

STUDENT VERSION (DevOps-Week-1)



CLARUSWAY
WAY TO REINVENT YOURSELF

Meeting Agenda

- ▶ Icebreaking
- ▶ Microlearning
- ▶ Questions
- ▶ Interview/Certification Questions
- ▶ Coding Challenge
- ▶ 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

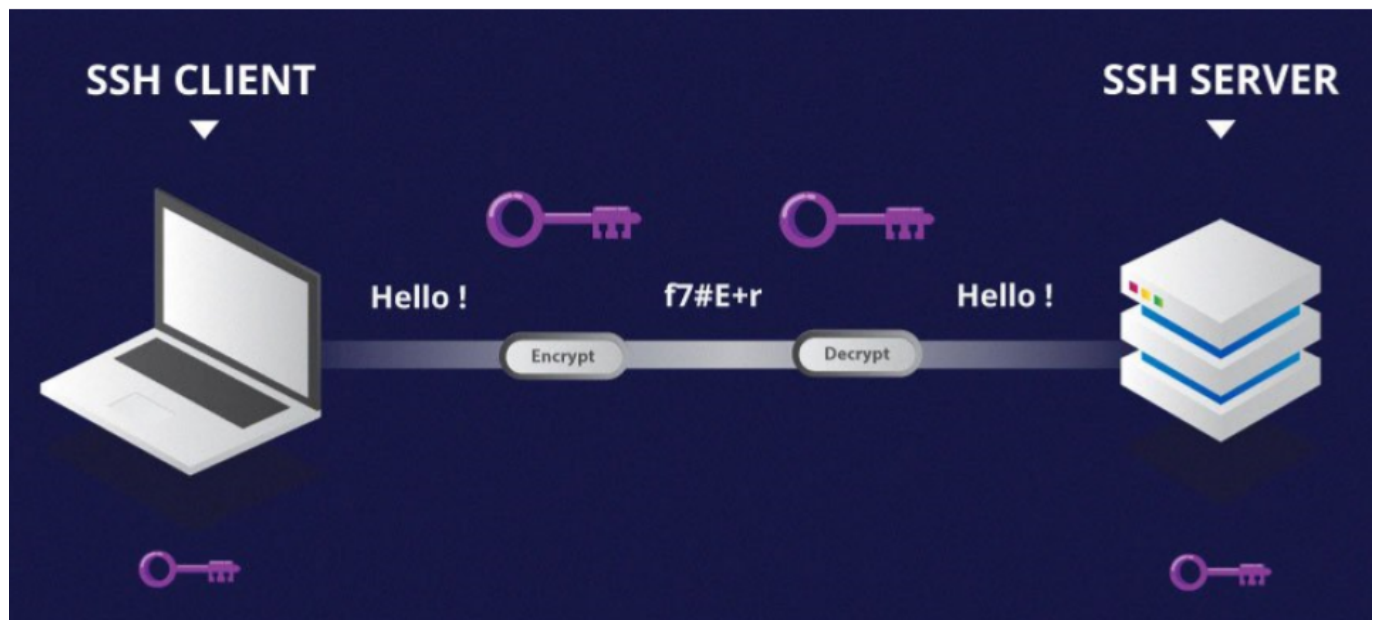
10m

- 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

What is SSH command?



The **ssh** command provides a secure encrypted connection between two hosts over an insecure network. This connection can also be used for terminal access, file transfers, and for tunneling other applications.

Using the Linux client:

Linux typically uses the OpenSSH client. The ssh command to log into a remote machine is very simple. To log in to a remote computer which IP address is 172.31.7.57, type the following command at a shell prompt:

```
ssh 172.31.7.57
```

If this is the first time you use ssh to connect to this remote machine, you will see a message like:

```
The authenticity of host '172.31.7.57' cannot be established. DSA key fingerprint
is 04:48:30:31:b0:f3:5a:9b:01:9d:b3:a7:38:e2:b1:0c. Are you sure you want to
continue connecting (yes/no)?
```

Type **yes** to continue. This will add the server to your list of known hosts (**~/.ssh/known_hosts**) as seen in the following message:

```
Warning: Permanently added '172.31.7.57' (DSA) to the list of known hosts.
```

Each server has a host key (*A host key is a cryptographic key used for authenticating computers in the SSH protocol. Host keys are key pairs, typically using the RSA, DSA, or ECDSA algorithms. Public host keys are stored on and/or distributed to SSH clients, and private keys are stored on SSH servers.*), and the above question related to verifying and saving the host key, so that next time you connect to the server, it can verify that it actually is the same server.

Once the server connection has been established, the user is authenticated. Typically, it asks for a password. For some servers, you may be required to type in a one-time password generated by a special hardware token.

Once authentication has been accepted, you will be at the shell prompt for the remote machine.

Specifying a different user name:

It is also possible to use a different username at the remote machine by entering the command as:

```
ssh alternative-username@172.31.7.57
```

The above can also be expressed with the syntax:

```
ssh -l alternative-username 172.31.7.57
```

Executing remote commands on the server:

The ssh command is often also used to remotely execute commands on the remote machine without logging in to a shell prompt. The syntax for this is:

```
ssh hostname command`
```

For example, to execute the command:

```
ls /tmp/doc
```

on host sample.ssh.com, type the following command at a shell prompt:

```
ssh 172.31.7.57 ls /tmp/doc
```

After authenticating to the remote server, the contents of the remote directory will be displayed, and you will return to your local shell prompt.

Note: The ssh command reads its configuration from the SSH client configuration file ``~/.ssh/config``.

Ask Questions

15m

1. Which command is used to terminate the Terraform-managed infrastructure?

- A. terraform terminate
- B. terraform erase
- C. terraform delete
- D. terraform destroy

2. Which command is used to list of the resources in state in Terraform?

- A. terraform state --list
- B. terraform show list
- C. terraform state list
- D. terraform ls state

3. Containers include the application and all of its dependencies, but share the kernel with other containers. They run as an isolated process in userspace on the host operating system. They're also not tied to any specific infrastructure – Docker containers run on any computer, on any infrastructure, and in any cloud.

- A. True
- B. False

4. What command should you run to see all running container in Docker?

- A. docker run
- B. docker ps
- C. docker --help
- D. docker build
- E. docker pull

5. Which of the following is not a state of Docker container?

- A. Running
- B. Freezed
- C. Paused
- D. Restarting
- E. Exited

6. Which command is used to remove all the stopped containers, all the networks that are not used, all dangling images and all build caches?

- A. docker system prune
- B. docker login
- C. docker pull
- D. docker rm

7. Which file is used to define dependency in Maven?

- A. build.xml
- B. pom.xml
- C. dependency.xml
- D. version.xml

Interview/Certification Questions

20m

1. What are the different phases in DevOps?

2. Explain the concept behind Infrastructure as Code (IaC).

3. How Terraform works?

4. You have an EC2 instance in the AWS us-east-1 region. The application in the instance needs to access a DynamoDB table that is located in the AWS us-east-2 region. The connection must be private without leaving the Amazon network and the instance should not use any public IP for communication. How would you configure this?

- A. Configure an inter-region VPC endpoint for the DynamoDB service.
- B. Configure inter-region VPC peering and create a VPC endpoint for DynamoDB in us-east-2.
- C. Create an inter-region VPC peering connection between us-east-1 and us-east2.
- D. There is no way to setup the private inter-region connections.

5. You own a MySQL RDS instance in AWS Region us-east-1. The instance has a Multi-AZ instance in another availability zone for high availability. As business grows, there are more and more clients coming from Europe (eu-west-2) and most of the database workload is read-only. What is the proper way to reduce the load on the source RDS instance?

- A. Create a snapshot of the instance and launch a new instance in eu-west-2.
- B. Promote the Multi-AZ instance to be a Read Replica and move the instance to eu-west-2 region.
- C. Configure a read-only Multi-AZ instance in eu-west-2 as Read Replicas cannot span across regions.
- D. Create a Read Replica in the AWS Region eu-west-2.

Video of the Week

10m

- [Terraform Explained](#)
- [What Is Maven? | What Is Maven And How It Works?](#)

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: Reverse Input Number](#)

Case study/Project

10m

- Project-202: Phonebook Application (Python Flask) deployed on AWS Application Load Balancer with Auto Scaling and Relational Database Service using Terraform

Closing

5m

-Next week's plan

-QA Session
