Silver Peak

AWS EC-V for Multi-Instance Inbound Load Balancing
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Silver Peak AWS EC-V for Multi-Instance Inbound Load Balancing Guide

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Summary

This set-up uses the inherent load balancing mechanism of the EdgeConnect platform routing engine to equally distribute load across multiple EdgeConnect virtual instances in AWS to achieve multi-gigabit ingestion of traffic.

By advertising the same subnet across multiple appliances with an equal cost metric, combined with SNAT, Silver Peak is able to effectively load balance traffic across multiple appliances, while eliminating asymmetric network conditions to achieve scalable, high capacity performance into AWS. This document covers the design for 5Gbps of ingestion using a Silver Peak EC-XL which is capable of 5Gbps of optimization on-premise and 5 x EC-V virtual appliances in AWS, each capable of 1Gbps.

This document covers load balancing into AWS for traffic initiated on-premise.

Step 1 – Configure Subnets in AWS

1. From the AWS console, go to Services > VPC and select Subnets from the menu.
2. Create Outside & Inside subnets in the relevant Availability Zone.

![Create Subnet](image-url)
Step 2 - Setting up an instance

1. Go to Services > EC2, select Instances, then Launch Instance.
2. Select EdgeConnect AMI.
3. In Step 3 of the Wizard, the initial interface is for management; others are assigned after creation.
4. Add ports for HTTPS & IPSec.

![Port Configuration Table]

5. Create or use the existing key pair to connect.

**Step 3 - Create & attach network interfaces**


![Create Network Interface]

Note the MAC address assigned to the two new interfaces:
2. Be sure to copy the NI description to the name; you will need this in the next steps.

<table>
<thead>
<tr>
<th>Name</th>
<th>Network interf.</th>
<th>Subnet ID</th>
<th>VPC ID</th>
<th>Zone</th>
<th>Security groups</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>spA-lan0</td>
<td></td>
<td>subnet-9bb63...</td>
<td>vpc-6aee2401</td>
<td>us-west-2a</td>
<td>Silver Peak with IP...</td>
<td>spA-lan0</td>
</tr>
<tr>
<td>8/255</td>
<td></td>
<td>subnet-44be66...</td>
<td>vpc-6aee2401</td>
<td>us-west-2a</td>
<td>Silver Peak with IP...</td>
<td>spA-wan0</td>
</tr>
</tbody>
</table>
| eni-dc2234ed|                 | subnet-68ee24... | vpc-6aee2401 | us-west-2a | Silver Peak with IP... | Primary network...

Intitital Log in

Frosty:Dropbox sbiggsins$ ssh -i "silverpeak.pem" admin@54.186.249.171
The authenticity of host '54.186.249.171 (54.186.249.171)' can't be established.
RSA key fingerprint is
SHA256:pJAniT8wiCeClWvYW7IL3uu6E12Oaj4itUf27cExgls.
Are you sure you want to continue connecting (yes/no)? yes

Assign web login credentials:

Last login: Tue Sep 26 16:08:57 2017 from 73.225.238.232
silverpeak-094976 > enable
silverpeak-094976 # configure terminal
silverpeak-094976 (config) # username [redacted] password [redacted]
silverpeak-094976 (config) # exit
silverpeak-094976 # write memory
Step 4 - Associating interfaces

1. From **Instances**, right-click the instance, then go to **Networking > Attach Network Interface**.

2. Also disable **Source/Dest Check** in the same Networking menu.
NOTE Attaching additional interfaces will disable the existing public IP on reboot. Elastic IPs need to be manually assigned.

3. Create & attach elastic IPs.
5. Attach to network interfaces.

6. Reboot the EC instance from the **Instances** view.

7. Log into the EC, then go to **Configuration > Interfaces**. Assign the correct interfaces per the MAC address noted earlier.
8. **Save & Reboot.**

9. Open the deployment page to switch the device to routed mode & assign IPs.

10. **Save & Reboot.**

### Step 5 - NATing

1. Browse to **Configuration > NAT policies** and create a LAN / Internal facing source-nat policy (in this case, 172.32.10.0/24 was the subnet created and attached to the lan0 interface).

2. From here, continue setup as normal for EC-Vs: add the account name & key, add to Orchestrator, create and apply overlays, etc.

### Step 6 Configure Equal Cost Subnet

After the Silver Peak appliances have been configured and the datacenter and Amazon AWS are connected to each, the last step is to advertise a subnet with equal cost across the 5 appliances running in AWS.

In this example, we are showing that the optimized subnet in AWS is 172.32.10.0/24 and we are advertising it with an equal metric across all 5 Silver Peaks in AWS. The Silver Peak appliance in the datacenter is advertising its own unique subnet of 10.0.0.0/8.
With the same metric being set across all 5 appliances the datacenter Silver Peak will evenly distribute traffic amongst the 5 appliances allowing for 5Gbps of WAN optimized traffic into AWS.

To achieve greater than 5Gbps of optimized capacity more appliances can be added into the datacenter and AWS to distribute load.
Final Result