



Setting up your infrastructure and operations for hybrid success

CIOs who want to drive digital transformation have a simple challenge – to deliver services their businesses need to meet customer demand and access new markets, while managing tight budgets.

“We’re pleased to collaborate with Fujitsu on PRIMEFLEX for OpenStack, pairing our expertise in delivering enterprise-grade open standards-based software with Fujitsu’s robust hardware architecture. Business-ready OpenStack solutions, like Red Hat OpenStack Platform, help provide a clear pathway to hybrid cloud deployments, a key component for enterprises seeking to start their journey towards digital transformation.”

Mark Longwell, Director OpenStack Partner Ecosystem, Red Hat

Today’s most innovative technology leaders aim to present the business with a range of service options, rather than pure technical features and functions, which deliver innovation to meet immediate requirements while building a platform for the future.

They are developing application roadmaps based on business strategy and they do so within a broad enterprise architecture plan that takes into account current and future technical options and solutions, wherever they are sourced from, whether it is in a public cloud, private cloud, on-premise, co-located or hosted.

This requires agility and flexibility, which almost invariably means seeking cloud-first solutions and open technology platforms.

Technically-savvy company executives and line of business (LOB) leaders have in recent years focussed their digital transformation strategies and purchasing decisions on the software layer. They have been attracted by the ever-expanding range of ‘as a service’ options. Their choices range from products offered by the giant core enterprise ERP and CRM system providers, to analytics, payroll, productivity, HR, HCM, social platforms, disaster recovery, security as a service, expense management, IT service desk, collaboration, and much more.

But in the face of all this choice, company leaders are once again turning to their CIOs for guidance – on technology options, security, governance and compliance and for reassurance that the organisation has the infrastructure to support digital transformation.

“Datacentres are where IT service delivery happens, so having a well-thought-out datacentre vision is critical. The challenge, today, is that companies’ existing datacentres do not match up well with changing requirements at multiple levels.”

Richard Villars, IDC’s VP Datacentre and Cloud
Source: Worldwide Data Centre 2017 Predictions, IDC

There is a growing understanding that innovation on the software layer is utterly dependent on the right infrastructure platforms, particularly as digital applications require the mixing of data from a range of applications, being managed in-house, by partners and as a service. To meet this requirement, Infrastructure as a service (IaaS) and Platform as a Service (PaaS) offerings have boomed and according to analyst group 451, almost two thirds of enterprises have or are adopting a multi-cloud strategy.

However, in a world dominated by cloud hype, IT spending offers an important insight into challenges every CIO faces in moving their organisation to a digital future. Analyst house IDC, in its latest Worldwide Quarterly Cloud IT Infrastructure report², predicted that spending on traditional IT infrastructure products will still outstrip spending on hardware deployed in cloud environments for the next two years.

So, while the cloud is the key enabling technology for the digital revolution, the fact remains that – even in its second decade – cloud spending still lags behind traditional infrastructure spending.

It is not a result of technological conservatism of vendors, enterprise IT professionals and those they report to. Rather it is a reminder of the challenges business technology leaders face in preparing their organisations for cloud and digital transformation.

Nevertheless, CIOs have a picture of the where they want to be, both in terms of technology, technology management and business, and what they need to get there.

Agility and Access to New Technologies

CIOs understand that rapidly changing customer and market demands require them to innovate and deliver at speed. They know change is everywhere and the future is unpredictable. They are trying to change cultures and methods of working – driving Agile development and rolling out DevOps to their teams. They are also trying to acquire new technologies, to make better use of data, to improve collaboration and to speed up automation, which will help the tech team deliver the changes that the business requires.

Cloud and Cheaper Compute Power

CIOs have seen the enormous power of the systems developed by hyperscale cloud providers and understand the benefits of highly configured and tuned, compute, storage and networking solutions and/or products from vendors and they want to take advantage of it.

This remains a key driver for the acquisition of IaaS and PaaS offerings. However, progressive CIOs have moved beyond their initial focus on cloud as a cost saver, a way to reduce the number of datacentres they run, or a quick and easy way to access more compute resources. Instead, it is now seen as the key enabler to deliver business services and digital transformation, bringing access to applications and data sets far outside the organisation’s firewalls.

Simplified Management and Monitoring

Hybrid IT and multi-cloud operations are no longer the product of weak central IT control and influence over technology purchasing decisions.

They are conscious decisions for organisations that are looking to engage with a range of cloud and other service providers in order to deliver innovation and improve efficiency.

Running hybrid and multi-cloud operations poses significant deployment, management, security and compliance challenges, which CIOs expect their suppliers to help them meet.

Where are your applications running?



Private Cloud



Public Cloud



Non-Cloud

Source: Rightscale 2017 State of the Cloud Report, Jan 2017

“Cloud is no longer a tactical solution but rather a strategic enabler of connected economies. Technology leaders will orchestrate cloud ecosystems that connect employees, customers, partners, vendors, and devices to serve rising customer expectations.”

Source: Cloud Powers The New Connected Economy, Forrester

Innovative Hosted and Private Cloud Options

CIOs know they cannot and should not automatically move all their data and workloads into the public cloud. GDPR, security and legacy IT are among the factors resulting in hybrid strategies that typically include one or more public clouds, on-premises and hosted private clouds and a range of non-cloud applications and systems.

Forward-thinking CIOs are looking to both maintain the investment needed to sustain current production systems and develop agile IT architectures that are a foundation for innovation. This means they will be looking for partners and suppliers that can offer relatively seamless pathways for applications and data to move from the enterprise data centre into the private and public cloud.

Pay-as-You-Go Pricing

The as-a-service model that allows organisations to shift their IT purchasing from capital expenditure to operational expenditure is here to stay. CEOs are increasingly unwilling to invest in fixed capital projects in an era of unprecedented rapid business change. CIOs and business unit leaders are already used to pay as you go pricing on software and services and use the model for IaaS and PaaS services to handle test and development, demand peaks and much more. Inevitably many will ask infrastructure suppliers, who are offering hybrid and multi cloud solutions, to move in the same direction.

CIOs driving digital transformation for their business are less interested in the infrastructure they manage than the services it allows them to develop and deliver. Inevitably they will be increasingly unwilling and unable to invest in IT modernisation that is not, in some way, tied to the services they offer the business.

Openness, Portability and Industry Standards

Technology and business are changing at a rapid pace. New markets are emerging almost overnight, and once mighty global companies are disappearing almost as rapidly. This applies to the technology industry just as much as other sectors of the economy. CIOs are finding preferred suppliers taken over and absorbed by rivals. They are finding start-ups able to offer applications and services that allow new products to be rolled out to market, before they even get to discuss their requirements with their traditional vendor’s client manager.

They are grappling with a world where IT infrastructure is being commoditised while at the same time innovation at the application layer is a crucial market differentiator. CIOs are battling with legacy contracts and with proprietary software and systems that can slow transformation programs, and they are worried that cloud might mean another generation of vendor lock-in.

They want partners that can bring expertise in social, mobile, analytics and cloud and who can ease the pain of integrating cloud and legacy systems. For many this means a commitment to open standards, open source and transparency over data portability which are high on the list of requirements in any RFP (request for proposal).

Open source, after all, is the bedrock of cloud. As AI Gillen, group vice president, software development & open source, at IDC says, “The vast majority of public cloud infrastructure in the market depends on open source software for basic enablement, and especially for delivery of full functionality. We also see the use of open source software as being fundamental to a substantial portion of private cloud infrastructure in use, and certainly for supporting the run-time environment.”

Where should your applications reside?

Analyst group Gartner lists these key factors in determining where an enterprise should host applications and data:

- Latency
- Reputation service continuity
- Performance
- Security
- Data protection
- Compliance
- Disaster Recovery

Main benefits of a private cloud

- Control
- Cost
- Privacy
- Continuity
- Availability

Source: Corina Marcuti for Luminus, 7 benefits of choosing a private cloud solution, Jan 2017

And this is where OpenStack, the free and open-source software platform, plays a leading role in deploying and managing hybrid IT workloads.

A joint Fujitsu and Red Hat offering based on OpenStack

For Fujitsu and Red Hat®, joint sponsors of this whitepaper, open source, open standards and interoperability are at the heart of the products and services they are bringing to market.

This approach allows them to offer a ‘co-creation’ methodology to customers, where each organisation’s specific needs and issues are dealt with, while at the same time Fujitsu can leverage its scale and experience to help clients stop ‘re-inventing the wheel’.

Fujitsu’s Integrated System PRIMEFLEX for OpenStack, a reference architecture controlled by Red Hat OpenStack® Platform, allows such an approach.

“OpenStack has evolved from an infrastructure for cloud-native applications to the de-facto-standard open common management platform for hybrid (on/off-premise) cloud infrastructures regardless of the type of workloads,” said Karsten Beins, Fujitsu fellow, program director open source technologies.

Red Hat OpenStack Platform is also cost effective, because it runs on commodity hardware. It reduces the danger of vendor lock-in because IT organisations are able to customise and ensure interoperability via common APIs. Red Hat OpenStack Platform has seen rapid innovation, thanks to its open source community development model, with six-month release cycles and it has already proved massively scalable.

Red Hat OpenStack Platform-driven solutions can underpin an enterprise’s digital transformation, linking public cloud, private cloud, hosted private cloud, and traditional on-premise systems – and Fujitsu uses OpenStack as a common technology basis for its off-premise and on-premise cloud service platforms.

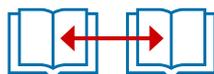
There are, inevitably, potential problems with a do-it-yourself approach to OpenStack deployments. There is, for example, a significant OpenStack skills shortage, which means CIOs have a challenge in building up internal skill sets for a system that requires significant expertise to install, maintain and upgrade.

Barriers to move to a modern cloud infrastructure

Top 3:



• No cloud strategy



• Institutional knowledge gap



• Security and policy constraints

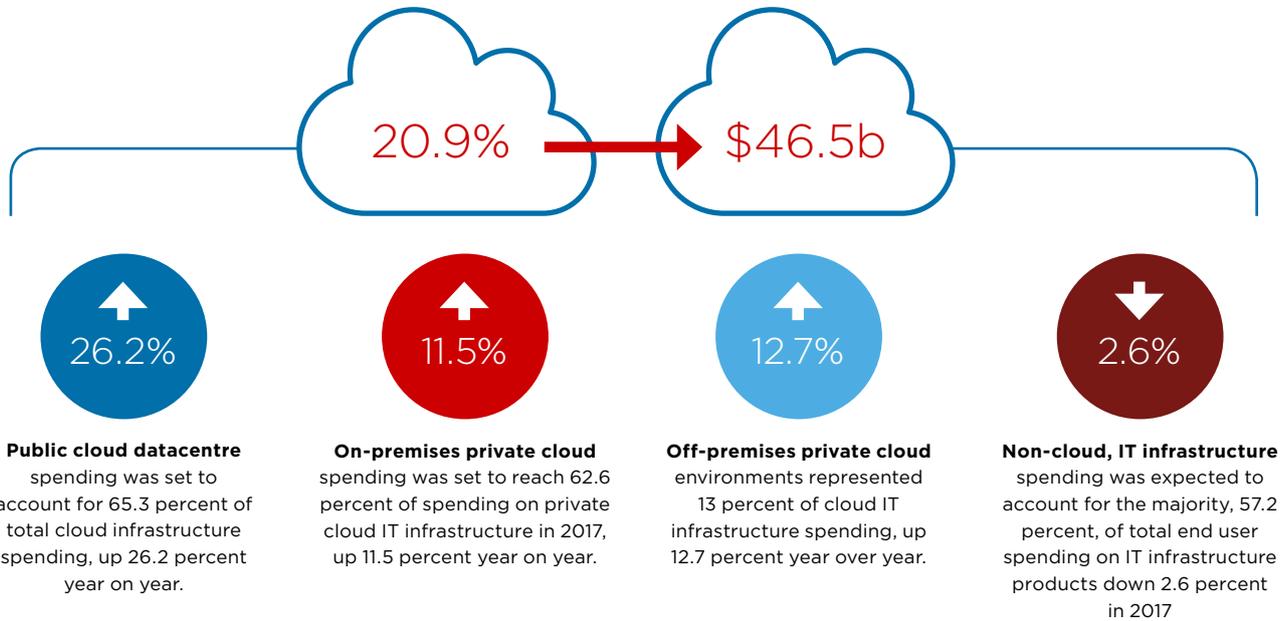
Source: Red Hat and Illuminas, Global Customer Challenge Research, April 2016

This is why pre-integrated solutions, such as PRIMEFLEX, can offer significant cost savings and efficiency gains. Fujitsu says its PRIMEFLEX for OpenStack Red Hat Edition solutions cut deployment risk, reduce infrastructure-related efforts and costs by up to 40 percent and are tailored to allow organisations to ‘start small and grow on demand’.

PRIMEFLEX can also act as a platform for containers – which often offer the first step for organisations using cloud to rapidly create new apps and services without disrupting core systems.

Where the money goes

Total spending on IT infrastructure products cloud environments was expected to total \$46.5 billion in 2017 with year-over-year (2017 and 2016) growth of 20.9 percent.



Source: International Data Corporation (IDC) Worldwide Quarterly Cloud IT Infrastructure Tracker, Jan 2018

“By using a pre-integrated reference architecture, it offers rapid time to value, it reduces implementation error and it allows you to start small, validate the full infrastructure, including portal management and automation, and then scale out,” says Craig Parker, head of integrated systems at Fujitsu EMEA.

PRIMEFLEX for OpenStack Red Hat Edition also allows Fujitsu to offer clients access to a full range of hybrid cloud services through its K5 offering. K5 is the world’s largest OpenStack cloud platform. It also supports VMware and bare metal, and, says Fujitsu, it has ‘100 percent infrastructure and integration compatibility, enabling integration across all options’.

Getting the infrastructure right is essential, but Glenn Fitzgerald, chief technology officer (CTO), insists that CIOs should, nevertheless, ‘get their nose out of infrastructure’ and focus on the applications and data. ‘Work on your application strategy and how that supports your business strategy, then we can help sort out your infrastructure’.

Gartner conveys the same message, urging CIOs to focus on placing application and data assets “where they can provide the most benefit to the business and offer the greatest utility for the future state,” and to do so “in a secure and compliant manner.”

Ultimately, today’s digital leaders need to build the appropriate foundations if they are to survive and thrive in the hybrid IT world. Only then can they build a digital-first, services-orientated business that is fit for the modern age. ■

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