STUDENT VERSION (DevOps-Week-2)

TEAMWORK

CLARUSWAY
WAY TO REINVENT YOURSELF

Meeting Agenda

- ▶ Icebreaking
- ▶ Microlearning
- ▶ Questions
- ▶ Interview/Certification Questions
- ▶ Coding Challenge
- ▶ Article of the week
- ▶ Video of the week
- ▶ Retro meeting
- ▶ Case study / project

Teamwork Schedule

Ice-breaking 5m

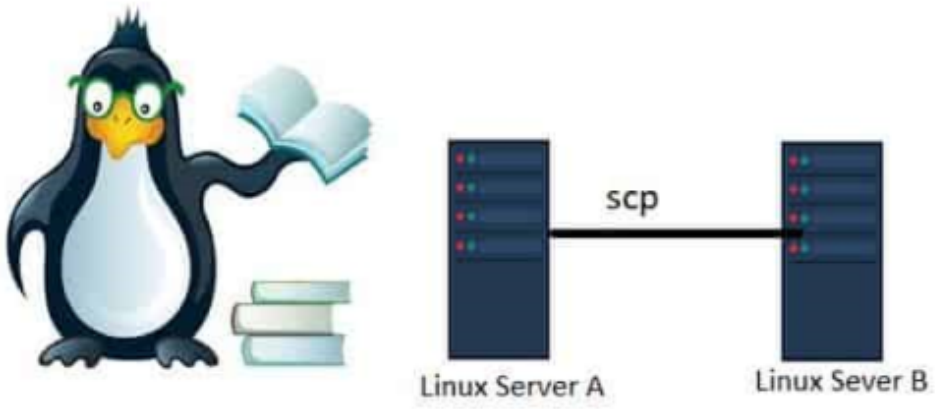
- Personal Questions (Stay at home & Corona, Study Environment, Kids etc.)
- Any challenges (Classes, Coding, AWS, studying, etc.)
- Ask how they're studying, give personal advice.
- Remind that practice makes perfect.

Team work 10m

- Ask what exactly each student does for the team, if they know each other, if they care for each other, if they follow and talk with each other etc.

Microlearning 15m

How to Use SCP Command



SCP (secure copy) is a command-line utility that allows you to securely copy files and directories between two locations. SCP uses by default the port 22, and connect via an encrypted connection or secure shell connection (ssh).

With scp, you can copy a file or directory:

- From your local system to a remote system.

- From a remote system to your local system.
- Between two remote systems from your local system.

When transferring data with scp, both the files and password are encrypted so that anyone snooping on the traffic doesn't get anything sensitive.

SCP Command Syntax:

The scp command syntax take the following form:

```
scp [OPTION] [user@]SRC_HOST:]file1 [user@]DEST_HOST:]file2
```

`OPTION` : scp options such as cipher, ssh configuration, ssh port, limit, recursive copy ...etc.

`[user@]SRC_HOST:]file1` : Source file.

`[user@]DEST_HOST:]file2` : Destination file.

Local files should be specified using an absolute or relative path, while remote file names should include a user and host specification.

scp provides a number of options that control every aspect of its behavior. The most widely used options are:

`-P` : Specifies the remote host ssh port.
`-p` : Preserves files modification and access times.
`-q` : Use this option if you want to suppress the progress meter and non-error messages.
`-C` : This option forces scp to compresses the data as it is sent to the destination machine.
`-r` : This option tells scp to copy directories recursively.

The `colon (:)` is how scp distinguish between local and remote locations.
To be able to copy files, you must have at least read permissions on the source file and write permission on the target system.

1. Copy a Local File to a Remote System with the scp Command:

To copy a file from a local to a remote system run the following command:

```
scp file.txt remote_username@10.10.0.2:/remote/directory
```

`file.txt` is the name of the file we want to copy, `remote_username` is the user on the remote server, `10.10.0.2` is the server IP address. The `/remote/directory` is the path to the directory you want to copy the file to.
If you don't specify a remote directory, the file will be copied to the remote user home directory.

You will be prompted to enter the user password, and the transfer process will start.

Omitting the filename from the destination location copies the file with the original name. If you want to save the file under a different name, you need to specify the new file name:

```
scp file.txt remote_username@10.10.0.2:/remote/directory/newfilename.txt
```

If SSH on the remote host is listening on a port other than the default 22 then you can specify the port using the -P argument:

```
scp -P 2322 file.txt remote_username@10.10.0.2:/remote/directory
```

The command to copy a directory is much like as when copying files. The only difference is that you need to use the -r flag for recursive.

To copy a directory from a local to remote system, use the -r option:

```
scp -r /local/directory remote_username@10.10.0.2:/remote/directory
```

- if you use pem key, you need the add it;

```
scp tyler.pem file.txt remote_username@10.10.0.2:/remote/directory
```

2. Copy a Remote File to a Local System using the scp Command:

To copy a file from a remote to a local system, use the remote location as a source and local location as the destination.

For example to copy a file named **file.txt** from a remote server with IP 10.10.0.2 run the following command:

```
scp remote_username@10.10.0.2:/remote/file.txt /local/directory
```

If you haven't set a passwordless SSH login to the remote machine, you will be asked to enter the user password.

3. Copy a File Between Two Remote Systems using the scp Command:

When using scp you don't have to log in to one of the servers to transfer files from one to another remote machine.

The following command will copy the file /files/file.txt from the remote host host1.com to the directory /files on the remote host host2.com.

```
scp user1@host1.com:/files/file.txt user2@host2.com:/files
```

You will be prompted to enter the passwords for both remote accounts.

To route the traffic through the machine on which the command is issued, use the -3 option:

```
scp -3 user1@host1.com:/files/file.txt user2@host2.com:/files
```

Ask Questions 15m

1. Which of the following is the native clustering for Docker?

A. Docker Hub
B. Docker Swarm
C. Kubernetes
D. Docker Compose

2. _____ runs on each node and ensures containers are running in a pod. (Kubernetes)

A. Kubelet
B. Etcd
C. Scheduler
D. Pod

3. Which one is used to help restricting the service within the cluster? (Kubernetes)

A. LoadBalancer
B. NodePort
C. ClusterIP
D. kubectl

4. Which is the intended use for etcd? (Kubernetes)

A. To store all the cluster data, maintain its state and provide access to critical data
B. To link a unique identifier to a value
C. To encrypt cluster data and send it to a secrets manager
D. To authenticate cluster data

5. Generally, what is a proxy service used for? (Kubernetes)

A. To supplant an authentic webpage in a search engine's index and search page results
B. To connect external parties and route data between internal and external containers
C. To act as an intermediary between an endpoint device and another server
D. To relay connection requests for inbound network traffic

Interview/Certification Questions 20m

1. What is Docker Compose? What can it be used for?

2. What is a pod in Kubernetes?

3. You are an architect in your organization. Your organization would want to upload files to AWS S3 bucket privately through AWS VPC. In an existing VPC, you created a subnet and VPC endpoint for S3. You also created one route table which routes the traffic from the subnet to a NAT gateway and also the traffic to S3 through the internet via the NAT gateway. But in AWS S3 server logs, you noticed that the request to S3 bucket from an EC2 instance is not coming via the Internet through the NAT Gateway. What could be causing this situation?

A. When NAT Gateway and VPC end-point exist on the same route table, NAT Gateway always takes precedence.
B. EC2 instance is having an elastic IP address associated with it.
C. The request was redirected through the VPC endpoint.
D. AWS S3 is a managed service, all requests will always go through internet.

4. You have a web application hosted on AWS VPC with a single EC2 instance with Auto Scaling enabled. You have also assigned elastic IP address to the EC2 instance. When you access the elastic IP address, you are able to successfully connect to your web application. You decided to route requests to your application from a custom domain through Route 53. You have performed the setup on Route 53. However, when you access your custom domain name from the internet, you get "Server Not Found" error. Which of the following could be a reason?

A. Route 53 service is for internal application routing. It does not support routing trac from the internet.
B. You must configure elastic load balancer in order to use Route 53 for web application hosting.
C. IP address configured in Route 53 DNS record set might be incorrect.
D. The resource on EC2 instance that you're routing trac to is unavailable.

5. Your company is planning on hosting an application that will be based on Docker containers. They need to setup an orchestration service that would automatically scale based on the load. As much as possible , the company does not want the burden of managing the underlying infrastructure. Which of the following can assist in this scenario?

A. AWS ECS with service Auto Scaling
B. Use an Elastic Load Balancer in front of an EC2 Instance. Use Docker containers on the EC2 Instance.
C. Use Auto Scaling with Spot Instances for the Orchestration Service.
D. Install and use Kubernetes on the EC2 Instance

Article of the Week 10m

- How Can We Easily and Visually Explain Docker-Compose?

Video of the Week 10m

- Kubernetes in 5 mins

Retro Meeting on a personal and team level 10m

Ask the questions below:

- What went well?
- What could be improved?
- What will we commit to do better in the next week?

Coding Challenge 5m

- Coding Challenge: Create Resources on AWS (Terraform)

Case study/Project 10m

- Project-203: Dockerization bookstore api on python-flask-mysql

Closing 5m

-Next week's plan

-QA Session
