

Energising efficiency: how cloud and virtualisation can transform government IT



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Government departments and agencies across the globe are being asked to do more with less in every facet of their operations. And given that we now live in a digital world, much of the burden of meeting those budgetary and service-level expectations is falling on the departments' and agencies' IT operations.

There are many factors at play here. One is the need to reduce capital expenditure — which means finding new ways to source and deliver essential IT services. Another is the need to improve productivity and efficiency — by eliminating dependence on siloed legacy systems that tie workers to their desks and make it hard to upgrade systems. What's needed instead is a way of providing application delivery on multiple platforms, anywhere, anytime, with the concomitant ability to scale up operations as required.

Fortunately, solutions to these problems are available, all thanks to the latest developments in enterprise cloud and virtualisation technologies.

The growth of cloud and virtualisation

To get some idea of the importance of cloud, according to Gartner¹, the worldwide cloud services

market was expected to grow 17.2% to total US\$208.6 billion in 2016, up from US\$178 billion in 2015.

The highest growth was expected to come from infrastructure as a service (IaaS), which it projected would grow by 42.8% in 2016. Meanwhile, cloud application services (software as a service, or SaaS) were expected to grow 21.7% in 2016 to reach US\$38.9 billion.

According to Gartner's 2015 cloud adoption survey, the growth of cloud is supported by the fact that organisations are saving 14% of their budgets as an outcome of cloud adoption. IT modernisation is "currently the top driver" of adoption, followed by budgetary savings, innovation and agility. Sid Nag, research director at Gartner, said that cloud services are being used to "recognise the tactical benefits of cost savings and innovation, but they are also being used to establish a more modern IT environment — an environment that can serve as a strategic foundation for future applications and digital business processes."

Going hand in hand with the adoption of cloud technology is the virtualisation of applications and



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desktops. Virtualisation is the process of removing software from the desktop PC or mobile device, and instead having it run on high-speed, ultrareliable servers in the cloud data centre. The user can then securely access any of the suite of applications from any device — whether that's sitting at their desk in the enterprise's offices or out on the road with a laptop, table or smartphone.

All of these operations use standardised, off-the-shelf server technologies, a strategy that keeps costs low and reliability high. A special term has been coined to describe this kind of system — hyperscale convergence.

Unleashing efficiency

The IT world is moving so quickly, with such ever-changing demands and expectations from customers (internal and external), that traditional, siloed IT structures are no longer capable of providing the level of responsiveness required. Companies such as Amazon simply could not exist were it not for the flexibility and scalability of the cloud. The same now applies to government departments and agencies — so it's time for them to capitalise on the cloud's advantages and unleash the kinds of efficiencies that the Amazons of the world enjoy.

And fortunately, moving in this direction is not difficult — the hard work has already been done by vendors, who have produced ultrareliable solutions that are suitable for government bodies of all sizes, from the smallest local governments to the largest federal departments. These public sector bodies can take advantage of easily managed, high-performing solutions that also enable them to keep their IT budgets in perfect shape.

Availability, reliability, scalability

Different government bodies will have different priorities for wanting to move to a virtualised environment, but here are some of the main reasons essentially all of them will share:

1. **Capex savings.** As all the intelligence operates in the cloud, IT departments will no longer have to budget for continual upgrading of local desktop machines in an effort to keep up with new operating system and application demands.
2. **Opex savings.** Virtual infrastructure, such as software-defined hyperconverged compute and storage infrastructure, brings terrific economies of scale, such as reduced power and cooling costs.

3. **Scalability.** In virtualised cloud environments, new users and instances can be spun up almost immediately, with the hyperscale infrastructure enabling hundreds of thousands of new 'machines' to be added without the traditional capex expense.

4. **Speedier provisioning.** IT staff are freed from the mundane work of onboarding new staff and provisioning them with all the applications they require. With hyperconverged compute and storage, all that's needed is a few clicks.

5. **Convenient management.** Keeping track of processes, applications and services is greatly simplified using easy-to-use dashboards which, in most cases, require only a few clicks to see the system status and make any required adjustments.

6. **In-built support for mobility.** It has become a truism that every enterprise is now a mobile enterprise. Virtualisation enables users to take their work with them anywhere, anytime.

7. **BYOD support.** As the applications are running in a virtual environment, the choice of endpoint device — whether it is a desktop, thin client, laptop, tablet or smartphone — almost becomes irrelevant. The user can employ whatever device they wish to use.

8. **Easier updates.** So much of an IT department's time is spent on routine operating system maintenance and updates — which can easily consume weeks of time when thousands of endpoints are involved. But with a virtualised environment, upgrades and updates can be rolled out to thousands of users quickly and simultaneously.

9. **Faster security patching.** Just as with the operating system updates, security patches can be applied to all users' virtual machines with a just a simple click.

It's really a case of horses for courses. In the past, a siloed IT infrastructure might have seemed the right choice. But with cloud and virtualised environments using standard, commodity servers, you can let the experts run the datacentres while your IT department concentrates on helping you fulfil your mission statement.

Power for the people

Numerous public sector agencies have reaped the benefits of adopting cloud and virtualisation solutions.

The Commonwealth Treasury is responsible for (among other things) producing the Australian government's annual Budget, a task that was



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becoming increasingly difficult within a traditional desktop environment. With staff members often scattered across the country and around the world while travelling on government business, having dedicated applications running on standalone PCs was holding things back. It was time for change, and that change was a switch to a Nutanix virtual desktop environment. Today, around 1,300 endpoints of all kinds are able to access Treasury's systems from the office, at home, on the road or on the other side of the world.

"By virtualising our applications and delivering them through a virtual desktop, employees have secure access to all software on any device in or outside the office. It has unshackled them from their desks, and allowed them to get more done when travelling or working remotely," said Treasury's then CTO, Ricardo Alberto.² "Project deadlines, particularly for the Budget, are very strict, so by enabling this [Nutanix solution], cut off dates aren't missed."

According to Ricardo, one of the major benefits of moving to the virtual environment has been the ability to quickly roll out and test changes and updates. Another has been the ability to do security patching in a more timely and efficient manner.

The vendor manages the integration of storage, compute and memory for the virtual desktops in a simple and scalable way that means IT staff don't need to spend time designing and building the back-end environment.

Australia's National Blood Authority (NBA) is a statutory agency that relies on a number of applications to help it deliver four million units of blood annually, valued at AU\$1.2 billion. To give its employees uninterrupted availability to resources, the NBA replaced its traditional storage area network with the Nutanix enterprise cloud platform to provide a simple, scalable and easy-to-manage data centre platform that performs invisibly. The implementation has given NBA employees the ability to log on to the agency's systems at home, in laboratories, at remote clinics and while on the road.

"We needed a way to give staff the most up-to-date information at all times, whether they're accessing our main blood management system named BloodNet, the Australian Bleeding Disorders Registry or any other application," said Peter O'Halloran, former CIO of the NBA.³ "Nutanix provided a reliable means to make this possible; if we didn't have the technology, there would be an increase in cost of about AU\$10 million per annum to cover blood wastage — that means at least 20,000 extra blood donors would need to be called in every year."

The NBA has seen significant recurrent cost savings and a 100% return on investment within the first five months. As its requirements expand, it is able to add more virtual machines using the Nutanix Acropolis hypervisor, and manage the environment through the Nutanix Prism single-pane-view console.

Other case studies are available at <http://www.nutanix.com/resources/case-studies/>.

Conclusion

In 2017, it's all about the efficiencies and economies of scale that enterprise cloud and hyperscale convergence technologies provide — which enable government departments and agencies to put their precious Budget dollars to the most effective ends, and enable their employees to work more productively. These solutions are driving lower costs, better outcomes and increased peace of mind.

1 <https://www.gartner.com/newsroom/id/3443517>

2 <https://www.nutanix.com/2016/02/14/interview-ricardo-alberto-chief-technology-officer-commonwealth-treasury/>

3 <http://www.technologydecisions.com.au/content/gov-tech-review/article/national-blood-authority-looks-to-cloud-to-stem-blood-wastage-738258338>

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix enterprise cloud platform leverages web-scale engineering and consumer-grade design to natively converge compute, virtualisation and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on Twitter @nutanix.



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