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# Experiment - 6.

Aim = To Study and implement Storage as a services Using own cloud.

Theory:

* cloud Storage:

cloud storage refers to the online storge of data on remote servers accessed over the internet It allow users to store and access their files document image video and other digital assets from anywhere with an internet connected.

Some features cloud Storage provides are as follow-

→ Remote Storage
→ Scalability
→ Accessibility
→ Data redundancy and durability
→ Security
→ Cost effectiveness
→ Data backup and recovery
→ Collabration.
→ Complication. and regulations.

* own cloud and its features:

own cloud is an open source self hosted file synchornization and sharing platform that allows users to access and share their file calendars contertes and other digital Assets from anywhere with an internet connection.

→ file synchronization & sharing → Extensibility
→ self hosting → Integration with existing
→ Data encryption Infrastructure
→ collaboration tools → mobile and desktop apps.

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* Advantages and limitations of storage as a service
→ Cost effective
→ Scalability
→ Accessibility
→ Reliability & redundancy
→ Maintenance & Management
→ Security

→ Data governance and compliance.
→ Data transfer costs
→ Dependency on services provider
→ Performance and latency
→ Data portability and privacy concerns

* Amazon Simple storage service (Amazon S3) is a prominent storage as a service (STaaS) offering provided by Amazon web service (AWS)
Services provided by S3
→ object storage
→ Data durability and availability
→ Storage classes.
  ↳ S3 Standard-IA
  ↳ S3 Standard IA
  ↳ S3 one zone IA
  ↳ S3 intelligent tiering
  ↳ S3 Glacier and S3 glacier deep.
→ Security features.
→ Data management
→ Monitoring and Analytics
→ Integration with AWS Ecosystem

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# Experiment -7

AIM= To Study and implement identity and access Management (IAM) practices.

Access Management =
Identity and access Management (IAM) practices are essential for ensuring the security and proper Management of resources within cloud enviroments

IAM (Identity and access Management)
It's a framework for Managing access to resource In a computing enviroment In the context of cloud Computing IAM allows organizations to control who has access to which resources and what actions they can perform on those resources.

Components of AIM.
i) Users
ii) Groups
iii) Roles
iv) permissions
v) policies
vi) Services acounts
vii) Resource hierarchy
viii) Auditing and logging

| Root users | other IAM Users |
| --- | --- |
| i) Has unrestricted access to all resources and services within the cloud accounts | Have limited privileges based assigned roles and permissions. |

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| | |
|---|---|
| Created during the initial setup of the cloud account | Created for specific individuals or applications or applications with defined roles and resposibilities |
| Has full control over every aspect of the account including billing access management and resource provisioning. | Can only perform actions that are explicitely allowed roles and policies, and assigned policies. |

* Role and policies -

| | Roles | policies |
|---|---|---|
| i) | predefined sets of permissions that determine what actions users or service accounts can perform on resources | Rules that specify who has access to which resource and what actions they can perform on those resources. |
| ii) | Can be assigned to users groups or services accounts to grant them specific sets of permissions | Can be attached to resources users groups or roles to enfore access control. |
| iii) | Typically apply to a specific set of resources or services within the could enviroment | Can apply different levels of the resources hierarchy to control access across mutiple projects or enviroments. |