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Link-Layer Types for PCAP-related Capture File Formats
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Abstract

This document describes a set of Packet CAPture (PCAP)-related LinkType values and creates an IANA registry for those values. These values are used by the PCAP and PCAP-Now-Generic specifications.

About This Document

This note is to be removed before publishing as an RFC.

Status information for this document may be found at https://datatracker.ietf.org/doc/draft-ietf-opsawg-pcaplinktype/.

Discussion of this document takes place on the opsawg Working Group mailing list (mailto:opsawg@ietf.org), which is archived at https://mailarchive.ietf.org/arch/browse/opsawg/. Subscribe at https://www.ietf.org/mailman/listinfo/opsawg/.

Source for this draft and an issue tracker can be found at https://github.com/IETF-OPSAWG-WG/pcapng.

Status of This Memo

Table of Contents

1. Introduction

In the late 1980s, Van Jacobson, Steve McCanne, and others at the Network Research Group at Lawrence Berkeley National Laboratory developed the tcpdump program to capture and dissect network traces. The code to capture traffic, using low-level mechanisms in various operating systems, and to read and write network traces to a file was later put into a library named libpcap [LIBPCAP].

Other documents describe the original (legacy) file format used by tcpdump (PCAP, [I-D.ietf-opsawg-pcap]), as well as a revised file format [I-D.ietf-opsawg-pcapng], both of which are used by tcpdump and Wireshark [Wireshark].

Within those file formats each packet that is captured is indicated by a LinkType value. The LinkType value selects one of many hundred formats for metadata and Layer 2 encapsulation of the packet.

This document creates an IANA registry for LinkType values, establishing the IANA Considerations by which other uses of the PCAP-related formats may register new LinkType values.

2. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

3. IANA Considerations

3.1. PCAP Registry

IANA is requested to create a new registry group entitled "The PCAP Registry".

3.2. LinkType Registry

IANA is also requested to create a registry entitled "PCAP-related LinkType List" under The PCAP registry group (Section 3.1).

The registry has the following structure:

* LinkType Name: Indicates the symbolic name for this LinkType. The name is prefixed with "LINKTYPE_" (i.e., LINKTYPE_something).

* LinkType Value: Indicates the 16-bit unsigned integer assigned for this LinkType.

* Description: Provides a very short description.

* Reference: Indicates an authoritative document reference for the LinkType or a requester reference.

The policy allocation for the LinkType values is as follows:

* Values from 0 to 65000 are allocated following a First-Come First-Served policy (Section 4.4 of [RFC8126]). Values in the ranges 0-10, 50-51, and 98-301 are already assigned; values in the ranges 11-49 and 52-97 are reserved and must not be assigned.

* Values from 65001 to 65535 are reserved for Experimental Use (Section 4.2 of [RFC8126]).

The initial version of the registry is provided in Section 3.2.1. In each case here, the reference should be set to [TCPDUMP] and the RFC number to be assigned to this document, which is not repeated each time.

The initial contents of the table are based upon the link-layer header type list maintained by libpcap, and published on [TCPDUMP].

Note that historically, values were assigned incrementally following First Come First Served (FCFS) policy with Expert Review. A preference was made to have a public specification, but with no mandate to enforce this. Some historical values may have less specification than desired.

LinkType values 147 to 162 named LINKTYPE_RESERVED_xx were originally reserved for Experimental/Private Use, and that use continues to be supported. However, new private use cases should use the values in the 65001-65535 range.

In general, Experimental Use values should never leak out of the entity that uses it. As the FCFS range is large and easily obtained, official values are recommended.

> There is often an associated Data Link Type (DLT) value which is often identical in value, but not universally so. DLT values are associated with specific operating systems, and the numerical values for some of them are operating system specific, and are thus not subject to standardization.

3.2.1. Initial Values

This is the initial table for the registry:

Name LINKTYPE_NULL
Number 0
Description BSD loopback encapsulation
Reference [LINKTYPE_NULL]

Name LINKTYPE_ETHERNET
Number 1
Description IEEE 802.3 Ethernet
Reference: [LINKTYPE_ETHERNET]

Name LINKTYPE_EXP_ETHERNET
Number 2
Description Xerox experimental 3Mb Ethernet
Reference [PracConsEthDesign]

Name LINKTYPE_AX25
Number 3
Description AX.25 layer 2 packets
Reference [LINKTYPE_AX25]

Name LINKTYPE_PRONET
Number 4
Description Proteon PRONet Token Ring

Name LINKTYPE_CHAOS
Number 5
Description MIT Chaosnet
Reference [AIM-628]

Name LINKTYPE_IEEE802_5
Number 6
Description IEEE 802.5 Token Ring

Name LINKTYPE_ARCNET_BSD
Number 7
Description ARCNET Data Packets with BSD encapsulation

Name LINKTYPE_SLIP
Number 8
Description SLIP, with a direction header
Reference [LINKTYPE_SLIP]

Name LINKTYPE_PPP
Number 9
Description PPP
Reference [LINKTYPE_PPP]

Name LINKTYPE_FDDI
Number 10
Description FDDI: per ANSI INCITS 239-1994

Name Not available for assignment
Number 11-49
Description Do not use these values

Name LINKTYPE_PPP_HDLC
Number 50
Description PPP in HDLC-like framing
Reference [LINKTYPE_PPP_HDLC]

Name LINKTYPE_PPP_ETHER
Number 51
Description PPPoE session packets

Reference [LINKTYPE_PPP_ETHER]

Name Not available for assignment
Number 52-98
Description Used historically by NetBSD

Name LINKTYPE_SYMANTEC_FIREWALL
Number 99
Description Symantec Enterprise Firewall

Name LINKTYPE_ATM_RFC1483
Number 100
Description LLC/SNAP-encapsulated ATM
Reference [LINKTYPE_ATM_RFC1483]

Name LINKTYPE_RAW
Number 101
Description IP without link-layer headers
Reference [LINKTYPE_RAW] [RFC791] [RFC8200]

Name LINKTYPE_SLIP_BSDOS
Number 102
Description BSD/OS SLIP BPF header

Name LINKTYPE_PPP_BSDOS
Number 103
Description BSD/OS PPP BPF header

Name LINKTYPE_C_HDLC
Number 104
Description Cisco PPP with HDLC framing
Reference [LINKTYPE_C_HDLC]

Name LINKTYPE_IEEE802_11
Number 105
Description IEEE 802.11 wireless LAN

Name LINKTYPE_ATM_CLIP
Number 106
Description ATM Classical IP, with no header preceding IP

Name LINKTYPE_FRELAY
Number 107
Description Frame Relay LAPF
Reference [LINKTYPE_FRELAY]

Name LINKTYPE_LOOP
Number 108

Description OpenBSD loopback encapsulation
Reference [LINKTYPE_LOOP]

Name LINKTYPE_ENC
Number 109
Description OpenBSD IPsec encapsulation

Name LINKTYPE_LANE8023
Number 110
Description ATM LANE + 802.3

Name LINKTYPE_HIPPI
Number 111
Description NetBSD HIPPI

Name LINKTYPE_HDLC
Number 112
Description NetBSD HDLC framing

Name LINKTYPE_LINUX_SLL
Number 113
Description Linux "cooked" capture encapsulation
Reference [LINKTYPE_LINUX_SLL]

Name LINKTYPE_LTALK
Number 114
Description Apple LocalTalk
Reference [LINKTYPE_LTALK]

Name LINKTYPE_ECONET
Number 115
Description Acorn Econet

Name LINKTYPE_IPFILTER
Number 116
Description OpenBSD ipfilter

Name LINKTYPE_PFLOG
Number 117
Description PF packet filter logging

Name LINKTYPE_CISCO_IOS
Number 118
Description Cisco-internal use

Name LINKTYPE_IEEE802_11_PRISM
Number 119
Description IEEE 802.11 wireless LAN, preceded by a Prism monitor

mode header
Reference [LINKTYPE_IEEE802_11_PRISM]

Name LINKTYPE_IEEE802_11_AIRONET
Number 120
Description 802.11 + FreeBSD Aironet radio metadata

Name LINKTYPE_HHDLC
Number 121
Description Siemens HiPath HDLC

Name LINKTYPE_IP_OVER_FC
Number 122
Description IP and ATM over Fibre Channel
Reference [LINKTYPE_IP_OVER_FC]

Name LINKTYPE_SUNATM
Number 123
Description ATM traffic captured from a SunATM device
Reference [LINKTYPE_SUNATM]

Name LINKTYPE_RIO
Number 124
Description RapidIO

Name LINKTYPE_PCI_EXP
Number 125
Description PCI Express

Name LINKTYPE_AURORA
Number 126
Description Xilinx Aurora link layer

Name LINKTYPE_IEEE802_11_RADIOTAP
Number 127
Description IEEE 802.11 wireless LAN, preceded by a Radiotap header
Reference [Radiotap]

Name LINKTYPE_TZSP
Number 128
Description Tazmen Sniffer Protocol

Name LINKTYPE_ARCNET_LINUX
Number 129
Description ARCNET Data Packets with Linux encapsulation

Name LINKTYPE_JUNIPER_MLPPP
Number 130

Description Juniper Networks

Name LINKTYPE_JUNIPER_MLFR
Number 131
Description Juniper Networks

Name LINKTYPE_JUNIPER_ES
Number 132
Description Juniper Networks

Name LINKTYPE_JUNIPER_GGSN
Number 133
Description Juniper Networks

Name LINKTYPE_JUNIPER_MFR
Number 134
Description Juniper Networks

Name LINKTYPE_JUNIPER_ATM2
Number 135
Description Juniper Networks

Name LINKTYPE_JUNIPER_SERVICES
Number 136
Description Juniper Networks

Name LINKTYPE_JUNIPER_ATM1
Number 137
Description Juniper Networks

Name LINKTYPE_APPLE_IP_OVER_IEEE1394
Number 138
Description Apple IP-over-IEEE 1394 cooked header
Reference [LINKTYPE_APPLE_IP_OVER_IEEE1394]

Name LINKTYPE_MTP2_WITH_PHDR
Number 139
Description SS7 MTP2 frames, with a pseudo-header
Reference [LINKTYPE_MTP2_WITH_PHDR]

Name LINKTYPE_MTP2
Number 140
Description SS7 MTP2 packets
Reference [LINKTYPE_MTP2]

Name LINKTYPE_MTP3
Number 141
Description SS7 MTP3 packets

Reference [LINKTYPE_MTP3]

Name LINKTYPE_SCCP
Number 142
Description SS7 SCCP packets
Reference [LINKTYPE_SCCP]

Name LINKTYPE_DOCSIS
Number 143
Description DOCSIS MAC frames
Reference [DOCSIS-4.0-MULP]

Name LINKTYPE_LINUX_IRDA
Number 144
Description Linux-IrDA packets
Reference [LINKTYPE_LINUX_IRDA]

Name LINKTYPE_IBM_SP
Number 145
Description IBM SP switch

Name LINKTYPE_IBM_SN
Number 146
Description IBM Next Federation switch

Name LINKTYPE_RESERVED_01
Number 147
Description For private use (deprecated)

Name LINKTYPE_RESERVED_02
Number 148
Description For private use (deprecated)

Name LINKTYPE_RESERVED_03
Number 149
Description For private use (deprecated)

Name LINKTYPE_RESERVED_04
Number 150
Description For private use (deprecated)

Name LINKTYPE_RESERVED_05
Number 151
Description For private use (deprecated)

Name LINKTYPE_RESERVED_06
Number 152
Description For private use (deprecated)

Name LINKTYPE_RESERVED_07
Number 153
Description For private use (deprecated)

Name LINKTYPE_RESERVED_08
Number 154
Description For private use (deprecated)

Name LINKTYPE_RESERVED_09
Number 155
Description For private use (deprecated)

Name LINKTYPE_RESERVED_10
Number 156
Description For private use (deprecated)

Name LINKTYPE_RESERVED_11
Number 157
Description For private use (deprecated)

Name LINKTYPE_RESERVED_12
Number 158
Description For private use (deprecated)

Name LINKTYPE_RESERVED_13
Number 159
Description For private use (deprecated)

Name LINKTYPE_RESERVED_14
Number 160
Description For private use (deprecated)

Name LINKTYPE_RESERVED_15
Number 161
Description For private use (deprecated)

Name LINKTYPE_RESERVED_16
Number 162
Description For private use (deprecated)

Name LINKTYPE_IEEE802_11_AVS
Number 163
Description IEEE 802.11 wireless LAN, preceded by an AVS header
Reference [AVS]

Name LINKTYPE_JUNIPER_MONITOR
Number 164
Description Juniper Networks

Name LINKTYPE_BACNET_MS_TP
Number 165
Description BACnet MS/TP frames
Reference [LINKTYPE_BACNET_MS_TP]

Name LINKTYPE_PPP_PPPD
Number 166
Description PPP preceded by a direction octet and an HDLC-like control field
Reference [LINKTYPE_PPP_PPPD]

Name LINKTYPE_JUNIPER_PPPOE
Number 167
Description Juniper Networks

Name LINKTYPE_JUNIPER_PPPOE_ATM
Number 168
Description Juniper Networks

Name LINKTYPE_GPRS_LLC
Number 169
Description General Packet Radio Service Logical Link Control, as per 3GPP TS 04.64
Reference [_3GPP-TS-04.64]

Name LINKTYPE_GPF_T
Number 170
Description Transparent-mapped generic framing procedure
Reference [G.7041]

Name LINKTYPE_GPF_F
Number 171
Description Frame-mapped generic framing procedure
Reference [G.7041]

Name LINKTYPE_GCOM_T1E1
Number 172
Description Gcom T1/E1 line monitoring equipment

Name LINKTYPE_GCOM_SERIAL
Number 173
Description Gcom T1/E1 line monitoring equipment

Name LINKTYPE_JUNIPER_PIC_PEER
Number 174
Description Juniper Networks

Name LINKTYPE_ERF_ETH

Number 175
Description Endace TYPE_ETH ERF records
Reference [LINKTYPE_ERF]

Name LINKTYPE_ERF_POS
Number 176
Description Endace TYPE_POS_HDLC ERF records
Reference [LINKTYPE_ERF]

Name LINKTYPE_LINUX_LAPD
Number 177
Description Linux vISDN LAPD frames
Reference [LINKTYPE_LINUX_LAPD]

Name LINKTYPE_JUNIPER_ETHER
Number 178
Description Juniper Networks

Name LINKTYPE_JUNIPER_PPP
Number 179
Description Juniper Networks

Name LINKTYPE_JUNIPER_FRELAY
Number 180
Description Juniper Networks

Name LINKTYPE_JUNIPER_CHDLC
Number 181
Description Juniper Networks

Name LINKTYPE_MFR
Number 182
Description FRF.16.1 Multi-Link Frame Relay frames
Reference [LINKTYPE_MFR]

Name LINKTYPE_JUNIPER_VP
Number 183
Description Juniper Networks

Name LINKTYPE_A429
Number 184
Description ARINC 429 frames

Name LINKTYPE_A653_ICM
Number 185
Description Arinc 653 Interpartition Communication messages

Name LINKTYPE_USB_FREEBSD

```
   Number  186
   Description  USB traffic captured on FreeBSD

   Name  LINKTYPE_BLUETOOTH_HCI_H4
   Number  187
   Description  Bluetooth HCI UART Transport Layer packets
   Reference  [LINKTYPE_BLUETOOTH_HCI_H4]

   Name  LINKTYPE_IEEE802_16_MAC_CPS
   Number  188
   Description  IEEE 802.16 MAC Common Part Sublayer

   Name  LINKTYPE_USB_LINUX
   Number  189
   Description  USB packets, beginning with a Linux USB header
   Reference  [LINKTYPE_USB_LINUX]

   Name  LINKTYPE_CAN20B
   Number  190
   Description  Controller Area Network (CAN) v. 2.0B packets

   Name  LINKTYPE_IEEE802_15_4_LINUX
   Number  191
   Description  IEEE 802.15.4 with address fields padded by Linux

   Name  LINKTYPE_PPI
   Number  192
   Description  Per-Packet Information header preceding packet data
   Reference  [LINKTYPE_PPI]

   Name  LINKTYPE_IEEE802_16_MAC_CPS_RADIO
   Number  193
   Description  802.16 MAC Common Part Sublayer plus radio header

   Name  LINKTYPE_JUNIPER_ISM
   Number  194
   Description  Juniper Networks

   Name  LINKTYPE_IEEE802_15_4_WITHFCS
   Number  195
   Description  IEEE 802.15.4 with FCS
   Reference  [LINKTYPE_IEEE802_15_4_WITHFCS]

   Name  LINKTYPE_SITA
   Number  196
   Description  Various link-layer types, with a pseudo-header
   Reference  [LINKTYPE_SITA]
```

Name LINKTYPE_ERF
Number 197
Description Endace ERF records
Reference [LINKTYPE_ERF]

Name LINKTYPE_RAIF1
Number 198
Description Ethernet packets captured from a u10 Networks board

Name LINKTYPE_IPMB_KONTRON
Number 199
Description IPMB packet for IPMI, with a 2-octet header

Name LINKTYPE_JUNIPER_ST
Number 200
Description Juniper Networks

Name LINKTYPE_BLUETOOTH_HCI_H4_WITH_PHDR
Number 201
Description Bluetooth HCI UART Transport Layer packets with a direction pseudo-header
Reference [LINKTYPE_BLUETOOTH_HCI_H4_WITH_PHDR]

Name LINKTYPE_AX25_KISS
Number 202
Description KISS frames between a host and an AX.25 TNC
Reference [LINKTYPE_AX25_KISS]

Name LINKTYPE_LAPD
Number 203
Description Q.921 LAPD frames
Reference [LINKTYPE_LAPD]

Name LINKTYPE_PPP_WITH_DIR
Number 204
Description PPP, with a direction header
Reference [LINKTYPE_PPP_WITH_DIR]

Name LINKTYPE_C_HDLC_WITH_DIR
Number 205
Description Cisco PPP with HDLC framing, with a direction header
Reference [LINKTYPE_C_HDLC_WITH_DIR]

Name LINKTYPE_FRELAY_WITH_DIR
Number 206
Description Frame Relay LAPF, with a direction header
Reference [LINKTYPE_FRELAY_WITH_DIR]

Name LINKTYPE_LAPB_WITH_DIR
Number 207
Description X.25 LAPB, with a direction header
Reference [LINKTYPE_LAPB_WITH_DIR]

Name WillBarker-Proprietary
Number 208
Description Proprietary Link-Layer type

Name LINKTYPE_I2C_LINUX
Number 209
Description Linux I2C packets
Reference [LINKTYPE_I2C_LINUX]

Name LINKTYPE_FLEXRAY
Number 210
Description FlexRay frames or symbols, with a pseudo-header
Reference [LINKTYPE_FLEXRAY]

Name LINKTYPE_MOST
Number 211
Description Media Oriented Systems Transport (MOST) bus

Name LINKTYPE_LIN
Number 212
Description Local Interconnect Network (LIN) automotive bus, with a
metadata header
Reference [LINKTYPE_LIN]

Name LINKTYPE_X2E_SERIAL
Number 213
Description X2E serial line captures

Name LINKTYPE_X2E_XORAYA
Number 214
Description X2E Xoraya data loggers

Name LINKTYPE_IEEE802_15_4_NONASK_PHY
Number 215
Description IEEE 802.15.4 with PHY header
Reference [LINKTYPE_IEEE802_15_4_NONASK_PHY]

Name LINKTYPE_LINUX_EVDEV
Number 216
Description Linux evdev messages

Name LINKTYPE_GSMTAP_UM
Number 217

Description GSM Um interface, with gsmtap header

Name LINKTYPE_GSMTAP_ABIS
Number 218
Description GSM Abis interface, with gsmtap header

Name LINKTYPE_MPLS
Number 219
Description MPLS packets with MPLS label as the header

Name LINKTYPE_USB_LINUX_MMAPPED
Number 220
Description USB packets, beginning with an extended Linux USB header
Reference [LINKTYPE_USB_LINUX_MMAPPED]

Name LINKTYPE_DECT
Number 221
Description DECT packets, with a pseudo-header

Name LINKTYPE_AOS
Number 222
Description OS Space Data Link Protocol

Name LINKTYPE_WIHART
Number 223
Description Wireless HART (Highway Addressable Remote Transducer)

Name LINKTYPE_FC_2
Number 224
Description Fibre Channel FC-2 frames
Reference [LINKTYPE_FC_2]

Name LINKTYPE_FC_2_WITH_FRAME_DELIMS
Number 225
Description Fibre Channel FC-2 frames with SOF and EOF
Reference [LINKTYPE_FC_2_WITH_FRAME_DELIMS]

Name LINKTYPE_IPNET
Number 226
Description Solaris ipnet
Reference [LINKTYPE_IPNET]

Name LINKTYPE_CAN_SOCKETCAN
Number 227
Description Controller Area Network (CAN) frames, with a metadata
header
Reference [LINKTYPE_CAN_SOCKETCAN]

Name LINKTYPE_IPV4
Number 228
Description IPv4 without link-layer headers
Reference [LINKTYPE_IPV4] [RFC791]

Name LINKTYPE_IPV6
Number 229
Description IPv6 without link-layer headers
Reference [LINKTYPE_IPV6] [RFC8200]

Name LINKTYPE_IEEE802_15_4_NOFCS
Number 230
Description IEEE 802.15.4 without FCS
Reference [LINKTYPE_IEEE802_15_4_NOFCS]

Name LINKTYPE_DBUS
Number 231
Description D-Bus messages
Reference [LINKTYPE_DBUS]

Name LINKTYPE_JUNIPER_VS
Number 232
Description Juniper Networks

Name LINKTYPE_JUNIPER_SRX_E2E
Number 233
Description Juniper Networks

Name LINKTYPE_JUNIPER_FIBRECHANNEL
Number 234
Description Juniper Networks

Name LINKTYPE_DVB_CI
Number 235
Description DVB-CI messages, with a pseudo-header
Reference [DVB-CI-PCAP]

Name LINKTYPE_MUX27010
Number 236
Description Variant of 3GPP TS 27.010 multiplexing protocol
Reference [LINKTYPE_MUX27010]

Name LINKTYPE_STANAG_5066_D_PDU
Number 237
Description STANAG 5066 D_PDUs
Reference [LINKTYPE_STANAG_5066_D_PDU]

Name LINKTYPE_JUNIPER_ATM_CEMIC

Number 238
Description Juniper Networks

Name LINKTYPE_NFLOG
Number 239
Description Linux netlink NETLINK NFLOG socket log messages
Reference [LINKTYPE_NFLOG]

Name LINKTYPE_NETANALYZER
Number 240
Description Ethernet frames with netANALYZER pseudo-header
Reference [LINKTYPE_NETANALYZER]

Name LINKTYPE_NETANALYZER_TRANSPARENT
Number 241
Description Ethernet frames with netANALYZER pseudo-header, preamble, and SFD
Reference [LINKTYPE_NETANALYZER_TRANSPARENT]

Name LINKTYPE_IPOIB
Number 242
Description IP-over-InfiniBand
Reference [LINKTYPE_IPOIB]

Name LINKTYPE_MPEG_2_TS
Number 243
Description MPEG-2 Transport Stream transport packets
Reference [LINKTYPE_MPEG_2_TS]

Name LINKTYPE_NG40
Number 244
Description Frames from ng4T GmbH’s ng40 protocol tester
Reference [LINKTYPE_NG40]

Name LINKTYPE_NFC_LLCP
Number 245
Description NFC Logical Link Control Protocol frames, with a pseudo-header
Reference [LINKTYPE_NFC_LLCP]

Name LINKTYPE_PFSYNC
Number 246
Description pfsync output

Name LINKTYPE_INFINIBAND
Number 247
Description InfiniBand data packets
Reference [LINKTYPE_INFINIBAND]

Name LINKTYPE_SCTP
Number 248
Description SCTP packets, with no lower-level protocols such as IPv4 or IPv6
Reference [RFC9260]

Name LINKTYPE_USBPCAP
Number 249
Description USB packets, beginning with a USBPcap header
Reference [USBPcap]

Name LINKTYPE_RTAC_SERIAL
Number 250
Description Serial-line packet from the Schweitzer Engineering Laboratories RTAC product
Reference [LINKTYPE_RTAC_SERIAL]

Name LINKTYPE_BLUETOOTH_LE_LL
Number 251
Description Bluetooth Low Energy link-layer packets
Reference [LINKTYPE_BLUETOOTH_LE_LL]

Name LINKTYPE_WIRESHARK_UPPER_PDU
Number 252
Description Wireshark

Name LINKTYPE_NETLINK
Number 253
Description Linux Netlink capture encapsulation
Reference [LINKTYPE_NETLINK]

Name LINKTYPE_BLUETOOTH_LINUX_MONITOR
Number 254
Description Bluetooth Linux Monitor
Reference [LINKTYPE_BLUETOOTH_LINUX_MONITOR]

Name LINKTYPE_BLUETOOTH_BREDR_BB
Number 255
Description Bluetooth Basic Rate and Enhanced Data Rate baseband packets
Reference [LINKTYPE_BLUETOOTH_BREDR_BB]

Name LINKTYPE_BLUETOOTH_LE_LL_WITH_PHDR
Number 256
Description Bluetooth Low Energy link-layer packets
Reference [LINKTYPE_BLUETOOTH_LE_LL_WITH_PHDR]

Name LINKTYPE_PROFIBUS_DL

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   Number  257
   Description  PROFIBUS data link layer packets
   Reference  [LINKTYPE_PROFIBUS_DL]

   Name  LINKTYPE_PKTAP
   Number  258
   Description  Apple PKTAP capture encapsulation
   Reference  [LINKTYPE_PKTAP]

   Name  LINKTYPE_EPON
   Number  259
   Description  Ethernet-over-passive-optical-network packets, including
      preamble octets
   Reference  [LINKTYPE_EPON]

   Name  LINKTYPE_IPMI_HPM_2
   Number  260
   Description  IPMI HPM.2 trace packets
   Reference  [LINKTYPE_IPMI_HPM_2]

   Name  LINKTYPE_ZWAVE_R1_R2
   Number  261
   Description  Z-Wave RF profile R1 and R2 packets
   Reference  [LINKTYPE_ZWAVE_R1_R2]

   Name  LINKTYPE_ZWAVE_R3
   Number  262
   Description  Z-Wave RF profile R3 packets
   Reference  [LINKTYPE_ZWAVE_R3]

   Name  LINKTYPE_WATTSTOPPER_DLM
   Number  263
   Description  WattStopper Digital Lighting Management (DLM) and
      Legrand Nitoo Open protocol packets
   Reference  [LINKTYPE_WATTSTOPPER_DLM]

   Name  LINKTYPE_ISO_14443
   Number  264
   Description  ISO 14443 contactless smartcard messages
   Reference  [ISO-14443-PCAP]

   Name  LINKTYPE_RDS
   Number  265
   Description  IEC 62106 Radio data system (RDS) groups
   Reference  [LINKTYPE_RDS]

   Name  LINKTYPE_USB_DARWIN
   Number  266
```

Description USB packets captured on a Darwin-based operating system (macOS, etc.)
Reference [LINKTYPE_USB_DARWIN]

Name LINKTYPE_OPENFLOW
Number 267
Description OpenBSD DLT_OPENFLOW

Name LINKTYPE_SDLC
Number 268
Description SNA SDLC packets
Reference [LINKTYPE_SDLC]

Name LINKTYPE_TI_LLN_SNIFFER
Number 269
Description Texas Instruments protocol sniffer

Name LINKTYPE_LORATAP
Number 270
Description LoRaWan packets with a LoRaTap pseudo-header
Reference [LINKTYPE_LORATAP]

Name LINKTYPE_VSOCK
Number 271
Description Protocol for communication between host and guest machines in VMware and KVM hypervisors
Reference [LINKTYPE_VSOCK]

Name LINKTYPE_NORDIC_BLE
Number 272
Description Messages to and from a Nordic Semiconductor nRF Sniffer for Bluetooth LE packets
Reference [LINKTYPE_NORDIC_BLE]

Name LINKTYPE_DOCSIS31_XRA31
Number 273
Description DOCSIS packets and bursts, preceded by a pseudo-header
Reference [DOCSIS-XRA] [DOCSIS-4.0-MULP]

Name LINKTYPE_ETHERNET_MPACKET
Number 274
Description IEEE 802.3 mPackets
Reference [LINKTYPE_ETHERNET_MPACKET]

Name LINKTYPE_DISPLAYPORT_AUX
Number 275
Description DisplayPort AUX channel monitoring messages
Reference [LINKTYPE_DISPLAYPORT_AUX]

Name LINKTYPE_LINUX_SLL2
Number 276
Description Linux cooked capture encapsulation v2
Reference [LINKTYPE_LINUX_SLL2]

Name LINKTYPE_SERCOS_MONITOR
Number 277
Description Sercos Monitor

Name LINKTYPE_OPENVIZSLA
Number 278
Description OpenVizsla FPGA-based USB sniffer
Reference [OpenVizsla]

Name LINKTYPE_EBHSCR
Number 279
Description Elektrobit High Speed Capture and Replay (EBHSCR) format
Reference [EBHSCR]

Name LINKTYPE_VPP_DISPATCH
Number 280
Description fd.io VPP graph dispatcher trace records
Reference [FD.io-VPP]

Name LINKTYPE_DSA_TAG_BRCM
Number 281
Description Ethernet frames, with a Broadcom switch tag inserted
Reference [LINKTYPE_DSA_TAG_BRCM]

Name LINKTYPE_DSA_TAG_BRCM_PREPEND
Number 282
Description Ethernet frames, with a Broadcom switch tag prepended
Reference [LINKTYPE_DSA_TAG_BRCM_PREPEND]

Name LINKTYPE_IEEE802_15_4_TAP
Number 283
Description IEEE 802.15.4 with a tap header preceding it
Reference [Exegin-802.15.4-TAP]

Name LINKTYPE_DSA_TAG_DSA
Number 284
Description Ethernet frames, with a Marvell DSA switch tag inserted
Reference [LINKTYPE_DSA_TAG_DSA]

Name LINKTYPE_DSA_TAG_EDSA
Number 285
Description Ethernet frames, with a Marvell EDSA switch tag inserted
Reference [LINKTYPE_DSA_TAG_EDSA]

Name LINKTYPE_ELEE
Number 286
Description ELEE lawful intercept protocol

Name LINKTYPE_Z_WAVE_SERIAL
Number 287
Description Serial frames transmitted between a host and a Z-Wave chip over an RS-232 or USB serial connection
Reference [Z_WAVE_SERIAL] section 5

Name LINKTYPE_USB_2_0
Number 288
Description USB 2.0, 1.1, or 1.0 packets
Reference [LINKTYPE_USB_2_0]

Name LINKTYPE_ATSC_ALP
Number 289
Description ATSC Link-Layer Protocol frames
Reference [LINKTYPE_ATSC_ALP]

Name LINKTYPE_ETW
Number 290
Description Event Tracing for Windows messages
Reference [LINKTYPE_ETW]

Name LINKTYPE_NETANALYZER_NG
Number 291
Description Hilscher Gesellschaft fuer Systemautomation mbH netANALYZER NG hardware and software

Name LINKTYPE_ZBOSS_NCP
Number 292
Description ZBOSS NCP Serial Protocol, with a pseudo-header
Reference [LINKTYPE_ZBOSS_NCP]

Name LINKTYPE_USB_2_0_LOW_SPEED
Number 293
Description Low-Speed USB 2.0, 1.1, or 1.0 packets
Reference [LINKTYPE_USB_2_0_LOW_SPEED]

Name LINKTYPE_USB_2_0_FULL_SPEED
Number 294
Description Full-Speed USB 2.0, 1.1, or 1.0 packets
Reference [LINKTYPE_USB_2_0_FULL_SPEED]

Name LINKTYPE_USB_2_0_HIGH_SPEED
Number 295
Description High-Speed USB 2.0 packets

Reference [LINKTYPE_USB_2_0_HIGH_SPEED]

Name LINKTYPE_AUERSWALD_LOG
Number 296
Description Auerswald Logger Protocol
Reference [Auerswald-Logger]

Name LINKTYPE_ZWAVE_TAP
Number 297
Description Z-Wave packets, with a metadata header
Reference [LINKTYPE_ZWAVE_TAP]

Name LINKTYPE_SILABS_DEBUG_CHANNEL
Number 298
Description Silicon Labs debug channel protocol
Reference [Silabs-Debug-Channel]

Name LINKTYPE_FIRA_UCI
Number 299
Description Ultra-wideband (UWB) controller interface protocol (UCI)
Reference [LINKTYPE_FIRA_UCI]

Name LINKTYPE_MDB
Number 300
Description MDB (Multi-Drop Bus) protocol
Reference [MDB-PCAP]

Name LINKTYPE_DECT_NR
Number 301
Description DECT-2020 New Radio (NR) MAC layer
Reference [LINKTYPE_DECT_NR]

3.2.2. Guidance for Registration

When processing a request for an allocation, the requester will be asked to provide a specification at a stable URL. There is no requirement for a specification.

When the contents of the link type can contain an IPv4 or IPv6 header, then the octets between the beginning of the link type and the IP header needs to be clearly specified.

Specifications that are not publicly available, but which may be obtained via liaison agreements (such as to ITU-T, 3GPP, IEEE, etc.) are acceptable particularly if the specification document will be public eventually, but are discouraged.

It is acceptable to register LinkTypes for which specifications are not publicly available. This includes specifications that might be subject to a security classification. The minimal requirement is to provide a contact person for that link type.

4. Security Considerations

This document describes the IANA registration rules for the LinkType encapsulations. PCAP-related packet file formats use this value to determine what kind of headers precede network packet captures. Many of these formats can contain IPv4 and IPv6 packets. A system reading PCAP-related format captures can be subject to arbitrary inputs that may be controlled by malicious entities, so utmost caution is required.

Many LinkType formats include a "snapshot" length, which may be smaller than the actual packet. It is therefore very likely that trailing parts of a packet capture may be omitted, yet internal length fields in the packets will claim the packet is bigger than the capture. This leads to trivial buffer overreads, and systems interpreting the packets need to carefully scrutinize all attempts to read data from a capture.

5. Contributors

PCAP has been developed over three and half decades by a variety of developers, including: Bill Fenner, Denis Ovsienko, Francois-Xavier Le Bail, Fulvio Risso, Gerald Combs, Gianluca Varenni, Gisle Vanem, Hannes Gredler, Joerg Mayer, Michal Sekletar, Stephen Donnelly, Torsten Landschoff, and Jun-ichiro itojun Hagino.

PCAP was originally created at LBL by Steve McCanne, Craig Leres, and Van Jacobson.

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