# Appendix TECHNICAL REQUIREMENTS

Participants of the SwissIX infrastructure must conform to the relevant standards as laid out in STD0001 (currently RFC5000) and associated Internet STD or RFC documents at all times.

## 1. Physical Layer

FastEthernet interfaces are delivered as 100Base-TX and must be configured with speed 100 and full duplex, i.e autosensing and auto-negotiation need to be turned off.

SwissIX provides GigabitEthernet interfaces on single mode fiber (9/125nm) or copper only, multi-mode fiber is not available. You may choose from 1000Base-LX and 1000Base-TX. On request we may offer 1000Base-BX10 (e.g. 1310/1490nm); please contact us for details. GigabitEthernet interfaces must be configured with autosensing and auto-negotiation.

TenGigabitEthernet comes as 10GBase-LR and 10GBase-ER (for longer fibers). On request we may offer 10GBase-BX (e.g. 1310/1270nm); please again, contact us for details.

## 2. MAC Layer

Ethernet frames forwarded to the SwissIX infrastructure must have one of the following ethertypes:

- 0x0800 - IPv4
- 0x0806 - ARP
- 0x86dd - IPv6

Frames forwarded to a member interface, which is part of the SwissIX infrastructure, must not be addressed to a multicast or broadcast MAC destination address except for:

- broadcast ARP packets
- multicast IPv6 Neighbour Discovery packets

Only one MAC address per port is allowed at any given time and use of proxy ARP or transmission of spanning tree BPDUs on the interface facing SwissIX is not permitted.

SwissIX activates port security on all ports. Ports showing more than one MAC address shall be disabled immediately and remain in this state for at least 15 minutes, during which the participant is expected to improve configuration.

Reception of spanning tree BPDU packets disables the port permanently. You have to contact the SwissIX NOC in this case.

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## 3. IP Layer

Participants interfaces connected to the SwissIX infrastructure may only use IP addresses and netmasks assigned to them by SwissIX. In particular:

SwissIX IPv4 and IPv6 addresses must be explicitly configured. Other than the assigned IPv4 and IPv6 addresses are not allowed on interfaces facing SwissIX infrastructure.

Participants should not forward IP packets addressed a directed broadcast address to SwissIX infrastructure.

IP address space assigned to the SwissIX infrastructure must not be advertised to other networks without explicit permission from the SwissIX Association.