Deploying Open-Source 5G Core

- 2 Days
- Lecture and Hands-on Labs

Course Overview

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.

Review this course online at https://www.alta3.com/courses/5g-deploy

Who Should Attend

- 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

What You'll Learn

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

Outline

Deploying the 5G Core - Docker Base Image

- Lecture: The DockerFile Base

Deploying the 5G Core - Building on the Base Image

- Lecture: Building on the DockerFile Base

Deploying the 5G Core - Docker Compose

- Lecture: Docker Compose
- Lecture + Lab: Deploying the 5G Core with Docker-Compose

Deploying the 5G Core - Docker Registry

- Lecture: Understanding Docker Registries
- Lecture + Lab: Deploying a Local Docker Registry

Deploying the 5G Core - Managing Docker Images

- Lecture: Understanding Docker Image Management
- Lecture + Lab: Pushing Docker Images to Our Local Registry

Deploying the 5G Core - Install K8s Cluster

- Lecture + Lab: Starting a Kubernetes Cluster

Deploying the 5G Core - Pods

- Lecture: Write a NRF Pod Manifest
- Lecture + Lab: Create an NRF Pod

Deploying the 5G Core - ConfigMaps

- Lecture: Consistent Configuration with ConfigMaps
- Lecture + Lab: Writing a ConfigMap for NRF

Deploying the 5G Core - Deployments

- Lecture: Convert NRF Pod to a Deployment
- Lecture + Lab: Creating a Deployment for our NRF Container

Deploying the 5G Core - Services

- Lecture: Kubernetes Services
- Lecture + Lab: Creating a Kubernetes Service for NRF

Deploying the 5G Core - The Other K8s Manifests

- Lecture + Lab: LABS Deploying the 5G Core in Kubernetes

Configuring Access to the 5G Core

- Lecture + Lab: LABS Configure External Access

Connecting to our 5G Core

- Lecture + Lab: Start the gNB RAN
- Lecture + Lab: Inspecting the UE SIM card
- Lecture + Lab: UE 5G Core Configuration (Web UI)
- Lecture + Lab: Start UE plus Network Slicing Analysis

Prerequisites

- This course is a continuation of the 5G Essentials class