VIX participants may (and should) request access to the VIX web portal, which is an excellent tool for debugging problems and broken peering relations and for analysing peering traffic. The portal makes the following status, monitoring and statistics views available to registered participants:

- **Peering Traffic view**
gives participants access to a detailed sFlow-based analysis of their own peering traffic flows across the VIX.

- **Layer 2 view**
shows detailed and sortable Layer 2 information such as mapping of AS numbers, IP addresses and MAC addresses.

- **IXP-Watch view**
gives hints about misconfigured peering routers, undesired non-IP traffic and Layer 2 anomalies.

- **Network Monitoring view**
shows the network health information from the VIX Network Operation Center (NOC) monitoring screen.

- **Port Statistics view**
gives participants access to the statistic graphs of their own VIX ports.

- **Smokeping view**
gives an indication regarding connection quality of VIX participants (delay/variation, loss).

- **Route Server web interface**
conveniently facilitates individual configuration of the route servers and their default behavior for IPv4 and IPv6 peerings.

For detailed information see: [www.vix.at](http://www.vix.at)
**How To Connect**

The only requirement for a connection to VIX is a unique Autonomous System (AS) Number with already properly established global Internet connectivity. Participants are expected to use their VIX connection as a complementary tool for optimization of regional Internet traffic flows. The only routing protocol which may be used across the VIX infrastructure is BGP4.

- [www.vix.at/vix_request.html](http://www.vix.at/vix_request.html)

**Local Connection**

The preferred method of connecting to VIX is to install a BGP4 peering router at one or both of the VIX locations and to directly connect the peering router port to the local VIX switch:

- [VIX1: UniVie only offers limited housing, mainly for data communications equipment and peering routers.](http://www.univie.ac.at/ZID/)
- [VIX2: Interxion offers all kinds of colocation services.](http://www.interxion.com)

**Remote Connection**

An alternative method to connect to VIX is to use a fiber optic cable or Layer 2/Ethernet Carrier Link (DWDM, EoMPLS, VLAN) from the BGP4 peering router abroad to one of the VIX locations.

**Connection Agreement**

The VIX Connection Agreement including all terms and conditions can be completed at and downloaded from the VIX website.

- [www.vix.at/vix_agreement.html](http://www.vix.at/vix_agreement.html)

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**Costs**

- **Registration & Setup Fee**
  - non-recurring, once per contract
  - does not include patching & cabling

- **Port Fee**
  - monthly recurring, depending on port-speed, 30% discount may apply for equal-speed, dual-site connections

- **Housing Fee**
  - monthly recurring, limited housing for data communications equipment and peering routers only (housing fees at VIX2/Interxion available on request at Interxion)

- [www.vix.at/vix_costs.html](http://www.vix.at/vix_costs.html)

**VIX Locations**

**VIX1**

University of Vienna
Vienna University
Computer Center (ZID)
Universitätsstrasse 7
1010 Vienna, Austria
- [www.univie.ac.at/ZID/](http://www.univie.ac.at/ZID/)
- admin@vix.at

**VIX2**

Interxion / IEC

interxion

Louis-Haefliger-Gasse 10
1210 Vienna, Austria
- [www.interxion.com](http://www.interxion.com)
- vienna.info@interxion.com

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**Technology**

VIX uses the same state-of-the-art ethernet switching technology at both locations, VIX1 and VIX2:

- Brocade BigIron RX-16 non-blocking high-performance switches
- Redundant switch-fabrics and management-processors
- Redundant power-supplies and power-feeds (mains, UPS + generator)
- Interconnected by diversely routed fibre optic cables
- Participants may connect to either one or both sites/switches with up to 10 Gbit/s per ethernet port.
- Local port channels supported (directly connected, colocated routers only)
- Only one MAC address is allowed per port or port channel
- Enforced port security automatically shuts down misbehaving ports
- IPv4 and IPv6 peering supported on the same peering-LAN using BGP4 routing-protocol
- sFlow based Peering Traffic Matrix
- [www.vix.at/vix_technology.html](http://www.vix.at/vix_technology.html)

- **Route Servers**: The Vienna Internet eXchange offers a redundant set of route servers, which eases peering configuration. The route servers just provide routing information, payload traffic is exchanged directly between the participants. After establishing a BGP session to both route servers and activating them in the web interface, participants may configure default behavior individually and specific per-peer settings, using an approved web interface for both, IPv4 and IPv6 peerings. [www.vix.at/vix_routeserver.html](http://www.vix.at/vix_routeserver.html)

- [www.vix.at/vix_peeringmatrix.html](http://www.vix.at/vix_peeringmatrix.html)

- [www.vix.at/vix_technology.html](http://www.vix.at/vix_technology.html)

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**IPv4 and IPv6 peering supported on the same peering-LAN using BGP4 routing-protocol**

<table>
<thead>
<tr>
<th>Service</th>
<th>Details</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>once per contract</td>
<td>1000 €</td>
</tr>
<tr>
<td>VIX Switch Port</td>
<td>100 Mbit/s</td>
<td>200 €/month</td>
</tr>
<tr>
<td></td>
<td>1 Gbit/s</td>
<td>400 €/month</td>
</tr>
<tr>
<td></td>
<td>10 Gbit/s</td>
<td>1400 €/month</td>
</tr>
<tr>
<td>Dual-site connections (equal-speed)</td>
<td>2x1 Gbit/s</td>
<td>560 €/month</td>
</tr>
<tr>
<td></td>
<td>2x10 Gbit/s</td>
<td>1960 €/month</td>
</tr>
</tbody>
</table>

Note requirements on VIX website.

- [www.vix.at/vix_routeserver.html](http://www.vix.at/vix_routeserver.html)

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**VIX2**

Interxion / IEC

interxion

Louis-Haefliger-Gasse 10
1210 Vienna, Austria
- [www.interxion.com](http://www.interxion.com)
- vienna.info@interxion.com

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**VIX1/UniVie and VIX2/Interxion**

redundant infrastructure across two bridges over the river Danube