



Position Details

Classification:
Information Technology Specialist III

Office:
Information Technology

Working Title:
Data Architect

Location:
Sacramento

Position Number:
311-480-1415-001

HR Approval Date/Initials:
02/25/2026 FAY

CBID/Bargaining Unit: M01

Work Week Group: E

Tenure:
Permanent

Time Base:
Full Time

Job Description Summary

Under administrative direction of the Chief Data Officer, an Information Technology (IT) Manager II, the IT Specialist III (Data Architect) leads the design, development, and implementation of the enterprise data strategy. This includes defining the technical data architecture, modern data platforms, enterprise data warehouse, and analytics infrastructure. The incumbent collaborates with business and IT stakeholders to establish scalable data engineering practices, enterprise data governance, and business intelligence capabilities. The Data Architect drives innovation by designing secure, high-performing, and future-ready data solutions that make data accessible, trusted, and actionable across the organization.

The following IT Domains are applicable to the incumbent’s duties/tasks:

- Business Technology Management
- Information Technology Project Management
- Client Services
- Software Engineering
- Information Security Engineering
- System Engineering

Duties

Percentage
Essential (E)/Marginal (M)

- 25% **Data Architecture**
(E)
 - Collaborates with diverse stakeholders, including California High-Speed Rail Authority (Authority) leadership and external partners to design and maintain an enterprise data strategy and framework that translates business objectives into scalable data architecture solutions, guiding data activities that support analytics, operations, and digital transformation.
 - Develops comprehensive data architecture frameworks that define how data is collected, stored, integrated, and used across the organization.

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These blueprints ensure consistency, scalability, and alignment with business and IT strategies.

- Develops and enforces data modeling standards that represent business entities and their relationships. This includes high-level conceptual models, detailed logical models for database design, and physical models optimized for performance and storage.
- Establishes modeling conventions and naming standards to ensure consistency across projects. Guides teams in using tools like ER/Studio, Erwin, or dbt to maintain high-quality, reusable models.
- Designs data platforms that can handle growing data volumes and diverse workloads, including real-time analytics, batch processing, and self-service Business Intelligence (BI). This includes selecting appropriate storage and processing technologies.
- Defines and develops how data moves between systems using Extract, Transform, Load/Extract, Load, Transform pipelines, Application Programming Interface, and streaming platforms like Kafka. Ensures integration patterns are secure, efficient, and reusable across the enterprise.
- Implements metadata management practices to document data definitions, lineage, and usage. Promotes a common vocabulary and taxonomy to improve data discoverability and reduce duplication.
- Assesses and selects the right mix of technologies (e.g., Snowflake, BigQuery, DynamoDB, Azure Synapse) based on use cases, performance needs, and cost considerations.
- Implements tools and processes to track how data flows from source to consumption. This helps in debugging, auditing, and understanding the downstream impact of changes.
- Ensures that data architecture supports the broader enterprise architecture, including application, infrastructure, and business capability layers. This alignment ensures that data initiatives are not siloed and contribute to strategic goals.
- Embeds data security and privacy-by-design into data architecture by collaborating with cybersecurity teams to ensure secure data flows, access controls, encryption standards, and compliance with organizational and regulatory requirements.

25% **Data Governance and Compliance**

- (E)
- Establishes and maintains enterprise data governance frameworks to define ownership, stewardship, and accountability for data assets across the organization.
 - Designs and implements technical solutions to operationalize data governance policies, including the integration of governance controls into data pipelines, metadata repositories, data catalogs, and access

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management systems. Leverage cloud-native governance services to automate enforcement and monitoring.

- Develops and enforces data policies, standards, and procedures to ensure data quality, consistency, and integrity throughout its lifecycle.
- Implements data classification and sensitivity labeling to identify and protect personal, confidential, and regulated data in accordance with internal and external requirements.
- Ensures compliance with data privacy and protection regulations such as General Data Protection Regulation (GDPR), California Consumer Privacy Act (CCPA), Health Insurance Portability and Accountability Act (HIPAA), and other industry-specific mandates.
- Defines and monitors data quality metrics and Key Performance Indicators, and work with data stewards to remediate data quality issues proactively.
- Establishes data access and usage controls based on roles and responsibilities, ensuring that data is only accessible to authorized users.
- Maintains data lineage and audit trails to support transparency, traceability, and regulatory reporting requirements.
- Collaborates with legal, compliance, and security teams to align data governance practices with broader risk management and compliance strategies.
- Defines the data architecture for the collection, integration, enhancement, storage, and availability of data as a shared asset for business decision-making.
- Promotes data literacy and awareness by providing training, documentation, and communication around data governance policies and best practices.
- Leads data governance councils or working groups to drive cross-functional alignment and decision-making on data-related issues.
- Closely collaborates with the Information Security Officer, Privacy Officer, and data owners to advise on data classification, compliance and protection, and to define data security standards and access.
- Works with security and technical teams to perform data compliance reviews and gap analysis activities related to Authority information resources. Ensures adherence to State and Federal data requirements. Develops mitigation strategies to remediate data related findings.
- Assesses data risks and makes recommendations on courses of action and data controls to ensure data security, privacy, and protection in compliance with State and Federal requirements.
- Extends data governance practices to cover Artificial Intelligence/Machine Learning (AI/ML) initiatives and unstructured data assets, including governance of training data, model lineage, and ethical use of data in automated decision-making systems.

- Defines and tracks governance maturity metrics and conduct regular assessments to identify gaps, measure effectiveness, and drive continuous improvement to remain effective and aligned with business needs.

25%
(E)

Data Engineering, Analytics, and Visualization

- Architects and oversees enterprise data pipelines and integration frameworks to support scalable, secure, and efficient data movement across systems for analytics, operational use, and advanced analytics workloads.
- Defines and governs enterprise data models and semantic layers that enable consistent, reusable, and business-aligned metrics across analytics and visualization platforms.
- Provides architectural leadership and technical guidance to data engineers, ensuring best practices in data ingestions, transformation, testing, and pipeline design across batch and real-time environments.
- Establishes standards for data integration and orchestration frameworks, supporting both batch and streaming data flows across hybrid cloud and on-premises environments.
- Implements data quality frameworks and observability practices to monitor, validate, and ensure the reliability and trustworthiness of data pipelines and analytics outputs.
- Promotes metadata-driven and declarative pipeline design, enabling reusable, testable, and version-controlled data transformations.
- Applies data product thinking by designing domain-aligned, discoverable, and reusable data assets that meet the needs of specific business units or use cases.
- Ensures analytics and BI platforms are powered by governed, high-quality, and well modeled data sources, enabling self-service, operation reporting and advanced analytics.
- Continuously optimizes data pipelines and analytics workloads for performance and cost-efficiency, leveraging cloud-native tools, monitoring solutions, and usage analytics.
- Provides direction, guidance to staff, and contracted personnel on the development and implementation of a robust data management program. Identifies opportunities for improvement in the delivery of data services; ensures services are delivered as requested or needed by business partners, other IT staff, and external entities in a timely and effective manner.

15% **Enterprise Data Support**

- (E)
- Advises leadership, staff, and clients on matters regarding IT trends best practices and the strategic role of data in the enterprise transformation
 - Collaborates with the IT leadership to envision and execute the IT strategic plan and technology roadmap, ensuring data architecture aligns with enterprise application, infrastructure, and security domains.
 - Leads the development and execution of the enterprise data strategy, including the multi-year roadmaps, capability maturity assessments, and investment planning.
 - Evaluates and recommends data platforms, tools, and vendors; participates in procurement processes, licensing decisions, and vendor performance reviews.
 - Mentors and upskills others by promoting architectural awareness, data modeling standards, scalable engineering practices, and data literacy across the enterprise.
 - Collaborates with peers and provides support for initiatives across all areas of the IT Office, including cross-functional and inter-agency data-sharing efforts.
 - Advises on responsible data use, including data ethics, bias mitigation, and governance of AI/ML models and unstructured data assets.
 - Leads the implementation of data governance and metadata management tools to operationalize policies and automate compliance.
 - Works closely with Project Management Office and cross-functional teams to ensure that data-related initiatives and enterprise solutions are delivered on time, within scope, and aligned with project objectives. Provides architectural oversight and contributes to planning, risk mitigation, and execution across the full solution delivery lifecycle.

10% **Other Duties**

- (E)
- Fosters an environment of teamwork and collaboration, communicates position-related information, and promotes the exchange of ideas through active listening and open discussion.
 - Represents the IT Office in meetings with Authority management, external partners, and cross-agency working groups.
 - Continuously scans the market for emerging data technologies and assess their applicability to the Authority's mission.
 - Actively participates in team and departmental meetings, training, technology initiatives, or other assignments.
 - Maintains up-to-date knowledge about state policies, processes, and industry best practices related to IT and data management.
 - Ensures travel is approved and documentation and expense claims are processed in a timely manner.

- Invests in personal development through continuous education to gain and enhance position-related knowledge.
- Adheres to Authority policies and procedures regarding attendance, leave, and conduct.
- Performs other duties as needed to accomplish the Authority and IT Office's mission and goals.
- Travel may be required domestically and internationally, if needed, to support business needs and continuous learning.

Special Requirements

The checked boxes below indicate any additional requirements of this position.

License Required Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Conflict of Interest (COI) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Bilingual Required Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Contract Manager Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Medical Required Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type:		Language:		

Other Special Requirements Information:

Conflict of Interest (COI) – This position is designated under the Conflict-of-Interest Code. The position is responsible for making, or participating in the making of governmental decisions that may potentially have a material effect on personal financial interests. The employee is required to complete form 700 within 30 days of assuming employment. Failure to comply with the Conflict-of-Interest Code requirements may result in disciplinary action.

Contract Manager – Ensures that assigned contracts and agreements are administered and managed in accordance with the applicable policies and procedures of the Authority, the State Contracting Manual, and the California Government Code.

Knowledge and Abilities

All knowledge and abilities of the IT Specialist II classification; and

Knowledge of: Development and application of technology in the current and future business environment; emerging technologies and their applications to business processes; policy development; and applications and implementation of information systems to meet organizational requirements.

Ability to: Research and identify best practice methods and processes to identify current and emerging trends in technology and recommend appropriate courses of action.

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Desirable Qualifications

- Demonstrated knowledge and experience in data architecture, data management, business intelligence, and governance.
- Proficiency in data analysis, data modeling, and data visualization.
- Experience with modern data platforms (cloud-native architectures (e.g., AWS, Azure, GCP), data lakehouse (e.g., Delta Lake, Snowflake), event-driven or microservices-based data platforms).
- Experience with modern data pipeline tools and technology.
- Experience designing and implementing data pipelines for production environments.
- Experience of governance frameworks (evidence of work with data cataloging tools (e.g., Collibra, Alation), metadata management, and data lineage).
- Experience with implementing governance and compliance with GDPR, CCPA, and HIPAA.
- Enabling analytics and self-service BI (experience with BI tools (Power BI, Tableau, Looker, ThoughtSpot), semantic layer design, and data modeling for analytics).
- Ability to lead teams, communicate effectively with stakeholders, and influence decision-making.
- Ability to establish and maintain cooperative working relationships with all levels of staff, management, and vendor partners; communicate effectively with executive leadership, peers, end users, technical staff and partners, oversight agencies, and other stakeholders.
- Ability to prepare or direct the preparation of clear and concise documentation (e.g., architecture diagrams, workflows, roadmaps, policies, etc.).
- Ability to research and analyze technical solutions and provide recommendations that support the Authority's technical direction.
- Ability to meet business needs through innovative solutions in a fast-paced environment.
- Ability to adapt to changes in direction or organizational change.
- Ability to manage multiple high priority initiatives in a fast-paced achievement-oriented environment.
- Ability to communicate complex technical information in a manner easily understood by non-technical stakeholders.
- Ability to maintain confidentiality of sensitive tasks, assignments, and information.
- Ability to work under pressure to meet deadlines.
- Display a working knowledge of project management practices, the system development lifecycle, etc.
- Demonstrate a service-oriented and customer relations-sensitive attitude.
- Demonstrate comprehensive understanding of the California State Administrative Manual and California Statewide Information Management Manual.
- Willingness to work excess hours to achieve business results.
- Display enthusiasm and aptitude for continuous learning.

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Supervision Exercised Over Others

This level does not supervise but may lead. The Specialist III provides technical and project management leadership. This level does not provide day-to-day operational management or supervision. The IT Specialist III has defined responsibility and authority for decision making related to projects or in an advisory function.

Public and Internal Contacts

The incumbent will have regular contact with various levels of staff at the Authority, consultants, vendors, contractors, and staff at other state agencies. The incumbent must handle all situations and communications tactfully and respectfully to support the Authority's mission.

Responsibility for Decisions and Consequence of Error

At the IT Specialist III level, incumbents are responsible for independent work within business constraints. This level is responsible for recommendations to executives, decisions for projects, and outputs. This level is also responsible for program and project decisions and actions. The consequence of error at the IT Specialist III level may have statewide and enterprise-wide impacts. Consequences include lost funding, project failure, failed business strategy, poor customer service and performance, risk exposure, loss of business continuity, missed business opportunities, and budget implications. Consequences also include error in making decisions or giving advice that would have a serious detrimental effect on the operating efficiency of the undertaking or function.

Physical and Environmental Demands

While working on-site, the incumbent works in a professional office environment, in a climate-controlled area which may fluctuate in temperature and is under artificial light. The incumbent will be required to use a computer, mouse, and keyboard, and will be required to sit for long periods of time at a computer screen. The incumbent must be able to focus for long periods of time, multi-task, adapt to changes in priorities, and complete tasks or projects with short notice. The incumbent must develop and maintain cooperative working relationships and display professionalism and respect for others in all contact opportunities.

Working Conditions and Requirements

- a. Schedule: Flexible schedules may be available for this position. Specific schedules will be set between the supervisor and the employee.
- b. Telework: Part-time telework may be available for this position for California residents based on the requirements of the position.
- c. Travel: Travel may be required domestically and internationally, if needed, to support business needs and continuous learning.
- d. Other: The incumbent will be required to carry a state-issued cell phone and work outside of their regular schedule, as needed, to meet business needs.

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Acknowledgment and Signatures

I have read and understand the duties listed above and can perform them with/without reasonable accommodation (RA). (If you believe you may require RA, please discuss this with the supervisor indicated below who will discuss your concerns with the RA coordinator. If you are unsure whether you require reasonable accommodation, inform the supervisor indicated below who will discuss your concerns with the RA Coordinator.)

Employee Printed Name:	Signature:	Date:
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I have discussed the duties with and provided a copy of this duty statement to the employee named above.

Supervisor Printed Name:	Signature:	Date:
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