

Database administrator

Database administrators (DBA) are responsible for the performance, integrity and security of a database

You'll be involved in the planning and development of the database, as well as in troubleshooting any issues on behalf of the users.

You'll ensure that:

- data remains consistent across the database
- data is clearly defined
- users access data concurrently, in a form that suits their needs
- there is provision for data security and recovery control (ensuring all data is retrievable in an emergency).

Responsibilities

As a database administrator, you'll need to:

- establish the needs of users and monitor user access and security
- monitor performance and manage parameters to provide fast responses to front-end users
- map out the conceptual design for a planned database
- consider both back-end organisation of data and front-end accessibility for end-users
- refine the logical design so that it can be translated into a specific data model
- further refining the physical design to meet system storage requirements
- install and test new versions of the database management system (DBMS)
- maintain data standards, including adherence to the Data Protection Act
- write database documentation, including data standards, procedures and definitions for the data dictionary (metadata)
- control access permissions and privileges
- develop, manage and test back-up and recovery plans
- ensure that storage and archiving procedures are functioning correctly

- carry out capacity planning
- work closely with IT project managers, database programmers and multimedia programmers
- communicate regularly with technical, applications and operational staff to ensure database integrity and security
- commission and install new applications, and customise existing applications to make them fit for purpose
- manage the security and disaster recovery aspects of a database.

Salary

- Starting salaries for graduate database administrators are around £23,000 to £28,000 a year.
- With some experience, in a junior position, you could earn between £35,000 to £45,000.
- With substantial experience, working in a senior position you could earn up to around £65,000.

It's also possible to work as a contractor, charging £300 to £500 a day, depending on your experience.

The range of salaries depends on the industry and location. Rates tend to be higher in the financial services and banking, investment and insurance sectors, and in London and the South East.

Income figures are intended as a guide only.

Working hours

Working hours are usually 37 to 40 hours a week, Monday to Friday, and may include regular unsocial hours.

You might be required to work overnight and on weekends (during periods of low usage) when maintenance and development work needs to be undertaken. You may also have to be on call at times, responding if a critical problem occurs.

What to expect

- The working environment is usually informal and it's possible for work to be carried out from home or from other remote locations. There's an increasing trend towards working from home.

- You'll find that the work can be demanding as organisations depend on effective databases, and there can be significant pressure to ensure that they operate smoothly, particularly if accessed online.
- Travel and absence from home overnight may occasionally be required.
- There are numerous opportunities to work abroad.
- Women are currently underrepresented in the IT profession. For information and jobs for women who want to work in technology take a look at [Women in Technology](#).

Qualifications

You can enter this career with a degree in any subject, but the following may be particularly useful:

- computer science
- computer software and computer systems engineering
- electronics
- information technology
- mathematics
- operational research.

Entry without a degree or HND is possible for those with good all-round IT skills.

Relevant HND subject areas include computer studies, software engineering or information technology. Physical, mathematical and applied science is also useful.

You can also become a data administrator by taking an [apprenticeship](#).

A pre-entry postgraduate qualification isn't essential but is likely to improve your prospects if your first degree is in a non-computing subject.

Skills

You will need to show:

- excellent problem-solving and analytical skills
- good communication, teamwork and negotiation skills
- familiarity with the main data manipulation languages and the principles of database design

- the ability to work to tight deadlines under pressure
- good organisational skills
- flexibility and adaptability
- the ability to create and maintain strong working relationships with colleagues and customers
- business awareness and understanding of business requirements of IT
- a willingness to keep up to date with developments in new technology
- a commitment to continuing professional development (CPD)
- an understanding of information legislation, such as the Data Protection Act.

Work experience

Most database administrator jobs require some sort of experience in the IT industry. Look out for sandwich degrees that include a work placement. These offer invaluable hands-on experience and can sometimes lead to employment after graduation.

It's a good idea to gain some experience in programming and to familiarise yourself with as many database technologies and operating systems as possible.

Most positions require an understanding of database management systems (DBMS) and the programming language SQL (Structured Query Language). Being familiar with popular DBMS platforms, such as Oracle, MySQL and Microsoft SQL Server and Unix is helpful, and you will need to gain a deep understanding of the platform you work with once in the role.

Find out more about the different kinds of [work experience and internships](#) that are available.

Advertisement

Employers

Opportunities can arise within any organisation that uses computerised databases, including organisations in the public, private and third sectors.

IT companies employ database administrators to run their own systems and to work on client projects.

Opportunities also exist in small and medium-sized enterprises (SMEs). Even relatively small companies hold a great deal of information on their members, clients and suppliers, and this data is crucial if they are to compete with others in the sector. Businesses use the information held on their databases to target new customers and launch new products and services.

The role is highly specialised and vacancy numbers have been steadily increasing in recent years. Direct entry to graduate roles is likely to be with very large organisations.

Look for job vacancies at:

- [CWJobs](#)
- [efinancial careers](#)
- [JobServe](#)
- [Technojobs](#)

Contracting is an option for experienced DBAs, and most job sites also deal with contract roles. Search niche sites like [Contractor UK](#) for leads as well.

Professional development

Most of your training will be provided on the job. It will largely consist of technical training on the systems used by your employer and in any relevant software developments. In-house training will be supplemented by short, internal or external courses, as appropriate.

Taking additional courses can help you progress professionally, and most employers will expect experienced staff to have completed a database certification programme, such as:

- Microsoft Certified: Azure Database Administrator Associate
- IBM Certified System Administrator
- Oracle Database Certification.

To understand user needs, you'll need to be able to work in multidisciplinary teams and so will usually be given in-house soft skills training to help facilitate this. This will usually cover communication, time management and customer service skills, as well as sessions on company products and procedures.

If you work at a smaller company you may be required to use technical manuals and web-based programmes for self-study. Larger companies may offer mentoring schemes and individually-tailored training plans.

You'll need to keep up with trends and developments and the latest protocols for responding to them. This includes negative ones such as increases in security risk. For example, the constant threat and reality of cyberattack means it's essential to ensure databases are as secure as possible. You'll do this by applying a range of best practices, such as carrying out continuous monitoring and auditing of database activity, carrying out regular backups and employing the best current encryption methods.

A big development affecting database administration is the rise of AI (artificial intelligence). It will become increasingly important to understand how AI technology can be used to carry out database tasks and to assist in the analysis of data.

It's vital to keep your technical skills up to date and taking a professional qualification can help with this. A range of relevant qualifications are available through the [The Chartered Institute for IT \(BCS\)](#).

Career prospects

Your career prospects will depend on the type of organisation you work for. Larger organisations may offer structured career paths to the level of lead or senior database administrator, with increasing management and technical responsibility.

You could move into other areas, such as:

- systems development
- project management
- network management
- database architecture.

Working towards a management position is a natural step and you could eventually end up running a team or whole department if you gain the right experience and undertake any necessary and relevant qualifications. As a result, with the right effort and focus, you could end up working at a more strategic level.

Alternatively, you could choose to work as a freelance consultant or contractor, capitalising on your specialist technical knowledge. As a contractor, the projects you work on might include the design and development of a smaller database or working as part of a large-scale project in conjunction with specialist IT firms and consultants. This does require substantial experience, but you may find the financial benefits and freedom to take time off between contracts attractive.