



IP Traffic Exchange Policy

IP Traffic Exchange Policy for U.S. Interconnection

As a result of the evolving Internet, Level 3 continues to evaluate its IP Traffic Exchange Policy to assure that it fairly reflects existing market and network dynamics. Level 3 believes that traffic exchange agreements, which now take many forms, should reflect a core tenet of the Internet when it was founded: namely, that traffic exchange arrangements between network entities should be fair and equitable. Achieving this fair and equitable balance requires periodic review and revision to our IP Traffic Exchange Policy, especially given rapid changes in the Internet and the networks that support it. As a result, Level 3 expects this Policy to evolve from time to time and reserves the right to modify the Policy at any time, in Level 3's sole discretion.

Types of Traffic Exchange

Level 3 currently offers varying types of traffic exchange to its global Internet network. The most prevalent type of traffic exchange is "high-speed IP transit," which is a service offered by Level 3 that customarily allows access to all global routes on the Internet. Any entity desiring access to all of the global Internet routes accessible through the Level 3 network could purchase high-speed IP transit services from Level 3.

Other types of traffic exchange arrangements provide mutual access to a subset of routes, and may or may not involve payment between the two parties. Level 3 frequently negotiates a wide variety of traffic exchange agreements, some of which combine elements of traditional high-speed IP transit service with elements typically associated with settlement-free "peering" agreements. Like any commercially-negotiated arrangement, Level 3 believes such arrangements are appropriate when both parties benefit from the relationship. Settlement-free peering agreements allow parties to reach the subset of routes accessible through the Level 3 network to exchange traffic with customers that pay Level 3 for exchange of that Internet traffic, whether through our content delivery services, or high-speed IP transit services, direct Internet access services and other IP connectivity services. All settlement-free peering is memorialized by a written agreement between the parties, including sufficient detail and dispute resolution procedures that will assure continued exchange of Internet traffic on a scalable, resilient and secure manner.

General Principles of Settlement-Free Peering

There are some general overall principles that serve as the foundation for the specific settlement-free peering qualifications set forth in this Policy:

The backbone cost burden associated with settlement-free peering traffic exchange should be equitably shared. Regardless of the direction or type of traffic exchanged between the networks, the routing practices and location of interconnection points should be such that each party bears a reasonably equal share of backbone costs.

The primary objective of a peering arrangement is to enable each party to deliver high-quality service to its customers.

The interconnection architecture and traffic exchange practices should assure that the exchange of traffic is resilient, scalable and secure.

Any termination or modification of a peering arrangement should be managed by both parties in a manner that minimizes adverse impacts to each party's customers and to the overall operation of the Internet.

General Qualifications

A party would be considered to be a candidate for settlement-free peering with Level 3 in the United States if it meets the following qualifications:

- a. must operate an IP network between the interconnection points and utilize Border Gateway Protocol (BGP) to govern the exchange of traffic at those interconnection points for all Internet traffic, regardless of source, destination or technology used to deliver traffic (including IPv4 and IPv6 Internet traffic);

- b. must have a backbone network node in at least six of the nine U.S. Census Bureau Divisions in the United States (New England, Middle Atlantic, South Atlantic, East South Central, East North Central, West North Central, West South Central, Mountain, Pacific);
- c. must interconnect at mutually agreeable geographically diverse points in at least five of the nine U.S. Census Bureau Divisions listed above. The United States interconnection points must include at least one city on the east coast, one in the central region, and one on the west coast;
- d. must have a professionally managed 24x7 NOC, must repair or otherwise remedy any problems within a reasonable timeframe, must agree to actively cooperate to resolve security incidents, denial of service attacks, and other operational problems;
- e. must use the same peering AS at each United States interconnection point and must announce a consistent set of routes at each point, unless otherwise mutually agreed;
- f. must announce only routes for paid traffic exchanged with its customers (and Level 3 and Global Crossing will announce only routes for paid traffic exchanged with their customers);
- g. must filter route announcements from its customers by prefix;
- h. must agree not to abuse the peering relationship by engaging in activities such as but not limited to: pointing a default route at the other or otherwise forwarding traffic for destinations not explicitly advertised, resetting next-hop, selling or giving next-hop to others;
- i. must have a fully redundant backbone network, in which the majority of its interhub trunking links shall have a capacity of at least 9953 Mbps (OC-192);
- j. must provide paid Internet transit services to at least 500 unique transit networks utilizing BGP on a global basis;
- k. must have sufficient network intelligence tools to accurately measure or approximate the mileage (in terms of "bit miles," as defined below) used on its network for all traffic exchanged over the peering interconnection points, and must have network management capabilities that enable the balancing of bit miles across the networks;
- l. if the requesting party operates primarily in non-U.S. markets, the party must agree to provide reciprocal settlement-free peering arrangement with Level 3 in those markets.

Meeting the general qualifications is not a guarantee that a peering relationship with Level 3 will be established. Level 3 will evaluate a number of business factors and reserves the right not to enter into a peering agreement with an otherwise qualified applicant, and additionally reserves the right to waive any of the qualifications set forth above. All settlement-free peering will be memorialized through execution of a contract, the terms and conditions of which are subject to negotiation.

Settlement-Free Peering Agreement

If Level 3 has determined to pursue settlement-free peering with a party that has requested it, the parties will negotiate the terms of a settlement-free peering agreement. Those terms will require parties to assure that, at all times during the term of the agreement, the "bit miles" for Internet traffic exchanged over the interconnection points and carried by one party will not be materially greater than the bit miles carried over the interconnection point for the other party. "Bit miles" would mean the product of (a) the number of air miles a party's Internet network carries Internet traffic from the source or destination to the interconnection point where that traffic is handed to the other party (expressed as a traffic-weighted average, and including international miles), and (b) the number of gigabits carried by the party in the applicable Internet traffic. For example, if a party's network carried 10 gigabits of content 1,500 air miles over the course of a day, the party's bit miles for that day would be 15,000 gigabit-miles. The settlement-free peering agreement would include provisions requiring a party to remedy material discrepancies in bit mileage by using changes to routing, changes to interconnection locations, or purchase of services from the other party or from third parties.

In order to allow the other party to achieve approximate bit mileage equality, both parties must allow the other party to alter the location of interconnection points in a manner that will permit the other party to remedy material discrepancies in bit mileage (such as placing interconnection points closer to the origin/destination locations on the other party's network, provided that such ports are utilized at appropriate levels). The interconnection locations would be mutually agreed such that the space and power used by each party would be roughly balanced, so that neither party charges the other for space and power for interconnection locations within their own facilities. Additionally, the interconnection locations must be locations which are on-net to both parties or, if not on-net to one party, either (a) open and accessible to be placed on-net by that party (i.e., the entity controlling access to the location will allow the other party to access the location via fiber or other connectivity without imposing charges for physical access to the facility), or (b) served on-net by at least three competitive providers of communications service.

The agreement would include provisions requiring joint capacity and forecasting reviews on a periodic basis. The agreement would require that each 10 Gbps interconnection point (whether initially-deployed, relocated to correct a bit mileage discrepancy, or augmented based on increased volume) would have to have an agreed minimum utilization. The agreement will also include provisions obligating both parties to augment interconnection point capacity on a timely basis when and as traffic meets specified thresholds. Other standard terms will be included in the settlement-free peering agreement negotiated between

the parties.