DH2i DxEnterprise 21.0 Software: AWS Load Balancer Quick Start Guide

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AWS Load Balancer

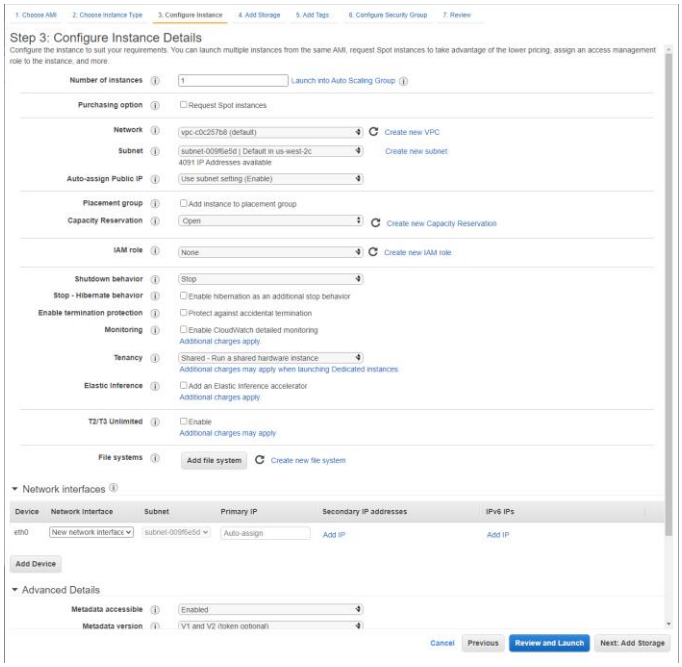
This quick start guide describes how to set up and configure a load balancing solution for DxEnterprise running in AWS. Using this guide, the user will create virtual machines and a security group, configure applications, and create and configure an AWS load balancer that will allow access to the resources assigned to the DxEnterprise Vhost.

Prerequisites

- Access to Amazon Web Services (AWS) with permissions to launch instances, create and modify security groups, and create load balancers.

Create the Virtual Machine and Security Group

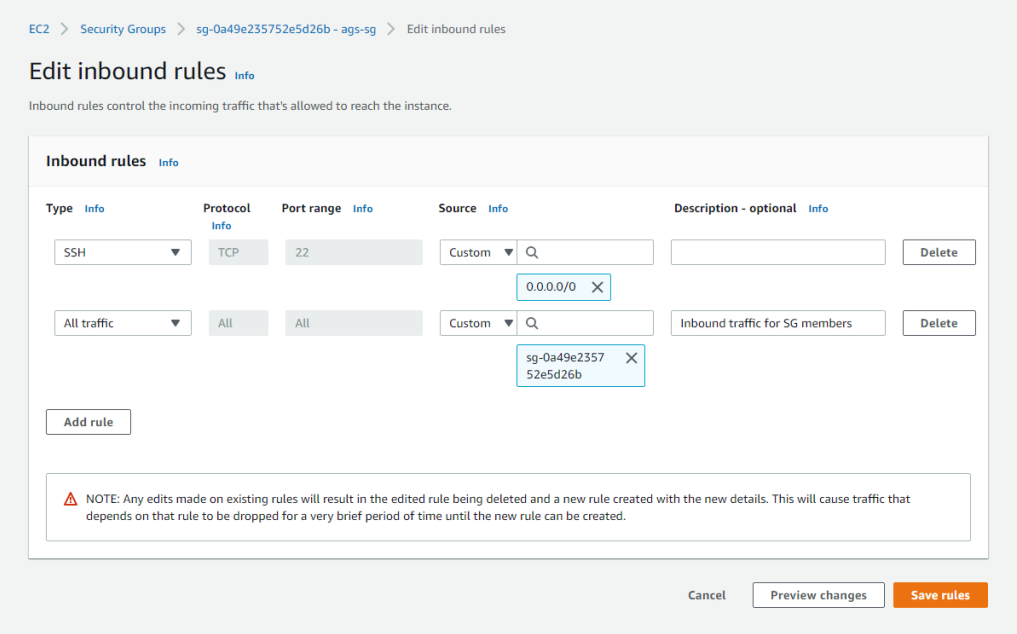
1. Login to the AWS Management Console.
2. Search for **EC2** under AWS Services > Find Services.
3. On the left of the window, select **Instances**.
4. Select **Launch Instance** at the top of the window.
5. Select **AWS Marketplace** on the left of the window.
6. Search for **DxEnterprise** using the search bar near the top of the window.
7. Select one of the DxEnterprise offerings listed in the results.
8. Create the VM.
    a. Choose an instance type.
    NOTE: SQL Server requires at least 2GB of free RAM.
    b. Select **Next: Configure Instance Details** at the bottom right of the window.
    c. Select a subnet for the VM. Note the selected subnet for later use.



    d. Select **6. Configure Security Group** from the options at the top of the window.
    e. Assign a name and description for the security group.
    f. If desired, modify the SSH rule to allow access from known IP addresses only.

g. Select **Review and Launch** at the bottom-right of the window, then **Launch**.
h. Create a new key pair or select and existing key pair, then launch the instance.

9. Repeat steps 8a-c for additional VM(s). Assign the VMs to the same subnet from step 8c of the first VM.
    a. Select **6. Configure Security Group** from the options at the top of the window and assign the VM to the existing security group configured during the setup of the first VM.
    b. Select **Review and Launch** at the bottom-right of the window, then **Launch**.
    c. Create a new key pair or select and existing key pair, then launch the instance.
10. The EC2 instances have been created and are initializing. Return to the EC2 landing page by clicking the AWS icon in the top-left corner and searching for **EC2** under AWS Services > Find Services.
11. Edit the security group.
    a. Select **Security Groups** under Network & Security.
    b. Select the security group from the list, then select **Edit inbound rules**.
    c. Add a rule to allow all inbound traffic originating from members of the security group and save the rule.



12. Return to the AWS Console by selecting the AWS icon in the top-left corner.

Configure DxEnterprise and Applications

1. The application must be installed and DxEnterprise configured before continuing. DH2i provides quick start guides for some applications – such as Microsoft SQL Server – running on physical or virtual machines; hyperlinks for these guides are provided below. Various other DxEnterprise configurations may take advantage of the AWS Load Balancer. After configuring the application, leave the console or DxAdmin window open for the second step.
    - SQL Server Availability Groups with DxCLI Quick Start Guide
    - SQL Server Availability Groups with DxAdmin Quick Start Guide

- SQL Server High Availability Instances on Linux Quick Start Guide

2. After configuring DxEnterprise and your application on the VM, add a probe port to the Vhost using DxCli or DxAdmin.
    - For DxAdmin:
        i. Right-click on the Vhost and select **Update virtual host**.
        ii. Select the pencil icon to the right of the Probe Port field, then enter a port number into the field. More than one probe port may be added to the Vhost by separating the ports with a comma.
        iii. Note the Vhost IP and probe port for later use. Save the changes by selecting **OK** at the bottom of the window.
    - For DxCli:
        i. Run the command `sudo dxcli set-vhost-ilbports` to add a load balancer port to the Vhost.

        Syntax
        ```
        dxcli set-vhost-ilbports <vhost> <ilb_ports>
        ```

        Parameters

Name	Description	Required
vhost	The name of the Vhost.	True
ilb_ports	List of ports to use for internal load balancer probing (Comma-separated list for multiples).	True

        Example
        ```
        sudo dxcli set-vhost-ilbports VHOST1 50000
        ```

        ii. Run the command `sudo dxcli get-vhost` to gather the Vhost IP address and verify the load balancer port is correct. Save these two items for later use.

        Syntax
        ```
        dxcli get-vhost <vhost>
        ```

        Parameters

Name	Description	Required
vhost	The name of the Vhost.	True

        Example
        ```
        sudo dxcli get-vhost VHOST1
        ```

3. After adding the probe port to the Vhost, return to the AWS Management Console for the next section.

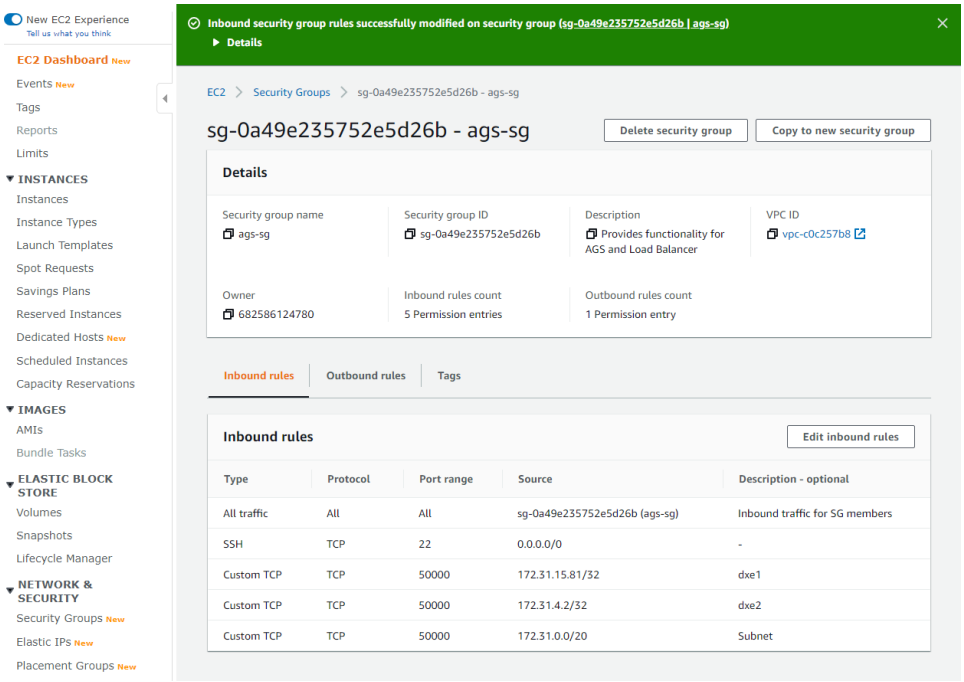
Create and Configure the AWS Load Balancer

1. Search for **EC2** under AWS Services > Find Services.
2. Edit the security group.
    a) Select **Security Groups** under Network & Security.

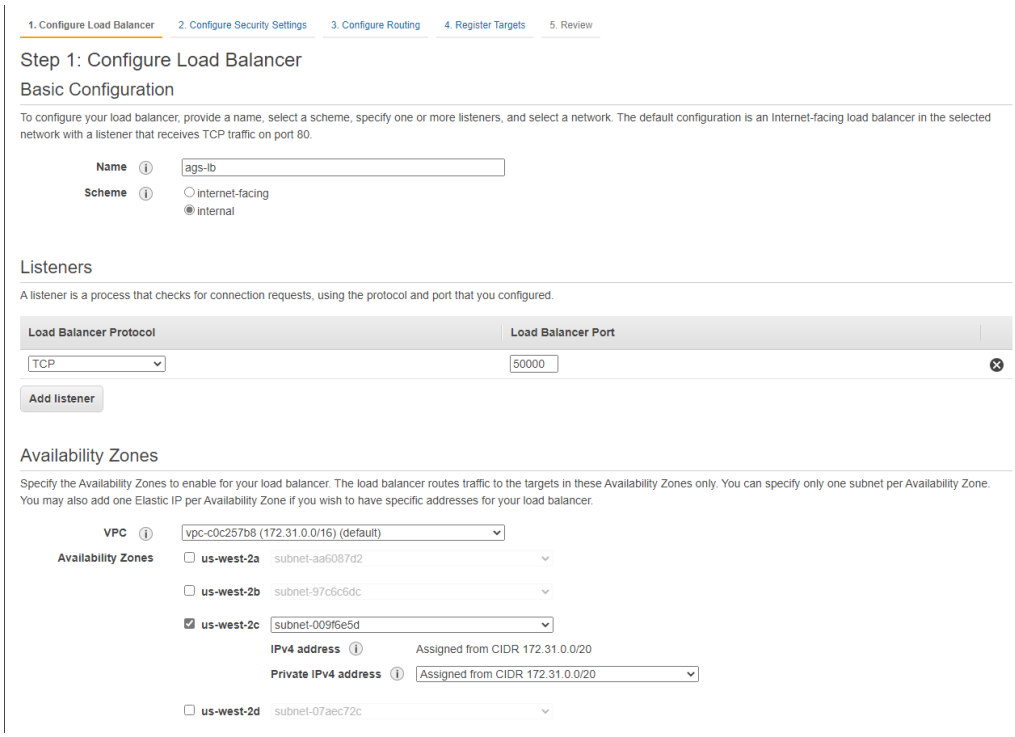
b) Select the security group from the list, then select **Edit inbound rules**.

c) Add the following rules:

- Allow traffic on the application listener port from all VMs in the Vhost using their IP addresses. To find a VMs IP address, select **Instances** from the left panel and select one of the instances that belong to the Vhost. The IP address will be listed under Private IPs.
- Allow traffic on the Vhost probe port from the subnet the VMs belong to. To find the correct CIDR for the subnet, select **Instances** from the left panel, select one of the instances that belong to the Vhost, then select the **Subnet ID** in the information pane. The CIDR for the subnet will be listed in the subnet information pane.

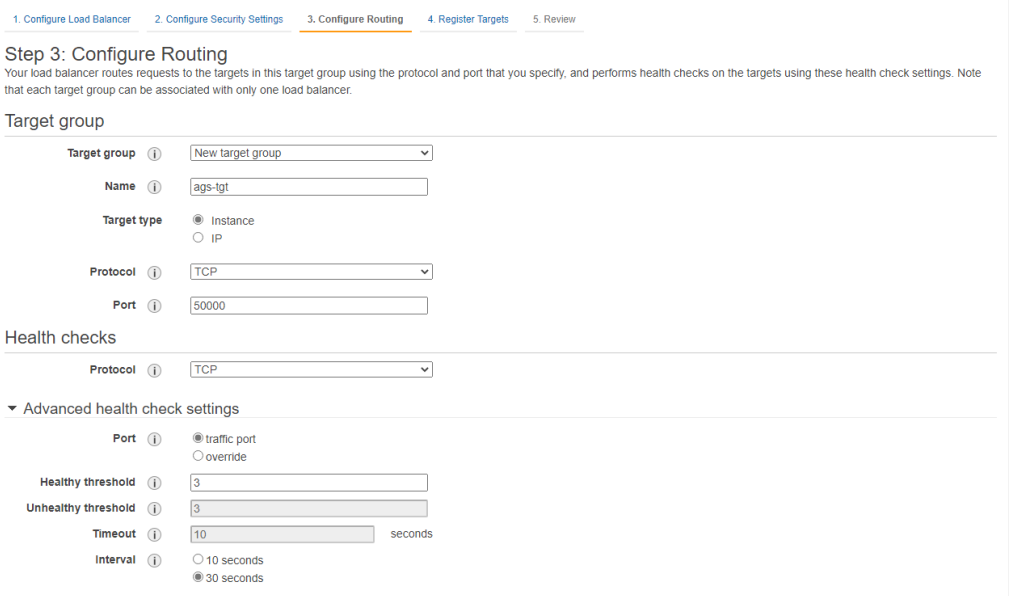


3. Under Load Balancing, select **Load Balancers**.
4. Create a load balancer and register the target(s).
   a) At the top-left of the window, select **Create Load Balancer**.
   b) Select **Create** under Network Load Balancer.
   c) Under basic configuration, assign the load balancer a name and change the scheme to **internal**.
   d) Under Listeners, change the Load Balancer Port to the Vhost probe port.
   e) Under Availability Zones, select the availability zone and subnet the VMs belong to.



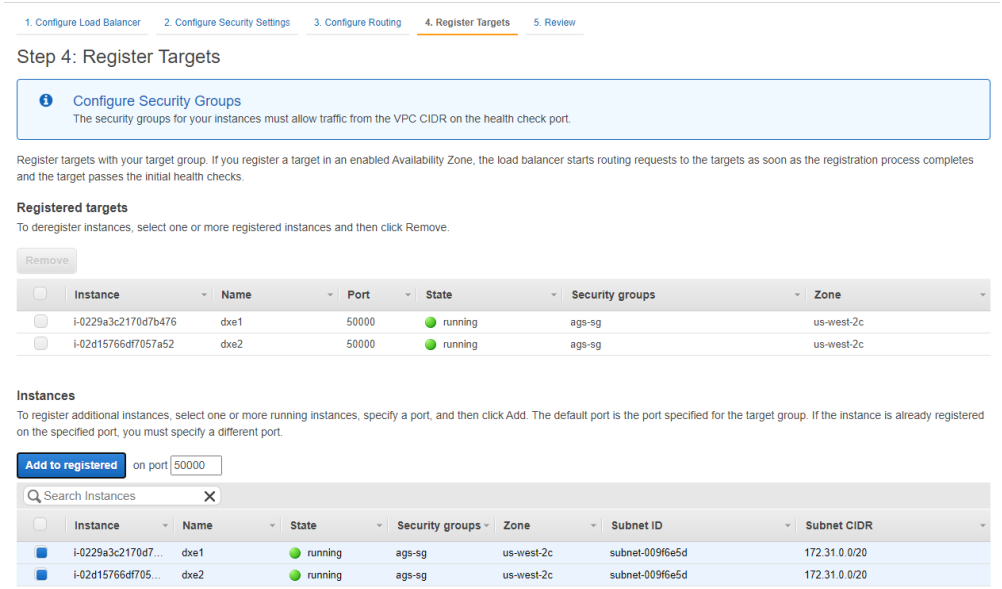
f) Select **Next: Configure Security Settings**, then **Next: Configure Routing**.

g) Under Target Group, assign a name and set the port to Vhost probe port.



h) Select **Next: Register Targets**.

i) Under Instances, select the instances that belong to the Vhost and select **Add to registered**. More information on registering targets can be found in the references section at the end of this document.



j) Select **Next: Review**, then **Create**.

5. AWS will begin provisioning the load balancer and registering the targets. To view the status of the targets, select Load Balancing > Target Groups, then select the **Targets** tab in the information pane.

References

- DxEnterprise DxCli Guide
- DxEnterprise Admin Guide
- Amazon – Register Targets with Your Target Group on AWS
- Amazon – What is a Network Load Balancer?