# QNE Cloud Database Prevention Plan

QNE Cloud Database Hosting leverages the immense power of Microsoft Azure, a globally recognized and extensively adopted cloud computing solution trusted by enterprises worldwide in providing a robust and reliable solution for data management.

With Microsoft Azure as its foundation, QNE Cloud Database benefits from its wealth of features and capabilities for crucial aspects such as database backup, disaster recovery, and prevention plan.

## Backup Strategy

### What is Point in Time Restore?

The Azure SQL Database service protects all databases with an automated backup system. These backups are retained for 7 days. Point-in-time restore is a self-service capability, allowing customers to restore a database from these backups to any point within the retention period. Point-in-time restore always creates a new database. The database backups are taken automatically with no need to opt-in and no additional charges. Together, the automated backup system and point-in-time restore provide a zero-cost, zero-admin way to protect databases from accidental corruption or deletion, whatever the cause.

PITR enables you to choose a specific moment in time, such as a particular date and time, and restore the database to its state at that moment. This can be useful in scenarios where you need to recover specific data or undo unintended changes made to the database.

### QNE Azure Cloud Backup (PITR)

PITR backup are scheduled automatically in QNE Azure Cloud hence all databases are protected by automatic backups. PITR backups are taken every 3 to 5 minutes depend on the database's activity. The first PITR backup is scheduled immediately after a database is created. After the first PITR backup all further backups are scheduled automatically and managed silently in the background. Backup files are stored in geo-redundant storage account with read access (RAGRS) to ensure backups' availability for disaster recovery purposes. When you restore a database, the required backup files are retrieved in the same data center and applied. QNE Azure Cloud configured PITR backups to be retained for 7 days.

### What is Long-term backup retention?

Many applications have regulatory, compliance, or other business purposes that require you to retain database backups beyond the 7-35 days provided by Azure SQL Database and Azure SQL Managed Instance automatic backups. By using the long-term retention (LTR) feature, you can

store specified SQL Database and SQL Managed Instance full backups in Azure Blob storage with configured redundancy for up to 10 years. LTR backups can then be restored as a new database. Long-term backup retention (LTR) leverages the full database backups that are automatically created to enable point in time restore (PITR). If an LTR policy is configured, these backups are copied to different blobs for long-term storage. The copy is a background job that has no performance impact on the database workload. The LTR policy for each database in SQL Database can also specify how frequently the LTR backups are created. Each backup will be kept in the long-term storage according to the policy parameters that are configured when the LTR backup is created.

### QNE Azure Cloud Backup Weekly (LTR)

LTR backup are scheduled automatically in QNE Azure Cloud as well. LTR backups are taken weekly (every 7 days) and the first LTR backup is scheduled immediately after a database is created. After the first LTR backup all further backups are scheduled automatically and managed silently in the background. Backup files are stored in geo-redundant storage account with read access (RA-GRS) to ensure backups' availability for disaster recovery purposes. When you restore a database, the required backup files are retrieved in the same data center and applied. QNE Azure Cloud configured both Weekly and Monthly LTR backups. Weekly LTR are configure to be retained for 4 weeks and Monthly LTR are configured to be retained for 2 months.

## Disaster Recovery Plan

### High Availability and Geo-Redundancy

QNE Azure Cloud Database are configured for high availability and resilience. Its automatically manages and maintains multiple replicas of the database ensuring continuous operation even in the event of a failure in primary replica providing an extra layer of data protection and minimizing the risk of data loss.

### Geo-Replication

QNE Azure Cloud Database are configured to have geo-replication for continuously replicated to a secondary region (East Asia) in near real time. In the Event of a major outage or disaster in the primary region (Southeast Asia), failover to the secondary region can be activated allowing quick resuming operations and ensure business continuity.

## Recovery Time Objective (RTO) and Recovery Point Objective (RPO)

QNE Software have establish aggressive RTO and RPO targets to minimize downtime and data loss in case of a disaster. Our aim is to recover the QNE Azure Cloud Server database and make it operational within a short timeframe.

At QNE Cloud, we prioritize the security and protection of our customers' data. Through our partnership with Microsoft Azure Cloud Technology, we ensure that your data storage is backed by advanced technology, offering robust security measures to safeguard your valuable information. QNE Cloud Database's partnership with Microsoft Azure offers businesses an exceptional and worry-free cloud database solution. With our secure platform, you can focus on your business, knowing that data breaches and unauthorized access are being taken care of.

### References:

Overview of business continuity with Azure SQL Database:

https://learn.microsoft.com/en-us/azure/azure-sql/database/business-continuity-high-availability-disaster-recover-hadr-overview?view=azuresql

High availability for Azure SQL Database:
https://learn.microsoft.com/en-us/azure/azure-sql/database/high-availability-sla?view=azuresql&tabs=azure-powershell

Automated backups in Azure SQL Database:
https://learn.microsoft.com/en-us/azure/azure-sql/database/automated-backups-overview?view=azuresql

Active geo-replication:
https://learn.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication- overview?view=azuresql

Auto-failover groups overview & best practices (Azure SQL Database):
https://learn.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-sql-db?view=azuresql&tabs=azure-powershell

***For further concerns regarding this matter, please contact support to assist you or create ticket thru this link https://support.qne.com.ph***