



# **OPNFV deployment tools common requirements**

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**OPNFV**

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## UX REQUIREMENTS

Releases: OPNFV Brahma Putra and Colorado

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

### 1.1 High availability requirements

- **GENESIS-9:** Brahma Putra and later: 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:** Brahma Putra and later: 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:** Brahma Putra and later: Automatically populate discovered servers into install tool (reduce user-intervention to a minimum).
- **GENESIS-28:** Brahma Putra and later: 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:** Brahma Putra and later: Neutron DHCP servers should be configured in HA per tenant.
- **GENESIS-44:** Brahma Putra and later: SDN Controller layer 3 forwarding support.
- **GENESIS-61:** Brahma Putra and later: Support layer 1/2 networking configuration.
- **GENESIS-62:** Brahma Putra and later: Support logical networks for target system.
- **GENESIS-72:** Brahma Putra and later: Support L3-neutron agent as an option for L3.
- **GENESIS-69:** Brahma Putra and later: Provide isolated compute node resources for CEPH OSD.

### 1.3 Versioning requirements

- **GENESIS-12:** Brahma Putra and later: 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: Brahmaputra and later: Common ability to input site, topology, and server information.
- GENESIS-17: Brahmaputra and later: User-configurable parameters available via config files.
- GENESIS-18: Brahmaputra and later: Allow assignment of different roles to servers, so that hardware and software can be configured according to the role.
- GENESIS-19: Brahmaputra and later: Deployment tool to provide for automatic device discovery.
- GENESIS-25: Brahmaputra and later: Installers should configure NTP servers on the servers for clock synchronization.
- GENESIS-40: Brahmaputra and later: Hardware replacement.

## 1.5 Requirements pertaining to the qualities of the deployment process

- GENESIS-74: Brahmaputra and later: 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: Brahmaputra and later: Installers to be agnostic to type of hard drives used.

## 1.6 Security related requirements

- GENESIS-23: Brahmaputra and later: Installers should enable Mandatory Access Control by default. Installers should enable MAC either using SELinux or AppArmor.
- GENESIS-24: Brahmaputra and later: 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: Brahmaputra and later: Ability to install with upstream artifacts.
- GENESIS-38: Brahmaputra and later: 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: Brahmaputra and later: 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:** Brahmaputra and later: Installers should provide a user guide.
- **GENESIS-35:** Brahmaputra and later: Installers should provide release notes for an OPNFV release as part of the documentation provided.





## TARGET SYSTEM REQUIREMENTS

Release: OPNFV Brahma Putra

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:



## TARGET SYSTEM REQUIREMENTS

Release: OPNFV Colorado

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.

### **3.1 Minimum base Operating System distribution supported:**

### **3.2 Components/features installed for OpenStack:**

### **3.3 Minimum base OpenStack distribution supported:**

### **3.4 SDN Controller:**

### **3.5 VM Controller:**

### **3.6 Hypervisor:**

### **3.7 Virtual forwarder:**



## 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.

### 4.1 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	yes
GENESIS-6 - OpenDaylight Beryllium	yes	yes	yes	yes
GENESIS-49 - ONOSFW	yes	yes	yes	yes
GENESIS-8 - KVM Hypervisor	yes	yes	yes	yes

## 4.2 User experience requirements

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

## KEY ARTIFACTS AND THEIR LOCATIONS

Release: OPNFV Brahmaputra

### 5.1 VM manager components

- OpenStack:

location: <http://docs.openstack.org/releases/releases/liberty.html> joid\_location: cloud-archive:liberty release: Liberty

### 5.2 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/6w76eo7loltv5/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

### 5.3 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

### 5.4 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:~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:~charmsh/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"