



CLOUD DATA PLATFORMS AND MIGRATIONS

GCloud Service Description Document

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paconsulting.com

Corporate Headquarters

10 Bressenden Place
London
SW1E 5DN
+44 20 7730 9000
paconsulting.com

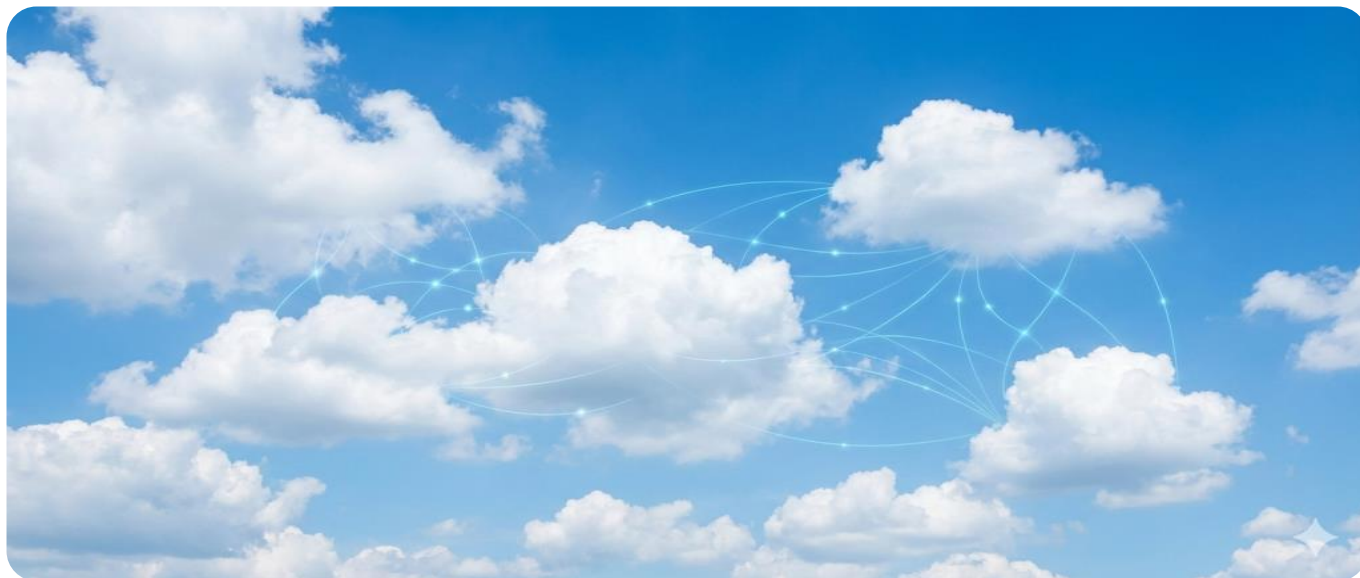
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Cloud Data Platforms and Migrations

1.1 Short Service Description

Many of our customers would realise significant benefits by migrating their data platforms to the cloud as a significant step in the delivery of cloud adoption strategies. This service utilises PA's Cloud Data Platform Migration Teams to enable customers to rapidly, and safely move data platform workloads to the cloud.

1.2 Key Service Features

1. Migration of data workloads from on premise to cloud
2. Expertise with on premise burning, and legacy data platforms
3. Defined methodologies, with accelerators for key data platforms
4. Experience of working across the data platform supplier community
5. Multiple cloud vendor support (AWS, Azure, & GCP)
6. Support migration of existing workloads to new build platforms
7. Integrated service bringing together cloud, on premise, and COTS
8. Use of AI, and accelerators to accelerate migrations
9. Access to PA's extensive range of services & insights
10. Drawing on a 300+ strong pool of Architecture professionals

1.3 Key Service Benefits

1. Proven methodology using PA's Cloud Governance framework
2. Shelve upgrades of on premise databases, and analytics tooling
3. Move workloads off legacy, and end of life hardware
4. Resolve contractual support risks with on premise hardware
5. Safe delivery of Data Platforms to Cloud, mitigating risks
6. Ready-made accelerators, and AI to migrate your data platforms
7. Enable accelerated cloud deployment for key reporting workloads
8. Provide access to cutting edge cloud data management tooling
9. Accelerate access to Machine Learning and big data at scale
10. Enable usage of AI data tooling with existing datasets

1.4 Service Definition

PA has an extensive track record of support our clients to move their enterprise data platform to the cloud. We have experience with multiple on-premise data platforms, and are agnostic, and independent about the target cloud platform.

While our independence is key, we are partners with the major cloud vendors, and are gold or equivalent partners.

We are experienced in dealing with complex on-premise data platforms that typically have grown organically over time, and are poorly documented or governed. We are also used to operating to tight timescales that can be imposed by EOL (end of life) dates for on-premise hardware.

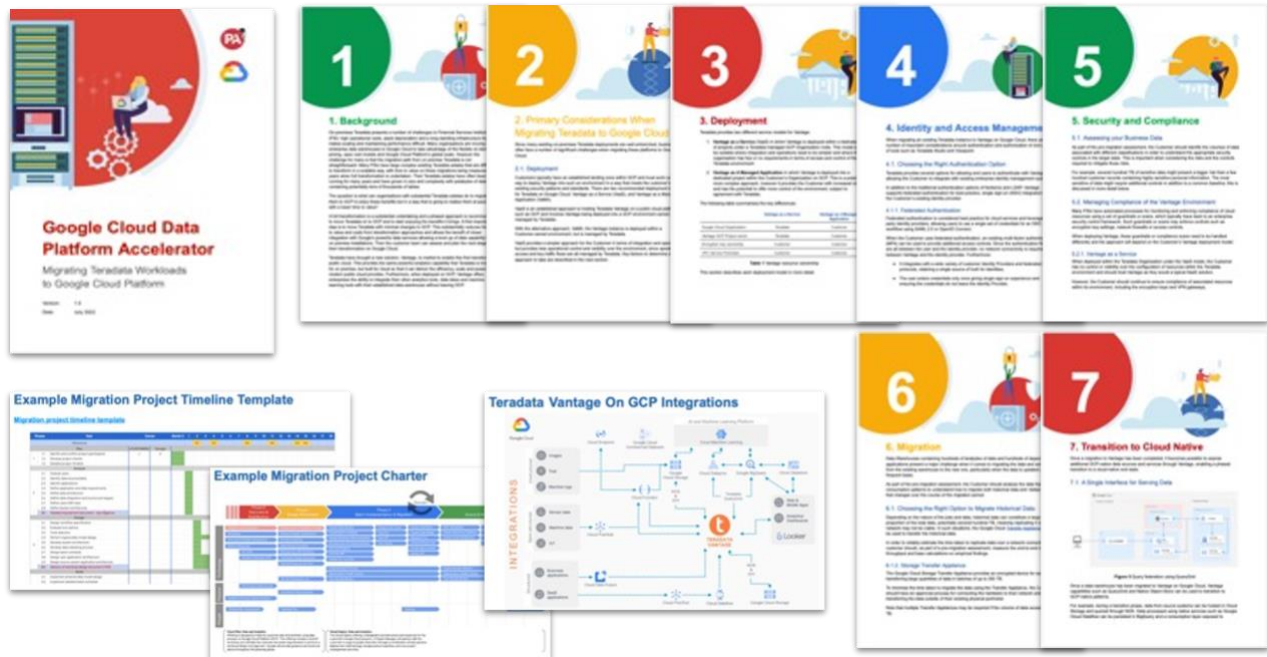
Key features of the service include:

- Provide architectural assurance on the target cloud architecture, the migration architecture, and the on-premises infrastructure underpinning the delivery from a security, resilience and networking point of view
- Validate that the target data platform is resilient & performant
- Design a pilot, and document the pilot learnings, turning these learnings into an actionable plan that draws on our experience of previous deliveries
- Use the pilot learnings to enable the early identification, and mitigation of risks
- Align the business solutions for the migration, ensuring that existing security guardrails and security standards are maintained
- Identify and document upstream/downstream technology impacts of the pilot and any implications for the larger scale migration
- Work with your suppliers to ensure they can deliver their role, and activities as required to complete the migration successfully.

Following the migration, clients are empowered to ring-fence their legacy data, and data-products on a cloud platform. This provides the opportunity to separate legacy from future data products, helping our clients to increase the pace of change, and leverage the new capability that the Cloud offers such as machine learning and AI, and the capabilities required to enable big data at scale. This occurs alongside the legacy data platform allowing much greater capability to migrate products off the legacy platform, and to a new cloud native data platform.

Example: Teradata Vantage to Google Cloud Platform Migrations

We developed the runbook for Google on how to successfully migrate Teradata-to-GCP (using Vantage) – writing seven definitive chapters spanning critical considerations, steps to migrate Teradata and setting-up a scalable & resilient platform, and sustainable operations.



Top-level considerations are:

- **Identity and access management.** Choosing the right authentication option from the traditional authentication options (e.g., Kerberos, LDAP) to federated authentication and SSO integration with existing identity provider.
- **Security.** With large volumes of Confidential or Highly Confidential data in scope, it is critical to ensure that the appropriate controls are in place to protect and manage access to data. We will work with your Cloud Services, Security and IAM teams to ensure the solution complies with established and evolving policies and guardrails.
- **Migration approach.** The large number of jobs and workloads requires careful planning to ensure a smooth transition. Our runbook provides guidance on the pre-migration technology and content assessment required to choose the right migration strategy.

We will bring independent insight and share leading practice throughout the pilot to help collectively solve fundamental Teradata, GCP, security and DR challenges. Our insight is based on:

1. Our Teradata and Google Cloud Platform experience
2. Our knowledge of enterprise data governance, and architecture and its processes & standards,
3. Our prior experience of having done this type of migration before and knowing the key pitfalls.

To safeguard delivery and provide you with regular code deliveries during the pilot, we will use our expert teams working hand in glove with yourselves and Teradata, as well as our guide to GCP security and our Teradata-to-GCP runbook.

Access PA's tried and tested methodology

We have developed an established methodology for the migration of workloads to the cloud, this is dependent on the technology chosen, and the cloud provider. The example below is from Teradata to a cloud hosted Teradata Vantage hosted on GCP.

This methodology has been tried and tested with numerous clients, including large and complex client environments.

Capture your application and data

Select an application, or platform to run the pilot on. Understanding the as-is performance and what changes need to be made in order to maintain this will be key.

We will work alongside your business and technology teams to understand the current architecture, data jobs & batch schedules – and identify critical scheduling overlaps.

Secure access to data

Building on the catalogue of data sources and security policies, we will develop secure patterns to ingest data into Teradata.

From experience, ensuring that TLS is enabled and that the Teradata services are suitably upgraded to support this will be key in ensuring the secure performance of the new platform.

Validate your solution architecture

We will work with your teams to understand the performance characteristics of the application as it responds to the movement of data across the interconnect and identify opportunities for improvement on the Teradata VantageCloud Enterprise environment.

We will work alongside your business and technology teams to validate user access and user experience on the new platform.

Secure your platform

We will work with you to the security framework, and controls for the new platform. We will work with your Cyber teams to understand your security standards, and concerns.

We will validate these and how they are applied in the pilot so we can ensure secure architecture patterns are embedded based on our best practices and experience in delivering complex solutions on Google Cloud.

Rapid prototyping and delivery

We will de-risk our design and build activity through rapid prototyping and using our engineers' deep experience in building on GCP.

Our experience of working in large public sector organisations means we know many of the approvals the platform design and build must go through to be ready for the migration.

Preparing for migration

One of the key goals of the pilot will be to prepare a migration plan with the right activities and team members identified to ensure success.

We will work closely with your team to optimize the plan, conduct technical proof points to validate the migration and iterate with you and our partners, Teradata to ensure we have captured all the capabilities needed to accelerate the migration.

1.5 Why PA Consulting Group (PA)?

A trusted partner for cloud, AI, and digital technologies

PA Consulting Group (PA) is a leading technology and innovation consultancy and one of the UK government's most trusted advisors, combining strategy, delivery assurance and deep engineering to turn complex ambition into assured outcomes. We bring end-to-end capability across cloud architecture, data and AI, cyber, and advanced technology R&D, backed by a track record of scaling innovation in the public and private sectors. .

Our UK work is anchored by secure, standards-led delivery. PA maintains ISO/IEC 27001 certification across global operations, demonstrating disciplined information security and operational control, and applies UK government good practice (GDS, NCSC CAF) across cloud and digital programmes.

We combine consultancy with real engineering. At our Global Innovation & Technology Centre (Cambridge), 300+ scientists, designers and engineers operate extensive labs and studios to prototype and industrialise solutions, bridging physical and digital from concept to production.

1.5.1 Why PA for cloud, data and AI

- **Hyperscaler alliances without vendor lock-in.** PA is Premier Tier with **Google Cloud** (13+ years; 150+ certifications; specialisations in infrastructure, data analytics, app dev and security) and holds deep **AWS** and **Microsoft** credentials, accelerating secure data foundations and generative AI at scale while keeping advice independent and outcome-led.
- **Responsible AI you can trust.** Our Responsible AI framework, governance toolkits, and risk policy make AI adoption transparent, auditable, and compliant, embedding lifecycle controls, model documentation, and human-in-the-loop safeguards aligned to evolving regulation.
- **Impact beyond pilots.** We help organisations become *intelligent enterprises*, using data and agentic AI to create and protect value, with pragmatic roadmaps from use-case selection to scaled operations.
- **Proof through delivery.** Our client stories span enterprise data platforms, IoT and analytics (e.g., Rentokil Initial), and product innovation at scale (e.g., Unilever) where PA has put data and AI at the heart of continuous, market-leading improvement.

1.5.2 Cloud capability (assess, design, build, assure, run)

PA applies an assured cloud delivery approach to complex government and regulated environments, blending client-side delivery assurance, multi-cloud architecture, and resilient operations:

- **Strategy & readiness.** Maturity assessments, target operating models for hybrid/multi-cloud, and cost/benefit modelling; proportionate GDS compliance and ISO 27001 controls embedded upfront.
- **Design & architecture.** Secure, well-architected patterns across Azure, AWS, and Google Cloud; data platforms, identity and access, and cross-domain solutions for sensitive estates.
- **Build & deploy.** Cloud-native engineering, DevSecOps (CALMR), CI/CD, infrastructure-as-code; automated testing and quality assurance to accelerate safe release.
- **Migration & modernisation.** Legacy transformation, platform reviews, and workload migration tuned to resilience and cost; pragmatic FinOps to keep spend predictable and efficient.
- **Operate & optimise.** Observability, incident management, performance tuning, backup/restore, and change management, maintaining business continuity and reducing total cost.
- **Client-side delivery assurance.** Forward-looking, risk-based assurance that keeps complex programmes on track, covering governance, architecture, testing, migration, service readiness and cutover. See our *IT Delivery Assurance* service.

1.5.3 AI, ML and data (from strategy to scale)

- **Strategy & governance.** AI blueprints, operating models, and policy; enterprise data governance; regulatory readiness; centre-of-excellence setup and change adoption.
- **Engineering & MLOps.** Data platforms on Azure/AWS/GCP, pipelines and feature stores; robust ML lifecycle with monitoring, drift detection and auditability.
- **Generative & agentic AI.** Secure integration of LLMs (including Copilot) into workflows for measurable productivity and quality gains, using guardrails, system cards and ROI framing.
- **Responsible AI.** Lifecycle controls and assurance tooling to manage bias, security and transparency.

1.5.3.1 Quantum and emerging technologies

PA's applied physics and quantum engineering teams help clients unlock near-term value, combining quantum techniques with classical systems for decision support, advanced sensing and secure communications:

- **Decision support & optimisation.** Hybrid quantum/classical algorithms to accelerate complex planning, routing and resource allocation where speed and quality of decisions matter.
- **Quantum sensing & RF.** Novel quantum radio and Rydberg-based sensing to enhance spectrum use, detection sensitivity and resilience in contested environments.
- **Commercialisation insight.** Advisory at the “whole-stack” level, hardware, supply chain, interfaces, and ethics, to move from lab to market within national strategies.

These capabilities are industrialised at our Cambridge centre, turning concepts into robust prototypes and pre-production systems across sectors like defence, energy and transport.

1.5.4 Cyber security and digital trust

Digital trust is central to PA's approach. We design security into architecture, operations and culture, aligning to NCSC CAF and GovAssure, and delivering testing, red-team, SOC design and OT/IoT security:

- **Transformation & architecture.** Secure-by-design patterns, cloud security, identity, and cross-domain data protection (including NCSC-approved Oakdoor data diode products).
- **Assurance & regulation.** CAF/GovAssure alignment and pragmatic remediation plans for government organisations.

- **Testing & resilience.** CREST-aligned penetration testing, red-teaming, incident readiness, and operational resilience.

1.5.5 What PA will bring

Ideation & Strategy

- Cloud strategy and advisory services
- Cloud readiness assessments
- Cost/benefit and ROI modelling
- Security and compliance by design.
- AI/ML and data strategy (blueprints, operating model, governance) with Responsible AI policy and guardrails.
- Quantum opportunity framing and whole-stack commercialisation roadmaps.

Design & Architecture

- Bespoke enterprise and cloud architectures
- Integration with existing IT infrastructures
- Hybrid/multi-cloud design
- Continuity and disaster recovery
- Data platforms and MLOps patterns
- Security, privacy and resilience embedded by design in technical designs
- User-centred-design
- Secure cross-domain solutions and high-side/low-side integration where required.

Development & Deployment

- Cloud-native engineering
- Containerisation, microservices and serverless
- DevSecOps (CALMR) with CI/CD and automated testing
- Generative AI and Copilot enablement with measurable productivity outcomes and run-controls.

Implementation & Migration

- Data migration and legacy modernisation
- Vendor selection and management
- Infrastructure-as-code with progressive, low-risk cutover.

Operations & Management

- Observability, incident management, SIEM/SOC design
- Performance optimisation and cost management (FinOps)
- Backup/restore
- User training and change adoption.

Innovation & Scaling

- Scalable cloud infrastructure to support growth
- AI/ML implementation and scaling
- IoT integration
- Ongoing innovation sprints and R&D, supported by our Cambridge engineering labs for rapid prototyping and pre-production.

1.5.6 PA is fully equipped to manage any challenges or requirements you may present

Across strategy, design, build and run, PA blends independent advice with hands-on engineering, operating to ISO 27001 and UK government standards, and backed by hyperscaler partnership depth. Whether the brief is modernising a sensitive cloud estate, industrialising AI responsibly, or de-risking a quantum-adjacent programme, we bring the multidisciplinary team to get from idea to reality, safely, quickly, and at scale.

1.6 A Genuine commitment to Social Value

At PA, we believe in the power of ingenuity to create a positive human future. Central to this ambition is our commitment to developing high-quality opportunities that enable individuals to acquire leading-edge skills, all within an environment that supports personal wellbeing and growth. We invest in our people through comprehensive training and development, ensuring they are fully prepared to tackle our clients' most complex challenges and advance their own careers.

We recognise that diversity drives innovation. Therefore, our recruitment practices are inclusive, welcoming individuals from all backgrounds. Every member of our team is empowered to reach their full potential through inclusive policies, processes, and a culture that is continuously improved using robust data.

We are passionate about creating genuine opportunities for those facing significant barriers to employment. Since 2023, our Digital Apprenticeship Programme has offered a Digital and Technology Solutions Degree through the University of Roehampton or Northumbria University. Our apprentices typically include first-generation professionals, college leavers, and individuals from ethnic minority backgrounds, many living in deprived areas. Additionally, we offer summer internships for undergraduates entering their final year, hosted at both our central London office and the Global Innovation and Technology Centre in Cambridge.

Economic responsibility is integral to our purpose. PA is accredited as a Living Wage employer, and where relevant, we ensure that our suppliers and subcontractors are paid at least the minimum living wage. We are also a signatory to the Prompt Payment Code, demonstrating our commitment to fair and responsible payments to suppliers.

Our carbon reduction targets have been validated by the Science Based Targets initiative (SBTi). We have a published carbon reduction plan and are committed to achieving carbon net zero by 2040, in alignment with PPN 06/21 criteria for UK public sector contracts exceeding £5 million. In 2024, we achieved a silver EcoVadis rating, reflecting our ongoing progress in sustainability.

We are dedicated to delivering targeted social value and will collaborate with you to determine the most effective approach for you, ensuring our efforts have the greatest possible impact.

1.7 Security Clearance

PA are fully compliant with industry best practices for information security, which includes compliance with the UK MOD Industry Personnel Security Assurance (IPSA) standard, against which we are independently audited every three years. PA also has multiple sites with FSC (previously List X) where our dedicated in-house Security Vetting team are based. This allows PA to achieve security vetting of its employees in a time effective manner ensuring the correct processes are always followed (In accordance with the Security Policy Framework/GS007). As a matter of standard process, PA puts all its eligible employees through the Baseline Personnel Security Standard (BPSS), set out by the Cabinet Office. Those employees working on, or planning to work on, government projects are automatically put forward for SC clearance which are processed via UK-SV (formally the Defence Business Services – National Security Vetting). PA also process DV vetting through the UK-SV and other agencies, these are generally client sponsored.

PA currently have a large pool of cleared individuals (80% of UK Staff). Should a resource be identified where clearance is needed, the PA Security Vetting team will then process the individual through the relevant clearance procedure. The team will also be able to validate all existing clearances held by PA employees when requested.

1.8 Next Steps

This service is intended to help customers develop and deliver successful outcomes regardless of the life cycle stage they are at. PA prides itself on working with clients and helping them to deliver outcomes whilst also providing them the ability to 'stand on their own' so that they can move their solutions forward without future involvement. Please contact us on GCloudFramework@paconsulting.com to discuss your needs further.



About PA.

We believe in the power of ingenuity to build a positive human future.

As strategies, technologies, and innovation collide, we create opportunity from complexity.

Our diverse teams of experts combine innovative thinking and breakthrough technologies to progress further, faster. Our clients adapt and transform, and together we achieve enduring results.

We are over 4,000 strategists, innovators, designers, consultants, digital experts, scientists, engineers, and technologists. And we have deep expertise in consumer and manufacturing, defence and security, energy and utilities, financial services, government and public services, health and life sciences, and transport.

Our teams operate globally from offices across the UK, Ireland, US, Nordics, and Netherlands.

PA. Bringing Ingenuity to Life.

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Corporate Headquarters

10 Bressenden Place

London

SW1E 5DN

+44 20 7730 9000

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