Telsyte

# FROM BACKUP TO AVAILABILITY

How Australian enterprises can implement real-time data protection for increased business agility

This report was commissioned by Veeam® Software and independently produced by Telsyte

# Contents

# Executive summary

Today's enterprises have higher than ever demands for data and application availability. The rapid digitisation of business processes and increasing expectations from customers and partners for constant uptime is ushering in a new era for IT which is less restricted by manual data protection practices. Telsyte research shows 75 per cent of IT budgets are spent on operations and transformation programs with only 25 per cent left for innovation. To drive more innovation, CIOs must address their number one business priority — reducing operating expenses — and free their organisations from a complex collection of backup, storage and virtualisation systems to ensure applications are online and protected from failures and cyber attacks.

With the penetration of private clouds among Australian enterprises approaching 45 per cent by 2019, and public cloud IaaS is forecast to reach 85 per cent penetration by the same year, data protection and availability are critical for every type of workload. With an availability architecture in place, Australian organisations will be better positioned to take advantage of a hybrid cloud architecture — from in-house physical systems to fully virtualised public clouds — to develop innovative products and services.

# Modern enterprises demand immediacy and availability along with continuous innovation

**Australian enterprise organisations are operating in a fast-paced economy with consumers and businesses demanding more immediate service delivery.**

The digitisation of business processes is rapidly increasing as more commerce is conducted through online and mobile channels. In an always-on world, organisations can not afford to miss opportunities due to poor levels of information access and availability.

For many organisations, a combination of dated technology and complex processes results in challenges relating to the availability of core server and storage systems required to deliver customer-facing applications. As more people use mobile devices in addition to telephones and Web browsers for interacting with enterprise and government organisations, the demand for immediacy is only increasing.

Telsyte research indicates that, in addition to more than 16 million smartphone users, Australia now has a tablet audience of 13 million people who do everything from purchase flowers to driver's licence renewals.

To overcome the growing challenges of on-demand service delivery, organisations need to establish infrastructure which is reliable and includes data protection and recovery as an integral part of an application availability strategy. If applications are offline, revenue can be lost and the reputation of the organisation can be compromised.

For most CIOs, a significant challenge is managing existing systems for established operations alongside mandates from business units to deliver new and innovative services. Among Australian enterprises, a high 75 per cent of IT budgets are spent on operations and transformation programs.

**Figure 1: Most of the IT budget is spent keeping the lights on**


Source: Telsyte Australian Digital Consumer Study 2015


Source: Telsyte Australian Digital Workplace Study 2015; n=424

In order for more of the budget to be spent on innovation, not only must operating costs be reduced, but the capability of application delivery must be increased. Technologies which are purpose-built for virtualisation — including for data born in the cloud — and the modern data centre are more flexible, cost effective and less complex. However, they add significant capability which should not be overlooked when developing a platform for the future.

Modern data centre tools — often multi-purposed for data services like backups, replication and disaster recovery — enable organisations to replace point solutions and take advantage of other emerging architectures like private and public clouds.

CIOs and business leaders should evaluate the cost of downtime to their organisation and prepare a modern infrastructure environment with availability, not just backups, as a fundamental priority. Fewer concerns about data protection and application availability will lead to more ability — and budget — to turn operations into innovation.

# From legacy data backup to modern availability

**With most of the IT budget locked up in operational processes, Australian enterprises are managing a complex network of clients and servers — often without a concerted approach to availability. Adding to this complexity is a growing mix of mobile devices and cloud services where data is generated outside the reach of routine backups.**

A traditional backup involves taking a point-in-time snapshot of data and keeping it housed on another system in the event of a problem with the original system. In such cases, a "recovery" process is then initiated whereby the backed up data is restored to its original state. The challenge for many organisations is that this backup-store-recover process is prone to lengthy delays and even data loss due to errors and lack of testing. If an online system experiences a problem, recovering from a point-in-time backup can directly impact the performance of that system and the organisation's ability to service customers and generate revenue.

Telsyte's research indicates that customer service is a growing business priority for IT leaders, as the quality and availability of internal and external-facing applications directly impact an organisation's ability to service customers.

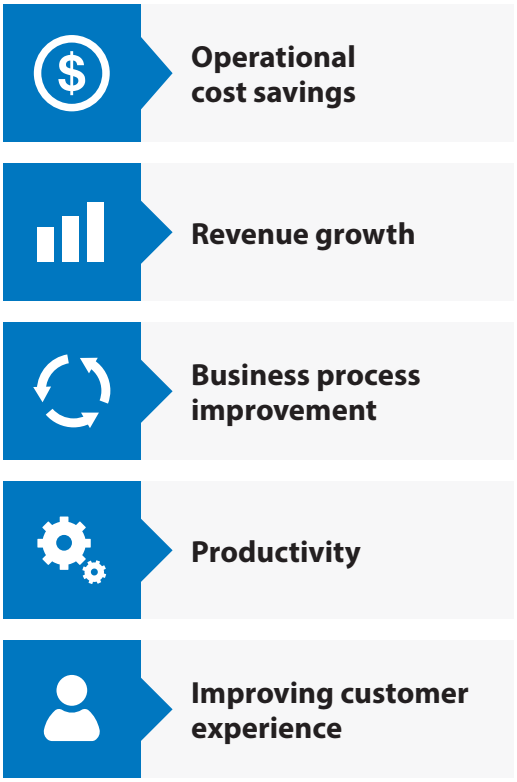
For example, if an insurance company is unable to process claims due to a mobile app failing to connect to a database which is offline, the customer experience is directly impacted and IT bears the responsibility from business stakeholders.

More IT-driven customer interaction processes call for more data and application availability, not just data protection. With the onus shifting to an always-on environment, CIOs must review the effectiveness of existing backup processes with particular attention to the time taken to restore data and applications once they have been backed up.

A modern availability strategy enables companies to re-architect their traditional backup processes for faster recovery times and closer recovery points, without impacting production workloads, apps, virtual machines or data centres.

Another benefit of availability — as distinct from legacy backup — is that it enables organisations to use the data in backup repositories in a valuable way. For example, for application testing and development.

**Figure 2: The top business priorities for Australian CIOs**




Source: Telsyte Australian Digital Workplace Study 2015; n=424

Paired with the right storage, organisations can architect an end-to-end solution designed to keep operations running. In addition to routine data protection, availability also comprises a strategic component of an organisation's overall IT security posture. CIOs must be prepared to recover data in the event of day-to-day outages that can impact the business — not just disasters like fires and floods. Malware attacks, human errors, directory deletions, lost and corrupted files (including VMs) are routine data security issues organisations face. The time to recover from such issues should be at the forefront of general business — not just a backup solution.

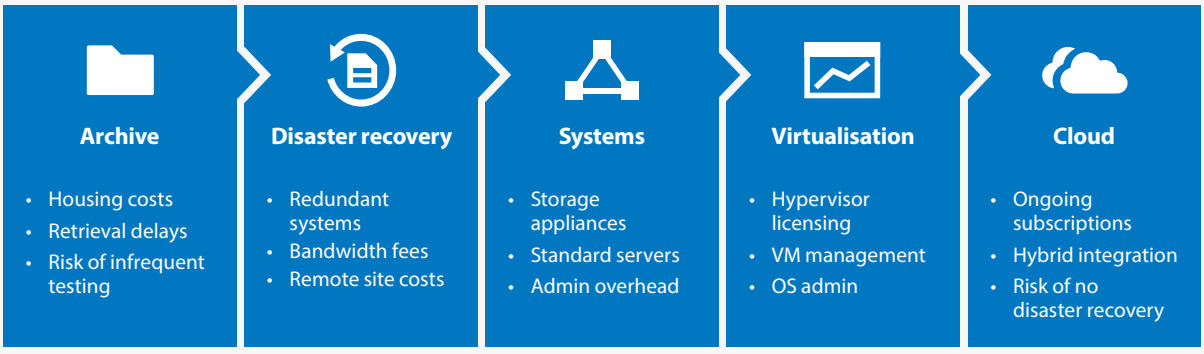
## Table 1: The clear differences between backup and availability

| Backup | Availability |
|---|---|
| Often not tested | Always tested |
| Long restore time | No — or short — restore time |
| Distant recovery points | Close recovery points |
| Inconsistent media (disk, tape, etc.) | Common media |
| Manual process intensive | More automated |
| Impacts running workloads | Transparent to running workloads |
| OS or hypervisor specific | Cross platform, hypervisor agnostic |
| Designed for single site | Designed for multi-site and disaster recovery |

## Don't get caught in the backup expense chain

Australian enterprises are spending a significant portion of their IT budgets on backup software and appliances, which can then translate into high services expenses. There is an entire value chain around legacy backup solutions that customers can get caught up in, and investigating products that offer out-of-the-box features can lead to cost savings and more innovation.

### Figure 3: Legacy backup processes can become complex and expensive



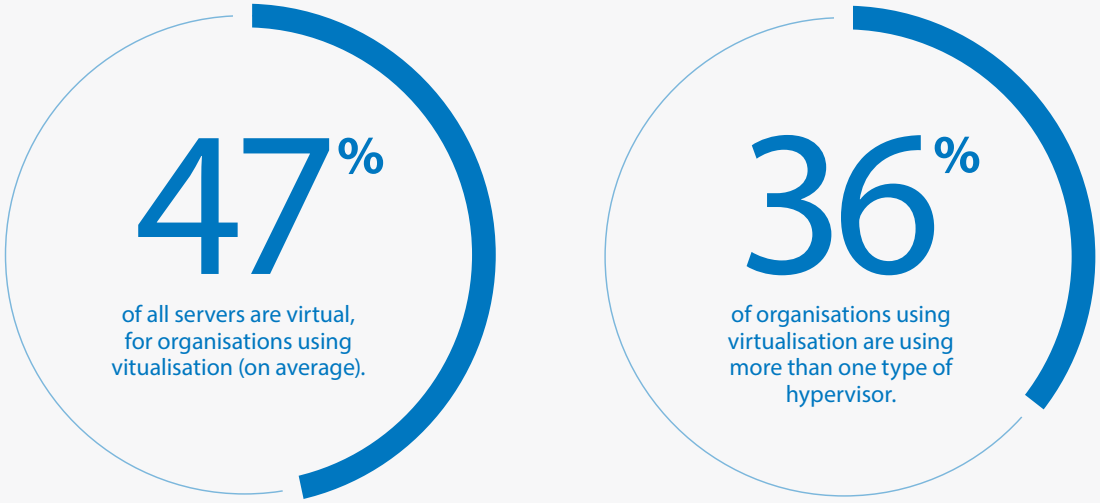

IT and business leaders should review each component of their backup methods to ensure optimal value is obtained, and if there are any opportunities to improve processes and eliminate unnecessary steps on the path to greater availability.

By improving data protection practices, IT departments and their service provider partners have a real opportunity to break free from spending huge amounts of time and money on integration services. Instead they can add value to the business through more innovative projects. Avoid paying top dollar for data backup and availability services that should just work, and shift budget from operations to innovation.

# Virtual systems demand best-of-breed approach

**There is a real change in how enterprises are managing their infrastructure, with physical servers being virtualised and collections of virtual servers being orchestrated into private clouds. Telsyte research indicates 80 per cent of Australian enterprises are using or investigating server virtualisation technology, making Australia one of the more mature markets globally.**

**Figure 4: The growth in virtual machines and multiple hypervisor use calls for near-constant physical and virtual availability**




Source: Telsyte Australian Infrastructure & Cloud Computing Market Study 2015

This trend towards more server and storage virtualisation has profound implications for backup and availability. A strategy to keep businesses always on must now include the capability to perform availability for both physical and virtual machines.

Along with the growing trend of virtualisation is the adoption of more than one type of hypervisor. VMware is the leading global supplier of enterprise virtualisation technology; however, in recent years Microsoft's Hyper-V virtualisation platform has risen to prominence as an alternative. Today, more than a third of enterprises using virtualisation are using more than one type of hypervisor, according to Telsyte's research.

Given that no vendor dominates the virtualisation and private cloud space, a best-of-breed approach to availability is essential for the best outcome across multiple platforms. Using the right backup and availability solution for your virtual environment can reduce complexity. For example, some backup solutions require agents which can inhibit the benefits of virtualisation, and add to the management complexity and cost which virtualisation aims to reduce in the first place. An availability solution is often the right fit for today's hypervisors, rather than agent-based backup applications or systems.

Managing the most appropriate products for backup and availability across physical and virtual infrastructure is often a more prudent approach to data protection than trying to shoehorn a mix of incomplete features into one interface. Agentless deployment across virtual machines and complementing physical machines can be a better outcome in terms of cost and availability — particularly if the strategy is to move from legacy backup to modern availability. A firm grasp on availability can also dramatically reduce the need for traditional backups, reducing the reliance on dedicated backup tools which add to the TCO of data protection.

# In-house, cloud or hybrid: availability is constant

**With more infrastructure going virtual, Australian organisations are well-equipped to take advantage of Infrastructure-as-a-Service (IaaS) from local and international cloud providers.**

The next step on the path to an on-demand infrastructure is orchestrating virtual machines into a private cloud. Telsyte research indicates that the penetration of private clouds among Australian enterprises will approach 45 per cent by 2019. This is happening alongside strong adoption of public cloud IaaS, which is forecast to reach 85 per cent penetration by the same year.

Data protection and availability are critical for every type of workload, from in-house physical systems to fully virtualised public clouds. There is a perception that using a cloud service automatically means data is protected and highly available. This is not true, and workloads both on- and off-premises can fall victim to poor data management and downtime.

There are numerous options for protecting data to and from the cloud, including backup-as-a-service, disaster recovery and replication-as-a-service; however, the solution must also be fit for purpose in the cloud, as many services do not afford the equivalent level of features and access to the hypervisor.

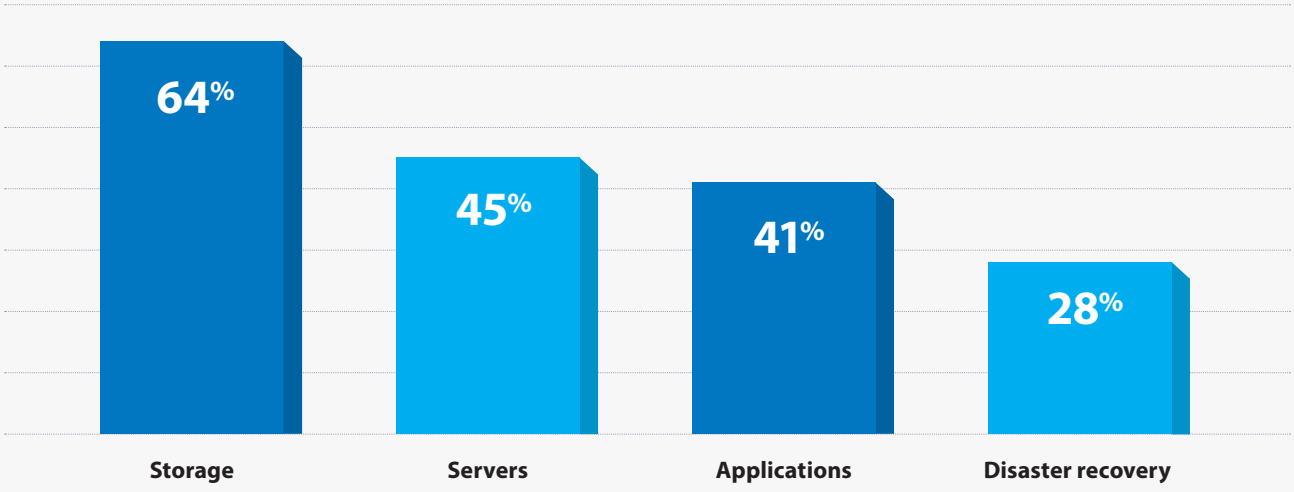
With a mix of private and public clouds in use, the future is a hybrid cloud environment where the right workload is hosted on the right infrastructure. Working toward a hybrid architecture will bring a new level of flexibility around how and where applications are hosted and what elasticity organisations have during peak load times. Regardless of the type, all cloud services need data security, redundancy and availability.

Telsyte research shows reliability of cloud services to be a high concern for CIOs. Reliability is one of the top three reasons why an organisation is likely to reduce their cloud spending, and CIOs rank data and application sovereignty as a top-five concern about IaaS in general.

With storage seen by CIOs as the most workable area of their infrastructure to develop a private cloud, modern data protection and availability is imperative to avoid fragmentation of information and a high management overhead.

### Figure 5: Storage well-placed for private clouds, data protection is paramount

**Question: What do you think are the most workable areas of your infrastructure to develop a hybrid cloud?**




Source: Telsyte Australian Infrastructure & Cloud Computing Market Study 2015

To get the most out of a hybrid cloud architecture, IT leaders must be confident their applications are available regardless of where the data resides. Evaluate the use of VPN and replication technology to have a second offsite copy of the data with automatic failover. Integration options for on-premises data protection connecting to easily accessible and easy to provision public cloud services are increasing steadily, and more solutions are being released with cloud connectivity as a design consideration.

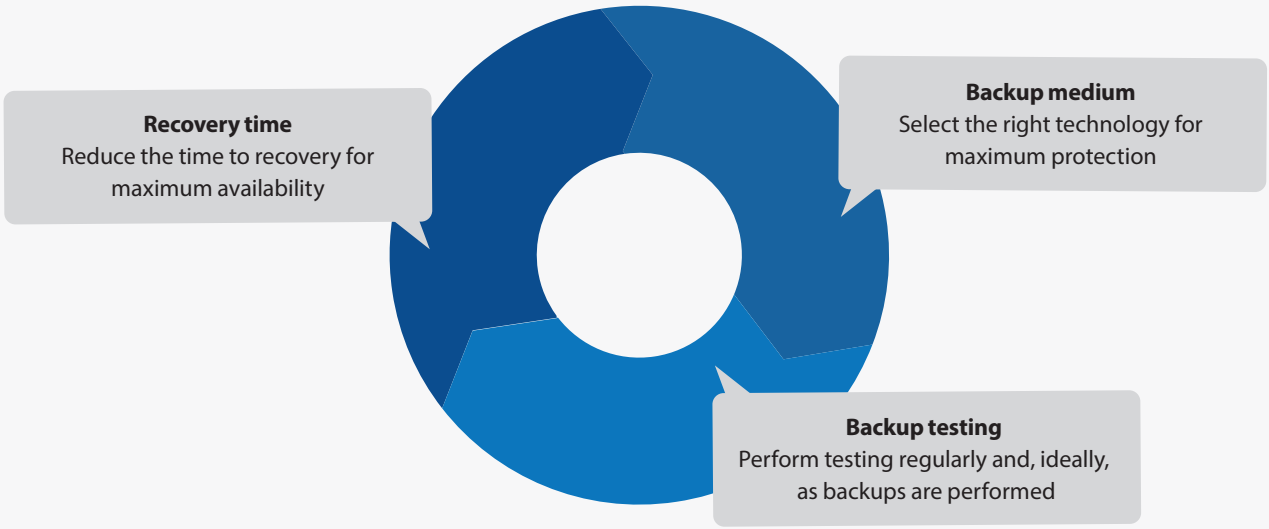
# Improve efficiencies with tested data protection

**With so much time and resources spent on backup and disaster recovery, it is crucial organisations understand the effectiveness of these activities.**

It is one thing to perform a backup or disaster recovery action, another thing to verify the success and efficiency of that action. If the backup is not successful then the investment is wasted.

To determine effectiveness of data protection processes, CIOs must investigate how the organisation's backup systems are performing and the frequency of testing and restoration. The backup medium itself will play a part in how well the data is protected. Online, disk-based backups can be tested regularly, whereas backups to tape can be left untouched for long periods of time. In the event of data needing to be restored, recovery from tape can be time-consuming and error-prone if the media has decayed over time.

**Figure 6: Availability depends on an efficient backup and recovery cycle.**




To eliminate the time it takes to recover data in the event of a problem, organisations should minimise the time it takes not only to perform backups but to test them as well. Combine this with a low recovery time and the business is on the right path to availability.

It is crucial to ensure all backups are tested, and the advantage of using disk for testing is that the test reports can be delivered as backups are performed. Backups are not infallible, and it is a misconception to believe that once data has been backed up it is safe for restoration. This ability to "test as you go" is pertinent for disaster recovery — another area which can be costly, time-consuming and difficult to test.

Australian CIOs must work towards streamlining disaster recovery processes to avoid dependency on manual intervention and potential loss of revenue if a disaster strikes and an untested architecture fails to take over. It is just as important to test disaster recovery and remote backups as it is to test local backups.

It can take a large enterprise months of preparation for a full disaster recovery test. And in many cases recovery testing has to do be done manually.

The good news for CIOs is there are now more local options — including local infrastructure of international providers — for disaster recovery in the cloud, which can augment existing data centre operations.

# Recommendations

**Australian enterprise organisations have more processes online than ever before. Increasing levels of digital integration and customer-facing services are driving a need for data and applications that are always online and highly available.**

The path to greater availability for an always-on enterprise is multifaceted and requires strategic planning by the CIO and IT team.

### Modernise for innovation

CIOs and business leaders should evaluate the cost of downtime to their organisation and prepare a modern infrastructure environment with availability — not just backup — as a fundamental business priority. Fewer concerns about data protection and application availability will turn operational costs toward investments in innovation.

### Assess the customer-experience risk

The traditional backup-store-recover process is prone to lengthy delays and even data loss due to errors and lack of testing. If an online system experiences a problem, recovering from a point-in-time backup can directly impact the organisation's ability to service customers and generate revenue.

### Steady on backup services

Avoid paying top dollar for data backup and availability services that should just work and this will help shift budget from operations to innovation.

### Best-of-breed for virtualised availability

Since no one vendor dominates the virtualisation and cloud (public and private) space, a "right fit" approach to availability is essential for the best outcome across multiple hypervisors and systems. For example, some backup solutions require agents which can inhibit the benefits of virtualisation and add to management complexity.

### Prepare for cloud data protection

Data protection and availability are critical for every type of workload, from in-house physical systems to fully virtualised public clouds. Cloud services do not mean data is protected and highly available, and workloads both on- and off-premises can fall victim to poor data management and downtime.

### Reduce testing time on path to availability

Backups are not infallible, and it is a misconception to believe once data has been backed up it is safe for restoration. The ability to test as backups are performed is crucial to restoration and disaster recovery which can be costly, time-consuming and difficult to test.

### Look beyond simple recovery

Today's availability solutions offer more than simple recovery operations. Testing changes in a "sandbox" environment, enterprise storage system integration, replication, e-discovery and DR-as-a-Service are all possible. Investigate the value your existing recovery applications and appliances deliver, and compare with what modern availability can offer.

# About this report

This report was commissioned by Veeam® Software and independently produced by Telsyte. The report offers advice on how business and IT leaders can best prepare and take advantage of cloud computing technologies to transform their organisation and improve operational efficiency. The research contained in this report will help empower IT and business leaders to develop a business case to invest in cloud initiatives. The report provides operational data as experienced by Australian organisations investing in on-premises and cloud infrastructure.

## Telsyte research respondent profile

The primary research contained in this report is sourced from the Telsyte Australian Infrastructure and Cloud Computing Market Study 2015. The findings are based on an online survey of 245 IT and business decision-makers in Australian organisations with between 20 to 20,000+ staff across a representative sample of vertical industries. The survey topics covered a range of business ICT infrastructure and cloud technologies and trends, including workplace changes. Respondents identified their key business challenges, technology use and intentions, views on devices, the workplace and mobility.


Veeam recognises the new challenges companies across the globe face in enabling the Always-On Enterprise™, a business that must operate 24/7/365. To address this, Veeam has pioneered a new market of Availability for the Always-On Enterprise™ by helping organisations meet recovery time and point objectives (RTPO™) of less than 15 minutes for all applications and data, through a fundamentally new kind of solution that delivers high-speed recovery, data loss avoidance, verified recoverability, leveraged data and complete visibility. Veeam Availability Suite™, which includes Veeam Backup & Replication™, leverages virtualisation, storage, and cloud technologies that enable the modern data centre to help organisations save time, mitigate risks, and dramatically reduce capital and operational costs, while always supporting the current and future business goals of Veeam customers.

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