A database administrator's (DBA) primary job is to ensure that data is available, protected from loss and corruption, and easily accessible as needed. Below are some of the chief responsibilities that make up the day-to-day work of a DBA. DSP deliver an outsourced DBA service in the UK, providing [Oracle Support](https://www.dsp.co.uk/oracle-database-support/) and [SQL Server Support](https://www.dsp.co.uk/sql-server-support-2/); whilst mindset and toolset may be different, whether a database resides on-premise or in a Public / Private Cloud, the role of the DBA is not that different.

**1. Software installation and Maintenance**

A DBA often collaborates on the initial installation and configuration of a new Oracle, SQL Server etc database. The system administrator sets up hardware and deploys the operating system for the database server, then the DBA installs the database software and configures it for use. As updates and patches are required, the DBA handles this on-going maintenance.

And if a new server is needed, the DBA handles the transfer of data from the existing system to the new platform.

**2. Data Extraction, Transformation, and Loading**

Known as ETL, data extraction, transformation, and loading refers to efficiently importing large volumes of data that have been extracted from multiple systems into a data warehouse environment.

This external data is cleaned up and transformed to fit the desired format so that it can be imported into a central repository.

**3. Specialised Data Handling**

Today’s databases can be massive and may contain unstructured data types such as images, documents, or sound and video files. Managing a very large database (VLDB) may require higher-level skills and additional monitoring and tuning to maintain efficiency.

**4. Database Backup and Recovery**

DBAs create backup and recovery plans and procedures based on industry best practices, then make sure that the necessary steps are followed. Backups cost time and money, so the DBA may have to persuade management to take necessary precautions to preserve data.

System admins or other personnel may actually create the backups, but it is the DBA’s responsibility to make sure that everything is done on schedule.

In the case of a server failure or other form of data loss, the DBA will use existing backups to restore lost information to the system. Different types of failures may require different recovery strategies, and the DBA must be prepared for any eventuality. With technology change, it is becoming ever more typical for a DBA to backup databases to the cloud, [Oracle Cloud](https://www.dsp.co.uk/oracle-cloud/) for Oracle Databases and MS Azure for [SQL Server](https://www.dsp.co.uk/sql-server-azure/).

**5. Security**

A DBA needs to know potential weaknesses of the database software and the company’s overall system and work to minimise risks. No system is one hundred per cent immune to attacks, but implementing best practices can minimise risks.

In the case of a security breach or irregularity, the DBA can consult audit logs to see who has done what to the data. Audit trails are also important when working with regulated data.

**6. Authentication**

Setting up employee access is an important aspect of database security. DBAs control who has access and what type of access they are allowed. For instance, a user may have permission to see only certain pieces of information, or they may be denied the ability to make changes to the system.

**7. Capacity Planning**

The DBA needs to know how large the database currently is and how fast it is growing in order to make predictions about future needs. Storage refers to how much room the database takes up in server and backup space. Capacity refers to usage level.

If the company is growing quickly and adding many new users, the DBA will have to create the capacity to handle the extra workload.

**8. Performance Monitoring**

Monitoring databases for performance issues is part of the on-going system maintenance a DBA performs. If some part of the system is slowing down processing, the DBA may need to make configuration changes to the software or add additional hardware capacity. Many types of monitoring tools are available, and part of the DBA’s job is to understand what they need to track to improve the system. 3rd party organisations can be ideal for outsourcing this aspect, but make sure they offer [modern DBA support](https://www.dsp.co.uk/modern-dba-support-provider/).

**9. Database Tuning**

Performance monitoring shows where the database should be tweaked to operate as efficiently as possible. The physical configuration, the way the database is indexed, and how queries are handled can all have a dramatic effect on database performance.

With effective monitoring, it is possible to proactively tune a system based on application and usage instead of waiting until a problem develops.

**10. Troubleshooting**

DBAs are on call for troubleshooting in case of any problems. Whether they need to quickly restore lost data or correct an issue to minimise damage, a DBA needs to quickly understand and respond to problems when they occur.