**CS 487 DATA SECURITY**

**HOP05 – Deploy Network Security Group(s)**

12/26/2020 Developed by Mary Oh

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**Before You Start**

* Version numbers may not match with the most current version at the time of writing. If given the option to choose between stable release (long-term support) or most recent, please choose the stable release rather than beta-testing version.
* This tutorial targets Windows users and MacOS users.
* There might be subtle discrepancies along the steps. Please use your best judgement while going through this cookbook style tutorial to complete each step.
* For your working directory, use your course number. This tutorial may use a different course number as an example.
* The directory path shown in screenshots may be different from yours.
* If you are not sure what to do or confused with any steps:
  + Consult the resources listed below.
  + If you cannot solve the problem after a few tries, ask a TA for help.

**Learning Outcomes**

* Learn how to use Visual Studio Code to deploy Network Security Group

**Resources**

* Microsoft Azure - [https://azure.microsoft.com/](https://azure.microsoft.com/en-us/overview/what-is-azure/?&ef_id=Cj0KCQiAlsv_BRDtARIsAHMGVSac9cd8I7htfl0EVYTYDUBxYJ7mEqQ6dB5bRem2ziaBp-j1Di4wui8aAivlEALw_wcB:G:s&OCID=AID2100131_SEM_Cj0KCQiAlsv_BRDtARIsAHMGVSac9cd8I7htfl0EVYTYDUBxYJ7mEqQ6dB5bRem2ziaBp-j1Di4wui8aAivlEALw_wcB:G:s&gclid=Cj0KCQiAlsv_BRDtARIsAHMGVSac9cd8I7htfl0EVYTYDUBxYJ7mEqQ6dB5bRem2ziaBp-j1Di4wui8aAivlEALw_wcB)
* Microsoft Documentation - <https://docs.microsoft.com/>

**What is Azure?**

Azure cloud platform is cloud services designed to help bring new solutions to life. You can build, run, and manage application across multiple clouds, on-premises, and at the edge, with the tools and frameworks of your choice.

**What is Azure Network Security Group?**

Azure network security group can be used to filter network traffic to and from Azure resources in an Azure virtual network. It can contain security rules that allow or deny inbound network traffic to, or outbound network traffic from, several types of Azure resources. For each rule, source and destination, port, and protocol can be specified.

**Using ARM template**

1. Download the attached json files.
2. Open the json files with Visual Studio Code.
3. Open the integrated Visual Studio Code terminal using ctrl + ` key.
4. Sign in using your Azure account information. This will open up a new window to sign in.

Text

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1. Create the resource group.

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1. On the networksecuritygroup.parameters.json file, modify the “networkSecurityGroup” value to your name.

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1. On the networksecuritygroup.json, you can find the “tags” with name:value of “cs487”:”hop”. Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. For our purpose, since this is for CS487 HOPs, we will leave the name:value as is.

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1. Make sure to save all the changes made.

**Deploying the template**

1. Deploy the template. Type the following command. Ensure you are in the correct directory where the file is saved.

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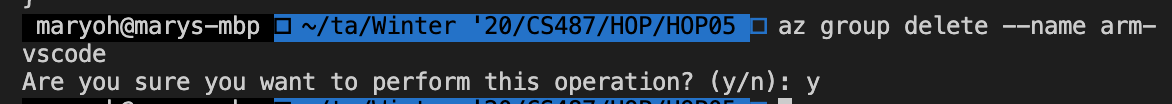
Description automatically generated

1. Verify deployment and creation of network security group is successful.

Graphical user interface, text, application, email

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1. To avoid incurring any unnecessary fees, clean up resources. Type the following command in your terminal and enter y.



1. Verify clean-up was successful. Head to your Azure in your web browser and refresh. The arm-vscode resource group should not be showing.

MY SNIPPETS FOR THE LAB

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**Questions you can answer for submissions:**

1. **Knowledge:** Why is Network Security Group important?

Network security group is important because it can be used to filter traffic between resources in a virtual network. It contains security rules that can be used to allow or block inbound or outbound traffic from other resources.

1. **Knowledge:** What is Network Security Group? Provide an analogy to understand it better.

A network security group is a group that contains security rules that can either allow inbound traffic to, or outbound traffic from several types of azure resources. Each rule allows you to specify source and destination, port or protocol. A security group contains properties like Name (a unique name within the security group), priority (a number between 100 and 4096, with lower numbers processed before higher numbers), source or destination (any or an individual IP address, classless inter-domain routing, e.g. 10.0.0.0/24, service tag or application security group), protocol, Direction (rules applies to inbound or outbound), port range (used to specify a range of ports which enables you to create fewer security rules), and the action which either allows or denies.

1. **Application:** When to use Network Security Group? Why?

You can use network security group wen you want to filter network traffic between azure resources

**Push your work to GitHub**

1. Open the integrated Visual Studio Code terminal using ctrl + ` key. Make sure you are in the right path.
2. Type the following command:

git add . (to copy all changes you have made)

git commit -m “Submission for Module 5 - YourGitHubUsername” (To add a message to your submission)

git push origin master (to upload your work to Github)