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## Barracuda CloudGen WAF Deployment and Quick Start Guide for Amazon Web Services

<https://campus.barracuda.com/doc/41104663/>

The Barracuda CloudGen WAF for AWS can be deployed in One-Arm Proxy Mode on Amazon Web Services. This article explains One-Arm Proxy Mode deployment. Complete the steps in this guide to configure, launch, and license your Barracuda CloudGen WAF instance. Then log into the Barracuda CloudGen WAF to verify your configuration and change your password.

### Requirements

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Before you deploy the Barracuda CloudGen WAF on Amazon Web Services, ensure that you have completed the following:

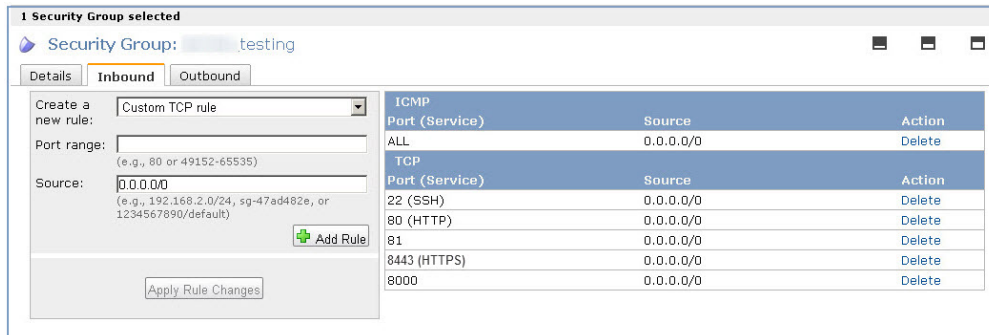
- [Set up an Amazon Virtual Private Cloud \(VPC\)](#) for the Barracuda CloudGen WAF.
- If you want to use the Bring Your Own Licensing (BYOL) model, get the Barracuda CloudGen WAF license. See [Bring Your Own License \(BYOL\)](#) .

### Step 1 - Create a Security Group

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Create a security group with rules specifying allowed protocols, ports and source IP ranges. Multiple security groups can be created with different rules, and assigned to each instance. For more information on security groups, refer to the AWS article [Amazon EC2 Security Groups](#).

1. Log into the [Amazon EC2 Management Console](#).
2. From the EC2 dashboard, select **Security Groups** under **NETWORK & SECURITY**.
3. Click **Create Security Group**.
4. In the **Create Security Group** window, do the following:
  1. Enter a name to identify the security group.
  2. Specify the description for the security group.
  3. Select a **VPC ID** from the list and click **Yes, Create**.
5. The created group appears in the security group table.
6. Select the security group from the table, and specify the inbound and outbound traffic to be allowed for the instance.



By default, the Barracuda CloudGen WAF web interface listens on port 8000 for HTTP and port 8443 for HTTPS. Make sure these ports (8000 and 8443) are allowed by the Inbound rule of the associated security group. Also, add the port(s) through which you configure the Service(s) for this instance.

## Step 2 - Create a Network Interface

Create a network interface using the static IP address, for association with the Barracuda CloudGen WAF later during deployment.

1. Log into the [Amazon EC2 Management Console](#).
2. From the EC2 dashboard, select **Network Interfaces** under **NETWORK & SECURITY**.
3. Click **Create Network Interface**.
4. In the **Create Network Interface** window, provide the following information for the network interface:
  1. **Description** – Enter a name for the interface.
  2. **Subnet** – Select a subnet from the list. Make sure to select the subnet of the VPC where you want to create the instance.
  3. **Private IP** – Enter the static primary private IP address. It is recommended to use the Static IP address.
  4. **Security Groups** – Select one or more security groups. Make sure the security group has all the required ports open.

By default, the Barracuda CloudGen WAF web interface listens on port 8000 for HTTP and port 8443 for HTTPS. Make sure these ports (8000 and 8443) are added to the Inbound Rule of the security group associated with the Barracuda CloudGen WAF.

5. Click **Yes, Create**.

## Step 3 - (Optional) Assign Multiple Private IP Addresses to the Network Interface

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## of the Instance

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Multiple secondary private IP addresses can be assigned to the network interface of the Barracuda CloudGen WAF instance, depending on the selected Instance Type, and can be used to create Services on the Barracuda CloudGen WAF. To assign a secondary private IP address to the Barracuda CloudGen WAF instance, perform the following steps:

1. Log into the [Amazon EC2 Management Console](#).
2. From the EC2 dashboard, select **Network Interfaces** under **NETWORK & SECURITY**.
3. Identify the instance needing a secondary private IP address assignment and right-click on the network interface attached to the instance.
4. Select **Manage Private IP Addresses**.
5. In the **Manage Private IP Addresses** window, do the following:
  1. Click **Assign a secondary private address**.
  2. In the Address field, enter a specific IP address that is within the subnet range for the instance.
  3. (Optional) Select **Allow reassignment** to allow the secondary private IP address to be reassigned if it is already assigned to another network interface.
  4. Click **Yes, Update**, and then click **Close**.

You can also assign a secondary private IP address to an instance by clicking **Instances** in the navigation pane. In the Instances table, right-click on the instance needing a secondary private IP address assignment and select **Manage Private IP Addresses**. Repeat **step 5** above. For more information, refer to [Multiple IP Addresses](#).

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## Step 4 - Allocate and Assign an Elastic IP Address to your Instance

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When an instance of your Barracuda CloudGen WAF is created, a public IP address is associated with the instance. That public IP address changes automatically when you **STOP** and **START** the Barracuda CloudGen WAF. To resolve this issue, assign a persistent public IP address to the instance using Elastic IP addressing. For more information, refer to the Amazon Web Services article [Elastic IP Addresses](#).

1. Log into the [Amazon EC2 Management Console](#).
2. From the EC2 dashboard, select **Elastic IPs** under **NETWORK & SECURITY**.
3. Click **Allocate New Address**.
4. Click **Yes, Allocate** to confirm and allocate a new IP address. A random Public IP gets generated and displayed in the **Allocate New Address** table.
5. In the **Allocate New Address** table, right click on the new IP address and select **Associate**.
6. In the **Associate Address** window:
  1. Select the **Instance** and the **Private IP Address** of the instance from the respective

lists.

**OR**

2. Select a **Network Interface** and the **Private IP Address** from the respective lists.
3. Select the **Allow Reassociation** check box.
7. Click **Yes, Associate**.

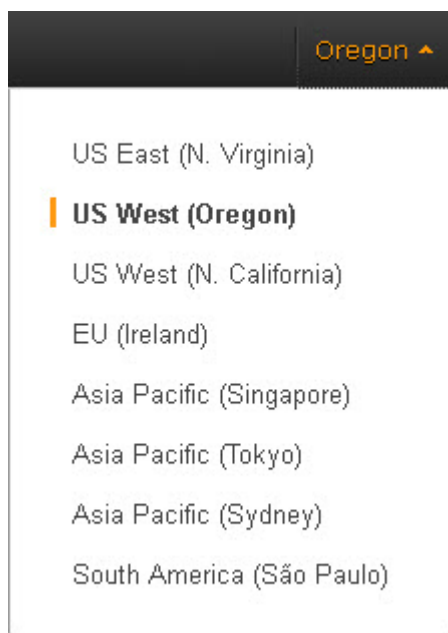
If you have configured multiple internal IP addresses to the interface, then follow the steps above to allocate and assign the elastic IP address to each internal IP address, so that they can be accessed by the outside world.

## Step 5 - Deploy the Barracuda CloudGen WAF on Amazon Web Services

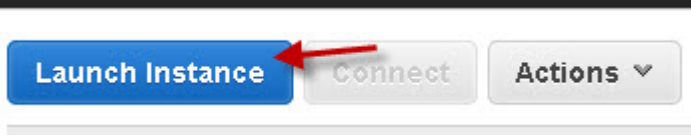
Before you proceed, it is recommended that you go through the [Deployment Best Practices](#) article.

In the Amazon VPC that you configured , launch an Amazon EC2 instance with the Barracuda CloudGen WAF AMI image. The **Amazon Launch Instance** wizard guides you through the following steps:

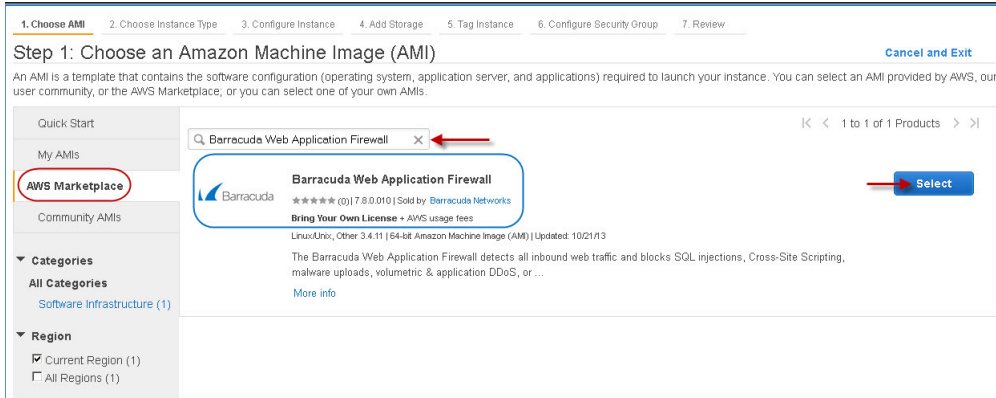
1. Log into the AWS Management Console and open the [EC2 Management Console](#).
2. From the top right corner of the page, select the region for the instance. This is important because some Amazon EC2 resources can be shared between regions.



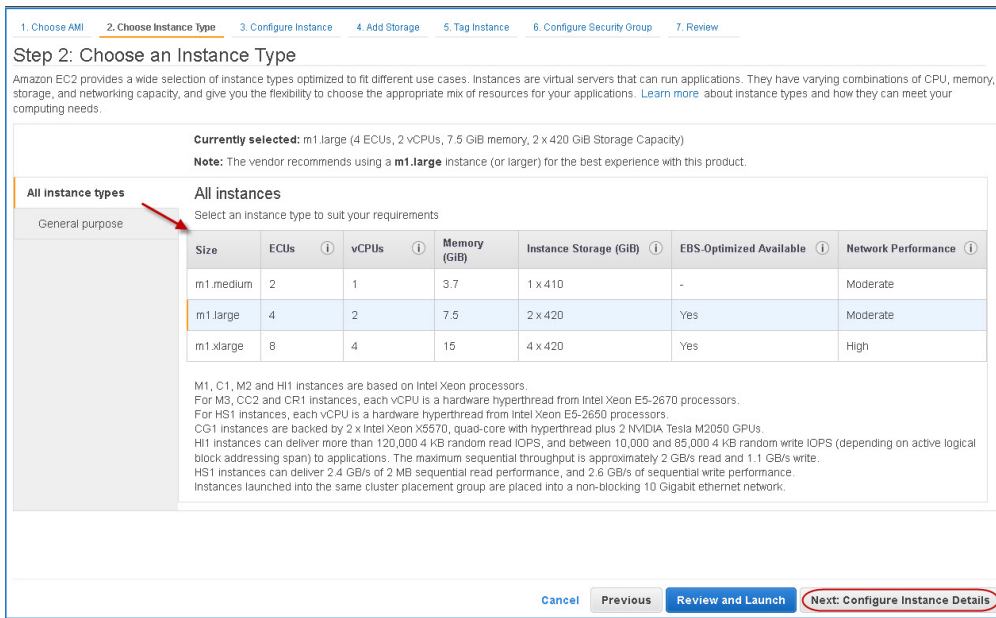
3. Click **Launch Instance**.



- On the **Step 1: Choose an Amazon Machine Image (AMI)** page, select **AWS Marketplace** and search for the *Barracuda CloudGen WAF* AMI. Click **Select** next to the Barracuda CloudGen WAF AMI.

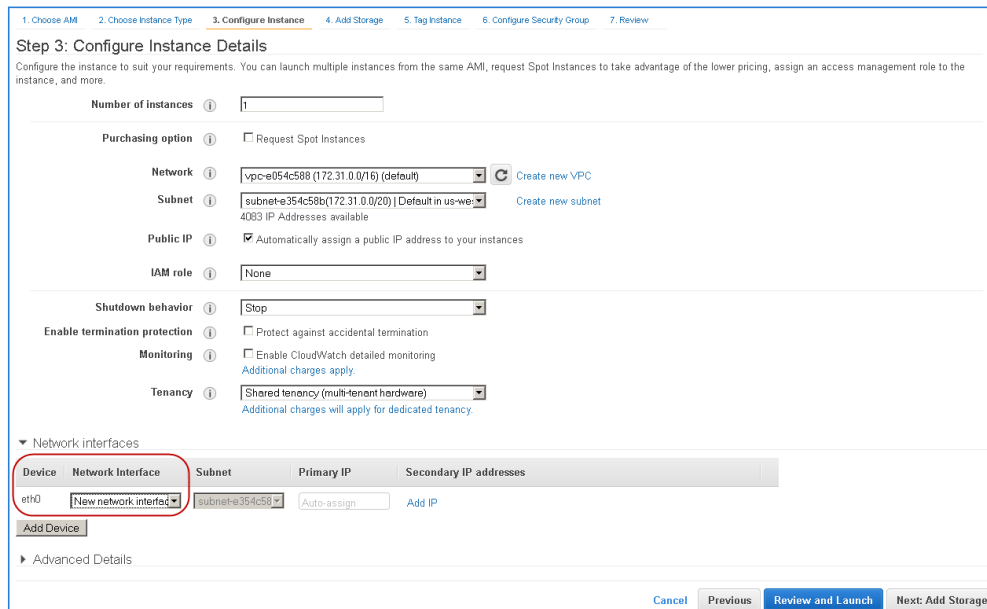


- On the **Step 2: Choose an Instance Type** page, select an instance type from the **All Instance types** or **General purpose** table. Click **Next: Configure Instance Details** to continue.



- On the **Step 3: Configure Instance Details** page:
  - Enter the **Number of instances** you want to launch.
  - Select the appropriate **Network** from the list to deploy the instance.
  - Select the appropriate **Subnet** from the list and select the network interface under **Network Interface** section that was created in **Step 2 - Create a Network Interface**.
  - In the **Advanced Details** pane, keep the default setting for all parameters and click

**Next: Add Storage.**



1. Choose AMI 2. Choose Instance Type 3. **Configure Instance** 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

**Step 3: Configure Instance Details**

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances: 1

Purchasing option:  Request Spot Instances

Network: vpc-e054c588 (172.31.0.0/16) (default) [Create new VPC](#)

Subnet: subnet-e354c58b (172.31.0.0/20) | Default in us-we-1 [Create new subnet](#)  
4083 IP Addresses available

Public IP:  Automatically assign a public IP address to your instances

IAM role: None

Shutdown behavior: Stop

Enable termination protection:  Protect against accidental termination

Monitoring:  Enable CloudWatch detailed monitoring  
[Additional charges apply.](#)

Tenancy: Shared tenancy (multi-tenant hardware)  
[Additional charges will apply for dedicated tenancy.](#)

Network interfaces

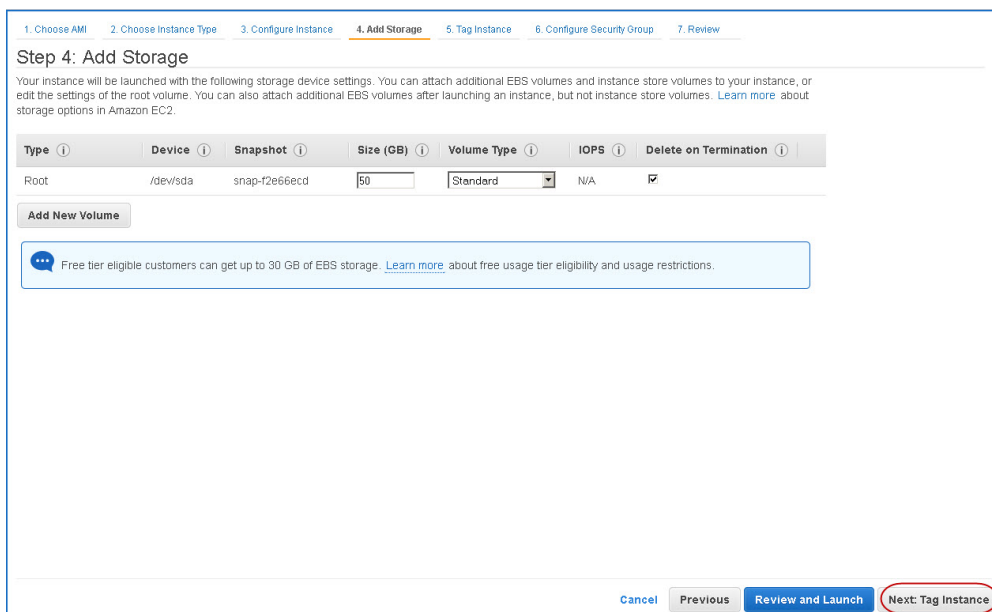
Device	Network Interface	Subnet	Primary IP	Secondary IP addresses
eth0	New network interface	subnet-e354c58b	Auto-assign	<a href="#">Add IP</a>

[Add Device](#)

Advanced Details

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

7. On the **Step 4: Add Storage** page, the table displays the storage device settings for the instance. Modify the values if required and click **Next: Tag Instance**.



1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. **Add Storage** 5. Tag Instance 6. Configure Security Group 7. Review

**Step 4: Add Storage**

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

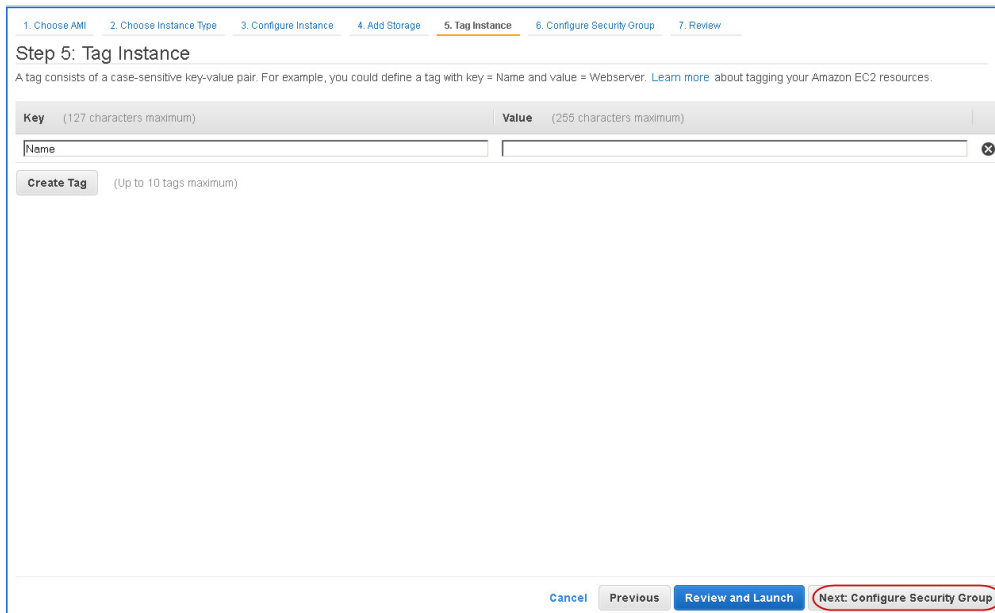
Type	Device	Snapshot	Size (GB)	Volume Type	IOPS	Delete on Termination
Root	/dev/sda	snap-f2e66ecd	50	Standard	N/A	<input checked="" type="checkbox"/>

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

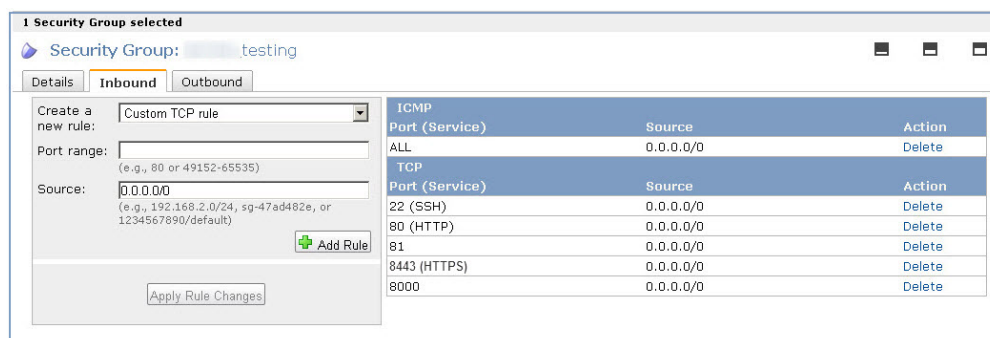
[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Tag Instance](#)

8. On the **Step 5: Tag Instance** page, add/remove the tags for the instance (if required) and click **Next: Configure Security Group**.



- On the **Step 6: Configure Security Group** page, choose **Select an existing security group** to select and assign the security group(s) from the existing list, or choose **Create a new security group** to create a new group (see **Step 1 - Create a Security Group** for more information). Click **Review and Launch**.

By default, the Barracuda CloudGen WAF web interface listens on port 8000 for HTTP and port 8443 for HTTPS. Make sure these ports (8000 and 8443) are added to the Inbound Rule of the security group associated with the Barracuda CloudGen WAF.



- On the **Step 7: Review Instance Launch** page, review your settings before launching the instance, and then click **Launch**.

After you click **Launch**, Amazon Web Services begins provisioning the Barracuda CloudGen WAF. Allow a few minutes for the Amazon Web Services Agent and the Barracuda CloudGen WAF image to boot up.

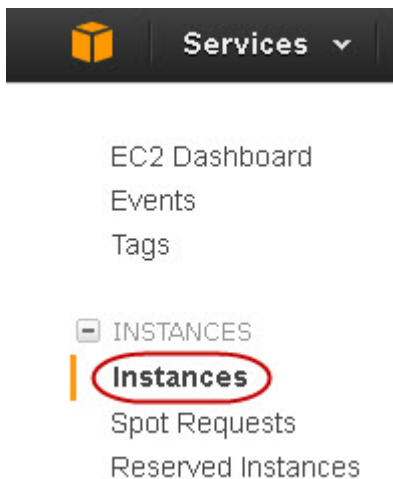
**DO NOT restart the Barracuda CloudGen WAF while it is launching!**

## Step 6 - License the Barracuda CloudGen WAF

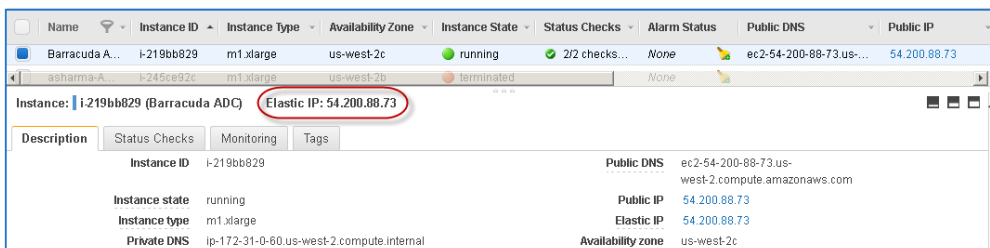
If you deployed the Barracuda CloudGen WAF with the Hourly/Metered option, you do not need to license the system; skip ahead to **Step 7 - Verify Configuration and Change the Password.**

If you deployed the Barracuda CloudGen WAF with BYOL, complete the licensing and provisioning of your system.

1. Log into the [Amazon EC2 Management Console](#).
2. From the EC2 Dashboard, select **Instances** under **INSTANCES**.



3. In the **Instances** table, select the Barracuda CloudGen WAF instance you created and note the **Elastic IP** address.



4. Open the browser and enter the copied Elastic IP address (from step 3) with port 8000 for HTTP. No port is required for HTTPS. For example:  
**For HTTP:** http://<Public DNS>:8000 (Unsecured)  
**For HTTPS:** https://<Public DNS> (Secured)

The Barracuda CloudGen WAF is not accessible via HTTPS port when it is booting up. Therefore, use ONLY HTTP port to access the unit when booting. This displays the status of the unit i.e., System Booting. Once the boot process is complete, you will be redirected to the login page.



5. After the boot process is complete, the **Licensing** page displays with the following options:



- 1. I Already Have a License Token** - Use this option to provision your Barracuda CloudGen WAF with the license token you have already obtained from Barracuda Networks. Enter your Barracuda Networks **Token** and **Default Domain** to complete licensing, and then click **Provision**.  
The Barracuda CloudGen WAF connects to the Barracuda Update Server to get the required information based on your license, and then reboots automatically. Allow a few minutes for the reboot process. Once the instance is provisioned, you are redirected to the login page.
- 2. I Would Like to Purchase a License** - Use this option to purchase the license token for the Barracuda CloudGen WAF. Provide the required information in the form, accept the terms and conditions, and click **Purchase**.  
The Barracuda CloudGen WAF connects to the Barracuda Update Server to get the required information based on your license, and then reboots automatically. Allow a few minutes for the reboot process. Once the instance is provisioned, you are redirected to the login page.
- 3. I Would Like to Request a Free Evaluation** - Use this option to get 30 days free evaluation of the Barracuda CloudGen WAF. Provide the required information in the form, accept the terms and conditions, and click **Evaluate**.  
The Barracuda CloudGen WAF connects to the Barracuda Update Server to get the required information based on your license, and then reboots automatically. Allow a few minutes for the reboot process. Once the instance is provisioned, you are redirected to the login page.

## Step 7 - Open Network Address Ranges on Firewall

If your Barracuda CloudGen WAF is located behind a corporate firewall, open the following Barracuda network address ranges for the ports shown in the table below on your firewall to ensure proper operation:

- 64.235.144.0/20
- 198.207.200.0/22
- 209.222.80.0/21

Port	Direction	TCP	UDP	Usage
22	Out	Yes	No	Technical Support connections
25	In/Out	Yes	No	Email alerts
53	Out	Yes	Yes	Domain Name Service (DNS)
80/8000	Out	Yes	No	Virus/attack/security definition and firmware updates
123	Out	No	Yes	Network Time Protocol (NTP)
8443	Out	Yes	No	Initial VM Provisioning *

\* The initial provisioning port can be disabled once the initial provisioning process is complete.

## Step 8 - Verify Configuration and Change the Password

1. Log into the Barracuda CloudGen WAF web interface as the administrator using the URL, as described in step 4 of **Licensing of the Barracuda CloudGen WAF after deploying on Amazon Web Services** above. Log in with:
  1. **Username:** *admin*
  2. **Password:** **Instance ID** of your Barracuda CloudGen WAF in Amazon Web Services.
2. Navigate to the **BASIC > Administration** page and enter your old password, new password, and re-enter the new password. Click **Save Password**.

## Configuring the Service(s) on the Barracuda CloudGen WAF

You can configure the services on the **BASIC > Services** page. In Amazon Web Services, the services can be created either using the System (WAN) IP address of the instance or any other IP address from the IP address pool as your System (WAN) IP address in the **Virtual IP Address** field. Note that configuring the VIP with an IP address from the IP address pool as your System (WAN) IP address is possible only for stand-alone instances. Also, ensure that you:

- Assign multiple private IP addresses to the network interface of the deployed Barracuda CloudGen WAF instance. The assigned private IP addresses can be used to create the service(s) on the Barracuda CloudGen WAF. For information on how to assign multiple private IP addresses, see [Step 3 - \(Optional\) Assign Multiple Private IP Addresses to the Network Interface of the Instance](#).
- Allocate and assign an Elastic IP (EIP) address to each private IP address assigned to the network interface of the Barracuda CloudGen WAF instance, so that it can be accessed externally. Ensure that the corresponding ports are opened in your security group and firewall. For more information on how to assign the EIP to the private IP address, see [Step 4 - Allocate and Assign an Elastic IP Address to your Instance](#).

If you want to cluster the Barracuda CloudGen WAF instances to load balance the traffic, ensure that the services are created using only the System (WAN) IP address. After the service is created using the System (WAN) IP address, the service will be accessible through the Public IP/DNS of the Barracuda CloudGen WAF VM. Ensure that the corresponding ports are opened in your security group and firewall.

For more information on services, see [Step 2: Configuring a Service](#). For detailed instructions on how to add a service, click the **Help** button.

## Figures

1. Create\_Security\_Group1.jpg
2. region.jpg
3. launch\_instance.jpg
4. BWAF\_AMI\_Image.jpg
5. instance\_type.jpg
6. Config\_instance\_details.png
7. add\_storage.jpg
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12. Licensing\_BWAF\_Vx.PNG

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