Position Code
1. INTCSPL3

POSITION DESCRIPTION

This position description serves as the official classification document of record for this position. Please complete the information as accurately as you can as the position description is used to determine the proper classification of the position.

2. Employee's Name (Last, First, M.I.)	**8. Department/Agency** TECH, MGMT AND BUDGET - IT
3. Employee Identification Number	**9. Bureau (Institution, Board, or Commission)** Agency Services
4. Civil Service Position Code Description Info Tech Specialist-3	**10. Division** MDE and CEPI
5. Working Title (What the agency calls the position) Cloud Application Architect - ITS 14	**11. Section** CEPI Support
6. Name and Position Code Description of Direct Supervisor JOHNSON, BRANDON L; INFO TECH MANAGER-3	**12. Unit**
7. Name and Position Code Description of Second Level Supervisor WANG, ZHENG; STATE ADMINISTRATIVE MANAGER-1	**13. Work Location (City and Address)/Hours of Work** MICHIGAN LIBRARY AND HISTORICAL CENTER 702 W. KALAMAZOO ST. LANSING, MI 48933 / 8:00AM TO 5:00PM, MONDAY – FRIDAY IN-STATE REMOTE

14. General Summary of Function/Purpose of Position

This position serves as an Cloud Application Architect for the Michigan Center for Educational Performance and Information (CEPI). This position will serve as the technical expert on orchestrating the placement and interaction of application components, to meet the agency business requirements, while also satisfying the often-conflicting requirements of sustainability, cost control, standardization, security, compliance, and strategic alignment primarily for the IT system modernization initiatives supporting CEPI portfolio. This position must ensure that the CEPI Cloud infrastructure is properly integrated with COTS packages, Software as a Service, Web Services and other federal, state and local government applications and services, both internal and external to the State. This position will provide technical expertise and leadership to application development staff, promoting usability, security, mobility, maintainability, and reusability. This position must be able to function with a minimum of direct supervision and requires a high degree of direct contact with department program managers and DTMB project and technology oversight groups. This position works as a part of a team of architects/designers with additional support staff.

The Cloud Application Architect is expected to lead the development and application of the technical architecture. They analyze technical/business problems and recommends strategies to implement technology or improve processes to enable improved business productivity.

This position should know how to use the most suitable cloud architecture frameworks and tools for agency system, and how to adapt them to specific project context and needs. The role should also be able to collaborate with other architects and developers for framework and tool recommendations in cloud. Here are a few highly desired technical skills for ideal candidates.

- Knowledge and experience using Cloud native applications.
- Creating Cloud native applications via Infrastructure as Code (IaC), Terraform, or ARM/Bicep.
- Cloud networking, storage, and architectural skillset.

15. Please describe the assigned duties, percent of time spent performing each duty, and what is done to complete each duty.

List the duties from most important to least important. The total percentage of all duties performed must equal 100 percent.

Duty 1

General Summary: **Percentage: 70**

In a Specialist capacity, develop and manage the enterprise level architecture for all IT systems and projects within the scope of responsibility.   Plan, develop and administer architectural practice related policies and procedures.

Individual tasks related to the duty:

- Provide application architecture expertise as it relates to the development and integration of applications, security, middleware, services, database design, development methodologies, and tools.
- Lead and coordinate with other technical resources in the overall application design, implementation and integration of applications with other existing applications/technologies/data sources on multiple platforms within the agency, across multiple state agencies, DTMB Office of Enterprise Architecture and with multiple vendors.
- Develop strategic goals required to ensure that the overall application architecture is in compliance with the DTMB Strategic Plan and DTMB development methodology best practices.
- Consult with application designers on proper application design and use of enterprise services.
- Compile or design application architectural models across the client enterprise for use internally and in conjunction with third party technology partners.   The models are of two types:
- Enterprise Models that depict the entire client enterprise and its inter-relationships internally and with the state enterprise architecture.
- Reference Models that depict recommended & approved application designs, which can serve as a template for future projects.
- Perform architecture design reviews across the organization as a part of the Enterprise Architecture Core Team.
- Define, implement and maintain the IT application architecture design methodology and best practices.
- Lead the effort towards services-based development and implementation.
- Survey external emerging development methodologies, and evangelize new technologies, standards and methodologies that will have a positive impact on the quality of applications and services.
- Ensure the implementation of security standards in application architectures, designs, and coding practices.   Be familiar with, provide research, documentation and input (when applicable) to Enterprise Security policies and standards.
- Plan, develop and administer application design-related policies and procedures to promote high quality, accurate and reusable application designs.
- Provide technical leadership, guidance and direction to Application Architects, Database Administrators, Programmer/Analyst(s) supporting application design, database architecture and design and overall application and service architecture functions in client agencies.

Duty 2

General Summary: **Percentage: 20**

Develop and maintain application level architecture components and design repositories (i.e. code libraries, middleware, services, database, and development tools). Manage projects related to application component design and development practice.

Individual tasks related to the duty:

- Perform business and technical requirements analysis for client enterprise level code libraries, middleware, services, database, and development tools.
- Oversee the design and validation of client enterprise level application components, API's and related databases.
- Oversee and approve the development of, and changes to the application architecture to ensure proper execution of the design.
- Provide technical support to application designers in the use of the enterprise service environment and development methodologies.
- Provide "practical" technical solutions to the development team to solve complex application development problems.
- Lead appropriate change control boards.
- Contribute to the development of testing plans, scenarios, and test data to ensure compliance and fit with the overall application architecture.
- Manage application architecture components and documentation versions using the established development and management processes and tools.
- Manage associated projects to develop client enterprise level application architecture components and objects.
- Review the security of application components and services.
- Act as the IT Architect SME covering the scope of responsibility on client enterprise application integration projects.
- Act as liaison to DTMB Office of Enterprise Architecture, and Office of Enterprise Security. Direct the use of EA Solution Patterns and Reference Models with existing and proposed solutions within the area of responsibility. Assist in creating EA Solution Assessments.
- Participate with the EA Core Team in the exchange of architectural best practices, the development and review of EA Roadmaps, the review of EA Solution Assessments from across the enterprise.

Duty 3

General Summary: **Percentage: 10**

Perform additional duties as assigned.

Individual tasks related to the duty:

- Perform code library, middleware, services support as required.
- Insure the installation, configuration, testing, and implementation of the applications follow the architecture guidelines.
- Insure proper operation of the applications.
- Participate in the development and implementation of processes that improve efficiency and enhance productivity.
- Provide leadership, consultation and expertise on special teams and projects as assigned.
- Ensure relevant administrative functions are complete and accurate.
- Provide coding guidance, validation, and quality control of other senior and junior developers' programming work.

16. Describe the types of decisions made independently in this position and tell who or what is affected by those decisions.

Final decision maker on the following:

- Application architecture design affecting agency development projects, development staff and applications users.
- Methodologies and tools used to develop application code, within DTMB standards, affecting agency development teams.
- The best approach to resolve technical issues and troubleshoot problems, affecting agency development and technical support teams.
- Plan, develop and administer application architecture design related policies and procedures, affecting agency development and technical support teams.

17. Describe the types of decisions that require the supervisor's review.

- Recommendations for application design that may have a direct impact on systems and agencies beyond the scope of responsibility.
- Requiring endorsement from managers of impacted applications beyond the scope of responsibility.
- Recommendations impacting budget and staffing needs, or significantly impacting project schedules.
- Decisions having strategic technical implications.
- Conflicts between technical directions or staff organizations and changes having significant impact to staff.
- Security considerations impacting the enterprise or requiring additional review by policy.

18. What kind of physical effort is used to perform this job? What environmental conditions in this position physically exposed to on the job? Indicate the amount of time and intensity of each activity and condition. Refer to instructions.

Typical office environment

19. List the names and position code descriptions of each classified employee whom this position immediately supervises or oversees on a full-time, on-going basis.

Additional Subordinates

20. This position's responsibilities for the above-listed employees includes the following (check as many as apply):

N	Complete and sign service ratings.	N	Assign work.
N	Provide formal written counseling.	N	Approve work.
N	Approve leave requests.	N	Review work.
N	Approve time and attendance.	N	Provide guidance on work methods.
N	Orally reprimand.	N	Train employees in the work.

22. Do you agree with the responses for items 1 through 20? If not, which items do you disagree with and why?

Management prepared.

23. What are the essential functions of this position?

As the Cloud Application Architect for the Center for Educational Performance and Information (CEPI), this position is strategically responsible for the design and interaction of the client enterprise level application architecture, code libraries, middleware, and services components. This Specialist leads the migration to a services-based architecture; compiles and designs architectural models of current and proposed applications across the client enterprise; performs design reviews across the client organization; leads the evaluation of vendor software targeted for possible integration into the applications or environment; defines and manages the IT application design methodology; surveys external emerging developments in application design and methodologies, and evangelizes new techniques, technologies and standards; manages the development and maintenance of the client application architecture environment, and consults with application designers on how to implement enterprise architecture components and resolve issues. This position serves as the team's chief cloud SME and will enforce best practices in cloud implementation and deployment while complying with DTMB policies and procedures.

Critical Job Role: Cloud Application Architect

Competencies: Customer Focus, Technical/Professional Knowledge, Planning and Organizing Work, Communication, Building Trust, Contributing to Team Success.

Occasional overtime may be required.

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24. Indicate specifically how the position's duties and responsibilities have changed since the position was last reviewed.

NEW POSITION

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25. What is the function of the work area and how does this position fit into that function?

This division is responsible for providing system and programming development to multiple program areas within the client enterprise. The division must assess user problem/needs, design, develop, program, implement, maintain, migrate, enhance, manage and control numerous cloud applications. It must perform these activities in compliance with state and federal regulations, in adherence to prevailing division policy, procedures, and standards, while maintaining operational effectiveness. For effectiveness in application development, decisions regarding the applications architecture are critical. This position serves as a cloud applications architectural specialist with responsibility as the liaison to the leveraged teams within DTMB.

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26. What are the minimum education and experience qualifications needed to perform the essential functions of this position.

EDUCATION:

Possession of a bachelor's degree with at least 21 semester (32 term) credits in one or a combination of the following: computer science, data processing, computer information systems, data communications, networking, systems analysis, computer programming, information assurance, IT project management or mathematics.

EXPERIENCE:

Information Technology Specialist 14 - 15
Three years of professional experience equivalent to an Information Technology Infrastructure or Programmer/Analyst P11 or one year equivalent to an Information Technology Infrastructure or Programmer/Analyst 12.

KNOWLEDGE, SKILLS, AND ABILITIES:

Required:

- A thorough knowledge of the various aspects of complex cloud application development environments and practices
- Ability to use precedents in making decisions, capacity to communicate effectively with others, and maintain favorable public relations with clients.
- Considerable knowledge of cloud application development architecture, framework, and tools, ability to gather and analyze facts, define problems, and recommend solutions.
- Ability to conduct interviews and establish and maintain effective relationships with system users, ability to communicate technical terminology at a level appropriate to the audience.
- A thorough knowledge of the various aspects of the client agency. The ability to recommend technical solutions to business problems is essential.
- A thorough knowledge of business requirements, network-based application orchestration, control, audit and enablement of system administration, database management and application development.
- Advanced cloud application development and integration techniques.
- Experience with and knowledge of .NET, HTML, XML, SQL, SOAP, REST, PowerShell, IaC, Microsoft Azure, Function Apps.
- Proficient in Microsoft VISIO, Microsoft Office (Word, Excel, Access, PowerPoint).
- Understanding in relational database concepts, database concepts, telecommunication concepts, secure coding concepts, secure authorization concepts, web services.
- Experience in analysis, design, programming, testing, implementing and supporting web-based applications in Microsoft/Windows platform. (ASP.NET, framework 4.8 or higher, .Net 6 or higher).
- Experience with observability and distributed tracing.
- Experience designing, creating and maintaining distributed applications leveraging a microservices architecture.
- Experience writing and implementing Infrastructure as Code (IaC).
- Knowledge of both Microsoft Azure, web-based, and client server-based systems architecture.
- Knowledge/training in object oriented analysis, design and programming experience.
- Knowledge of cloud application and database development and access methods.
- Ability to prepare detailed written instructions and documentation.
- Ability to effectively make oral and written reports and presentations and prepare clear and concise documentation.
- Ability to establish and maintain effective relationships with clients and matrix support teams.
- Ability to resolve complex problems in a timely manner and seeks optimum solutions.
- Effective at creating highly complex assignments in a high stress work environment.
- Ability to troubleshoot application issues under pressure.
- Ability to own work items and issues from start to finish with minimal supervision.

CERTIFICATES, LICENSES, REGISTRATIONS:

Highly Desired:

Any cloud architect and developer certifications

NOTE: Civil Service approval does not constitute agreement with or acceptance of the desired qualifications of this position.

I certify that the information presented in this position description provides a complete and accurate depiction of the duties and responsibilities assigned to this position.

Supervisor	**Date**

TO BE FILLED OUT BY APPOINTING AUTHORITY

Indicate any exceptions or additions to the statements of employee or supervisors.

None

I certify that the entries on these pages are accurate and complete.

SARAH SEGERLIND	6/5/2024
Appointing Authority	**Date**

I certify that the information presented in this position description provides a complete and accurate depiction of the duties and responsibilities assigned to this position.

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Employee   **Date**