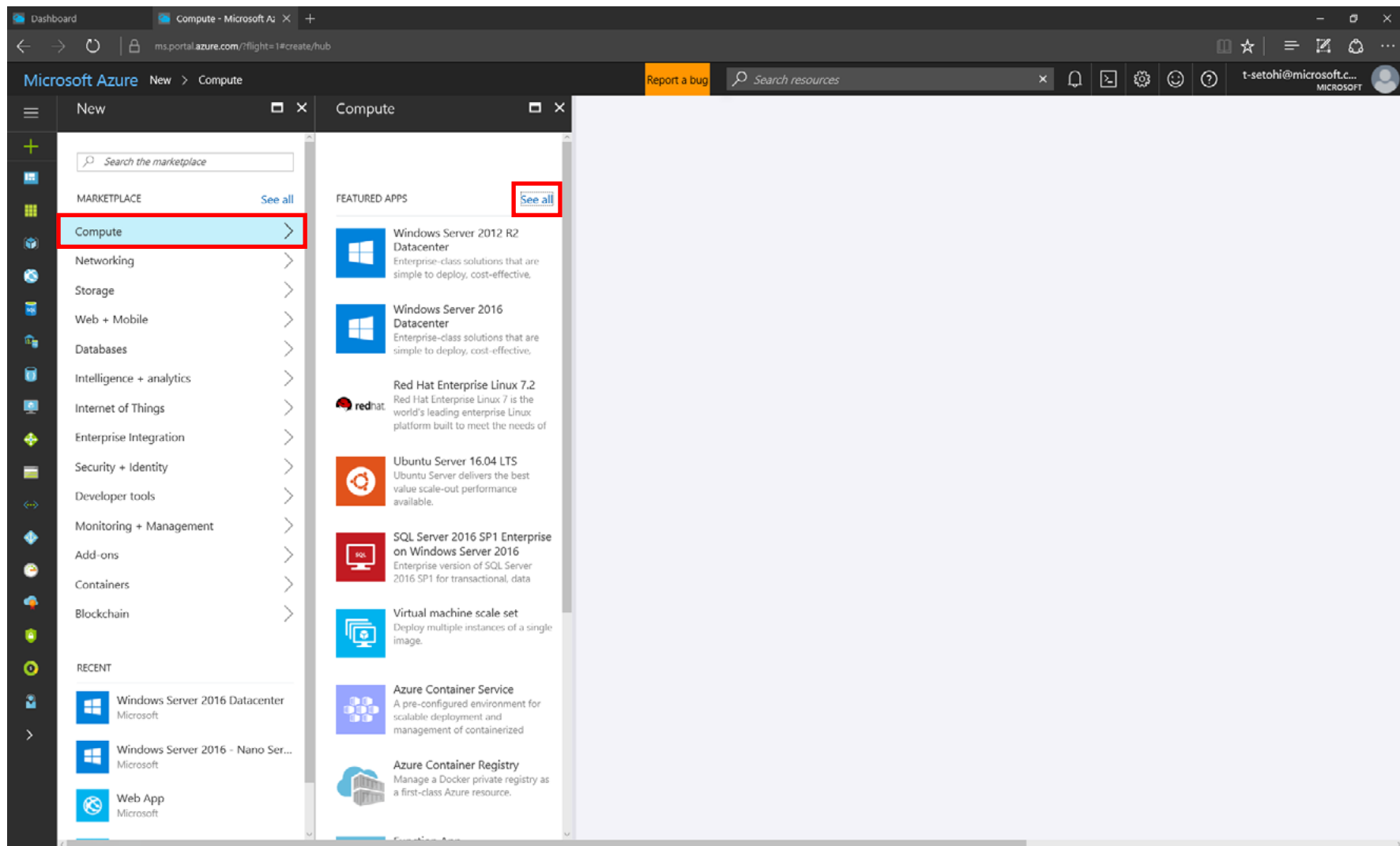
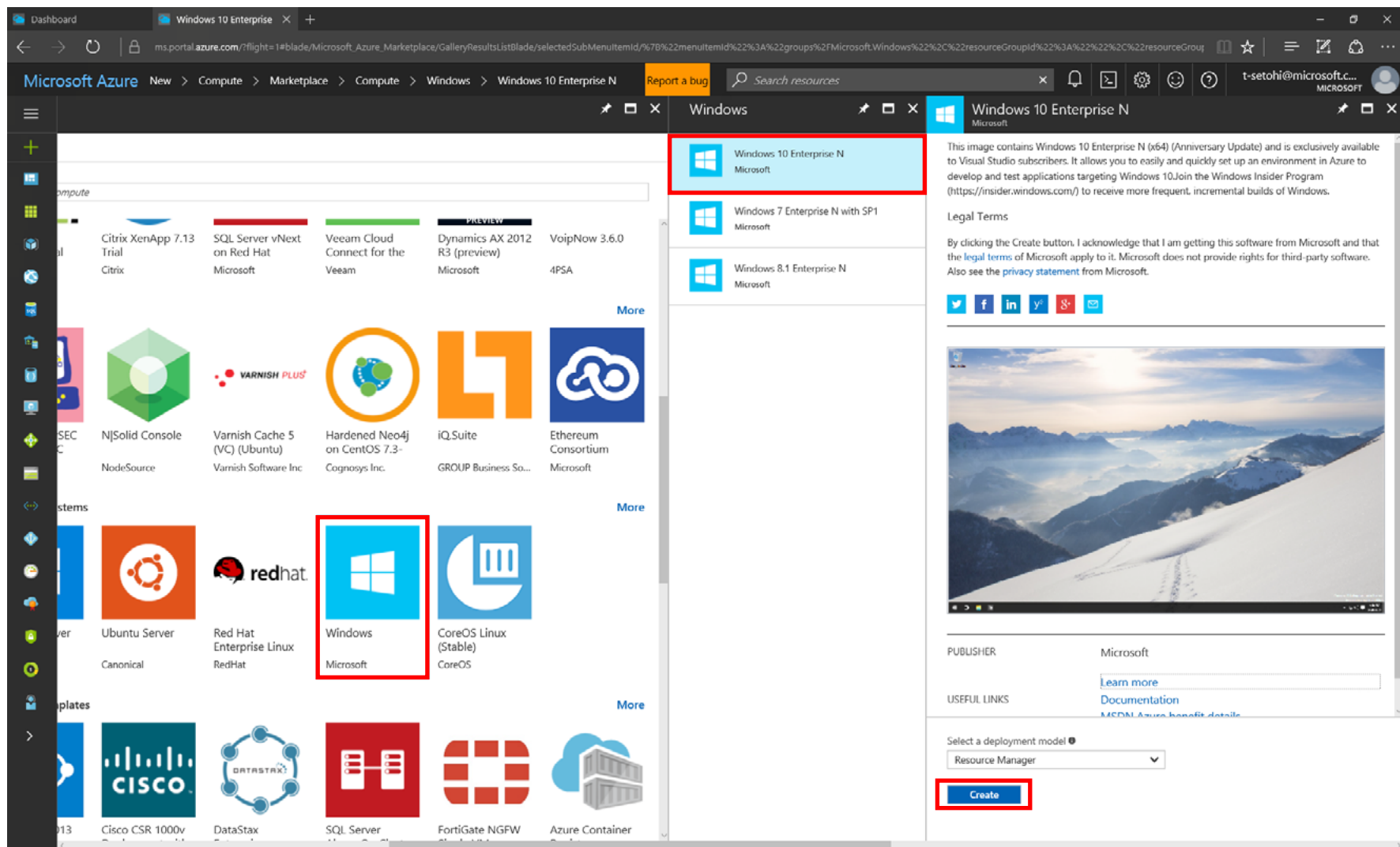


1. This is the dashboard you'll see once you log into Azure. Click on "**New**".



2. Click on **"Compute"**, followed by **"See all"**.



3. Scroll down to the *Operating Systems* section and select *Windows*.
Select *Windows 10 Enterprise N* and click on "**Create**".

Dashboard Basics - Microsoft Azure

ms.portal.azure.com/?flight=1#create/Microsoft.WindowsServer2016NanoServer-ARM

Microsoft Azure Windows Server Windows Server 2016 - Nano Server Create virtual machine Basics Report a bug Search resources

Create virtual machine Basics

- 1 Basics
Configure basic settings
- 2 Size
Choose virtual machine size
- 3 Settings
Configure optional features
- 4 Summary
Windows Server 2016 - Nano S...

* Name
SharingService ✓

VM disk type
HDD ▼

* User name
SharingService ✓

* Password
[masked] ✓

* Confirm password
[masked] ✓

Subscription
[selected] ▼

* Resource group
☒ Create new ☐ Use existing
SharingServiceResourceGroup ✓

Location
West US 2 ▼

OK

4. Configure the basic settings.

Select **HDD** as the VM disk type, and choose a user name and password.

These credentials will be used to log into the VM.

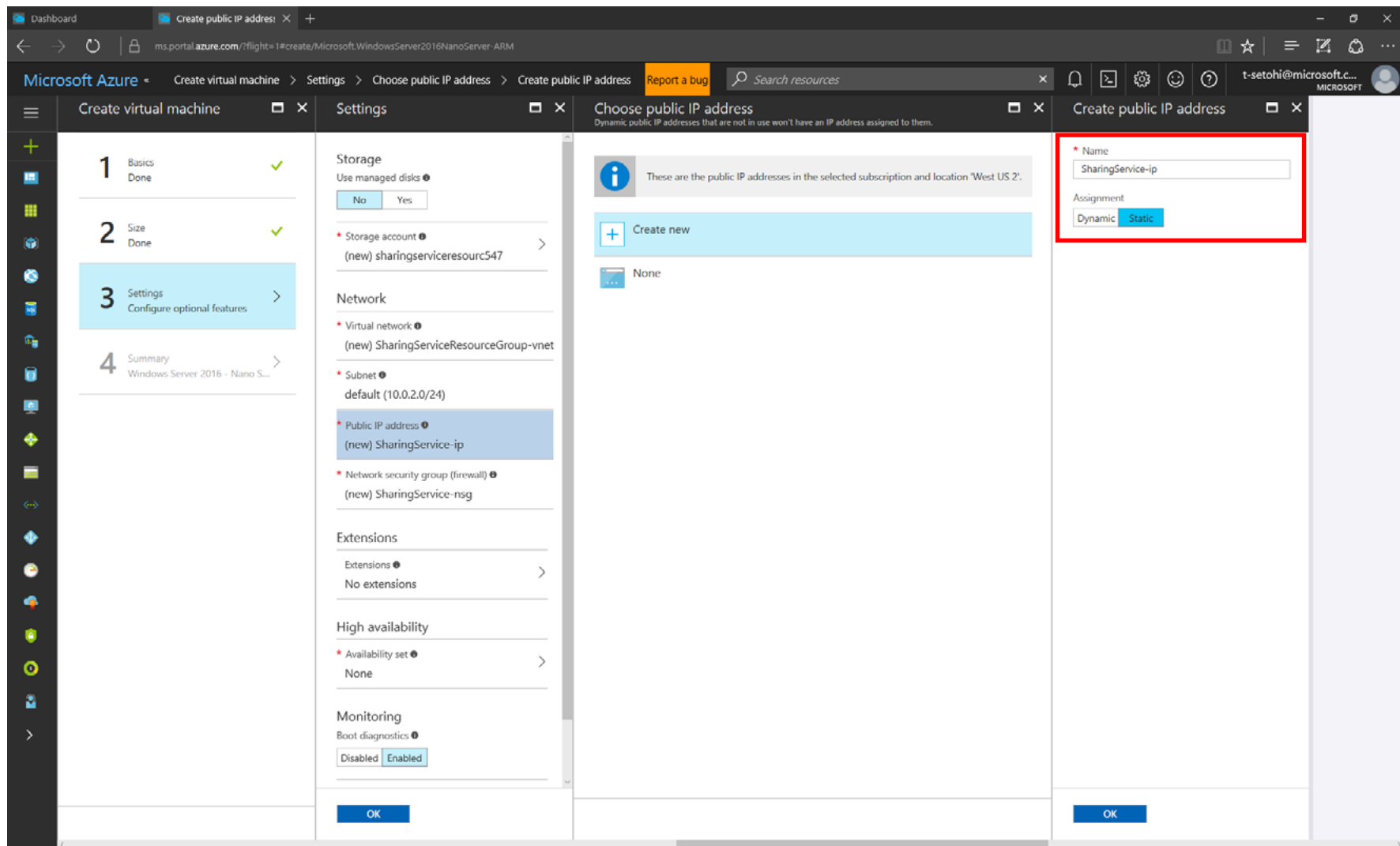
Your subscription should be chosen already, and you should create a new resource group.

Choose one of the **Canadian locations** as the location.

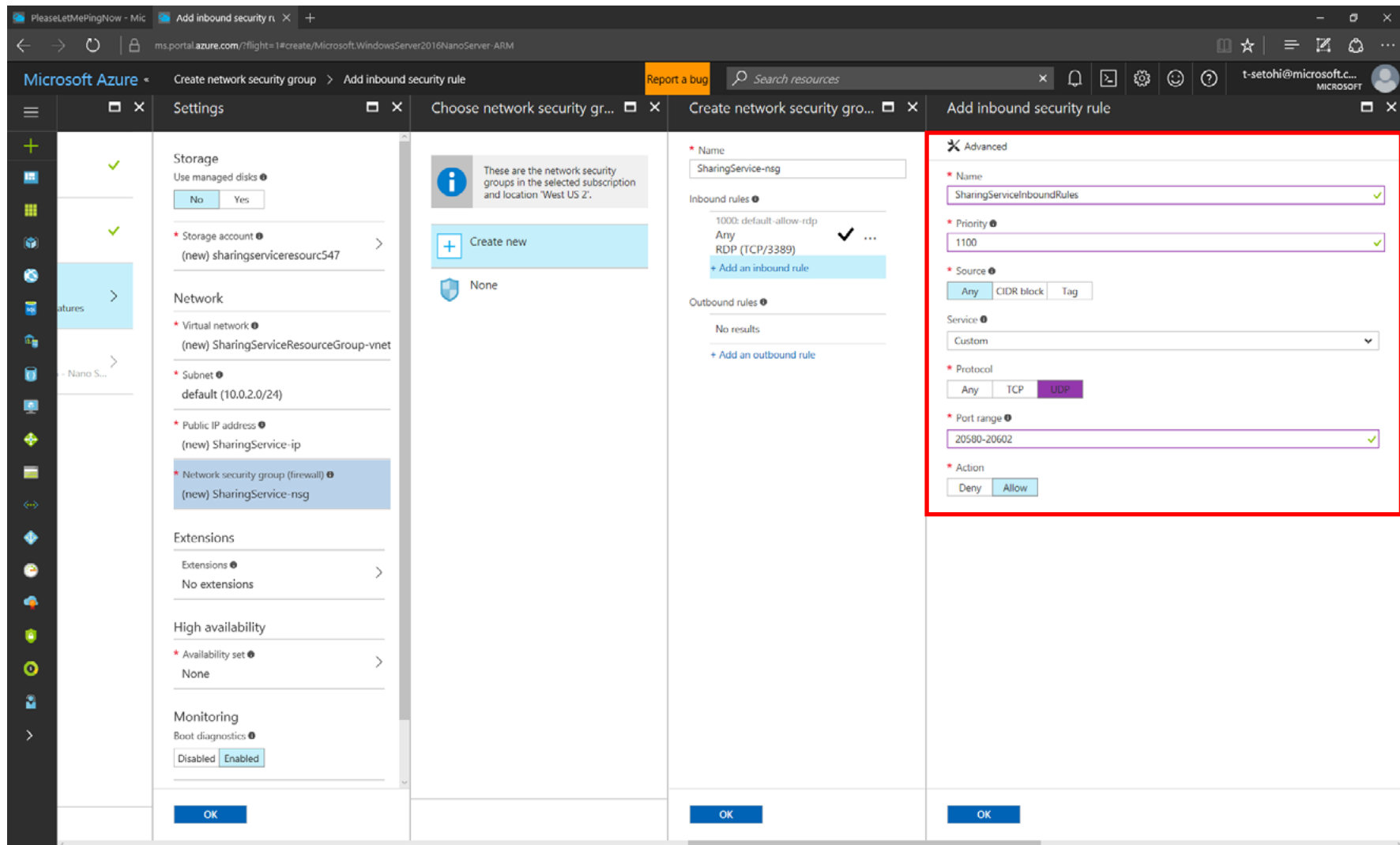
The screenshot shows the 'Choose a size' page in the Microsoft Azure portal. The page is titled 'Choose a size' and 'Browse the available sizes and their features'. It displays a grid of VM sizes with their respective costs and features. The A0 Basic size is highlighted with a red box.

Size	Cores	Memory	Data disks	Max IOPS	Estimated Price (USD/Month)
A7 Standard	8	56 GB	16	16x500	506.66
A0 Basic	1	0.75 GB	1	1x300	223.20
A1 Basic	1	1.75 GB	2	2x300	446.40
A2 Basic	2	3.5 GB	4	4x300	892.80
A3 Basic	4	7 GB	8	8x300	13.39
A4 Basic	8	14 GB	16	16x300	23.81
A5 Basic	16	28 GB	32	32x300	81.84
A6 Basic	32	56 GB	64	64x300	220.22
A7 Basic	64	112 GB	128	128x300	440.45

5. Now we need to choose a VM size. This determines the speed and power of the VM. For the purposes of the sharing service, the basic size is fine. Select **A0**, the cheapest size. If you later find that the VM is too slow to even start the sharing service, you can change the size to A1.

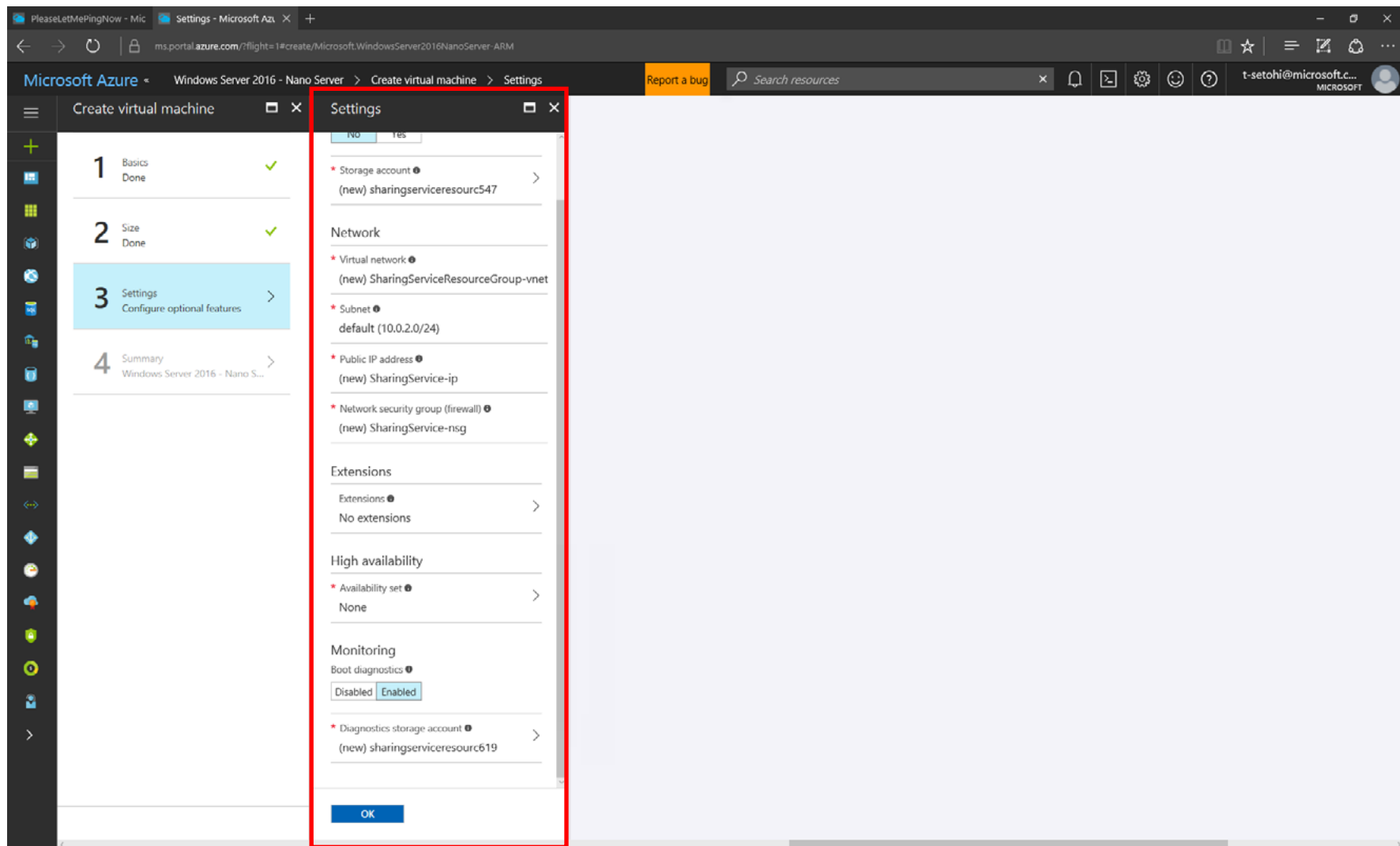


6. We must configure the IP of the device. The IP address will be used to connect the project to the sharing service. Be sure to create a new IP that is static.



7. We need to let our devices communicate through the VM. This requires opening ports on the VM specific to the sharing service.

Create a new inbound rule for the UDP protocol on **ports 20580-20602**. Opening these ports allows for 20 unique concurrent sessions. If more need to be added later on, decrease the lower bound of the port range (e.g. go down to 20570).



8. Confirm that the settings are correct and click **"OK"**.

Microsoft Azure - Windows Server 2016 - Nano Server > Create virtual machine > Summary

1 Basics Done ✓

2 Size Done ✓

3 Settings Done ✓

4 Summary Windows Server 2016 - Nano S... >

Validation passed

Basics

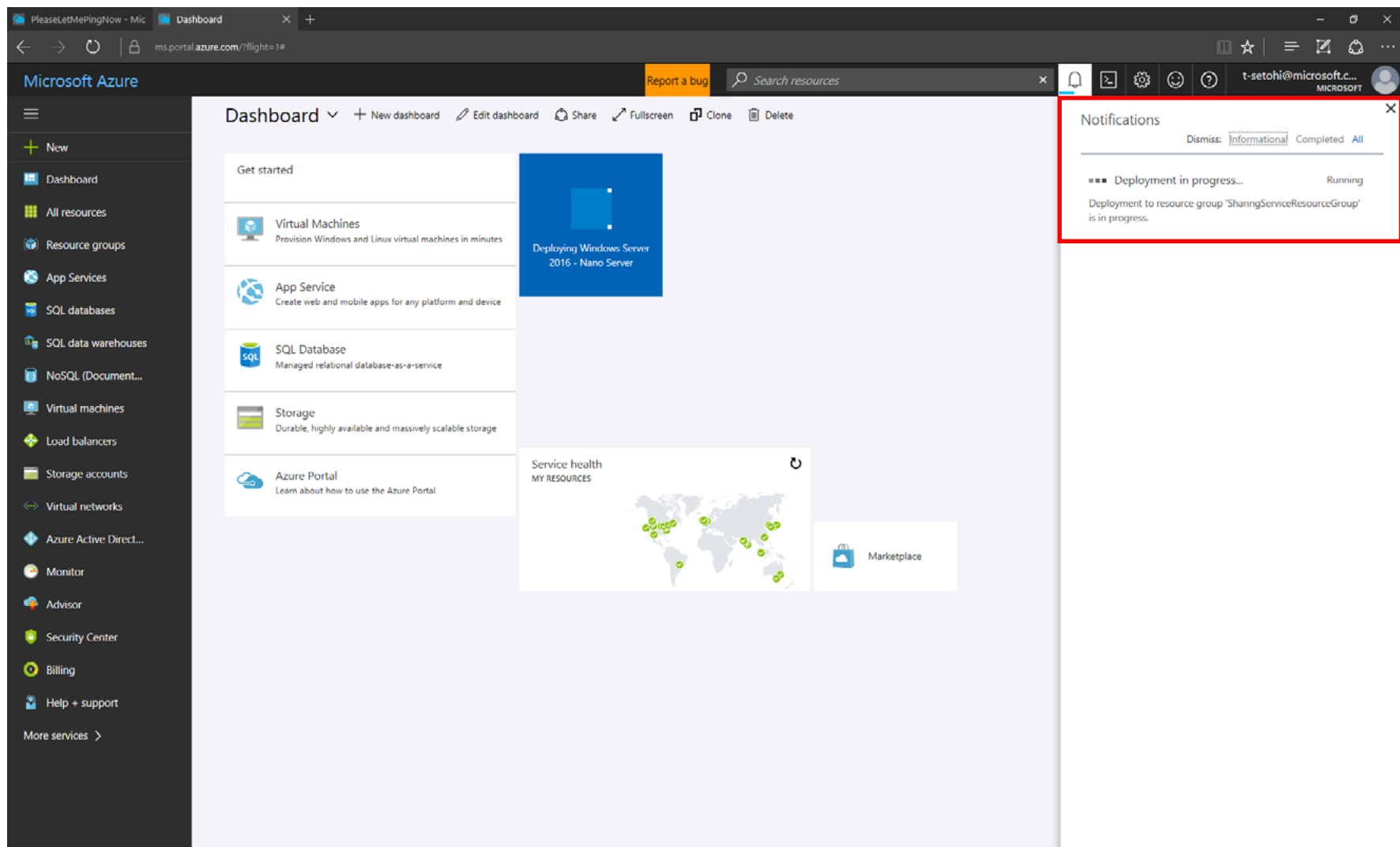
Subscription
Resource group (new) SharingServiceResourceGroup
Location West US 2

Settings

Computer name SharingService
Disk type HDD
User name SharingService
Size Basic A0
Storage account (new) sharingserviceresourc547
Managed No
Virtual network (new) SharingServiceResourceGroup-vnet
Subnet (new) default (10.0.2.0/24)
Public IP address (new) SharingService-ip
Network security group (firewall) (new) SharingService-nsg
Availability set None
Boot diagnostics Enabled
Diagnostics storage account (new) sharingserviceresourc619

OK download template and parameters

9. View the summary and click **"OK"**.



10. The VM will start deploying. It will take up to 10 minutes for the VM to deploy.

The screenshot displays the Microsoft Azure portal interface. The left-hand navigation pane is highlighted with a red rectangle and contains the following sections: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, SETTINGS (Availability set, Disks, Extensions, Network interfaces, Size, Backup, Properties, Locks), Automation script, SCHEDULES (Auto-shutdown), and MONITORING (Metrics, Alert rules, Diagnostics settings). The main content area shows the 'SharingService' virtual machine overview. At the top, there are buttons for 'Connect', 'Start', 'Restart', 'Stop', 'Move', 'Delete', and 'Refresh'. Below this, the 'Essentials' section provides key information: Resource group (SharingServiceResourceGroup), Status (Running), Location (West US 2), Subscription (b6870aa7-ee6a-409e-9ea4-5d8e5e0c0a06), Computer name (SharingService), Operating system (Windows), Size (Basic A0 (1 core, 0.75 GB memory)), Public IP address (52.175.251.39), and Virtual network/subnet (SharingServiceResourceGroup-vnet/default). A 'Show data for last' dropdown is set to '1 hour'. Three performance charts are displayed: 'CPU (average)' showing 0% usage, 'Network (total)' showing 0B in/out, and 'Disk bytes (total)' showing 0B read/write. A notification panel on the right indicates 'Deployments succeeded' at 11:38 AM, with a message stating 'Deployment to resource group 'SharingServiceResourceGroup' was successful.'

11. Once the VM is done deploying, you can select it in the *virtual machines* section to see an overview.

The screenshot shows the Microsoft Azure portal interface for a virtual machine named 'SharingService'. The 'Connect' button is highlighted with a red box. The public IP address, 52.175.251.39, is also highlighted with a red box. The page displays various metrics like CPU, Network, Disk bytes, and Disk operations/sec.

Microsoft Azure SharingService

Virtual machine

Search (Ctrl+J)

Connect Start Restart Stop Move Delete Refresh

Essentials

Resource group (change) SharingServiceResourceGroup

Status Running

Location West US 2

Subscription (change)

Subscription ID b6870aa7-ee6a-489e-9ea4-5d8e5e0c0a06

Computer name SharingService

Operating system Windows

Size Basic A0 (1 core, 0.75 GB memory)

Public IP address 52.175.251.39

Virtual network/subnet SharingServiceResourceGroup-vnet/default

View All

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

CPU (average)

Network (total)

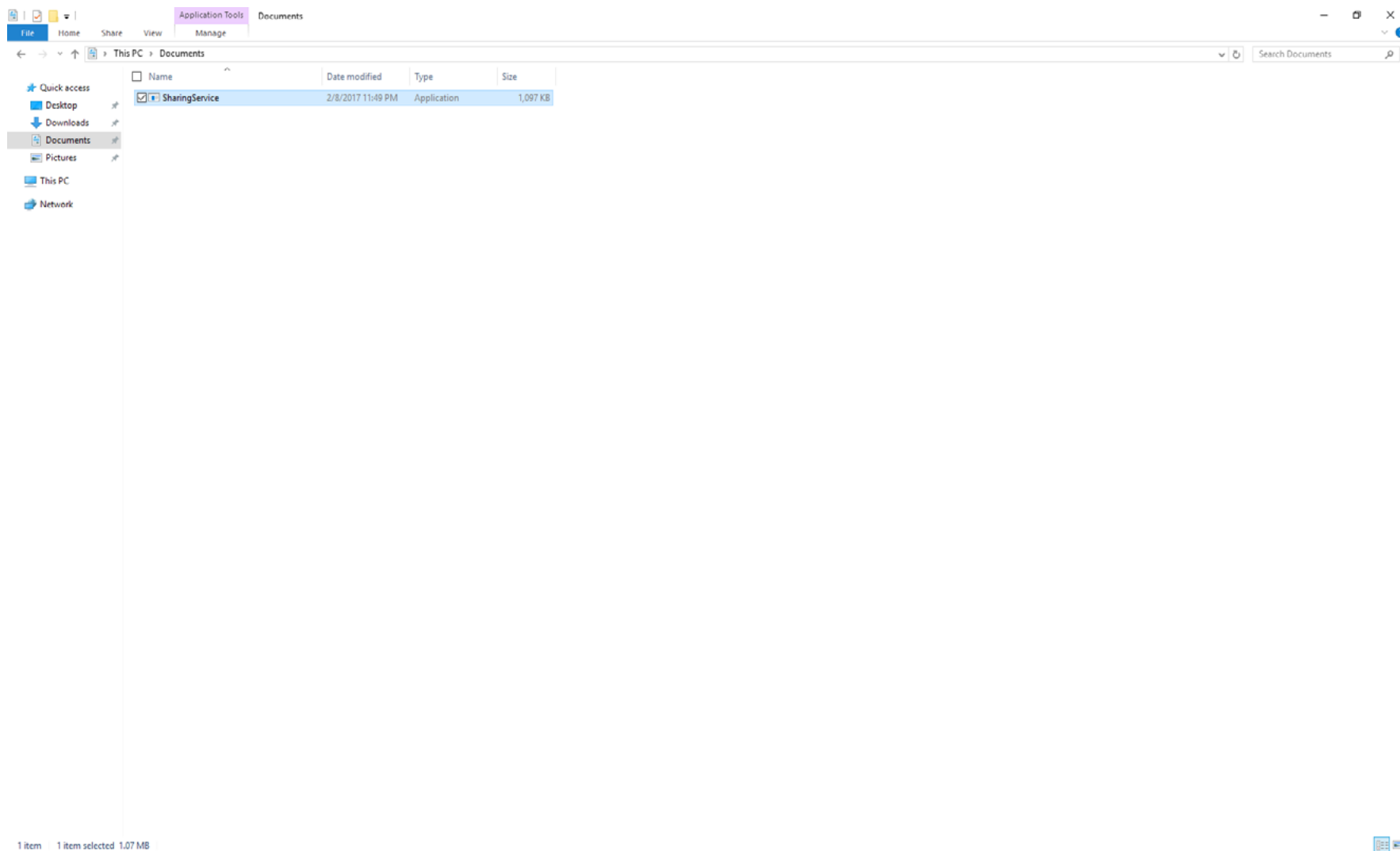
Disk bytes (total)

Disk operations/sec

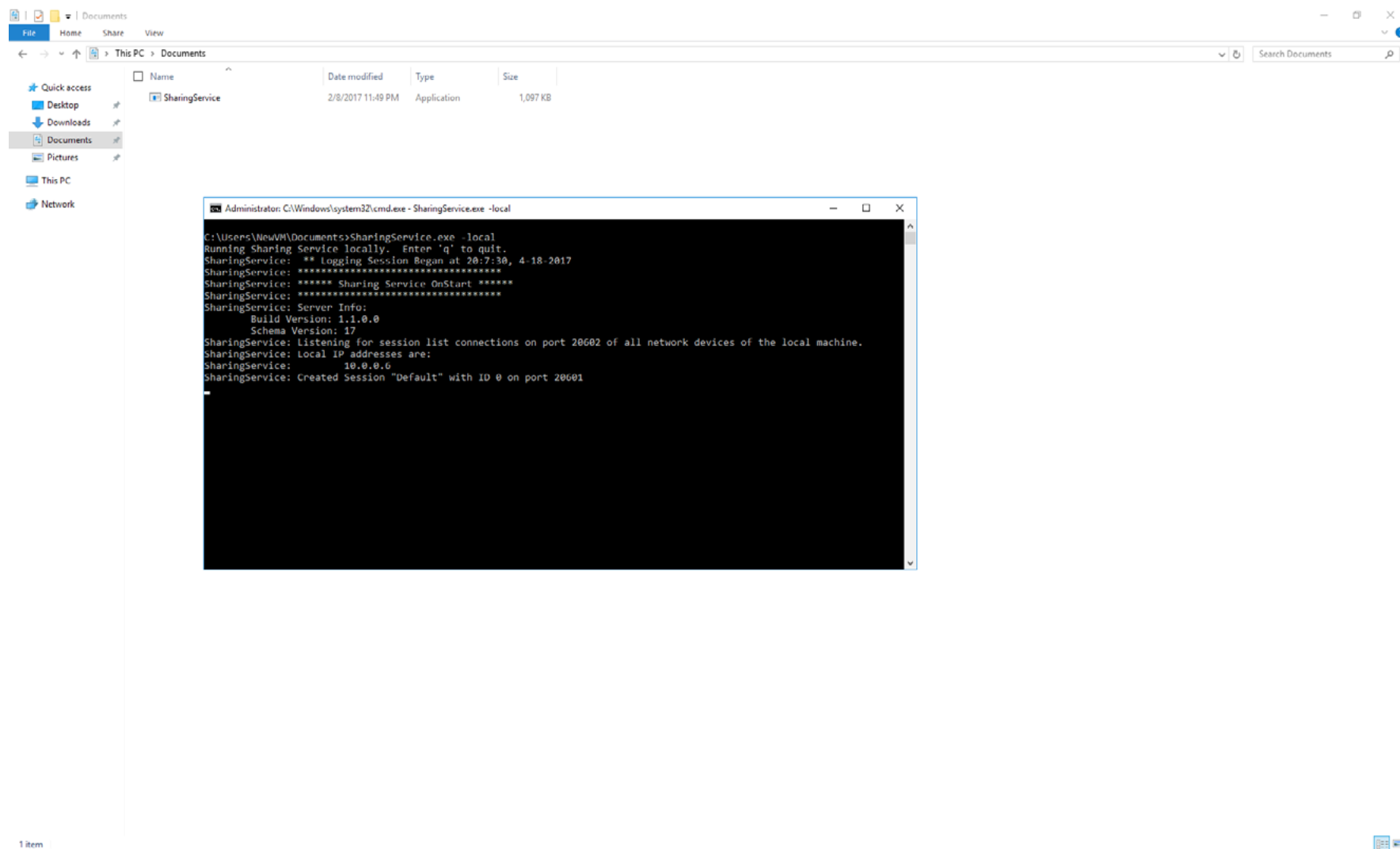
Check more metrics in Azure monitor

12. Take note of the **public IP address**, which is the IP that the project will use to connect to the sharing service.

Click on the "**Connect**" button to download the remote desktop connection file, and open it to connect to the VM. You will need to use the username and password that you selected in Step 4.



13. Once connected to the VM, it will take up to 10 minutes to load and bring you to its desktop. Files can be directly copied from your computer and pasted into the VM. Copy the **SharingService.exe** file and paste it into the VM.



14. Hold **shift** and **right-click** inside the folder. Select “**Open command window here**”. In the terminal that opens up, type “**SharingService.exe -local**” (without quotations). This will start the sharing service. Whenever someone creates a new session or joins a session, it will be shown in this terminal.

Misc.

The IP address must be entered into the Unity project using the Unity editor. The project must be rebuilt in Unity, must then be built in Visual Studio, and finally deployed onto the HoloLens.

If you notice that people are unable to connect to the sharing service, you can close the window and run the sharing service again (step 14). This has happened to us a few times and restarting the sharing service has occasionally fixed the problem.