

NaMeX

Technical Regulations

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## **1 Rules for Admission**

- 1.1 Legally recognised entities may enter into this connection enabling agreement.
- 1.2 The entity must:
  - (a) Possess its own Autonomous System Number and classes of public networks obtained from an RIR;
  - (b) Have independent Internet access;
  - (c) Guarantee NaMeX that it has absolute title and full legal rights enabling it to observe the points contained in the following document and the peering agreements stipulated;
  - (d) Submit the documents required pursuant to this connection enabling agreement certifying that it has the necessary qualifications.
- 1.3 Applications for admission will be approved by the President of NaMeX on the advice of the Technical Committee.

## **2 General Rules**

- 2.1 The costs of interconnection between the location of the NaMeX exchange point and the location of the user party are the complete responsibility of the same party.
- 2.2 The activity of user parties vis-à-vis NaMeX shall not be in conflict with the laws in force.
- 2.3 The user parties must communicate and keep current the name of a technical referent, an administrative referent and a NOC with a telephone number for emergencies. The name, the role filled in the

organisation of the user party, a telephone number and an e-mail address shall be communicated for each such referent. In addition, the user parties shall communicate an e-mail address that NaMeX will use for official communications.

- 2.4 The devices owned by the user party housed at the NaMeX exchange point must be covered by an insurance policy against theft, fire and damages/injuries to third parties.

### **3 Technical Rules Pertaining to Peering Services**

#### **Premise**

The peering services offered by NaMeX are subdivided as follows:

- public peering services using NaMeX switching infrastructure
- private peering services on dedicated VLANs using NaMeX switching infrastructure
- Internet transit services on dedicated VLANs using NaMeX switching infrastructure
- back-to-back connection services between routers of operators.

#### **3.1 Technical rules for installation**

- 3.1.1 The devices of the user party dedicated to peering services shall operate at Level 3 of the ISO/OSI stack.
- 3.1.2 Typically, the devices of the parties that sign this connection enabling agreement are installed at one of the locations of the NaMeX exchange point, in the area reserved for peering services.
- 3.1.3 Should remote capability be provided for, the connections between the NaMeX switching infrastructure and the devices of the user party shall be realised by means of Level 2 dedicated point-to-point circuits. The user party shall specify the make and model of the same devices, as well as the MAC address of the interfaces that the same intends to use to connect to the peering LAN.
- 3.1.4 The devices that the user party houses in the rooms of NaMeX used for peering services must be of the 19"rack mountable type powered by 220V AC.
- 3.1.5 The connection with the NaMeX switching infrastructure shall take place by means of RJ45 connectors and category 5 or 6 UTP cables, or else SC or LC connectors and multimode (50/125 or 62.5/125 micron) or single-mode (9/125 micron) fibre cables.
- 3.1.6 The ports available for connection with the switching infrastructure are Ethernet 10/100/1000 Mbps, Gigabit Ethernet 1000BaseSX and 1000Base LX, and 10 Gigabit Ethernet.

- 3.1.7 Any variations in the type of media available for connection with the switching infrastructure shall be communicated by the technical staff to the user parties present at NaMeX.
- 3.1.8 It is the duty of the user party to attend to the material necessary for the installation of its router at the location of the NaMeX exchange point.
- 3.1.9 It is the duty of the user party to install its router in the rack in the position indicated by the technical staff of NaMeX.
- 3.1.10 The installation of the devices shall take place in compliance with technical specifications determined by NaMeX.
- 3.1.11 The only authorized connections from user party devices located in the peering services area are WAN connections, connections with the switching infrastructure and back-to-back type of connections with devices of other operators housed in the same area.
- 3.1.12 It is prohibited for a user party to intervene with regard to the switching infrastructure or any router of other user parties present in the areas dedicated to peering services.

### **3.2 Operating rules pertaining to the public peering service**

- 3.2.1 The switching infrastructure of the NaMeX exchange point is made by devices operating at Level 2 of the ISO/OSI stack.
- 3.2.2 The user parties undertake to establish peering agreements utilising the BGPv4 and/or BGPv4+ routing protocol.
- 3.2.3 The user parties undertake to publish their peering policies on the special page of the NaMeX Website.
- 3.2.4 The peering agreements between NaMeX user parties shall be stipulated solely free of charge on the basis of the peering policies published by the same parties.
- 3.2.5 The user parties have the right to refuse a request for peering on the part of another user party as a consequence of the implementation of their peering policies.
- 3.2.6 Every user party undertakes to establish a peering session with the AS of NaMeX.
- 3.2.7 The user party is not allowed to transfer this peering agreement to a third party without the express assent of the NaMeX Technical Committee.
- 3.2.8 The user parties undertake to announce in the peering agreements only the public networks associated with their AS or with those of their own customers.

- 3.2.9 The user parties undertake to not announce any default route in their own peering agreements, and in any case to not act as gateway in any direct or indirect form, such as, by way of non-exclusive example, to announce the Full Internet Routing Table, engage in tunnelling or utilise static routing.
- 3.2.10 The user parties undertake to announce as next-hop of the networks announced that of their own router at NaMeX.
- 3.2.11 The user parties undertake to announce their networks in the best possible way. Specifically, they undertake to announce their own networks using an aggregate modality (*route summarisation*) and to reduce the announcement of specific networks to the indispensable minimum.
- 3.2.12 The user parties undertake to keep their own peering agreements up to date with regard to the IRR (*Internet Routing Registry*) of the RIR (*Regional Internet Registry*) of their region of belonging in accordance with the specifications set forth in documents RFC-2622 (RPSL) and RFC-4012 (RPSLng).
- 3.2.13 The user parties undertake to control the stability of the announcements of their own networks (*route-flap*) and to maintain it at quality levels considered acceptable by the Internet community and defined in document ripe-229.
- 3.2.14 The user parties undertake to take the utmost care so as to not cause any damage to other user parties due to their own traffic or that of their customers.
- 3.2.15 A sole MAC address shall correspond to any port of the NaMeX switching infrastructure utilised by the user party, which must always be associated with the IP address assigned for peering.
- 3.2.16 The user parties undertake to maintain the quality level of their traffic above the parameters established by the NaMeX Technical Committee. The required parameters are packet loss < 5% and Round Trip Delay < 59 msec on a monthly average measured between the router of the user party at NaMeX and the first next-hop toward its own network. The measurements shall be taken and made known to the other user parties by the technical staff of NaMeX.
- 3.2.17 The user parties undertake to deactivate the following functions on their devices:
- (a) Proxy-ARP
  - (b) ICMP redirect
  - (c) IP direct broadcast
  - (d) IEEE 802.1D Spanning tree

(e) All protocols that generate broadcast toward the switching infrastructure of the exchange point, with the sole exception of the ARP protocol and of all other protocols necessary for the correct functioning of the exchange point.

3.2.18 The user parties undertake to not collect data in transit on the exchange point. Any data that may be gathered, subject to communication to and approval of the NaMeX Technical Committee, must remain confidential and be used only for internal purposes tied to the quality of the traffic without in any way breaking Italian or European laws on privacy.

### **3.3 Operating rules pertaining to private peering services on dedicated VLAN**

3.3.1 The user parties have the possibility of engaging in private peering through attestation on dedicated VLANs configured on the switching infrastructure of the exchange point.

3.3.2 A sole MAC address shall correspond to any gateway on dedicated VLAN utilised by the user party.

3.3.3 It is not allowed to utilise private peering VLANs for the supply/acquisition of Internet transit; for this service it is necessary to request the activation of a VLAN expressly dedicated to transit.

### **3.4 Operating rules pertaining to transit services on dedicated VLAN**

3.3.1 The user parties have the possibility of supplying/acquiring Internet transit at the exchange point by utilising dedicated VLANs configured on the switching infrastructure.

3.4.2 A user party desiring to provide Internet transit at the exchange point must request activation of one or more dedicated VLANs, in the role of *initiator*.

3.4.3 A user party desiring to acquire Internet transit through the exchange point must request association, in the role of *participant*, with a VLAN previously activated by an *initiator*.

3.4.4 A sole MAC address shall correspond to any port on dedicated VLAN utilised by the user party.

### **3.5 Operating rules pertaining to back-to-back connection services**

3.5.1 Two user parties may request direct connection (*back-to-back*) between interfaces of their respective routers housed in the rooms dedicated to peering services.

## **4 Technical Rules Pertaining to the L1/L2 Interconnection Service**

### **4.1 Technical rules for installation**

- 4.1.1 The devices dedicated to the L1/L2 interconnection service must operate at Level 1 and/or Level 2 of the ISO/OSI stack.
- 4.1.2 The devices dedicated to the L1/L2 interconnection service must be of the 19" *rack mountable* type and powered by 220 Volt AC.
- 4.1.3 The devices dedicated to the interconnection must be installed in a special room (*carrier room*) in accordance with two possible modalities:
- (a) devices occupying an entire rack must be placed in spaces of 60x60 cm designated by the NaMeX technical staff; the user party is completely responsible for providing and installing the rack;
- (b) devices occupying fractions of rack may be placed in lockers/boxes arranged by NaMeX, in lots occupying  $\frac{1}{4}$  of a rack (10 RU).
- 4.1.4 The user parties undertake to communicate to the NaMeX technical staff the expected power consumption for each device at the time of installation, as well as the overall power consumption of the installed active devices.
- 4.1.5 The user parties likewise undertake to communicate in timely fashion to the NaMeX technical staff any variation in the power consumption values initially declared.
- 4.1.6 The power consumption of each user party is subjected to periodic control by the NaMeX technical staff for the purpose of verifying the observance of the nominal values declared.
- 4.1.7 The carrier room has an area provided with shared wiring/cable facilities, necessary for the realisation of interconnections between/among operators, called *meet-me area*.
- 4.1.8 The devices dedicated to interconnection can be served by two typologies of connections:
- (a) WAN connections to the geographic network infrastructure of the operator;
- (b) Internal connections with the *carrier room*, from the devices to the shared wiring/cable facilities (*meet-me area*).
- 4.1.9 It is the task of the user party to realise the connections as per the preceding point, in compliance with these regulations and with the instructions of the NaMeX technical staff.

## **4.2 Operating rules**

- 4.2.1 The user parties that make use of the L1/L2 interconnection service may realise optic and electric connections for the following purposes:



(a) Interconnection of their own circuits with other operators present in the *carrier room*;

(b) Supply of circuits to enable connection with subjects present in other areas of the datacenter (PoP of operators, devices housed in the rooms dedicated to peering services, and entities housed in various capacities in the data rooms).

4.2.2 For the purpose of realising these connections each operator is obliged to install one or more patch-panels at the shared wiring/cable infrastructures (*meet-me area*) arranged by NaMeX.

4.2.3 The installation is allowed for the following types of wiring/cable and panels in the infrastructures of the *meet-me area*: single-mode (9/125 micron) and multi-mode (50/125 or 62.5/125 micron) optic fibre patch-panels, UTP patch-panel (category 5 or 6) and attestation blocks for coaxial cables (N3).

4.2.4 All the interconnection connections must be realised with the installation of optical and/or electrical patch cords between patch-panels of the *meet-me area*. In no case are direct connections between/among the devices of different operators or between the devices of one operator and other areas of the datacenter allowed.

4.2.5 It is the task of the user party to provide the material necessary for the installation and realisation of the patch cords necessary for the realisation of the interconnection circuits.

4.2.6 It is the task of the user party to realise the interconnection patch cords in compliance with the rules contained in these regulations and in accordance with the instructions provided by the NaMeX technical staff.

4.2.7 It is prohibited for a user party to intervene on the transmission devices of other user parties present in the areas dedicated to the interconnection service.

## **5 Duties of the NaMeX Technical Staff**

5.1 The NaMeX technical staff undertakes to run a Website for keeping up to date a set of information of a technical nature, as follows:

(a) In the public part of the site:

- graphics concerning the total traffic exchanged through the switching infrastructure of the exchange point
- the upstream capacity of the single user parties
- the bandwidth declared by the single user parties

(b) In a part of the site with reserved access:

- graphs concerning the traffic of the single user party at the switching infrastructure of the exchange point

- a list of the technical referents of the single user parties.

In addition, a space shall be provided on the Website to every user party for publishing its peering policies. These policies shall be visible in the reserved-access part of the Website.

- 5.2 The technical staff has the task of keeping the switching infrastructure of the exchange point as efficient as possible.
- 5.3 The technical staff has the task of keeping the infrastructures for wiring/cables and support to the interconnection and peering services as efficient as possible.
- 5.4 The technical staff has the duty to intervene in the case of malfunctioning of the switching infrastructure of the exchange point.
- 5.5 The technical staff has duty to intervene in the case of defective functioning, deterioration of performance/services or general inefficiency of the wiring/cable infrastructures that support the peering and interconnection services.
- 5.6 The technical staff has the task of affixing and keeping up to date the labels/tags pertaining to the connection cables between the peering devices and the switching infrastructure.
- 5.7 The technical staff has the task of affixing and keeping up to date the labels/tags pertaining to the patch cords installed in the *meet-me area*.
- 5.8 The technical staff of NaMeX has the obligation to inform the technical referents of the user parties present at NaMeX about routine maintenance work. Notice thereof shall be given by e-mail at least 7 days in advance.

## **6 Violation of These Regulations**

- 6.1 The technical staff of NaMeX reserves the right to ask user parties for evidence of compliance with these regulations.
- 6.2 In the event of violation of these regulations by a user party, NaMeX will send formal reprimands to the technical contacts of the party. Should the situation persist or recur, NaMeX reserves the right to submit the case to the Technical Committee, which shall evaluate it and decide whether to take further measures.
- 6.3 In the event of serious violation of these regulations, NaMeX reserves the right to act in the way it deems most appropriate to rectify matters.