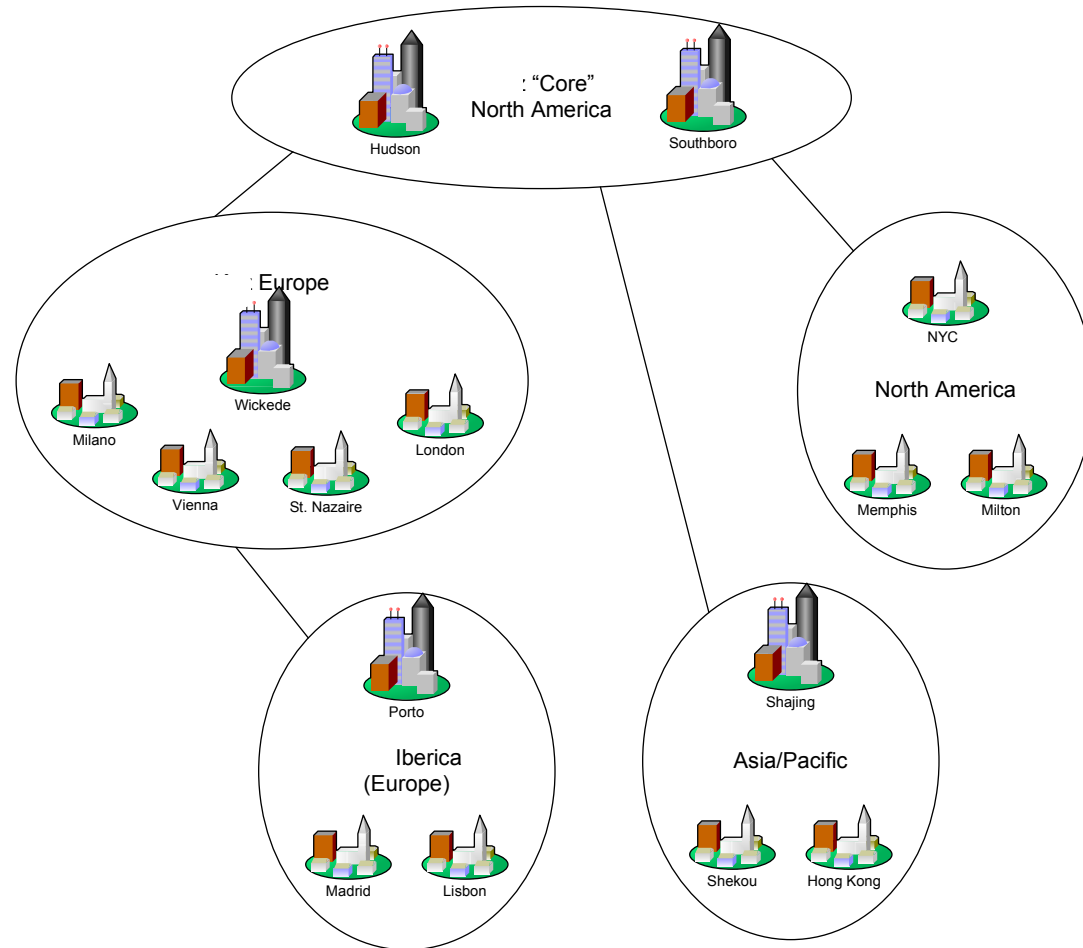


ABC Corp. Data Network

Draft Proposal and TCO Study

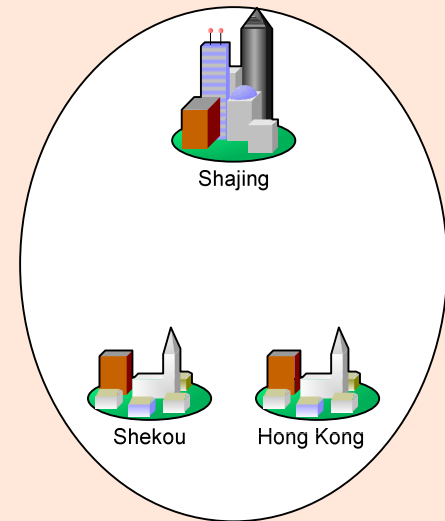
Major WAN Locations



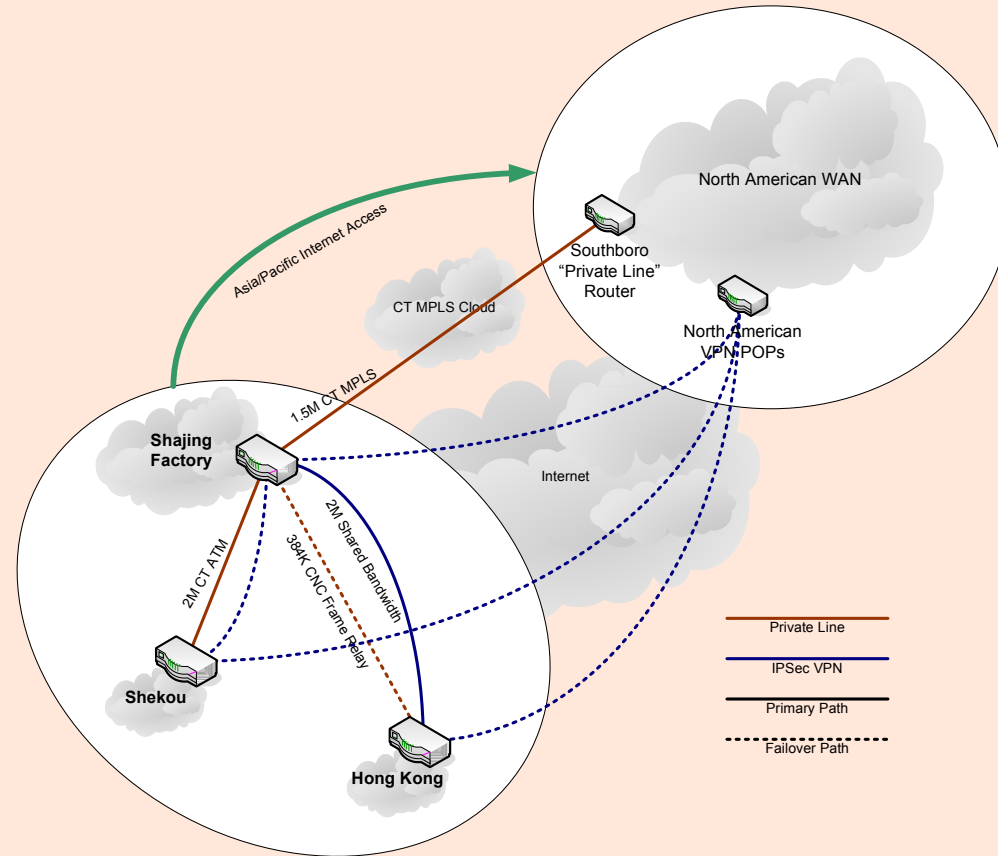
Asia/Pacific

The ABC Corp. Asia/Pacific network is backhauled to the North American backbone using a China Telecom dedicated 1.5M leased line from the Shajing factory to Southboro.

To ensure connectivity in the case of failure all sites also have failover VPN connections to multiple North American POPs.



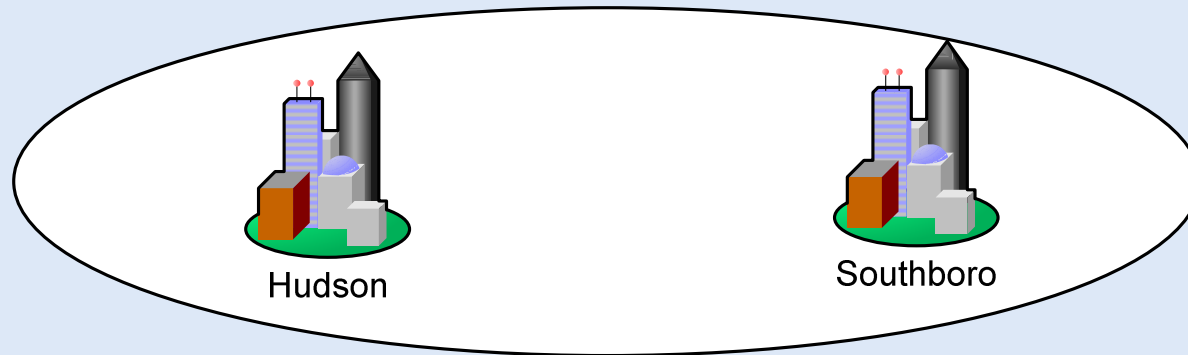
Asia/Pacific – A Closer Look



Asia/Pacific – Operating Cost

Shajing	Shekou	Hong Kong
1.5M CT Line to Southboro Monthly \$7500	2M CT Line to Shajing Monthly \$780	384K CNC Line to Shajing Monthly \$2800
2M CT Internet Monthly \$1708	DSL Internet Monthly \$150	DSL Internet Monthly \$106
DSL Internet Monthly \$150		
Total \$9358	Total \$930	Total \$2906
		Total Monthly \$13194.00

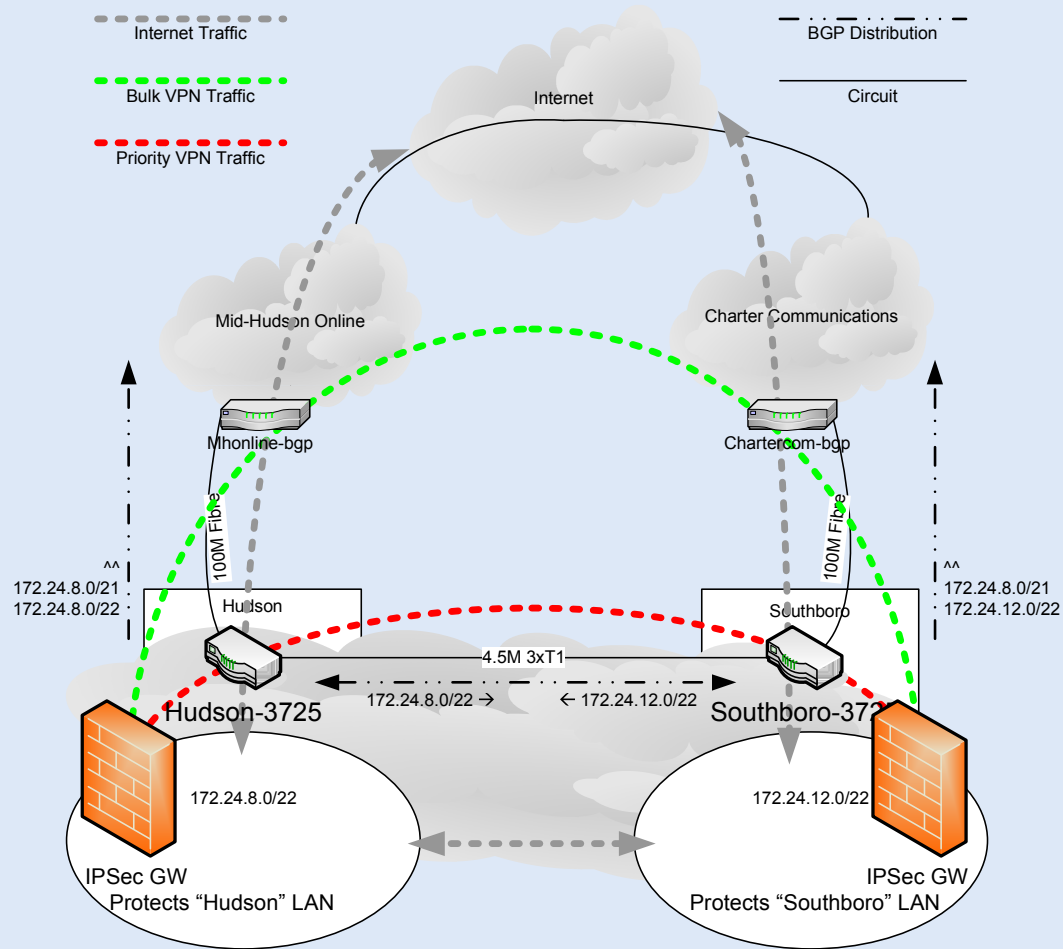
ABC Corp. “Core” North America



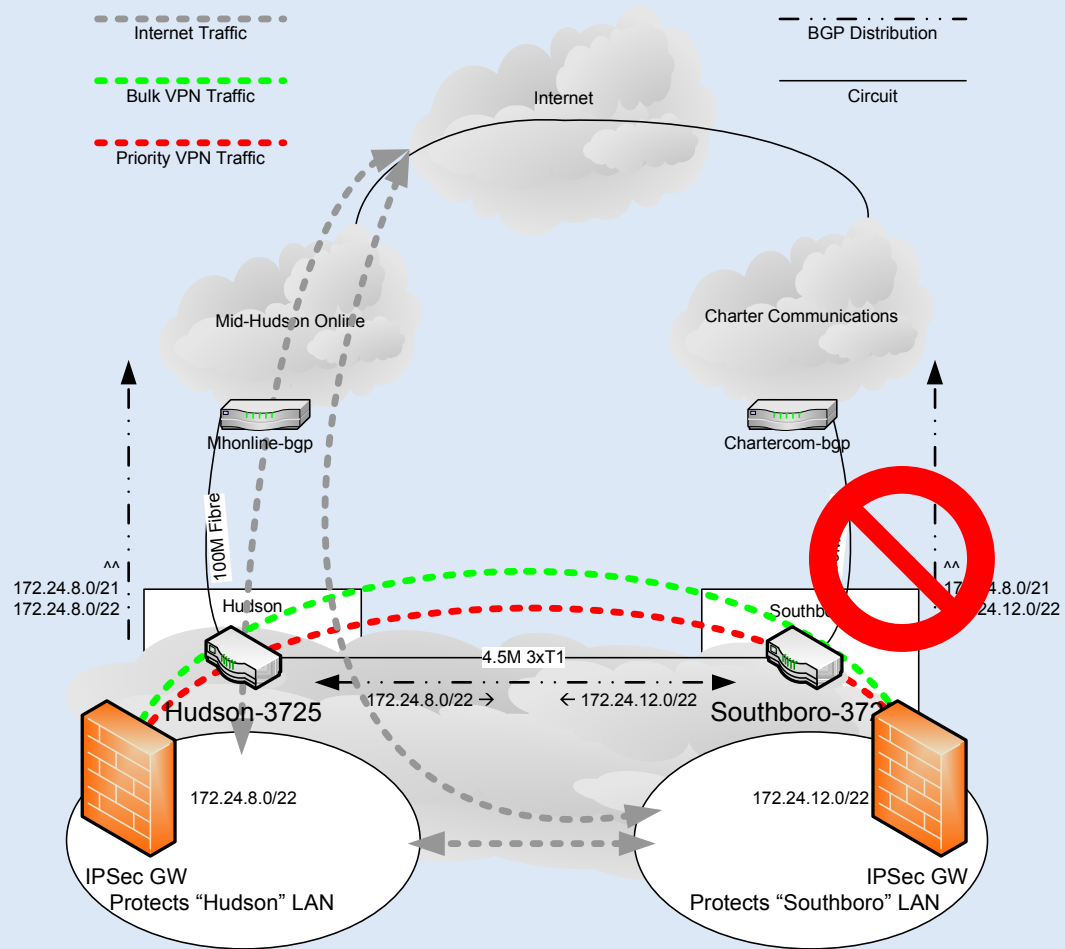
The Core network leverages fiber internet and private line technology to host a 100mbit backbone. Both sites may burst unpoliced up to full backbone speed for WAN/Internet access.

A private line with 4.5M of bandwidth ensures consistent Quality of Service required for Voice and Video applications, it also serves as a redundant failover path for Internet and Bulk WAN traffic.

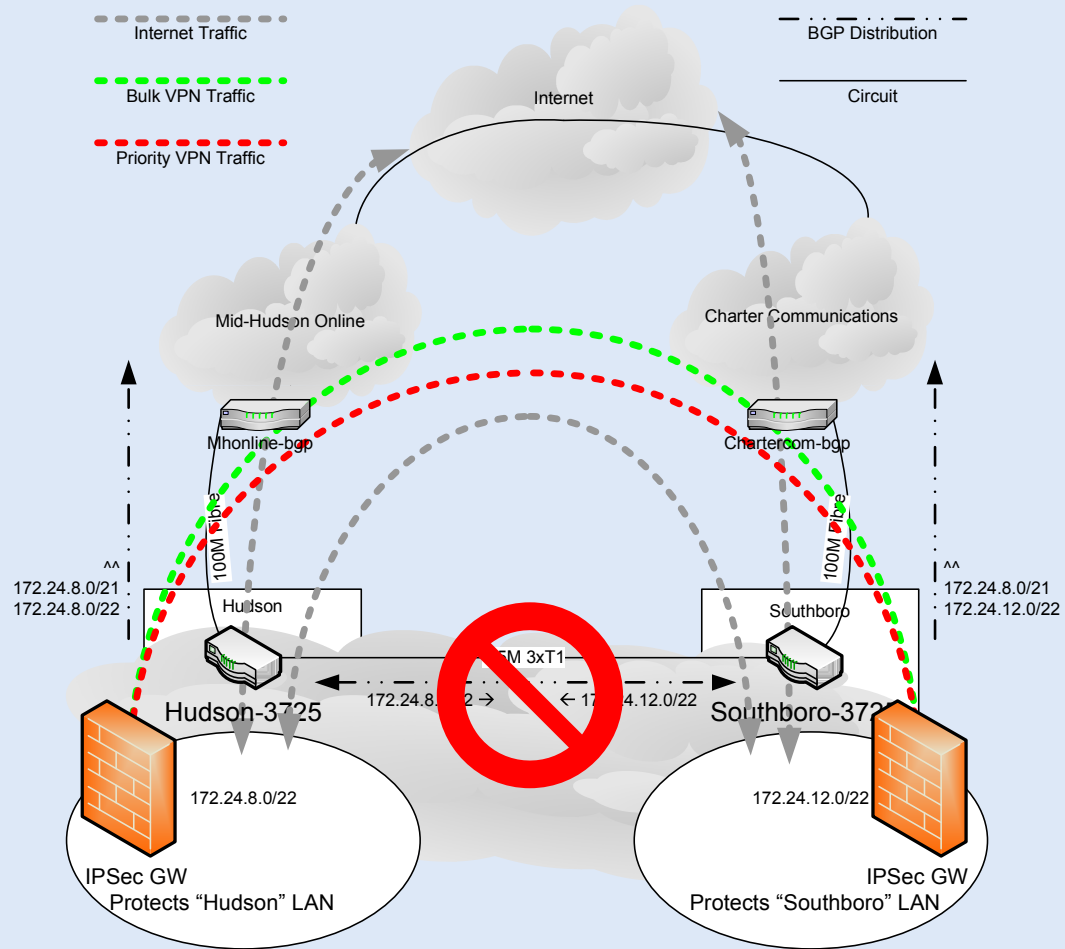
Core - "Primary" Configuration



Core – “Charter” Failure



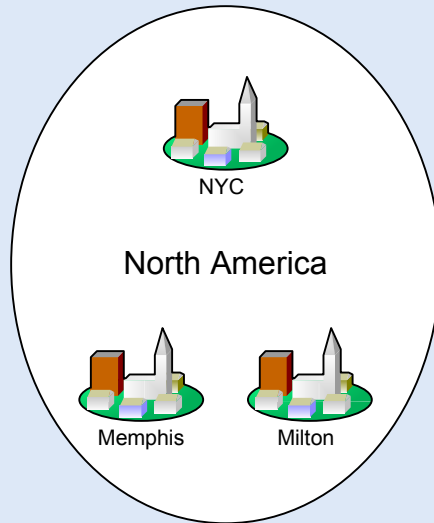
Core – iBGP Failure



Core – Operating Cost

Hudson		Southboro	
Mid-Hudson Online	\$1000	Charter Communications	\$3200
100mbit Fiber		100mbit Fiber - Unmetered	
Monthly 2mbit	\$700.00	Monthly	\$3200.00
Overage	\$100/mbit		
Monthly 5mbit	\$1000.00		
MCI Backhaul to Southboro	\$2115.81		
T1			
T1 Access Hudson	\$214.20		
T1 Access Southboro	\$146.40		
Dedicated Line	\$344.67		
Monthly	\$705.27		
Install	\$450.00		
3xT1			
Monthly	\$2115.81		
Install	\$1350.00		
Hardware	\$4500.00		
		Total Monthly	\$6315.81
		Total Install	\$5850.00

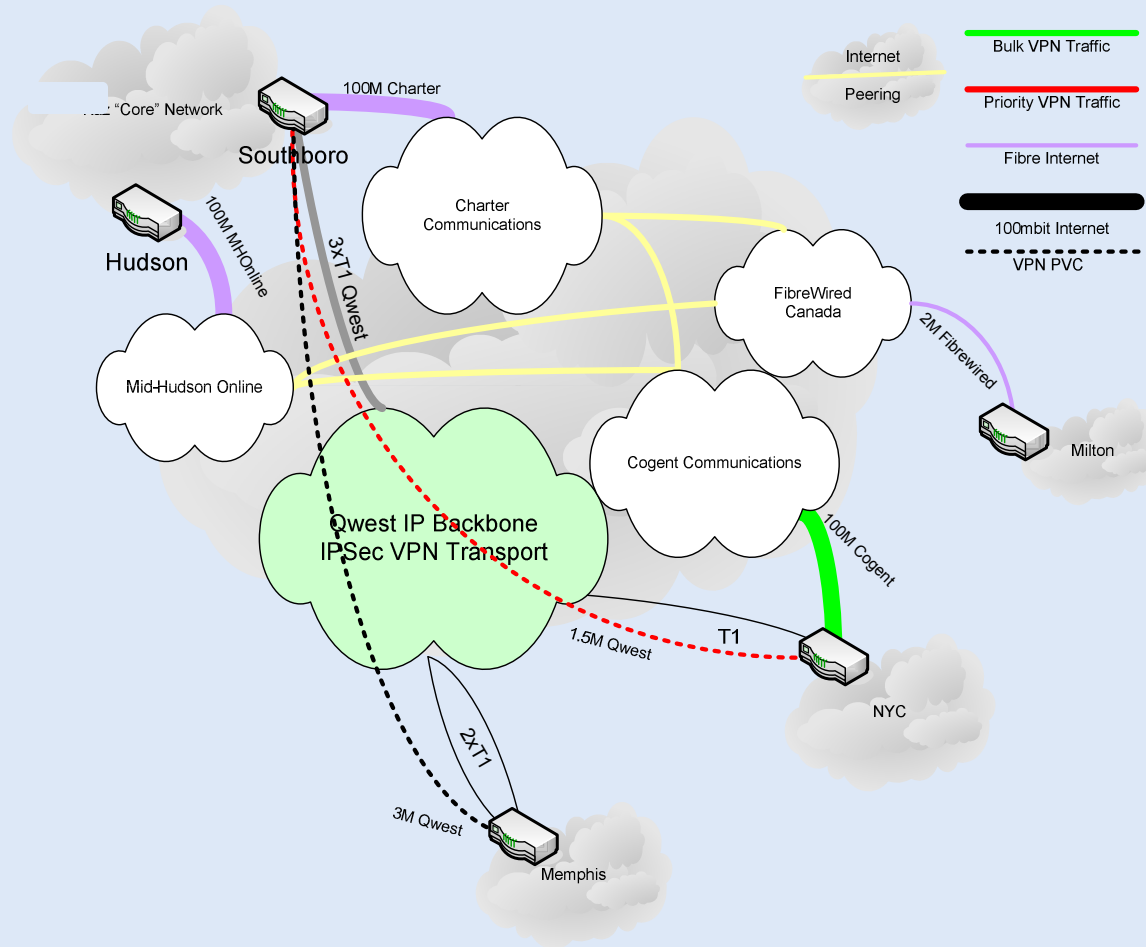
ABC Corp. North America



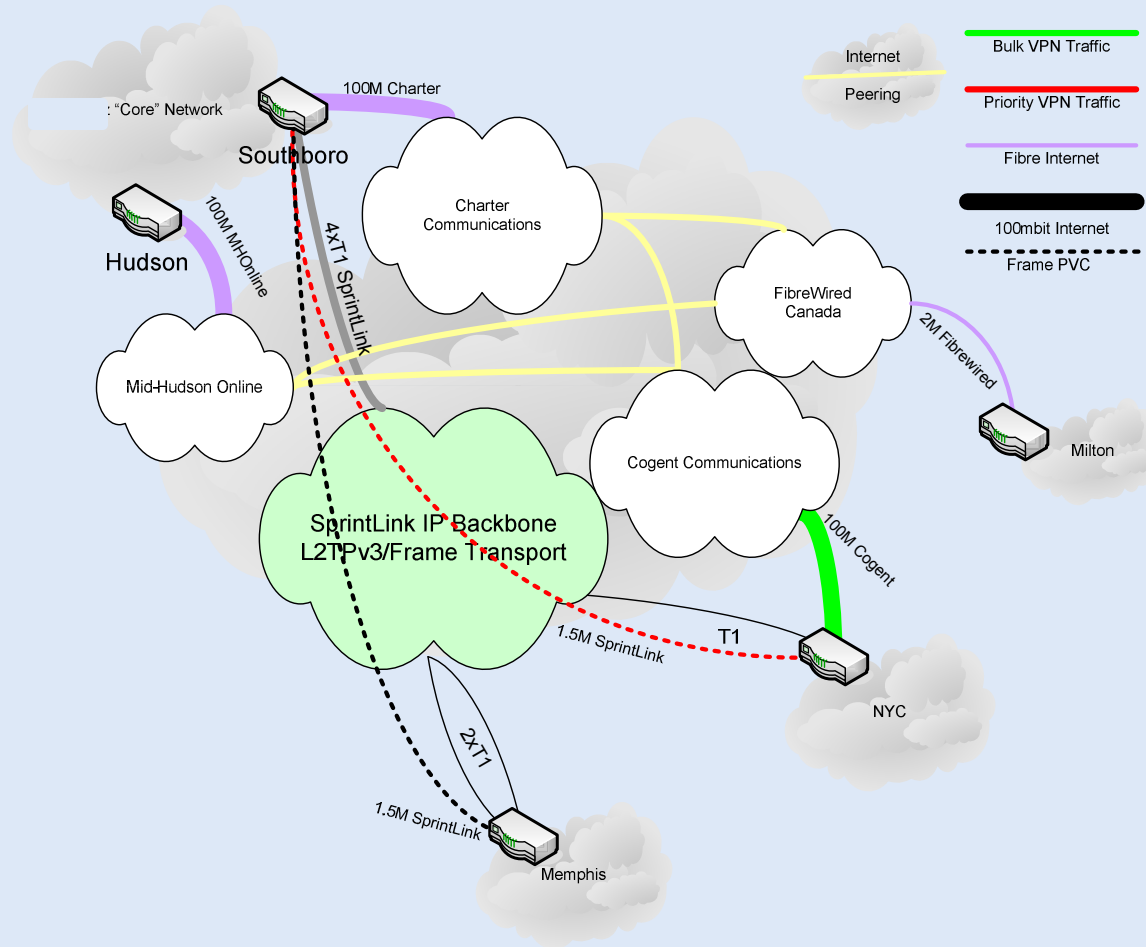
In NYC, Memphis and Milton we have explored several supportable solutions with varying cost, performance and scalability.

The following slides will depict north american data network solutions from Qwest, Sprint and Equant.

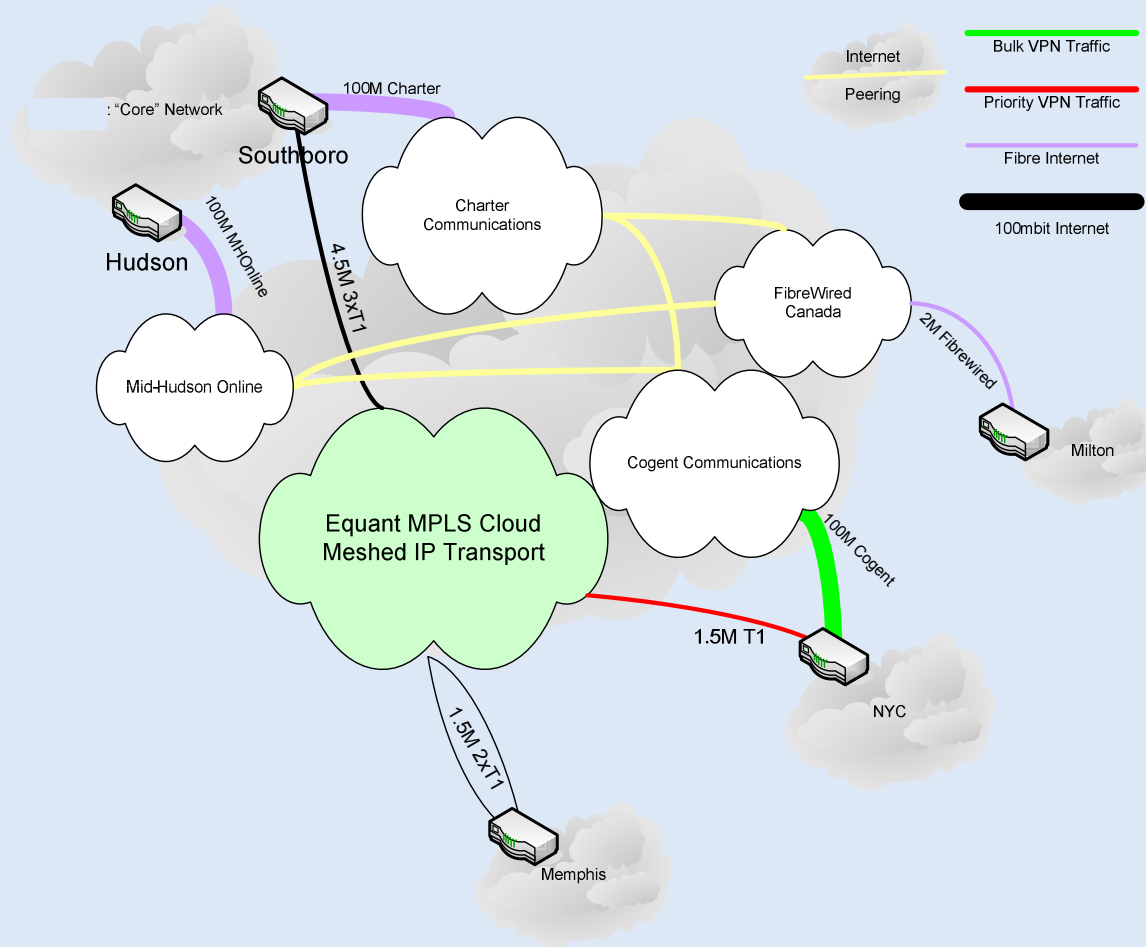
NA - Qwest VPN Solution



NA – Sprint Frame/VPN Solution



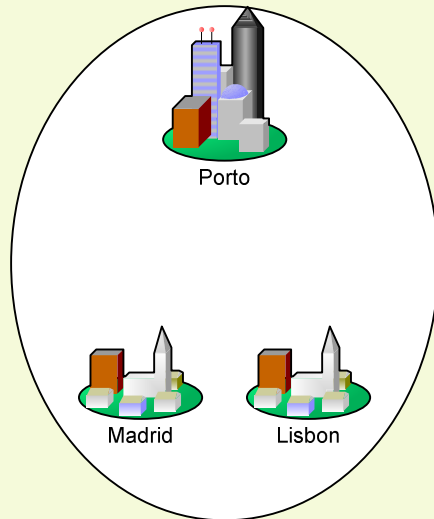
NA – Equant MPLS Solution



North America – Operating Cost

Shared Cost	Qwest	Sprint	Equant
Milton Fibrewired 2mbit Fiber Monthly \$644 Install \$7176 NYC Cogent 100mbit Fiber Monthly \$900	NYC Qwest 1.5M T1 Monthly \$566 Memphis Qwest 3M 2xT1 Monthly \$1241 Hardware \$2500 Southboro Qwest 4.5M 3xT1 Monthly \$1858 Hardware \$1500	NYC Sprint 1.5M T1 Monthly \$780 Memphis Sprint 1.5M 2xT1 Monthly \$1684 Hardware \$2500 Southboro Sprint 6M 4xT1 Monthly \$2900 Hardware \$8125	NYC Equant 1.5M T1 Monthly \$2274 Memphis Equant 1.5M 2xT1 Monthly \$2262 Southboro Equant 4.5M 3xT1 Monthly \$4141 Equant Setup Install \$10000
Total Monthly \$1725 Total Install \$9200 24M TCO \$50600 \$2108/mo	Total Monthly \$5523 Total Hardware \$4000 24M TCO \$136552 \$5690/mo	Total Monthly \$5364 Total Hardware \$10625 24M TCO \$139361 \$5807/mo	Total Monthly \$8677 Total Install \$10000 24M TCO \$218248 \$9094/mo
Total 24M TCO Annual (based on 24M TCO) First Year Subsequent Year(s)	\$187,152 \$92,573 \$100,176 \$86,976	\$189,961 \$94,981 \$104,893 \$85,068	\$268,848 \$134,424 \$144,024 \$124,824
Monthly (based on 24M TCO)	\$7,798	\$7,915	\$11,202

ABC Corp. Iberica (Europe)



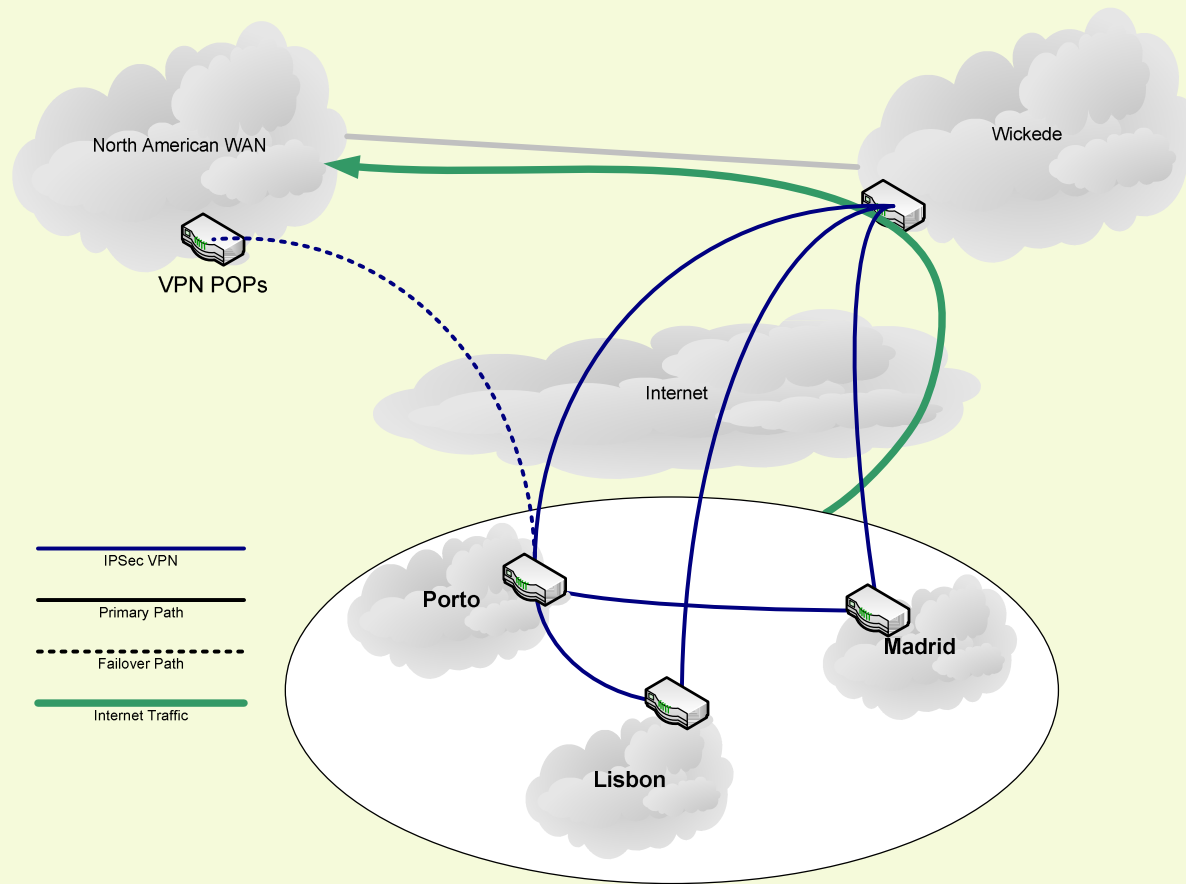
ABC Corp. Iberica as an operating unit consists of Porto Portugal, Lisbon Portugal and Madrid Spain.

Porto is backhauled both to Wickede and US POPs via IPsec VPN, Lisbon and Madrid are connected to Porto and Wickede using the same method.

Although the nature of having multipath routing means these sites will stay connected during an “upstream” failure, no local loop redundancy or QoS controlled private lines are in use.

Potential video and voice applications will be prioritized ahead of other WAN/Internet traffic in an effort to eliminate bandwidth contention on the outgoing internet circuits.

ABC Corp. Iberica – Network Details



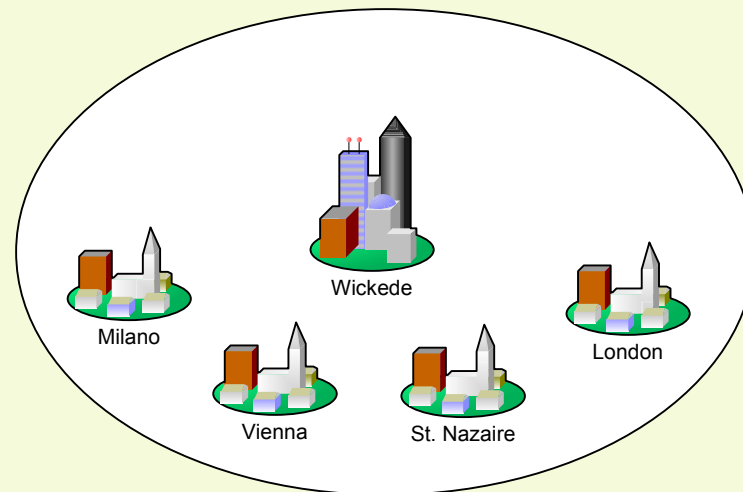
ABC Corp. Iberica – Operating Cost

Porto	Lisbon	Madrid
1M E1 PT Internet Monthly \$4205 Hardware \$890	DSL PT Internet Monthly \$54	DSL Spain Telecom Internet Monthly \$99
		Total Monthly \$4358.00 Total Hardware \$890.00

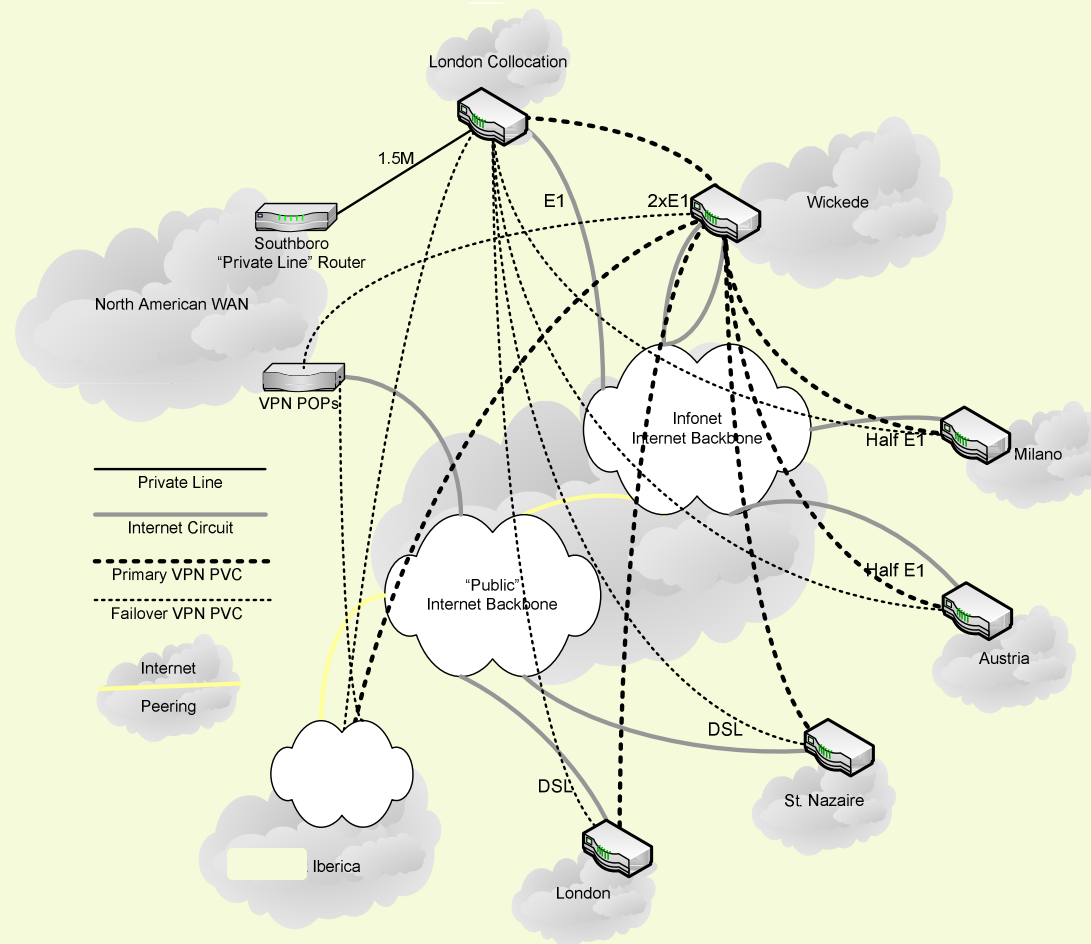
ABC Corp. Europe

In Wickede, Milano and Austria we have explored several supportable solutions with varying cost, performance and scalability.

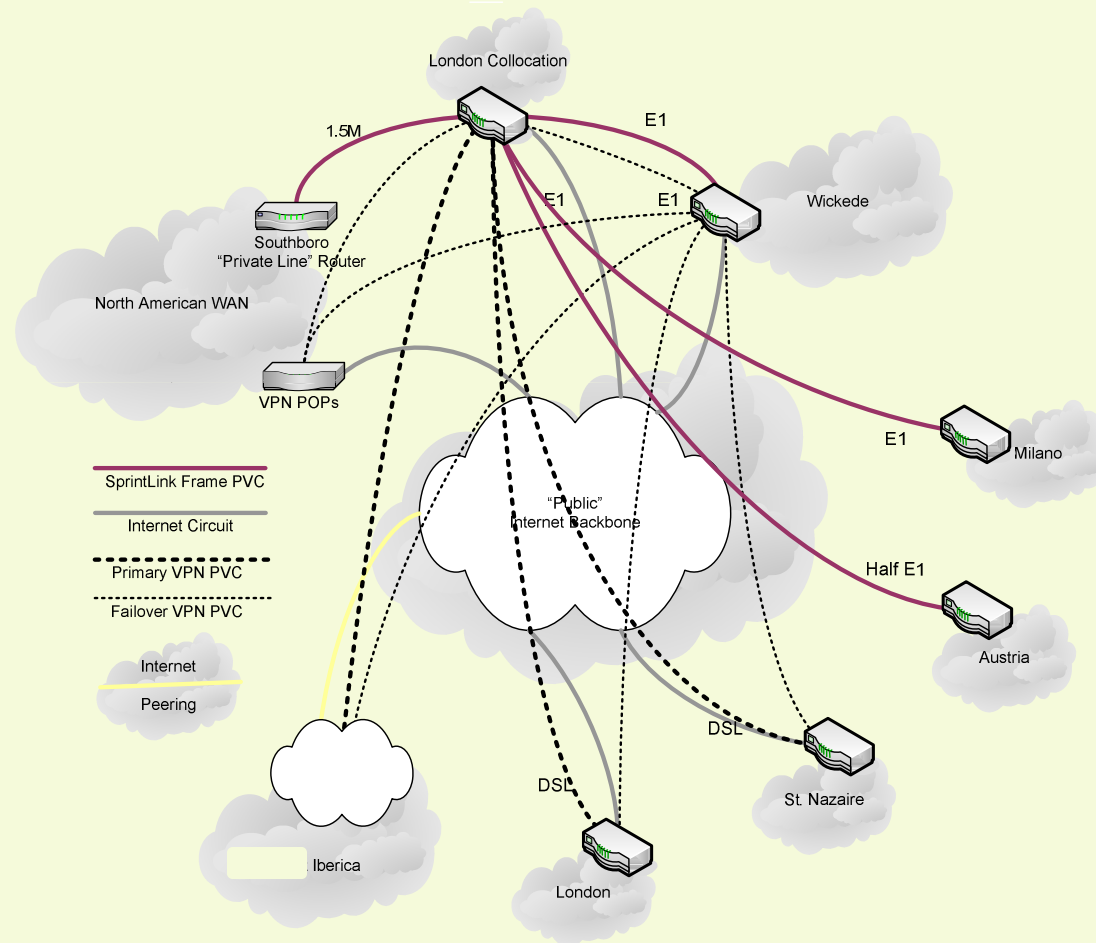
The following slides will depict european data network solutions from Qwest, Sprint and Equant.



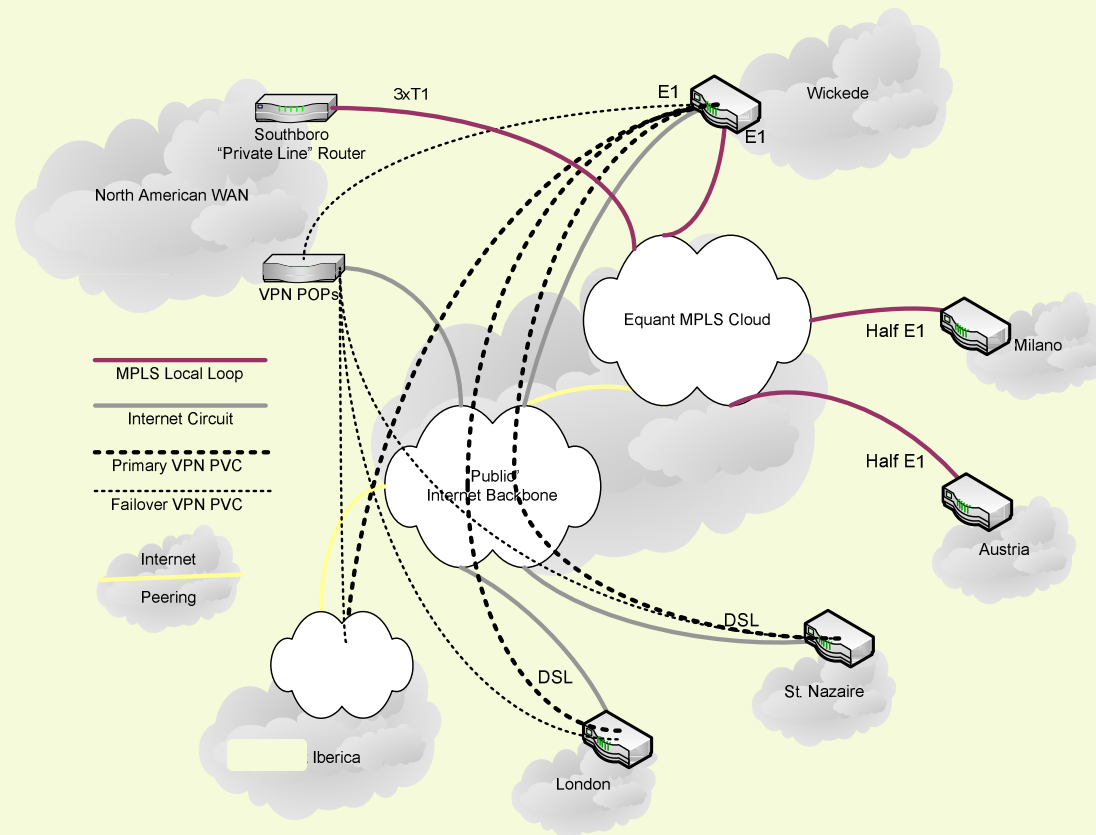
EU – Qwest/Infonet VPN Mesh



EU - Sprint Frame/VPN Solution



EU – Equant MPLS Solution



ABC Corp. Europe – Operating

Cost

Shared Cost	Qwest	Sprint	Equant
London DSL Monthly \$139 Hardware \$890 St. Nazaire DSL Monthly \$99	Wickede Infonet 4M 2xE1 Monthly \$3438 Hardware \$3177 Milano Infonet 1M E1 Monthly \$1583 Hardware \$2530 Vienna Infonet 1M E1 Monthly \$824 Hardware \$2530 UK Collocate Interxion Lease Monthly \$1100 Install \$3000 Hardware \$5830 UK Collocate Qwest 1.5M Backhaul Monthly \$1186 UK Collocate Qwest E1 Inet Monthly \$1064	Wickede CompanyConnect 2M E1 Monthly \$1651 Upfront \$2366 Wickede SprintLink 2M E1 Monthly \$3902 Upfront \$4648 Milano SprintLink 2M E1 Monthly \$2152 Upfront \$3701 Vienna SprintLink 1M E1 Monthly \$1434 Upfront \$4386 UK Collocate Sprint Lease Monthly \$895 Upfront \$14630 UK Collocate Sprint E1 Inet Monthly \$1900	Wickede CompanyConnect 2M E1 Monthly \$1651 Install \$726 Hardware \$1640 Wickede Equant 2M E1 Monthly \$4313 Milano Equant 1M E1 Monthly \$2960 Hardware \$890 Vienna Equant 1M E1 Monthly \$2267 Hardware \$890 Equant Setup Install \$10000
Total Monthly \$238 Total Hardware \$890 24M TCO \$6602 \$275/mo	Total Monthly \$9195 Total Upfront \$17067 24M TCO \$237747 \$9906/mo	Total Monthly \$11934 Total Upfront \$29731 24M TCO \$316147 \$13173/mo	Total Monthly \$11191 Total Upfront \$14146 24M TCO \$228106 \$9504/mo
Total 24M TCO Annual (based on 24M TCO) First Year Subsequent Year(s)	\$244,349 \$122,175 \$131,153 \$113,196	\$322,749 \$161,375 \$176,685 \$146,064	\$282,730 \$141,365 \$148,438 \$134,292
Monthly (based on 24M TCO)	<h1>\$10,181</h1>	<h1>\$13,448</h1>	<h1>\$11,780</h1>

Vendors



designed and powered by



Data Network Operating Cost

Qwest		Sprint		Equant	
Asia-Pacific (Shajing, Shekou, Hong Kong)		Asia-Pacific (Shajing, Shekou, Hong Kong)		Asia-Pacific (Shajing, Shekou, Hong Kong)	
Monthly	\$13194	Monthly	\$13194	Monthly	\$13194
North America Core (Hudson, Southboro)		North America Core (Hudson, Southboro)		North America Core (Hudson, Southboro)	
Monthly	\$6316	Monthly	\$6316	Monthly	\$6316
Upfront	\$5850	Upfront	\$5850	Upfront	\$5850
North America (NYC, Memphis, Milton)		North America (NYC, Memphis, Milton)		North America (NYC, Memphis, Milton)	
Monthly	\$5523	Monthly	\$5364	Monthly	\$8677
Upfront	\$4000	Upfront	\$10625	Upfront	\$10000
ABC Corp. Iberica (Porto, Lisbon, Madrid)		ABC Corp. Iberica (Porto, Lisbon, Madrid)		ABC Corp. Iberica (Porto, Lisbon, Madrid)	
Monthly	\$4358	Monthly	\$4358	Monthly	\$4358
Upfront	\$890	Upfront	\$890	Upfront	\$890
ABC Corp. Europe (Wickede, Vienna, Milano, London, St. Nazaire)		ABC Corp. Europe (Wickede, Vienna, Milano, London, St. Nazaire)		ABC Corp. Europe (Wickede, Vienna, Milano, London, St. Nazaire)	
Monthly	\$9195	Monthly	\$11934	Monthly	\$11191
Upfront	\$17067	Upfront	\$29731	Upfront	\$14146
Total Monthly	38586	Total Monthly	41166	Total Monthly	43736
Total Upfront	27807	Total Upfront	47096	Total Upfront	30886
First Year	490839	First Year	541088	First Year	555718
Subsequent Year	463032	Subsequent Year	493992	Subsequent Year	524832
Commitment	953871	Commitment	1035080	Commitment	1090550
Commitment/2	476936	Commitment/2	517540	Commitment/2	545275
Commitment/24	39745	Commitment/24	43128	Commitment/24	45440

