Disaster recovery with IBM cloud virtual servers

Phase 2

Innovation

Major challenges in disaster recovery with cloud virtual servers

Disaster recovery with IBM Cloud servers, like any cloud-based infrastructure, comes with its own set of challenges.

- ➤ Data Backup and Synchronization
- ➤ Network Connectivity
- ➤ Resource Allocation
- ➤ Testing and Maintenance
- ➤ Security
- ➤ Compliance
- ➤ Human Error
- ➤ Cost Management

There are several innovative solutions and technologies that can enhance disaster recovery and business continuity efforts

Problem

The major problem in disaster recovery is storage resources and cost management
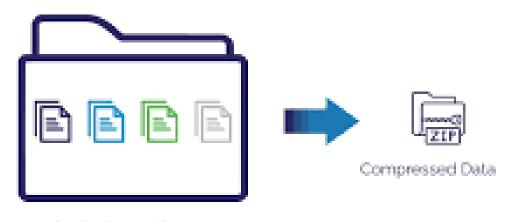

Running a secondary data center or cloud environment solely for disaster recovery purposes can be expensive

Solution

Data compression technique used in storage and backup systems to eliminate redundant copies of data. It involves identifying and eliminating duplicate data, storing only one copy, and creating references to that copy for any other instances where the same data is encountered. This process helps save storage space, reduce storage costs, and improve data efficiency.

Compression reduces the size of stored data

Deduplicated Data → Compressed Data

Steps for data compression in IBM cloud servers

1.Data Chunking

The data is divided into smaller chunks or blocks, often using fixed or variable-length chunking algorithms.

2.Hashing

A unique hash value is generated for each data chunk. This hash serves as a fingerprint for that specific piece of data.

3.Comparison

The system compares the generated hash values to identify duplicate data chunks. If two chunks have the same hash value, they are considered duplicates.

4.Elimination

Duplicate data chunks are eliminated, and only one copy of each unique chunk is stored.

5.References

For subsequent occurrences of duplicate data chunks, references or pointers are used to point back to the already stored copy. This way, the storage system doesn't need to store redundant data.

It's also crucial to regularly update and adapt your disaster recovery strategy to stay ahead of emerging threats and technologies.

Data deduplication can significantly reduce the amount of storage space required for data backups, archives, and other data-intensive applications. It's commonly used in backup solutions, data replication, and data reduction technologies. Deduplication can be done at the file level, block level, or even byte level, depending on the specific implementation and requirements of the storage system.