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Avoiding grey clouds

Open source microservices:
Any vendor, any platform, any technology.

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Where is the public cloud market heading?

According to Gartner, the worldwide public cloud services market is projected to grow 21.4 per cent in 2018 to total $186.4 billion, up from $153.5 billion in 2017. Public cloud offers both enterprises and SMB companies many benefits. The bottom line is that utilising a big public cloud – Microsoft, Google or AWS brings options that would not only be very expensive to replicate on-premise, but in some cases would be difficult or unfeasible for smaller companies to replicate at all.

However, Gartner expects the top 10 providers to account for nearly 70 per cent of the IaaS market by 2021, up from 50 per cent in 2016. This causes many IT directors to question which vendor and technology to choose to build modern cloud-applications and avoid vendor lock-in.

Developing a multi-vendor, multi-technology approach increases choice, flexibility and reduces cost and dependency ensuring best-of-breed.

This whitepaper looks at how the growth and support for open source technology and developing software applications in a microservices architecture delivers on the promise.

The top 10 cloud providers own 70% of IaaS market share (2017)

2015

2017

○ Other cloud providers　　● Top 10 public cloud providers
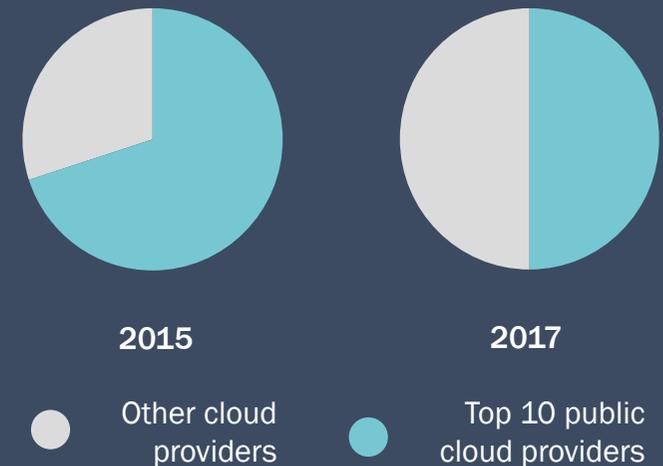
Choosing your cloud strategy - key market insights

Whilst who wins the race to be market leader in the public cloud infrastructure market may seem trivial, the impact it has on how organisations look at their cloud strategies and how they distribute their application workload between the different IaaS providers is not.

According to analysts IDC, cloud services and infrastructure spending will reach $266 billion annually by 2021 – so there is much to play for. From a market share perspective, Amazon Web Services (AWS) dominates the public cloud infrastructure market with 62% market share. However, that figure has fallen from 68% the previous year, and by contrast, Microsoft Azure is gaining ground.

If we also consider the application workload distribution between the platforms, although AWS is the most popular cloud platform comprising 41.5% of the application workloads in the public cloud, Azure holds 29.4% of the installed based and is once again gaining ground.

According to KeyBanc analysts, Azure contributed $3.7 billion to Microsoft's FY2017 revenue, which totalled an estimated $96.6 billion. It suggests that Azure almost doubled in revenue, whilst Amazon reported that AWS grew 42% in Q3 despite its growth slow-down.

The market is tight and may tighten further given the trends, so customers will increasingly review their strategy to consider incorporating a multi-cloud strategy in order to avoid vendor lock-in or technology complacency and provide choice.

"Cloud services and infrastructure spending will reach $266 billion annually by 2021"

-IDG Research

The growth of open source

As the market grows in size and competitiveness, cloud providers must find ways to differentiate their offerings. According to research by Accenture in 2018, which surveyed more than 750 US-based software developers to determine what they look for in a platform provider, nearly half of all developers said they think that the three leading cloud ecosystems are "pretty much the same" in terms of usefulness.

Differentiation is key – those vendors that provide the best experience for developers will undoubtedly grow in favour. Differentiators include add on services such as business intelligence, big data, artificial intelligence and machine learning as well as opening once proprietary platforms up to open source development.

In the main, adoption of open source software is growing. Gone are the days when organisations like Microsoft and Oracle were openly hostile to the open source movement. Now these same organisations are the biggest supporters and drivers of change.

Microsoft's cloud solutions architects now champion the adoption of open source technologies and frameworks and has recently acquired GitHub. Open source matches the more agile development practices that are being adopted by enterprise organisations and it ultimately prevents vendor lock in that could hinder growth.

But not only that, it's universally recognised that open source is typically better software: it's better architected, has higher code quality, delivers better performance, is easier to learn and is created by very talented individuals from which other developers can learn. These factors are driving organisations to increasingly build technologically agnostic platforms and choose the multi-vendor route, thus staying as open as possible.

The benefits to the organisation of an open source system are well documented: it's crowd-sourced and has benefits of cost, flexibility, freedom, security and accountability that are unsurpassed by proprietary software solutions. Plus it's supported by a community of developers who enjoy the freedoms of developing in open source.

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Open source adoption: top 5 benefits to organisations

1

Innovation.

Open source technologies help drive choice, creativity and innovation.

2

Cost reduction.

Many open source tools are free.

3

Attracting development talent.

Developers can be more experimental and learn new things when using open source tech.

4

Avoiding vendor lock in.

Open source delivers an increasingly open environment.

5

Flexibility.

Many more applications can be 'plugged-in' to open source environments.

Empowering development teams to choose open source solutions sends a powerful message: "Our organisation trusts you to make the right technical decisions. You have the freedom to innovate."

- Jorge Garcia de Bustos, Technical Presales Consultant, Godel Technologies

Microservices development architecture

Across many of its projects Godel takes a microservices approach to software development, as it is becoming the preferred way to build large-scale, distributed applications that deliver what the organisation needs with the right performance and scalability. It provides a way to break down legacy systems into smaller components with clearly defined roles and dependencies that can be deployed independently. When put together, they work to serve a business goal – in turn delivering all the benefits of cloud computing to an organisation and its customers.

Constantly improving each microservice, and by default, the sum of their parts.

Re-architecting systems in this way means that continuous improvement and integration of software is easier to achieve – constantly improving each micro-service and, by default, the sum of their parts.

Incremental additions to the software's features can be achieved very rapidly - rather than delivering software updates as a 'bells and whistles' launch, software is updated continuously without customers even noticing, and many of the processes to bring the software to production can be automated which delivers even greater efficiencies.

Breaking the solution into small components that can be tested, deployed and monitored independently makes the overall system more resilient as well as 'isolating' the software from its environment and abstract dependencies making it more platform agnostic.

Microservices architectures plan for component failure by factoring it into the system design. They also take scalability into consideration, planning for high demand and using strategies like load balancing or containerisation.

Microservices are the fastest route to choice for a customer – the choice of platform and choice between proprietary or open source technologies. Each has its benefits, but the popularity of open source amongst customers is growing thanks to the savings it delivers – many of the tools are free for developers to use, providing cost efficiencies.

Experian case study: from monolithic to microservices

By fully moving three legacy applications to Microsoft Azure, Experian is able to deliver business functionality for customers by taking advantage of its cloud IaaS delivering. Godel was responsible for the creation of the new infrastructure, which required a variety of tasks to be undertaken.

Solutions delivered:

An Active Directory and the associated Virtual Machines belonging to the domain were created, which in turn increased the efficiency in the management of the machines.

New environments were created for automation, quality assurance, user acceptance testing and production.

An 'always on' High Availability (HA) group was rolled out across all the migrated databases – having this functionality in the database cluster provides not only HA, but disaster recovery too.

A Microsoft Service Fabric Cluster was created, enabling faster deployment, which is highly scalable and also provides load balancing for the cluster.

A Web Farm has been created on a presentation level for load balancing and HA of the web applications. This delivered Experian a fully cloud ready solution.

"Part of the project we worked on with Godel was replatforming our product suite. Historically we had monolithic apps- very large, inflexible, difficult to update, had to test it all if you made any changes.

So we had a vision to break these down into microservices architecture.

We had a very loose plan of this which we brought to Godel and with their technical architects we were able to draw together a more detailed roadmap of how to achieve our goal."

- Simon Coulton, Head of Web Development, Experian

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About Godel

Godel is a platform and technology agnostic nearshore software development partner. It develops greenfield applications as well as reengineering legacy systems to move them to public cloud platforms including Microsoft Azure, Google Cloud and AWS.

Its coding expertise includes .NET, Java, PHP, front-end and JavaScript, with extensive capabilities in DevOps tools, quality assurance and test automation, mobile development, business intelligence tools and AI/machine learning.

To learn more about our software delivery expertise, visit our website or contact us to have a conversation.

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