OPNFV deployment tools common requirements

Release brahmaputra.1.0 (7824df2)

OPNFV

February 25, 2016

CHAPTER

ONE

UX REQUIREMENTS

Release: OPNFV Brahmaputra

Requirements for a common user-experience created by the deployment tools.

1.1 High availability requirements

- GENESIS-9: Installers shall support the deployment of OpenStack with High-Availability (for those components that support it in Liberty) on 3 or more control nodes. Functest tests should be able to verify that the HA is enabled and functional.
- GENESIS-71: Hitless hardware upgrade: Increase size of a deployment in terms of compute nodes (add additional compute nodes) without service interruption. This requirement doesn't mandate upgrade/increasing the size of the control node cluster.

1.2 Network setup and configuration related requirements

- GENESIS-20: Automatically populate discovered servers into install tool (reduce user-intervention to a minimum).
- GENESIS-28: Installers should support a common configuration file (e.g. kickstart file) per platform/role, so that the installed OS can be customized for hardware and role.
- GENESIS-43: Neutron DHCP servers should be configured in HA per tenant.
- GENESIS-44: SDN Controller layer 3 forwarding support.
- GENESIS-61: Support layer 1/2 networking configuration.
- GENESIS-62: Support logical networks for target system.
- GENESIS-72: Support L3-neutron agent as an option for L3.
- GENESIS-69: Provide isolated compute node resources for CEPH OSD.

1.3 Versioning requirements

- GENESIS-12: Installers should track/control all versions of all components pulled from external sources (user should be able to identify the versions and origins of all software components deployed).

1.4 System definition and system configuration requirements

- GENESIS-16: Common ability to input site, topology, and server information.
- GENESIS-17: User-configurable parameters available via config files.
- GENESIS-18: Allow assignment of different roles to servers, so that hardware and software can be configured according to the role.
- GENESIS-19: Deployment tool to provide for automatic device discovery.
- GENESIS-25: Installers should configure NTP servers on the servers for clock synchronization.
- GENESIS-40: Hardware replacement.

1.5 Requirements pertaining to the qualities of the deployment process

- GENESIS-74: Installers which create a build for Brahmaputra, should create the build as an "all-in-one" build. The the build process of the installer creates a single entity (e.g. ISO) - which has all the artifacts considered and required by all the projects for Brahmaputra packaged in. Or in other terms and as an example: If there are 4 different versions of OVS - all these 4 versions would be contained in the "all in one build". Note: This requirement only applies to installers which support a "build" phase (i.e. create a bootable image, like an iso-image from the different artifacts required).
- GENESIS-31: Installers to be agnostic to type of hard drives used.

1.6 Security related requirements

- GENESIS-23: Installers should enable Mandatory Access Control by default. Installers should enable MAC either using SElinux or AppArmour.
- GENESIS-24: Installers should install ssh keys on servers so that key-based login can be used for administration.

1.7 Testing related requirements

1.8 Installation method related requirements

- GENESIS-39: Ability to install with upstream artifacts.
- GENESIS-38: Installers should supply a script or set of scripts ("deploy.sh") to automatically install the jumphost (from there, the entire OPNFV system is automatically installed).
- GENESIS-42: Installers should support offline deployment. Jump host may have Internet access, but the installers should support offline installation on target hosts during the deployment phase (either manually or automatically).

1.9 Documentation related requirements

- GENESIS-34: Installers should provide a user guide.
- GENESIS-35: Installers should provide release notes for an OPNFV release as part of the documentation provided.

CHAPTER

TWO

TARGET SYSTEM REQUIREMENTS

Release: OPNFV Brahmaputra

This document lists requirements for the target system that an installer creates. Different from the requirements document on user-experience, this document focuses on the key hardware and software components the different deployment tools install and/or configure.

2.1 Minimum base Operating System distribution supported:

- GENESIS-4: Installers should support either Centos 7 or Ubuntu 14.04 as target system base OS.

2.2 Components/features installed for OpenStack:

- GENESIS-53: OpenStack Heat should be installed.

2.3 Minimum base OpenStack distribution supported:

- GENESIS-7: Installers should support OpenStack Liberty release.

2.4 SDN Controller:

- GENESIS-6: Installers should support OpenDaylight Beryllium Release.
- GENESIS-49: Installers should support ONOSFW.

2.5 VM Controller:

2.6 Hypervisor:

- GENESIS-8: Installers should support KVM hypervisor.

2.7 Virtual forwarder:

CHAPTER

THREE

DEPLOYMENT TOOLS SUPPORT MATRIX

This document provides a summary view of the features and capabilities of deployment tools (a.k.a. "installers") which are expected to be common for all deployment tools.

The tables below only show a short abbreviation of the requirement. For details, please refer to detailed UX-requirements and system-requirements documents.

3.1 Target system requirements

Feature	Apex	Compass	Fuel	JOID/Juju
GENESIS-4 - Centos7 or Ubuntu 14.04	yes	yes	yes	yes
GENESIS-53 - OpenStack Heat	yes		yes	yes
GENESIS-6 - OpenDaylight Beryllium	yes		yes	yes
GENESIS-49 - ONOSFW	yes		yes	yes
GENESIS-8 - KVM Hypervisor	yes		yes	yes

3.2 User experience requirements

Feature	Apex	Compass	Fuel	JOID/Juju
GENESIS-9 - OpenStack HA	yes		yes	yes
GENESIS-71 - Hitless hardware upgrade	yes		yes	yes
GENESIS-20 - Server discovery integrated	yes		yes	yes
GENESIS-28 - Common configuration file	yes		yes	yes
GENESIS-43 - DHCP server HA per tenant	yes		yes	yes
GENESIS-44 - SDN Controller L3	yes		yes	no
GENESIS-61 - L1/2 networking config	yes		yes	yes
GENESIS-62 - Logical networks	yes		yes	yes
GENESIS-72 - L3-neutron agent	yes		yes	yes
GENESIS-69 - Isolated CEPH OSD	yes		yes	yes
GENESIS-12 - Version control for components	yes		yes	yes
GENESIS-16 - Common inventory config	yes		yes	yes
GENESIS-17 - User-facing config files	yes		yes	yes
GENESIS-18 - Server roles	yes		yes	yes
GENESIS-19 - Automatic device discovery	yes		yes	yes
GENESIS-25 - NTP config	yes		yes	yes
GENESIS-40 - Hardware replacement support	yes		yes	yes
GENESIS-74 - “all-in-one” build	yes		yes	n/a
GENESIS-31 - Agnostic to type of hard drive	yes		yes	yes
GENESIS-23 - Mandatory Access Control	yes		yes	yes
GENESIS-24 - Install ssh keys	yes		yes	yes
GENESIS-39 - Use artifacts from upstream	yes		yes	yes
GENESIS-38 - Deploy script for jumphost	yes		yes	yes
GENESIS-42 - Offline deployment	yes		yes	yes
GENESIS-34 - User guide	yes		yes	yes
GENESIS-35 - Release notes	yes		yes	yes

CHAPTER

FOUR

KEY ARTIFACTS AND THEIR LOCATIONS

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4.1 VM manager components

- OpenStack:

  location: http://docs.openstack.org/releases/releases/liberty.html joid_location: cloud-archive:liberty release: Liberty

4.2 Network controller components

- OpenDaylight Controller:

  location: ‘https://nexus.opendaylight.org/content/repositories/staging/org/opendaylight/integration/distribution-karaf/0.4.0-Beryllium-RC2/distribution-karaf-0.4.0-Beryllium-RC2.tar.gz‘ release: Beryllium RC2

- OpenDaylight SFC:

  location: https://www.dropbox.com/s/6w76eo7loltvvb5/openstack.net-virt-sfc-karaf-1.2.1-SNAPSHOT.zip

- ONOS Controller:

  location: http://downloads.onosproject.org/nightly/onos-1.4.0-rc2.tar.gz release: Emu 1.4.0-rc2

4.3 vSwitch components

- OVS NSH build:

  location: https://github.com/openvswitch/ovs.git commit: 121daded51b9798fe3722824b27a05c16806cbd1

- OVS build:

  joid_location: *cloud-archive:liberty* release: 1.4.0

4.4 JOID components

- MAAS:

location: ppa:maas/stable release: 1.9.0

- JUJU:

  location: ppa:juju/stable release: 1.25.3

- CHARM:

  location: **https://code.launchpad.net/~openstack-charmers** charm: "cs:trusty/juju-gui" charm: "cs:trusty/ubuntu" charm: "cs:trusty/mongodb" branch: "lp:~openstack-charmers/charms/trusty/percona-cluster/next" branch: "lp:~openstack-charmers/charms/trusty/hacluster/next" branch: "lp:~openstack-charmers/charms/trusty/ceilometer/next" branch: "lp:~openstack-charmers/charms/trusty/ceilometer-agent/next" branch: "lp:~openstack-charmers/charms/trusty/heat/next" branch: lp:~openstack-charmers/charms/trusty/ceph/next branch: lp:~openstack-charmers/charms/trusty/ceph-osd/next branch: lp:~openstack-charmers/charms/trusty/ceph-radosgw/next branch: lp:~openstack-charmers/charms/trusty/cinder/next branch: lp:~openstack-charmers/charms/trusty/cinder-ceph/next branch: lp:~openstack-charmers/charms/trusty/rabbitmq-server/next branch: lp:~openstack-charmers/charms/trusty/keystone/next branch: lp:~openstack-charmers/charms/trusty/openstack-dashboard/next branch: lp:~openstack-charmers/charms/trusty/nova-compute/next branch: lp:~openstack-charmers/charms/trusty/nova-cloud-controller/next branch: lp:~openstack-charmers/charms/trusty/neutron-api/next branch: lp:~openstack-charmers/charms/trusty/neutron-gateway/next branch: lp:~openstack-charmers/charms/trusty/odl-controller/next branch: lp:~openstack-charmers/charms/trusty/glance/next branch: lp:~narindergupta/charms/trusty/promise/trunk branch: lp:~openstack-charmers/charms/trusty/neutron-api-odl/next branch: lp:~openstack-charmers/charms/trusty/openvswitch-odl/trunk branch: lp:~charmers/charms/precise/zookeeper/trunk branch: lp:~stub/charms/trusty/cassandra/noauthentication branch: lp:~sdn-charmers/charms/trusty/contrail-configuration/trunk branch: lp:~sdn-charmers/charms/trusty/contrail-control/trunk branch: lp:~sdn-charmers/charms/trusty/contrail-analytics/trunk branch: lp:~sdn-charmers/charms/trusty/contrail-webui/trunk branch: lp:~opnfv-team/charms/trusty/neutron-api-contrail/trunk branch: lp:~opnfv-team/charms/trusty/neutron-contrail/trunk branch: lp:~sdn-charmers/charms/trusty/keepalived/trunk branch: "lp:~wuwenbin2/onosfw/onos-controller" branch: "lp:~wuwenbin2/onosfw/neutron-api-onos" branch: "lp:~wuwenbin2/onosfw/openvswitch-onos"