



# DH2i DxEnterprise 19.5 Software: Azure Load Balancer Quickstart Guide

**DH2i Company**

Support: +1 (800) 380-5405 ext 2

[support.dh2i.com](https://support.dh2i.com)

eFax: +1 970-295-4505

[support@dh2i.com](mailto:support@dh2i.com)

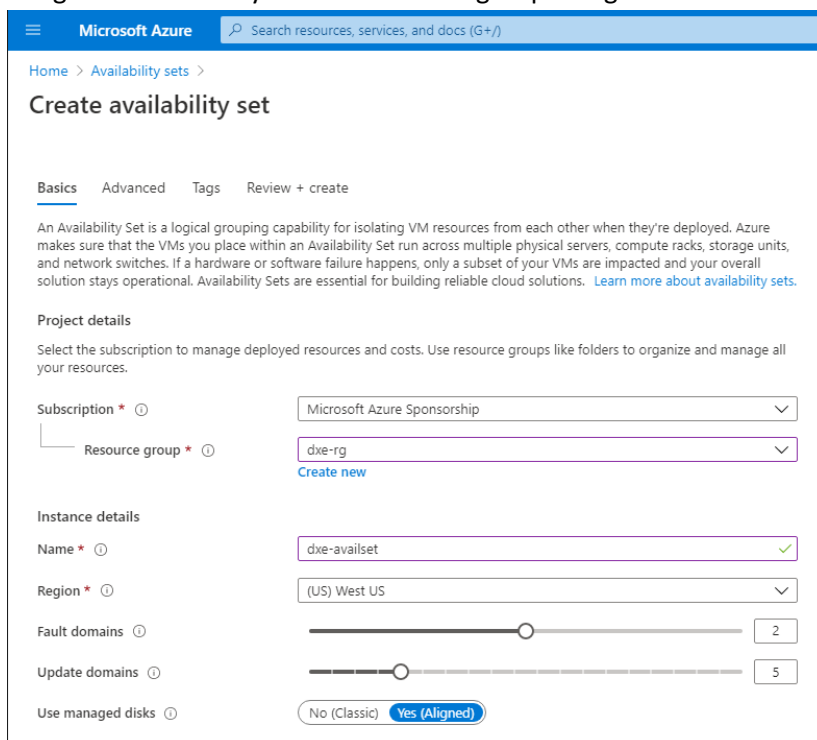
[www.dh2i.com](https://www.dh2i.com)

# Set Up a Load Balancer for a DxEnterprise Vhost in Azure

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

## Create the Availability Set and Virtual Machines

1. Login to the Azure Management Portal.
2. Search for **Availability Sets** using the top search bar, then select **Add**.
3. Assign the availability set to a resource group and give it a name.



The screenshot shows the 'Create availability set' page in the Microsoft Azure portal. The page is divided into several sections:

- Project details:** Subscription is set to 'Microsoft Azure Sponsorship' and Resource group is 'dxr-rg'. There is a 'Create new' link below the resource group dropdown.
- Instance details:** Name is 'dxr-availset', Region is '(US) West US', Fault domains is 2, and Update domains is 5.
- Use managed disks:** The 'Yes (Aligned)' option is selected.

4. Select **Review + Create** in the bottom-left corner, then select **Create**.
5. Search for **DxEnterprise** in the top search bar and select one of the DxEnterprise offers available under **Marketplace**.
6. Under Select a software plan, choose an operating system and select **Create**.
7. Configure a virtual machine template and assign it to the availability set.
  - a. Assign the VM to the same resource group as the availability set and give it a name.
  - b. Under Instance Details > Availability options, select **Availability set**.
  - c. A new drop-down box will appear. Select the availability set created in step 4.

- d. Setup an authentication type.
- e. Under Networking, select **Create New** and set the SKU of the public IP address to standard.  
NOTE: There is an option under network settings to place the virtual machine behind an existing load balancing solution. Do not select this option.
- f. Select **Review + Create**, then **Create**.

The screenshot shows the 'Create a virtual machine' page in the Microsoft Azure portal. The page is divided into several sections:

- Project details:** Subscription is set to 'Microsoft Azure Sponsorship' and Resource group is 'dxe-rg'.
- Instance details:** Virtual machine name is 'dxe1', Region is '(US) West US', Availability options is 'Availability set', and Availability set is 'dxe-availset'.
- Image:** Selected as 'DxEnterprise on Ubuntu (BYOL)'.
- Azure Spot instance:** Set to 'No'.
- Size:** Selected as 'Standard\_D2s\_v3 - 2 vcpus, 8 GiB memory (\$85.41/month)'.
- Administrator account:** Authentication type is 'SSH public key'.
- SSH public key source:** Set to 'Generate new key pair'.
- Key pair name:** Set to 'dxe-key'.

A notification box states: 'Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.'

8. Repeat steps 8a-f for additional VM(s).
9. The availability set has been created with VMs assigned to it. Return to the Azure homepage by selecting **Microsoft Azure** in the top-left corner.

## Configure DxEnterprise and Applications

DH2i provides DxEnterprise quickstart guides for some applications running in Azure. Save the Vhost IP address and listening port for the application; this information will be used to configure the load balancer.

- [MSSQL Availability Groups for Linux on Azure Quickstart Guide](#)
- [DH2i DxEnterprise 19.5 Software: Highly Available SQL Server AGs \(Windows\)](#)
- [MSSQL High Availability Instances on Linux Quickstart Guide](#)
- [DxEnterprise Admin Guide, Pg. 102 – High Availability Features](#)

# Create and Configure the Azure Load Balancer

1. Search for **Load Balancers** in the top search bar, then select **Add**.
  - a) Assign the load balancer to the resource group and give it a name.
  - b) Set the Type to **Internal**.
  - c) Set the SKU to **Standard**.
  - d) Assign the load balancer to the same virtual network as the VMs.
  - e) Set the IP address assignment to **Static**.
  - f) Enter the IP address for the load balancer. This is the same IP used for the Vhost created in step 1 of the previous section.
  - g) Select **Review + Create** in the bottom-left corner, then select **Create**.

Microsoft Azure Search resources, services, and docs (G+)

Home > Load balancers >

## Create load balancer

Basics Tags Review + create

Azure load balancer is a layer 4 load balancer that distributes incoming traffic among healthy virtual machine instances. Load balancers uses a hash-based distribution algorithm. By default, it uses a 5-tuple (source IP, source port, destination IP, destination port, protocol type) hash to map traffic to available servers. Load balancers can either be internet-facing where it is accessible via public IP addresses, or internal where it is only accessible from a virtual network. Azure load balancers also support Network Address Translation (NAT) to route traffic between public and private IP addresses. [Learn more](#).

**Project details**

Subscription \* Microsoft Azure Sponsorship

Resource group \* dxs-rg [Create new](#)

**Instance details**

Name \* dxs-lb

Region \* (US) West US

Type \*  Internal  Public

SKU \*  Basic  Standard

**Configure virtual network.**

Virtual network \* dxs-rg-vnet

Subnet \* default (10.0.3.0/24) [Manage subnet configuration](#)

IP address assignment \*  Static  Dynamic

Private IP address \* 10.0.3.110

**Standard Load Balancer is secure by default.** This means Network Security Groups (NSGs) are used to explicitly permit and whitelist allowed traffic. If you do not have an NSG on a subnet or NIC of your virtual machine resource, traffic is not allowed to reach this resource. Please configure an NSG to ensure communication if needed. For outbound communication, an explicit outbound rule is needed. [Learn more about outbound connectivity](#)

2. After the deployment completes, select the **Go to resource** box. Alternatively, the resource can be found by navigating to the resource group from the Azure homepage.
3. Select **Backend pools** from the options in the left pane.
  - a) Select **Add** near the top.
  - b) Assign a name to the backend pool.
  - c) Under virtual machines, select **Add** and add the DxEnterprise VMs to the list.
  - d) Select **Add** at the bottom to add the backend pool to the load balancer.

Microsoft Azure Search resources, services, and docs (G+)

Home > dxr-rg > dxr-lb | Backend pools >

## Add backend pool

dxr-lb

Name \* dxr-bepool ✓

Virtual network ⓘ dxr-rg-vnet (dxr-rg)

IP version IPv4 IPv6

Virtual machines

You can only attach virtual machines in westus that have a standard SKU public IP configuration or no public IP configuration. All IP configurations must be on the same virtual network.

+ Add × Remove

<input type="checkbox"/> Virtual machine ↑↓	IP Configuration ↑↓	Availability set ↑↓
<input type="checkbox"/> dxr2	ipconfig1 (10.0.3.5)	DXE-AVAILSET
<input type="checkbox"/> dxr1	ipconfig1 (10.0.3.4)	DXE-AVAILSET

4. Select **Health probes** from the options in the left pane.
  - a) Select **Add** near the top.
  - b) Assign a name for the health probe.
  - c) Set the Port to the application listener port.
  - d) Select **OK** at the bottom to add the health probe to the load balancer.

Microsoft Azure Search resources, services, and docs (G+)

Home > dxr-rg > dxr-lb | Health probes >

## Add health probe

dxr-lb

Name \* dxr-hp ✓

Protocol ⓘ TCP

Port \* ⓘ 5000 ✓

Interval \* ⓘ 5 seconds

Unhealthy threshold \* ⓘ 2 consecutive failures

5. Select **Load balancing rules** from the options in the left pane.
  - a) Select **Add** near the top.
  - b) Assign a name for the load balancing rule.
  - c) Select **HA Ports** to allow all traffic through the Frontend IP address.
  - d) Set **Floating IP** to **Enabled**.
  - e) Select **OK** at the bottom to add the rule to the load balancer.

Microsoft Azure Search resources, services, and docs (G+)

Home > dx-e-rg > dx-e-lb | Load balancing rules >

## Add load balancing rule

dx-e-lb

**i** A load balancing rule distributes incoming traffic that is sent to a selected IP address and port combination across a group of backend pool instances. Only backend instances that the health probe considers healthy receive new traffic.

Name \*  
dx-e-lbrule ✓

IP Version \*  
 IPv4  IPv6

Frontend IP address \* ⓘ  
10.0.3.110 (LoadBalancerFrontEnd) ▼

HA Ports ⓘ

Backend pool ⓘ  
dx-e-bepool (2 virtual machines) ▼

Health probe ⓘ  
dx-e-hp (TCP:50000) ▼

Session persistence ⓘ  
None ▼

Idle timeout (minutes) ⓘ  
 4

TCP reset  
 Disabled  Enabled

Floating IP (direct server return) ⓘ  
Disabled Enabled

Create implicit outbound rules ⓘ  
 Yes  No

## References

- [DxEnterprise v19.5 DxCli Guide](#)
- [DxEnterprise v19.5 Admin Guide](#)
- [Microsoft – Install SQL Server on Linux](#)
- [Microsoft – Load Balancer Documentation](#)
- [Microsoft – Create Internal Load Balancer](#)