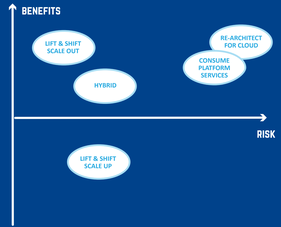
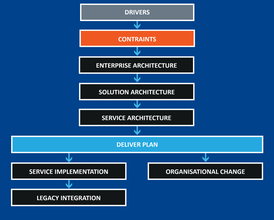
Cloud Migration Process





Migration Strategy

Choosing a cloud migration strategy requires organisations to understand and balance risk against desired benefits.

Lift and shift can be a low risk, high benefit strategy for applications that have been designed to scale out across multiple machines. There are significantly fewer benefits of migrating legacy systems that can only scale up with higher powered hardware, especially when factoring in the cost of migration.

A hybrid strategy can be used to effectively cherry pick components for the cloud or to augment existing solutions with new cloud-based services. However, this requires setting up secure and reliable network connections, and network latency and data volumes need to be carefully considered.

Business applications can be trivially adapted to take advantage of native cloud services for key components like SQL Server. This can deliver considerable benefits in terms of performance, scale and management overhead, but any change of subsystem carries with it a risk.

Re-architecting solutions that fully exploit cloud capabilities helps to build modern data driven businesses, but may require significant internal change not just to the software, but to the business itself: new mind-sets, skills and processes.

Migration Process

Successful cloud migration programmes start by clearly defining the business drivers including the business strategy, assessing organisational readiness and fully understanding the needs of all affected stakeholders. These are represented as a series of clearly defined, measurable constraints that will govern the entire process.

These constraints should be embodied in an Enterprise Architecture which will describe and enforce the policies, standards and governance process across all applications and solutions.

Solution and Service Architectures determine how existing on-premise solutions will operate in the cloud along with the engineering practices and quality gates that ensure compliance with business requirements and operational constraints.

A detailed delivery plan will govern the progress of implementation and necessary organisational change required to operate the final solution. Legacy integration may be needed if a hybrid strategy or an incremental delivery approach is chosen.

The entire process should be iterative and incremental, however, regulated environments will require a more detailed analysis of drivers and constraints before moving on to implementation, delivery and planning activities.

Download a digital copy of this poster at
https://endjin.com/thought-leadership/cloud-migration-process

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Process Breakdown

DRIVERS	CONTRAINTS	ENTERPRISE ARCHITECTURE Policy, guidance, process & standards	SOLUTION ARCHITECTURE Technology, design patterns & quality gates	SERVICE ARCHITECTURE Technology selection, service design, engineering practices & metrics	DELIVERY PLAN	IMPLEMENTATION	LEGACY INTEGRATION	ORGANISATIONAL CHANGE
BUSINESS STRATEGY ORGANISATIONAL READINESS STAKEHOLDERS	**RISK & COMPLIANCE**	Governance process Disaster recovery Data security & privacy Availability Fault isolation Platform maintenance Logging & monitoring Data retention Platform exit Audit Standards compliance	Redundancy Data backup & restore Data classification Application monitoring QA Deployment Release management	Proof of concept Test plans Security audit Penetration testing Health monitoring Performance monitoring Service versioning	Resource Plan Roadmap Dashboard Dependencies Budget Risk Register	Service components Data migration scripts Deployment templates Packages Test results Documentation	System impact modelling Ops impact modelling Cost modelling Integration components Test / QA Documentation	Dev Ops Support Business transformation Business continuity Legal
	IDENTITY & SECURITY	Identity management Federation Authentication Authorisation Access policy Encryption Key & secret management Auditing Traffic monitoring Threat detection	Roles & claims Service boundaries Security tokens Data classification Data encryption Authentication Authorisation Threat analytics	Service identity Service protocols Session management Access control Security telemetry				
	DATA SOVEREIGNTY	Traffic management Data centre location Data segregation	Data classification Information flows	Service protocols Payload identification Data storage				
	WORKLOAD PERFORMANCE & SCALE	Solution scaling Resource provisioning Performance monitoring Alerting	Workload analysis Data classification Data storage Data processing Capacity planning Auto scaling Resource provisioning	Proof of concept Performance testing				
	BUSINESS VALUE	Value stream System behaviour Shared services	System design Service integration Transaction boundaries	Service design Service specifications Service protocols Data model Data migration Error handling Consistency				
	NETWORK	Network topology Network security Access control Inter-site connectivity Appliances & devices	Service isolation Message transports ACLs	Response times & latency				
	BUDGET	Operating cost modelling Accounting controls Programme cost modelling		Service cost modelling Implementation cost modelling				

Migration Dashboard

	ENTERPRISE ARCHITECTURE	SOLUTION ARCHITECTURE	SERVICE ARCHITECTURE	DELIVERY PLAN	IMPLEMENTATION	LEGACY INTEGRATION	ORGANISATIONAL CHANGE
OWNER	RODNEY	JANET	FREDERICH	JUDY	JAMES	ALICE	MATTHEW
COMPLETENESS	84%	75%	52%	88%	85%	90%	90%
COMPLEXITY	20	30	40	20	30	60	20
RISK	10	50	50	20	20	50	10

Migration Dashboard

A migration dashboard provides overall visibility of the health of the programme. The continuous assessment of completeness, complexity and risk across all activities is necessary to ensure issues are highlighted early and any necessary corrective action taken. As new information is discovered, constraints may change, any effect and impact of downstream activities can then be clearly tracked.

The Microsoft Cloud

Microsoft Azure

	LIFT & SHIFT	CONSUME PLATFORM SERVICES	RE-ARCHITECT FOR CLOUD
COMPUTE	Virtual Machines VM Scale Sets Container Service Page Blobs Premium Storage	Web Apps Cloud Services API Apps	Cloud Services Functions Logic Apps Web Jobs Batch Service Fabric
STORAGE & CONTENT DELIVERY	File Storage Import/Export	Blob Storage Backup (software) StorSimple Content Delivery Network	
DATABASE		SQL Database SQL Data Warehouse Azure Redis Cache	DocumentDB Table Storage
ANALYTICS & BIG DATA		Power BI Search Data Catalog Cognitive Services	HDInsight Datafactory Stream Analytics Data Lake Analytics Data Lake Store Machine Learning
INTERNET OF THINGS			Event Hubs Iot Hub
MOBILE SERVICES	PowerApps	Mobile Apps Mobile Engagement Notification Hubs	
APPLICATION SERVICES	Remote App	Queue Storage Service Bus Queues Service Bus Topics Service Bus Relay Logic Apps Search Xamarin Test Cloud Azure Dev Test Labs	API Management
NETWORK	Virtual Network DNS Traffic Manager ExpressRoute Load Balancer Application Gateway		
SECURITY & IDENTITY	Azure AD/RBAC Multi-Factor Authentication Key Vault Security Center Azure Active Directory Azure Active Directory B2C Azure Active Directory Domain Services		
MANAGEMENT & MONITORING	Azure Portal Resource Manager Automation VM Extensions Log Analytics Application Insights Scheduler Azure Command Line Interface Azure Powershell Azure SDK		