

Tirol-IX Connection Agreement

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1 Definitions and General Principles

For the purpose of this agreement the following terms shall have the following meanings:

1.1 **Tirol-IX:** The Tyrol Internet Exchange is a neutral Internet Exchange Point (IXP) service provided and operated by the company Stadtwerke Hall in Tirol GmbH. It is based on a switched peering LAN (Local Area Network, IEEE802.3/Ethernet. Being located in the heart of Tyrol (and Europe), it became one of Austria's best address for transnational connections. Tirol-IX makes top-notch IPv4 and IPv6 internet traffic exchange among participants possible.

1.2 **Tirol-IX Site:** Physical location at which the Tirol-IX shared infrastructure is present. There is one location at the moment available:

- Datencenter 3, Eduard-Bodem-Gasse 2, A-6020 Innsbruck

1.3 **Participant:** Organization (legal entity) holding a valid Tirol-IX Connection Agreement.

1.4 **Local Connection:** The physical cable connection of a participant to the Tirol-IX shared medium.

1.5 **Remote Connection:** The physical connection path of a participants distant peering router, using either participants or third party cable and/or higher layer infrastructure to the Tirol-IX shared medium.

1.6 **Transit Services:** The Tirol-IX is not an Internet Service Provider (ISP) itself and it is not intended for the sale of Internet transit services over the peering LAN. The Tirol-IX provides a complementary infrastructure to its participants for optimization of regional Internet traffic flows.

1.7 **Peering:** It is the responsibility of each connected participant to establish bilateral peering agreements with other participants. There is no requirement to peer with any specific number or with all other participants. However, we are encouraging an open peering policy.

1.8 **Tirol-IX IP Address:** Each participant gets one unique IPv4 and/or IPv6 address assigned per Connection, out of a dedicated address range allocated for the Tirol-IX peering LAN.

2 Prerequisites for the Connection

2.1 **Autonomous System (AS) Number:** Tirol-IX participants are required to use their own properly assigned and globally unique AS number for any BGP4 peering session on the Tirol-IX peering LAN. All advertised AS numbers on any peering session at Tirol-IX have to be globally unique and properly assigned and documented by a RIR/LIR (Regional or Local Internet Registry) and the announcing Tirol-IX participant needs to be authorized to do so.

2.2 **IP Address Space:** All advertised IP address space on any peering session at Tirol-IX has to be globally unique and properly assigned and documented by a RIR/LIR (Regional or Local Internet Registry) and the announcing Tirol-IX participant needs to be authorized to do so.

2.3 **Global Internet Connectivity:** Tirol-IX participants are required to have their AS number and IP address space provided with global Internet connectivity before the connection to the Tirol-IX is established.

3 Services provided by the Tirol-IX

3.1 Tirol-IX will provide and maintain the Connections for all Tirol-IX participants under the same General Terms and Conditions.

3.2 Proper function of the Tirol-IX core equipment is continually monitored, aiming at seamless operation.

3.3 The Tirol-IX is providing and maintaining a web page (<http://www.tirol-ix.at>) with links to the individual members' homepage. Peering status (voluntary), operational status, summary statistics and other information is also made public through this web page.

3.4 Tirol-IX is providing and maintaining a closed mailing list for operational information, where all participants must subscribe with a suitable role mailbox (NOC).

4 Router Housing/Colocation

4.1 Tirol-IX does not offer co-location space. Any required housing rack space must be agreed with the respective Tirol-IX Site. Participant must cover all costs regarding co-location and agree contract with the co-location provider.

5 Responsibilities of the Participant

5.1 Participant has to continuously fulfill the Prerequisites according to article 2.

5.2 Subject to article 4, participant shall be responsible for arranging and contracting housing facilities if necessary, and all required data communication lines up to (but not including) the local connection.

5.3 Peering with other connected participants is not covered by this agreement. Participants are responsible for the conclusion of bilateral peering arrangements.

5.4 All routing prefixes, which are announced to any peer on the Tirol-IX, shall be registered with the appropriate origin AS in the routing registry part of the RIPE-DB.

5.5 A peering shall be established with at least the Tirol-IX route collector, as detailed on the Tirol-IX web page. The Route Collector Service

provides public looking glass services and is also used by the Tirol-IX NOC for monitoring the prefix announcements of its participants.

5.6 **Tirol-IX Route Server:** All participants are welcome to establish a peering to the Tirol-IX Route Server and exchange prefixes this way. The Route Server should not be seen as a replacement to bilateral peerings between Participants and is provided by Tirol-IX on a best effort basis without any guarantee on availability.

5.7 Only one unique Ethernet/MAC address may be visible on the peering LAN on any participants Connection (port or port channel) to the Tirol-IX. The Tirol-IX port security will automatically shut down ports, which are violating the MAC address limitation.

5.8 Only the specifically assigned IPv4 and/or IPv6 Tirol-IX peering LAN address may be used on any particular Connection.

5.9 ICMP ping to these peering LAN addresses shall be allowed.

5.10 **Announced address prefixes:** Participants are only allowed to announce locally originating prefixes and prefixes of their customers as described in the RIEP DB by the AS-SET of the participant or an object in another RIR database with the same purpose.

5.11 Proper configuration and performance of its Connection(s) shall be periodically verified by Participant by using the tools and views offered by the Tirol-IX web portal (<http://www.tirol-ix.at>) that shows own port and peering statistics to Participant, and information regarding round trip delay and jitter, layer 2 views and layer 2 anomalies of all connected participants.

5.12 Broken Remote Connections have to be debugged directly between Participant and any third party provider first, before the Tirol-IX NOC is involved. All costs caused by such third party troubleshooting have to be accepted by the Participant, even if the fault is found at the Tirol-IX shared infrastructure.

5.13 The following contacts shall be appointed in order to represent Participant in specific matters:

- Contractual Contact (official addressee for any legal correspondence)
- Technical Contact
- Administrative Contact

5.14 Participant agrees to immediately communicate all organizational, operational and technical changes and issues which are relevant for this agreement by e-mail to noc@tirol-ix.at.

6 Use and Limitations

6.1 Participant is entitled to use the Connection for peering purposes only. This license is non-exclusive and non-transferable. Participant is not entitled to assign and/or sub-license any of its rights under this agreement to any third party without previous written consent of Tirol-IX. Selling of Transit Services using the Connection to the Tirol-IX shared medium is not allowed.

6.2 To actually exchange traffic at the Tirol-IX, bilateral agreements need to be established between participants. The required routing protocol for all Tirol-IX peering relations is BGP4. Internal routing protocols must not be used on nor exported to the shared peering LAN.

6.3 Participant accepts full responsibility for its use of the Connection according to Article 5, specifically that it does not cause or is likely to cause any damage, or is in any other way harmful, to the Tirol-IX infrastructure or to the normal operation, availability or functionality of the Tirol-IX services or to the traffic exchanged thereon. Participant agrees to implement any reasonable measures that Tirol-IX may propose to prevent or repair such damage or harm. Participant will observe relevant Best Current Practices (BCPs) which are published on the Tirol-IX web page and announced to the operations mailing list.

6.4 Tirol-IX is entitled to (a) suspend or (b) discontinue the Connection, in whole or in part, and/or (c) to require that certain conditions be met before continuation thereof, if:

- Participant is infringing Article 6.3 and has not, within reasonable terms after a written (e-mailed) request from the Tirol-IX operations staff, implemented adequate measures to prevent or repair such infringement;
- it is necessary for Tirol-IX to comply with a judicial decision;
- it is necessary for installation or maintenance of hardware, software or infrastructure that is used or otherwise relevant for Tirol-IX; such action, of course, has to be preceded by an adequately scheduled notification;
- Participant is in breach of one or more of its essential obligations under this agreement.
- Participant connects via an unstable or broken Remote Connection to Tirol-IX.

7 Amendments and Appendices

7.1 These General Terms and Conditions and all Appendices referred to herein form an integral part of the Connection Agreement:

- Appendix I: Contact, Address and Invoice Information
- Appendix II: Fees for Tirol-IX Services
- Appendix III: Additional Information for Remote Connections

7.2 Further amendments or supplements to the Connection Agreement are valid only if agreed in writing.

8 Term and Termination

8.1 This Connection Agreement shall come into force as soon as the connection of participant is established and shall remain in force until a new version of this document is issued or participant leaves the Tirol-IX.

8.2 Tirol-IX reserves the right to amend any provision of this Agreement - including but not limited to rates, payment and appendices and will notify the participant of such amendment at least one month before coming into effect. Such modifications shall take effect unless participant objects in writing within that period.

8.3 The Connection Agreement can be terminated at any time by any of the parties by means of a written notice to the other party; in that case this agreement is terminated at the end of the third month, following on the month in which the said written notice was sent.

9 Liability

9.1 Neither party nor the Tirol-IX shall be liable towards any other party for any indirect or consequential damage, including but not limited to any loss of profits and damage consisting of or resulting from any loss of data or information.

9.2 Any liability of the Tirol-IX towards participants for any direct or indirect damages arising out of or in connection with the Tirol-IX performance or non-performance of this Agreement is at all times limited to the total amount of fees paid by Member pursuant to this agreement.

10 Governing Law, Place of Jurisdiction

This agreement shall be governed by Principality of Austrian Law. Any dispute concerning the conclusion, interpretation or performance of this agreement, and any other dispute with respect to or relating to the agreement, shall be submitted exclusively to the competent court in Hall in Tirol, Austria.