

## How to Configure NextGen Firewall and Web Application Firewall Integration

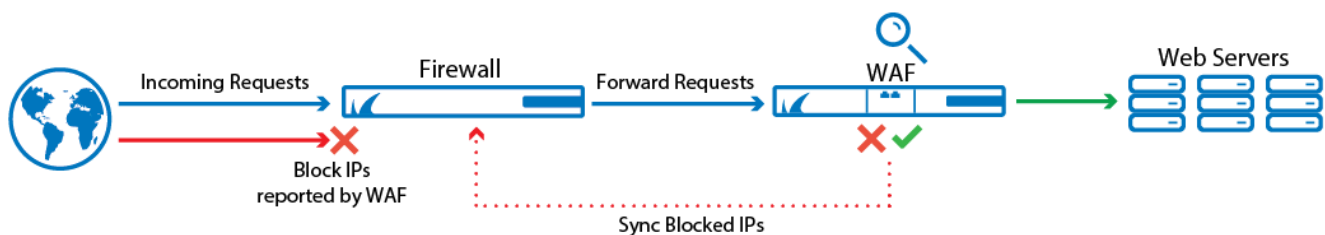
<https://campus.barracuda.com/doc/68355853/>

The Barracuda Web Application Firewall (WAF) and NextGen Firewall F can work in tandem to block IP addresses from which malicious activity was detected. While the WAF is very good at detecting application layer attacks, the NextGen Firewall is more efficient on the network layer. Connections blocked by the firewall are never forwarded to the WAF, thereby freeing resources that would otherwise have to be used to block known-bad connections.

The NextGen Firewall is located at the perimeter with the WAF behind it. IP addresses that are blocked by the WAF are synced to the fourth custom external network object on the firewall via REST API calls. For the WAF to see the public IP address of the request and to block the public IP address associated with the request, the WAF must use the firewall as the default gateway.

### Blocking IP Addresses for a Detected Attack:

1. Incoming HTTP/HTTPS connections are forwarded to the WAF.
2. If an attack is detected by the WAF, the attack is blocked and the IP address is added to the CustomExternalNetworkObject4 on the NextGen Firewall via REST API call.
3. Subsequent attacks from the blocked IP address are blocked on the firewall, freeing up resources on the WAF.
4. After the defined timeout, the IP address is removed from the blocked IP addresses on the WAF and removed from the custom external network object on the firewall via REST API call.



### Limitations for High Availability Clusters in the Public Cloud

The WAF can only send REST API calls to one firewall. High availability NextGen Firewall clusters in the public cloud cannot be both updated by one REST API call. An internal load balancer between the WAF and the firewalls can be used to update only the active firewall.

### Before You Begin

- The WAF must use the firewall as the default gateway.
- In the public cloud, the WAF and the firewall must be deployed into two different subnets.

## Step 1. Configure Admin for Accessing the REST API

1. Go to **CONFIGURATION > Configuration Tree > Box > Administrators** .
2. Click **Lock**.
3. In the **Administrators** section, click **+** to add an administrator account.
4. Enter restadmin for the **Name** and click **OK**. The **Administrators** window opens.
5. Configure the admin:
  - **Full Name** - Enter REST Admin.
  - **Assigned Roles** - Select **Manager**.
  - **System Level Access** - Select **No OS Login**.
  - **Authentication Level** - Select **Password**.
  - **Password Validation** - Select **Against Local Password**.
  - **Password** - Enter the password.
  - **(optional) Peer IP Restriction** - Add the IP address of the WAF and remove the **0.0.0.0/0** entry.

**Account Description**

Account Status: Enabled

Full Name: REST Admin

**Administrator Authorization**

Assigned Roles: Manager

System Level Access: No OS Login

**Administrator Authentication**

Authentication Level: Password

Password Validation: Against Local Password

External Login Name:

Password: New: ••••• Confirm: •••••

Strength:

Public RSA Key: Ex/Import No key present

**Administrator Access Control**

Peer IP Restriction: 10.100.0.48

6. Click **OK**.
7. Click **Send Changes** and **Activate**.

## Step 2. Enable REST API for HTTP or HTTPS

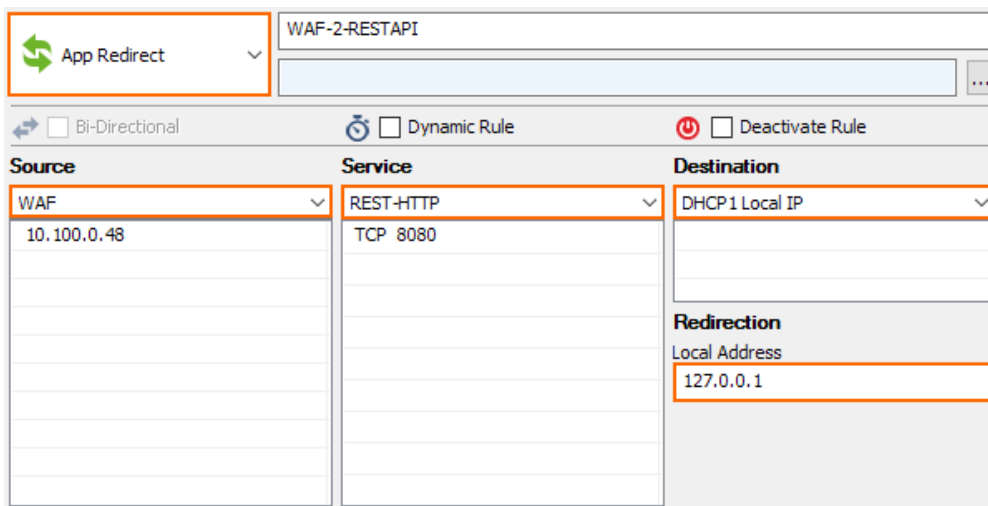
1. Go to **CONFIGURATION > Configuration Tree > Box > Infrastructure Services > REST API Service**.
2. Click **Lock**.
3. Verify that either the **HTTP** or **HTTPS Interface** of the REST API is enabled. For more information, see [REST API](#).
4. Click **Send Changes** and **Activate**.

### Step 3. Create App Redirect Rule for REST API Calls from the WAF

Allow REST API calls for HTTP or HTTPS from the WAF and redirect them to the rest daemon listening on 127.0.0.1:8080 (HTTP) or 127.0.0.1:8443 (HTTPS).

Create an access rule to redirect incoming REST API calls to the REST daemon:

- **Action** – Select **App Redirect**.
- **Source** – Enter the IP address of the WAF.
- **Service** – Select **HTTP** or **HTTPS**.
- **Destination** – Select the virtual server IP address the WAF uses for the REST API call. In the public cloud, select **DHCP Local IP1**.
- **Redirection** – Enter 127.0.0.1 for the HTTP REST endpoint.



The screenshot shows the configuration for an 'App Redirect' rule named 'WAF-2-RESTAPI'. The rule is configured with the following settings:

Source	Service	Destination
WAF 10.100.0.48	REST-HTTP TCP 8080	DHCP1 Local IP

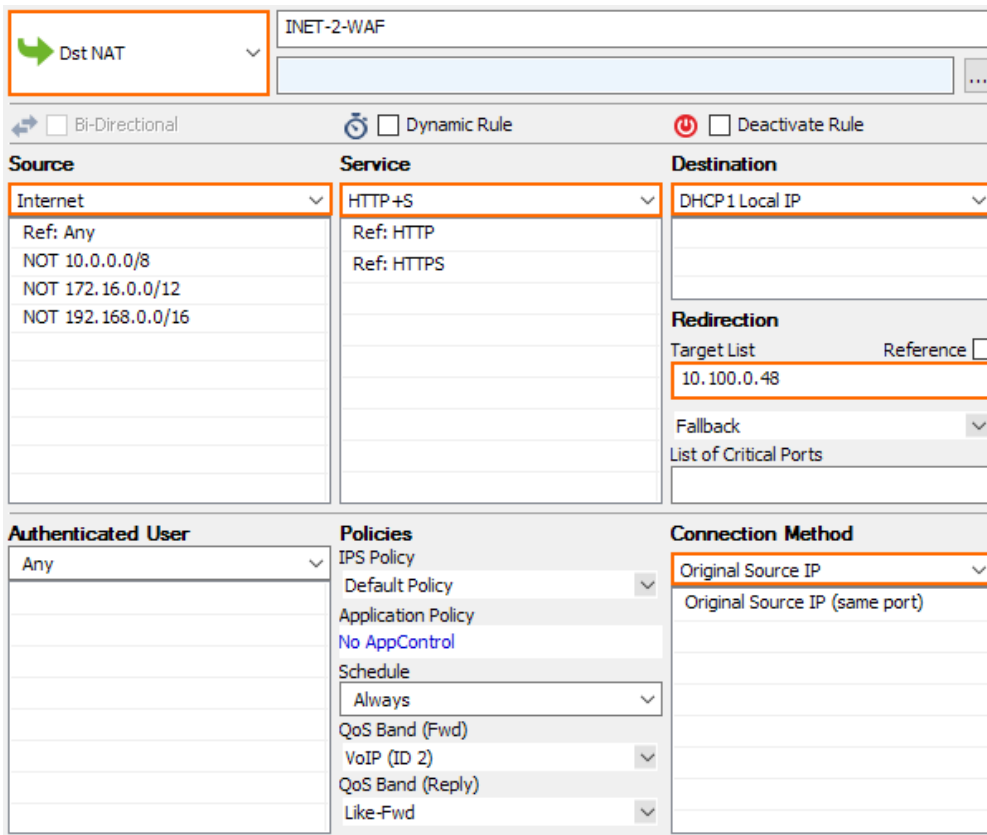
Additional settings include:

- Redirection Local Address:** 127.0.0.1
- Bi-Directional:**
- Dynamic Rule:**
- Deactivate Rule:**

### Step 3. Create a DST NAT Rule to Forward Web Traffic to the WAF

Create an access rule to forward all incoming HTTP and/or HTTPS traffic to the WAF:

- **Action** – Select **Dst NAT**.
- **Source** – Select **Internet**.
- **Service** – Select **HTTP**, **HTTPS**, or **HTTP+S** depending on the type of web traffic forwarded to the WAF.
- **Destination** – Enter the public IP address of the firewall, or the network object for the dynamic WAN connection.
- **Redirection** – Enter the IP address for the WAF.
- **Connection Method** – Select **Original Source IP**.




The screenshot shows the configuration for a NAT rule named "INET-2-WAF". The rule is configured with the following settings:

- Source:** Internet (Ref: Any, NOT 10.0.0.0/8, NOT 172.16.0.0/12, NOT 192.168.0.0/16)
- Service:** HTTP+S (Ref: HTTP, Ref: HTTPS)
- Destination:** DHCP 1 Local IP
- Redirection:** Target List: 10.100.0.48
- Connection Method:** Original Source IP

#### Step 4. Create an Access Rule to Block Malicious IP Addresses

Create an access rule to block the malicious IP address stored in the custom external object number 4.

- **Action** – Select **Block**.
- **Source** – Select **CustomExternalObject4** .
- **Service** – Select **HTTP**, **HTTPS**, or **HTTP+S** depending on the type of application.
- **Destination** – Enter the public IP address of the firewall, or the network object for the dynamic WAN connection.
- **Connection Method** – Select **Original Source IP**.

<div style="border: 1px solid orange; padding: 2px;">  Block         </div>			<div style="border: 1px solid orange; padding: 2px;">           Block-BadIPs         </div>					
<input type="checkbox"/> Bi-Directional			<input type="checkbox"/> Dynamic Rule			<input type="checkbox"/> Deactivate Rule		
Source	Service	Destination						
CustomExternalObject4	Any	DHCP 1 Local IP						
	Ref: Any-TCP Ref: Any-UDP Ref: ICMP ALLIP							

### Step 5. Configure the Barracuda Web Application Firewall

Go to **ADVANCED > NextGen Firewall Settings** and configure the IP address and user for the REST API calls. Go to **SECURITY POLICIES > Action Policies** to edit the Attack action for the security policies to use **Block Client-IP** as the **Follow Up Action**.

#### NextGen Firewall Settings

Server Name/IP:   
Enter the name or IP address of the Barracuda NextGen Firewall.

TCP Port:   
Enter port number associated with the IP address of the Barracuda NextGen Firewall.

Username:   
Enter the user name to access the Barracuda NextGen Firewall.

Password:   
Enter the password associated with the user name.

Click Test to view the IP addresses that are currently blocked on the Barracuda NextGen Firewall.

Edit Attack Action		Help
Attack Action Name	Invalid Header	
ID	invalid-header	
Numeric ID	121	
Action:	<input type="text" value="Protect and Log"/> <i>Specifies what to do when this attack is encountered. The actual protection method varies from attack to attack. Most attacks on the request cause the request to be denied, for which, the Deny Response decides how the request is denied.</i>	
Deny Response:	<input type="text" value="Send Response"/> <i>Specifies how the request should be denied (applicable only for those attacks whose protection method is to deny the request).</i>	
Redirect URL:	<input type="text"/> <i>Specifies the URL to be used to redirect the request if the deny response is set to "Permanent Redirect" or "Temporary Redirect". The URL should start with a "/" or should be a fully qualified URI like http://domain/url or https://domain/url. When using the "Follow Up Action" as "Challenge with CAPTCHA", configure a %s to redirect to the original URL, or a %b to redirect to the base part of the original URL if desired.</i>	
Response Page:	<input type="text" value="default"/> <i>Specifies the response page to be sent to the client if the "Deny Response" is set to "Send Response".</i>	
Follow Up Action:	<input type="text" value="Block Client-IP"/> <i>Specifies the follow up action to be taken if any protection action is taken.</i>	
Follow Up Action Time:	<input type="text" value="60"/> <i>Specifies the time in seconds to block the client IP if "Follow Up Action" is set to "Block Client IP".</i>	

For more information, see [Upstream Firewall Configuration](#) and [Security Policies](#).

## Figures

1. ngf\_waf\_integration.png
2. WAF\_01.png
3. WAF\_02.png
4. WAF\_03.png
5. WAF\_04.png
6. WAF\_05.png
7. WAF\_06.png

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