

# Database Migration Planning Checklist

Database migration requires meticulous planning and execution. Though certainly not exhaustive, this checklist outlines the key factors that contribute to a successful transition from your existing database environment to another. Use it to jumpstart your own planning.

# Database Migration Planning Checklist

## Assess your current database



An obvious starting point maybe, but the first step in any successful migration is to thoroughly assess and understand your current environment. In doing so, all other steps become easier. You should take the time to:



### **Understand your data**

Take the time to analyze the types of data you have, their structures, and how they are interconnected. Determine the volume of data you have – not just the total size but also the size of individual tables or datasets – so you can plan for storage requirements in the target database. Finally, assess the quality of your data – are there any inconsistencies, duplicates, or errors that need to be addressed?



### **Identify performance issues**

Evaluate the performance of your current database system. Identify any bottlenecks, slow queries, or other issues that need improvement and could potentially lead to issues during the migration.



### **Analyze data dependencies**

Examine the dependencies between different data sets. Identify any dependencies on the existing database within your applications or systems – e.g. SQL queries, stored procedures, or application code that relies on your current database structure.

## Set clear objectives



Lay out the key drivers for your migration. For example, are you looking to improve performance? Enable developer self-service? Are you looking to move to open source for the cost savings? It may seem like a no-brainer — you knew your objectives before you considered a migration; that's why you're doing it! But in clearly articulating what you hope to accomplish, you'll often discover there's a factor or two you hadn't otherwise considered.

## Establish a timeline



Create a realistic timeline for your database migration project. This should include pre-migration preparation, execution, and post-migration evaluation. Remember to expect the unexpected. If this is you and your team's first time undergoing such a complex project, there's a non-zero chance that something could go amiss.

## Select the right DBMS for your business needs



Chances are you already have a certain DBMS in mind, but make sure you're considering both your current and future needs. Key factors to consider include data volume, the technology stack your larger organization prefers, and:



### Compatibility

Ensure that the new database system is compatible with your existing applications and software. Compatibility issues can lead to complications during migration. We highly recommend compatibility testing prior to any migration. This typically involves the configuration of a test environment, migration of test data, and testing execution to ensure proper behavior and functionality.



### Scalability

Think beyond the immediate. First, ask yourself whether or not your chosen database system has the scalability necessary to accommodate growing data requirements. Then, consider the associated cost. Are you tying yourself to a proprietary database that's affordable now but may balloon in price in the future? Have you considered the impact of vendor lock-in?



# Develop a data backup and recovery strategy

Before migration, create comprehensive backups of your data. In doing so, you'll mitigate risk, safeguard business continuity, satisfy compliance requirements, and ensure recovery and disaster. Key considerations include:



## Data Identification

Identify what data is critical for your organization, as not all data may require the same level of backup and recovery procedures.



## Backup frequency

Determine how often backups should be performed.



## Storage location

Decide where backups will be stored – onsite or offsite.



## Backup methods

Choose the appropriate backup methods, such as full, incremental backups, or differential.



## Testing and validation

Regularly test your backups to ensure they can be successfully restored.



## Disaster recovery plan

Develop a clear plan for how to recover data in case of a disaster, including step-by-step procedures and responsibilities for different team members.

## Cleanse and optimize your data



Not only does cleansing and optimizing data improve your organization's efficiency, resource allocation, and decision-making processes, but it also enables you to get your data in the best possible state before migration. Cleansing and optimizing involves:

### Disaster recovery plan

#### Removing redundant data

Redundant data refers to information that is duplicated or unnecessary. Cleansing data by removing redundant or obsolete data not only reduces the volume of data to be migrated but also improves data efficiency and accuracy – and may lead to cost savings on storage and processing.

### Enhancing data quality

Inaccurate or inconsistent data can lead to errors during migration and impact the performance of the new database. Data quality enhancement may involve standardizing formats, validating data, and ensuring consistency across records.

## Create a test environment



As we mentioned above, compatibility testing is essential to any successful migration. Create a test environment that mirrors your intended environment, and test the migration process thoroughly to identify and resolve any issues before the actual migration. Test all aspects of the new database, including data integrity, application functionality, and performance.

## Assemble a migration team



Assemble a migration team with clearly defined roles and responsibilities. Then, develop a communication plan to keep all stakeholders informed about the migration progress and potential disruptions.



## Conduct a post-migration evaluation

A post-migration evaluation is a litmus test for the success of your migration effort. It involves several components:



### **Performance assessment**

Measure your new database's operational efficiency, speed, and responsiveness in comparison to the goals set during the objective phase.



### **Data validation**

Conduct an examination of migrated data to verify that it has been successfully transferred and that data integrity has been preserved. This includes comparing the source data with the data in the new system to detect any discrepancies, errors, or missing records.



### **Security measures**

To safeguard data in the new database system, several security measures should be implemented and evaluated, including encrypting data and establishing robust access control policies. Mechanisms for the latter, such as role-based access control (RBAC) or user-level permissions, should be configured to ensure that only individuals with the appropriate credentials and permissions can access and manipulate the data.

## Document and train



Create documentation for the new database system, including configuration settings and procedures. Also, don't overlook training. Make sure to provide training to employees who will be working with the new database system to ensure they are proficient in its use. If you lack the necessary external expertise, consider outside consultants who offer training services, such as Percona.

## Conduct ongoing monitoring and maintenance

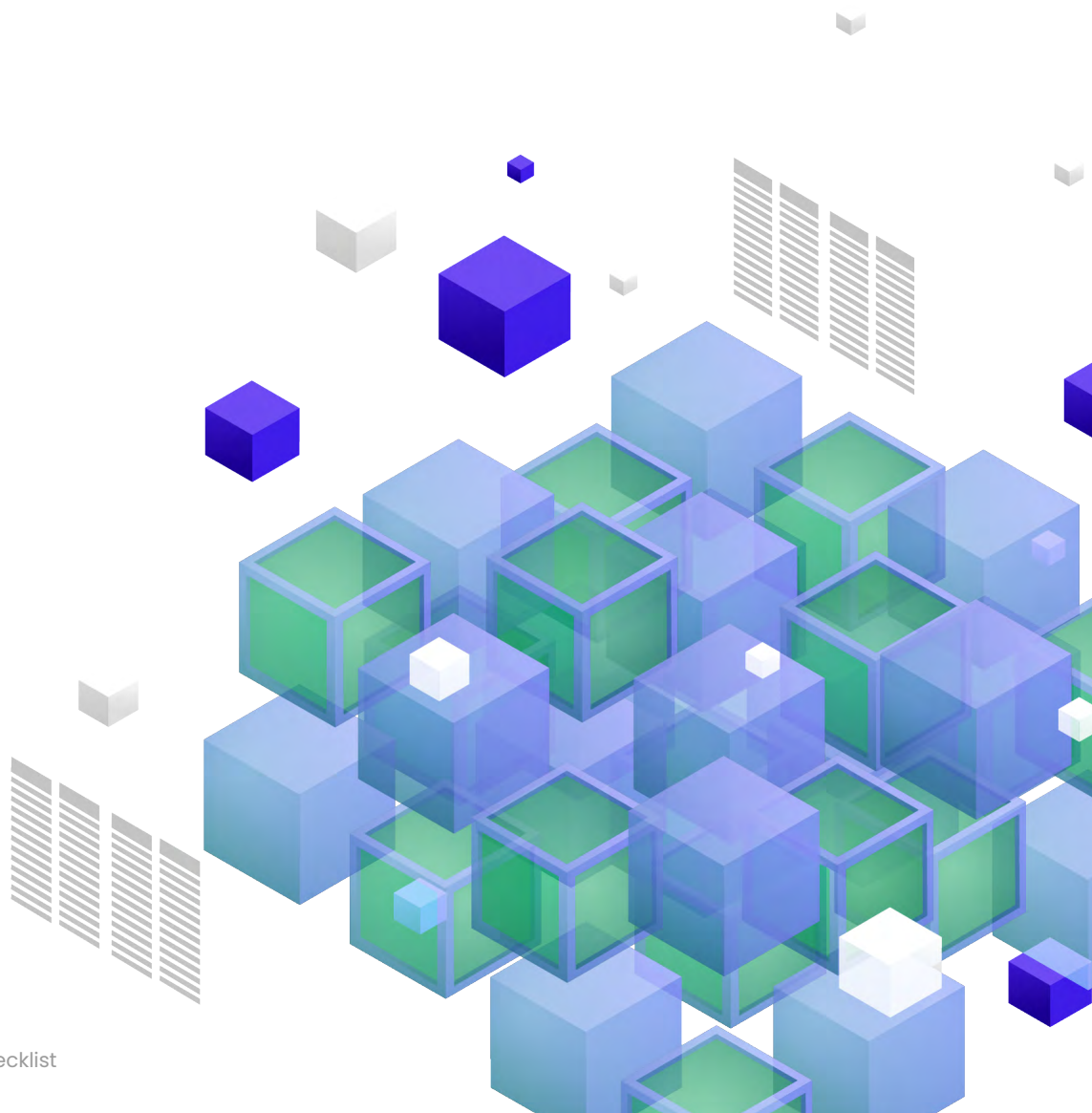


Finally, regularly perform health checks on your database to identify and address any performance issues or security vulnerabilities, and stay up-to-date with database updates and security patches to keep your system secure and optimized.

# Get assistance with your database migration

Percona has helped thousands of companies migrate their databases from one environment to another. Our tried-and-tested migration process is designed to ensure performance, availability, a smooth cutover, and minimal impact to production traffic. Call on us to help you develop a migration plan or have us handle the entire process, from beginning to end, for you.

[Learn more about Percona Migration Assistance](#)



## Contact us

For more information about Percona Support, Managed Services, and Consulting, contact us at +1-888-316-9775 (USA), +44 203 608 6727 (Europe), or via email at [sales@percona.com](mailto:sales@percona.com).