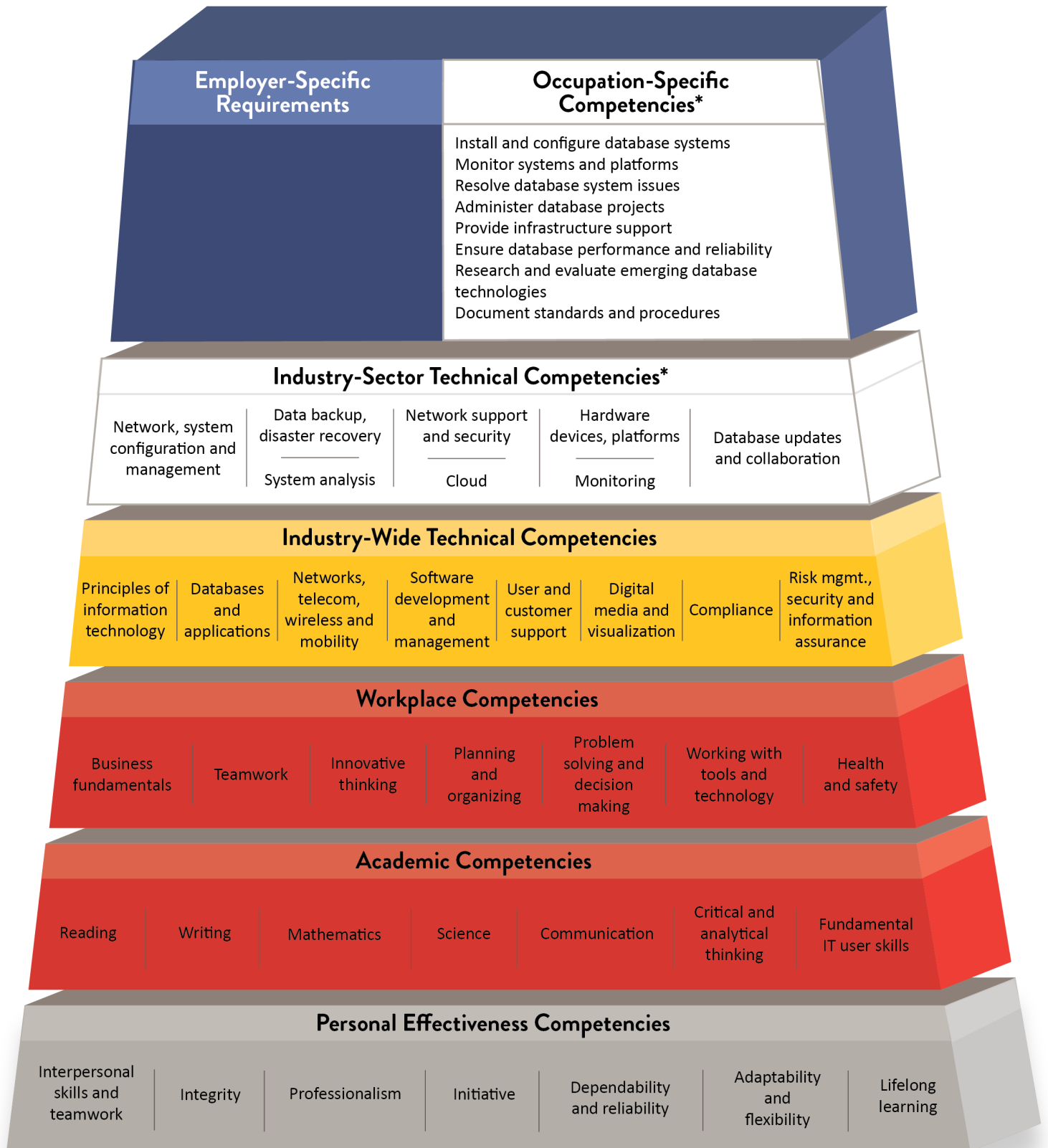


# Minnesota Dual-Training Pipeline

## Competency Model for Information Technology

### Occupation: Database Administrator



Based on: Information Technology Competency Model, Employment and Training Administration, United States Department of Labor, February 2025. For more detailed information about competency model creation and sources, visit [dli.mn.gov/business/workforce/information-technology](https://dli.mn.gov/business/workforce/information-technology).

## Competency Model for Database Administrator

**Database Administrator** – An individual responsible for directing or performing all activities related to maintaining a successful database environment. This professional ensures an organization’s database, and its related applications, operate functionally and efficiently. This person also plans, coordinates, and implements security measures to safeguard computer databases.

\*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job (OJT) training opportunities.

### Industry-Sector Technical Competencies

**Related Instruction** for dual training means the organized and systematic form of education resulting in the enhancement of skills and competencies related to the dual trainee’s current or intended occupation.

- **Network, system configuration and management** – Understand the design of a computer network, the framework for the specifications of a networks physical components and their functional organization and configuration, principles, procedures, and data formats.
- **Data backup, disaster recover** – Know how to document maintenance, organize duplicated documents and tools in safe places, and a documented process or set of procedures to recover and protect a database infrastructure in the event of a disaster.
- **Systems analysis** – Know the act and process of analyzing complex processes or operations to improve efficiency, especially by applying a computer system.
- **Network support and security** – Know the policies adopted to prevent and monitor unauthorized access, misuse, modification, or denial of a computer network and network-accessible resources. Network security involves the authorization of access to data in a network, which is controlled by the database administrator.
- **Cloud** – Understand a scalable content database running on a cloud computing platform.
- **Hardware devices, platforms** – Able to use compatible hardware on which software applications can be run.

- **Monitoring** – Understand the established process to identify and react to potentially malicious activity.
- **Database updates and collaboration** – Understand the integration of various communications methods with collaboration tools such as virtual white boards, real-time audio and video conferencing, and enhanced call control capabilities.

## Occupation-Specific Competencies

**On-the-Job Training** is hands-on instruction completed at work to learn the core competencies necessary to succeed in an occupation. Common types of OJT include job shadowing, mentorship, cohort-based training, assignment-based project evaluation and discussion-based training.

- **Install and configure database systems** – Know how to install and maintain database software by ensuring proper integration with hardware and operating systems.
- **Monitor systems and platforms** – Understand the established process to identify, assess, adjust, maintain, and support databases and platforms.
- **Resolve database system issues** – Know how to identify, scrutinize, and rectify problems with databases.
- **Administer database projects** – Able to organize a process of initiating, planning, executing, controlling, and closing the work of a team to develop and maintain a database.
- **Provide infrastructure support** – Understand and work with end business users to ensure seamless infrastructure operation.
- **Ensure database performance and reliability** – Able to verify that the database network and systems are performing well and seamlessly.
- **Research and evaluate emerging database technologies** – Know how to identify innovative solutions that enhance performance, scalability, and security, while aligning with evolving business and industry standards.
- **Document standards and procedures** – Be able to create and maintain documentation for database configurations, policies, and troubleshooting protocols.

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