Network Solutions Division

Products and Services Guide 2004

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Company Information

About Us

Progressive Networks Ltd was incorporated in August 1996. We specialise in the design, implementation and support of communications networks, in particular IP networks. We have a massive range of products and services designed to cater for the needs of our IT partners and customers.

Quality Management System

Progressive Networks is an ISO 9001:2000 registered organisation. All of our processes and systems are designed around and integrated with our quality management system.

Why Partner With Us ?

Progressive Networks has been working with IT organisations like yours for many years, supporting projects that require specialist network skills. The typical organisations that we tend to work with include:-

- Generic I.T. Solution Providers
- Software Houses
- Application Service Providers
- Internet Service Providers
- I.T. Consultancy Firms

We can make you money either by working together on projects where you are billing the customer or by offering a share of the profits for projects that you have referred to us.

We add value to your organisation by allowing you to tender for projects that might otherwise be out of reach due to lack of specialist knowledge in the networking field.

Our range of products and services also includes a full set of Internet Services (see our “Internet Services – Partner Information” document) in addition to our regular network design, build, support and management services.

Our engineers are all certified in their respective fields. We have partnered with the top manufacturers such as Cisco, Checkpoint and several others. In fact we are one of the few properly qualified specialist network firms based in Suffolk. We have good pedigree and we do things properly, using the “best practices” relevant to our industry.

We are able to assist with projects of local, national or international coverage.

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Our Technology Partners

Progressive Networks only partner with leading edge & forward thinking companies to ensure that we only offer best of breed solutions which offer guaranteed future proofing to our customers.

Check Point Software Technologies is the worldwide leader in securing the Internet. It is the confirmed market leader of both the worldwide VPN and firewall markets. Through its Next Generation product line, the company delivers a broad range of Perimeter, Internal and Web security solutions that protect business communications and resources for corporate networks and applications, remote employees, branch offices and partner extranets. Additional security features and resilience are available when coupled with a **Nokia** IP Device.

Cisco Systems are the world's leading network equipment manufacturer, with more than 80% of the world's IP networks based on their equipment. Progressive Networks are Premier Certified Partners of Cisco Systems. We work closely with our colleagues at Cisco to provide our Service Provider and Corporate customers with world class networking solutions.

SonicWALL, Inc. designs, develops and manufactures comprehensive Internet security solutions that provide access security, value-added security services and transaction security products for a broad range of markets

APC are the original and still number 1 uninterruptible power supply manufacturers trading today. Constant product improvements and innovation means that APC offer an excellent product range coupled with excellent support services.

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Our Services

Network Design

Network design is our core skill. Some of our engineers have specialised in data communications for over 20 years. We continually update our skills with a series of training courses, exams and certifications in order to meet the requirements of our manufacturer partners. Here are some examples of the types of designs we have recently implemented.

- Corporate national WAN supporting IP and legacy SDLC
- Corporate national VPN using MPLS and broadband
- International 60 channel Voice Over IP (VOIP) solution
- Resilient web portal design
- Application Service Provider hosting solution
- Content switching and load balancing solution
- Secure wireless networks
- Rural community broadband solution
- Serviced office solution
- Resilient Internet access design using multiple ISPs and BGP4
- Core ISP network design

Network Build

Our engineers are well travelled, having implemented solutions all over the country and abroad. When we recently built a voice over IP solution in India we pre-configured and shipped the hardware that was later installed by local staff.

There are various ways in which a network can be implemented. We prefer to send our engineer to site to ensure that all work is carried out to our high standards both in terms of physical installation, configuration and testing.

If you have a design on the table and need it implemented we are happy to provide engineering expertise on a flexible basis for the rollout and beyond.

We take safety seriously and would be happy to provide a copy of our health and safety policy on request.

Project Management

Another aspect of our service is the management of projects that we are involved in, but also projects being implemented by third parties. If you need to ensure that your design is being correctly implemented within the agreed timescales then we can assist in this area.

Network Support / Management

One of our core competencies is the ongoing management and support of our clients' network infrastructure. Very few organisations have the in-house expertise to effectively monitor and manage their infrastructure. Our role is to monitor the network, detect any faults and to rectify them before they become a problem. Typically our designs include resilience and so we can often rectify a fault before it becomes service affecting. A typical management contract would include the following elements.

- Full service level agreement with guaranteed response times
- 24x7 network monitoring using SNMP
- Trend analysis / capacity planning
- Web based interface for customers to view network status and events.
- Customised SMS and email alerts
- Change control / configuration management
- Configuration backups
- Help desk
- Fault diagnosis
- Disaster recovery
- Hardware maintenance

Network Security

We find that in many cases network security is one of the last considerations when designing a new network. In our experience security has become a critical aspect of any network design and needs to be a fundamental part of it from the outset.

Progressive Networks have designed and built networks for government clients to the highest security specifications imaginable. Our engineers have been vetted and SC security rated by the Home Office to allow us to work on sensitive projects.

We have in house network security experts that are certified by Checkpoint to CCSE level, the number one vendor of network security solutions. We also partner with and have experience of Nokia, Cisco PIX, Sonicwall and other vendors.

Some of the security components and solutions that we can offer include..

- Firewalls from Checkpoint, Nokia, Cisco, Sonicwall
- ACE/RADIUS for "one-time" password authentication
- Virtual Private Networks / VPN concentrators
- Wireless network security

We can also offer design advice for projects where security is a factor.

Consultancy

Sometimes we have to take a neutral and independent role in order to offer the best advice to clients that are seeking professional assistance. Our more experienced staff have worked with senior management at large enterprises, national charities and Internet Service Providers in order to develop their network infrastructure to meet key business objectives. Typical services would include but are not limited to: -

- Large scale network design
- Vendor selection / tender processes and administration
- Network audits / recommendations

Internet Services

Progressive Networks is a full Internet Services Provider (ISP). We own and operate our ISP infrastructure. Services include national Internet Access using Leased Lines, Broadband and Dial-up. We also offer shared and dedicated hosting, co-location services and domain names.

Least Cost Routing

Carrier Pre Select (CPS) enables significantly lower costs for all your outbound calls without the need to change existing BT telephone numbers or install any additional hardware.

There is no disruption or inconvenience involved with Carrier Pre Select, no PBX reprogramming, no auto-dialers or manual prefixing; existing numbers are kept & telephone calls are made as standard. The result is a significant cost reduction when calling local, national, international and mobile phones.

BT will still maintain and bill for the physical phone line and a monthly direct debit will be instigated to cover ‘call only’ costs.

- Tier 1 Quality Routing
- No call set up charges
- No fixed monthly fees
- 1p minimum call charged
- Free online billing for all customers

Progressive Networks manage the whole process to ensure a smooth and timely transition.

Case Studies

Call centre in India

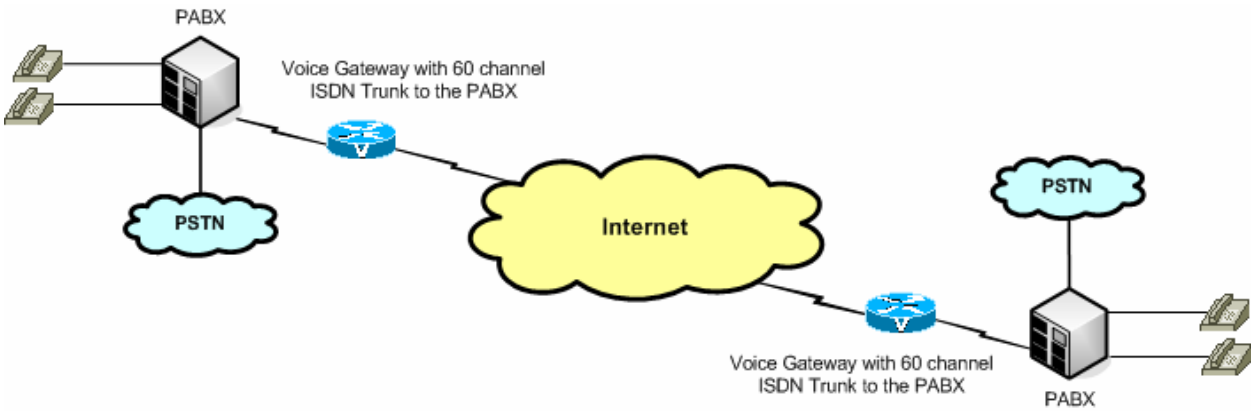
Many UK based organisations are now using overseas call centres to reduce their operating costs. We recently designed and built a Cisco based voice over IP solution for an international pharmaceutical company. The brief was as follows.

- Agents in India needed to be able to call customers in the UK
- Incoming calls from UK customers could be routed to India based on load or time of day
- Extension to extension dialling between the India and UK offices
- The system needed to support 60 concurrent calls
- Voice quality needed to be good with low delay

Our design involved Cisco 3700 series routers fitted with voice processing cards. By putting the voice processing functions in the network this made the PABX requirements very simple. In fact the client simply had to install extra ISDN30 cards (with support for QSIG) in each PABX. At the UK end we upgraded their Toshiba CTX system and an agent sorted the India PABX upgrade.

Communications between India and the UK can be expensive, so the client decided to trial the solution using the Internet with the installation of private leased line to follow. This presented us with some technical challenges because the Internet does not provide guaranteed performance or latency. We were involved in careful selection of ISPs, including testing the end to end delay (very important in the voice world). By careful management of bandwidth it is possible to effectively use the Internet to support international voice calls.

The ability to pass free voice calls between offices using existing Internet access circuits is very attractive to many organisations. Progressive Networks have designed and implemented various voice solutions.



For the solution highlighted above we used the Internet for the international leg of the call and this ensured that calls were placed at local UK rates, often using an alternate supplier to obtain even cheaper national calls within the UK.

We are well versed in the technologies used to support VOIP including Quality of Service (QoS) mechanisms that manage congestion, delay, queuing etc. Once again our network solutions division can help with VOIP enquiries.

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Typical SME WAN Project

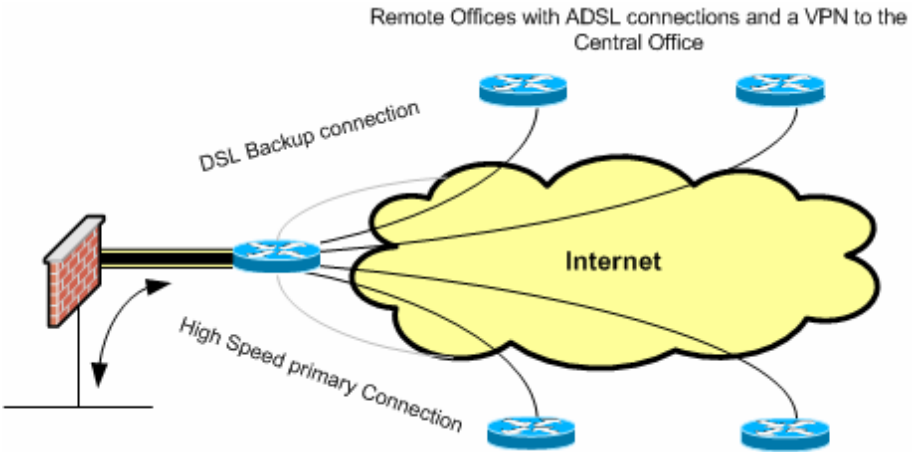
A recent project highlighted our ability to provide a turn key communications solutions for the SME market. As both an ISP and network solutions specialist we were able to deliver the entire solution in-house.

This organisation consisted of a head office and four branch offices. We started by providing a high speed (10MBPS) fibre circuit between their office in Ipswich and our Point of Presence (PoP). We installed a Cisco router and Checkpoint firewall to provide secure management of the main Internet connection. A broadband back-up connection was also implemented at the H.O.

Using Cisco based rate limiting we could control exactly how much bandwidth was on tap. The IT manager was able to select how much bandwidth he required on a monthly basis, thus providing the ultimate flexibility and lowest cost of ownership.

The branch offices were equipped with broadband products combined with Cisco routers. Each branch could be configured to have independent Internet access, or controlled access via the corporate proxy server. Each branch was also equipped with a secure communications channel to the Head Office by means of an Internet based Virtual Private Network (VPN).

We provide ongoing management and support of this network.



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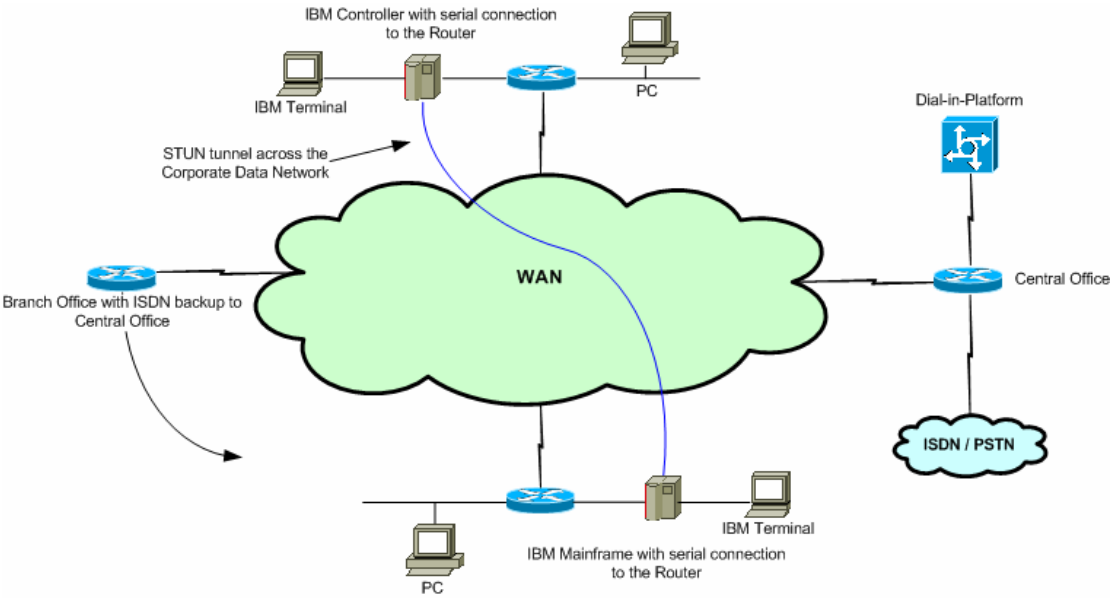
National WAN Supporting Legacy Protocols

We recently won a contract with a customer that had a national leased line WAN with IBM remote controllers at the branch offices and an IBM AS400 at the head office. The problem was that this network only supported the IBM SDLC protocol and could not support the IP protocol.

Our solution was to design and build a new Cisco based IP network that could also support the legacy IBM protocols. The legacy protocols were supported using the Cisco STUN (Serial Tunneling) feature. This not only transported the SDLC frames over the IP network, but also spoofed a lot of the acknowledgements. These local protocol acknowledgements saved a considerable amount of bandwidth. Another enhancement was the introduction of data compression. When using leased lines this technology (standard issue on Cisco routers) can effectively double the available bandwidth.

The result was a network that supported a gradual migration from legacy systems over to IP based systems without incurring further recurring telecom costs.



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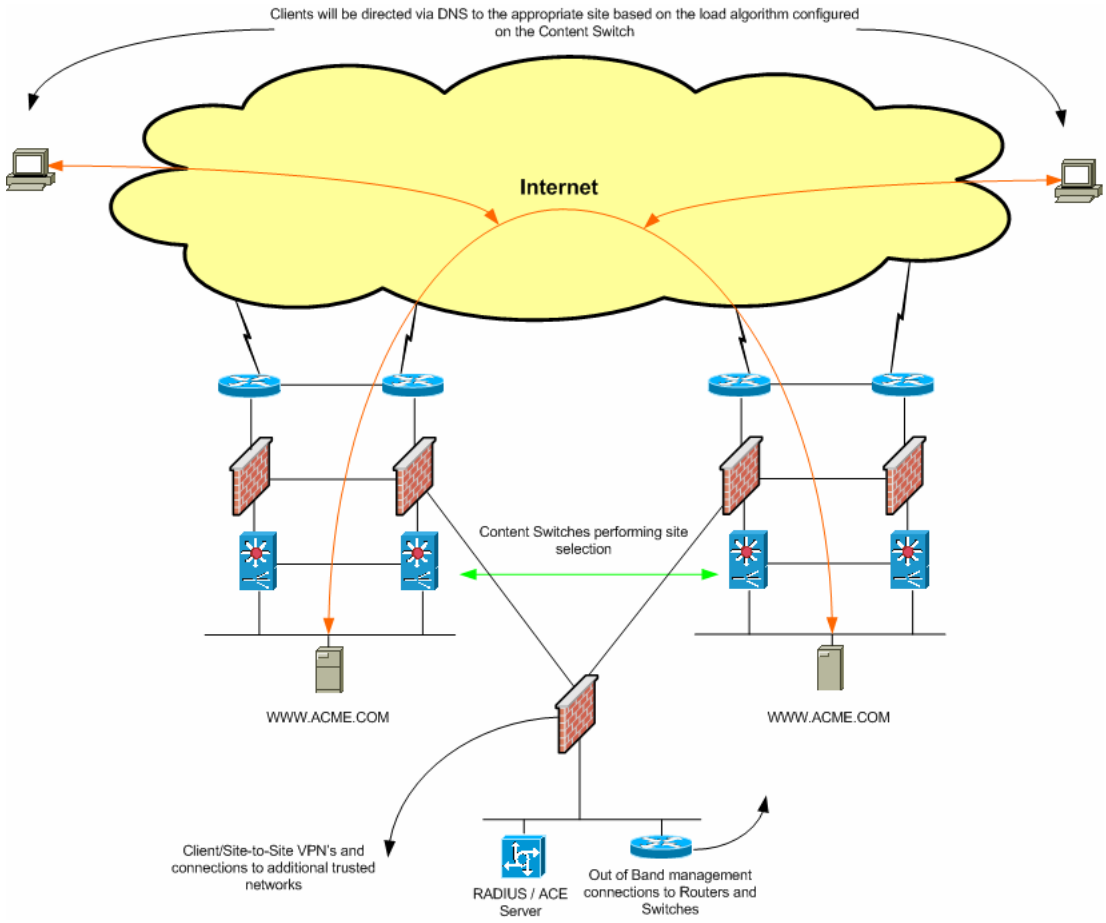
Secure Web Portal

Web based services can often contain information that is deemed sensitive or private. Data protection is also a major consideration these days.

So when we were asked to design and build a high availability web solution involving sensitive information security was the main concern, especially since the system was accessed via the Internet.

We designed a secure web portal with the following features.

- Security Screening Routers with ACLs
- Various brands of firewall
- RADIUS / ACE authentication and accounting
- Resilient Internet access using BGP4 routing
- Remote out of band management platform
- NTP time on all devices
- Content switching for global site selection



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I.S.P. Core Network

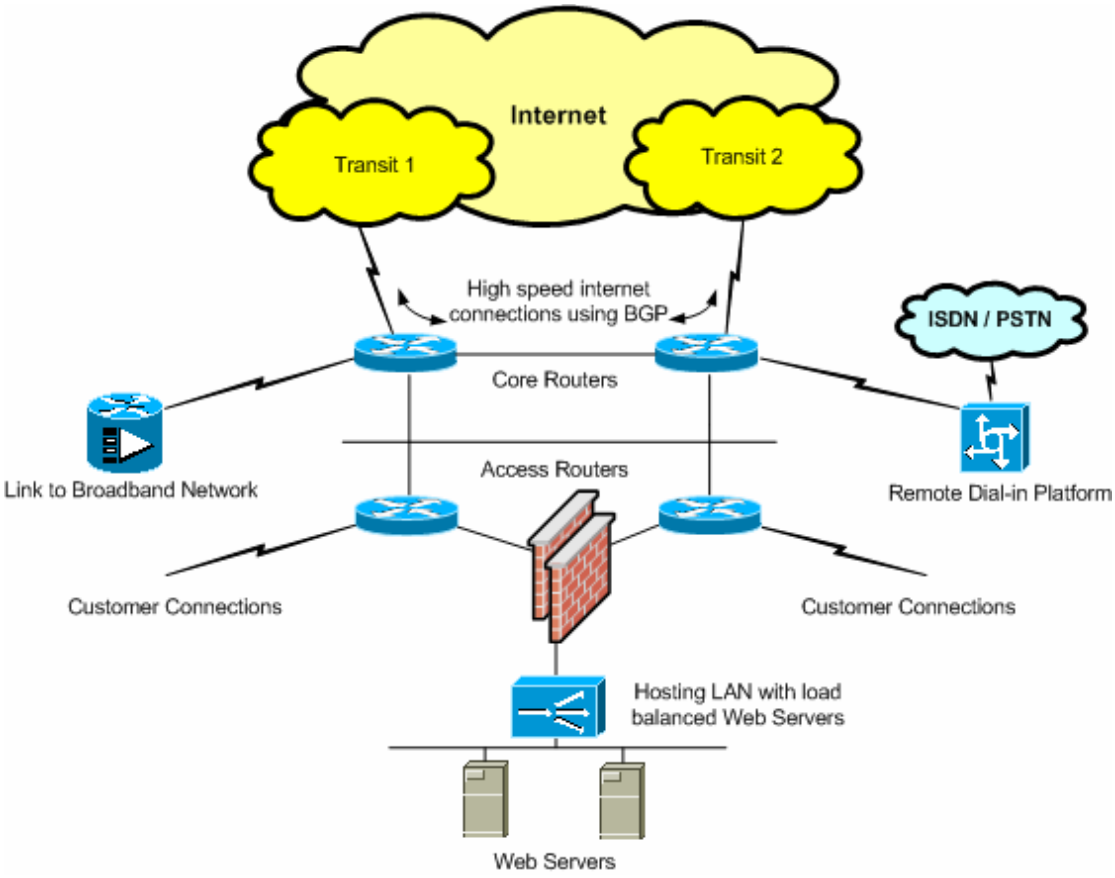
Progressive Networks has much experience in the design of ISP core networks. ISPs have particular criteria in mind when designing their networks that differs from standard corporate networks. For example because they support a large number of customers it is important that their networks are very fast and reliable. They also need to be able to manage the bandwidth available to each customer.

We found one ISP in a pretty poor condition. Their data centre was poorly designed. Their network was unreliable and their power supply had no UPS for protection.

We introduced a Cisco base core network that allowed functions such as rate limiting to be performed in software rather than using hardware boxes. We introduced a resilient design with the OSPF routing protocol providing alternate paths within the core of the network. We also added an APC Symetra UPS system for redundant power supply. The datacentre was tidied up and all devices were rack mounted instead of table mounted.

Upstream routing was managed using the BGP4 protocol and a second upstream provider introduced for further resilience.

The result is a much higher performance and more reliable network that can be effectively managed in order to provide maximum uptime for their customers.



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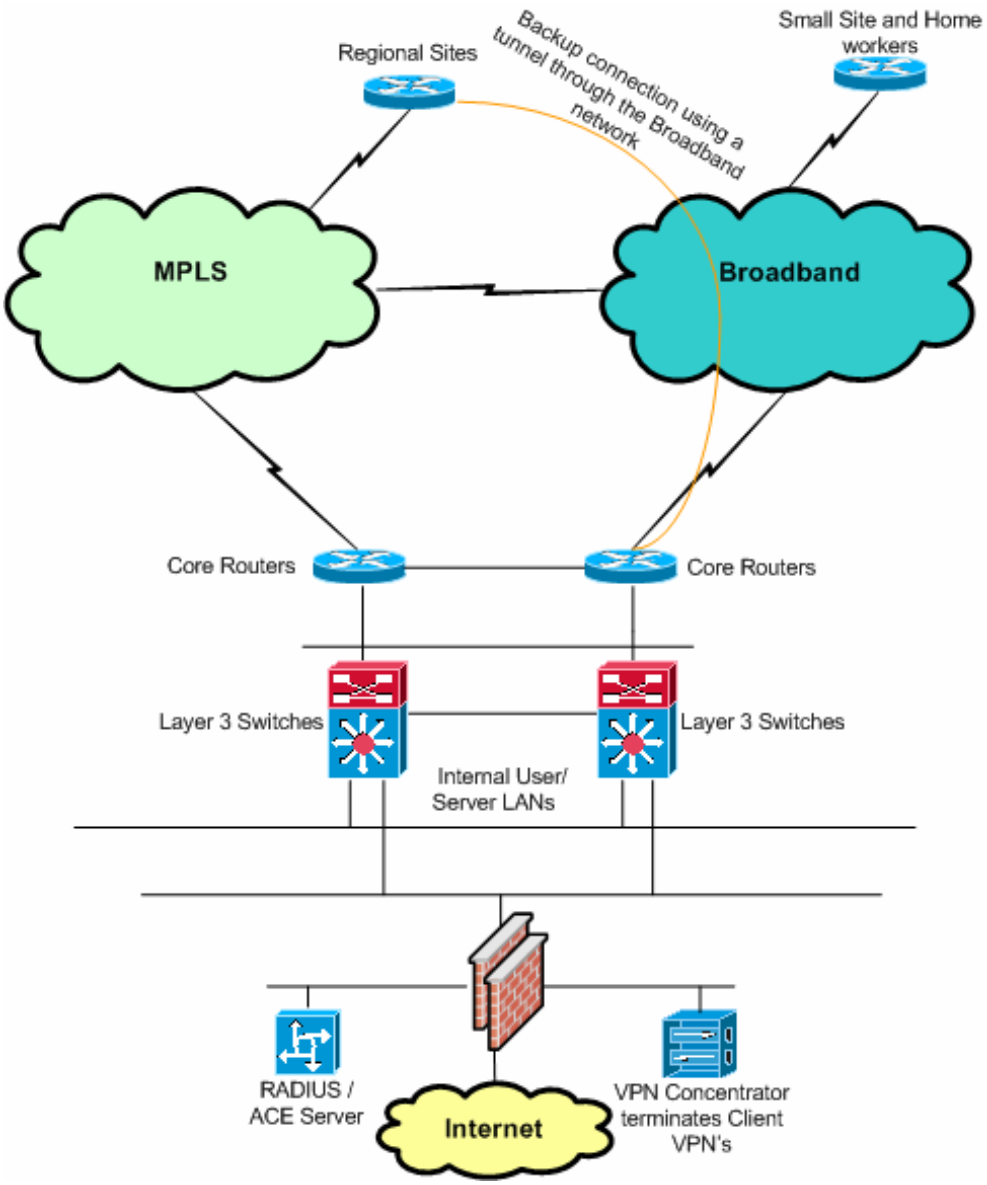
National Charity – Consultancy Services

We were approached on recommendation by a well known national charity organisation. Their goal was to bring an ageing and unsupportable WAN up to current standards. Like many large organisations, whilst they had on-site IT support staff they lacked in-house expertise when it came to networks and therefore required a specialist firm of consultants to guide them. We performed a number of tasks in order to progress through to a full national WAN implementation as follows:-

- Network Audit
- Production of Network Security Policy
- Production of High Level WAN Design
- Production and implementation of layer 3 switching LAN at HO
- Tender administration / documentation
- Final vendor selection board
- Ongoing project management
- Ongoing client representation



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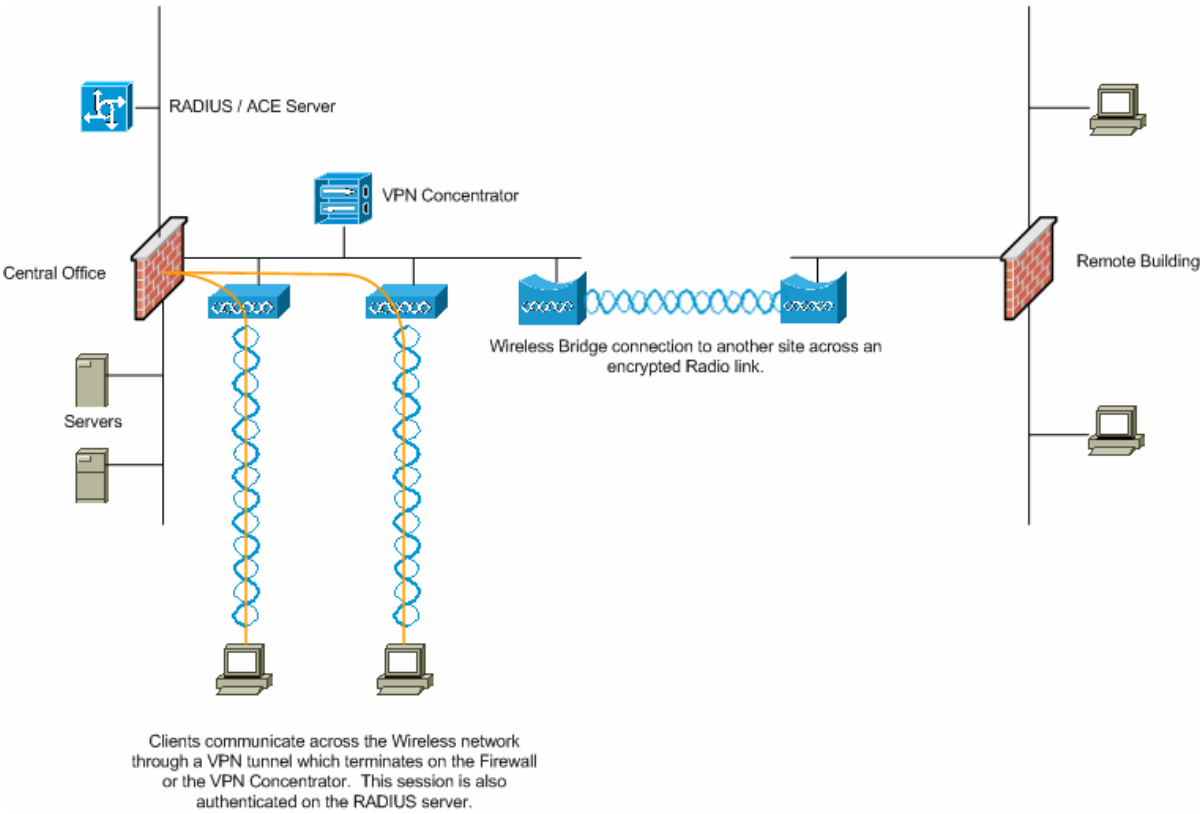
Secure Wireless Network

When providing a Wireless solution it is important to select scaleable solutions that embrace all the current wireless standards to future proof the entire network. The implementation must also be secure with the data encrypted and the users authenticated.

We have built many wireless networks for our customers each addressing individual requirements; the solution below highlights a typical example of one of these designs which takes advantage of all the various security elements required to implement a secure wireless network. Some of these features are:

- Encryption through VPN Tunnels terminating on either a Firewall or VPN concentrator.
- User authentication using RADIUS through a Windows Domain or a One Time Password (OTP) system such as SecurID.
- Wireless bridges to offer cost effective connections to remote buildings and offices.



Not all designs require this level of security; therefore each implementation is carefully designed around the customer's requirements, sensitivity of the data and budget constraints.

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