New

Ministry

Technology and Innovation

Describe: Basic Job Details

Position

Position ID

Position Name (30 characters)

Data Architect

Requested Class

Systems Analyst Level 3

Job Focus

Supervisory Level

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Organizational Structure

Division, Branch/Unit

☐ Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Supervisor's Current Class

Design: Identify Job Duties and Value

Job Purpose and Organizational Context

Why the job exists:

The Business Technology Operations branch plans for, implements, operates, and supports the digital services foundation technologies and platforms hosting the digital systems and data that empower business partners' services across the Government of Alberta (GOA). The branch ensures that modern technologies, including both on-premise and cloud-based hosting environments, along with an operating framework are in place to support the GoA's digital and data strategies. The branch is also responsible for the implementation, operation, and support of corporate electronic content management services as well as legacy business applications in accordance with policies and standards.

The Data Architect role is designed to lead the development, implementation, and modernization of the cloud based enterprise Data Management Platform and its architecture, enabling the Government of Alberta (GoA) to achieve its digital, data, and AI strategies. This role ensures that data is effectively organized, securely stored, efficiently analyzed, and aligned with enterprise standards, policies, and priorities. The Data Architect provides hands-on expertise in implementing modern data solutions, drives innovation through cutting-edge technologies, and ensures the platform supports business priorities, with a strong focus on enabling advanced analytics and AI as foundational components for the future.

Key purposes for this role include the following:

- Enterprise Data Strategy and Architecture: Responsible for defining, developing, and implementing enterprise data architecture and standards to support GoA’s data strategies, including the integration of AI-driven solutions.
- Platform Modernization and Implementation: Lead the modernization and hands-on implementation of the Data

Management Platform using cloud-native technologies, such as Delta Lake, Databricks, and Azure, to enable efficient data storage, data engineering, analytics, and scalable AI capabilities.

- Hands-On Solution Development: Actively design and implement scalable and secure data pipelines, ingestion processes, and transformation workflows using tools such as Databricks, Azure Data Factory, APIs, and other integration technologies, with AI-readiness as a key focus.
- AI Enablement: Ensure the Data Management Platform is designed to support AI initiatives, including advanced data modeling, machine learning workflows, and integration of AI-driven decision-making capabilities across organizational processes.
- Data Quality and Governance: Formulate and apply techniques for quality data collection, management, and governance to ensure data adequacy, accuracy, security, and compliance with confidentiality standards, with considerations for AI data requirements.
- Roadmap Development and Execution: Collaborate with team members and vendors to create and execute the Data Management Platform roadmap, ensuring alignment with strategic goals, business priorities, and AI-readiness.
- Advisory and Recommendations: Provide expert recommendations on platform design, configuration, and development to ensure solutions are scalable, efficient, secure, and aligned with business requirements, including future AI and advanced analytics needs.
- Mentorship and Leadership: Lead and mentor team members in both technical knowledge and agile practices, fostering continuous learning, adherence to best practices, and strong engineering standards, with an emphasis on preparing the team for AI-driven technologies.
- Collaboration: Work closely with cross-functional teams, stakeholders, and vendors to ensure seamless integration of data solutions, operational excellence, and platform enhancement, with AI as a fundamental consideration for all initiatives.
- Alignment with GoA Operations: upport the implementation, operation, and modernization of digital services, hosting environments, and corporate electronic content management systems in alignment with GoA's digital, data, and AI strategies.

This role is critical in ensuring that the Data Management Platform is well-designed, secure, and capable of supporting current and future business needs across the Government of Alberta. With AI as a foundational component of organizational priorities, the Data Architect will play a key role in enabling AI-readiness, driving technological innovation, and ensuring the data ecosystem evolves to support advanced analytics and artificial intelligence capabilities for the future.

Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

Data Architecture and Strategy:

• Lead and manage the development of enterprise-wide data architectures to support complex systems, high-volume data processing, and diverse data sources.
• Architect and modernize the cloud-based Data Management Platform, leveraging technologies such as Azure, Databricks, and Delta Lake to handle high-volume, high-velocity, and diverse data.
• Develop and enforce data governance frameworks to ensure data quality, integrity, security, and compliance with organizational and regulatory standards.
• Design architectures that enable seamless integration of internal and external data sources into a unified platform supporting advanced analytics, visualization, and reporting needs.
• Ensure the architecture supports robust data sharing and collaboration, enabling self-service analytics and visualization across business units.
• Create and maintain architectural roadmaps to align with the organization's digital priorities, including AI-readiness and data visualization capabilities.

Solution Design and Implementation:

• Hands-On Data Engineering: Actively design, develop, and optimize scalable, secure, and reliable data pipelines to support ingestion, transformation, and delivery of data for analytics, visualization, and AI use cases.
• Data Analytics Enablement: Design and implement solutions that provide easy access to clean, well-structured, and analytics-ready data for business intelligence (BI), visualization tools (e.g., Power BI), and advanced analytics.
• Implement cutting-edge data solutions using cloud-native tools (e.g., Databricks, Azure Data Factory, Delta Lake) to deliver data for dashboards, reports, and visualizations in real time or near real time.
• Enable data exploration and visualization capabilities by creating frameworks and integrations that support BI and

analytics tools across the organization.
• Ensure all solutions adhere to organizational IT standards, security policies, and compliance requirements, including data privacy and auditability.
• Establish tools and processes to maintain platform reliability, high availability, and data integrity while ensuring traceability and transparency in data workflows.

AI Enablement and Innovation:
• Ensure the Data Management Platform is AI-ready, supporting advanced data modeling, machine learning workflows, and AI-driven decision-making processes.
• Enable AI capabilities by building data pipelines that provide high-quality input for machine learning models and advanced analytics systems.
• Analyze and interpret large datasets to identify patterns, trends, and insights that drive AI and data-driven innovation.
• Collaborate with stakeholders to identify and implement AI use cases, ensuring platform capabilities meet business and technical requirements.
• Continuously improve platform performance to support AI, advanced analytics, and visualization needs across the organization.

Collaboration and Coordination:
• Collaborate with cross-functional teams, including stakeholders, project managers, and vendors, to deliver scalable data solutions that enable analytics, visualization, and AI capabilities.
• Coordinate with Technology and Innovation teams to address client priorities and ensure solutions align with business needs and technical requirements.
• Work closely with Service Development and Service Management stakeholders to implement and integrate solutions while ensuring auditability and governance.
• Establish methods and procedures for secure and effective information sharing between internal and external stakeholders to support analytics and reporting needs.

Leadership and Mentorship:
• Provide technical and strategic leadership for projects, ensuring alignment with organizational goals, IT standards, and compliance requirements.
• Mentor and coach data engineers and team members in technical best practices, cloud-native technologies, and AI-ready solutions.
• Lead the development of reusable frameworks, standards, and patterns to drive operational efficiency and platform enablement for analytics and visualization.
• Collaborate with leadership on branch planning activities, providing recommendations on data strategies, platform direction, and alignment with organizational goals.
• Organize and monitor project teams, ensuring timely progress on key deliverables.

IT Audit and Compliance:
• Develop and implement platform controls, documentation, and procedures to ensure compliance with IT audit requirements and organizational policies.
• Ensure data solutions adhere to security, privacy, and governance standards, enabling traceability and transparency.
• Establish mechanisms for logging, monitoring, and reporting to support audit readiness and regulatory compliance.
• Collaborate with internal and external auditors to address audit findings and provide evidence of compliance.
• Conduct regular reviews of platform operations to identify and resolve gaps in compliance, security, or governance.

Continuous Improvement:
• Stay current with advancements in cloud computing, data engineering, and AI technologies to ensure the platform remains innovative, efficient, and aligned with organizational goals.
• Continuously seek opportunities to improve scalability, reliability, and functionality of the platform to support advanced analytics and AI capabilities.
• Lead initiatives to integrate emerging technologies into the platform, ensuring solutions remain future-ready while maintaining compliance.
• Drive innovation by identifying and adopting tools and frameworks that enhance platform performance and operational efficiency.

Problem Solving

Typical problems solved:

The Data Architect regularly addresses complex architectural challenges, which require a strong technical background, creativity, and the ability to research and collaborate with technology experts across the Government of Alberta (GoA). These challenges often involve designing scalable, secure, and high-performing solutions for diverse and evolving

business needs.

Scheduling and prioritization conflicts are another common challenge, which necessitate a deep understanding of GoA priorities and the ability to effectively engage and consult with ministries, business areas, and stakeholders to align goals and timelines.

The position also involves navigating and resolving people-related issues, such as personality conflicts, interpersonal dynamics, or personal emergencies. Resolving these requires strong interpersonal skills, an understanding of team dynamics, and familiarity with HR practices. Stakeholders include internal staff, contracted resources, and business partners across all levels of the GoA, requiring a thoughtful and diplomatic approach to problem resolution.

Types of guidance available for problem solving:

- The position requires a high level of diversity due to the breadth of technologies relying on the infrastructure and the complexity of making changes to the infrastructure. This position requires a high level of creativity and problem solving abilities.
- Provides direction to a team of technical support analysts, solution architects and contractors focused on the development, maintenance and operations of commercially available software applications, custom developed applications and associated software infrastructure components.

Direct or indirect impacts of decisions:

- This position works with minimal direction, applying good discretion when making decisions. Latitude is afforded when making decisions, providing architectural recommendations, planning, initiating, and completing work based on business expectations and technology requirements.
- Decisions made can impact critical service delivery in a multi-ministry environment
- Decision made can impact other data, technology platforms and product development

Key Relationships

Major stakeholders and purpose of interactions:

- **GoA Staff -** Requirements gathering, problem resolution, provide guidance and recommendations
- **Consultants\Contractors -** Cooperate with to provide services; support in order to deliver project deliverables; coordinate delivery of database services.
- **Cloud Platform Services Peers -** Knowledge exchanges, technical assistance
- **Cyber Security Services -** Critical interaction to ensure platforms and services are secure
- **Team Members and Leadership -** Provide insights, technical work and support to team members and leadership
- **Business Technology Operations Peers -** Information sharing, collaboration for new services
- **Business Technology Operations Leaders -** Planning activities, operational efficiency recommendations
- **Vendors** - Support issues, research, and learning
- **Governance bodies -** including Governance, Change Advisory Boards and various committees and groups - Required for maintenance of services
- **Project Management Office -** Reporting progress and status for work on various projects supported by services
- **FOIP / Litigation team -** Responding to requests from various ministries to support FOIP and litigation requests against hosted services
- **Records Management/Information Management -** Critical interaction for job function to properly align services to RM/IM requirements
- **Infrastructure Services -** Aligning to standards provided by infrastructure team; including server configuration, server architecture and cloud services

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Bachelor's Degree (4 year)	Other		

If other, specify:

Information Technology.

Job-specific experience, technical competencies, certification and/or training:

- 8+ years of experience in Information Technology.

Data and Cloud Experience:

- 8+ years of experience in data engineering, data transformation, and enterprise-level data architecture.
- 5+ years of experience in data management, including cloud-based data engineering, solution architecture, and implementation of scalable data solutions.
- 5 to 7 years of SDLC experience in roles like solution architecture, or systems integration
- Strong hands-on experience in cloud-based data platforms (e.g., Azure), including designing and implementing data pipelines, architectures, and datasets.
- Proven expertise in solution architecture, including designing end-to-end scalable and secure systems and integrating data solutions across cloud and on-premise environments.
- Expertise in cloud-native data tools and technologies, such as Azure Data Factory, Databricks, Delta Lake, and Synapse Analytics.
- Advanced experience in data modeling and design, including database development and management.
- Proficiency in analyzing and processing large datasets to support analytics, reporting.
- Knowledge of AI/ML concepts and their integration into data pipelines and systems to enable advanced data-driven decision-making.

Data Architecture and Cybersecurity:

- Expertise in data architecture, data management principles, practices, tools, and methodologies.
- Expertise in systems integrations, including linking enterprise systems, managing dependencies, and optimizing data flow across platforms.
- Proven ability to design and implement integration solutions that connect cloud, on-premise, and third-party systems.
- Experience with data security in cloud environments, including encryption standards, secure data access, and identity and access management (IAM).
- Knowledge of data protection strategies and implementing cybersecurity best practices for cloud-based data systems.
- Familiarity with industry-standard security frameworks is an asset.

Technical Environment Experience:

- Proven experience in enterprise technical environments, including systems linkages, integrations, and managing interdependencies between systems.
- Skilled at facilitating changes to business policies and processes to meet evolving organizational needs.
- Knowledge of GIS technologies is an asset.

Leadership and Communication:

- Proven ability to lead, mentor, and empower diverse teams, fostering collaboration and engagement.
- Demonstrated success in leading large-scale and complex initiatives or projects.
- Strong problem-solving, critical thinking, and decision-making skills, with the ability to resolve complex challenges effectively.
- Excellent communication and collaboration skills, including consultation, facilitation, and presenting technical concepts to stakeholders.
- Ability to convey complex data, systems integration, cybersecurity, and AI-driven concepts, solutions, and recommendations to key decision-makers in an understandable manner.

Certifications and Training:

- ITIL Foundation certification is preferred
- TOGAF 9 Professional Certification is desirable
- Knowledge or experience with Azure cloud technologies is highly desirable.
- AI/ML certifications is an added advantage.

- Azure cloud knowledge / experience in an asset

Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

Competency	Level A B C D E	Level Definition	Examples of how this level best represents the job
Systems Thinking	○ ○ ◉ ○ ○	Takes a long-term view towards organization's objectives and how to achieve them: • Takes holistic long-term view of challenges and opportunities • Anticipates outcomes and potential impacts, seeks stakeholder perspectives • Works towards actions and plans aligned with APS values • Works with others to identify areas for collaboration	valuates potential solutions and considers implications Works with clients to gain a better understanding of the impacts Can visualize long-term needs and can evaluate potential impacts to design choices
Creative Problem Solving	○ ○ ◉ ○ ○	Engages the community and resources at hand to address issues: • Engages perspective to seek root causes • Finds ways to improve complex systems • Employs resources from other areas to solve problems • Engages others and encourages debate and idea generation to solve problems while addressing risks	valuates potential solutions and considers implications Works with clients to gain a better understanding of the impacts Can visualize long-term needs and can evaluate potential impacts to design choices
Develop Self and Others	○ ○ ◉ ○ ○	Plans according to career goals and regular development: • Aligns personal goals with career goals • Leverages strengths; attempts stretch goals • Provides feedback and openly discusses team performance • Values team diversity, and supports personal development	Identifies knowledge gaps and pro-actively seeks learning opportunities Actions development; actively learns about the broader organization Supports others' development; brings others together to reflect and learn Develops staff; consults with individuals to reflect

			on experiences
Agility	○ ○ ○ ◉ ○	Proactively incorporates change into processes: • Creates opportunities for improvement • Is aware of and adapts to changing priorities • Remains objective under pressure and supports others to manage their emotions • Proactively explains impact of change on roles, and integrates change in existing work • Readily adapts plans and practices	Able to adapt approach to a situation in an environment where variable frequently change Seeks out new opportunities; fosters agility in others Anticipates change; aware of changing organizational priorities Supports change; champions a plan of action
Drive for Results	○ ○ ○ ◉ ○	Works to remove barriers to outcomes, sticking to principles: • Forecasts and proactively addresses project challenges • Removes barriers to collaboration and achievement of outcomes • Upholds principles and confronts problems directly • Considers complex factors and aligns solutions with broader organization mission	Plans for results; defines mission with longer-term perspective Takes accountability; removes barriers Takes risks; confronts problems directly Focuses on outcomes; strategically aligns decisions

Benchmarks

List 1-2 potential comparable Government of Alberta: Benchmark