

Experiment No. 6

Aim: To study and implement storage as a service using own cloud.

Theory:

- Explain the concept of cloud storage.
 - ⇒ Cloud storage is made of computer data storage in which digital data is stored on servers in outside location.
- The servers are maintained by third party provider who is responsible for hosting, managing and security data stored on its infrastructure.
- Explain own cloud and its features.
 - ⇒ Own cloud is self hosted, open source file syncing and sharing server like dropbox, google drive, box and more for the big organization, owncloud give you access to your file, calendar, contacts and other data.
 - You can sync all between your own sync device and store file with others.
- Features
 - ⇒
 - 1) Access your data
 - 2) Sync your data
 - 3) Share your data
 - 4) Versioning
 - 5) Encryption

- 6) Drag-and-Drop file Upload, photo or file.
- 7) Viewer for pdf files or presentation.
- 8) Application API.
- 9) Application store.

- Advantages: To begin with simplicity & user interface to show in separate build.

- 1) Cost efficient. Less cost in separate.
- 2) Scalability. National ability in O.
- 3) Accessibility. can access soft →
- 4) Automatic update in auto delivery.
- 5) Redundancy. Data has no concern.
- 6) Collaborator.
- 7) flexibility.
- 8) Managed security. less risk.

- Limitations: reverse engineering by others.

- 1) Dependency on Internet & bandwidth.
- 2) Security concerns about viruses.
- 3) Data transfer speed may not be.
- 4) Service downtime.
- 5) Regulatory compliances.
- 6) Customization constraints.
- 7) Limited control.
- 8) Data location.

~~about map area~~ (1)
~~about map area~~ (2)
~~about map area~~ (3)
~~about map area~~ (4)

• Explain different types of storage like object storage, block level storage.

1) Object storage:



Transport : TCP / IP

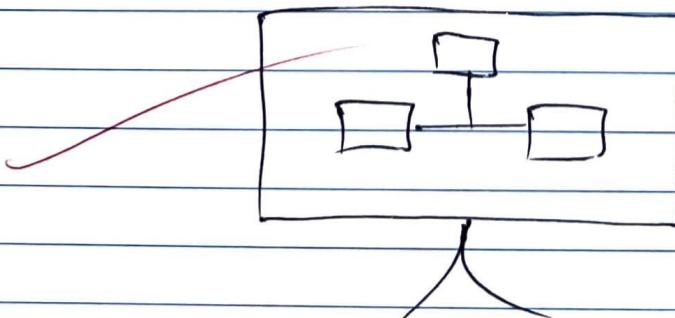
Interface : HTTP / REST

Use case : Easily scaling with no limits accessible across LAN and WAN

has no database layer : no transactions

DEFINITION : It's a way of architecture for storing data which section data into unit objects.

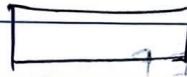
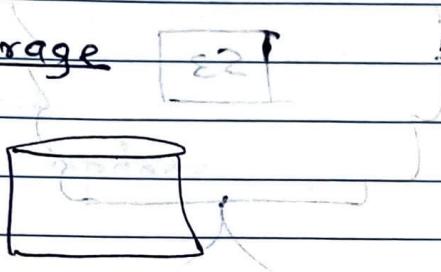
2) File storage:



- Transport : TCP / IP
- Interface : NFS / SMB
- Use case : Good performance, file sharing, etc.
- The data is stored in file, files are organized in folders and folders are organized into hierarchy of direction of sub direction.

3) Block storage

⇒



FC / FTT : Transport

Fibre Channel : Interface

limit on data transfer : 2Gb/s

- Transport : FC, serial connection

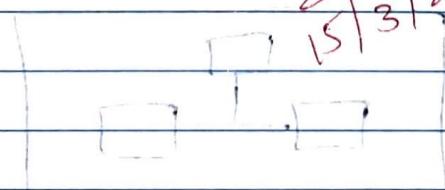
- Interface : Direct attached or SAN

- Use cases : Low latency, best for structure data, time and stable with no voids.

(A)

FC : supports SFP (S)

SFP



Output:

1. Click on Create bucket

The screenshot shows the AWS Cloud Home page with a search bar at the top containing 'buckets'. The search results are displayed under the 'Features' section, with 'Buckets' being the first result. Other features listed include Object storage, Multi-Region Access Points, and Account Block Public Access settings. To the right of the search results, there is a sidebar for 'myApplications' with a 'Create application' button and a 'Find applications' search bar.

The screenshot shows the 'Amazon S3 > Buckets' page. It displays an 'Account snapshot' section and a table of 'General purpose buckets'. There are two buckets listed: 'elasticbeanstalk-eu-north-1-' and 'elasticbeanstalk-us-east-1-'. Each bucket entry includes a 'Name', 'AWS Region', 'IAM Access Analyzer', and 'Creation date'. A 'Create bucket' button is located at the top right of the bucket list table. The left sidebar of the S3 console is visible, showing options like 'Buckets', 'Access Grants', and 'Storage Lens'.

Name	AWS Region	IAM Access Analyzer	Creation date
elasticbeanstalk-eu-north-1- 533267428271	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	March 13, 2024, 16:47:02 (UTC+05:30)
elasticbeanstalk-us-east-1- 533267428271	US East (N. Virginia) us-east-1	View analyzer for us-east-1	February 26, 2024, 15:41:08 (UTC+05:30)

2. Give Bucket name & select region for storage

The screenshot shows the 'Create bucket' page in the AWS Management Console. The 'General configuration' section is visible, including the 'AWS Region' (set to 'Europe (Stockholm) eu-north-1'), 'Bucket type' (set to 'General purpose'), and 'Bucket name' (set to 'myawsbucketcc16'). The 'Object Ownership' section at the bottom is collapsed.

3. Keep object ownership setting as ACLs Disabled as by-default

The screenshot shows the 'Create bucket' page in the AWS Management Console. The 'Object Ownership' section is expanded, showing the 'ACLs disabled (recommended)' option selected. The 'Object Ownership' dropdown at the bottom is set to 'Bucket owner enforced'.

4. Disable block all public access checkbox

The screenshot shows the 'Block Public Access settings for this bucket' section. At the top, there is a note about public access being granted through ACLs, bucket policies, access point policies, or all. Below this, the 'Block all public access' checkbox is unchecked. A detailed description follows, explaining that turning it on is equivalent to enabling four other settings. The four settings are listed as sub-options under the main checkbox:

- Block public access to buckets and objects granted through new access control lists (ACLs)**
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
- Block public access to buckets and objects granted through any access control lists (ACLs)**
S3 will ignore all ACLs that grant public access to buckets and objects.
- Block public access to buckets and objects granted through new public bucket or access point policies**
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
- Block public and cross-account access to buckets and objects through any public bucket or access point policies**
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

A warning box is present, stating: "Turning off block all public access might result in this bucket and the objects within becoming public. AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting." Below the warning, there is a checkbox for acknowledging the risk: "I acknowledge that the current settings might result in this bucket and the objects within becoming public." The checkbox is currently unchecked.

5. Selecting the checkbox for Turning off blocks all public access might result in this bucket and the objects within becoming public

The screenshot shows the same 'Block Public Access settings for this bucket' section, but now the 'Block all public access' checkbox is checked. The rest of the interface remains identical to the previous screenshot, including the detailed descriptions of the four sub-settings and the warning message about public access becoming public if the main setting is disabled. The acknowledgment checkbox is also checked in this version.

6. Keep bucket versioning as disabled and add tags if required

The screenshot shows the 'Bucket Versioning' configuration page. At the top, there is a brief description of what bucket versioning is and a link to learn more. Below this, there are two radio button options: 'Disable' (selected) and 'Enable'. Underneath, there is a section for 'Tags - optional (0)' with a note about using tags to track storage costs and organize buckets, followed by a link to learn more. A button labeled 'Add tag' is present. At the bottom, there is a section for 'Default encryption' with a note that server-side encryption is automatically applied to new objects stored in the bucket, followed by a link to learn more. A 'Encryption type' section with a 'Info' link is also shown. The bottom navigation bar includes CloudShell, Feedback, and links for 2024, Privacy, Terms, and Cookie preferences.

7. Keep default encryption disabled and click on Create Bucket button

The screenshot shows the 'Create Bucket' configuration page. It features a 'Default encryption' section with a note that server-side encryption is automatically applied to new objects stored in the bucket, followed by a link to learn more. An 'Encryption type' section includes three radio button options: 'Server-side encryption with Amazon S3 managed keys (SSE-S3)' (selected), 'Server-side encryption with AWS Key Management Service keys (SSE-KMS)', and 'Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)'. A note below the DSSE-KMS option says to secure objects with two separate layers of encryption and provides a link to learn more. Below this is a 'Bucket Key' section with a note that using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. It states that S3 Bucket Keys aren't supported for DSSE-KMS and provides a link to learn more. A 'Bucket Key' section with 'Disable' (selected) and 'Enable' radio buttons follows. A 'Advanced settings' section is partially visible. At the bottom, a note says that after creating the bucket, files and folders can be uploaded and additional bucket settings can be configured. A 'Cancel' button and a prominent orange 'Create bucket' button are at the very bottom.

You can now see the successful creation of your bucket

The screenshot shows the AWS S3 console with a green success message at the top: "Successfully created bucket 'myawsbucketccl6'. To upload files and folders, or to configure additional bucket settings, choose View details." Below this, the "Account snapshot" section is visible, followed by the "General purpose buckets" and "Directory buckets" tabs. The "General purpose buckets" tab is selected, showing a table with three rows. The table columns are Name, AWS Region, IAM Access Analyzer, and Creation date. The rows are:

Name	AWS Region	IAM Access Analyzer	Creation date
elasticbeanstalk-eu-north-1-533267428271	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	March 13, 2024, 16:47:02 (UTC+05:30)
elasticbeanstalk-us-east-1-533267428271	US East (N. Virginia) us-east-1	View analyzer for us-east-1	February 26, 2024, 15:41:08 (UTC+05:30)
myawsbucketccl6	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	April 8, 2024, 11:08:45 (UTC+05:30)

At the bottom of the page, there are links for CloudShell, Feedback, and copyright information: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

8. Now click on the bucket that you have created

The screenshot shows the AWS S3 console with the left sidebar expanded. The "General purpose buckets" tab is selected, displaying a table of buckets. The table columns are Name, AWS Region, IAM Access Analyzer, and Creation date. The rows are:

Name	AWS Region	IAM Access Analyzer	Creation date
elasticbeanstalk-eu-north-1-533267428271	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	March 13, 2024, 16:47:02 (UTC+05:30)
elasticbeanstalk-us-east-1-533267428271	US East (N. Virginia) us-east-1	View analyzer for us-east-1	February 26, 2024, 15:41:08 (UTC+05:30)
myawsbucketccl6	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	April 8, 2024, 11:08:45 (UTC+05:30)

The row for "myawsbucketccl6" is highlighted with a blue selection bar. The left sidebar includes sections for Buckets, Access Grants, Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, IAM Access Analyzer for S3, Block Public Access settings for this account, Storage Lens, Feature spotlight, and AWS Marketplace for S3. At the bottom, there are links for CloudShell, Feedback, and copyright information: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

9. You can either create a folder here or upload an existing file in the bucket

The screenshot shows the AWS S3 console interface. On the left, there's a sidebar with options like 'Buckets', 'Storage Lens', and 'Feature spotlight'. The main area shows a bucket named 'myawsbucketcc16'. At the top, there are tabs for 'Objects', 'Properties', 'Permissions', 'Metrics', 'Management', and 'Access Points'. Below the tabs, there's a toolbar with actions like 'Upload' (which is highlighted in orange), 'Create folder', 'Delete', 'Actions', 'Download', 'Copy URL', and 'Copy S3 URI'. A search bar says 'Find objects by prefix'. A table below shows 'No objects' found. At the bottom right of the main area, there's a large 'Upload' button.

10. Now click on the upload button and click on the add files button browse your local machine and select which file you need to upload on S3 next click on the upload button at the bottom right end

This screenshot shows the 'Upload' step in the AWS S3 console. It displays a list of files and folders to be uploaded. A large text input field at the top says 'Drag and drop files and folders you want to upload here, or choose Add files or Add folder.' Below this, a table lists 'Files and folders (12 Total, 71.7 MB)'. The table has columns for 'Name', 'Folder', and 'Type'. Each row contains a checkbox, the file name, the folder path, and the file type. The file types listed are all 'application/'. At the bottom of the table, there are buttons for 'Remove', 'Add files', and 'Add folder'. A search bar 'Find by name' is also present. The bottom right corner of the page includes standard AWS footer links: CloudShell, Feedback, Privacy, Terms, and Cookie preferences.

The screenshot shows the AWS S3 console with a progress bar at the top indicating an upload is in progress (85% complete). Below the progress bar is a table titled "Files and folders (12 Total, 71.7 MB)" containing 12 entries. Each entry includes a file name, folder path, type, size, status (e.g., In progress, Pending), and error column.

Name	Folder	Type	Size	Status	Error
CCL_ASSIGN...	CCL/	application/...	6.0 MB	In progress (85)	-
CCL_ASSIGN...	CCL/	application/...	4.4 MB	Pending	-
CCL_EXP1.pdf	CCL/	application/...	13.5 MB	Pending	-
CCL_EXP10....	CCL/	application/...	12.3 MB	Pending	-
CCL_EXP2.pdf	CCL/	application/...	9.8 MB	Pending	-
CCL_EXP3.pdf	CCL/	application/...	4.8 MB	Pending	-
CCL_EXP4.pdf	CCL/	application/...	3.6 MB	Pending	-
CCL_EXP5.pdf	CCL/	application/...	2.7 MB	Pending	-
CCL_EXP6.pdf	CCL/	application/...	2.3 MB	Pending	-
CCL_EXP7.pdf	CCL/	application/...	2.6 MB	Pending	-

Now you can check the upload status screen

The screenshot shows the AWS S3 console with a green success message banner at the top stating "Upload succeeded" and "View details below." Below the banner is a table titled "Files and folders (12 Total, 71.7 MB)" containing 12 entries. All files listed have a status of "Succeeded".

Name	Folder	Type	Size	Status	Error
CCL_ASSIGN...	CCL/	application/...	6.0 MB	Succeeded	-
CCL_ASSIGN...	CCL/	application/...	4.4 MB	Succeeded	-
CCL_EXP1.pdf	CCL/	application/...	13.5 MB	Succeeded	-
CCL_EXP10....	CCL/	application/...	12.3 MB	Succeeded	-
CCL_EXP2.pdf	CCL/	application/...	9.8 MB	Succeeded	-
CCL_EXP3.pdf	CCL/	application/...	4.8 MB	Succeeded	-
CCL_EXP4.pdf	CCL/	application/...	3.6 MB	Succeeded	-
CCL_EXP5.pdf	CCL/	application/...	2.7 MB	Succeeded	-
CCL_EXP6.pdf	CCL/	application/...	2.3 MB	Succeeded	-
CCL_EXP7.pdf	CCL/	application/...	2.6 MB	Succeeded	-

Now click on the close button.
The screen will appear as below.

The screenshot shows the AWS S3 console interface. At the top, there's a navigation bar with the AWS logo, a search bar, and account information for 'Stockholm' and 'omsheste0550'. Below the navigation bar, the URL shows 'Amazon S3 > Buckets > myawsbucketccl6'. The main area is titled 'myawsbucketccl6' with a 'Info' link. A horizontal menu bar below the title includes 'Objects' (which is underlined), 'Properties', 'Permissions', 'Metrics', 'Management', and 'Access Points'. Under the 'Objects' section, there's a sub-menu with 'Objects (1) Info'. It shows one object: 'CCL/' (Type: Folder). There are buttons for 'Actions' (with options like Copy S3 URI, Copy URL, Download, Open, Delete, Create folder, and Upload), a search bar ('Find objects by prefix'), and sorting options for Name, Type, Last modified, Size, and Storage class. At the bottom of the page, there are links for CloudShell, Feedback, and a copyright notice: '© 2024, Amazon Web Services, Inc. or its affiliates.' followed by 'Privacy', 'Terms', and 'Cookie preferences'.

11. Select properties and scroll down to Static website hosting option which is disabled now click on Edit option on right side

The screenshot shows the 'Properties' page for the 'myawsbucketccl6' bucket. At the top, there's a message: 'Amazon S3 Transfer acceleration is not available for your bucket because it is located in an unsupported Region. [Learn more](#)'. Below this, there are three sections: 'Object Lock' (status: Disabled), 'Requester pays' (status: Disabled), and 'Static website hosting' (status: Disabled). Each section has an 'Edit' button to its right. The 'Static website hosting' section also contains a note: 'Use this bucket to host a website or redirect requests. [Learn more](#)'. At the bottom of the page, there are links for CloudShell, Feedback, and a copyright notice: '© 2024, Amazon Web Services, Inc. or its affiliates.' followed by 'Privacy', 'Terms', and 'Cookie preferences'.

12. Now come to the Amazon S3 tab select your bucket and then click on the delete button

The screenshot shows the AWS S3 console. In the top navigation bar, 'Amazon S3' is selected. Below it, there's an 'Account snapshot' section with a link to 'View Storage Lens dashboard'. Under 'General purpose buckets', there's a table listing three buckets:

Name	AWS Region	IAM Access Analyzer	Creation date
elasticbeanstalk-eu-north-1-553267428271	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	March 13, 2024, 16:47:02 (UTC+05:30)
elasticbeanstalk-us-east-1-553267428271	US East (N. Virginia) us-east-1	View analyzer for us-east-1	February 26, 2024, 15:41:08 (UTC+05:30)
myawsbucketcc16	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	April 8, 2024, 11:08:45 (UTC+05:30)

Actions for the selected bucket ('myawsbucketcc16') include: Copy ARN, Empty, Delete, and Create bucket.

The screenshot shows the 'Empty bucket' confirmation dialog for the 'myawsbucketcc16' bucket. It includes a warning message about deleting all objects, a note about lifecycle rules, and a confirmation step where the user types 'permanently delete' into a text input field. Buttons for 'Cancel' and 'Empty' are at the bottom.

The screenshot shows the 'Empty bucket: status' confirmation dialog. It displays a summary table with the following data:

Source	Successfully deleted	Failed to delete
s3://myawsbucketcc16	12 objects, 71.7 MB	0 objects

Below this, a 'Failed to delete (0)' section shows a table with no data, indicating 'No failed object deletions'.

Delete bucket Info

Delete bucket "myawsbucketcl6"?

To confirm deletion, enter the name of the bucket in the text input field.

myawsbucketcl6

Cancel **Delete bucket**

https://eu-north-1.console.aws.amazon.com/console/home?region=eu-north-1

Successfully deleted bucket "myawsbucketcl6"

Account snapshot

Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

[View Storage Lens dashboard](#)

General purpose buckets Info **Directory buckets**

General purpose buckets (2) Info

Buckets are containers for data stored in S3.

Name	AWS Region	IAM Access Analyzer	Creation date
elasticbeanstalk-eu-north-1-533267428271	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	March 13, 2024, 16:47:02 (UTC+05:30)
elasticbeanstalk-us-east-1-533267428271	US East (N. Virginia) us-east-1	View analyzer for us-east-1	February 26, 2024, 15:41:08 (UTC+05:30)

[Create bucket](#)

CloudShell Feedback