MCP 1.0 Release Notes

version 1.0

Copyright notice

Preface

This documentation provides information on how to use Mirantis products to deploy cloud environments. The information is for reference purposes and is subject to change.

Intended audience

This documentation is intended for deployment engineers, system administrators and developers; it assumes that the reader is already familiar with network and cloud concepts.

Documentation history

The following table lists the released revisions of this documentation:

Revision date	Description
March 30, 2017	1.0 GA

What's new

Mirantis Cloud Platform 1.0 introduces a set of new features and enhancements.

DriveTrain

DriveTrain is a configurable deployment tool that lets you deploy MCP clusters in a semi-automated way and a shorter time frame.

Key features include:

- Quick and semi-automated installation:

  - Installation and configuration of MAAS and PostgreSQL.

  - Deployment of Jenkins Master and Slave and configuration of all MCP jobs.

  - Optional deployment of Artifactory as MCP Registry.

  - Deployment of Gerrit.

  - HAProxy for CI nodes statistics.

  - HAProxy for Docker Swarm.

- DevOps portal available to Mirantis employees.

Mirantis OpenContrail

Mirantis Cloud Platform supports Mirantis OpenContrail as an SDN solution. Mirantis OpenContrail is based on the OpenContrail source code with additional customizations that make Mirantis OpenContrail support broader functionality than other OpenContrail distributions.

Mirantis OpenContrail is based on OpenContrail 3.1.1 and supports all features of that release. In addition, Mirantis OpenContrail supports the following:

Mirantis OpenContrail 3.1.1

Feature	Description
OpenStack release	Mitaka
Trusty support	Yes, with kernel version 4.4
Xenial	Yes, with kernel version 4.8
CNI plugin for Kubernetes	Tech preview

Logging, Metering, and Alerting toolchain features

The MCP Logging, Metering, and Alerting (LMA) solution called StackLight is specifically tailored to monitor the OpenStack environment. StackLight provides building blocks that plug in virtually to every datacenter infrastructure.

Key features include:

- Implemented Kubernetes and Calico monitoring at the infrastructure level.
- Added three new Grafana dashboards:
    - A Service Level monitoring dashboard that shows various service-level indicators, such as the OpenStack service clusters uptime, the API availability ratio, the API requests errors ratio.
    - A combined dashboard for Kubernetes and Calico since both are configured using the same Salt formula.
    - A dashboard for etcd.
- Sensu replaced Nagios for self-monitoring checks and self-healing functions. As opposed to Nagios, Sensu also includes an API to query events and display the health status of the OpenStack services in Horizon. Sensu also contains clustering and multi-domain monitoring support using Uchiwa.
- Added meta monitoring of the StackLight Operational Insights Pipeline.
- Integrated StackLight with the MCP Lifecycle Management system (LCM) including the CI/CD toolchain, Salt, and Reclass.
- Integrated the Nova aggregates monitoring.
- Integrated StackLight with the OpenStack Dashboard (Horizon) using the following plugins:
    - The horizon-telemetry-dashboard plugin that provides access to the Telemetry data stored in InfluxDB for the control plane and data plane nodes.
    - The horizon-monitoring-dashboard plugin that provides access to the StackLight health status events stored in Sensu.
- The Remote Metric Collector functionality is extended with the CADF-compatible notifications that are sent through syslog.
- Added support for Syslog output in the Log Collector and Remote Metric Collector for the logs and the OpenStack Notifications.

Kubernetes deployment

Kubernetes is an orchestrator for the containerized users workloads. MCP enables you to install one or multiple Kubernetes clusters side-by-side with an OpenStack environment or separately.

Kubernetes features include:

- Deployment automation with SaltStack
- Configuration changes and updates through SaltStack
- etcd
- Docker
- Calico networking
- Highly available Kubernetes cluster

NFV features support

MCP 1.0 supports NFV workloads running on an MCP cloud with the following functionality:

- CPU pinning - You can specify the amount of CPU cores on a compute node dedicated for pinning.
- NUMA - You can enable and use Non-Uniform Memory Access (NUMA) on the OpenStack environment.
- HugePages - You can specify the amount of RAM on a compute node to be dedicated for HugePages.
- OpenContrail:
    - You can use DPDK based vRouter when using OpenContrail for maximum performance.
    - You can utilize SR-IOV for NFV workloads and vRouter when using OpenContrail.
- SR-IOV:
    - MCP allows you to configure NIC as SR-IOV interface.
    - MCP allows you to specify the amount of VFs that VMs can consume from this particular NIC.
    - MCP allows you to assign NIC with SR-IOV enabled to a particular physical network.
- DPDK:
    - MCP allows you to enable DPDK on specific NIC or bonded interfaces with this NIC.
    - MCP allows you to adjust the amount of CPU cores and RAM provided to OVS-DPDK for performance tuning.
    - MCP deploys DPDK-enabled OVS package and DPDK drivers when operators select DPDK features.
- Multiqueue networking - Multiqueue functionality enables network performance to scale according to the vCPUs assigned to a VM.

Decapod version 1.0.0

Decapod version 1.0.0 contains the following improvements:

- Added the capability to use only docker and make for building Decapod.
- Updated Decapod to use MongoDB 3.4 as a database.
- Added a capability to inject configuration files as volumes.
- Introduced a new admin service that replaces the cron service and contains a list of migrations and various utilities.
- Improved the UI.
- Added integration with Keystone.
- Added new plugins: Remove monitor, Telegraf integration, Telegraf removal.
- Added verification of deployed Ceph versions on adding new OSDs and monitors.

- Added scripts for the backup and restore procedures and also for creating a debug snapshot.

Major components versions

The following table describes the versions of software that Mirantis Cloud Platform 1.0 installs.

Component	Version
Linux Kernel	4.8 (HWE)
Open vSwitch	2.6.1
OpenStack	Mitaka
Salt	2016.3
HA Proxy	1.6.3
MySQL	5.6
Galera/wsrep	5.6
RabbitMQ	3.6.5
Operating System for: • Kubernetes deployment • DriveTrain • Compute nodes • Gateway nodes	Ubuntu 16.04.2
Operating System for VCP	Ubuntu 14.04
Operating System for Docker image	Debian Jessie
Operating system for physical nodes	Ubuntu 16.04
Contrail	3.1
MaaS	2.1
Docker	17.03.1-ce
Kubernetes	1.6
Calico	1.0.0
etcd	3.0.12
libvirt	2.4.0
QEMU	2.7

Known issues

This section lists the MCP 1.0 known issues and workarounds.

Issue #: PROD-9972

- Title: Gerrit and Jenkins images include user data for login
- Description: The provided images of Gerrit and Jenkins include random user accounts that anyone can use to log in.
- Workaround: In the current release, LDAP authentication is not provided out of the box and Gerrit's system authentication is configured as DEVELOPMENT_BECOME_ANY_ACCOUNT. Use any preconfigured account to log in without actual authentication. Alternatively, you can configure Gerrit to use an existing LDAP server for authentication.

Issue #: PROD-8660

- Title: The ceilometer-agent-compute cannot connect to libvit on a compute node
- Description: The ceilometer-agent-compute cannot connect to libvit on a compute node. The issue happens during the start of the ceilometer-agent-compute service before you add a Ceilometer user to the libvirt group.
- Workaround: Restart the ceilometer-agent-compute service on the compute node.