RA2 - Kubernetes Reference Architecture

Objective

The intention of this Reference Architecture (RA) is to develop a usable Kubernetes based platform for the Telecom operator community. The RA will be based on the standard Kubernetes platform where ever possible. This RA for Kubernetes will describe the high level system components and their interactions, taking the goals and requirements and mapping them to real-world Kubernetes (and related) components. This document needs to be sufficiently detailed and robust such that it can be used to guide the production deployment of Kubernetes within an operator, whilst being flexible enough to evolve with and remain aligned with the wider Kubernetes ecosystem outside of Telco.

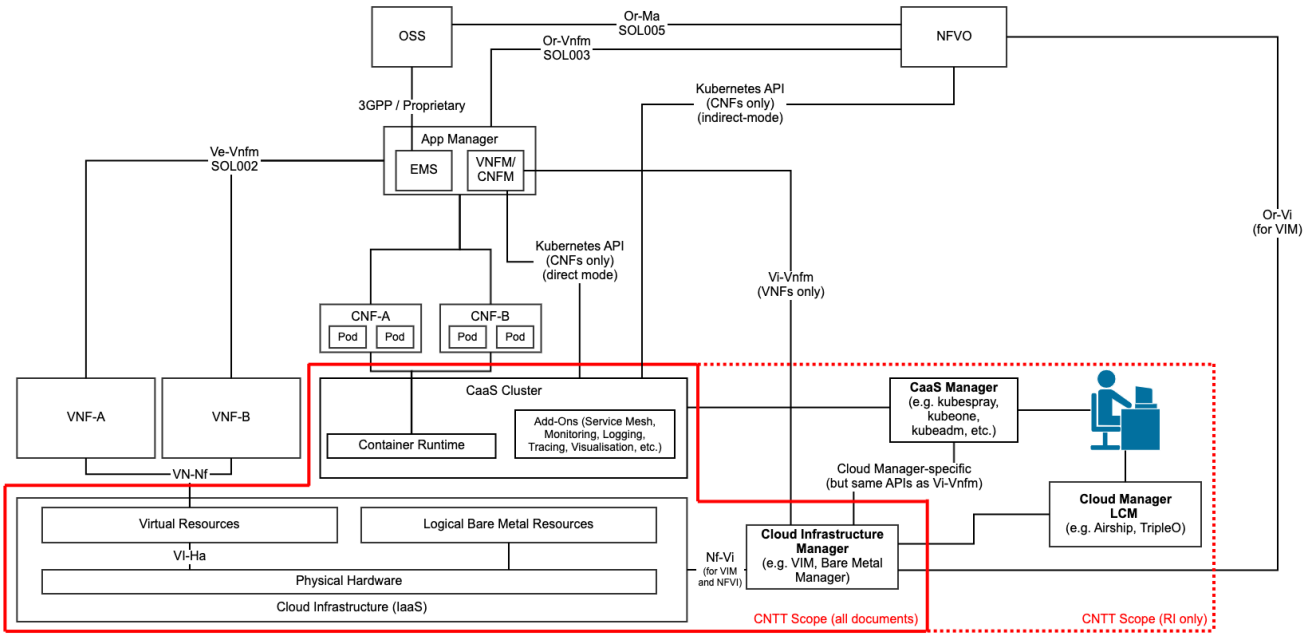
Scope

The scope of this particular RA can be described as follows (the capabilities themselves will be listed and described in the documentation), also shown in the figure below:

- Kubernetes capabilities required to conform to the Reference Model requirements
- Support for CNFs that consist wholly of containers
- Support for CNFs that consist partly of containers and partly of VMs, both of which will be orchestrated by Kubernetes

The following items are considered **out of scope**:

- **Kubernetes cluster lifecycle management**: Since it is not considered to be "visible" to a CNF, it should not be included.
- **Kubernetes-based Application / VNF Management**: similar to VNFM, this is an application layer capability that is out of scope of CNTT. This includes Kubernetes-based Application Package Management, such as Helm, as this is a client application and set of libraries that would be part of a modern/cloud native VNFM, not part of the infrastructure itself.



Links

- GitHub repository (for editing): https://github.com/cntt-n/CNTT/tree/master/doc/ref_arch/kubernetes
- Readthedocs (for reading): https://cntt.readthedocs.io/en/latest/ref_arch/kubernetes/