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Link-Connect

WHITE PAPER

# Can a Data Centre lower your networking costs?

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# Contents



# INTRODUCTION

Multi-site organisations who need users at all locations to have fast, reliable access to enterprise application servers need to evaluate hosting in “on network” data centres. The problem is that the cost of traditional networking solutions to connect from the Data centre to the organisations multiple sites can make hosting in a data centre economically unfeasible.

This white paper is discusses the options available that can not only make data centre hosting economically viable but lower cost than traditional wide are network solutions and hosting in an organisations head office.

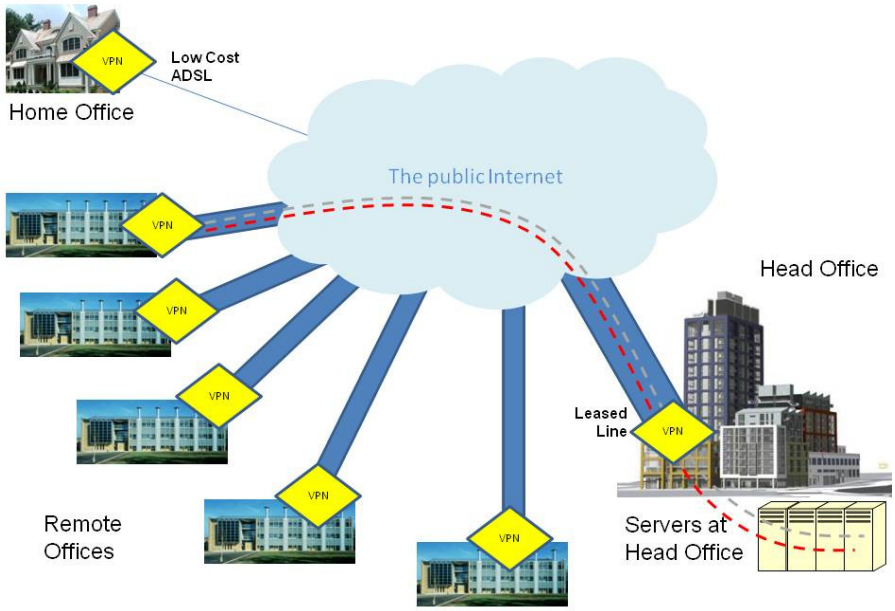
Can a data centre lower your networking costs?
For multi site organisations moving your main enterprise applications to a data centre can be lower cost than hosting the applications in your head office! This can be made possible not through any slight of hand but by applying the right network access technology.

## 1. Head Office application hosting

By hosting all applications at the head office a large (expensive) synchronous connection is required at head office. The size and speed has multiple restraining factors such as office location and remote user population trying to access the head office servers. Due to economic constraints the bottle neck of the entire organisation is likely to be the head office connection to the network.

## 1.1 Reaching your Applications

All remote users need to traverse the whole network to the head office (red dotted line) connect with the application and then return with the data (grey dotted line) to the remote user.




If the network is over the public network and secured through VPN then a delay will be added to the application. Some applications are very sensitive to this delay and can become virtually unusable, examples have been seen where VPN latency increases application delay by a multiple of 7.5! Experienced white paper readers will be relieved to learn the business case shown does not rely upon spurious potential application acceleration.

## 1.2 Example Scenarios

The 3 examples show a head office with a 10Mbps leased line. For a head office in a city centre with lots of fibre (Example 1) this is shown as £600pm for Rural Head Offices this is shown at £1200pm (Examples 2&3)

The remote offices have a 2 Mbps leased line (examples 1& 2) OR 2 lines of bonded ADSL (example 3.)

For each example scenario is scaled from 2 to 15 locations.

| Locations | 2 | 3 | 4 | 5 | 10 | 15 |
|---|---|---|---|---|---|---|
| Example 1 - Servers Head Office | | | | | | |
| Head Office 10MB LL - City Centre | £600 | £600 | £600 | £600 | £600 | £600 |
| Remote Offices - 2MB LL | £600 | £1,200 | £1,800 | £2,400 | £5,400 | £8,400 |
| Total Monthly Cost | £1,200 | £1,800 | £2,400 | £3,000 | £6,000 | £9,000 |
| Example 2 - Servers Head Office | | | | | | |
| Head Office - 10mb LL – Rural | £1,200 | £1,200 | £1,200 | £1,200 | £1,200 | £1,200 |
| Remote Offices 2 MB LL | £600 | £1,200 | £1,800 | £2,400 | £5,400 | £8,400 |
| Total Monthly Cost | £1,800 | £2,400 | £3,000 | £3,600 | £6,600 | £9,600 |
| Example 3 - Servers Head Office | | | | | | |
| Head Office 10MB LL Rural | £1,200 | £1,200 | £1,200 | £1,200 | £1,200 | £1,200 |
| Remote Offices 2 Bonded ADSL | £199 | £398 | £597 | £796 | £1,791 | £2,786 |
| Total Monthly Cost | £1,399 | £1,598 | £1,797 | £1,996 | £2,991 | £3,986 |

## 2 Data Centre application hosting

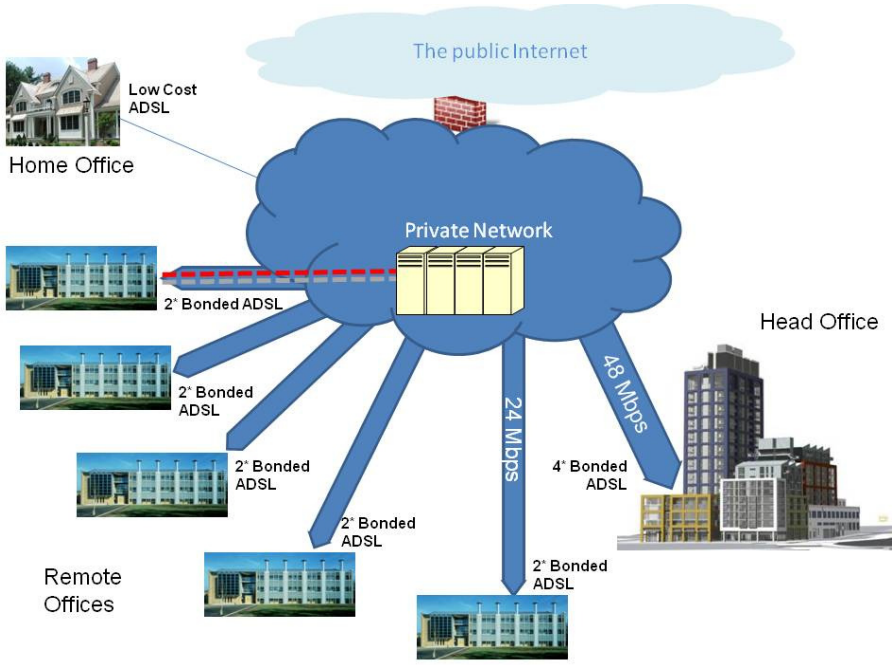
The known benefits of moving servers to a data centre are that the servers are in the perfect environment of temperature and secure electrical supply. Many organisations know the data centre benefits but the business case stalls when connectivity to the Head Office and remote users is designed using traditional wide area network technologies such as leased lines and MPLS.

When moving applications to the data centre the network designed from the ground up to deliver massive down load speed at low cost is ASDL technology. Bonding multiple ADSL connections together creates a logical single high speed connection and fantastic resilience is added by having ADSL lines from different suppliers. The result is low cost, high speed and highly resilient bandwidth to enterprise servers.

*The lesson from all past IT and networking technology is that fast and cheap beats slow and expensive every time.*

**Example 4**

Using the same examples as with head office hosting above but by moving the main applications into a data centre at a cost of £600 per month and replacing the head office connection with 4* Bonded ADSL connections providing up to 48Mbps download from the data centre how much could be saved? (5* bonded ADSL are possible allowing max 60Mbps download.)




## 2.1 Costs of Hosting in Data Centre & Network Savings

| Locations | 2 | 3 | 4 | 5 | 10 | 15 |
|---|---|---|---|---|---|---|
| Example 4 - Servers Data Centre | | | | | | |
| Head Office 4*Bonded ADSL | £349 | £349 | £349 | £349 | £349 | £349 |
| Remote Offices 2*Bonded ADSL | £199 | £398 | £597 | £796 | £1,791 | £2,786 |
| Hosting Costs | £600 | £600 | £600 | £600 | £600 | £600 |
| Total per month | £1,148 | £1,347 | £1,546 | £1,745 | £2,740 | £3,735 |
| Annual Savings Compared to Example 1. | £624 | £5,436 | £10,248 | £15,060 | £39,120 | £63,180 |
| Additional Server U's that could be provisioned at DC within network savings based on £150pm per U. | 0 | 3 | 6 | 8 | 22 | 35 |

As the number of locations increases so does the annual savings. As the organisation gets larger it is to be expected that the number of servers supporting those applications will also increase. The last row of the cost saving table shows how many additional server rack U's could be rented at a price of £150 per U per month.

# 3 Additional Considerations

## 3.1 Security & Security Management

As the network is fully private the only network security to be configured is a central firewall where the security policy for the whole organisation can be established and enforced. If adds, changes or deletions are made from the network no reconfiguration of the network is required.

## 3.2 Flexibility

The private network is technology agnostic so your network can be constructed from a home office user ADSL up to 1GB leased line or MPLS network elements.

## 3.3 Resilience

The primary choice for connections is bonded ADSL created from multiple providers. This ensures that if an individual connection fails or a provider's network fails your connectivity remains.

## 3.4 Low Latency

The private network has no border encryption so no latency is introduced, allowing applications to run faster. Moving from a VPN network to a Private Network has been proven to reduce application latency by a factor of 7.5.

## 3.5 Quality of Service

The private network does not support end to end quality of service. If this is required, then an MPLS network or additional hardware to provide quality of service over the tail circuits will be required.

## LINK-CONNECT

Link-Connect have over 11 year's expert knowledge in Internet connectivity and secure private networks.

Our Bonded ADSL network can ensure 100% up-time on your broadband connection as well making leased line bandwidth available at a fraction of the cost.

## FURTHER READING

- **Do you need MPLS?**
- **Is Bonded ADSL right for you?**

Visit www.link-connect .com for additional white papers


To find out how Private Networking and Bonded ADSL can change the dynamics of your Enterprise Applications performance and networking costs contact Link-Connect Services on 0800 0354 0777

# White Paper

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