PowerScale

S3 Access

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Pre-Sales - Isilon / PowerScale / ECS
April 28th 2023

DELL Technologies

Agenda

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S3 Nuance

- PowerScale OneFS uses a limited subset of the S3 API. Verify your S3 application does not use any S3 API functions that are not supported by PowerScale.

- The real use case for S3 on PowerScale is to use it when Multi Protocol access is needed. This is when you want to share S3 data with SMB or NFS users. If you are using S3 ONLY, you should really be looking at an ObjectStore like ECS (DELL Elastic Cloud Storage)

- The bucket Name must be between 3 and 63 characters in length. The bucket name cannot contain characters other than LOWERCASE a-z, 0-9, ‘-’, and no spaces. The bucket name cannot be changed once created.

- The S3 API List-Buckets Function only lists buckets that the user is the owner of. Even if the user has full rights to a bucket, if the user is not the owner, the returned bucket list will not include that bucket. This is important as some applications may use the List-Buckets api function and want to see the bucket name. So always try to make the userID you use with the application the owner of the bucket.

- If the SSL certificate on the PowerScale is not a valid cert, if you try to use HTTPs the command will fail with a 403 error. You could troubleshoot this by adding the –no-verify-ssl.

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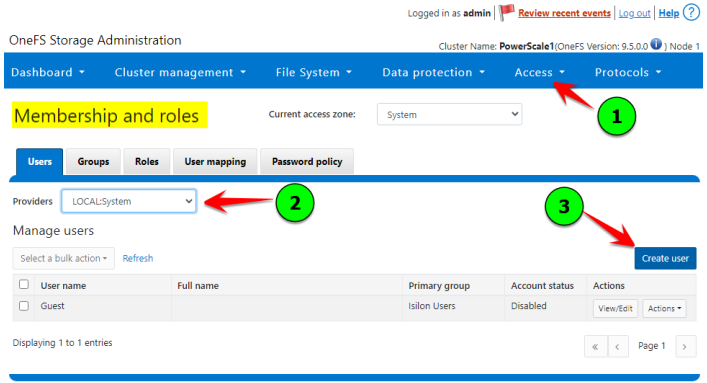
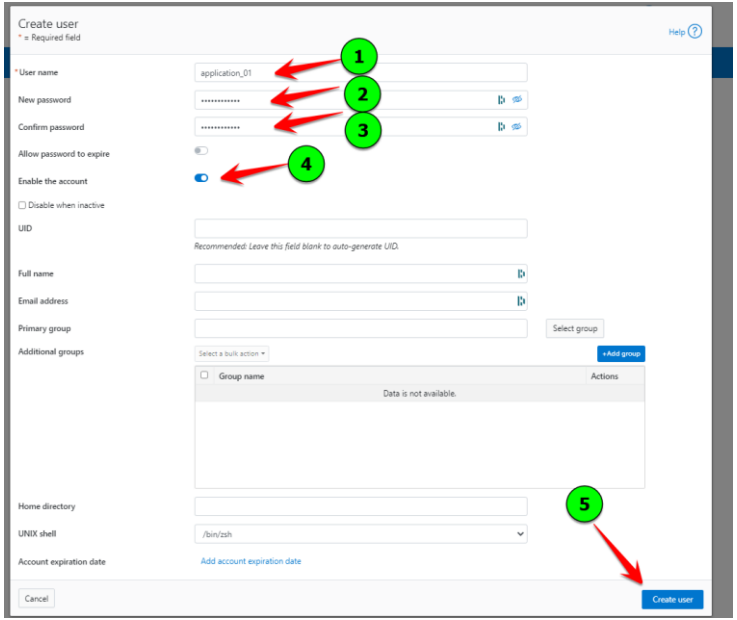
Create S3 User

- Users can be both Local and Active Directory users.
- Once a user is created or selected, you must generate an access key pair they will use to authenticate via S3.





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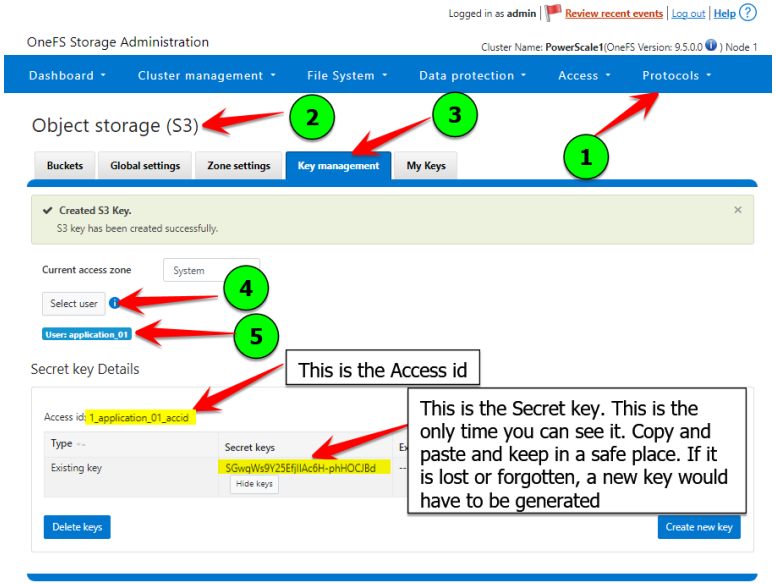
Creating Access and Secret keys

- Access and Secret keys are used to authenticate the s3 user.
- Once the Secret Key is created, it cannot be viewed again. Copy and paste it into a safe place.
- If the secret key is forgotten or lost, a new secret key must be generated.
- The secret key has nothing to do with the user's password. If the user changes their password, the secret key remains valid.



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S3 Bucket folder structure

The S3 Bucket can be created almost anywhere in the ifs file structure.

This is a suggested path for your buckets

/ifs/data/s3data/bucket1
bucket2
bucket3
…

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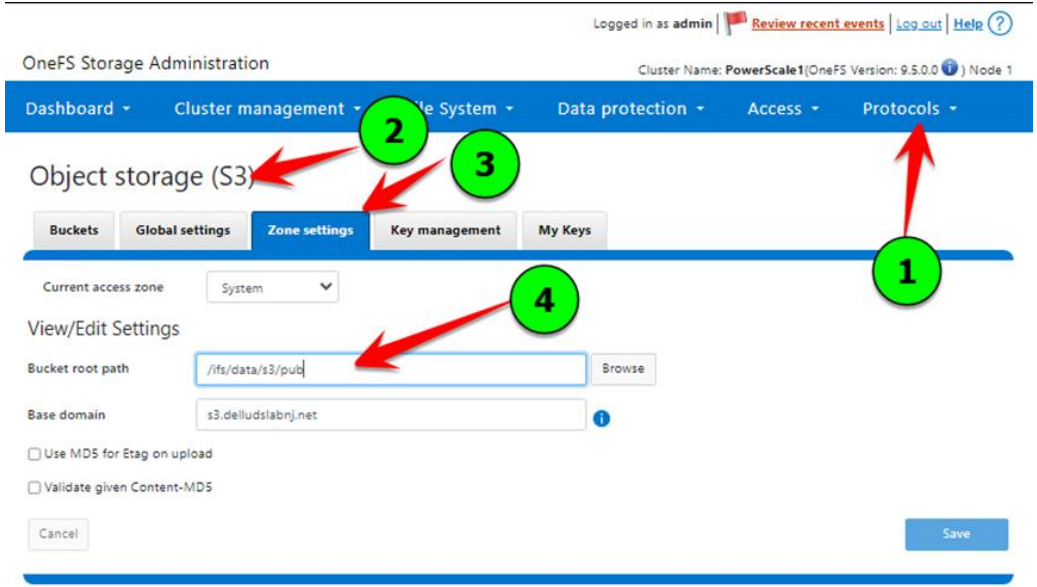
S3 Bucket folder structure

- The bucket root path is used when users are allowed to create their own buckets. This is where their bucket would be created.
- To allow users to create their own buckets, you have to give them full access to the bucket root path. I would suggest creating a folder just for users created buckets like PUB or USR.
- Warning – they could create as many buckets as they want. There is no way to limit them.



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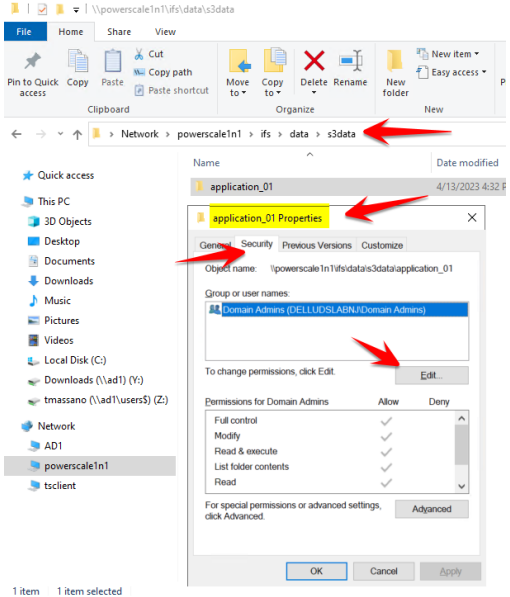
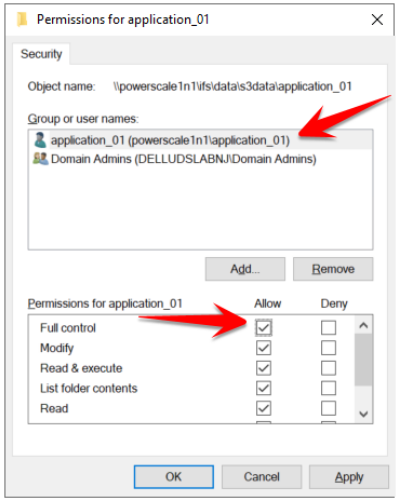
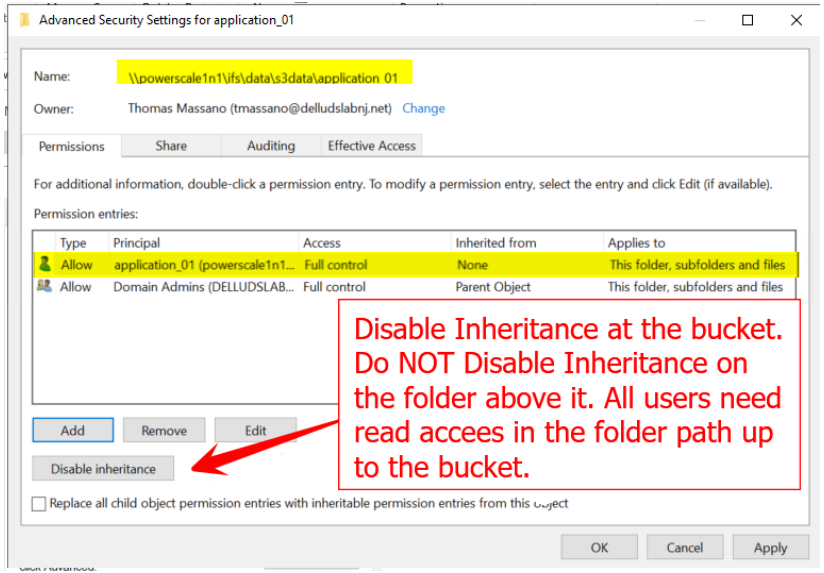
Folder Permissions

- Once permissions are added to the folder, the POSIX permissions are no longer authoritative.
- It is important to have Inheritance enabled on the folder above the bucket. Users need read access on the path to the bucket.
- DISABLE Inheritance on the actual Bucket.
- Any additional users added to the ***S3 Bucket ACL*** must have the ***folder permissions*** also added to match.





Domain Admins were inherited. They are not required but make administration easier.



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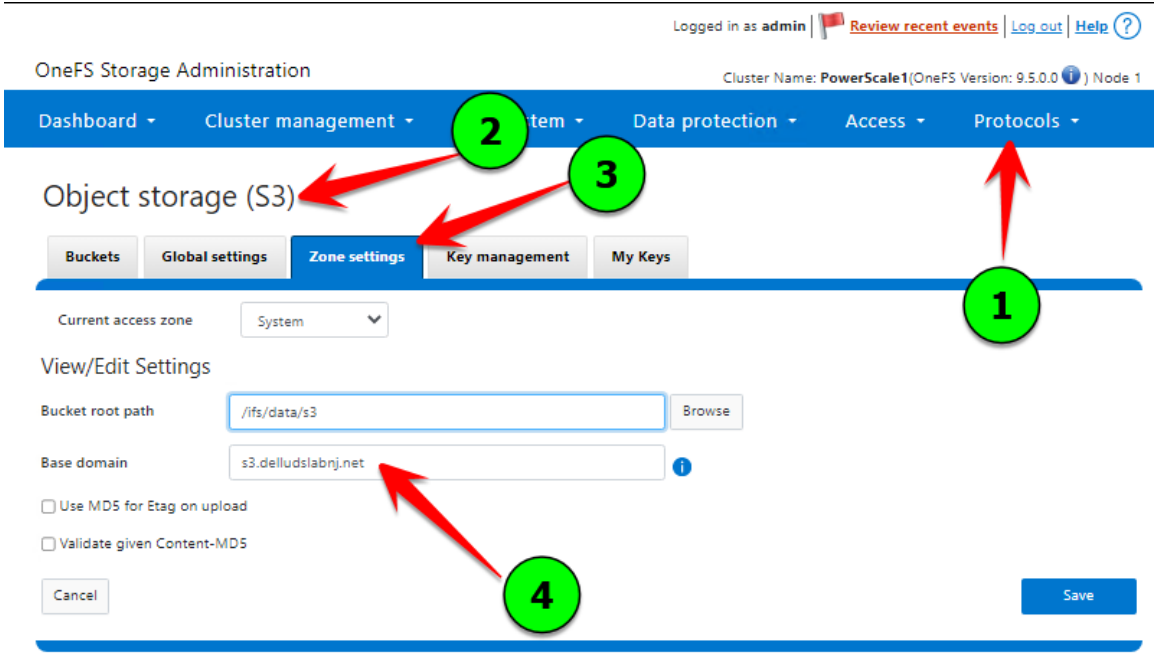
Base Domain

- The base domain needs to be assigned for S3 Path Style addressing
- The base domain name is the SmartConnect Zone Name



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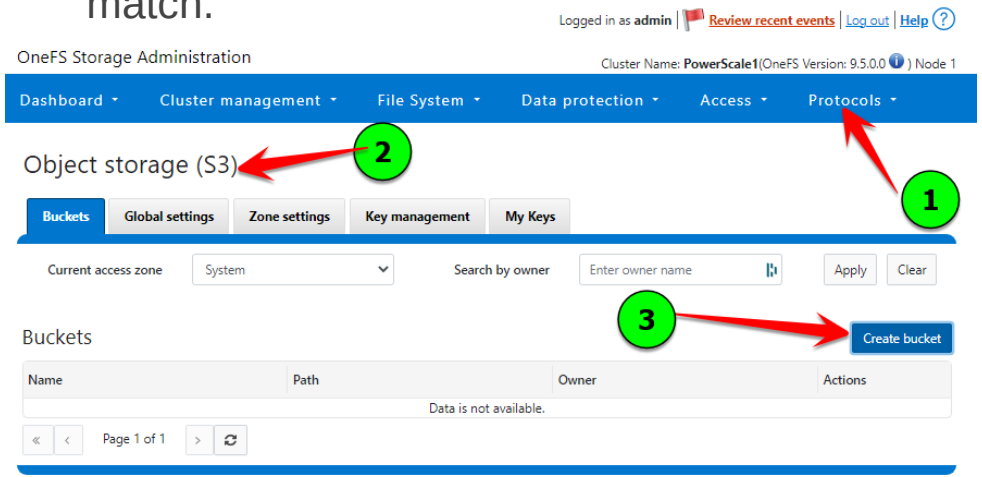
Create a Bucket

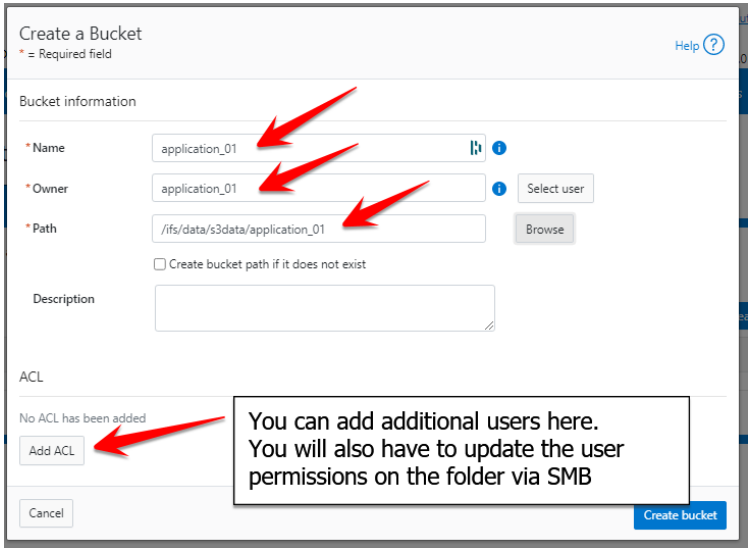
- Think of this S3 Bucket much as you think of an SMB share.
- This is the entry point permissions. Then you also have to have the filesystem permissions to match.



The Bucket name is application_01

I also have a User with the name application_01

And the Path is also using the application_01 folder



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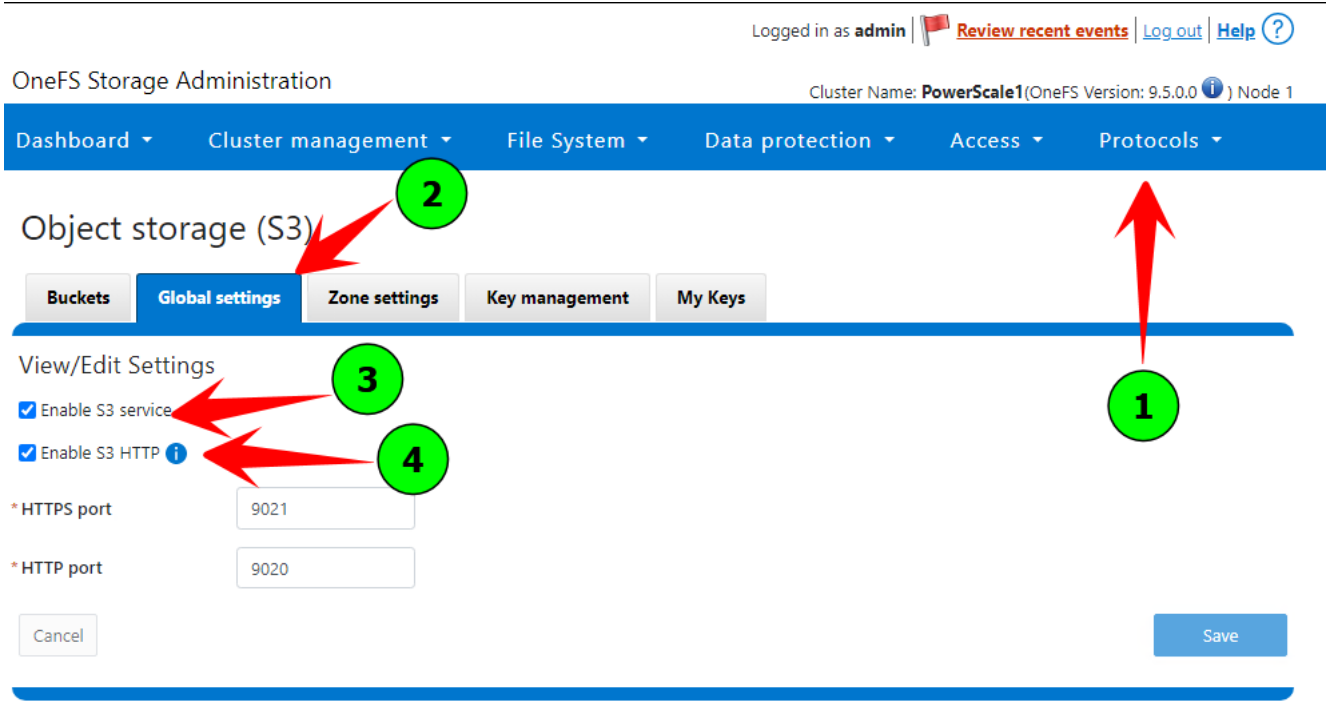
Enable S3 Protocol



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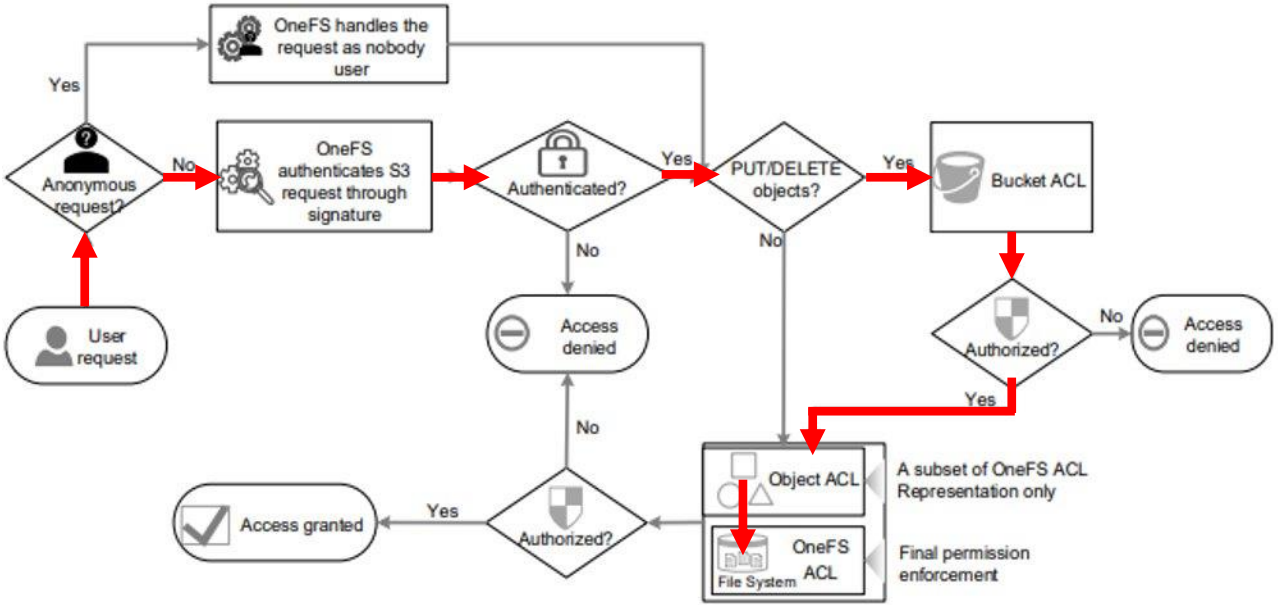
Authentication / Permissions workflow



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PowerScale supported S3 APIs

S3 API Ver 2006-03-01	Apply To	OneFS 9.5
AbortMultipartUpload	Object	Yes
CompleteMultipartUpload	Object	Yes
CopyObject	Object	Yes
CreateBucket	Bucket	Yes
CreateMultipartUpload	Object	Yes
DeleteBucket	Bucket	Yes
DeleteBucketAnalyticsConfiguration	Bucket	No
DeleteBucketCors	Bucket	No
DeleteBucketEncryption	Bucket	No
DeleteBucketIntelligentTieringConfiguration	Bucket	No
DeleteBucketInventoryConfiguration	Bucket	No
DeleteBucketLifecycle	Bucket	No
DeleteBucketMetricsConfiguration	Bucket	No
DeleteBucketPolicy	Bucket	No
DeleteBucketReplication	Bucket	No
DeleteBucketTagging	Bucket	No
DeleteBucketWebsite	Bucket	No
DeleteObject	Object	Yes
DeleteObjects	Object	Yes
DeleteObjectTagging	Object	No
DeletePublicAccessBlock	Bucket	No
GetBucketAccelerateConfiguration	Bucket	No
GetBucketAcl	Bucket	Yes
GetBucketAnalyticsConfiguration	Bucket	No
GetBucketCors	Bucket	No
GetBucketEncryption	Bucket	No
GetBucketInventoryConfiguration	Bucket	No
GetBucketLifecycle	Bucket	No
GetBucketLifecycleConfiguration	Bucket	No
GetBucketLocation	Bucket	Yes

S3 API Ver 2006-03-01	Apply To	OneFS 9.5
GetBucketLogging	Bucket	No
GetBucketMetricsConfiguration	Bucket	No
GetBucketNotification	Bucket	No
GetBucketNotificationConfiguration	Bucket	No
GetBucketPolicy	Bucket	No
GetBucketPolicyStatus	Bucket	No
GetBucketReplication	Bucket	No
GetBucketRequestPayment	Bucket	No
GetBucketTagging	Bucket	No
GetBucketVersioning	Bucket	No
GetBucketWebsite	Bucket	No
GetObject	Object	Yes
GetObjectAcl	Object	Yes
GetObjectLegalHold	Object	No
GetObjectLockConfiguration	Object	No
GetObjectRetention	Object	No
GetObjectTagging	Object	No
GetObjectTorrent	Object	No
GetPublicAccessBlock	Bucket	No
HeadBucket	Bucket	Yes
HeadObject	Object	Yes
ListBucketAnalyticsConfigurations	Bucket	No
ListBucketInventoryConfigurations	Bucket	No
ListBucketMetricsConfigurations	Bucket	No
ListBuckets	Bucket	Yes
ListMultipartUploads	Bucket	Yes
ListObjects	Bucket	Yes
ListObjectsV2	Bucket	Yes
ListObjectVersions	Bucket	No
ListParts	Object	Yes

S3 API Ver 2006-03-01	Apply To	OneFS 9.5
PutBucketAccelerateConfiguration	Bucket	No
PutBucketAcl	Bucket	Yes
PutBucketAnalyticsConfiguration	Bucket	No
PutBucketCors	Bucket	No
PutBucketEncryption	Bucket	No
PutBucketInventoryConfiguration	Bucket	No
PutBucketLifecycle	Bucket	No
PutBucketLifecycleConfiguration	Bucket	No
PutBucketLogging	Bucket	No
PutBucketMetricsConfiguration	Bucket	No
PutBucketNotification	Bucket	No
PutBucketNotificationConfiguration	Bucket	No
PutBucketPolicy	Bucket	No
PutBucketReplication	Bucket	No
PutBucketRequestPayment	Bucket	No
PutBucketTagging	Bucket	No
PutBucketVersioning	Bucket	No
PutBucketWebsite	Bucket	No
PutObject	Object	Yes
PutObjectAcl	Object	Yes
PutObjectLegalHold	Object	No
PutObjectLockConfiguration	Object	No
PutObjectRetention	Object	No
PutObjectTagging	Object	No
PutPublicAccessBlock	Bucket	No
RestoreObject	Object	No
SelectObjectContent	Object	No
UploadPart	Object	Yes
UploadPartCopy	Object	Yes

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AWS CLI

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AWS CLI

- The AWS CLI can be downloaded from https://aws.amazon.com/cli/
- Once you have downloaded it, you can create user profiles to make authentication easier.
  aws configure –profile *profilename*
  It will ask *Access Key ID, Secret Access Key, Region: none, Output format: text*
- Since any S3 location other than AWS is considered AWS Compatible, you must specify your endpoint in the cli command. --endpoint http://s3.Isilon.local:9020
- An AWS CLI Command starts like this:
  aws --profile isilon_user1 --endpoint http://s3.isilon.local:9020 *cmd*
- Since command line is not my forte, I created a webpage that will generate command line that you can cut & paste from. www.theblackperl.com/s3/aws

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S3 Browser

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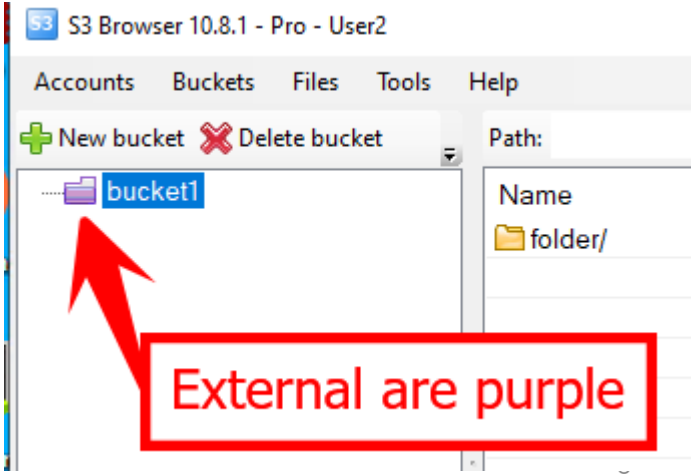
S3 Browser

- S3 Browser Download site https://s3browser.com/
- I have had inconsistent results with S3 browser, when in doubt, use the AWS CLI.
- Be aware, the AWS S3 ListBuckets API function only lists the OWNER's buckets, it does not list buckets that you are not the owner of, even though you may have full permissions.
- In S3 browser, to view bucket you have "access" to, but are not the owner, you must "Add External Bucket".
- To do this:
  1. Right click and select "Add External Bucket" (Ctrl + E)
  2. Type the bucket name you have access to.
  3. The external Bucket shows up as purple (if you are the owner it is yellow)



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