# Restoring data from backup files

## Cloud Manager

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# Restoring data from backup files

Backups are stored in an object store in your cloud account so that you can restore data from a specific point in time. You can restore an entire volume from a saved backup file, or if you only need to restore a few files, you can restore individual files from a saved backup file.

You can restore an entire volume to the same working environment, to a different working environment that's using the same cloud account, or to an on-premises ONTAP system. See Restoring a volume from a backup.

You can restore files to a volume in the same working environment, to a volume in a different working environment that's using the same cloud account, or to a volume on an on-premises ONTAP system. See Restoring files from a backup.

## Supported working environments and object storage providers

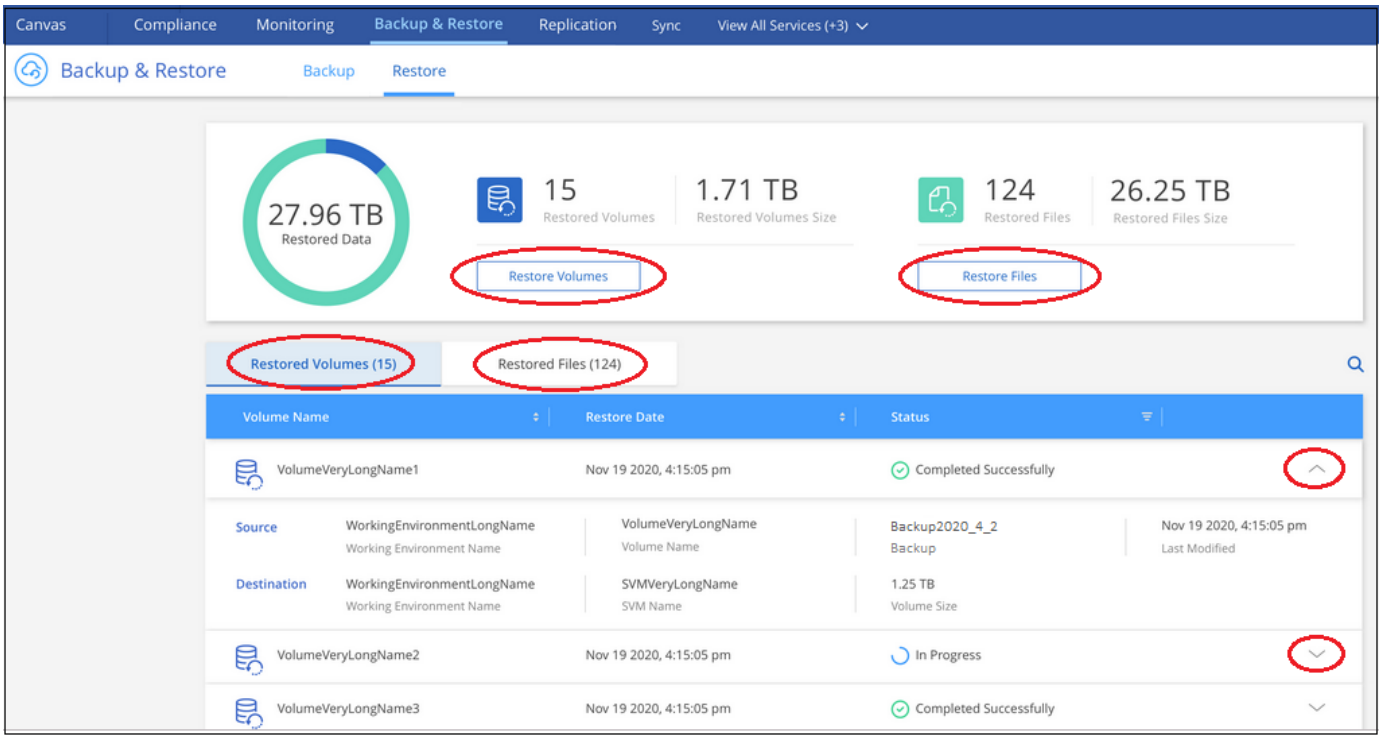
You can restore a volume, or individual files, from a backup file to the following working environments:

| Backup File Location | Destination Working Environment | |
|---|---|---|
| | **Volume Restore** | **File Restore** |
| Amazon S3 | Cloud Volumes ONTAP in AWS<br>On-premises ONTAP system | Cloud Volumes ONTAP in AWS<br>On-premises ONTAP system |
| Azure Blob | Cloud Volumes ONTAP in Azure<br>On-premises ONTAP system | Cloud Volumes ONTAP in Azure<br>On-premises ONTAP system |
| Google Cloud Storage | Cloud Volumes ONTAP in Google<br>On-premises ONTAP system | |
| NetApp StorageGRID | On-premises ONTAP system | |

## The Restore Dashboard

You access the Restore Dashboard by clicking the **Backup & Restore** tab from the top of Cloud Manager, or you can click  > **View Restore Dashboard** from the Backup & Restore service from the Services panel.

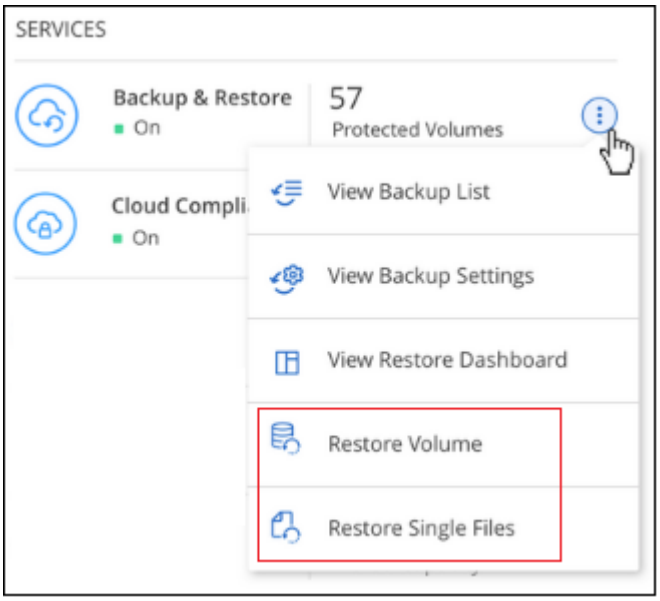
The Cloud Backup service must already be activated for at least one working environment.




The Restore Dashboard provides buttons for you to restore volumes and files. Clicking the *Restore Volumes* or *Restore Files* buttons starts a wizard that walks you through the steps to restore that data.

The dashboard also provides a list of all the volumes and all the files you have restored in case you need a history of previous restore actions. You can expand the row for each restored volume or file to view the details about the source and destination locations for the volume or file.

Note that you can also initiate a volume or file restore operation from a working environment in the Services panel. When started from this location the source working environment selection is automatically filled with the name of the current working environment.



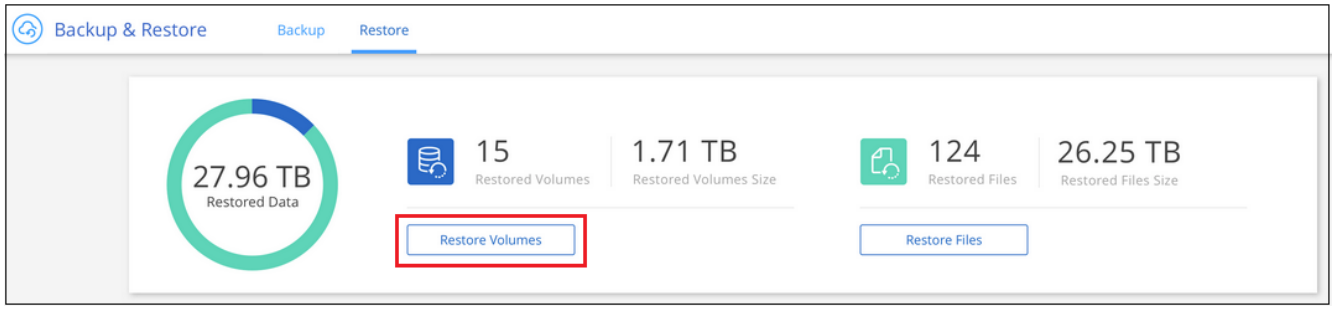
# Restoring a volume from a backup file

When you restore a volume from a backup file, Cloud Manager creates a *new* volume using the data from the backup. You can restore the data to a volume in the same working environment or to a different working environment that's located in the same cloud account as the source working environment. You can also restore files to an on-premises ONTAP system.

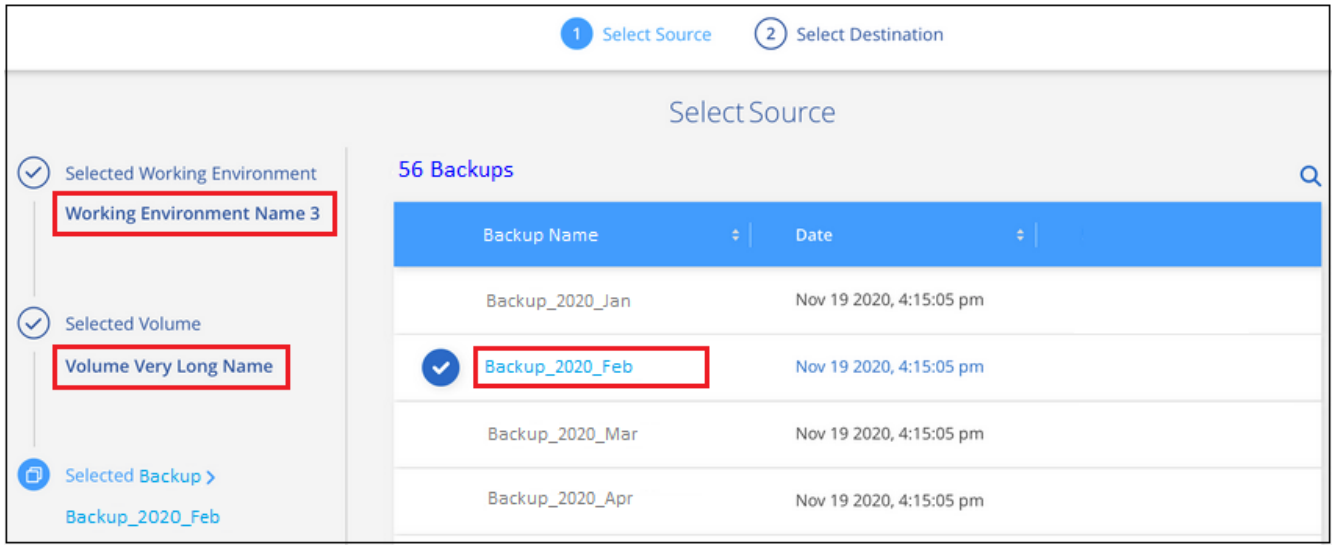
You should know the name of the volume you want to restore and the date of the backup file you want to use to create the newly restored volume.

**Steps**

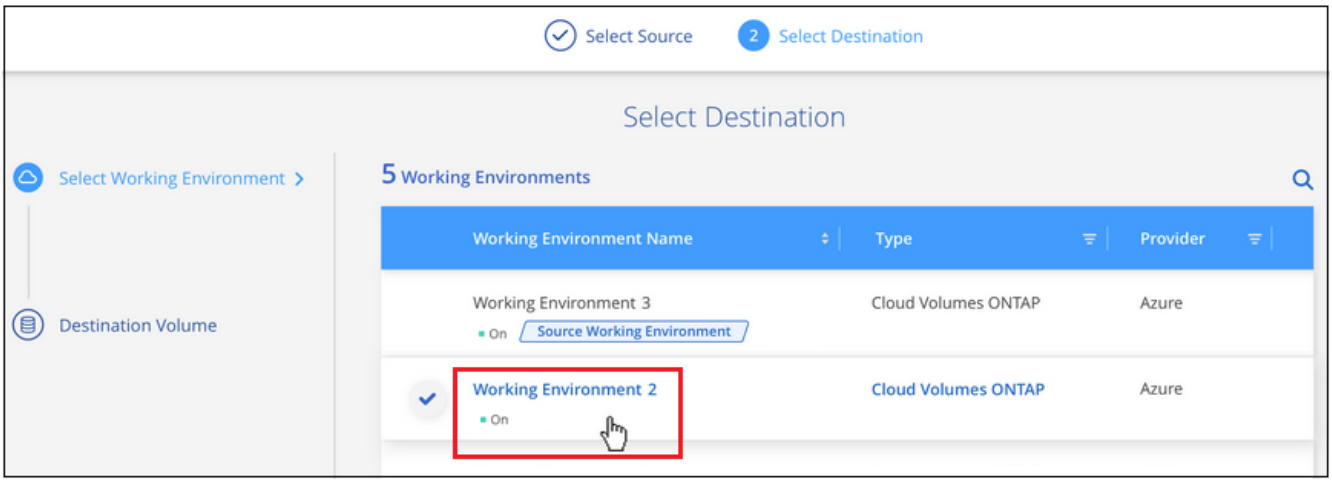
1. Select the **Backup & Restore** tab.
2. Click the **Restore** tab and the Restore Dashboard is displayed.
3. Click **Restore Volumes**.



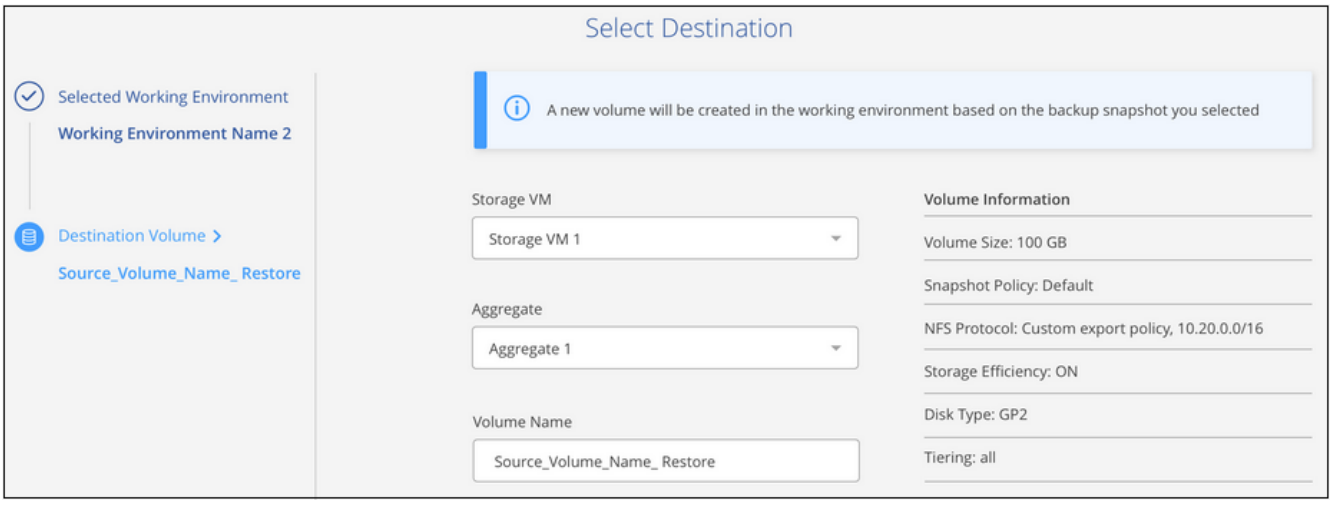

4. In the *Select Source* page, navigate to the backup file for the volume you want to restore. Select the **Working Environment**, the **Volume**, and the **Backup** that has the date/time stamp that you want to restore.




5. Click **Continue**.
6. In the *Select Destination* page, select the **Working Environment** where you want to restore the volume.




7. If you select an on-premises ONTAP system and you haven't already configured the cluster connection to the object storage, you are prompted for additional information:
   - When restoring from Amazon S3, select the AWS Account and the Access Key and Secret Key to access the object storage, the region where the backups are stored, and the IPspace in the ONTAP cluster where the destination volumes reside.
   - When restoring from Azure Blob, select the Azure Subscription to access the object storage, the region where the backups are stored, and the IPspace in the ONTAP cluster where the destination volumes reside.
   - When restoring from Google Cloud Storage, select the Google Cloud Project and the Access Key and Secret Key to access the object storage, the region where the backups are stored, and the IPspace in the ONTAP cluster where the destination volumes reside.
   - When restoring from StorageGRID, select the Access Key and Secret Key needed to access the object storage, and the IPspace in the ONTAP cluster where the destination volumes reside.
8. Select the Storage VM where the volume will reside and enter the name you want to use for the restored volume. By default, **<source_volume_name>_Restore** is used as the volume name.




You can select the Aggregate that the volume will use for its' capacity only when restoring a volume to an on-premises ONTAP system.

9. Click **Restore** and you are returned to the Restore Dashboard so you can review the progress of the restore operation.

**Result**

Cloud Manager creates a new volume based on the backup you selected. You can manage this new volume as required.

# Restoring files from a backup

If you only need to restore a few files from a volume, you can choose to restore individual files instead of restoring the entire volume. You can restore files to a volume in the same working environment, or to a different working environment that's using the same cloud account. You can also restore files to an on-premises ONTAP system.

All the files are restored to the same destination volume that you choose. If you want to restore files to different volumes, you need run the restore process a second time.

## Prerequisites

- The ONTAP version must be 9.6 or greater in your Cloud Volumes ONTAP or on-premises ONTAP systems to perform file restore operations.
- Restoring individual files from a backup file uses a separate Restore instance/virtual machine. See the AWS Requirements or Azure Requirements to make sure your environment is ready.
- Restoring files also requires that specific EC2 permissions are added to the user role that provides Cloud Manager with permissions. Make sure all the permissions are configured correctly.
- AWS cross-account restore requires manual action in the cloud provider console. See the AWS topic granting cross-account bucket permissions for details.

## File Restore process

The process goes like this:

1. When you want to restore one or more files from a volume, click the **Restore** tab, click **Restore Files**, and select the backup file in which the file (or files) reside.
2. The Restore instance starts up and displays the folders and files that exist within the backup file.

   **Note:** The Restore instance is deployed in your cloud providers' environment the first time you restore a file.

3. Choose the file (or files) that you want to restore from that backup.
4. Select the location where you want the file(s) to be restored (the working environment, volume, and folder), and click **Restore**.
5. The file(s) are restored, and then the Restore instance is shut down to save costs after a period of inactivity.

## Restoring files from a backup file

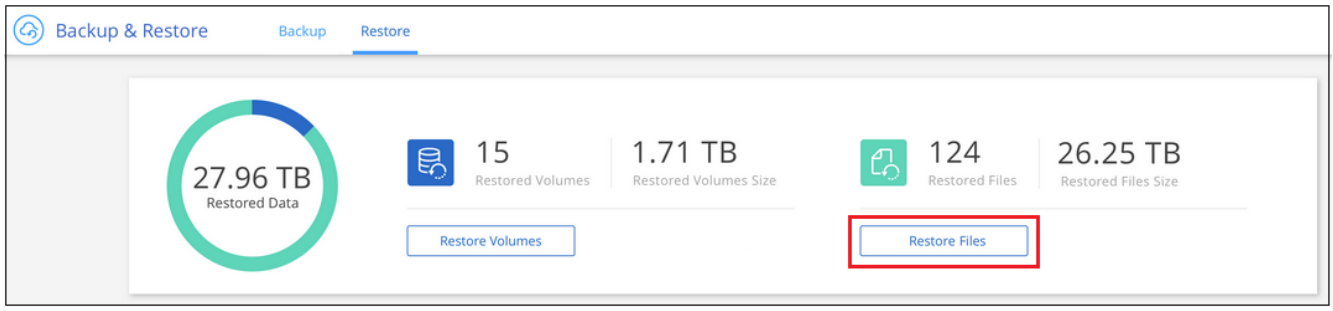
Follow these steps to restore files from a volume backup to a volume. You should know the name of the volume and the date of the backup file that you want to use to restore the file, or files. This functionality uses Live Browsing so that you can view the list of directories and files within the backup file.

The following video shows a quick walkthrough of restoring a single file:

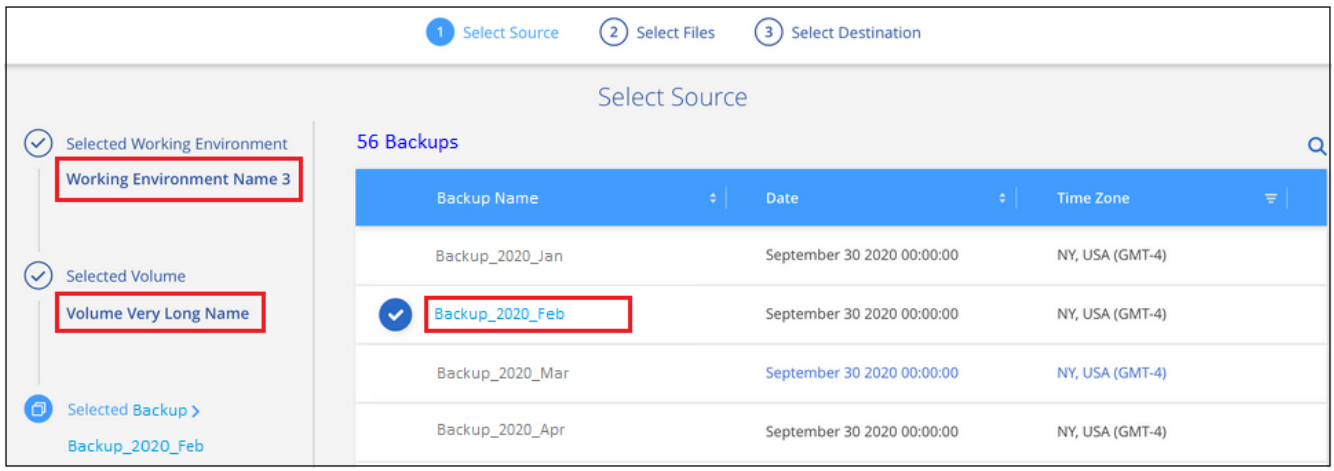
[] | *https://img.youtube.com/vi/ROAY6gPL9N0/maxresdefault.jpg*

**Steps**

1. Select the **Backup & Restore** tab.
2. Click the **Restore** tab and the Restore Dashboard is displayed.
3. Click the **Restore Files** button.

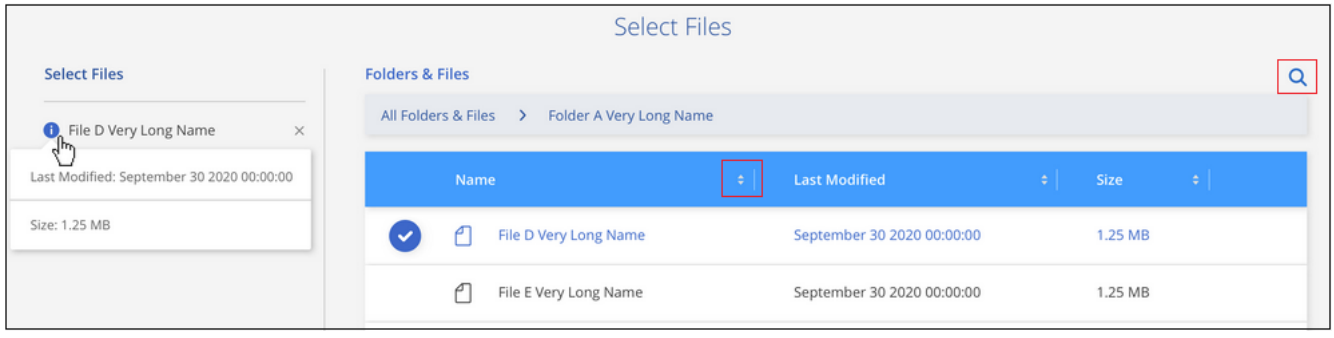



4. In the *Select Source* page, navigate to the backup file for the volume that contains the files you want to restore. Select the **Working Environment**, the **Volume**, and the **Backup** that has the date/time stamp from which you want to restore files.




5. Click **Continue** and the Restore instance is started. After a few minutes the Restore instance displays the list of folders and files from the volume backup.

   **Note:** The Restore instance is deployed in your cloud providers' environment the first time you restore a file, so this step could take a few minutes longer the first time.

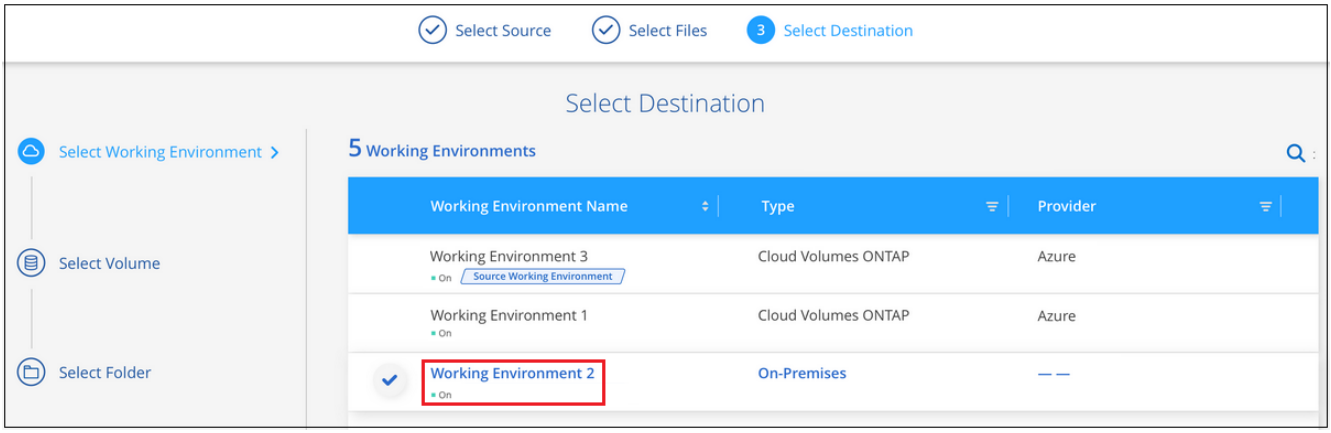



6. In the *Select Files* page, select the file or files that you want to restore and click **Continue**.
   - You can click the search icon and enter the name of the file to navigate directly to the file.

- You can click the file name if you see it.
- You can navigate down levels in folders using the › button at the end of the row to find the file.

  As you select files they are added to the left side of the page so you can see the files that you have already chosen. You can remove a file from this list if needed by clicking the **x** next to the file name.

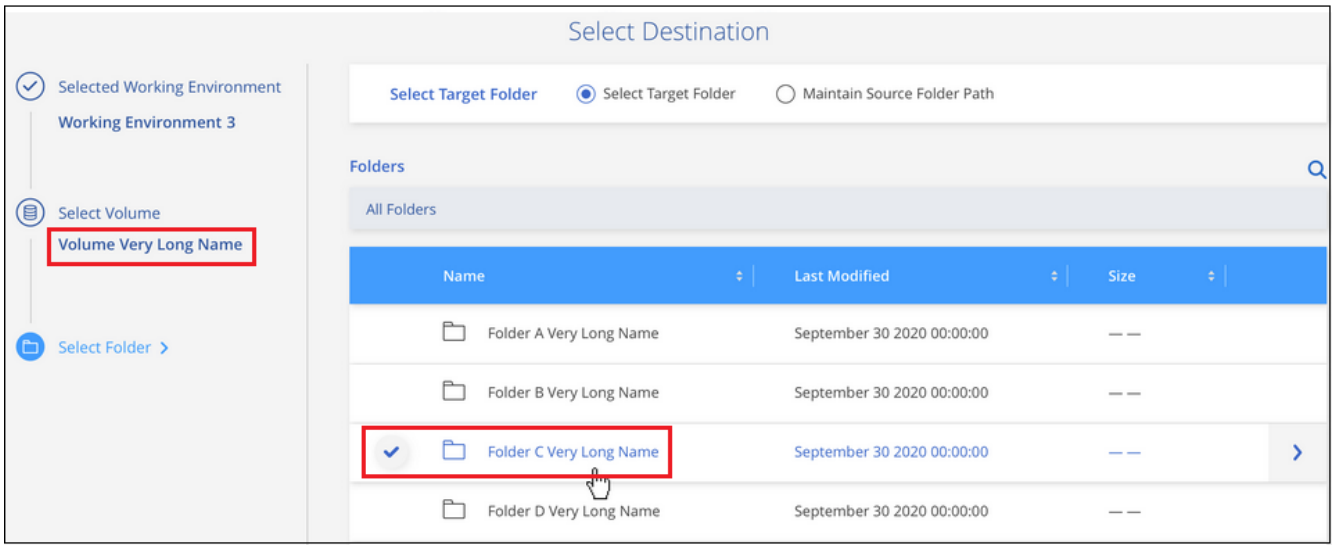
7. In the *Select Destination* page, select the **Working Environment** where you want to restore the files.




If you select an on-premises cluster and you haven't already configured the cluster connection to the object storage, you are prompted for additional information:

- When restoring from Amazon S3, enter the IPspace in the ONTAP cluster where the destination volumes reside, and the AWS Access Key and Secret Key needed to access the object storage.
- When restoring from Azure Blob, enter the IPspace in the ONTAP cluster where the destination volumes reside.

8. Then select the **Volume** and the **Folder** where you want to restore the files.




You have a few options for the location when restoring files.

- When you have chosen **Select Target Folder**, as shown above:
  - You can select any folder.
  - You can hover over a folder and click › at the end of the row to drill down into subfolders, and then

select a folder.

- If you have selected the same destination Working Environment and Volume as where the source file was located, you can select **Maintain Source Folder Path** to restore the file, or all files, to the same folder where they existed in the source structure. All the same folders and sub-folders must already exist; folders are not created.

9. Click **Restore** and you are returned to the Restore Dashboard so you can review the progress of the restore operation.

The Restore instance is shut down after a certain period of inactivity to save you money so that you incur costs only when it is active.