



Port Forwarding Setup Guide

NF20 / NF20MESH

Port Forwarding Overview

Port forwarding enables programs or devices running on your LAN to communicate with the internet as if they were directly connected. This is most used for remotely accessing DVR/NVR Controller, IP Cameras, Web Server or online gaming (via game console or computer).

Port forwarding works by "forwarding" a specific TCP or UDP port from the Gateway to the computer or device you are using.

Prerequisite

Prior to setting the port forwarding function you must know which ports need to be opened. If you are not sure, contact the application vendor or developer.

Also, you need to make sure that you have a **Public Routable IP address**. To do that first check your WAN IP from Gateway Web UI (Device info > WAN) and then Google for "what is my IP". If they match, then you have a public routable IP address. Otherwise please call your ISP for a public routable IP address.

Please ensure required ports are not blocked by your Internet Service Provider.

Add a Port Forwarding Rule

Logging in to the web interface of the Gateway

- 1 Connect your computer to the Gateway using a wired or wireless connection. We recommend connecting via Ethernet cable.
- 2 Open a web browser (such as Internet Explorer, Google Chrome, Safari or Mozilla Firefox), type the following address into the address bar and press **Enter**.

http://192.168.20.1

3 Enter the Gateway Login **Username** and **Password** printed on the label at the bottom of the Gateway and click on the **Login** button.

Ĩ.	NetCom	m
Welc	ome to your Wi-Fi 6 Gat	eway
	Username Password	
	Login	
You can find your	r username and password on the Wi-Fi 6	6 Gateway's label.

Set up a Virtual Server

- 1 From the Advanced Setup menu, open the NAT sub-menu and then select Virtual Servers.
- 2 The NAT Virtual Servers Setup screen will open:

Device Info Basic Setun	NAT Vir Virtual Serv server with different po	tual Servers ver allows you t a private IP ac ort number use	Setup to direct incom Idress on the L d by the server	ing traffic fro AN interface r on the LAN	m the WAN in . The Internal side. A maxim	terface (identi port is require um of 64 entri	fied by its Proto d only if the ex ies can be conf	ocol and Extern ternal port nee igured.	al port) to the I ds to be convert	nternal red to a
Advanced Setup Layer2 Interface WAN Service LAN NAT	Note: An) Note: An)	(Pv4 address (Pv6 address	is not editab is not editab	le if the IPv le if the IPv	4 NAT functi 6 function of Add	on is turned f the interfac	off. e is turned o	ff.		
Virtual Servers Port Triggering DMZ Host ALG	Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IPv4 Address	Server IPv6 Address	WAN Interface	Remove

3 Click on the Add button to add a port forwarding rule. The NAT – Virtual Servers screen is displayed.





NAT -- Virtual Servers

Select the service name, and enter the server IP address and click "Apply/Save" to forward IP packets for this service to the specified server. NOTE: The "Internal Port End" cannot be modified directly. Normally, it is set to the same value as "External Port End". However, if you modify "Internal Port Start", then "Internal Port End" will be set to the same value as "Internal Port Start".

Note: Ipv4 address will prohibit edit if the NAT function of IPV4 is turned off.

Note: Ipv6 address will prohibit edit if the Ipv6 function of interface is turned off.

		Remaining number of	of entries that car	n be configured:	54	
	5	Use Interface	eth4.1/eth4.1	~		
	6	Service Name: Select a Service:	Age of Empir	es		~
	8	Server IPv4 Address:	: 192.168.20.100			
e		Server IPv6 Address:	:			
	9	Enable LAN Lo	opback			
					Apply/Save	
		External Port Start	External Port End	Protocol	Internal Port Star	Internal Port End
na		47624	47624	TCP 🗸	47624	47624
	1	6073	6073	TCP 🗸	6073	6073
		2300	2400	TCP 🗸	2300	2400
		2300	2400	UDP 🗸	2300	2400
				TCP 🗸		
				TCP 🗸		
				TCP 🗸		
				TCP 🗸		
				TCP 🗸		
				TCP 🗸		
				TCP 🗸		
				TCP 🗸		
				12	Apply/Save	

4 Select the correct Interface in the **Use Interface** field as a misconfiguration will end up failing to forward anything.

The correct interface can be checked from **Device Info > WAN**.

If you have multiple entries, choose one with an available IPv4 address.

5 The Service Name drop down list has a predefined list of port forwarding for many services and games. If you can find your desired service listed, select the item in the drop-down list and check ● Select a Service.

A sample configuration for "Age of Empires" is shown, above.



Important – If you found an appropriate service in the Service Name drop down list, then you can skip steps 7, 11 and 12, below.

6 If you could not find one, you may create your own defined port forwarding rule, select the **⊙ Custom Service** button and enter a unique name for the port forwarding rule.



Layer2 Interfac WAN Service LAN NAT Virtual Servers Port Triggering DMZ Host ALG MAC Filtering Parental Control Firewall **Ouality of Servio** Routing DN5 DSI UPnP DNS Proxy DLNA Storage Service Interface Groupi Wi-Fi Voice Diagnostics Management Logout

Device Info Basic Setup

Advanced Setup

A sample configuration for allowing Remote desktop and custom application access toward a single private IP is as follows:

		NAT Virtual Ser	rvers				
Device Info Basic Setup		Select the service n server. NOTE: The End". However, if Port Start".	ame, and enter the se "Internal Port End" Fyou modify "Intern	rver IP address and cannot be modif al Port Start", th	d click "Apply/Save" t fied directly. Norm ien "Internal Port I	o forward IP packets f ally, it is set to the End" will be set to t	for this service to the specified same value as "External Port the same value as "Internal
Advanced Setup		Note: Ipv4 addre	ss will prohibit edit	if the NAT functi	on of IPV4 is turne	d off.	
Layer2 Interface		Note: Ipv6 addre	ss will prohibit edit	if the Inv6 functi	ion of interface is t	urned off.	
I AN							
NAT		Remaining numb	er of entries that ca	n be configured:	64		
Virtual Servers Port Triggering	5	Use Interface Service Name:	eth4.1/eth4.	1 🗸			
DMZ Host		O Select a Servi	ce: Select One			~	
ALG	7	Oustom Serv	ice: Remote Desktop	and Custom Applic	cation		
MAC Filtering							
Parental Control	•	Server IPv4 Addr	ess: 192.168.20.10	1			
Ouality of Service							
Routing		Server IPv6 Addr	ess:				
DNS							
DSL	9	Enable LAN	Loonback				
UPnP			coopdack				
DNS Proxy							
DLNA				11	Apply/Save		_
Storage Service		External Port Sta	rt External Port End	Protocol	Internal Port Star	tInternal Port End	1
Interface Grouping	10	3389	3389	TCP ¥	3389	3389	
Voice		10001	10010		10001	10010	
Diagnostics		10001	10010		10001	10010	
Management				TCP V			
Logout				TCP 🗸			
				TCP 🗸			
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- 7 In either case you must enter the Private IP address of the computer or device you wish to port forward to in the Server IP Address field.
- 8 This will be a local IP address in the subnet 192.168.20.xx (by default); where xx can be equal to 2 to 254.
- 9 Select 🗹 Enable LAN Loopback.
- 10 Enter the port number or port range into the **External Port Start** and **External Port End** fields.

If you only want to open one port, then enter the same number in **Start** and **End** port fields, but if you want to open range of ports, then enter the start number in **Port Start** field and end number in **Port End** field.

Note that the Internal Port Start and Internal Port End fields will automatically populate with the same port numbers.



- 11 Select the **Protocol** to be used for the port forwarding rule: **TCP**, **UDP** or **TCP/UDP both**
- 12 Click on the Apply/Save button.
- 13 The port forwarding rule will now be added to the list.

This example created in this user guide description is displayed in the bottom row, below.

NAT	 Virtual	Servers	Setur

Virtual Server allows you to direct incoming traffic from the WAN interface (identified by its Protocol and External port) to the Internal server with a private IP address on the LAN interface. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum of 64 entries can be configured.

Note: An IPv4 address is not editable if the IPv4 NAT function is turned off.

Note: An IPv6 address is not editable if the IPv6 function of the interface is turned off.

Add Remove

Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IPv4 Address	Server IPv6 Address	WAN Interface	Remove
Age of Empires	47624	47624	тср	47624	47624	192.168.20.100		eth4.1	
Age of Empires	6073	6073	тср	6073	6073	192.168.20.100		eth4.1	
Age of Empires	2300	2400	тср	2300	2400	192.168.20.100		eth4.1	
Age of Empires	2300	2400	UDP	2300	2400	192.168.20.100		eth4.1	
Remote Desktop and Custom Application	3389	3389	тср	3389	3389	192.168.20.101		eth4.1	
Remote Desktop and Custom Application	10001	10010	TCP/UDP	10001	10010	192.168.20.101		eth4.1	

Add Remove

Advanced Setup Layer2 Interfa WAN Service LAN NAT Virtual Servers Port Triggering DMZ Host ALG MAC Filtering Parental Control Firewall Quality of Service Routing DNS DSL UPnP DNS Proxy DLNA Storage Service Interface Grouping Wi-Fi Voice Diagnostics Management Logout

Device Info Basic Setup

Please note

We recommend that you set a Static IP address on the end device, instead of obtaining one automatically, to make sure that the request is forwarded to the appropriate machine every individual time. Also, you need to specify a Default Gateway when configuring Static IP address on the end device.

You can only forward a port to one location (IP address). In some cases, this may cause issues when multiple LAN devices (computers, game consoles, or VOIP ATAs) attempt to use online gaming at the same time or make multiple VOIP service connections. In these cases, you will need to use an alternate port for any subsequent connections after the first device. Please consult your VOIP provider or game manufacturer for assistance with this.

Similarly, remote access and the webserver must have unique port numbers. For example, you cannot host a web server accessible through port 80 of your public IP and enable remote http administration of the Gateway through port 80, you must provide both with unique port numbers.

Note also that ports 22456 to 32456 are reserved for RTP protocol in VOIP services. Do not use any of these ports for any other service.



