



## Object Versioning in S3

In Amazon Simple Storage Service (S3), object versioning is a feature that allows you to keep multiple versions of an object in a bucket. When versioning is enabled for a bucket, every update or delete operation on an object creates a new version of that object, and you can access and restore previous versions of the object.

Here are some key points about S3 object versioning:

1. **Enabling Versioning:** You can enable versioning for an S3 bucket using the AWS Management Console, AWS CLI, or one of the AWS SDKs. Once versioning is enabled for a bucket, it cannot be suspended. You can only "Suspend" versioning, which preserves all existing versions but prevents new versions from being created.
2. **Object Versioning:** Each version of an object in a versioned bucket has a unique version ID. This version ID is a string that uniquely identifies a specific version of an object. When you upload a new version of an existing object, S3 automatically assigns a new version ID to the updated object.
3. **Listing Versions:** You can list all versions of an object in a versioned bucket using the AWS Management Console, AWS CLI, or SDKs. The default listing of objects shows only the latest version. To view all versions, you need to explicitly request the version history.
4. **Accessing Specific Versions:** When you retrieve an object without specifying a version, S3 returns the latest version by default. You can retrieve a specific version of an object by providing its version ID in the request.
5. **Deletion and Versioning:** When you delete an object from a versioned bucket, S3 does not permanently delete the object. Instead, it adds a delete marker, which is a special version that represents the deletion of the object. You can still retrieve the delete-marked object by specifying its version ID.
6. **Cross-Region Replication (CRR) and Versioning:** If you enable cross-region replication on a versioned bucket, the replication process replicates all versions of objects, including delete markers.
7. **MFA Delete (Multi-Factor Authentication Delete):** You can enable MFA Delete for a versioned bucket to add an extra layer of security. This requires the use of multi-factor authentication (MFA) to permanently delete objects or suspend versioning.

Object versioning in S3 provides durability by keeping track of all versions of your objects, allowing you to recover from accidental deletions or modifications. It is a crucial feature for data protection and compliance in scenarios where maintaining a historical record of changes is important.



## To Begin with the Lab

1. Login to AWS Console, then navigate to S3.
2. Open your bucket.
3. Then inside your bucket if you will go to Properties.



4. There you will see an option named as Bucket versioning.
5. Now if you click on Edit.

A screenshot of the 'Bucket Versioning' settings page. It shows a summary of current settings: Bucket Versioning is 'Disabled' and Multi-factor authentication (MFA) delete is also 'Disabled'. A red box highlights the 'Edit' button at the top right.

6. Here you will see two options, one for enable this service and other for suspending this service.
7. But for now, enable it and click on save changes.

A screenshot of the 'Bucket Versioning' settings page. The 'Enable' radio button is selected. A callout box contains the note: 'After enabling Bucket Versioning, you might need to update your lifecycle rules to manage previous versions of objects.' At the bottom, it shows 'Multi-factor authentication (MFA) delete' is 'Disabled'. At the very bottom right are 'Cancel' and 'Save changes' buttons.

8. Now your bucket versioning is enabled.

A screenshot of the 'Bucket Versioning' settings page. It shows the status has been updated to 'Enabled'. The 'Edit' button is visible at the top right.

9. Now go back to your bucket where you have stored your data.
10. Here you can see you have a file name as docker file.

**Objects (2) Info**

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Name	Type	Last modified	Size	Storage class
Dockerfile	Folder	January 12, 2024, 19:51:29 (UTC+05:30)	113.0 B	Standard
scripts/	Folder		-	-

11. Now if you open this file and click on versions.
12. You will see a version in place which says current version.
13. It is because you have upload this file prior to turning on bucket versioning.

Amazon S3 > Buckets > datausr1234 > Dockerfile

**Dockerfile Info**

[Properties](#) [Permissions](#) [Versions](#)

**Versions (1)**

Version ID	Type	Last modified	Size	Storage class
null (Current version)	-	January 12, 2024, 19:51:29 (UTC+05:30)	113.0 B	Standard

14. Now if you will just re-upload this file.
15. You will see that you have a version ID in place with the previous version also present.

Amazon S3 > Buckets > datausr1234 > Dockerfile

**Dockerfile Info**

[Properties](#) [Permissions](#) [Versions](#)

**Versions (2)**

Version ID	Type	Last modified	Size	Storage class
ruY05kEZ1z5d55qnGhY6r8bWVRdYpap (Current version)	-	January 12, 2024, 23:07:36 (UTC+05:30)	113.0 B	Standard
null	-	January 12, 2024, 19:51:29 (UTC+05:30)	113.0 B	Standard

16. Now back to your bucket and select your file and then delete it.

**Objects (2) Info**

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Name	Type	Last modified	Size	Storage class
Dockerfile	Folder	January 12, 2024, 23:07:36 (UTC+05:30)	113.0 B	Standard
scripts/	Folder		-	-

17. So, on the deletion page you will see this message.
18. This means that if you will delete this right here, it won't get permanent delete.
19. It will be saved as delete marker.
20. Now click on delete objects.

## Delete objects Info

**⚠** If a folder is selected for deletion, all objects in the folder will be deleted, and any new objects added while the delete action is in progress might also be deleted. If an object is selected for deletion, any new objects with the same name that are uploaded before the delete action is completed will also be deleted.

[Learn more](#)



**Deleting the specified objects adds delete markers to them**

If you need to undo the delete action, you can delete the delete markers. [Learn more](#)

### Specified objects

[Find objects by name](#)

< 1 >

Name	Type	Last modified	Size
Dockerfile	-	January 12, 2024, 23:07:36 (UTC+05:30)	113.0 B

### Delete objects?

To confirm deletion, type *delete* in the text input field.

delete

[Cancel](#)

[Delete objects](#)

21. You will see that your file is nowhere to be seen.

Objects (1) Info

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Copy S3 URI  Copy URL  Download  Open  Delete  Actions  Create folder  Upload

[Find objects by prefix](#)  Show versions

< 1 >

Name	Type	Last modified	Size	Storage class
scripts/	Folder	-	-	-

22. But if you will click on Show versions.

23. You will see your file again in the objects section.

Objects (4) Info

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Copy S3 URI  Copy URL  Download  Open  Delete  Actions  Create folder  Upload

[Find objects by prefix](#)  Show versions

< 1 >

Name	Type	Version ID	Last modified	Size	Storage class
Dockerfile	Delete marker	1vwPplhRQ xM130Mnijr o_PwPcpx8 ZMG	January 12, 2024, 23:11:51 (UTC+05:30)	0 B	-
Dockerfile	-	ruY0SkEZ1z Sd3s5qnGh Y6r8bWVRd Ypap	January 12, 2024, 23:07:36 (UTC+05:30)	113.0 B	Standard
Dockerfile	-	null	January 12, 2024, 19:51:29 (UTC+05:30)	113.0 B	Standard
scripts/	Folder	-	-	-	-

24. Now you need to delete the delete marker. Select your delete marker then click on delete.
25. It will ask you to permanently delete your marker. Now click on delete objects.

**Delete objects** [Info](#)

**⚠** • If a folder is selected for deletion, all objects in the folder will be deleted, and any new objects added while the delete action is in progress might also be deleted. If an object is selected for deletion, any new objects with the same name that are uploaded before the delete action is completed will also be deleted.

- Deleting the specified objects can't be undone.

[Learn more](#)

Specified objects				
<input style="width: 100%; height: 20px; margin-bottom: 5px;" type="text"/> <b>Find objects by name</b> <span style="float: right;">&lt; 1 &gt;</span>				
Name	▲	Version ID	Type	Last modified
Dockerfile		1vwPplhRQxM130Mn.ijro_PwPCpz8ZMG	Delete marker	January 12, 2024, 23:11:51 (UTC+05:30)

Permanently delete objects?	
To confirm deletion, type <i>permanently delete</i> in the text input field. <input style="width: 100%; height: 30px; border: 1px solid #ccc; margin-bottom: 5px;" type="text"/> <b>permanently delete</b>	
Cancel	<b>Delete objects</b>

26. Once you have done that go back to your bucket and turn off **Show Versions** you will see your file in place.

**datausr1234** [Info](#)

[Objects](#) [Properties](#) [Permissions](#) [Metrics](#) [Management](#) [Access Points](#)

Objects (2) <a href="#">Info</a>						
Objects are the fundamental entities stored in Amazon S3. You can use <a href="#">Amazon S3 inventory</a> to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. <a href="#">Learn more</a>						
<input type="button" value="C"/> <input type="button" value="Copy S3 URI"/> <input type="button" value="Copy URL"/> <input type="button" value="Download"/> <input type="button" value="Open"/> <input type="button" value="Delete"/> <input type="button" value="Actions"/> <input type="button" value="Create folder"/> <input type="button" value="Upload"/>						
<input style="width: 100%; height: 20px; margin-bottom: 5px;" type="text"/> <b>Find objects by prefix</b> <span style="float: right;">&lt; 1 &gt; </span>						
<input type="checkbox"/> <b>Name</b> <input type="checkbox"/> <b>Type</b> <input type="checkbox"/> <b>Last modified</b> <input type="checkbox"/> <b>Size</b> <input type="checkbox"/> <b>Storage class</b>						
<input type="checkbox"/> <input checked="" type="checkbox" value="Dockerfile"/> Dockerfile - January 12, 2024, 23:07:36 (UTC+05:30) 113.0 B Standard						
<input type="checkbox"/> <input checked="" type="checkbox" value="scripts/"/> scripts/ -						

**So, this object versioning or bucket version helps you to get your file back, if you have deleted it by mistake.**