

Percona database performance experts can help maximize the performance of your database deployment with a performance audit, tuning, and optimization. Those measures will also help protect your environment against expensive outages and unplanned downtime.

## Percona can:

- Assist you with projects of all sizes and complexities.
- Provide a detailed analysis and plan for optimal performance that you can implement yourself or with our help.
- Ensure your deployment continues to perform optimally.
- Provide staff augmentation or even take over the full management of your servers to ensure continued performance and availability.

Running the database environment can be time-consuming, especially if there are constant failures, issues, and unexpected downtime. Vigilance is the key to a high-performance database, but certain preemptive measures can make this job easier.

The busy DBA and his or her managers must consider the problems caused by part-time or reactive database administration and the impact those issues may have on your overall business. The following checklist is designed to help you consider how you might proactively improve your database performance.

## Out-of-date version

You may adopt or inherit a database environment where the version is out-of-date. Remaining with a legacy version can lead to risks:

- **Security** – you can be more vulnerable to security exploits with an old version.
- **Performance** – you will usually experience better performance with the latest version.
- **Support** – your version might be so old that it is no longer supported by your vendor or it is difficult to find tools or a consultant to help.

## Inadequate MySQL configuration settings

Most database software can run right out-of-the-box. While this makes it easy to install and evaluate at a small scale, many of the default configuration values are not appropriate for a large production environment. This can lead to:

- A highly inefficient usage of system resources
- A system that does not scale well
- Unpredictable behavior for application end users

## Unmindful deployment practices

Updating the code in your production application is a frequent necessity. Sometimes, deploying new code requires changes to the database for schema updates, adding indexes, or deleting rows.

Making changes to a database, such as deleting many records, can cause problems if not thoughtfully planned and executed.



## Poor migration preparation

There may come a time in your application's lifecycle when it makes sense to migrate to a new infrastructure. A migration should result in a positive impact on your bottom line. However, migrations face a number of potential issues that can bring down your system, and your business, for an extended period of time. Upgrades, capacity alterations, moving operations in or out of the cloud, and changing products can result in downtime if not properly planned.

## Poor query performance

Query tuning is one of the most important ways you can improve the performance of your database, yet it is often overlooked. Bad queries can overload your server or affect user response time. A good index on a simple select can be the difference between response times measured in minutes or milliseconds.

## Lack of high availability/too much downtime

Downtime of production databases typically results in a major impact on service quality, a poor user experience, and potential lost business. In order to minimize downtime, organizations can pursue a high availability (HA) strategy that incorporates automation. Automating failover processes potentially reduces failover time from minutes to seconds and minimizes human error.

## Inadequate monitoring and alerting

Database monitoring is an essential component of application operations. It ensures both the availability and performance of the service are maximized. A lack of monitoring can lead to incidents that take longer than necessary to diagnose or even to missed incidents. In addition, effective monitoring helps deliver an optimal and consistent user experience by proactively alerting the business to potential risks and incidents before they occur.

## Faulty security practices

Security will always be a hot topic. The company DBA must always be vigilant in ensuring database security. The security of your business, as well as the personal or financial business of your clients, can be at risk. Adopting a security culture within your organization is necessary to reduce the possibility of a breach. Taking a few foundational steps early in your database instance's life and maintaining firm security practices hardens your environment against potential intruders.

## Limited backup and recovery plan

System failure can result from faulty hardware, application bugs, operational mistakes, or malicious attacks. Unless you strictly adhere to a backup strategy, you can lose part or all of your data and potentially your clients, your job, and your business.