```
Usage: packstack [options] [--help]

Options:
  --version             show program's version number and exit
  -h, --help            show this help message and exit
  --gen-answer-file=GEN_ANSWER_FILE
                        Generate a template of an answer file.
  --answer-file=ANSWER_FILE
                        Runs the configuration in non-interactive mode,
                        extracting all information from theconfiguration file.
                        using this option excludes all other options
  --install-hosts=INSTALL_HOSTS
                        Install on a set of hosts in a single step. The format
                        should be a comma separated list of hosts, the first
                        is setup as a controller, and the others are setup as
                        compute nodes.if only a single host is supplied then
                        it is setup as an all in one installation. An
                        answerfile will also be generated and should be used
                        if Packstack needs to be run a second time
  --allinone            Shorthand for --install-hosts=<local ipaddr>
                        --novanetwork-pubif=<dev> --novacompute-privif=lo
                        --novanetwork-privif=lo --os-swift-install=y --nagios-
                        install=y , this option can be used to install an all
                        in one OpenStack on this host
  -t TIMEOUT, --timeout=TIMEOUT
                        The timeout for puppet Exec calls
  -o, --options         Print details on options available in answer file(rst
                        format)
  -d, --debug           Enable debug in logging
  -y, --dry-run         Don't execute, just generate manifests

  Global Options:
    --ssh-public-key=SSH_PUBLIC_KEY
                        Path to a public key to install on servers. If a
                        usable key has not been installed on the remote
                        servers, the user is prompted for a password and this
                        key is installed so the password will not be required
                        again.
    --default-password=DEFAULT_PASSWORD
                        Default password to be used everywhere (overridden by
                        passwords set for individual services or users).
    --service-workers=SERVICE_WORKERS
                        The amount of service workers/threads to use for each
                        service. Useful to tweak when you have memory
                        constraints. Defaults to the amount of cores on the
                        system.
    --mariadb-install=MARIADB_INSTALL
                        Specify 'y' to install MariaDB. ['y', 'n']
    --os-glance-install=OS_GLANCE_INSTALL
                        Specify 'y' to install OpenStack Image Service
                        (glance). ['y', 'n']
    --os-cinder-install=OS_CINDER_INSTALL
                        Specify 'y' to install OpenStack Block Storage
                        (cinder). ['y', 'n']
    --os-manila-install=OS_MANILA_INSTALL
                        Specify 'y' to install OpenStack Shared File System
                        (manila). ['y', 'n']
    --os-nova-install=OS_NOVA_INSTALL
                        Specify 'y' to install OpenStack Compute (nova). ['y',
                        'n']
    --os-neutron-install=OS_NEUTRON_INSTALL
                        Specify 'y' to install OpenStack Networking (neutron);
                        otherwise, Compute Networking (nova) will be used.
                        ['y', 'n']
    --os-horizon-install=OS_HORIZON_INSTALL
                        Specify 'y' to install OpenStack Dashboard (horizon).
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                    ['y', 'n']
  --os-swift-install=OS_SWIFT_INSTALL
                    Specify 'y' to install OpenStack Object Storage
                    (swift). ['y', 'n']
  --os-ceilometer-install=OS_CEILOMETER_INSTALL
                    Specify 'y' to install OpenStack Metering
                    (ceilometer). ['y', 'n']
  --os-aodh-install=OS_AODH_INSTALL
                    Specify 'y' to install OpenStack Telemetry Alarming
                    (Aodh). Note Aodh requires Ceilometer to be installed
                    as well. ['y', 'n']
  --os-gnocchi-install=OS_GNOCCHI_INSTALL
                    Specify 'y' to install OpenStack Metering as a Service
                    (gnocchi). ['y', 'n']
  --os-sahara-install=OS_SAHARA_INSTALL
                    Specify 'y' to install OpenStack Data Processing
                    (sahara). In case of sahara installation packstack
                    also installs heat.['y', 'n']
  --os-heat-install=OS_HEAT_INSTALL
                    Specify 'y' to install OpenStack Orchestration (heat).
                    ['y', 'n']
  --os-trove-install=OS_TROVE_INSTALL
                    Specify 'y' to install OpenStack Database (trove)
                    ['y', 'n']
  --os-ironic-install=OS_IRONIC_INSTALL
                    Specify 'y' to install OpenStack Bare Metal
                    Provisioning (ironic). ['y', 'n']
  --os-client-install=OS_CLIENT_INSTALL
                    Specify 'y' to install the OpenStack Client packages
                    (command-line tools). An admin "rc" file will also be
                    installed. ['y', 'n']
  --ntp-servers=NTP_SERVERS
                    Comma-separated list of NTP servers. Leave plain if
                    Packstack should not install ntpd on instances.
  --nagios-install=NAGIOS_INSTALL
                    Specify 'y' to install Nagios to monitor OpenStack
                    hosts. Nagios provides additional tools for monitoring
                    the OpenStack environment. ['y', 'n']
  --exclude-servers=EXCLUDE_SERVERS
                    Comma-separated list of servers to be excluded from
                    the installation. This is helpful if you are running
                    Packstack a second time with the same answer file and
                    do not want Packstack to overwrite these server's
                    configurations. Leave empty if you do not need to
                    exclude any servers.
  --os-debug-mode=OS_DEBUG_MODE
                    Specify 'y' if you want to run OpenStack services in
                    debug mode; otherwise, specify 'n'. ['y', 'n']
  --os-controller-host=OS_CONTROLLER_HOST
                    Server on which to install OpenStack services specific
                    to the controller role (for example, API servers or
                    dashboard).
  --os-compute-hosts=OS_COMPUTE_HOSTS
                    List the servers on which to install the Compute
                    service.
  --os-network-hosts=OS_NETWORK_HOSTS
                    List of servers on which to install the network
                    service such as Compute networking (nova network) or
                    OpenStack Networking (neutron).
  --os-vmware=OS_VMWARE
                    Specify 'y' if you want to use VMware vCenter as
                    hypervisor and storage; otherwise, specify 'n'. ['y',
                    'n']
  --unsupported=UNSUPORTED
                    Specify 'y' if you want to use unsupported parameters.
                    This should be used only if you know what you are
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                        doing. Issues caused by using unsupported options will
                        not be fixed before the next major release. ['y', 'n']
  --use-subnets=USE_SUBNETS
                        Specify 'y' if you want to use subnet addresses (in
                        CIDR format) instead of interface names in following
                        options: CONFIG_NOVA_COMPUTE_PRIVIF,
                        CONFIG_NOVA_NETWORK_PRIVIF, CONFIG_NOVA_NETWORK_PUBIF,
                        CONFIG_NEUTRON_OVS_BRIDGE_IFACES,
                        CONFIG_NEUTRON_LB_INTERFACE_MAPPINGS,
                        CONFIG_NEUTRON_OVS_TUNNEL_IF. This is useful for cases
                        when interface names are not same on all installation
                        hosts.

vCenter Config Parameters:
  --vcenter-host=VCENTER_HOST
                        IP address of the VMware vCenter server.
  --vcenter-username=VCENTER_USERNAME
                        User name for VMware vCenter server authentication.
  --vcenter-password=VCENTER_PASSWORD
                        Password for VMware vCenter server authentication.
  --vcenter-clusters=VCENTER_CLUSTERS
                        Comma separated list of names of the VMware vCenter
                        clusters. Note: if multiple clusters are specified
                        each one is mapped to one compute, otherwise all
                        computes are mapped to same cluster.

Global unsupported options:
  --os-storage-host=OS_STORAGE_HOST
                        (Unsupported!) Server on which to install OpenStack
                        services specific to storage servers such as Image or
                        Block Storage services.
  --os-sahara-host=OS_SAHARA_HOST
                        (Unsupported!) Server on which to install OpenStack
                        services specific to OpenStack Data Processing
                        (sahara).

Server Prepare Configs :
  --use-epel=USE_EPEL
                        Specify 'y' to enable the EPEL repository (Extra
                        Packages for Enterprise Linux). ['y', 'n']
  --additional-repo=ADDITIONAL_REPO
                        Comma-separated list of URLs for any additional yum
                        repositories, to use for installation.
  --enable-rdo-testing=ENABLE_RDO_TESTING
                        Specify 'y' to enable the RDO testing repository.
                        ['y', 'n']

RHEL config:
  --rh-username=RH_USERNAME
                        To subscribe each server with Red Hat Subscription
                        Manager, include this with CONFIG_RH_PW.
  --rhn-satellite-server=RHN_SATELLITE_SERVER
                        To subscribe each server to receive updates from a
                        Satellite server, provide the URL of the Satellite
                        server. You must also provide a user name
                        (CONFIG_SATELLITE_USERNAME) and password
                        (CONFIG_SATELLITE_PASSWORD) or an access key
                        (CONFIG_SATELLITE_AKEY) for authentication.
  --rh-sat6-server=RH_SAT6_SERVER
                        Specify a Satellite 6 Server to register to. If not
                        specified, Packstack will register the system to the
                        Red Hat server. When this option is specified, you
                        also need to set the Satellite 6 organization
                        (CONFIG_RH_SAT6_ORG) and an activation key
                        (CONFIG_RH_SAT6_KEY).
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  RH subscription manager config:
    --rh-password=RH_PASSWORD
                        To subscribe each server with Red Hat Subscription
                        Manager, include this with CONFIG_RH_USER.
    --rh-enable-optional=RH_ENABLE_OPTIONAL
                        Specify 'y' to enable RHEL optional repositories.
                        ['y', 'n']
    --rh-proxy-host=RH_PROXY_HOST
                        HTTP proxy to use with Red Hat Subscription Manager.
    --rh-sat6-org=RH_SAT6_ORG
                        Specify a Satellite 6 Server organization to use when
                        registering the system.
    --rh-sat6-key=RH_SAT6_KEY
                        Specify a Satellite 6 Server activation key to use
                        when registering the system.

  RH subscription manager proxy config:
    --rh-proxy-port=RH_PROXY_PORT
                        Port to use for Red Hat Subscription Manager's HTTP
                        proxy.
    --rh-proxy-user=RH_PROXY_USER
                        User name to use for Red Hat Subscription Manager's
                        HTTP proxy.
    --rh-proxy-password=RH_PROXY_PASSWORD
                        Password to use for Red Hat Subscription Manager's
                        HTTP proxy.

  RHN Satellite config:
    --rhn-satellite-username=RHN_SATELLITE_USERNAME
                        User name to authenticate with the RHN Satellite
                        server; if you intend to use an access key for
                        Satellite authentication, leave this blank.
    --rhn-satellite-password=RHN_SATELLITE_PASSWORD
                        Password to authenticate with the RHN Satellite
                        server; if you intend to use an access key for
                        Satellite authentication, leave this blank.
    --rhn-satellite-activation-key=RHN_SATELLITE_ACTIVATION_KEY
                        Access key for the Satellite server; if you intend to
                        use a user name and password for Satellite
                        authentication, leave this blank.
    --rhn-satellite-cacert=RHN_SATELLITE_CACERT
                        Certificate path or URL of the certificate authority
                        to verify that the connection with the Satellite
                        server is secure. If you are not using Satellite in
                        your deployment, leave this blank.
    --rhn-satellite-profile=RHN_SATELLITE_PROFILE
                        Profile name that should be used as an identifier for
                        the system in RHN Satellite (if required).
    --rhn-satellite-flags=RHN_SATELLITE_FLAGS
                        Comma-separated list of flags passed to the rhnreg_ks
                        command. Valid flags are: novirtinfo, norhnsd,
                        nopackages ['novirtinfo', 'norhnsd', 'nopackages']
    --rhn-satellite-proxy-host=RHN_SATELLITE_PROXY_HOST
                        HTTP proxy to use when connecting to the RHN Satellite
                        server (if required).

  RHN Satellite proxy config:
    --rhn-satellite-proxy-username=RHN_SATELLITE_PROXY_USERNAME
                        User name to authenticate with the Satellite-server
                        HTTP proxy.
    --rhn-satellite-proxy-password=RHN_SATELLITE_PROXY_PASSWORD
                        User password to authenticate with the Satellite-
                        server HTTP proxy.

  SSL Config parameters:
    --ssl-cacert-file=SSL_CACERT_FILE
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                      Specify filepath for CA cert file. If
                      CONFIG_SSL_CACERT_SELFSIGN is set to 'n' it has to be
                      preexisting file.
  --ssl-cacert-key-file=SSL_CACERT_KEY_FILE
                      Specify filepath for CA cert key file. If
                      CONFIG_SSL_CACERT_SELFSIGN is set to 'n' it has to be
                      preexisting file.
  --ssl-cert-dir=SSL_CERT_DIR
                      Enter the path to use to store generated SSL
                      certificates in.
  --ssl-cacert-selfsign=SSL_CACERT_SELFSIGN
                      Specify 'y' if you want Packstack to pregenerate the
                      CA Certificate.

SSL selfsigned CAcert Config parameters:
  --selfsign-cacert-subject-country=SELFSIGN_CACERT_SUBJECT_COUNTRY
                      Enter the selfsigned CAcert subject country.
  --selfsign-cacert-subject-state=SELFSIGN_CACERT_SUBJECT_STATE
                      Enter the selfsigned CAcert subject state.
  --selfsign-cacert-subject-location=SELFSIGN_CACERT_SUBJECT_LOCATION
                      Enter the selfsigned CAcert subject location.
  --selfsign-cacert-subject-organization=SELFSIGN_CACERT_SUBJECT_ORGANIZATION
                      Enter the selfsigned CAcert subject organization.
  --selfsign-cacert-subject-organizational-unit=SELFSIGN_CACERT_SUBJECT_ORGANIZATIONAL_UNIT
                      Enter the selfsigned CAcert subject organizational
                      unit.
  --selfsign-cacert-subject-common-name=SELFSIGN_CACERT_SUBJECT_COMMON_NAME
                      Enter the selfsigned CAcert subject common name.
  --selfsign-cacert-subject-email=SELFSIGN_CACERT_SUBJECT_EMAIL

AMQP Config parameters:
  --amqp-backend=AMQP_BACKEND
                      Service to be used as the AMQP broker. Allowed values
                      are: rabbitmq ['rabbitmq']
  --amqp-host=AMQP_HOST
                      IP address of the server on which to install the AMQP
                      service.
  --amqp-enable-ssl=AMQP_ENABLE_SSL
                      Specify 'y' to enable SSL for the AMQP service. ['y',
                      'n']
  --amqp-enable-auth=AMQP_ENABLE_AUTH
                      Specify 'y' to enable authentication for the AMQP
                      service. ['y', 'n']

AMQP Config SSL parameters:
  --amqp-nss-certdb-pw=AMQP_NSS_CERTDB_PW
                      Password for the NSS certificate database of the AMQP
                      service.

AMQP Config Athentication parameters:
  --amqp-auth-user=AMQP_AUTH_USER
                      User for AMQP authentication.
  --amqp-auth-password=AMQP_AUTH_PASSWORD
                      Password for AMQP authentication.

MariaDB Config parameters:
  --mariadb-host=MARIADB_HOST
                      IP address of the server on which to install MariaDB.
                      If a MariaDB installation was not specified in
                      CONFIG_MARIADB_INSTALL, specify the IP address of an
                      existing database server (a MariaDB cluster can also
                      be specified).
  --mariadb-pw=MARIADB_PW
                      Password for the MariaDB administrative user.

Keystone Config parameters:
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    --keystone-db-passwd=KEYSTONE_DB_PASSWD
                        Password to use for the Identity service (keystone) to
                        access the database.
    --keystone-db-purge-enable=KEYSTONE_DB_PURGE_ENABLE
                        Enter y if cron job for removing soft deleted DB rows
                        should be created.
    --keystone-region=KEYSTONE_REGION
                        Default region name to use when creating tenants in
                        the Identity service.
    --keystone-admin-email=KEYSTONE_ADMIN_EMAIL
                        Email address for the Identity service 'admin' user.
                        Defaults to
    --keystone-admin-username=KEYSTONE_ADMIN_USERNAME
                        User name for the Identity service 'admin' user.
                        Defaults to 'admin'.
    --keystone-admin-passwd=KEYSTONE_ADMIN_PASSWD
                        Password to use for the Identity service 'admin' user.
    --keystone-demo-passwd=KEYSTONE_DEMO_PASSWD
                        Password to use for the Identity service 'demo' user.
    --keystone-service-name=KEYSTONE_SERVICE_NAME
                        Name of service to use to run the Identity service
                        (keystone or httpd). ['keystone', 'httpd']
    --keystone-identity-backend=KEYSTONE_IDENTITY_BACKEND
                        Type of Identity service backend (sql or ldap).
                        ['sql', 'ldap']

  Keystone LDAP Identity Backend Config parameters:
    --keystone-ldap-url=KEYSTONE_LDAP_URL
                        URL for the Identity service LDAP backend.
    --keystone-ldap-user-dn=KEYSTONE_LDAP_USER_DN
                        User DN for the Identity service LDAP backend.  Used
                        to bind to the LDAP server if the LDAP server does not
                        allow anonymous authentication.
    --keystone-ldap-user-password=KEYSTONE_LDAP_USER_PASSWORD
                        User DN password for the Identity service LDAP
                        backend.
    --keystone-ldap-suffix=KEYSTONE_LDAP_SUFFIX
                        Base suffix for the Identity service LDAP backend.
    --keystone-ldap-query-scope=KEYSTONE_LDAP_QUERY_SCOPE
                        Query scope for the Identity service LDAP backend. Use
                        'one' for onelevel/singleLevel or 'sub' for
                        subtree/wholeSubtree ('base' is not actually used by
                        the Identity service and is therefore deprecated).
                        ['base', 'one', 'sub']
    --keystone-ldap-page-size=KEYSTONE_LDAP_PAGE_SIZE
                        Query page size for the Identity service LDAP backend.
    --keystone-ldap-user-subtree=KEYSTONE_LDAP_USER_SUBTREE
                        User subtree for the Identity service LDAP backend.
    --keystone-ldap-user-filter=KEYSTONE_LDAP_USER_FILTER
                        User query filter for the Identity service LDAP
                        backend.
    --keystone-ldap-user-objectclass=KEYSTONE_LDAP_USER_OBJECTCLASS
                        User object class for the Identity service LDAP
                        backend.
    --keystone-ldap-user-id-attribute=KEYSTONE_LDAP_USER_ID_ATTRIBUTE
                        User ID attribute for the Identity service LDAP
                        backend.
    --keystone-ldap-user-name-attribute=KEYSTONE_LDAP_USER_NAME_ATTRIBUTE
                        User name attribute for the Identity service LDAP
                        backend.
    --keystone-ldap-user-mail-attribute=KEYSTONE_LDAP_USER_MAIL_ATTRIBUTE
                        User email address attribute for the Identity service
                        LDAP backend.
    --keystone-ldap-user-enabled-attribute=KEYSTONE_LDAP_USER_ENABLED_ATTRIBUTE
                        User-enabled attribute for the Identity service LDAP
                        backend.
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    --keystone-ldap-user-enabled-mask=KEYSTONE_LDAP_USER_ENABLED_MASK
                        Bit mask integer applied to user-enabled attribute for
                        the Identity service LDAP backend. Indicate the bit
                        that the enabled value is stored in if the LDAP server
                        represents "enabled" as a bit on an integer rather
                        than a boolean. A value of "0" indicates the mask is
                        not used (default). If this is not set to "0", the
                        typical value is "2", typically used when
                        "CONFIG_KEYSTONE_LDAP_USER_ENABLED_ATTRIBUTE =
                        userAccountControl".
    --keystone-ldap-user-enabled-default=KEYSTONE_LDAP_USER_ENABLED_DEFAULT
                        Value of enabled attribute which indicates user is
                        enabled for the Identity service LDAP backend. This
                        should match an appropriate integer value if the LDAP
                        server uses non-boolean (bitmask) values to indicate
                        whether a user is enabled or disabled. If this is not
                        set as 'y', the typical value is "512". This is
                        typically used when
                        "CONFIG_KEYSTONE_LDAP_USER_ENABLED_ATTRIBUTE =
                        userAccountControl".
    --keystone-ldap-user-enabled-invert=KEYSTONE_LDAP_USER_ENABLED_INVERT
                        Specify 'y' if users are disabled (not enabled) in the
                        Identity service LDAP backend (inverts boolean-enalbed
                        values).  Some LDAP servers use a boolean lock
                        attribute where "y" means an account is disabled.
                        Setting this to 'y' allows these lock attributes to be
                        used. This setting will have no effect if
                        "CONFIG_KEYSTONE_LDAP_USER_ENABLED_MASK" is in use.
                        ['n', 'y']
    --keystone-ldap-user-attribute-ignore=KEYSTONE_LDAP_USER_ATTRIBUTE_IGNORE
                        Comma-separated list of attributes stripped from LDAP
                        user entry upon update.

    --keystone-ldap-user-default-project-id-attribute=KEYSTONE_LDAP_USER_DEFAULT_PROJECT_ID_ATTRI
    BUTE
                        Identity service LDAP attribute mapped to
                        default_project_id for users.
    --keystone-ldap-user-allow-create=KEYSTONE_LDAP_USER_ALLOW_CREATE
                        Specify 'y' if you want to be able to create Identity
                        service users through the Identity service interface;
                        specify 'n' if you will create directly in the LDAP
                        backend. ['n', 'y']
    --keystone-ldap-user-allow-update=KEYSTONE_LDAP_USER_ALLOW_UPDATE
                        Specify 'y' if you want to be able to update Identity
                        service users through the Identity service interface;
                        specify 'n' if you will update directly in the LDAP
                        backend. ['n', 'y']
    --keystone-ldap-user-allow-delete=KEYSTONE_LDAP_USER_ALLOW_DELETE
                        Specify 'y' if you want to be able to delete Identity
                        service users through the Identity service interface;
                        specify 'n' if you will delete directly in the LDAP
                        backend. ['n', 'y']
    --keystone-ldap-user-pass-attribute=KEYSTONE_LDAP_USER_PASS_ATTRIBUTE
                        Identity service LDAP attribute mapped to password.
    --keystone-ldap-user-enabled-emulation-dn=KEYSTONE_LDAP_USER_ENABLED_EMULATION_DN
                        DN of the group entry to hold enabled LDAP users when
                        using enabled emulation.

    --keystone-ldap-user-additional-attribute-mapping=KEYSTONE_LDAP_USER_ADDITIONAL_ATTRIBUTE_MAP
    PING
                        List of additional LDAP attributes for mapping
                        additional attribute mappings for users. The
                        attribute-mapping format is <ldap_attr>:<user_attr>,
                        where ldap_attr is the attribute in the LDAP entry and
                        user_attr is the Identity API attribute.
    --keystone-ldap-group-subtree=KEYSTONE_LDAP_GROUP_SUBTREE
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                        Group subtree for the Identity service LDAP backend.
  --keystone-ldap-group-filter=KEYSTONE_LDAP_GROUP_FILTER
                        Group query filter for the Identity service LDAP
                        backend.
  --keystone-ldap-group-objectclass=KEYSTONE_LDAP_GROUP_OBJECTCLASS
                        Group object class for the Identity service LDAP
                        backend.
  --keystone-ldap-group-id-attribute=KEYSTONE_LDAP_GROUP_ID_ATTRIBUTE
                        Group ID attribute for the Identity service LDAP
                        backend.
  --keystone-ldap-group-name-attribute=KEYSTONE_LDAP_GROUP_NAME_ATTRIBUTE
                        Group name attribute for the Identity service LDAP
                        backend.
  --keystone-ldap-group-member-attribute=KEYSTONE_LDAP_GROUP_MEMBER_ATTRIBUTE
                        Group member attribute for the Identity service LDAP
                        backend.
  --keystone-ldap-group-desc-attribute=KEYSTONE_LDAP_GROUP_DESC_ATTRIBUTE
                        Group description attribute for the Identity service
                        LDAP backend.
  --keystone-ldap-group-attribute-ignore=KEYSTONE_LDAP_GROUP_ATTRIBUTE_IGNORE
                        Comma-separated list of attributes stripped from LDAP
                        group entry upon update.
  --keystone-ldap-group-allow-create=KEYSTONE_LDAP_GROUP_ALLOW_CREATE
                        Specify 'y' if you want to be able to create Identity
                        service groups through the Identity service interface;
                        specify 'n' if you will create directly in the LDAP
                        backend. ['n', 'y']
  --keystone-ldap-group-allow-update=KEYSTONE_LDAP_GROUP_ALLOW_UPDATE
                        Specify 'y' if you want to be able to update Identity
                        service groups through the Identity service interface;
                        specify 'n' if you will update directly in the LDAP
                        backend. ['n', 'y']
  --keystone-ldap-group-allow-delete=KEYSTONE_LDAP_GROUP_ALLOW_DELETE
                        Specify 'y' if you want to be able to delete Identity
                        service groups through the Identity service interface;
                        specify 'n' if you will delete directly in the LDAP
                        backend. ['n', 'y']

  --keystone-ldap-group-additional-attribute-mapping=KEYSTONE_LDAP_GROUP_ADDITIONAL_ATTRIBUTE_M
  APPING
                        List of additional LDAP attributes used for mapping
                        additional attribute mappings for groups. The
                        attribute=mapping format is <ldap_attr>:<group_attr>,
                        where ldap_attr is the attribute in the LDAP entry and
                        group_attr is the Identity API attribute.
  --keystone-ldap-use-tls=KEYSTONE_LDAP_USE_TLS
                        Specify 'y' if the Identity service LDAP backend
                        should use TLS. ['n', 'y']
  --keystone-ldap-tls-cacertdir=KEYSTONE_LDAP_TLS_CACERTDIR
                        CA certificate directory for Identity service LDAP
                        backend (if TLS is used).
  --keystone-ldap-tls-cacertfile=KEYSTONE_LDAP_TLS_CACERTFILE
                        CA certificate file for Identity service LDAP backend
                        (if TLS is used).
  --keystone-ldap-tls-req-cert=KEYSTONE_LDAP_TLS_REQ_CERT
                        Certificate-checking strictness level for Identity
                        service LDAP backend; valid options are: never, allow,
                        demand. ['never', 'allow', 'demand']

Glance Config parameters:
  --glance-db-passwd=GLANCE_DB_PASSWD
                        Password to use for the Image service (glance) to
                        access the database.
  --glance-ks-passwd=GLANCE_KS_PASSWD
                        Password to use for the Image service to authenticate
                        with the Identity service.
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    --glance-backend=GLANCE_BACKEND
                        Storage backend for the Image service (controls how
                        the Image service stores disk images). Valid options
                        are: file or swift (Object Storage). The Object
                        Storage service must be enabled to use it as a working
                        backend; otherwise, Packstack falls back to 'file'.
                        ['file', 'swift']

  Cinder Config parameters:
    --cinder-db-passwd=CINDER_DB_PASSWD
                        Password to use for the Block Storage service (cinder)
                        to access the database.
    --cinder-db-purge-enable=CINDER_DB_PURGE_ENABLE
                        Enter y if cron job for removing soft deleted DB rows
                        should be created.
    --cinder-ks-passwd=CINDER_KS_PASSWD
                        Password to use for the Block Storage service to
                        authenticate with the Identity service.
    --cinder-backend=CINDER_BACKEND
                        Storage backend to use for the Block Storage service;
                        valid options are: lvm, gluster, nfs, vmdk, netapp.
                        ['lvm', 'gluster', 'nfs', 'vmdk', 'netapp']

  Cinder volume create Config parameters:
    --cinder-volumes-create=CINDER_VOLUMES_CREATE
                        Specify 'y' to create the Block Storage volumes group.
                        That is, Packstack creates a raw disk image in
                        /var/lib/cinder, and mounts it using a loopback
                        device. This should only be used for testing on a
                        proof-of-concept installation of the Block Storage
                        service (a file-backed volume group is not suitable
                        for production usage). ['y', 'n']

  Cinder volume size Config parameters:
    --cinder-volumes-size=CINDER_VOLUMES_SIZE
                        Size of Block Storage volumes group. Actual volume
                        size will be extended with 3% more space for VG
                        metadata. Remember that the size of the volume group
                        will restrict the amount of disk space that you can
                        expose to Compute instances, and that the specified
                        amount must be available on the device used for
                        /var/lib/cinder.

  Cinder gluster Config parameters:
    --cinder-gluster-mounts=CINDER_GLUSTER_MOUNTS
                        A single or comma-separated list of Red Hat Storage
                        (gluster) volume shares to mount. Example: 'ip-address
                        :/vol-name', 'domain:/vol-name'

  Cinder NFS Config parameters:
    --cinder-nfs-mounts=CINDER_NFS_MOUNTS
                        A single or comma-separated list of NFS exports to
                        mount. Example: 'ip-address:/export-name'

  Cinder NetApp main configuration:
    --cinder-netapp-login=CINDER_NETAPP_LOGIN
                        Administrative user account name used to access the
                        NetApp storage system or proxy server.
    --cinder-netapp-password=CINDER_NETAPP_PASSWORD
                        Password for the NetApp administrative user account
                        specified in the CONFIG_CINDER_NETAPP_LOGIN parameter.
    --cinder-netapp-hostname=CINDER_NETAPP_HOSTNAME
                        Hostname (or IP address) for the NetApp storage system
                        or proxy server.

  Cinder NetApp ONTAP-iSCSI configuration:
```

```
  Cinder NetApp NFS configuration:

  Cinder NetApp iSCSI & 7-mode configuration:

  Cinder NetApp 7-mode Fibre Channel configuration:

  Cinder NetApp Vserver configuration:

  Cinder NetApp E-Series configuration:

  Ironic Options:
    --os-ironic-db-passwd=OS_IRONIC_DB_PASSWD
                        Password to use for OpenStack Bare Metal Provisioning
                        (ironic) to access the database.
    --os-ironic-ks-passwd=OS_IRONIC_KS_PASSWD
                        Password to use for OpenStack Bare Metal Provisioning
                        to authenticate with the Identity service.

  Nova Options:
    --nova-db-purge-enable=NOVA_DB_PURGE_ENABLE
                        Enter y if cron job for removing soft deleted DB rows
                        should be created.
    --nova-db-passwd=NOVA_DB_PASSWD
                        Password to use for the Compute service (nova) to
                        access the database.
    --nova-ks-passwd=NOVA_KS_PASSWD
                        Password to use for the Compute service to
                        authenticate with the Identity service.
    --novasched-cpu-allocation-ratio=NOVASCHED_CPU_ALLOCATION_RATIO
                        Overcommitment ratio for virtual to physical CPUs.
                        Specify 1.0 to disable CPU overcommitment.
    --novasched-ram-allocation-ratio=NOVASCHED_RAM_ALLOCATION_RATIO
                        Overcommitment ratio for virtual to physical RAM.
                        Specify 1.0 to disable RAM overcommitment.
    --novacompute-migrate-protocol=NOVACOMPUTE_MIGRATE_PROTOCOL
                        Protocol used for instance migration. Valid options
                        are: tcp and ssh. Note that by default, the Compute
                        user is created with the /sbin/nologin shell so that
                        the SSH protocol will not work. To make the SSH
                        protocol work, you must configure the Compute user on
                        compute hosts manually. ['tcp', 'ssh']
    --nova-compute-manager=NOVA_COMPUTE_MANAGER
                        Manager that runs the Compute service.
    --nova-ssl-cert=NOVA_SSL_CERT
                        PEM encoded certificate to be used for ssl on the
                        https server, leave blank if one should be generated,
                        this certificate should not require a passphrase. If
                        CONFIG_HORIZON_SSL is set to 'n' this parameter is
                        ignored.
    --nova-ssl-key=NOVA_SSL_KEY
                        SSL keyfile corresponding to the certificate if one
                        was entered. If CONFIG_HORIZON_SSL is set to 'n' this
                        parameter is ignored.
    --nova-pci-alias=NOVA_PCI_ALIAS
                        Enter the PCI passthrough array of hash in JSON style
                        for controller eg. [{"vendor_id":"1234",
                        "product_id":"5678", "name":"default"}, {...}]
    --nova-pci-passthrough-whitelist=NOVA_PCI_PASSTHROUGH_WHITELIST
                        Enter the PCI passthrough whitelist array of hash in
                        JSON style for controller eg. [{"vendor_id":"1234",
                        "product_id":"5678", "name':"default"}, {...}]
    --nova-libvirt-virt-type=NOVA_LIBVIRT_VIRT_TYPE
                        The hypervisor driver to use with Nova. Can be either
                        'qemu' or 'kvm'. Defaults to 'qemu' on virtual
                        machines and 'kvm' on bare metal hardware.
```

```
Nova Network Options:
  --novacompute-privif=NOVACOMPUTE_PRIVIF
                      Private interface for flat DHCP on the Compute
                      servers.
  --novanetwork-manager=NOVANETWORK_MANAGER
                      Compute Network Manager.
                      ['^nova\.network\.manager\.\w+Manager$']
  --novanetwork-pubif=NOVANETWORK_PUBIF
                      Public interface on the Compute network server.
  --novanetwork-privif=NOVANETWORK_PRIVIF
                      Private interface for flat DHCP on the Compute network
                      server.
  --novanetwork-fixed-range=NOVANETWORK_FIXED_RANGE
                      IP Range for flat DHCP. ['^[\:\.\da-
                      fA-f]+(\/\d+){0,1}$']
  --novanetwork-floating-range=NOVANETWORK_FLOATING_RANGE
                      IP Range for floating IP addresses. ['^[\:\.\da-
                      fA-f]+(\/\d+){0,1}$']
  --novanetwork-auto-assign-floating-ip=NOVANETWORK_AUTO_ASSIGN_FLOATING_IP
                      Specify 'y' to automatically assign a floating IP to
                      new instances. ['y', 'n']

Nova Network VLAN Options:
  --novanetwork-vlan-start=NOVANETWORK_VLAN_START
                      First VLAN for private networks (Compute networking).
  --novanetwork-num-networks=NOVANETWORK_NUM_NETWORKS
                      Number of networks to support (Compute networking).
  --novanetwork-network-size=NOVANETWORK_NETWORK_SIZE
                      Number of addresses in each private subnet (Compute
                      networking).

Neutron config:
  --os-neutron-ks-password=OS_NEUTRON_KS_PASSWORD
                      Password to use for OpenStack Networking (neutron) to
                      authenticate with the Identity service.
  --os-neutron-db-password=OS_NEUTRON_DB_PASSWORD
                      The password to use for OpenStack Networking to access
                      the database.
  --os-neutron-l3-ext-bridge=OS_NEUTRON_L3_EXT_BRIDGE
                      The name of the Open vSwitch bridge (or empty for
                      linuxbridge) for the OpenStack Networking L3 agent to
                      use for external  traffic. Specify 'provider' if you
                      intend to use a provider network to handle external
                      traffic.
  --os-neutron-metadata-pw=OS_NEUTRON_METADATA_PW
                      Password for the OpenStack Networking metadata agent.
  --os-neutron-lbaas-install=OS_NEUTRON_LBAAS_INSTALL
                      Specify 'y' to install OpenStack Networking's Load-
                      Balancing-as-a-Service (LBaaS). ['y', 'n']
  --os-neutron-metering-agent-install=OS_NEUTRON_METERING_AGENT_INSTALL
                      Specify 'y' to install OpenStack Networking's L3
                      Metering agent ['y', 'n']
  --neutron-fwaas=NEUTRON_FWAAS
                      Specify 'y' to configure OpenStack Networking's
                      Firewall-as-a-Service (FWaaS). ['y', 'n']
  --os-neutron-vpnaas-install=OS_NEUTRON_VPNAAS_INSTALL
                      Specify 'y' to configure OpenStack Networking's VPN-
                      as-a-Service (VPNaaS). ['y', 'n']

Neutron ML2 plugin config:
  --os-neutron-ml2-type-drivers=OS_NEUTRON_ML2_TYPE_DRIVERS
                      Comma-separated list of network-type driver entry
                      points to be loaded from the neutron.ml2.type_drivers
                      namespace. ['local', 'flat', 'vlan', 'gre', 'vxlan']
  --os-neutron-ml2-tenant-network-types=OS_NEUTRON_ML2_TENANT_NETWORK_TYPES
```

```
                        Comma-separated, ordered list of network types to
                        allocate as tenant networks. The 'local' value is only
                        useful for single-box testing and provides no
                        connectivity between hosts. ['local', 'vlan', 'gre',
                        'vxlan']
  --os-neutron-ml2-mechanism-drivers=OS_NEUTRON_ML2_MECHANISM_DRIVERS
                        Comma-separated ordered list of networking mechanism
                        driver entry points to be loaded from the
                        neutron.ml2.mechanism_drivers namespace. ['logger',
                        'test', 'linuxbridge', 'openvswitch', 'hyperv', 'ncs',
                        'arista', 'cisco_nexus', 'mlnx', 'l2population',
                        'sriovnicswitch']
  --os-neutron-ml2-flat-networks=OS_NEUTRON_ML2_FLAT_NETWORKS
                        Comma-separated list of physical_network names with
                        which flat networks can be created. Use * to allow
                        flat networks with arbitrary physical_network names.
  --os-neutron-ml2-vlan-ranges=OS_NEUTRON_ML2_VLAN_RANGES
                        Comma-separated list of
                        <physical_network>:<vlan_min>:<vlan_max> or
                        <physical_network> specifying physical_network names
                        usable for VLAN provider and tenant networks, as well
                        as ranges of VLAN tags on each available for
                        allocation to tenant networks.
  --os-neutron-ml2-tunnel-id-ranges=OS_NEUTRON_ML2_TUNNEL_ID_RANGES
                        Comma-separated list of <tun_min>:<tun_max> tuples
                        enumerating ranges of GRE tunnel IDs that are
                        available for tenant-network allocation. A tuple must
                        be an array with tun_max +1 - tun_min > 1000000.
  --os-neutron-ml2-vxlan-group=OS_NEUTRON_ML2_VXLAN_GROUP
                        Comma-separated list of addresses for VXLAN multicast
                        group. If left empty, disables VXLAN from sending
                        allocate broadcast traffic (disables multicast VXLAN
                        mode). Should be a Multicast IP (v4 or v6) address.
  --os-neutron-ml2-vni-ranges=OS_NEUTRON_ML2_VNI_RANGES
                        Comma-separated list of <vni_min>:<vni_max> tuples
                        enumerating ranges of VXLAN VNI IDs that are available
                        for tenant network allocation. Minimum value is 0 and
                        maximum value is 16777215.
  --os-neutron-l2-agent=OS_NEUTRON_L2_AGENT
                        Name of the L2 agent to be used with OpenStack
                        Networking. ['linuxbridge', 'openvswitch']
  --os-neutron-ml2-supported-pci-vendor-devs=OS_NEUTRON_ML2_SUPPORTED_PCI_VENDOR_DEVS
                        Comma separated list of supported PCI vendor devices
                        defined by vendor_id:product_id according to the PCI
                        ID Repository.
  --os-neutron-ml2-sriov-agent-required=OS_NEUTRON_ML2_SRIOV_AGENT_REQUIRED
                        Specify 'y' if the sriov agent is required
  --os-neutron-ml2-sriov-interface-mappings=OS_NEUTRON_ML2_SRIOV_INTERFACE_MAPPINGS
                        Comma-separated list of interface mappings for the
                        OpenStack Networking ML2 SRIOV agent. Each tuple in
                        the list must be in the format
                        <physical_network>:<net_interface>. Example:
                        physnet1:eth1,physnet2:eth2,physnet3:eth3.

Neutron LB agent config:
  --os-neutron-lb-interface-mappings=OS_NEUTRON_LB_INTERFACE_MAPPINGS
                        Comma-separated list of interface mappings for the
                        OpenStack Networking linuxbridge plugin. Each tuple in
                        the list must be in the format
                        <physical_network>:<net_interface>. Example:
                        physnet1:eth1,physnet2:eth2,physnet3:eth3.

Neutron OVS agent config:
  --os-neutron-ovs-bridge-mappings=OS_NEUTRON_OVS_BRIDGE_MAPPINGS
                        Comma-separated list of bridge mappings for the
                        OpenStack Networking Open vSwitch plugin. Each tuple
```

```
                        in the list must be in the format
                        <physical_network>:<ovs_bridge>. Example: physnet1:br-
                        eth1,physnet2:br-eth2,physnet3:br-eth3
  --os-neutron-ovs-bridge-interfaces=OS_NEUTRON_OVS_BRIDGE_INTERFACES
                        Comma-separated list of colon-separated Open vSwitch
                        <bridge>:<interface> pairs. The interface will be
                        added to the associated bridge. If you desire the
                        bridge to be persistent a value must be added to this
                        directive, also CONFIG_NEUTRON_OVS_BRIDGE_MAPPINGS
                        must be set in order to create the proper port. This
                        can be achieved from the command line by issuing the
                        following command: packstack --allinone --os-neutron-
                        ovs-bridge-mappings=ext-net:br-ex --os-neutron-ovs-
                        bridge-interfaces=br-ex:eth0
  --os-neutron-ovs-bridges-compute=OS_NEUTRON_OVS_BRIDGES_COMPUTE
                        Comma-separated list of Open vSwitch bridges that must
                        be created and connected to interfaces in compute
                        nodes when flat or vlan type drivers are enabled.
                        These bridges must exist in
                        CONFIG_NEUTRON_OVS_BRIDGE_MAPPINGS and
                        CONFIG_NEUTRON_OVS_BRIDGE_IFACES. Example: --os-
                        neutron-ovs-bridges-compute=br-vlan --os-neutron-ovs-
                        bridge-mappings="extnet:br-ex,physnet1:br-vlan" --os-
                        neutron-ovs-bridge-interfaces="br-ex:eth1,br-
                        vlan:eth2"

Neutron OVS agent config for tunnels:
  --os-neutron-ovs-tunnel-if=OS_NEUTRON_OVS_TUNNEL_IF
                        Interface for the Open vSwitch tunnel. Packstack
                        overrides the IP address used for tunnels on this
                        hypervisor to the IP found on the specified interface
                        (for example, eth1).
  --os-neutron-ovs-tunnel-subnets=OS_NEUTRON_OVS_TUNNEL_SUBNETS
                        Comma-separated list of subnets (for example,
                        192.168.10.0/24,192.168.11.0/24) used for sending
                        tunneling packets. This is used to configure IP
                        filtering to accept tunneling packets from these
                        subnets instead of specific IP addresses of peer
                        nodes. This is useful when you add existing nodes to
                        EXCLUDE_SERVERS because, in this case, packstack
                        cannot modify the IP filtering of the existing nodes.

Neutron OVS agent config for VXLAN:
  --os-neutron-ovs-vxlan-udp-port=OS_NEUTRON_OVS_VXLAN_UDP_PORT
                        VXLAN UDP port.

Manila Config parameters:
  --manila-db-passwd=MANILA_DB_PASSWD
                        Password to use for the OpenStack File Share service
                        (manila) to access the database.
  --manila-ks-passwd=MANILA_KS_PASSWD
                        Password to use for the OpenStack File Share service
                        (manila) to authenticate with the Identity service.
  --manila-backend=MANILA_BACKEND
                        Backend for the OpenStack File Share service (manila);
                        valid options are: generic, netapp, glusternative, or
                        glusternfs. ['generic', 'netapp', 'glusternative',
                        'glusternfs']

Manila NetApp configuration:
  --manila-netapp-driver-handles-share-servers=MANILA_NETAPP_DRIVER_HANDLES_SHARE_SERVERS
                        Denotes whether the driver should handle the
                        responsibility of managing share servers. This must be
                        set to false if the driver is to operate without
                        managing share servers. Defaults to 'false' ['true',
                        'false']
```

```
    --manila-netapp-transport-type=MANILA_NETAPP_TRANSPORT_TYPE
                        The transport protocol used when communicating with
                        the storage system or proxy server. Valid values are
                        'http' and 'https'. Defaults to 'https'. ['https',
                        'http']
    --manila-netapp-login=MANILA_NETAPP_LOGIN
                        Administrative user account name used to access the
                        NetApp storage system.  Defaults to ''.
    --manila-netapp-password=MANILA_NETAPP_PASSWORD
                        Password for the NetApp administrative user account
                        specified in the CONFIG_MANILA_NETAPP_LOGIN parameter.
                        Defaults to ''.
    --manila-netapp-server-hostname=MANILA_NETAPP_SERVER_HOSTNAME
                        Hostname (or IP address) for the NetApp storage system
                        or proxy server. Defaults to ''.
    --manila-netapp-storage-family=MANILA_NETAPP_STORAGE_FAMILY
                        The storage family type used on the storage system;
                        valid values are ontap_cluster for clustered Data
                        ONTAP. Defaults to 'ontap_cluster'. ['ontap_cluster']
    --manila-netapp-server-port=MANILA_NETAPP_SERVER_PORT
                        The TCP port to use for communication with the storage
                        system or proxy server. If not specified, Data ONTAP
                        drivers will use 80 for HTTP and 443 for HTTPS.
                        Defaults to '443'.
    --manila-netapp-aggregate-name-search-pattern=MANILA_NETAPP_AGGREGATE_NAME_SEARCH_PATTERN
                        Pattern for searching available aggregates for NetApp
                        provisioning. Defaults to '(.*)'.

  Manila NetApp multi-SVM configuration:
    --manila-netapp-root-volume-aggregate=MANILA_NETAPP_ROOT_VOLUME_AGGREGATE
                        Name of aggregate on which to create the NetApp root
                        volume. This option only applies when the option
                        CONFIG_MANILA_NETAPP_DRV_HANDLES_SHARE_SERVERS is set
                        to True.
    --manila-netapp-root-volume-name=MANILA_NETAPP_ROOT_VOLUME_NAME
                        NetApp root volume name. Defaults to 'root'.

  Manila NetApp single-SVM configuration:
    --manila-netapp-vserver=MANILA_NETAPP_VSERVER
                        This option specifies the storage virtual machine
                        (previously called a Vserver) name on the storage
                        cluster on which provisioning of shared file systems
                        should occur. This option only applies when the option
                        driver_handles_share_servers is set to False. Defaults
                        to ''.

  Manila generic driver configuration:
    --manila-generic-driver-handles-share-servers=MANILA_GENERIC_DRIVER_HANDLES_SHARE_SERVERS
                        Denotes whether the driver should handle the
                        responsibility of managing share servers. This must be
                        set to false if the driver is to operate without
                        managing share servers. Defaults to 'true'. ['true',
                        'false']
    --manila-generic-volume-name-template=MANILA_GENERIC_VOLUME_NAME_TEMPLATE
                        Volume name template for Manila service. Defaults to
                        'manila-share-%s'.
    --manila-generic-share-mount-path=MANILA_GENERIC_SHARE_MOUNT_PATH
                        Share mount path for Manila service. Defaults to
                        '/shares'.
    --manila-service-image-location=MANILA_SERVICE_IMAGE_LOCATION
                        Location of disk image for Manila service instance.
                        Defaults to '
    --manila-service-instance-user=MANILA_SERVICE_INSTANCE_USER
                        User in Manila service instance.
    --manila-service-instance-password=MANILA_SERVICE_INSTANCE_PASSWORD
                        Password to service instance user.
```

```
Manila general network configuration:
  --manila-network-type=MANILA_NETWORK_TYPE
                        Type of networking that the backend will use. A more
                        detailed description of each option is available in
                        the Manila docs. Defaults to 'neutron'. ['neutron',
                        'nova-network', 'standalone']

Manila standalone network configuration:
  --standalone_network_plugin_gateway=STANDALONE_NETWORK_PLUGIN_GATEWAY
                        Gateway IPv4 address that should be used. Required.
                        Defaults to ''.
  --standalone_network_plugin_mask=STANDALONE_NETWORK_PLUGIN_MASK
                        Network mask that will be used. Can be either decimal
                        like '24' or binary like '255.255.255.0'. Required.
                        Defaults to ''.
  --standalone_network_plugin_segmentation_id=STANDALONE_NETWORK_PLUGIN_SEGMENTATION_ID
                        Set it if network has segmentation (VLAN, VXLAN, etc).
                        It will be assigned to share-network and share drivers
                        will be able to use this for network interfaces within
                        provisioned share servers. Optional. Example: 1001.
                        Defaults to ''.
  --standalone_network_plugin_ip_range=STANDALONE_NETWORK_PLUGIN_IP_RANGE
                        Can be IP address, range of IP addresses or list of
                        addresses or ranges. Contains addresses from IP
                        network that are allowed to be used. If empty, then
                        will be assumed that all host addresses from network
                        can be used. Optional. Examples: 10.0.0.10 or
                        10.0.0.10-10.0.0.20 or
                        10.0.0.10-10.0.0.20,10.0.0.30-10.0.0.40,10.0.0.50.
                        Defaults to ''.
  --standalone_network_plugin_ip_version=STANDALONE_NETWORK_PLUGIN_IP_VERSION
                        IP version of network. Optional. Defaults to '4'.
                        ['4', '6']

Manila GlusterFS native configuration:
  --glusterfs-servers=GLUSTERFS_SERVERS
                        List of GlusterFS servers that can be used to create
                        shares. Each GlusterFS server should be of the form
                        [remoteuser@]<volserver>, and they are assumed to
                        belong to distinct Gluster clusters.
  --glusterfs-native-path-to-private_key=GLUSTERFS_NATIVE_PATH_TO_PRIVATE_KEY
                        Path of Manila host's private SSH key file.
  --glusterfs-volume-pattern=GLUSTERFS_VOLUME_PATTERN
                        Regular expression template used to filter GlusterFS
                        volumes for share creation. The regex template can
                        optionally (ie. with support of the GlusterFS backend)
                        contain the #{size} parameter which matches an integer
                        (sequence of digits) in which case the value shall be
                        intepreted as size of the volume in GB. Examples:
                        "manila-share-volume-d+$", "manila-share-
                        volume-#{size}G-d+$"; with matching volume names,
                        respectively: "manila-share-volume-12", "manila-share-
                        volume-3G-13". In latter example, the number that
                        matches "#{size}", that is, 3, is an indication that
                        the size of volume is 3G.

Manila GlusterNFS configuration:
  --glusterfs-target=GLUSTERFS_TARGET
                        Specifies the GlusterFS volume to be mounted on the
                        Manila host. For e.g:
                        [remoteuser@]<volserver>:/<volid>
  --glusterfs-mount-point-base=GLUSTERFS_MOUNT_POINT_BASE
                        Base directory containing mount points for Gluster
                        volumes.
  --glusterfs-nfs-server-type=GLUSTERFS_NFS_SERVER_TYPE
```

```
                        Type of NFS server that mediate access to the Gluster
                        volumes (Gluster or Ganesha).
  --glusterfs-path-to-private-key=GLUSTERFS_PATH_TO_PRIVATE_KEY
                        Path of Manila host's private SSH key file.
  --glusterfs-ganesha-server-ip=GLUSTERFS_GANESHA_SERVER_IP
                        Remote Ganesha server node's IP address.

NOVACLIENT Config parameters:

OpenStack Horizon Config parameters:
  --os-horizon-ssl=OS_HORIZON_SSL
                        Specify 'y' to set up Horizon communication over
                        https. ['y', 'n']

SSL Config parameters:
  --os-ssl-cert=OS_SSL_CERT
                        PEM-encoded certificate to be used for SSL connections
                        on the https server. To generate a certificate, leave
                        blank.
  --os-ssl-key=OS_SSL_KEY
                        SSL keyfile corresponding to the certificate if one
                        was specified. The certificate should not require a
                        passphrase.
  --os-ssl-cachain=OS_SSL_CACHAIN

OpenStack Swift Config parameters:
  --os-swift-ks-passwd=OS_SWIFT_KS_PASSWD
                        Password to use for the Object Storage service to
                        authenticate with the Identity service.
  --os-swift-storages=OS_SWIFT_STORAGES
                        Comma-separated list of devices to use as storage
                        device for Object Storage. Each entry must take the
                        format /path/to/dev (for example, specifying /dev/vdb
                        installs /dev/vdb as the Object Storage storage
                        device; Packstack does not create the filesystem, you
                        must do this first). If left empty, Packstack creates
                        a loopback device for test setup.
  --os-swift-storage-zones=OS_SWIFT_STORAGE_ZONES
                        Number of Object Storage storage zones; this number
                        MUST be no larger than the number of configured
                        storage devices.
  --os-swift-storage-replicas=OS_SWIFT_STORAGE_REPLICAS
                        Number of Object Storage storage replicas; this number
                        MUST be no larger than the number of configured
                        storage zones.
  --os-swift-storage-fstype=OS_SWIFT_STORAGE_FSTYPE
                        File system type for storage nodes. ['xfs', 'ext4']
  --os-swift-storage-size=OS_SWIFT_STORAGE_SIZE
                        Size of the Object Storage loopback file storage
                        device.

Heat Config parameters:
  --os-heat-mysql-password=OS_HEAT_MYSQL_PASSWORD
                        Password used by Orchestration service user to
                        authenticate against the database.
  --heat-auth-encryption-key=HEAT_AUTH_ENCRYPTION_KEY
                        Encryption key to use for authentication in the
                        Orchestration database (16, 24, or 32 chars).
  --os-heat-ks-passwd=OS_HEAT_KS_PASSWD
                        Password to use for the Orchestration service to
                        authenticate with the Identity service.
  --os-heat-cloudwatch-install=OS_HEAT_CLOUDWATCH_INSTALL
                        Specify 'y' to install the Orchestration CloudWatch
                        API. ['y', 'n']
  --os-heat-cfn-install=OS_HEAT_CFN_INSTALL
                        Specify 'y' to install the Orchestration
```

```
                        CloudFormation API. ['y', 'n']
  --os-heat-domain=OS_HEAT_DOMAIN
                        Name of the Identity domain for Orchestration.
  --os-heat-domain-admin=OS_HEAT_DOMAIN_ADMIN
                        Name of the Identity domain administrative user for
                        Orchestration.
  --os-heat-domain-password=OS_HEAT_DOMAIN_PASSWORD
                        Password for the Identity domain administrative user
                        for Orchestration.

Provisioning demo config:
  --provision-demo=PROVISION_DEMO
                        Specify 'y' to provision for demo usage and testing.
                        ['y', 'n']
  --provision-tempest=PROVISION_TEMPEST
                        Specify 'y' to configure the OpenStack Integration
                        Test Suite (tempest) for testing. The test suite
                        requires OpenStack Networking to be installed. ['y',
                        'n']

Provisioning demo config:
  --provision-demo-floatrange=PROVISION_DEMO_FLOATRANGE
                        CIDR network address for the floating IP subnet.
  --provision-image-name=PROVISION_IMAGE_NAME
                        The name to be assigned to the demo image in Glance
                        (default "cirros").
  --provision-image-url=PROVISION_IMAGE_URL
                        A URL or local file location for an image to download
                        and provision in Glance (defaults to a URL for a
                        recent "cirros" image).
  --provision-image-format=PROVISION_IMAGE_FORMAT
                        Format for the demo image (default "qcow2").
  --provision-image-ssh-user=PROVISION_IMAGE_SSH_USER
                        User to use when connecting to instances booted from
                        the demo image.
  --provision-uec-image-name=PROVISION_UEC_IMAGE_NAME
                        Name of the uec image created in Glance used in
                        tempest tests (default "cirros-uec").
  --provision-uec-kernel-url=PROVISION_UEC_KERNEL_URL
                        URL of the kernel image copied to Glance image for uec
                        image (defaults to a URL for a recent "cirros" uec
                        image).
  --provision-uec-ramdisk-url=PROVISION_UEC_RAMDISK_URL
                        URL of the ramdisk image copied to Glance image for
                        uec image (defaults to a URL for a recent "cirros" uec
                        image).
  --provision-uec-disk-url=PROVISION_UEC_DISK_URL
                        URL of the disk image copied to Glance image for uec
                        image (defaults to a URL for a recent "cirros" uec
                        image).

Provisioning tempest config:
  --tempest-host=TEMPEST_HOST
  --provision-tempest-user=PROVISION_TEMPEST_USER
                        Name of the Integration Test Suite provisioning user.
                        If you do not provide a user name, Tempest is
                        configured in a standalone mode.
  --provision-tempest-user-passwd=PROVISION_TEMPEST_USER_PASSWD
                        Password to use for the Integration Test Suite
                        provisioning user.
  --provision-tempest-floatrange=PROVISION_TEMPEST_FLOATRANGE
                        CIDR network address for the floating IP subnet.
  --provision-tempest-repo-uri=PROVISION_TEMPEST_REPO_URI
                        URI of the Integration Test Suite git repository.
  --provision-tempest-repo-revision=PROVISION_TEMPEST_REPO_REVISION
                        Revision (branch) of the Integration Test Suite git
```

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                        repository.
  --run-tempest=RUN_TEMPEST
                        Specify 'y' to run Tempest smoke test as last step of
                        installation.
  --run-tempest-tests=RUN_TEMPEST_TESTS
                        Test suites to run, example: "smoke dashboard
                        TelemetryAlarming". Optional, defaults to "smoke".

Provisioning all-in-one ovs bridge config:
  --provision-ovs-bridge=PROVISION_OVS_BRIDGE
                        Specify 'y' to configure the Open vSwitch external
                        bridge for an all-in-one deployment (the L3 external
                        bridge acts as the gateway for virtual machines).
                        ['y', 'n']

Gnocchi Config parameters:
  --gnocchi-db-passwd=GNOCCHI_DB_PASSWD
                        Password to use for Gnocchi to access the database.
  --gnocchi-ks-passwd=GNOCCHI_KS_PASSWD
                        Password to use for Gnocchi to authenticate with the
                        Identity service.

Ceilometer Config parameters:
  --ceilometer-ks-passwd=CEILOMETER_KS_PASSWD
                        Password to use for Telemetry to authenticate with the
                        Identity service.
  --ceilometer-service-name=CEILOMETER_SERVICE_NAME
                        Ceilometer service name. ['httpd', 'ceilometer']

MONGODB Config parameters:
  --mongodb-host=MONGODB_HOST
                        IP address of the server on which to install MongoDB.

Redis Config parameters:
  --redis-master-host=REDIS_MASTER_HOST
                        IP address of the server on which to install the Redis
                        master server.
  --redis-port=REDIS_PORT
                        Port on which the Redis server(s) listens.
  --redis-ha=REDIS_HA
                        Specify 'y' to have Redis try to use HA. ['y', 'n']
  --redis-slaves=REDIS_SLAVES
                        Hosts on which to install Redis slaves.
  --redis-sentinels=REDIS_SENTINELS
                        Hosts on which to install Redis sentinel servers.
  --redis-sentinel-contact=REDIS_SENTINEL_CONTACT
                        Host to configure as the Redis coordination sentinel.
  --redis-sentinel-port=REDIS_SENTINEL_PORT
                        Port on which Redis sentinel servers listen.
  --redis-sentinel-quorum=REDIS_SENTINEL_QUORUM
                        Quorum value for Redis sentinel servers.
  --redis-sentinel-master-name=REDIS_SENTINEL_MASTER_NAME
                        Name of the master server watched by the Redis
                        sentinel. ['[a-z]+']

Aodh Config parameters:
  --aodh-ks-passwd=AODH_KS_PASSWD
                        Password to use for Telemetry Alarming to authenticate
                        with the Identity service.

Trove config parameters:
  --trove-db-passwd=TROVE_DB_PASSWD
                        Password to use for OpenStack Database-as-a-Service
                        (trove) to access the database.
  --trove-ks-passwd=TROVE_KS_PASSWD
                        Password to use for OpenStack Database-as-a-Service to
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                        authenticate with the Identity service.
  --trove-nova-passwd=TROVE_NOVA_PASSWD
                        Password to use when OpenStack Database-as-a-Service
                        connects to the Compute service.

Sahara Config parameters:
  --sahara-db-passwd=SAHARA_DB_PASSWD
                        Password to use for OpenStack Data Processing (sahara)
                        to access the database.
  --sahara-ks-passwd=SAHARA_KS_PASSWD
                        Password to use for OpenStack Data Processing to
                        authenticate with the Identity service.

Nagios Config parameters:
  --nagios-passwd=NAGIOS_PASSWD
                        Password of the nagiosadmin user on the Nagios server.

Puppet Config parameters:

POSTSCRIPT Config parameters:
```