

Government.- IRAS Tax portal (Lim Wei Yang, Joseph Ong, Huang Zhangqin)

1. Define your business at a high-level

Collect tax money from personal, company and property

The Inland Revenue Authority of Singapore (IRAS) is a statutory board under the Ministry of Finance that is responsible for the administration of taxes in Singapore. The IRAS Tax portal is a secure and personalized portal that allows taxpayers to view and manage their tax transactions with IRAS, at their convenience

2. Define your company's assets

- Data assets (Singaporean personal information, Income level)
- Physical servers
- Complete computer room environments
- Critical IT hardware including network infrastructure, servers, desktop or laptop computers, wireless devices, and peripherals
- Service provider connectivity
- Enterprise software applications
- Data storage devices or applications

3. Define your possible threats

- Bugs and virus
- Server failure
- Power outage
- Human error
- Ransomware / malware
- Cyber security attack (Social engineering attacks, Advanced persistent threats (APT), Distributed denial of service (DDoS))
- Server room fire
- Phishing

4. Define Your RTO and RPO

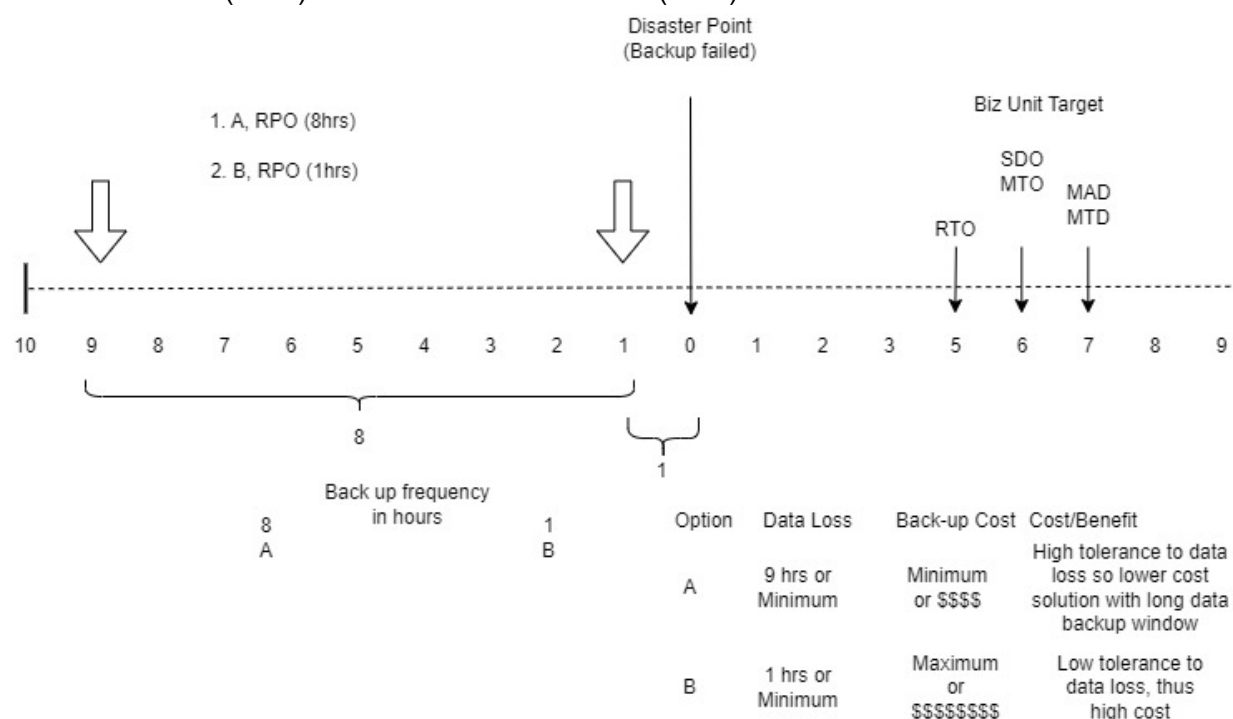
RTO = To have the server back up in 5 hours

- Post Mortem of what went wrong and how it caused the system to go down.

RPO = last back-up within 8 hours of disaster point.

- Testing of back-up and uploading process to know how long it takes to recover the system
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Data Restoration (RPO) and Max Time to Recover (RTO)



1. Recovery Time Objectives (RTO) refers to the point in time in the future at which the Business Data will have to recover
2. Recovery Point Objectives (RPO) refers to the point in time in the past at which the Business Data will have to be backed up
3. Maximum Tolerable Outagetime (MTO) or Service Delivery Objective (SDO) refers to a point in time by which time if the Business has to ensure that all the Technology Services are resumed or recovered following the completion data recovery to RTO
4. Maximum Tolerable Downtime (MTD) or Maximum Allowed Downtime (MAD) refers to a point in time by which time if the Business is back NOT to BAU state it may never be able to come back to its BAU state or will cease to exist or operate
5. Mean Time to Recover (MTTR) refers to the average time taken to repair or recover a service or product or both
6. Mean Time to Fail (MTTF) refers to the average time period between one restoration point to the next expected failure
7. Mean Time Between Failure (MTBF) refers to the average time period between one failure point to the next expected failure

Common replication methods are:

Synchronous Replication – The safest, yet most resource-demanding replication method. In a synchronous replication scenario, the receiving system acknowledges every single change received from the sending system. Adopting this method requires maintenance of a “hot” backup site, and it is most effective in combination with “hot” failover solutions and Global Server Load Balancing (GSLB) solutions.

Semi-Synchronous Replication – The receiving system sends acknowledgement only after a series of changes have been received. This method of synchronization is parallel to the “warm” failover approach, and may be the right choice for services that – in the event of a disaster – can allow for some loss of data and a reasonable amount of downtime.

Asynchronous Replication – This method's data replication is faster but less secure, as the sending system simply continues to send data, without receiving any response. Parallel to the "cold" failover approach, this method is best suited for static resources or scenarios in which data loss is acceptable.

When creating a DRP, organizations must ensure that their failover policy is fully in-line with their synchronization method of choice.