

## Solution Brief

# NetApp SANtricity Cloud Connector

Backup and recovery of data between your NetApp storage and your existing cloud service made easy

### Key Benefits

- Browser-based graphical user interface
- Full file and folder-based backup of Linux partitions (ext2, ext3, and ext4) on an E-Series volume
- Full block-based backup and restore of an E-Series volume
- Incremental backup capabilities for file-based backups
- RESTful API for job management of backup and restore activities
- StorageGRID target support
- Amazon S3 target support
- For additional information on the SANtricity Cloud Connector, please see the NetApp SANtricity Cloud Connector technical report at <https://www.netapp.com/us/media/tr-4658.pdf>

### The Challenge

Maintaining off-site backups can be an important decision for businesses of all sizes. Often, the need for off-site backup is to not only mitigate disruptions to day-to-day business activities, but also to meet government requirements for data storage. Powerful cloud storage services such as Amazon Simple Storage Service (S3) provide users with the portability and scalability ideal for off-site backups. How you synchronize your existing on-site storage with cloud storage is equally critical. Any successful solution should be secure, simple, and reliable to ensure the seamless transition of your vital on-site data to-and-from the cloud.

### The Solution

The NetApp® SANtricity® Cloud Connector is a host-based Linux application that enables you to perform full block-based and file-based backup and recovery of E-Series volumes to S3 compliant accounts (Amazon Simple Storage Service and NetApp StorageGRID®).

Available for installation on Linux platforms, the SANtricity Cloud Connector is a packaged solution (.bin file). After the SANtricity Cloud Connector is installed, you can configure the application to perform backup and restore jobs for E-Series volumes to your existing Amazon S3 or StorageGRID accounts. All jobs performed through the SANtricity Cloud Connector use REST-based APIs.

### Image-Based and File-Based Backups

The SANtricity Cloud Connector uses the concept of jobs to perform the actual backup of an E-Series volume. Backup data in the form of Snapshots™ of an E-Series volume is used by the SANtricity Cloud Connector application.

An image-based backup reads the raw data blocks from a Snapshot volume and backs up the data to a file known as an image. All the data blocks on the Snapshot volume are backed up, including empty blocks, blocks occupied by deleted files, blocks associated with partitioning, and file system metadata. Image backups have the advantage of storing all information with the Snapshot volume regardless of the partitioning scheme or file system on it.

A file-based backup reads the files contained within a file system partition and backs them up into a series of data chunks that are 64MB in size. A file-based backup does not back up deleted files or partitioning and file system metadata. As with image-based backups, the data chunks allow SANtricity Cloud Connector to use multiple connections to the backup target, thereby improving performance of the backup process.

For backups to StorageGRID and Amazon Web Services (S3), each data chunk uses a separate encryption key to encrypt the chunk. The key is a SHA256 hash consisting of the combination of a user supplied passphrase and the SHA256 hash of the user data.

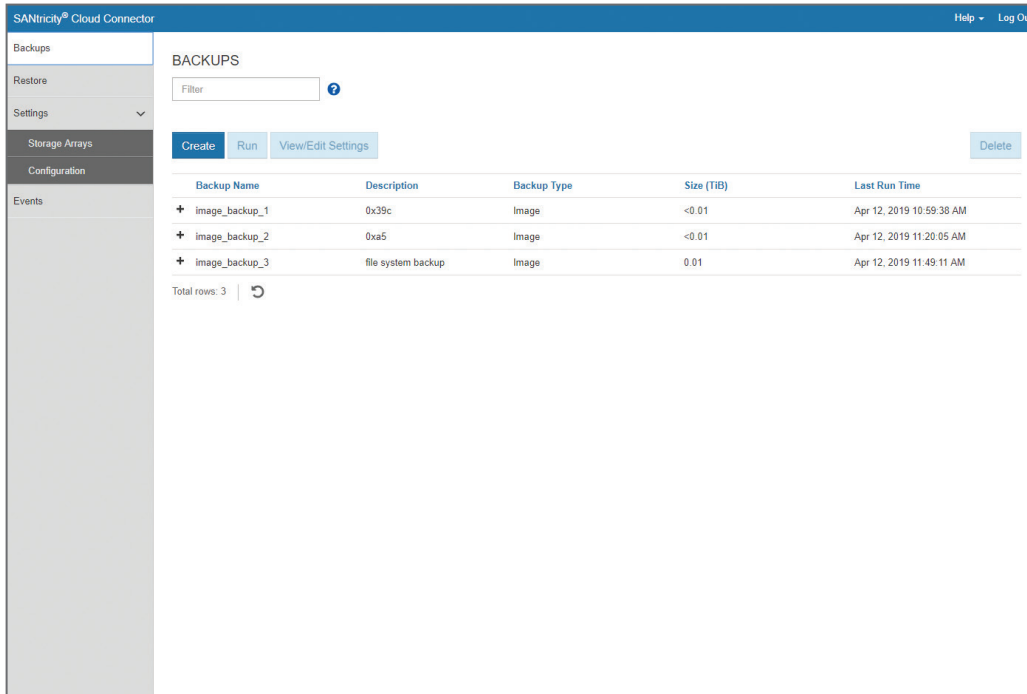


Figure 1) SANtricity Cloud Connector Backups Dashboard

### Perform Backups on Your Schedule

Backups created through the SANtricity Cloud Connector application can be performed immediately or later. In addition, you can perform incremental file-based backups through the SANtricity Cloud Connector application. Incremental backups only back up data that has changed since the last full backup. A total of six incremental backups can be performed from an initial full file-based backup.

### Restoring Data from the Cloud

As with backups, the SANtricity Cloud Connector applies the concept of jobs to perform the actual restore of an E-Series volume from a cloud-based backup. When restoring data through the SANtricity Cloud Connector application, you must first identify which E-Series volume will be used for the operation. After the E-Series volume is identified for restore, the SANtricity Cloud Connector restores the backed-up data.

### System Requirements

For the host hardware, the SANtricity Cloud Connector application requires at least 5GB of memory, 4GB for the maximum configured heap size, and at least 500MB of free disk space for the software installation. The SANtricity Cloud Connector

application is compatible with most web browsers and with Red Enterprise Linux (RHEL) 7.x and SUSE Linux Enterprise Server (SLES) 12.x operating systems.

### Why Choose SANtricity Cloud Connector

The SANtricity Cloud Connector offers a simple and secure solution for reliably moving data between your E-Series storage and the cloud. Providing the flexibility to back up data on your schedule and efficiently through the incremental backups, the SANtricity Cloud Connector can play an essential part of your off-site data management solution. For more information, see <https://www.netapp.com/us/media/tr-4658.pdf>.

### About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit [www.netapp.com](http://www.netapp.com). #DataDriven