



Code: 06L7

Family: IT-Technical Administration

Service: Administrative

Group: Clerical, Accounting, and General Office

Series: Information Technology

CLASS TITLE: PRINCIPAL DATABASE ADMINISTRATOR

CHARACTERISTICS OF THE CLASS

Under direction, this class is the principal level in the series responsible for performing technical functions related to the design, install, maintenance, and upgrade of the City of Chicago's databases (development, testing, and production) by providing technical expertise in the use of database technology and is accountable for the overall performance of the database environment, and performs related duties as required

This class is assigned to the Technical Administration Information Technology Job Family which consists of positions that design, build, configure, test, deploy, upgrade, maintain and improve technology products, platforms, and solutions.

ESSENTIAL DUTIES

This is the highest level in the Database Administrator classification series. This class title is distinguished from the senior level by serving as a lead on technical projects and functioning as a subject matter expert in database administration; requires advanced knowledge of technical database administration in an enterprise environment; and functions as a resource for lower-level database administrators. The principal level also requires the following advanced competencies: analytical thinking, information seeking and information systems thinking. In addition, the class title works to explore opportunities to evaluate, implement and manage best-in-class database administration tools, technologies and capabilities.

- Serves as a technical lead on database administration projects requiring subject matter expertise in the related area
- Provides subject matter expertise and individual contributor in all database administration activities
- Provides technical guidance on the design and implementation of complex databases
- Works independently and closely with business users, analysts, and solution developers to define and resolve information flow and content issues—helping to transform business requirements into environment-specific databases
- Designs, configures, and manages complex technical databases to ensure the integrity, security, and accessibility of the organization's data
- Defines standards for physical data storage, maintenance, access, and security administration
- Approves and modifies the designs and architectures by reviewing end-user topology, security, performance, and interoperability requirements
- Analyzes, designs, and develops a roadmap and implementation plan based upon a current vs. future state in a cohesive architecture viewpoint
- Identifies the tools and components used within the infrastructure based on the enterprise toolset and defines exceptions as warranted
- Meets with project management and IT Leaders to ensure progress toward architectural alignment with project goals and requirements
- Analyzes the current technology environment to detect critical deficiencies and recommend solutions for improvement
- Coordinates architecture implementation and modification activities

- Coordinates post-implementation continuous-improvement efforts to enhance performance and provide increased functionality
- Identifies organizational requirements for the resources, structures, and cultural changes necessary to support initiatives
- Monitors and analyzes performance metrics and then allocates database resources to achieve optimum database performance
- Implements and performs backup and recovery procedures for AIS IT's databases and helps develop the tools and techniques that allow end users to access data in a secure environment
- Configures database parameters and defines data repository requirements, data dictionaries, and warehousing requirements
- Designs and implements approaches to improve database performance, capacity, and scalability
- Assists in the training of lower-level Database Administrators

NOTE: *The list of essential duties is not intended to be inclusive; there may be other duties that are essential to particular positions within the class.*

MINIMUM QUALIFICATIONS

Education, Training, and Experience

- Graduation from an accredited college or university with a Bachelor's degree in Computer Science, Information Technology/Systems, or a directly related field, plus four (4) years of work experience in database administration, design and/or support, or an equivalent combination of education, training and experience.

Licensure, Certification, or Other Qualifications

- None

WORKING CONDITIONS

- General office environment

EQUIPMENT

- Standard office equipment (e.g., phone, printer, copier, computers, mobile devices)
- Standard productivity suites (e.g., Microsoft Office Suite, OpenOffice, Google Workspace)

PHYSICAL REQUIREMENTS

- No specific requirements

KNOWLEDGE, SKILLS, ABILITIES, AND OTHER WORK REQUIREMENTS

Knowledge

Comprehensive knowledge of:

- *relational database structures, theories, principles and practices
- *computer systems management
- *distributed and centralized computer systems
- *database normalization concepts
- *IT systems development practices, standards, and procedures

- *computer operating systems
- *architecture design review processes
- *architecture principles and concepts
- *data modeling
- *performance tuning to design high-volume
- *data mining
- *data warehousing
- *data security
- *database design
- *database implementation
- *data access and user administration
- *storage, capacity, and performance methods
- *tuning and optimization techniques
- *change management
- *incident management
- *IT disaster recovery

Considerable knowledge of:

- *database project management theories, principles and practices

Knowledge of applicable City and department policies, procedures, rules, and regulations

Other knowledge as required for successful performance in the Senior Database Administrator class

Skills

- ACTIVE LEARNING - Understand the implications of new information for both current and future problem-solving and decision-making
- ACTIVE LISTENING - Give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times
- CRITICAL THINKING - Use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems
- COMPLEX PROBLEM SOLVING - Identify complex problems and review related information to develop and evaluate options and implement solutions
- TIME MANAGEMENT - Manage one's own time or the time of others
- COORDINATION WITH OTHERS - Adjust actions in relation to others' actions
- JUDGEMENT AND DECISION MAKING - Consider the relative costs and benefits of potential actions to choose the most appropriate one
- SYSTEMS ANALYSIS - Determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes

Abilities

- COMPREHEND ORAL INFORMATION - Listen to and understand information and ideas presented through spoken words and sentences
- SPEAK - Communicate information and ideas in speaking so others will understand

- COMPREHEND WRITTEN INFORMATION - Read and understand information and ideas presented in writing
- WRITE - Communicate information and ideas in writing so others will understand
- CONCENTRATE - Concentrate on a task over a period of time without being distracted
- RECOGNIZE PROBLEMS - Tell when something is wrong or is likely to go wrong
- REASON TO SOLVE PROBLEMS - Apply general rules to specific problems to produce answers that make sense
- COME UP WITH IDEAS - Come up with a number of ideas about a topic
- MAKE SENSE OF INFORMATION - Quickly make sense of, combine, and organize information into meaningful patterns
- REACH CONCLUSIONS - Combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)

Additional Competency Requirements

- COMMUNICATION FOR RESULTS – Writes, speaks and presents effectively. Explains the immediate context of the situation, asks questions with follow-ups and solicits advice prior to taking action. Develops presentations to influence others by using graphics, visuals or slides that display information clearly. Listens and asks questions to understand other people's viewpoints.
- GROWTH MINDSET – Takes ownership of personal growth. Identifies knowledge gaps. Asks questions of subject matter experts and seeks help when needed. Keeps abreast of information, developments and best practices within a field of expertise (e.g., by reading, interacting with others or attending learning events).
- INITIATIVE – Volunteers to undertake tasks that stretch his or her capability. Identifies who can provide support and procures their input. Identifies problems and acts to prevent and solve them.
- OWNERSHIP AND COMMITMENT – Volunteers to undertake tasks that stretch his or her capability. Checks the scope of responsibilities of self and others. Monitors day-to-day performance and takes corrective action when needed to ensure desired performance is achieved. Identifies problems and acts to prevent and solve them. Identifies who can provide support and procures their input.
- ADAPTABILITY – Handles multiple projects and duties simultaneously, prioritizing as needed. Quickly resolves new challenges in a changing environment. Devises flexible approaches that are easily adopted. Listens to others' opinions and acknowledges the value of difference.
- ANALYTICAL THINKING – Effectively resolves complex problems that require substantial, in-depth analysis. Quickly identifies key issues in a complex situation or problem. Finds ways to condense large amounts of information into a useful form. Asks perceptive, probing questions to get to the heart of the matter.
- CUSTOMER SERVICE – Takes extra steps and demonstrates creativity to meet others' needs. Asks questions and conducts investigations in order to understand customers' specific needs and provides prompt, attentive service. Tests and inspects outputs, and applies quality checks prior to work submission. Understands customer's expectations and takes initiatives to meet and exceed them. Monitors progress and updates customer and management as to status. Educates customers on the ways to use products and services. Quickly and effectively solves customer problems. Develops trust and credibility with the customer.

- INFORMATION SEEKING – Seeks information on issues impacting the progress of organizational and process issues. Researches organizational and professional trends. Networks internally and externally on areas of interest and concern. Evaluates sources, and collates and compares findings for bias, omission and accuracy. Conducts objective analysis. Prioritizes information by source. Translates up-to-date information into continuous improvement activities that enhance performance and/or business opportunities. Monitors systematically. Deploys resources (time, people, systems) to ensure timely management reporting.
- INFORMATION SYSTEMS THINKING – Identifies means of integrating technical support requirements with enterprise processes and strategies. Identifies technological opportunities to meet customer needs. Creates information system solutions to meet the needs of business partners. Partners with appropriate technical consultants, experts and managers.
- SYSTEMS THINKING – Researches the critical and underlying relationships between primary business, technology and systems platforms. Devises approaches that integrate system components.
- TEAMWORK – Actively solicits ideas, opinions and concerns from others to quickly accomplish objectives. Proactively shares information, knowledge and advice with others in own group. Supports others to raise team performance.
- THOROUGHNESS – Demonstrates operational agility. Uses organizational systems that result in multiple critical activities being identified and completed on time. Renegotiates priorities as necessary. Puts systems in place and uses them to monitor and detect errors and problems. Tests and inspects outputs, and applies quality checks prior to work submission.

Other competencies as required for successful performance in the lower-level series.

All employees of the City of Chicago must demonstrate commitment to and compliance with applicable state and federal laws, and City ordinances and rules; the City's Ethics standards; and other City policies and procedures.

The City of Chicago will consider equivalent foreign degrees, accreditations, and credentials in evaluating qualifications.

* May be required at entry.

City of Chicago
Department of Human Resources
March, 2023