Mirantis, Inc. is releasing Mirantis OpenStack version 6.1.

This generally available version of Mirantis OpenStack is based on Juno release 2014.2.2 of OpenStack.

These release notes supplement the product documentation and list enhancements, resolved issues, and known issues in this version.

The following table lists the released revisions of this documentation:

<table>
<thead>
<tr>
<th>Revision</th>
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</table>
What's New in Mirantis OpenStack 6.1

Mirantis is pleased to make Mirantis OpenStack 6.1 available to our customers, partners and the community.

New Features Included in Mirantis OpenStack 6.1

Support for the latest OpenStack Juno release

The OpenStack core projects in the Mirantis OpenStack hardened packages support the OpenStack Juno 2014.2.2 release. Fuel 6.1 deploys this version of OpenStack on either CentOS or Ubuntu.

Fuel Master Node can be upgraded from 5.1.x or 6.0 to 6.1 GA

If you are running a Mirantis OpenStack 5.1, 5.1.1, or 6.0 environment, you can upgrade your Fuel Master Node to Fuel 6.1. Fuel can manage environments that were deployed with 6.0 releases, assuming that you created the environment with the earlier release and upgraded the Fuel Master node rather than doing a fresh install. For a list of OpenStack releases and versions that your Fuel Master node can manage, click on the "Releases" tab at the top of your Fuel home page.

See Upgrade Fuel from Earlier Versions for details.

Upgrading the Fuel Master Node does not update the OpenStack environment.

Ubuntu 14.04 is supported for target nodes

Ubuntu 14.04 is now supported as a host operating system.

For details, please see Support Ubuntu 14.04 as a host node blueprint.

Note, that BIOS dev networking management replaced ethx naming scheme.

Beginning with Fuel 6.1, the Ubuntu system packages are downloaded from the official Ubuntu mirrors, and Mirantis packages are downloaded from the Mirantis mirrors.

For details see Downloading Ubuntu system packages.

Downloadable Ubuntu release

With Fuel 6.1, you can now download the Ubuntu system packages from either the official Ubuntu mirrors (default option) or from your company's local Ubuntu repositories.

See Downloading Ubuntu system packages for details.

See also Consume External Ubuntu.

HA stability and scalability improvements

Mirantis OpenStack 6.1 includes a number of internal enhancements to improve the stability and scalability of the deployed environment:

- multi-node mode is deprecated and HA is now the only available option.
- it is possible to deploy a single HA controller, see the Single Controller in HA.
- Pacemaker and Corosync infrastructure is now updated with Corosync 2.x. See the blueprint.
• the hardened rebuild of Linux HA-stack from Ubuntu Vivid is now introduced to add or remove nodes dynamically. See the related issue.

• the OSTF HA stack is improved: replication and message queue is checked in HA AMQP cluster. See OSTF RabbitMQ replication for more details.

• The caching system is improved in Keystone: a new memcache_pool backend allows reusing open memcache connections and resolves issues related to the usage of threading.local objects in the eventlet environment.

**Scalability certification for 200-node environments**

Environments deployed with Fuel 6.1 are certified as stable and scalable at up to 200 nodes. We are continuing to work to eliminate stability, scalability, and performance issues for larger environments. See the 200 nodes support blueprint for details about the implementation.

**Granular deployment based on pluggable tasks**

In earlier releases, only one task (site.pp) was ran. Fuel 6.1 provides granular deployment based on tasks. It allows to extend deployment scenario, since it is not required to patch puppet manifests anymore. Now you can use the set of tasks instead; execution order is calculated with resolving task dependencies graph. For instructions, see Task-based deployment. Note, that you can not only form your deployment criteria, but also render graphs; see Graph representation for more details.

**Nodes can be removed from Fuel inventory**

If a previously discovered node is now offline, it is now possible to remove the node from the Fuel inventory via CLI or UI. For more information on removing a node via UA, see Assign a role or roles to each node server. For instructions on deleting any node from inventory using the Fuel CLI, see Remove a node from Fuel DB.

**Fuel web UI reminds about network verification before deployment**

The Fuel web UI now provides messages for network verification when you try to click Deploy button:

- if you forgot to verify networks
- if the verification failed
- if verification is in progress

See Verify networks for more details and screenshots.

**Support for operating system (base-os) role**

With Fuel 6.1 you are now able to deploy an empty role that you can then customize to fit your needs.

See Blueprint: Allow generic linux install with no additional packages.

For detailed instructions on how to deploy an empty role through Fuel CLI see Deploying an empty role.

**Fuel repository separated from Mirantis OpenStack**

Starting with Fuel 6.1, the repositories for Mirantis OpenStack and Linux packages are separate. You can now run base distributive updates and Mirantis OpenStack updates separately during the product life cycle.
For a detailed description see Separate Mirantis OpenStack and Linux Repositories. See also Operations Guide: Configuring repositories. You can also check the corresponding blueprint.

**Patching**

The patching feature introduced in Mirantis OpenStack 6.1 is the process of delivering product updates to users which can be applied using standard Linux commands (e.g. `apt-get` and `yum`).

The patching feature allows you to keep your environment up-to-date in a customized fashion without the need to upgrade to the latest version.

For your user experience and how-to see Applying patches.

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**Note**

The patching feature is introduced in Mirantis OpenStack 6.1 and will not work in older releases.

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**External DNS and NTP support**

With Fuel 6.1 you can now change DNS and NTP servers for Slave nodes through the Fuel web UI.

This way if the Fuel Master node does not have access to the Internet or if it is disabled after the deployment, you can change the NTP and DNS servers for the Slave nodes and not have it routed through the Fuel Master node.

You can specify the following values for the Slave nodes:

- DNS
- NTP-servers

The values need to be specified strictly as an IP address for DNS and IP or FQDN for NTP-servers.

Fuel does not check if the specified DNS and NTP services are actually available. Make sure you specify the correct ones.

See the Support External DNS and NTP.

**Linux bonds**

With Fuel 6.1 you can now use Linux bonds instead of Open vSwitch bonds.

See the related blueprint.

**Virtual Router for public-less nodes**

With Fuel 6.1, Slave nodes that do not have public interface can now connect to the public networks without the Fuel Master node as the default gateway.

See Blueprint for Virtual router for env's nodes for details.

**Multiple L3 Agents per environment**
Fuel 6.1 deploys one L3 Agent per Controller node, which helps eliminate HA bottlenecks that could occur in environments with only one L3 agent running. Rescheduling of networks is moved to Neutron server code. Neutron server code reschedules networks by automatically reassigning routers to L3 agents when it detects that a particular L3 agent is failed. See How To Troubleshoot Corosync/Pacemaker for examples and the fuel-multiple-l3-agents blueprint for details about the implementation.

**Neutron agent state reporting**

Mirantis OpenStack 6.1 has obtained its own logic to determine if agents are dead or alive. Agents now do not rely REST API calls to notify a neutron server which maintains agents’ state by collecting state reports from agents via AMQP. They can report their own status by saving it in local files. So, when a message queue has issues, the Cluster Resource Manager still can respond in time if something goes wrong with an agent. See the neutron-agents-local-reports blueprint for details about the implementation.

**Note**

This feature is disabled by default in Mirantis OpenStack 6.1 since it solves a very specific corner case, which might happen in production. So enabling it by default is very risky and should be handled with the help of Mirantis support team.

**Multiple DHCP-agents**

In Mirantis OpenStack 6.1, multiple DHCP agents are configured with one on each Controller. In earlier releases, each environment had a single DHCP agent that was located on one of the Controllers. With the help of multiple DHCP agents, you can avoid the HA bottlenecks that could occur with only one DHCP agent running in the environment. Also, each network with a DHCP server enabled is served by two DHCP agents simultaneously, so a failure of one DHCP agent is completely transparent to DHCP clients. Rescheduling of networks is moved to Neutron server code, which accomplishes this by automatically reassigning networks to DHCP agents when it detects that a particular DHCP agent is dead. See the fuel-multiple-dhcp-agents blueprint for details about the implementation.

**Bootable ISO USB drive**

You can now write a Fuel 6.1 ISO to a USB drive that will be bootable.

For detailed instructions, see Writing a bootable Fuel 6.1 ISO to a USB drive.

**Nova-compute and vSphere clusters mapping**

In earlier Fuel releases, 1-N mapping between nova-compute service and vSphere cluster (cluster that is formed from ESXi hosts by vCenter server) was used. In most cases, a single nova-compute service instance uses many vSphere clusters, managed by a single vCenter. Beginning with Fuel 6.1, this behaviour was changed to 1-1 mapping, so that a single nova-compute service instance now interacts with a single vSphere cluster. For more information, see nova-compute and vSphere cluster mapping.

**KVM and vCenter support for one OpenStack cloud**
Fuel 6.1 now provides dual hypervisors in one cloud. For example, you can set KVM with vCenter or QEMU with vCenter. For instructions, see User Guide. For reference architecture, see Dual hypervisor architecture.

**Multiple Cinder types support**

Previously, when vCenter was used as a hypervisor, it could use volumes only from Cinder VMDK. The same occurred with KVM: when enabled, it could not mount volumes from Cinder VMDK. Since dual hypervisors are now supported, Cinder can be deployed with multiple backends - VMDK plus LVM or Ceph.

Fuel 6.1 now has Storage - Cinder Proxy to VMware Datastore, a new role, that provides this opportunity. For instructions, see Assign a role or roles to each node server.

See the related Cinder with VMDK role blueprint.

**VMware Settings tab on the Fuel web UI**

Previously, VMware settings were included into Settings tab of the Fuel web UI alongside with other configuration options. Fuel 6.1 provides a separate VMware tab of the Fuel web UI: now it is possible to have and add different vSphere clusters for nova-compute and Cinder or Glance services. For instructions, see VMware tab.

See the related VMware UI settings blueprint.

**Ceilometer support for vCenter is improved**

In 6.1, Ceilometer support for vCenter is implemented according to 1-1 mapping principle (the one done between nova-compute and vSphere cluster). Now Ceilometer compute service is available for each vSphere cluster: every agent polls resources about instances from those that only relate to their vSphere cluster. What is more, monitoring under Pacemaker is introduced for every Ceilometer compute service to avoid failures. For more information, see Related projects for vCenter.

**Infiniband support is enabled for nodes discovery**

The nodes discovery is now enabled over the prepared Infiniband network via Fuel over Mellanox NICs with Infiniband support, after Mellanox Fuel plugin installation. This means, the Fuel Master node will discover and use EIPOIB daemon (Ethernet IP Over Infiniband) interfaces for the network roles. Note, that interface driver and bus information are now available for all discovered NIC interfaces. For detailed instructions, see Verify Infiniband links for nodes section in the official Mellanox documentation.

**Role operations with Nailgun REST API and Fuel Client**

Now you can create, update or delete roles using Nailgun REST API and Fuel Client; more details can be found in Role operations section.

For Fuel CLI command reference, see Roles operations commands.

**Fuel plugins and new task type**

**Fuel web UI now provides a message about installed plugins**

If the environment has been deployed successfully, a message will appear on the Fuel web UI informing you about the deployed plugins, their names and description.
Fuel Plugins SDK is released

Fuel Plugins SDK provides a set of useful recommendations on planning and driving Fuel Plugins development process. What is more, you can now use not only SDK, but also Fuel Plugins Certification page at Mirantis website to get more details on certification workflow.

Reboot task type is now introduced

A new task type is now introduced for plugin developers. During plugin installation, a node can require reboot to apply multiple changes. With this task type, it will reboot and come back to the online state before starting the next tasks. Reboot task type requires several parameters: timeout (by default, it is set to 300 seconds), UID (for nodes) and priority (the order in which nodes will be rebooted).

For more information, see the Fuel Plugins wiki page.

LBaaS plugin compatible with controllers in HA mode

The 6.1 compatible LBaaS plugin has been modified so that it can be deployed on controllers in HA mode. Please note that this enables the new LBaaS plugin to work with 6.1, but does not make the plugin itself HA.

Zabbix is no longer supported as a core Fuel component

Zabbix is now only available as a plugin for Fuel. For information on prerequisites, installation and configuration instructions, see the Fuel Plugins Catalog.

New Plugins for Fuel are available

Using the Fuel Plugins Catalog, you can download and install new Fuel Plugins. Please, note that they will be available within a few weeks of the Mirantis OpenStack 6.1 release:

<table>
<thead>
<tr>
<th>Monitoring</th>
<th>Networking</th>
<th>Storage</th>
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<tbody>
<tr>
<td>LMA Collector</td>
<td>VPNaaS</td>
<td>EMC VNX</td>
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<tr>
<td>Elasticsearch-Kibana</td>
<td>FWaaS</td>
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<tr>
<td>Zabbix</td>
<td>Mellanox</td>
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<tr>
<td>InfluxDB-Grafana</td>
<td>Cisco ACI</td>
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<td></td>
<td>Calico</td>
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Note

LBaaS plugins compatible with Fuel 6.0 and 6.1 are not supported for customer deployments due to the limitations of the community solution, including no failover of load-balanced objects or HTTPS termination. Mirantis will review capabilities of the project in the community again in advance of the Fuel 8.0 release. Unsupported plugins are published to DriverLog.
Ceilometer-related features

Mirantis OpenStack 6.1 includes a number of improvements for Telemetry module:

- new method of partitioning alarm evaluation load using tooz coordination, as opposed to a hand-crafted protocol. See the Rebase partitioned alarm evaluation on tooz blueprint for details;
- option to split off the alarms persistence into a separate database. See the Dedicated database for the alarm part of ceilometer blueprint for details;
- metering of Neutron networking services: LBaaS, FWaaS & VPNaaS. You can enable it manually in Ceilometer if you are going to deploy additional Fuel plugins:
  - LBAAS: https://github.com/stackforge/fuel-plugin-neutron-lbaas
  - FWAAS: https://github.com/stackforge/fuel-plugin-neutron-fwaas
  - VPNAAS: https://github.com/stackforge/fuel-plugin-neutron-vpnaas
- support for persisting events via the MongoDB storage driver (previously limited to SQLAlchemy). See the Enable event feature on MongoDB and DB2 blueprint for details;
- support for per-device metering of instance disks. See Add support to gather per-device metrics for instances blueprint for details;
- Ceilometer now uses oslo.messaging instead of openstack.common.rpc. See the Switch to oslo.messaging blueprint for details;
- option to use notifications instead of RPC for metering messages. See the Replace RPC cast() with notifications blueprint for details;
- external MongoDB support. See the Implement possibility to set external MongoDB connection blueprint for details;
- Ceilometer and VCenter integration. See the Implement possibility to setup ceilometer compute agent on controller blueprint for details.

Cinder-related features

Mirantis OpenStack 6.1 includes a number of improvements for OpenStack Block Storage (Cinder):

- Support for Volume Replication.
- Support for Consistency Groups and Snapshots of Consistency Groups.
- Support for Volume Pools.
- Completion of i18n-enablement.
- Honor Glance protected properties in Image Upload.
- Enable ability to restrict bandwidth usage on volume-copy operations.
- Add Volume Num Weigher Scheduling.

Glance-related features
• A new metadata definitions catalog, where a user can register the metadata definitions to be used on various resource types including images, volumes, aggregates, and flavors. See the Metadata Definitions Catalog blueprint for details.

• Restrict normal users from downloading images by adding a new rule to the policy.json file and applying that rule to the download_image policy. See the Restrict users from downloading image based on policy blueprint for details.

• Use an internal library API for asynchronous processing. See the Asynchronous Processing in Glance blueprint for details.

• The glance.store package is pulled out into its own library, so now other projects (like Nova) can use glance_store library for accessing images directly. See the Pull Glance's store package out of glance blueprint for details.

• Now enhanced Scrubber service allows a single instance to maintain multiple glance-api servers cross nodes.

Heat-related features

Heat Docker Resource enabled by default

Mirantis OpenStack 6.1 installs the Docker Resource for Heat when Murano is selected. This enables Murano to consume the Docker Resource for Heat immediately. Use the heat resource-list command on any controller to view the list of available resources.

For more details, see the Enable Heat Docker resource by default blueprint.

Heat configured to use Keystone v3 domains by default

Full power of OpenStack Orchestration (Heat) is now available for non-admin users. Now both admin and non-admin users can use autoscaling, wait conditions, and software deployment features in their Heat templates.

For more details, see the Enable Heat to use Keystone v3 domains blueprint.

Other

• Recovery from failures during stack updates.

• API to cancel and roll back an in-progress stack update.

• Implementation of new resource types:

  • OS::Glance::Image.
  • OS::Heat::SwiftSignal.

    • Provides the option to store Wait Condition (and Software Deployment) data in Swift.
  • OS::Heat::StructuredDeployments.

    • Groups code for multiple lifecycle events into a single deployment resource.
  • OS::Heat::SoftwareDeployments.

    • Provides a way of avoiding circular dependencies when deploying an interdependent cluster of servers.
• OS::Heat::SoftwareComponent.
• OS::Nova::ServerGroup.
• OS::Sahara::NodeGroupTemplate.
• OS::Sahara::ClusterTemplate.

• Remember the previously-supplied parameters when updating a stack.
• Improved scalability.
• Improved visibility into trees of nested stacks.

**Horizon-related features**

**Sahara**
The OpenStack Data Processing project (Sahara) has been formally included into the integrated release in MOS, and Horizon includes broad support for managing your data processing. You can specify and build clusters to utilize several data types with user specified jobs while tracking the progress of those jobs.

**Nova**

• The new action panel for nova instances provides a list of all actions taken on all instances in current project, allowing users to view resulting errors or actions performed by other users.
• Administrators now have the ability to evacuate instances from hypervisors that can aid in system maintenance by providing a mechanism to migrate all instances to other hosts.

**Cinder**

• State of a snapshot resetting enabled.
• State of a volume resetting enabled.
• Upload-to-image support.
• Volume retype.
• QoS (quality of service) support.

**General UX changes**
Horizon is transitioned to utilizing Bootstrap v3. This means some minor improvements in UI, though it mostly remains consistent with the previous versions.

The identity panels have been moved from the admin dashboard to their own Identity dashboard, and accessibility is determined by policies alone.

**Keystone-related features**
Mirantis OpenStack 6.1 contains improvements for the Identity service:
• Keystone now has experimental support for Keystone-to-Keystone federation, where one instance acts as an Identity Provider, and the other as a Service Provider.

• PKIZ is a new token provider available for users of PKI tokens, which simply adds a zlib-based compression to traditional PKI tokens.

• The hashing algorithm used for PKI tokens is now configurable (the default one is still MD5, but the Keystone team recommends that deployments migrate to SHA256).

• Identity-driver-configuration-per-domain now supports Internet domain names of arbitrary hierarchical complexity (for example, customer.cloud.example.com).

• The LDAP identity back end now supports description as an attribute of users.

• Identity API v3 requests are now validated via JSON Schema.

• In case of multiple identity back ends, Keystone can now map arbitrary resource IDs to arbitrary back ends.

• keystoneclient.middleware.auth_token has been moved into its own repository, keystonemiddleware.auth_token.

• Identity API v3 now supports a discrete call to retrieve a service catalog, GET /v3/auth/catalog.

• Federated authentication events and local role assignment operations now result in CADF (audit) notifications.

• Keystone can now associate a given policy blob with one or more endpoints.

• Keystone now provides JSON Home documents on the root API endpoints in response to Accept: application/json-home headers.

• Hiding endpoints from client’s service catalogs is now more easily manageable via OS-EP-FILTER.

• The credentials collection API is now filterable per associated user (GET /v3/credentials?user_id={user_id}).

• New generic API endpoints are available for retrieving authentication-related data, such as a service catalog, available project scopes, and available domain scopes.

• Keystone now supports mapping the user enabled attribute to the lock attribute in LDAP (and inverting the corresponding boolean value accordingly).

• A CA certificate file is now configurable for LDAPS connections.

• The templated catalog back end now supports generating service catalogs for Identity API v3.

• Service names are added to the v3 service catalog.

• You can now filter services by name (GET /v3/services?name={service_name}).

Neutron-related features

Neutron features supported in 6.1

• DB migration refactor and new timeline.

• IPSet support for security groups (this option is configurable).
• L3 agent performance improvements such as processing many routers in parallel and improved responsiveness to L3 changes made through the API following an agent restart.
• Migration to oslo.messaging library for RPC communication.
• Security group rules for devices RPC call refactoring (a huge performance improvement).

**Neutron features not supported in 6.1**

• Distributed Virtual Router Support (DVR).
• Full IPv6 support for tenant networks.
• High Availability for the L3 Agent.

**Nova-related features**

**Instance features**

• Users are allowed to specify an image to use for rescue instead of the original base image. See also the API: Allow user to specify image to use during rescue blueprint and the Allow image to be specified during rescue specification for details.
• Allow images to specify whether a config drive should be used. See the Consider the image property for config drive option blueprint and the Config drive based on image property specification for details.
• Users and administrators can control the vCPU topology exposed to guests via flavors. See the Virt driver guest vCPU topology configuration specification for details.
• All local disks are attached during rescue. See the Attach All Disks During Rescue (partial) blueprint and the Attach All Local Disks During Rescue specification for details.

**Networking**

• Nova-network allows per-network settings. See the Better Support for Multiple Networks in nova-network (partial) blueprint and the Better Support for Multiple Networks in nova-network specification for details.
• Allow deployers to add hooks which are informed as soon as networking information for an instance is changed. See the Add hook for update_instance_cache_with_nw_info specification for details.
• Permit VM instances to attach multiple interfaces to one network. See the Support multiple interfaces from one VM attached to the same network specification for details.
• VM instances can now be booted up with SR-IOV neutron ports. See the enable a nova instance to be booted up with neutron SRIOV ports blueprint and the PCI SR-IOV passthrough to nova instance specification for details.

**Scheduling**

• Resource tracker is now pluggable. See the Scheduler: Extensible Resource Tracking (partial) blueprint and the Extensible Resource Tracking specification for details.
• It is no longer required to specify a target host when evacuating instances. See the API: Evacuate instance to a scheduled host specification for details.

• Status of a host in the database is now updated only when it is changed, instead of every 60 seconds. See the Change compute updates from periodic to on demand specification for details.

Other

• Status information is now included in API listings of hypervisor hosts. See the Return hypervisor node status specification for details.

• API callers can now specify more than one status to filter by when listing VMs. See the servers list API support specify multi-status specification for details.

• New quota values have been added to constrain the number and size of server groups a user can create. See the Server Group Quotas specification for details.

Libvirt specific

• Performance of listing instances on modern libvirt versions has been improved. See the Speedup listing of domains in libvirt driver (partial) blueprint and the Speedup listing of domains in libvirt driver specification for details.

• Meta-data about an instance is now recorded in the libvirt domain XML. This is intended to help administrators while debugging problems. See the Libvirt driver domain metadata specification for details.

• Add support for handing back unused disk blocks to the underlying storage system: the hw_disk_discard configuration option. See the Libvirt-Enable support for discard option for disks managed by nova blueprint, the Libvirt-Enable support discard option for disk device specification, and the New options in Juno for OpenStack Compute reference for details.

• Copy-on-write cloning for RBD-backed disks is now enabled. See the Storage: Copy-on-write cloning for RBD-backed disks specification for details.

• Allow controlled shutdown of guest operating systems during VM power off. See the Allow Users to specify Guest shutdown behavior for Stop, Rescue, and Delete (partial) blueprint and the Allow controlled shutdown of GuestOS for operations which power off the VM specification for details.

Sahara-related features

• Sahara panel in OpenStack Dashboard is moved to Project -> Data Processing.

• Support for CDH 5.2 is added.

• Support for Apache Spark 1.0.0 is added. Elastic data processing (EDP) engine is refactored a lot to support non-Oozie workflow engines.

• Support for Apache Hadoop 2.4.1 is added, and support for 2.3.0 is removed. So, altogether, MOS 6.1 supports Apache Hadoop 1.2.1 and 2.4.1.

• Support for HDP 1.3.2 is removed. Overall, MOS 6.1 supports HDP 2.0.6 only.

• Ceilometer integration is added. Now Sahara notifies Ceilometer about all cluster state changes. See the Integration with Ceilometer blueprint for details.
• Cluster provisioning error handling is improved. If something goes wrong during scaling, cluster rolls back to its original state.

• An ability to specify security groups for a node group is added. Also, Sahara can automatically create a security group with only the required ports open. See the Cluster security groups blueprint for details.

Murano-related features

• New OpenStack application catalog was published to Communitiy App Catalog, enabling users to select Murano packages, Heat templates, and Glance images they would like to add to their cloud.

• Users can source Murano packages and their dependencies using a URL (package name) from Communitiy App Catalog instead of using a zip file, simplifying Murano workflow. See the related blueprint.

• Support for Docker applications in Murano. See the related blueprint.

Experimental features

All features marked as experimental are unsupported and should be used for non-Production/feedback purposes only.

Enhancements to Fuel Agent for image-based provisioning

The Fuel Agent, an experimental feature that uses images to install the operating system on the target nodes instead of using customized versions of the native operating system installation scripts, is enhanced in 6.1:

• Add connection tracking See Add connection tracking to fuel-agent.

• Add image checksums to image downloader. See Add image checksums to image downloader in fuel-agent.

• Ability to build target images with Ubuntu on Fuel Master node. See Building target images with Ubuntu on master node.

Ceilometer can use an external MongoDB installation

The ability to configure Ceilometer to use an external MongoDB cluster instead of MongoDB nodes that are deployed by Fuel as part of the OpenStack environment is an experimental feature that is enhanced in 6.1. See the Implement possibility to set external MongoDB connection blueprint for implementation details.

Other enhancements

• OpenStack nodes no longer lose DNS and NTP on Fuel Master node outage. See LP1368514 and the Support External DNS and NTP blueprint.

• In an environment with more than 60 tenant networks, rescheduling a Neutron agent to a different controller no longer times out and leaves behind orphaned networks and dnsmasq processes. LP1405477

• admin_token* is no longer used. Now OSTF and Nailgun use their users to validate Keystone tokens instead of admin_token. LP1385343

• /root/openrc* is not used for OpenStack component scripts anymore. Instead, use component specific credentials (Nova, Neutron, Glance and so on). LP1396594
Additional information

For information about Issues and Blueprints for Mirantis OpenStack 6.1, see the Fuel for OpenStack 6.1 Milestone page.
Major Component Versions

- Operating Systems
  - CentOS 6.5 (x86_64 architecture only)
  - Ubuntu 14.04.2 (x86_64 architecture only)
- Puppet (IT automation tool) 3.4.2
- MCollective 2.3.3
- Cobbler (bare-metal provisioning tool) 2.4.4
- OpenStack Integrated Projects
  - Juno release 2014.2.2
    - Nova (OpenStack Compute)
    - Swift (OpenStack Object Storage)
    - Glance (OpenStack Image Service)
    - Keystone (OpenStack Identity)
    - Horizon (OpenStack Dashboard)
    - Neutron (OpenStack Networking)
    - Cinder (OpenStack Block Storage service)
    - Ceilometer (OpenStack Telemetry)
    - Heat (OpenStack Orchestration)
    - Sahara (OpenStack Data Processing)
- OpenStack Related Projects
  - Murano 2014.2.2
- Hypervisor
  - CentOS: KVM, libvirt 1.2.5; QEMU 2.0.5
  - Ubuntu: KVM, libvirt 1.2.5; QEMU 2.0.0
  - vCenter 5.5 Update 2
- Networking backend
  - Open vSwitch 2.3.1
- HA Proxy 1.5.3
- Galera 25.3.5
- RabbitMQ 3.3.5
- Pacemaker 1.1.12
- Corosync 2.3.4
• **MongoDB 2.4.6**

• **Ceph 0.80.9 “Firefly”**

• **MySQL 5.6.16** (CentOS), **5.6.16** (Ubuntu)

• **Zabbix 2.2.2**
Fuel Installation and Deployment

New installation and deployment features and resolved issues

• Removing and redeploying a Controller node does not result in an error. LP1394188

• Deployment now does not fail if there is no public gateway. See also HA deployment for Networking and LP1396126.

• If the /var partition fills up, Fuel will warn you that you are running out of disk space to deploy a node. LP1371757

• Ceph deployment no longer fails when used for ephemeral volumes. LP1405407

• Anaconda failures no longer affect the deployment, since image based provisioning is used starting with Fuel 6.1. See LP1321790 and the related blueprint.

• Previously, VirtualBox scripts deleted all the host-only networks, regardless of what network parameters were used. Now it deletes the demo_hostonly networks only. LP1384976

Known installation and deployment issues

• An attempt to join a Corosync cluster after a hard reboot of a Controller node fails. LP1434141.

  The workaround is to do the following:

  1. Stop both the Corosync and Pacemaker on the faulty node.
  2. Delete the faulty node from the cluster.
  3. Issue the following command on the other node:

     \texttt{crm node delete <faulty_node_name>}

  4. Back up and remove CIB XMLs on the faulty node:

     \texttt{rm -rf /var/lib/pacemaker/cib*.xml}

  5. Start Corosync on the faulty node.

• Additional MongoDB roles cannot be added to an existing deployment. Fuel installs MongoDB as a backend for Ceilometer. Any number of MongoDB roles (or standalone nodes) can initially be deployed into an OpenStack environment but, after the environment is deployed, additional MongoDB roles cannot be added. Be sure to deploy an adequate number of MongoDB roles (one for each Controller node is ideal) during the initial deployment. LP1308990

• The script for disk partitioning in Fuel has no minimal requirement for the root partition. The recommendation is to allocate 50 GB or more for root and 30 GB or more for logs. You can configure the disk size in the Fuel Web UI. LP1394864

• If the /var partition gets filled up and you run out of disk space, you may run into one of the following issues:
• Fuel Web UI fails to work.

• The `dockerctl list -l` output reports that the nailgun, ostf, and/or keystone container is down.

• The output of the `fuel task` command reports a 400: Bad Request.

For detailed symptoms, cause, and resolution see Fuel Master and Docker disk space troubleshooting and LP1383741.

• Fuel dashboard may incorrectly show online nodes as going offline and online again, when the nodes are actually healthy and online. LP1432175

• RabbitMQ does not keep non-default users, vhosts etc after a failover. LP1383258

• The Fuel upgrade procedure does not update packages that are part of the control plane rather than OpenStack. This includes the Fuel agent, mcollective agent, and the network checker. Not upgrading these components means that bugs fixed in those packages are not applied to environments that were previously deployed and introduces some limitations for the actions that can be added or modified to the Astute network checker. LP1343139

• If you add nodes to the environment after you create a backup and subsequently restore the Fuel Master, those nodes may be reported as offline. Rebooting those nodes brings them back online. To avoid this problem, always run a new backup of the Fuel Master node after adding nodes. LP1347718

• You must run `deep_clean` before you run `make iso` to build an ISO file or old packages on your system may cause `make iso` to fail. LP1393777

• Docker version does not roll back on an upgrade failure. LP1440709

• Docker may be slow with loading images on CentOS. This is related to the specifics of CentOS architecture -- CentOS does not support AUFS which is recommended for Docker. LP1333458

• `fuelclient` does not work if installed with the SetupTools version older than v12. The possible workarounds are to either install `fuelclient` with `pip install` or to use an older version of SetupTools (e.g. 3.6 which has been confirmed as working). LP1443328

• In order to avoid failures caused by keystone token loss, please add/remove controllers during a maintenance window. LP1451515, LP1449584
Hardware Support Issues

Resolved hardware issues

- RAID-1 spans all configured disks on a node. Fuel 6.0 and older puts a boot partition on each disk because OpenStack does not have access to the BIOS. Starting with Fuel 6.1, the boot partition is put on the first disk only. LP1258347
- More than 28 disks per node, which used to be a limitation, are now supported from Ubuntu installation. LP1340414

Known hardware issues

- You may experience some performance drop on CEPH on disks with 4 KB sector size, since the default sector size for operation is 512-bytes. LP1318614
- Adaptec 6805E RAID controller does not work in bootstrap. LP1438676
- HP BL120/320 RAID controller line is not supported. LP1359331
  To get a nonstandard ISO, please contact Mirantis support.

  Note that it is impossible to update the kernel if there are no drivers for this version. This happens because the source code for the hpvs module is not open, and HP publishes the hpvs binaries only for specific kernel versions. They do not always coincide with those used in Fuel with Ubuntu.
  
  Currently, no equipment for testing is available, and the testing itself can not be performed due to the closed HP VSA source code. ISO may be assembled only for kernel versions specified by HP.
  
  For information about kernel modules that are compiled for specific kernel versions, see HP storage and hpvs update.

- Dell PER RAID H330/730/730P/830 controllers on bootstrap (kernel 3.10.55) are not supported. LP1420330
  There is a publicly available bootstrap archive that can be used as a workaround with Fuel 6.0.1 and Fuel 6.1. To make the driver work, you need to download and unpack the archive and substitute Linux_image and initramfs_image files on the deployed Fuel master node in the /var/www/nailgun/bootstrap folder with the files from it.

- Intel X710 CNA is not supported at the moment. LP1445562

- Intel X540-AT2 is not supported, and we strongly recommend that you do not use it at the moment.
Networking Issues

Resolved networking issues

• Open vSwitch has been upgraded to Version 2.3. VM to VM network performance is no longer limited to 2.5 Gb. LP1403047, LP1400355

Known networking issues

• HA will fail if a node runs out of RAM and swap memory, because Pacemaker resources will not migrate from the affected node. The recommendation is to employ external monitoring along with STONITH. LP11422186

• Network verification may fail on VirtualBox after deployment on CentOS. The workaround is to enable at least one VLAN (even unused) in the interface at the node startup. LP1457478

Known limitations for the Mellanox SR-IOV plugin

In 6.1 release, Mellanox is supported in Experimental Mode only. Nevertheless, it is not recommended to use Mellanox features in this mode as the whole upstream feature is deprecated and is not verified. We recommend using the Mellanox plugin instead, which can be downloaded from the Fuel Plugin Catalog.
OpenStack Deployment Issues

Resolved deployment issues

- Ruby conflicts in the CentOS repository have been fixed. You can now successfully run plain yum updates. [LP1403088](#)
- The SQLAlchemy (and, if appropriate, the Neutron database pool) are now tuned to scale to better accommodate Nova-network, Neutron, Cinder, and Glance on larger hardware configurations. [LP1274784](#)
- The `vm.swappiness` parameter has been decreased to 10 on controller nodes. The previously default value of 60 on some occasions resulted request delays to the APIs and slowed down the RabbitMQ and/or MySQL performance. [LP1413702](#)

Known deployment issues

- During OpenStack deployment, a spurious critical error may appear in the `openvswitch-agent.log` file. The error is misleading; no actual malfunction occurs. [LP1347612](#)
- There is a minor issue with modules for Puppet which may cause the deployment fail with MySQL deadlock errors because of concurrent Puppet run at controllers. The workaround is to repeat the failed deploy action again. [LP1330875](#)
- Rarely, cloud deployment may fail if it is chosen to deploy with Murano. This is because some process may listen to the same port as the RabbitMQ used by Murano. The workaround is to reset the environment and redeploy it. [LP1467024](#)
- Disk partitioning on controllers does not automatically reset back to the default state if a Glance backend is changed. [LP1450100](#)
Test and Verification Issues

Resolved test and verification issues

Network verification issues

Network verification does not fail anymore if a node is offline, as net_checker does not try to check offline nodes. The appropriate notice is generated when a node is offline, which implies this node will not be tested. It will issue an error without starting if there are fewer than two online nodes. LP1318659
Issues in High Availability

Known issues in High Availability

With the Mirantis OpenStack environment deployed in High Availability (HA) mode, shutting down one of the controllers will cause some requests to OpenStack to fail even if the controller comes back online. The requests that will fail are the ones processed by the controller. The workaround is to restart the affected service.

LP1463802
Issues with Image Based Provisioning

Known issues with image based provisioning

Rebooting any node of a cluster with a Ubuntu image based provisioning two times in a row will stop at the GRUB screen. The node will not automatically boot until the user selects an option in the GRUB menu. There is no timeout. LP1465586

Image building requires using a high I/O rate disk on the Fuel Master node. Otherwise, the operation is likely to time out before the building process completes successfully which will lead to the "Timeout of provisioning is exceeded" error and the deployment will fail. The issue is likely to appear when the Fuel Master node is deployed over a QEMU/KVM virtual machine with the default disk settings.
Storage Technologies Issues

Resolved storage technologies issues

- Cinder-backup service is now enabled for environments with Ceph running as Cinder back end. LP1411635
- Enabling the Assign public network to all nodes option on the Settings tab of the Fuel web UI no longer uses the default gateway from Storage network, and does not make the Internet host unreachable. LP1404809

Known storage technologies issues

- Placing Ceph OSD on Controllers is not recommended because it can severely degrade controller’s performance. We recommend using separate storage nodes if you have enough hardware.
- You may experience some performance drop on CEPH on disks with 4 KB sector size, since the default sector size for operation is 512-bytes. LP1318614
VMware Support Issues

Resolved issues with the vCenter integration

- Upload of CirrOS TestVM image no longer fails due to broken pipe in Glance vSphere Store. LP1402354

Known limitations with the vCenter integration

VMware vCenter integration is fully supported in Mirantis OpenStack 6.1, but with the following limitations:

- The first launch of Check create, update and delete image actions using Glance v2 OSTF test fails. If launched once again, it finishes successfully: Glance works without failures with Horizon or the Fuel CLI. LP1455468
- Creating volume from image in Cinder with vCenter backend is not supported. Note, that this is expected behaviour. LP1455565
- The nova-compute fails to start if vCenter cluster has no ESXi hosts. In 6.1 release, each vCenter cluster is served by a dedicated nova-compute instance; that means, this issue will make a particular nova-compute service unavailable. LP1404123
- Murano is not enabled for vCenter. See the related blueprint.
- According to the official VMware recommendations, reserved_host_memory_mb nova-scheduler's option should be set to 0, whereas Fuel uses a default value which is 512. The problem is that vCenter is already doing a memory reservation and there is no valuable reason to do it twice. The vCenter provides an aggregated memory from all ESXis in a vSphere cluster, and this option is applied to a cumulative value, but not to each individual ESXi node. Actually, 512 MB memory is lost for each vSphere cluster. LP1382539
- The vCenter credentials are not checked before deployment. That means, if you enter incorrect login and password, the deployment will fail. Please, check your credentials before deployment. LP1370723
- With vCenter, the OSTF test fails because instances do not get addresses via DHCP. LP1457404

NSX deprecation

Beginning with Fuel 6.1, NSX is deprecated. It might be turned into a plugin for Fuel in future releases.
Issues in OpenStack Components

General OpenStack issues

Resolved OpenStack issues

• If one of the controller nodes in an HA environment is deleted or goes offline, requests to Horizon, Keystone, and other OpenStack services reliant on Keystone do not get delayed anymore. Previously, it took several seconds to connect to the memcached server on the offline controller node. LP1405549, LP1367767

• The issue with the growing number of RabbitMQ queues has been fixed. LP1396688

Known OpenStack issues

• Nova hypervisor stats (CLI - nova hypervisor-stats, Horizon - hypervisors page) report is misleading when shared storage backend (Ceph) is used: the actual amount of space available/used is multiplied by the number of compute nodes. Note that this does not affect booting of instances in any way, but only confuses the operator checking the resources usage report. LP1359989

• All AUDIT log records from OpenStack services are being translated into syslog WARNING severity, then sent to syslog as well. LP1402683

• Sometimes OSTF platform tests fail with timeouts and errors because of the inability of OpenStack cloud to handle all the requests from them. The reason is that swap is used because of low-speed hard disks on controller nodes. LP1417521

• Sometimes RabbitMQ cluster may hang while all its nodes are up, all the PIDs are in place, and rabbitmqctl reports that everything is OK. But actually RabbitMQ creates only load to CPU and does not process messages. OpenStack services stall, and restarting the whole RabbitMQ cluster leads to some messages loss. Note that for the 6.1 release the improved HA health checks are implemented. So, passed OSTF HA health check now ensures everything is OK with underlying AMQP layer. But still, there are no checks for the app layer, which are OpenStack services running the oslo.messaging code. LP1394324

• Rebooting more than one controller may cause nova-compute services to stop reporting their status. This is an issue with the oslo.messaging queueing. LP1465757, LP1463440

OpenStack telemetry (Ceilometer) and MongoDB database

Resolved Ceilometer and MongoDB issues

• The Ceilometer pipeline.yaml file was changed to receive all the Nova disk .rate pollsters. LP1400324

• The support for a number of Swift notifications has been added. These include storage.objects.incoming.bytes, storage.objects.outgoing.bytes, and storage.api.request. LP1400240

• The Telemetry messaging listener is changed from the eventlet notification_listener executor to the blocking one. It is done to avoid failures of the ceilometer-agent-notification instances after restart and connection to RabbitMQ (that previously had socket errors about handshake timeout in its logs). LP1393505
• The `time_to_live` parameter is now set to one week, and cron job runs once a week to clean up the outdated metrics from the database. [LP1399164]

**Known Ceilometer and MongoDB issues**

• When `ceilometerclient` tries to return more than 500,000 records from MongoDB, a response from Ceilometer API has error status because of a timeout. [LP1434589]

**OpenStack Block Storage (Cinder)**

**Known Cinder issues**

• It is impossible to get to know whether a volume has any dependent snapshots. Neither `cinder list` command nor `cinder show` command does show snapshot list or details. This is unacceptable for a user, as Cinder, for example, does not allow deletion of the volume with a dependent snapshot. [LP1405862]

**OpenStack Image (Glance)**

**Resolved Glance issues**

• In case of slow connection to the external storage, Glance was not able to upload an image. It happened because of a one-minute timeout that broke connection if 16 MB chunk had not been downloaded within that time period. To prevent these timeouts, the chunk size is reduced to 4 MB. [LP1401118]

• The token caching was disabled for `glance-api` to prevent authentication errors. [LP1443913]

**Known Glance issues**

• A big image cannot be uploaded and an instance snapshot will fail if the upload image time is longer than the Keystone token lifespan. Glance returns an authentication failure indicating that the token is invalid. [LP1456573, LP1441156]

• After all the Ceph compute nodes destruction followed by their recreation and the environment redeployment, `glance-api` stops responding (with an HTTP 503 error). As a workaround, restart the `glance-api` service. [LP1459743]

• Glance may create unjustified CPU load on a standby cluster. The issue is with the multiple concurrent actions with the cloud (e.g. various CRUD operations) performed by users. Each new action may create a heavier load on the CPU. The workaround is to restart the affected service, which will drop back the CPU consumption by the service to almost zero. [LP1463522]

• An attempt to create a Glance image with incorrect checksum results in a 500 error. [LP1452712]

**OpenStack Orchestration (Heat)**

**Known Heat issues**
• For the time being, the default Heat configuration for HA environments is set to False. It may lead to the Heat failures in destructive scenarios (when you power off some controllers, for example). LP1465840
As a workaround, change the parameter to rabbit_ha_queues=True in the /etc/heat/heat.conf file. Once you change the Heat configuration files on all the controllers, restart all the Heat services on all the OpenStack controllers manually:

```
# service heat-api restart
# service heat-engine restart
# service heat-api-cfn restart
# service heat-api-cloudwatch restart
```

OpenStack Dashboard (Horizon)

**Known Horizon issues**

• If one of the two Neutron options is chosen during the Network Setup of the Create a New OpenStack environment wizard, the Disassociate Floating IP option disappears for an instance with an associated floating IP in the Project > Compute > Instances table within Horizon. This is NOT an issue if the Nova Network is chosen during the Network Setup. You can work around this issue by using the Disassociate Floating IP located in the Project > Access & Security > Floating IPs table within Horizon. LP1325575

• When changing tenants, the current region (Keystone service region) may change unexpectedly. After logging in or changing tenants, a user should select their desired region to ensure they are working with the correct one. LP1452722

OpenStack Identity (Keystone)

**Resolved Keystone issues**

• The eventlet monkeypatching now precedes the logging system initialization. Previously, it occurred after the logging system initialization, thus leaving all the locks used in the logging handlers non-patched and breaking threading.RLock. The initialization order is fixed, so eventlet locks work correctly. LP1413341

**Known Keystone issues**

• Keystone is currently limited to ~150 requests per second which may produce a heavy load and slow down the performance in large environments. LP1313662

Application Catalog (Murano)

**Resolved Murano issues**

• Murano applications based on Heat Docker resource do not put a stack to a non-deletable state anymore. That happened previously because of the hidden dependencies between neutron resources. LP1428138
• The **murano package-list** command works properly now: the wrong endpoint for Murano specified in Keystone has been corrected. LP1397273

**Known Murano issues**

• For each Murano application where host name is requested from a user, there is a requirement: the host name should be unique across the environment. This is not validated during the user-input phase, and in case two applications use the identical instance name, the deployment either fails or leads to unpredictable result. LP1452679

To avoid any undesirable consequences, make sure you use unique names for instance names and instance name templates. Similar rules may be applied to other entities as well. For example, application names must be unique.

• Murano does not free resources after redeployment. User can remove a component from the already deployed environment but the resources associated with that component are not released unless the entire environment is deleted. LP1392351

• User is not able to select Murano when configuring an environment in Fuel and to install Murano when VMWare vCenter is selected as a hypervisor. This is due to the fact that Murano does not support nova-network, which is required when Mirantis OpenStack is installed with VMWare vCenter. LP1427678

• Murano local variables, such as MURANO_REPO_URL, METADATA_CACHE_DIR and MAX_FILE_SIZE_MB, if set in the `local_settings.py` file, are overridden by the default settings. To change the default values, specify them in the `setting.py` file. LP1451604

• Murano does not delete stack after a failed deployment of a Kubernetes cluster. LP1461564

• If nova-network is selected for an OpenStack installation with Fuel, it is impossible to install Murano at the same time. Murano can be installed manually on a deployed OpenStack environment, and will work with nova-network. LP1462341

**OpenStack Networking (Neutron)**

**Resolved Neutron issues**

• In rare circumstances, there was no connectivity to instances in HA Neutron environment. Open vSwitch streams that enable network access to VM instances were dropped. Ports created when neutron-openvswitch-agent was down got a DOWN status and `binding:vif_type=binding_failed` as it should be. When an agent is rebooted, it should be able to recreate ports according to the DB, but instead it logged a warning and created a port with the DOWN status. The fix adds the rebinding chance on the agent startup in order to recover ports created while the agent was down. This includes DHCP and router ports. LP1393771

• During the boot process on clusters with Neutron networking, instances get IP address from the DHCP server with a delay that is caused by the DHCP NAK messages. The problem is due to a special setting in the DHCP server (dnsmasq). The delay also depends on the DHCP client. LP1455113

**Known Neutron issues**

*The Pacemaker can turn DHCP agent resource into unmanaged state*
Pacemaker monitors DHCP agents on all the controller nodes and restarts them if they seem to be dead. By default, Pacemaker tries to clean all the artifacts created by the agent (namespaces, ports, processes). In case of a large number of networks, this procedure can take too long to finish, and the resource will be marked as unmanaged. LP1436414

If it happens, you can clean up the resources by executing the following command:

```
pcs resource cleanup p_neutron-dhcp-agent
```

To prevent such cases:

1. Disable the cleanup on starting/stopping of Neutron DHCP agent resource using the following command:

```
pcs resource update p_neutron-dhcp-agent \ remove_artifacts_on_stop_start=true --force
```

2. Disable and enable the resource to apply changes.

The resource can be restarted without removing any artifacts (for example, to apply configuration changes), as it supports the reload operation. To apply this option, change one of the resource parameters. For example, execute:

```
pcs resource update p_neutron-dhcp-agent debug=true
```

The resource should be reloaded. If it restarts instead of reloading from the very first try, change the parameter again.

**Other issues**

- Neutron router namespaces are managed by Neutron L3 agent; and in case of unstable communication between L3 agent and Neutron server, namespaces can be duplicated after the router rescheduling. Such behaviour is expected and usually shouldn't break connection to and from instances. Instances also should receive metadata, as usual. LP1452768

- If some instances were scheduled to boot on the Compute node but failed, the node starts accumulating the iptables' rules even though the ports and VMs are already deleted. With time, this accumulation slows down the process of VM's creation on the node. LP1465081

- Instances metadata on CentOS 6.6 cloud images with cloud-init 0.7.5 may be unset in Neutron environments. When an environment is deployed with one of the Neutron topologies and CentOS 6.6 cloud images are used, instances can be unreachable via SSH due to cloud-init failure because users' keypairs and the rest of configuration data may not be set correctly. LP1406286

- Before neutron-plugin-openvswitch-agent can start, it requires openvswitch-switch to start first. In some hardware configurations, Upstart may fail to initiate neutron-plugin-openvswitch-agent, because SystemV delays the start of openvswitch-switch. LP1552017

**Workaround:**

1. Log in to a compute node.
2. Open the `/etc/init/neutron-plugin-openvswitch-agent.conf` file for editing.

3. Add a 15 second sleep requirement in the pre-start script.

```plaintext
pre-start script
    mkdir -p /var/run/neutron
    chown neutron:root /var/run/neutron
    sleep 15
end script
```

4. Reload the Upstart configuration by typing:

```plaintext
initctl reload-configuration
```

5. Repeat step 1 - step 4 on all compute nodes.

**OpenStack Compute (Nova)**

**Resolved Nova issues**

- An encrypted volume can now be successfully attached to an instance. LP1420849

**Known Nova issues**

- Occasionally, nova-api process starts using too much RAM (>2 GB). This is a known, hard-to-reproduce issue. The workaround is to restart the nova-api service. LP1427688

- Live migration with the specified destination host does not currently use the same memory oversubscription logic as during an instance boot. This may cause migrations to fail due to not enough amount of memory. LP1452009

- An instance may hang with a kernel panic after the live migration operation completes successfully. This only affects pure QEMU virtualization. We recommend using offline migration of instances until the issue is resolved. LP1371130

- Before nova-compute can start, it requires openvswitch-switch to start first. In some hardware configurations, Upstart may fail to initiate nova-compute, because SystemV delays the start of openvswitch-switch. LP1540648

**Workaround:**

1. Log in to a compute node.

2. Add the following to `/etc/init/nova-compute.conf`:

```plaintext
respawn
respawn limit 20 5
limit nofile 65535 65535
```
3. Reload the Upstart configuration by typing:

```bash
initctl reload-configuration
```

4. Start the `nova-compute` service by typing:

```bash
service nova-compute start
```

5. Repeat step 1 - step 4 on all compute nodes.

**Data Processing (Sahara)**

**Resolved Sahara Issues**

Sahara cluster provisioning stability improved. The bigger clusters can now be started using Sahara. Provisioning time however may slightly increase due to the new services polling strategy used in Sahara. LP1444423
How to Obtain the Product

Mirantis OpenStack is distributed as a self-contained ISO. You can download the ISO in the Mirantis OpenStack download section of the Mirantis Portal. We have also created Oracle VirtualBox scripts to enable quick and easy deployment of a multi-node OpenStack cloud for evaluation purposes; see Running Mirantis OpenStack on VirtualBox.
Maintenance Updates

This section contains a list of available maintenance updates and update instructions for Mirantis OpenStack 6.1:

- For information on how to update the product, see How to apply Mirantis OpenStack 6.1 Maintenance Update.
- For details on a specific update, refer to the Published updates section.
- For general considerations on applying updates, see Applying patches.

Warning

Updating a Mirantis OpenStack deployment can override manually applied custom patches and result in a downtime of the entire environment. Therefore, before applying the updates to production, you must plan a maintenance window and back up your deployment as well as test the updates on your staging environment.

Always consult Mirantis Support if you have any questions or concerns.

Published updates

The following bugs have been fixed in Mirantis OpenStack maintenance updates 6.1.

Maintenance Update 1:

- #1466490 Neutron L2 agent performs a DoS attack because of incorrectly allowed address pairs.
- #1463802 RPC clients cannot find a reply queue after the last RabbitMQ server restarts in the cluster.
- #1462991 [libvirt] Failing to _hard_reboot an instance created from a multi-part image with resume_guests_state_on_host_boot=True.
- #1466552 The radosgw service does not start after reboot on CentOS.
- #1469149 The backend_argument option may lead to a password leakage through logs.

Maintenance Update 2:

- #1486907 Cumulative OpenStack update (7 fixes).
- #1467671 A node with Broadcom NetXtreme II NIC fails to reboot.

Maintenance Update 3:

- #1504916 Cumulative OpenStack update (19 fixes).
- #1487517 The status of alarms and queues is silently ignored in the RabbitMQ monitoring OCF.
- #1484693 OpenSSH fills auth.log up due to a missing ed25519 host key file.
• #1452389 The logrotate utility rotates already rotated logs of atop.
• #1486690 [logrotate] The sharedscripts option conflicts with delaycompress option.
• #1470831 [IBP] The journaling may lead to timeouts during an image building.
• #1482121 [vCenter] After a failover, nova-compute searches for images in a new directory.
• #1484502 [vCenter][OSTF] The OSTF test Create volume and boot instance from it fails in the dual-hypervisor mode.
• #1495949 [vCenter] The nova-compute.conf file does not contain the vlan_interface option in the dual-hypervisor mode with VLANManager.

Maintenance Update 4:

• #1489958 [Neutron] [CVE-2015-5240] The race condition that allows users to bypass IP anti-spoofing.
• #1488938 The network connectivity failures caused by the Neighbour table overflow error.
• #1469176 [logrotate] The hard drive space is exhausted due to the increasing of log files.
• #1491306 A race condition in the OCF script when there are no running RabbitMQ nodes.
• #1512754 [RabbitMQ] A race condition in the OCF script.
• #1460762 RabbitMQ hangs and restarts unexpectedly due to the CPU load spikes on controller nodes.
• #1388771 [OCF] After terminating the MySQL resource on controller nodes, it cannot be started by Pacemaker.
• #1463382 [OCF] The gratuitous ARP packets are not being sent correctly by the ns_IPaddr2 OCF script.
• #1488304 An environment deployment with Murano fails due to the race condition.
• #1490960 The OSTF tests for Swift fail after an environment redeployment.
• #1506877 [Ceilometer] The JavaScript map-reduce mechanism for getting statistics requests blocks other statistics requests due to its low performance.
• #1500426 The Ceilometer API freezes during the list requests on a long-running environment.
• #1510252 The single-threading Ceilometer API stops responding after three simple API requests.
• #1496607 The ceilometer resource-list command fails if you have a big amount of data to get in the output.
• #1510916 The ceilometer-collector service cannot reconnect to RabbitMQ after restarting the RabbitMQ service.
• #1522334 [Neutron] The tunnels are not built properly after the DHCP port rescheduling.
• #1499914 Race condition during an update of reserved Neutron DHCP ports.
• #1506198 The redundant Neutron DHCP agents are assigned to networks after the DHCP agents' restart.
• #1508878 [Heat] A stack deletion fails when a floating IP association depends on a non-existing server.
• #1507504 [Nova] The disk I/O QOS is erroneously ignored if RBD is used.
• #1474015 [Glance] The glance-registry error messages are handled incorrectly.
• **#1494391** The --os-cacert option for the Murano CLI does not work properly.
• **#1503685** The floating IP addresses sorting does not work in Horizon.
• **#1510851** [Facter] The osd_devices facter fails in NBD client.
• **#1502195** [Facter] The NVMe separator is not considered during the Ceph deployment.
• **#1463835** [ohai] The segmentation fault in ruby-sigar.

**Maintenance Update 5:**

• **#1534262** The vulnerability in the outdated libvirt package.
• **#1533729** The Heat denial-of-service through template-validate.
• **#1542152** [OSSA-2016-005] [CVE-2015-7546] The revoked Identity tokens can be potentially reused allowing unauthorized access to an environment resources.
• **#1520185** RadosGW returns the requested bucket name raw in the Bucket response header.
• **#1530927** [OSSA 2016-001] Nova host data leak through a snapshot.
• **#1518903** Deleting a stack can get stuck due to an uncaught exception.
• **#1501070** When network is rescheduled from one DHCP agent to another, the DHCP port binding does not change.
• **#1525495** The DHCP/L3 agent can change the status of ports that this agent does not own.
• **#1536271** Due to the lack of allowed PIDs, all running OSDs restart on an OSD node that may lead to a cascade OSD node failures.
• **#1467024** The Murano deployment fails with the following error: *Failed to start TCP Listener on 0.0.0.0:55572 - eaddrinuse (address already in use).*
• **#1496386** Pacemaker attempts to start RabbitMQ eternally.
• **#1501430** The Nova interfaces are inconsistent when restarting an instance.
• **#1532037** Keystone cannot cope with being behind an SSL terminator for the version list.
• **#1533208** Block migrate with attached volumes copies the volumes to themselves.
• **#1539664** The neutron-meter-agent makes traffic between internal networks NATed.
• **#1542505** The RPC server does not consume messages after the message acknowledge failure.
• **#1517671** Booting from volume can no longer be bigger than the flavor size.
• **#1544326** Nova fails to delete the RBD image and puts the guest to the ERROR state.
• **#1496000** Volumes stay in the creating status after the Keystone node shuts down.
• **#1533805** The binary logs of MySQL are enabled by default.
• **#1541838** A concurrent interface attachment corrupts the information cache in Nova.
• **#1491642** The syntax of the /etc/dnsmasq.upstream file is wrong.
- **#1515004** An image cannot be correctly created from an archive.
- **#1524333** A template rendering speed is slower without the cached TEMPLATE_LOADERS Django setting.
- **#1417035** The manual creation of Volume Type -> Extra Spec raises an error.

**Maintenance Update 6:**

- **#1558493** [Horizon] The vulnerability in AngularJS 1.2.16.
- **#1552683** The vulnerability in Nova instance resize/migration.
- **#1498615** A potential vulnerability in Glance that uses Swift as a back end allowing a regular user to get administrator credentials using the Swift direct URLs.
- **#1499754** Changing the Glance credentials leads to an OpenStack environment malfunction.
- **#1573675** A controller removal fails due to the Neutron client parsing the error on subnet-show.
- **#1563617** The rsyslog utility overfills the /var/spool/rsyslog/ disk space by the mainmsgqueue.* files.
- **#1537657** The installation of the ceilometer-common package updates leads to the broken swift-proxy server process since it cannot write data to its log file.
- **#1499349** The logrotate job incorrectly rotates log files in /var/log/upstart.
- **#1489198** The RARP packages can be lost during a VM live migration that can interrupt a VM's network connection.
- **#1555999** Running the `glance image-show <image_id>` command has an invalid output.
- **#1550454** Heat fails to delete a stack and instantly goes to the DELETE_FAILED state.
- **#1557013** Heat stack stops scaling after several failures of the resource allocation process.
- **#1478310** The MySQL database fails to start because it is killed by Pacemaker before the full state transfer is finished.
- **#1528498** The `fuel-createmirror` fails to prepare Ubuntu mirror because of the deprecated Docker v1.4.1.
- **#1522039** [Horizon] The number of GET requests grows exponentially when multiple rows are being updated in the table.

**Maintenance Update 7:**

- **#1582893** The default Keystone admin_token on Fuel nodes can be accessed and used unrestrictedly until disabled in the configuration files.
- **#1585130** The default Keystone token expiration time of 1 hour affects internal operations for long-running processes.
- **#1583602** An XSS vulnerability in /api/logs.
- **#1584797** The sensitive files are exposed in the directory listing.
- **#1585176** Security vulnerabilities through error messages with directory and files enumeration.
• #1585137 The versioning information is disclosed through /api/version.
• #1585203 Lack of security HTTP headers allows several types of attacks.
• #1491746 A diagnostic snapshot can be downloaded from the Fuel Master node without authentication.
• #1585160 The detailed information with description of SQL fields is accessible through error messages in Fuel API.
• #1593002 [Murano] Using extended YAML tags in a Murano application YAML files, an attacker can perform a remote code execution attack.
• #1560097 Uplinking a subnet to router fails after destroying one controller.
• #1510274 The fuel-createmirror tool fails if you create a full mirror after a partial one.
• #1537699 [Provisioning] Adding additional LVs and mountpoints for /var/log causes an incorrect /var/log content.
• #1588260 The IBP provision fails for a previously deployed node.
• #1590571 [CLI] The --fuel-version request does not work correctly with credentials.
• #1552662 OpenSSL DROWN (Decrypting RSA with Obsolete and Weakened eNcryption) vulnerability and related CVEs.
• #1529691 Stopping a deployment to add a compute node to an existing environment leads to the destruction of the environment.
• #1596682 The ipset race condition leads to the ipset and iptables modification issues when multiple instances are started or stopped.
Contacting Support

You can contact support online, through email, or by phone. Instructions on how to use any of these contact options can be found through Mirantis Service Desk.

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