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Assignment 11: Lab - Security for virtual networks

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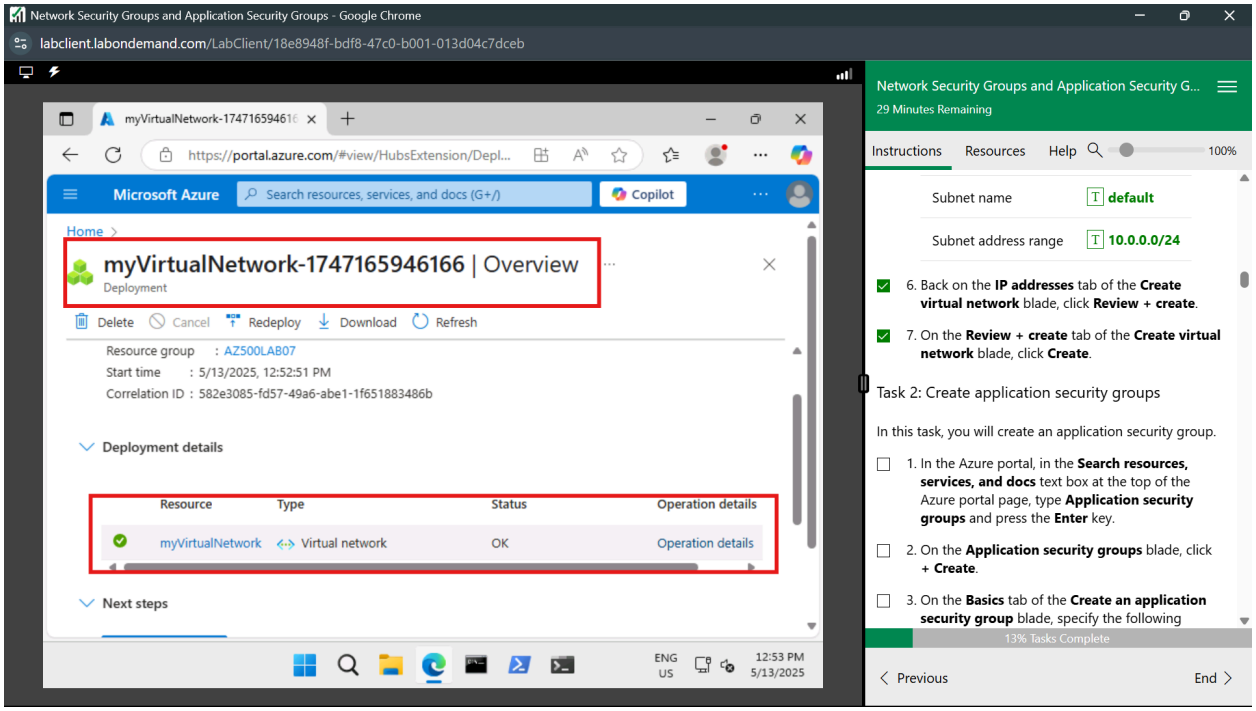
Introduction

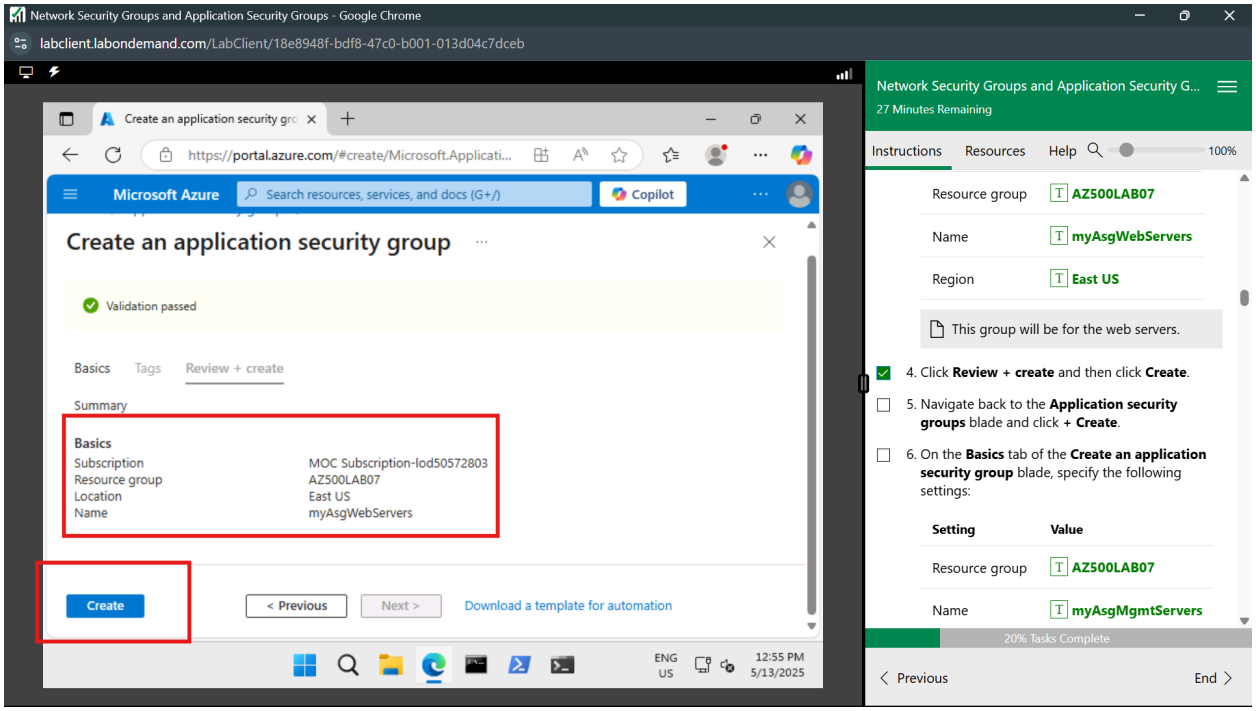
In this lab scenario, we will implement the network security capabilities such as Network Security Groups and Application Security Groups used in securing Azure Virtual Networks. We will use Network security group rules to control network access, while Application Security Groups to secure two groups of servers: web server and management servers.

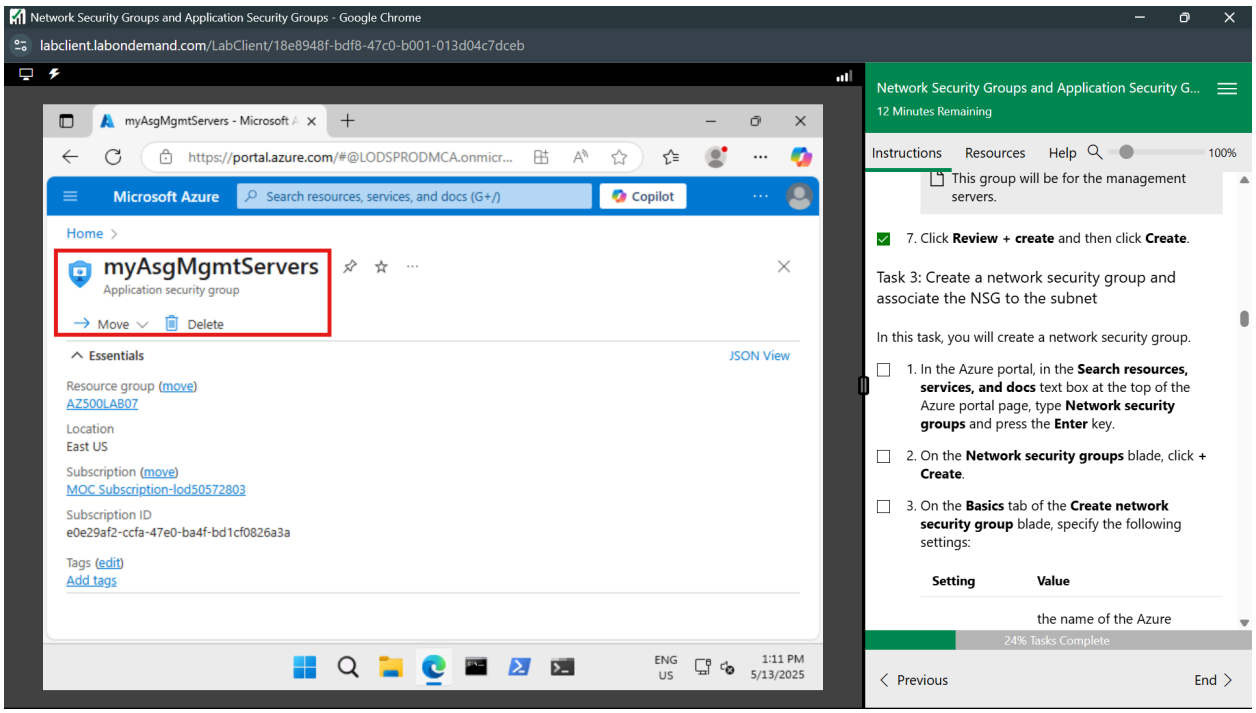
Create the virtual networking infrastructure

In this task, we will create a virtual network, two application security groups, and network security groups. We will then associate the network security groups with the virtual network subnet.

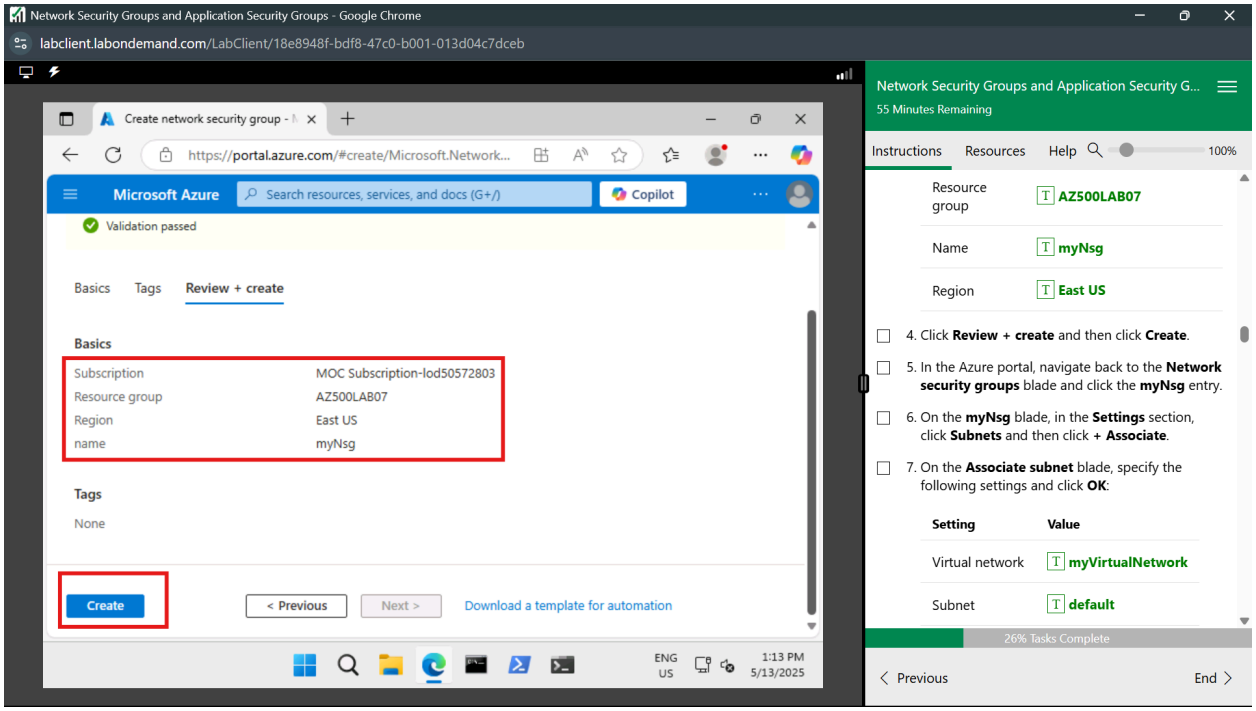


We then create the web server and management server ASGs

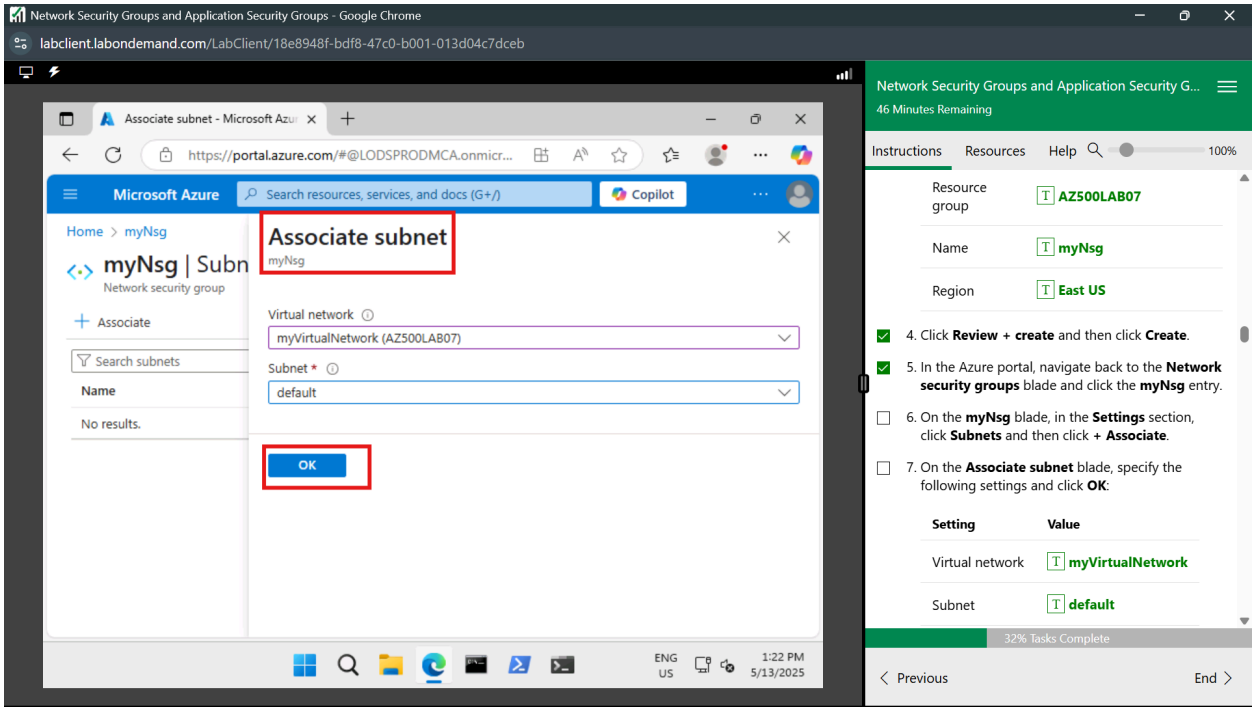




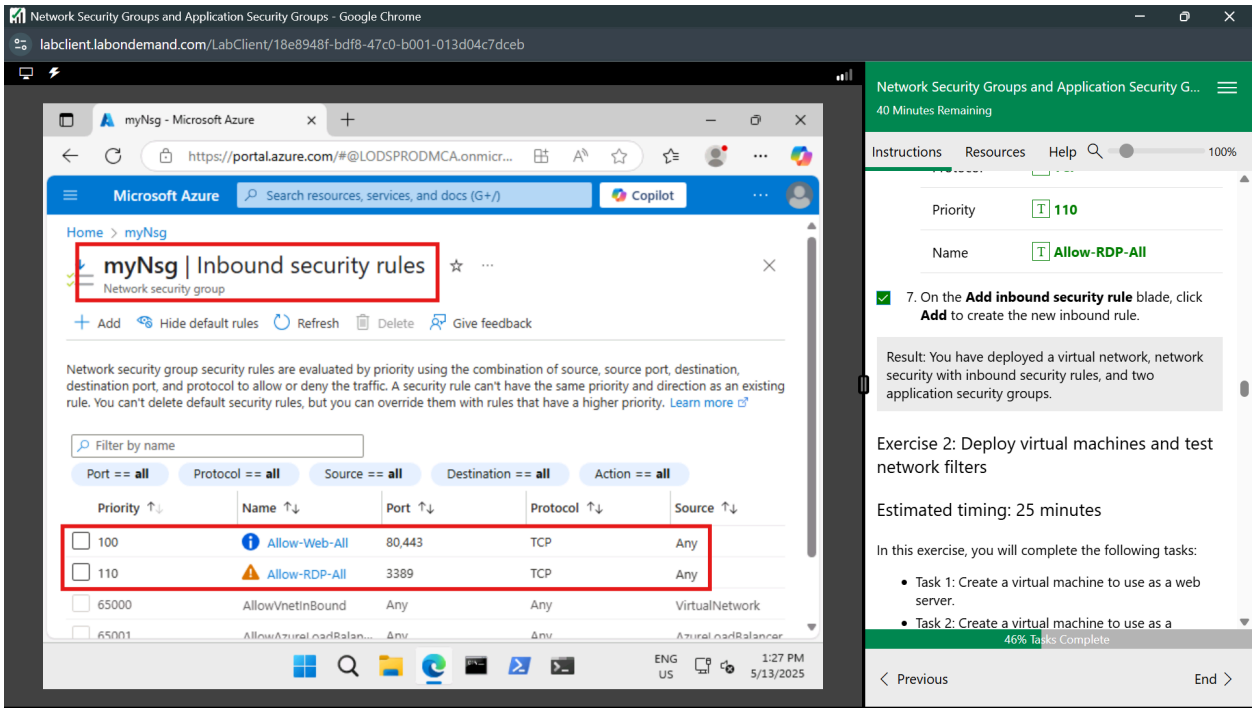
We create the NSG.



We associate the NSG created above to a subnet

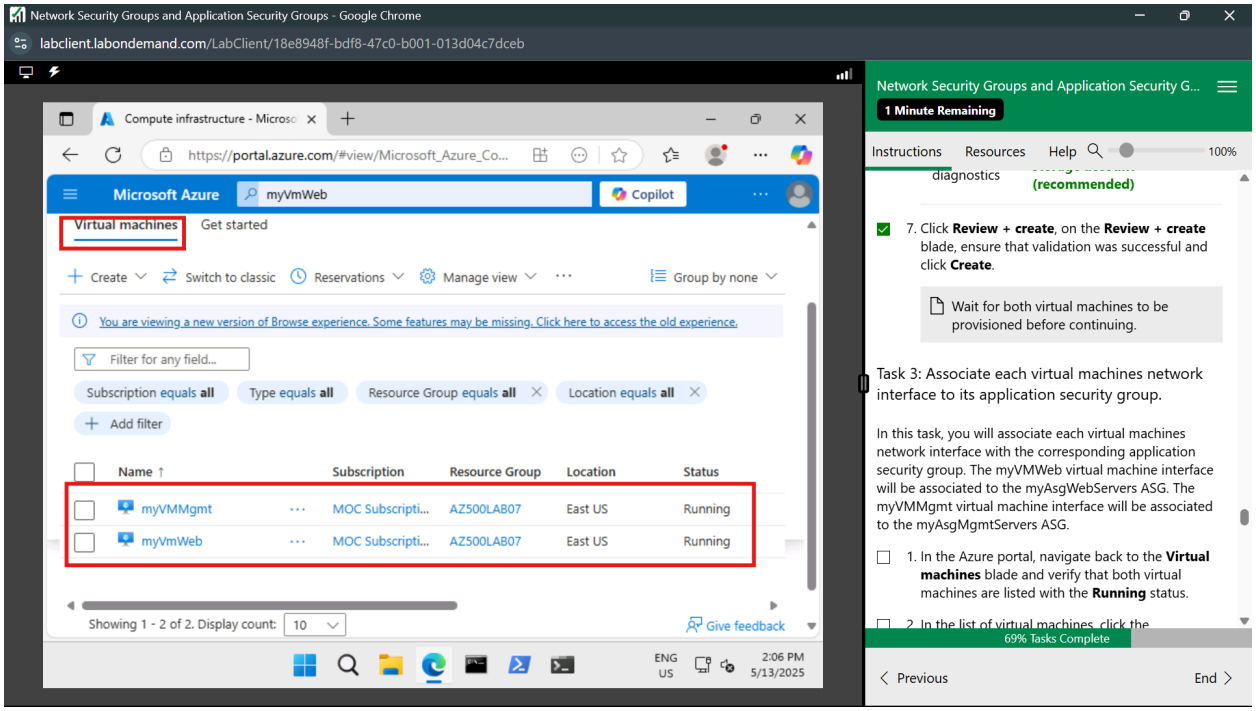


Inside our NSG, we create two inbound rule with management server and web server as their destinations on ports 80, and 443 for web server and 3389 for management server.

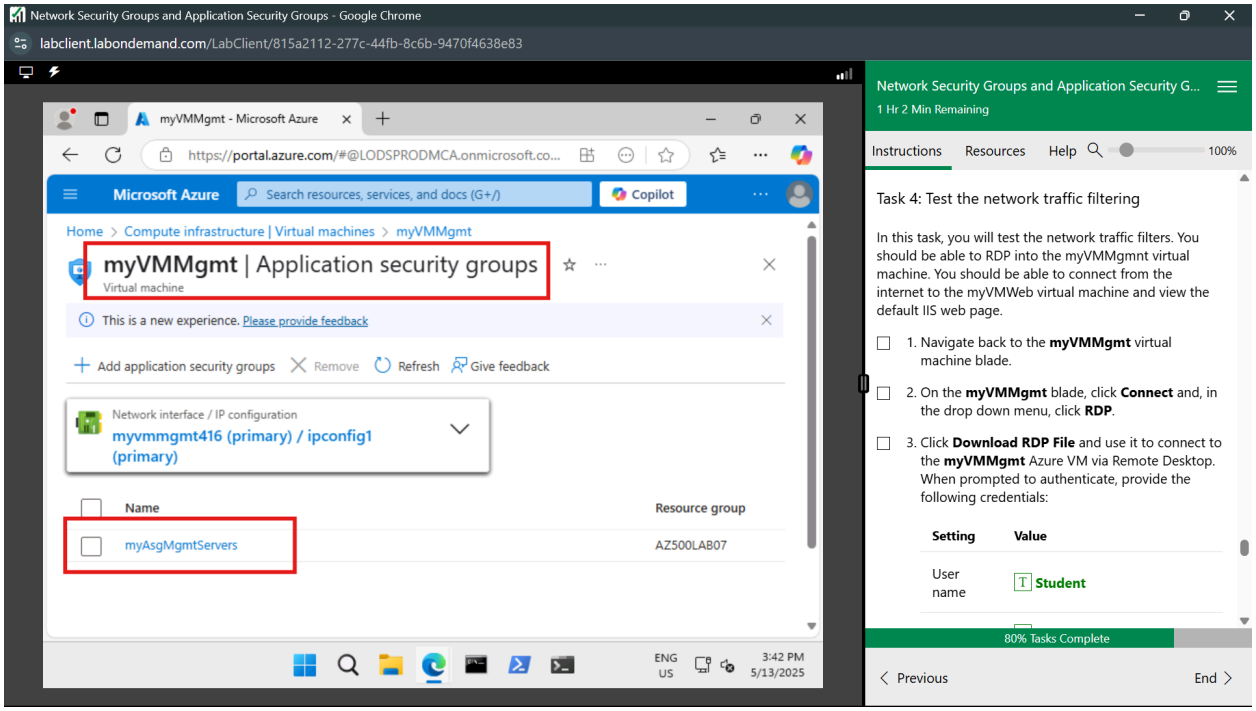


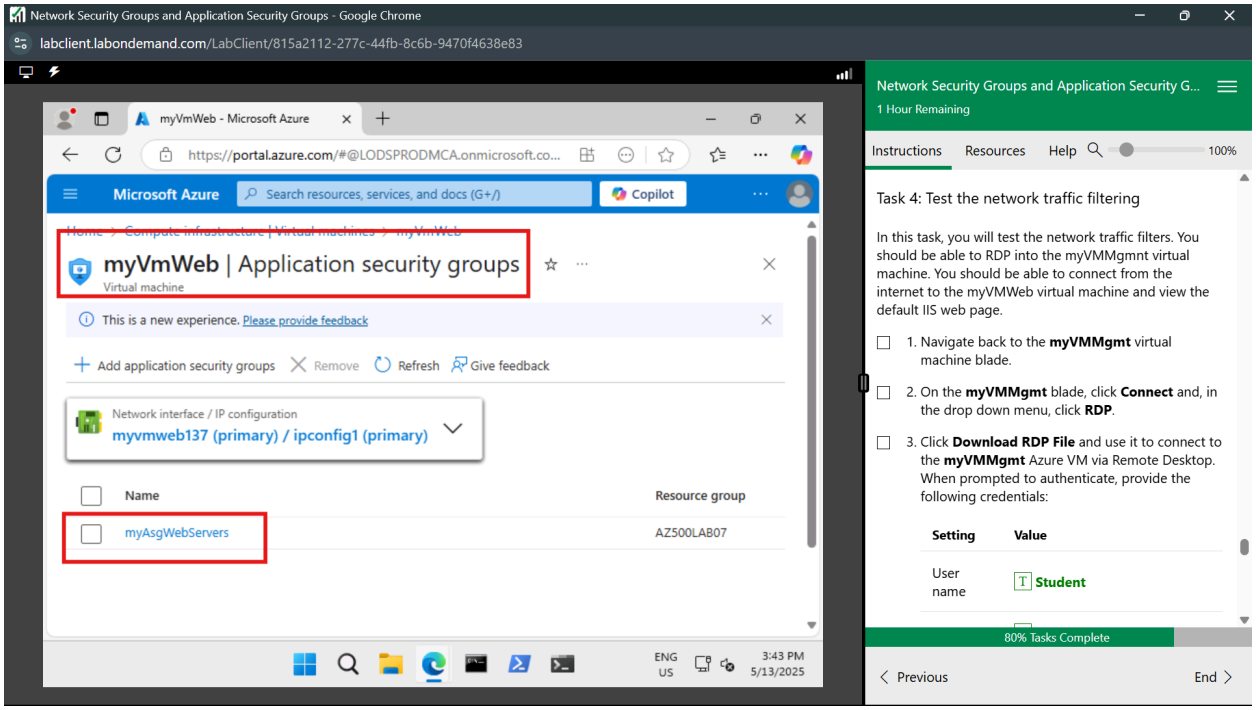
Deploy virtual machines and test network filters

In this task, we will spin up two VMs: a web server and a management server, and then associate each machine's network interface with its application security.



Associating the VMs with respective ASGs

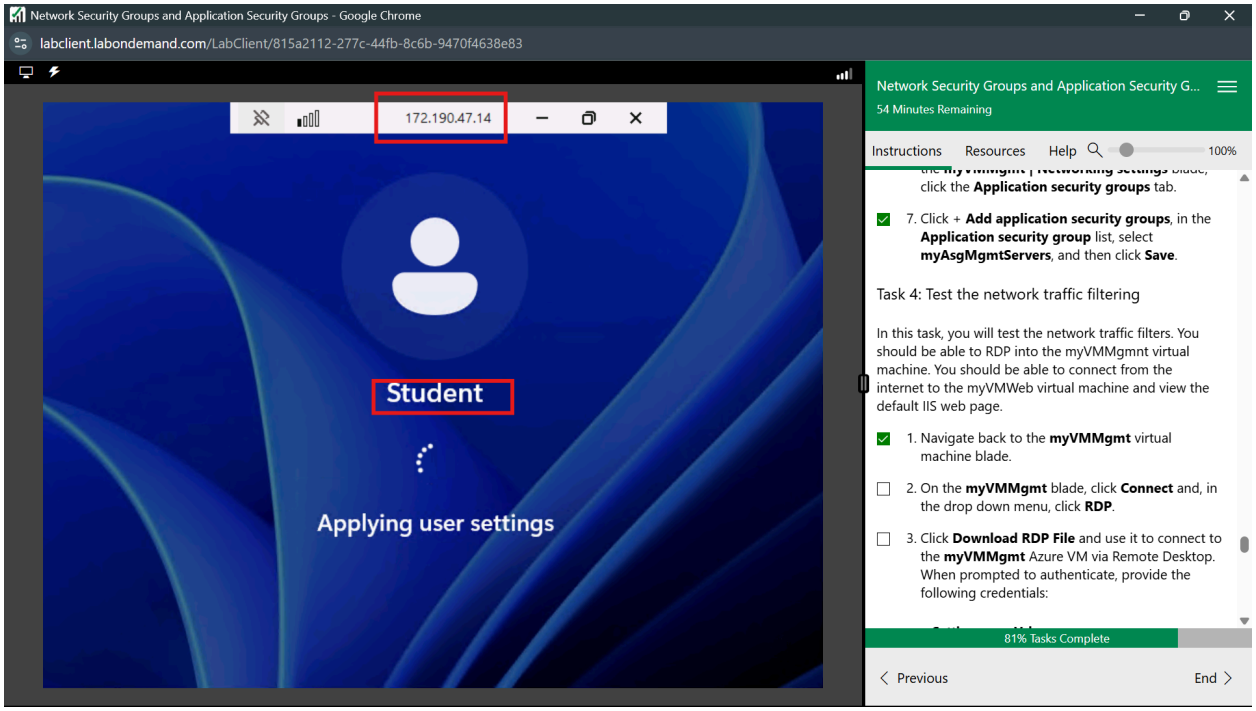




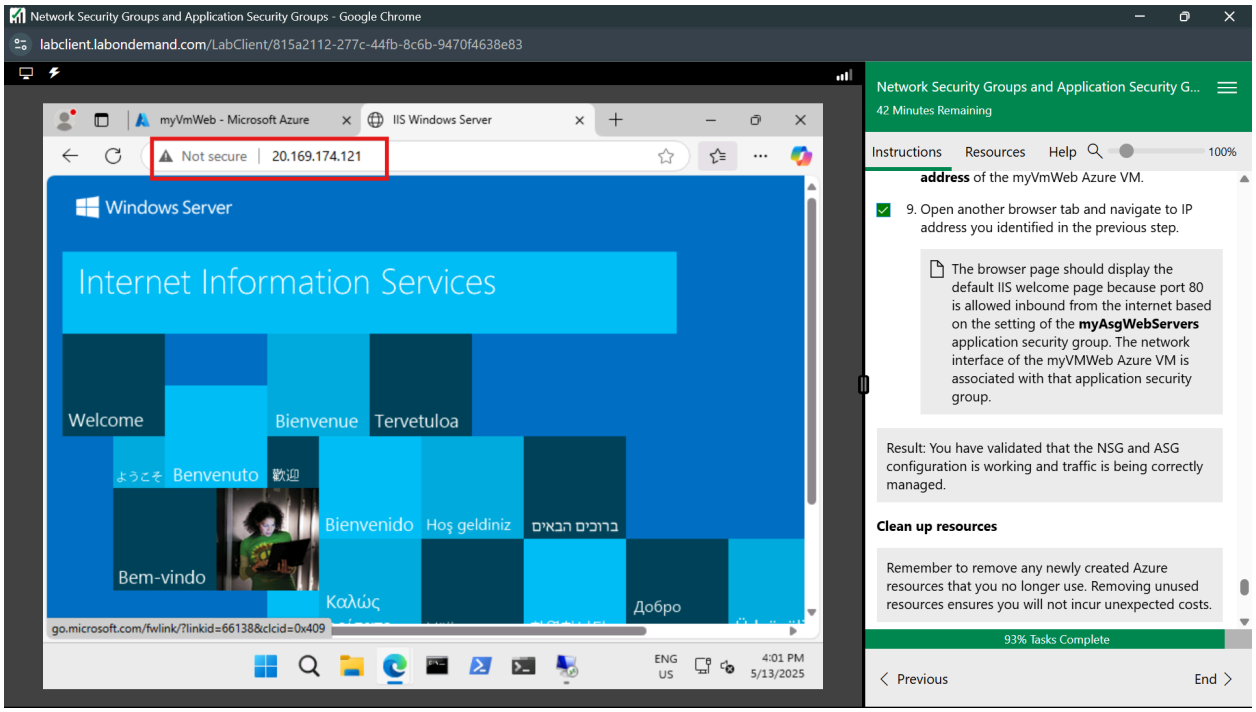
Test the network traffic filtering

In this task, we will test our configurations. We should be able to RDP into the myVMMgmt virtual machine. We should be able to connect from the internet to the myVMWeb virtual machine and view the default IIS web page.

The screenshot shows we were able to RDP into myVMMngt.



The following screenshot shows that we were able to install a web server and using its public IP to access its default IIS welcome page as shown.



Conclusion

To conclude, we have implemented the network security of Azure virtual networks using Application Security Groups and Network Security Groups attached to VMs and Subnets, respectively. We were able to demonstrate how the network traffic was filtered to avoid unwanted traffic.