Grandstream Networks, Inc.

GWN76XX

Wi-Fi Access Points

Firewall and NAT Configuration Guide

Table of Content

Table of Figures

Table of Tables

INTRODUCTION

In this guide we will cover the Firewall rules for inbound and outbound traffic with which we can configure a set of rules that will either deny or allow it. With the firewall rule. This provides a centralized management for the entire network flow by selecting which SSID to have a rule or a set of rules applied on one or multiple SSIDs

This guide will also include the Network Address Translation (NAT) configuration on GWN Access points, so in NAT mode, clients will get the IP addresses from the specified NAT pool, while the communication and clients connecting to different APs are isolated from each other.

FIREWALL

A firewall is a set of security measures designed to prevent unauthorized access to a networked computer system. It is like walls in a building construction, because in both cases their purpose is to isolate one "network" or "compartment" from another.

To protect private networks and individual machines from the dangers of Internet, a firewall can be employed to filter incoming or outgoing traffic based on a predefined set of rules called firewall policies.

Traffic Rules: Used to control incoming/outgoing traffic and taking actions for specified rules such as Permit and Deny.

Outbound Rules

This section allows user to control the outgoing traffic from clients connected to certain SSIDs or all SSIDs by manually setting up the policies to either deny or permit the traffic based on protocol type and by specifying destinations.

To create a new outbound rule:

1. Click on + Add to add a new rule.
2. Select the **Service Protocol** to apply the rule on like *ICMP*, *HTTP*… *Any* or *Custom*.
3. Set **Policy** to either *Permit* or *Deny*.
4. Select **Destination** type whether *Particular Domain*, *IP Address* , *Particular Network* or *All*.
5. Select the **SSID**(s) to have the rule applied on.

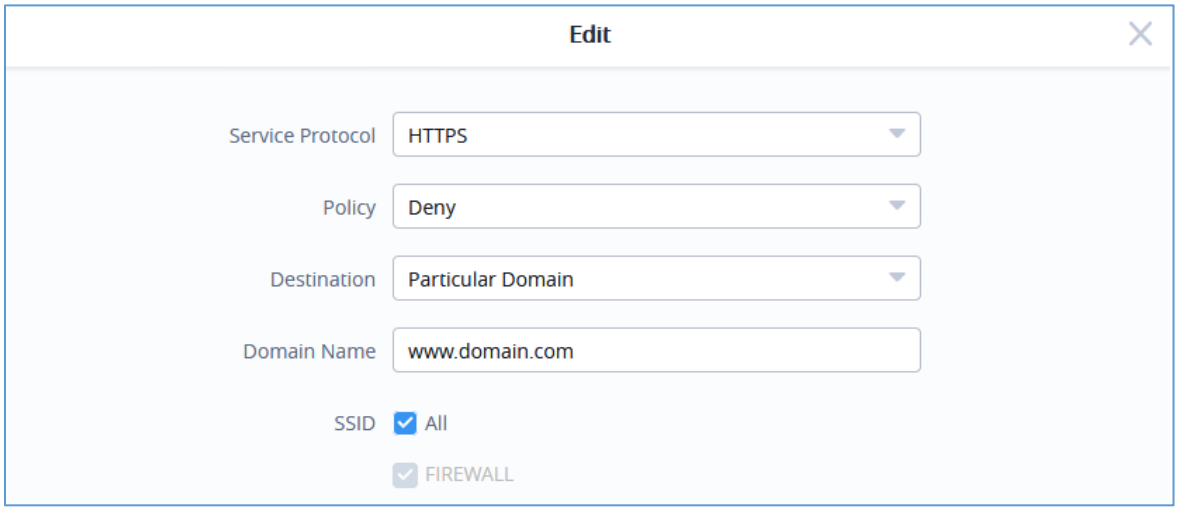


Figure 1: Outbound Rule Example

The following table lists and describes the available options:

Table 1: Outbound Rules

Field	Description
Service Protocol	Select type of traffic to be affected by the outbound rule like ICMP, HTTP, HTTPS, DNS, DHCP or Any as well as Custom. When set to Custom, user could enter the following: **Protocol:** TCP or UDP **Port:** define the port used by this protocol.
Policy	Either select to Permit or Deny outbound traffic.
Destination	Select either: • **Particular Domain:** enter FQDN of a destination. • **Particular IP:** IP address of destination. • **Particular Network:** Network IP address. • **All:** the rule will apply on all destinations.
SSID	Select one or multiple SSIDs to apply the rule on.

The Outbound Rules will be displayed as the figure below:

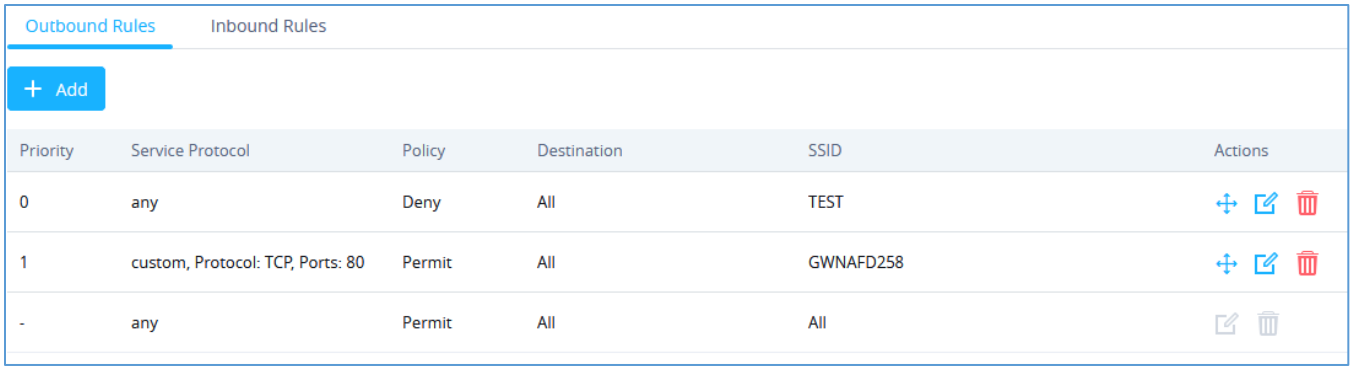


Figure 2: Outbound Rules actions

- To edit the Outbound rule, click on to change Service protocol, Policy etc.
- To change the priority of rules, user needs to click on to change the position then click Apply.
- To delete a rule user needs to click on .

Inbound Rules

User can define inbound rules by setting up actions to either block or accept incoming from specific and/or to a specific destination.

To create a new inbound rule:

1. Click on + Add to add a new rule.
2. Select the **Service Protocol** to be apply the rule on like *ICMP*, *HTTP, Any, Custom...*
3. Set **Policy** to *Permit* or *Deny.*
4. Select **Source** to either *All*, *Particular IP,* or *Particular Network*. *(IP* field must be enter if selecting Particular IP, additionally *Netmask* field must be entered if selecting Particular Network).
5. Select **Destination** to either *All*, *Particular IP*, *Particular Domain* or *Particular Network*. *(IP* field must be enter if selecting Particular IP, additionally *Netmask* field must be entered if selecting Particular Network, while *Domain Name* must be entered if selecting Particular Domain).

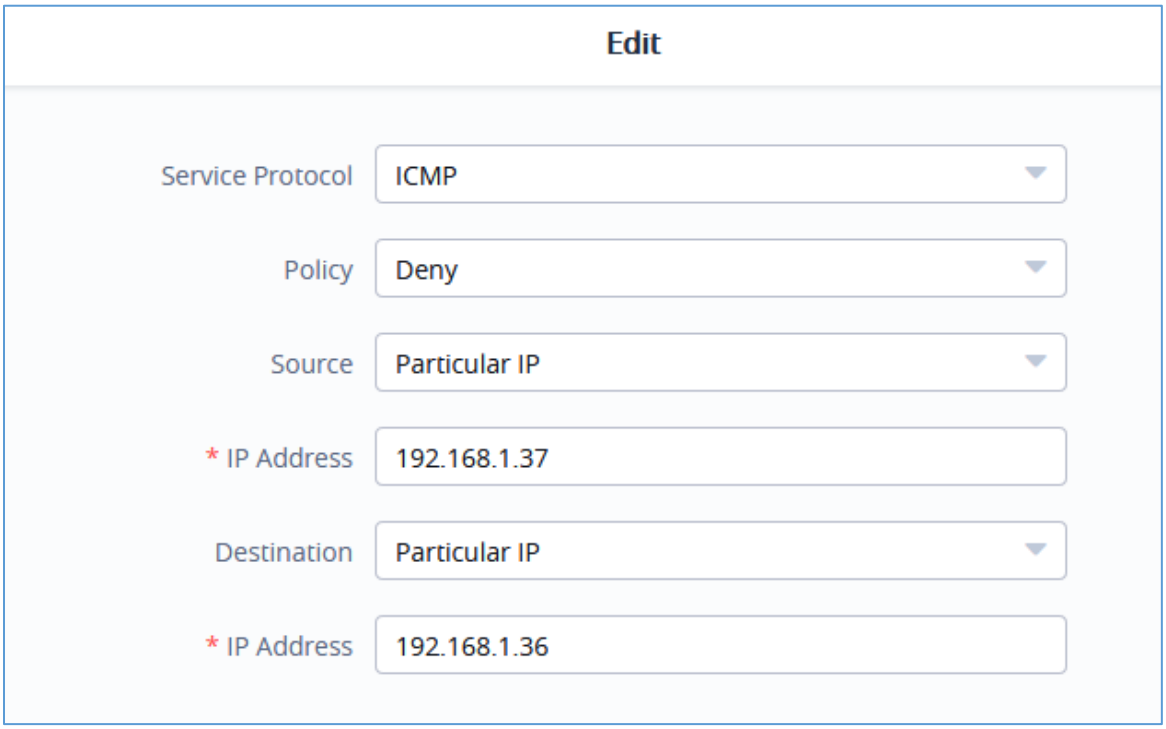


Figure 3: Inbound Rule Example

The following table lists and describes the available options:

Table 2: Inbound Rules

Field	Description

Service Protocol	Select type of traffic to be affected by the inbound rule like ICMP, HTTP, HTTPS, DNS, DHCP or Any as well as Custom.
	• If set to **Any:** The rule will be applied to all protocols.
	• When set to **Custom**, user could enter the following:
	  ○ **Protocol:** TCP, UDP or Others.
	  ○ **Protocol ID:** Specify the protocol ID when set to "Others".
	  ○ **Ports:** Define the port used by TCP or UDP protocol.

Policy	Either select to Permit or Deny inbound traffic.
Source	Specify the source type for the rule. Select either: • **Particular IP:** IP address of source. • **Particular Network:** Network IP address. • **All:** the rule will apply on all destinations.
IP	Enter the source IP address. This field is required when Source is set to Particular IP or Particular Network.
Netmask	Enter the source network mask. This field is required when Source is set to Particular Network.
Destination	Specify the destination type for the rule. Select either: • **Particular IP:** IP address of destination. • **Particular Domain:** Domain name of destination. • **Particular Network:** Network IP address. • **All:** the rule will apply on all destinations.
IP	Enter the destination IP address. This field is required when Destination is set to Particular IP or Particular Network.
Domain Name	Enter the destination domain name. This field is required when Destination is set to Particular Domain.
Netmask	Enter the destination network mask. This field is required when Destination is set to Particular Network

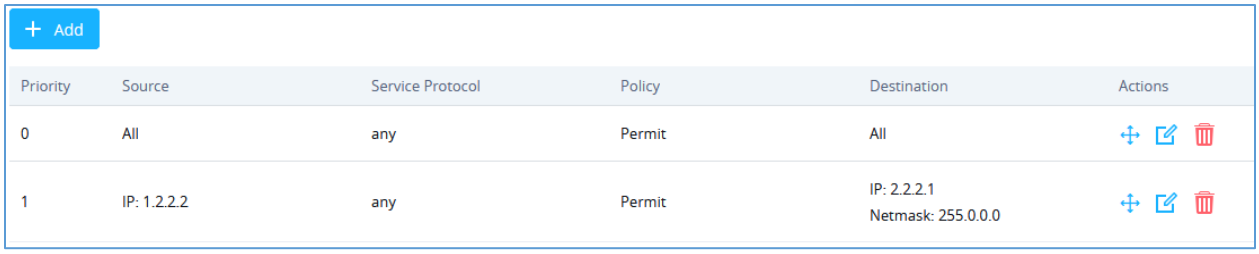


Figure 4: Inbound Rules Actions

- Click on Add to add a new rule.
- To edit an Inbound Rule, click on to change Service protocol, Policy etc.
- To change the priority of rules, user needs to click on to change the position then click Apply.
- To delete a rule user needs to click on .

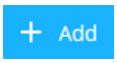
NAT

GWN76xx NAT feature defines an address pool from which the Wi-Fi clients will acquire their IP address so that the access point acts as a lightweight home router.

Notes:

- This option cannot be enabled when **Client Assignment IP** is set to *Bridge mode.*
- This option is not supported in GWN7610.

In order to use the lightweight NAT service of the GWN76XX AP, please proceed as follow:

1. Access **SSID** page and click on 

to create a new SSID.
2. In the **Client IP Assignment** select **NAT** option and configure the rest of the parameter like password and Access points involved.

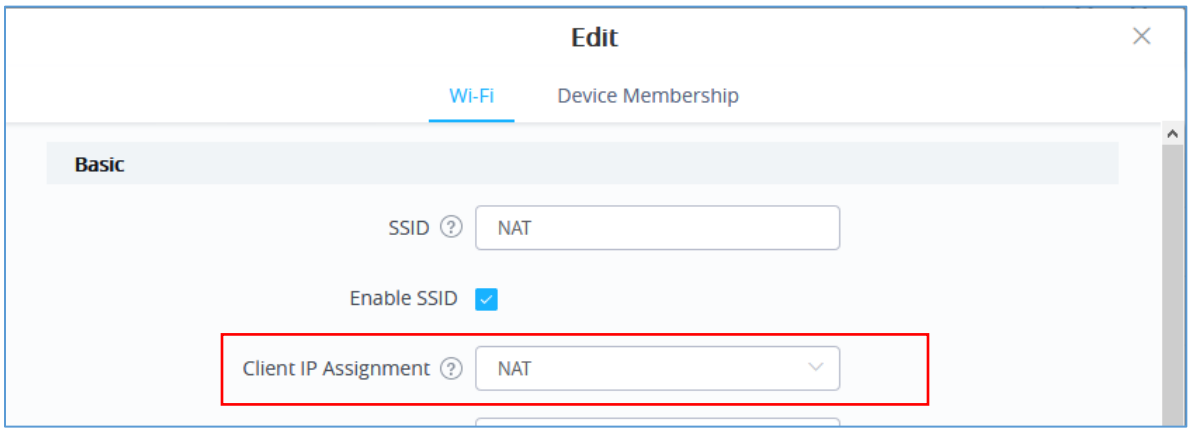


Figure 5: NAT on SSID

3. Then proceed from **Service → DHCP Server→ NAT Pool**, in order to configure the Gateway, with which the client will communicate with along with DHCP Server Subnet Mask, DHCP Lease Time and DHCP Preferred/Alternate DNS:

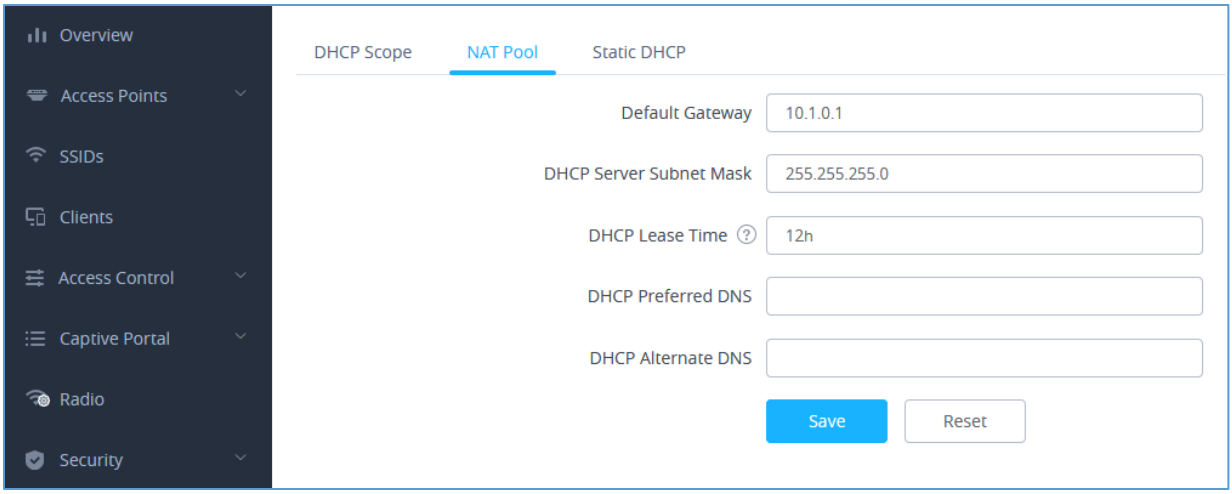


Figure 6: NAT Pool

Table 3: NAT Pool Parameters

Field	Description
Default Gateway	Set the gateway IP address. **Note:** The client's IP range will be on the same segment as the gateway's.
DHCP Server Subnet Mask	Set the gateway mask.
DHCP Lease Time	Set the DHCP Lease time.
DHCP Preferred DNS	Set the preferred DNS for DHCP
DHCP Alternated DNS	Set the alternated DNS for DHCP

4. Proceed from **Clients** page to be informed on the IP the clients have acquired.

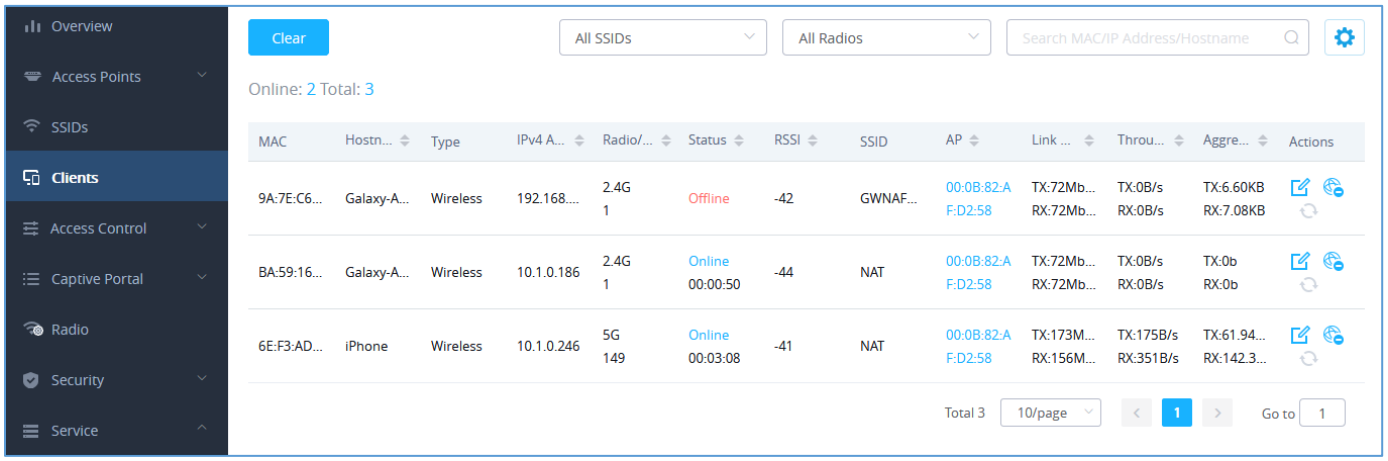


Figure 7: NAT Pool-Client