How to secure your networks for a hybrid everything world.

NEC

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Partner

Balancing connectivity and security in today's work-from-anywhere world.

The perimeter of Government entities is no longer confined to the boundaries of the data centre. In this thought leadership paper, we address the actions Government Department leaders need to take to secure the perimeter of a hybrid world — while also supporting connectivity and access to support remote work and cloud capabilities.

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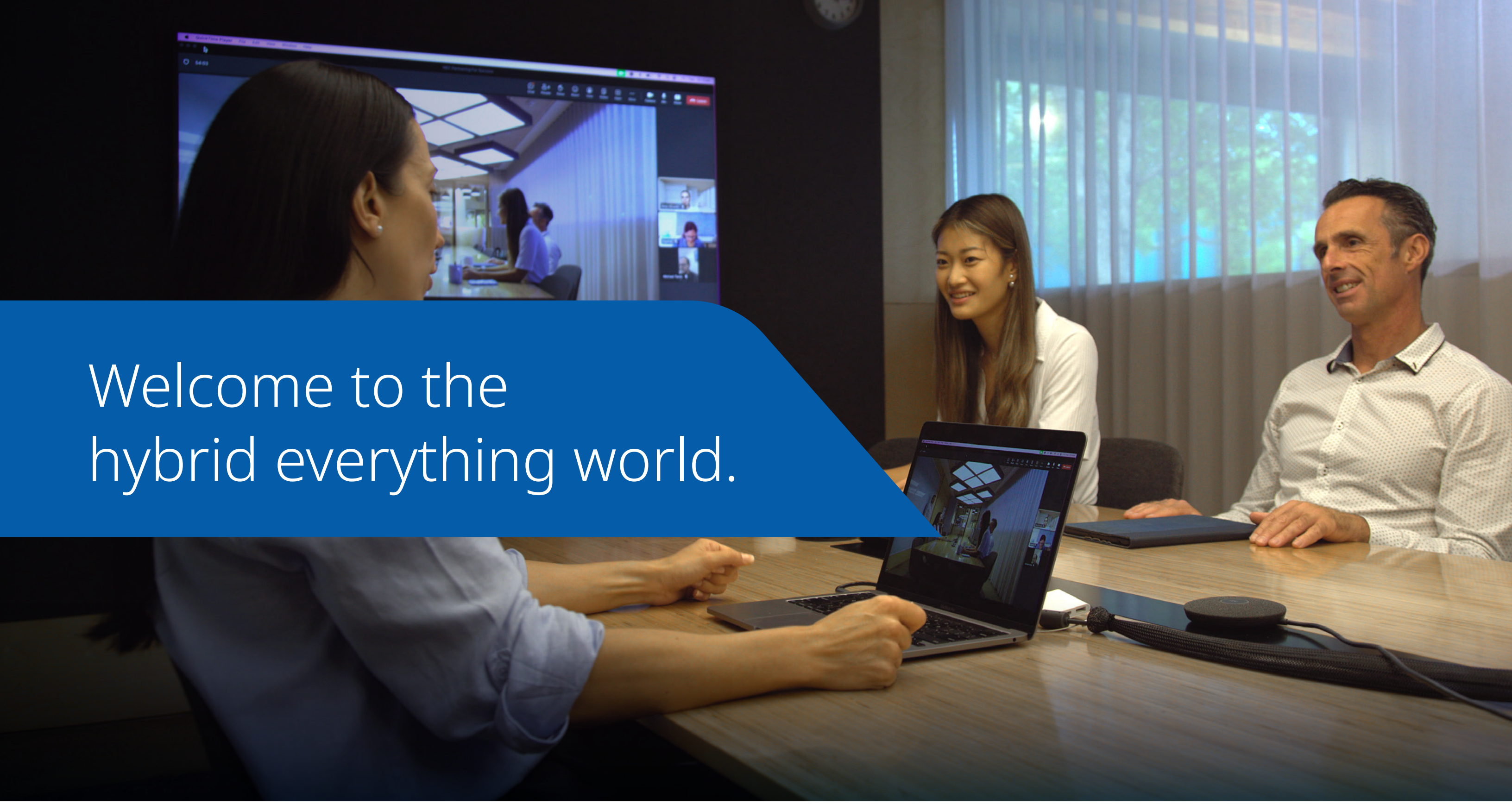

Welcome to the hybrid everything world.

We're officially in a world where people work from the office some days, from home others — plus the airport, the coffee shop, and points in between. A world where people use managed and unmanaged devices to access SaaS applications, internal applications, and external applications hosted on a public cloud.

The hybrid world is interconnected and dynamic. Remote access and cloud computing create opportunities for people to work from anywhere and for Government organisations to tap into a broader pool of talent. Cloud computing means greater flexibility and scale, making it easier to innovate and adapt to citizen expectations.

But with those opportunities come challenges. In a hybrid world, the proliferation of endpoints and reliance on cloud creates a greater surface area for cyber attacks. Threat actors are more prominent and active than ever, making headlines — and making Government Department leaders take a closer look at their security posture.

And in a world that's moving faster than ever, tech becomes legacy in the blink of an eye. The architecture that allowed Government organisations to pivot to remote work just two years ago? Outdated. The on-premises firewall installed just five years ago? Might as well be from the ice age.

Given these competing challenges, what can Government Department leaders do?

Navigating this hybrid world means enabling the twin peaks of connectivity and security.

- **Connectivity,** because when people have the devices, access, and applications they need, at a level on par with what they'd get in the office, they can work productively.
- **Security,** because the cost of a breach goes far beyond remediation or potential fines — the reputational damage from a data breach can be immeasurable.

Importantly, connectivity and security are intertwined. To focus on one without the other is to minimise your people's ability to do their best work, and to hamper your organisation's ability to deliver for citizens.

Balancing the three critical hybrid priorities.

While it's true, every Government entity has different needs, the considerations for secure networks are the same — Workforce, Cloud and On-Premise. Let's look at each.

1. Workforce

94%

of Australian workers would like to work at home some of the time [1]

64%

of Australian workers would like a hybrid arrangement of work-from-home and in-office work [2]

60%

of workers report their employers permit hybrid work [3]

Australians have gotten used to hybrid work, and Government Department leaders are having to account for these shifts in worker expectations. That's a challenge because whilst workers are in the office, things seem simpler. They operate from behind the office network and are subject to the security policies set on managed computers.

But outside the office, things are much less predictable.

Consider the divergent needs of these three:

- Jo in accounting works from her dining table behind a home broadband router with a flimsy password.
- Steve in HR is tethered to his phone while his son plays cricket at a local oval.
- Issy in policy is working from the airport after a stakeholder consultation.

How can their department provide them with secure, reliable access to the applications they need, whether they're working remotely or in the office?

[1] https://melbourneinstitute.unimelb.edu.au/data/taking-the-pulse-of-the-nation-2022/2023/ttpn-july-2023

[2] Ibid.

[3] Ibid.

VPNs are common tools to support remote work. However, they raise several issues. Specifically:

- **VPNs make it hard to manage demand:** If the number of remote users exceeds the expected load for the VPN, there can be impediments to performance of the network — which, in turn, affects people's productivity.
- **Manual work limits scale:** Given the proliferation of users and devices, it can be challenging to install and configure VPN software on all the devices that need to be connected. Changes in people's work or access policies must also be done manually.
- **Access to the entire system is risky:** Once a user gains access to the VPN, they have access to the entire system. This increases the surface area for cyber attack and increases the blast radius of attack, should one occur.

Provide secure and reliable access – at any time, from anywhere.

NEC's Secure Access Service Edge (SASE) service supports the dynamic needs of the modern remote workforce. As network and security technologies converge and move to a cloud-based model, SASE offers the connectivity people need — with the security that the Government Department needs. SASE provides:

- **Enhanced security:** Zero-trust protection from endpoint to application, for protection 24x7. That means better visibility, overall security awareness, and reduced risk.
- **Cost effectiveness:** A single platform dramatically reduces costs and IT resources and is offered as a composable service with flexible pricing.
- **Improved performance:** Support your increasingly mobile workforce by ensuring they can easily access applications, the internet and Government data, wherever they are.
- **Leverage expertise:** NEC's end-to-end service can be customized for your Government Department's specific needs, and our deep and long-standing partnership with leading vendors like Cisco allows us to offer best-in-breed solutions.

2. Cloud

72%
of Australian organisations use one to five public clouds [4]

23%
of Australian organisations use more than five public cloud environments [5]

72%
of global organisations use a hybrid, multi-cloud strategy that includes private and public clouds [6]

79%
of global organisations say security is a top cloud challenge [7]

Cost savings, faster innovation, and greater agility are common reasons for cloud investment. Cloud capabilities are also essential for supporting a remote workforce and maintaining service continuity.

But with speed, agility, and flexibility come challenges:

- How do you support Jo in accounting to access several SaaS applications, hosted on a mixture of internal and public clouds, when she's dealing with sensitive financial information?
- How do you help Steve in HR, working from the side of the cricket pitch, as he scans performance reviews on his work laptop?
- How do you assist Issy in policy, hunkering down in Gate 36, as she navigates several applications on private clouds, public clouds and SaaS?

Again, these scenarios raise questions about how to achieve both security and connectivity in our hybrid world.

Improve case management and workflows – and maintain data sovereignty.

NEC WorkZone is Case Management as a Service (CMaaS), delivered by NEC from our Digital Government Centre of Excellence in Australia.

- Ensure compliance with data sovereignty, security, and governance standards.
- Boost productivity with this low-code, highly configurable and scalable solution.
- Reduce deployment times by enabling non-technical users to easily develop applications and solutions.

[4] https://adapt.com.au/resources/articles/cloud-infrastructure/55-of-australian-organisations-workloads-in-public-cloud-by-2025
[5] Ibid
[6] https://info.flexera.com/CM-REPORT-State-of-the-Cloud
[7] Ibid

3. On-premises

Many Government Department leaders perceive on-premises capabilities as being more secure than the others. There's a perception that the physical location is easier to secure because it's within the office's physical infrastructure.

That is, until you start to examine the state of the network. Consider these common use-cases:

- Networks that have accommodated ad hoc growth as new departments or entities were created.
- Networks with competing network devices with varying capabilities, or smaller capabilities bolted onto larger ones.
- Networks that started off well-designed but are now out of date with Government needs, with no simple way to make updates.

More issues arise because:

- Traditional IP-based processes were designed for an in-person workforce, and don't work as well when users can connect remotely from multiple device types.
- Traditional processes make it challenging to configure and troubleshoot user access and maintain a consistent security and connectivity posture across the network.
- Traditional processes make it hard to know who and what is connecting, which makes it difficult to map and control the network.

Things are changing faster than humans can keep up — and a Government entity that relies on manually updated, legacy on-premises solutions may be hindering itself. It's reducing its ability to adapt to citizen needs and deliver the connectivity and security required in a hybrid world.

Connect the modern workforce with NEC's Software-Defined Network (SDN)

Leave behind your IT complexity — and the manual configuration, lack of visibility, and limited scalability that comes with traditional network solutions. NEC's SDN solution helps Government entities manage intricate environments and adapt to changing citizen expectations:

- Flexible network solutions that seamlessly connect Government organisation, employee, and citizen.
- Agility to support the proliferation of mobile and data-reliant devices, while ensuring data security.
- Drive flexibility and scalability in systems, processes, and transformations.

NEC is proud to have received Cisco's Secure Access Designation for our SDN solution, and to be only the second Australian partner to have done so.

Traditional solutions aren't up to hybrid world challenges.

The perimeter used to be defined by the on-premises network. But today, the perimeter has been pixelated by remote work and cloud computing. So, thinking about connectivity and security means thinking about this wider hybrid world, and the more diffuse perimeter your Government entity needs to secure.

Traditional solutions simply aren't up to the new challenges. Notably, the proliferation of users and devices means traditional solutions aren't flexible or scalable enough to support the needs of employees or the department itself.

- **Manual configurations.** Legacy approaches to onboarding devices, such as setting up access through firewalls and access control lists, simply aren't feasible to keep up with the scale and speed required to be responsive to citizen needs.
- **Access control policies based on IP addresses or user locations.** Given the increase in user mobility and the number of devices, it's neither manageable nor scalable to manage access this way.
- **Granting access to the entire network.** Legacy solutions authenticate a user once, then grant access to the entire network — including applications or parts of the network an individual user doesn't need. This increases the potential surface area for cyber attack and the likelihood that a breach can spread laterally.

Instead, the hybrid world demands a more unified, digital, and automated approach that can provide consistent service and security across the network — wherever users or devices are located.

- **Automated capabilities**. Modern solutions allow Government agencies to connect the endpoints to understand how users and devices are using the network — and then segment them into groups so you can define their access at scale.
- **Access control policies based on group rules and need.** Group-based network policies provide an intuitive and easier way to define access control policies, at scale and at speed.
- **Zero trust policies.** Zero-trust security gives the minimum level of access to people and technology that a user needs to get their work done. By granting access only to what's needed — and nothing that isn't — the surface area for attack is dramatically reduced and any breaches can be more easily contained.

The increasing cost of legacy solutions.

No one wants to be at the centre of a highly publicised security breach. Equally, no one has an unlimited budget. But just as the hybrid world has changed how we look at network security and connectivity, new solutions can make it easier and more cost-effective to maintain a consistent security and connectivity posture.

Consider the hypothetical example of a Government entity with 50 offices around Australia. Traditional solutions would include capital investments in hardware, sending technicians to each site to install and configure the hardware — never mind the time and cost of maintenance, or manual updates to try to keep up with shifting business priorities.

Instead, a cloud-based firewall would be far more feasible, cost-effective, and less disruptive. Importantly, it would allow a consistent security posture across the Government entity, without the logistical nightmare of coordinating 100 physical installs of a firewall.

While many Government Department leaders will first consider cost and then security posture, perhaps it's instructive to flip the order. Without thoroughly considering network security, the department is at greater risk of a breach, with a price tag covering business losses, fines, class-action lawsuits, insurance-related costs, containment costs, and remediation costs.

Reputational damage wreaks damage long after the bills have been paid, negatively affecting citizen trust; that trust, once broken, is difficult to restore.

Importantly, options are available today which shift IT spend from up-front capital investments to more cloud-based subscription solutions that provide scale and flexibility — and much-needed security.

Simplify your network operations with Network as a Service (NaaS)

Did you know? 75% of annual hours are spent on maintaining network operations. NEC NaaS delivers the performance you need, with the secure and dependable connection that you expect.

- Take the hassle out of managing IT capital expenditures and ongoing network administration.
- Ensure that network performance remains at its peak.
- Streamline network operations with a secure, scalable, and simplified way to manage your network.

Keys to secure networks in a hybrid everything world

The genie's out of the bottle. We can't put remote work or cloud computing back in. So how can Government Department leaders design a workplace that provides connectivity and security, enables them to keep up with citizen expectations, and drives their objectives?

1. Limit the lateral movement of threats.

When it comes to cyber security, best practice is to assume that you've already been breached. Given that mindset, think about what would happen in such a case. With legacy solutions that provide network access to an authenticated user, the blast radius of a breach would be extensive. On the other hand, using zero-trust policies, which provide minimum-level access to users and devices, a breach could be quarantined without it moving laterally across the Government organisation.

2. Aim for a consistent security and connectivity posture.

Operating in a hybrid world means having a consistent posture across the Government organisation. Cloud-based solutions provide that consistent posture across the hybrid environment, in a way that physical solutions can't. And having a consistent security and connectivity posture doesn't just help to deliver the same service and security when someone is working remotely as when they're in the office. It also helps to mitigate the likelihood of a vulnerability that can be exploited by a threat actor.

3. Balance your budget with your priorities.

Cost will always be a top consideration, but it shouldn't come at the expense of security. As with other business decisions, it's important to have a clear understanding of your objectives and needs. Some Government organisations prioritise connectivity and security of their central location — while others, such as police forces, may privilege connectivity for the field force. Also make sure the services you procure are in line with your needs. Everyone wants top-of-the-line services, but if you only need a Ford, don't buy a Ferrari. A reputable service provider will work with you to determine what you need – without the bells and whistles you don't.

4. Know how quickly things change.

Things are moving faster than ever. It's not enough to run with the blueprint of a three-year-old plan – that blueprint is already out of date. Effective partnerships with technology providers can help Government leaders stay abreast of key issues, while allowing them to focus on the core competencies of the delivering citizen services.

NEC and Cisco can keep everyone securely connected.

NEC has a century-long history of innovation. From its cornerstone ideal – "Orchestrating a brighter world" - NEC integrates technologies, expertise, and ideas from around the world. With this global expertise, NEC Australia can bring global experience to our local clients.

For over 50 years, we've been providing local support to Australian organisations, bringing together the best tech and the best people. We're also proud to work with half of the state governments in Australia and to support mission-critical functions in law enforcement agencies, healthcare entities, and emergency services.

Through value co-creation with customers and partners, NEC Australia innovates to design and deliver end-to-end technology solutions which meet customers' needs throughout their entire business lifecycle.

Cisco delivers integrated solutions to develop and connect networks around the world. As a global market leader, Cisco is changing the way the world works, lives, plays, and learns. NEC is proud to be a Cisco Gold Certified Partner, and to be only the second partner in Australia to receive Cisco's Secure Access Designation for our Software Defined Network (SDN) solution.

To start a conversation about how NEC and Cisco can help you embrace the hybrid world,
visit nec.com.au/secure-networks

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