110								
Ŷ		26 #								
~		27 dhcp server ip-pool "for ap management"								
$-\Sigma$		28 gateway-list 192.168.56.254								
	Copyright (C) 2014-2023,New H3C Techno	30 address range 192.168.56.51 192.168.56.100								