

Wifi: Routed Virtual AP with Ethernet Gateway

Goal: Configure LANforge CT523 or similar with as a virtual access point with access to an ethernet network.

LANforge WiFi systems can be configured as wireless access points that are gateways to wired networks where the wired network is a separate broadcast domain.





- 1. Configure the gateway port
- 2. From the **Status** tab, click **Netsmith**

	🛓 LANforge Manager Version(5.2.11) 🔶 – 🗆 🗙								
Control Reporting Tear-Off Info Plugins									
Stop All Restart Manager Refresh HELP									
File-IO Layer-4 Generic Test Mgr Test Group Resource Mgr PPP-Links Event Log Alerts Port Mgr Messages Status Layer-3 L3 Endps VolP/RTP VolP/RTP Endps Armageddon WanLinks Attenuators Collision-Domains									
License Info	Current Users	Т	est Configuration Database						
Licenses expire in: 316 davs.	* Admin from:192.168.100.27 gnuserver from:127.0.0.1	List: da	ay_346						
		Name:	C						
Current evoires in 216 days		Load Behavior: Cho	oose One						
Support expires in: 316 days.			Download DB Show						
•	· · · · · · · · · · · · · · · · · · ·								
	Virtual Shelf	1	1						
	Resource 1	Resource 42							
	•• 🔳	•• 🔳 •• 🔳							
	•• 🔳	••							
		•• 🔳							
	•• 🔳	••							
	Netsmith Netsmith								
Logged in to: 192.168.100.26:4002 a	is: Admin								

3. In the **Netsmith** window, *right click* the ethernet port connected to the destination network and click **Modify Port**

差 Netsmith configuration for Resou	rce: jedtest.candelatech.com(1.1) Version: 5.2.11 🔹 + 🗉 ×
Virtu	ual Routers and Connections — 🔨 🔺
Mgt-p33p1 192.168.100.26/24	p1p1 192.168.100.43/24 ==
wiphy0 wlan0	Display WanLink & WanPaths Connect Modify Toggle WanLink Modify WanLink Modify Port Create Ports Sniff Port Reset Port
Wanlinks Show Legend V Fire	Delete WanLink pt Sunc Apply Close
✓ WanLink Names ✓ Port Names ✓ Fire Names	Delete Concel Apply Progress: 100% Complete Cancel Apply
🗹 Peer WanLinks 🗹 Parents 🛛 🗹 Col. Domain 🕑 WanLink Config	ns 🗌 IPv6s Netsmith Status: OK

4. Configure the gateway port with these settings:

<u>s</u>		p1p1 ((brent-521) Configu	re Settings						
Curi Driv	Port Status Information Current: LINK-UP 1000bt-FD AUTO-NEGOTIATE Flow-Control TSO GSO GRO Driver Info: Port Type: Ethernet Driver: e1000e(3.2.5-k) Bus: 0000:02:00.0 Cur: 2.5GT/s x1 Max: 2.5GT/s x1									
			Port Configur	ables						
Enable		General Int	erface Settings			Port Rates	Advert Rates			
Set MAC	Down	Aux-Mgt				O 10bt-FD O 100bt-HD	✓ 10bt-FD			
Set TX Q Len	DHCP-IPv6	☑ DHCP Release	DHCP Vendor ID:	None	•	○ 100bt-FD ○ 1000-FD ○ 10G-FD	✓ 100bt-HD			
Set Offload	DNS Servers:	Secondary-IPs	DHCP Client ID:	None	•	O 40G-FD Autonegotiate	✓ 1000-FD			
Set Rate Info	IP Address:	192.168.100.43	Global IPv6:	AUTO		Renegotiate	10G-FD			
Set Rx-All/FCS	IP Mask: Gateway IP:	255.255.255.0	Link IPv6: IPv6 GW:		=	Restart Xcvr	Flow-Control			
Set Bypass	Alias:		MTU:	1500		PROMISC RX-ALL	Offload			
Set CPU Mask	MAC Addr:	00:90:0b:21:9f:5d	TX Q Len	1000		RX-FCS	✓ TSO Enabled			
Services — HTTP	Rpt Timer:	medium (8 s) 💌	Watchdog:	0		Bypass NOW!	GSO Enabled			
FTP	CPU Mask:	NO-SET 💌	WiFi Bridge:	NONE	-	Bypass Power-DOWN	☐ LRO Enabled ☑ GRO Enabled			
						Bypass Disconnect	J			
	Print Vi	ew Details	Probe Sync	Apply		OK Cancel				

- A. DNS Servers: 192.168.100.1
- B. IP Address: 192.168.100.43
- C. IP Mask: 255.255.255.0
- D. Gateway IP: 192.168.100.1
- E. Click **OK** to commit changes.

5. In the **Netsmith** window, click **Sync**

- 6. NOTE: It is also possible to assign NAT to the outbound gateway port.
 - A. From the **Netsmith** screen, you would *right click* on p1p1
 - B. Choose Modify
 - C. Select NAT
 - D. Click **OK**
 - E. Click **Apply** in the **Netsmith** window.

A. *Right click* the radio wiphy0 and select Create Port:

\$	Netsmith configuration for	Resource: jedtest.candelatech.com(1.1) Version: 5.2.11	+ _ = ×
			_
	Идt-p33p1 192.168.100.26/24	plp1 192.168.100.43/24	≡
✓ ✓ WanLin ✓ WanLin ✓ Peer W ✓ WanLin	viphy0 Display WanLink & WanPaths Connect Modify Toggle WanLink Modify WanLink Modify WanLink Modify Port Create Ports Sniff Port Reset Port Delete Port Delete WanLink	e ✓ IPv4s Info Print Sync Apply e Names Zero-IPv4s Apply Progress: 100% Complete Ca I. Domains IPv6s Netsmith Status: OK	Close ncel Apply

B. Configure the AP with these settings:

	vap0 (b	rent-521) Configure S Port Status Inform	ettings ation		
	Current:	LINK-UP GRO NON	E		
	Driver Info:	Port Type: WIFI-AP	Parent: wiphy0		
		Port Configurab	es		
Standard Configur	ation Advanced Co	onfiguration Misc	Configuration	Custom WiFi	
Enable —		General In	erface Settings		1
Set IF Down	Down	Aux-Mgt			
Set MAC	DHCP-IPv6	DHCP Release	DHCP Vendor ID	: None	-
Set TX Q Len	DHCP-IPv4	Secondary-IPs	DHCP Client ID:	None	-
Set Offload	DNS Servers:	BLANK	Peer IP:	NA	
	IP Address:	10.26.1.1	Global IPv6:	AUTO	
	IP Mask:	255.255.255.0	Link IPv6:	AUTO	
	Gateway IP:	192.168.101.43	IPv6 GW:	AUTO	
Services —	Alias:		MTU:	1500	
🔲 НТТР	MAC Addr:	00:eb:7c:d6:0a:49	TX Q Len	1000	
FTP	Rpt Timer:	medium (8 s) 🔻	WiFi Bridge:	NONE	-
		WiF	Settings		
Low Level	SSID: vapte	st	▼ AP:	DEFAULT	
PROMISC	Key/Phrase:		Mode:	8 (8)	-
TSO Enabled	Freq/Channel: 5240)/48	Rate:	OS Default	_
UFO Enabled	DTIM-Period: 2		Max-STA:	2007	
GSO Enabled	Beacon: 240				
LRO Enabled	WPA WPA2	OSEN WEP	isable HT40 🔲 D	isable HT80 🔲 Disat	ble SGI
GRO Enabled	Verbose Debug				
1					
int View Details	Logo Dro	bo Dicplay Fra	Sync	Apply	Can

- A. Select WiFi VAP
- B. Select a MAC Address: 00:eb:7c:d6:0a:49
- C. IP Address: 10.26.1.1
- D. IP Mask: 255.255.255.0
- E. Gateway IP: 192.168.100.43
- F. STA ID: 0
- G. SSID: vaptest

C. In the **Netsmith** window, click **Sync**

1	Netsmi	ith configuratio	on for Resource	: jedtest.ca	andelatech.com(1.1) Version: 5.2	2.11 + _ = ×
			Virtual	Routers and (Connections		_
	Mgt-p33p 192.168.	/1 100.26/24	plp1 192.168.10	00.43/24			_
	ζ ■						
	ς						_
	0v/dqiw		vap0 10.26.1.1/2	4			
	•						
	wlan0						
							-
4				Ш			
	WanLinks	Show Legend	✓ Fire	✓ IPv4s	Info Print	Sync	Apply Close
	WanLink Names	Port Names	✓ Fire Names	Zero-IPv4s	Apply Progress:	100% Complete	Cancel Apply
~	Peer WanLinks	Parents	🖌 Col. Domains	IPv6s	Netemith Status	OF	
	WanLink Config				Netamitri Status.	UK	

8. In the **Netsmith** window, *right click* and select **New Router**

٤	Netsmi	th configuratio	on for Resource	e: jedtest.c	andelate	ch.com(1.1) Version	: 5.2.11	↑ _ □ ×
			Virtual	Routers and	Connectior	ns ———			A
	Mgt-p33p 192.168.1	1 .00.26/24	plpl 192.168.1	00.43/24					=
	-								
				Ne	w Router	tion			
	wiphy0			vap0	w Bridge				
				10.26.1.1/2	24				
	wlan0								
									▼
🕑 WanL	inks	Show Legend	🖌 Fire	✓ IPv4s	Info	Print	Sync	Apply	Close
🖌 WanL	ink Names	Port Names	Fire Names	Zero-IPv4s	Apply Pro	arocci 🗖	100% Comple	ato	Concol Apply
					Oppig 110	gress:	100% compi	are	cancer Apply

9. Create a router using default settings: click **OK**.

🛓 Create/Modify Virtual Router 🔶 🔿 🗠										
Name: <auto create="" name="" new=""> Width: 100 Height: 100</auto>										
🗌 Use OSPF 🔄 Multicast Routing 🗌 Use OLSR 📄	🗌 Use OSPF 🔄 Multicast Routing 📄 Use OLSR 🔄 RIPv2 📄 RIP Dflt Route 📄 Xorp SHA 📄 IPv6 Router 📄 IPv6 RADV									
Use Existing Cfg 🔲 BGP Router 🗌 BGP 4B AS [Use Existing Cfg 🔄 BGP Router 🔄 BGP 4B AS 🔄 BGP Reflector 📄 BGP Confederation 📄 BGP Damping									
No	Notes about this Virtual Router									
В	GP Configuration Informati	on								
Router ID 0.0.0.0 Local	AS 0	Cluster ID 0	.0.0.0							
Confederation ID 0 Damp	ing Half Life 3	Damping Max Suppress 3								
Damping Reuse 3 Damp	ing Suppress 3									
BGP Peer Flags Peer AS	Peer ID Local Iface	Nexthop Nexthop6	Hold Time Delay Open							
🗌 Active 🔲 Client 📄 Confed 🗹 Ucast 0			5 0							
Active Client Confed 🗹 Ucast 0			5 0							
Active Client Confed 🗹 Ucast 0			5 0							
Active Client Confed 🗹 Ucast 0			5 0							
Active Client Confed 🗹 Ucast 0			5 0							
Active Client Confed 🗹 Ucast 0			5 0							
Active Client Confed 🗹 Ucast 0			5 0							
Active Client Confed 🗹 Ucast 0			5 0							
	OK Cancel									

A. In the Netsmith window, click Apply

10. Drag vap0 into the virtual router

🛓 Netsmit	h configuratio	n for Resource	: jedtest.ca	indelatech.com(1.1) Version: 5.2.1	1 • - • ×
Q Mgt-p33p1 192.168.100 Q wiphy0 wlan0	.26/24	Virtual 192.168.100.43/	Routers and (24 RO(NA) vap 10.	0 26.1.1/24		
WanLinks	Show Legend	✓ Fire	✓ IPv4s	Info Print	Sync Ap	ply Close
WanLink Names	Port Names	Fire Names	Zero-IPv4s	Apply Progress:	100% Complete	Cancel Apply
✓ Peer WanLinks✓ WanLink Config	Parents	Col. Domains	IPv6s	Netsmith Status:	ок	

- A. In the Netsmith window, click Apply
- 11. Drag **p1p1** into the virtual router

🛓 Netsm	th configuratio	on for Resource	e: jedtest.ca	andelatech.com((1.1) Version: 5.2.11	↑ _ □ ×
		Virtual	Routers and (Connections		^
Mgt-p33p1 192.168.10	0.26/24					
—						=
			R0(NA)			
wiphy0			10.	26.1.1/24		
T			p1p 192	01 2.168.100.43/24		
wlan0						
						-
•						
🕑 WanLinks	Show Legend	Fire Fire	✓ IPv4s	Info Print	Sync App	ly Close
🕑 WanLink Names	Port Names	🕑 Fire Names	Zero-IPv4s	Apply Progress:	100% Complete	Cancel Apply
Peer WanLinks	Parents	Col. Domains	IPv6s	Netsmith Status:	ок	
WanLink Config						

A. In the Netsmith window, click Apply

12. Assign DHCP to the vap0 port

A. *Right click* on vap0 and select **Modify**

1	Netsmit	h configuratio	n for Resource	e: jedte:	st.	candelatech.com(1.1) Ve	rsion: 5.2.11	↑ _ □ ×
			Virtual	Routers	and	d Connections		^
	Mgt-p33p1 192.168.100).26/24						=
	-			_				
				F	N)05 V	IA) ap0		
	wiphy0				1	0.26.1.1/24	_	
					E	Display WanLink & WanPaths		
	wlan0			L	-	Connect		
-	-					TogalewanLink		
					_	Modify WanLink	-	•
WanLi	nks	Show Legend	✓ Fire	₽ IPv4s		Modify Port	Apply	Close
WanLii	nk Names	Port Names	✓ Fire Names	Zero-I	Ρv	Create Ports	mplete	Cancel Apply
Peer V	VanLinks	Parents	Col. Domains	IPv6s		Reset Port		cancer Apply
💌 WanLii	nk Config					Delete Port		
						Delete WanLink		

B. Configure DHCP with these settings:

4	Create/Modif	y Connection	×
		Interface-Cost:	1
Port 1-A:	3 (p1p1)	RIP-Metric:	1
	· (p1p1)	OSPF Area:	0.0.0.0
Port 1-B: 🗹 Skip	<auto create="" new="" port=""></auto>	VRRP IP:	0.0.0/24
WanLink: 🗹 Skip	<auto create="" new="" wanlink=""> 🔻</auto>	VRRP ID:	1
Port 2-B: Skin	<auto create="" new="" ports<="" td=""><th>VRRP Priority:</th><td></td></auto>	VRRP Priority:	
		VRRP Interval:	1
Port 2-A: 🗹 Skip	<auto create="" new="" port=""></auto>	Next-Hop:	0.0.0.0
DHCP Lease Time:	43200	Subnets (a.b.c.d/xx):	
DHCP DNS:	192.168.100.1		
DHCP Range Min:	10.26.1.20		
DHCP Range Max:	10.26.1.50		
DHCP Domain:			
DHCPv6 DNS:		Next-Hop-IPv6:	
DHCPv6 Range Min:		IPv6 Subnets (aaa::0/xx):	
DHCPv6 Bange Max:			
DHCPd Config File:			
Differen connig i ne.			
]
🗌 NAT 🛛 🗹 ЦСР	DHCPv6 Custom DHCP	VRRP Cand-RP	
Shoul	d this interface serve DHCP?	Cancel	
A. DHCP DNS: 192.16	8.100.1		
B. DHCP Range Min:	10.26.1.20		

- C. DHCP Range Max: 10.26.1.50
- D. Select DHCP
- E. Click **OK** to commit the settings.
- C. In the Netsmith window, click Apply
- 13. NOTE: To test this setup, you could use a laptop with WiFi or a desktop system with a USB WiFi dongle to associate with the Virtual AP. If you have a second radio in your LANforge CT523 you could create a virtual station on one of those extra radios, as well.

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