



ITNextGen Limited
Digital Technology Specialists

G-Cloud 15 Service Definition Document AI-Powered Cloud Migration

ITNextGen Limited

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Service Overview

1.1 Introduction

Our AI-Powered Cloud Migration Services combine traditional cloud migration expertise with cutting-edge artificial intelligence to deliver faster, more accurate, and cost-effective cloud transformation projects. This service is specifically designed for UK public sector organisations seeking to modernise their IT infrastructure whilst minimising risk, downtime, and total cost of ownership.

We leverage machine learning algorithms to analyse existing workloads, predict migration complexity, automate assessment processes, and optimise cloud architecture recommendations. This AI-first approach reduces migration timelines by up to 40% compared to traditional methods whilst improving accuracy and reducing post-migration issues.

1.2 Service Scope

This service encompasses:

- AI-driven application and infrastructure assessment
- Automated dependency mapping and risk analysis
- Intelligent migration strategy development
- Automated migration execution for compatible workloads
- AI-powered testing and validation
- Post-migration optimisation and cost management
- Comprehensive knowledge transfer and training

1.3 Target Cloud Platforms

Our service supports migration to and between the following cloud platforms:

- Amazon Web Services (AWS)
- Microsoft Azure
- Google Cloud Platform (GCP)
- Multi-cloud and hybrid cloud architectures
- UK Government-approved cloud platforms (including UKCloud, GPSN)



2. Service Description

2.1 Service Overview

Our AI-Powered Cloud Migration Services represent a paradigm shift in how organisations approach cloud transformation. By combining experienced cloud migration specialists with proprietary AI tools and industry-leading methodologies, we deliver migrations that are faster, more accurate, and demonstrably lower risk than traditional approaches.

The service is designed to address the unique challenges faced by public sector organisations, including complex legacy systems, strict security requirements, limited downtime windows, and the need for detailed audit trails and compliance documentation.

2.2 How the Service Works

Phase 1: AI-Driven Discovery and Assessment (2-4 weeks)

We deploy our proprietary AI assessment tools to automatically scan and analyse your existing IT estate:

- Automated application portfolio discovery and cataloguing
- AI-powered dependency mapping across applications, databases, and infrastructure
- Machine learning-based complexity scoring for each workload
- Automated security and compliance gap analysis
- Performance baseline establishment and capacity planning
- Cost modelling and TCO analysis for target cloud platforms

Phase 2: Intelligent Migration Planning (2-3 weeks)

Our AI algorithms analyse the assessment data to develop optimised migration strategies:

- AI-recommended migration approach for each workload (rehost, replatform, refactor, replace)
- Intelligent wave planning and sequencing based on dependencies and business priorities
- Automated runbook generation for migration execution
- Risk scoring and mitigation strategy development
- Resource allocation and timeline optimisation
- Target architecture design with AI-optimised configurations

Phase 3: Automated Migration Execution (4-12 weeks, dependent on scope)

Migration execution leverages automation wherever possible whilst maintaining human oversight:

- Automated provisioning of target cloud infrastructure
- AI-assisted data migration with integrity validation
- Automated application deployment and configuration
- Continuous AI monitoring for migration anomalies
- Automated rollback capabilities for critical systems
- Real-time progress tracking and reporting dashboards



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Phase 4: AI-Powered Testing and Validation (2-4 weeks)

Comprehensive testing ensures migrated workloads meet performance and functional requirements:

- Automated functional testing using AI test generation
- Performance testing and benchmarking against baseline
- Security testing and vulnerability scanning
- User acceptance testing (UAT) coordination and tracking
- AI-driven anomaly detection and issue resolution
- Disaster recovery and business continuity validation

Phase 5: Optimisation and Hypercare (4-8 weeks post-migration)

Post-migration support ensures optimal performance and cost-efficiency:

- AI-driven performance optimisation recommendations
- Automated cost optimisation and rightsizing
- 24/7 hypercare support with AI-assisted incident triage
- Knowledge transfer and training sessions
- Documentation and runbook finalisation
- Transition to ongoing managed services (optional)



3. Key Features and Benefits

3.1 Key Features

Feature	Description
AI-Powered Assessment	Automated discovery and analysis of IT estate using machine learning algorithms, reducing assessment time by 60%
Intelligent Dependency Mapping	AI algorithms automatically identify complex inter-application dependencies, reducing migration risk
Automated Migration Runbooks	AI-generated step-by-step migration procedures tailored to each workload
Predictive Risk Analysis	Machine learning models predict migration complexity and potential issues before execution
Multi-Cloud Support	Migration to AWS, Azure, GCP, or hybrid/multi-cloud architectures
Zero-Downtime Migrations	AI-orchestrated cutover processes minimise or eliminate service disruption
Automated Testing	AI-generated test cases and automated validation of migrated workloads
Cost Optimisation	AI algorithms recommend optimal instance types, reserved capacity, and cost-saving opportunities
Compliance Automation	Automated security and compliance validation against UK Government standards
Real-Time Monitoring	AI-powered dashboards provide real-time migration progress and issue alerts

3.2 Business Benefits

Reduced Migration Time

Our AI-powered approach reduces typical migration timelines by 30-40% compared to traditional methods. Automated assessment, planning, and execution eliminate manual effort and accelerate project delivery.

Lower Migration Risk

AI-driven dependency mapping and predictive risk analysis identify potential issues before they occur. Our clients experience 70% fewer post-migration incidents compared to industry averages.



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Cost Savings

Automated processes reduce professional services costs by up to 35%. AI-optimised cloud architectures deliver ongoing operational cost savings of 25-40% through rightsizing, reserved capacity recommendations, and waste elimination.

Improved Accuracy

Machine learning algorithms eliminate human error in assessment and planning. Automated testing validates 100% of migrated components against baseline performance metrics.

Enhanced Security and Compliance

Automated security validation ensures all migrated workloads meet UK Government security standards including Cyber Essentials Plus, ISO 27001, and data sovereignty requirements. Comprehensive audit trails support regulatory compliance.

Knowledge Transfer

AI-generated documentation and automated runbooks provide your team with detailed operational procedures. Structured training programmes ensure successful knowledge transfer and ongoing self-sufficiency.



4. Technical Capabilities

4.1 Supported Migration Patterns

Rehost (Lift and Shift)

Automated migration of applications with minimal modification. Suitable for workloads requiring rapid migration with limited downtime. Our AI tools automate server provisioning, application deployment, and data synchronisation.

Replatform (Lift, Tinker, and Shift)

Migration with cloud optimisation such as managed database services, containerisation, or managed application platforms. AI algorithms recommend optimal platform services based on workload characteristics.

Refactor/Re-architect

Application modernisation to cloud-native architectures including microservices, serverless, and containers. AI-assisted code analysis identifies refactoring opportunities and generates migration blueprints.

Replace

Migration to SaaS alternatives with data extraction and import. Our AI tools map data schemas and automate transformation for seamless transitions.

Hybrid/Multi-Cloud

Intelligent workload placement across multiple cloud platforms or hybrid environments. AI-driven decision engines select optimal platforms based on cost, performance, compliance, and resilience requirements.

4.2 Technology Stack Expertise

Our team possesses deep expertise across:

- Operating Systems: Windows Server (2008-2025), Linux (RHEL, Ubuntu, SUSE, CentOS)
- Databases: Oracle, SQL Server, PostgreSQL, MySQL, MongoDB, Cassandra, DynamoDB
- Application Servers: IIS, Apache, Nginx, Tomcat, WebLogic, WebSphere
- Virtualisation: VMware, Hyper-V, KVM, Citrix
- Containers: Docker, Kubernetes, OpenShift, ECS, AKS, GKE
- Programming Languages: Java, .NET, Python, PHP, Node.js, Ruby, Go
- Legacy Systems: Mainframe, AS/400, COBOL, and other heritage platforms



5. AI-Powered Capabilities

5.1 Proprietary AI Tools

Our migration service is powered by proprietary AI tools developed specifically for cloud migration:

Discovery AI Engine

Automated discovery tool that uses machine learning to scan IT estates, identify applications, map dependencies, and assess migration readiness. Processes millions of configuration items in hours rather than weeks.

Migration Planner AI

Decision engine that analyses assessment data and recommends optimal migration strategies for each workload. Incorporates learnings from thousands of previous migrations to improve recommendations.

Cost Optimisation AI

Predictive models that forecast cloud costs, identify savings opportunities, and recommend optimal resource configurations. Continuously learns from actual usage patterns to improve accuracy.

Automated Testing AI

Generates comprehensive test cases automatically based on application behaviour and user workflows. AI-powered anomaly detection identifies issues missed by traditional testing.

Migration Orchestrator AI

Intelligent automation platform that executes migrations whilst continuously monitoring for issues. Self-healing capabilities automatically resolve common problems without human intervention.

5.2 Machine Learning Models

Our AI capabilities are built on sophisticated machine learning models:

- Complexity prediction: Estimates migration effort based on workload characteristics
- Dependency detection: Identifies hidden dependencies using network traffic analysis
- Performance prediction: Forecasts post-migration performance based on baseline metrics
- Anomaly detection: Identifies unusual patterns during migration execution
- Cost forecasting: Predicts long-term cloud costs based on historical usage
- Risk assessment: Quantifies migration risks using multi-factor analysis



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6. Service Delivery Methodology

6.1 Agile Delivery Approach

We employ an Agile delivery methodology with 2-week sprints, enabling rapid iteration, continuous stakeholder engagement, and flexible response to changing requirements. Daily standups, sprint reviews, and retrospectives ensure transparency and continuous improvement.

6.2 Governance and Reporting

We provide comprehensive governance through:

- Weekly progress reports with RAG status
- Real-time dashboards showing migration progress
- Monthly steering committee presentations
- Risk and issue registers with mitigation plans
- Change control processes for scope variations
- Comprehensive audit trails for compliance



7. Support and Service Levels

7.1 Service Level Commitments

Priority	Description	Response Time	Resolution Target
P1 - Critical	Service-affecting issue	30 minutes	4 hours
P2 - High	Significant impact	2 hours	1 business day
P3 - Medium	Moderate impact	4 hours	3 business days
P4 - Low	Minor issue	8 hours	5 business days

7.2 Support Channels

- 24/7 telephone hotline for P1/P2 issues
- Email support portal (8am-6pm, Monday-Friday for P3/P4)
- Dedicated Slack channel for real-time communication
- Weekly status calls with project team
- Named account manager as single point of contact



8. Security and Compliance

8.1 Security Accreditations

We hold the following security certifications:

- ISO/IEC 27001:2022 - Information Security Management
- Cyber Essentials Plus
- ISO/IEC 27017:2015 - Cloud Services Security
- ISO/IEC 27018:2019 - Personal Data Protection in Cloud
- Cloud Security Alliance STAR Certification
- UK Government Security Clearance (SC and DV available)

8.2 Data Protection and GDPR Compliance

We ensure full compliance with UK GDPR and Data Protection Act 2018:

- All data processed within UK data centres (data sovereignty)
- Data Processing Agreements in place for all engagements
- Encryption at rest and in transit (AES-256, TLS 1.3)
- Regular Data Protection Impact Assessments (DPIA)
- Dedicated Data Protection Officer (DPO)
- Staff training on data protection requirements

8.3 Government Security Standards

Our service meets UK Government security requirements:

- OFFICIAL data classification handling (OFFICIAL-SENSITIVE available)
- Alignment with NCSC Cloud Security Principles
- Public Services Network (PSN) compliance
- Health and Social Care Network (HSCN) compliance
- Government Protective Marking Scheme adherence
- Security incident reporting within 24 hours



9. Onboarding and Offboarding

9.1 Service Onboarding Process

Week 1: Initiation and Setup

- Contract execution and framework agreement signing
- Assignment of dedicated account manager and technical lead
- Initial kickoff meeting to align objectives and expectations
- Establishment of communication channels and governance
- Security and access provisioning

Weeks 2-3: Discovery and Planning

- Deployment of AI discovery tools across your IT estate
- Workshops to understand business objectives and constraints
- Creation of detailed project plan with milestones
- Risk assessment and mitigation strategy
- Resource allocation and team mobilisation

Week 4: Execution Readiness

- Finalisation of migration strategy and wave planning
- Establishment of testing and validation procedures
- Setup of monitoring and reporting dashboards
- Stakeholder approval and go-ahead for migration

9.2 Service Offboarding Process

We ensure smooth transition at project completion:

- Comprehensive knowledge transfer sessions with your team
- Delivery of all documentation, runbooks, and operational procedures
- Handover of all tools, scripts, and automation code
- Final project closure report with lessons learnt
- Post-implementation review meeting
- 90-day warranty period for any migration-related issues
- Option to transition to ongoing managed services



10. Use of Subcontractors and Partners

10.1 Subcontracting Policy

We may engage specialist subcontractors for specific technical skills or to scale delivery capacity. All subcontractors:

- Must meet our security and compliance standards
- Are subject to the same contractual obligations as our direct employees
- Will be disclosed to the client prior to engagement
- Remain under our direct management and supervision
- Hold appropriate security clearances if handling OFFICIAL data

10.2 Strategic Partners

We maintain strategic partnerships with leading technology vendors:

- AWS Advanced Consulting Partner
- Microsoft Gold Partner for Azure
- Google Cloud Partner
- VMware Partner

These partnerships provide access to additional technical resources, training, and support escalation paths.