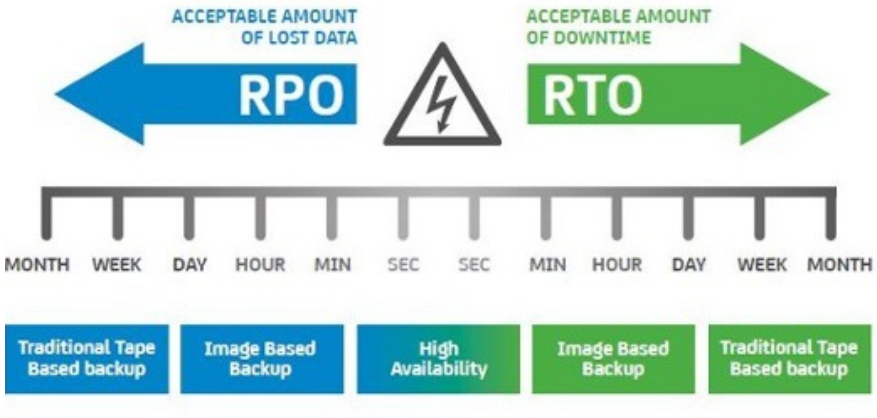
What are RTO and RPO? How are they different?

RTO and RPO both play an important role in minimizing losses to businesses when incidents occur.



Two key concepts in data backup and recovery strategy are RTO (Recovery Time Objective) and RPO (Recovery Point Objective). RTO and RPO have a direct impact on the performance and even the revenue of the business. So what are RTO and RPO? Let's find out with ***TipsMake*** in the article below.

What is RTO?

RTO (Recovery Time Objectives) - Recovery time is the amount of time it takes for a system to recover from an unexpected disruption. When a failure occurs, the system will need to replace the damaged part, reprogram or test it to return to normal operation. The time it takes to fix this problem is the recovery time objective - RTO.

What is RTO?

What is RPO?

RPO (Recovery Point Object) - Recovery Point Object is the maximum amount of time that data can be recovered after an incident occurs. RPO is usually measured in time, such as 1 hour, 1 day, or 10 days before the incident occurs. This means that RPO determines the maximum amount of data that a business can accept losing in the event of an incident.

The role of RTO and RPO for businesses

When incidents such as natural disasters, system failures or cyber attacks occur, businesses face the risk of data loss and operational disruption, causing financial damage, reputational damage and customer relations. RTO and RPO are important in helping businesses minimize losses, through clear regulations on recovery time and acceptable levels of data loss.

1. **Loss Mitigation:** Both RTO and RPO play an important role in minimizing business losses in the event of an incident. By clearly defining recovery time and acceptable levels of data loss, businesses can plan more effectively for emergency situations.
2. **Increase customer confidence:** Having a clear recovery plan helps businesses maintain credibility with customers. Customers will feel more secure knowing that the business is well prepared for emergencies.
3. **Optimize backup strategy:** Businesses need to determine their RTO and RPO goals to choose the right backup technology and process. For example, for critical applications that require a low RTO, businesses can deploy an on-premises backup solution, while less critical systems can use a lower-cost cloud backup solution.

What is the difference between RTO and RPO?

About the purpose

The RTO goal focuses on the recovery time after the system, without seriously affecting the business. Meanwhile, RPO will focus on the highest level of data loss that can be accepted to determine the necessary data backup time to minimize the risk of losing important data.

What is the difference between RTO and RPO?

About the cost

If the business wants fast recovery time and minimal data loss, the cost of RTO and RPO will increase. This is because:

To shorten RTO, businesses need to invest more in recovery systems, costs at this time will include fees for recovery technologies, fees for technical teams, and investment fees in high-end infrastructure.

To keep RPO short, the number of times the business backs up will increase, leading to increased data storage and management costs.

About use cases

Businesses should prioritize RTO when recovery times are too long, causing serious impacts on revenue, performance, or customers. Financial, healthcare, and transportation companies will need to prioritize short RTOs.

Businesses that should prioritize RPO are banking organizations, online payment services,. where data plays an important role and needs to minimize data damage.

How to calculate RTO and RPO

How to calculate RTO

To calculate RTO, you need to determine the following factors:

Detection Time: The time from when the incident occurs until it is detected.

Notification and Analysis Time: Time to notify the response team and analyze the cause and impact of the incident.

Recovery Initiation Time: Time to start deploying the predefined recovery solutions.

System Recovery Time: Time to fully restore the system, including data integrity checks.

The formula for calculating RTO will be:

RTO = Detection Time + Notification and Analysis Time + Recovery Initiation

How to calculate RPO

To calculate RPO, you need to determine:

1. Backup Frequency: The time interval between two consecutive backups.
2. Failure Point: The point in time the failure occurred, since the last backup.
3. The formula for calculating RPO is as follows: RPO = Backup Frequency + Failure Point

Conclude

RTO and RPO are two important metrics in a business's data backup and recovery strategy. RTO (recovery time to market) determines the time it takes to restore a system, while RPO (results from data loss) indicates the extent to which data can be lost. Understanding and properly applying these two metrics helps businesses reduce risks, save costs, and ensure continuity in operations.