



MOVING TOWARD A VIRTUAL DATA CENTER



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The reality is that the cloud is becoming the new normal.

As more organisations move from their on-site datacenters to cloud data management, business leaders and IT teams need a structured procedure for evaluating cloud services providers and services to determine if such a move is feasible for their organisation.

This whitepaper will provide such a procedure, as well as the reasons behind every step.

INTRODUCTION

In less than a year, Australian businesses have moved to the cloud in record numbers, according to data from the [Australian Bureau of Statistics](#). The numbers are staggering.

By the end of 2016, Australian businesses which use cloud computing services nearly doubled from the previous year — from 19% of Australian businesses in 2015 to 31% in 2016.

Though the statistics for 2017 aren't in yet, all indications point to the fact that adoption and use of cloud services will continue to rise at a rapid rate.

When looking at the types of businesses which use cloud services, the numbers become even more telling.

Businesses with 200 or more employees represent 60% of Australian businesses already benefitting from cloud solutions. Smaller Australian businesses (from zero to four employees) are in the minority, representing 25% of total.

Those who haven't yet moved to the cloud cite two issues holding them back: lack of knowledge and security concerns.

Yet all indications show that Australian businesses will increase their spending on cloud services in the coming year.

Gartner IT research said that Australia's cloud market was set to grow by another 15%, underpinned by the increasing adoption of software-as-a-service offerings.

With those trends pointing upward, Australian businesses owe it to themselves to look long and hard at the benefits of taking their companies' IT into the cloud.

If a company wants to make that move, it needs to overcome the two-fold challenge that has held companies back — security concerns and lack of knowledge. Armed with that information, it can evaluate the benefits and eliminate the risks.

This paper will look at these factors to support business leaders and decision makers to make the transition to the cloud a successful one.

MOVING TO THE CLOUD: WHERE AND HOW TO BEGIN THE JOURNEY

Companies need to find a solution that [simplifies their IT](#), one that they can both understand and that keeps their data secure. Furthermore, they need a solution that delivers only what that company needs — a customised solution that won't break the bank, yet can scale up when the company grows.

Once a company has decided on how it will proceed, it needs to create a strategy that will help its staff and system transition with ease

1.



DEFINE YOUR STRATEGY

Simplification and security are the keys to success.

With simplification and security as the cornerstone of a strategy, a company can map a successful pathway to move to the cloud. Use a provider who will keep and secure the organisation's data within Indonesia, one who can create a simple process that takes little time to implement and little time to learn. Local support, too, can help simplify and streamline the process.

2.



START WITH SERVER VIRTUALISATION

With virtual servers, a company can reduce the complex web of networking and security. Whether a company needs a private, a public, or a hybrid environment, virtualisation not only provides simplicity and security, it also delivers more control.

With server virtualisation, a company can customise its solution to its current needs, yet have the capacity to grow as the business does without the added expense.

With virtualisation, a company won't incur more expense buying new hardware every time the system needs to grow.

3.



CHOOSE THE APPS

Not all applications will migrate easily to the cloud. For a successful migration, an app has to [cloud-ready](#).

Newer apps (built within the last 15 years) using a versatile language, supported by the organisation's chosen cloud provider, are usually a good fit. Check the security and compliance level for each app before migrating it to the cloud.

The cloud's encryption level must be able to support the app's requirements.

4.



PLAN TO CONQUER THE CHALLENGES

Simplify with a local environment that can fully integrate with the provider's, which will allow the organisation to have a single local management console.

Monitor the performance of the company's virtual machines with both real-time and historical metrics. Choose a system with auto-failover. Since hardware nodes can fail, an organisation needs a provider that can restart its virtual machines automatically to keep its system running.

Check legal requirements for what data the company can migrate to the cloud. Again, make sure that the cloud provider has airtight security measures and stores all its data within Indonesia. Probe the [vendors' definitions of terms](#) like 'percentage uptime'.

Make sure that their expectations match the company's. Check for software licensing requirements. Make sure that the software is properly licenced for the company's move to the cloud.

CLOUD COMPUTING FOR BUSINESS: A SOLUTION

Cloud computing can help a business simplify its IT, keep its data secure, and reduce downtime that stifles productivity.

A blend of several types of technology, cloud computing ties multiple physical servers into a large resource pool. That way, if a node fails, the grid continues to function and the user can continue without downtime.

Businesses can choose from several options, including metred computing and on-demand computing. Metred computing is when a business pays for its usage. On-demand computing is when a business can simply click to get more power if they need to scale up, or to drop down a lower level of service when business slows

HOW CLOUD COMPUTING BENEFITS BUSINESSES

Businesses can scale their power needs at will, making cloud computing more cost efficient. It outsources the management of this complex technology to its provider, freeing its IT staff and other support people to take care of other tasks.

Technical support doesn't need to manage individual nodes any more, only a cloud. Fewer maintenance tasks means more money and man-hours can go into progressing strategic initiatives. Without the worry of owning servers, your IT team can be more agile, more efficient, and more cost-effective.



CLOUD INFRASTRUCTURE OPTIONS

Three infrastructure options exist for businesses to leverage the cloud: SaaS, PaaS, and IaaS. Here is a rundown of these options and their characteristics:

SaaS

Hosted on a remote server, an organisation can access [SaaS software](#) through a browser over the internet. These applications are managed from a central location. Popular SaaS products include Google Apps, GoToMeeting, DropBox, and Netflix. Users don't need to update software, handle patches, or purchase software. Short-term, seasonal, e-commerce sites, and public-access applications make SaaS a popular choice for organisations that only need those types of services.

PaaS

This infrastructure provides a platform on which developers can create software, deliverable through the Web. The IT department needs only focus on building applications with no need to concern themselves about updates, storage, operating systems or other infrastructure. Multiple developers can use PaaS at the same time in order to utilise a more agile, rapid way to develop software.

IaaS

This type of infrastructure provides organisations total control over their applications. Companies need not purchase infrastructure, since the IaaS provider delivers network, storage, server, and operating system service on demand. Scalable, flexible, allowing multiple users, this option is the best for those who need a rapidly scalable solution that delivers airtight security.

CLOUD STRUCTURE OPTIONS

Private, public, or hybrid cloud? Organisations moving to the cloud need to look at the benefits of each option for their unique needs.

It pays to take a close look before choosing.

Private cloud

For an organisation that needs [total control over its data](#) for security or regulatory reasons, as well as those who need to protect their intellectual property, a private cloud service may be the best choice. Though a secure third-party provider provides maintenance help, patching, and service monitoring, the organisation maintains total control over its access. A private cloud service can also be customised specifically for an organisation, providing an exact fit for its needs. This can mean proprietary architecture dedicated to the single organisation. Businesses with this type of service, though, may need some IT expertise without the help of a managed private cloud.

Public cloud

The easiest to use and the easiest to access, this service is usually the most cost-effective. A third party operates the service, and an organisation needs little IT expertise to take advantage of cloud technology.

Hybrid cloud

This allows an organisation to leverage the advantages of both public and private services to benefit from private cloud hosting for the organisation's most secure data, yet enjoy the flexibility, scale, cost efficiency, and ease offered by a public service.



WHY AN ORGANISATION SHOULD VIRTUALISE NETWORKING, STORAGE, AND SECURITY

An energy-saving, cost-effective way to better utilize an organisation's IT resources, virtualisation also [increases uptime](#), speed, and achieves quicker recovery time in case of disasters.

Even more important, virtualisation can [increase an organisation's data security](#), a major concern when a company handles sensitive data or valuable intellectual property.

HOW A VIRTUAL DATA CENTRE HELPS ORGANISATIONS BETTER LEVERAGE THE CLOUD

With a virtual data center (VDC), an organisation can [dispense with the need to operate its own data centre](#).

With a VDC, a company's data management provider will create groups of virtual servers that the company itself can manage. At the same time, it can simplify security and networking to make it easy for a company to use. With a system that requires too much knowledge or advanced training, most companies will struggle with their transition to the cloud.

Virtual servers provide the flexibility that most organisations need, allowing the business to become more agile, expanding its services as needed. No climate-controlled environments nor an army of IT professionals needed.

WHAT'S THE DIFFERENCE BETWEEN A VIRTUAL PRIVATE SERVER AND A VDC?

While virtual private servers (VPS) and VDCs are related, they have significantly different purposes.

Both a VPS and VDC are invaluable for businesses of all sizes, from small organisations looking for an affordable and secure server to suit their unique needs, to growing and enterprise-level organisations that require maximum scalability and flexibility.

Both make the computing power of an outside server accessible, empowering business IT teams to do more regarding security, functionality and development. Where the distinction between VPS and VDC lies is in the scope of what they offer.

WHAT IS A VPS USED FOR?

A VPS can be used for a variety of purposes. It serves as an off-site, third-party hosting provider with greater security and flexibility than you'd get with something like shared hosting.

It can be used for:

- Running websites
- Hosting business files and media
- Testing new components as well as server setups that aren't yet live

With a VPS, an organisation can best utilise its resources without having to purchase new hardware. Consolidating all the functions of multiple servers into one virtual server costs less and delivers more efficiency, and more security for an organisation while freeing its IT team up for other tasks.

The advantages of a VPS are that it offers a lot of the resources modern organisations require to offer a professional user experience. A VPS will have a limited number of users, which means it is limited in scalability and may not offer enough for more dynamic organisations – or for those on a fast growth track.

This is where VDCs are beneficial.



WHAT IS A VDC USED FOR?

Just as a physical data building would house numerous racks containing servers, a virtual data center is a virtual location that houses numerous virtual servers. It offers a pool of virtualised resources, which are then available to your organisation. This means instead of one virtual operating system, you have an entire virtual environment that contains many virtual servers.

A VDC is designed to meet the needs of enterprise-level organisations. It is essentially a management environment. Leverage it for all it's worth, and your IT team can do just about anything within a secure, scalable, stunningly flexible environment.

A VDC also serves as a source of backup and replication.

Depending on the cloud provider, some VDCs enable you to customise your virtual servers so they match exactly what you need.

The primary benefit for businesses is financial - it's an opportunity to save on IT costs by only paying for what you use, as well as already being set up to scale when your organisation demands growth and greater functionality.

HOW TO DETERMINE IF A VDC IS THE RIGHT CHOICE FOR AN ORGANISATION

If a company needs tight security, but doesn't need the extra costs and manpower needed to maintain its own private servers, it should consider a move to a virtual data centre.

Small-to-medium-sized businesses (SMEs), especially, need a scalable solution that can grow as they do without the cost of private servers, which would be overwhelming for organisations in those categories. If an organisation needs agility and cost-effectiveness, it should consider moving its data management to a VDC.

HOW DATA STAYS PROTECTED IN A VDC

Organisations can protect the virtual machines in their virtual data centres with SecondSite Interzone. This powerful service replicates them to another availability zone. If an availability zone were to experience an outage, organisations can easily fail over to another zone with minimal downtime to business operations



THE BENEFITS OF KEEPING YOUR DATA LOCAL

Just because you use an Indonesian provider, or a provider based in Indonesia, doesn't mean they house your data in an Indonesia data center. They may instead use a data center in Singapore—or even the U.S.

If you're unsure about where your data is held, make sure you find out from your cloud services provider. What your organisation needs, then, is a provider that assures you of state data sovereignty as well as national data sovereignty. If you prefer that your provider store your data in a specific state, you need a provider who can guarantee that situation. If you need your data to cover users in other states, you need a provider who has local offices in those states.



The benefits of your cloud provider ensuring data sovereignty include:

Data security

With a locally hosted cloud service, you know your data will be secure from intrusive searches, prying eyes, and untold legal obligations.

Indonesian data sovereignty compliance

Indonesian organisations must follow Indonesia law with regard to data sovereignty compliance. To ensure that you follow the law, make sure your cloud service stores your data only in Indonesia.

Improved performance and latency

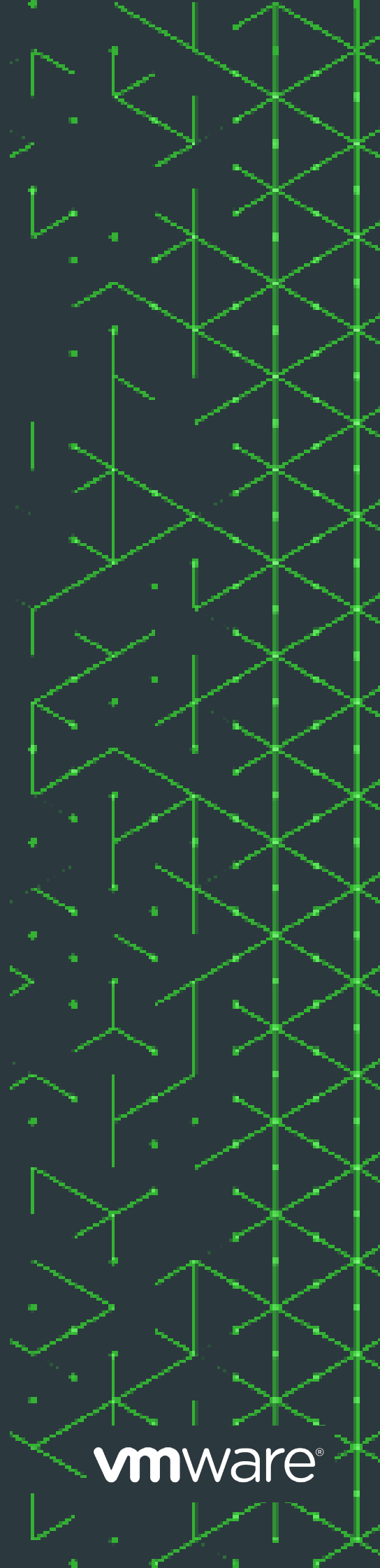
If your users are in various locations in Indonesia, then you should house your applications in multiple states—load-balanced throughout the country.

Disaster recovery and replication data storage

When things go wrong, you want to recover as quickly as possible. With recovery teams in a remote location and replication data stored overseas—or even in another state—this may not be possible. With a local cloud services provider, you can rest easy.

Access to key personnel in the same state

If you need an architect or an engineer to solve a particular challenge, you'll have faster access with a local provider.



HOW TO BENEFIT FROM VCLLOUD SUITE

With the power of [vCloud Suite](#), an organisation can consolidate its servers and data centres while maximising its applications' availability and performance, better manage its use, become more agile, and develop new apps more quickly

HOW TO CHOOSE A HOST FOR A VIRTUAL DATA CENTRE

Organisations must look at several factors when they choose a host for their virtual data centre. Not all providers offer the same range of services, so it pays to shop around—carefully.



Here are some of the things to look for in a virtual data centre host:

Customisable sizing of virtual servers

To avoid overkill when it comes to data management, yet allow for easy scalability, a host should offer flexible sizing that the organisation can customise to meet its unique needs.

Complexity and simplicity of management

Ideally, an organisation needs to handle complex tasks, yet manage them with ease. Convoluted management requires more man-hours, more IT personnel—which leads to depletion of resources and time.

Scalability of resources

To create the kinds of innovative solutions its customers demand, an organisation needs to be able to scale up or down at will.

Furthermore, all businesses have their peak and their slow times. A virtual data centre that can scale up or down likewise is a huge plus for any organisation.

Fluctuating fee or predictable subscription billing

An organisation doesn't need unpredictable billing practices or fluctuating fees. To manage its funds properly, it needs a predictable expense each month. Choose a provider that will deliver dependable service, dependable billing.

Compare contract types

Lock-in contracts versus pay-as-you-go contracts: An organisation certainly doesn't need to pay for services it doesn't need. With a lock-in contract, though, that's exactly what one gets. For organisations on the move, a pay-as-you-go solution usually is the best choice.

VMware integration

For better scalability, ease of use, control, and automation, [integrating powerful VMware](#) with an organisation's system is a must.

Consider where data is stored

This is a must for organisations with sensitive data and highly guarded intellectual property. With intrusive regulations in host countries allowing questionable government access to data stored abroad, a security breach is just a matter of time. Choose a host that keeps the data within Indonesia, and a company need not worry about its data getting into the wrong hands.

Real-time and historical metrics for monitoring performance

Metrics are the essence of businesses. Keeping good track of performance, tweaking policies and workflows to correct poor performance can be the difference between success and failure. Selecting a virtual data centre provider ought not be any different than selecting an employee or other service. Insist on accurate metrics provided as needed for a successful move to the cloud.

KEY FEATURES TO LOOK FOR FROM A CLOUD PROVIDER

If you're thinking of migrating to the cloud, there are key features you need to be on the look out for from your cloud service provider.

Up-time guarantee

The potential impact of downtime can be severe. Look for a cloud service provider who clearly documents the amount of downtime that's allowed on your platform. Don't assume that your definition of downtime matches theirs. Ask your potential provider to explain a few downtime reimbursement scenarios to you before you sign up for their services.

Having complete control

Apart from looking for a complete service level agreement (SLA) backed cloud solution, search for cloud providers that offer you a higher degree of control and flexibility.

Customised solutions

To make the most of the cloud without wasting resources, find out if the provider allows you to customise your solution to suit your needs. You may not need everything that is packaged up for you and your business.

Ease of use

In order to quickly and cost-effectively drive business outcomes, you'll need a portal that's easy to setup and navigate. An easy-to-use and intuitive portal makes it simpler for you to quickly manage your IT resources online.

Predictable billing

Many cloud providers charge their customers for several items like IOPS, GETs, and PUTs. It's hard to make sense of all these additional charges on your bill. Instead of trying to decode the costs listed on your bill, look for a provider that charges you a fixed charge month after month.

Avoid lock-in contracts

Not all cloud service providers live up to their SLAs. If they lock you into a contract, you might have to stick with them even if they don't meet your requirements. Look to avoid getting locked into contracts.

Local data storage & support

Many cloud service providers don't advertise where their data centres are or where your data is kept. They may store your data overseas and even move your data without notifying you. Look for a cloud provider which guarantees your data is hosted locally in Indonesia and complies with Indonesian Privacy Principles.

Data sovereignty

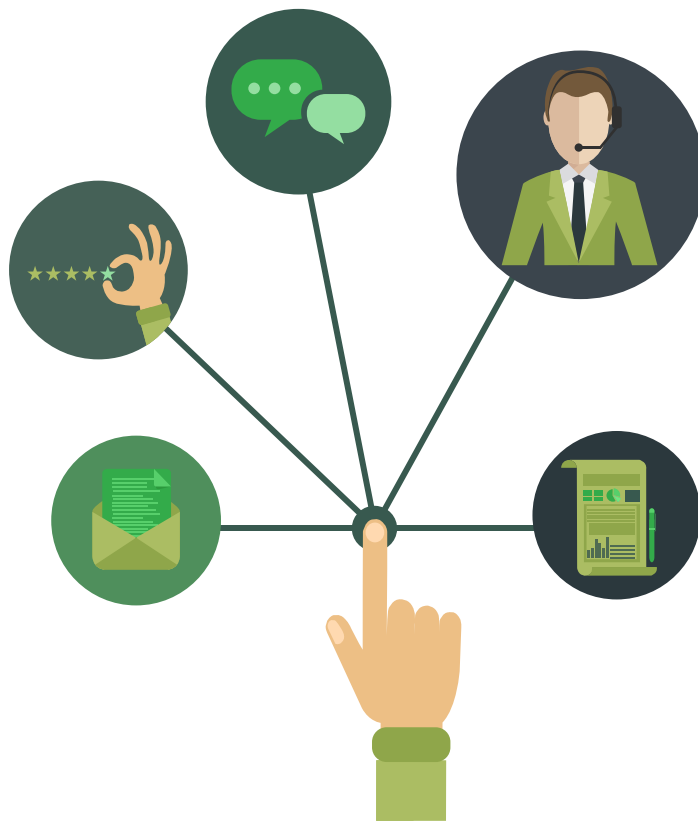
If your data is stored overseas, your rights over your data come second to the rights of the organisation that's minding your data. This is something you ought to consider when looking for a provider. Make sure your data remains safe right here in Indonesia.

Backup & disaster recovery options

Look for a service provider that offers you a quick and easy way to backup, replicate, and restore data from the cloud. That way you're always protected, no matter what .

Real-time metrics

Sometimes, it's challenging to manage virtual environments because of their complexity. Find a provider that offers you real-time metrics. They will show you how well your virtual environment is performing and let you easily find and remediate performance issues.



CONCLUSION

INFRASTRUCTURE-AS-A-SERVICE MAKES IT EASIER

Why purchase clunky infrastructure that costs more, will wear out more quickly, and can't scale to meet an organisation's needs?

With today's Infrastructure-as-a-Service (IaaS) technology, an organisation need not purchase its own equipment to have the same security as once only an on-site data centre provided. Having a virtual data centre allows an organisation to scale at will, invest in people instead of equipment, and still maintain tight security, provided that the provider chosen keeps the data within Australia's borders.

TAKING THE FIRST STEPS

With careful research, an organisation can take the first steps toward a successful move to the cloud. When an organisation follows this research with the selection process that this paper outlines, it can assure itself of success when it makes its move to the cloud.





ABOUT ZETTAGRID VIRTUAL DATA CENTER

Zettagrid delivers the latest in self-service cloud infrastructure platforms to provide a secure, user-friendly cloud solution to clients of every size—from start-ups to large-scale enterprise organisations. To do so, it leverages the technical firepower of **VMware** products and solutions to provide the best service and security available anywhere in the world. Its Virtual Data Centers help to simplify the cloud whilst providing the ultimate in Indonesia-based security for its clients.

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