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OSM-MR#11 Hackfest
OAI Onboarding Challenge
Tasks and technicalities

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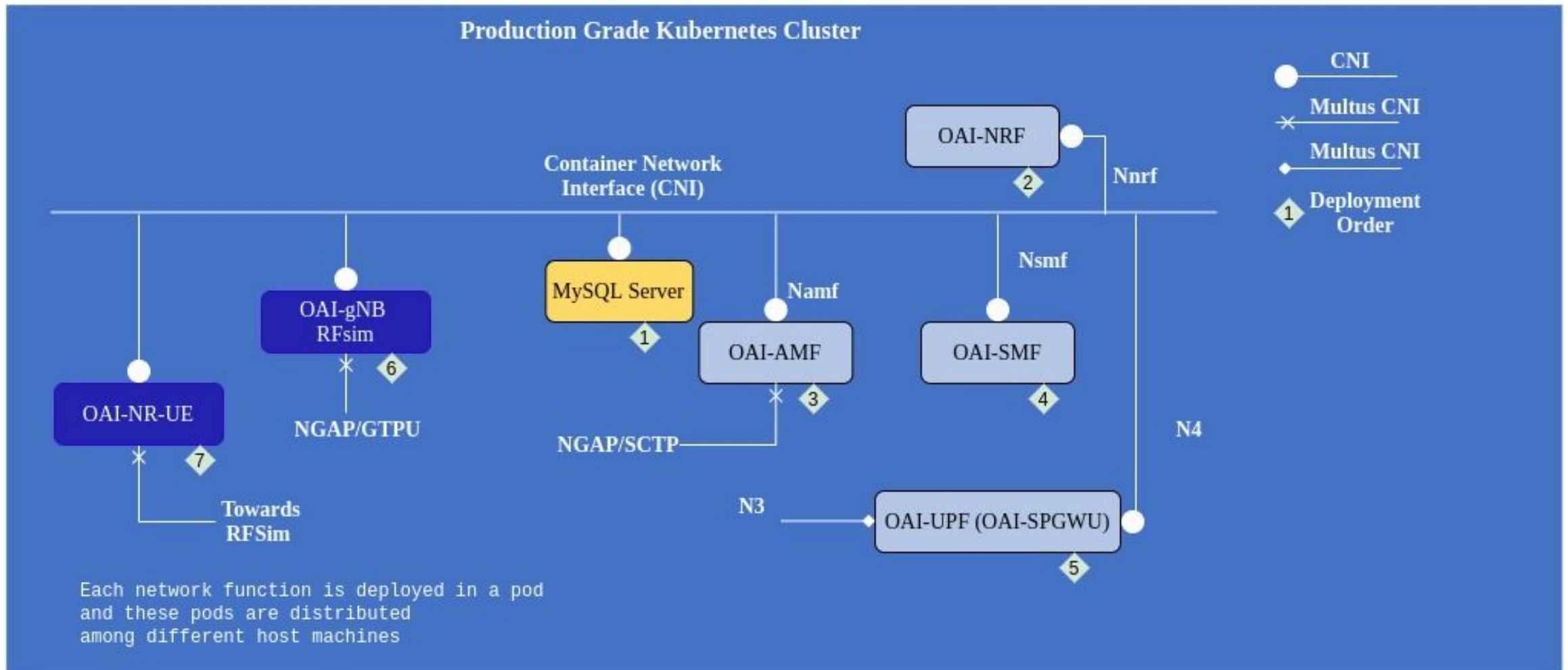
OAI on-boarding challenge - task

- Deploy OAI network function and simulators using OSM
- Test if OAI is working correctly
- Automate a configuration change
- Automate a scale-up operation by deploying additional gNB RF SIM
- Upgrade AMF

OAI on-boarding challenge - criteria

- Deployment - successful deployment of entire setup
- Demo - quality of the demonstration
- Presentation - quality of the presentation
- Actions/Operations - amount of implemented actions
- Additional points can be gained for unit tests and documenting your work

OAI on-boarding challenge - task



OAI on-boarding challenge - deployment

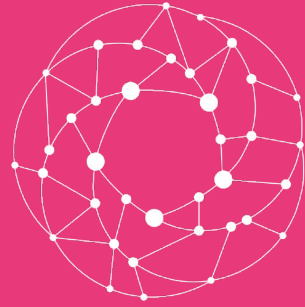
- Write juju charms for OAI network functions
- Write OSM deployment descriptors for OAI network functions
- Deploy OAI network functions (amf,smf, nrf, upf)
- Deploy simulators and testing tools (nr-ue, oai-gnb)

Materials and guides

- Development setup for charms <https://juju.is/docs/sdk/dev-setup>
- Onboarding <https://osm.etsi.org/docs/vnf-onboarding-guidelines/>
- OAI tutorial
https://gitlab.eurecom.fr/oai/cn5g/oai-cn5g-fed/-/blob/helm-update/docs/DEPLOY_SA5G_HC.md#6-changes-for-vanilla-kubernetes

Simple CNI

- To make the task easier we will not work with multiple networks and Multus (it's required on production)
- use Micro K8s - small, simple and dev friendly K8s cluster
- run amf,smf, nrf, upf all of them on eth0
- nr-ue and oai-gnb on eth0 as well
- only gNB needs static ip-address, which can be set up like this:
<https://docs.projectcalico.org/networking/use-specific-ip>



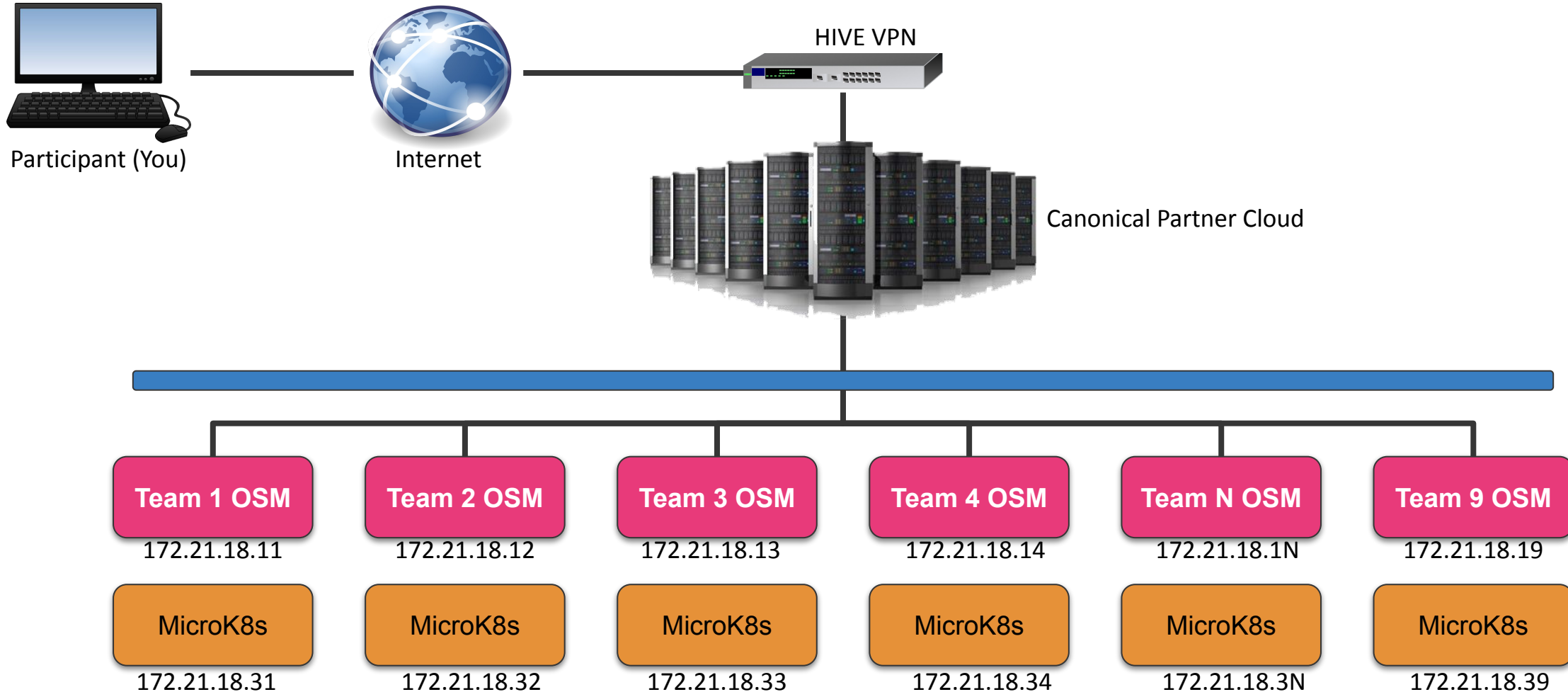
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Connectivity

Connecting to the lab

- Each team member needs a HIVE VPN access
- Each team will receive their own VM with OSM installed
- Each team will receive an empty K8s cluster (MicroK8s)

HIVE Network Topology



Accessing Your Instances

OSM instances:

- `ssh ubuntu@172.21.18.11 / password hackfest`
- OSM Web UI: <https://ui.172.21.18.11.nip.io/login>
User: admin, Password: admin

Microk8s instances:

- `ssh ubuntu@172.21.18.31 / password hackfest`



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Example charms

How charms should look like

- <https://github.com/charmed-osm/oai-bundle>



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Q&A