Course Outline

Deploying 5G

Course Summary

Description

This course builds directly on the previous 5G Essentials class. You have already mastered the 5G lexicon and architecture. Since you are standing on a strong foundation, you are ready to deploy a 5G network.at scale. You will write 5G docker files and learn how to build and test container based services in the context of 5G. You will then use docker compose to build all services in a test environment. Finally, you will deploy your 5G services onto your own kubernetes cloud, test and troubleshoot. When you have completed this class, you will have a clear picture of the 5G landscape. You will be able to continue studies in our advanced courses such as docker, microservices, kubernetes, and programming, standing on a strong foundational knowledge of how it all goes together in a real 5G network.

Topics

- 5G Microservices
- 5G Containers (docker)
- 5G Core Cloud featuring Kubernetes
- 5G Networking analysis and Troubleshooting

Audience

- Anyone who is responsible for building a 5G network
- Anyone who is building Connectivity or devices for a 5G network
- Anyone who learns best from a hands on experience

Prerequisites

This course is a Continuation of the 5G Essentials class

Duration

Two days

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I. Deploying 5G services in containers - Now that you are familiar with 5G services, you understand the 5G concepts, and you have mastered the vast 5G lexicon, you will now learn how to stuff those 5G services into containers in real hands-on labs. This knowledge is Essential to understand the next step which is to deploy services in a kubernetes cloud.

A. LECTURE: Microservices essentials
B. LECTURE Docker - Essentials
C. LAB: Docker file - Build services
D. LAB: Docker compose
E. LAB: Build a secure Docker registry

II. Kubernetes Orchestration - You will now deploy the containers created in the previous Section into a real kubernetes cloud. The k8s focus will be 100% relevant to 5G services. For most 5G engineers, this is the perfect way to be introduced to kubernetes by seeing it in Action, specifically focused on Supporting 5G.

A. LECTURE: K8s essentials
B. LAB: Build a k8s cluster for 5G
C. LAB: Deploy a secure container registry for 5G containers
D. LAB: K8s pods, replica sets, deployments essentials
E. LECTURE: K8s services essentials
F. LAB: Deploy 5G deployment sets in a 5G cluster
G. LAB: Test 5G Operation in a Production environment
H. LECTURE Review k8s administration essentials exactly as it applies to 5G

III. 5G Network Function Virtualization

A. LAB: NFV Essential L2 components
B. LAB: NFV Essential L3 components
C. LAB: Networking UPFs and K8s infrastructure
D. LAB: Perform network Troubleshooting and analysis both inside and outside Kubernetes.

IV. Hands-on labs:

A. Docker file - Build services
B. Docker compose
C. Build a secure Docker registry
D. Build a k8s cluster for 5G
E. Deploy a secure container registry for 5G containers
F. K8s pods, replica sets, deployments essentials
G. Deploy 5G deployment sets in a 5G cluster
H. Test 5G Operation in a Production environment
I. NFV Essential L2 components
J. NFV Essential L3 components
K. Networking UPFs and K8s infrastructure
L. Perform network Troubleshooting and analysis both inside and outside Kubernetes.