4.0 Virtual Infrastructure HA – Requirements:

This section is written with the goal to ensure that there is alignment with Section 4.2 of the ETSI/NFV REL-001 document.

Key reference requirements from ETSI/NFV document:

[Req.4.2.12] On the NFVI level, there should be a transparent fail-over in the case of for example compute, memory,storage or connectivity failures.

- The virtual infrastructure should provide classified virtual resource for different SAL VNFs. Each class of the resources should have guaranteed performance metrics.
- Specific HA handling schemes for each classified virtual resource, e.g. recovery mechanisms, recovery priorities, migration options, should be defined.
- The NFVI should maintain the number of VMs provided to the VNF in the face of failures. I.e. the failed VM instances should be replaced by new VM instances.

4.1 Compute

VM including CPU, memory and ephemeral disk

Requirements:

- Detection of failures must be sub 1 second.
- Recovery of a failed VM (VNF) must be automatic. The recovery must re-launch the VM based on the required initial state defined in the VNFD.
- On evacuation, fencing of instances from an unreachable host is required.
- Resources of a migrated VM must be evacuated once the VM is migrated to a different compute node, placement policies must be preserved. For example during maintenance activities.
- Failure detection of the VNF software process is required in order to detect the failure of the VNF sufficiently. Detection should be within less than 1 second.

4.2 Network

Virtual network:

Requirements:

- Redundant top of rack switches must be supported as part of the deployment.
- Static LAG must be supported to ensure sub 50ms detection and failover of redundant links between nodes. The distributed virtual router should support HA.
- Service provided by network agents should be highly available (L3 Agent, DHCP agent as examples)
- L3-agent, DHCP-agent should clean up network artifacts (IPs, Namespaces) from the database in case of failover.

vSwitch Requirements:

- Monitoring and health of vSwitch processes is required.
- The vSwitch must adapt to changes in network topology and automatically support recovery modes in a transparent manner.

Link Redundancy Requirements:

- The ability to manage redundant interfaces and support of LAG on the compute node is required.
- Support of LAG on all interfaces, internal platform control interfaces,internal platform storage interfaces, as well as interfaces connecting to provide networks.
- LACP is optional for dynamic management of LAG links
- Automated configuration LAG should support active/standby and balanced modes. Should adapt to changes in network topology and automatically support recovery modes in a transparent manner.
- In SR-IOV scenario, link redundancy could not be transparent, VM should have two ports directly connect to physical port on host. Then app may bind these two ports for HA.