



Enterprise Azure Quick Start Guide

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Introduction

Azure is Microsoft's cloud platform. It's a growing collection of integrated services—compute, storage, data, networking, and application. It allows services to be deployed as and when required. Charges are made for what is used making it an extremely flexible and cost effective solution.

The Loadbalancer.org Enterprise Azure cloud based load balancer allows customers to rapidly deploy and configure a feature rich load balancing solution within the Azure cloud.

About Enterprise Azure

The core software is based on customized versions of Centos 6 / RHEL 6, Linux 3.10, HA-Linux, HAProxy, Pound & STunnel.

Version 7.6.x

Enterprise Azure is based on the same code base as our main hardware/virtual product. This means that Enterprise Azure supports many of the same features as the hardware & virtual based products. There are certain differences due to the way the Microsoft Azure environment works. The main differences are listed below.

Main Differences to the Non-Cloud Product

- The appliance can only have a single IP address. All configured virtual services must also use this address
- The network setup is customized for Microsoft Azure deployment
- Layer 4 NAT mode and DR mode are not supported
- The WUI is not accessible on HTTP port 9080, only HTTPS port 9443

Why use Enterprise Azure?

Microsoft enables users to configure a load balancer to load balance multiple Azure instances running in the cloud. This does provide basic load balancing functionality but is limited in several areas. Loadbalancer.org's Enterprise Azure load balancer provides the following additional features & advantages:

1. Supports Layer 7 load balancing functionality
2. Load balances both Azure based and non-Azure based servers
3. Supports Round Robin and Least Connection connection distribution algorithms
4. Supports customizable timeouts for custom applications beyond those offered by Azure
5. Supports comprehensive back-end server health-check options
6. Enables fallback servers to be configured and invoked when all load balanced servers/services fail
7. Provides extensive real time and historical statistics reports
8. Supports session distribution based on actual server load (utilizing Loadbalancer.org's feedback agent which is available for both Linux & Windows)
9. Supports SSL Termination
10. Supports RDP Cookie based persistence
11. Supports full integration with Remote Desktop Services Connection Broker

Azure Terminology

<u>Acronym</u>	<u>Definition</u>
Windows Azure	Microsoft's Cloud platform
BLOB	Binary Large Object for storing large data items, basically a large file
Image	A VHD that is used as a template to create a new virtual machine
VNet	Virtual Network for grouping services
Cloud Service	Logical construct for grouping VM's and sharing public IP addresses
VIP	The public IP address (allocated to the Cloud Service)
DIP	The private IP address allocated by Azures DHCP service

Getting Started

To start using Microsoft Azure, you'll need an Azure account. If you don't already have one you can create one at the following URL : <https://manage.windowsazure.com/>

Another useful source of information to help get started with Azure is available at the following URL:

<http://blogs.technet.com/b/keithmayer/archive/2013/01/05/31-days-of-servers-in-the-cloud-getting-started.aspx>

Deployment Concepts

Overview

When deploying the load balancer and other virtual machines, it's possible to deploy them generically into Azure's various regions, or more specifically to a particular Virtual Network (VNet). A VNet is required since the load balancer and the other load balanced VM's must be able to communicate with each other within the Azure Infrastructure. For more information please refer to the following link:

<http://msdn.microsoft.com/en-us/library/azure/jj156007.aspx>

Virtual Networks in Azure

A Virtual Network is a network overlay that can be configured in Azure. VM's and services that are part of the same VNet can access each other. However, services outside the VNet have no way to identify or connect to services hosted within other VNets unless you decide to configure a [VNet to VNet](#) connection. This provides an added layer of isolation to your services. Azure VNets also allow you to extend your network into Azure and treat deployments as a natural extension to your on-premises network. For more information please refer to the following link:

<http://msdn.microsoft.com/en-us/library/azure/dn133803.aspx>

Network Interfaces

The current release of Azure does not support adding or removing NICs after a VM is created. Multiple NICs can only be configured when a VM is created. This functionality is only supported within a Virtual Network. Please refer to the following link for more information:

<http://msdn.microsoft.com/en-us/library/dn848315.aspx>

Default Gateway

The default gateway in Azure subnets is always the first IP address in the subnet. For example, for the subnet 10.0.20.0/24, the default gateway would be 10.0.20.1.

IP Address Types



NOTE : The load balancer has a single public IP address in Azure so all work-load and management services must be accessed via the same IP address.

DIP – Internal IP Address automatically assigned by DHCP

An internal IP address that is automatically assigned to the VM. The address isn't routable over the Internet. It's used to communicate directly within Azure and for cross-premises configurations.

When using a VNet, the DIP is automatically assigned from a range you specify. You can optionally configure a static DIP from the range. If you don't have a VNet, the IP address is automatically assigned by Azure; you cannot specify it.

VIP – Public IP Address automatically assigned to the associated Cloud Service

A public IP address associated with the VM's Cloud Service. You access all VM's in the Cloud Service by

using the same VIP address, but with a different public port number for each VM endpoint.

You can reserve a public VIP address and associate it with the VM's Cloud Service (for example, by using Azure PowerShell Cmdlets), or Azure can automatically assign a VIP to the Cloud Service.

PIP – Public IP Address assigned directly to the VM

A public IP address that can be assigned directly to the VM.

You can add a PIP to an existing VM by using Azure PowerShell Cmdlets.

Cloud Services

In Azure, Virtual Machines are associated with Cloud Services. If multiple VM's are associated with the same Cloud Service, they will be accessible via the same VIP address.

End Points

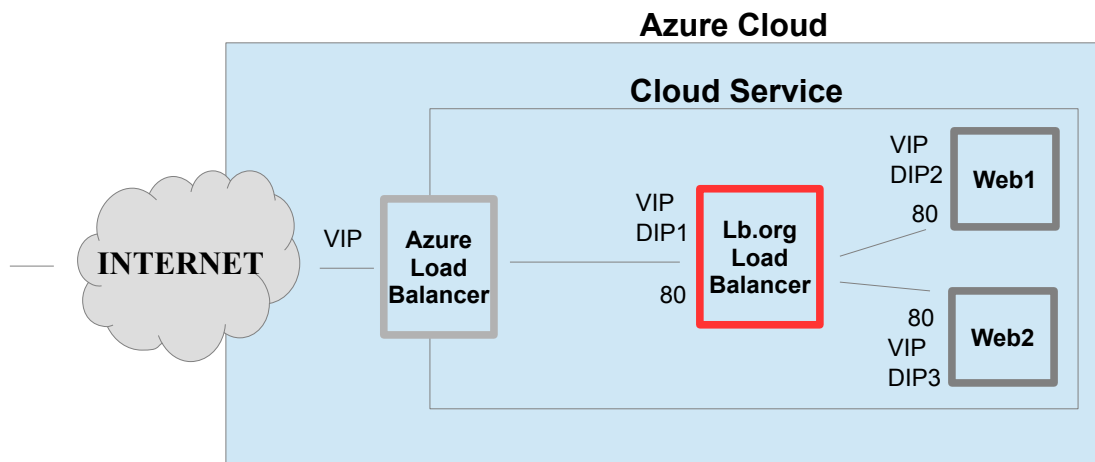
As mentioned, the Cloud Service virtual IP address is shared between all the virtual machines that are running within a particular Cloud Service. Endpoints enable mapping from an externally accessible port on the Cloud Service virtual IP address to a private port on a specific virtual machine. Default endpoints are created for each Windows virtual machine for RDP and PowerShell and for Linux VM's for SSH access.

Transparency

Load balanced services are not transparent with Azure. The source IP address of packets reaching the backend (load balanced) servers will be the Cloud Services VIP address.

Putting it Together

The following diagram illustrates how things fit together for a load balanced Azure environment:



Endpoint Configuration:

LB.org (Load Balanced cluster)	:	VIP:80 Ext , 80 Int
LB.org (WUI access)	:	VIP:9443 Ext , 9443 Int
LB.org (SSH access)	:	VIP:22 Ext , 22 Int
WEB1 (SSH access, port auto-assigned)	:	VIP:53958 Ext , 22 Int
WEB2 (SSH access, port auto-assigned)	:	VIP:54156 Ext , 22 Int

N.B. Endpoints are not needed for port 80 on Web1 and Web2. This ensures that connections are load balanced by the LB.org load balancer and not the Azure Load Balancer.

Azure Management

Many management tasks can be carried out using the [Azure Management Portal](#). However, there are still a number of tasks that must be done via Azure PowerShell. Azure PowerShell is a powerful scripting environment that can be used to control and automate the deployment and management of workloads in Azure.

The Azure Cross-Platform Command-Line Interface (xplat-cli) is also available and provides a set of open source, cross-platform commands for working with the Azure Platform.

Useful related Microsoft Links:

- 1) PowerShell & Cli for Azure can be downloaded here: <http://azure.microsoft.com/en-us/downloads/>
- 2) Installing & Configuring Azure PowerShell: <http://azure.microsoft.com/en-gb/documentation/articles/install-configure-powershell/>
- 3) Installing & Configuring Azure Cli: <http://azure.microsoft.com/en-gb/documentation/articles/xplat-cli/>
- 4) Azure PowerShell CmdLet reference: <https://msdn.microsoft.com/en-us/library/azure/jj554330.aspx>

Deploying Enterprise Azure

STEP 1 - Create a Virtual Network

- In the Azure Management Portal select the **Networks** option
- Click **NEW** to create a new Virtual Network, then select **Custom Create**
- Specify a suitable **Name & Location**, e.g. **Vnet1** and **West US**
- Click the Next arrow
- Specify **DNS & VPN** settings if required
- Click the Next arrow
- By default one subnet is created, add more if required using the **Add Subnet** green button
- Click the Complete tick-mark
- Select the Virtual Network just created and click **Configure** to show the settings:

vnet1

[DASHBOARD](#) [CONFIGURE](#) [CERTIFICATES](#)

dns servers ?

ENTER NAME	IP ADDRESS
------------	------------

point-to-site connectivity ?

CONNECTION Configure point-to-site connectivity

virtual network address spaces ?

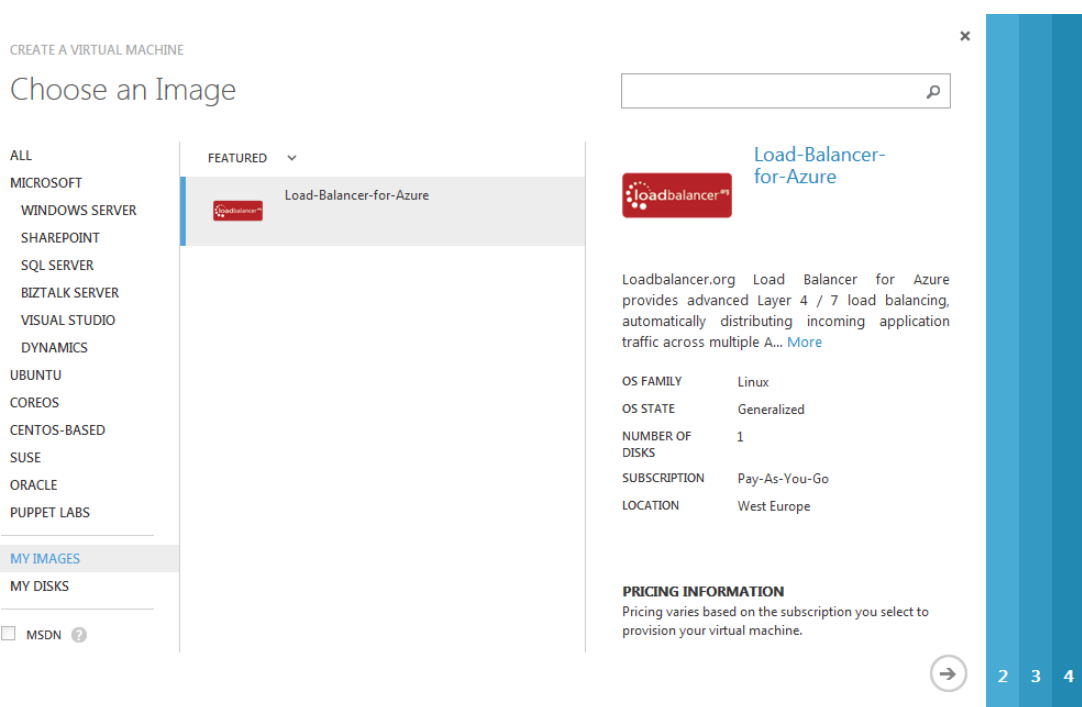
ADDRESS SPACE	STARTING IP	CIDR (ADDRESS COUNT)	USABLE ADDRESS RANGE
10.0.0.0/8	10.0.0.0	/8 (16777...	10.0.0.4 - 10.255.255.254
SUBNETS			
Subnet-1	10.0.0.0	/11 (2097...	10.0.0.4 - 10.31.255.254

[add subnet](#)

[add address space](#)

STEP 2 – Accessing & Deploying the Enterprise Azure Image

- In the Azure Management Portal select the **Virtual Machines** option
- Click the **IMAGES** option at the top of the screen
- Click the **BROWSE VM DEPOT** option
- Click the **CENTOS** option
- Scroll down the list and select **Load Balancer for Azure**
- Click the Next arrow
- Select the required **IMAGE REGION** and **STORAGE ACCOUNT**, and specify a **NEW STORAGE ACCOUNT NAME** if required
- Click the Complete tick-mark, the Loadbalancer.org load balancer image will now be copied from the VM Depot to the storage account specified in the previous step
- Use the **REGISTER** option at the bottom of the screen to register the image and make it available
- Click the **INSTANCES** option at the top of the screen
- Click **NEW** to create a new Virtual Machine
- Select **COMPUTE > VIRTUAL MACHINE > FROM GALLERY**
- When prompted to Choose an Image, select the **MY IMAGES** option
- Select the **Load-Balancer-for-Azure** image



- Click the next arrow

- Type a suitable name, e.g. **LoadBalancer**
- Complete the other details as required

CREATE A VIRTUAL MACHINE

Virtual machine configuration

VIRTUAL MACHINE NAME [?]

TIER

SIZE [?]

NEW USER NAME

AUTHENTICATION [?]

UPLOAD COMPATIBLE SSH KEY FOR AUTHENTICATION

PROVIDE A PASSWORD

NEW PASSWORD

CONFIRM

- Click the Next arrow

N.B. to enable full root access, the following command can be used once logged in to the appliance via ssh:

sudo su

For this to work without further modification, the username specified when setting up the appliance must be 'azureuser' as shown in the screen shot above

CREATE A VIRTUAL MACHINE

Virtual machine configuration

CLOUD SERVICE ?

Create a new cloud service ▼

CLOUD SERVICE DNS NAME

LoadBalancer .cloudapp.net

REGION/AFFINITY GROUP/VIRTUAL NETWORK ?

Vnet1 ▼

VIRTUAL NETWORK SUBNETS

Subnet-1(10.0.0.0/11) ▼

AVAILABILITY SET ?

(None) ▼

ENDPOINTS

NAME	PROTOCOL	PUBLIC PORT	PRIVATE PORT
SSH	TCP	22	22
HTTP	TCP	80	80
WUI	TCP	9443	9443
L7 STATS	TCP	7777	7777

- Create a new Cloud Service or select an existing one as required
N.B. The load balancer and the servers to be load balanced must reside within the same Cloud Service
- Set the Cloud Service DNS name as required, e.g. **LoadBalancer**
- Select the appropriate **VNet1**
N.B. The load balancer and the servers to be load balanced must reside within the same VNet
- Select the required subnet
- Define the End-points as required. The example above includes the following:
SSH (22) – for external SSH access to the load balancer (**Recommended**)
HTTP (80) – for load balanced HTTP services (**Required for Web Based deployments**)
WUI (9443) – for access to the management WUI (**Required**)
L7 STATS (7777) – for access to the layer 7 (HAProxy) Statistics page (**Required**)

- Click the Next arrow and then the Complete tick-mark to deploy & start the VM
- Use the **Manage ACL** option to configure access to the Endpoint public ports

Accessing the Enterprise Azure WUI

In a browser, navigate to the Public DNS name or Public IP address port 9443

i.e.

https://<Cloud Service DNS name>:9443

or

https://<Cloud Service IP address>:9443

You'll receive a warning about the certificate as it's a self signed cert not related to an Internet based CA. Confirm you want to continue and a login prompt will be displayed. Use the following default credentials:

Username: *loadbalancer*

Password: *loadbalancer*

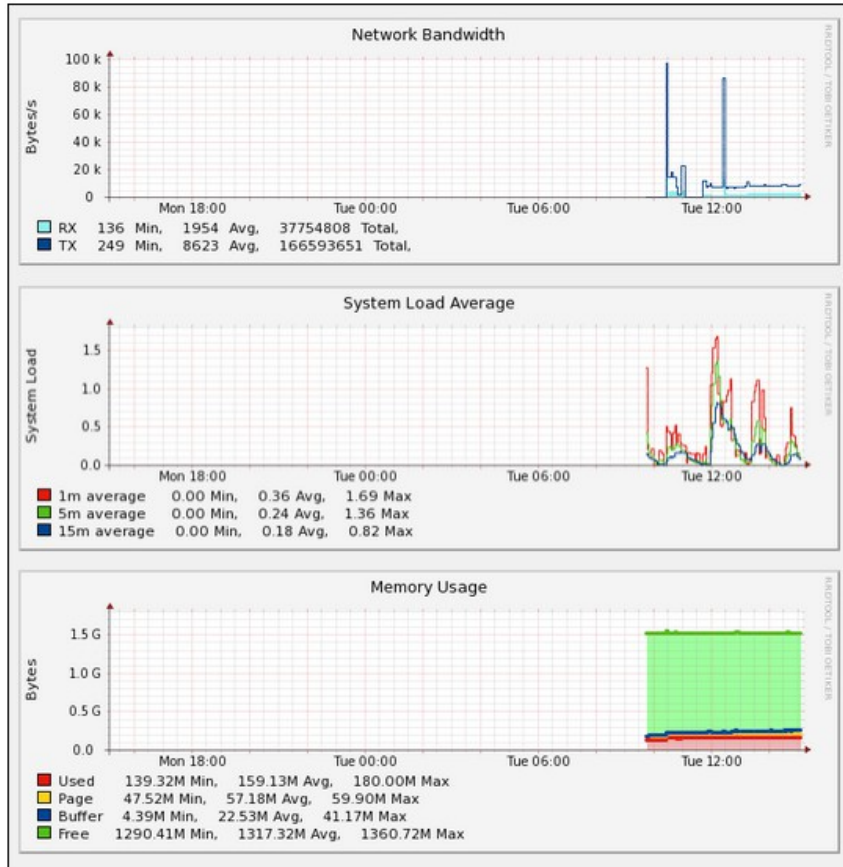
Once logged in, the following screen is displayed:

- System Overview
- Local Configuration
- Cluster Configuration
- Maintenance
- View Configuration
- Reports
- Logs
- Support

SYSTEM OVERVIEW

2015-01-20 16:07:31 UTC

Key: ▲ Virtual Service / Real Server healthy ▲ Virtual Service needs attention ▼ Virtual Service / Real Server down ● Real Server taken offline



Using the Enterprise Azure WUI

The main menu options are as follows:

- System Overview** – Displays a graphical summary of all VIPs, RIPS and key appliance statistics
- Local Configuration** – Configure local host settings such as DNS, Date & Time etc.
- Cluster Configuration** – configure load balanced services such as VIPs & RIPS
- Maintenance** – Perform maintenance tasks such as service restarts and taking backups
- View Configuration** – Display the saved appliance configuration settings
- Reports** – View various appliance reports & graphs
- Logs** – View various appliance logs
- Support** – Create a support download & contact the support team

The following sections detail the menu options that differ from our main product. For all others please refer to our main administration manual : <http://pdfs.loadbalancer.org/loadbalanceradministrationv7.pdf>

Local Configuration > Network Interface Configuration

NETWORK INTERFACE CONFIGURATION

IP Address Assignment

eth0	<input type="text" value="10.0.0.4/11"/>
------	--

Notes:

- Shows the private IP address allocated to the Virtual Machine
- Click **Configure Interfaces** to apply any changes

Accessing Enterprise Azure using SSH

The current version of the Azure Management Portal only accepts SSH public keys that are encapsulated in an X509 certificate. The steps below show how to generate and use SSH keys with Azure under Linux and Windows.

Creating SSH Keys using Linux

STEP 1 - Install OpenSSL if not currently installed:

Under CentOS / Oracle Linux:

```
# sudo yum install OpenSSL
```

Under Ubuntu:

```
# sudo apt-get install OpenSSL
```

Under SLES & openSUSE:

```
# sudo zypper install OpenSSL
```

STEP 2 - Use OpenSSL to generate an X509 certificate with a 2048-bit RSA keypair:

(Answer the questions that the OpenSSL prompts for (or you may leave them blank). The content in these fields is not used by the platform)

All Distros:

```
# OpenSSL req -x509 -nodes -days 365 -newkey rsa:2048 -keyout myPrivateKey.key -out myCert.pem
```

2 files are created:

- myPrivateKey.key – this is used on the SSH client machine
- myCert.pem – this is uploaded to the Loadbalancer.org Enterprise Azure Virtual Machine when the VM is deployed

STEP 3 - Change the permissions on the private key to secure it:

All Distros:

```
# chmod 600 myPrivateKey.key
```

STEP 4 – Configure SSH authentication:

Specify the PEM file (myCert.pem in this example) when creating the Loadbalancer.org Enterprise Azure Virtual Machine. This is configured within the **Authentication** section.

Creating SSH Keys using Windows

STEP 1 - Install OpenSSL if not currently installed:

Download and install GitHub for Windows from the following location: <http://windows.github.com/>

Run *Git Bash* from the Start Menu > All Programs > Git

STEP 2 - Use OpenSSL to generate an X509 certificate with a 2048-bit RSA keypair:

(Answer the questions that the OpenSSL prompts for (or you may leave them blank). The content in these fields is not used by the platform)

```
# OpenSSL req -x509 -nodes -days 365 -newkey rsa:2048 -keyout myPrivateKey.key -out myCert.pem
```

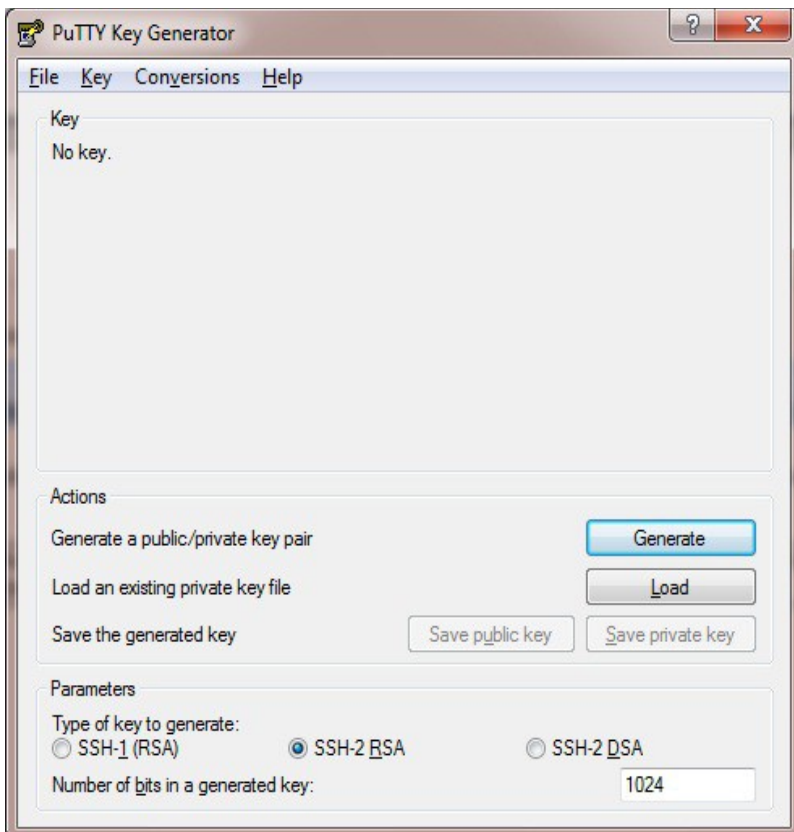
2 files are created:

- myPrivateKey.key – this is used on the SSH client machine
- myCert.pem – this is uploaded to the Loadbalancer.org Enterprise Azure Virtual Machine when the VM is deployed

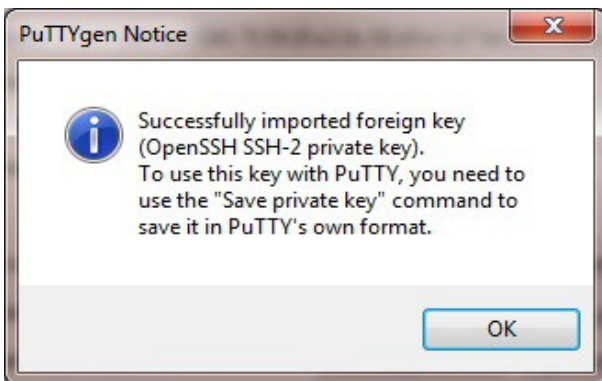
Accessing the Load Balancer from Windows using PuTTY

Download PuTTY from: <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

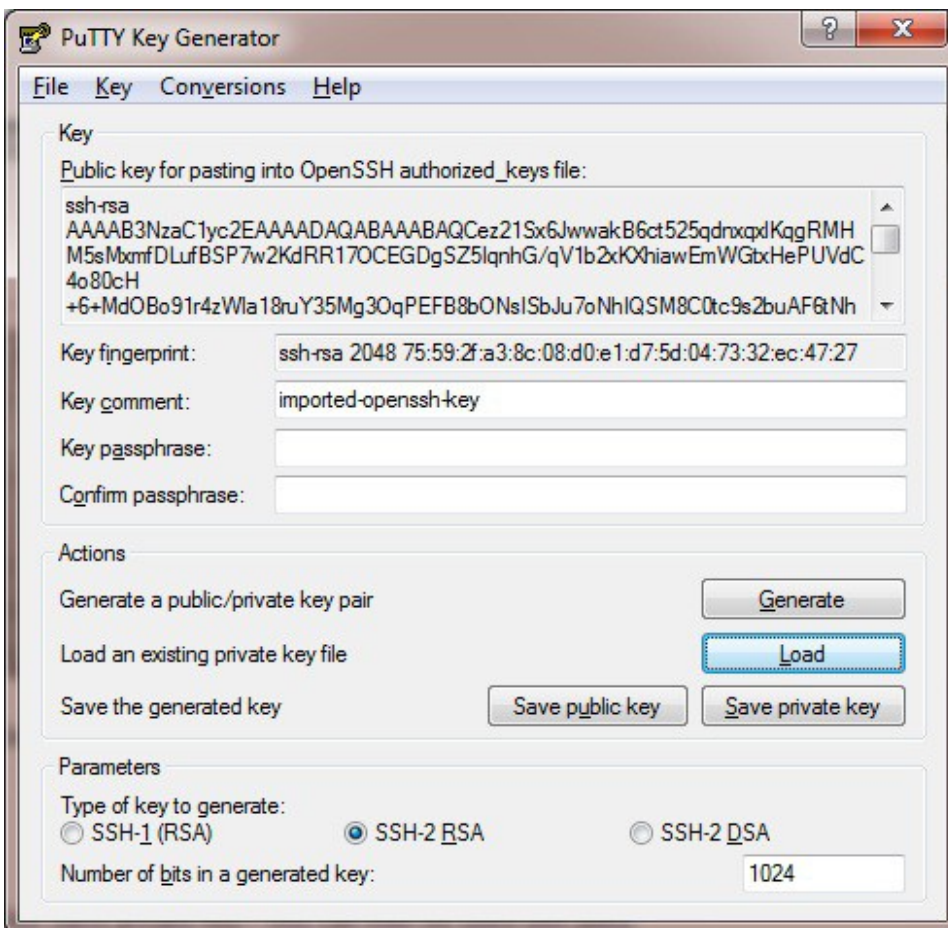
For PuTTY, the private key must be converted into an appropriate format. To do this the PuTTYgen utility (included with PuTTY) must be used. Start PuTTYgen:



Click **Load**, change the file-type to all files and select the pem file saved earlier when creating your Key Pair. You should see the following message:

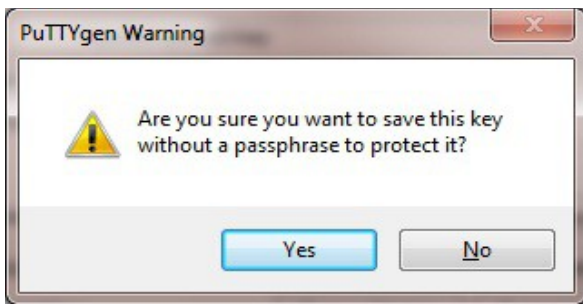


Click **OK**



Now Click **Save private key** – this can then be used with PuTTY.

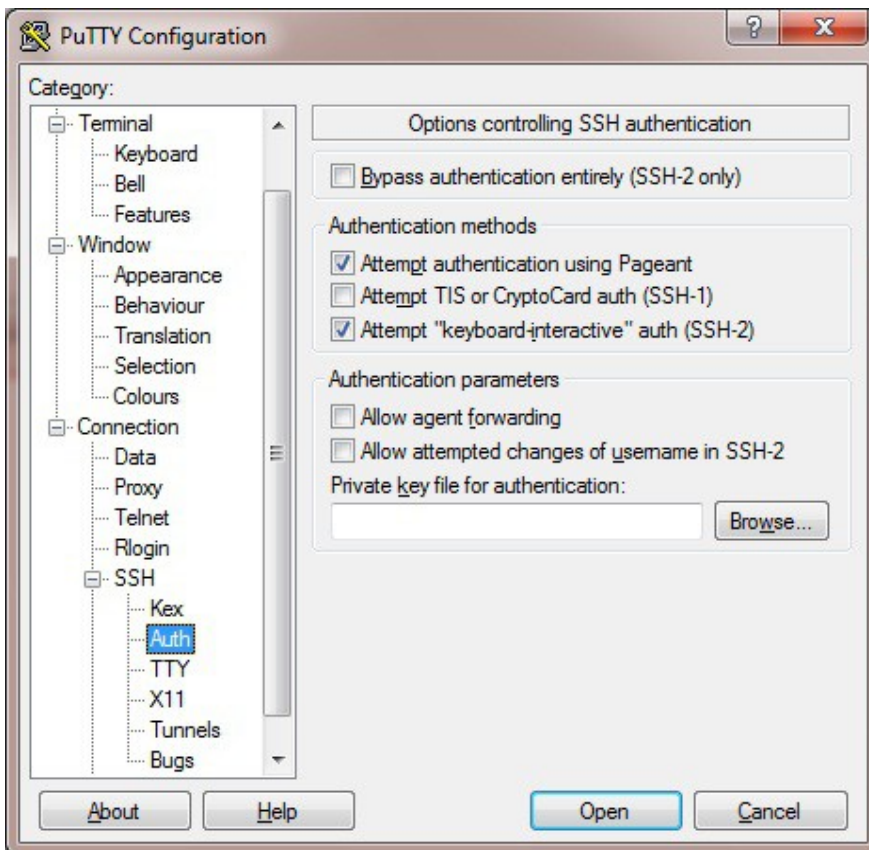
You can also choose to enter an additional pass-phrase for improved security, if you don't, the following message will be displayed:



Click **Yes** and save the file with the default .ppk extension

Now close PuTTYgen and start PuTTY

Expand the SSH section as shown below:



Click **Browse** and select the new .ppk file just created

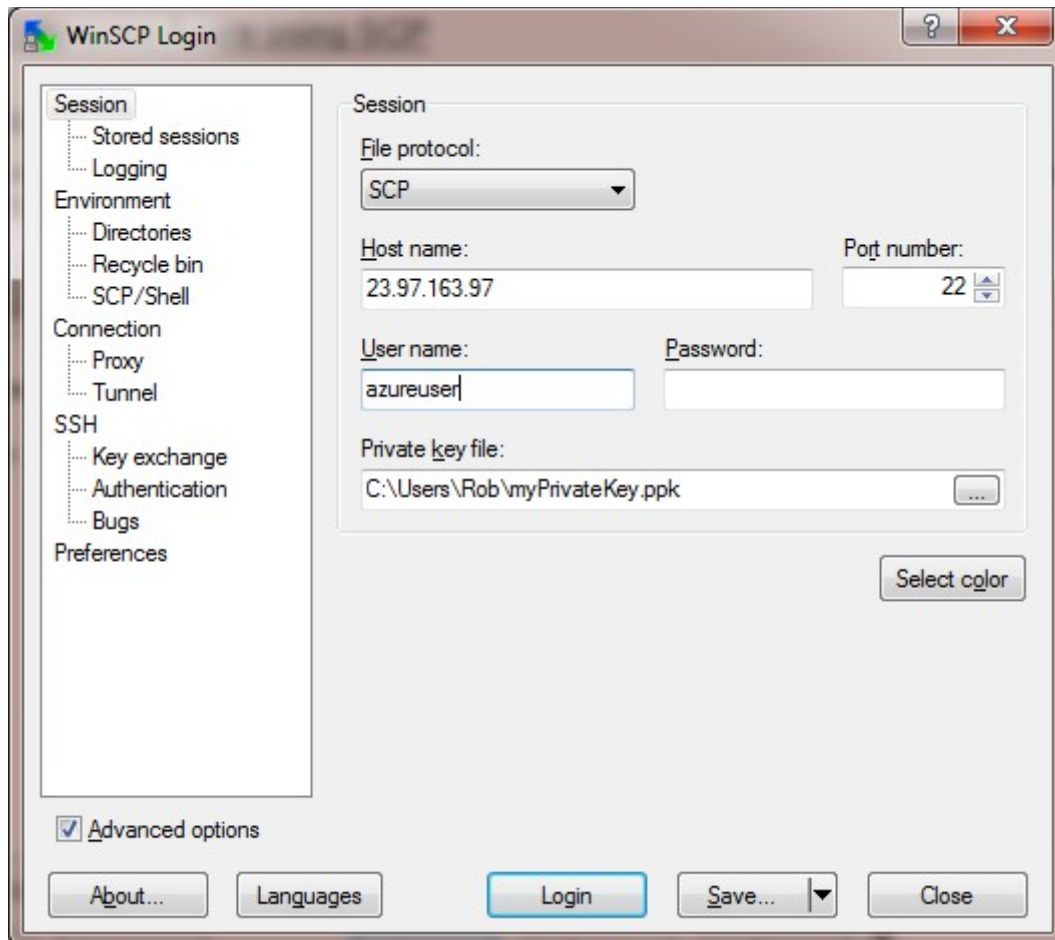
When you open the SSH session, login as 'azureuser' – no password will now be required.

Accessing Enterprise Azure using SCP

Using Windows

Download WinSCP from: <http://winscp.net/eng/download.php>

With WinSCP, enter the relevant IP address, set the username field to **azureuser**, and browse to the private key file created previously using PuTTYgen as shown below:



Click **Login**

Configuration Examples

The following sections provide a number of examples to help illustrate how the load balancer can be deployed.



NOTE : It's not possible to configure a VIP on the same IP address as any of the network interfaces. This ensures services can move between master and slave appliances.

1) Load Balancing Web Servers - Single Subnet, Layer 7

This is a simple layer 7 example using one public subnet for both the load balancer and the web servers.

a) Setting up Azure

- Deploy the load balancer instance as described on page 8-10
- Deploy your required web server VM's into the same VNet & subnet as the load balancer
- Ensure the required Endpoints are configured as described on page 10
- Public IP addresses are not needed when deploying the real server instances since the load balancer is configured to send traffic to the private IP address (DIP) of each web server

b) Setting up the Virtual Service

- Using the WUI, go to *Cluster Configuration > Layer 7 – Virtual Service* and click **[Add a New Virtual Service]**
- Enter the following details:

Label	<input type="text" value="Web-Cluster1"/>	?
Virtual Service	IP Address <input type="text" value="10.0.0.22"/>	?
	Ports <input type="text" value="80"/>	?
Layer 7 Protocol	<input type="text" value="HTTP Mode"/>	?
Manual Configuration	<input type="checkbox"/>	?

- Enter an appropriate label for the VIP, e.g. **Web-Cluster1**
- Set the *Virtual Service IP address* field to the required IP address, e.g. **10.0.0.22**
- Set the *Virtual Service Ports* field to **80**
- Leave *Layer 7 Protocol* set to **HTTP mode**
- Click **Update**

c) Setting up the Real Servers

- Using the WUI, go to *Cluster Configuration > Layer 7 – Real Servers* and click **[Add a new Real Server]** next to the newly created VIP
- Enter the following details:

Label	<input type="text" value="Web1"/>	?
Real Server IP Address	<input type="text" value="10.0.0.23"/>	?
Real Server Port	<input type="text" value="80"/>	?
Weight	<input type="text" value="100"/>	?

- Enter an appropriate label for the RIP, e.g. **Web1**
- Change the *Real Server IP Address* field to the required IP address, e.g. **10.0.0.23**
- Click **Update**
- Repeat the above steps to add your other Web Server(s)

d) Applying the new Layer 7 Settings

- Once the configuration is complete, use the **Reload HAProxy** button at the top of the screen to commit the changes

e) Testing & Verification

To test the configuration is working, browse to the public IP address (VIP) on port 80

i.e. **http://<VIP Address>:80**

2) Load Balancing Web Servers - Single Subnet Layer 7 with SSL Termination

This is similar to the first example with the addition of setting up SSL termination on the load balancer. We generally recommend that SSL should be termination on the backend servers rather than the load balancer for scalability reasons, although in some cases terminating on the load balancer may be preferred.

a) Setting up Azure

- Deploy the load balancer instance as described on page 8-10
- Deploy your required web server VM's into the same VNet & subnet as the load balancer
- Ensure the required Endpoints are configured as described on page 10 including an end-point for HTTPS on port 443
- Public IP addresses are not needed when deploying the real server instances since the load balancer is configured to send traffic to the private IP address (DIP) of each web server

b) Setting up the Virtual Service

- Using the WUI, go to *Cluster Configuration > Layer 7 – Virtual Service* and click **[Add a New Virtual Service]**
- Enter the following details:

Label	<input type="text" value="Web-Cluster1"/>	?
Virtual Service	IP Address <input type="text" value="10.0.0.22"/>	?
	Ports <input type="text" value="80"/>	?
Layer 7 Protocol	<input type="text" value="HTTP Mode"/>	?
Manual Configuration	<input type="checkbox"/>	?

- Enter an appropriate label for the VIP, e.g. **Web-Cluster1**
- Set the *Virtual Service IP address* field to the required IP address, e.g. **10.0.0.22**
- Set the *Virtual Service Ports* field to **80**
- Leave *Layer 7 Protocol* set to **HTTP mode**
- Click **Update**

c) Setting up the Real Servers

- Using the WUI, go to *Cluster Configuration > Layer 7 – Real Servers* and click **[Add a new Real Server]** next to the newly created VIP
- Enter the following details:

Label	<input type="text" value="Web1"/>	?
Real Server IP Address	<input type="text" value="10.0.0.23"/>	?
Real Server Port	<input type="text" value="80"/>	?
Weight	<input type="text" value="100"/>	?

- Enter an appropriate label for the RIP, e.g. **Web1**
- Change the *Real Server IP Address* field to the required IP address, e.g. **10.0.0.23**
- Click **Update**
- Repeat the above steps to add your other Web Server(s)

d) Configuring SSL Termination

- Using the WUI, go to *Cluster Configuration > SSL Termination* and click **[Add a New Virtual Service]**
- Enter the following details:

Label	<input type="text" value="SSL-WEB"/>	?
Virtual Service IP address	<input type="text" value="10.0.0.22"/>	?
Virtual Service Port	<input type="text" value="443"/>	?
Backend Virtual Service IP Address	<input type="text" value="10.0.0.22"/>	?
Backend Virtual Service Port	<input type="text" value="80"/>	?
Ciphers to use	<input type="text" value="ECDHE-RSA-AES128-GCM"/>	?
Do not insert empty fragments	<input checked="" type="checkbox"/>	?
SSL Terminator	<input type="radio"/> Pound <input checked="" type="radio"/> STunnel	?
Delay DNS Lookups	<input checked="" type="checkbox"/>	?
Disable SSLv2 Ciphers	<input checked="" type="checkbox"/>	?
Disable SSLv3 Ciphers	<input checked="" type="checkbox"/>	?
Allow Client Renegotiation	<input checked="" type="checkbox"/>	?
Disable SSL Renegotiation	<input checked="" type="checkbox"/>	?
Time To Close	<input type="text" value="0"/>	?
Set as Transparent Proxy	<input type="checkbox"/>	?

- Enter an appropriate label for the VIP, e.g. **SSL-WEB**
- Set the *Virtual Service IP address* to be the same as the VIP created in step c) e.g. **10.0.0.22**
- Set the *Virtual Service Ports* field to **443**
- Set the *Backend Virtual Service IP address* to be the same as the VIP created in step c) e.g. **10.0.0.22**
- Set the *Backend Virtual Service Ports* field to **80**
- Leave all other settings at their default values
- Click **Update**

SSL Certificate Notes:

- A default self-signed certificate will be used when setting up SSL Termination
- To change this, using the WUI, select: *Cluster Configuration > SSL Termination*
- Click **[Certificate]** next to the Virtual Service
- If you already have a certificate, use the **Upload prepared PEM/PFX file** option at the bottom of the screen to upload it
- If you don't have a certificate, you can create a CSR using the **Generate SSL Certificate Request** section. This will create the CSR in the upper pane of the **Upload Signed Certificate** section based on the settings you enter. This should be copied and sent to your CA
- Once the signed certificate is received copy/paste it (along with any required intermediate

certificates) the lower pane of the **Upload Signed Certificate** section, and click **Upload Signed Certificate**

e) Applying the new Settings

- Once the configuration is complete, use the **Reload HAProxy** button at the top of the screen to commit the changes
- Once the configuration is complete, use the **Restart Stunnel** button at the top of the screen to commit the changes

f) Testing & Verification

To test the configuration is working, browse to the public IP address (VIP) on HTTPS port 443

i.e. **https://<VIP Address>**

Verifying Load Balanced Services

Various features exist on the load balancer to help monitor load balanced services. These are covered in the sections below.

Connection Error Diagnosis

If the VIP is not working, check *Reports > Layer 7 Status*. The default credentials required are

username: loadbalancer
password: loadbalancer

This will open a second tab in the browser and display a statistics/status report as shown in the example below:

Statistics Report for pid 3261

> General process information

pid = 3261 (process #1, nbproc = 1)
 uptime = 0d 0h00m42s
 system limits: memmax = unlimited; ulimit-n = 81000
 maxsock = 80024; maxconn = 40000; maxpipes = 0
 current conns = 1; current pipes = 0/0; conn rate = 2/sec
 Running tasks: 1/5; idle = 100 %

■ active UP
■ active UP, going down
■ active DOWN, going up
■ active or backup DOWN
■ backup UP
■ backup UP, going down
■ backup DOWN, going up
■ not checked
■ active or backup DOWN for maintenance (MAINT)

Display option:
[Hide DOWN servers](#)
[Refresh now](#)
[CSV export](#)

External resources:
[Primary site](#)
[Updates \(v1.5\)](#)
[Online manual](#)









Note: UP with load-balancing disabled is reported as "NOLB".

L7		Queue		Session rate			Sessions				Bytes		Denied		Errors			Warnings		Server										
	Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status	LastChk	Wght	Act	Bck	Chk	Dwn	Dwntme	Thrtle	
Frontend	0	15	-	0	4	40 000	56			21 698	3 385 782	0	0	0	0	0	0	0	0	0	OPEN									
backup	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0			1	-	Y					
RIP1	0	0	-	0	16	0	2	-	56	56	21 698	3 385 782	0	0	0	0	0	0	0	0	42s UP	L4OK in 0ms	1	Y	-	0	0	0s	-	
Backend	0	0	-	0	16	0	2	4 000	56	56	21 698	3 385 782	0	0	0	0	0	0	0	0	42s UP		1	1	1		0	0s		

stats		Queue		Session rate			Sessions				Bytes		Denied		Errors			Warnings		Server										
	Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status	LastChk	Wght	Act	Bck	Chk	Dwn	Dwntme	Thrtle	
Frontend	2	4	-	1	1	2 000	8			1 464	33 111	0	0	0	4						OPEN									
Backend	0	0	-	0	0	200	0			0	1 464	33 111	0	0	0	0	0	0	0	0	42s UP		0	0	0		0			

System Overview

The *System Overview* shows the status of the various real servers that make up a cluster:

Virtual Service	IP	Ports	Protocol	Method	Mode	
HTTP-Cluster2	192.168.110.152	80	HTTP	Layer 7	Proxy	 
Real Server	IP	Ports	Weight			
rip1	192.168.110.237	80	100	Drain	Halt	 
rip2	192.168.110.238	80	0	Online	Halt	 
rip3	192.168.111.239	80	100	Drain	Halt	 

In this example:

rip1 is green which indicates that the Real Server is operating normally.

rip2 is blue, this indicates that the Real Server has been either Halted or Drained. In this example Drain has been used. If Halt was used, 'Halt' would be displayed in the Weight column rather than a weight of 0.

rip3 is down (red). This implies that the Real Server has failed a health check. This can be investigated using

Logs > Layer 7. If you know the Real Server should be active, you may need to increase the health check time-outs using *Cluster Configuration > Layer 7 – Advanced Configuration.*

Log Files

The appliance includes several logs that are very useful when diagnosing issues. These are viewable via the Logs option in the WUI.

Loadbalancer.org Technical Support

If you have any questions regarding the appliance don't hesitate to contact the support team support@loadbalancer.org or your local reseller.

For more details please refer to our full administration manual which is available at:

<http://www.loadbalancer.org/pdf/files/loadbalanceradministrationv7.pdf>

Appendix

1. Copying Images

AzCopy can be used to copy Blobs (files) between Azure storage locations. It's basically the same as Windows Xcopy but specifically for Azure.

Copying an entire folder:

```
AzCopy /Source:https://lbvmazure.blob.core.windows.net/lb-org  
/Dest:https://rob23.blob.core.windows.net/instances  
/SourceKey:zTc+vNJDminJHDXsfk5ss4SOJTdivUOBJmrILNVcUMvm3pVXdj7SvWzjPgoYTHzu+w==  
/DestKey:CoaUiVoPKSdJDBcFZ9q9z/h6RTUGzetC54IHDLficc6DeuLwarBI6h4k5nWEsT7m0+bDw== /S
```

Copying a specific file:

```
AzCopy /Source:https://lbvmazure.blob.core.windows.net/lb-org  
/Pattern:Loadbalancer.org_Enterprise_Azure_V7.6.3-os-2015-01-16.vhd  
/Dest:https://rob23.blob.core.windows.net/instances  
/SourceKey:zTc+vNJDminJHDXsfk5s31u7nHDvjoleJMOxOnQUMvm3pVXdj7SvWzjPgoYTHzu+w==  
/DestKey:CoaUiVoPKSdJDBcFZ9q9z/GJr3ABANdVvjY6OJ/h66DeuLwarBI6h4k5nWEsT7m0+bDw== /S
```

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