4- data protection

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Soft-delete

- protects data from being accidentally deleted .
- maintains the deleted data in the system for a specific period of time.
- During retention period, you can restore a soft-deleted container and its contents to the containers state at the time it was deleted.
- container and its contents are permanently deleted after the period expire.

- ! default retention period is *7 days*
- you can specify a retention period between 1 and 365 days.
- you can recover a deleted container by calling the *Restore Container Operation*.
- containers blobs and any blob versions and snapshots are also restored.
- ? use container soft delete to restore blobs when container itself was deleted.
- To restore a deleted blob when its parent container hasn't been deleted, you must use *soft delete* or *blob versioning*
- you must restore it to its original name. If the original name has been used to create a new container, then you will not able to restore the soft-delete container.
- source
- You can change the retention period at any time.
- ! updated retention period applies only to the newly deleted containers.
- Previous deleted containers will be permanently deleted based on the retention period that was in effect at the time that the container was deleted.
- source
- Disabling container soft delete doesn't result in permanent deletion of containers that were previously soft-deleted.
- ! use resource locks for accidental deletion of storage account. Soft-delete does not protect against the deletion of storage account.

- container soft delete is available in

- General-purpose V2 and V1 storage accounts.
- Block blob storage accounts.
- Blob storage accounts.

blob soft delete

- protects an individual *blob*, *snapshots*, or *version* from accidental deletes or overwrites for specific period of time.

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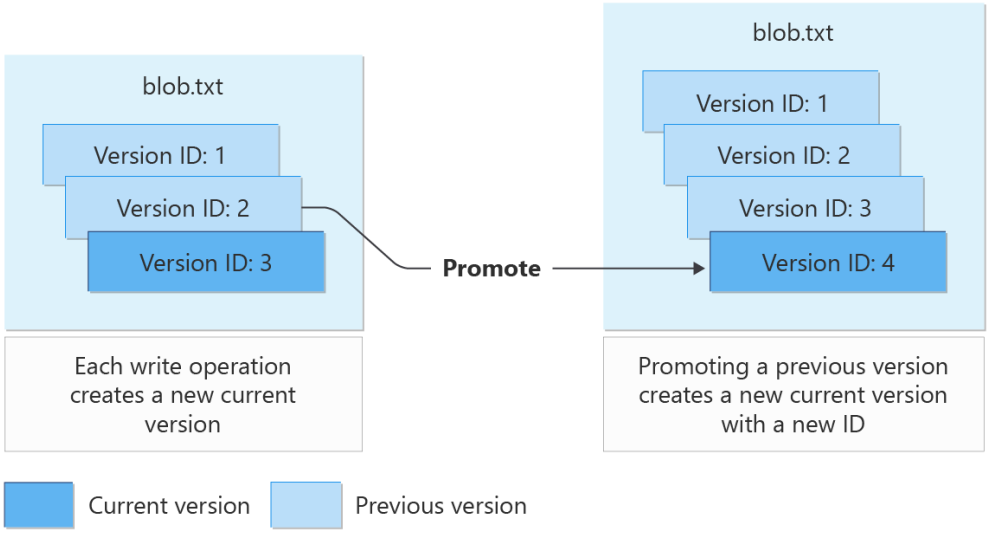
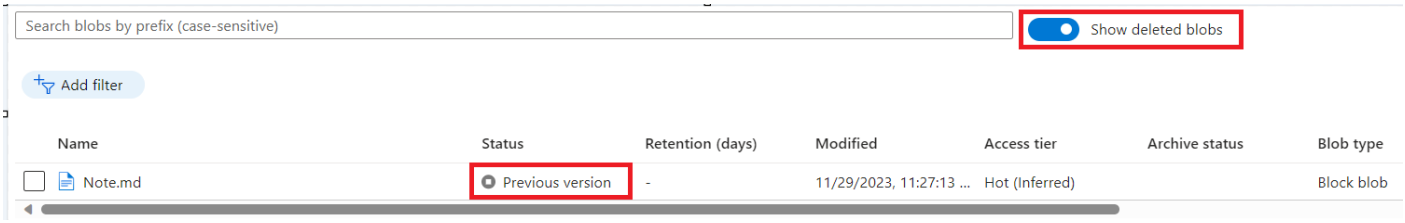
blob-versioning

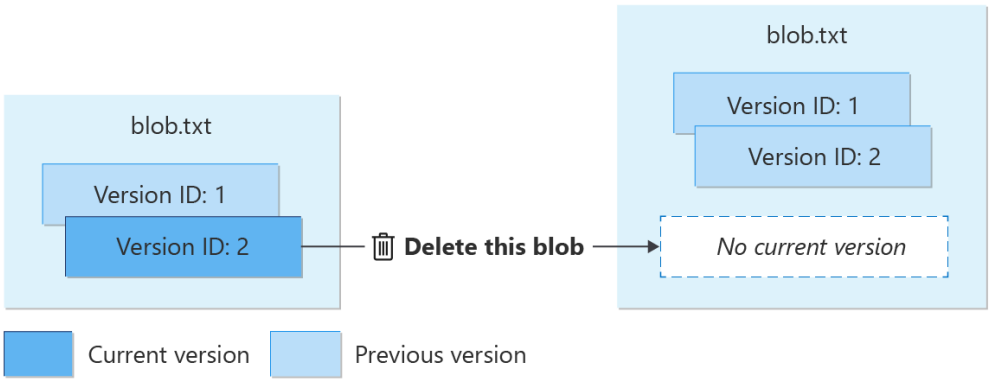
- ! every write operation will create a new version of that blob after you enable blob versioning for a storage account.
- For this reason, it may result in additional costs.
- Use lifecycle management to automatically delete old versions of the blob.
- captures the state of a blob at a given point of time.
- each version is identified with unique ID.
- A blob can have only one current version at a time.

how version works when **blob creation** and **deletion**

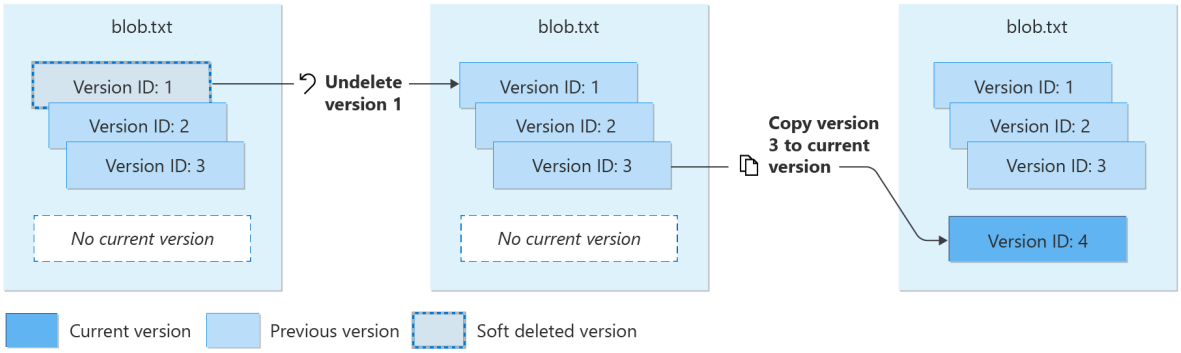
- When you create a new blob, a single version exists.
- that version is the current version.
- When you modify an existing blob, the current version becomes the previous version.
- A new version is created to capture the updated state, and that new version is the current version.
- When you delete a blob, the current version of the blob becomes a previous version.
- and there’s no longer a current version.
- Any previous versions of the blob persists.
- source
- previous version can be promoted to a current version.

- 

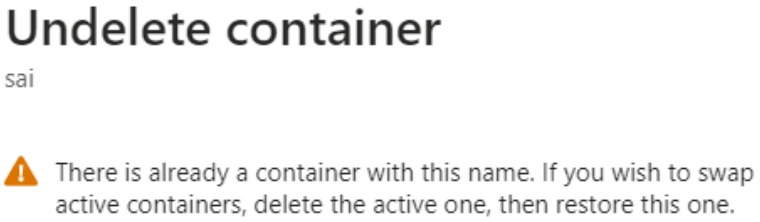
- 

- 

- having large number of versions per blob increase the latency for blob listing operations.
- Microsoft recommends maintaining fewer than 1000 versions per blob.
- use lifecycle management to auto delete the versions.
- ? versioning supported
  - general-purpose V2
  - premium block blob
  - legacy blob storage accounts
- ? not supported
  - data lake Storage Gen 2.
- Disabling blob versioning doesn't delete existing blobs. No new versions are subsequently created.
- restoring a soft delete d version using Un-delete Blob operation



- deleted a blob.
- created a blob with the same name of the deleted blob.
- try to undelete the deleted blob.



Version ID

source

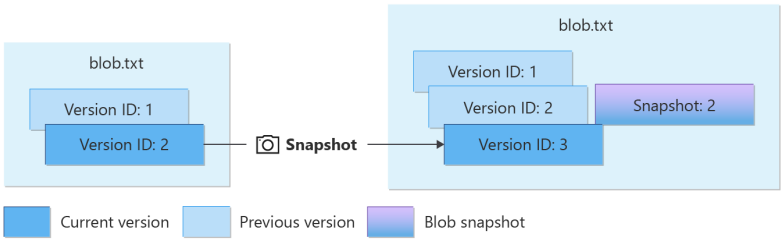
blob-version and blob-snapshot

- A snapshot is created manually by you or your application
- A version is created automatically on a write or delete operation.

> **Important**
>
> It is recommended to update your applications to *stop taking snapshots* of block blobs, if versioning is enabled for your storage account.
>
> - If versioning is enabled for your storage account, all updates and deletions are captures and preserved by versions.
> - Taking snapshots does not offer any additional protection to your block blob data if blob versioning is enabled, and may increase costs and application complexity

- When you take a snapshot of a versioned blob, a new version is created at the same time that the snapshot is created.
- A new current version is also created when a snapshot is taken.

- source



- blob version and snapshots with version ID 2 and 3 contain identical data.

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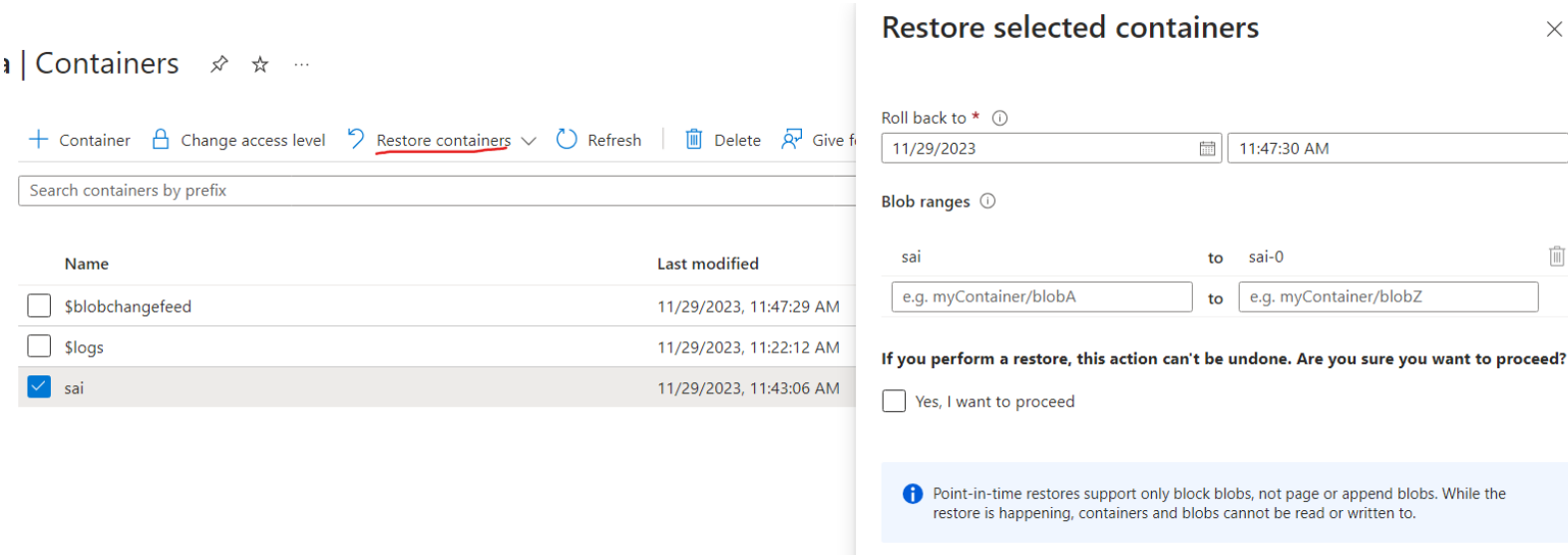
point-in-time restore



Pricing and billing

- no additional costs to enable container soft delete.
- Data in soft-delete containers is billed at the same rate as active data.
