1. What are 3 common job roles that combine security and cloud skills?

**Network Engineer:**

Duties/Responsibilities:  Implementation, configuration, maintenance, and support; administration, monitoring, documentation, security and integration of the network

**Penetration Tester**

Investigate, uncover, and correct where possible any potential vulnerabilities – both network systems and web applications.

**Developer Security Operations**

Automates the integration of security at every phase of the software development lifecycle

Utilizes a well-rounded background and understanding of hardware and software, data center and cloud infrastructure – to implement and support the company’s cloud.

**Automation Engineer:**

Practical application/use of experience from software development or operations applied to cloud automation, orchestration, and integration.  Supports and optimizes the infrastructures of the cloud.

1. What are the 3 biggest cloud provider platforms?

* Amazon Web Services
* Microsoft Azure
* Google

1. What are the 6 most common cloud services (and their acronyms)?

* Saas – Software as a Service
* PaaS – Platform as a Service
* Iaas – Infrastructure as a Service
* Maas – Monitoring as a service
* XaaS – Anything as a Service
* DBaaS – Database as a service

1. What is the difference between a virtual network and a physical network?

* Virtual Network – allows service provider to provision an efficient networking structure for the applications it hosts- uses software to alter the structure when needed

* Physical Network – is operational utilizing switches, router, load balancers and firewalls

1. What is the point of setting your first firewall rule to block *all* traffic?

Blocking all allows the administrator time to properly configure the network; limits vulnerabilities to the company – until the security is in place to deter and detect intrusion/exploits.

1. What is the difference between physical computing components (CPU, RAM, HDD/SSD) and virtual computing components?

* Physical server: CPU, RAM, HDD/SDD along with OS are all needed on a physical server to run programs and applications AKA “bare metal server” – large physical component

* Virtual (VM): Emulates a physical computer without taking up any physical space

1. What is the purpose of using an encrypted ssh key to connect to a machine?

* SSH key provides a private key which is required for any devise or person to gain access to connection – to one’s data

1. What is the difference between a container and a virtual machine?

* **Virtual Machine (VM):**

Infrastructure

Hypervisor

Guest Operating System (OS)

Bins (binaries and libraries)

Application

Allows software to run (on top of) in a cloud of a physical server – a replication of a physical server without being able to physically touch the equipment.

The hardware is being virtualized to run multiple OS instances.

* **Container:**

Infrastructure

Operating System (OS)

Container Engine

Bins (binaries and libraries)

Application

Containers provide a way to virtualize an OS so that several loads can run a single OS instance.

1. What is a provisioner? Provide 3 examples of common provisioning software.

* Allocates resources to support the VM; creates an environment, defined for current system – which is in a working state.

1. Microsoft Azure
2. Oracle
3. SailPoint
4. What is meant by Infrastructure as Code?

IaC:  Managing and provisioning through code – not through manual processes

1. What is Continuous Integration/Continuous Deployment?

* Testing each change as it occurs/each instance of change
* After testing – pushes changes to a production system (or staging until the company is ready to live/production)

1. What is a VPN and when should us use one?

* Virtual Private Network – allows the creation of a secure connection to another network over the internet

1. What is the purpose of a load balancer?

* Balances the traffic so that the servers do not get overloaded

1. What is a resource group in Azure?

* Holds related resources; collects metadata from each resource to facilitate management which is more specified than what the subscription provides.

1. What is Region in Azure?

* Datacenters which are physically separated – strategically placed around the world to reasonability ensure service during a natural disaster.

* Availability zones are for network redundancy:  physically separate zones within an Azure region.  Three availability zones for each supported Azure region.