

SME Network Solution

Wi-Fi-based Deployment Cases -Gateway + Core Switch + Access Switch + AP Networking

 Issue
 05

 Date
 2024-08-11





Copyright © Huawei Technologies Co., Ltd. 2024. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions

NUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd. All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base Bantian, Longgang Shenzhen 518129 People's Republic of China

Website: https://ekit.huawei.com

Contents

1 "Gateway + Core Switch + Access Switch + AP" Networking: Wi-Fi-based	
Deployment	1
1.1 Application Scenarios and Networking Requirements	1
1.2 Device Model Selection	3
1.3 Configuration Process	4
1.4 Downloading the App	4
1.5 Deploying the Network	5
1.6 Configuring Service Networks	10
1.7 Optimizing the Network	14
1.8 Handing Over the Project	16

"Gateway + Core Switch + Access Switch + AP" Networking: Wi-Fi-based Deployment

- 1.1 Application Scenarios and Networking Requirements
- 1.2 Device Model Selection
- **1.3 Configuration Process**
- 1.4 Downloading the App
- 1.5 Deploying the Network
- **1.6 Configuring Service Networks**
- 1.7 Optimizing the Network
- 1.8 Handing Over the Project

1.1 Application Scenarios and Networking Requirements

Application Scenario

Scenario	Number of Access Terminals (for Reference)
Enterprise office	200 to 500

Networking Requirements

Case: In an enterprise office scenario, a new network needs to be deployed.

Requirement 1: Three subnets are planned: guest, office, and video security subnets.

- Guest subnet: used by guests to access the Internet
- Office subnet: used for access of office terminals

• Video security subnet: used for access of cameras

Requirement 2: One guest Wi-Fi network needs to be enabled, on which rate limiting is configured to prevent office traffic from being affected.

Requirement 3: One office Wi-Fi network needs to be enabled, and a password is required to access this network.

Requirement 4: Devices on the entire network are deployed through Wi-Fi using the Huawei eKit app. After the deployment is complete, remote O&M is implemented through the app.

As shown in **Figure 1-1**, Huawei's SME Network solution can meet the preceding requirements.

Network planning 1: The S380 accesses the Internet through DHCP or PPPoE on the WAN interface or the static IP address allocated by the carrier.

Network planning 2: The S380 uses VLANIF 1 as the management subnet gateway interface of the LAN-side device and allocates IP addresses through DHCP.

Network planning 3: The core switch functions as the user subnet gateway on the LAN side and allocates IP addresses through DHCP.



Figure 1-1 "Gateway + core switch + access switch + AP" networking diagram

1.2 Device Model Selection

Categor y	Recommended Model
Gateway	AR720 and AR730
	S380 (PoE-incapable model) (device used in this example)
Core switch	S310 and S530
Access switch	S220
AP	AP160, AP263, AP361, AP362, AP371, AP661, and AP761

1.3 Configuration Process

Step	Sub-step	Remarks
1. Downlo ading	Downloading the app from the mobile app store	Mandatory. Perform either of the sub-steps.
the app	Downloading the app by scanning the QR code	Mandatory. Perform either of the sub-steps.
2. Deployi ng the networ k	Entire-network Wi-Fi-based deployment	Mandatory
3. Configu ring service networ ks	Configuring the network by following the wizard	Mandatory. The service network management function of the app is used to quickly configure wired and wireless networks based on the configuration wizard.
4. Optimiz ing the	Optimizing the Wi-Fi immediately	Optional. You are advised to perform this step when Wi-Fi needs to be used immediately.
networ k	Setting scheduled Wi-Fi optimization parameters	Optional
5. Handin g over	Downloading the deployment report	Optional
the project	Handing over the project	Optional

1.4 Downloading the App

You can download the Huawei eKit app using either of the following methods on your mobile phone:

- Method 1: Search for Huawei eKit in the mobile app store (APP Store for iOS users) and download the app as prompted.
- Method 2: Scan the QR code shown in Figure 1-2 to download the app.

NOTE

Scan the QR code below to download the Huawei eKit app from the app store supported by your phone.

Figure 1-2 QR code for downloading the Huawei eKit app



1.5 Deploying the Network

Context

Devices on the entire network are deployed through Wi-Fi and onboarded using the app.

Procedure

Step 1 Tap **Service** and then the plus sign (+). In **Select a Deployment Mode** that is displayed, select **Wi-Fi Deployment**.

If you select **All Products** instead of **SME Network** in the upper left corner, the system prompts you to select the product to be deployed when you tap **+**.



Step 2 Enter the deployment confirmation phase. Confirm the information, and tap **Confirm**.



Step 3 Tap **Connect** to switch to the Wi-Fi selection screen of your phone, and select the management Wi-Fi network you want to connect to.

The SSID of the management Wi-Fi network is in the format of **hw_manage_xxxx**, **hw_manage_fit_xxxx**, or **hw_manage_cloud_xxxx**, where xxxx indicates the last four digits of the AP's MAC address. The AP MAC address can be found on the device shell.

On a network with multiple APs, you are advised to select the management Wi-Fi network with strong signals.



Step 4 After the management Wi-Fi network is connected, switch back to the Wi-Fibased deployment page and tap **Next**.



Step 5 Configure deployment parameters. After setting the parameters, tap **Start Deployment Task**.



Step 6 After the devices in the network topology are automatically discovered, tap Next.Check whether the number of discovered devices is correct. If not, discover devices again.



Step 7 The device is automatically onboarded, and the Wi-Fi network is automatically enabled. Then, check the network egress connectivity.

If the gateway uses PPPoE or a static IP address to access the Internet, the page for setting the mode for obtaining the IP address of the WAN interface is automatically displayed when you check the network egress connectivity. Select either of the following modes as required:

• Internet access through PPPoE



• Internet access through a static IP address



Step 8 If the network egress connectivity test is passed, the device goes online successfully and the Wi-Fi network is automatically enabled.



----End

1.6 Configuring Service Networks

Context

The three planned service subnets can be quickly configured using the service network management function provided by the app, including wired network configuration and wireless network configuration. In addition, the core switch functions as the user gateway. With the wizard-based network configuration function, the interconnection subnet, interconnection VLAN, and route between the core switch and the gateway are automatically configured, greatly improving the network deployment efficiency.

Data Plan

Servic e Netwo rk	User Gatewa Y	VLAN	Gateway Interface IP Address/ Mask	DHC P	Wi-Fi
Guest_	Core	VLAN	192.168.1	Enabl	SSID: guest; password: none;
Net	switch	10	0.1/24	ed	rate limit: ≤ 1 Mbit/s
Office_	Core	VLAN	192.168.2	Enabl	SSID: office; password:
Net	switch	20	0.1/24	ed	Office@1234
Video_	Core	VLAN	192.168.3	Enabl	-
Net	switch	30	0.1/24	ed	

Procedure

- **Step 1** Find the corresponding network project on the service page, and tap the project to access the project details page. Then, tap **View More** and **VLAN Management**.
- **Step 2** Create a guest subnet.
 - 1. Configure the core switch as the gateway and tap **Create Service Network**.



2. Set the name, VLAN ID, and gateway/mask of the guest subnet as planned. Then, tap **Next**.

\leftarrow Create		
Set Configu Parameters Net	re Wired Configure Wireless work Network	Deliver Configuration
VLAN Name	Guest_Net	
VLAN ID	10	
Gateway/ Mask	192.168.10.1/24	
DHCP If terminals auton addresses	natically obtain IP	
Allocate IP Address	es Dynamically	
IP Segment 19	92.168.10.1 - 92.168.10.254	
	I	Next >

3. On the wired network configuration page, configure the switch as the access device. On the interface configuration page, select the interface for connecting to the guest's wired terminal. Then, tap **Next**.



On the wireless network configuration page, set the SSID for the guest Wi-Fi 4. network and rate limit as planned. Then, tap Next.

Crea	te Ser	vice Networ	k
	6—	6	
Set Cor Parameters Wired	nfigure Network	Configure Wireless Network	Deliver Configuration
Wi-Fi SSID			
guest			0
Password Open (To set the pa this button.)	issword	, toggle on	
More			
Hide			
Limit download s	peed		
1			Mbps
Limit upload spe	ed		
1			Mbps
Effective radio			
< Previous			Next >

Wait until the configuration is delivered. Then, tap **Finish**. 5.



Step 3 Create the office subnet in a similar manner.

← Create	Create Service Network	← Create Service Network
Seters Configure Wired Configure Wireless Deliver Network Network Configuration	Set Configure Configure Deliver Parameters Wired Network Wireless Network Configuration	Configure Parameters Wired Network Wireless Network Configuration
VLAN Name Office_Net	Access Device 2 >	Wi-Fi SSID office
VLAN ID 20	Interface Configuration Legend ()	Password
Gateway/ Mask 192.168.20.1/24	4E2:	Encrypted (A password is required for connecting to this Wi-Fi network.)
DHCP	Selected int GE0/0/3	Password
If terminals automatically obtain IP	Select Interface	Ø
Allocate IP Addresses Dynamically	2 4 6 8 10 12 14 16 18 20 22 24	More
IP Segment 192.168.20.1 - 192.168.20.254	1 3 5 7 9 11 13 15 17 19 21 23	
	4E2 ESN Selected int	
	Select Interface	
	2 4 6 8 10 12 14 16 18 20 22 24	
Next >	< Previous Next >	< Previous Next >

Step 4 Create the video security subnet in a similar manner.

\leftarrow Create			Create Service Network
Set Conf Parameters M	igure Wired Configure Wireless Network Network C	Deliver onfiguration	Set Configure Configure Deliver Parameters Wired Network Wireless Network Configuration
VLAN Name	Video_Net		Access Device 2 >
VLAN ID	30		Interface Configuration
Gateway/ Mask	192.168.30.1/24		4E2:
DHCP			Selected int GE0/0/5-6
If terminals auto addresses	omatically obtain IP		Select Interface
Allocate IP Addre	sses Dynamically		2 4 6 8 10 12 14 16 18 20 22 24
IP Segment	192.168.30.1 - 192.168.30.254		1 3 5 7 9 11 13 15 17 19 21 23
			4E2 ESN Selected int_ GE0j0/8
			Select Interface
			2 4 6 8 10 12 14 16 18 20 22 24
	N	lext >	< Previous Next >

----End

1.7 Optimizing the Network

(Optional, Recommended) Optimizing the Configured Wi-Fi Immediately

If you **want to use the Wi-Fi network immediately** after the Wi-Fi network configuration is complete, you are advised to optimize the Wi-Fi network to reduce wireless channel interference and improve Wi-Fi network quality.

- **Step 1** Find the corresponding network project on the service page of the app, tap the project to access the project details page, and tap **Wi-Fi Optimization**.
- **Step 2** Tap **Start Optimization**. On the page that is displayed, tap **Confirm** to start Wi-Fi optimization.



Step 3 After the optimization is complete, the Wi-Fi optimization page is displayed, which shows the latest optimization record, including the execution time and optimization result.



----End

(Optional) Setting Scheduled Wi-Fi Optimization Parameters

You can also configure scheduled optimization for APs based on actual requirements.

On the Wi-Fi optimization page, tap **Time Settings** in the upper right corner. Set the scheduled optimization time as required and tap **Save**.



1.8 Handing Over the Project

(Optional) Obtaining the Acceptance Report

After deployment on the app, you can view and download the acceptance report for subsequent customer acceptance.

- Step 1 Find the corresponding network project on the service page of the app, tap the project to access the project details page, and tap Acceptance Report in the Popular Functions area.
- Step 2 On the page that is displayed, tap View Report or Share Report.



----End

(Optional) Handing Over the Project

After customer acceptance, you can hand over the project to the customer on the app. During the handover, you can still implement maintenance for the customer, upon the customer's request.

- **Step 1** Log in to the app using the network engineer account and hand over a project.
 - 1. Tap **Service** and then **To Be Handed Over**. Tap the project to hand over in the project list.

Il Produc	sts ▪	4	Q	← To I	Be Handed	
2 To Be Han Over	ded >	0	eived >	SOHO Datacem	Net1 Change Time: 08-14-2023 Pending Handover	
Guide for						Hand Over Now
Beginners	9	Service Tool		SOHO	Net2 Change Time: 08-11-2023	
y Project 2			r		Pending Handover	Hand Over Now
SOHO Net1						
batacem Man	aging	(08-14-2023			
SOHO Net2	2					
Bataces	aging	1	08-11-2023			
	+ Deplo	by Now				
Deplo	wment Guide	e for Beginners >				
	00		0			
L L	I OC		0			

2. Tap **Hand Over Now**. On the page for filling in application information, set **Handed Over To**, enter the phone number of the recipient, and tap **Confirm**.

0	2
Handover Application Appli	cation Submitted
Project Name	Netl
Applicant	100
Company	11111111
Owner ①	o
Colleague (j)	
Other Company ①	
lote: The project will be removed fror andover. (The project deployment per Project Overview page)	n your project list after t sonnel can only go to th

3. Verify that the project is handed over successfully.

	0
Handover Application Applica	tion Submitted
Project Name	Netl
Applicant	200
Company	824
Phone Number of the Recipient	-
Recipient Account	-
Application Time	

Step 2 Log in to the app using the customer account and receive the project.

1. Tap **Service** and then **To Be Received**. Tap the project to be received in the project list.

All Products -	4	Q ((To	Be Received	
0 To Be Handed >	To Be Rece	ived >	SOMO Datacom	Net1 Change Time: 08-22-2023 Handover Application	
Guide for Beginners	Service Tool	٢			View Now
My Project 0		r			
G Dep	loy Now				
Deployment Guid	e for Beginners >				
	8 💬	0			

2. Tap **View Now**. On the handover confirmation page, confirm the project information, select **I have read and accepted the User Agreement and Privacy Statement**, and tap **Confirm Receipt**.



3. After the project is received, the customer can apply for joint O&M and authorize network engineers to manage the project.



Step 3 (Optional) Log in to the app using the customer account and apply for joint O&M.

- 1. On the success page, tap **Apply for Joint O&M**.
- 2. Set Joint O&M Person, select I have read and agree to the User Agreement and Privacy Statement and I have read the Authorization Letter for Managed O&M and agree to authorize the applicant to continue to manage the project, and tap Initiate Joint O&M.



3. Confirm the joint O&M person information and tap **Complete**.



- **Step 4** (Optional) Log in to the app using the network engineer account and confirm the joint O&M application.
 - 1. Tap **Service** and then **To Be Received**. Find the project requiring joint O&M on the displayed **To Be Received** page.

SOHO Intern	Net1 Change Time: 08-22-	2023 Individual		
			View Now	

2. Confirm the applicant information, select I have read and accepted the terms of the Managed O&M Agreement, and tap Confirm Receipt.



3. Tap **Complete**.



----End