

DE-CIX VIRTUALPNI TECHNICAL SERVICE DESCRIPTION

I. GENERAL PROVISIONS

1. Overview, scope of application

This document contains the Technical Service Description (TSD) for the VirtualPNI product. This TSD is part of the DE-CIX contractual framework.

This TSD shall apply only to the VirtualPNI product. The VirtualPNI product may, however, be a prerequisite for other DE-CIX services. This document contains only technical specifications and documentation. Please consult the VirtualPNI Special Service Level Agreement (Special SLA) for service levels.

2. Amendment

This document may be revised and amended at any time pursuant to the provisions of the DE-CIX Agreement.

3. Product prerequisites

The VirtualPNI Product requires the following DE-CIX products for its normal operation:

DE-CIX Access (see Master SLA and DE-CIX Technical Access Description (TAD)) at any data center location that allows a local or remote¹ connection to the respective VirtualPNI region.

4. Applicable standards

Customer's use of the DE-CIX network shall at all times conform to the relevant standards as laid out in [STD0001](#) and associated Internet STD documents.

¹ Some Exchange locations of DE-CIX are interconnected. At those locations customers can book the access to the VirtualPNI region at the remote location as an additional service, e.g. customers of DE-CIX New York region can order the access to the DE-CIX VirtualPNI Frankfurt region.

II. DATA LINK-LAYER CONFIGURATION (ISO/OSI LAYER 2)

1. Bandwidth

Bandwidth of the VirtualPNI product must be explicitly configured if the agreed bandwidth for VirtualPNI differs from the bandwidth of the access or bundle of aggregated access, on which the VirtualPNI product is used.

2. Frame Size

The maximum Frame Size is set to 9,000 Bytes.

3. Protocol Transparency

The VirtualPNI service is transparent to Layer 2 Ethernet and Layer 3 protocols.

| Group | Parameter | Transparent |
|-----------------|---|-------------|
| General | 802.1Q VLAN Transparency | optional |
| | 802.1Q QinQ Vlan Transparency | optional |
| IEEE L2CPs | Spanning Tree Protocol (STP, RSTP, PVST, MST) | Yes |
| | Flow-Control - PAUSE (802.3x) | No |
| | Link Aggregation Protocol (LACP) | No |
| | Port Authentication Protocol (802.1X) | No |
| | Link Layer Discover Protocol (LLDP) | No |
| Cisco Protocols | Cisco Port Aggregation Protocol (PAgP) | Yes |
| | Cisco Discovery Protocol (CDP) | Yes |
| | Cisco Uni Directional Link Detection (UDLD) | Yes |
| | Cisco VLAN Trunking Protocol (VTP) | Yes |
| | Cisco Dynamic Trunking Protocol (DTP) | Yes |
| | Cisco Interswitch Link (ISL) | Yes |
| Other Protocols | Transparent for 802.2 LLC/SNAP (0x0600) | No |
| | IPv4 (0x0800) | Yes |
| | Address Resolution Protocol ARP (0x0806) | Yes |
| | Reverse Address Resolution Protocol RARP (0x8035) | Yes |
| | AppleTalk (0x809b) | Yes |
| | AppleTalk Address Resolution Protocol (0x80f3) | Yes |
| | IEEE 802.1Q-tagged frame (0x8100) | Yes |
| | Novell IPX (0x8137) | Yes |

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| | Novell (0x8138) | Yes |
| | IPv6 (0x86DD) | Yes |
| | PPPoE Discover Stage (0x8863) | Yes |
| | PPPoE Session Stage (0x8864) | Yes |
| | EAP over LAN (0x888E) | No |
| | MAC security (0x88E5) | No |
| | MPLS | Yes |