# *Settlement-Free Interconnection Policy*

***For Autonomous System 2828***

May 17, 2011

The Settlement-Free Interconnection guidelines describe the criteria in which XO Communications uses to engage in settlement-free interconnection. This practice is commonly referred to as Peering.

## I. Definitions

Peering: The practice of exchanging Internet Protocol (IP) traffic between two interconnected IP networks. This exchange is strictly limited to traffic destined for the other network. Traffic is exchanged on a bilateral basis between peering routers and is governed by both IPv4 and IPv6 BGP peering sessions.

Transit: indicates a settlement-based customer/provider relationship between two networks. The provider is providing the customer the ability to reach other networks.

Route announcement: The means in which two peering routers provide routing information in order to exchange IP traffic.

Network: An IP network or an Autonomous System (AS) is defined as a group of connected IP routers that are under one administrative control.

POP: point-of-presence, a node on the IP backbone.

Applicant: A company with a network consisting of one AS applying for a settlement-free peering with XO AS2828.

## II. How to become and Applicant:

Internet backbone providers wishing to initiate discussions regarding potential establishment of new settlement-free peering should contact peering-impl@eng.xo.com with their requests, including evidence of meeting all criteria listed in the policy below. The criteria involving traffic measurements must be met by a prospective peer for three consecutive months. An Applicant may submit a request for interconnection once per calendar quarter.

Potential peers will be contacted within a reasonable timeframe to discuss their requests. The Applicant must enter into a Mutual Non-Disclosure Agreement and an Interconnection Agreement. Peering will only occur if XO and Applicant reach agreement on the terms of an Interconnection Agreement.

III. General Conditions and Requirements

A. The peering policy is only a guideline. Meeting or exceeding all of the above requirements does not guarantee XO will enter into a peering relationship with an Applicant. XO reserves the right to grant or refuse peering to an Applicant, whether or not they would otherwise meet these requirements. It is within XO's sole discretion to modify, replace or discontinue this policy at any time. Any such decision made by XO concerning such Policy will be final, binding and conclusive.

B. No Applicant who is an XO transit customer shall be entitled to enter in a peering relationship with AS2828 at the same time that such transit customer is maintaining transit connections with AS2828 at any location.

C. Neither party will apply port, service or other charges to the other party.

D. The Applicant shall make available a twenty-four hour, seven-day-a-week ("24x7") contact for peering issues.

E. The Applicant shall operate a twenty-four hour, seven-day-a-week ("24x7") Network Operations Center (NOC) under its sole control.

F. All requirements of this Policy must continue to be met to continue a settlement-free interconnection relationship. Status under the policy will be evaluated periodically. In the case of a change in ownership or control of a party with which XO has an interconnection agreement, status under the policy will be evaluated within 30 days of such change.

IV. Infrastructure Requirements

A. A redundant Internet backbone operating on circuits dedicated to IP traffic of at least 10Gbps capacity.

B. Each backbone POP shall be connected to at least two backbone hubs via Nx10Gbps circuits.

C. The IP backbone shall have backbone hubs in at least nine (9) of the geographic regions indicated below in which XO also has nodes. These nodes include the following locations:

1. Seattle, 2001 6th St.
2. Palo Alto, 529 Bryant St./San Jose, 11 Great Oaks Blvd.
3. Los Angeles, 600 West 7th St.
4. Denver, 910 15th St.
5. Chicago, 350 East Cermak Rd.
6. Dallas, 1950 Stemmons Freeway.

7. Atlanta, 56 Marietta St.
8. Miami, 99 NE 8th St.
9. Ashburn, 21711 Filigree Ct.
10. New York City, 111 8th Ave.
11. London, 2 Buckingham Aveune, Slough Trading Estate
12. Amsterdam, Luttenbergweg 4, 1101 EC
13. Frankfurt, Friesstrasse 26
14. Madrid, Terremark NAP, C/Yecora 4
15. Hong Kong, 17/F Global Gateway, 168 Yeung UK Road, Tsuen Wan

D. The minimum number of geographically dispersed peering connections shall be at least eight (8) locations across all regions which include: Domestic United States: two (2) on the west coast, two (2) in the midwest and two (2) on the east coast, and two (2) in Europe.

V. Routing Requirements to routing:

A. Both the applicant and XO shall announce customer-only routes at all interconnection points.
B. A consistent number of routes will be announced at each location of interconnection.

VI. Traffic Capacity and Ratio Requirements

A. The total 95th percentile aggregate traffic volume shall be at least 16Gbps or 20% of overall connectivity. The traffic will be measured from the busier direction by summing all points of interconnection.

B. Each point of interconnection shall be at least 10Gbps in capacity, with the required eight (8) points of interconnection, this would equate to 80Gbps of total capacity.

C. The total 95th percentile aggregate traffic in/out ratio shall not exceed 2.0 to 1.

For example, if 16Gbps of traffic is sent to XO from the Applicant, 8Gbps of traffic is the minimum amount of traffic that could be sent from the Applicant to XO. The opposite is applicable as well.

**Public Peering**

All current peers configured via the Equinix San Jose, Dallas, Chicago and Ashburn, LINX, AMS-IX, DEC-IX and ESPANIX locations are grandfathered with connectivity remaining in place for the foreseeable future.

No new peers will be added via the US public exchange points, however, current peers already in place at other locations may add sessions to the locations for redundancy purposes.