# Phase- 3 – Disaster recovery with IBM cloud virtual servers

**RTO** is the maximum amount of time that an application or system can be unavailable after a disaster. **RPO** is the maximum amount of data that can be lost after a disaster.

The development phase of a disaster recovery plan should begin with an assessment of the organization's RTO and RPO requirements. This assessment should take into account the criticality of the applications and systems being protected, as well as the organization's budget and tolerance for risk.

Once the RTO and RPO requirements have been identified, the organization can start to design the disaster recovery solution.

## This design should include the following components:

•**Replication strategy:** How will data be replicated from the production environment to the disaster recovery environment?

•**Recovery strategy:** How will the applications and systems be recovered in the disaster recovery environment?

•**Testing strategy:** How will the disaster recovery plan be tested to ensure that it meets the RTO and RPO requirements?

## IBM Cloud Virtual Servers provides a number of features that can be used to create a disaster recovery plan. These features include:

•**Replication:** IBM Cloud Virtual Servers supports both asynchronous and synchronous replication. Asynchronous replication is less expensive, but it does not guarantee zero data loss. Synchronous replication is more expensive, but it does guarantee zero data loss.

•**Recovery:** IBM Cloud Virtual Servers supports a variety of recovery options, including image-based recovery, volume-based recovery, and live migration. The best recovery option for a given application or system will depend on the RTO and RPO requirements.

•**Testing:** IBM Cloud Virtual Servers provides a number of tools that can be used to test the disaster recovery plan. These tools include test failovers and test restores.


**Here are some specific examples of how to implement RTO, RPO, and recovery strategy in the development phase of a disaster recovery plan with IBM Cloud Virtual Servers:**

•**RTO:** To achieve a low RTO, organizations should use synchronous replication and live migration. Synchronous replication will ensure that data is always up-to-date in the disaster recovery environment, and live migration will allow applications and systems to be recovered without downtime.

•**RPO:** To achieve a low RPO, organizations should use synchronous replication and frequent backups. Synchronous replication will ensure that data is always up-to-date in the disaster recovery environment, and frequent backups will minimize the amount of data that can be lost in the event of a disaster.

•**Recovery strategy:** The recovery strategy should be tailored to the specific RTO and RPO requirements of each application or system. For example, applications and systems with a low RTO and RPO requirement may need to be recovered using live migration. Applications and systems with a higher RTO and RPO requirement may be able to be recovered using image-based or volume-based recovery.

By carefully planning and designing the disaster recovery solution, organizations can achieve their RTO and RPO requirements and minimize the impact of a disaster on their business operations.