

> **26/08/2015**

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Operating systems and Information Services



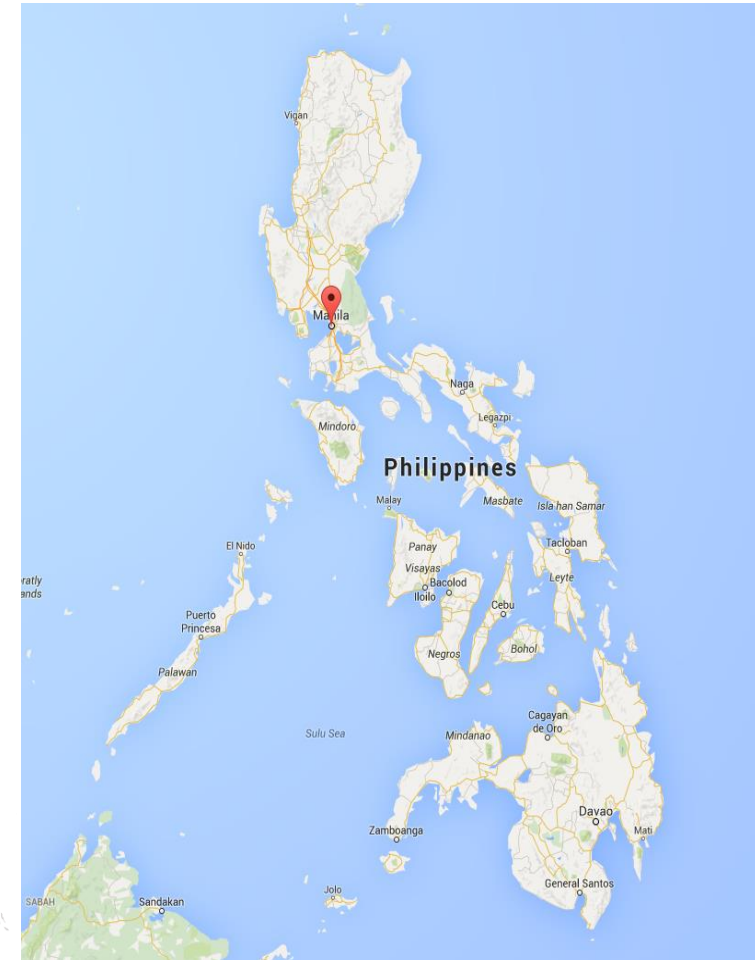
OpenStack Manila

CERN openlab Summer Students
Lightning Talks Sessions

Mihai Patrascoiu



Manila





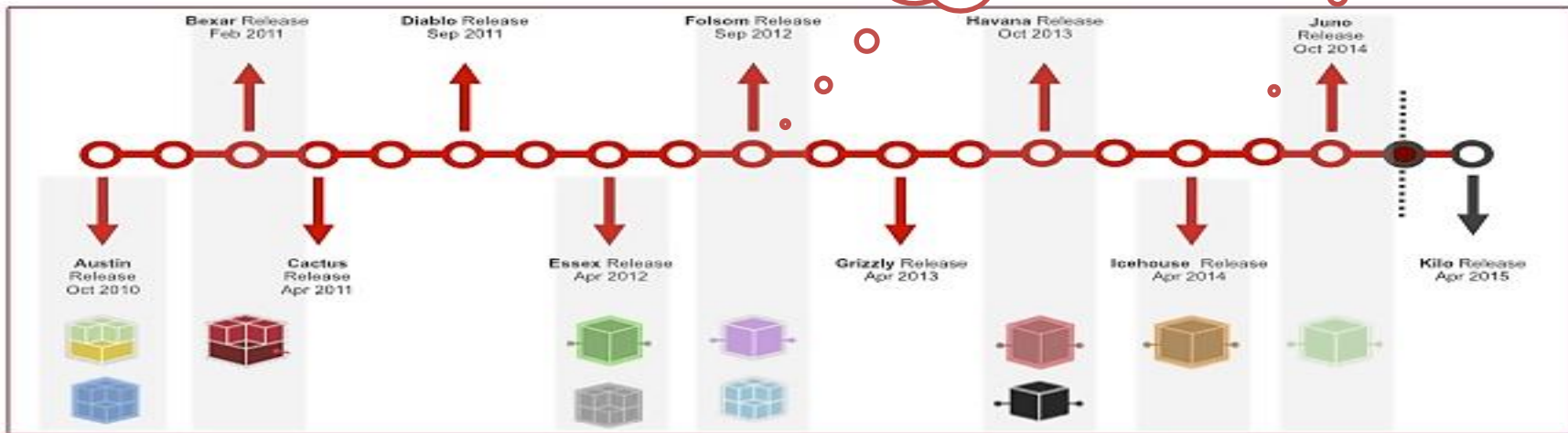
OpenStack Manila

OpenStack – software platform for managing cloud computing
Manila – OpenStack component. Provides Shares-as-a-Service

Achieved incubation status

OpenStack® Project Timeline

Manila started



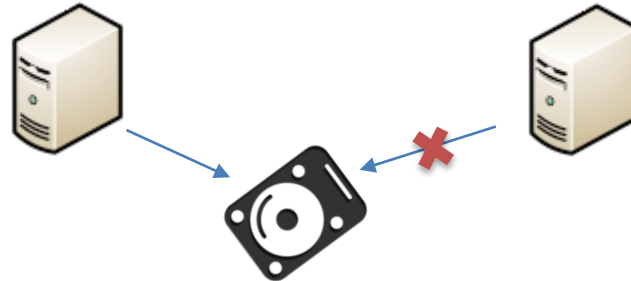
Why OpenStack Manila?



openstack™



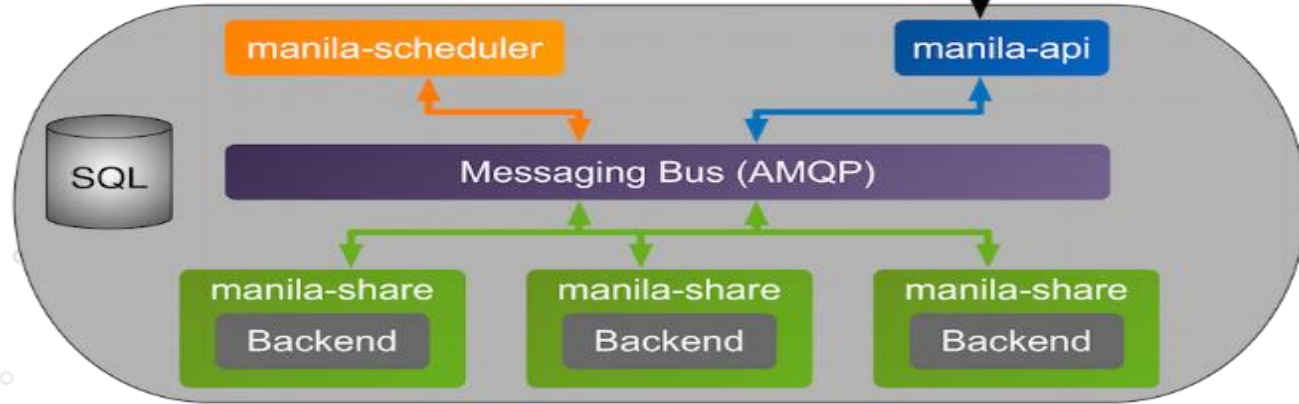
- › No file based storage system provided by OpenStack
- › No way to share drives between VMs



How it works



REST API



Backend drivers:

HP
Generic
NetApp

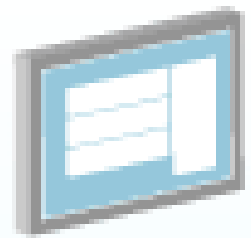
IBM
GlusterFS

NFS-Ganesha
Huawei

Generic Driver

> Handling share servers

Manila service



create

Share server VMs



Shared volumes

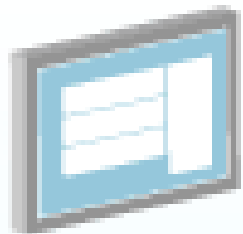




Generic Driver

> Handling share servers

Manila service



create

Share server VMs



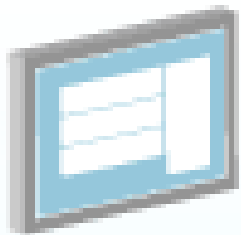
Shared volumes



Generic Driver

› Not handling share servers

Manila service



interact

Existing share server



Shared volumes



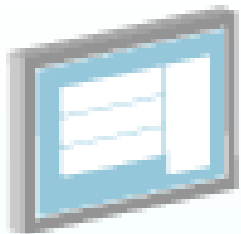


Resources
Admin

Generic Driver

› Not handling share servers

Manila service



interact

Existing
share
server

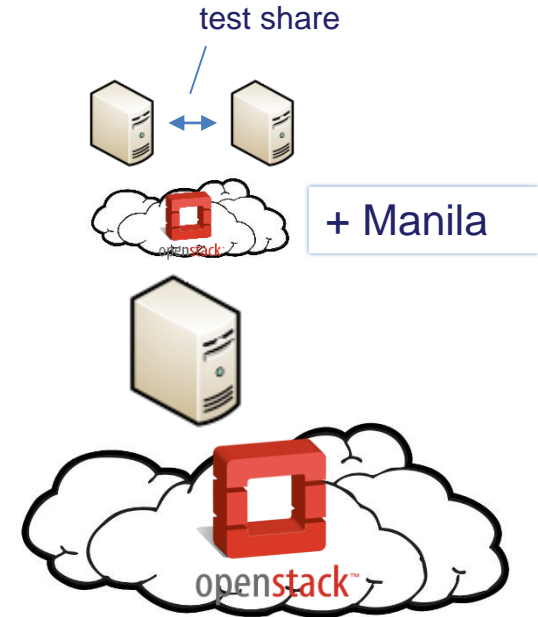


Shared
volumes



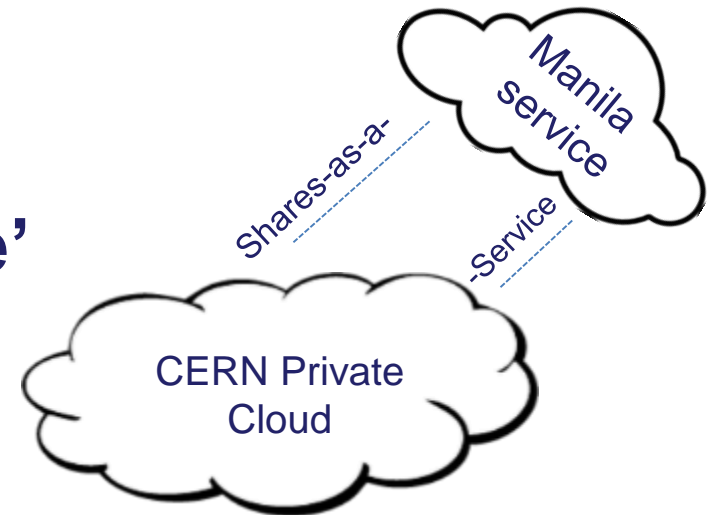
The Process (part 1)

- › **Create VM**
- › **Install OpenStack on VM**
- › **Install & configure Manila**
- › **Launch VMs**
- › **Test shares**



The Process (part 2)

- › **New project in CERN Private Cloud:
*‘Cloud Share Service – Critical’***
- › **Install Manila service**
- › **Enable *‘Shares-as-a-Service’***

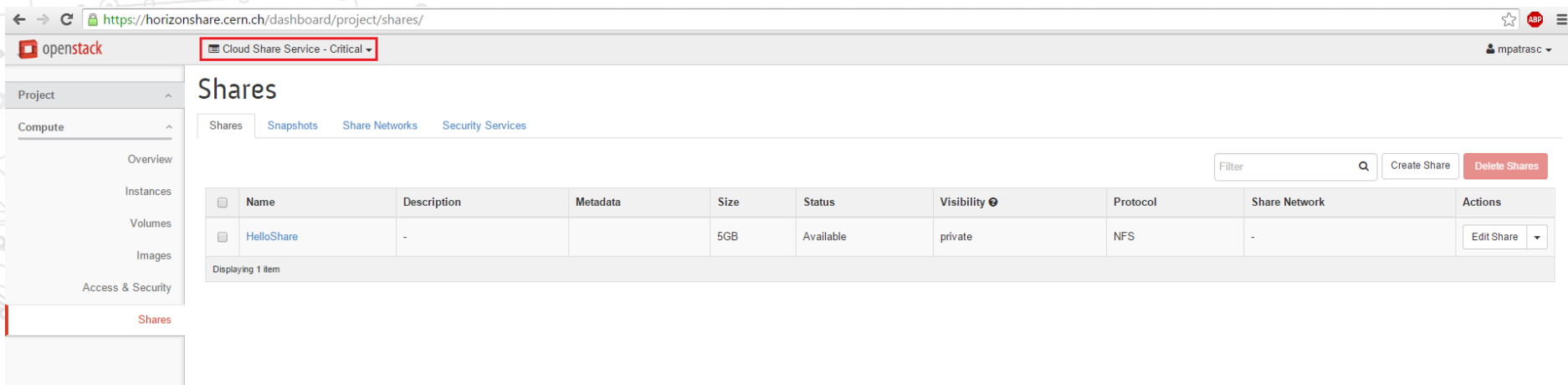


```
Traceback (most recent call last):
File "/usr/lib/python2.7/site-packages/oslo_messaging/rpc/dispatcher.py", line 142, in _dispatch_and_reply
    executor.callback)
File "/usr/lib/python2.7/site-packages/oslo_messaging/rpc/dispatcher.py", line 186, in _dispatch
    executor.callback)
File "/usr/lib/python2.7/site-packages/oslo_messaging/rpc/dispatcher.py", line 130, in _do_dispatch
    result = func(ctxt, **new_args)
File "/usr/lib/python2.7/site-packages/manila/share/manager.py", line 485, in delete_share
    {'status': 'error_deleting'})
File "/usr/lib/python2.7/site-packages/oslo_utils/excutils.py", line 85, in _exit__
    six.reraise(self.type_, self.value, self.tb)
File "/usr/lib/python2.7/site-packages/manila/share/manager.py", line 481, in delete_share
    share_server=share_server)
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line 522, in
    share_server['backend_details'], share['name'])
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line
    server, ['sudo', 'net', 'conf', 'delshare', share_name])
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line
    return processutils.ssh_execute(ssh, ' '.join(command))
File "/usr/lib/python2.7/site-packages/oslo_concurrency/processutils.py", line
    stdin_stream, stdout_stream, stderr_stream = ssh.exec_command(cmd)
File "/usr/lib/python2.7/site-packages/paramiko/client.py", line 341, in exec_command
    chan = self.transport.open_session()
File "/usr/lib/python2.7/site-packages/paramiko/transport.py", line 615, in open_session
    max_packet_size=max_packet_size)
File "/usr/lib/python2.7/site-packages/paramiko/transport.py", line 731, in open_channel
    raise e
EOFError
-----
File "/usr/lib/python2.7/site-packages/oslo_utils/excutils.py", line 85, in _exit__
    six.reraise(self.type_, self.value, self.tb)
File "/usr/lib/python2.7/site-packages/manila/share/manager.py", line 319, in create_share
    context, share_ref, share_server=share_server)
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line 116, in
    return f(self, *args, **kwargs)
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line 198, in
    self.format_device(server_details, volume)
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line 209, in
    self.ssh_exec(server_details, command)
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line 158, in
    return processutils.ssh_execute(ssh, ' '.join(command))
File "/usr/lib/python2.7/site-packages/oslo_concurrency/processutils.py", line 335, in
    cmd=sanitized_cmd)
ProcessExecutionError: Unexpected error while running command.
Command: sudo mkfs.ext4 /dev/vdc
Exit code: 1
Stdout: u''
Stderr: u'mkfs 1.42.9 (28-Dec-2013)\nCould not stat /dev/vdc --- No such file or directory'

Traceback (most recent call last):
File "/usr/lib/python2.7/site-packages/oslo_messaging/rpc/dispatcher.py", line 142, in _dispatch_and_reply
    executor.callback)
File "/usr/lib/python2.7/site-packages/oslo_messaging/rpc/dispatcher.py", line 186, in _dispatch
    executor.callback)
File "/usr/lib/python2.7/site-packages/oslo_messaging/rpc/dispatcher.py", line 130, in _do_dispatch
    result = func(ctxt, **new_args)
File "/usr/lib/python2.7/site-packages/manila/share/manager.py", line 345, in create_share
    self.db.share_update(context, share_id, {'status': 'error'})
File "/usr/lib/python2.7/site-packages/oslo_utils/excutils.py", line 85, in _exit__
    six.reraise(self.type_, self.value, self.tb)
File "/usr/lib/python2.7/site-packages/manila/share/manager.py", line 319, in create_share
    context, share_ref, share_server=share_server)
File "/usr/lib/python2.7/site-packages/manila/share/drivers/generic.py", line 96, in wrap
    service_manager.get_common_server()
File "/usr/lib/python2.7/site-packages/manila/share/drivers/service_instance.py", line 235, in get_common_server
    ('instance_name_or_id'))
File "/usr/lib/python2.7/site-packages/manila/compute/nova.py", line 197, in server_get_by_name_or_id
    ('instance_name_or_id'))
File "/usr/lib/python2.7/site-packages/novaclient/utils.py", line 218, in find_resource
    (args)
File "/usr/lib/python2.7/site-packages/novaclient/base.py", line 196, in find
    (**kwargs)
File "/usr/lib/python2.7/site-packages/novaclient/base.py", line 249, in findall
    (**list_kwargs)
File "/usr/lib/python2.7/site-packages/novaclient/v2/servers.py", line 600, in list
    _list("/servers%s%s" % (detail, query_string), "servers")
File "/usr/lib/python2.7/site-packages/novaclient/base.py", line 64, in _list
    body = self.api_client.get(url)
File "/usr/lib/python2.7/site-packages/novaclient/client.py", line 451, in get
    return self._cs_request(url, 'GET', **kwargs)
File "/usr/lib/python2.7/site-packages/novaclient/client.py", line 429, in _cs_request
    resp, body = self._time_request(url, method, **kwargs)
File "/usr/lib/python2.7/site-packages/novaclient/client.py", line 402, in _time_request
    resp, body = self._request(url, method, **kwargs)
File "/usr/lib/python2.7/site-packages/novaclient/client.py", line 373, in _request
    **kwargs)
File "/usr/lib/python2.7/site-packages/requests/api.py", line 50, in request
    response = session.request(method=method, url=url, **kwargs)
File "/usr/lib/python2.7/site-packages/requests/sessions.py", line 465, in request
    resp = self.send(prepared_request, **send_kwargs)
File "/usr/lib/python2.7/site-packages/requests/sessions.py", line 573, in send
    r = adapter.send(request, **kwargs)
File "/usr/lib/python2.7/site-packages/requests/adapters.py", line 431, in send
    raise SSLError(e, request=request)
SSLWarning: [Errno bad handshake] (104, 'Connection reset by peer')
```

The Process (part 3)

- › Deploying the Web GUI
- › Available on: *horizonshare.cern.ch*



The screenshot displays the OpenStack Horizon web interface for managing shares. The browser address bar shows the URL `https://horizonshare.cern.ch/dashboard/project/shares/`. The page title is "Shares". The interface includes a navigation sidebar on the left with options like "Project", "Compute", "Overview", "Instances", "Volumes", "Images", "Access & Security", and "Shares". The main content area shows a table of shares with the following data:

<input type="checkbox"/>	Name	Description	Metadata	Size	Status	Visibility	Protocol	Share Network	Actions
<input type="checkbox"/>	HelloShare	-		5GB	Available	private	NFS	-	Edit Share

Below the table, it indicates "Displaying 1 item".

Creating your share

Create Share

Share Name *

Description

Share Protocol *

NFS ▼

Size (GB) *

Share Type *

▼

Metadata

Make visible for all

- suitable name

- NFS / CIFS protocol

- size in GB

- customType (generic driver w/o handling share server)

Conclusions

- › **Prototype deployment of Manila**
- › **Improve the backend**
- › **Ensure scalability & security**

Thank You !