LoadMaster for Azure Classic Interface

Feature Description

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1 Introduction

Microsoft Azure has two different models for deploying services: **Resource Manager** and **Classic**. The main body of this guide covers setting up the LoadMaster using the **Classic** method. For steps using the **Resource Manager** method, please refer to the LoadMaster for Azure Resource Manager Installation Guide.

This document is intended to provide an overview of LoadMaster for Azure and to introduce some basic aspects of LoadMaster functionality.

1.1 Load Balancing in Microsoft Azure

Before we create a LoadMaster Virtual Machine (VM) in Azure, it is important to understand the traffic flow so that VMs in Microsoft Azure can be configured appropriately.

Microsoft Azure Infrastructure as a Service (IaaS) deployments accept traffic only on published endpoints. Any request to access Microsoft Azure workloads passes through the default load balancing layer of the Microsoft Azure platform. The figure below depicts the default deployment without the use of a Kemp LoadMaster in Azure.

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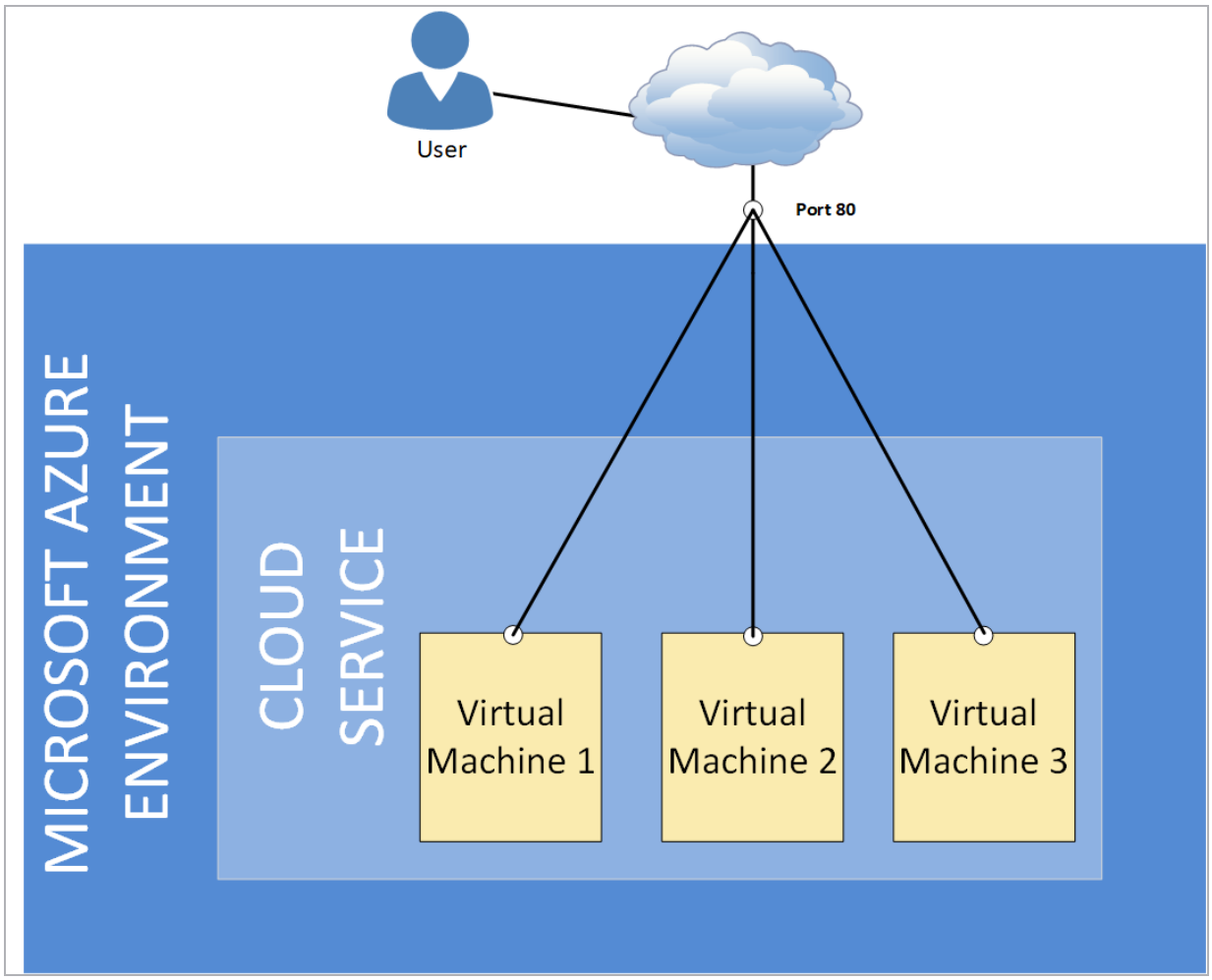

Any workload being published consists of a cloud service, which represents a single VM or multiple VMs. When a VM is created, if a cloud service exists, you have an option to connect the VM to an existing cloud service. As more VMs are connected to an existing VM (and thus to an existing Cloud Service), the built-in Microsoft Azure load balancer distributes connections when creating a load-balanced endpoint.

If you wish to use LoadMaster for Azure for your deployment, the following steps must be completed:

1. The LoadMaster for Azure needs to be deployed first, creating the required cloud service.

2. All the VMs that need to be load balanced using the LoadMaster can then be created and must be connected to the existing LoadMaster VM to create the required grouping.

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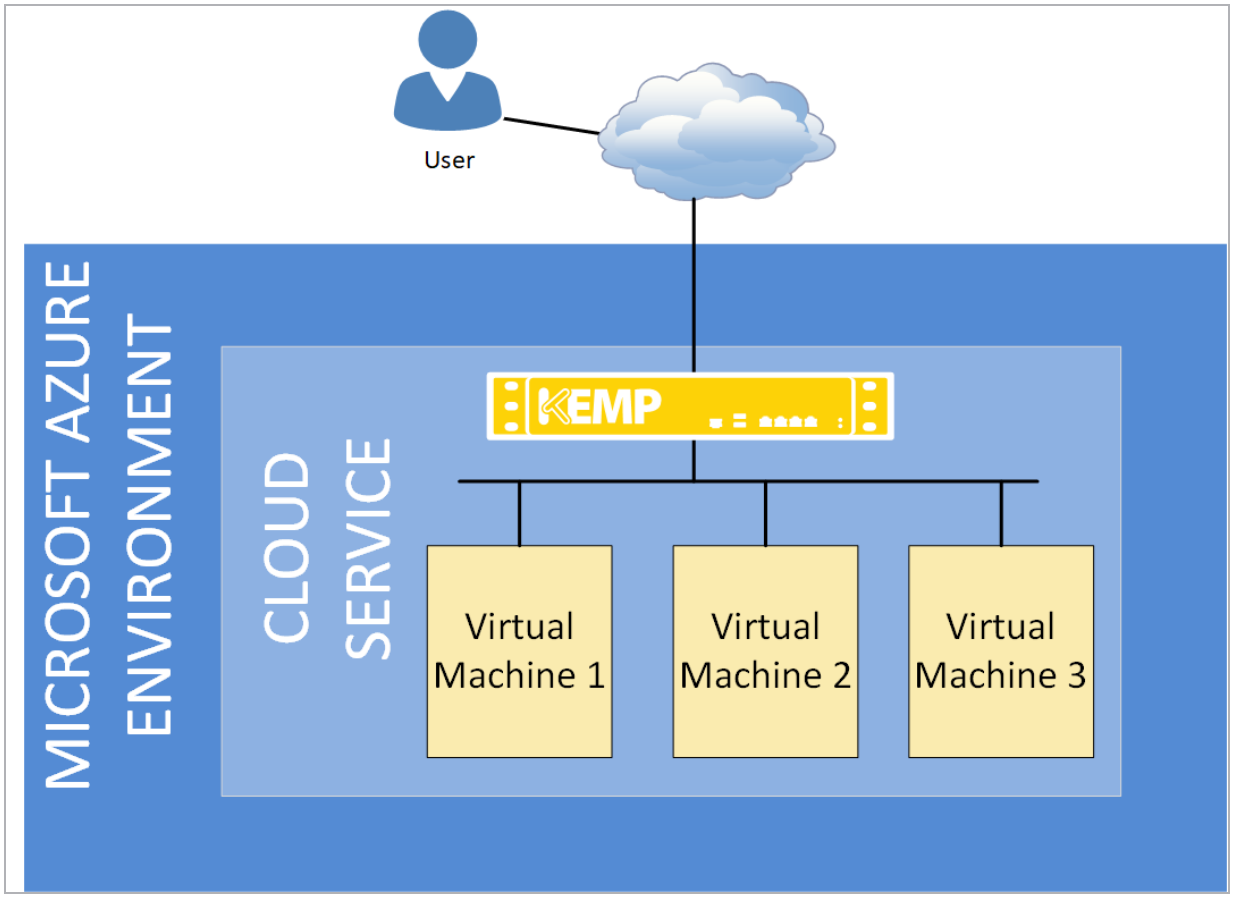
3. Finally, when creating endpoints, we cannot use the **Load-Balance traffic on an existing endpoint** option in Azure as we do not want to use the Microsoft Azure Load Balancer to load balance incoming connections.

The figure below depicts the flow when LoadMaster for Azure is deployed:



Notice that VM1, VM2 and VM3 in this example are grouped into a single cloud service and the endpoint for published Virtual Services is created only on the LoadMaster VM. By doing this, we receive all load balanced traffic on the LoadMaster VM and the logic of load balancing incoming connections are applied as per the configured Virtual Service on the LoadMaster for a given workload.

Also notice that VM1, VM2 and VM3 will not have any endpoints as they are not going to be published directly to the internet.

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There may be exceptions to this rule for connections that require direct connectivity to the VM such as Remote Desktop Connections to Windows Server OS.

1.2 Known Issues/Limitations

There are a couple of known issue/limitation to be aware of:

- Transparency is not possible in the Azure LoadMaster. **Transparency** must be disabled in the Virtual Service settings on the LoadMaster (**Virtual Services > View/Modify Services > Modify > Standard Options**).
- Do not downgrade from firmware version 7.2.36 or higher to a version below 7.2.36. If you do this, the LoadMaster becomes inaccessible and you cannot recover it.

  It is not possible to bond interfaces on Azure LoadMasters.

- Alternate default gateway support is not permitted in a cloud environment.

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2 Installation Prerequisites

To support LoadMaster for Azure, the following are required:

- An active subscription of Microsoft Azure Virtual Machines
- A client computer running Windows 7 or newer
- Internet Explorer 9 or newer, or any modern browser
- A minimum of 2GB RAM on the cloud environment

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3 Creating a LoadMaster for Azure VM

Please ensure that the prerequisites documented in the earlier section are met.

3.1 Create an SSH Key Pair

When creating a LoadMaster for Azure VM, there are two options for authentication - a password or an SSH public key. Kemp recommends using a password, but either way will work fine. If you choose to use a password, this section can be skipped and you can move on to the **Bring Your Own License (BYOL)** section to create the LoadMaster for Azure VM. If you choose to use an SSH public key, an SSH key pair will need to be created.

To create an SSH key pair, you will need to use a program such as the **PuTTYgen** or **OpenSSH**. As an example for this document, the steps in **PuTTYgen** are below:

1. Open PuTTYgen.

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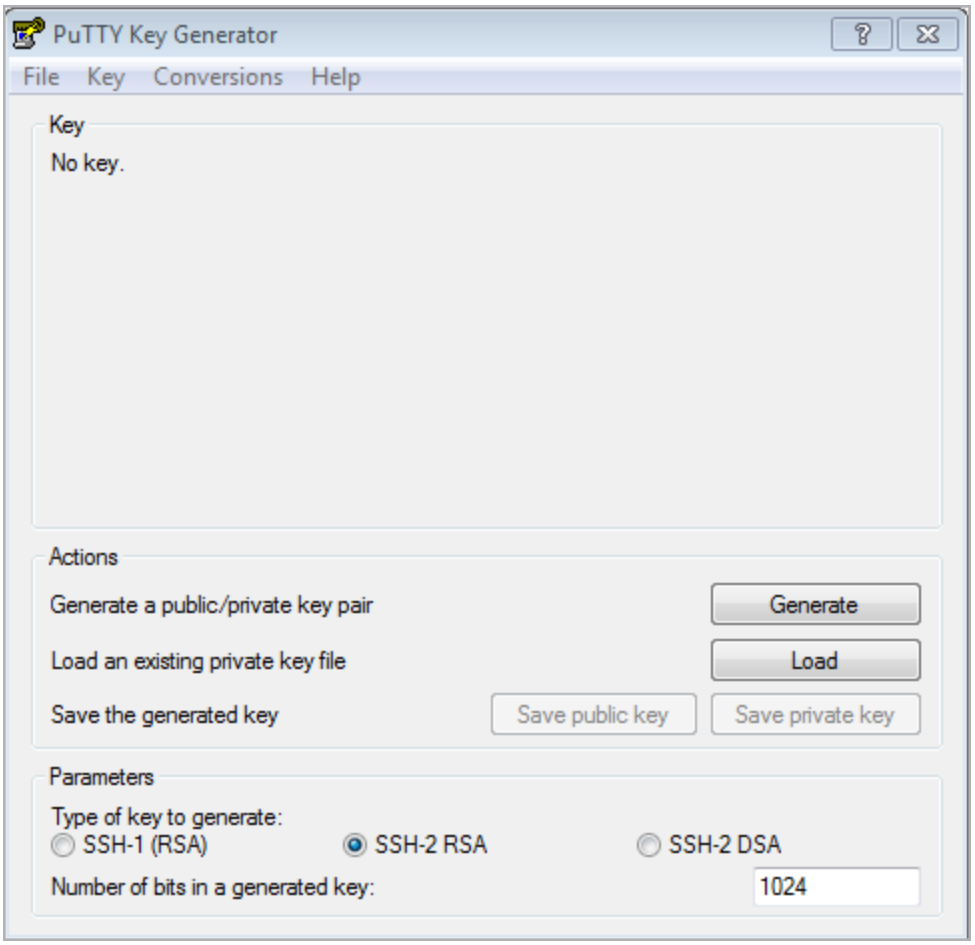

2. Click **Generate**.

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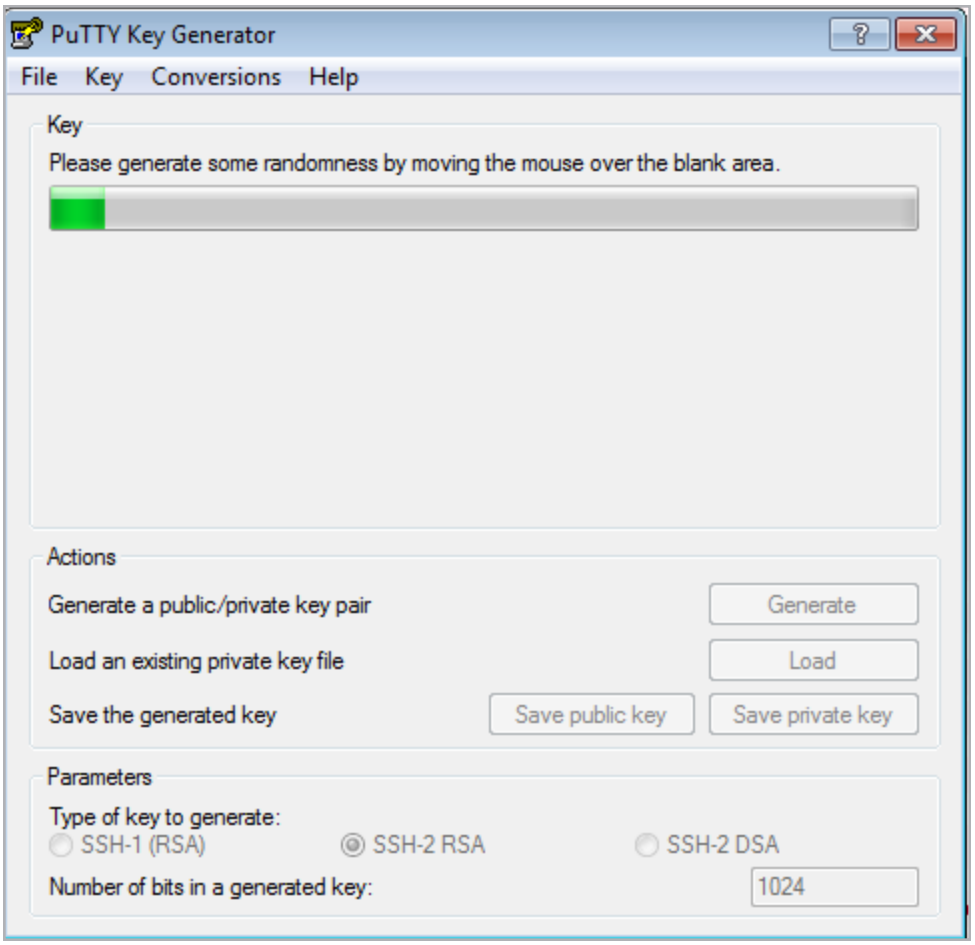

3. Move the mouse over the blank area in the middle. This generates a random pattern that is used to generate the key pair.

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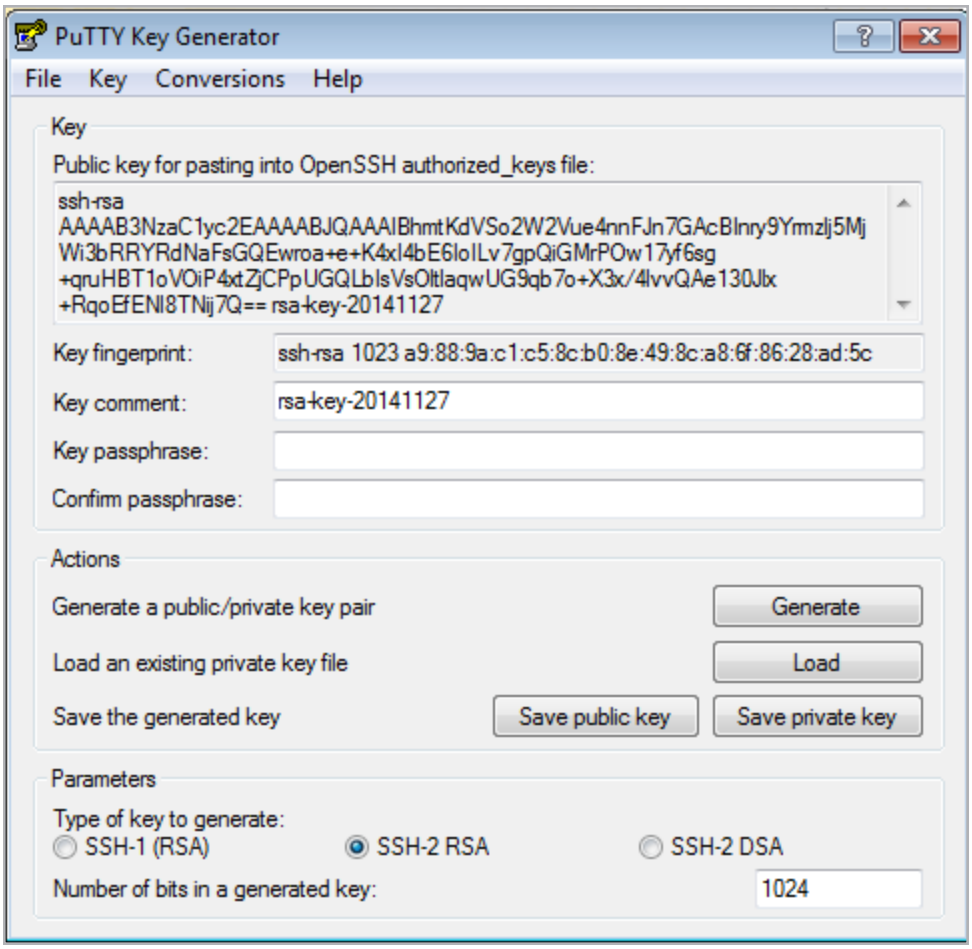

4. Copy and save the public and private key as needed.

It is recommended to store SSH keys in a secure location.

3.2 Bring Your Own License (BYOL)

In addition to other licensing options for Azure, it is possible to “bring your own license”. To do this, follow the steps below:

1. Deploy the **BYOL and Free** version of the Virtual LoadMaster (follow the steps in the section below to do this).

2. Contact a Kemp representative to get a license.

3. Update the license on your LoadMaster to apply the license change (**System Configuration > System Administration > Update License**).

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4. Kemp recommends rebooting after updating the license.

3.3 Creating a LoadMaster for Azure VM

The steps in this document reflect the steps in the Azure Marketplace (http://portal.azure.com).

Microsoft are recommending the use of the new Azure Resource Manager (ARM) portal, rather than the old classic interface.

The following procedure describes how to set up LoadMaster for Azure from the Windows Azure portal:

> The steps below are carried out from http://portal.azure.com and not from http://manage.windowsazure.com.

1. From the Azure Management Portal dashboard, click **Marketplace.**

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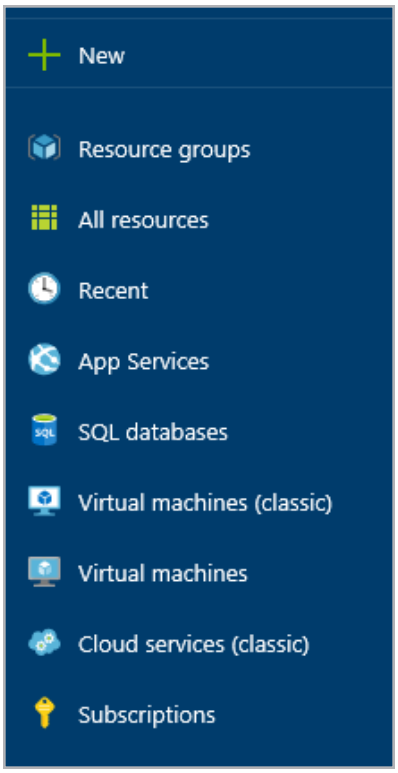

2. In the **Marketplace** section, click **New**.

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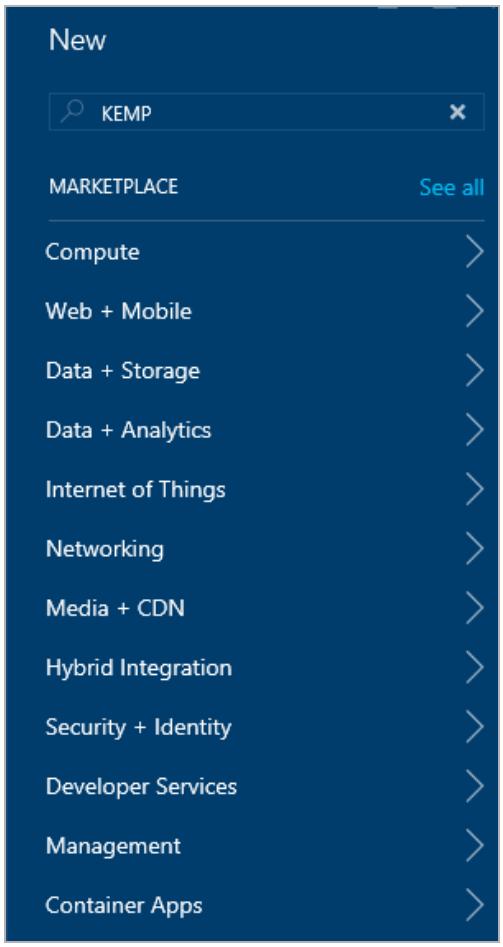

3. Type **Kemp** in the search field and press **Enter** on the keyboard.

NAME	PUBLISHER	CATEGORY
KEMP 10 Gbps KEMP VLM for Azure (Hourly Billing)	Kemp Technologies Inc	Compute
KEMP 20 Mbps KEMP VLM for Azure (BYOL and Free)	Kemp Technologies Inc	Compute
KEMP 200 Mbps KEMP VLM for Azure (Hourly Billing)	Kemp Technologies Inc	Compute
KEMP 2 Gbps KEMP VLM for Azure (Hourly billing)	Kemp Technologies Inc	Compute
KEMP 5 Gbps KEMP VLM for Azure (Hourly Billing)	Kemp Technologies Inc	Compute

4. Select the appropriate Kemp Virtual LoadMaster image to deploy.

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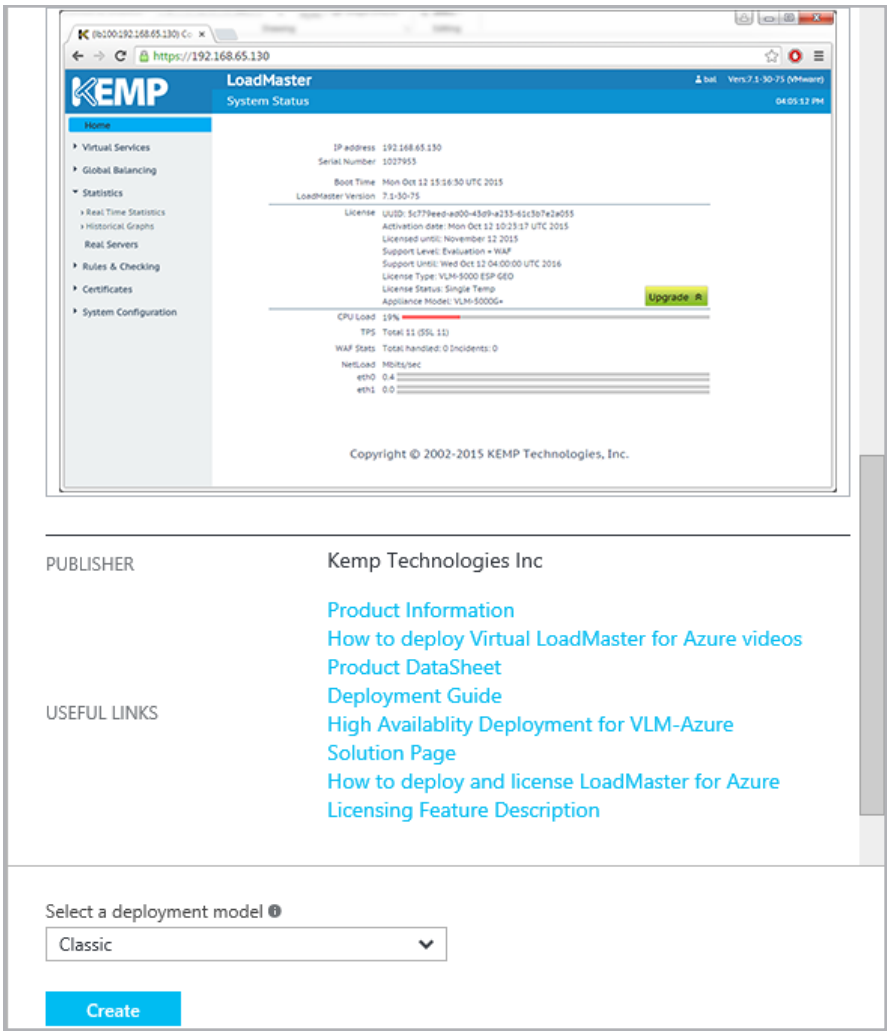

5. Click **Create**.

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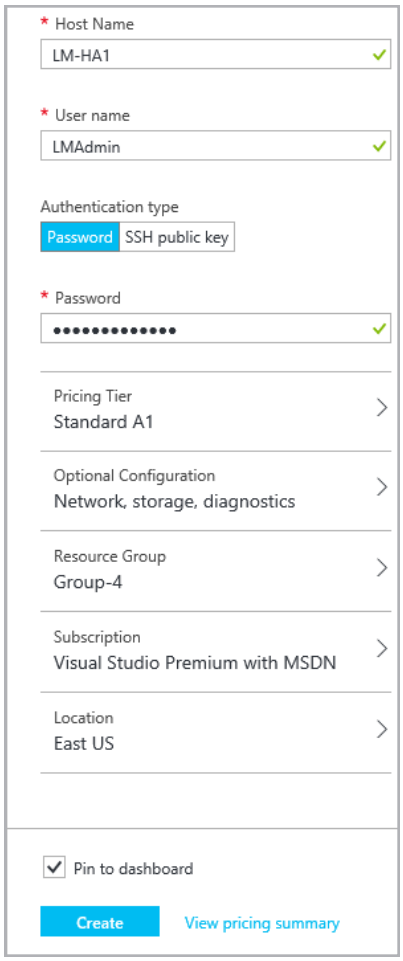

6. Provide details in the **Create VM** section. The details required to create new VM are:

   a) **Host Name**: Provide a unique name for VM identification

Please contact Kemp for assistance with sizing.

   b) **User Name**: This will not be used by LoadMaster for Azure. Provide a name of your choice. The default username to access the LoadMaster is **bal**.

   c) Fill out the authentication details. There are two possible methods of authentication - using a password or an SSH key. Depending on what you select, complete the relevant step below:

      - **Password:** Enter a password.

This password is used to access the LoadMaster WUI.

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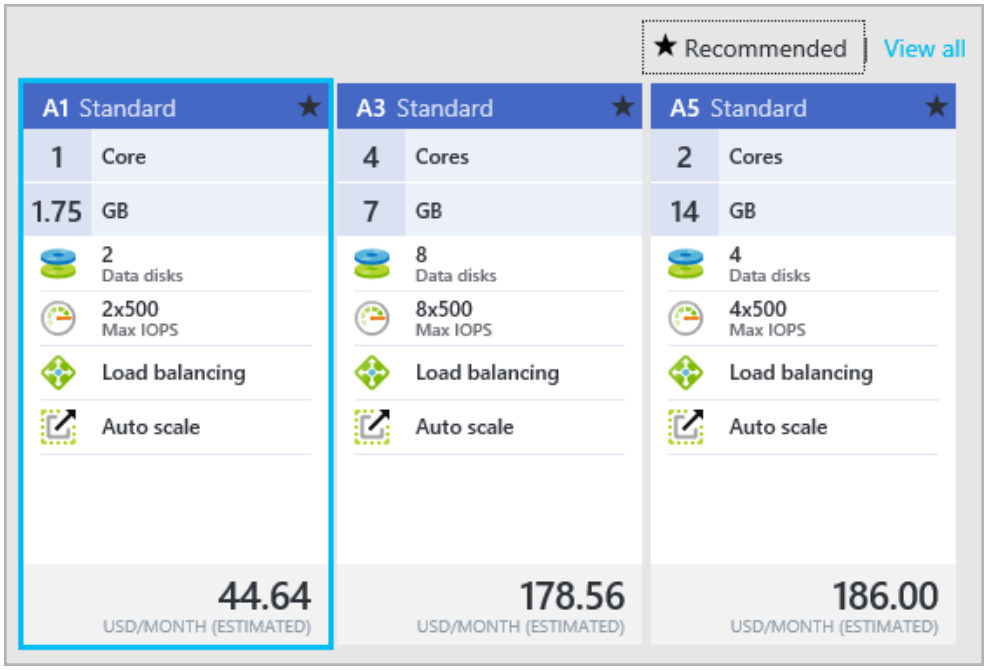
- **SSH Public Key:** Paste the SSH public key which was created in the **Create an SSH Key Pair** section. The private key is needed to connect to the LoadMaster using SSH.

It is recommended to store SSH keys in a secure location.

d) Click Pricing Tier.



e) Select from the recommended pricing tiers. Click **View all** if the recommended pricing tier is not meeting the recommended requirements (see the table in the **Recommended Pricing Tier** section for further information regarding what tier to select).

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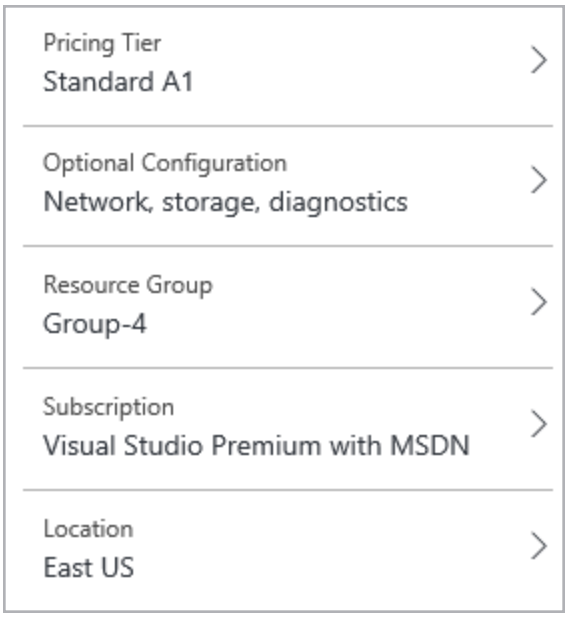

7. Verify and change the settings related to network storage, resource group, subscription and location for the Virtual Machine, as needed.

8. Click **Create**.

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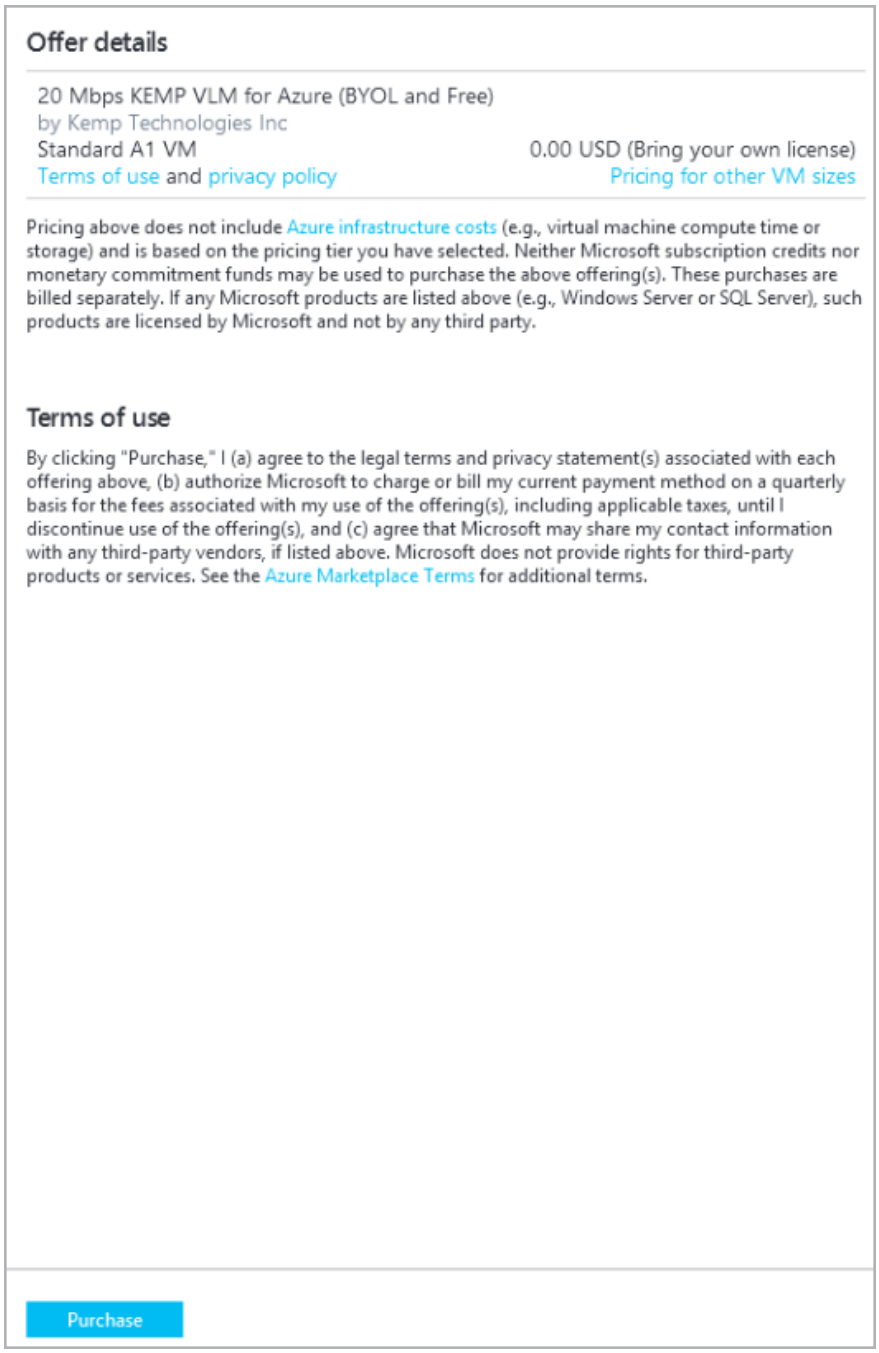

9. In the **Purchase** section, click **Purchase** to start creation of the LoadMaster for Azure Virtual Machine.

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The creation of a VM may take a few minutes or more depending on the Azure portal's responsiveness and other factors. Ensure that the VM is created without any errors. Resolve any errors if needed.

End points are created automatically for port 22 and 8443. This is OK for a single LoadMaster unit. In a HA configuration, the end points will need to be changed. For instructions on how to configure HA in Azure, refer to the HA for Azure, Installation Guide.

3.3.1 Recommended Pricing Tier

When creating a LoadMaster for Azure Virtual Machine, you must select a pricing tier. The recommended pricing tiers are listed in the table below.

If the relevant pricing tier is not displayed, click **View all**.

VLM Model	Recommended Pricing Tier
VLM-200	A1, A2, A3
VLM-2000	A2, A3, A4
VLM-5000	A3, A4, A5
VLM-10G	A7, A8, A9

3.4 Licensing and Initial Configuration

The following procedure will help you set up LoadMaster for Azure by ensuring appropriate licensing and basic configuration before you can create a Virtual Service and publish the required workloads:

1. Using a supported web browser, navigate to **https://<cloudserviceurl>:8443**.

   Substitute <cloudserviceurl> with the cloud service DNS name you created in previous section.

2. Take the appropriate steps to acknowledge notification about the self-signed certificate in order to proceed.

3. Before using the LoadMaster, it must be licensed. For instructions on how to license the LoadMaster, refer to the Licensing, Feature Description.

   When licensing a trial, you can usually only get a trial VLM-5000.

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4. The LoadMaster requires you to log in before you can proceed any further. The password used to log in will vary depending on whether you choose to use **Password** authentication or **SSH Public Key** authentication when creating the VM in the **Bring Your Own License (BYOL)** section:

- **Password:** Provide the username **bal** and the password which was set in the **Bring Your Own License (BYOL)** section.

Click **Continue**.

- **SSH Public Key:** Provide the default username **bal** and password **1fourall** to proceed. You are required to change the default password soon after.

5. You are presented with the End User License Agreement (EULA). You must accept the EULA to proceed further. Click **Agree** to accept the EULA.

6. After accepting the EULA, you are presented with a password change screen. Provide a secure password of your choice. Click **Set Password** to commit changes. The new password is effective immediately.

7. On the password notification screen, click **Continue**.

8. The LoadMaster will require you to authenticate with a new password. Enter **bal** in the user field and the new password in the password field. Click **Ok** to proceed.

9. After successful authentication, you are presented with the main menu and home screen of the LoadMaster.

Before you can create Virtual Services, you should create VMs that you are load balancing through LoadMaster for Azure. Ensure that your network security group (NSG) is set up correctly depending on which services you are load balancing. The following section will provide some details on this topic.

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4 Creating Connected VMs

While creating non-LoadMaster VMs is fundamentally not very different from what we covered in the **Creating a LoadMaster for Azure VM** section, we need to make sure that the VMs that need to be load balanced by LoadMaster for Azure are not stand-alone VMs. The following procedure provides an overview of creating a connected virtual machine.

4.1 Creating a Connected VM

To create a connected VM, follow the steps below in the Windows Azure portal:

> The steps below must be carried out from http://portal.azure.com and not from http://manage.windowsazure.com.

1. From the Azure Management Portal dashboard, click **Marketplace**.

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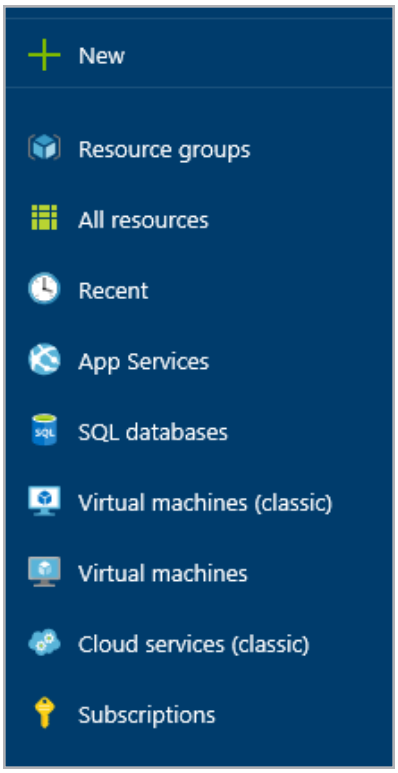
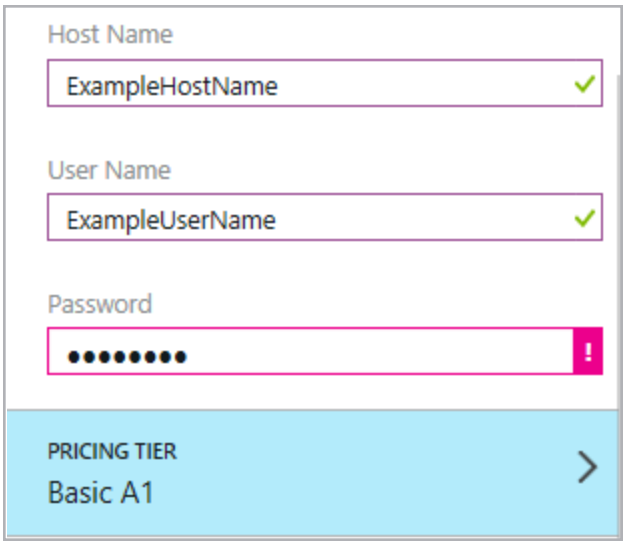


2. In the **Marketplace** section, click **New**.
3. In the **Virtual machines** section, select the appropriate options to deploy.
4. Click **Create**.



5. Provide details in the **Create VM** section. The details required to create the new VM are:

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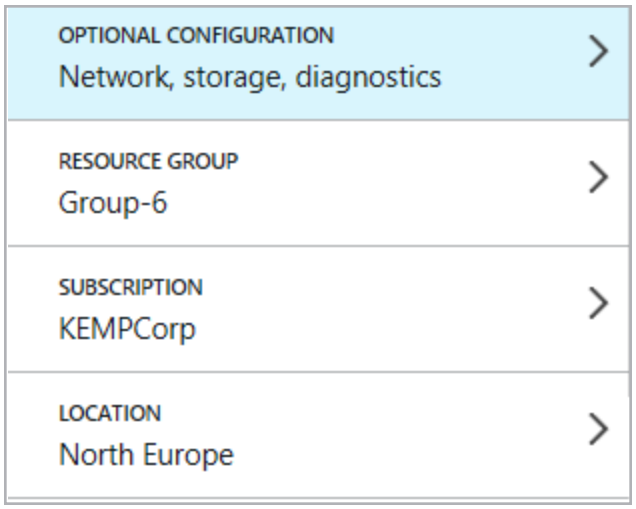
a) **Host Name**: Provide a unique name for VM identification

b) **User Name**: Provide a desired username

c) Enter the desired **Password**.

d) Click **Pricing Tier**.

6. Select the relevant pricing tier.



7. Click **Network, storage, diagnostics**.

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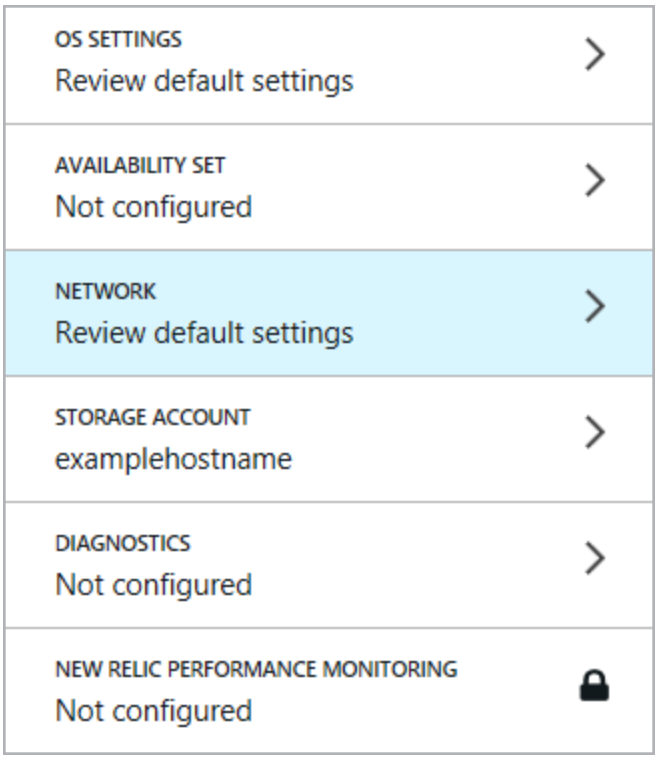
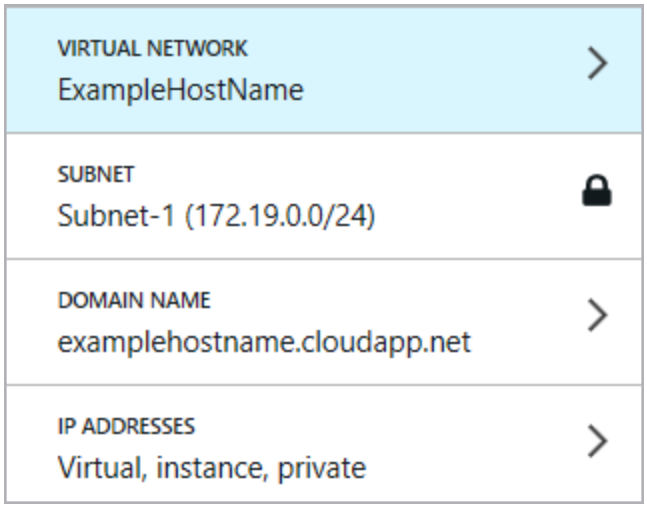


8. Click **Review default settings**.



9. Click **VIRTUAL NETWORK**.

10. Select the existing virtual network that the LoadMaster is on.

11. Click **OK**.

12. Click **OK** again.

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13. Make the appropriate selections for **Storage Account, Region/Affinity Group/,** and **Virtual Network Subnets** to meet your requirements.

14. Verify and change any of the other settings related to network storage, resource group, subscription and location for the Virtual Machine, as needed.

15. Make the appropriate selection for **Availability Set** to meet your requirements.

16. Click **Create** to start creation of the VM.

Create more VMs if needed and then proceed to the next step to create a Virtual Service.

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5 Creating Virtual Services

The following steps describe how to create a Virtual Service on the LoadMaster for Azure.

1. Using a supported web browser, navigate to **https://<cloudserviceurl>:8443**. Substitute **<cloudserviceurl>** with the cloud service DNS name you created in the **Bring Your Own License (BYOL)** section.

2. Take the appropriate steps to acknowledge notification about the self-signed certificate to proceed further.

> The certificate used by the WUI will take the public name used by Azure/AWS.

3. If prompted, log in to the WUI.

4. From the main menu, expand the **Virtual Services** section and click **Add New**.

5. In the Virtual Service parameters section, provide the following details:

   a) **Virtual Address**: This field is pre-populated with the eth0 IP address:

      i. If only one Network Interface Card (NIC) is present for the Virtual Machine - the LoadMaster is limited to a single IP. To create a Virtual Service, you must use the internal IP address of the LoadMaster VM. You can find the internal IP address from the VM's dashboard page.

      ii. If more than one NIC is present in the Virtual Service, it is possible to use any of the internal IP addresses as the Virtual Service address.

> Only the IP address on eth0 is connected to the public IP.

   b) **Port**: This must be the same port as the Private Port defined while creating the endpoint in earlier section.

   c) **Service Name**: While optional, service name helps identify the purpose of the Virtual Service being created

   d) **Protocol**: This must be the same as the protocol selected during creation of the endpoint in the earlier section.

6. Click the **Add this Virtual Service** button.

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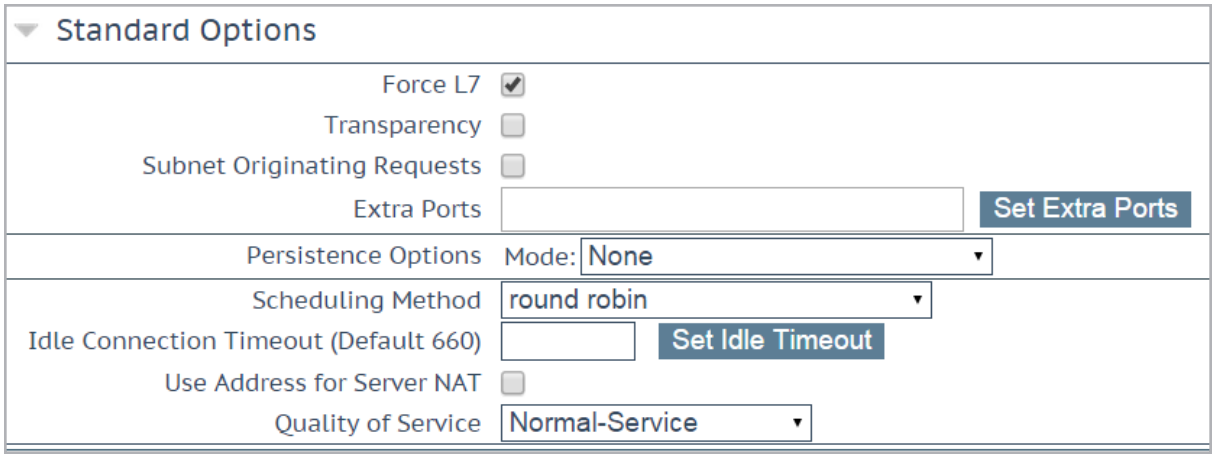
7. Expand the **Standard Options** section.



8. Ensure that the **Transparency** check box is unticked.

> Virtual Services in the LoadMaster for Azure must be non-transparent.

9. Configure the remaining virtual parameters as necessary. Use the Kemp LoadMaster guides from the Product Documentation section located on the Kemp website: http://kemptechnologies.com/documentation

10. Add VMs being load balanced in the **Real Servers** section of the Virtual Service.

Repeat the steps above as necessary to create more Virtual Services on LoadMaster for Azure.

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References

While the instructions above provide a basic overview of how to deploy and configure LoadMaster for Azure, it is not designed to be a comprehensive guide to configure every possible workload. This section identifies some of many guides published on our resources section of our website. Unless otherwise specified, the following documents can be found at http://kemptechnologies.com/documentation.

Kemp LoadMaster, Product Overview

Web User Interface (WUI), Configuration Guide

CLI, Interface Description

RESTful API, Interface Description

Virtual Services and Templates, Feature Description

SubVSs, Feature Description

SSL Accelerated Services, Feature Description

Port Following, Feature Description

Content Rules, Feature Description

ESP, Feature Description

Quickstart Guide

LoadMaster for Azure Resource Manager, Feature Description

HA for Azure, Feature Description

Licensing, Feature Description

You can find more documentation here: http://kemptechnologies.com/documentation

You can engage in community discussions on forums at: http://forums.kemptechnologies.com/

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Last Updated Date

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