Copying or Syncing data from RAC to AWS S3 using rclone

This tutorial will show you how to use rclone to back up your data to Amazon S3. Please note that you will need a valid Amazon / AWS account for this to work. In addition, **AWS will charge you based on the amount of storage you use.**

- Install Rclone on instance
    - Quickstart Installation
    - Installation by using a script
- Configure rclone
- Create a S3 bucket using Rclone
- Synching/Copying using rclone
- rclone Copy

Install Rclone on instance

rclone is a command line program to sync files and directories to and from cloud storage.

Quickstart Installation

- Download the relevant binary.
- Extract the rclone binary from the archive.
- Run rclone config to set up.

Installation by using a script

Install rclone on Linux/macOS/BSD systems:

```
curl https://rclone.org/install.sh | sudo bash
```

Configure rclone

After installing Rclone:

1. Type `rclone config`
2. Type n for a New remote
3. Give a name to your remote (AWS in this example)
4. Select the type of storage to configure

```
name> AWS
Type of storage to configure.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
 1 / 1Fichier
   \ "fichier"
 2 / Alias for an existing remote
   \ "alias"
 3 / Amazon Drive
   \ "amazon cloud drive"
 4 / Amazon S3 Compliant Storage Providers including AWS, Alibaba, Ceph, Digital Ocean, D
reamhost, IBM COS, Minio, SeaweedFS, and Tencent COS
   \ "s3"
 5 / Backblaze B2
   \ "b2"
 6 / Box
   \ "box"
 7 / Cache a remote
   \ "cache"
 8 / Citrix Sharefile
   \ "sharefile"
 9 / Compress a remote
   \ "compress"
10 / Dropbox
   \ "dropbox"
11 / Encrypt/Decrypt a remote
   \ "crypt"
12 / Enterprise File Fabric
   \ "filefabric"
13 / FTP Connection
   \ "ftp"
14 / Google Cloud Storage (this is not Google Drive)
   \ "google cloud storage"
15 / Google Drive
   \ "drive"
16 / Google Photos
   \ "google photos"
17 / Hadoop distributed file system
   \ "hdfs"
18 / Hubic
   \ "hubic"
19 / In memory object storage system.
   \ "memory"
20 / Jottacloud
   \ "jottacloud"
21 / Koofr
   \ "koofr"
22 / Local Disk
   \ "local"
23 / Mail.ru Cloud
   \ "mailru"
24 / Mega
   \ "mega"
25 / Microsoft Azure Blob Storage
   \ "azureblob"
26 / Microsoft OneDrive
   \ "onedrive"
27 / OpenDrive
   \ "opendrive"
28 / OpenStack Swift (Rackspace Cloud Files, Memset Memstore, OVH)
   \ "swift"
29 / Pcloud
   \ "pcloud"
30 / Put.io
   \ "putio"
31 / QingCloud Object Storage
   \ "qingstor"
32 / SSH/SFTP Connection
   \ "sftp"
33 / Sugarsync
   \ "sugarsync"
34 / Tardigrade Decentralized Cloud Storage
   \ "tardigrade"
35 / Transparently chunk/split large files
   \ "chunker"
36 / Union merges the contents of several upstream fs
   \ "union"
37 / Uptobox
   \ "uptobox"
38 / Webdav
   \ "webdav"
39 / Yandex Disk
   \ "yandex"
40 / Zoho
```

```
     \ "zoho"
41 / http Connection
     \ "http"
42 / premiumize.me
     \ "premiumizeme"
43 / seafile
     \ "seafile"
Storage> 4
```

5. Choose the S3 provider

```
Choose your S3 provider.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
 1 / Amazon Web Services (AWS) S3
   \ "AWS"
 2 / Alibaba Cloud Object Storage System (OSS) formerly Aliyun
   \ "Alibaba"
 3 / Ceph Object Storage
   \ "Ceph"
 4 / Digital Ocean Spaces
   \ "DigitalOcean"
 5 / Dreamhost DreamObjects
   \ "Dreamhost"
 6 / IBM COS S3
   \ "IBMCOS"
 7 / Minio Object Storage
   \ "Minio"
 8 / Netease Object Storage (NOS)
   \ "Netease"
 9 / Scaleway Object Storage
   \ "Scaleway"
10 / SeaweedFS S3
   \ "SeaweedFS"
11 / StackPath Object Storage
   \ "StackPath"
12 / Tencent Cloud Object Storage (COS)
   \ "TencentCOS"
13 / Wasabi Object Storage
   \ "Wasabi"
14 / Any other S3 compatible provider
   \ "Other"
provider> 1
```

6. Select the type of authentication method.

```
Get AWS credentials from runtime (environment variables or EC2/ECS meta data if
no env vars).
Only applies if access_key_id and secret_access_key is blank.
Enter a boolean value (true or false). Press Enter for the default ("false").
Choose a number from below, or type in your own value
 1 / Enter AWS credentials in the next step
   \ "false"
 2 / Get AWS credentials from the environment (env vars or IAM)
   \ "true"
env_auth> 
```

PLEASE NOTE: Enter your secret AWSAccesskeyId and AWSSecretKey in case you selected false.

7. Select the region to connect(Canada-Central Region in this example).

```
Region to connect to.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
   / The default endpoint - a good choice if you are unsure.
 1 | US Region, Northern Virginia, or Pacific Northwest.
   | Leave location constraint empty.
   \ "us-east-1"
   / US East (Ohio) Region
 2 | Needs location constraint us-east-2.
   \ "us-east-2"
   / US West (Northern California) Region
 3 | Needs location constraint us-west-1.
   \ "us-west-1"
   / US West (Oregon) Region
 4 | Needs location constraint us-west-2.
   \ "us-west-2"
   / Canada (Central) Region
 5 | Needs location constraint ca-central-1.
   \ "ca-central-1"
   / EU (Ireland) Region
 6 | Needs location constraint EU or eu-west-1.
   \ "eu-west-1"
   / EU (London) Region
 7 | Needs location constraint eu-west-2.
   \ "eu-west-2"
   / EU (Paris) Region
 8 | Needs location constraint eu-west-3.
   \ "eu-west-3"
   / EU (Stockholm) Region
 9 | Needs location constraint eu-north-1.
   \ "eu-north-1"
   / EU (Milan) Region
10 | Needs location constraint eu-south-1.
   \ "eu-south-1"
   / EU (Frankfurt) Region
11 | Needs location constraint eu-central-1.
   \ "eu-central-1"
   / Asia Pacific (Singapore) Region
12 | Needs location constraint ap-southeast-1.
   \ "ap-southeast-1"
   / Asia Pacific (Sydney) Region
13 | Needs location constraint ap-southeast-2.
   \ "ap-southeast-2"
   / Asia Pacific (Tokyo) Region
14 | Needs location constraint ap-northeast-1.
   \ "ap-northeast-1"
   / Asia Pacific (Seoul)
15 | Needs location constraint ap-northeast-2.
   \ "ap-northeast-2"
   / Asia Pacific (Osaka-Local)
16 | Needs location constraint ap-northeast-3.
   \ "ap-northeast-3"
   / Asia Pacific (Mumbai)
17 | Needs location constraint ap-south-1.
   \ "ap-south-1"
   / Asia Pacific (Hong Kong) Region
18 | Needs location constraint ap-east-1.
   \ "ap-east-1"
   / South America (Sao Paulo) Region
19 | Needs location constraint sa-east-1.
   \ "sa-east-1"
   / Middle East (Bahrain) Region
20 | Needs location constraint me-south-1.
   \ "me-south-1"
   / Africa (Cape Town) Region
21 | Needs location constraint af-south-1.
   \ "af-south-1"
   / China (Beijing) Region
22 | Needs location constraint cn-north-1.
```

8. Select the Endpoint and Location constraint values.

```
Endpoint for S3 API.
Leave blank if using AWS to use the default endpoint for the region.
Enter a string value. Press Enter for the default ("").
endpoint>
Location constraint - must be set to match the Region.
Used when creating buckets only.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
 1 / Empty for US Region, Northern Virginia, or Pacific Northwest.
   \ ""
 2 / US East (Ohio) Region.
   \ "us-east-2"
 3 / US West (Northern California) Region.
   \ "us-west-1"
 4 / US West (Oregon) Region.
   \ "us-west-2"
 5 / Canada (Central) Region.
   \ "ca-central-1"
 6 / EU (Ireland) Region.
   \ "eu-west-1"
 7 / EU (London) Region.
   \ "eu-west-2"
 8 / EU (Paris) Region.
   \ "eu-west-3"
 9 / EU (Stockholm) Region.
   \ "eu-north-1"
10 / EU (Milan) Region.
   \ "eu-south-1"
11 / EU Region.
   \ "EU"
12 / Asia Pacific (Singapore) Region.
   \ "ap-southeast-1"
13 / Asia Pacific (Sydney) Region.
   \ "ap-southeast-2"
14 / Asia Pacific (Tokyo) Region.
   \ "ap-northeast-1"
15 / Asia Pacific (Seoul) Region.
   \ "ap-northeast-2"
16 / Asia Pacific (Osaka-Local) Region.
   \ "ap-northeast-3"
17 / Asia Pacific (Mumbai) Region.
   \ "ap-south-1"
18 / Asia Pacific (Hong Kong) Region.
   \ "ap-east-1"
19 / South America (Sao Paulo) Region.
   \ "sa-east-1"
20 / Middle East (Bahrain) Region.
   \ "me-south-1"
21 / Africa (Cape Town) Region.
   \ "af-south-1"
22 / China (Beijing) Region
   \ "cn-north-1"
23 / China (Ningxia) Region.
   \ "cn-northwest-1"
24 / AWS GovCloud (US-East) Region.
   \ "us-gov-east-1"
25 / AWS GovCloud (US) Region.
   \ "us-gov-west-1"
location_constraint> 5
```

9. Select the Type of Access Control and encrypt

```
Canned ACL used when creating buckets and storing or copying objects.

This ACL is used for creating objects and if bucket_acl isn't set, for creating b
uckets too.

For more info visit https://docs.aws.amazon.com/AmazonS3/latest/dev/acl-overview.
html#canned-acl

Note that this ACL is applied when server-side copying objects as S3
doesn't copy the ACL from the source but rather writes a fresh one.
Enter a string value. Press Enter for the default ("bucket-owner-full-control").
Choose a number from below, or type in your own value
 1 / Owner gets FULL_CONTROL. No one else has access rights (default).
   \ "private"
 2 / Owner gets FULL_CONTROL. The AllUsers group gets READ access.
   \ "public-read"
   / Owner gets FULL_CONTROL. The AllUsers group gets READ and WRITE access.
 3 | Granting this on a bucket is generally not recommended.
   \ "public-read-write"
 4 / Owner gets FULL_CONTROL. The AuthenticatedUsers group gets READ access.
   \ "authenticated-read"
   / Object owner gets FULL_CONTROL. Bucket owner gets READ access.
 5 | If you specify this canned ACL when creating a bucket, Amazon S3 ignores it.
   \ "bucket-owner-read"
   / Both the object owner and the bucket owner get FULL_CONTROL over the object.
 6 | If you specify this canned ACL when creating a bucket, Amazon S3 ignores it.
   \ "bucket-owner-full-control"
acl> 6
The server-side encryption algorithm used when storing this object in S3.
Enter a string value. Press Enter for the default ("AES256").
Choose a number from below, or type in your own value
 1 / None
   \ ""
 2 / AES256
   \ "AES256"
 3 / aws:kms
   \ "aws:kms"
server_side_encryption> █
```

10. Select the Redundancy type and verify all the remote config values

      before closing the rclone.

```
The storage class to use when storing new objects in S3.
Enter a string value. Press Enter for the default ("STANDARD").
Choose a number from below, or type in your own value
 1 / Default
   \ ""
 2 / Standard storage class
   \ "STANDARD"
 3 / Reduced redundancy storage class
   \ "REDUCED_REDUNDANCY"
 4 / Standard Infrequent Access storage class
   \ "STANDARD_IA"
 5 / One Zone Infrequent Access storage class
   \ "ONEZONE_IA"
 6 / Glacier storage class
   \ "GLACIER"
 7 / Glacier Deep Archive storage class
   \ "DEEP_ARCHIVE"
 8 / Intelligent-Tiering storage class
   \ "INTELLIGENT_TIERING"
storage_class> █
```

```
--------------------
[AWS]
type = s3
provider = AWS
env_auth = true
region = ca-central-1
location_constraint = ca-central-1
acl = bucket-owner-full-control
server_side_encryption = AES256
storage_class = STANDARD
--------------------
y) Yes this is OK (default)
e) Edit this remote
d) Delete this remote
y/e/d> y
```

Create a S3 bucket using Rclone

Run the following command:

```
$ rclone mkdir <remote name>:<bucket name>
```

⚠ AWS S3 bucket names must be globally unique. It helps to create a bucket name using a unique name. For example, instead of calling a bucket "mysql_backups", call it "jdoe777_mysql_backups".

Once the remote is configured and the bucket is created you can use below commands to list the remotes and buckets:

```
$ rclone listremotes
$ rclone lsd <remote name>:
```

Synching/Copying using rclone

Run the below command to sync your data to your AWS bucket:

```
$ sudo rclone sync /path/to/local/data   <remote name>:<bucket name>
```

For example:

```
$ sudo rclone sync /var/lib/mysql  aws:mysql_backups
```

rclone Copy

To copy files from source to destination and skipping files that have already been copied:

```
$ rclone copy /path/to/local/data <remote name>:<bucket name>
```