

# IP VPNs Come of Age

Optus Evolve™  
Executive Whitepaper

OPTUS BUSINESS



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# Users Drive Network Transformation

The global transition to new-generation internet protocol (IP) networks is the latest step in the evolution of corporate networking. These networks eliminate the bandwidth limitations and service impediments of older technologies that restricted business expansion. Telecommunications carriers and their customers are realising the benefits of these new capabilities in the deployment of IP virtual private networks (VPNs).

## THE EVOLUTION OF REMOTE NETWORKING

The last two decades have seen a rapid evolution in the technologies businesses use to connect sites and allow remote access from outside the network. But until recently, the products available left many business users unsatisfied.

In the early 1990s, many businesses started using modems and ISDN tie lines to share data and applications across multiple sites. While this allowed basic connectivity, information usually resided in several silos across the business, meaning staff often made decisions based on outdated or incorrect data.

By the late 1990s, these connections had mostly been replaced with technologies such as frame relay and asynchronous transfer mode (ATM), which enabled data and applications to be shared between offices and with key partners. However, these links were complicated and slow to provision and required considerable technical expertise to install and maintain.

Early in the new millennium, the growth of email and internet use greatly increased the demand for bandwidth and made IP networks the norm. However, telecommunications carriers still relied on legacy technologies such as ATM for backhaul links.

Sending IP traffic over these hybrid networks was technically demanding, which reduced the flexibility of services carriers could provide. It was also difficult to ensure that the bandwidth necessary to service demanding applications such as voice over IP (VoIP) and videoconferencing was available.

## THE MOVE TO IP VPNS

Over the past five years, many Australian businesses have deployed IP VPNs; in fact, IP VPN has become the standard for wide-area network (WAN) deployment.

Australian businesses now entrust IP VPNs with sensitive financial and client data as well as new-generation applications such as teleconferencing, videoconferencing and unified messaging, which makes voice, email, video and fax messages available from a single inbox.

But while a VPN can improve overall staff productivity and provide flexibility, managing this infrastructure is still time consuming and distracts information technology staff from more strategic tasks.

The complexity of most telecommunications providers' VPN offerings, including a wide range of features and multiple speed options across access and IP ports, makes it harder for network managers to support business growth and flexibility. VPN technologies such as IPSec require complicated firewalls that are difficult and time consuming to configure, troubleshoot and maintain, and require a high level of expertise.

The vulnerability to intrusion of 'first-generation' IP VPNs remains a worry for businesses that need to transport highly sensitive data. A recent\* Optus survey showed 92 per cent of businesses with IP networks provided access to enterprise applications for remote users over an IP VPN. However, concerns about remote and wireless access linger. More than 30 per cent of businesses have doubts about the safety and security of IP as a carriage mechanism.

With business growth fuelling demand and CFOs increasingly concerned about rising bandwidth costs, IT and network managers are anxious to deploy application awareness across the network rather than just access 'tails'. Real-time applications such as voice and video require strong, reliable service.

IT and network managers are demanding IP VPN solutions that allow them to:

- Obtain comprehensive reporting for network utilisation and application performance and predict network utilisation trends
- Reduce the complexity of provisioning and managing WAN and remote site connections
- Deliver business continuity and disaster recovery capabilities
- Access greater bandwidth at lower cost
- Implement flexible converged solutions that improve productivity
- Prioritise the performance of bandwidth-hungry applications while ensuring the delivery of less critical traffic
- Enable staff to work from home and access corporate IT resources while on the road.

Service providers globally have responded to these demands by building end-to-end IP networks that better serve customers' business needs.

# Optus Evolve™ Network: VPNs Made Easy

End-to-end IP networks are eradicating many of the problems that plagued hybrid IP networks and predecessors such as frame relay and ATM. Telecommunications carriers worldwide are investing heavily in these networks in response to customer demand and Optus is at the forefront of this movement.

Optus has built its new Optus Evolve network and a suite of communications products tailored to the way customers want to do business.

The Optus Evolve IP VPN service is designed to minimise confusion and maximise ease of management. It is delivered over Ethernet, a technology network administrators are familiar and comfortable with. Customers can choose a variety of access speeds and a range of value-added services.

Optus' redesigned cost structure delivers simple, easy-to-understand quotes, bills and service level agreements.

## MPLS DELIVERS ADVANCED CAPABILITIES

The enabling technology of the Optus Evolve IP VPN service is multi-protocol label switching (MPLS), which delivers vastly improved class of service (CoS) and quality of service (QoS) capabilities compared to standard IP packet routing. This moves the complexity away from customers' networks to the service provider's network.

MPLS makes it much easier to provision and remove IP VPN connections or change the connection speed. A customer can simply connect its router to a provider edge (PE) router over Ethernet. There is no need for complex and time-consuming WAN routing or high-maintenance IPSec firewall routers. This is as close as it gets to plug-and-play networking.

By reducing complexity and using commodity Ethernet technology, Optus IP VPN delivers a cost-effective wide-area network and remote access solution that frees up IT resources to focus on more important business needs.

## WANT MORE?

Optus Evolve IP VPN offers advanced connection capabilities that are easy to deploy and manage. Where required, customers can also use value-added services such as:

- **Secure socket layer (SSL) remote access.** Staff can securely access data from inside the network – including email, files and core business systems – from any internet-connected computer using VPN over SSL technology.
- **Managed router service (MRS)** For remote sites where skilled technology staff may not be available, Optus can remotely manage routers and remove the hassles of network administration. Optus' expert staff will proactively monitor the network and provide reports on network traffic and trends to ensure quality for vital applications.

# Business Benefits

Using the Optus Evolve IP VPN, IT staff can focus on innovating to build the business rather than mundane tasks such as network administration. Optus looks after most of the administration work while allowing IT managers to view exactly what is going on inside their networks.

Built-in application awareness allows IT managers to view the bandwidth needs and usage of current applications, including services such as videoconferencing and VoIP. They can tailor QoS and applications to suit the way they want to do business.

Performance levels are defined by comprehensive and sensible service level agreements and customer care centres are available around the clock to provide support.

If customers add the managed router service module, Optus will administer, monitor and support remote sites from a central location, reducing the workload on the IT department and removing the need to hire or develop people with costly network management skills.

The remote access module allows users to access critical systems such as customer relationship management and enterprise resource planning securely from any device with an internet connection. These devices can include third-generation (3G) mobile phones, wireless-enabled laptops or handheld computers.

Support for the latest security techniques, including two-factor authentication, complements 128-bit encryption to minimise threats to mission-critical data. IT staff can manage user accounts from a centralised web portal, minimising the administration load and enabling them to change user access privileges quickly and easily.

## PRACTICAL EXAMPLES

Many organisations are looking to reduce long-distance call costs by switching to VoIP. However, to provide a service of equivalent quality to a long-distance call, VoIP must have reliable access to a required amount of bandwidth and low levels of latency, packet loss and jitter. Otherwise any cost savings are eroded by lost productivity due to frustration at low call quality. These quality requirements were impossible to meet using older VPN technologies such as IPSec tunnels. Optus Evolve IP VPN allows customers to assign and manage QoS functionality to VoIP traffic over their connection, ensuring voice quality.

To rein in costs and make the most efficient use of their resources, many organisations now use virtualisation technology such as VMware® and application delivery systems such as Citrix® and Microsoft Windows® Terminal Services to centralise their computing power. This style of processing requires a robust network to support the transport of the pre- and post-processed data between sites. Optus Evolve IP VPN provides CoS functionality to deliver the required application performance.

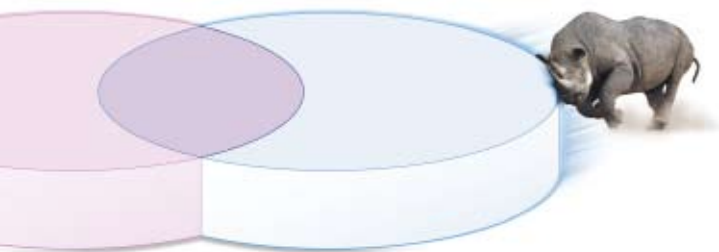
Organisations with highly mobile workers such as delivery drivers, service technicians and salespeople are increasingly looking to provide real-time, on-the-road access to corporate systems. Using the SSL remote access module available with Optus Evolve IP VPN, mobile staff can gain full access to corporate systems wherever they are, using handheld computers, laptops, 3G phones and purpose-built devices. Delivery drivers can access routes and customer details, service technicians can check technical documentation or spare parts inventories and mobile sales people can place orders and update customer profiles, all in real time.

## About Optus

Optus is an Australian leader in integrated communications that serves more than 6 million customers each day. As part of the SingTel Group, Optus is at the heart of Asia's leading communications company which has the largest IP network footprint in the Asia-Pacific. Throughout Australia, Optus provides business-grade IP network connectivity to hundreds of corporate and government customers. For more information please visit [www.optus.com.au](http://www.optus.com.au).

## About Optus Business

Optus Business is a leading provider of telecommunications and information and communications technology (ICT) solutions to businesses across the spectrum. Our solutions are suitable for organisations with 200 or more employees and include mobile, IP converged solutions, voice and data and IP. For more information, please visit [www.optus.com.au/business](http://www.optus.com.au/business).



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