

EFTPOS over DSL

How retailers are saving money by adding financial transactions to their IP networks

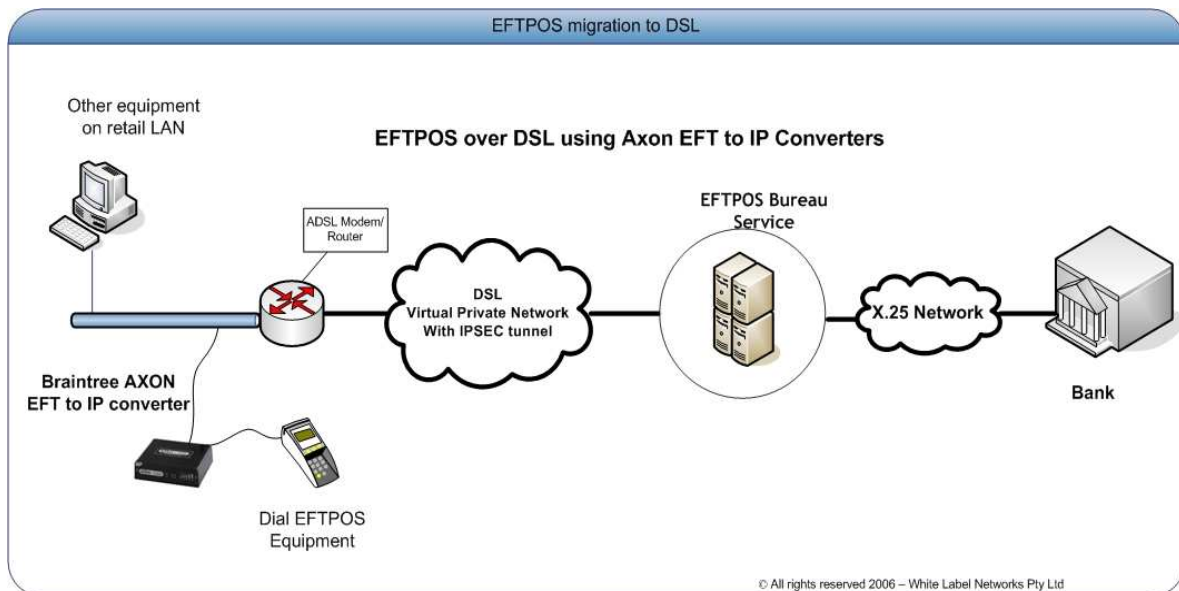
What is EFTPOS over DSL?

EFTPOS (Electronic Funds Transfer at Point of Sale), over DSL (Digital subscriber line), is where EFTPOS transactions, including credit and debit card transactions, are delivered to the merchant's bank via an IP network. This network can be a private IP network, or a virtual private network on the public Internet. In the UK EFTPOS is referred to as EPOS.

With EFTPOS over DSL, IP networks (like ADSL, BDSL, HDSL, cable Internet), are used rather than PSTN (Public Switched Telephone Network), or leased line services.

Traditionally, merchants connect their pin pads to either a standard telephone line, or to some sort of leased line. In Australia the leased line is usually a 16 kbps ISDN D channel.

In the case of connecting to a standard telephone line, the pin pad dials a FreeCall 1800 number that terminates the call at a Telco's modem rack. The merchant pays for the monthly telephone line rental, and the bank pays for the 1800 calls (and passes those costs on to the merchant as part of the merchant fees).



Typical Network – note that other applications like web, inter-office file transfers, e-mail and VOIP can be run on the same DSL connection as the EFTPOS

Why consider EFTPOS over DSL?

The primary reasons to consider EFTPOS over DSL are **Telco line cost-savings, flexibility, lower merchant service fees, scalability** and **line provisioning times**.

By using an existing DSL service to carry the EFTPOS transactions to the bank, merchants can save on monthly line costs

Many retail merchants just keep adding telephone lines for their EFTPOS pin pads as their business grows. It's not unusual to find small supermarkets, hotels or other multi-lane businesses with a separate telephone line for each checkout. At about \$36 per line per month the annual costs can be substantial by switching to EFTPOS over DSL. For the latest costs of EFTPOS leased lines, please call your carrier or consult the respective carrier's online pricing schedules.

The other benefit of EFTPOS over DSL is if a merchant wants to add a pin pad, they can connect the new pin pad into the existing DSL network and not have to wait for an extra line to be provisioned. This can be very important to retailers who need to move premises or operate businesses from multiple locations (fashion warehouses for example).

Because DSL services typically range in speed from 256 kilobits per second to 2 megabits per second, there is ample bandwidth to support hundreds of pin pads as well as concurrent e-mail, web browsing and VOIP (voice over Internet Protocol) traffic.

EFTPOS over DSL will work with any type of broadband service including DSL, ADSL, Cable Internet and SHDSL. There are hundreds of DSL suppliers now operating in the Australian market. This means more price and service competition, and value-added applications like VOIP. Cheaper wireless routers also mean that temporary points of sale can be set up in goods yards, warehouses and shopping centre high-traffic areas.

Lower MSF?

With normal PSTN dial pin pads it is important to remember that even though the merchant usually pays for the PSTN line rental, the bank usually picks up the costs of the 1800 calls. If the merchant is using EFTPOS over DSL the bank's costs are therefore reduced meaning the merchant may be able to renegotiate their MSF (merchant service fee).

Merchants have little to lose by approaching their bank, explaining their desire to use DSL rather than PSTN or leased lines, and requesting a review of their MSF. It pays to shop around each year. New players are entering the EFTPOS transaction market meaning greater price and service competition.

Some banks are now offering value-added applications like mobile phone top-ups, ticketing and loyalty systems to their standard EFTPOS merchant services.

How does EFTPOS over DSL work?

Instead of the EFTPOS transactions being delivered to the bank via a leased line or PSTN line, the transactions are converted to IP (Internet protocol), and delivered to a gateway maintained by the DSL service provider. The conversion process is performed by a hardware device called an *EFT to IP Converter*. This converter takes EFTPOS protocols like ABP or TPDU and converts them to IP.



EFT to IP Gateway – answers the call from the pinpad and converts it to IP for carriage over a DSL network

The gateway to the EFTPOS switch logs these transactions so as to provide statistical information to the merchant, and then forwards them via a secure line to the EFTPOS transaction switch provider.

The EFTPOS transaction switch provider, who has relationships with the banks, sends the EFTPOS transactions to the appropriate bank for processing. Transactions destined for the merchant travel via a reverse path.

What does it cost?

From the merchant's point of view usually the only cost involved is the hardware required to connect their existing EFTPOS equipment to the DSL service - the *EFT to IP Converter*. These devices are also sometimes called *terminal adaptors* or *protocol converters*. In many cases the cost of this hardware will be bundled in with the IP service provider's monthly access cost. Similarly the cost of delivering the transactions to the bank via the bureau service is often bundled in with the DSL access costs.

Depending on the merchant's DSL provider, there may be an additional monthly charge for the added EFTPOS service. This is usually charged on a cents per transaction basis.

Price for EFT to IP converters range from \$650 to \$1250. Return on investment for this hardware is typically less than 12 months. It's important that devices be used that are designed in Australia and support Australia's quirky, but secure, banking standards. (refer to Australian Standard AS2805).

These EFT to IP Converters are placed in series between the EFTPOS equipment and the DSL modem or router (usually connected via a hub or switch).

Other services running on the DSL like e-mail, web browsing, file transfers and VOIP and all are run at the same time as the EFTPOS transactions. Your typical EFTPOS traffic stream only needs between 2400 and 9600 bits per second bandwidth.

Interestingly, the leased line service which runs on a 16 kbps ISDN D channel will support up to 16 pin pads. Theoretically a standard ADSL connection could support hundreds of pin pads.

As competition increases in the DSL market, EFTPOS switching capability will become a standard offering from DSL service providers and included in the monthly access cost.

In mid 2006 you will start to see 512/256k ADSL private IP access, including Internet and EFTPOS switching for a flat \$120 - \$200 per month. VOIP hardware and off-net calls will incur an additional charge.

How reliable is EFTPOS over DSL?

Although most DSL services do not offer the Service Level Agreements (SLAs), of leased lines, EFTPOS over DSL can be made as reliable through dial-on-demand backup.

DSL services are becoming more reliable as customers become more and more reliant on the connectivity they bring. If the DSL service fails, an alternative connection to the EFTPOS switch can be made using PSTN, GSM or GPRS (a mobile IP network).

GSM or GPRS are the preferred options as they use their own infrastructure rather than the standard copper network. Cost too is an important consideration. GPRS access can be arranged for as little as \$5-\$10 per month.

The dial-on-demand function is handled by the EFT to IP Converter or by the DSL router. If the DSL service is business grade, dial-on-demand redundancy may not be required. In the worst case, the pin pad can be disconnected from the EFT to IP converter and connected to any available normal telephone line.

How secure is EFTPOS over DSL?

The short answer is "far more secure than PSTN". In most situations at least the card-holder's pin is encrypted by the EFTPOS pin pad. Add to that the additional security offered by virtual private networks and the risk of compromise is minimal. For the security conscious, IPSEC between the DSL edge device and the switching service router is an option.
