

SYST8200 – Group 2 – Lab Configuration

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Description

The objective of this document is to provide the lab configuration details of the proposed project.

Requirements

Access to VMware's vSphere and Microsoft Azure cloud are the requirements for making use of the virtual machines and the services of the cloud.

Plan

The plan of the implementation is creation of a Virtual Network (Vnet), and two virtual machines in the Vnet. The Vnet will have two subnets for isolating a public and private network. Among the two virtual machines, we install an application server in the virtual machine, which has the public subnet, and a database server in the virtual machine, which has the private subnet. The application server will be installed in the virtual machine containing the public subnet, whereas the database server will be installed in the virtual machine containing the private subnet. The application will be exposed to the Internet, but the database server will not be exposed for public access. A web application is designed and developed for Infinity Premium Sports using Odoo ERP system.

Odoo URL and Credentials

Application: http:// <http://10.173.17.60:8069>

Email: oshahmadar@conestogac.on.ca

Password: Secret55

Observations and Screenshots

1. We created a resource group called proj-rg.

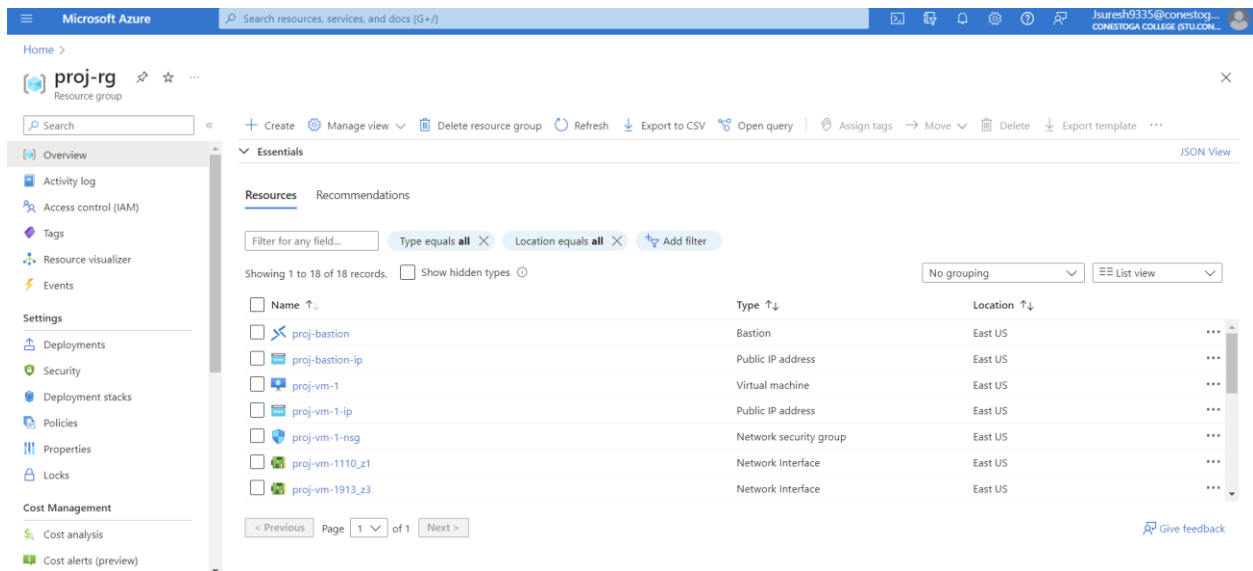


Figure 1: Resource Group

- Under the resource group, we created a virtual network called proj-vnet. While creating the Vnet, under Networking section, we enable Bastion for SSH into the virtual machine containing the private subnet.

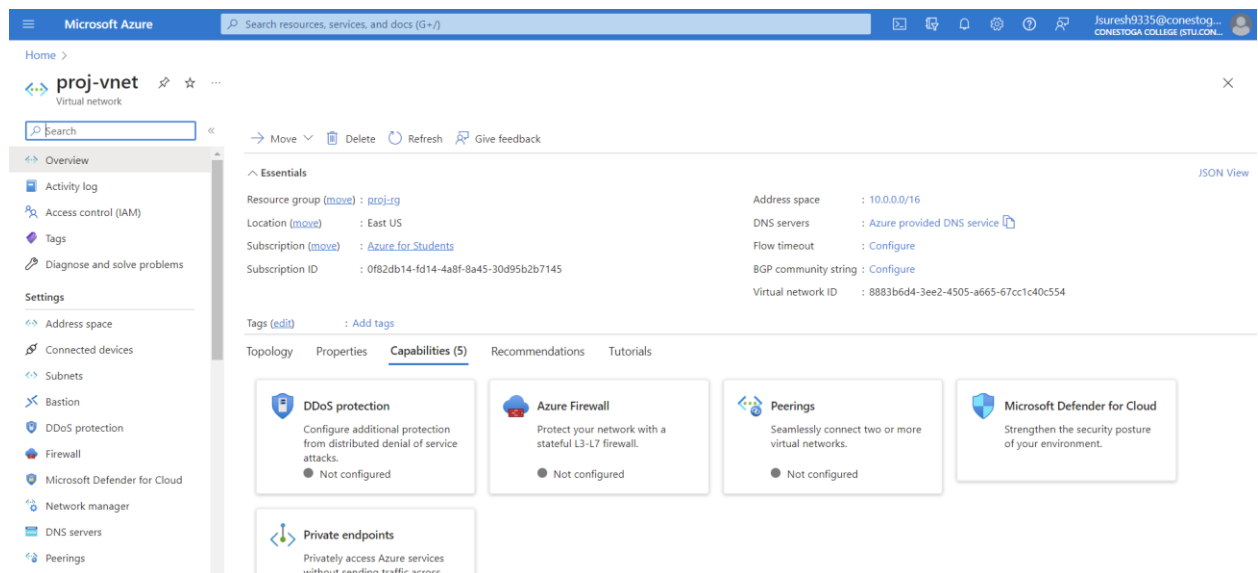


Figure 2: Virtual Network

- We created two virtual machines “proj-vm-1” and “proj-vm-2” under public subnet and private subnet respectively.

proj-vm-1
Virtual machine

Search resources, services, and docs (G+)

Home >

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Networking

Connect

Disks

Size

Microsoft Defender for Cloud

Advisor recommendations

Extensions + applications

Availability + scaling

Configuration

Identity

proj-vm-1 virtual machine agent status is not ready. Troubleshoot the issue →

Essentials

Resource group (move) : [proj-rg](#)

Status : Running

Location : East US (Zone 3)

Subscription (move) : [Azure for Students](#)

Subscription ID : 0f82db14-fd14-4a8f-8a45-30d95b2b7145

Availability zone : 3

Tags (edit) : [Add tags](#)

Operating system : Linux

Size : Standard B1s (1 vcpu, 1 GiB memory)

Public IP address : [172.174.250.245](#)

Virtual network/subnet : [proj-vnet/public](#)

DNS name : [Not configured](#)

Health state : -

Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine

Computer name : proj-vm-1

Operating system : Linux

Image publisher : canonical

Image offer : 0001-com-ubuntu-server-focal

Image plan : 20_04-lts-gen2

Networking

Public IP address : [172.174.250.245](#) (Network interface [proj-vm-1913_x3](#))

Public address (IPv6) : -

Private IP address : 10.0.1.5

Private IP address (IPv6) : -

Virtual network/subnet : [proj-vnet/public](#)

Figure 3: VM-1 with public subnet

proj-vm-2
Virtual machine

Search resources, services, and docs (G+)

Home >

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Networking

Connect

Disks

Size

Microsoft Defender for Cloud

Advisor recommendations

Extensions + applications

Availability + scaling

Configuration

Identity

Essentials

Resource group (move) : [proj-rg](#)

Status : Running

Location : East US (Zone 1)

Subscription (move) : [Azure for Students](#)

Subscription ID : 0f82db14-fd14-4a8f-8a45-30d95b2b7145

Availability zone : 1

Tags (edit) : [Add tags](#)

Operating system : Linux (ubuntu 20.04)

Size : Standard B1s (1 vcpu, 1 GiB memory)

Public IP address : -

Virtual network/subnet : [proj-vnet/private](#)

DNS name : -

Health state : -

Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine

Computer name : proj-vm-2

Operating system : Linux (ubuntu 20.04)

Image publisher : canonical

Image offer : 0001-com-ubuntu-server-focal

Image plan : 20_04-lts-gen2

VM generation : V2

Networking

Public IP address : -

Public address (IPv6) : -

Private IP address : 10.0.2.4

Private IP address (IPv6) : -

Virtual network/subnet : [proj-vnet/private](#)

DNS name : -

Figure 4: VM-2 with private subnet

- There was a challenge that was faced after pulling a docker image and installing Odoo. Though it worked smoothly for some time, the website stopped abruptly. Hence, we deployed a Rocky Linux virtual machine on VMware's vSphere and installed docker followed by Odoo.

```

10.173.17.60 (root)
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect...
49bc9f9e834e: Pull complete
aa2e8d88c284: Pull complete
d9865ba07823: Pull complete
4a1b94e634e1: Pull complete
0807597a062e: Pull complete
e1f55bc8c4c3: Pull complete
d3e4a1deb082: Pull complete
44d6adc1da8d: Pull complete
Digest: sha256:8a62ccf4e2772a337f47c73b928c99b65b50ff9848395f56baf7890547fd5d22
Status: Downloaded newer image for odoo:14
docker.io/library/odoo:14
[root@Rocky-Template ~]# sudo docker pull postgres
Using default tag: latest
latest: Pulling from library/postgres
648e6a0df75a: Pull complete
f715c8c55756: Pull complete
b11a1dc32c8c: Pull complete
f29e8ba9d17c: Pull complete
78af88a9afb8: Pull complete
b74279c180d9: Pull complete
6e3e5bf64fd2: Pull complete
b62a2c2d2ce5: Pull complete
eba91ca3c7a3: Pull complete
d4a24cdf2433: Pull complete
b20f8a8df5dc: Pull complete
e0731da084c3: Pull complete
0361da6a228e: Pull complete
Digest: sha256:8775adb39f0db45cf4c3601380312ee5e9c4f53af0f89b7dc5cd4c9a78e4e8
Status: Downloaded newer image for postgres:latest
docker.io/library/postgres:latest
[root@Rocky-Template ~]# sudo docker run -d -v odoo-db:/var/lib/postgresql/data -e POSTGRES_USER=odoo -e POSTGRES_PASSWORD=odoo -e POSTGRES_DB=postgres --name
db postgres
b4d1516c8387437c1046d771dbf7fc72abedc4b741c1bb398aee164071b17cca
[root@Rocky-Template ~]# docker run -v odoo-data:/var/lib/odoo -d -p 8069:8069 --name odoo --link db:db -t odoo:14
40410062ef3e6d2acbd0ee5ccac1ee7e7316a1339d92474bfce6a1e8bbeccce

```

Figure 5: Odoo installation

5. A Postgres database server was installed in the proj-vm-2. The virtual machine will be accessed through Azure Bastion since it has a private subnet.

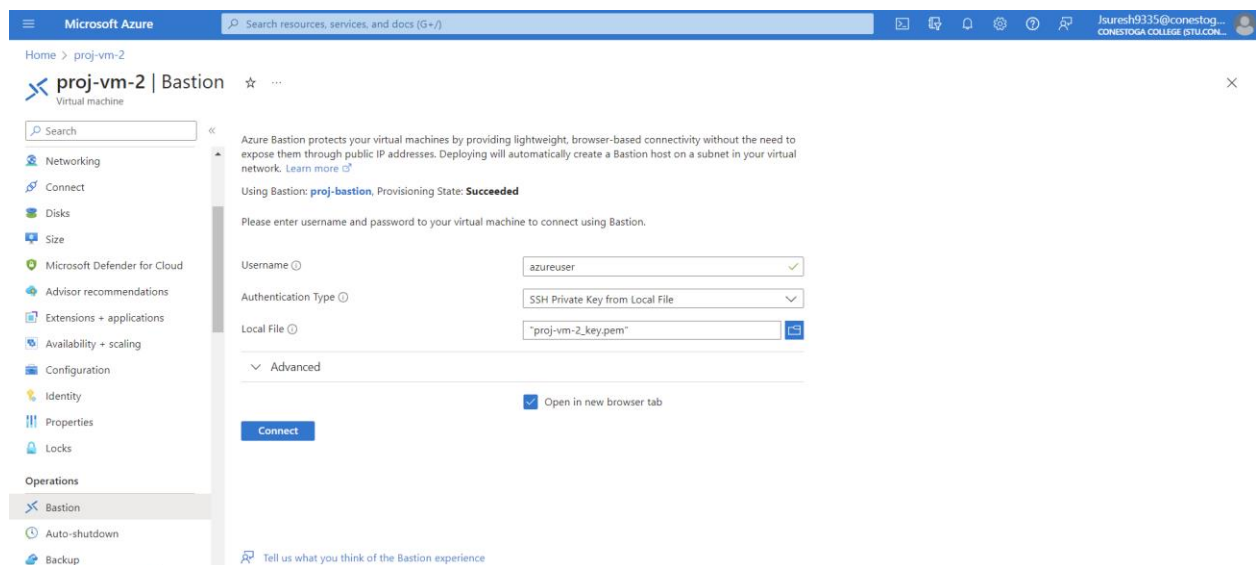


Figure 6: Azure Bastion

6. All the resources are created under East-US region. We can have multiple availability zones under the same region for handling the load when there is a huge traffic. If the entire region collapses, we can make use of West-US region, which has its availability zones.
7. For Monitoring the created virtual machines, we use Azure Monitoring. We can examine metrics such as Available memory bytes, disk read and write, and inbound and outbound flows. We have enabled Azure Monitoring for proj-vm-1.

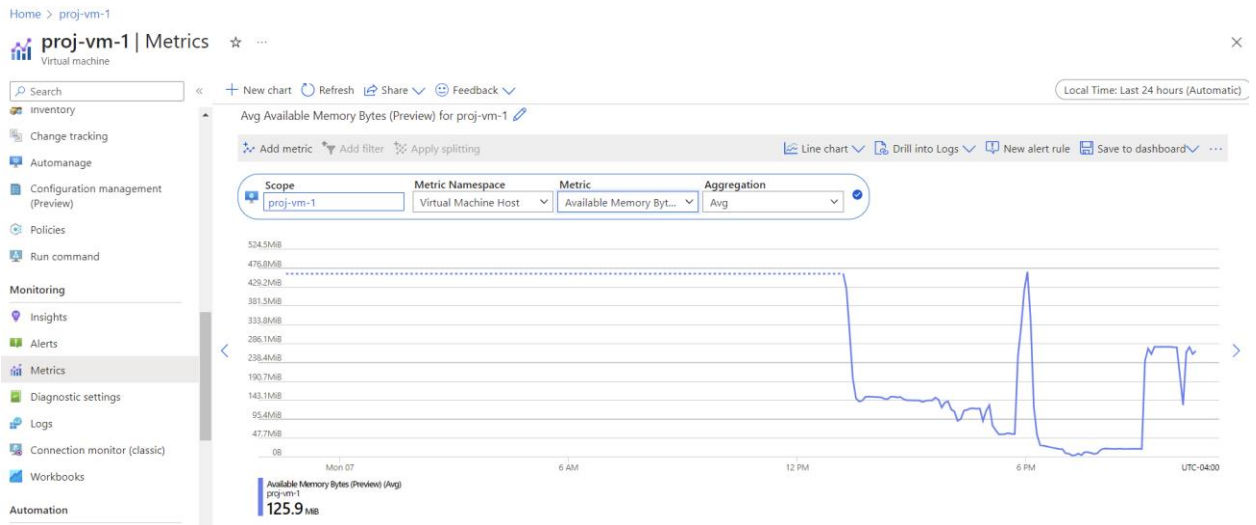


Figure 7: Available Memory Bytes

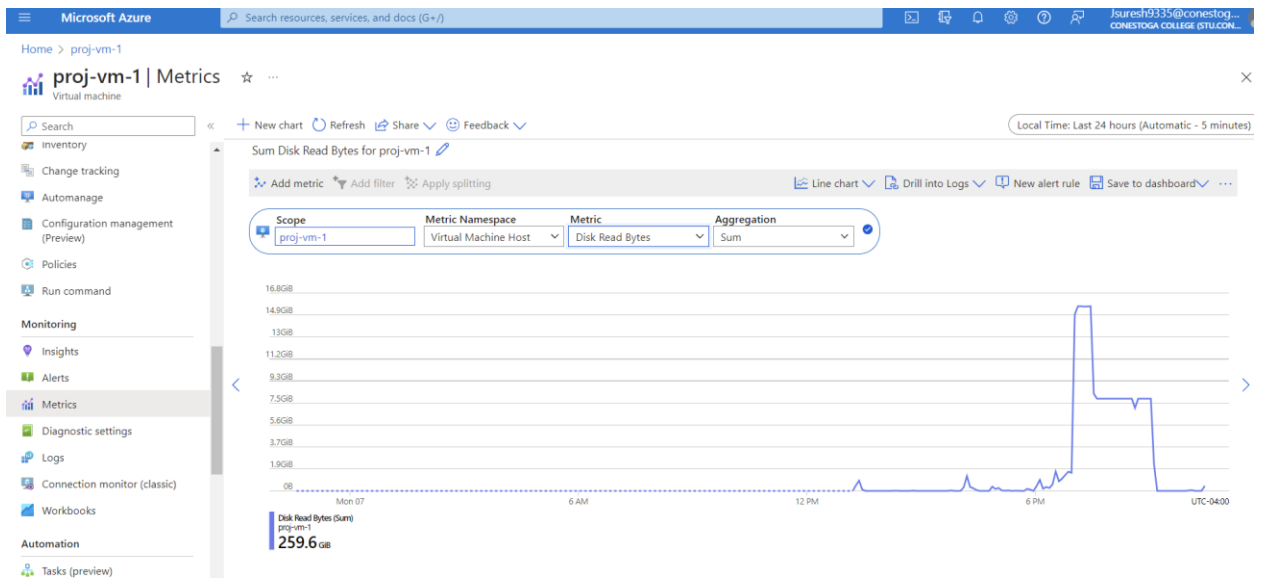


Figure 8: Disk Read Bytes

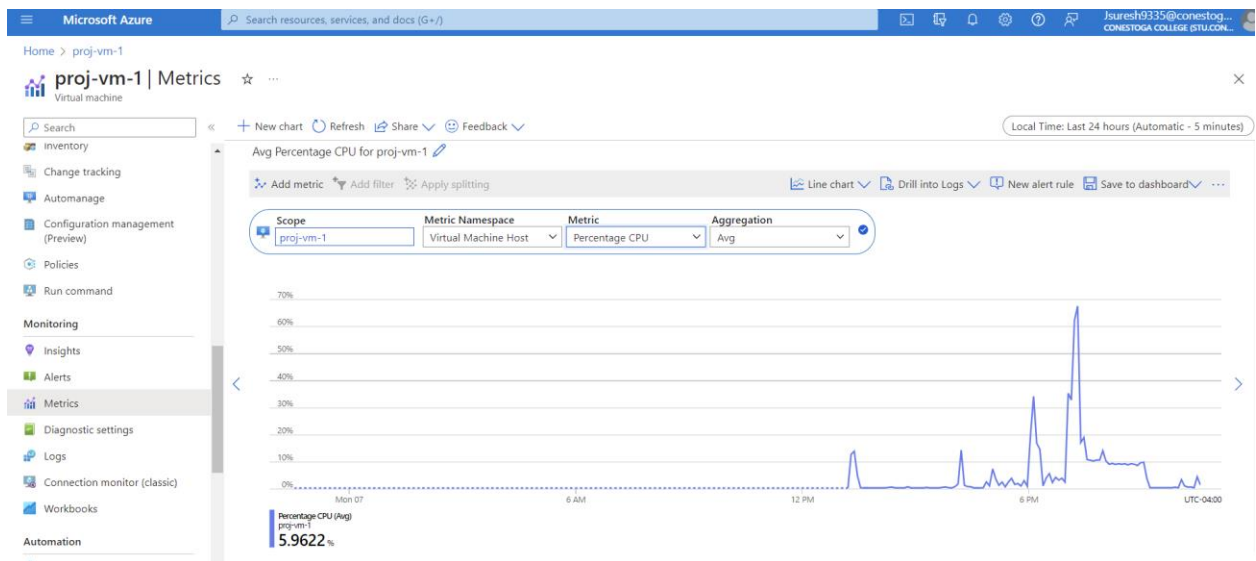


Figure 9: CPU Percentage

8. The website of Infinity Premium Sports company looks as per the below screenshots.

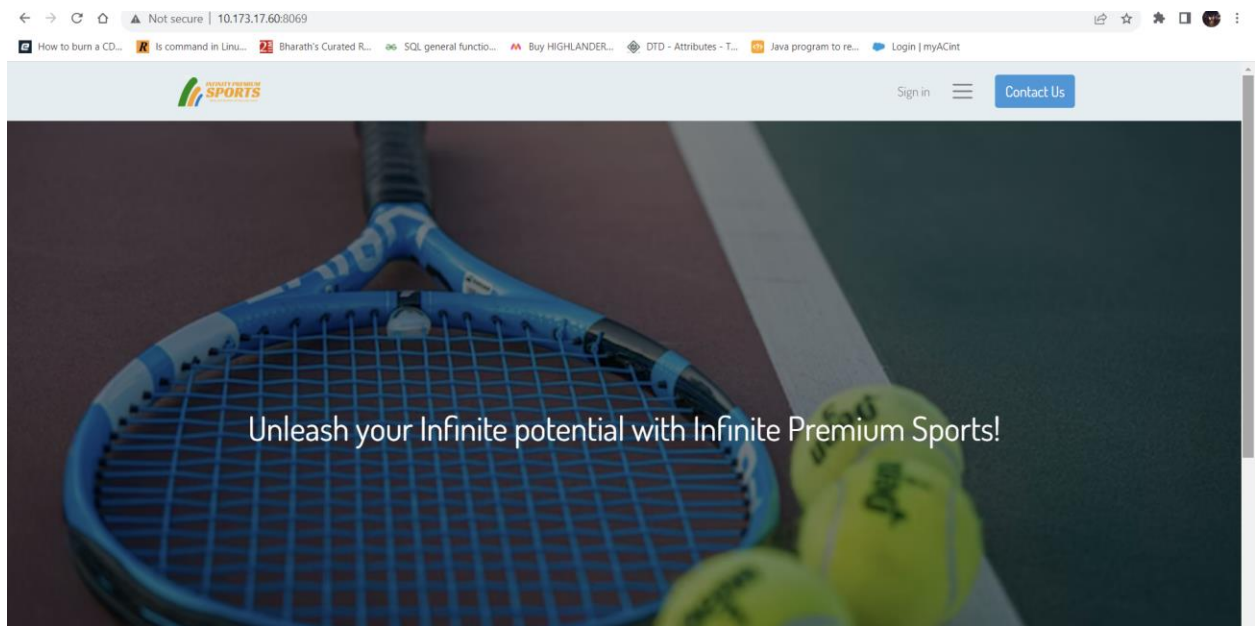


Figure 10: Home Page

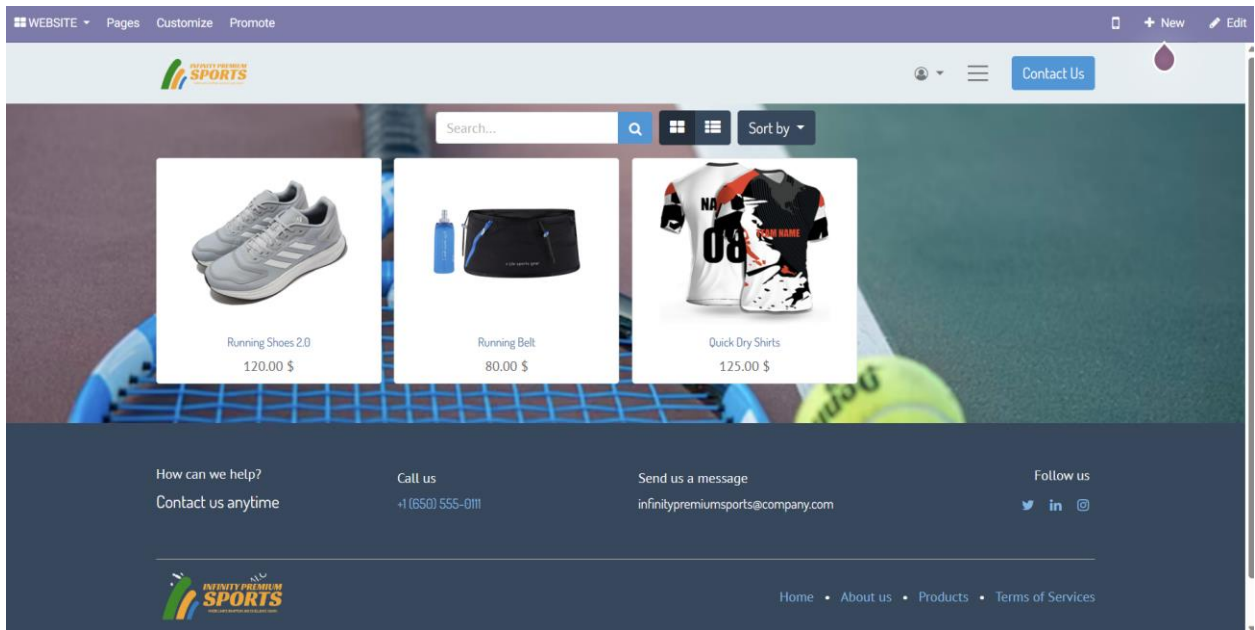


Figure 11: Products Section

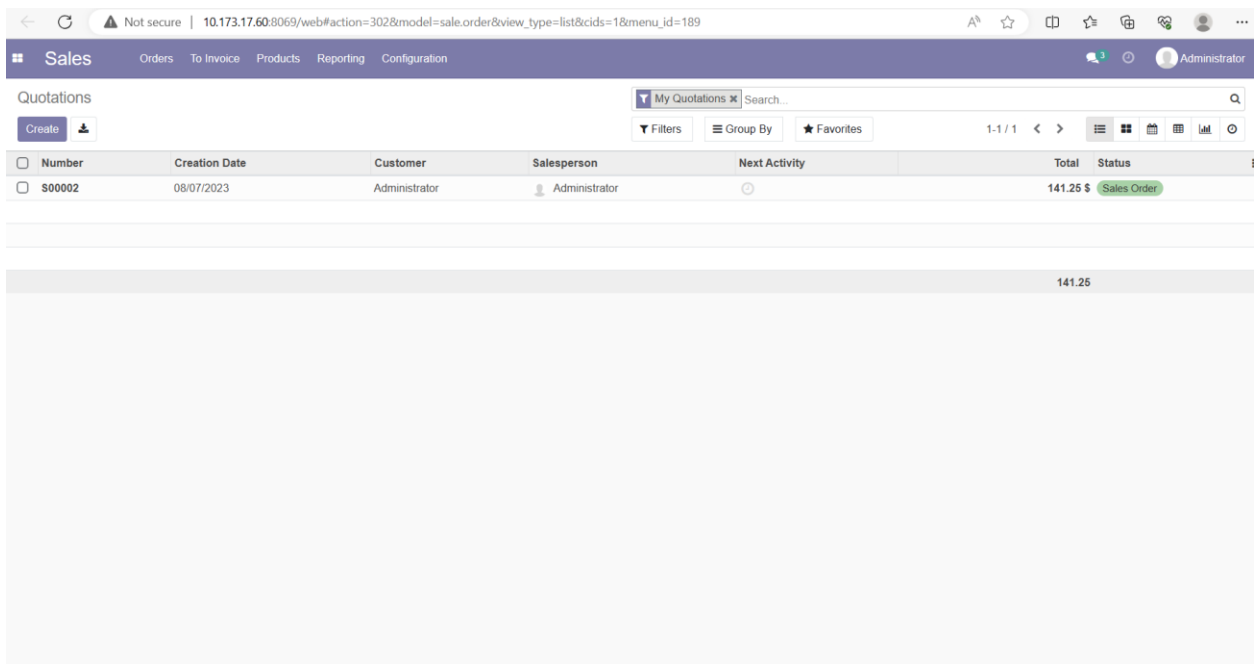


Figure 12: Sales Quotations

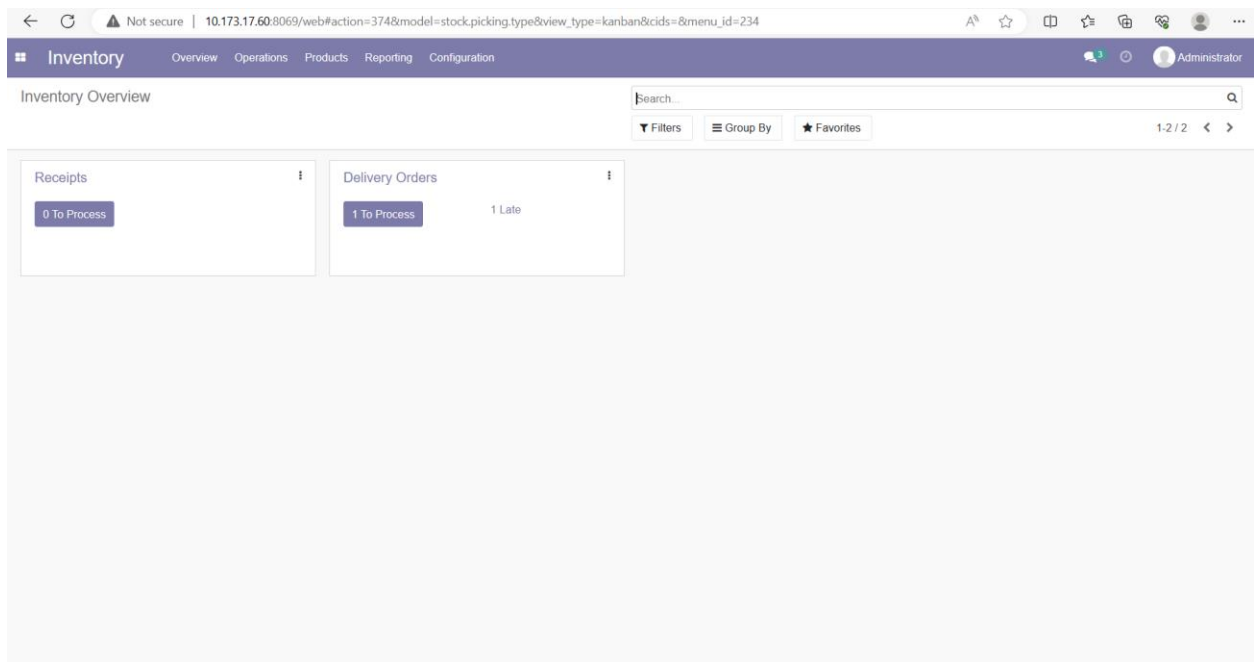


Figure 13: Inventory

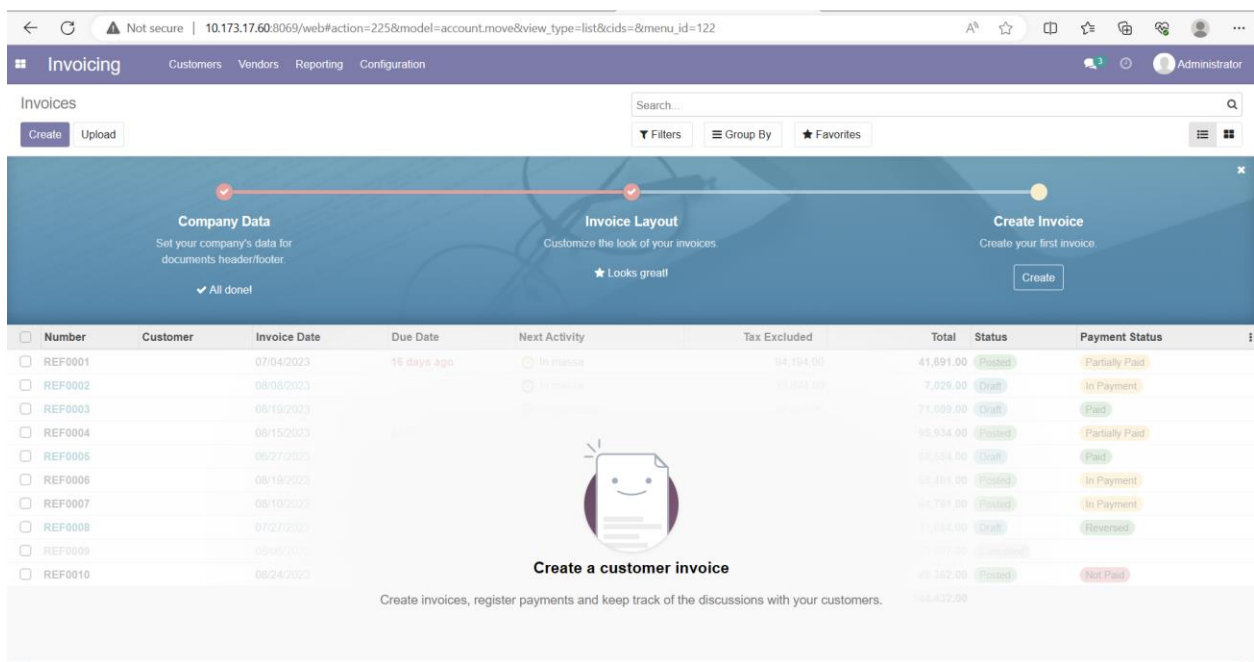


Figure 14: Invoices

Conclusion

Float Tech company recommends Azure as the cloud solution provider for Infinity Sports' needs.

After Migrating to the cloud, the company benefitted and improved its business by offering services that were above and beyond the expectations of its customers. It would also provide more opportunities for the company to expand its research and innovation.

References

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