



Adopt a share today!

How to bring your existing shared filesystem under
Manila's management

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Agenda

- 1) What's Manila?
- 2) Multitenancy in Manila
- 3) Adopting/Abandoning a share
- 4) Demo

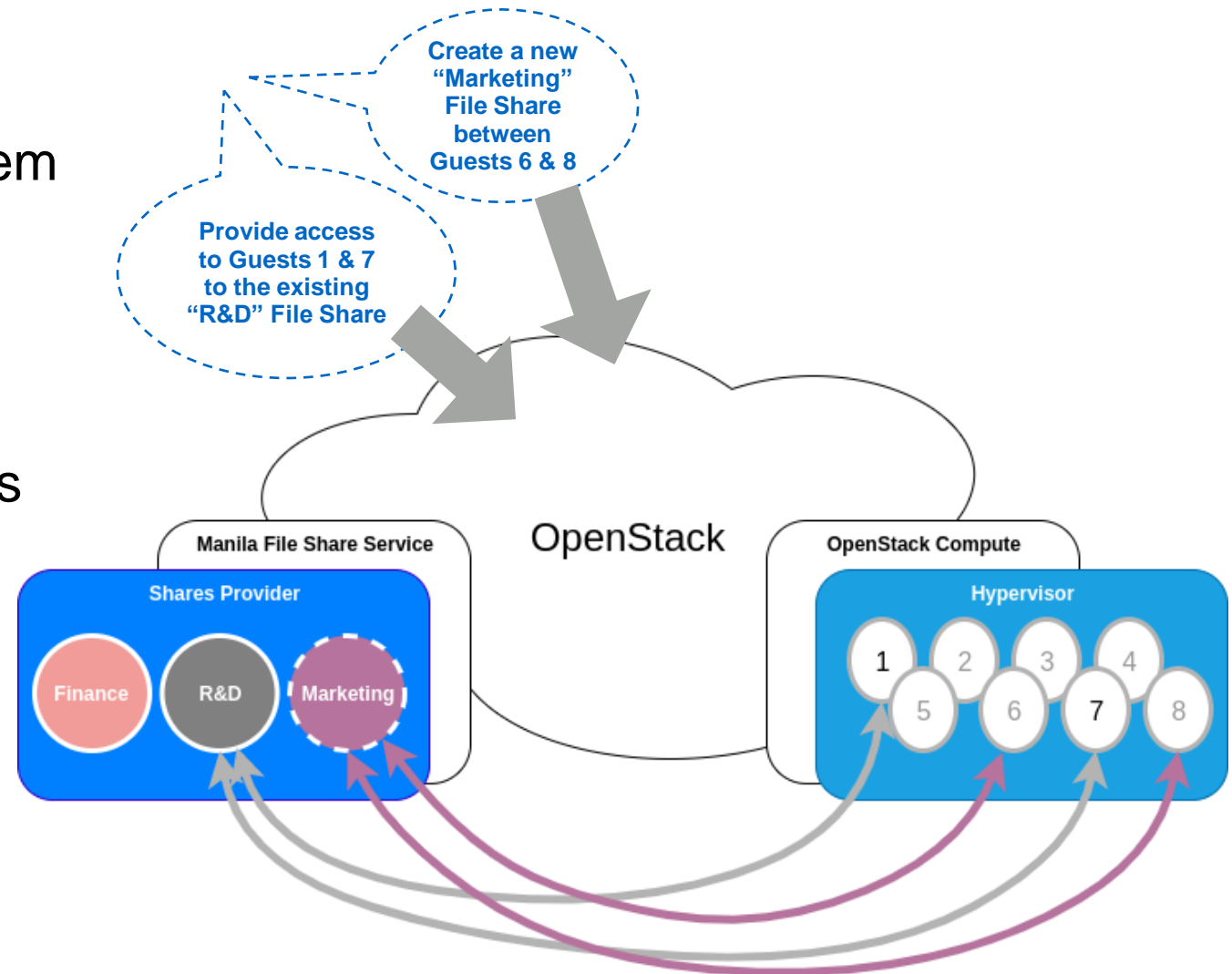




What's Manila?

What's Manila? (1/2)

- Manila is an OpenStack shared filesystem service
- Provides self-service provisioning and access control of shared filesystems
- Supports NFS, CIFS and other protocols
- Useful features: snapshots, replicas across storage pools, etc.



What's Manila? (2/2)

- Manila consists of four services:
 - manila-api
 - manila-data
 - manila-scheduler
 - manila-share
- One or more backend needs to be configured
- Many vendors maintain Manila drivers to allow their storages to be used as share backend and contribute to add new core features

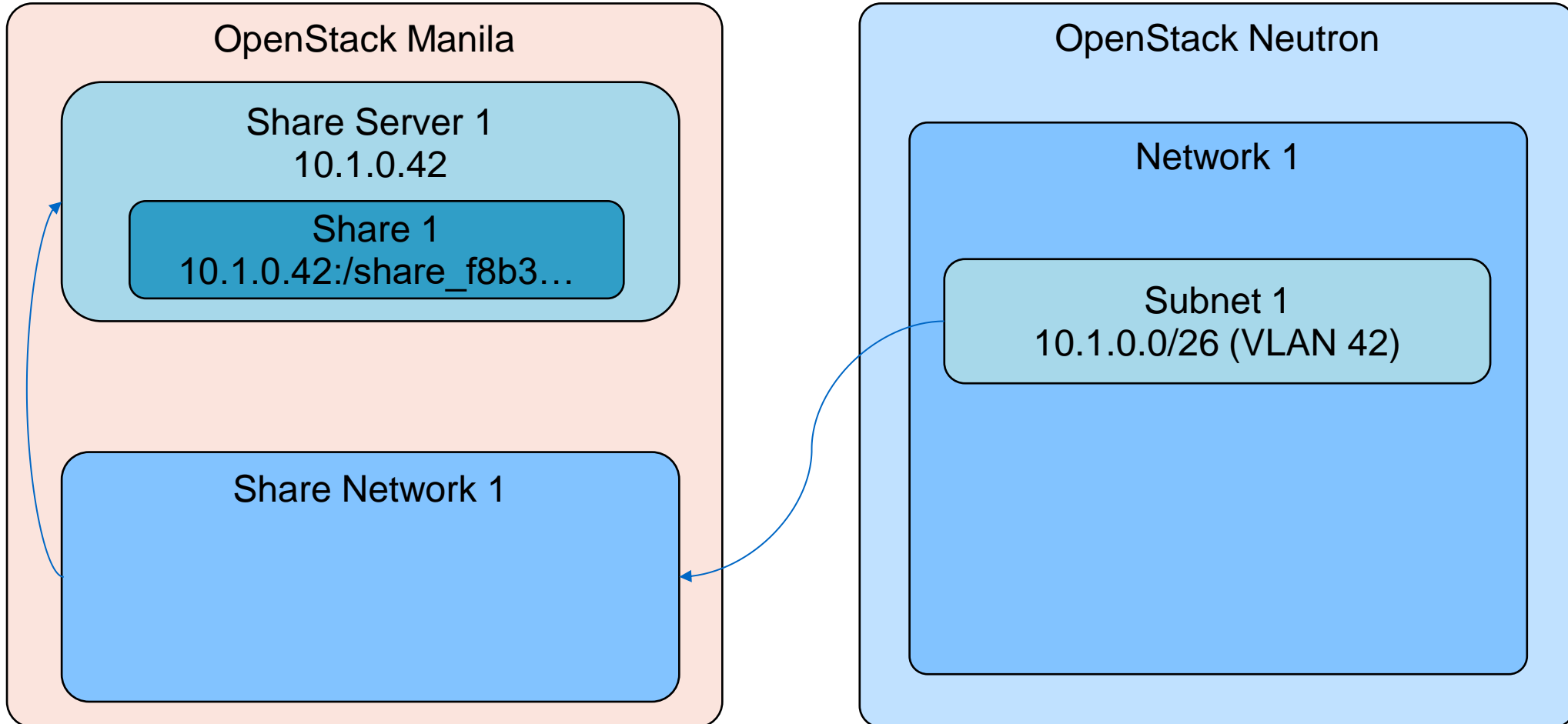


Multitenancy in Manila

Multitenancy in Manila (1/3)

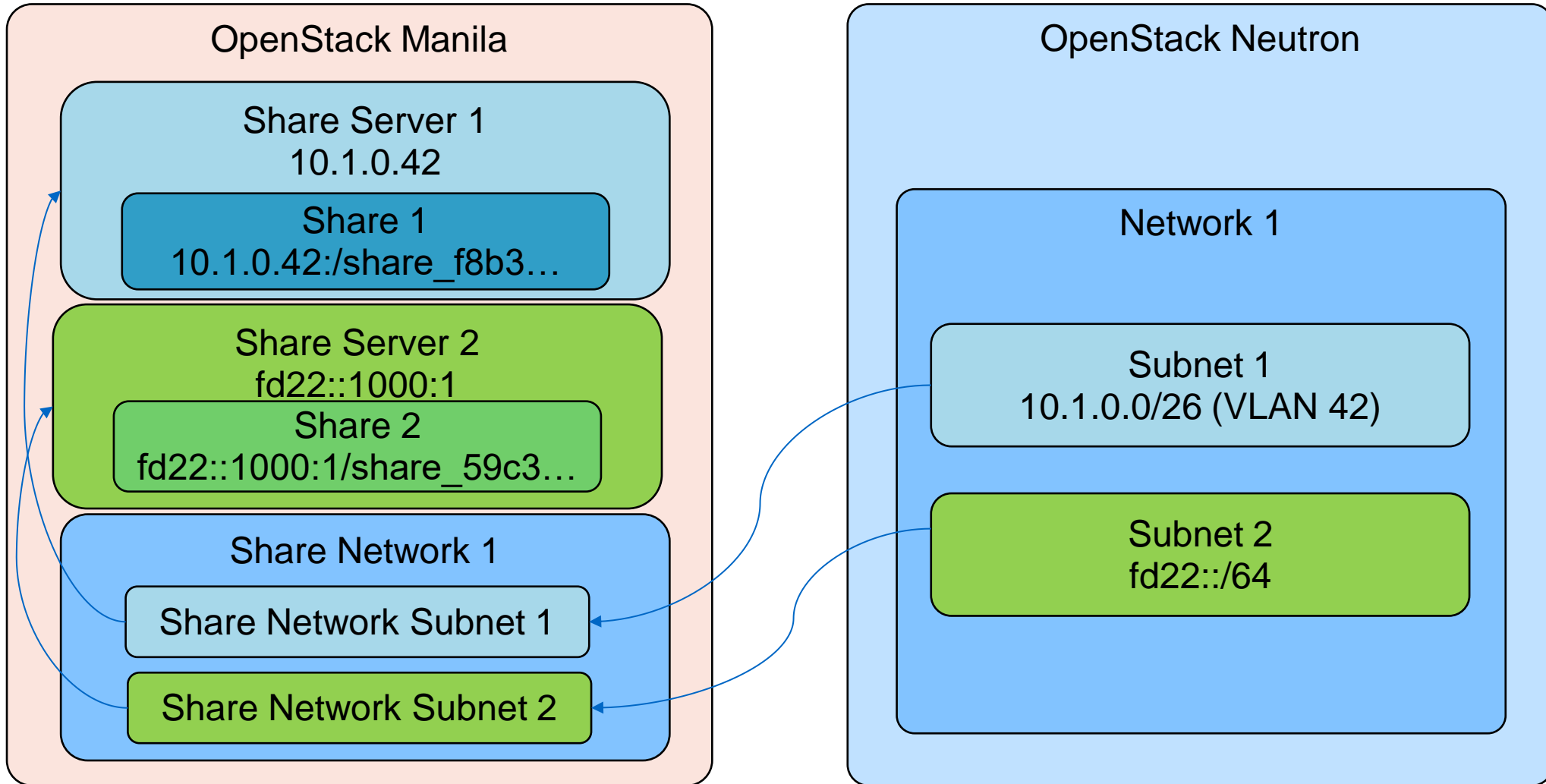
- Admin can configure `driver_handles_share_servers = True` mode to ensure secure isolation between tenants
- Share Network
 - Entity that stores network information
 - {CIDR, IP version, Network type (vlan, vxlan, gre, flat), segmentation ID}
 - Security services can be associated for authentication and authorization
 - {LDAP, Kerberos, Microsoft Active Directory}
- Share Server
 - It's associated to a share network
 - Shares are created associated to a share server
 - Shares are exported with IP addresses within the associated share network

Multitenancy in Manila (2/3)



* Until Stein release

Multitenancy in Manila (3/3)



* From Train release



Adopting/Abandoning a share

Adopting/Abandoning a share

- Also known as managing/unmanaging a share
- Adopt a share
 - Read existing share in the backend that was not created by Manila
 - Specify its protocol and export path
 - It will be registered to Manila DB
- Abandon a share
 - De-register the share from Manila DB, but don't delete it from the backend.
- From Stein release, share servers can be adopted/abandoned as well
 - It's possible to manage/unmanage with DHSS=True



Demo

Demo

- DevStack
- Manila (train release)
 - Share network configured
 - NetApp ONTAP backend configured
 - Share type that matches with the configured backend

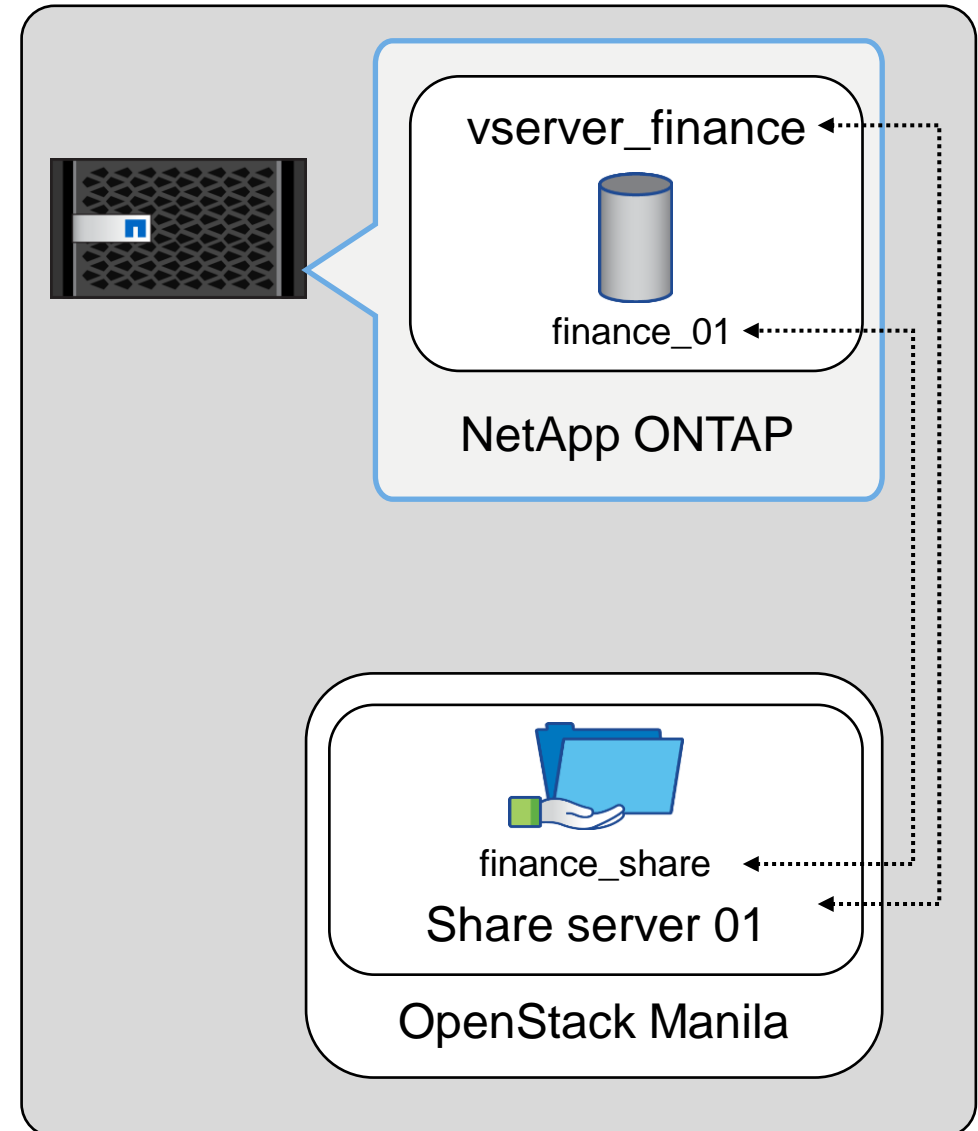
Demo

- Backend configuration on manila.conf

```
[netapp1]
share_driver=manila.share.drivers.netapp.common.NetAppDriver
driver_handles_share_servers=True
netapp_login=username
netapp_password=password
netapp_server_hostname=10.1.1.1
share_backend_name=netapp1
netapp_transport_type=http
netapp_storage_family=ontap_cluster
netapp_server_port=80
backend_availability_zone=netapp-zone-0
netapp_root_volume_aggregate=aggr1
```

Demo

- How NetApp ONTAP resources are mapped to Manila entities
- VServer (SVM – Storage Virtual Machine)
 - Virtual storage server
 - Has one or more data volumes
 - Has one or more IP addresses
 - One vServer is created for each Manila share server
- Volume
 - Stores files
 - Has an export location to expose its files
 - One volume is created for each Manila share



Demo

- To bring a share server under Manila management, run:

```
$ manila share-server-manage \  
  <host@backend> \  
  <share_network_uuid> \  
  <identifier> \  
  [--share-network-subnet share_network_subnet_uuid]
```

```
$ manila share-server-manage \  
  19-shanghai-summit-demo@netapp1 \  
  5e81f481-988e-4df5-aff6-a543d7763d4d \  
  vserver_finance \  
  --share-network-subnet 8aed0e42-3974-4522-9da6-d714f0d63221
```


Demo

- To bring a share under Manila management, run:

```
$ manila manage \  
  <host@backend#pool> \  
  <protocol> \  
  <export_path> \  
  [--share-server-id share_server_uuid] \  
  [--share-type share_type] \  
  [--name share_name]
```

```
$ manila manage \  
  19-shanghai-summit-demo@netapp1#aggr1 \  
  nfs \  
  10.1.0.42:/share_4a27a769_dee0_42d7_9bb2_32783d013e4d \  
  --share-server-id 595b2b73-6caf-4894-95ed-515cf222266f \  
  --share-type netapp \  
  --name finance_share
```

Demo

- Abandon a share server
 - Make sure that it does not contain shares
 - The share server will still be available in the storage system

- Abandon a share
 - Make sure that it does not contain any other related resource
 - The share will still be available in the storage system



References

- <https://wiki.openstack.org/wiki/Manila> Manila - OpenStack
- <https://docs.openstack.org/manila/latest/admin/> OpenStack Docs: Admin Guide
- <https://docs.openstack.org/manila/latest/admin/shared-file-systems-share-server-management.html> OpenStack Docs: Share Servers
- <https://github.com/openstack/manila-specs/blob/master/specs/stein/manage-unmanage-with-share-servers.rst> Manage/Unmanage with Share Servers

Join the Community!

- Mailing-list: openstack-discuss@lists.openstack.org subject: [manila]
- IRC channel: #openstack-manila, #openstack-meeting-alt (Thursdays, 15:00 UTC)



Thank You