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# Pathways to the Cloud

Cloud Migration

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Digital transformation will continue to be a business imperative, and by using cloud, you can accelerate your transformation and maximise business value.

Leading a digital transformation can require a leap of faith at board level to invest in intangibles that are not fully understood. Transformation of any kind faces competing demands from across your organisation and technology needs to transition from being perceived as a cost centre to the conduit for innovation and growth.

## Becoming digital

### Organisational pressures on IT

#### **Increasing profitability and market share**

- Finding a competitive edge
- Development, production and delivery of new products to market
- Driving down costs
- Meeting fast changing consumer expectations


#### **Building operational resilience**

- Ability to grow and replicate
- Continued service delivery
- Security, Assurance, Governance, Compliance

#### **Creating a digital culture**

- Overcoming resistance and barriers to change
- Willingness to invest and commit to digital at senior level
- Attracting and retaining the best talent





Cloud Migration  
is hard. It is not a  
digital silver bullet.

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**Cloud technology allows organisations to move away from management and maintenance of IT hardware by converting infrastructure into a utility, itemised, billed and paid for in the same way as electricity.**

Born-digital companies have already demonstrated how moving to the cloud offer extreme agility, instant global presence, security and business continuity, with the possibility of infinite capacity and scalability, all wrapped up with a pay-as-you-go, per-second-billing bow.

Organisations with legacy systems that have possibly been neglected over time, due to cost and workload pressures, but are still in active use and often in a mission critical capacity, may look at their newer digital competitors with some envy. However, they too can realise the full benefits of cloud, if they have the commitment to pursue digital transformation and are equipped to follow a robust Cloud Migration strategy.

Migrating IT hardware and networked systems to the cloud is a key enabler and accelerator for Digital Transformation and business agility. However, modernisation must go alongside innovation, and sustainable transformation cannot be achieved in a single step.

Attempts to transfer existing technology and data to the cloud to infuse previously stagnating systems with digital agility does not automatically yield the real benefits of cloud computing. In fact, managed without a clear strategy, it can result in more complexity, inefficiency and cost than before, causing disillusionment and leading to project failure.

Even a well-executed Cloud Migration that achieves significant initial savings, can lead to a dramatic increase in costs, if the subsequent development phase is not planned and implemented effectively.

# Pathways to the Cloud

## Introducing our Cloud Migration service

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### 1. Create a Cloud Migration Strategy

**Our teams will leverage modern automation techniques and tooling to develop a migration strategy with you that puts your business needs first with clear traceability to your business strategy.**

We will:

- Conduct a full assessment of the current state of your technology landscape in order to identify and prioritise your migration portfolio based on metrics that concentrate on the three Cs – reducing costs, increasing competitiveness and improving compliance:
  - **Cost**, clearly articulated cost reduction metrics that need to be achieved to deliver lower total cost of ownership. This ensures the migration is built on value creation.
  - **Competitiveness**, the case for increasing speed to market, improved customer experience and sustainability are made. This underpins the investment case in migrating to the cloud.
  - **Compliance**, a regulatory and compliance case is compelling. The net effect of the migration provides the opportunity to resolve any outstanding compliance and operational risks such as GDPR, PCI, and ISO.
- Define key objectives, target state and cloud principles informed by your business strategy
  - Produce a short term, medium term and long-term migration roadmap with target dates and prioritised migration candidates.

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### 2. Architecture and Design

**Break the migration portfolio into a series of work packages and for each one:**

- Define and design a migration approach for each workload keeping in mind legacy-application remediation - rehost, refactor or rebuild
- Design the solution to be implemented, including selection of the target cloud vendor and platform (IaaS, PaaS or SaaS)
- Define success criteria including validation and verification
- Produce the work package plan

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### 3. Engineering and Operations

**Assemble a multidisciplinary Cloud Migration team:**

- User experience designers, enterprise architects, agile experts, software developers, cyber analysts, security architects, data scientists, DevOps and software engineers
- Leverage proprietary methodologies and frameworks to accelerate work package delivery
- This includes the 6point6's Software Factory, a proprietary framework that produces a consistent approach to fully automated Continuous Delivery at scale that adapts to multiple teams and a diverse range of technologies
- Leverage proven products and platforms, such as 6point6 Cloud Gateway, to help migrate to the cloud at the pace and in the manner that suits your business

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## 4. Assurance and Governance

### Provide assurance to all your stakeholders:

- Evidence that Cloud Migration objectives are being met and the delivery phase conforms to the design
- Provide practical, actionable advice and guidance to rectify any identified problems
- Establish governance and assure compliance across the supply chain

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## 5. Cyber Security

### Operational resilience across all IT

- Help your existing cyber security practice to evolve as you transition to cloud
- Develop a proactive plan for cyber capability, based on your specific data, security needs and priorities, ensuring that agility and responsiveness are not compromised
- Create cloud-specific security e.g. perimeter security design, encryption or third-party providers, or adapt applications, depending on identified priorities and perceived risks

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## 6. Continuous Handover

### Support and mentor your in-house team as they gain ownership and eventual full control

- Work collaboratively handing over knowledge and physical artefacts in incremental stages.
- Help your technologists exploit cloud-native features, to build new digital products, ultimately making you self-sufficient.
- Encourage staff to embrace a digital and cloud culture

# Pathways to the Cloud

## Typical Cloud Migration scenarios

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**Over time we have developed and refined a number of typical Cloud Migration scenarios from our in-depth work on a large number of Cloud Migrations. These scenarios have enabled us to package the skills and tools needed to accelerate the strategy, design and migration process, giving us the capability to get you to the cloud securely and start drawing on its benefits quickly.**

### 6point6 Cloud Migration scenarios

#### 1. Tactical Lift and Shift

While simply transporting existing datacenter workloads as-is to the cloud typically doesn't unlock key benefits such as elasticity, global presence and per transaction, opex-based costing, sometimes, it is the right thing to do. High-volume Line of Business systems such as CRMs and ERPs that are mission critical may benefit from a multi-stage, transitional approach to Cloud Migration.

#### 2. Born in the cloud

Greenfield adoption of cloud when you have no on-premises legacy workloads may seem straightforward because barriers to entry seem low. However, there are pitfalls to avoid and we help to get it right first time with infrastructure automation, coupled with automated continuous delivery and deployment of digital services and products that transform your ability to inject change in a sustainable, industrialised model, responsive to evolving user needs.

#### 3. Renewed in the cloud

Fully embrace the promise of cloud by recreating existing on-premises workloads as cloud-native services that are global by default, are elastically scalable, have practically infinite capacity, are capital expenditure free and will vastly improve your infrastructure security. When lift and shift just won't work, workloads must be re-engineered, data migrated and infrastructure automated and converted into versionable software.

#### 4. Software Delivery Lifecycle (SDLC) in the cloud

This is the halfway house to the cloud - the lifting and shifting of development, test and pre-production environments to the cloud. Our focus of this scenario is the automation of environments and data to enable rapid stand-up, test and packaging ready for delivery. This brings tremendous flexibility and cost saving.

#### 5. Isolate and Retire

Mission-critical data center workloads made up of multiple siloed systems performing a similar task are normally resistant to Cloud Migration, as they require disruptive application consolidation as a prerequisite. Instead create a cloud-native, 'headless', API-driven Digital Platform that integrates with legacy systems and provides a single cloud-based proxy service for the entire workload. This allows new cloud native services to be built on top, while their predecessors are gracefully retired in their own time.

#### 6. Processing agility under high pressure

Peak, batch-driven data workloads that require large on-tap processing capability to wrangle data into analytics platforms belong in the cloud. Embracing a cloud-native data platform brings extreme agility and provides short term access to data crunching capacity, previously beyond imagination in traditional data warehouse environments.



## **7. 6point6 Cloud Gateway platform**

Transitioning workloads to one or more clouds is a journey, it cannot be done overnight - a state of hybrid is inevitable. The old and the new must co-exist. Workload interconnectivity in a hybrid estate requires a sophisticated, agile infrastructure to seamlessly connect to the cloud cost-effectively, quickly and securely. 6point6 Cloud Gateway is a hybrid-cloud connectivity platform-as-a-service. It is a simple, fast and flexible way to transform your infrastructure without disruption, and to manage and secure your cloud connectivity.

# Our 6point6 skills and knowledge base

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**We have teams of analysts, designers and engineers with hands-on experience of Cloud Migration in organisations across every sector. We deploy small teams with the right mix of skills and experience to solve your specific migration project in its entirety.**

**Known as Pods, our Cloud Migration teams give you ready-made, modular delivery capability focused on the real-world challenges that you will face when migrating to the cloud.**

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## Benefits of pods

### 1. Collaborative and supportive

We aim to minimise impact on your team's day-to-day role, handing over control in manageable increments and working collaboratively to ensure your staff are brought on the cultural journey to adopt cloud and to gain the skills required to sustainably change the operating model.

### 2. Autonomy and value for money

Our Pods are mission directed. By adopting our frameworks and methods, we gain consistency in ways of working that leverage the architecture and programme delivery teams.

### 3. Scaling the migration

Our outcome-focused Pods can be scaled: in the early life of the migration programme our delivery managers focus on optimising the balance between number of workloads and number of team members per Pod. This continuous monitoring and balancing leads to better insight and certainty regarding delivery dates and predictable progress.



# Our Cloud Migration experience

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## The Home Office

**Our consultants, architects and engineers worked in partnership alongside Civil Servants and other Home Office suppliers to jointly achieve one of the largest cloud transformation projects ever across the UK Government and the largest AWS migration in Europe.**

The Home Office is fundamental to the security and safety of the UK, acting as the lead government department for immigration and passports, drugs policy, crime, fire, counter-terrorism and the police. New technology is transforming the way immigration services are delivered; making it faster and easier for members of the public to apply for visas and for Home Office staff to make millions of decisions each year. These systems of critical national importance are dependent on a complex, cloud-based infrastructure. The Home Office identified that its existing hosting platform lacked the scalability and stability necessary to support its ambitious transformation agenda. Faced with the need to improve delivery efficiency, test capabilities and service performance, they selected the Amazon Web Services' (AWS) hosting platform.

With the existing architecture consisting of more than 1,400 servers containing a vast amount of data, 27 data hosts and 36 external interfaces, this was not a simple lift and shift; it involved the migration of a very large infrastructure and vast amounts of data whilst maintaining continuity of business services.

6point6 played a key role in planning, enabling and executing the Cloud Migration to Amazon Web Services (AWS), by providing Digital Transformation, Cyber Security and Data Platform services to the Home Office in one of the largest cloud transformation programmes undertaken by government. The redesigned and simplified infrastructure has improved the stability and resilience of the Home Office's cloud environment, enhanced reliability of deployment and improved the security of the production service. It has also increased the ability to scale and to optimise infrastructure costs. This has resulted in more efficient and better protected digital services, ready and available for operational business and live services.

# Our thoughts

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## Why do I need a cloud migration strategy?

The term 'legacy' refers to technology that is hard to change, has been neglected over time (i.e. not regularly patched) but is still in active use, often in a mission critical capacity.

Migrating to the cloud is project-based work that must have an identifiable scope which can be designed, delivered and transitioned to production within a finite period and with a predictable budget. This is distinct from a digital product, such as a website that is more likely to have an ongoing life cycle of change, requiring a dedicated team of technologists to continuously improve it, normally using agile delivery methods.

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## What is the difference in the process between building a product and migrating to the cloud?

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## Can I use a product to make Cloud Migration simple?

There is always more than just technology at play when migrating to the cloud. While there are many migration products available, these are no more than tools to aid in a much larger process and cannot be relied on as a 'silver bullet' to solve the task single handed. Having said that, using platforms such as 6point6 Cloud Gateway, you can migrate to the cloud at the pace and in the manner that best suits your business. Cloud Gateway provides effortless cloud connectivity. It securely and practically transitions any corporate network, no matter how complex, into a network fit for the future while enabling the retention and integration of 'must keep' elements of the legacy infrastructure. By 'fit for the future', we mean not simply from a technology standpoint, but by measures such as agility, flexibility, scalability, security, simplicity and cost.

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## Technical Debt. What is that?

Financial debt is a good metaphor for what happens to an IT estate over time. Each shortcut, for example to save time or cost, is like taking out a small loan. Loans must be paid back, or they must at least be measured and quantified in order to inform the decision on whether or not to take out more loans. If not, then bankruptcy is inevitable at some point in the future and in IT terms, the risk-laden lead up to this is known as a 'burning platform'.

The reality is that all repayments that were missed over the years (all the missed upgrades, failures to patch, lack of code refactoring) must now be made in an accelerated time frame and more often than not, resulting in one very painful transaction. In our experience, the demands of regulatory change, disruption from competitors and cyber security breaches are common catalysts for a technical debt crisis.

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## What is a Software Factory?

DevOps has transformed how software applications are built, tested and released in recent years by building bridges between those who create digital products and services and those responsible for running them reliably using automation and in many cases cloud. But in solving one problem, it has created another. In many organisations DevOps had become largely an unregulated cottage industry subject to continuity risk and lacking in discipline and governance.

6point6's Software Factory is a proprietary framework that produces a consistent approach to fully automated Continuous Delivery at scale. It is able to scale to multiple teams and adapt to a diverse range of technologies. It is a pattern-based approach that empowers developers to create their own automation in a consistent way, evolving away from the DevOps 'hero culture'. It is the foundation stone upon which Cloud Migration and Digital Transformation rests.

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## Get in touch

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## About 6point6

Integrating digital technology into your business can result in fundamental changes to how you operate and deliver value to your customers. To go digital is to reinvent yourself to the core, opening yourself and your clients to a world of possibilities.

6point6 is a technology consultancy. We bring a wealth of hands-on experience to help businesses, including financial services providers, media houses and government, achieve more with digital. Using cutting edge technology and agile delivery methods, we help you reinvent, transform and secure a brighter digital future.

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