

Introduction to Cloud Migration

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Quick-reference guide for students, IT professionals, and decision-makers

1. What Is Cloud Migration?

Term	Meaning
Cloud Migration	The process of moving applications, data, and other IT resources from on-premises or legacy environments to cloud-based platforms (public, private, or hybrid).
Rehosting (Lift and Shift)	Moving workloads to the cloud with little or no modification.
Replatforming	Slightly modifying the environment (e.g., moving a database to a managed service) to gain cloud benefits without full redesign.
Refactoring / Re-architecting	Redesigning applications to be cloud-native (microservices, serverless, containers).
Hybrid Migration	Keeping some components on-premises while moving others to the cloud, often linked via VPN or dedicated connectivity.

2. Why Migrate to the Cloud?

Business Drivers	Technical Benefits
Cost optimization – pay-as-you-go, reduce CAPEX	Scalability – auto-scale resources up/down
Faster time-to-market – provision in minutes	Reliability – built-in redundancy, SLA-backed uptime
Global reach – serve users from any region	Security – advanced encryption, identity services
Innovation – access to AI/ML, analytics, IoT services	Disaster recovery – automated backup & failover
Regulatory compliance – managed certifications	Operational agility – CI/CD pipelines, DevOps tools

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3. Core Migration Strategies (The “6 Rs”)

Strategy	When to Use	Typical Tasks
Rehost (Lift&Shift)	Short-term deadline, low-risk apps	VM snapshot → cloud VM, update DNS
Replatform (Lift&Reshape)	Want managed services without code rewrite	Move DB → managed RDS, containerize web tier
Refactor / Re-architect	Need cloud-native benefits (auto-scale, serverless)	Rewrite code, adopt micro-services, use Functions
Repurchase (SaaS)	Legacy app can be replaced by a SaaS alternative	Cancel license, provision SaaS tenant, migrate data
Retire	Redundant or obsolete workloads	Decommission, archive data, remove dependencies
Retain (Hybrid)	Regulatory or latency constraints keep some assets on-prem	Build VPN/Direct Connect, sync data, maintain dual ops

4. Migration Lifecycle – Step-by-Step Framework

1. Assessment & Planning

- Inventory assets (applications, data, dependencies).
- Evaluate suitability (cost, performance, compliance).
- Define migration goals & success metrics (e.g., 30% cost reduction).

2. Design

- Choose target cloud model (public, private, hybrid).
- Select services (IaaS, PaaS, SaaS).
- Architect network connectivity (VPN, Direct Connect, VPC peering).

3. Proof-of-Concept (PoC)

- Migrate a low-risk workload.
- Validate performance, security, and cost.

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4. Migration Execution

- **Data migration:** Use tools (AWS Snowball, Azure Data Box, Google Transfer Service).
- **Application migration:** Apply chosen “R” strategy.
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