Quobyte Plugin

Bacula Systems Documentation

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Contents

This following chapter presents the strategy to backup Quobyte NAS with Bacula Enterprise.

Through subchapters, more in-depth information can be found about the following topics:

1 Scope

This plugin is available for **Bacula Enterprise 18.0** and later.

See also:

Go to:

- *Features*
- *Installation*
- *Configuration*

Go back to the main *Quobyte Plugin page*.

Go back to the main Dedicated Backup Solutions page.

2 Features

The support for Quobyte is designed to simplify and optimize the backup and restore performance of your Quobyte storage volumes.

When using the File Daemon Snapshot feature, Bacula Enterprise will query the Quobyte server to detect tenants and volumes, and create snapshots for the current Job. The Quobyte network share (fuse.quobyte) is required to access files.

With Bacula Enterprise, snaphotting and backing up Quobyte volumes is supported in two different ways:

- The **bsnapshot** Bacula plugin now supports Quobyte volumes in addition to LVM, ZFS, and btrfs volumes.
- The new **quobyte-fd** plugin, when used in conjunction with the **scan_plugin** plugin, supports automatically identifying Quobyte volumes, and creating a Job/Fileset pair for each Quobyte volume identified.

Note: See Quobyte example for the Scan Plugin.

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See also:

Go back to:

- *Scope*

Go to:

- *Installation*
- *Configuration*

Go back to the main *Quobyte Plugin page*.

Go back to the main Dedicated Backup Solutions page.

3 Installation

Snapshot support for Quobyte volumes is available with the standard Bacula Enterprise **bsnapshot** package for all supported platforms.

To perform snapshot backups of Quobyte volumes, it is necessary to install the **bacula-enterprise-snapshot package** on a Client machine that has network access to the Quobyte filer. It is advised to use the Client that resides on your Storage Daemon so that the File Daemon to Storage Daemon data transfers are made internally rather than across the network.

If you intend to use the Automation Center (or **scan_plugin**) with Quobyte to automatically create one Bacula Job/Fileset per Quobyte volume, you will need to install the **bacula-enterprise-quobyte-plugin** package.

It is also necessary to install the Quobyte client package on the Bacula Client machine and this system must have access to the Quobyte tenants and volumes (located under */quobyte* by default).

Note: For further information, refer to the Quobyte documentation.

See also:

Go back to:

- *Scope*
- *Features*

Go to:

- *Configuration*

Go back to the main *Quobyte Plugin page*.

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4 Configuration

The following chapter presents information on:

4.1 Quobyte Configuration

The Quobyte filesystem must be mounted and available on your Bacula Client machine. The configuration can be done through the `/etc/quobyte/client.cfg` or when using systemd `/etc/quobyte/client-service.cfg`.

```
root# cat /etc/quobyte/client-service.cfg
# By default these are the options for the quobyte systemd service
# quobyte-client.service

multi-tenant
# Where to mount to
mount_point=/quobyte
registry=f7sskksge.myquobyte.net
uuid=yyyy-xxx-zzzz-aaaa-bbbbbbbbb
```

Mount the Quobyte filesystem to your machine:

```
root# mkdir /quobyte

root# systemctl enable --now quobyte-client

root# ls /quobyte
tenant_1
tenant_2
```

Install the `qmgmt` Quobyte tool and test the access.

Note: Refer to the Quobyte installation guide for more information.

See also:

Go to:

- *Configuration for Built-in bsnapshot Support*
- *Configuration with the quobyte-fd Plugin*
- Automatic Objects Configuration

Go back to the *main Quobyte Configuration chapter*.

Go back to the *main Quobyte page*.

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4.2 Configuration for Built-in bsnapshot Support

Your Backup Job and FileSet should be defined as:

```
 Job {
  Name = "Quobyte"
  Client = storage-fd
  FileSet = quobyte
  ...
 }

 FileSet {
  Name = quobyte

  # Enable bsnapshot support for Quobyte volumes
  Enable Snapshot = yes

  Include {
   Options {
    Signature = sha1
    # Include all subvolumes
    onefs = no
   }
  File = /quobyte
}
```

Access to the Quobyte cluster can be configured in the `/opt/bacula/etc/bsnapshot.conf` bsnapshot configuration file.

```
root# cat /opt/bacula/etc/bsnapshot.conf
env="QUOBYTE_API=http://10.10.10.17:7860"
env="QUOBYTE_USER=admin"
env="QUOBYTE_PASSWORD=Thisisasecurepassword"
```

Note: Refer to the Quobyte documentation to use an API Key if needed.

In this example, all Quobyte volumes are available under the `/quobyte` directory.

It is possible to backup a subset of volumes or tenants by adapting the Fileset configuration:

```
FileSet {
 Name = quobyte_all_tenants

 # Enable Snapshot support for Quobyte
 Enable Snapshot = yes

 Include {
  Options {
   Compression = zstd
   Signature = sha1
   onefs = no
  }
 File = /quobyte/tenant_1
```

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```
 File = /quobyte/tenant_2
}
```

```
 FileSet {
  Name = quobyte_tenant_1_vol1

  # Enable Snapshot support for Quobyte
  Enable Snapshot = yes

  Include {
   Options {
    Signature = Sha1
  }
  File = /quobyte/tenant_1/vol1
}
```

Job output example using the **bsnapshot** plugin on a Quobyte volume:

```
JobId 879: Start Backup JobId 879, Job=QuobyteVol1.2024-01-16_12.01.51_11
JobId 879: Connected to Storage "NULL" at wa-quobyte-dir:9103 with TLS
JobId 879: Using Device "NULL" to write.
JobId 879: Connected to Client "wa-quobyte-dir-fd" at wa-quobyte-dir:9102 with␣
↪encryption
JobId 879: Connected to Storage at wa-quobyte-dir:9103 with encryption
JobId 879: Wrote label to prelabeled Volume "Vol-0038" on TAPE device "LTO" (/
↪dev/lto)
JobId 879:    Create Snapshot for /quobyte/tenant_1/vol1
JobId 879:    Delete Snapshot for /quobyte/tenant_1/vol1
JobId 879: Elapsed time=00:36:33, Transfer rate=3.161 M Bytes/second
JobId 879: Sending spooled attrs to the Director. Despooling 634,551 bytes ...
JobId 879: Bacula Enterprise wa-quobyte-dir-dir 18.0.0 (11Jan24):
  Build OS:               x86_64-redhat-linux-gnu-bacula-enterprise redhat␣
↪(Core)
  JobId:                  879
  Job:                    QuobyteVol1.2024-01-16_12.01.51_11
  Backup Level:           Full
  Client:                 "wa-quobyte-fd" 18.0.0 (11Jan24) x86_64-pc-linux-gnu,
↪redhat,(Core)
  FileSet:                "quobyte_tenant_1_vol1" 2023-12-18 14:58:55
  Pool:                   "DiskBackup365d" (From Job resource)
  Catalog:                "BaculaCatalog" (From Client resource)
  Storage:                "TAPE" (From Command input)
  Scheduled time:         16-jan-2024 12:01:51
  Start time:             16-jan-2024 12:02:53
  End time:               16-jan-2024 12:39:27
  Elapsed time:           36 mins 34 secs
  Priority:               10
  FD Files Written:       2,532
  SD Files Written:       2,532
  FD Bytes Written:       6,933,339,531 (6.933 GB)
  SD Bytes Written:       6,933,732,834 (6.933 GB)
  Rate:                   3160.1 KB/s
```

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```
  Software Compression:   None
  Comm Line Compression:  6.9% 1.1:1
  Snapshot/VSS:           yes
  Encryption:             no
  Accurate:               no
  Volume name(s):         Vol-0038
  Volume Session Id:      325
  Volume Session Time:    1702658652
  Last Volume Bytes:      6,939,807,455 (6.939 GB)
  Non-fatal FD errors:    0
  SD Errors:              0
  FD termination status:  OK
  SD termination status:  OK
  Termination:            Backup OK
```

See also:

Go back to:

- *Quobyte Configuration*

Go to:

- *Configuration with the quobyte-fd Plugin*
- Automatic Objects Configuration

Go back to the *main Quobyte Configuration chapter*.

Go back to the *main Quobyte page*.

4.3 Configuration with the quobyte-fd Plugin

The **quobyte-fd** plugin can be used to optimize the Quobyte support. In this scenario, to maximize the throughput, the idea is to create one Bacula Job and Fileset per volume available on Quobyte. The Automation Center (or **scan_plugin**) was designed to automate the Bacula integration.

The Quobyte Plugin is installed with the **bacula-enterprise-quobyte-plugin** package using the standard package management tools.

Example Job and Fileset using the **Quobyte** Plugin:

```
Job {
 Name = "quobyte_tenant_1_vol1"
 Type = "Backup"
 Client = "wa-quobyte-dir-fd"
 Fileset = "quobyte_tenant_1_vol1"
 ...
}
```

```
Fileset {
 Name = "quobyte_tenant_1_vol1"
  Include {
  Options {
  Signature = sha1
```

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```
  }
  Plugin = "quobyte: volume=\"/quobyte/tenant_1/vol1\" abort_on_error"
 }
}
```

Job output example using the Quobyte Plugin on a Quobyte volume:

```
JobId 1665: Start Backup JobId 1665, Job=quobyte_tenant_1_vol1.2024-06-10_13.05.11_49
JobId 1665: Connected to Storage "Dedup2Autochanger" at 10.0.99.122:9103 without␣
↪encryption
JobId 1665: Using Device "Dedup2Autochanger_Dev7" to write.
JobId 1665: Connected to Client "wa-quobyte-dir-fd" at wa-quobyte-dir:9102 with TLS
JobId 1665: Enabling Snapshot for the current FileSet
JobId 1665: Connected to Storage at 10.0.99.122:9103 with TLS
JobId 1665: Volume "Dedup2_30d-0114" previously written, moving to end of data.
JobId 1665: Ready to append to end of Volume "Dedup2_30d-0114" size=2,041,142
JobId 1665:    Create Snapshot for /quobyte/tenant_1/vol1
JobId 1665:    Delete Snapshot for /quobyte/tenant_1/vol1
JobId 1665: Elapsed time=00:00:29, Transfer rate=19.57 K Bytes/second
JobId 1665: Sending spooled attrs to the Director. Despooling 501,201 bytes ...
JobId 1665: Bacula Enterprise wa-quobyte-dir-dir 18.0.3 (05Jun24):
  Build OS:               x86_64-redhat-linux-gnu-bacula-enterprise redhat (Core)
  JobId:                  1665
  Job:                    quobyte_tenant_1_vol1.2024-06-10_13.05.11_49
  Backup Level:           Full
  Client:                 "wa-quobyte-dir-fd" 18.0.3 (05Jun24) x86_64-redhat-linux-gnu-
↪bacula-enterprise,redhat,(Core)
  FileSet:                "quobyte_tenant_1_vol1" 2024-06-07 16:49:48
  Pool:                   "Dedup2_30d" (From Job resource)
  Catalog:                "BaculaCatalog" (From Client resource)
  Storage:                "Dedup2Autochanger" (From Pool resource)
  Scheduled time:         10-Jun-2024 13:05:11
  Start time:             10-Jun-2024 13:05:19
  End time:               10-Jun-2024 13:05:48
  Elapsed time:           29 secs
  Priority:               10
  FD Files Written:       2,536
  SD Files Written:       2,536
  FD Bytes Written:       42,498,943 (42.49 MB)
  SD Bytes Written:       567,655 (567.6 KB)
  Rate:                   1465.5 KB/s
  Software Compression:   98.7% 74.9:1
  Comm Line Compression:  55.6% 2.3:1
  Snapshot/VSS:           yes
  Encryption:             no
  Accurate:               yes
  Volume name(s):         Dedup2_30d-0114
  Volume Session Id:      28
  Volume Session Time:    1717576935
  Last Volume Bytes:      meta: 2,667,617 (2.667 MB) aligned: 176,396,059 (176.3 MB)
  Non-fatal FD errors:    0
  SD Errors:              0
```

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```
  FD termination status:  OK
  SD termination status:  OK
  Termination:            Backup OK
```

See also:

Go back to:

- *Quobyte Configuration*
- *Configuration for Built-in bsnapshot Support*

Go to:

- Automatic Objects Configuration

Go back to the *main Quobyte Configuration chapter*.

Go back to the *main Quobyte page*.

See also:

Go back to:

- *Scope*
- *Features*
- *Installation*

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