

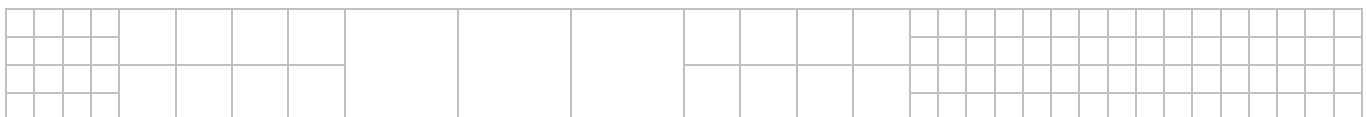
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Bloomberg Network Connectivity Guide

Technical Guide

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1. Overview

This document provides network and connectivity specifications for Bloomberg products and services. The information given is intended to make the process of configuring a client system and network easy and reliable, for both initial setup and regular maintenance. It is intended for desktop, systems and network administrators, as well as home and/or standalone users.

Bloomberg also provides a range of other supplemental documentation on setting up, configuring and maintaining the Bloomberg Terminal®. These are available on the Documentation Support page of the [Bloomberg Professional Services website](#). For further information on procedures, technical questions, and common troubleshooting steps, visit the [Frequently Asked Questions](#) section.

For any additional clarification or assistance regarding any of the topics covered here or in other documents, Bloomberg Customer Support is available 24/7 for any queries.

Please note that the information provided in this document is for informational purposes only, is subject to change, and is provided without any representation or warranty, express or implied, as to the accuracy or completeness of such information. Provision of applicable services is subject to agreement to the terms and conditions of a definitive final contract. In the event of any inconsistency between this information and the terms of a final contract, the terms of the final contract shall govern.

[illegible]

Bloomberg provisions redundant communication circuits among Bloomberg's data centers. Connectivity to a given customer site requires yet another set of private/leased circuits from Bloomberg's data centers (usually from the remote node sites depending on geographical locations) to customer locations.

Figure 1. Depicts a model where a Network Access services customer site is connected to the nearest Bloomberg nodes utilizing two redundant circuits. More detailed diagrams can be found in the appendix.

2.2. Capacity and Bandwidth Requirements – Bloomberg Terminal

Bloomberg support teams determine the size/capacity of these circuits based on the number of Terminals at a given customer location. **Table 1** below, shows Bloomberg's Network Access guideline.

Bloomberg Terminal Network Guideline				
Terminal Count	Router Quantity	Bloomberg Appliances	LAN Interface*	Access Capacity
< 10	1	-	1Gb	5 - 10 Mbps
10 - 30	2	2	1Gb	5 - 10 Mbps
31 – 40	2	2	1Gb	10 - 20 Mbps
41 – 50	2	2	1Gb	20 - 50 Mbps
51- 100	2	2	1Gb	50 - 100 Mbps
100-250	2	2	10Gb	100 - 1000 Mbps
250+	2	4**	10Gb	100 - 1000 Mbps

<ul style="list-style-type: none"> • The bandwidth guideline table is based on statistical analysis of network utilization of existing Bloomberg terminals across the global Bloomberg customer base as well as circuit size offering by various telecom service providers. Individual customer connectivity and bandwidth capacity recommendations are made based on continual automated monitoring as well as evaluation by Bloomberg customer support personnel. • The actual Network Access capacity is subject to availability at the time of the order. • For customer sites with 1-9 Terminals a single router and circuit with backup through the Internet may be acceptable. All other customer sites are required to have multiple diverse circuits and dual routers. • The bandwidth (bps) recommendations are for a single router. Dual router sites will require double the stated bandwidth. • (*) LAN interface duplex set on client's request OR Auto/Auto if client doesn't have a preference. • (**) more Bloomberg Appliances may be required.

Table 1. – Network Access Guideline

Connectivity from Bloomberg node sites to customer locations terminate at Bloomberg supplied routers installed at the customer sites. These are referred to as **CPE** (Customer Premises Equipment) routers. Bloomberg support teams work with customer IT staff to install and connect up these routers.

Figure 1. Depicts a redundant circuit installation, which in turn requires two Bloomberg CPE routers. Bloomberg CPE routers may also come with an attached server module (except in a very few cases). The combination of the router and server are known as the **Bloomberg Appliance**. The server modules are Linux based and are designed to fan out Bloomberg data services locally for better WAN circuit utilization. Bloomberg Appliances are installed in pairs when there are 10 or more Terminals and are always attached to a pair of CPE routers. Single Bloomberg Appliance deployment (not in pairs) may be implemented for a client's Disaster Recovery (DR) site.

Prior to shipping CPE routers and/or Bloomberg Appliances to a customer site, customers will receive a **“Router Survey Document”**. In this survey, the customer’s IT personnel specify the IP addresses of the LAN ports (the router Ethernet ports that connect to the client’s LAN infrastructure) of the Bloomberg CPE routers for configuration. Additional technical information is also discussed and decided on, such as the routing protocols; eBGP (with BFD support), HSRP, VRRP and Static routes for use between Bloomberg CPE routers and the customer’s network environment. It is important to note that the Bloomberg CPE routers and Bloomberg Appliances are entirely owned and operated by Bloomberg and customers must not access or attempt to access the equipment’s configuration.

2.3. Network Address Specifications – Bloomberg Terminal

Customers must provide IP addresses on which the Bloomberg CPE routers will reside within the customer network. These IP addresses, along with any other used to connect to Bloomberg, do not necessarily have to be IANA registered.

Table 2. The required IP address ranges to which customers must be able to connect in order to access Bloomberg Terminal services. Customers must ensure they can route to these IP addresses, and more specific subnets within these ranges.

Bloomberg IP Address Ranges:
208.134.161.0/24
205.183.246.0/24
199.105.176.0/21
199.105.184.0/23
69.184.0.0/16

Table 2. Bloomberg IP address ranges

2.4. Network Ports – Bloomberg Terminal

In addition to the required IP address ranges, it is also necessary for specific UDP and TCP port ranges to be allowed through customer access lists and firewalls. **Table 3.** Below shows Bloomberg's specific ports. It should be noted that the destination ports specified are the port numbers that Bloomberg servers listen on at the Bloomberg data centers.

The Bloomberg Terminal uses the following source and destination port numbers. Please note, destination is from the client (Terminal) perspective.

UDP Source Ports	UDP Destination Ports
48129 – 48137 & 49152 - 65535 ₁	48129 — 48137

TCP Source Ports	TCP Destination Ports
8194-8395 & 49152 - 65535 ₁	8194 — 8198
8194-8395 & 49152 - 65535 ₁	8209 — 8220
8194-8395 & 49152 - 65535 ₁	8290 — 8294

1 Denotes the Microsoft default ephemeral port range used by Windows Vista and later Operating Systems.

Table 3. Bloomberg Private Network UDP and TCP Ports

[illegible]

2.5. Network Address Specifications – Enterprise and Feeds Products

Bloomberg offers a wide range of Enterprise solutions for business needs, which extend beyond the Bloomberg Terminal. Specific Enterprise solutions are offered in seven business areas: Content and Technology, Decision Support, Client Management, Liquidity and Trading, Risk and Pricing, Operations, Regulations and Compliance. For more information on Bloomberg Enterprise products please visit:

<https://www.bloomberg.com/professional/product/enterprise-gateway/>

In addition, we also offer electronic trading solutions for equities (including futures and options), fixed income, foreign exchange, commodities and many more.

For the list of products, please refer to the Bloomberg website. Alternatively, on the Terminal you may visit BPS<GO> and browse the left-hand menu to understand more about the different solutions we offer our customers.

Table 4. lists the IP ranges used for Bloomberg Enterprise / Feeds Product Servers connecting via Bloomberg Leased/Dedicated lines. Customers must ensure they can route to these networks and more specific subnets within these ranges.

Enterprise / Feed Bloomberg Network Address Ranges:
69.184.0.0/16
160.43.13.0/24
160.43.14.0/23
160.43.16.0/23
160.43.24.0/24
160.43.90.0/23
160.43.92.0/22
160.43.96.0/23
160.43.98.0/24
160.43.166.0/24
160.43.172.0/24

Table 4. Bloomberg Enterprise / Feed IP Ranges

2.6. Network Ports – Enterprise and Feeds Products

Feeds products that use FIX connectivity utilize TCP- 8228; SFTP utilize TCP- 22.

The Majority of Enterprise / Feeds products establish connectivity via the ports listed below in

Table 5.

TCP Destination Ports	8194-8198
	8228

Table 5. Bloomberg Enterprise / Feed TCP Ports

** Some of the ports requires Bloomberg Server whitelisting

** For detailed source and destination IP/ports information, please contact the product representative or visit the Bloomberg website for more info <https://www.bloomberg.com/professional/>

2.7. Bloomberg CPE Router

This section outlines customer network requirements to access the Bloomberg Terminal service via our Network Access services and CPE router:

- Ethernet network that supports IP
- Minimum CAT5e UTP cable from the customer switch, router or firewall to the Bloomberg Access Router for 1Gbps connections
- Multimode fiber **only** for 10Gbps connections
- IP address and subnet mask for the local Ethernet interface on the Bloomberg Access Router. (Bloomberg will provide an IP address for customers without an existing IP Address scheme).

One or more Bloomberg CPE Routers may be installed at each customer site. These routers provide the following benefits:

- **Enhanced Data Delivery**
The Bloomberg CPE router uses the IP network protocol and addressing scheme along with a dynamic access list to receive and deliver data.
- **Seamless Integration**
Installing a Bloomberg CPE router requires minimal configuration changes and will not impact the customer network topology or performance. At least a CAT5e/6 UTP cable must be run from the customer switch, router or firewall to distribute data to and via the Bloomberg services.
- **Security**
The Bloomberg CPE Router communicates only to the private Bloomberg Network. This is ensured through dynamic access lists on each Bloomberg CPE Router in addition to fixed virtual circuit path definitions based on the underlying Data-Link protocol TLS.

The Bloomberg CPE router may reside outside LAN firewalls to further ensure LAN integrity.

The Bloomberg Terminal Software utilizes both UDP and TCP connections (see [Table 3. Bloomberg Private Network UDP and TCP Ports](#)) and contains various components and applications such as Bloomberg API, Tradebook, FX and multimedia that utilize multiple ports.

In the event of a failure, an alternate path is established on the host end to transport Bloomberg data. For locations with multiple Bloomberg CPE Routers and redundant circuits, Bloomberg supports BGP, HSRP, VRRP and static routes for redundancy, provided there is a crosslink connection between the two devices. In a split site scenario where there is no crosslink between the two Bloomberg routers, Bloomberg will only support BGP for failover.

4. Bloomberg DCA Add-In

4.1. Bloomberg DCA Network Address Specifications

Bloomberg DCA is an Excel add-in used by clients to publish their own data to the Bloomberg Terminal. The add-in requires one pair of the following IPs to be whitelisted on the client's firewall to ensure data transmission. Please confirm with your Contributions Account Manager which pair of IPs will be used for your firm. No whitelisting of client IPs is required on the Bloomberg side for this application.

TCP Destination Port	
11011	
Leased Line Network Addresses	Internet Network Addresses
EMEA: 69.184.36.14/32 69.184.37.18/32	Internet: 69.191.193.148/32 69.191.229.73/32
AMER: 69.184.4.23/32 69.184.5.15/32	Internet2: 69.191.193.174/32 69.191.229.119/32
APAC: 69.184.68.18/32 69.184.69.28/32	Internet3: 69.191.193.175/32 69.191.229.120/32

Table 9. Bloomberg DCA Port and Network Addresses

5. SFTP Connectivity

5.1. Bloomberg SFTP Connectivity Overview

BB-SFTP enables a set of Bloomberg-provided SFTP accounts to be used for transferring files. Access to BB-SFTP is restricted to SFTP Users. SFTP Users may use the Bloomberg Network access or the Internet to access BB-SFTP.

Access to BB-SFTP is only permitted from an IP address previously provided by SFTP Users to Bloomberg; that IP address will be used to create an account-specific IP address whitelist. SFTP Users are responsible for configuration changes within their own environments and for ensuring that they make any necessary changes to their firewalls to enable BB-SFTP access.

For further details on this topic and a FULL connectivity breakdown; Including DNS and IP details, please see the 'Help' section of the Enterprise Console (Login Required).

<https://console.bloomberg.com>

For Internet connectivity, customers are advised to use the DNS **sftp.bloomberg.com** or **sftp.blpprofessional.com** (China), not use IP addresses directly.

Customers connecting via Bloomberg Network Access services should connect to the Virtual IP in the region they are connecting from. Customers not directly targeting a specific site should connect to the Virtual IP listed in our SFTP documentation. If the customer relies on site specific file locations, they should target the server IP of that data center. Customers choosing to target server IPs in either of our Data Centers directly over Bloomberg Network Access services need to handle failover themselves. Automatic failover will only be handled if clients target the VIP.

5.2. BVault SFTP

URL	Addresses	Port	Region
ftpcom.bloomberg.com	69.191.251.78 69.191.212.14	30206	Global

Table 10. BVault SFTP

6.2. Network requirements for ROOM.

ROOM <GO> launches the Bloomberg Room web application, which allows you to hold voice and video conferences and share your screen with other Bloomberg users. Bloomberg Room is integrated with the Bloomberg Terminal, so you can start a new conference from IB with just one click.

Customer's PC must have the ability to resolve the DNS names below as well as the ability to connect to the following IPs and ports.

Web/Https	
URLs	IP Addresses
*.blproom.com	75.2.22.94 15.197.247.93 99.83.148.107 3.33.219.126
Media	
UDP destination port	IP Address Ranges
10000	3.141.237.0/25 3.251.110.0/25 35.72.225.128/25 35.85.225.128/25 13.37.1.128/25 13.214.15.128/25

6.3. Firewalls

Most customer networks with an outside connection to the Internet will have some form of security in place, such as a firewall. A firewall may be installed either locally on the customer PC, on the network, or both. In order for customers to access the Bloomberg Terminal with full functionality, their firewall must be set to assume all incoming and outgoing activity from the Bloomberg services are safe. The customer's firewall must allow connectivity on all the ports and addresses provided in the relevant sections of this document.

Should a customer experience any connection loss or slowness to and from the Bloomberg services, the customer firewall will be considered as a likely factor and should be verified in the first instance.

Bloomberg Terminal's TLS connections are secured using both Client and Server Certificates. Bloomberg servers do not allow TLS connections from any device which does not have a valid Client Certificate. SSL interception is not supported.

For Terminal Connect product, local firewall must allow listening on localhost port range:

Localhost port range	9000-9020
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The communication between the SOCKS5 server and Bloomberg is the same as defined in this document for Bloomberg Network Access services and Internet connectivity for the relevant Source and Destination Ports sections. The Source ports used however, will be defined and limited by the server administrator.

7. Appendix

7.1. Connectivity Diagrams

Single Customer Site – Single CPE

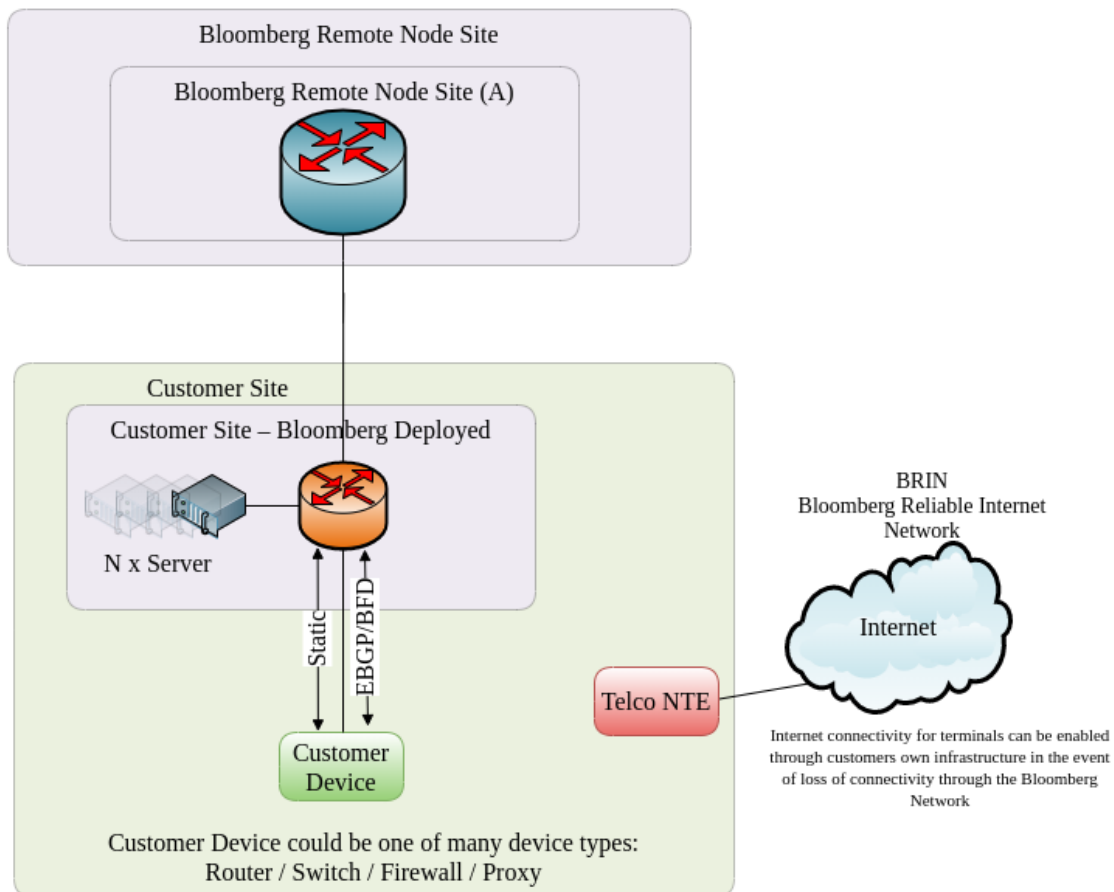


Figure 3. Single Site – Single CPE Network Diagram

Single Customer Site – Dual CPE

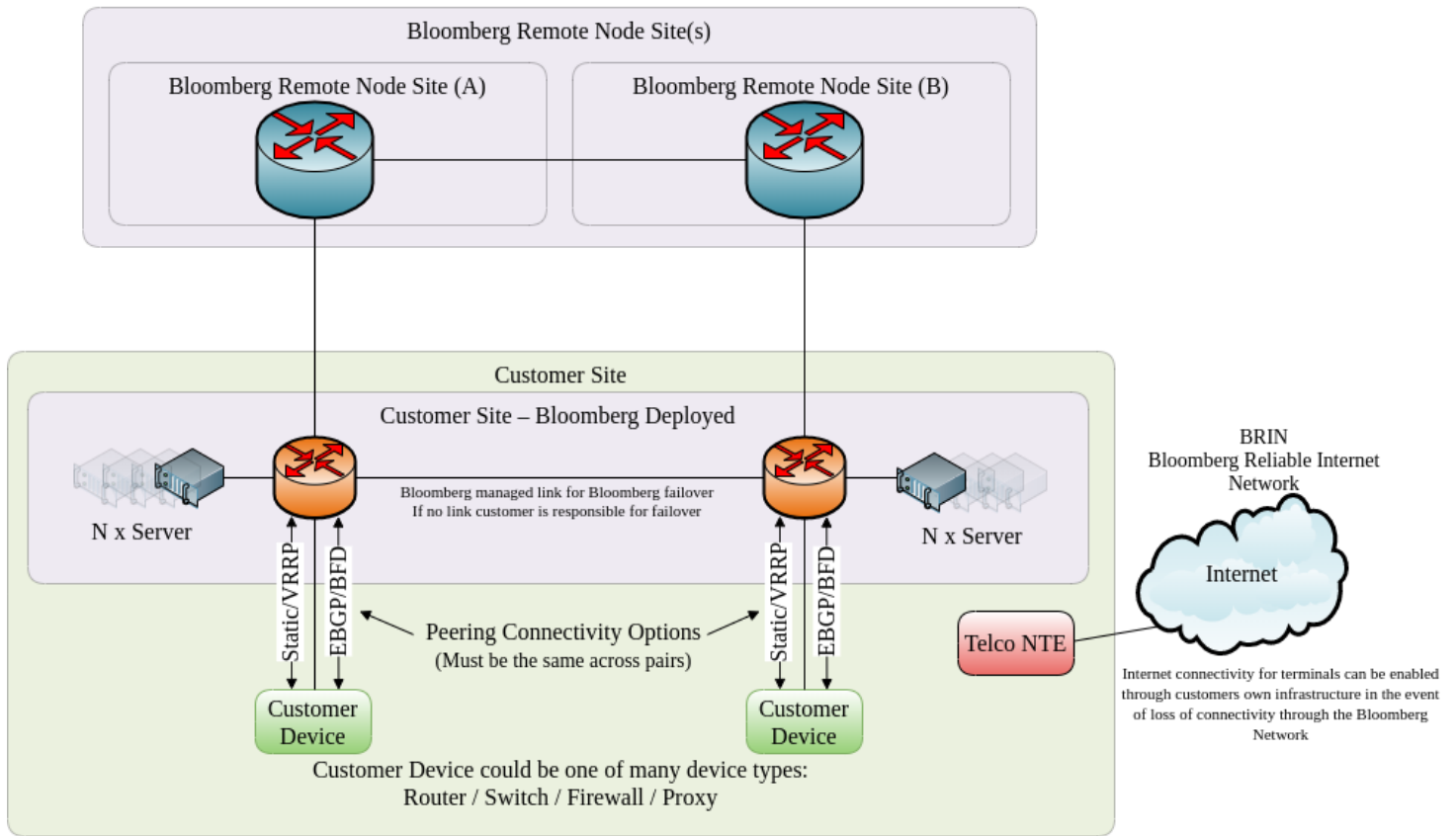


Figure 4. Single Site – Dual CPE Network Diagram

Dual Customer Site – Single CPE

Dual Customer Site – Dual CPE

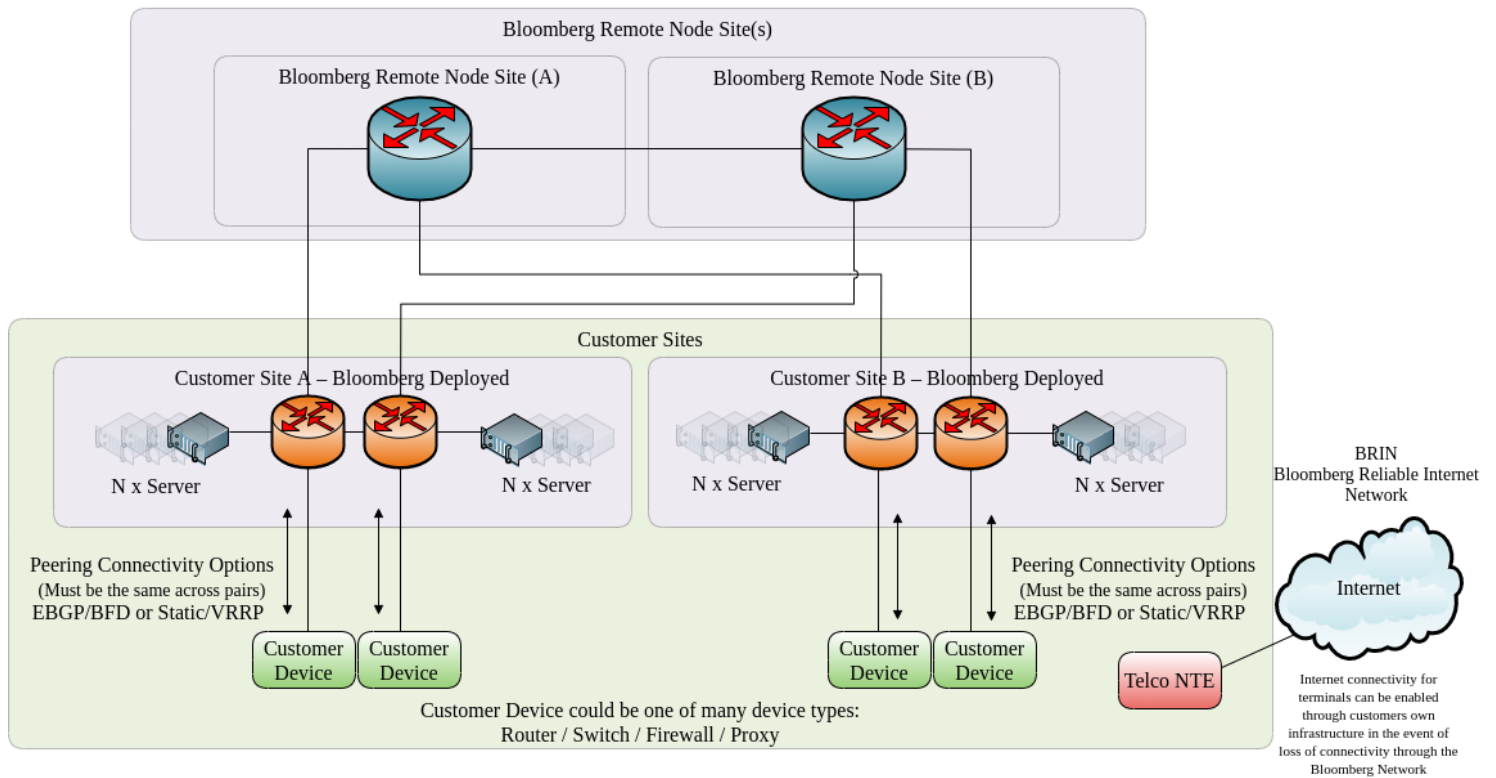


Figure 6. Dual Site – Dual CPE Network Diagram

Connectivity via Internet

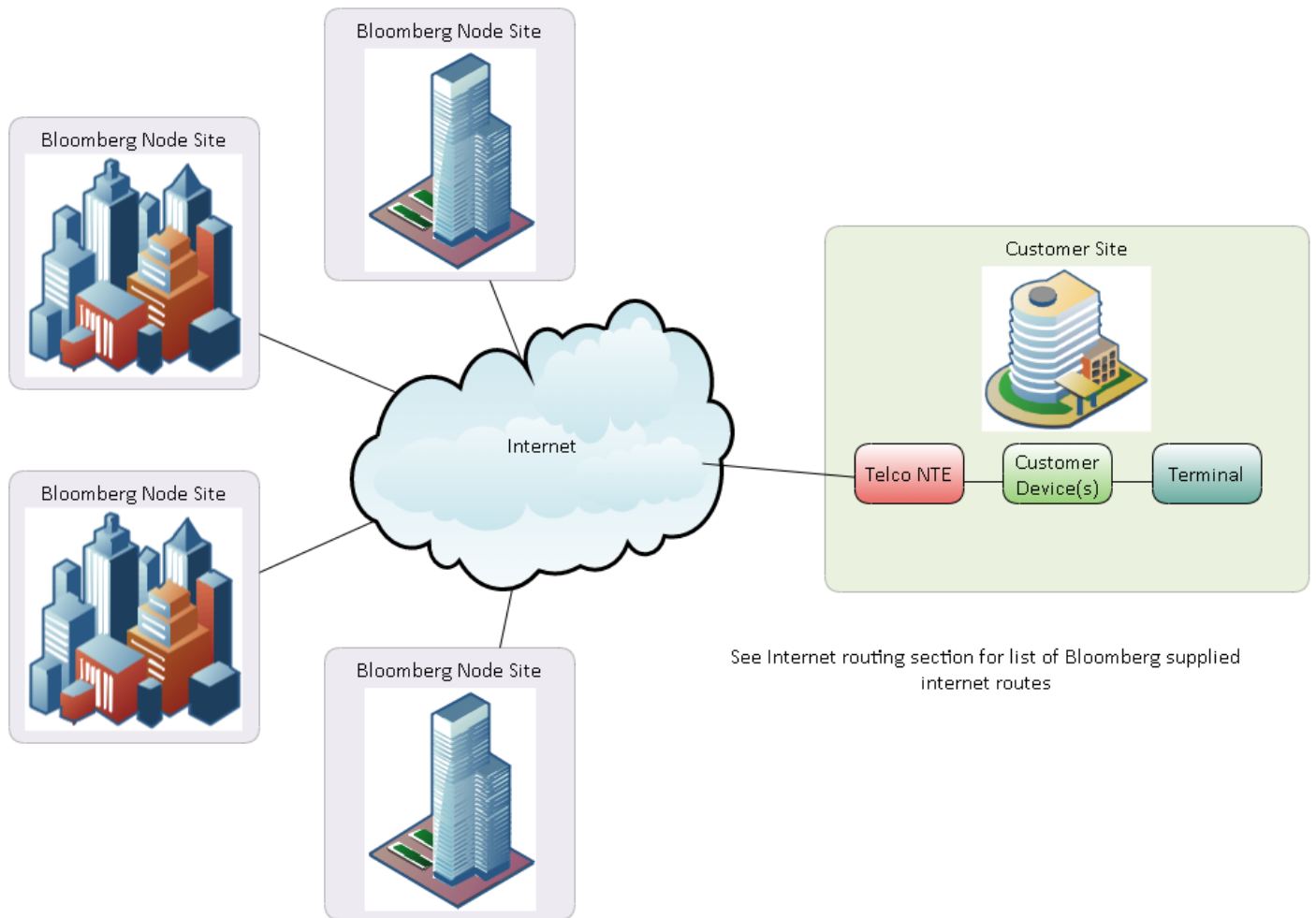


Figure 7. Connectivity via Internet Network Diagram