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Introductory Guide to Colocation.

**How to free time, money and talent
for what comes next.**

What is colocation?

With over 70% of Australian IT budgets already consumed by legacy costs[1], it has never been harder - or more important - to free resources and make new things possible. For many, the answer will be Colocation.

Colocating your server assets in a purpose-built Data Centre enables you to sweat your investments with enterprise-scale efficiency and security. You're in good company. 9 in 10 Australian organisations are choosing a multi-technology design1 and over 80% of are working with external specialists to deliver new capabilities faster[5].

Not all Colocation Data Centres are created equal.

This guide will show you what to look for when you're looking, what questions to ask and what benchmarks, certifications and regulations may apply to your selection. Because it's about technology. And people.

It applies 5 key criteria to asses Colocation solutions:

Scale & Efficiency.

Australia's 40,000 Data Centres above 10Kw already account for 3.9% of all national power consumption[4]. 60% are small to medium centres most challenged by scale, efficiency and staffing[4]. Selecting an enterprise scale, tier 3 Data Centre can be up to 80% more efficient than legacy Data Centres inhouse[3].

People.

They make all the difference. It's why we in-source named Australian NV1 certified engineering, architecture and support talent. They're on-site 24/7, not just on-call, because great service starts with people. Not portals and API's.

Compliance & Certifications.

The distributed design that makes Cloud computing so advantageous can also be its Achilles heel, so this will be crucial to our your vendor and design selections. Certifications like ISO27001, ISM and PCI are the key to comparing complex offerings.

Partners & Tools.

Because we are VMware's exclusive Australian Showcase Partner and work with the tools and partners you already know and trust, we ensure you benefit from our Colocation solutions from day 1.

Better by Design.

Because we work with our own enterprise-scale Data Centres and insourced engineers over here, not over there, we're uniquely placed to deliver the right mix of Colocation and Cloud solutions for you. We believe in a no-surprises experience, so we ensure you can evolve your mix of solutions over time with agreed monthly billing.

We're not just carrier-neutral, we're also a leading business-facing Telco in our own right, so you can bring your own plans or benefit from ours. We're deeply interconnected with Australia's leading carriers, our own points of presence nationally and networks including ICON (government), AARNet (education) and the Public Cloud (e.g. with Google Cloud Interconnect).

We design for you, not us. Our world-class expertise in distributed and extended Data Centre design has made us the leader in Government Cloud Services and Australia's most-recommended provider.

The opportunity cost of legacy systems.

Calculating the true cost of sustaining in-house legacy systems can be challenging. For instance, what is the total cost to your team if a key staff member departs with skills, knowledge and experience you can't readily backfill?

You worked hard for what you have. Invested. Tested. Evolved. Hired. So it makes sense you bring it with you by sweating your investments in Colocation. Identifying your true legacy costs can reveal just how much time, money and talent Colocation can free for what comes next.

This checklist will help identify the full cost of inhouse solutions.

Hardware	Facilities	Software	Labour	Other
Compute	Power | supply and UPS | UTI	Security Management	Security process and procedures	IP protection & Legal services
Storage	Power | backups and failovers	Host Management	Rights control	Scaling for future growth
Routing & Networking	Cooling	OS Management	Burn-in validation	3rd party services
Load Balancing	Access Management	Network Management	Monitoring Applications	Vendor Application & Software Support
Switching	Property fees, levies and charges	Storage Management	Operations	Vendor Hardware Support
Racking	Real Estate	Service Management	Logging, auditing and trouble shooting	Management
Access Control	Physical Security	Naming | Service Directory	Setting, address and config documentation	Research & events
Cabling	Security Monitoring	Ticket Management	Installation, racking, cabling	Vendor relationships & evaluation
Firewalls	Insurance	Audit | Compliance	Decommisioning	Certifications & audit
Monitoring & Logging	Storage	Reporting Management	Procurement	
Appliances	Isolated testing environments	Orchestration | K8S	Security (Staff & Systems)	
Warranty & End-of-life	Packing | Handling	Containerisation	Team Management	
	DevOps		Systems Design & Engineering	
			Performance Optimisation	
			Overtime (afer hours; weekends)	
			Access e.g. DC escort; contractors	

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In colocation data centres, design matters. Here's why.

Choosing the right vendor makes their team, investment and capabilities yours. But not all Colocation Data Centres are equal.

82% of Australian organisations lost data last year[7]. 75% report being unable to restore lost data from backups[8]. Your colocation partner can be part of the solution. Start by mapping the warranty and economic lifespan of your existing investments, defining your preferred reference design and ensure your contracts can cost-effectively turn compute, storage or network services on and off like a tap with real-world Service Level Guarantees.

Concurrent maintainability.

Your business requires infrastructure that is always on. Enterprise-scale Data Centres like Sydney's IC2 have been designed to be 'concurrently maintainable', meaning they provide 100% power and cooling uptime service level guarantees (SLG's). And the MacquarieView portal means everything you need to know is at your fingertips for a no-surprises Colocation experience.

Racks, equipment & design.

Our flexible design supports custom, high-performance, heavy, multi-rack, mini-rack, 3-phase and secured design requirements. Enjoy your reference design, or ours. It's the advantage of delivering Colocation with our own local DC's.

Power & cooling.

Since 2010, total Australian power usage has been falling. But power costs are still accelerating. In fact, power costs have grown at double the rate of overall business costs for the last decade3. While typical Data Centres exceed 2.5 power-unit-efficiency (PUE), Intellicentre 2's tier 3 design goal was an extraordinary 1.3 figure that cannot be matched in-house. By off-boarding your assets to state-of-the-art Colocation Data Centres you can secure enterprise-scale power savings overnight.

Security.

Knowing who can access your assets, and how, can be vital to protecting your certifications and data. Comparing Colocation security capabilities can be challenging, So make certifications your guide. Our ISO, PCI, ASIO T4 and ISM compliance is part of our wider Defence-in-Depth total security model.

More than speeds & feeds.

But there is so much more required of a colocation data centre. Monitoring. Onsite meeting rooms, testing, storage and maintenance facilities. Parking. Access. Onsite talent. Flexible, scalable design. Meeting, asset testing and storage rooms. Security. And more.

Connected colocation.

With some providers, you have no control. With others, you're left to do everything. Choosing the right partner can not just lower your cost-base, but deliver new capabilities, Defence-in-Depth security and the real-world Service Level Guarantees (SLGs) your stakeholders demand.

Colocation doesn't happen in a vacuum. Done right, it connects to everything you have in place, everywhere you have it. It means you're free to choose the carriers you prefer. Free to add the backup (BaaS) and disaster recovery (DR) solutions that are right for you. Free from hidden fees and charges and free to change your mix of in-house, Colocation and Cloud solutions over time. Making this happen has made us Australia's most-recommended Colocation provider.

One Network Office to Data Centre
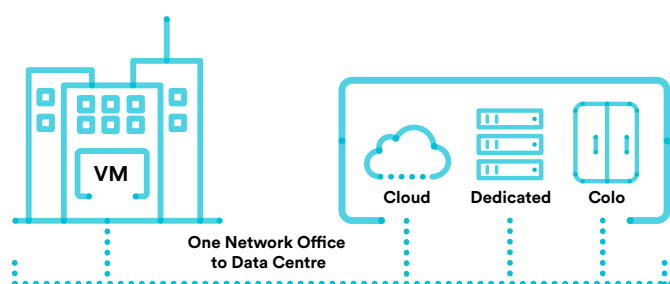
Deeply integrated solutions.

No one provider does it all. And a chain is only as strong as its weakest link. With over 100 NV1 certified engineers, over here, not over there, we ensure your Colocated assets can be bare metal, self-managed, or part of a fully-managed environment with a provider recommended by more of its users than any other. It means no surprises, no learning curve, and full benefits from day 1.

Data centre extensions. From yours. To ours.

You're at capacity. Your needs or team change. Investment is required. Compute is reaching EOL. Space is at a premium. You're moving. Power costs are biting. Whatever the reason, your Colocation provider must make it easy to bring your virtual machines, IP addresses, cluster design and security zones with you seamlessly to free resources for your project priorities.

Simple, powerful tools.

Simplicity is paramount. Our MacquarieView portal delivers a single-pane-of-glass experience, so you can:

- Personalise it to meet your management priorities.
- Easily manage access, users and sign-ins.
- Leverage your existing VMware and vSphere tools and skills.
- Efficiently manage inventory, ordering, status, support, billing and allocations.
- With integrated vendor tools including vCloud Portal, FortiManager and Cisco UCS Console.

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Is colocation secure? Because it has to be.

Colocation should be more secure than inhouse solutions. Because security isn't a question. It's the question.

Last year, over 31% of Australian organisations were breached[6]. Over 44% admit to being at risk from new mandatory breach reporting laws[9]. Only when Colocation fits into a complete Defence-in-Depth model, can you protect your interests from escalating complexity and risk.

From physical ASIO T4 security, to complete Intrusion Prevention and Detection design, we use a unique 10 point model to ensure what protects us, as Australia's most-recommended provider, can also protect you.

Challenge your Colocation provider to be part of the solution with a full Defence-in-Depth model spanning:

- Physical security
- Certifications and compliance
- Secure backup & Disaster Recovery design
- Anti-Virus
- Patching, updates, rights & versioning
- Secure connectivity
- People, process and policies
- Intrusion Detection and Prevention
- Micro-segmentation
- Firewalling and design

Whether you're being specifically targeted, or just probed for vulnerabilities, you need solutions in place against external threats to your Colocated assets. That's where we come in.
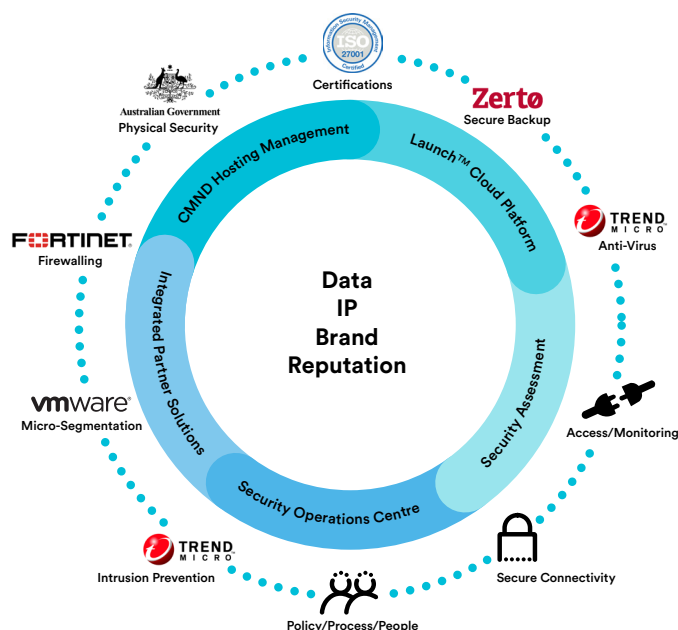
We deliver a human cloud experience with Hosting Management Centre and CMND teams over here, not over there. This includes our Intellihands who are onsite 24/7, and not just on-call. And because we aren't reselling 3rd party Data Centres, we can deliver whatever design, monitoring, security or access rules you, your certifications, auditors or your customers demand. Accept nothing less.

Because we used named local talent, if you experience an issue or identify an opportunity, you'll be speaking to a team already familiar with your solution, not abandoned to portals, API's or raising tickets.

Because to us, it's personal.

Is your company ready?

Identifying your Colocation goals. And making them happen.

The right workload in the right place

Not every app is ready for virtualised Cloud environments. Different workloads may mean dedicated or shared assets are required. When comparing different Colocation & Cloud designs, be sure to asess secondary costs like DevOps, re-coding, containerisation, onsite support and more for legacy applications and systems.

Understand the regulatory environment

Some regulatory obligations are near-universal, such as new Mandatory Breach Reporting requirements launched in February, 2018.

Other are industry specific. The Department of Human Services has strict security criteria for its Software-as-a-Service (SaaS) providers. Companies working with VISA, Mastercard, AMEX need full PCI DSS V3.2 compliance. Dealing with government or those that serve them often requires national standards such as ISM or SCEC assessment for Restricted or Protected data. Knowing your requirements means you can select a provider that's certified, to make it easier for you to be as well. Talk to our experts today..

Preparing to implement your Colocation solution

Once your company has decided that it could benefit from colocating some or all of its inhouse infrastructure, it's time to make the necessary preparations for the transition.

- **Assemble the colocation adoption team.** This team will consist of upper level management, IT staff, and other relevant employees that will be responsible for overseeing the target solution and migration.
- **Audit existing assets, setting and dependencies.**
- **Define your uptime and availability requirements throughout the lift-and-shift process.**
- **Define goals.** Make a list of the objectives your company wants to accomplish and what Key Performance Indicators (KPI's) will measure them.
- **Define Service Level Guarantees** including uptime, backup, disaster recovery and more.
- **Evaluate the right mix** of 'bare-metal' solutions without software, self-managed or or fully-managed offerings.
- **Choose which stretched solutions** you may require over time, such as Stretch Storage, Stretched Data Centre and more.
- **Audit Data & Applications.** Including their required order, dependencies and security requirements.
- **Plan you lift-and-shift operation.** Choose your preferred team, or work with ours to ensure seamless transition.
- **Check Compliance.** Comparing complex solutions is hard, so make global certifications like ISO270001 and PCI and Australian standards like ISM mandatory.
- **Read the Contract.** Before signing up with a provider, vet the contract with your legal team e.g. in some cases, service might be limited to API's and portals, without costly upgrades and commitments. The only certainly over time is change, so ensure your ability to evolve your solution with the protection of agreed monthly billing is vital. Key areas to look at are uptime guarantees, terms of cancellation, who has access to your data and who retains ownership of the data.

If you're standing still, you're falling behind.

Colocation can help with more than 'just' server performance.

A solution to runaway power costs.

Since 2010, total Australian power usage has been falling. But power costs are still accelerating. In fact, they've grown at double the rate of overall business costs for the last decade[4]. But that's not all. Real estate, compliance, talent and security costs are all skyrocketing. Already power makes up as much as a 1/5th of tenants non-rent costs, ahead of council rates and other operational expenses. Something has to change. Colocation could be the answer.

Your gateway to other services.

Because there are so many varieties of cloud computing, this can be one of the most difficult parts of the selection process. But by using objective certifications, filtering out mere 3rd party Data Centre resellers, insisting on local engineering and architecture support and prioritising a providers service record, the field begins to clear rapidly.

From there, you can begin looking at the more specific and specialised features each provider offers. This can vary widely depending on what services you need, so make a detailed comparison list, ranking features by order of importance. For example, some providers might only offer limited associated services such as snapshots that fall short of a full backup solution to meet your Recovery Point Objective (RPO) and Recovery Time Objective (RTO).

Office relocation & real estate Considerations.

Nabers is Australia's 6 star system for rating power and water efficiency. The higher the rating, the more desirable and lucrative a commercial property becomes. Many sites have now exhausted their ability to achieve efficiencies in power and cooling (often 10-15%), lighting (where LED can deliver 75% savings), replacing appliances, adding motion sensors, reviewing insulation and glazing etc[14]. This puts energy-intense legacy Server rooms and Data Centres firmly on their hit list. Sustaining legacy Server infrastructure onsite means you'll have to compete harder for a smaller and smaller pool of site options as you expand and relocate over time. Colocation frees you from the real estate trap.

Capital management.

Moving your Data Centre solution from an upfront capital expence (CAPEX) problem to a Colocated operating expence (OPEX) solution frees time, money and talent for you to invest in building your competitive advantage.

Talk to our expert team about modeling your saving profile today.

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The ins and outs of our Intelligent Data Centres.

We invite you to meet our team, and see the difference in our Intellicentres for yourself.

IC1, Sydney CBD.

Level 16, 477 Pitt Street, Sydney
Tel +61 2 8221 7755

- ASIO T4 | ISM | PCI
- Meeting rooms & facilities
- 99.98% uptime guarantee
- Power N+1, Cooling N+1
- In building parking B1|B2 (preapproval required)
- Reception 8am – 7pm
- Intellihands support onsite
- After Hours. Network Operations Manager Team 24/7
- Intercom screening, ID Card, PIN Code, Biometrics, Protected areas apply
- Service providers include Macquarie Telecom, Macquarie Cloud Services, Telstra, Optus, AAPT, PIPE, Vocus, Uecomm, Verizon, Cirrus, Megaport and other national and international carriers.

IC2, Macquarie Park.

17-23 Talavera Road, Macquarie Park
Tel +61 2 8221 7756

- ASIO T4 | ISM | PCI | Tier 3
- Meeting | Testing | Storage rooms
- 100% uptime guarantee
- Power 2N, Cooling N+1
- Onsite parking
- Reception
- Intellihands support onsite
- After Hours. 24/7 CMND Engineers onsite.
- Intercom screening, ID Card, PIN Code, Biometrics, Protected areas apply
- Service providers include Macquarie Telecom, Macquarie Cloud Services, Telstra, Optus, AAPT, PIPE, Vocus, Uecomm, Verizon, Cirrus, Megaport, AARnet and other national and international carriers.

IC4, Canberra.

Address and contact details available on request.

- ASIO T4 | ISM | PCI | Tier 3
- Secure workspaces
- 99.98% uptime guarantee
- Power N+1, Cooling N+1
- Onsite Parking
- Reception. On request
- Intellihands support onsite
- After hours. 24/7 subject to Protected access
- Intercom screening, ID Card, PIN Code, Biometrics, Protected areas apply
- Service providers include Macquarie Telecom, Macquarie Cloud Services, Telstra, Optus, AAPT, Megaport, ICON and other national and international carriers.**

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Book your Data Centre tour today.

Speeds and feeds matter, but they aren't everything. We invite you to see why we call them our Intellicentres for yourself. Book your tour today by calling 1800 004 943 or seeing us online.

Intellihands.

When things happen, they can often be technical and urgent. It's why our CMND and Hosting Management Centre Engineers are onsite 24/7 and available for a range of hands-on services to support your Colocated assets.

Service Level Guarantees. Guaranteed.

Every provider has them. But not all SLGs are equal. Be sure your provider provides a clear set of real-world Service Level Guarantees (SLGs) with specific measures, time frames and explicit consequences. Colocation can be your ticket not only to enterprise scale efficiencies, but also to the next-level SLG's your stakeholders demand.

Active-Active Design.

Our Active-Active solutions stage your environment across two distributed sites, including your Colocation Data Centre, to deliver real-world 100% Service Level Guarantees for mission-critical IT.

Public Cloud Friendly.

It's not about Public Cloud Vs Hybrid Cloud. It's about both. That's why we can deploy our reference design, or yours, and work with specialist providers such as Megaport and direct networks such as Google Cloud Interconnect to ensure you Colocation solution today, can work with any combination of Public Cloud solutions in the future.

Nailing the Basics, Everytime.

From carrier-agnostic meet-me-rooms, Cat6 and fibre connectivity, a central patching platform, preinstalled cabling and redundant cable paths, our expert team are in place to ensure you receive a better experience faster.

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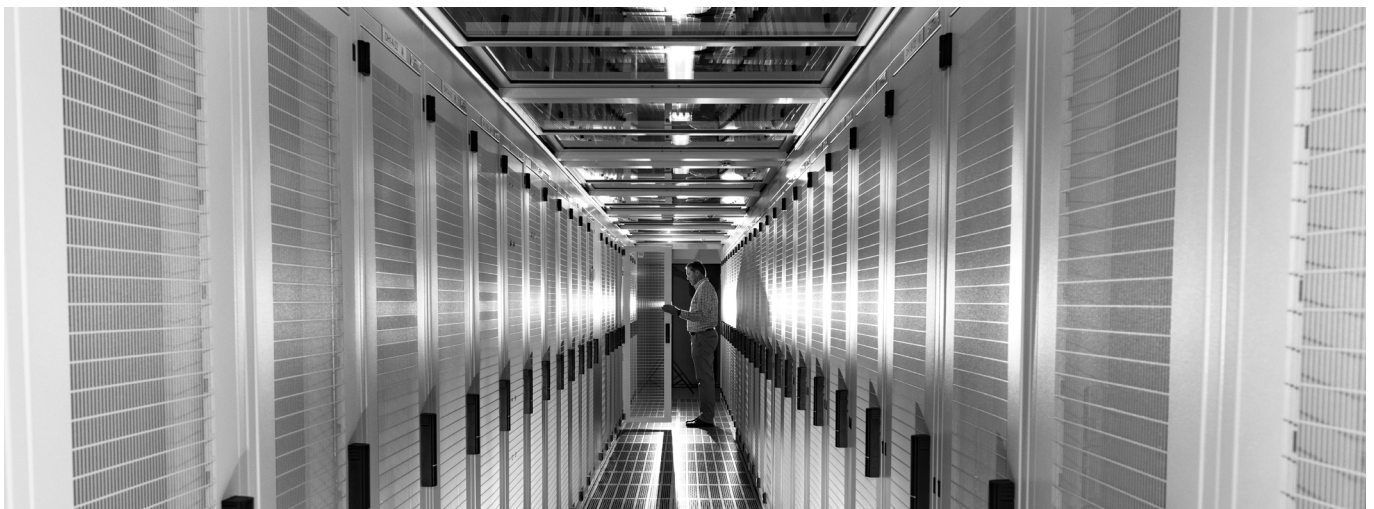
Colocation isn't the end. It's a new beginning.

Our mission.

We're Australia's most-recommended Colocation, Hybrid and Private Cloud provider. We're in business to power your business. We're building on our Telco heritage, serving Australian organisations who've been underserviced and overcharged. We're here to secure the cloud. And we're here to make sure you receive the bespoke solution that right for you today, and tomorrow.

On-Premise   Cloud   Dedicated   Colo   Public Cloud
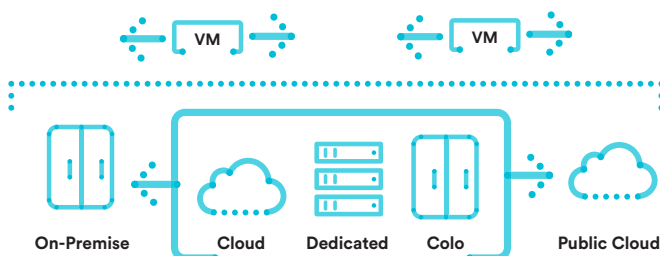
Australia's most-recommended customer experience.

Net Promoter Scores. And what they mean.

Our +81 Net Promoter Score means we are more recommended by our customer than any Colocation provider in Australia5. Our service model is built on insourcing our Hosting Management Centre and CMND teams over here, not over there. When combined with our famous Personally Accountable Service model and the on-site presence of our trained Intellihands in our own Australian Data Centres, it makes for an unequaled Colocation experience.

Things change. Keep your cloud options open.

Many companies are attracted to cloud computing because of its relatively low cost of entry, the transition from upfront CAPEX costs to ongoing OPEX investment, and the ability to scale to enterprise level capabilities. But many workloads and apps were never designed for the Cloud, and if there's one thing you can count on in IT, it's change. By choosing a mature enterprise-scale Colocation, Hybrid and Private Cloud provider with its own security and Telco capabilities, you can design, plan and implement a transformation over time, with realworld SLG's and fixed monthly billing to protect you throughout.

For over 17 years, we've earned the trust of many leading brands. We'd like to earn yours.

There's never been a better time.

There's a lot of moving pieces required to deliver Australia's most-recommended Colocation solutions. That's OK. We're here to help.

When you're planning your move, ask our team about our Don't-pay-twice and Lift-and-shift-support offers today.

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Not all colocation providers are created equal. Choose Australia's most-recommended.

It's about technology. And people.

At Macquarie Cloud Services, we're different. We take the time to understand your starting point, where you want to go and how you want to get there. And we make it happen with Australia's most-recommended team.

Every journey is different.

Every journey is different. No two starting points are the same. So no two solutions should be the same either. We specialise in a human colocation experience, connecting our named engineers and architects with your specific requirements to deliver a flexible future-proof design with everything you need and nothing you don't.

Enjoy More Resources.

We'll free you from legacy in-house time, money and talent costs so you can reinvest in what matters most to you. Talk to the team today and find out for yourself why we deliver Australia's most-recommended Colocation, Hybrid and Private Cloud solutions.

It can all start with a single coffee. Lets' talk.

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[13] Peter Martin, SMH, 21 September 2017

[14] NSW Office of Environment and Heritage, Sept 2017

Want to learn about how to identify and test the right Colocation, Hybrid & Private Cloud solution for you? Let's talk. We'd love to start the conversation at one of our Intellicentres, so you can experience them for yourself.

**Macquarie Cloud Services
1800 004 943
macquariecloudservices.com**