# CLASS TITLE: PRINCIPAL CLOUD ENGINEER

## CHARACTERISTICS OF THE CLASS

Under direction, facilitates execution of the cloud/infrastructure strategy set by architecture by providing the design of a cloud-based network and IT infrastructure environment. Leads the implementation and integration of cloud technologies to support the infrastructure and service needs of the organization across business and IT functions, products, and platforms, and performs related duties as required.

The class title functions at the principal level delivering expertise in a range of areas, including systems design, testing and implementation of infrastructure, virtualization, cloud computing, network engineering, and systems and data flow monitoring to create the design for a new system.

This class is assigned to the City's Engineering Information Technology Job Family which consists of engineers and developers responsible for designing, building, testing, deploying, and supporting IT products and solutions.

## ESSENTIAL DUTIES

This is the highest level in the Cloud Engineer series. This class title requires a high level of technical knowledge; requiring work to be performed within a broad base. Positions in this classification also serve as a lead on technical projects involving large-scale, complex, and highly analytical tasks, with a focus on developing and executing cloud solution roadmaps to drive the achievement of business objectives. Positions at this level work to explore opportunities to evaluate, implement and manage best-in-class cloud engineering tools and technologies.

- Leads technical cloud engineering projects
- Researches, designs, develops, runs tests, and evaluates complex systems that support cloud implementation
- Plans, leads, and conducts technical tasks associated with the implementation and maintenance of enterprise-shared infrastructure
- Resolves complex problems, creates and improves procedures, and facilitates communication
- Develops and executes cloud solution roadmaps
- Participates and plays an active role in agile team activities and is accountable for regularly producing product increments that effectively contribute to solution features and/or components
- Works with agile teams and product analysts to gather requirements and information to support plans to transition existing business functions and IT services to a cloud-based environment
- Develops time and cost estimates for cloud solutions
- Evaluates technical requirements for projects and products to determine the impact of cloud technologies on the infrastructure including equipment redundancy and capacity requirements
- Determines cloud systems specifications, input/output processes, and working parameters for hardware/software compatibility
- Creates the physical design for cloud-based solutions for infrastructure and platforms
- Coordinates with Security staff to ensure cloud solutions support the maintenance of a secure technology environment
- Aligns cloud solutions to business and IT strategies

- Plans and validates the installation, configuration, and maintenance of cloud architecture
- Troubleshoots, diagnoses, documents, and resolves escalated support problems
- Supports innovative efforts by driving creativity, acting with agility, and thinking outside current boundaries
- Evaluates services provided by vendors and recommend changes
- Participates in Agile Release Train (ART) events as required

*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 IT Engineering, Computer Science, Business Management, Mathematics, Information Technology, Computer Engineering or Information Science or a directly related field plus four (4) years of work experience in systems administration, networking, database management administration, network engineering or administration, or an equivalent combination of education, training, and experience.

### Licensure, Certification, or Other Qualifications

- Relevant certification is preferred
- Experience in an agile environment is strongly preferred
- Experience with Scaled Agile Framework (SAFe) framework preferred

## 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:

- *practical application of engineering and technology including applying principles, techniques, procedures, hardware and tools to the design and production of various products and services
- *cloud ecosystem and leading-edge cloud emerging technologies
- *DevOps principles and ways of working
- *broad range of hardware and software products
- *approaches, tools, and techniques for anticipating, recognizing, managing, and resolving technical (hardware, software, application, or operational) problems

Considerable knowledge of:

- data center design best practices

- programming languages

- APIs, orchestration, automation, and databases

Moderate knowledge of:

- leading cloud engineering projects

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

Other knowledge as required for successful performance in the Senior Cloud Engineer 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.

- NETWORK TECHNOLOGY KNOWLEDGE – Integrates information from multiple sources into the design and development of network systems. Takes a lead role in assessing the optimum ways to develop and design networks in response to medium-term business needs. Applies the latest technologies and recommends the technical solution, required capital expenditure, component purchasing and contracting resources for setting up, enhancing and maintaining effective cross-functional networks.

- ANALYTICAL THINKING – Collects all the relevant information and data needed to address the problem. Organizes, classifies and synthesizes the data into fundamental issues. Breaks the information into manageable components. Identifies the logical outcomes from the analyses of the data collected and identifies the options and solutions for addressing the problems analyzed.

- CUSTOMER PARTNERSHIP – Conducts dialogues about improvements at the project or departmental level. Identifies simple product and service improvement opportunities and creates basic cost-benefit proposals. Provides recommendations to customers regarding enhancements to existing products and services as well as solutions that align with strategic performance drivers. Regularly meets with customer representatives to give status reports, and maintains records on customer activities. Demonstrates respect for the opinions of others.

- INFORMATION SEEKING – Utilizes a variety of information and data sources pertaining to organizational and professional trends. Checks the source for omission and accuracy. Identifies the sources that are appropriate for specific types of information. Checks for bias and omission. Seeks out the appropriate people to approach for guidance either formally or informally depending on the type of issue. Links information in a lateral as well as linear manner. Finds hidden data. Relates and manipulates data from various sources to create a fuller picture. Investigates and uncovers root causes of a problem or issue.

- OUTCOME DRIVEN – Evaluates the effectiveness of current metrics in pursuit of improved performance indicators. Takes appropriate actions to ensure obligations are met. Demonstrates the ability to challenge existing practices in order to become more effective. Contributes to improve work methods, outcomes and team performance.

- PROCESS ORIENTATION – Takes steps to identify and improve processes within own functional area. May escalate process improvement recommendations to appropriate

management team for consideration. Participates on process improvement teams as subject mater expert for assigned areas of responsibilities.

- SYSTEMS THINKING – Researches the critical and underlying relationships between primary business, technology and systems platforms. Devises approaches that integrate system components.

- 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.

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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.

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City of Chicago
Department of Human Resources
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