# Ethernet port specification  in Master Internet s.r.o network for customer servers

This specification is for ports with default configuration. Configuration can be changed after sending mail to support@master.cz or before service setup.

## Physical Connection L1

### Interface settings - autonegotiation

100base and 10base Ethernet interfaces attached to MAI switches must be configured for speed and duplex autonegotiation.

## Link Layer L2

### Allowed ethertypes

Frames sent from customer device to MAI switch must have one of following ethertypes

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

In case of dot1q trunking

- 0x8100 – dot1q

Ethernet frames with different ethertypes could be droped.

### Maximum number of MAC addresses on port

Static port security is configured on switch ports with maximum number of MAC addresses equal to number of assigned IPs + 30. There is no aging configured in default configuration.

### Unicast MAC frames only

Frames send to MAI switches could have only unicast destination MAC, except

- broadcast ARP
- ICMPv6

### No link-local protocols

These protocols are prohibited for usage in MAI ethernet network

- IRDP
- ICMP redirects
- **IEEE 802 Spanning Tree**
- Proprietary L2 protocols
    - Discovery protocols: CDP, EDP
    - VLAN/trunking protocols: VTP, DTP
- IGP (e.g. OSPF, ISIS, IGRP, EIGRP)
- FHRP – VRRP, HSRP, GLBP
- BOOTP/DHCP
- PIM-SM
- PIM-DM
- DVMRP
- ICMPv6 ND-RA
- UDLD
- L2 Keepalives

BPDU Guard is configured on all ports. If port will receive spanning tree BPDU frame, port will be disabled. All disabled ports must be manually enabled by MAI support.

### Storm control

All ports have storm control protection enabled. Maximum number of received frames with multicast or broadcast destination MAC is set to 100pps. If there is violation of storm control protection, port is disabled for 30s.

## Network layer L3

### IPv4 ARP cache

All routers in MAI network have ARP cache with 4h timeout. You can call MAI support for ARP cache cleaning in case of moving IPs between servers in same vlan, or changing MAC for IP, or you can use tools for sending gratious ARP to notify routers about MAC change.

### IPv6 ND RA

Routers in MAI network have periodic IPv6 ND RA disabled. They will reply with RA when they receive RS, but RA has no auto-config flag set, so only connected routes will be installed on hosts with IPv6 autoconfig mechanism.

## Example of default port configuration

This is port configuration example taken from Cisco Catalysts switch with IOS

```
interface GigabitEthernetYY/ZZ
 switchport access vlan XXX
 switchport mode access
 switchport nonegotiate
 switchport port-security maximum 30
 switchport port-security
 switchport port-security violation restrict
 spanning-tree portfast
 spanning-tree bpduguard enable
 storm-control action shutdown
 storm-control broadcast level pps 100
 storm-control multicast level pps 100
end
```