CLOUD LAB ASSIGNMENT 2

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Uploading objects to s3 bucket
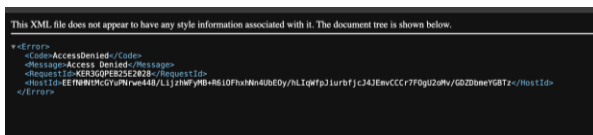

Public access restricted

Public Access allowed
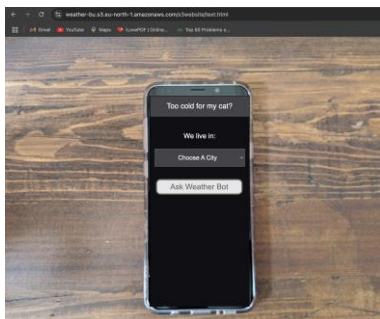
Uploading a text file , enabling versioning of bucket , making change in file ; reuploading it : we can see different versions

Creating s3 lifecycle policy:

Create lifecycle rule   Info

Lifecycle rule configuration

Lifecycle rule name

s3Lifecycle

Up to 255 characters

Choose a rule scope
- ● Limit the scope of this rule using one or more filters
- ○ Apply to all objects in the bucket

Filter type
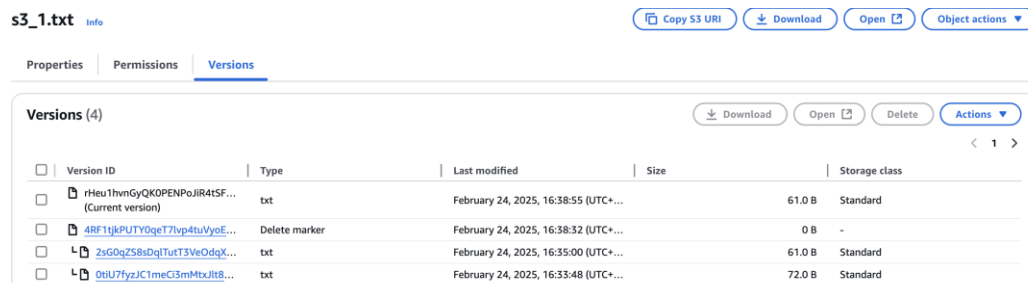You can filter objects by prefix, object tags, object size, or whatever combination suits your usecase.

Prefix
Add filter to limit the scope of this rule to a single prefix.

s3_1.txt

Don't include the bucket name in the prefix. Using certain characters in key names can cause problems with some applications and protocols. Learn more ⧉

Object tags
You can limit the scope of this rule to the key/value pairs added below.

Add tag

Object size

Enabling CORS:

✓ Successfully edited cross-origin resource sharing (CORS).

Bucket owner (your AWS account)
Canonical ID:
8e02f49bbee27bc60b467833eddf30b13a412bc3f341e3006ab389f23ef0ada7

Everyone (public access)
Group:
http://acs.amazonaws.com/groups/global/AllUsers

Authenticated users group (anyone with an AWS account)
Group:
http://acs.amazonaws.com/groups/global/AuthenticatedUsers

S3 log delivery group
Group:
http://acs.amazonaws.com/groups/s3/LogDelivery

Cross-origin resource sharing (CORS)

The CORS configuration, written in JSON, defines a way for client web applications that are loaded in one domain to interact with reso

```
[
  {
    "AllowedHeaders": [
      "*"
    ],
    "AllowedMethods": [
      "GET"
    ]
  }
]
```

Uploading a video directly on s3:

Amazon S3 > Buckets > weather-bu > 3078336-uhd_3840_2160_25fps.mp4

Amazon S3

General purpose buckets
Directory buckets
Table buckets
Access Points
Access Grants
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens
Dashboards
Storage Lens groups
AWS Organizations settings

Feature spotlight 11

3078336-uhd_3840_2160_25fps.mp4 Info

Copy S3 URI   ⤓ Download   Open ⧉

Properties   Permissions   Versions

Object overview

Owner
8e02f49bbee27bc60b467833eddf30b13a412bc3f341e3006ab389f23ef0ada7

AWS Region
Europe (Stockholm) eu-north-1

Last modified
February 24, 2025, 17:05:33 (UTC+05:30)

Size
107.8 MB

Type
mp4

Key
3078336-uhd_3840_2160_25fps.mp4

S3 URI
s3://weather-bu/3078336-uhd_3840_2160_25fps.mp4

Amazon Resource Name (ARN)
arn:aws:s3:::weather-bu/3078336-uhd_3840_2160_25fps.mp

Entity tag (Etag)
12dacc0b394d85f3d57249489aa8c827-7

Object URL
https://weather-bu.s3.eu-north-1.amazonaws.com/3078336-25fps.mp4

Now using transfer acceleration , the upload speed has increased:

Edit transfer acceleration Info

Transfer acceleration
Use an accelerated endpoint for faster data transfers. Learn more ↗

Transfer acceleration
- ○ Disable
- ● Enable

Accelerated endpoint
⬚ weatherbu.s3-accelerate.amazonaws.com

ⓘ Use the accelerated endpoint for faster data transfers, which will incur an additional fee. See Amazon S3 pricing ↗

Static website hosting using s3:

☰ **Amazon S3** > **Buckets** > **weatherbu**

⊘ Successfully edited static website hosting.

weatherbu Info

Objects | Metadata | **Properties** | Permissions | Metrics | Management

← → C ⌖ weatherbu.s3.us-east-1.amazonaws.com/index.html?X-Amz-A

⊞ | M Gmail ▶ YouTube 📍 Maps 🗎 iLovePDF | Online... ✂ Top 50 Problems
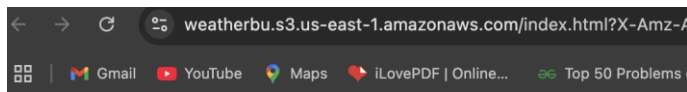
Welcome to My Simple Page

This is a simple HTML file structure for demonstration purposes.

[Click Me]

Creating an IAM role for s3 full access and attaching it to ec2:

⊘ Role s3fullacccess created.

Roles (3) Info
An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations.

🔍 Search

	Role name	▲	Trusted entities
☐	AWSServiceRoleForSupport		AWS Service: support (Se
☐	AWSServiceRoleForTrustedAdvisor		AWS Service: trustedadv
☐	s3fullacccess		AWS Service: ec2

Instances (1/1) Info

Last updated
less than a minute ago

Connect | Instance state ▼

Running ▼

☑	Name ✎ ▽	Instance ID	Instance state ▽	Instance type ▽	Status check
☑	s3-ec2	i-061b8aa4f2c35c8d2	⊘ Running ⊕ ⊖	t2.micro	⏱ Initializing

Connecting the ec2 instance and uploading files on s3 from ec2:

```
[root@ip-172-31-23-57 ec2-user]# aws s3 ls
2025-02-24 11:48:01 weatherbu
[root@ip-172-31-23-57 ec2-user]# touch test.txt
[root@ip-172-31-23-57 ec2-user]# echo "Hello World" >> test.txt
[root@ip-172-31-23-57 ec2-user]# cat test.txt
Hello World
[root@ip-172-31-23-57 ec2-user]# aws s3 mv test.txt s3://weatherbu
move: ./test.txt to s3://weatherbu/test.txt
```

We can see the test.txt file on s3:

Objects (4)

↻ | ⎘ Copy S3 URI | ⎘ Copy URL | ⬇ Download | Open ↗ | Delete | Actions ▼ | Create folder | ↑ Upload

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 ▽
☐	3078336-uhd_3840_2160_25fps.mp4	mp4	February 24, 2025, 17:19:12 (UTC+05:30)	107.8 MB	Standard
☐	index.html	html	February 24, 2025, 17:24:21 (UTC+05:30)	506.0 B	Standard
☐	s3website/	Folder	-	-	-
☐	test.txt	txt	February 24, 2025, 18:40:33 (UTC+05:30)	12.0 B	Standard

Uploading more files from ec2 to s3:

```
[root@ip-172-31-23-57 ec2-user]# touch new.txt
[root@ip-172-31-23-57 ec2-user]# touch smile.txt
[root@ip-172-31-23-57 ec2-user]# aws s3 mv new.txt s3://weatherbu
move: ./new.txt to s3://weatherbu/new.txt
[root@ip-172-31-23-57 ec2-user]# aws s3 mv smile.txt s3://weatherbu
move: ./smile.txt to s3://weatherbu/smile.txt
[root@ip-172-31-23-57 ec2-user]# aws s3 ls s3://weatherbu
                           PRE s3website/
2025-02-24 11:49:12  113031940 3078336-uhd_3840_2160_25fps.mp4
2025-02-24 11:54:21        506 index.html
2025-02-24 13:15:48          0 new.txt
2025-02-24 13:16:05          0 smile.txt
2025-02-24 13:10:33         12 test.txt
[root@ip-172-31-23-57 ec2-user]# aws s3 mv test.txt s3://yourBucketName/test.txt .

Unknown options: .
[root@ip-172-31-23-57 ec2-user]# aws s3 mv test.txt s3://yourBucketName/test.txt

The user-provided path test.txt does not exist.
[root@ip-172-31-23-57 ec2-user]# aws s3 mv s3://weatherbu/test.txt .
move: s3://weatherbu/test.txt to ./test.txt
[root@ip-172-31-23-57 ec2-user]# ls -l test.txt
-rw-r--r--. 1 root root 12 Feb 24 13:10 test.txt
[root@ip-172-31-23-57 ec2-user]# aws s3 ls s3://weatherbu/
                           PRE s3website/
2025-02-24 11:49:12  113031940 3078336-uhd_3840_2160_25fps.mp4
2025-02-24 11:54:21        506 index.html
2025-02-24 13:15:48          0 new.txt
2025-02-24 13:16:05          0 smile.txt
[root@ip-172-31-23-57 ec2-user]# #!/bin/bash
[root@ip-172-31-23-57 ec2-user]# sudo su
[root@ip-172-31-23-57 ec2-user]# yum update -y
Amazon Linux 2023 Kernel Livepatch repository                    102 kB/s |  14 kB     00:00
Last metadata expiration check: 0:00:01 ago on Mon Feb 24 13:24:29 2025.
```

i-061b8aa4f2c35c8d2 (s3-ec2)   ✕

PublicIPs: 184.73.130.1 PrivateIPs: 172.31.23.57

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Creating directory home/ec2-user/tmp/ then changing directory to /tmp/:

```
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-23-57 ec2-user]# mkdir /home/ec2-user/tmp/
[root@ip-172-31-23-57 ec2-user]# aws s3 cp s3://weatherbu/
3078336-uhd_3840_2160_25fps.mp4 /home/ec2-user/

usage: aws [options] <command> <subcommand> [<subcommand> ...] [parameters]
To see help text, you can run:

  aws help
  aws <command> help
  aws <command> <subcommand> help

aws: error: the following arguments are required: paths

bash: 3078336-uhd_3840_2160_25fps.mp4: command not found
[root@ip-172-31-23-57 ec2-user]# aws s3 cp s3://weatherbu/3078336-uhd_3840_2160_25fps.mp4 /home/ec2-user/
download: s3://weatherbu/3078336-uhd_3840_2160_25fps.mp4 to ./3078336-uhd_3840_2160_25fps.mp4
[root@ip-172-31-23-57 ec2-user]# ls -lh /home/ec2-user/
total 108M
-rw-r--r--. 1 root root 108M Feb 24 11:49 3078336-uhd_3840_2160_25fps.mp4
-rw-r--r--. 1 root root   12 Feb 24 13:10 test.txt
drwxr-xr-x. 2 root root    6 Feb 24 13:24 tmp
[root@ip-172-31-23-57 ec2-user]# mv /home/ec2-user/3078336-uhd_3840_2160_25fps.mp4 /tmp/
[root@ip-172-31-23-57 ec2-user]# ls -lh /tmp/
total 108M
-rw-r--r--. 1 root root 108M Feb 24 11:49 3078336-uhd_3840_2160_25fps.mp4
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-chronyd.service-q6N1Nh
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-dbus-broker.service-XUSrRM
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-policy-routes@enX0.service-uCFnHD
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-systemd-logind.service-kla4Oi
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-systemd-resolved.service-VYFdlz
[root@ip-172-31-23-57 ec2-user]# cd temp
```

i-061b8aa4f2c35c8d2 (s3-ec2)   ✕

PublicIPs: 184.73.130.1 PrivateIPs: 172.31.23.57

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```
total 0
[root@ip-172-31-23-57 tmp]# cd /tmp/
[root@ip-172-31-23-57 tmp]# ls -lh
total 108M
-rw-r--r--. 1 root root 108M Feb 24 11:49 3078336-uhd_3840_2160_25fps.mp4
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-chronyd.service-q6N1Nh
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-dbus-broker.service-XUSrRM
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-policy-routes@enX0.service-uCFnHD
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-systemd-logind.service-kla4Oi
drwx------. 3 root root   60 Feb 24 12:12 systemd-private-6599458eade4403cb5ca7bc05bcfe251-systemd-resolved.service-VYFdlz
[root@ip-172-31-23-57 tmp]#
```

Multi part upload – splitting the video into chunks:

```
[root@ip-172-31-23-57 tmp]# split -b 50M 3078336-uhd_3840_2160_25fps.mp4 chunk_
[root@ip-172-31-23-57 tmp]# ls -lh chunk_*
-rw-r--r--. 1 root root  50M Feb 24 15:13 chunk_aa
-rw-r--r--. 1 root root  50M Feb 24 15:13 chunk_ab
-rw-r--r--. 1 root root 7.8M Feb 24 15:13 chunk_ac
[root@ip-172-31-23-57 tmp]# aws s3api create-multipart-upload --bucket weatherbu --key 3078336-uhd_3840_2160_25fps.mp4
{
    "ServerSideEncryption": "AES256",
    "Bucket": "weatherbu",
    "Key": "3078336-uhd_3840_2160_25fps.mp4",
    "UploadId": "ANE6QokR0T7mUCvN8P_Msn6GytbXF2ego7ICZWQf58lUKOKo1.ctlFPyp67djZ53dVXSgNmJMW9_vxBjDyZBS62abc_e8fxlyQhCqcV.X9Q.i6C4qSWc3qhAoLGsuwa1XT8AbV_RXk1cXag6
oaCiYQ--"
[root@ip-172-31-23-57 tmp]# aws s3api upload-part --bucket weatherbu --key 3078336-uhd_3840_2160_25fps.mp4 --part-number 1 --body chunk_aa --upload-id ANE6QokR0T
7mUCvN8P_Msn6GytbXF2ego7ICZWQf58lUKOKo1.ctlFPyp67djZ53dVXSgNmJMW9_vxBjDyZBS62abc_e8fxlyQhCqcV.X9Q.i6C4qSWc3qhAoLGsuwa1XT8AbV_RXk1cXag6oaCiYQ--
{
    "ServerSideEncryption": "AES256",
    "ETag": "\"3b9ed4dcc304cc5f508461c7cb4af92b\""
}
```

```
[root@ip-172-31-23-57 tmp]# aws s3api upload-part --bucket weatherbu --key 3078336-uhd_3840_2160_25fps.mp4 --part-number 2 --body chunk_ab --upload-id ANE6QokR0T
7mUCvN8P_Msn6GytbXF2ego7ICZWQf58lUKOKo1.ctlFPyp67djZ53dVXSgNmJMW9_vxBjDyZBS62abc_e8fxlyQhCqcV.X9Q.i6C4qSWc3qhAoLGsuwa1XT8AbV_RXk1cXag6oaCiYQ--
{
    "ServerSideEncryption": "AES256",
    "ETag": "\"7e456006b68f1128cbec877fe6f68bad\""
}
[root@ip-172-31-23-57 tmp]# nano parts.json
[root@ip-172-31-23-57 tmp]# aws s3api upload-part --bucket weatherbu --key 3078336-uhd_3840_2160_25fps.mp4 --part-number 3 --body chunk_ac --upload-id ANE6QokR0T
7mUCvN8P_Msn6GytbXF2ego7ICZWQf58lUKOKo1.ctlFPyp67djZ53dVXSgNmJMW9_vxBjDyZBS62abc_e8fxlyQhCqcV.X9Q.i6C4qSWc3qhAoLGsuwa1XT8AbV_RXk1cXag6oaCiYQ--
{
    "ServerSideEncryption": "AES256",
    "ETag": "\"c579c31d8d997464b1fa8ea131074a18\""
}
[root@ip-172-31-23-57 tmp]# nano parts.json
```

```
[root@ip-172-31-23-57 tmp]# aws s3api complete-multipart-upload --bucket weatherbu --key 3078336-uhd_3840_2160_25fps.mp4 --upload-id ANE6QokR0T7mUCvN8P_Msn6GytbX
F2ego7ICZWQf58lUKOKo1.ctlFPyp67djZ53dVXSgNmJMW9_vxBjDyZBS62abc_e8fxlyQhCqcV.X9Q.i6C4qSWc3qhAoLGsuwa1XT8AbV_RXk1cXag6oaCiYQ-- --multipart-upload file://parts.json
{
    "ServerSideEncryption": "AES256",
    "VersionId": "TGsJAyp6Vie_6xYBC2_9j8lfv2FHPUIU",
    "Location": "https://weatherbu.s3.us-east-1.amazonaws.com/3078336-uhd_3840_2160_25fps.mp4",
    "Bucket": "weatherbu",
    "Key": "3078336-uhd_3840_2160_25fps.mp4",
    "ETag": "\"41df4297912219d5be2f65d318c5796d-3\""
```

```
[root@ip-172-31-23-57 tmp]# aws s3 ls s3://weatherbu/
                           PRE s3website/
2025-02-24 15:31:14   113031940 3078336-uhd_3840_2160_25fps.mp4
2025-02-24 11:54:21         506 index.html
2025-02-24 13:15:48           0 new.txt
2025-02-24 13:16:05           0 smile.txt
```

Parts.json file containing all etags of respective parts:

```json
{
  "Parts": [
    { "ETag": "\"3b9ed4dcc304cc5f508461c7cb4af92b\"", "PartNumber": 1 },
    { "ETag": "\"7e456006b68f1128cbec877fe6f68bad\"", "PartNumber": 2 },
    { "ETag": "\"c579c31d8d997464b1fa8ea131074a18\"", "PartNumber": 3 }
  ]
}
```