

# **Technical Guide**

# **Cross Gateway Roaming**

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# 1 Introduction

Cross Gateway Roaming is a powerful feature on the Controller that allows an authenticated end user to roam seamlessly within a large network deployment where multiple WLAN controllers are in service at different locations. Note that "authenticated end user" here refers to an end user that has been authenticated by any of the internal/external authentication options on the Controller.

Normally, when a user moves from an edge AP managed by one Controller to another edge AP managed by another Controller, the user would experience network disconnection and have to re-login. However, with Cross Gateway Roaming, the user can stay logged in to the network and continue to enjoy network access without interruption.

Cross Gateway Roaming adopts a star topology that consists of one Master Node that sits at the center and multiple Slave Nodes that connect to it. One Master Node may connect with up to 15 Slave Nodes. A Controller can be in Master Mode or Slave Mode depending on its Cross Gateway Roaming settings.

This technical guide aims to explain the setup flow of Cross Gateway Roaming on the Controller. Below are two exemplary network deployments that deploy Cross Gateway Roaming so that authenticated users could seamlessly roam within the larger network. For these network deployments, the Master and Slave Controllers could be operating at two adjacent buildings of a company or a hotel, for example, and authenticated users going from one building to the other could stay connected to the Internet. For Network Topology - 2, the Master and Slave Controllers are each managing an Access Point for providing Wi-Fi networks, and CAPWAP tunnels have been built between the Controllers and the Access Points. Note that the SSID on both Access Points have to be the same for Cross Gateway Roaming. [Network Topology - 1]



[Network Topology - 2]



# 2 Master Controller Configuration

### 2.1 System – Initial Login

 a. Access the Controller's Web Management Interface (WMI) by going to 192.168.1.254 in a web browser. Login to the Controller using the default credentials: admin/admin
 Note: Upon first-time login, the admin user will be asked to change the password.

						Dashboard ★Setup Wizard ?Help DeLogout
	SYSTEM	USERS DEVICES	NETWORK	UTILITIES	STATUS	Shortcuts
		Main	Categories			
		Welcome t	o System Main M	lenu		
	This Administrati to manage user	ve Web Interface allows you to set va accounts and to monitor user status.	rious networking parameters, to	customize network service	ıs,	
	Functions are se System , Users ,	parated into the following main categ Network , <u>Utilities</u> , and <u>Status</u> .	ories:			
	For a quick overv For shortcut link	iew of the system, please refer to the to the Dashboard, you may click the	Dashboard. 4ipnet Logo on the top-left, or cl	ick the <u>'Dashboard'</u> icon or	the top-right.	
	The <u>'Star'</u> icon or	the top right is a <u>Setup Wizard</u> that	rovides a quick step-by-step guid	le on setting up your syste	m.	
	For help with you	r system configuration, click the 🝸 lo	on for Online Help.			
		UIC	Verview			
LOGIN Username admin Password	bg In lish •	gin to procee	d to the We	lcome Pag	ge	

### 2.2 Enabling Cross Gateway Roaming

a. Go to Network > Client Mobility > Cross Gateway Roaming

#### Technical Guide Cross Gateway Roaming

	SYSTEM	USERS	DEVICES	NETWORK	UTILITIES	STATUS
NAT		Main > Network > Clien	t Mobility			
Monitor List						
Walled Garden	r .	Client Mob	oility			
VPN						
Proxy Server						
Local DNS Reco	ords	IP PNP		🔾 Enable 💿 Disable		
Dynamic Routi	ng	Cross Gate	vay Roaming	Configure		
DDNS				and the second second		
Client Mobility	Land Bar	S. 1998 States		<b>O</b> A	pply 🛛 🔀 Canc	el
						_

 b. Set this Controller to be in "Master Mode" and inform the Controller where the Slave Controller by providing the IP address of the Slave Controller. Also set up a security key for communication between the two Controllers.

	SYSTEM	USER	S	DEVICES	NETWORK	UTILITIES	STATUS	
NAT	Main <sub>2</sub> N	etwork - Cross G	ateway Roaming					
Monitor List								
Walled Garden	Cros	ss Gate	way Roar	ming				
VPN		_						
Proxy Server	_			0		_		
Local DNS Records		Node		🔾 Disable 🤇	Master Mode 🔾 Sla	ave Mode		
Dynamic Routing	5	Status		Node List				
DDNS	S	lave Nodes S	etting					
Client Mobility		No.	Active	Remote IP A	ddress	Secret Key		Remark
		1		10.70.5.66		•••••	s	lave - Controller
		2						
		3						
		4						
		5						
		6						
		7						
		8					1 [	

c. Go to *System > Service Zone* to enable the Service Zones that will be providing services.

	SYSTEM	USE	RS DEVICI	ES	NETWORK	UTILITI	ES STATUS		
General	Main	System > Servic	e Zone						
WAN									
IPv6	Ser	vice Zo	ne Settings						
LAN Ports	_	_							-
High Availability									_
Service Zones		Status	Service Zone Name	IP Address	IPv6 Address	VLAN Tag	Default Auth. Option	Network Alias	
Port Location Mapping									
PMS Interface		ON	Default	192.168.2.254	N/A	N/A	Server 1	N/A	
		ON 🕢	SZ1	172.21.1.254	N/A	1	Server 1	N/A	
		ON 🚯	572	172.22.1.254	N/A	2	Server 1	N/A	
		() or (	SZ3	172.23.0.254	N/A	3	Server 1	N/A	
		() OF	SZ4	172.24.0.254	N/A	4	Server 1	N/A	
		() orr	SZ5	172.25.0.254	N/A	5	Server 1	N/A	

Default Service Zone: 192.168.2.254/255.255.255.0 Service Zone 1: 172.21.1.254/255.255.255.0 Service Zone 2: 172.22.1.254/255.255.255.0

d. For demonstration purpose, a Local account (Local Authentication) will be used. However, as mentioned previously, accounts of other authentication types can also be used. Go to Users > Internal Authentication > Local to set up a Local account.

SYSTEM	USERS	EVICES	NETWORK	UTILITIES	STATUS
Groups	Main > Users > Internal Authentic	ation > Local Authe	ntication		
Authentication Servers					
Internal Authentication	Server No. 1 : Server 1 >				
Local					
On-Demand	Local Authentic	ation			
Guest					
One Time Password			Configure		
External Authentication	Local User List		Conligure		
On-Demand Accounts	Account Roaming Ou	ıt	O Enable   Disable		
Schedule	802.1X Authentication	n	O Enable   Disable		
Policies					
Blacklists				Annhy O Cons	
Privilege Lists					er
Additional Controls					

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STSTEM	USERS	DEVICED		OTILITIES	STATUS
Groups	Main > Users > Internal A	uthentication > Local Auth	entication > Local User List		
Authentication Servers					
Internal Authentication	Local User	List			
Local					
On-Demand					
Guest	Add Del	ete Backup List U	bload		
One Time Password					
External Authentication	■ No	Status Usernan	ne Password	MAC Group	Activation Expir
On-Demand Accounts	State States				
Schedule			(Total:0/10000) 🖙 First 🔄	Prev Next > Last Go to P	age V (Page:1/1)
Policies					
Blacklists					
Privilege Lists					
Additional Controls					
SYSTEM	USERS Main > Users > Internal	DEVICES	NETWORK	UTILITIES	STATUS
SYSTEM Groups Authentication Servers Internal Authentication	USERS Main > Users > Internal 10000 users can be	DEVICES Authentication > Local Aut	NETWORK	UTILITIES	STATUS
SYSTEM Groups Authentication Servers Internal Authentication Local	USERS Main > Users > Internal 10000 users can be Usernam	DEVICES Authentication > Local Aut added to this local use	NETWORK thentication > Local User List > r list. MAC Address	UTILITIES Add	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand	USERS Main > Users > Internal 10000 users can be Usernam	DEVICES Authentication > Local Aut added to this local user ne Password	NETWORK thentication > Local User List > filst. MAC Address	UTILITIES Add Group	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Au added to this local use ne Password	NETWORK thentication > Local User List > r list. MAC Address	UTILITIES	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Aut added to this local use Password Password	NETWORK thentication > Local User List > r list. MAC Address	UTILITIES	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Aut added to this local user ne Password	NETWORK thentication > Local User List > flist. MAC Address	UTILITIES       Add       Group       Group 1 ~       Group 1 ~       Group 1 ~       Group 1 ~	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Aut added to this local use be Password Pass	NETWORK thentication > Local User List > r list. MAC Address	Add Group 1 ~ Group 1 ~ Group 1 ~ Group 1 ~ Group 1 ~	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule Policies	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Au added to this local use Password	NETWORK thentication > Local User List > r list. MAC Address	UTILITIES     Add     Group 1	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule Policies Blacklists	USERS Main > Users > Internal 10000 users can be	DEVICES Authentication > Local Aut added to this local user action Password	NETWORK thentication > Local User List > r list. MAC Address	UTILITIES     Add     Group 1	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule Policies Blacklists Privilege Lists	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Aut added to this local user added to th	NETWORK thentication > Local User List > Tist. MAC Address	UTILITIES       Add       Group 1	Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule Policies Blacklists Privilege Lists Additional Controls	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Au added to this local use be Password DEVICES DEVICES	NETWORK  thentication > Local User List >  r list.  MAC Address	Group       Group 1 ~	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule Policies Blacklists Privilege Lists Additional Controls	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Au added to this local use  Password  Password  Authentication	NETWORK  thentication > Local User List > r list.  MAC Address	OTTILITIES     Add     Group 1	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule Policies Blacklists Privilege Lists Additional Controls	USERS Main > Users > Internal 10000 users can be Usernam TestA	DEVICES Authentication > Local Au added to this local use  Password  Password  Authentication > Local Au Authentication > Local Aut	NETWORK thentication > Local User List > r list.	UTILITIES     Add     Group 1	STATUS Account Span
SYSTEM Groups Authentication Servers Internal Authentication Local On-Demand Guest One Time Password External Authentication On-Demand Accounts Schedule Policies Blacklists Privilege Lists Additional Controls	USERS Main > Users > Internal 10000 users can be Usernarr TestA	DEVICES Authentication > Local Aut added to this local user added to th	NETWORK           thentication > Local User List >           r list.           MAC Address	UTILITIES     Add     Group 1     Group 1	STATUS  Account Span

e. Take an AP to connect to the Master Controller by establishing a CAPWAP tunnel. Perform the necessary steps to achieve this, such as configuring CAPWAP settings on both the Controller and the AP and applying a Template to the AP, where the Template has one VAP with Complete Tunnel enabled. This completes the set up for Cross Gateway Roaming on the Master Controller.

# 3 Slave Controller Configuration

### **3.1 Enabling Cross Gateway Roaming**

- a. Access the Controller's Web Management Interface (WMI) by entering 192.168.1.254 in a web browser.
- b. Login to the Controller using the default credentials: admin/admin

Note: Upon first-time login, the admin user will be asked to change the password.

			■Dashboard ★Setup Wizard ?Help ➡Log
	SYSTEM USERS DEVICES NETWORK UTILITIES	STATUS	Shortcuts
	Main Categories		
	Welcome to Contem Main Manu		l
	This Administrative Web Interface allows you to set various networking parameters, to customize network servi to manage user accounts and to monitor user status.	ces,	
	Functions are separated into the following main categories: <u>System</u> , <u>Users</u> , <u>Network</u> , <u>Utilities</u> , and <u>Status</u> .		
	For a quick overview of the system, please refer to the <u>Dashboard</u> . For shortcut links to the Dashboard, you may tlick the 4jpnet Logo on the top-left, or click the <u>"Dashboard"</u> icon	on the top-right.	
	The 'Star' icon on the top right is a Setup Wizard that provides a quick step-by-step guide on setting up your sys	.tem.	
	For help with your system configuration, click the 🝸 lcon for Online Help.		
	UI Overview		
LOGIN			
Username			
Password	Login to proceed to the Welcome Pa	ige	
6	Log In	-	
Change password?			

c. Go to Network > Client Mobility > Cross Gateway Roaming

Forgot password?

	SYSTEM	USERS	DEVICES	NETWORK	UTILITIES	STATUS
NAT		Main > Network > Client	Mobility	a Sadalah Sada		
Monitor List						
Walled Garden	r i	Client Mob	ility			
VPN						
Proxy Server						
Local DNS Rec	ords	IP PNP		🔾 Enable 💿 Disable		
Dynamic Routi	ng	Cross Gatew	ay Roaming	Configure		
DDNS				Might and the second		
Client Mobility				🖉 A)	oply 🛛 😯 Cance	al de la constante de la const
						—

d. Set this Controller to be in "Slave Mode" and enter the same security key.

SYSTEM	USERS	DEVICES	NETWORK	UTILITIES	STATUS
NAT	Main > Network > Cross	Gateway Roaming			
Monitor List					
Walled Garden	Cross Gate	way Roami	ng		
VPN			124		
Proxy Server					
Local DNS Records	Mode		O Disable O Master	Mode  Slave Mode	
Dynamic Routing	Status		Node List		
DDNS			Demote ID Address	10 70 5 71	
Client Mobility	Master Node	a Setting	Remote IP Address	10.70.5.71	
	100 S.C.L. (1885-540		Secret Key	•••••	*
			Remark	Master	

e. Click on "Node List" to verify the set up

NAT			2012			
Monitor List	Main > Network >	Cross Gateway Roaming	> Roaming Status			
Walled Garden	Roaming	g Gateway L	ist			
VPN		· · · · · · · · · · · · · · · · · · ·				
Proxy Server						
Proxy server Local DNS Records	ID	Connected	IP	Remark	Service Zone	Subnet
Proxy server Local DNS Records Dynamic Routing	D	Connected	IP	Remark	Service Zone	Subnet 192.168.2.254/255.255.255
Proxy server Local DNS Records Dynamic Routing DDNS	1	Connected	IP 10.70.5.71	Remark	Service Zone 0 1	Subnet 192.168.2.254/255.255.255.0 172.21.1.254/255.255.255.0

\*\* From this figure, Cross Gateway Roaming has been established between the Master and Slave Controllers. Service Zones enabled on the Master Controller will be displayed.

\*\* Important: When using Cross Gateway Roaming, please make sure the IP address ranges assigned to the Service Zones on both Controllers do not overlap. For instance, the default IP address range of the Default Service Zone is 192.168.1.254/255.255.0.0. Thus, only one Controller can have such IP address range, and the other one has to use a different IP address range to prevent IP address conflicts.

## 4 Logs

### 4.1 Login from Master Controller

a. Take a client to login to the network managed by the Master Controller (10.70.5.71), and then verify whether the client has successfully logged in by going to *Status > Monitor Users* > *Online Users* on the Master Controller. Here, the client is accessing from an EAP737 that is managed by the Master Controller using CAPWAP.

					SYSTEM	USER:	s c	EVICES	NETWORK	ι	TILITIES	S	TATUS			
System Summary	Main > Statu:	s > User Monitor	r > Online Users													
Interfaces																
Monitor Users	Online	e Users	List													
Online Users		_														
Roaming In Users														0.1		
Roaming Out Users		Select Mod	de		Summary 🖲 🛙	letail							IP OF MAC	Search		
Non-Login Devices		Logout	Refresh										Refresh	80 Sec. 🔻		
MAC Login Devices	_															_
Authenticated Users	No.	Username	IP Address	IPv6 Address	NAT IP Address	MAC Address	SZ / VLAN	Group / Policy	Auth. Database	Auth. Method	Pkts In/Out	Bytes In/Out	Access From		Uptime	Idle
WIFI Monitor	1	TestB@local	172.21.1.92	N/A	N/A	54:72:4F:30:1A:24	SZ1 / TN#1.1001	Group 1 / Policy 1	LOCAL	UAM	18/17	1K / 2K	Enterprise_Access_Point_	EAP737	10s	6s
Process Monitor																
Logs & Reports						(Total:1) In First	Prev Next Last	🔊 Go to Page 1 🔻	(Page:1/1)				Row per Page: 50 V			
Reporting																
Sessions																
DHCP Leases																
Routing Tables																

 b. Take the client to roam to the network managed by the Slave Controller (10.70.5.66), and then check the "Online User list" on the Master Controller again. Notice that the client is now accessing from the Slave Controller.

			SYS	STEM	USERS	D	EVICES	NETWORK	ι	JTILITIES	s	TATUS		
System Summary Interfaces	Main > Status > User Monito	or > Online Users												
Monitor Users	Online Users	s List												
Online Users														
Roaming In Users											_			
Roaming Out Users	Select Mode		Summary	Detail							IP	or MAC	Sea	arch
Non-Login Devices	Logout	sh										Refre	sh 30 Sec	c. 🔻
MAC Login Devices														
Authenticated Users	No. User	name IP Address	s IPv6 Address N	NAT IP Address	MAC Address	SZ / VLAN	Group / Policy	Auth. Database	Auth. Method	Pkts In/Out	Bytes In/Out	Access From	Uptime	Idle
WIFI Monitor	1 TestB	Diocal 172.21.1.92	2 N/A	N/A	54:72:4F:30:1A:24	SZ1 / RI#1	Group 1 / Policy 1	LOCAL	UAM	59/35	6K / 3K	10.70.5.66	5m37s	26s
Process Monitor											1.4.1.1.1.1		0.000	
Logs & Reports				(Tota	il:1) IIIFirst @Prev	Next Last	Go to Page 1 🔻	(Page:1/1)				Row per Page:	50 🔻	
Reporting														
Sessions														
DHCP Leases														

c. In the System Log of the Master Controller (*Status > Logs & Reports > System Log*), the

following message will be displayed:

May 15 17:36:18 @W6000 <user.info> cipgrd[7166]: User: TestB@local, ip:172.21.1.92, mac:54:72:4F:30:1A:24 roaming to 10.70.5.66

		SYSTEM	USERS	DEVICES	NETWORK	UTILITIES	STATUS
System Summary	Main > Status > Logs and Reports > System Log						
Interfaces							
Monitor Users	System Log						
W/El Monitor	-)						
	and the second se						
Process Monitor	Developed					096	
Logs & Reports	Download					0.0	
CAPWAP Log	May 15 17:40:28 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:40:28 +0800</td><td></td><td>*</td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:40:28 +0800		*	
Configuration Change Log	May 15 17:39:38 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:39:38 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:39:38 +0800			
Local Monthly Licago	May 15 17:38:48 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:38:48 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:38:48 +0800			
Local Monully Usage	May 15 17:37:58 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:37:58 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:37:58 +0800			
Local Web Log	May 15 17:37:08 @W6000 <user.notice May 15 17:37:05 @W6000 <user info=""> (</user></user.notice 	> root: [Process Monitor] Last cr od emod. Enterprise Access Doir	eck time: 2018-05-15 17	103/00-1E-D/I-05-41-641 c	tate changed to ('Offline')		
Micros Opera Log	May 15 17:36:18 @W6000 <user.info></user.info>	cipgrd[7166]: User: TestB@local.	p:172.21.1.92. mac:54:7	2:4F:30:1A:24 roaming to	10.70.5.66		
On-Demand Billing Report	May 15 17:36:17 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:36:17 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:36:17 +0800			
RADIUS Server Log	May 15 17:36:05 @W6000 <user.info> 0</user.info>	od_emcd: [100.64.144.193/00:1F:	D4:05:A1:6A] report fail(	3)			
510 C-11 1	May 15 17:35:27 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch and among [100,54,144,103/00:15]</td><td>eck time: 2018-05-15 17</td><td>:35:27 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch and among [100,54,144,103/00:15]	eck time: 2018-05-15 17	:35:27 +0800			
SIP Call Usage	May 15 17:33:05 @W6000 <user notice<="" td=""><td>&gt; root- [Process Monitor]   ast ch</td><td>eck time: 2018-05-15 17</td><td>-34-37 +0800</td><td></td><td></td><td></td></user>	> root- [Process Monitor]   ast ch	eck time: 2018-05-15 17	-34-37 +0800			
SMS API Log	May 15 17:34:05 @W6000 <user.info> 0</user.info>	od emcd: [100.64.144.193/00:1F:	D4:05:A1:6A1 report fail(	1)			
System Log	May 15 17:33:47 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:33:47 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:33:47 +0800			
UAMD LOP	May 15 17:32:57 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:32:57 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:32:57 +0800			
User Green	May 15 17:32:06 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:32:06 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:32:06 +0800			
User Events	May 15 17:31:16 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last cr od amod: Enterprise Access Doir</td><td>eck time: 2018-05-15 17</td><td>102/00-1E-D/-05-41-641 c</td><td>tate changed to ('Online')</td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last cr od amod: Enterprise Access Doir	eck time: 2018-05-15 17	102/00-1E-D/-05-41-641 c	tate changed to ('Online')		
Reporting	May 15 17:30:26 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:30:26 +0800</td><td>cate changed to ( online )</td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:30:26 +0800	cate changed to ( online )		
Sessions	May 15 17:29:52 @W6000 <user.info> o</user.info>	cipgrd[7166]: User: , ip:0.0.0.0, m	ac:54:72:4F:30:1A:24 con	nected			
DHCP Leases	May 15 17:29:46 @W6000 <daemon.er< td=""><td>r&gt; radiusd[28956]: Ignoring requ</td><td>est to accounting addres</td><td>is * port 1813 from unkno</td><td>own client 10.70.5.15 port 53</td><td>087</td><td></td></daemon.er<>	r> radiusd[28956]: Ignoring requ	est to accounting addres	is * port 1813 from unkno	own client 10.70.5.15 port 53	087	
Pouting Tables	May 15 17:29:36 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>:29:36 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:29:36 +0800			
Routing Tables	May 15 17:28:46 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last cr &gt; root: [Process Monitor] Last cr</td><td>eck time: 2018-05-15 17</td><td>28:46 +0800</td><td></td><td></td><td></td></user.notice<>	> root: [Process Monitor] Last cr > root: [Process Monitor] Last cr	eck time: 2018-05-15 17	28:46 +0800			
	May 15 17:27:05 @W6000 <user notice<="" td=""><td>&gt; root: [Process Monitor] Last ch</td><td>ock time: 2018-05-15 17</td><td>27:05 +0800</td><td></td><td></td><td></td></user>	> root: [Process Monitor] Last ch	ock time: 2018-05-15 17	27:05 +0800			
	May 15 17:26:15 @W6000 <user notice<="" td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>-26-15 +0900</td><td></td><td></td><td></td></user>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	-26-15 +0900			
	May 15 17:25:25 @W6000 <user notice<="" td=""><td>&gt; root: [Process Monitor] Last ch</td><td>eck time: 2018-05-15 17</td><td>-25-25 +0800</td><td></td><td></td><td></td></user>	> root: [Process Monitor] Last ch	eck time: 2018-05-15 17	-25-25 +0800			
	May 15 17:20:25 @W6000 <user notice<="" td=""><td>&gt; root. [Process Monitor] Last ch</td><td>ack time: 2010-05-15 17</td><td>-24-25 +0000</td><td></td><td></td><td></td></user>	> root. [Process Monitor] Last ch	ack time: 2010-05-15 17	-24-25 +0000			
	May 15 17:22:44 @W6000 cuser notice	> root: [Process Monitor] Last ch	ock time: 2010-05-15 17	-22-44 +0200		-	
	May 15 17:25:44 @W6000 <user notice<="" td=""><td>&gt; root, [Process Monitor] Last ch</td><td>ock time: 2010-03-13 17</td><td>23.44 -0000</td><td></td><td></td><td></td></user>	> root, [Process Monitor] Last ch	ock time: 2010-03-13 17	23.44 -0000			
	May 15 17:22:54 @W6000 <user.notice< td=""><td>&gt; root: [Process Monitor] Last cr</td><td>eck time: 2018-05-15 17</td><td>:22:54 +0800</td><td></td><td>1</td><td></td></user.notice<>	> root: [Process Monitor] Last cr	eck time: 2018-05-15 17	:22:54 +0800		1	

d. For the Slave Controller, the client will appear in "Roaming In Users" (Status > Monitor

#### Users > Roaming In Users).

		SYSTEM	USERS	DEVICES	NETWORK	UTILITIES
System Summary	Main > Status > User Monitor > Roaming In Users					
Interfaces						
Monitor Users	Roaming In Users					
Online Users						
Roaming In Users						
Roaming Out Users	Retresh				Refresh D	isable 🔻
Non-Login Devices	Name	IP Address	MAC Address	VLAN ID	Home	Detail
MAC Login Devices						
Authenticated Users	TestB@local	172.21.1.92	54:72:4F:30:1A:24	1001	10.70.5.71	Query
WiFi Monitor		(Total:1) teFirst eP	rev Nexte Lastel Go to Pa	age 1 V (Page-1/1)	Row per Page	- 50 ▼
Process Monitor					then be read	
Logs & Reports						
Reporting						
Sessions						
DHCP Leases						

e. For In the System Log of the Slave Controller (*Status > Logs & Reports > System Log*), the following message will be displayed:

May 15 17:38:46 @W6000 <user.info> cipgrd[7155]: User: TestB@local, ip:172.21.1.92, mac:54:72:4F:30:1A:24 roaming from 10.70.5.71

#### Technical Guide Cross Gateway Roaming

		SYSTEM	USERS	DEVICES	NETWORK	UTILITIES	STATUS
System Summary	Main -> Status -> Logs and Reports -> System Log		la da ser se				
Interfaces							
Monitor Users	System Log						
WIFI Monitor	, ,						
Process Monitor							
	Download					096	
Logs & Reports							
CAPWAP Log	May 15 17:39:08 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:39:08 +0800		*	
Configuration Change Log	May 15 17:38:46 @W6000 <user.info> ci</user.info>	pgrd[7155]: User: TestB@local, i	p:172.21.1.92, mac:54:7	2:4F:30:1A:24 roaming fro	m 10.70.5.71		
Local Monthly Usage	May 15 17:38:18 @W6000 <user.notice> May 15 17:37:28 @W6000 <user.notice></user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17 eck time: 2018-05-15 17	:38:18 +0800 :37:28 +0800			
Local Web Log	May 15 17:36:37 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:36:37 +0800			
Micros Opera Log	May 15 17:36:32 @W6000 <user.info> o</user.info>	d_emcd: Enterprise_Access_Poin	tEAP705 [100.64.144.	193/00:1F:D4:04:27:52] st	ate changed to ('Online')		
Wilcros Opera Log	May 15 17:36:18 @W6000 <user.info> ci</user.info>	pgrd[7155]: User: TestB@local, i	p:172.21.1.92, mac:54:7.	2:4F:30:1A:24 roaming fro	m 10.70.5.71		
On-Demand Billing Report	May 15 17:35:47 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:35:47 +0800			
RADIUS Server Log	May 15 17:34:07 @W6000 <user notice=""></user>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	34:07 +0800			
SIP Call Usage	May 15 17:33:17 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:33:17 +0800			
SMS ADI LOG	May 15 17:32:26 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:32:26 +0800			
5/10/12/05	May 15 17:31:36 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:31:36 +0800			
System Log	May 15 17:30:46 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:30:46 +0800			
UAMD Log	May 15 17:30:35 @W6000 <user.into> o May 15 17:29:56 @W6000 <user.notice></user.notice></user.into>	cont: [Process Monitor] Last ch	tEAP705 [100.64.144. eck time: 2018-05-15 17	193/00:1F:D4:04:27:52j st	ate changed to ('Offline')		
User Events	May 15 17:29:35 @W6000 <user.info> or</user.info>	d_emcd: [100.64.144.193/00:1F:l	04:04:27:52] report fail(	3)			
Reporting	May 15 17:29:05 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:29:05 +0800			
	May 15 17:28:35 @W6000 <user.info> or</user.info>	d_emcd: [100.64.144.193/00:1F:l	04:04:27:52] report fail(2	2)			
Sessions	May 15 17:28:15 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	:28:15 +0800			
DHCP Leases	May 15 17:27:35 @W6000 <user.info> or</user.info>	d_emcd: [100.64.144.193/00:1F:I	04:04:27:52] report fail(	1)			
Routing Tables	May 15 17:27:25 @W6000 <user.hotice></user.hotice>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17 ack time: 2018-05-15 17	127:25 ±0800			
induing rubics	May 15 17:25:45 @W6000 <user notice=""></user>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	25:45 +0800			
	May 15 17:24:54 @W6000 <user notice=""></user>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	-24-54 +0800			
	May 15 17:24:04 @W6000 cuser notice>	root: [Process Monitor] Last ch	ack time: 2018-05-15 17	-24-04 +0800			
	May 15 17-23-14 @W6000 <user notice=""></user>	root: [Process Monitor] Last ch	eck time: 2018-05-15 17	23.14 +0800		0.155165555	
	May 15 17:22:24 @W6000 <user notice=""></user>	root: [Process Monitor] Last ch	ock time: 2018-05-15 17	-22-24 ±0000			
	May 15 17:22.24 @W0000 <usef.notce></usef.notce>	root, [Process Wonitor] Last Ch	eux unite: 2010-00-10 17	21.24 -0000			
	Way 15 17:21:34 @Wouou <user.hotice></user.hotice>	root. [Process wonitor] Last ch	eck unite: 2018-00-15 17	.21.54 +0800		•	
	May 15 17:20:43 @W6000 <user.notice></user.notice>	root: [Process Monitor] Last ch	еск time: 2018-05-15 1/	:20:43 +0800		1	

# 5 Remarks

Please contact Technical Support Team for additional inquiries.