

PRINCIPAL DATA ENGINEER

Position Level: L7

Location: Perth

Effective Date: October 2026

Responsibilities

The Principal Data Engineer is responsible for designing, building and optimising modern enterprise data platforms that enable trusted, secure and scalable analytics across the organisation. The role leads the implementation of Microsoft Fabric data warehouse and Lakehouse solutions, develops robust integration pipelines across source systems, establishes enterprise-wide data governance and domain-aligned data practices that support operational and strategic decision-making. The role also drives the maturity of the organisation's data platform, establishing the architecture, standards, and practices required to enable future AI, machine learning, and MLOps capabilities.

Reporting

The Principal Data Engineer reports to the Applications and Data Manager.

Accountabilities

Result Area	Major Activities
1. Safety and People:	• Further a safe, inclusive, and collaborative workplace, that supports the mental health and wellbeing of self, and others. • Identify actions and changes leading to continuous improvement of safe work environments; both physically and psychologically. • Lead and implement practices that improve safety and inclusion as outlined in the Leadership Capability Framework.
2. Integrated Management Systems:	• Develop and oversee the systems that ensure Pilbara Ports complies with all applicable codes, as well as its legal and statutory requirements. • Comply with and demonstrate a positive commitment to organisational processes and ISO Management Systems including Quality, Environment, Safety and Information Security.
3. Data Platform Engineering:	• Design, implement and optimise Microsoft Fabric data warehouse, Lakehouse and semantic model solutions, establishing scalable workspace architectures, capacity planning, workload management, and cost optimisation practices aligned to enterprise architecture and business priorities. • Establish enterprise-scale data architecture standards, platform design patterns, and engineering practices that ensure secure, resilient, and cost-effective data products while enabling advanced analytics, AI, and digital innovation. • Collaborate with solution architects, application teams and business stakeholders to translate data requirements into robust engineering designs and reusable platform components. • Lead and govern CI/CD, DataOps, and Infrastructure as Code (IaC) practices, apply engineering best practices across version control, testing, release management, observability and support to ensure a secure, reliable and scalable enterprise data platform.

4. Microsoft Fabric, Data Governance, Integration:	• Lead the design and implementation of Microsoft Fabric data warehouses, Lakehouses and medallion-style data architectures to support trusted enterprise reporting and advanced analytics. • Build and maintain batch and near real-time data integration pipelines across enterprise applications using reusable ingestion, transformation and orchestration patterns. • Establish and embed enterprise-wide data governance practices including data domains, ownership, quality controls, lineage, metadata standards, security and access controls, retention and privacy requirements. • Partner with business data owners and domain representatives to define canonical datasets, business definitions and trusted data products that improve consistency across reporting and analytics. • Support development and optimisation of semantic models, dashboards and visualisations that provide clear operational and strategic insights while enabling self-service reporting where appropriate. • Monitor platform performance, data freshness, pipeline reliability and data quality, and implement proactive improvements to increase resilience, usability and business trust. • Work collaboratively with internal technical teams and external partners to troubleshoot issues, resolve data incidents and support ongoing enhancement of the enterprise data ecosystem.
5. Data Enablement and Collaboration:	• Work closely with analysts, reporting specialists and business stakeholders to translate information needs into scalable dataset and semantic modelling solutions. • Define standards for metric consistency, dataset reuse and release management to improve the quality and usability of enterprise reporting assets. • Support adoption of Microsoft Fabric and Power BI capabilities through technical guidance, documentation and mentoring for data consumers and delivery teams. • Contribute to data literacy and self-service maturity by helping stakeholders understand data sources, definitions, quality considerations and appropriate use of governed datasets. • Identify opportunities to automate manual reporting and data preparation activities, improving efficiency, repeatability and control across the analytics lifecycle.
6. Technical Leadership, Stakeholder Engagement and Service Excellence:	• Promote the organisation's strategic direction by delivering modern, secure and scalable data solutions that create measurable business value. • Provide technical leadership across the data engineering lifecycle, including solution design, code quality, peer review, documentation, testing and operational readiness. • Evaluate emerging technologies and data architecture patterns to drive continuous improvement and innovation. • Provide guidance, mentoring and practical teaching to others across data engineering practices, tools, standards and ways of working, helping to uplift capability across the broader team. • Build strong, trusted relationships with business and technology stakeholders through a respectful and collaborative approach, ensuring data products are fit for purpose and delivered in partnership with others.

	Communicate technical concepts, risks, dependencies and recommendations clearly to both technical and non-technical audiences.
7. Other duties:	Undertake other duties as directed by the Applications and Data Manager.

Selection Criteria

Qualifications:

Tertiary qualifications in Information Technology, Computer Science, Data Engineering, Analytics, Data Science, Information Systems or equivalent experience. Relevant certifications in Microsoft Fabric, Azure Data Engineering, Power BI or related Microsoft data platform technologies are highly regarded.

Personal Attributes:

- Exhibit behaviours that align with Pilbara Ports' values of Safety, Excellence, Teamwork, Integrity, and Care.
- Demonstrated commitment to an inclusive work culture that encourages diversity.
- Demonstrates collaboration with a strong commitment to building trust, sharing knowledge and contributing positively to team culture.
- Strong stakeholder engagement skills with the ability to translate business requirements into practical, scalable and governed data solutions.
- Highly analytical and outcomes-focused, with strong problem-solving capability and the ability to work effectively through ambiguity and changing priorities.
- Strong governance mindset with a practical approach to data quality, security, privacy, compliance and auditability.
- Continuous improvement mindset with curiosity, initiative and a passion for uplifting enterprise data capability and decision-making.

Work Related Requirements:

- Demonstrated experience designing and implementing enterprise data platforms, including modern cloud-based warehousing, Lakehouse patterns and semantic models.
- Extensive knowledge of Microsoft Fabric, including data warehouses, Lakehouse pipelines, notebooks, dataflows, semantic models and Power BI integration.
- Proven capability building and supporting data integration pipelines, data transformation frameworks and automated data quality controls across multiple enterprise systems.
- Experience establishing enterprise-wide data governance practices, including data domains, ownership models, metadata standards, lineage, security and access management.
- Advanced hands-on capability in SQL and Python or PySpark, with experience developing, testing and optimising production-grade data transformations, pipelines and distributed data-processing workloads.
- Experience working in complex operational, infrastructure, logistics or asset-intensive environments is preferred, but not essential.
- Desirable experience designing data platforms that support future AI and machine-learning workloads, including an understanding of feature engineering, model deployment, monitoring, reproducibility and MLOps governance.

Sound computing skills, as well as the ability to gain a Maritime Security Identification Card, and WA Driver's License are prerequisites for positions with Pilbara Ports.