IDERA® | Database Backup Whitepaper

UNDERSTANDING DATABASE BACKUP STRATEGIES

PINAL DAVE OF SQLAUTHORITY.COM

KNOW YOUR WHAT

The basic building block of any effective backup relies on knowing what we need to backup. Backup plans involve multiple strategies. Mission-critical databases on which the organization depends will require aggressive plans, and databases that are less critical will need different plans. There is no one-size-fits-all option. Databases are tough and sometimes tedious during the recovery process, so it is important to be consistent.

There is no "one-size-fits-all" option

KNOW YOUR WHERE

An adequate backup protects us from a multitude of possible failures occurring within our database as well as our backups. Organizations take this matter seriously and have multi-factor backup strategies making it a challenge for a process to be in place. Database administrators backup from database to files to tape, from database to local files to file transfer protocol (FTP) remote site, from database to files to cloud backup, from the database to tape to the remote storage server, and from the database to storage area network (SAN) to shared storage, etc. All of these are valid and possible strategies. There is no right or wrong answer. It is entirely dependent on the organization and their service level agreements (SLAs) for recovery point objective (RTO) and recovery time objective (RPO). Local storage is a cheaper alternative and can speed up the recovery process, but it can also become a single point of failure when the whole site goes down during a natural disaster.

KNOW YOUR WHEN

For systems that require 24 x 7 x 365 use, it is important to know the database access patterns before any backup takes place. There are two fundamental questions to be answered in this “When?” timeframe. Those are: “What is the frequency at which I need to make a backup?” and “What is the best time to schedule this backup?”.

Easily answer the frequency question if we know the amount of lost data if disaster struck just minutes before the next backup. How much data loss is affordable or manageable? How long does it take to bring the database online and how much time does it take to recover lost data? These questions are business challenges, and they need to be answered before answering the frequency question.

Run backups when there is a minimal load on the system. Backups consume server resources and can cause noticeable performance degradation and application response delays. Typically, backups are run by a scheduled pattern of maintenance windows, daily by database administrators or in a pattern. The busiest time of day for servers tends to be the first few hours each morning at the beginning of the workday when people first log into the system. Make sure to run backups as a part of maintenance automated scripts that finish well before the start of a workday.

KNOW YOUR ADD-ONS

The database platform can provide a range of capabilities. Moreover, it is important for us to know which of these are under production. There can exist different resource needs if we use techniques like compression or encryption. In the SQL Server world, it is one of the given tasks that the backup needs compression techniques. It minimizes the input/output (IO) requirements and typically completes faster when compared to backups taken without compression.

Sometimes organizations are required to protect their data and resort to backup encryption techniques too. In this case, it is critical and essential to keep the encryption key safe and available on the DR site. Without access to the encryption key, backups cannot be recovered and are therefore useless.

DO YOU TEST IT?

Realize the real value of backups only when we can restore data after a disaster. Disasters are unpredictable so that there is no point in backing up and not testing regularly. Database platforms like SQL Server have an option to validate the backup file after writing it to disk. It is advisable to check them periodically and create a backup of your backup. It is better to invest the extra ounce of overhead than being sorry when disaster strikes.

CONCLUSION

These are some of the basic fundamental building blocks of working with backups. They are not written in stone. We assume that as seasoned database administrators you are well on top of your backup strategies. It is a journey that any database administrator needs to refine over time. Continue to explore new capabilities of the platform that enhance your backup experience.

SQL SAFE BACKUP

IDERA's SQL Safe Backup saves money by reducing database backup time by up to 50% over native backups and reducing backup disk space by up to 95%. It also enables complete hands-free automated backup of entire SQL Server infrastructures and ensures compliance with the backup and recovery policies of organizations. Backup faster and save space via dynamic compression with encryption. Choose from multiple options for recovery. Ensure organizational compliance via policy-based management. Reduce failures due to temporary network problems. Receive alerts and create reports with the centralized web console. From tens of local SQL Servers to hundreds of global SQL Servers, it is the only backup and recovery solution that scales to meet the challenge. **Start a FREE 14 day trial today.**