MOVING FROM SINGLE CLOUD TO MULTI-CLOUD - THE RIGHT WAY

Many organisations are adopting multiple Clouds and living with the very real operational and security challenges of inter-connecting and managing these different platforms and services. Computacenter Solution Leaders Paul Nearn and Mark Prior highlight the challenges of managing multiple Clouds today and how our approach and Multi-Cloud Landing Zone+ service helps to solve those challenges.

PART 1 - THE CHALLENGE

From the work that we do across many large organisations we have seen a noticeable increase in the consumption of services from multiple cloud providers, driven by many factors, such as business line preference, avoiding vendor lock-in, mergers and acquisitions or simply ensuring business continuity through resilience and disaster recovery solutions.

Innovation driven by the cloud providers is fast moving and there is still significant differentiation between the services they offer which often drives customer preference. Many of the infrastructure services offered natively are 'good enough' when considered in the context of single public cloud adoption, and so the uptake of 3rd party solutions, which includes elements such as security, networking, enhanced storage services and FinOps, has been limited. When an organisation starts to move to a multi-cloud world

it is tempting to just use the services native to each Cloud Service Provider (CSP) platform, but this approach leads to a decentralised operating model and leads onto several challenges.

Each of the CSPs, both public and private, provide similar sets of infrastructure services but with different features and limitations. These differences introduce complexity, and with complexity comes a greater risk of error. If you are now running different security enforcement services in each Cloud, how much harder is it to ensure you are compliant with policy? If infrastructure is complex within and between Clouds, how much more likely is it that an outage will occur? If an outage does occur, how much longer will it take to resolve? Can costs be managed efficiently both in terms of personnel and tracking general spend? These and other scenarios should be risk assessed and necessitate the implementation of solutions to mitigate those risks.

INCONSISTENT SERVICES | ARCHITECTURE DIFFERENCES | COMPLEX CONNECTIVITY | LACK OF VISIBILITY BETWEEN CLOUDS

RISKS GENERATED BY INCONSISTENCY AND COMPLEXITY

GREATER COST MANAGEMENT CHALLENGES

INCREASED VULNERABILITY TO CYBER ATTACKS

FREQUENCY AND LENGTH OF SERVICE OUTAGES IMPACTING PROFITABILITY AND REPUTATION

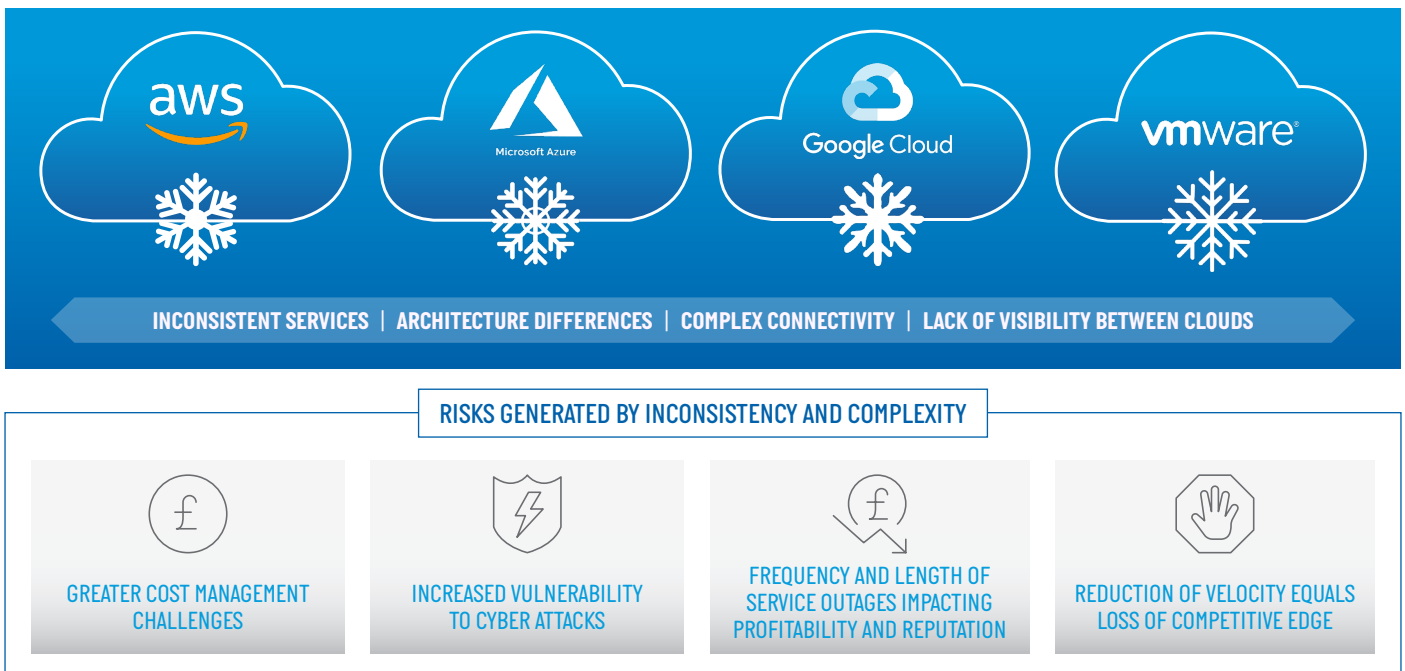REDUCTION OF VELOCITY EQUALS LOSS OF COMPETITIVE EDGE

Figure 1 – Multi-cloud Challenges and Resulting Risks

We view AWS + Azure + Google delivered in a siloed approach by individually skilled teams, not as 'multi-cloud' but rather as the adoption of multiple cloud platforms. Multi-cloud should involve the unification and centralisation of commercial, operational and security functions to reduce risk, accelerate the consumption

and uptake of cloud services and significantly enhance day to day operations. Organisations should be thinking multi-cloud not multiple clouds to streamline their operations and maximise the business value of Cloud services.
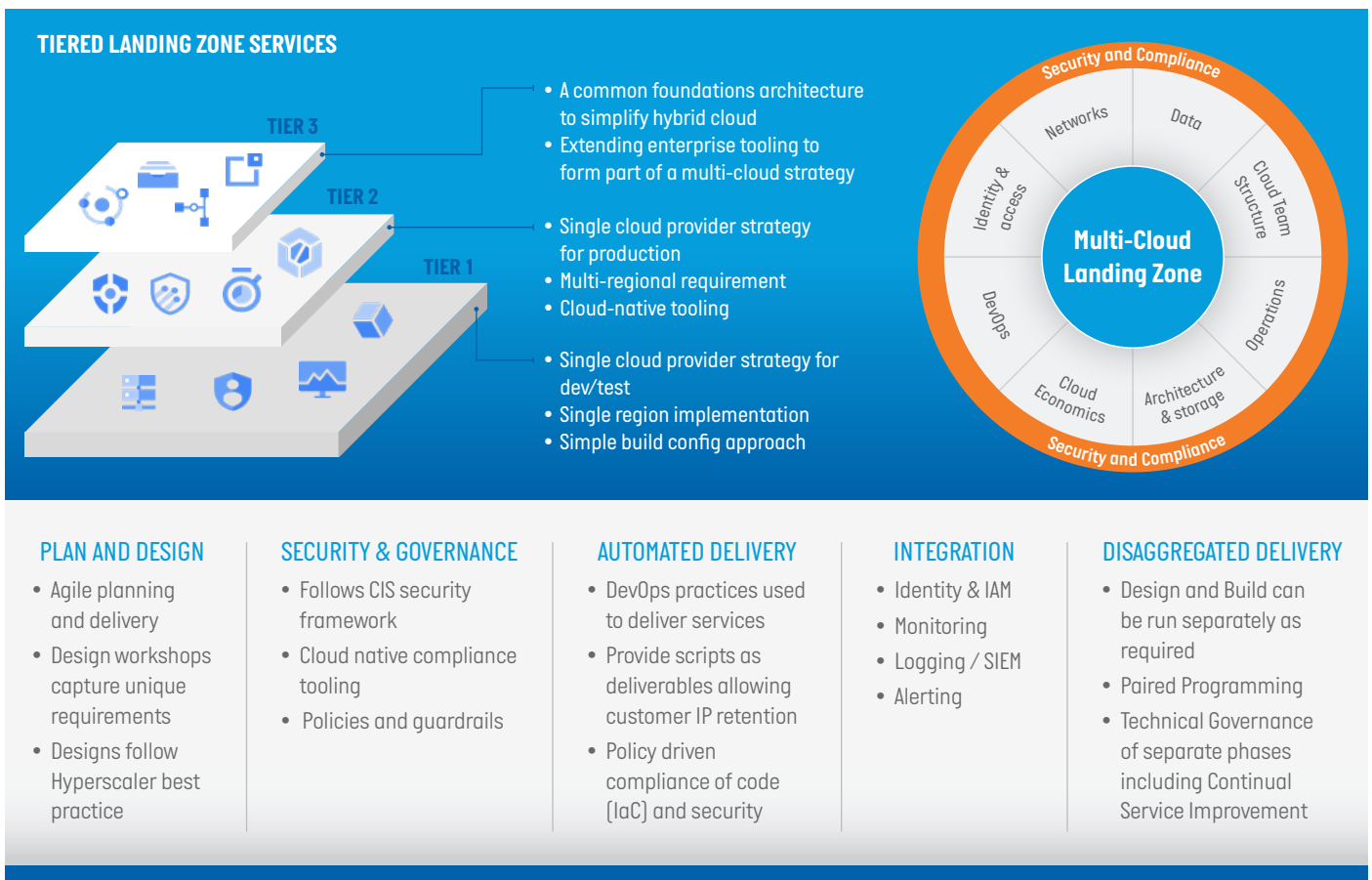
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PART 2 - OUR APPROACH TO ADDRESSING THE CHALLENGES OF MULTIPLE CLOUDS

During the initial adoption of single provider cloud services, it is essential that organisations deploy well architected, standardised, and automated cloud landing zones across public and private clouds. Cloud landing zones must be secure by design and ensure

cloud provider tenancies are correctly created to rapidly onboard enterprise workloads.

Computacenter has developed a tiered services implementation model when delivering Cloud landing zone implementations as shown in the diagram below:

TIERED LANDING ZONE SERVICES

TIER 3
- A common foundations architecture to simplify hybrid cloud
- Extending enterprise tooling to form part of a multi-cloud strategy

TIER 2
- Single cloud provider strategy for production
- Multi-regional requirement
- Cloud-native tooling

TIER 1
- Single cloud provider strategy for dev/test
- Single region implementation
- Simple build config approach

Multi-Cloud Landing Zone

Security and Compliance — Networks, Data, Cloud Team Structure, Operations, Architecture & storage, Cloud Economics, DevOps, Identity & access

PLAN AND DESIGN
- Agile planning and delivery
- Design workshops capture unique requirements
- Designs follow Hyperscaler best practice

SECURITY & GOVERNANCE
- Follows CIS security framework
- Cloud native compliance tooling
- Policies and guardrails

AUTOMATED DELIVERY
- DevOps practices used to deliver services
- Provide scripts as deliverables allowing customer IP retention
- Policy driven compliance of code (IaC) and security

INTEGRATION
- Identity & IAM
- Monitoring
- Logging / SIEM
- Alerting

DISAGGREGATED DELIVERY
- Design and Build can be run separately as required
- Paired Programming
- Technical Governance of separate phases including Continual Service Improvement

Multi-cloud challenges

As our Enterprise customer base pivots towards multiple cloud adoption, we are increasingly building landing zones at the Tier 3 level. This is where we look at their creation through the lens of unified multi-cloud architectures against an architectural blueprint, via the use of best of breed and/or open-source solutions. This enables the abstraction of common services across cloud platforms and therefore provides a centralised, consistent, and streamlined management plane and operating model.

This methodology not only reduces the risks of running each cloud as an individual entity, as highlighted in part 1 of this blog series, but also significantly reduces lock in to each individual hyperscaler.

Our expert services deploy best practice landing zones across Tiers 1 and 2 and offer a clear path for moving to an efficient Tier 3 multi-cloud model when a customer is ready, which we call our Multi-cloud Landing Zone+.

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THE MULTI-CLOUD LANDING ZONE+ (MLZ+)

To help organisations move towards a more centralised operating model, we have developed a modular blueprint for a Multi-cloud Landing Zone+(MLZ+). This builds upon the experience and best practices Computacenter have used in the development of our single cloud landing zones but introduces best-of-breed 3rd party solutions and services to mitigate the multi-cloud challenges. The MLZ+ provides a consistent architecture and common tooling platform that abstracts infrastructure and security services away from the individual cloud providers, thus simplifying operations and enhancing end to end visibility.

The MLZ+ has been created as a modular service with multiple technology options such that it can be adapted to differing customer requirements. The blueprint is centred around secure cloud network overlay and storage abstraction solutions. The secure cloud network overlay introduces a consistent network and security architecture through abstraction from, or replacement of, native

cloud services, introduces integrated defence in depth security capabilities, enhanced visibility, and centralised management. The multi-cloud storage solution provides cost efficient multi-cloud data mobility, efficient replication and backup services and enhanced security. Additional capability is added to ensure end to end visibility and cloud agnostic automation.

For organisations that are now planning a multi-cloud strategy, implementing the MLZ+ will enhance single cloud landing zone infrastructure services, streamline the adoption of multi-cloud, and significantly enhance operations and security once a multi-cloud model is adopted. For those organisations that already have a multi-cloud deployment it can be retrospectively implemented, and the benefits realised. We offer a multi-cloud health check service for customers with an existing multi-cloud deployment that provides an analysis of current state against the MLZ+ blueprint and provides justifiable recommendations for change.
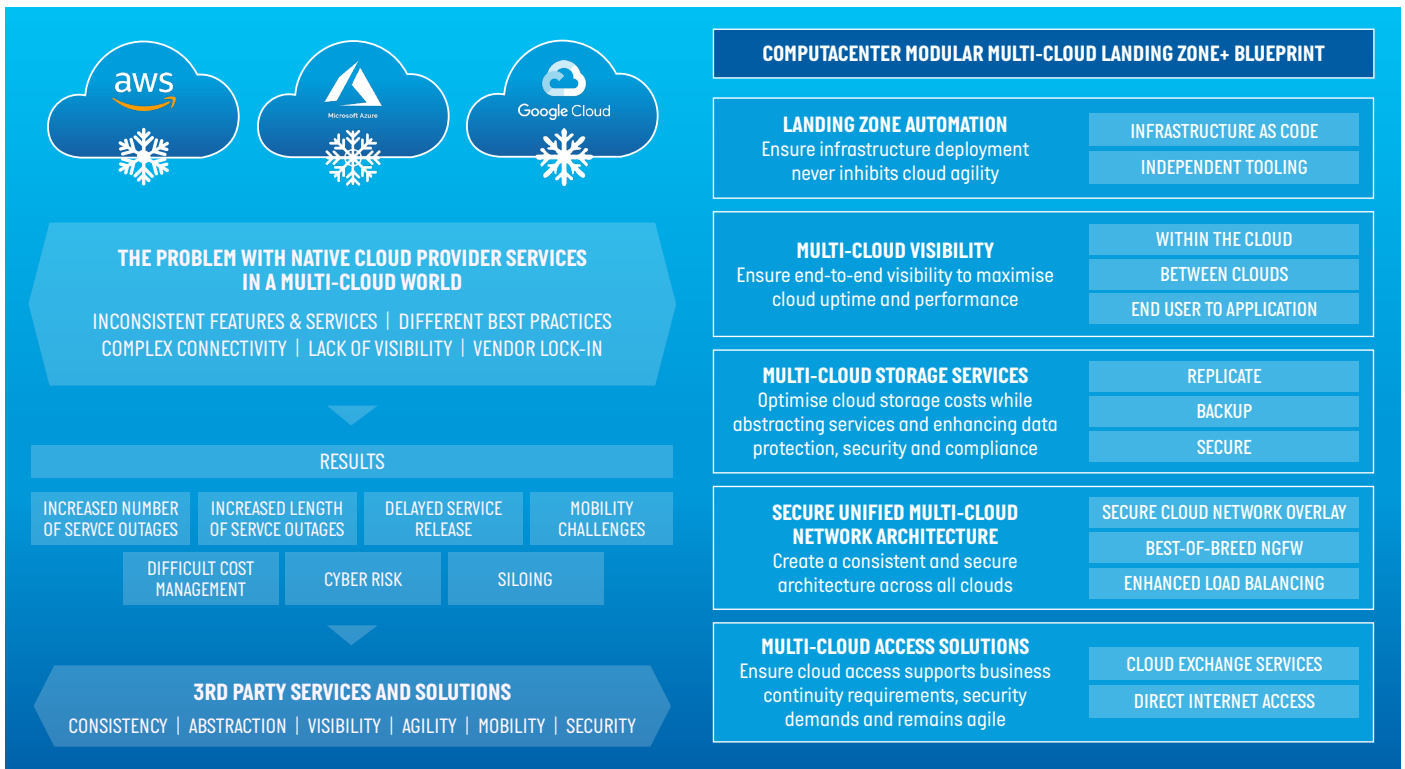
The Multi-Cloud Landing Zone+

WANT TO FIND OUT MORE?

If you would like to discuss further the challenges of multi-cloud or for more information on Computacenter's landing zone services, including the Multi-cloud Landing Zone+ and Multi-cloud Infrastructure Health Check Service we would be delighted to speak with you.

Contact us at the Office of the CTO: MB.UK_CTO_Office@computacenter.com