

BELL GIGA HUB WITH HOME ROUTER - APRIL 2025

April 14 2025 Version 2

This document, has been updated. In the first version I stated PPPoE was not an option on the Bell Giga Hub (GH), which is incorrect. It turns out that the GH supports both PPPoE and DMZ. As the GH only has settings to turn on DMZ, I incorrectly assumed PPPoE it was not supported which you can really think of as the GH default. My bad.

This document is based on Bell Giga Hub firmware 2.13 which was released by Bell some time around April 2024. I would think the instructions in this document could also apply to future firmware updates unless Bell changes its consumer fibre service offering. Prior to firmware 2.13 Bells GH configuration was confusing as there service offering also included Bridge Mode - at least for some customers. As of April 2024 Bells Fibre offering appears stable but with 2.13 Bell supports only the following:

- PPPoE (Public - non static IP)
- DMZ and Advanced DMZ (Public - non static IP)
- Bridge Mode: NOT OFFERED for Consumer Fibre
- Bridge Mode with static IP appears to be offered to Business Clients only

Depending on your needs, the best option (easy and faster speeds) may be to configure your router and attach it to the GH 10Gps WAN port and live with double NAT. This may produced the best speed. If you can't live with double NAT then read on.

I first tried DMZ mode on the GH to attach my Ubiquiti UDM-SE. Since finding PPPoE is also included I have consolidated the instructions for setting up both PPPoE and DMZ with Ubiquiti Gateways into this document. DMZ was stable but was for some reason slower than PPPoE which was not entirely expected.

My Current Hardware

Bell Giga Hub - Firmware 2.13 - 3Gbps

UDM-SE - Network 9.0.114 - Zone Firewall Policies

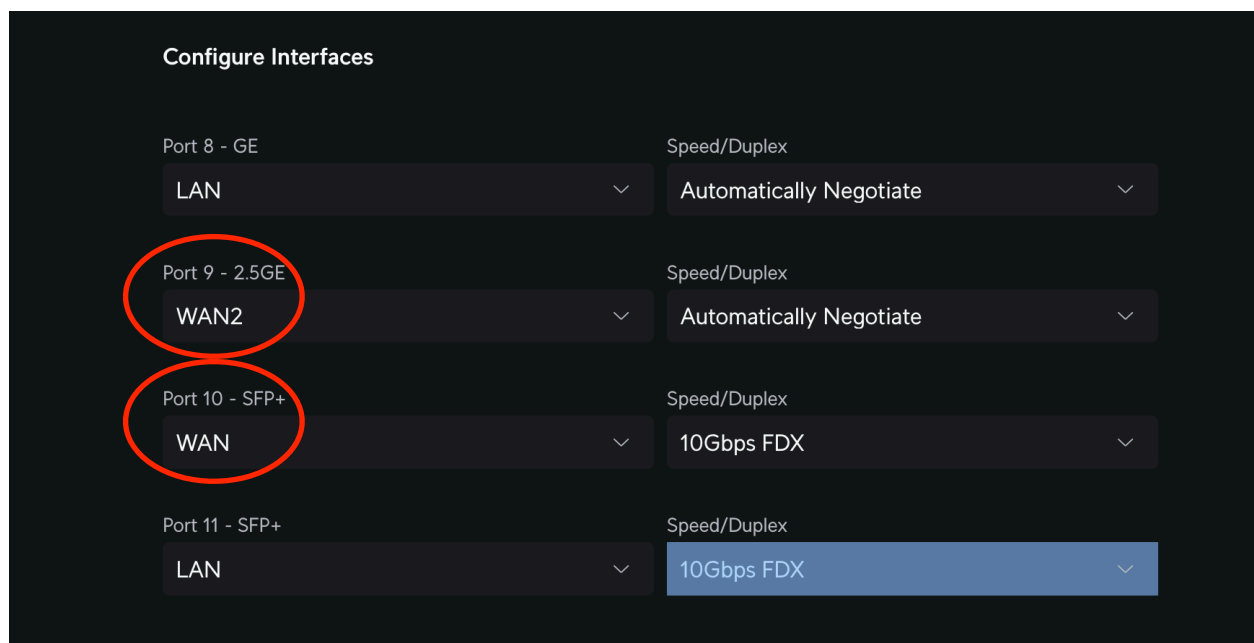
Note: as various IP addresses will change as you make settings changes you should be able to reach your equipment via the following IP addresses during and after implementation:

- UDM-SW: 192.168.1.1
- Its easier to contact the GH using a direct connect to the LAN ports or its WIFI

Step 1 - Connections: In all cases an ethernet cable from the GH WAN port to the router must be used. The GH has a shielded ethernet port so cat 6 or cat7 cable should be used to support 10Gbps (future proofing). You can not use fibre to your router (without breaking the Bell Terms of Service).

If this is not a new install, simply plugging the GH into the UDM, the UDM will likely show this connection as WAN2 and insist when you remove your old ISP connection that you just failed over from WAN1 (your old modem) to WAN2. You may need to turn off WAN1 and redefine the new port (the GH port) on the UDM as WAN1 to get rid of this failover message.

In my case, I move **from** Cogeco 1Gbps using UDM ethernet port 9 to a Bell 3Gbps using UDM SPF+ port 10. I also need to adjust the speeds of the ports and set up Port 10 as the primary WAN port. Temporarily turning off port 9 allowed me to make the settings changes on the UDM Ports screen assigning WAN to port 10 (Blue Cat6E) and WAN2 to port 9.



I assigned WAN2 port 9 to be used as a poor mans WAN failover using an iPhone. I will make a separate posting regarding using a iPhone with power from a UPS for the entire house WAN backup.

Note: I am sticking to Ubiquiti SPF+ equipment as cheaper alternatives stated they worked with Ubiquiti but did not for me.



PPPoE GIGA HUB TO ROUTER

For DMZ configure see the next section below.

Configure your router (in my case UDM-SE) to connect to the GH by entering the Bell supplied PPPoE UserID/password in the router. The userID will begin with b1... and is supplied by Bell. The installer should also have it.

Port forwarding seems to work fine from the GH to my router with PPPoE and DMZ. The Router is assigned a public IP address which presumably Bell updates as it changes it from time to time.

From my experience PPPoE was considerably faster than DMZ but results would vary as its dependent on the processing power of your router - you will need to try PPPoE and DMZ to see which is faster or just assume PPPoE is faster as it is the default on the GH.

Note: while you are changing the GH I suggest you use its' WIFI as you will loose connectivity as you proceed with changes (or directly attach a laptop to one of the GH lan ports).

Settings> Internet > Select WAN port (in my case Primary WAN1). Make sure that the wan port is set up to handle the correct speeds which will vary depending on your ISP plan. If you subscribed to fibre speeds greater than 2500 you will need to use a SPF+ 10Gbps port. Click on the correct WAN port in my case WAN1

The screenshot shows the UniFi Network settings interface. The left sidebar contains navigation options: Search Settings, WiFi, Networks, Internet (selected), VPN, Security, Routing, Profiles, and System. Below these are UDM SE settings for Control Plane and Admins & Users. The main content area is titled 'Internet' and features a table of WAN ports, a diagram of Internet Sources, and configuration options for Primary and Secondary WAN ports.

Name	IP Address	IPv6 Address	Port	ISP	Upti...	Peak L
Primary (WAN1)	[Redacted]	[Redacted]	10	Bell Canada	100%	5%/2%
Secondary (WAN2)	-	-	9	-	-	0%/0%

Internet Sources

Diagram showing Internet Sources: Primary (Port 10) and Secondary (Port 9). A green box labeled '8' is also present.

Primary (WAN1) Port 10 (SFP+)

Secondary (WAN2) Port 9 (2.5GE, "Port 9")

Load Balancing ☒ Failover Only ☐ Distributed

Internet	Status
Primary (WAN1)	Active
Secondary (WAN2)	Unavailable

Automatic Speed Test ☒

Schedule ☒ Daily ☐ Weekly ☐ Monthly

09:00

.

Enter: Expected ISP Speeds, this should be the speed you subscribed to from Bell. This number will be used to display % utilization.

Advanced > Manual

IPv4 Connection: PPPoE

Enter the Username and Password provided by Bell. You can ask for this from the installer or call them if you don't have it.

While you are in this screen you can add a DNS sever or select Auto. If using Auto Bell's DNS will be used however as an ISP, they will likely sell your browser history as you query their DNS server.

I use Quad9: 9.9.9.9. / 149.112.11.112 but there are many popular choices. Starting with Auto will work fine for the Bell DNS. Note that setting the DNS on this screen will establish the DNS server for all Networks on your router.

Good luck.

UDM-SE

Network

UniFi

Search Settings

WiFi

Networks

Internet

VPN

Security

Routing

Profiles

System

UDM SE

Control Plane

Admins & Users

Network 9.0.114

Submit Support Ticket

< Name

Host Device

Interface

Expected ISP Speeds

Advanced

VLAN ID ⓘ

MAC Address Clone ⓘ

Smart Queues ⓘ

IPTV Streaming ⓘ
IGMP Proxy

UPnP ⓘ

Dynamic DNS ⓘ

IPv4 Configuration

IPv4 Connection

Username

Password

Additional IP Addresses

DNS Server ⓘ

Primary Server

Secondary Server

IPv6 Configuration

IPv6 Connection

DNS Server ⓘ

Primary (WAN1)

UDM-SE

SFP+ 1 - WAN

Download

3000 Mbps

Upload

3000 Mbps

Auto

Manual

☐

0

☐

MAC Address

Downrate

☐

Mbps

Uprate

☐

Mbps

☐

☐

☒ Create New Dynamic DNS

☐ DHCPv4

☐ Static IP

☒ PPPoE

☐ DS-Lite ⓘ

☒

☒

☒ Add IP

☐ Add IP Range

Enter IPv4 CIDR

Add

☐ Auto

9.9.9.9

149.112.112.112

☒ Disabled

☐ SLAAC

☐ DHCPv6

☐ Static IP

☒ Auto

6

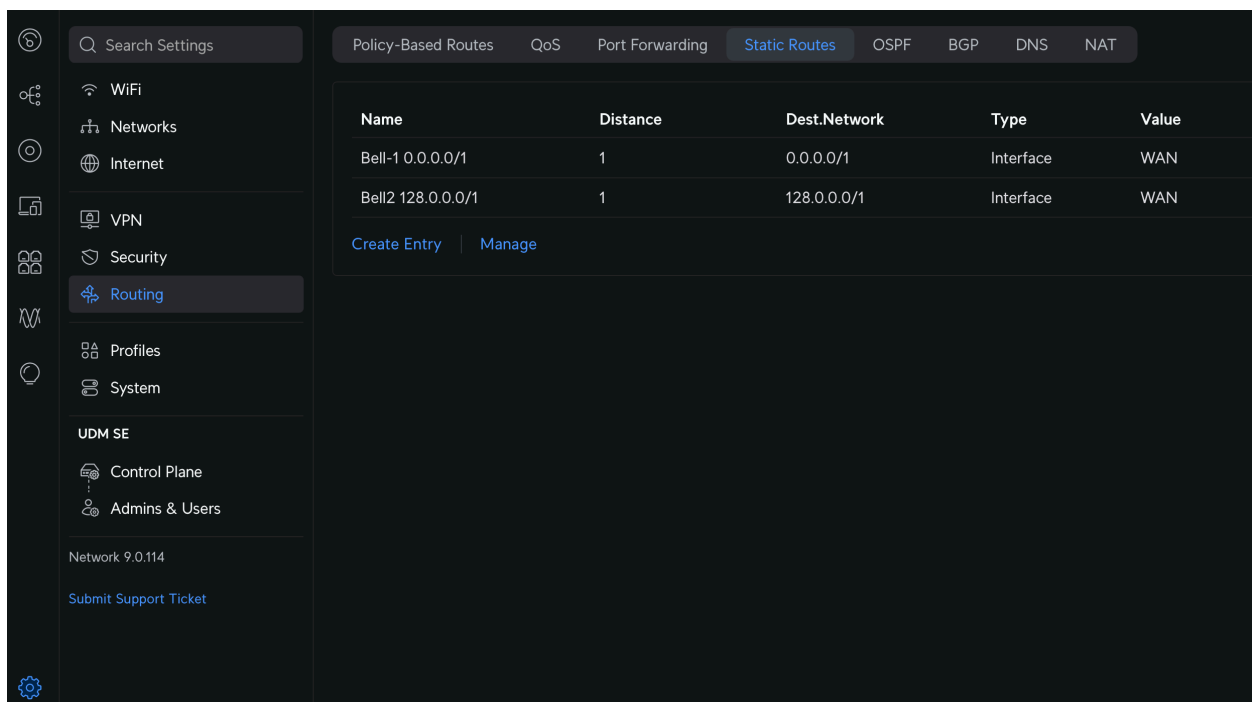
DMZ GIGA HUB TO ROUTER

If your not using PPPoE the alternative is DMZ/ADMZ.

You should be aware that if you turn on DMZ with the GH 2.13 firmware, Ubiquiti Gateways don't provide Internet access without a Routing settings adjustment (described below).

Step 1 - Routing: As mentioned UNIFI does not work with ADMZ turned on until a minor Routing change is made. I don't think it matters what you do first but basically the UDM and the GH need to both be changed and during the process UNFI will not provide internet access. I would use the local IP addresses I noted at the beginning of this article.

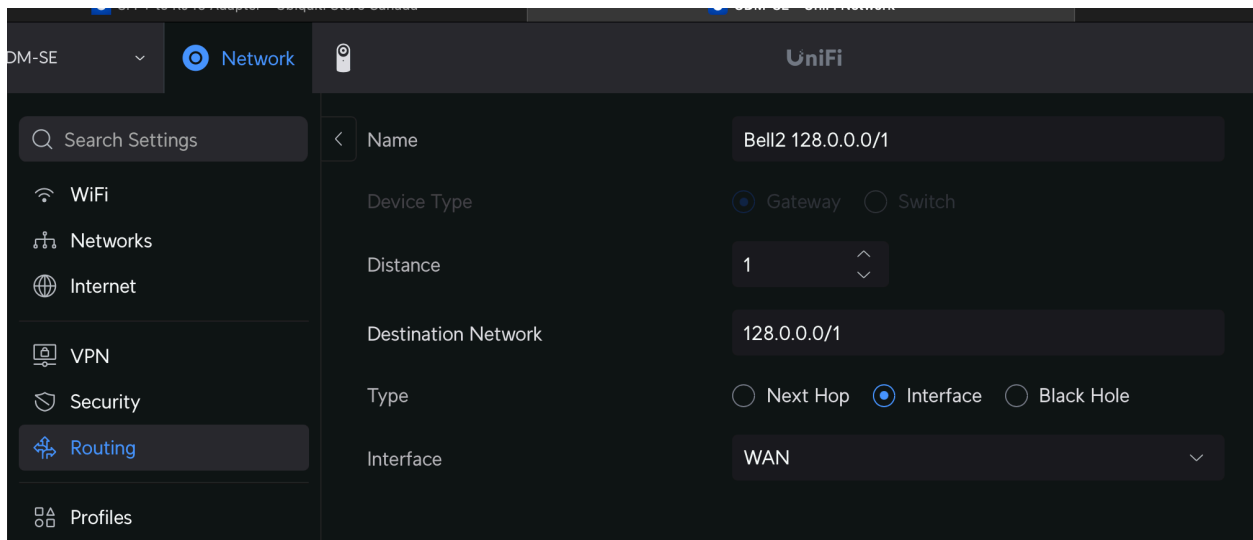
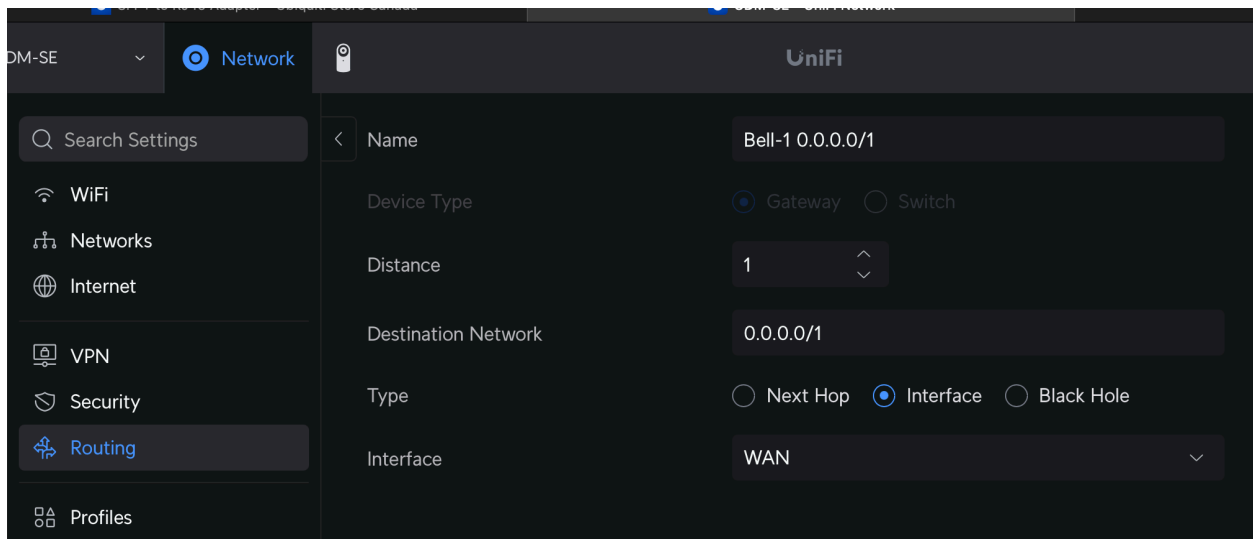
Add the following Static Routes to the UDM which assigns traffic back the the WAN port:



The screenshot shows the Ubiquiti UniFi Controller interface. On the left is a sidebar with navigation icons and labels: WiFi, Networks, Internet, VPN, Security, Routing (highlighted), Profiles, System, UDM SE, Control Plane, and Admins & Users. At the bottom of the sidebar, it says 'Network 9.0.114' and 'Submit Support Ticket'. The main panel has tabs for Policy-Based Routes, QoS, Port Forwarding, Static Routes (selected), OSPF, BGP, DNS, and NAT. Below the tabs is a table with the following data:

Name	Distance	Dest.Network	Type	Value
Bell-1 0.0.0.0/1	1	0.0.0.0/1	Interface	WAN
Bell2 128.0.0.0/1	1	128.0.0.0/1	Interface	WAN

Below the table are links for 'Create Entry' and 'Manage'.



Step 3: Determine WAN MAC address:

On the UDM: Select UniFi Devices (on the far left) > select the UDM > Overview (blue icon below) and **scroll down** to WAN1 and take note of the IP and MAC address. Note this WAN1 MAC address must be to configure the GH, not the UDM's MAC address.

Scroll down!

The screenshot shows the UniFi UDM-SE Overview page. At the top, there's a 'Overview' tab and a 'UDM-SE' header. Below the header, there are three icons: a blue link icon (selected), a bar chart icon, and a gear icon. The main content area displays system metrics: Memory Usage (79.8%), Load Average (3.16 / 3.04 / 2.81), and Power Consumption (11.0 W). Below this, there's a section for 'WAN 1' with an upward arrow. The 'WAN 1' section lists various configuration items: IP Address (redacted), MAC Address (circled in red), Experience (10 GbE), ISP (Bell Canada), DNS Server 1 (9.9.9.9), DNS Server 2 (149.112.112.112), Down Pkts / Bytes (5.54 M / 6.79 GB), Up Pkts / Bytes (6.41 M / 8.34 GB), Down Activity (13.7 Kbps), and Up Activity (13.9 Kbps).

UDM-SE	
Overview	
Memory Usage	79.8%
Load Average	3.16 / 3.04 / 2.81
Power Consumption	11.0 W
WAN 1	
IP Address	[Redacted]
MAC Address	[Redacted]
Experience	10 GbE
ISP	Bell Canada
DNS Server 1	9.9.9.9
DNS Server 2	149.112.112.112
Down Pkts / Bytes	5.54 M / 6.79 GB
Up Pkts / Bytes	6.41 M / 8.34 GB
Down Activity	13.7 Kbps
Up Activity	13.9 Kbps

Step 4: On the GH - (192.168.x.1) Select Advanced > turn on DMZ.

Scroll through the list of MAC addresses or manually add the MAC address - it should populate in the Active Device.

Turn on Advanced DMZ - take note of your Public IP Address. If all goes well it will populate into the UDM.

Save the settings.

DMZ ☒ ON ☐ OFF

Device

?

✓

?

>

?

Add device manually

MAC address:

XX:XX:XX:XX:XX:XX

Add

Active device

Activate a DMZ on a device to make it reachable over the Internet.

?

✕

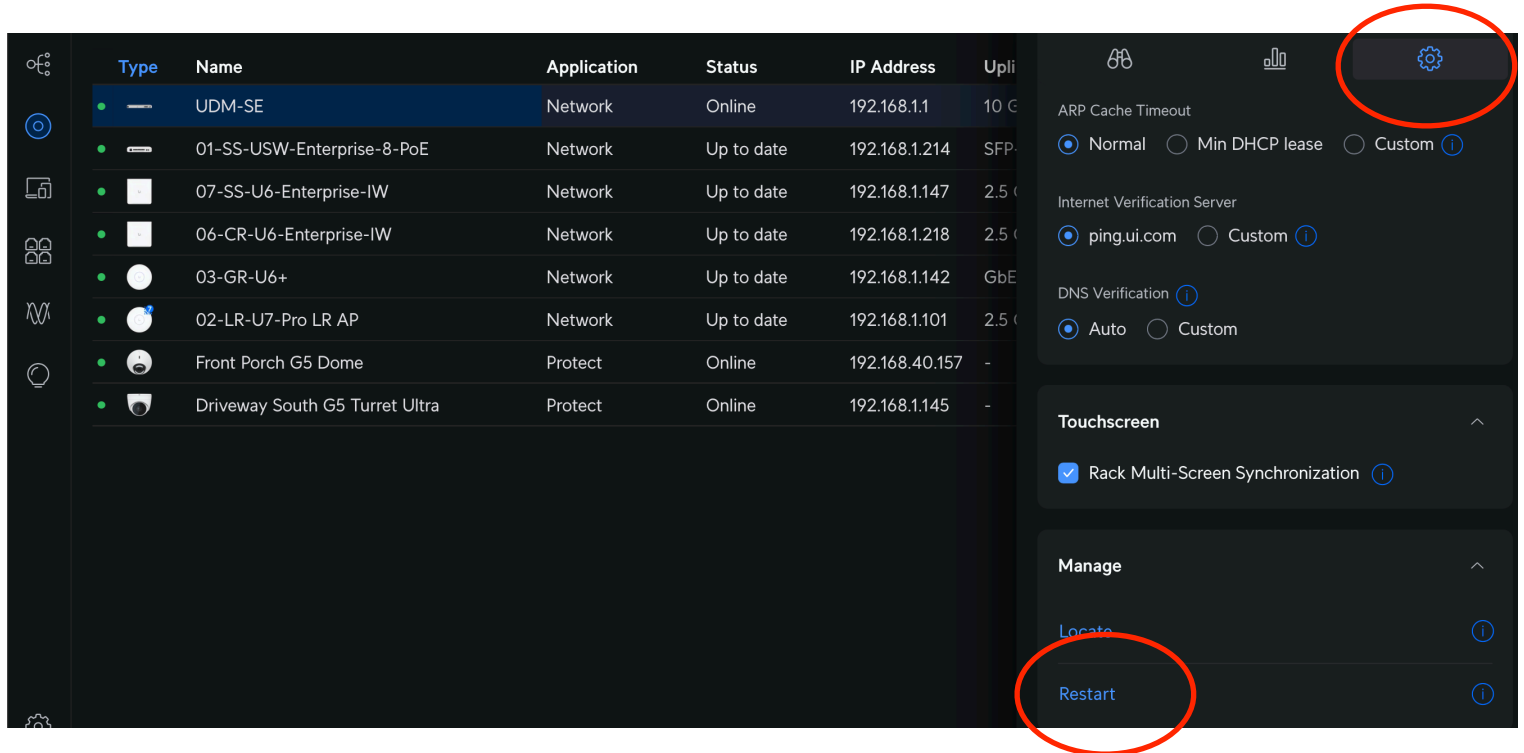
☒ **Advanced DMZ**

The advanced DMZ feature allows a device to use the modem's WAN IP address as its own. It also puts the device outside the modem's firewall. Your modem's WAN IP is:

Cancel

Save

Step5: Restart the UDM.



Step6: Testing

Settings>Internet. When the UDM reboots the IP address of the WAN should be your public address and you should have browser internet access.

