



FREQUENTLY ASKED QUESTIONS

UUdirect TransitSM

UUdirect Transit services have been designed to satisfy the specific requirements of Internet and Online Service Providers.

What is UUdirect Transit?

It gives you one local connection for global connectivity

UUdirect Transit is a wholesale, high performance Internet access service for Internet and Online Service Providers. It offers full connectivity via UUNET's global backbone and worldwide peering agreements with just one connection to your nearest hub. These hubs are located in Australia, Belgium, France, Germany, Hong Kong SAR, Ireland, Italy, Netherlands, Sweden, Switzerland, UK and the USA.

What is the difference between the 'Global Edition' and the 'European Edition'?

Global Edition:

With just one connection to your nearest hub, it offers full connectivity to UUNET's Global network, including:

- All other UUdirect Transit customers
- All of UUNET's non-wholesale customers

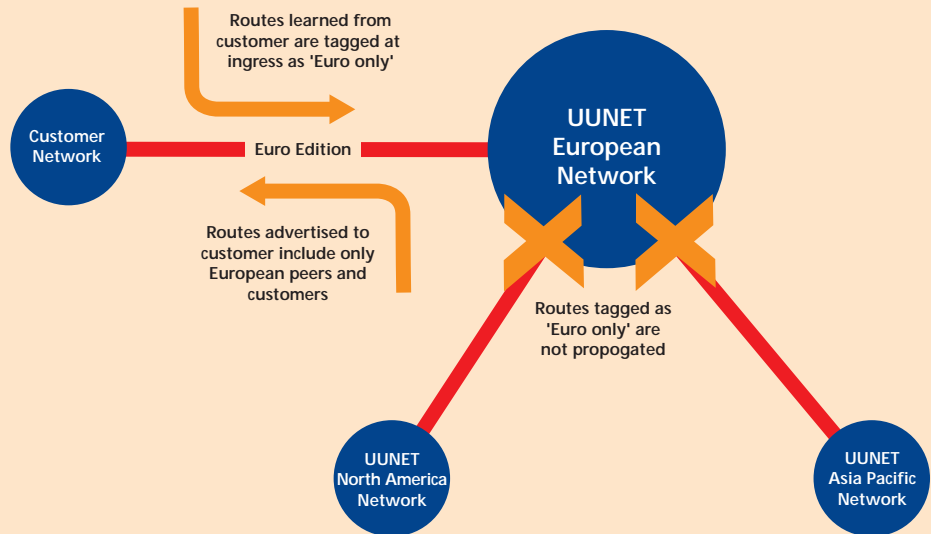
European Edition:

It offers connectivity to UUNET's European network, including:

- Other UUdirect Transit customers (Global and Euro edition)
- In-country OpCo networks and customers
- Pan European peers

Again the service can be installed with just one connection to your nearest hub. These hubs are located in Belgium, France, Germany, Italy, Netherlands, Sweden, Switzerland and UK.

UUDirect Transit-European Edition



Who would be interested in the European Edition of UUDirect Transit?

- ISPs who require additional Transit capacity but only need to send IP traffic to European destinations
- ISPs who have connectivity directly to the US but require better local routing
- ISPs who currently have a 'European only' service but want to take advantage of the reach, peerings, bandwidth and resilience of the UUNET European network

The service recognizes the increasing amount of Internet traffic between European sites. Because the traffic can now remain in Europe there is a significant time and cost advantage.

Why do ISPs in 76 countries connect to UUNET?

Their future depends on meeting customer needs

The Internet industry is one of the most competitive and fast-moving in the world. As the Yankee Group predicted in 1997, companies are increasingly turning to consolidation, through mergers and acquisitions, to stay competitive. Moreover, Internet users, both at work and at home, are becoming ever more demanding, insisting that their Internet Service Providers offer them the best service at the lowest prices.

The UUDirect Transit service gives you the capacity and the performance to meet your own, as well as your customers' expectations. Flexible and scalable, the service is ideal for ISPs who want all the advantages of a global performance network, without the need to build or maintain one themselves.

How fast is the UUNET network?

In order to support UUNET's current Transatlantic capacity of over 3 Gbps, the core network is based on fiber optic links ranging from STM-1 (155 Mbps) to OC-12c (622 Mbps). These links originate and land in diverse locations to maximize redundancy, ensuring that, in the unlikely event of a fiber problem, traffic always has a backup path, maintaining connectivity.

Details of our network can be seen on our Network maps:
www.uu.net/network/

Global, Europe, North America and Asia maps are also available in printed format on request.

Why is UUNet Direct Transit the ideal solution for ISPs?

High performance, scalable backbone

The issues that can affect scalability and performance are:

- I) **Capacity** - the amount of data the physical transmission facilities can carry
- II) **Interconnection** - the efficiency with which traffic is exchanged between networks
- III) **Routing** - the reliability of the routers and the speed at which packets are routed

UUNet's scalable network meets these criteria to provide high performance now and in the future. As a result, the network does not have to be re-engineered when traffic loads reach critical levels, a cost that may otherwise be passed to the customer.

I) The capacity for now and in the future

UUNet has:

- The resources to offer the capacity customers need
- The experience of building large scale IP networks in North America
- The expertise in IP engineering to streamline routing using Backbone Transit Switching
- And most importantly, the infrastructure

To stay ahead of demand for network capacity, which is growing by 1,000% every year, UUNet is investing over \$2,000,000 per day. Using sophisticated forecasting tools, UUNet can plan for future demands up to 12 months in advance, whilst a long-range planning team is working on the topology and architecture to meet demand in the 21st century. By then, we estimate that each network switch will support a total of 2 Terabits per second. As much as half of this capacity will be put in place for redundancy purposes, to ensure that traffic can be carried on an alternative route, in the event of a failure.

II) Interconnections

Private and Public Peering

As the Internet has evolved, so has UUNet. In order to meet the growing demand for alternative routes to the normal public peering points, UUNet has embarked on a mission to establish private peering connections to all major network providers in the US and in Europe. UUNet has multiple, unshared 'private peering' links to major network providers. In addition, UUNet has connections at MAE East, MAE West, MAE Houston, CIX West, Sprint NAP (New Jersey), AMS-IX (Amsterdam), SE-GIX (Stockholm), and London. This diversity provides quick and reliable access across multiple routes. In addition, UUNet is the ISP's ISP, and has direct connections to literally thousands of regional and local providers across the globe. These 'customer' connections act as their own peering links, in the sense that they provide direct access to that regional or local network.

III) Routing

A dedicated virtual link between every hub

UUNet's innovative Network Transit Switching is a result of proactive traffic routing, carried out at UUNet's Network Operation Centers (NOCs). It results in a lower latency, as router lookups at intermediate hops on the network are eliminated. This means less stress on the network routers, increasing their reliability. In short, traffic is less likely to be affected with router problems.

More control

Network Transit Switching gives UUNET greater control over the flow of traffic on the network to provide seamless connectivity from point-to-point. For example, if the link between Amsterdam and Frankfurt experiences high traffic volumes, the traffic from Amsterdam to Zurich (and therefore all the IP traffic) can be moved to travel via London on the network, without the routers (or the end users) noticing any difference.

Automatic fault resolution

Should an outage occur, the network is designed to automatically re-route your traffic around the problem without interruption or any drop in performance.

What support does UUNET offer for UUDirect Transit?

Full installation support

UUDirect Transit comes with full technical support from some of the most highly skilled Internet engineers in the world. Your personal Installation Engineer will help you with everything from obtaining IP addresses and AS numbers to configuring secondary DNS, mail and routing (including BGP4 for multi-homed customers).

Your Installation Engineer will also co-ordinate the ordering, installation, testing and configuration of the access circuit, to ensure that the connection is compatible with your equipment and your packets will be accepted. He or she will then be available to you for a further 30 days following the installation.

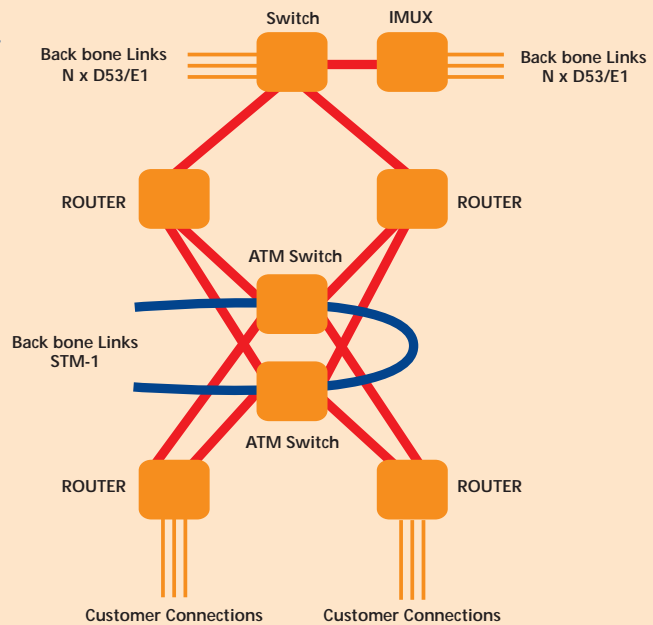
Customer Support

After your initial installation period, UUNET's dedicated Customer Support team provides 24 x 7 support all year round. Further details can be found in the Service Level Agreement available upon request.

24 x 7 Network Operations Centres

The two NOCs are staffed 24 hours a day, seven days a week. They proactively monitor the entire UUNET network including all equipment and customer connections every five minutes. With sophisticated monitoring systems, faults can not only be automatically diagnosed and solved, but the network can be managed in response to demand and designed to trigger automatic fault resolution systems in the event of a problem.

Typical UUNET hub design



What guarantees do I get about the performance of my connection?

Connecting to UUNET is your guarantee of quality

As the ISP's ISP, businesses trust UUNET to offer their customers the performance and capacity they expect. With UUNET, you'll enjoy plenty of both.

Focus on reliability

As much as half of UUNET's planned capacity is for redundancy purposes, allowing alternative routes to by-pass heavy traffic areas of the network. However, UUNET focuses on minimizing failure in the first place. The hub design is an ideal example of this:

- Hubs are protected from power outages by diesel backup generators
- Multiple entry and exit paths - to carry traffic to the hub's core - protect packets from a single point of failure
- The hub architecture is built to the highest specification, with internal redundancy and duplicate equipment
- The hubs are based around fully redundant ATM or FDDI cores

Focus on quality

With experience in designing and provisioning a fully redundant, high quality backbone network since 1987, UUNET's service is designed to satisfy the most exacting ISPs. For full details of our design and performance criteria, please see the Service Level Agreement.

How much does a UUDirect Transit connection cost?

The cost of a UUDirect Transit connection depends on your location and the hub and capacity you require. Please ask your UUNET representative to advise you on the most suitable hub for your requirements.

Other questions?

The Service Order Form can answer many other question such as:

- What capacities are available?
- What is the lead-time for installation?
- When will I receive my first bill?
- What equipment will I need?
- Can I co-locate a router?
- What do I do about IP address space?
- Do I need to run active (BGP4) routing?

What do I do now?

UUNET's specialist Wholesale Account Executives can help you determine the correct capacities and connection hubs for your needs. For more details, please contact any of the UUNET world wide offices.

www.uu.net

Australia	Tel. +61 2 9433 2888	www.au.uu.net	Netherlands	Tel. +31 20 495 2727	www.nl.uu.net
Austria	Tel. +01 725 11 0	www.at.uu.net	Norway	Tel. +47 22 94 60 80	
Belgium	Tel. +32 70 233 560	www.be.uu.net	Spain	Tel. +34 91 423 6070	www.es.uu.net
Canada	Tel. +1 888 689 5565	www.ca.uu.net	Sweden	Tel. +46 8 5661 7000	www.se.uu.net
Denmark	Tel. +45 70 23 00 32	www.dk.uu.net	Switzerland	Tel. +41 1 580 8611	www.ch.uu.net
France	Tel. +33 1 56 38 22 00	www.fr.uu.net	United Kingdom	Tel. +44 1223 250100	www.uk.uu.net
Germany	Tel. +49 231 972 0	www.de.uu.net	USA	Tel. +1 703 206 5600	www.us.uu.net
Hong Kong	Tel. +852 2292 2888	www.hk.uu.net	Eastern Europe Cyprus, Turkey, Greece & Portugal	(wholesale only) (+44) 1223 250311	
Ireland	Tel. +353 1 6790404	www.ie.uu.net	Middle East Africa, India & Pakistan	(wholesale only) (+1) 703 208 3741	
Italy	Tel. +39 02 3600 1861	www.it.uu.net	For postal, e-mail and fax details please see		www.uu.net/worldwide/
Japan	Tel. +81 3 5365 2600	www.jp.uu.net			
Luxembourg	Tel. +352 44 02 91	www.lu.uu.net			