**Interview Questions**

**Domain: Network Security**

**Question 1: Faulty Firewall**

1. **Restate the problem**

Our problem is that we have firewalls that are allowing SSH connections even though they are set up to block them.

1. **Provide a concrete example scenario**

The network security group is set up to allow SSH to the Jump-Box-provisioner from my private IP address. On the other hand we can use the Jump-Box-provisioner to SSH into the other virtual network. However we can not SSH to the virtual machine directly without the Jump-Box-provisioner and the Jump-Box-provisioner can only be SSH from my IP Address only. Trying to connect to a VM that does not accept SSH connection would not work, the connection would timeout or we will get an error message. Network Security group plays a big role in allowing SSH or blocking SSH connection.

1. **Explain the solution requirements**

If one of my VM is accepting SSH connections even though it is set up not to accept SSH connection, I would assume that the network security group is not set up right or there is an error that occurred on the SSH configuration file. Double checking the network security group and the SSH configuration file would help us avoid these problems. We can test the new configuration and security setup by SSH into it and see if it is still accepting SSH connection or not.

1. **Explain the solution details**

On the Azure UI, I would look at the network security group and check for the setup of the SSH connection and make sure it is not allowing SSH connection from untrusted sources and allow connections from trusted sources only. I would also check the SSH credentials, the configuration file, and SSHD. I would also check if the server is accessible, whether SSH connection is allowed by checking the network security group, i would check if SSH is listening on port 22, and check the SSH configuration file for typos. After checking all these potential problems I would try SSH connection to my VM using theJump-Box-provisioner and see if it is working or not.

1. Identify Advantages/Disadvantage of the solution

Using an SSH connection is more secure than using a password. A malicious user must obtain both the private key and the corresponding passphrase to pose as a legitimate user. These will make the network of these projects immune to all unauthorized access. One disadvantage of using SSH connection is that it is not very scalable. For a large environment distribution on the public key might take a long time and it will be cumbersome. We can monitor all the failed SSH connection by checking the log file and we can also put in a script that would track all the failed SSH connection attempts.