



End-to-End Management for Networking Solutions

COLT CPE (Customer Premises Equipment) Solutions is a components-based managed data service. It provides you with the option to choose both the equipment and connectivity that best meet your individual needs, from creating Managed Switched Gigabit Ethernet Networks to Managed Router Networks.

Whether in the wide area network (WAN) or the metropolitan area network (MAN), the underlying technology forming the basis of any customer network will be driven by individual circumstances with a choice of connectivity, including Synchronous Digital Hierarchy (SDH), ATM/Frame Relay or Ethernet.

COLT combines the convenience of off-the-shelf products with the versatility of a customised solution to meet any requirement. For example, if you have a need for a high-speed service within a metropolitan network or a more complex network connecting multiple sites across international borders, COLT can deliver the solution within standard lead times.

Having defined a comprehensive equipment list to include Cisco® routers and switches, your networking solution can be enhanced by features such as Virtual Local Area Network (VLAN) trunking, routed or switched VLANs, additional LAN ports, performance reporting – whatever it takes to meet your specific needs.

- ▶ Focus on core competencies – outsourcing the ownership and responsibility of technology investment and network operation to COLT enables you to concentrate on your core business
- ▶ Customised – COLT will work with you to design a solution that is tailored to your networking requirements
- ▶ Extending MAN and WAN technologies – as well as using COLT's extensive WAN capability, CPE Solutions extends to deliver high-bandwidth, high-resilience, tailored solutions within the MAN
- ▶ Single source for all your network requirements – a single point of contact for an end-to-end managed service
- ▶ Scalable and flexible – CPE Solutions' wide range of options can be offered on existing hardware and networks. A menu-based approach enables more flexibility to adapt and keep up-to-date with emerging technologies
- ▶ Reduces expenditure – building on your existing infrastructure lowers up-front costs. The inclusion of CPE as part of the service will further reduce total cost of ownership
- ▶ Fast time to provision – a standard set of product options enables you to pick and choose the components of your solution, yet still achieve short delivery times
- ▶ Cost-effective 10Mbps-1Gbps wire-speed switching capacity



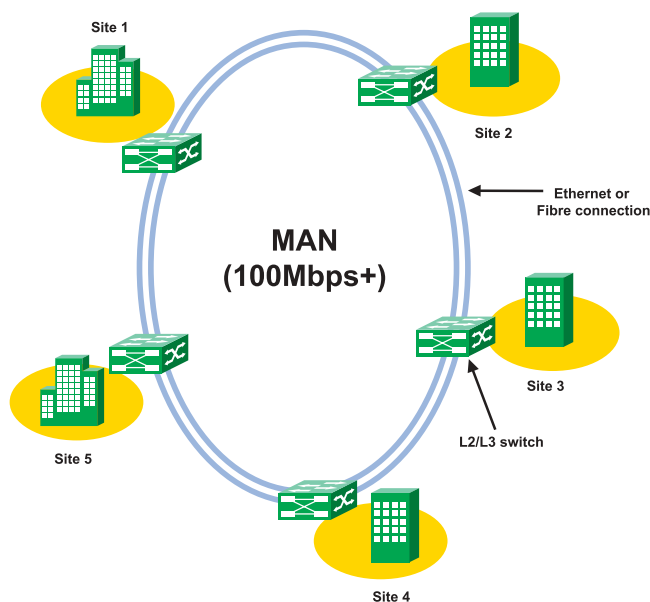
CPE Solutions delivered using switches

CPE Solutions provides an end-to-end managed capability to your network in the MAN, delivered either via Ethernet or fibre connections. This guarantees throughput at wire speed, enabling applications to run at full bandwidth capacity with no additional overheads.

Ideally suited to the transportation of high-volume traffic, whether storage or day-to-day data, high-speed connections from 10Mbps to 1Gbps, using the Cisco® 3550 switch, COLT can provide a low-cost managed network solution providing either switched or IP routed functionality in the MAN.

Transparent networking allows you to operate as a single LAN over physically diverse locations – for example, extending the LAN segment into the MAN and potentially the WAN. COLT will trunk the traffic of multiple VLANs across the network whilst maintaining optimum security and VLAN isolation throughout.

The diagram below shows the CPE Solutions in a MAN for a single multi-site company.



Features of CPE Solutions delivered using switches:

- ▶ Multiple customer LAN/WAN interfaces – through the Cisco® 3550 switch, COLT can provide 20 usable fast Ethernet interfaces, as well as two Gigabit Interface Connector (GBIC) ports for high-speed WAN connections
- ▶ Ability to segregate the network into multiple VLANs and VLAN trunks:
 - VLAN trunking – transparent VLAN switching ensures the features you have selected are consistently maintained throughout your network
 - Managed VLAN – ideal for connecting Layer 3 devices across the MAN
- ▶ Highly resilient network – network-based ring topologies are automatically switched over in the event of failure as a result of Spanning Tree Protocol. Further resiliency can be built into the network through the deployment of dual switches
- ▶ Two levels of class of service (CoS) available, based on either the customer port or the IP address of your organisation's end device
- ▶ Online performance reporting:
 - Utilisation statistics, including reports on how efficiently you're using your bandwidth
 - Real-time reporting, enabling network transparency
 - The ability to measure performance on a per-CoS basis, enabling you to track bandwidth demands on a per-application basis
- ▶ Network connectivity available via Ethernet or Fibre connectivity with bandwidth granularity from 2Mbps to 1000Mbps

CPE Solutions delivered using routers

CPE Solutions combines Cisco® routers with mixed technologies to provide managed network connectivity to organisations around the globe.

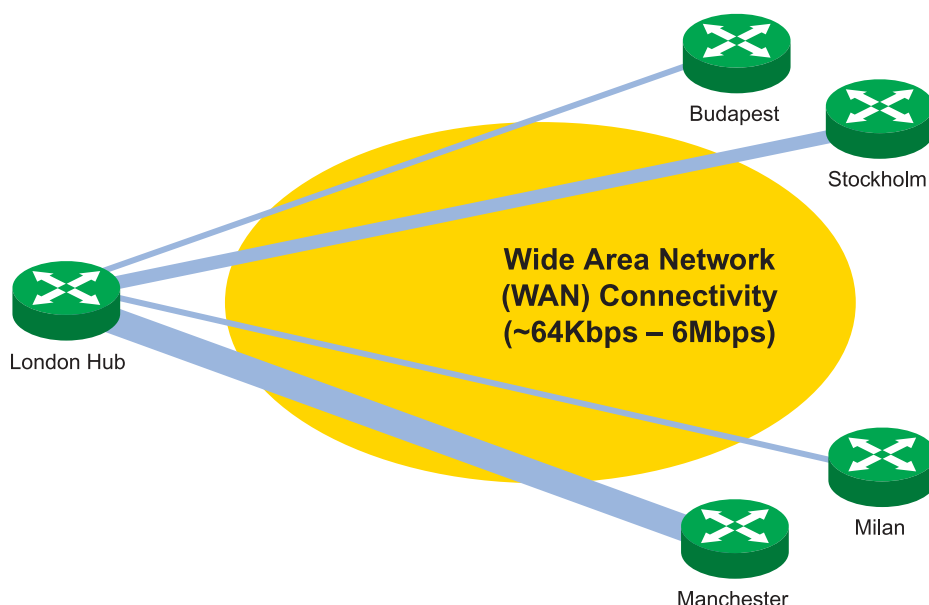
Building on existing leased lines, COLT adds value at the IP Layer, providing you with a feature-rich set of options similar to an Internet Protocol Virtual Private Network (IP VPN). COLT's advanced network management tools allow you to concentrate instead on the core nature of your business, with the confidence that your network is fully supported.

From network design through to implementation and operations, COLT's highly skilled engineers and support team provide a market-leading level of customer service. COLT as a single source will oversee the deployment from start to finish to include provisioning and testing of each circuit. Upon hand-over, COLT will then guarantee 24-hour monitoring and maintenance, diagnosing and isolating problems as they arise to ensure minimum disruption on the network.

This cost-effective solution is provided with minimum technological risk, reducing the overheads incurred by a company's internal IT department.

Features of CPE Solutions delivered using routers:

- ▶ IP feature set including Routing Information Protocol (RIP) v2, Border Gateway Protocol (BGP), Static, Open Shortest Path First (OSPF) and Enhanced Internet Gateway Routing Protocol (EIGRP), SNMP read-only access, and integrated Internet access
- ▶ Five classes of service (CoS) enable traffic prioritisation by application, according to traffic importance
- ▶ Router features include ISDN Backup and MEI (Multiple Ethernet Interfaces)
- ▶ Online reporting tool offers:
 - Utilisation statistics, including reports on how efficiently you're using your bandwidth
 - Real-time reporting, enabling network transparency
 - The ability to measure performance on a per-CoS basis, enabling you to track bandwidth demands on a per-application basis
- ▶ Ability to mix technologies including SDH and ATM/FR
- ▶ Bandwidth granularity [64kbps to 155mbps for SDH-based services and 64Kbps to 34Mbps for ATM/FR-based services]



Technical Specifications

CPE Solutions	Layer 3 Routing	Layer 2 Switching	Layer 3 Switching
Network Coverage	WAN/MAN	MAN	MAN
CPE List	826 836 837 1721 2611XM 7204VXR/CPE 7206VXR/400/GE	3550-24-SMI	3550-24-SMI 3550-24-EMI
Transport Technology	SDH Ethernet ATM/Frame Relay Partner Tail Circuits	Ethernet COLT Fibre Partner Ethernet Circuits	Ethernet COLT Fibre Partner Ethernet Circuits
Service Bandwidth	64Kbps – 155Mbps	2Mbps – 1Gbps	2Mbps – 1Gbps
Protocol Supported	IPv4	Ethernet	IPv4 with Ethernet II encapsulation
SLA: On-net, Off-net Tier One (in COLT countries) Off-net Tier Two (see description in SLA)	100% 99.90%	100% 99.90%	100% 99.90%
Service Level Guarantees against SLA	✓	✓	✓
Class of Service	Five (Premium, B1, B2, B3, Standard)	Two (Premium, Standard)	Two (Premium, Standard)
Resiliency Option	Dual CPE ISDN Back-up	Ring Architecture Protected Point-to-point Circuits Dual CPE	Ring Architecture Protected Point-to-point Circuits Dual CPE
Multiple Ethernet Interfaces	Max. 16	Max. 20 (additional available upon request)	Max. 20 (additional available upon request)
Internet Access	ATM Access only	-	-
Online Reporting	✓	✓	✓
Routing Protocols Supported	RIP, Static, BGP, OSPF, EIGRP	-	RIP, Static, BGP, OSPF, EIGRP

Subject to standard Terms and Conditions.

Contact COLT

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