Database administrators use specialized software to store and organize data, such as financial information and customer shipping records. They make sure that data are available to users and are secure from unauthorized access.

### Duties

Database administrators typically do the following:

* Identify user needs to create and administer databases
* Ensure that the database operates efficiently and without error
* Make and test modifications to the database structure when needed
* Maintain the database and update permissions
* Merge old databases into new ones
* Backup and restore data to prevent data loss
* Ensure that organizational data is secure

Database administrators, often called DBAs, make sure that data analysts can easily use the database to find the information they need and that the system performs as it should. DBAs sometimes work with an organization’s management to understand the company’s data needs and to plan the goals of the database. Database administrators are responsible for backing up systems to prevent data loss in case of a power outage or other disaster. They also ensure the integrity of the database, guaranteeing that the data stored in it come from reliable sources.

Some DBAs oversee the development of new databases. They have to determine what the needs of the database are and who will be using it. Database administrators often plan security measures, making sure that data are secure from unauthorized access. Many databases contain personal or financial information, making security important.

Many database administrators are general-purpose DBAs and have all these duties. However, some DBAs specialize in certain tasks that vary with the organization and its needs. Two common specialties are as follows:

System DBAs are responsible for the physical and technical aspects of a database, such as installing upgrades and patches to fix program bugs. They typically have a background in system architecture and ensure that the firm’s database management systems work properly.

Application DBAs support a database that has been designed for a specific application or a set of applications, such as customer service software. Using complex programming languages, they may write or debug programs and must be able to manage the aspects of the applications that work with the database. They also do all the tasks of a general DBA, but only for their particular application.

**Personality and Interests**

Database administrators (DBAs) typically have an interest in the [Thinking](https://www.truity.com/holland-codes/investigative-thinker) and [Organizing](https://www.truity.com/holland-codes/conventional-organizer) interest areas, according to the [Holland Code](https://www.truity.com/page/holland-code-riasec-theory-career-choice) framework. The Thinking interest area indicates a focus on researching, investigating, and increasing the understanding of natural laws. The Organizing interest area indicates a focus on working with information and processes to keep things arranged in orderly systems.

If you are not sure whether you have a Thinking or Organizing interest which might fit with a career as a database administrator (DBA), you can take a [career test](https://www.truity.com/test/career-personality-profiler-test) to measure your interests.

Database administrators (DBAs) should also possess the following specific qualities:

Analytical skills. DBAs must be able to monitor a database system’s performance to determine when action is needed. They must be able to evaluate complex information that comes from a variety of sources.

Communication skills. Most database administrators work on teams and must be able to communicate effectively with developers, managers, and other workers.

Detail oriented. Working with databases requires an understanding of complex systems, in which a minor error can cause major problems. For example, mixing up customers’ credit card information can cause someone to be charged for a purchase he or she didn’t make.

Logical thinking. Database administrators use software to make sense of information and to arrange and organize it into meaningful patterns. The information is then stored in the databases that these workers manage, test, and maintain.

Problem-solving skills. When problems with a database arise, administrators must be able to diagnose and correct the problems.

### Work Experience in a Related Occupation

Most database administrators do not begin their careers in that occupation. Many first work as database developers or data analysts. A database developer is a type of software developer who specializes in creating databases. The job of a data analyst is to interpret the information stored in a database in a way the firm can use. Depending on their specialty, data analysts can have different job titles, including financial analyst, market research analyst, and operations research analyst. After mastering one of these fields, they may become a database administrator. For more information, see the profiles on software developers, financial analysts, market research analysts, and operations research analysts.