



MANILA

an OpenStack Community Project

Onboarding Session

Tom Barron (tbarron)

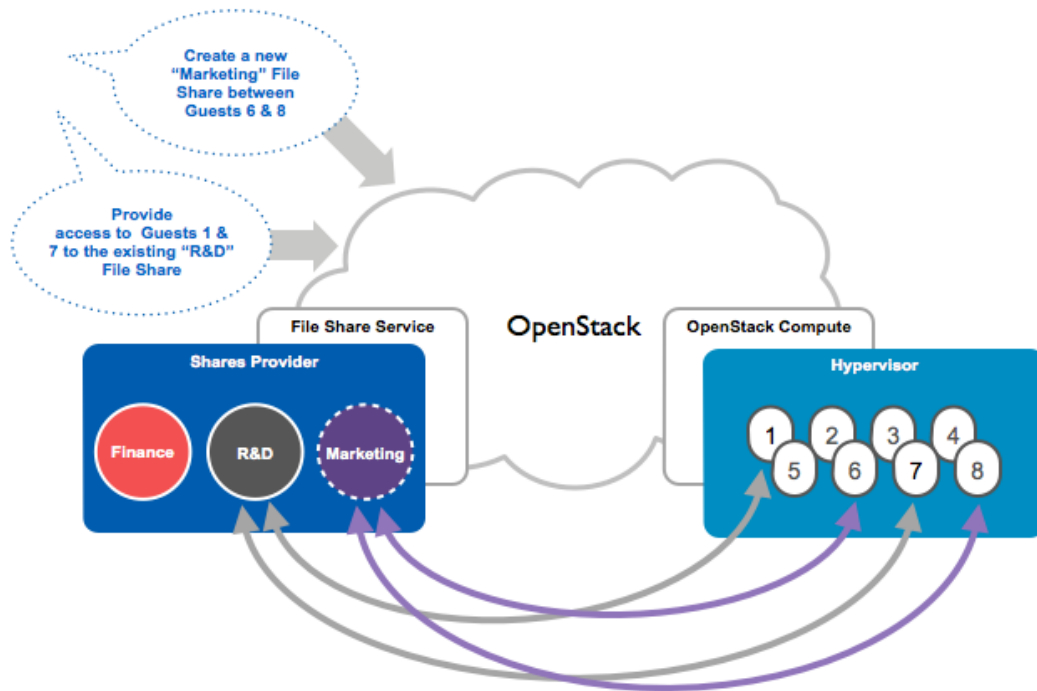
Victoria Martinez de la Cruz
(vkmc)

Dustin Schoenbrun
(dustins)



Think: manila folders.
Manila provides self-service file shares as a service.

What is Manila?



Our Documentation

- General OpenStack Contributor Portal: <https://www.openstack.org/community/>.
- General OpenStack Contributor Guide: <https://docs.openstack.org/contributors/>.
- Manila Project Wiki pages: <https://en.wikipedia.org/wiki/Manila>.
- Manila Docs (general purpose): <https://docs.openstack.org/manila/>.
- Developer Docs: <https://docs.openstack.org/manila/latest/contributor/index.html>.

Get Into the Conversation

- General discussions for manila
 - IRC channel #openstack-manila on Freenode.
 - Don't know how to use IRC? <https://docs.openstack.org/contributors/common/irc.html>
- Weekly meetings
 - Meeting agenda and details: <https://wiki.openstack.org/wiki/Manila/Meetings>.
 - Want to discuss something? Add it to the agenda (and don't forget to add your name).
 - Thursdays at 3pm UTC on #openstack-meeting-alt on Freenode.

Release Schedule - Rocky

- Complete schedule: <https://releases.openstack.org/queens/schedule.html>
- Blueprints: <https://blueprints.launchpad.net/manila>
- Specs: <http://specs.openstack.org/openstack/manila-specs/>
- Bugs: <https://bugs.launchpad.net/manila>
- Important dates
 - Milestones.
 - Specs, what needs a spec?
 - Drivers.
 - Feature proposal.
 - Feature freeze.

Related Projects

- python-manilaclient: <https://github.com/openstack/python-manilaclient>
 - CLI and API for interacting with Manila.
- manila-ui: <https://github.com/openstack/manila-ui>
 - Manila's Horizon UI Plugin.
- manila-image-elements: <https://github.com/openstack/manila-image-elements>
 - Bootable Linux image for use with the Generic Share Driver.

Development Environment: Accounts

- Contributor accounts: <https://docs.openstack.org/infra/manual/developers.html>
 - Here you will set up your:
 - Launchpad ID.
 - OpenStack Foundation Profile/Gerrit ID.

Things to Remember

- Reviewing
 - All code/documentation contributions are submitted into Gerrit: review.openstack.org.
 - Zuul (OpenStack CI) must approve the code/doc patch with a +1.
 - Anyone can provide a +/- 1 to any patch.
 - 2 Core Reviewers must +2 the patch, and one of them will +W (Workflow) the patch when it is ready to merge.
- Conventions:
 - Best Practices for Git Commit Messages: <https://wiki.openstack.org/wiki/GitCommitMessages>.
 - Commit message tags:
https://docs.openstack.org/manila/latest/contributor/commit_message_tags.html.
 - Release notes (aka renos) https://docs.openstack.org/manila/ocata/devref/adding_release_notes.html

How Manila is Consumed

- All major distributions include Manila
 - <https://www.openstack.org/marketplace/distros/>
- Backports
 - When a fix can also be applied to previous releases of Manila, we can backport the fix to them.
 - All bugfixes are eligible to be backported to the last stable release, so long as they do not affect the database (DB migrations) or the Manila API.
 - Manila adheres to the OpenStack stable branch policy.
 - “driverfixes” branches exist to allow backporting driver changes to unsupported branches, for the benefit of distributions.

Development Environment: DevStack

- General DevStack Documentation:
 - <https://docs.openstack.org/devstack/latest/>.
- Configuration of Manila with DevStack
 - <https://docs.openstack.org/manila/latest/contributor/development-environment-devstack.html>.
- Default configuration is Manila configured with the Generic Share Driver
- Recommended setup:
 - VM (8GB RAM, 50GB virtual disk, 4 CPU cores) with Ubuntu Xenial/Centos 7/OpenSUSE

DevStack Configuration - Generic Share Driver (DHSS=True)

```
[local|localrc]
ADMIN_PASSWORD=secret
DATABASE_PASSWORD=$ADMIN_PASSWORD
RABBIT_PASSWORD=$ADMIN_PASSWORD
SERVICE_PASSWORD=$ADMIN_PASSWORD

LIBS_FROM_GIT=python-manilaclient

enable_plugin manila git://git.openstack.org/openstack/manila
enable_plugin manila-ui https://git.openstack.org/openstack/manila-ui
```

DevStack Configuration - CephFS-NFS Driver

```
[local|localrc]
ADMIN_PASSWORD=secret
DATABASE_PASSWORD=$ADMIN_PASSWORD
RABBIT_PASSWORD=$ADMIN_PASSWORD
SERVICE_PASSWORD=$ADMIN_PASSWORD

LIBS_FROM_GIT=python-manilaclient

enable_plugin manila git://git.openstack.org/openstack/manila
enable_plugin manila-ui https://git.openstack.org/openstack/manila-ui
enable_plugin devstack-plugin-ceph git://git.openstack.org/openstack/devstack-plugin-ceph

ENABLE_CEPH_CINDER=True    # ceph backend for cinder
ENABLE_CEPH_GLANCE=True   # store images in ceph
ENABLE_CEPH_C_BAK=True    # backup volumes to ceph
ENABLE_CEPH_NOVA=True     # allow nova to use ceph resources
ENABLE_CEPH_MANILA=True   # configure manila to use ceph native

# NFS Ganesha GW
MANILA_CEPH_DRIVER=cephfsnfs
```

DevStack Configuration - LVM Driver Initial Setup

```
mkdir /opt/stack/data
truncate -s 100g /opt/stack/data/lvm-shares1-backing-file
truncate -s 100g /opt/stack/data/lvm-shares2-backing-file
sudo vgcreate lvm-shares1 $(sudo losetup -f --show /opt/stack/data/lvm-shares1-backing-file)
sudo vgcreate lvm-shares2 $(sudo losetup -f --show /opt/stack/data/lvm-shares2-backing-file)
```

DevStack Configuration - LVM Driver

```
[[local|localrc]]
```

```
ADMIN_PASSWORD=secret
```

```
DATABASE_PASSWORD=$ADMIN_PASSWORD
```

```
RABBIT_PASSWORD=$ADMIN_PASSWORD
```

```
SERVICE_PASSWORD=$ADMIN_PASSWORD
```

```
LIBS_FROM_GIT=python-manilaclient
```

```
enable_plugin manila git://git.openstack.org/openstack/manila
```

```
enable_plugin manila-ui https://git.openstack.org/openstack/manila-ui
```

```
MANILA_MULTI_BACKEND=True
```

```
MANILA_BACKEND1_CONFIG_GROUP_NAME=vienna
```

```
MANILA_BACKEND2_CONFIG_GROUP_NAME=prague
```

```
MANILA_SHARE_BACKEND1_NAME=Vienna
```

```
MANILA_SHARE_BACKEND2_NAME=Prague
```

```
SHARE_DRIVER=manila.share.drivers.lvm.LVMShareDriver
```

```
MANILA_OPTGROUP_vienna_driver_handles_share_servers=False
```

```
MANILA_OPTGROUP_prague_driver_handles_share_servers=False
```

```
MANILA_OPTGROUP_vienna_lvm_share_volume_group=lvm-shares1
```

```
MANILA_OPTGROUP_prague_lvm_share_volume_group=lvm-shares2
```

```
# If you're running minimal
```

```
ENABLED_SERVICES=key,mysql,rabbit,tempest,manila,m-api,m-sch,m-shr,m-dat
```

Database and The Message Queue

- Manila maintains its state and objects under its control through a database
 - Similar to most other OpenStack projects
- You will occasionally need to update your database schemas due to changes
 - `$ manila-manage db sync`
 - <https://docs.openstack.org/manila/latest/cli/manila-manage.html>
- Manila uses a Message Queue service for inter-process communication and RPC
 - Typically RabbitMQ provides this service but there are others.
 - <https://www.rabbitmq.com/>

The Manila API

- All APIs are core APIs
- The API is micro-versioned
 - Backwards Compatibility
 - https://docs.openstack.org/manila/latest/contributor/api_microversion_dev.html
- SDK Support:
 - Supported by the Manila community:
 - python-manilaclient
 - Supported by other communities
 - Gophercloud - <https://github.com/rackspace/gophercloud>
 - Openstack4j - <http://www.openstack4j.com>
 - ...

Unit tests

- Simple and fast checks of the smallest units of code to ensure they work properly.
- Always run them before submitting any change!
- How do I run the Manila Unit Tests?
 - Python 2.7: **\$ tox -e py27**
 - Python 3.5: **\$ tox -e py35**
 - PEP-8 : **\$ tox -e pep8**
 - Coverage : **\$ tox -e cover**

Tempest Tests

- Suite of Integration and Functional Tests
- Manila has its own Tempest plugin
 - <https://github.com/openstack/manila-tempest-plugin>
- Typically run as part of the final suite of tests before a patch is merged.
- `$ tox -eall-plugin <path-to-test>`

Continuous Integration (CI)

- Every in-tree driver needs a CI System
- If the CI System does not exist, a new driver will not be merged
- If the CI is not maintained (e.g. it fails on all runs) the driver will be marked as “unsupported”

Zuul check	12:02 PM
build-openstack-sphinx-docs	SUCCESS in 6m 23s
openstack-tox-pep8	SUCCESS in 6m 04s
openstack-tox-py27	SUCCESS in 5m 52s
openstack-tox-py35	SUCCESS in 6m 10s
openstack-tox-cover	FAILURE in 11m 42s (non-voting)
openstack-tox-pylint	SUCCESS in 7m 52s (non-voting)
legacy-manila-ui-dsvm	SUCCESS in 31m 05s (non-voting)
manila-tox-genconfig	SUCCESS in 4m 04s
manila-tempest-dsvm-mysql-generic	SUCCESS in 1h 07m 22s (non-voting)
manila-tempest-dsvm-postgres-container	SUCCESS in 41m 22s (non-voting)
manila-tempest-dsvm-postgres-zfsonlinux	SUCCESS in 57m 14s (non-voting)
manila-tempest-dsvm-postgres-generic-singlebackend	SUCCESS in 49m 19s (non-voting)
manila-tempest-dsvm-generic-no-share-servers	SUCCESS in 59m 16s (non-voting)
manila-tempest-dsvm-scenario	SUCCESS in 1h 04m 36s (non-voting)
manila-tempest-minimal-dsvm-cephfs-native-centos-7	SUCCESS in 1h 04m 06s (non-voting)
manila-tempest-minimal-dsvm-cephfs-nfs-centos-7	FAILURE in 10m 45s (non-voting)
manila-tempest-dsvm-glusterfs-nfs	SUCCESS in 1h 03m 20s (non-voting)
manila-tempest-dsvm-glusterfs-native	FAILURE in 1h 03m 25s (non-voting)
manila-tempest-dsvm-hdfs	FAILURE in 1h 01m 40s (non-voting)
manila-tempest-minimal-dsvm-dummy	SUCCESS in 39m 55s
manila-tempest-minimal-dsvm-lvm-centos-7	SUCCESS in 57m 13s
grenade-dsvm-manila	SUCCESS in 17m 10s (non-voting)
rally-dsvm-manila-multibackend	SUCCESS in 25m 31s (non-voting)
rally-dsvm-manila-multibackend-no-ss	SUCCESS in 22m 06s (non-voting)
Dell EMC Isilon CI	1:04 PM
EMC_ISILON	SUCCESS in 1h 01m 43s
Dell EMC VNX CI	2:12 PM
EMC_VNX_Manila	SUCCESS in 2h 09m 16s
HPE Storage CI	1:49 PM
manila-master-client-pip-ssa03-dsvm-neutron	SUCCESS in 1h 44m 02s
IBM Storage CI check	2:05 PM
gpfs-manila-ces-tempest-dsvm-full-nfs	SUCCESS in 2h 07m 02s
Infortrend CI	6:58 PM
infortrend-manila-share	ABORTED in 3h 00m 09s
NetApp CI	2:18 PM
manila-cDOT-ss	SUCCESS in 53m 09s
manila-cDOT-no-ss	SUCCESS in 1h 22m 24s
Veritas Access CI	12:37 PM
dsvm-veritas-access-manila-driver	SUCCESS in 1h 45m 52s

Where we Need Help

- New features/bug fixes always welcome
- SDKs, openstack-client
- Code Reviewers
- Driver Maintainers
 - HDFS
 - GlusterFS
 - Container driver
- Integration into clients outside of OpenStack
- Documentation

Need Help?

- Join us in `#openstack-manila` on Freenode
- Weekly meeting: Thursdays 3pm UTC in `#openstack-meeting-alt` on Freenode
- Contact:
 - Tom Barron, Project Team Lead (PTL) (tbarron)
 - Core Reviewers → <https://review.openstack.org/#/admin/groups/213,members>

Q&A