

# AZURE-TIO-VMSS-v1

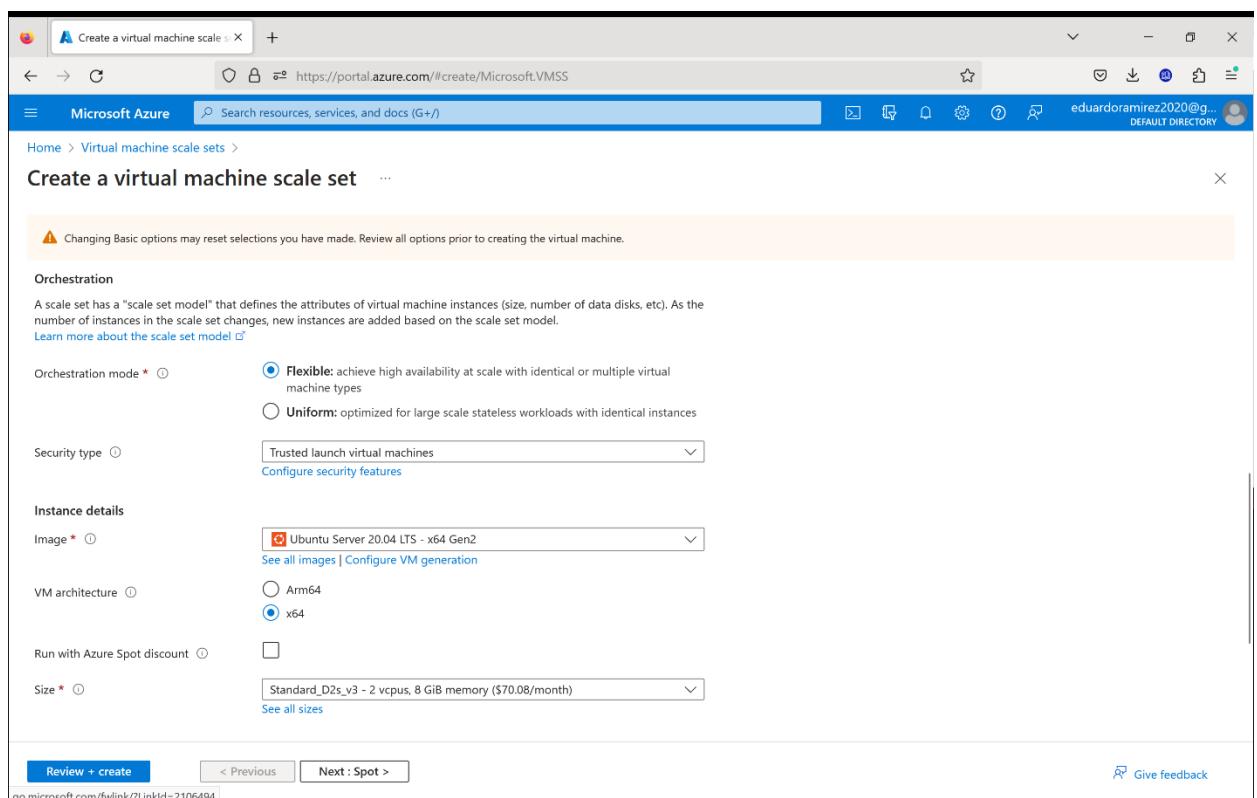
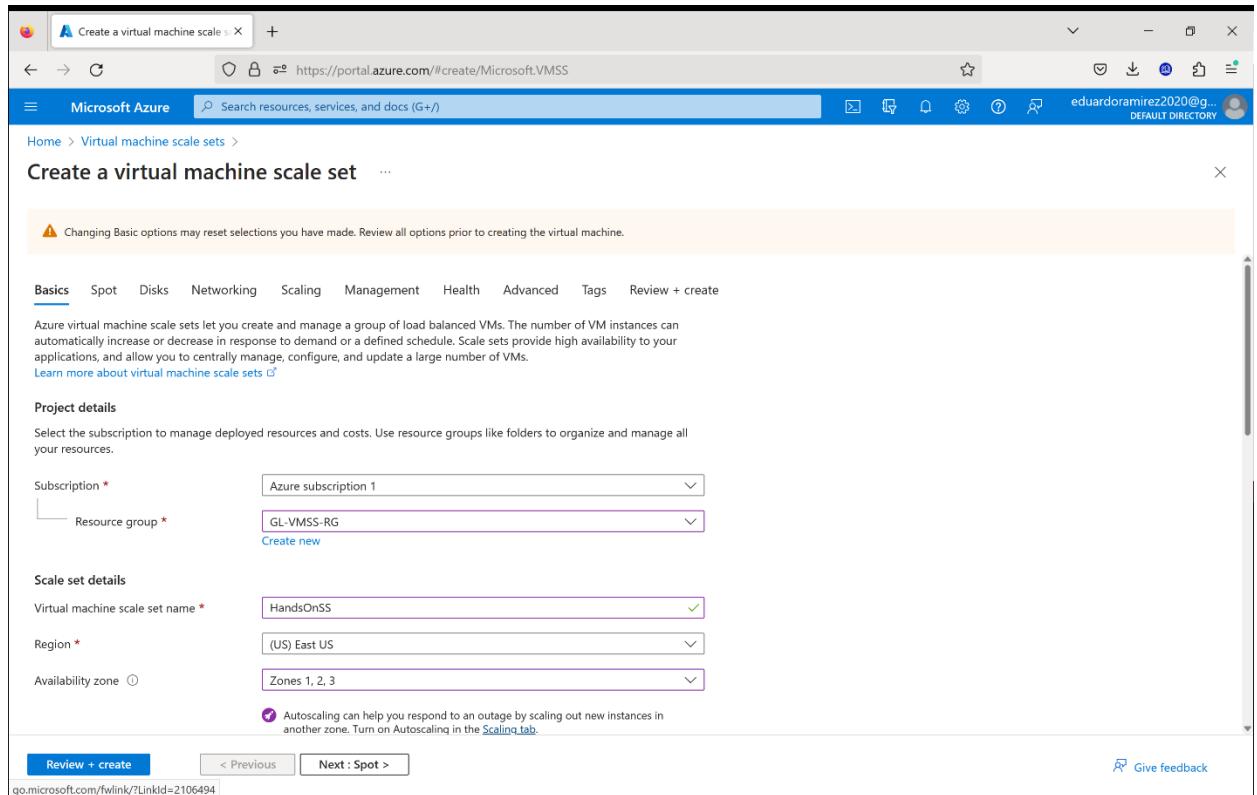
## The Goal

1. Create a resource group.
2. Understand the process of creating a virtual machine scale set.
3. Deploy a custom application using a bootstrap script
4. Create firewall rules to allow port 22 and 80.
5. Access the custom application using a web browser

### A. Create a resource group

The screenshot shows the Microsoft Azure portal interface. The user is navigating to the 'Resource groups' section. In the top right corner, there is a notification for 'Resource group created' with a message: 'Creating resource group 'GL-VMSS-RG' in subscription 'Azure subscription 1' succeeded.' Below the notification are two buttons: 'Go to resource group' and 'Pin to dashboard'. The main area displays a table of existing resource groups. The table has columns for Name, Subscription, and a checkbox column. Two resource groups are listed: 'GL-VMSS-RG' (Subscription: Azure subscription 1) and 'NetworkWatcherRG' (Subscription: Azure subscription 1). At the bottom of the table, there are navigation links: '< Previous', 'Page 1 of 1', and 'Next >'.

### B. Create Virtual Machine Scale Set.



## C. Create Virtual Machine Scale Set: Networking

The screenshot shows the Azure portal interface for creating a virtual machine scale set. The current step is 'Networking'. The 'Virtual network' dropdown is set to '(New) GL-VMSS-RG-vnet (recommended)'. Under 'Network interface', there is one entry: 'GL-VMSS-RG-vnet-nic01' with 'Yes' selected for public IP, 'default (10.0.0.0/20)' for subnet, 'Basic' for security, and 'On' for accelerated networking. The 'Load balancing' section shows 'None' selected. At the bottom, there are 'Review + create' and 'Next : Scaling >' buttons.

The screenshot shows the Azure portal interface for creating a virtual machine scale set. The current step is 'Scaling'. The 'Load balancing' section shows 'Azure load balancer' selected. A note below states: 'To allow traffic from your load balancing product, please update the appropriate port configuration on your network security group associated with your network interface.' The 'Select a load balancer' dropdown is set to '(new) handsOnLB'. A OneDrive notification on the right says 'Screenshot saved' and 'The screenshot was added to your OneDrive.' At the bottom, there are 'Review + create' and 'Next : Scaling >' buttons.

## D. Create Virtual Machine Scale Set: Scaling

**Create a virtual machine scale set**

Scaling

An Azure virtual machine scale set can automatically increase or decrease the number of VM instances that run your application. This automated and elastic behavior reduces the management overhead to monitor and optimize the performance of your application. [Learn more about VMSS scaling](#)

Initial instance count \*

Scaling policy  Manual  Custom

Minimum number of instances \*

Maximum number of instances \*

Scale out

CPU threshold (%) \*

Duration in minutes \*

Number of instances to increase by \*

Scale in

CPU threshold (%) \*

**Review + create** [< Previous](#) [Next : Management >](#) [Give feedback](#)

## E. Create Virtual Machine Scale Set: Health

**Create a virtual machine scale set**

Health

You can configure health monitoring on an application endpoint to update the status of the application on that instance. This instance status is required to enable platform managed upgrades like automatic OS updates and virtual machine instance upgrades. [Learn more about application health monitoring](#)

Enable application health monitoring

Health monitor configuration

Type: Application health extension  
Protocol: HTTP  
Port number: 80  
Path: /health.html

[Configure](#)

**Automatic repair policy**

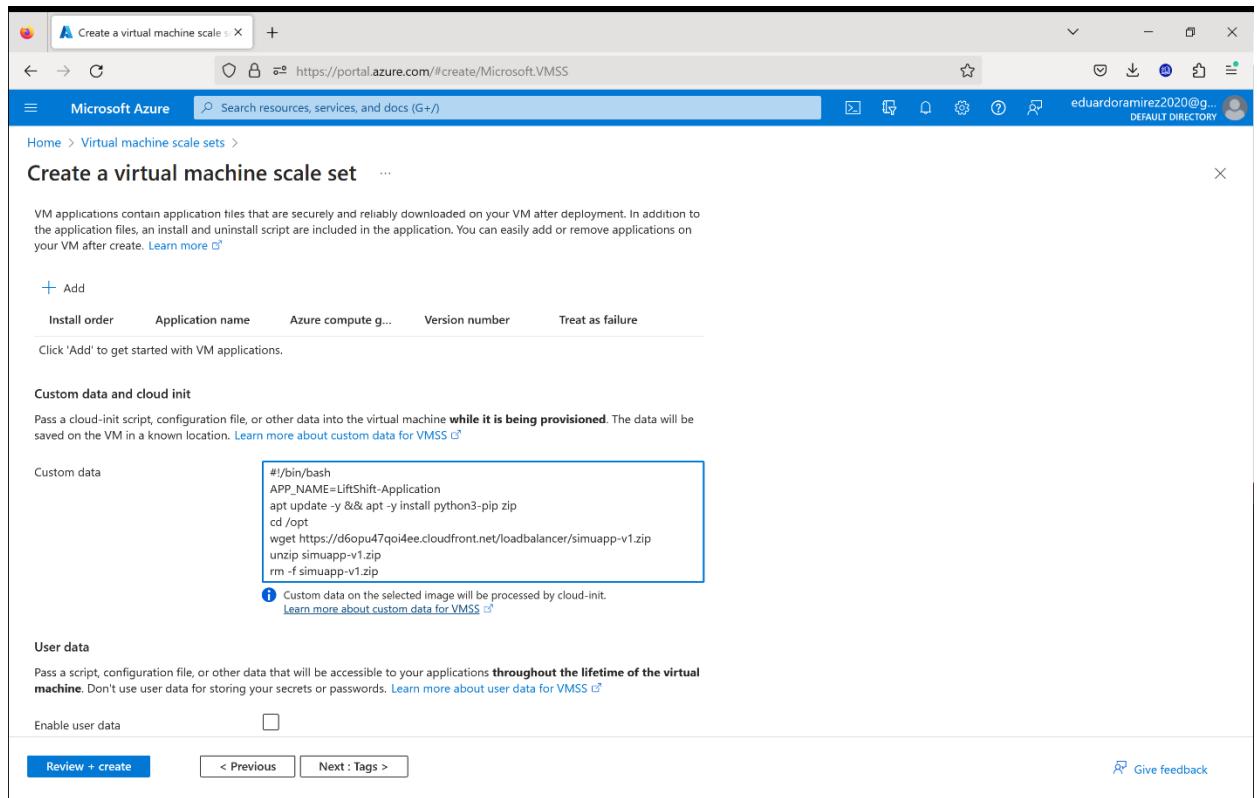
Before enabling the automatic repairs policy, review the requirements for opting in. [Learn more about automatic repair policy](#)

Enable automatic repairs

Grace period (min)

**Review + create** [< Previous](#) [Next : Advanced >](#) [Give feedback](#)

## F. Create Virtual Machine Scale Set: Advanced



The screenshot shows the Azure portal interface for creating a Virtual Machine Scale Set. The current step is 'Create a virtual machine scale set' under 'Virtual machine scale sets'. The 'Custom data and cloud init' section is active, containing a shell script:

```
#!/bin/bash  
APP_NAME=LiftShift-Application  
apt update -y && apt -y install python3-pip zip  
cd /opt  
wget https://d6opu47qoi4ee.cloudfront.net/loadbalancer/simuapp-v1.zip  
unzip simuapp-v1.zip  
rm -f simuapp-v1.zip
```

A note below the script states: "Custom data on the selected image will be processed by cloud-init. Learn more about custom data for VMSS".

Other sections visible include 'User data' (disabled) and 'Enable user data' (checkbox). Navigation buttons at the bottom include 'Review + create', '< Previous', 'Next : Tags >', and 'Give feedback'.

## Deployment of resource

**CreateVmss-canonical.0001-com-ubuntu-server-focal-20231023065427 | Overview**

Your deployment is complete

Deployment name : CreateVmss-canonical.0001-com-ubuntu-server-focal-20231023065427 Start time : 10/23/2023, 7:13:04 AM

Subscription : Azure subscription 1 Correlation ID : 09d38211-52cc-4442-844d-4032fae31f...

Resource group : GL-VMSS-RG

Deployment details

Next steps

Go to resource

Give feedback

Tell us about your experience with deployment

Cost management

Microsoft Defender for Cloud

Free Microsoft tutorials

Work with an expert

## G. Configure Networking Rules

**HandsOnSS | Networking**

Virtual machine scale set

Feedback Add network interface Remove network interface

Diagnose and solve problems

Settings

- Instances
- Networking**
- Scaling
- Disks
- Operating system
- Microsoft Defender for Cloud
- Size
- Extensions + applications
- Configuration
- Upgrade policy
- Health and repair
- Identity
- Properties
- Locks

Monitoring

Alerts Need help?

**GL-VMSS-RG-vnet-nic01**

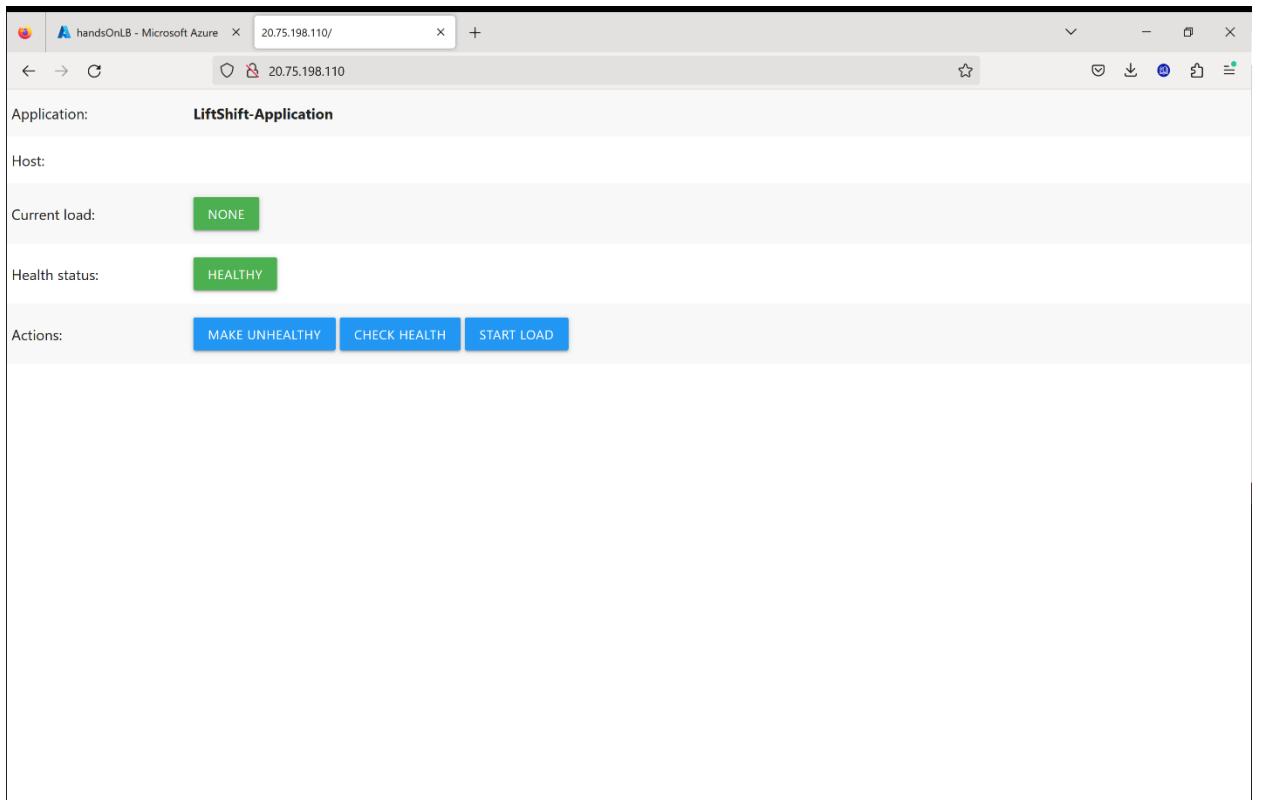
IP configuration

Network Interface: GL-VMSS-RG-vnet-nic01 Topology

Virtual network/subnet: GL-VMSS-RG-vnet/default Accelerated networking: Disabled

Priority	Name	Port	Protocol	Source	Destination	Action
100	Port_80	80	TCP	Any	Any	Allow
110	Port_22	22	TCP	Any	Any	Allow
300	Tcp	80	TCP	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

## H. Access Application



The screenshot shows a web browser window with the title "handsOnLB - Microsoft Azure". The address bar displays "20.75.198.110/" and "20.75.198.110". The main content area is titled "LiftShift-Application". It includes sections for "Host", "Current load", and "Health status". Under "Actions", there are three buttons: "MAKE UNHEALTHY", "CHECK HEALTH", and "START LOAD". The "Current load" button is green and labeled "NONE". The "Health status" button is green and labeled "HEALTHY".

## I. Terminate Resources

GL-VMSS-RG - Microsoft Azure

https://portal.azure.com/#@eduardoramirez2020@gmail.onmicrosoft.com/resource/subscriptions/69d7ff57-5a0c-42d6-8217-94fc4c35adda

Microsoft Azure

Resource groups > GL-VMSS-RG

Default Directory

+ Create Manage view ...

Filter for any field...

Name ↑↓

[ NetworkWatcherRG ]

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Deployments

Security

Deployment stacks

Policies

Properties

Locks

Cost Management

Cost analysis

Cost alerts (preview)

Budgets

Advisor recommendations

Notifications

More events in the activity log → Dismiss all

Deleted resource group GL-VMSS-RG Deleted resource group GL-VMSS-RG a minute ago

Created security rule Successfully created security rule 'Port\_22'. 8 minutes ago

Created security rule Successfully created security rule 'Port\_80'. 9 minutes ago

Deployment succeeded Deployment 'CreateVmss-canonical.0001-com-ubuntu-server-focal-20231023065427' to resource group 'GL-VMSS-RG' was successful. 17 minutes ago

Resource group created Creating resource group 'GL-VMSS-RG' in subscription 'Azure subscription 1' succeeded. 39 minutes ago

Go to resource Pin to dashboard

Go to resource group Pin to dashboard