# Pure Storage Cinder Plugin Guide

## version 3.0.0

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# Contents

# Guide to the Pure Storage Cinder Plugin v3.0-3.0.0-1

## User Documentation

## *Pure Storage Cinder plugin*

The Pure Storage Cinder Fuel plugin provides an automated method

to insert the necessary lines into the `cinder.conf` file. The plugin extends the Fuel Web UI to provide the necessary entry locations for the information for the configuration file. Thus, the plugin incorporates OpenStack Cinder Driver for Pure Storage Flash Array. | Thus, the plugin provides the ability to create a configuration file stanza so that when multi-backend support is selected, the stanza is correct.

## *Requirements*

| Requirement | Version/Comment |
|---|---|
| Mirantis OpenStack compatibility | 9.1 |

## *Limitations*

No limitations are present.

## *Installation Guide*

### *Pure Storage Cinder Plugin installation*

1. Download the plugin from the Fuel Plugins Catalog.

2. Copy the plugin to an already installed Fuel Master node. If you do not have the Fuel Master node yet, please follow the instructions:

   # scp fuel-plugin-purestorage-cinder-3.0-3.0.0-1.noarch.rpm root@:<the_Fuel_Master_node_IP>:/tmp``

3. Log into the Fuel Master node.

4. Install the plugin

   # cd /tmp # fuel plugins --install fuel-plugin-purestorage-cinder-3.0-3.0.0-1.noarch.rpm

5. Check if the plugin was installed successfully

   **# fuel plugins**

   id | name | version | package_version ---|------------------------------|--------|--------------- 1 | fuel-plugin-purestorage-cinder | 3.0.0 | 4.0.0

6. After the plugin is installed, create a new OpenStack environment using the Fuel UI Wizard.

7. Configure your environment.

8. Open the Settings tab of the Fuel Web UI and scroll down the page. Select the Storage section to enable Pure Storage driver in Cinder plugin checkbox.

☑ Pure Storage driver for Cinder

Versions ● 3.0.0

### Cinder Consistency Groups

○ True
    Enables Cinder Consistency Groups for all users and all backends (where supported)

● False
    Disables Cinder Consistency Groups for all users and all backends

| Pure Storage Management IP (san_ip) | [                    ] | Error: Enter in regular IP address dot notation |
| API Token for Pure Storage (pure_api_token) | [                    ] | Error: API token field cannot be empty |

### Pure Storage Multipath for Image Transfers (use_multipath_for_image_xfer)

● True
    Enables multipathing for image transfers

○ False
    Disables multipathing for image transfers

### Multipathing for iSCSI and FC in Nova Compute servers (iscsi_use_multipath)

○ True
    Enables multipathing for Nova compute servers - applies to both iSCSI and FC

● False
    Disables multipathing for Nova compute servers - applies to both iSCSI and FC

### Replication to Remote Pure Storage array

○ False
    Disable replicaton to remote Pure Storage array

● True
    Enable replicaton to remote Pure Storage array

| Name of array to replicate data to | [                    ] | Error: remote array name field cannot be empty |
| IP address of remote array | [                    ] | Error: Enter in regular IP address dot notation |
| API Token for remote Pure Storage | [                    ] | Error: API token field cannot be empty |

## Replication Retention Configuration

⚪ **Default**
Use default replication retention vlaues (see documentation)

🔘 **Manual**
Manually define replication retention settings

| | | |
|---|---|---|
| Replication internal (in seconds) | 900 | (pure_replica_interval_default) |
| Retention period for snapshots on target(in seconds) | 14400 | (pure_replica_retention_short_term_default) |
| Number of days to keep snapshots | 7 | (pure_replica_retention_long_term_default) |
| Number of snapshots to keep per day | 3 | (pure_replica_retention_long_term_per_day_default) |

## Glance Image-Cache (image_volume_cache_enabled)

⚪ **False**
Disable the Glance Image-Cache for Cinder backend

🔘 **True**
Enable the Glance Image-Cache for Cinder backend

| | | |
|---|---|---|
| Glance Image Cache Max Count (image_volume_cache_max_cou...) | 0 | Maximum number of images in Glance Image Cache (0 = no limit) |
| Glance Image Cache Size (image_volume_cache_max_siz..._g..) | 0 | Maximum size for Glance Image Cache [GB] 90 = no limit |

## Auto-Eradication of Deleted Volumes

🔘 **False**
Disables auto-eradication of deleted volumes

⚪ **True**
Enables auto-eradication of deleted volumes

## Protocol for Pure Storage block access

⚪ **iSCSI**
Enables iSCSI protocol for block storage volumes
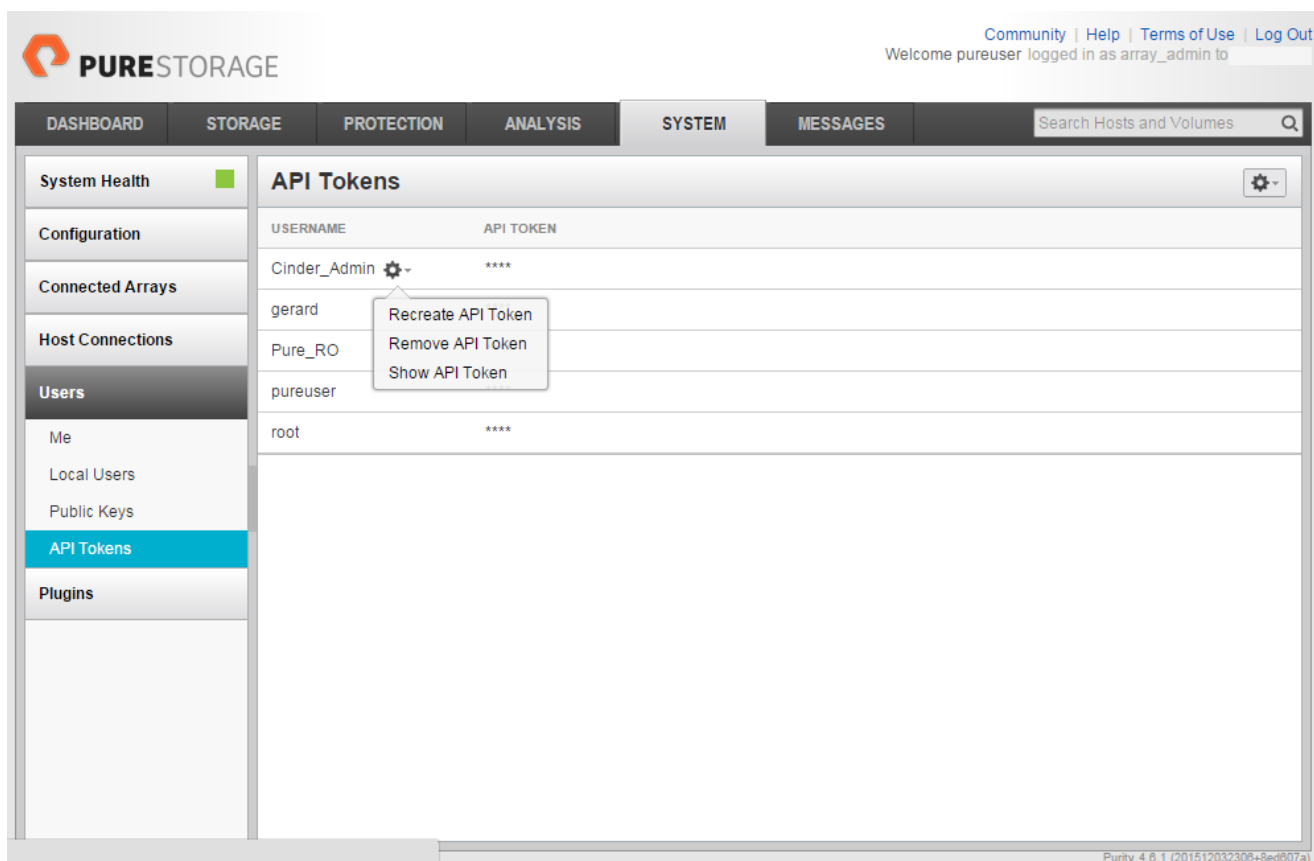
🔘 **Fibre Channel**
Enables Fibre Channel protocol for block storage volumes

9. Enter the Purity API Token and the IP address of the management VIP of the Pure Storage FlashArray.

• Obtain the Purity API token from the Pure Storage GUI

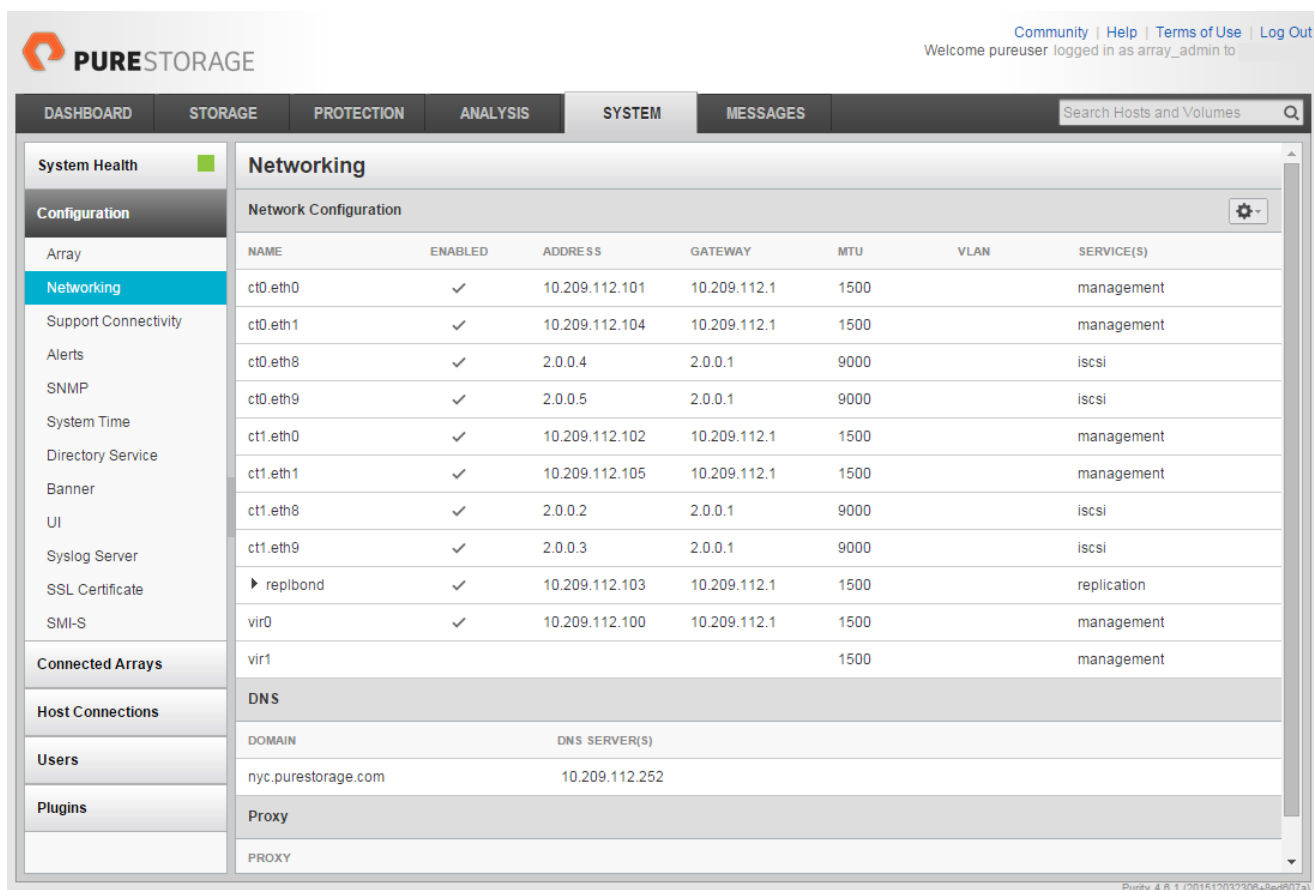*System->Users->API Tokens: Select User, click gear icon by user and select 'Show API Token'*

or use the following Purity CLI command to obtain the API token:

   # pureadmin list --api-token --expose <USER>

• Obtain the Pure Storage VIP from the Pure Storage GUI

     *System->System->Configuration->Networking: Use the IP address associated with 'vir0'*

or use the following Purity CLI command to obtain the VIP address:

> # purenetwork list vir0

10. Select the defaults for all other Pure Storage options. Each selectable option has a description in the Fuel GUI.

11. If using Fibre Channel as the storage protocol you need to select the zoning method to be used in your deployment. If you are configuring your own zones then select 'Manual' but you can select 'Automatic' if you wish to use the Openstack Fibre Channel Zone Manager. If 'Automatic' is selected you will need to provide the necessary information for the Zone Manager to communicate and configure your fibre channel switches.

**Protocol for Pure Storage block access**

○ iSCSI
  Enables iSCSI protocol for block storage volumes

● Fibre Channel
  Enables Fibre Channel protocol for block storage volumes

**Fibre Channel Zoning Manager**

● Automatic
  Use automated Fibre Channel Zone Manager for zoning

○ Manual
  Use manual fibre channel zoning

| | | |
|---|---|---|
| Fibre Channel SAN Switch Provider | Brocade ▾ | FC Vendor |
| Number of SAN fabrics | 2 ▾ | Number of SAN fabrics connected to compute and controller nodes |
| Name of Fabric 1 | | Error: Fabric name cannot be blank |
| IP address of Fabric 1 switch | | Error: Enter in regular IP address dot notation |
| User ID for Fabric 1 switch | | Error: Username cannot be blank |
| Password for Fabric 1 switch | ⊙ | Error: Password cannot be blank |
| Zoning prefix for Fabric 1 | | Prefix for zone name created by FCZM (Blank field will use default of 'openstack') |
| Name of Fabric 2 | | Error: Fabric name cannot be blank |
| IP address of Fabric 2 switch | | Error: Enter in regular IP address dot notation |
| User ID for Fabric 2 switch | | Error: Username cannot be blank |
| Password for fabric 2 switch | ⊙ | Error: Password cannot be blank |
| Zoning prefix for Fabric 2 | | Prefix for zone name created by FCZM (Blank field will use default of 'openstack') |

12. If configuring Cinder replication to a remote Pure Storage FlashArray then it is necessary to provide both the Management IP address of the target array and its API token. Replication of volumes will be performed using the default values provided by the driver, but these can be overriden in the plugin by selecting 'Manual' in the Replication Retention Configuration section of the plugin. On selecting this you will be presented with the default options that are adjustable.

## Replication to Remote Pure Storage array

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Replication internal (in seconds) | [ 900 ] | (pure_replica_interval_default)

Retention period for snapshots on target(in seconds) | [ 14400 ] | (pure_replica_retention_short_term_default)

Number of days to keep snapshots | [ 7 ] | (pure_replica_retention_long_term_default)

Number of snapshots to keep per day | [ 3 ] | (pure_replica_retention_long_term_per_day_default)

## *User Guide*

Once the OpenStack instance is deployed by Fuel the Pure Storage plugin provides no user configurable or maintainable options.

Validation of the plugins correct operation can be performed by comparing the parameters selected in the Fuel GUI to those added into the `/etc/cinder/cinder.conf` and `/etc/nova/nova.conf` files on the Controller and Compute nodes respectively.

As part of this installation a new multipath.conf file is provided to all nodes. Ensure that other device entries required for your local environment are added to these files and multipath is restarted to accept any changes.

The Pure Storage driver (Once configured by Fuel) will output all logs into the cinder-volume process log file with the 'Pure Storage' title.

## Contact Support

For reporting a problem, suggesting an enhancements or new features please contact Pure Storage support for help (support@purestorage.com).

## Known issues

1. Ensure your controller nodes have access to the public internet to allow for correct Python module installation required by the Fuel plugin

2. If you environment is deployed with multiple controllers for HA, you cannot run all the Cinder Volume services at the same time in Active-Active mode

3. There are specific changes that need to be made to the local deb packages. More details can be found in the Pure Storage/Mirantis Reference Architecture

## Appendix

- OpenStack Cinder Driver for Pure Storage Flash Array
- Pure Storage Flash Array Volume Driver