IBM Disaster Recovery Project Plan

# Project Title: IBM Disaster Recovery

Problem Statement

Safeguard business operations with IBM Cloud Virtual Servers. Create a disaster recovery plan for an onpremises virtual machine, ensuring continuity in unforeseen events. Test and validate the recovery process to guarantee minimal downtime. Become the guardian of business continuity, securing the future of your organization!

### Phase 1: Problem Definition and Design Thinking

## Problem Definition

Objective: Develop a disaster recovery plan using IBM Cloud Virtual Servers to ensure business continuity for an onpremises virtual machine during unforeseen events. This includes defining recovery objectives, setting up backups, configuring replication, testing recovery procedures, and minimizing downtime.

### 1. Disaster Recovery Strategy

Define the disaster recovery strategy:

->Identify key objectives, such as Recovery Time Objective (RTO) and Recovery Point Objective (RPO).

->Clearly articulate the scope of the disaster recovery plan.

->If set your RTO to 2 hours, then you should be able to resume normal business operations within this timeframe in the event of a disaster. If, during real-life disaster recovery, you exceed the specified time frame, you should either reassess the RTO calculations or revise your disaster recovery plan and procedures.

### 2. Backup Configuration

Configure regular backups of the onpremises virtual machine:

->Choose a suitable backup solution compatible with IBM Cloud Virtual Servers.

->Ensure critical data and configurations are included in backups.

->IBM Backup comprehensively protects your data assets in IBM through a simple, secure, and cost-effective solution that requires zero-infrastructure. It's IBM built-in data protection solution for a wide range of workloads. It helps protect your mission critical workloads running in the cloud, and ensures your backups are always available and managed at scale across your entire backup estate.

### 3. Replication Setup

Implement replication of data and virtual machine images to IBM Cloud Virtual Servers:

->Select the appropriate replication method (e.g., continuous, periodic).

->Establish a secure connection between onpremises infrastructure and IBM Cloud.We implement this method named Block-Level Replication.  
  
Block level replication :

* Storage Blocks: In block-level replication, data is divided into fixed-size storage blocks or sectors, typically ranging from a few kilobytes to a few megabytes each. These blocks are the smallest units of data that can be read from or written to a storage device.
* Granularity: Block-level replication offers fine-grained control over data replication. Instead of replicating entire files or volumes, it replicates only the individual blocks that have changed. This granularity minimizes the amount of data transferred during replication, reducing bandwidth and storage requirements.
* Change Tracking: Block-level replication systems employ mechanisms to track changes at the block level. This can be achieved through techniques such as journaling, tracking block modification timestamps, or using bitmap-based tracking. These mechanisms identify which blocks have been modified, added, or deleted since the last replication.

### 4. Recovery Testing

Design and conduct recovery tests:

->Develop a test plan outlining scenarios and objectives.

->Execute test scenarios to validate the recovery process.

->Document results, identify issues, and make necessary adjustments.

### 5. Business Continuity

Ensure alignment with the organization's business continuity strategy:

->Coordinate with relevant stakeholders to integrate disaster recovery plan into the overall strategy.

->Ensure that the plan complies with any regulatory or compliance requirements.

->Business continuity in the cloud - Benefits and planning tips

Learn the major areas of concern and the seven key steps to include when creating a cloud-based business continuity plan to protect data and workloads.

# Design Thinking

### Disaster Recovery Strategy

Explanation: Your disaster recovery strategy is the foundation of the plan. It defines the objectives and scope of the recovery efforts. Determine your Recovery Time Objective (RTO) and Recovery Point Objective (RPO) to set clear expectations for recovery time and data loss.

### Backup Configuration

Explanation: Regular backups are crucial for data recovery. Choose a backup solution that suits your needs and ensure that it captures all critical data and configurations from your onpremises virtual machine.

### Replication Setup

Explanation: Replication ensures that your data and virtual machine images are uptodate in the IBM Cloud. Select a replication method that aligns with your recovery objectives and establish a secure connection between your onpremises infrastructure and the cloud.

### Recovery Testing

Explanation: Testing is essential to validate the effectiveness of your disaster recovery plan. Design comprehensive test scenarios, execute them, and document the results. Address any issues to improve the plan's reliability.

### Business Continuity

Explanation: Ensure that your disaster recovery plan aligns with your organization's broader business continuity strategy. Collaborate with relevant stakeholders to integrate the plan seamlessly and meet any compliance or regulatory requirements.Discover the primary areas of focus and the seven critical steps for developing a business continuity plan in the cloud to safeguard data and workloads.