

Ruijie Networks – Innovation Beyond Networks



# Ruijie Easy Gateway 2100-P V2 PoC Guide (V1.2)

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# Preface

This document providing technical guidance to help engineers testing Easy Gateway products. This document may contain scenario, configuration, command, screenshot image, topology and any related material. This document may not help to solve a similar case due any differences in the real conditions.

#### Audience

- Network Engineers
- Network Administrator

#### **Obtain Technical Assistance**

- Ruijie Networks Websites: http://www.ruijienetworks.com
- Ruijie Service Portal: <u>http://caseportal.ruijienetworks.com</u>

Welcome to report error and give advice in any Ruijie manual to Ruijie Service Portal

#### **Related Documents**

- RG-EG Implementation Cookbook (V1.0)
   <a href="https://www.ruijienetworks.com/support/documents/slide\_75371">https://www.ruijienetworks.com/support/documents/slide\_75371</a>
- Ruijie EG Security Gateway datasheet\_EG2100P EG3250
   https://www.ruijienetworks.com/resources/preview/75394
- RG-EG2100-P V2 Hardware Installation and Reference Guide <u>https://www.ruijienetworks.com/resources/preview/75320</u>
- RG-EG Series Gateway Web-Based Configuration Guide, Release 11.9(1)B11S1 https://www.ruijienetworks.com/resources/preview/75237

#### **Revision History**

Date	Change contents	Reviser
2019.09.23	Initial publication V1.0	Ruijie GTAC
2019.09.24	Ruijie Easy Gateway 2100-P V2	Ruijie GTAC
	PoC Guide (V1.1)	
	1. Change 3.9.1 Resource Cache Checking as Mobile App Caching	
	and add it on 2. Test Items Summary;	
	2. Place 3.2 Login EG's WEB via Cloud to 3.4 Cloud && App	
	Monitoring section;	
	3. Change the diagram sequence of section 3.1 Mobile App Quick	
	Provisioning.	
2021.05.21	Ruijie Easy Gateway 2100-P V2	Ruijie GTAC
	PoC Guide (V1.2)	
	Add the L2TP over IPsec VPN	

## 1. Ruijie Easy Gateway Testing List



#### 2. Test Items Summary

	Category	Test Item	Description	Pass	Fail
1.	Mobile App	Mobile App	EG quick setup via Ruijie Cloud App, and		
	Provisioning	Quick Provisioning	device should online on Cloud		l
		DUCESover	Enable service DHCP and create IP Pool		
		DHCP Sever	Test from laptop or wifi		
		DHCP Client	Only apply on WAN interface		
		WAN Uplink	WAN PPPoE or DHCP as Internet Uplink		
2.	Basic Network	DNS Proxy	Enable EG as DNS Server		
	Testing	Dual WAN Uplink	EG support two WAN Uplink to access		
		(Optional)	internet, and load balance		
	Internet Connectivity	Client should connect to Internet successfully			
			Block Facebook		
3.	3. Online	App Blacklist	Keyword : Facebook_Messenger		
	Benavior		Block Youtube		
	ivianagement	Block User Access	Adding user (Name/IP) to blacklist		

		Block chat / messenger application	Whatsapp	
		Login EG's WEB via Cloud	Opening EG WEB via Ruijie Cloud Web UI and access successfully	
4.	Cloud & App	Cloud (Web UI) Monitoring	Monitoring EG device and WAN/LAN status on Ruijie Cloud WEB	
	Monitoring	Ruijie Cloud App Monitoring	Monitoring EG device and WAN/LAN status Ruijie Cloud App (IOS or Android)	
		Synchronize Voucher/Account to EG	Using Ruijie Cloud created Voucher to log in with Portal WiFi (SSID)	
5. Authentication Acceleration (EG Offload)	Speed Limit	Using different Voucher Profile with varies speed limit, and create two Voucher code to log-in to get different speed control		
	Seamless Authentication	User can seamless online directly at next time connected WiFi without login again		
		Compatibility test of EG local authentication	Compatibility test of EG local authentication	
6.	Internet Access Log Audit	User internet access log checking	User access log (such as visited URL, source/dest IP, MAC, etc.) should send out via HTTP/FTP to Ruijie provided Log Server	
7.	IPSEC VPN	IPSEC VPN	The HQ and branch gateway use static IP addresses. The HQ gateway needs to verify the IP address of the branch gateway.	
8.	L2TP VPN	L2TP over IPsec	Branch and clients create the L2TP over IPsec VPN with HQ	
9.	Resource Cache	Mobile App Caching	Resource cache can reduce bandwidth usage and save users from waiting for access.	

Note: Before PoC, please check whether the EG has been upgrade to the latest version by execute

command *"show version detail"*, the example is shown as below:

EG#show version detail	
system description	: Ruijie EASY GATEWAY(EG2100-P) by Ruijie Networks.
System start time	: 1970-01-01 08:00:00
System uptime	: 0:00:06:50
System hardware version	: 2.00
System software version	: EG_RGOS 11.9(1)B11S1, Release(06161713)
System patch number	: NA
System software number	: M13125204172019
System serial number	: н1мв0g8002959
System boot version	: 2.2.2.302c1ba(180810)
System core version	: 2.6.32.7efa46adabe6c8
System cpu partition	: 1-3

# 3. Testing Lists

# **3.1 Mobile App Quick Provisioning**

← Quick Setup Guide ····
Ruijie Cloud offers an easy way to set up a network. Firstly, is there a gateway (EG2100-P) in your network?
Yes
No How to use Ruijie Cloud?
Skip ③
← Quick Setup Guide ····
Ruíjie
Easy Gateway
Please enter the username admin
Please enter the password admin
Log In Forgot password? • •
Log in with the default account: admin/ admin. Complete the Gateway Wizard to configure the WAN port(PPPOE, Static IP or DHCP). Note: Please ensure that the EG is ready for configuration.
OK Select WiFi
← Quick Setun Guide ····
Power on the device and connect the AP to any port(except WAN0) on the gateway. Note: Gateway must be in the factory default settings, or you need to reset it. (press the Reset button for more than 3 seconds)
Next

← Quick Setup Guide ····
Connect to the WiFi RJ_XXXXX after AP and EG are powered on for 3 min.
Next
← Quick Setup Guide ····
Create Network         Image: transmersion         Image: transmersion
Skip 🏵
← Quick Setup Guide •••
Dashbaar     Wy Networks       0. Gearch
Tap the network to open its dashboard and add devices.
Next

← Quick Setup Guide ····
Add Device
<image/> Image: Set in the set i
5. Click Start, and set the network SSID. After the network is created, then enter the network and click Add Device to add AP and EG2100-P through scanning the QR code (AP SN/MAC) on the back of the device. Note: When adding an EG device, you need to enter the WEB management password of the EG device.
← Create Network
Set up a new network
Network:
Encryption:
Create



# 3.2 Basic Network Testing

#### 3.2.1 DHCP Server

Testing project:	DHCP server
Testing purpose:	EG as DHCP Server, Clients can get DHCP IP from EG normally
Testing procedure and expected results:	<complex-block></complex-block>

	3					
	Ruijie EG				Scenario: S&M Enterprise 🧔	Config Wizard 🔊 Online Service Hi, admin
	Home Interface	Settings Static IP	Address User List			
	Route/Load	+Add DHCP XDelete Set	lected DHCP ØExcluded Addre	ess Range DHCP. ON		
	DNS Settings	Name	IP Address	Range Default Gateway	Lease Time	DNS Action
	Flow VPN	STA-VLAN4	40 192.168.40.1-192 30 192.168.30 1-192	2.168.40.254 192.168.40.1 2.168.30.254 192.168.30.1	2 hour(s)	8.8.8.8 Edt Delete
	NAT/Port Mapping	ap_thtp_pt	192.168.1.1-192	2.168.1.254 192.168.1.1	1 minute(s)	88.8.8 Edt Delete
	Behavior	Show No.: 10 • Total Co	punt 3			IN First ≪ Pre 1 Nest ► Last ► 1 GO
	Security					
	8					
	User					
	Network					
	Ŷ					
	WLAN					
	(C) Advanced					
	$\odot$					
	Collapse					
		Model: EG2100-P Web Version:	2018.9.20.19 Details		©2000-2019 Ruijie Networks Co., I	td Service Portal   Service Mail   Official Website   Online Service
	2. AP 0	connect to	the EG a	and configure	e the STA VLA	N, AP and STAS car
				0		,
	get	the correc	t IP addre	ess.		
	Configuro	+ha CTA \/I		ia Claudu		
	configure	ule SIA VL	AN VIA KUIJI			
	Ruffe	MONITORING	CONFIGURATION	MAINTENANCE *		📕 ti 🙉 🐢
	Automatics Spect	SSID				×
	a GROUPS	WLAN ID	1	*	Hidden No	:00)Asia/Hong_Kong
	& WIRELESS	SSID	@Ruijie-WIFI		Forward Mode @ Bridge	
	Basic		Tip: If SSID contains the space and the upgrade the AP to B40P9 or a higher v	te captive portal is enabled, please version.	VLAN ID 30	une w
	Layout Load Balance	Encryption Mode	Open	٠	Radio Z Radio1(2.4GHz)	Radio2(5GHz)
	RF Planning					Hz or 5GHz)
	Roaming Bluetooth	Band Steering @	8			Action
		Rate Limit by SSID	0			Lo III
	Voucher	Auth	0			7.x 1 11 0000
	PPSK			OK Cance	4	In O Access
	Ruíjie	MONITORING	CONFIGURATION M	MAINTENANCE *		
		SSID				×
	5 GROUPS	WLAN ID	2	٣	Hidden No	v UU)Asia/Hong_Kong
	WIRELESS	SSID	@Ruijie-WIF12 Tip: If SSID contains the space and the	captive portal is enabled, please	Forward Mode @ Bridge	• Save More •
	Layout	Encryption Mode	Open	ersion. *	Radio Radio1/2.4GHz)	Radio2(5GHz)
	Load Balance				Radio3 @ (2.4GH	z or 5GHz)
	Roaming	Band Steering O				Action
	Bluetooth	Rate Limit per Client				2 11
		Rate Limit by SSID				) 🛌 1 in total
	PPSK	Auth				
				OK Cancel		in O Access
		ON/OFF		ON/OFF	C	NOFF OD
	Check the	DHCP user	list			
		-				
	Ruijie EG				Scenarlo: S&M Enterprise 📀	Config Wizard 🗢 Online Service Hi, admin
	Home Interface	Settings Static IP	Address User List			
	Route/Load	Bind MAC to Dynamic IP				Search by IP Address: Search
	Common DNS Settings	8	IP	MAC	Lease Time	Allocation Type
		15	92.168.1.2	0074.9c08.4e0b	0 Day(s) 0 hour(s) 0 minute(	s) Dynamic Allocation
	HOW THE	0 19	2.168.30.2	9487.e844.3ac2	0 Day(s) 1 hour(s) 59 minute	(s) Dynamic Allocation
	Behavior Mapping	19	2.168.40.2	e49a.dc93.edf5	0 Day(s) 1 hour(s) 59 minute	(s) Dynamic Allocation
	DHCP	Show No.: 10 * Total Cou	unt:3			M First 4 Pre 1 Nest ▶ Last ▶ 1 GO
	Security					
	<u>A</u> User					
	• 🔊					
	Network					
	Ŷ					
	WLAN					
	(C) Advanced					
	$\odot$					
	Collapse					
		Model: EG2100-P Web Version:	: 2018.9.20.19 Details		©2000-2019 Ruije Networks Co.,	Ltd Service Portal   Service Mail   Official Website   Online Service
Moncurod records						
Testing conclusion:						

# 3.2.2 WAN Uplink

Testing project:	WAN uplink (This step is covered during App provisioning, at here you can				
	change WAN Uplink with other ways, such as PPPoE or Static IP)				
Testing purpose:	WAN PPPoE, Static or DHCP IP as Internet Uplink				
	1. Configure the EG uplink connection mode (PPPoE/Static/DHCP) and connect it correctly. EG can access the Internet correctly.				
Testing procedure and expected results:	Contract to EGG with wireless and wire user, an access the Internet correctly.				
Measured record:					
Testing conclusion:					

# 3.2.3 Dual WAN Uplink (Optional)

Testing project:	Dual WAN uplink				
Testing purpose:	EG support two WAN Uplink to access internet, and load balance				
Testing procedure and	1. Configure the EG uplink connection mode (PPPoE/Static/DHCP).				
expected results:	2. Add the sub interface with different vlan in the WAN, configure the				
	account info in different sub interface.				

Obser     MAT/Port       User     DHCP       Network     VILAN       VILAN     Sepand	I Panel	Reset	D LAN2 LAN4 LAN6 D LAN2 LAN4 LAN6 D LAN Bridge Bridge Bridge D LAN3 LAN5 LAN7 1 LAN3 LAN5 LAN7 * * * * * * * * * Mbps (Range: 0.5-10 Mbps (Range: 0.5-10	RG-EG2100- Poli ext Hop IP: 2.1234) 2000). Default: 10.	P Powered-on Powered-off
Add the sub	interfaces ar	save cancel	Sub Interface	e/passwor	d
A Not secure   172.3	1.61.20/interface_pi/int_	child.html			0-
Sub Interface:	Gi0/1 •	4 *	(Range: 1-1023)		
VLAN ID:	4	* (Range: 1-4087	7)		
Type:	PPPoE(ADSL)				
Username:	test	* Pas	ssword: ••••	*	
MAC:	DC76.5815.C0dE	* (Format: 0023.	AE86.B3E0)		
Downlink Bandwidth:	2 Mbps Uplink	Bandwidth: 0.5 Mbp	05		
Default Route:	∎Enable				
Sub Interferentiat	Add				
Sub Interface List					
<ul> <li>Interface Configuration</li> <li>Not secure   172.3</li> </ul>	- Sub Interface - Google Chr 1.61.20/interface_pi/int_c	ome child.html			- 🗆 ×
Sub Interface:	Gi0/1 •	* ()	Range: 1-1023)		
VLAN ID:		* (Range: 1-4087)			
Type:	DHCP •	a se alcudadator da en el tra			
Sub Interface List	TU Mbps Uplink E	sandwidth: 10 Mbps	5		
Sub Interface	VLAN ID	Interface Info	Bandwidth	ISP	Action
GigabitEthernet 0/1.5	5 1	Username: ruijie P Address192.168.200.2	2	Others	Edit Delete
GigabitEthernet 0/1.4	4 II	Username: test P Address192.168.100.2	2	Others	Edit Delete
show No.: 10 V To	otal Count:2	INTIGER: 233.233.233.235	l4 First - 4 Pre	vious <b>1</b> Next I	ast ▶I 1 GO
3. Connect Enable the loa	t the WAN co d balance	rrectly and er	hable the lo	ad balance.	

2.5						
i <b>zuījie</b> Eg				Scenario: Gene	ral 🕞 Config Wizard	A Online Service
Home Interface	Policy-Based Route	e User-Based Ro	oute IP-Based R	oute Load Balar	ice	
Route/Load	Load Balance Setti	ngs				
Common DNS Settings	Load Balance: Allocate t allocated automatically.	traffic to different links acco	ording to the policy. (It take	s effect only on the interface	configured with IP-based r	oute.)Click Enable, and the tra
Flow VPN	Load E	Balance: Enable				
NAT/Port		[View Load Bal	ance Effect] [Custom	nterface Weight]		
Behavior		Save				
Cache DHCP						
$\bigcirc$						
Security						
 ∪ser						
Ø						
Network						
ැලි .dvanced						
Set the inte	erface's weig	ght				
View the interface	e weight Google Cl	hrome				- U X
O Not secure	172.31.61.20/rout	e_pi/mllb_weigh	t_view.htm			
Tip: By default,	the multi-link load ba	alance regards the l	bandwidth value a	s its weight value. U	sers can change the	e weight in the
following condit	ions. If the bandwidth	usage of an interf	ace is small/large,	please increase/dec	rease its weight so	that to
increase/decreas	e the bandwidth usag	ge.				
li li	nterface: Select a	an interface	•			
	Sciecte					
	Weight:		* (1~4	0000000)		
	Add					
In	terface		Weight		Action	ı
c	lialer 1	200	0 (Default: 2000	))	Edit De	lete
c	lialer 2	200	0 (Default: 2000	))	Edit De	lete
Show No.: 10	<ul> <li>Total Count:2</li> </ul>		I4 First		Next Last ▶	1 GO
Configure the	e default rout	e				
Ruíjie EG			Scenario: S8	دM Enterprise 🔞 🛛 🐻	Config Wizard 🛛 🖄 Onlin	e Service 🛛 Hi, admin 🗸
	Deline Deced Deute		Load Dalance			
Home	Policy-based Route	IP-Based Route	LUAU DAIANCE			
Elow Route/Load	Priority: The policy-based restatic route > default route.	oute and IP-based route both	serve packet forwarding. Wh	en they exist at the same time	the priority is listed as follows	: policy-based route >
DNS Settings	IP-Based Route: It can tran	smit packet according to the s	specified path and includes st	atic route, address database a	d default root. Among them,	the default route has the
Security VPN	lowest priority.					
NAT/Port Manning	+Add Static Route +Ad	ld Default Route			Filter Criteria: All	•
User	Dest Network	Submask	Next Hop Address	Outbound Interface	Route	Action
O DHCP Network	0.0.0.0	0.0.0.0		dialer 1	Primary Route	Edit Delete
2	0.0.0.0	0.0.0.0		dialer 2	Primary Route	Edit Delete
WLAN	anow No. 10 • Total (	COUTLE			INEXT PIE I NEXT	
$\odot$						
Evnand						
Add the NAT	outside inter	face and NA	T rule			
	Province       France         Home       Interface         Route/Load       DNS Settings         Province       VPN         Province       Mapping         Province       Province         Province </th <th>From       Interface       Policy-Based Route         Image: Route/Load       Interface       Interface         Image: Route/Load       Image: Route/Load       Interface         Image: Route/Load       Image: Route/Load       Image: Route/Load         <td< th=""><th>First EG         Normal Interface         Route/Load         NAT/Point         NAT/Point         DKCP         Cache         DKCP         Cache         DKCP         Sect the interface weight.         Source         Tip: By default, the multi-link load balance regards the following conditions. If the bandwidth usage of an interface         Tip: By default, the multi-link load balance regards the following conditions. If the bandwidth usage of an interface         Weight:         Add</th><th>Policy-Based Route       User-Based Route       IP-Based Route         Interface       Interface       Image         Interface       Very       Image         Interface       Image       Image         Image       Image       Image       Image         Image       Image       Image       Image       Image         Image       Image       Image       Image       Image       Image         Image       Image       Image       Image       Image       Image</th><th>Sector 2000       Delay-Based Route Uner-Based Route Rout</th><th>Write Einig       Centre Street Billing         Write Balance Streigs       Write Balance Streigs         Write Balance Streigs       Interface         Write Balance Streigs       Interface</th></td<></th>	From       Interface       Policy-Based Route         Image: Route/Load       Interface       Interface         Image: Route/Load       Image: Route/Load       Interface         Image: Route/Load       Image: Route/Load       Image: Route/Load         Image: Route/Load       Image: Route/Load       Image: Route/Load <td< th=""><th>First EG         Normal Interface         Route/Load         NAT/Point         NAT/Point         DKCP         Cache         DKCP         Cache         DKCP         Sect the interface weight.         Source         Tip: By default, the multi-link load balance regards the following conditions. If the bandwidth usage of an interface         Tip: By default, the multi-link load balance regards the following conditions. If the bandwidth usage of an interface         Weight:         Add</th><th>Policy-Based Route       User-Based Route       IP-Based Route         Interface       Interface       Image         Interface       Very       Image         Interface       Image       Image         Image       Image       Image       Image         Image       Image       Image       Image       Image         Image       Image       Image       Image       Image       Image         Image       Image       Image       Image       Image       Image</th><th>Sector 2000       Delay-Based Route Uner-Based Route Rout</th><th>Write Einig       Centre Street Billing         Write Balance Streigs       Write Balance Streigs         Write Balance Streigs       Interface         Write Balance Streigs       Interface</th></td<>	First EG         Normal Interface         Route/Load         NAT/Point         NAT/Point         DKCP         Cache         DKCP         Cache         DKCP         Sect the interface weight.         Source         Tip: By default, the multi-link load balance regards the following conditions. If the bandwidth usage of an interface         Tip: By default, the multi-link load balance regards the following conditions. If the bandwidth usage of an interface         Weight:         Add	Policy-Based Route       User-Based Route       IP-Based Route         Interface       Interface       Image         Interface       Very       Image         Interface       Image       Image         Image       Image       Image       Image         Image       Image       Image       Image       Image         Image       Image       Image       Image       Image       Image         Image       Image       Image       Image       Image       Image	Sector 2000       Delay-Based Route Uner-Based Route Rout	Write Einig       Centre Street Billing         Write Balance Streigs       Write Balance Streigs         Write Balance Streigs       Interface         Write Balance Streigs       Interface

	<b>Ruíjie</b> eg			Scenario: S&M Enterprise 🔮	Config Wizard	Online Service Hi, admin V
	Lome Interface	NAT Rule NAT Addres	s Pool Port Mapping	Multi-Port Mapping		
	► Route/Load	Note: The address pool indicates th	e public IP addresses allocated to i	nternal user. It is recommended to co	nfigure at most 500 address po	ols.
	Flow DNS Settings	Address Pool List: 0123	<ul> <li>+Add Add</li> </ul>	ress Pool XDelete Selected		
	Security VPN	No.	Interface	Start IP	End IP	Action
	NAT/Port Mapping	1	Di1	/	/	Edit Delete
	User DHCR	2	Di2	/	/	Edit Delete
	Network	Show No.: 10 Total Count:2			I∢ First ∢ Pre 1	Next ▶ Last № 1 GO
	() WLAN					
	Expand					
			5	Scenario: S&M Enterprise 😗	G Config Wizard 🛛 🗙 O	Inline Service Hi, admin 🗸
	Home Interface	NAT Rule NAT Address	Pool Port Mapping	Multi-Port Mapping		
	Elow Route/Load	Note: It applies ACL to NAT address	pool to make NAT rule take effect.			
	DNS Settings	+Add ×Delete Selected	-			
	Security VPN	•	Add NAT Rule		× 2001	
	User NAT/Port Mapping	Characterized Transforment	ACL ID:	1 • [A	dd ACL]	
	DHCP	Show No.: 10 V Total Count:1	Address Pool:	0123 •	1.11	ext V Last VI 1 GO
				OF	Cancel	
	WLAN					
	Expand_					
	4. Monit	or the load bala	ance in Traff	ic Monitorin	3	
Measured record:						
Testing conclusion:						

## 3.2.4 Internet Connectivity

Testing project:	Internet connectivity
Testing purpose:	Client should connect to Internet successfully
Testing procedure an expected results:	<ol> <li>Make sure the EG uplink connection is ok.</li> <li>The AP access to the EG, obtains an ip address from the EG, and releases the SSID. The STAs can browse the webpage and the video.</li> <li>The PC accesses the EG to obtain an IP address, and can browse the webpage and the video normally.</li> </ol>
Measured record:	
Testing conclusion:	

# 3.3 Online Behaviour Management

# 3.3.1 Block Facebook/Youtube Access

Testing project:	Block access				
Testing purpose:	Block Facebook access				
	1. Add the Facebook Applications to App Blacklist				
Testing procedure and expected results:	Circle       Circle				
	App Blacklist - Google Chrose   Not secure 172.31.62.39:9080/beh_audit_pi/beh_dropapp.htm     Tip: The application (group) will not be displayed if its parent group is displayed in the list     + Add Blacklisted App     Delete   facebook   Delete   Facebook-live   Delete   FacebookWebmail				
	Facebook-WEBIM     Delete       Facebook_Messenger     Delete       Show No.: 10 • Total Count:5     I4 First 4 Previous 1     Next Last H     1     GO       2.     STA connect to EG access to the Facebook with APP and Website, it will be				

	blocked, other websites can be accessed successfully.
Measured record:	
Testing conclusion:	

#### 3.3.2 Block User Access

Testing project:	Blacklist				
Testing purpose:	Add user(Name/IP) to blacklist				
Testing procedure and expected results:	<image/>				
	Ruffie EG     Scenario: SAM Enterprise @ Config Waard R Online Service Hil, admin v       None     User       Common User     Import/Export User       With Auth     With Service User				
	Control     Control     Control     Dest Backfeit: There was a field b				
	Caferran Nadoli 162128-9 Web Vinnion: 2018.3283 Details 6200-2019 Ruije Networks Ca, tad Service Partal   Service Mail   Official Website   Celline Service   _				

	RUMP FG				Scanarlas SAM Sataradas 🤗	Config Minard 9 College	anica III admin M
		Common Hoos 1	in a set free set i la se		scenario, securi enterprise 🔮	Config Wized Scotlines	ervice m, aunin +
	Home	Common oper	R Easy Gateway - Google Chrome	USW .			
	Common	VIP/Server User: These user User Blacklist: These user	O Not secure   192.168.10.4/u	iser_pl/user_stopuser.htm			
	Local Auth	Audit-Exempt User: Thes	+Add Blacklisted User				
	Flow Block Internet Access		User Name	IP Address	MACAddress	Action	
	<b>T</b>		Jww3on	10	#	Delete	
	Behavlor	<b>(</b>	11	192.168.40.66	#	Delete	
	Ø	VIP/Server User	L Show No.: 10 • Total Court	tt2	H First 4 Previous 1 N	ext Last H 1 GO	
	security						
	User						
	6						
	Network						
	<u> </u>						
	WLAN						
	٢						
	Advanced						
	Collapse						
	Med	del: EG2100-P Web Version	n: 2018.9.20.19 Details		©2000-2019 Ruijie Networks Co.,	ttd Service Portal   Service Mail   Official	Website   Online Service   🖕
	2 STA co	nnect to	h FG with th	e user in hla	ecklist and try	access to th	e internet
	2. 517.00	inicet to					e meenee,
	he will	he bloc	rked				
	iie wiii						
Measured record:							
Testing conclusion:							
	1						

# 3.4 Cloud && App Monitoring

# 3.4.1 Login EG WEB via Cloud

Testing project:	EG WEB configuration		
Testing purpose:	Cloud open EG WEB and access successfully		
	4 Make sure the EG online on Cloud.		
	RUJTO CONFIGURATION MAINTENANCE 6 0 0		
Testing procedure and expected results:	ANARONAL ALL CONTRACTOR AND A		



## 3.4.2 Cloud Monitoring

Testing project:	Monitoring(Ruijie cloud)
Testing purpose:	EG overview status and WAN/LAN status can be monitoring on Ruijie Cloud WEB
Testing procedure and expected results:	<ol> <li>Ruijie cloud can monitor the device status, including device details, traffic information, current user, interface status and alarm. The CWMP interface can work normally.</li> </ol>





## 3.4.3 Ruijie Cloud App Monitoring

Testing project:	Monitoring(Ruijie cloud APP)		
Testing purpose:	Ruijie Cloud App(IOS or Android) monitoring EG status(IOS and Android)		
Testing procedure and expected results:	<ol> <li>Ruijie cloud can monitor the device info, system status, clients status, applications status and log.</li> <li>Using the Ruijie Cloud APP to add, delete, and configure devices. You can synchronize them under the same account of the Ruijie Cloud.</li> <li>Support IOS or Android version.</li> </ol>		

Measured record:	
Testing conclusion:	

# **3.5** Authentication Acceleration (EG Offload)

# 3.5.1 Synchronize Voucher/Account to EG

Testing project:	Synchronize Voucher/Account to EG
Testing purpose:	Use Cloud Voucher Code to log in with Portal WiFi (SSID)
Testing procedure an expected results:	1. EG is installed and online on the Ruijie Cloud, the Ruijie Cloud operates the voucher user (addition and deletion), which can be correctly synchronized to the EG. Create the package          Image: Ima
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	MONITORING CO	ONFIGURATION	N MAINTEN						<b>-</b>	0000
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🗷 WIRELESS	L Meuslaw									
Basic	Print Vourher Manage Park	kane More +	Total Vouchers:	12 Activated Vouch	ers: 0 😐 Dec	leted Vouchers @ : 2		Voucher Code,	Name/Ref, IQ Adva	nced Search V
Layout Load Balance	Vourber Gode Name	Ref Package Name	Price Perior	f Created at	Expired at	Devices Bind MAC	Data Usane	Max Download Rate	Max Upload Rate	Status
RF Planning	6pewr6 -	test	10.00 2 Hour	s 2019-09-18 11:08:45		0/3 Yes	0 MB/500 MB	1 Mbps	512 Kbps	Not Activated
Bluetooth	jhrig -	test	10.00 2 Hour 10.00 2 Hour	s 2019-09-18 11:08:45 s 2019-09-18 11:08:45		0/3 Yes 0/3 Yes	0 MB/500 MB	1 Mbps	512 Kbps 512 Kbps	Not Activated
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	nmyq3u -	test	10.00 2 Hour	s 2019-09-18 11:08:45		0/3 Yes	0 MB/500 MB	1 Mbps	512 Kbps	Not Activated
	m5kvb -	test	10.00 2 Hour	s 2019-09-18 11:08:45		0/3 Yes	0 MB/500 MB	1 Mbps	512 Kbps	Not Activated
			First	Previous Page	10f2	Next			10 -	12 in total
Enable the	auth integra	ation w	ith Clo	ud						
Ruíjie EG				half to 10 years of		Scenario: S&M En	nterprise 🔞	Config Wizard	A Online Service	Hi, admin 🗸
Home	Auth Policy Auth Sen	ver Advance	ed Settings	Whitelist Settings	Single Sig	in-On User P	ermission	OnlineInto		
Web Auth	Note: 1. Bridge mode is not support 2. Any two among Web auther	ted. nöcation, marketing auth	hentication and local s	erver authentication cannot be	enabled at the si	ame time.				
Local Auth	3. You can configure usemam 4. You can view AD domain up	ne and password on the	User page.							
Flow Block Internet Access	5. Users who fail single sign-	on will be matched with	the other policies.							
	6. Please disable flow control	i if you want to configure	rate limit on cloud acc	ounts for Auth Integration with	Cloud. Otherwise	i, rate limiting may not fun	iction accurately.			
(I)	+Add Policy X Delete Selecte	ed Disable Local Se	rver Auth: ON	Auth Integration with Clou	d: ON					
Security	Policy Name		P Range	Auth Se	rver	Policy Type	Policy S	Status Status N	latch Order	Action
* <u>e</u>				N	Record Four	nd				
्र Show the	users synced	from C	loud							
Ruite EG						Scenario: S&M En	iterprise 👩	Config Wizard	A Online Service	Hl, admin 🗸
	Common Here	t/Export Liser	Special Liser							
Home Web Auto	Use freeter		Path: root/	cloud						
Common Local Auto	- Caroot		Behavior Po	olicies: 0 records 🔂 Det	alls					
	Goud 💭					S	earch by Nan	ne •		Search
How Access			0	Name	÷	IP/MAC Addres	ss Ç	Behavior Policy D	etails	Action Delet-
State Behavior			0	sbtkqs		Null				dīt Delete
. Complete				jww3on		Null		Ξ		dit Delete
5Q			0	y3gx75		Null		E		dit Delete
User	AD Domain User Structure			tzg7ng		Null				dit Delete
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exte	rnal netwo	rk bv v	/ouch	er auth	entic	ation				
Add the au	uthentication	IP rang	ge							

	Ruíjie EG	Scenario: SBM Enterprise 💿 🧧 Config Witzard 🔊 Online Service 🛛 Hi, admin 🦄
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	Web Auth	Note: 1. Bridge mode is not supported.
	Common Local Auth	2. Any two among Vielo submerid: alon, markeling subter  2. You can configure usemame and password on the U Enable
	Flow Block Internet	4. You can view XD domain user information on the Use 5. Users who hat single sign-on-will be matched with the Policy Name test
	Access	6. Please disable for control Pyou want to configure ra Policy Type:
	Behavlor	+Add Policy XDelete Selected Disable Local Serv IP Range: 192,168.302-192,168.30253
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	• <u>Q</u>	
	0 User	Show No: 10 * Total Count 0 K Pro: Not > Las H 1 60
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	Ruíjie EG	Scenario: S&M Enterprise 🜒 🦉 Config Wizard 🖄 Online Service 🛛 Hi, admin 🕚
	Home User	Auth Policy         Auth Server         Advanced Settings         Whitelist Settings         Single Sign-On         User Permission         Online Info
	Web Auth	Note: 1. Bridge mode is not supported.
	Common Local Auth	<ol> <li>Any two among Web authentication, maniating authentication and local server authentication cannot be enabled at the same time.</li> <li>You can configure username and password on the User page.</li> </ol>
	How Block Internet	4. You can view XD domain user information on the User page. 5. Users who fail single size-ow will be matched with the other policies.
	Access	8. Please disable flow costs) if you want to configure rate limit on cloud accounts for Auth integration with Cloud. Otherwise, rate limiting may not function accountely.
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	Security.	
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	Show the <b>Ruffie EG</b> Hone User Hone Web Auth	e online info Scenario: S&M Enterprite  C Config Waard  R Online Service Hi, admin Auth Policy Auth Server Advanced Settings Whitelist Settings Single Sign-Cin User Permission Online Info Nete: Famotie number of 15th adheticator, be molie number with a displayed at the servename.
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	Show the Ruffe EG Ver Ver Auto Ver Auto For Ver Auto	e online info
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	Show the Ruffe EG Hore Ver Auto Derric Ver Auto Derri	e online info
	Show the Ruffe EG Hore Ver Auto Derrich From Ver Auto Derrich From Ver Auto Derrich Research Control Standard Control	e online info
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Testing conclusion:	
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# 3.5.2 Speed Limit

Testing project:	Vouc	her												
Testing purpose:	Diffe	rent	Vo	uche	r Pr	ofile	e with di	fferent s	spee	ed li	mit			
Testing procedure and expected results:	1. Config Config Voucher Vouch	Conf Ruijii gure m f f f f f f f f f f f f f f f f f f	igul e Cl the i i i i i i i i i i i i i i i i i i i	re the loud. speed to to to to to to to to to to to to to	e dif	ffere it // workers 1 // worker	Activated Voucher     Count of     O     Activated Voucher     O     O     Activated Voucher     O    O	her prof Performance Performa	ile v	Bad MAC Vas Vas Vas Vas Vas Vas Vas Vas Vas Vas	Cats Jace 0 M3-500 M8 0 M3-50	rent spe verter s	eedlim Maxipa and 512 kbps 512 kb	it on
	r	resu	lt w	heth	er t	he s	ame as	Voucher	pro	ofile	confi	igured.	•	
Measured record:														
Testing conclusion:														

## 3.5.3 Seamless Authentication

Testing project:	Seamless
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Testing purpose:	Enable and disable Seamless
Testing procedure and expected results:	<ul> <li>1. EG is installed and online on the Ruijie Cloud, the Ruijie Cloud operates the Voucher user (addition and deletion), which can be correctly synchronized to the EG.</li> <li>2. Enable and disable seamless on EG.</li> <li>Close means disable seamless, seamless MAC bypass means enable seamless with MAC</li> <li>Image of the theory of the set of the seamless of the seamless with Policy of the set of the seamless of the seamless is searly of the set of the seamless is the seamles is the different STAs, record the result. First time STA login</li> </ul>
	to online, then next time STA come back the network (or you can kick out the
Measured record:	user on EGJ, ne will be online automatically.
Testing conclusion:	

# 3.5.4 Compatibility test of EG local authentication

Testing project:	Compatibility
Testing purpose:	Compatibility with STAs
Testing procedure and expected results:	<ol> <li>Configure the captive portal template on Cloud and synchronize it to EG</li> <li>The user can select login options and customize the portal page</li> <li>Enable local auth on EG, including account, voucher and one-click authentication</li> <li>Use different STAs including laptop and mobile phone (iOS and Android), and make sure the portal page pops up automatically and is consistent with the template on Cloud</li> </ol>
Measured record:	

	Phone Model	OS and version	Browser	Result
	Iphone X	IOS 12.2	Safari	
	Samsung S10	Android 9.0	Chrome	
Measured record:				
Testing conclusion:				

# 3.6 User Access Log Audit

# 3.6.1 User access log checking

Testing	Log audit
project:	
Testing	User access log (such as visited URL, source/dest IP, etc.) should send out via HTTF
purpose:	to Log Server
	1. Enable the log policy on EG and set the log level.
	Scenario: S&M Enterprise @ G Config Waard A Online Service Hi, admin 🗸
	Home System System Log Systog Server
	Upgrade Upgrad
	Row ConnectMy Log Upload Mode: © Real Time # File Upload
	Schedule ServerIP: 17231.61.133
	Central Port 80 * (1-65535)
	System Log Sener Type: Other
	Log Policy (AHTP)
	Network Report
	WLAN         Scheduled Transmission           Image: Im
lesting	Advanced Transmission Log Type           Image: Stransmission Log Type           Image: Stran
procedure	Colopie. If Enable URL Audit Enterface Sessions Audit Elip App Traffic Audit
and	Imp Sessions Audit         Imp Channel Traffic Audit         Imp Channel Traffic Audit           Imp Sessions Audit         Imp Channel Traffic Audit         Imp Channel Traffic Audit
avecated	System ServerLog System Log System Server
expected	Note: Upgrade Note: The port ID of the device shall be the same as the peer server port ID. If the peer device is an SNC server, only the CPU(memory usage logs, hard disk usage logs, interface session audit logs, IP ruffic audit logs, and
results:	Control To Buse Collection To Bu
	How Connection Log Upload Mode: Real Time ® File Upload
	behudur Schedule ServerIP:
	Certification Control Port 20000 * 20000-53000
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	Save Save
	WAN         Server IP         Log Upload Mode         Server Type         Port         Via MGMT Interface         Log Type         Other         Action
	CPUMemory Usage Log     Transmission Time: 0 - 0
	Show No: 10 • Total Council         If First 4 Pre 1 Next > Last Pl 1 00
	Modele ES2120-9 Web Version: 2018.0.2013 Details ©2000-2019 Ruije Networks Ca, Led Senics Portal   Senics Mail   Official Website   Online Senics
	2. Configure the log server (HTTP).



## 3.7 IPSEC VPN

#### 3.7.1 Establish VPN

Testing	Establish VPN
project:	
Testing purpose:	The HQ and branch gateways use static IP addresses. The HQ gateway needs to verify the IP address of branch gateway.
	1. Check the network topology.
	172.26.6.150 IPsec tunnel 172.26.6.33
Testing procedure and	Branch: EG2
expected results:	
	192.168.1.0/24 192.168.2.0/24
	2. Configure the branch.
	1) Complete wizard-based setup to meet basic Internet access requirements of users in the HQ a
	branch. If the users can access the Internet, check whether the next hop address is configured
	the WAN Interface.
	2) Configure Prec for the branch. Choose Network > VPN and click Configure Select Pranch and click Next
	Choose Network > VFN and click Configure. Select Branch, and Click Next.

Select a l'Ostroll.			/ Network
Headquarter	🗊 😨 😨 🐻		2 Configure
Set the current device as			
Headquarter device and connect the terminal devices to it.			3 Connect
	Internet		
Branch Set the current device as Branch device and connect the terminal devices to it to access the Headquarter.	Branch Branch		
			Back
$\equiv$ Welcome to VPN Confi	g Wizard		
Enter Basic Information			/ Networ
Enter Basic Information.			/ Netwo
Enter Basic Information. VPN Type:	IPSec 🗸		/ Netwo
Enter Basic Information. VPN Type: HQ Public IP/Domain Name:	IPSec         ✓           172.26.6.150         * +IP/URL ❷		/ Netwo
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key:	IPSec     ✓       172.26.6.150     * +IP/URL        *		/ Netwo
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key:	IPSec     ✓       172.26.6.150     * +IP/URL         *		<ul> <li>/ Netwo</li> <li>2 Config</li> <li>3 Connect</li> </ul>
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface:	IPSec       ✓         172.26.6.150       * +IP/URL           *         Gi0/0 ✓		/ Networ / Config / Connec
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface: Network Config	IPSec       ✓         172.26.6.150       * +IP/URL           *         Gi0/0 ✓          Wizard		/ Networ
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface: Network Config Local Network	IPSec     ✓       172.26.6.150     * +IP/URL         *       Gi0/0 ✓        Wizard       rk     HQ Network	+	/ Netwo
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface: Network Config Local Networ 192.168.2.0	IPSec       ✓         172.26.6.150       * +IP/URL          •••••••       *         Gi0/0 ✓          Wizard       HQ Network         255.255.0       192.168.1.0       255.255	+ 5.255.0 ×	/ Netwo
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface: Network Config Local Network 192.168.2.0 255	IPSec       ✓         172.26.6.150       * +IP/URL          172.26.6.150       *         Image: State of the state	+ 5.255.0 ×	/ Netwo
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface: Network Config Local Networ 192.168.2.0 255	IPSec       ✓         172.26.6.150       * +IP/URL           *         Gi0/0 √          Wizard          rk       HQ Network         255.255.0       192.168.1.0       255.255         Ivance Settings	+ 5.255.0 ×	/ Networ
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface: Network Config Local Network 192.168.2.0 255	IPSec       ✓         172.26.6.150       * +IP/URL          Image: state	+ 5.255.0 ×	/ Networ 2 Config 3 Connec
Enter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: Interface: Network Config Local Network 192.168.2.0 255 Additional Statements of the second statements of the s	IPSec       ✓         172.26.6.150       * +IP/URL           *         Gi0/0 ✓          Wizard          rk       HQ Network         255.255.0       192.168.1.0         vance Settings	+ 5.255.0 ×	/ Network

Negotiation Mode:       Main Mode         IKE Policy:       Encryption Algorithm         Hash Algorithm       DH Group         Lifetime         DES       SHA	
IKE Policy: Encryption Algorithm Hash Algorithm DH Group Lifetime	30.0
DES V SHA V Group 1 V 86400 @	<b>2</b> Configure
	3 Connect to
Iransform Set 1: esp-des esp-sha-hmac	
Transform Set 2: Not configure	
PFS(Perfect Forwarding	
Secrecy): Disable	
IPSec Lifetime: 3600 second(s)	
DPD Type: on-demand  DPD Interval: 30 second(s) ?	
2) Configure IPsec for router A in the HQ.	
Choose Network > VPN and click Configure. Select Headquarter, and	click Next.
Welcome to VPN Config Wizard Select a Position:	/ Netwo
Welcome to VPN Config Wizard       Select a Position:       Image: Welcome to VPN Config Wizard       Image: Welcome to VPN Conf	/ Netwo
Welcome to VPN Config Wizard         Select a Position:         Image: Headquarter Set the current device as Headquarter device and connect	/ Netwo
Welcome to VPN Config Wizard Select a Position: Welcome to VPN Config Wizard Feadquarter Set the current device as Headquarter device and connect the terminal devices to it.	/ Netwo 2 Branch 3 VPN Ty
Welcome to VPN Config Wizard Select a Position:	<ul> <li>/ Netwo</li> <li>2 Branch</li> <li>3 VPN Ty</li> <li>4 Finish</li> </ul>
E Welcome to VPN Config Wizard Select a Position:	<ul> <li>/ Netwo</li> <li>2 Branch</li> <li>3 VPN Ty</li> <li>4 Finish</li> </ul>
E Welcome to VPN Config Wizard Select a Position: Meadquarter Set the current device as Headquarter device and connect the terminal devices to it. Internet	<ul> <li>/ Netwo</li> <li>2 Branch</li> <li>3 VPN Ty</li> <li>4 Finish</li> </ul>
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<ul> <li>Welcome to VPN Config Wizard</li> <li>Select a Position:</li> <li>Meadquarter</li> <li>Set the current device as</li> <li>Headquarter device and connect</li> <li>the terminal devices to it.</li> </ul>	<ul> <li>/ Netwo</li> <li>2 Branch</li> <li>3 VPN Ty</li> <li>4 Finish</li> </ul>

Select a Branch Type:	/ Netwo	ork Positi
🗆 Mobile User 🔲 🊄	2 Branc	:h Type
	3 VPN T	Гуре
Z Branch	4 Finish	
	Back	N
Select IPsec, and click Next.		
Select IPsec, and click Next. Welcome to VPN Config Wizard Recommended VPN Types:	/ Netw	ork Posit
Select IPsec, and click Next. Welcome to VPN Config Wizard Recommended VPN Types: You can change the VPN type.	/ Netwo	ork Posit
Select IPsec, and click Next. Welcome to VPN Config Wizard Recommended VPN Types: You can change the VPN type. Branch	□ L2TP	ork Posit
Select IPsec, and click Next. Welcome to VPN Config Wizard Recommended VPN Types: You can change the VPN type. Branch	<ul> <li>↓ Netwo</li> <li>2 Branc</li> <li>2 IPSec</li> <li>3 VPN</li> </ul>	ork Posit :h Type <b>Type</b>
Select IPsec, and click Next.          Welcome to VPN Config Wizard         Recommended VPN Types:         You can change the VPN type.         Branch	<ul> <li>↓ Network</li> <li>2 Brance</li> <li>2 Properties</li> <li>3 VPN</li> <li>4 Configure</li> </ul>	ork Posit :h Type <b>Type</b> igure IPSe
Select IPsec, and click Next.          Welcome to VPN Config Wizard         Recommended VPN Types:         You can change the VPN type.         Branch	□ L2TP ☑ IPSec □ L2TP IPSec ☑ Config ☑ Finish	rork Posit :h Type <b>Type</b> igure IPSo
Select IPsec, and click Next.          Welcome to VPN Config Wizard         Recommended VPN Types:         You can change the VPN type.         Branch         PPTP/L2TP: Support access authentication without data end	□ L2TP ☑ IPSec □ L2TP IPSec ☑ ZTP IPSec ☑ Config 五 Finish acryption.	rork Posit :h Type <b>Type</b> igure IPSo
Select IPsec, and click Next. Welcome to VPN Config Wizard Recommended VPN Types: You can change the VPN type. Branch PPTP/L2TP: Support access authentication without data errors PPTP/L2TP: Support access authentication without data errors IPSec: Support data encryption. L2TP IPSec: Support access authentication and data encryption. L2TP IPSec: Support access authentication and data encryption. L2TP IPSec: Support access authentication and data encryption. Branch	□ L2TP □ L2TP □ IPSec □ L2TP IPSec □ L2TP IPSec 3 VPN 4 Config 5 Finish acryption.	rork Posit th Type <b>Type</b> igure IPS
Select IPsec, and click Next.             Welcome to VPN Config Wizard          Recommended VPN Types:         You can change the VPN type.         Branch            PPTP/L2TP: Support access authentication without data encryption.         L2TP IPSec: Support access authentication and data encryption.         L2TP IPSec: Support access authentication and data encryption.	L2TP ☐ L2TP ☐ IPSec ☐ L2TP IPSec ☐ 2 Branc ☐ VPN ☐ Config 5 Finish hcryption. ption.	rork Posit ch Type <b>Type</b> igure IPS
Select IPsec, and click Next.             Welcome to VPN Config Wizard          Recommended VPN Types:         You can change the VPN type.         Branch            PPTP/L2TP: Support access authentication without data encryption.         L2TP IPSec: Support access authentication and data encryption.         L2TP IPSec: Support access authentication and data encryption.	L2TP ☐ L2TP ☐ IPSec ☐ L2TP IPSec ☐ Config 5 Finish acryption.	ork Posit ch Type <b>Type</b> igure IPSi
Select IPsec, and click Next.          Welcome to VPN Config Wizard         Recommended VPN Types:         You can change the VPN type.         Branch         PPTP/L2TP: Support access authentication without data encryption.         L2TP IPSec: Support access authentication and data encryption.	L2TP ☐ L2TP ☐ IPSec ☐ L2TP IPSec ☐ Config 5 Finish ption.	ork Posit th Type <b>Type</b> igure IPSe

Configure IPSec P	arameter					/ Network Position
Pre	-shared Key: ••••••	•	* ?			2 Branch Type
I	Local ID 🕜 : 🗌 Enabl	le				3 VPN Type
Net	work Config Wizard					<b>4</b> Configure IPSec
Local	Network	The brar	ich network	Outbound Interface	+	
192.168.1.0	255.255.255.0	192.168.2.0	255.255.255.0	Gi0/0	×	5 Finish
						Back Next
Welcome to	VPN Config Wizar	ď				
Welcome to	VPN Config Wizar	rd 				<ul> <li>/ Network Position</li> </ul>
KE Policy	VPN Config Wizar	r <b>d</b> ettings m Hash Algorithr	n DH Group	Lifetime		<ul> <li>/ Network Position</li> <li>2 Branch Type</li> </ul>
Welcome to	<ul> <li>VPN Config Wizar</li> <li>Advance Se</li> <li>/: Encryption Algorith</li> <li>DES </li> </ul>	rd ettings m Hash Algorithr SHA ✔	n DH Group group1 V	Lifetime 86400		<ul> <li>/ Network Position</li> <li>2 Branch Type</li> </ul>
Welcome to	VPN Config Wizar  Advance Se  CENCYPTION Algorith  DES	rd ettings m Hash Algorithr SHA ✓	n DH Group group1 V	Lifetime 86400		<ul> <li>/ Network Position</li> <li>2 Branch Type</li> <li>3 VPN Type</li> </ul>
KE Policy	VPN Config Wizar  Advance Se  CEncryption Algorith  DES  () () () () () () () () () () () () ()	rd ettings m Hash Algorithr SHA V	n DH Group group1 V	Lifetime 86400		<ul> <li>/ Network Position</li> <li>2 Branch Type</li> <li>3 VPN Type</li> <li>4 Configure IPSec</li> </ul>
Welcome to IKE Policy Transform Set 1 Transform Set 2	<ul> <li>VPN Config Wizar</li> <li>Advance Set</li> <li>Encryption Algorith</li> <li>DES </li> <li>l: esp-des esp-sha-h</li> <li>2: Not configure</li> </ul>	rd ettings m Hash Algorithr SHA V	n DH Group group1 v v	Lifetime 86400		<ul> <li>I Network Position</li> <li>Branch Type</li> <li>VPN Type</li> <li>Configure IPSec</li> <li>Finish</li> </ul>
Welcome to IKE Policy Transform Set 7 Transform Set 7 PFS(Perfe	<ul> <li>VPN Config Wizar</li> <li>Advance Set</li> <li>Encryption Algorith</li> <li>DES </li> <li>esp-des esp-sha-h</li> <li>Not configure</li> </ul>	d ettings m Hash Algorithr SHA ✓	n DH Group group1 v v	Lifetime 86400 🕜		<ul> <li>/ Network Position</li> <li>2 Branch Type</li> <li>3 VPN Type</li> <li>4 Configure IPSec</li> <li>5 Finish</li> </ul>
Welcome to IKE Policy Transform Set 7 Transform Set 7 PFS(Perfe Forwardin Secrecy	VPN Config Wizar  Advance Se  CEncryption Algorith  DES  CENCPUT  CENCPUT CENCPUT  CENCPUT  CENCPUT CENCPUT CENCPUT CENCPUT CENCPUT CENCP	rd ettings m Hash Algorithr SHA ✓ nmac	n DH Group group1 V V	Lifetime 86400		<ul> <li>/ Network Position</li> <li>2 Branch Type</li> <li>3 VPN Type</li> <li>4 Configure IPSec</li> <li>5 Finish</li> </ul>
Welcome to IKE Policy Transform Set 7 Transform Set 7 PFS(Perfe Forwardin Secrecy	<ul> <li>VPN Config Wizar</li> <li>Advance Set</li> <li>Encryption Algorith</li> <li>DES </li> <li>esp-des esp-sha-h</li> <li>esp-des esp-sha-h</li> <li>Not configure</li> <li>Not configure</li> <li>Disable</li> <li>3600</li> </ul>	rd ettings m Hash Algorithr SHA V mmac	m DH Group group1 v v v v	Lifetime 86400		<ul> <li>/ Network Position</li> <li>2 Branch Type</li> <li>3 VPN Type</li> <li>4 Configure IPSec</li> <li>5 Finish</li> </ul>
Welcome to IKE Policy Transform Set 7 Transform Set 7 PFS(Perfe Forwardin Secrecy IPSec Lifetime	<ul> <li>VPN Config Wizar</li> <li>Advance Set</li> <li>Encryption Algorith</li> <li>DES </li> <li>esp-des esp-sha-h</li> <li>esp-des esp-sha-h</li> <li>Not configure</li> <li>Disable</li> <li>3600</li> </ul>	rd ettings m Hash Algorithr SHA ▼ mmac secon	n DH Group group1 v v v d(s) ?	Lifetime 86400 ?		<ul> <li>1 Network Position</li> <li>2 Branch Type</li> <li>3 VPN Type</li> <li>4 Configure IPSec</li> <li>5 Finish</li> </ul>

	Welcome to VPN Config Wizard		
	The VPN is created.	/ Net	work Position
		2 Bran	ich Type
	Then:	3 VPN	Туре
	View branch configuration. 🔁 <u>View</u>	4 Con	figure IPSec
		<i>5</i> Finis	sh
		Back	Finish
		Back	Finish
		Back	Finish
4. Ve	rification Choose Network > VPN, and click the Topo tab to view the co	Back	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co	Back	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co Branch Info	Back	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co VPN           Branch Info           Topo           Table	Back	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co VPN Branch Info Topo Table All Branches Add HQ Add Branch	Back	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co VPN Branch Info Topo Table All Branches Add HQ Add Branch	Back	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co VPN Branch Info Topo Table All Branches Add HQ Add Branch	Back	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co	Back Donfiguration.	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co VPN Branch Info Topo Table All Branches Add Branch	Back Donfiguration.	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co VPN           Branch Info           Image: Comparison of the top of top of the top of	Back configuration. Ruijie (local device) IP: 172.266.150	Finish
4. Ve 1)	rification Choose Network > VPN, and click the Topo tab to view the co	Back configuration. Ruijie (local device) IP: 172.266.150	Finish

	VPN			
	Branch Info	E View 172.26.6.33 D	etails ×	
	Topo Table All Branches Y	Device Name:	172.26.6.33	
		Connected:	Connected	
		Connected on:	2021-05-19 09:17:35	
	Add HQ Add Branch	Public IP:	172.26.6.33	
		172.26.6.33	Cancel	
Measured				
record:				
Testing				
conclusion				
:				

## 3.8 L2TP over IPsec VPN

#### 3.8.1 Establish VPN

Testing	project:	Establish VPN
Testing	purpose:	Branch and clients create the L2TP over IPsec VPN with HQ.
Testing	procedure	1. Check the network topology.
and	expected	
results:		



Select a Position:		
Headquarter Set the current device as Headquarter device and connect the terminal devices to it.		
	Internet	
Branch Set the current device as Branch device and connect the terminal		Branch
leadquarter.	Branch	
Welcome to VPN Confi	g Wizard	
Welcome to VPN Confinter Basic Information.	g Wizard	
Welcome to VPN Confine ter Basic Information.	g Wizard	
Welcome to VPN Confine Ther Basic Information. VPN Type: HQ Public IP/Domain Name:	g Wizard L2TP IPSec 172.26.6.150	★ +IP/URL
Welcome to VPN Confine Mercome to VPN Confine Mercome to VPN Confine New Yellow Confine Mercome to VPN Confine New Yellow Confine New Yello	g Wizard L2TP IPSec 172.26.6.150	* +IP/URL     *
Headquarter. Welcome to VPN Confination. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: User Name:	g Wizard L2TP IPSec 172.26.6.150 test	* +IP/URL     *     *
Headquarter. Welcome to VPN Confination. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: User Name: Password:	g Wizard          L2TP IPSec         172.26.6.150         ••••••         test	* +IP/URL     *     *     *     *     *     *     *
Headquarter. Welcome to VPN Confi Inter Basic Information. VPN Type: HQ Public IP/Domain Name: Pre-shared Key: User Name: Password: HQ Network:	g Wizard [L2TP IPSec 172.26.6.150 •••••• test ••••• 192.168.1.0	✓ ★ +IP/URL ★ *

Welcome to VPN C	Config Wizard			
Auth:	🗆 Enable 😮			
IKE Policy: Enci	ryption Algorithm	Hash Algorithm	DH Group	Lifetime
DE	s 🗸	SHA 🗸	group1 🗸	86400
Transform Set 1:	esp-des esp-sha-l	nmac	~	
Transform Set 2:	Not configure		~	
PFS(Perfect Forwarding				
Secrecy):	Disable	~		
IPSec Lifetime:	3600	second	(s) 😮	
DPD Type:	on-demand V	DPD Interv	val: 30 seco	ond(s) 😮
Keepalive Interval:	60 second	(s)		
Allow LO to Access				
Welcome to VPN	Config Wizard			
	Sec.	Connecting		
I				

Connect operation succeeded. You can now access the headquarter network.
<ul> <li>3) Configure the HQ.</li> <li>Complete wizard-based setup to implement basic Internet access service of the HQ router.</li> <li>Configure L2TP IPsec for router A in the HQ.</li> <li>Choose Network &gt; VPN and click Configure. Select Headquarter, and click Next.</li> </ul>
Select a Position:
Headquarter Set the current device as Headquarter devices to it.
Internet
O Branch Set the current device as Branch devices to it to access the Headquarter.

Select Mobile User, and click Next.	
Select a Branch Type:	
Mobile User	
Branch	
Select L2TP IPsec, and click Next.	
<b>Recommended VPN Types:</b> You can change the VPN type.	
Mobile User	□ PPTP ☑ L2TP IPSec
PPTP/I 2TP · Support access authentication without data encryption	
IPSec: Support data encryption. L2TP IPSec: Support access authentication and data encryption.	
Enter the basic information, client IP range and DNS	

	· · · · · · · · · · · · · · · · · · ·				
Enter Basic Information	n				
Client IP Range:	100.1.1.1	~ 100.1.1.2	*		
	Please make sure the not in use in the LAI	at the IP add V.	lresses are		
HQ Domain Name:					
Primary DNS Server:	8.8.8.8				
Secondary DNS Server:	8.8.4.4				
	If a mobile user wan through the domain address should be c usually the same wit LAN DNS server.	ts to access name, a DN onfigured wi th the addres	the LAN IS server hich is ss of the		
	>> Advance Settings				
Enable the	branch and add t	he branch	n network		
Enable the Welcome to VPN	branch and add t Config Wizard	he branch	n network		
Enable the	branch and add t Config Wizard LAN DNS server.	he branch	n network		
Enable the	branch and add t Config Wizard LAN DNS server. Advance Settings	he branch	n network		
Enable the Welcome to VPN Local Tunnel IP:	branch and add t Config Wizard LAN DNS server. Advance Settings 100.1.1.1	he branch	n network		
Enable the Welcome to VPN Local Tunnel IP: Local Tunnel Mask:	branch and add t Config Wizard LAN DNS server. Advance Settings 100.1.1.1 255.255.255.0	he branch	n network		
Enable the Welcome to VPN Local Tunnel IP: Local Tunnel Mask: L2TP Keepalive	branch and add t Config Wizard LAN DNS server. Advance Settings 100.1.1.1 255.255.255.0	he branch	n network		
Enable the Welcome to VPN Local Tunnel IP: Local Tunnel Mask: L2TP Keepalive Interval:	branch and add t Config Wizard LAIN DINS server. Advance Settings 100.1.1.1 255.255.255.0 600 second(s).	he branch	n network		
Enable the Welcome to VPN Local Tunnel IP: Local Tunnel Mask: L2TP Keepalive Interval: L2TP Verification Code:	branch and add t Config Wizard LAIN DINS server. Advance Settings 100.1.1.1 255.255.255.0 600 second(s). Enable	he branch	n network		
Enable the Welcome to VPN Local Tunnel IP: Local Tunnel Mask: L2TP Keepalive Interval: L2TP Verification Code: Allow HQ to Access	branch and add t Config Wizard LAIN DINS server.  Advance Settings 100.1.1.1 255.255.255.0  600 second(s). Enable	he branch	n network		
Enable the  Welcome to VPN Local Tunnel IP: Local Tunnel Mask: L2TP Keepalive Interval: L2TP Verification Code: Allow HQ to Access Branch:	branch and add t Config Wizard LAIN DINS server.  V Advance Settings 100.1.1.1 255.255.255.0  600 second(s). Enable Rable	he branch	n network		
Enable the  Welcome to VPN Local Tunnel IP: Local Tunnel Mask: L2TP Keepalive Interval: L2TP Verification Code: Allow HQ to Access Branch: Branch Tunnel IP	branch and add t Config Wizard LAN DNS server. V Advance Settings 100.1.1.1 255.255.255.0 600 second(s). Enable Z Enable	he branch	n network		+

Save Account					
	on				
Local Device	e Other System 😮	)			
Add Branch	User Name: test	Password: •••	•• Edit	Cancel	
Туре:	ι	Jser Name		4	Action
6		test		Edi	t Delete
Show No.: 1	0 🗸 Total Count: 1	I∢ Fin	st ∢ Previous 1	Next Last	1 1
	e to VPN Config Wiz	ard			
	Pre-shared Key:		* 🕐		
	The shared key.				
	Local ID 😮 : 🗆 Ena	able			
	X Advance	Settings			
	🕹 Advance	Settings			
Inte	rface: ☑ Gi0/0 😵	Settings			
Inte IKE F	vrface: ☑ Gi0/0 ❷ Policy: Encryption Algori	Settings thm Hash Algorith	nm DH Group	Lifetime	
Inte IKE F	<ul> <li>✓ Advance</li> <li>erface: ✓ Gi0/0 ②</li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> </ul>	Settings thm Hash Algorith	nm DH Group <b>group1 √</b>	Lifetime 86400 💡	
Inte IKE F	¥ Advance erface: ☑ Gi0/0 � Policy: Encryption Algori DES ✓	Settings thm Hash Algorith	nm DH Group group1 🗸	Lifetime 86400	
Inte IKE F Transform	<ul> <li>✓ Advance</li> <li>erface: ✓ Gi0/0 </li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> <li>Set 1: esp-des esp-sha</li> </ul>	Settings thm Hash Algorith SHA 🗸	nm DH Group group1 v	Lifetime 86400	
Inte IKE F Transform Transform	<ul> <li>✓ Advance</li> <li>erface: ✓ Gi0/0 </li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> <li>Set 1: esp-des esp-sha</li> <li>Set 2: esp-3des esp-m</li> </ul>	Settings thm Hash Algorith SHA ✓	nm DH Group group1 • •	Lifetime 86400 🕜	
Inte IKE F Transform Transform	<ul> <li>✓ Advance</li> <li>erface: ✓ Gi0/0 </li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> <li>Set 1: esp-des esp-sha</li> <li>Set 2: esp-3des esp-m</li> <li>Perfect</li> </ul>	Settings thm Hash Algorith SHA V I-hmac d5-hmac	nm DH Group group1 v v	Lifetime 86400	)
Inte IKE F Transform Transform PFS(F Eonu	<ul> <li>✓ Advance</li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> <li>Set 1: esp-des esp-sha</li> <li>Set 2: esp-3des esp-m</li> <li>Perfect</li> <li>arding</li> </ul>	Settings thm Hash Algorith SHA ✓ -hmac d5-hmac	nm DH Group group1 🗸	Lifetime 86400	
Inte IKE F Transform Transform PFS(F Forw Soc	<ul> <li>✓ Advance</li> <li>erface: ✓ Gi0/0 </li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> <li>Set 1: esp-des esp-sha</li> <li>Set 2: esp-3des esp-m</li> <li>Perfect</li> <li>arding</li> <li>trecy): Disable</li> </ul>	Settings thm Hash Algorith SHA ✓	nm DH Group group1 v v	Lifetime 86400 ?	,
Inte IKE F Transform Transform PFS(F Forw Sec	<ul> <li>✓ Advance</li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> <li>Set 1: esp-des esp-sha</li> <li>Set 2: esp-3des esp-m</li> <li>Perfect</li> <li>arding</li> <li>crecy): Disable</li> </ul>	Settings thm Hash Algorith SHA -hmac d5-hmac	nm DH Group group1 v v	Lifetime 86400	
Inte IKE F Transform Transform PFS(F Forw Sec	<ul> <li>✓ Advance</li> <li>erface: ✓ Gi0/0 </li> <li>Policy: Encryption Algori</li> <li>DES ✓</li> <li>Set 1: esp-des esp-sha</li> <li>Set 2: esp-3des esp-m</li> <li>Perfect</li> <li>arding</li> <li>crecv): Disable</li> </ul>	Settings thm Hash Algorith SHA ✓ -hmac d5-hmac	nm DH Group group1 v v	Lifetime 86400 ?	

The VPN is created.
Then:
View branch configuration. 🔁 <u>View</u>
4) Verification
Choose Network > VPN, and click the Topo tab to view the configuration. HQ review
VPN
Branch Info
Add HQ Add Branch
Ruijie (local device)
IP: 172.26.6.150
172.26.6.33 172.26.10.86
Branch review

	VPN
	Branch Info Topo Table All Branches ~
	Add HQ Add Branch Config
	HQ1 172266.150 EG2100-P (local device) IP: 172266.33
Measured record:	
Testing conclusion:	

## 3.9 Resource Cache

# 3.9.1 Mobile App Caching

Testing project:	Mobile App Caching			
Testing purpose:	Resource cache refers to synchronizing resource from the specified server to a device. Afterwards, users can get the resource directly from the device without crossing WAN. Resource cache can reduce bandwidth usage and save users from waiting for access.			
Testing procedure and expected results:	1. Enable the cache function, the device will be restarted:			

2.	Enable resource cache:				
	Resource Cache Home Resource Cache App Cache Common Flow Rebailor Cache Security User Network	Scen.	ario: General 0	Config Wizard R Onlia	ne Service i Hi, admin 1
3.	Paste the download link o	of the resource to th	e "Reso	urces Address	51":
	Ruijie EG	Scena	rio: General 🔞	Config Wizard R Online	e Service 🛛 Hi, admin 🗸
	Home Resource Cache Monitoring Setting	gs -			
	App Cache Note: If the address is a doma Note: Please do not configure	in name, please configure DNS first. Up to 10 addresses a website as the cache address. Otherwise, the website	can be added.	in midule uses. TCP prove, which will	conflict with the Internet
	whield mode, make sure that the	e laternet daekt mode is turned off.			
	Flow Enable Cache:				
	Behavior Resources Cache Addres	S Cache Capacity (Used: 90.96MB Total: 750.00MB)	Disk Capacity (Free	: 2260.07MB Total: 2724.34MB)	
	Resources Address1:	ol/testapp/shoppingmall.apk	Add	11	
	⑦ Addsthe I	ink address to reso	ources a	ddress	
	Security.	Save Clear All			
	User Resources Cache Setting	s			
	Cache Status: ()	Cache Details]			
4. Ref Bahh Sec Sec Us Net Notes	Check the cache file:	Capacity (Joed: 30.96448 Total: 750.80440) Dink Ca rurijenetworks.com * X Delete + Add Clear AB bits • • 0 • : 0 • @ Cache Now Restore Dataut Details C2000-2019 Ruije Nete	quacity (Free: <b>2260.07A</b> and the second	18 Total, 2224,34448) 5111   Service Mail.   Official Website	r   Online Service
	Resource Name	Resource Size		Cache Time:	
ap	p.ruijienetworks.com/	error		2019-05-31 1	1:14:45
	how No.: 10 • Total Count: 2	anginalitapit 20.30MB	14 First 4	Pre 1 Next > Lact >	1 60
			Constraint of	the off or and the mark of	

	<ol> <li>5. Verification</li> <li>1) Download the file via browser:</li> <li>Today</li> </ol>
	shoppingmall.apk http://app.ruijienetworks.com:50090/tool/testapp/shoppingmall.apk 8.6 MB/s 85.6 MB of 91.0 MB, 0 secs left Pause Cancel
	2) The file is downloaded within the LAN.
Measured record:	
Testing conclusion:	