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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

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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## 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. IANA Considerations

### 2.1. PCAP Registry

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

### 2.2. LinkType Registry

IANA is also requested to create a registry entitled "PCAP-related LinkType List" under The PCAP registry group (Section 2.1).

The registry has the following structure:

- \* LinkType Value: Indicates the 16-bit unsigned integer assigned for this LinkType.
- \* LinkType Name: Indicates the symbolic name for this LinkType. The name is prefixed with "LINKTYPE\_" (i.e., LINKTYPE\_something).
- \* Change Controller: as per [RFC8126], Section 2.3
- \* 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 an Expert Review policy (Section 4.5 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 2.2.1.

The initial contents of the table are based upon the link-layer header type list maintained by libpcap, and published on [LINKTYPES]. The change controller for all initial entries that have no other reference is linktype@tcpdump.org.

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 Expert Review 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.

### 2.2.1. Initial Values

This is the initial table for the registry:

LinkType Value	0
LinkType Name	LINKTYPE_NULL
Description	BSD loopback encapsulation
Reference	[LINKTYPE_NULL]
LinkType Value	1
LinkType Name	LINKTYPE_ETHERNET
Description	IEEE 802.3 Ethernet
Reference	[LINKTYPE_ETHERNET]
LinkType Value	2
LinkType Name	LINKTYPE_EXP_ETHERNET
Description	Xerox experimental 3Mb Ethernet
Reference	[PracConsEthDesign]
LinkType Value	3
LinkType Name	LINKTYPE_AX25
Description	AX.25 layer 2 packets
Reference	[LINKTYPE_AX25]
LinkType Value	4
LinkType Name	LINKTYPE_PRONET
Description	Proteon PRONet Token Ring
LinkType Value	5
LinkType Name	LINKTYPE_CHAOS
Description	MIT Chaosnet
Reference	[AIM-628]

LinkType Value 6  
LinkType Name LINKTYPE\_IEEE802\_5  
Description IEEE 802.5 Token Ring

LinkType Value 7  
LinkType Name LINKTYPE\_ARCNET\_BSD  
Description ARCNET Data Packets with BSD encapsulation

LinkType Value 8  
LinkType Name LINKTYPE\_SLIP  
Description SLIP, with a direction header  
Reference [LINKTYPE\_SLIP]

LinkType Value 9  
LinkType Name LINKTYPE\_PPP  
Description PPP  
Reference [LINKTYPE\_PPP]

LinkType Value 10  
LinkType Name LINKTYPE\_FDDI  
Description FDDI: per ANSI INCITS 239-1994

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

LinkType Value 50  
LinkType Name LINKTYPE\_PPP\_HDLC  
Description PPP in HDLC-like framing  
Reference [LINKTYPE\_PPP\_HDLC]

LinkType Value 51  
LinkType Name LINKTYPE\_PPP\_ETHER  
Description PPPoE session packets  
Reference [LINKTYPE\_PPP\_ETHER]

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

LinkType Value 99  
LinkType Name LINKTYPE\_SYMANTEC\_FIREWALL  
Description Symantec Enterprise Firewall

LinkType Value 100  
LinkType Name LINKTYPE\_ATM\_RFC1483  
Description LLC/SNAP-encapsulated ATM  
Reference [LINKTYPE\_ATM\_RFC1483]

LinkType Value 101  
LinkType Name LINKTYPE\_RAW  
Description IP without link-layer headers  
Reference [LINKTYPE\_RAW] [RFC791] [RFC8200]

LinkType Value 102  
LinkType Name LINKTYPE\_SLIP\_BSDOS  
Description BSD/OS SLIP BPF header

LinkType Value 103  
LinkType Name LINKTYPE\_PPP\_BSDOS  
Description BSD/OS PPP BPF header

LinkType Value 104  
LinkType Name LINKTYPE\_C\_HDLC  
Description Cisco PPP with HDLC framing  
Reference [LINKTYPE\_C\_HDLC]

LinkType Value 105  
LinkType Name LINKTYPE\_IEEE802\_11  
Description IEEE 802.11 wireless LAN

LinkType Value 106  
LinkType Name LINKTYPE\_ATM\_CLIP  
Description ATM Classical IP, with no header preceding IP

LinkType Value 107  
LinkType Name LINKTYPE\_FRELAY  
Description Frame Relay LAPF  
Reference [LINKTYPE\_FRELAY]

LinkType Value 108  
LinkType Name LINKTYPE\_LOOP  
Description OpenBSD loopback encapsulation  
Reference [LINKTYPE\_LOOP]

LinkType Value 109  
LinkType Name LINKTYPE\_ENC  
Description OpenBSD IPsec encapsulation

LinkType Value 110  
LinkType Name LINKTYPE\_LANE8023  
Description ATM LANE + 802.3

LinkType Value 111  
LinkType Name LINKTYPE\_HIPPI  
Description NetBSD HIPPI

LinkType Value 112  
LinkType Name LINKTYPE\_HDLC  
Description NetBSD HDLC framing

LinkType Value 113  
LinkType Name LINKTYPE\_LINUX\_SLL  
Description Linux "cooked" capture encapsulation  
Reference [LINKTYPE\_LINUX\_SLL]

LinkType Value 114  
LinkType Name LINKTYPE\_LTALK  
Description Apple LocalTalk  
Reference [LINKTYPE\_LTALK]

LinkType Value 115  
LinkType Name LINKTYPE\_ECONET  
Description Acorn Econet

LinkType Value 116  
LinkType Name LINKTYPE\_IPFILTER  
Description OpenBSD ipfilter

LinkType Value 117  
LinkType Name LINKTYPE\_PFLOG  
Description PF packet filter logging

LinkType Value 118  
LinkType Name LINKTYPE\_CISCO\_IOS  
Description Cisco-internal use

LinkType Value 119  
LinkType Name LINKTYPE\_IEEE802\_11\_PRISM  
Description IEEE 802.11 wireless LAN, preceded by a Prism monitor  
mode header  
Reference [LINKTYPE\_IEEE802\_11\_PRISM]

LinkType Value 120  
LinkType Name LINKTYPE\_IEEE802\_11\_AIRONET  
Description 802.11 + FreeBSD Aironet radio metadata

LinkType Value 121  
LinkType Name LINKTYPE\_HHDLC  
Description Siemens HiPath HDLC

LinkType Value 122  
LinkType Name LINKTYPE\_IP\_OVER\_FC  
Description IP and ATM over Fibre Channel  
Reference [LINKTYPE\_IP\_OVER\_FC]

LinkType Value 123  
LinkType Name LINKTYPE\_SUNATM  
Description ATM traffic captured from a SunATM device  
Reference [LINKTYPE\_SUNATM]

LinkType Value 124  
LinkType Name LINKTYPE\_RIO  
Description RapidIO

LinkType Value 125  
LinkType Name LINKTYPE\_PCI\_EXP  
Description PCI Express

LinkType Value 126  
LinkType Name LINKTYPE\_AURORA  
Description Xilinx Aurora link layer

LinkType Value 127  
LinkType Name LINKTYPE\_IEEE802\_11\_RADIOTAP  
Description IEEE 802.11 wireless LAN, preceded by a Radiotap header  
Reference [Radiotap]

LinkType Value 128  
LinkType Name LINKTYPE\_TZSP  
Description Tazmen Sniffer Protocol

LinkType Value 129  
LinkType Name LINKTYPE\_ARCNET\_LINUX  
Description ARCNET Data Packets with Linux encapsulation

LinkType Value 130  
LinkType Name LINKTYPE\_JUNIPER\_MLPPP  
Description Juniper Networks

LinkType Value 131  
LinkType Name LINKTYPE\_JUNIPER\_MLFR  
Description Juniper Networks

LinkType Value 132  
LinkType Name LINKTYPE\_JUNIPER\_ES  
Description Juniper Networks

LinkType Value 133  
LinkType Name LINKTYPE\_JUNIPER\_GGSN  
Description Juniper Networks

LinkType Value 134  
LinkType Name LINKTYPE\_JUNIPER\_MFR

Description Juniper Networks

LinkType Value 135

LinkType Name LINKTYPE\_JUNIPER\_ATM2

Description Juniper Networks

LinkType Value 136

LinkType Name LINKTYPE\_JUNIPER\_SERVICES

Description Juniper Networks

LinkType Value 137

LinkType Name LINKTYPE\_JUNIPER\_ATM1

Description Juniper Networks

LinkType Value 138

LinkType Name LINKTYPE\_APPLE\_IP\_OVER\_IEEE1394

Description Apple IP-over-IEEE 1394 cooked header

Reference [LINKTYPE\_APPLE\_IP\_OVER\_IEEE1394]

LinkType Value 139

LinkType Name LINKTYPE\_MTP2\_WITH\_PHDR

Description SS7 MTP2 frames, with a pseudo-header

Reference [LINKTYPE\_MTP2\_WITH\_PHDR]

LinkType Value 140

LinkType Name LINKTYPE\_MTP2

Description SS7 MTP2 packets

Reference [LINKTYPE\_MTP2]

LinkType Value 141

LinkType Name LINKTYPE\_MTP3

Description SS7 MTP3 packets

Reference [LINKTYPE\_MTP3]

LinkType Value 142

LinkType Name LINKTYPE\_SCCP

Description SS7 SCCP packets

Reference [LINKTYPE\_SCCP]

LinkType Value 143

LinkType Name LINKTYPE\_DOCSIS

Description DOCSIS MAC frames

Reference [DOCSIS-4.0-MULP]

LinkType Value 144

LinkType Name LINKTYPE\_LINUX\_IRDA

Description Linux-IrDA packets

Reference [LINKTYPE\_LINUX\_IRDA]

LinkType Value 145  
LinkType Name LINKTYPE\_IBM\_SP  
Description IBM SP switch

LinkType Value 146  
LinkType Name LINKTYPE\_IBM\_SN  
Description IBM Next Federation switch

LinkType Value 147  
LinkType Name LINKTYPE\_RESERVED\_01  
Description For private use (deprecated)

LinkType Value 148  
LinkType Name LINKTYPE\_RESERVED\_02  
Description For private use (deprecated)

LinkType Value 149  
LinkType Name LINKTYPE\_RESERVED\_03  
Description For private use (deprecated)

LinkType Value 150  
LinkType Name LINKTYPE\_RESERVED\_04  
Description For private use (deprecated)

LinkType Value 151  
LinkType Name LINKTYPE\_RESERVED\_05  
Description For private use (deprecated)

LinkType Value 152  
LinkType Name LINKTYPE\_RESERVED\_06  
Description For private use (deprecated)

LinkType Value 153  
LinkType Name LINKTYPE\_RESERVED\_07  
Description For private use (deprecated)

LinkType Value 154  
LinkType Name LINKTYPE\_RESERVED\_08  
Description For private use (deprecated)

LinkType Value 155  
LinkType Name LINKTYPE\_RESERVED\_09  
Description For private use (deprecated)

LinkType Value 156  
LinkType Name LINKTYPE\_RESERVED\_10  
Description For private use (deprecated)

LinkType Value 157  
LinkType Name LINKTYPE\_RESERVED\_11  
Description For private use (deprecated)

LinkType Value 158  
LinkType Name LINKTYPE\_RESERVED\_12  
Description For private use (deprecated)

LinkType Value 159  
LinkType Name LINKTYPE\_RESERVED\_13  
Description For private use (deprecated)

LinkType Value 160  
LinkType Name LINKTYPE\_RESERVED\_14  
Description For private use (deprecated)

LinkType Value 161  
LinkType Name LINKTYPE\_RESERVED\_15  
Description For private use (deprecated)

LinkType Value 162  
LinkType Name LINKTYPE\_RESERVED\_16  
Description For private use (deprecated)

LinkType Value 163  
LinkType Name LINKTYPE\_IEEE802\_11\_AVS  
Description IEEE 802.11 wireless LAN, preceded by an AVS header  
Reference [AVS]

LinkType Value 164  
LinkType Name LINKTYPE\_JUNIPER\_MONITOR  
Description Juniper Networks

LinkType Value 165  
LinkType Name LINKTYPE\_BACNET\_MS\_TP  
Description BACnet MS/TP frames  
Reference [LINKTYPE\_BACNET\_MS\_TP]

LinkType Value 166  
LinkType Name LINKTYPE\_PPP\_PPPD  
Description PPP preceded by a direction octet and an HDLC-like  
control field  
Reference [LINKTYPE\_PPP\_PPPD]

LinkType Value 167  
LinkType Name LINKTYPE\_JUNIPER\_PPPOE  
Description Juniper Networks

LinkType Value 168  
LinkType Name LINKTYPE\_JUNIPER\_PPPOE\_ATM  
Description Juniper Networks

LinkType Value 169  
LinkType Name LINKTYPE\_GPRS\_LLC  
Description General Packet Radio Service Logical Link Control, as  
per 3GPP TS 04.64  
Reference [\_3GPP-TS-04.64]

LinkType Value 170  
LinkType Name LINKTYPE\_GPF\_T  
Description Transparent-mapped generic framing procedure  
Reference [G.7041]

LinkType Value 171  
LinkType Name LINKTYPE\_GPF\_F  
Description Frame-mapped generic framing procedure  
Reference [G.7041]

LinkType Value 172  
LinkType Name LINKTYPE\_GCOM\_T1E1  
Description Gcom T1/E1 line monitoring equipment

LinkType Value 173  
LinkType Name LINKTYPE\_GCOM\_SERIAL  
Description Gcom T1/E1 line monitoring equipment

LinkType Value 174  
LinkType Name LINKTYPE\_JUNIPER\_PIC\_PEER  
Description Juniper Networks

LinkType Value 175  
LinkType Name LINKTYPE\_ERF\_ETH  
Description Endace TYPE\_ETH ERF records  
Reference [LINKTYPE\_ERF]

LinkType Value 176  
LinkType Name LINKTYPE\_ERF\_POS  
Description Endace TYPE\_POS\_HDLC ERF records  
Reference [LINKTYPE\_ERF]

LinkType Value 177  
LinkType Name LINKTYPE\_LINUX\_LAPD  
Description Linux vISDN LAPD frames  
Reference [LINKTYPE\_LINUX\_LAPD]

LinkType Value 178

LinkType Name LINKTYPE\_JUNIPER\_ETHER  
Description Juniper Networks

LinkType Value 179  
LinkType Name LINKTYPE\_JUNIPER\_PPP  
Description Juniper Networks

LinkType Value 180  
LinkType Name LINKTYPE\_JUNIPER\_FRELAY  
Description Juniper Networks

LinkType Value 181  
LinkType Name LINKTYPE\_JUNIPER\_CHDLC  
Description Juniper Networks

LinkType Value 182  
LinkType Name LINKTYPE\_MFR  
Description FRF.16.1 Multi-Link Frame Relay frames  
Reference [LINKTYPE\_MFR]

LinkType Value 183  
LinkType Name LINKTYPE\_JUNIPER\_VP  
Description Juniper Networks

LinkType Value 184  
LinkType Name LINKTYPE\_A429  
Description ARINC 429 frames

LinkType Value 185  
LinkType Name LINKTYPE\_A653\_ICM  
Description Arinc 653 Interpartition Communication messages

LinkType Value 186  
LinkType Name LINKTYPE\_USB\_FREEBSD  
Description USB traffic captured on FreeBSD

LinkType Value 187  
LinkType Name LINKTYPE\_BLUETOOTH\_HCI\_H4  
Description Bluetooth HCI UART Transport Layer packets  
Reference [LINKTYPE\_BLUETOOTH\_HCI\_H4]

LinkType Value 188  
LinkType Name LINKTYPE\_IEEE802\_16\_MAC\_CPS  
Description IEEE 802.16 MAC Common Part Sublayer

LinkType Value 189  
LinkType Name LINKTYPE\_USB\_LINUX  
Description USB packets, beginning with a Linux USB header

Reference [LINKTYPE\_USB\_LINUX]

LinkType Value 190

LinkType Name LINKTYPE\_CAN20B

Description Controller Area Network (CAN) v. 2.0B packets

LinkType Value 191

LinkType Name LINKTYPE\_IEEE802\_15\_4\_LINUX

Description IEEE 802.15.4 with address fields padded by Linux

LinkType Value 192

LinkType Name LINKTYPE\_PPI

Description Per-Packet Information header preceding packet data

Reference [LINKTYPE\_PPI]

LinkType Value 193

LinkType Name LINKTYPE\_IEEE802\_16\_MAC\_CPS\_RADIO

Description 802.16 MAC Common Part Sublayer plus radio header

LinkType Value 194

LinkType Name LINKTYPE\_JUNIPER\_ISM

Description Juniper Networks

LinkType Value 195

LinkType Name LINKTYPE\_IEEE802\_15\_4\_WITHFCS

Description IEEE 802.15.4 with FCS

Reference [LINKTYPE\_IEEE802\_15\_4\_WITHFCS]

LinkType Value 196

LinkType Name LINKTYPE\_SITA

Description Various link-layer types, with a pseudo-header

Reference [LINKTYPE\_SITA]

LinkType Value 197

LinkType Name LINKTYPE\_ERF

Description Endace ERF records

Reference [LINKTYPE\_ERF]

LinkType Value 198

LinkType Name LINKTYPE\_RAIF1

Description Ethernet packets captured from a u10 Networks board

LinkType Value 199

LinkType Name LINKTYPE\_IPMB\_KONTRON

Description IPMB packet for IPMI, with a 2-octet header

LinkType Value 200

LinkType Name LINKTYPE\_JUNIPER\_ST

Description Juniper Networks

LinkType Value 201

LinkType Name LINKTYPE\_BLUETOOTH\_HCI\_H4\_WITH\_PHDR

Description Bluetooth HCI UART Transport Layer packets with a direction pseudo-header

Reference [LINKTYPE\_BLUETOOTH\_HCI\_H4\_WITH\_PHDR]

LinkType Value 202

LinkType Name LINKTYPE\_AX25\_KISS

Description KISS frames between a host and an AX.25 TNC

Reference [LINKTYPE\_AX25\_KISS]

LinkType Value 203

LinkType Name LINKTYPE\_LAPD

Description Q.921 LAPD frames

Reference [LINKTYPE\_LAPD]

LinkType Value 204

LinkType Name LINKTYPE\_PPP\_WITH\_DIR

Description PPP, with a direction header

Reference [LINKTYPE\_PPP\_WITH\_DIR]

LinkType Value 205

LinkType Name LINKTYPE\_C\_HDLC\_WITH\_DIR

Description Cisco PPP with HDLC framing, with a direction header

Reference [LINKTYPE\_C\_HDLC\_WITH\_DIR]

LinkType Value 206

LinkType Name LINKTYPE\_FRELAY\_WITH\_DIR

Description Frame Relay LAPF, with a direction header

Reference [LINKTYPE\_FRELAY\_WITH\_DIR]

LinkType Value 207

LinkType Name LINKTYPE\_LAPB\_WITH\_DIR

Description X.25 LAPB, with a direction header

Reference [LINKTYPE\_LAPB\_WITH\_DIR]

LinkType Value 208

LinkType Name WillBarker-Proprietary

Description Proprietary Link-Layer type

LinkType Value 209

LinkType Name LINKTYPE\_I2C\_LINUX

Description Linux I2C packets

Reference [LINKTYPE\_I2C\_LINUX]

LinkType Value 210

LinkType Name LINKTYPE\_FLEXRAY  
Description FlexRay frames or symbols, with a pseudo-header  
Reference [LINKTYPE\_FLEXRAY]

LinkType Value 211  
LinkType Name LINKTYPE\_MOST  
Description Media Oriented Systems Transport (MOST) bus

LinkType Value 212  
LinkType Name LINKTYPE\_LIN  
Description Local Interconnect Network (LIN) automotive bus, with a  
metadata header  
Reference [LINKTYPE\_LIN]

LinkType Value 213  
LinkType Name LINKTYPE\_X2E\_SERIAL  
Description X2E serial line captures

LinkType Value 214  
LinkType Name LINKTYPE\_X2E\_XORAYA  
Description X2E Xoraya data loggers

LinkType Value 215  
LinkType Name LINKTYPE\_IEEE802\_15\_4\_NONASK\_PHY  
Description IEEE 802.15.4 with PHY header  
Reference [LINKTYPE\_IEEE802\_15\_4\_NONASK\_PHY]

LinkType Value 216  
LinkType Name LINKTYPE\_LINUX\_EVDEV  
Description Linux evdev messages

LinkType Value 217  
LinkType Name LINKTYPE\_GSM\_TAP\_UM  
Description GSM Um interface, with gsm\_tap header

LinkType Value 218  
LinkType Name LINKTYPE\_GSM\_TAP\_ABIS  
Description GSM Abis interface, with gsm\_tap header

LinkType Value 219  
LinkType Name LINKTYPE\_MPLS  
Description MPLS packets with MPLS label as the header

LinkType Value 220  
LinkType Name LINKTYPE\_USB\_LINUX\_MMAPPED  
Description USB packets, beginning with an extended Linux USB header  
Reference [LINKTYPE\_USB\_LINUX\_MMAPPED]

LinkType Value 221  
LinkType Name LINKTYPE\_DECT  
Description DECT packets, with a pseudo-header

LinkType Value 222  
LinkType Name LINKTYPE\_AOS  
Description OS Space Data Link Protocol

LinkType Value 223  
LinkType Name LINKTYPE\_WIHART  
Description Wireless HART (Highway Addressable Remote Transducer)

LinkType Value 224  
LinkType Name LINKTYPE\_FC\_2  
Description Fibre Channel FC-2 frames  
Reference [LINKTYPE\_FC\_2]

LinkType Value 225  
LinkType Name LINKTYPE\_FC\_2\_WITH\_FRAME\_DELIMS  
Description Fibre Channel FC-2 frames with SOF and EOF  
Reference [LINKTYPE\_FC\_2\_WITH\_FRAME\_DELIMS]

LinkType Value 226  
LinkType Name LINKTYPE\_IPNET  
Description Solaris ipnet  
Reference [LINKTYPE\_IPNET]

LinkType Value 227  
LinkType Name LINKTYPE\_CAN\_SOCKETCAN  
Description Controller Area Network (CAN) frames, with a metadata header  
Reference [LINKTYPE\_CAN\_SOCKETCAN]

LinkType Value 228  
LinkType Name LINKTYPE\_IPV4  
Description IPv4 without link-layer headers  
Reference [LINKTYPE\_IPV4] [RFC791]

LinkType Value 229  
LinkType Name LINKTYPE\_IPV6  
Description IPv6 without link-layer headers  
Reference [LINKTYPE\_IPV6] [RFC8200]

LinkType Value 230  
LinkType Name LINKTYPE\_IEEE802\_15\_4\_NOFCS  
Description IEEE 802.15.4 without FCS  
Reference [LINKTYPE\_IEEE802\_15\_4\_NOFCS]

LinkType Value 231  
LinkType Name LINKTYPE\_DBUS  
Description D-Bus messages  
Reference [LINKTYPE\_DBUS]

LinkType Value 232  
LinkType Name LINKTYPE\_JUNIPER\_VS  
Description Juniper Networks

LinkType Value 233  
LinkType Name LINKTYPE\_JUNIPER\_SRX\_E2E  
Description Juniper Networks

LinkType Value 234  
LinkType Name LINKTYPE\_JUNIPER\_FIBRECHANNEL  
Description Juniper Networks

LinkType Value 235  
LinkType Name LINKTYPE\_DVB\_CI  
Description DVB-CI messages, with a pseudo-header  
Reference [DVB-CI-PCAP]

LinkType Value 236  
LinkType Name LINKTYPE\_MUX27010  
Description Variant of 3GPP TS 27.010 multiplexing protocol  
Reference [LINKTYPE\_MUX27010]

LinkType Value 237  
LinkType Name LINKTYPE\_STANAG\_5066\_D\_PDU  
Description STANAG 5066 D\_PDUs  
Reference [LINKTYPE\_STANAG\_5066\_D\_PDU]

LinkType Value 238  
LinkType Name LINKTYPE\_JUNIPER\_ATM\_CEMIC  
Description Juniper Networks

LinkType Value 239  
LinkType Name LINKTYPE\_NFLOG  
Description Linux netlink NETLINK NFLOG socket log messages  
Reference [LINKTYPE\_NFLOG]

LinkType Value 240  
LinkType Name LINKTYPE\_NETANALYZER  
Description Ethernet frames with netANALYZER pseudo-header  
Reference [LINKTYPE\_NETANALYZER]

LinkType Value 241  
LinkType Name LINKTYPE\_NETANALYZER\_TRANSPARENT

Description Ethernet frames with netANALYZER pseudo-header,  
preamble, and SFD  
Reference [LINKTYPE\_NETANALYZER\_TRANSPARENT]

LinkType Value 242  
LinkType Name LINKTYPE\_IPOIB  
Description IP-over-InfiniBand  
Reference [LINKTYPE\_IPOIB]

LinkType Value 243  
LinkType Name LINKTYPE\_MPEG\_2\_TS  
Description MPEG-2 Transport Stream transport packets  
Reference [LINKTYPE\_MPEG\_2\_TS]

LinkType Value 244  
LinkType Name LINKTYPE\_NG40  
Description Frames from ng4T GmbH's ng40 protocol tester  
Reference [LINKTYPE\_NG40]

LinkType Value 245  
LinkType Name LINKTYPE\_NFC\_LLCP  
Description NFC Logical Link Control Protocol frames, with a pseudo-  
header  
Reference [LINKTYPE\_NFC\_LLCP]

LinkType Value 246  
LinkType Name LINKTYPE\_PFSYNC  
Description pfsync output

LinkType Value 247  
LinkType Name LINKTYPE\_INFINIBAND  
Description InfiniBand data packets  
Reference [LINKTYPE\_INFINIBAND]

LinkType Value 248  
LinkType Name LINKTYPE\_SCTP  
Description SCTP packets, with no lower-level protocols such as IPv4  
or IPv6  
Reference [RFC9260]

LinkType Value 249  
LinkType Name LINKTYPE\_USBPCAP  
Description USB packets, beginning with a USBPcap header  
Reference [USBPcap]

LinkType Value 250  
LinkType Name LINKTYPE\_RTAC\_SERIAL  
Description Serial-line packet from the Schweitzer Engineering

Laboratories RTAC product

Reference [LINKTYPE\_RTAC\_SERIAL]

LinkType Value 251

LinkType Name LINKTYPE\_BLUETOOTH\_LE\_LL

Description Bluetooth Low Energy link-layer packets

Reference [LINKTYPE\_BLUETOOTH\_LE\_LL]

LinkType Value 252

LinkType Name LINKTYPE\_WIRESHARK\_UPPER\_PDU

Description Wireshark

LinkType Value 253

LinkType Name LINKTYPE\_NETLINK

Description Linux Netlink capture encapsulation

Reference [LINKTYPE\_NETLINK]

LinkType Value 254

LinkType Name LINKTYPE\_BLUETOOTH\_LINUX\_MONITOR

Description Bluetooth Linux Monitor

Reference [LINKTYPE\_BLUETOOTH\_LINUX\_MONITOR]

LinkType Value 255

LinkType Name LINKTYPE\_BLUETOOTH\_BREDR\_BB

Description Bluetooth Basic Rate and Enhanced Data Rate baseband packets

Reference [LINKTYPE\_BLUETOOTH\_BREDR\_BB]

LinkType Value 256

LinkType Name LINKTYPE\_BLUETOOTH\_LE\_LL\_WITH\_PHDR

Description Bluetooth Low Energy link-layer packets

Reference [LINKTYPE\_BLUETOOTH\_LE\_LL\_WITH\_PHDR]

LinkType Value 257

LinkType Name LINKTYPE\_PROFIBUS\_DL

Description PROFIBUS data link layer packets

Reference [LINKTYPE\_PROFIBUS\_DL]

LinkType Value 258

LinkType Name LINKTYPE\_PKTAP

Description Apple PKTAP capture encapsulation

Reference [LINKTYPE\_PKTAP]

LinkType Value 259

LinkType Name LINKTYPE\_EPON

Description Ethernet-over-passive-optical-network packets, including preamble octets

Reference [LINKTYPE\_EPON]

LinkType Value 260  
LinkType Name LINKTYPE\_IPMI\_HPM\_2  
Description IPMI HPM.2 trace packets  
Reference [LINKTYPE\_IPMI\_HPM\_2]

LinkType Value 261  
LinkType Name LINKTYPE\_ZWAVE\_R1\_R2  
Description Z-Wave RF profile R1 and R2 packets  
Reference [LINKTYPE\_ZWAVE\_R1\_R2]

LinkType Value 262  
LinkType Name LINKTYPE\_ZWAVE\_R3  
Description Z-Wave RF profile R3 packets  
Reference [LINKTYPE\_ZWAVE\_R3]

LinkType Value 263  
LinkType Name LINKTYPE\_WATTSTOPPER\_DLM  
Description WattStopper Digital Lighting Management (DLM) and  
Legrand Nitoo Open protocol packets  
Reference [LINKTYPE\_WATTSTOPPER\_DLM]

LinkType Value 264  
LinkType Name LINKTYPE\_ISO\_14443  
Description ISO 14443 contactless smartcard messages  
Reference [ISO-14443-PCAP]

LinkType Value 265  
LinkType Name LINKTYPE\_RDS  
Description IEC 62106 Radio data system (RDS) groups  
Reference [LINKTYPE\_RDS]

LinkType Value 266  
LinkType Name LINKTYPE\_USB\_DARWIN  
Description USB packets captured on a Darwin-based operating system  
(macOS, etc.)  
Reference [LINKTYPE\_USB\_DARWIN]

LinkType Value 267  
LinkType Name LINKTYPE\_OPENFLOW  
Description OpenBSD DLT\_OPENFLOW

LinkType Value 268  
LinkType Name LINKTYPE\_SDL\_C  
Description SNA SDLC packets  
Reference [LINKTYPE\_SDL\_C]

LinkType Value 269  
LinkType Name LINKTYPE\_TI\_LL\_N\_SNIFFER

Description Texas Instruments protocol sniffer

LinkType Value 270

LinkType Name LINKTYPE\_LORATAP

Description LoRaWan packets with a LoRaTap pseudo-header

Reference [LINKTYPE\_LORATAP]

LinkType Value 271

LinkType Name LINKTYPE\_VSOCK

Description Protocol for communication between host and guest machines in VMware and KVM hypervisors

Reference [LINKTYPE\_VSOCK]

LinkType Value 272

LinkType Name LINKTYPE\_NORDIC\_BLE

Description Messages to and from a Nordic Semiconductor nRF Sniffer for Bluetooth LE packets

Reference [LINKTYPE\_NORDIC\_BLE]

LinkType Value 273

LinkType Name LINKTYPE\_DOCSIS31\_XRA31

Description DOCSIS packets and bursts, preceded by a pseudo-header

Reference [DOCSIS-XRA] [DOCSIS-4.0-MULP]

LinkType Value 274

LinkType Name LINKTYPE\_ETHERNET\_MPACKET

Description IEEE 802.3 mPackets

Reference [LINKTYPE\_ETHERNET\_MPACKET]

LinkType Value 275

LinkType Name LINKTYPE\_DISPLAYPORT\_AUX

Description DisplayPort AUX channel monitoring messages

Reference [LINKTYPE\_DISPLAYPORT\_AUX]

LinkType Value 276

LinkType Name LINKTYPE\_LINUX\_SLL2

Description Linux cooked capture encapsulation v2

Reference [LINKTYPE\_LINUX\_SLL2]

LinkType Value 277

LinkType Name LINKTYPE\_SERCOS\_MONITOR

Description Sercos Monitor

LinkType Value 278

LinkType Name LINKTYPE\_OPENVIZSLA

Description OpenVizsla FPGA-based USB sniffer

Reference [OpenVizsla]

LinkType Value 279  
LinkType Name LINKTYPE\_EBHSCR  
Description Elektrobite High Speed Capture and Replay (EBHSCR) format  
Reference [EBHSCR]

LinkType Value 280  
LinkType Name LINKTYPE\_VPP\_DISPATCH  
Description fd.io VPP graph dispatcher trace records  
Reference [FD.io-VPP]

LinkType Value 281  
LinkType Name LINKTYPE\_DSA\_TAG\_BRCM  
Description Ethernet frames, with a Broadcom switch tag inserted  
Reference [LINKTYPE\_DSA\_TAG\_BRCM]

LinkType Value 282  
LinkType Name LINKTYPE\_DSA\_TAG\_BRCM\_PREPEND  
Description Ethernet frames, with a Broadcom switch tag prepended  
Reference [LINKTYPE\_DSA\_TAG\_BRCM\_PREPEND]

LinkType Value 283  
LinkType Name LINKTYPE\_IEEE802\_15\_4\_TAP  
Description IEEE 802.15.4 with a tap header preceding it  
Reference [Exegin-802.15.4-TAP]

LinkType Value 284  
LinkType Name LINKTYPE\_DSA\_TAG\_DSA  
Description Ethernet frames, with a Marvell DSA switch tag inserted  
Reference [LINKTYPE\_DSA\_TAG\_DSA]

LinkType Value 285  
LinkType Name LINKTYPE\_DSA\_TAG\_EDSA  
Description Ethernet frames, with a Marvell EDSA switch tag inserted  
Reference [LINKTYPE\_DSA\_TAG\_EDSA]

LinkType Value 286  
LinkType Name LINKTYPE\_ELEE  
Description ELEE lawful intercept protocol

LinkType Value 287  
LinkType Name LINKTYPE\_Z\_WAVE\_SERIAL  
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

LinkType Value 288  
LinkType Name LINKTYPE\_USB\_2\_0  
Description USB 2.0, 1.1, or 1.0 packets

Reference [LINKTYPE\_USB\_2\_0]

LinkType Value 289

LinkType Name LINKTYPE\_ATSC\_ALP

Description ATSC Link-Layer Protocol frames

Reference [LINKTYPE\_ATSC\_ALP]

LinkType Value 290

LinkType Name LINKTYPE\_ETW

Description Event Tracing for Windows messages

Reference [LINKTYPE\_ETW]

LinkType Value 291

LinkType Name LINKTYPE\_NETANALYZER\_NG

Description Hilscher Gesellschaft fuer Systemautomation mbH  
netANALYZER NG hardware and software

LinkType Value 292

LinkType Name LINKTYPE\_ZBOSS\_NCP

Description ZBOSS NCP Serial Protocol, with a pseudo-header

Reference [LINKTYPE\_ZBOSS\_NCP]

LinkType Value 293

LinkType Name LINKTYPE\_USB\_2\_0\_LOW\_SPEED

Description Low-Speed USB 2.0, 1.1, or 1.0 packets

Reference [LINKTYPE\_USB\_2\_0\_LOW\_SPEED]

LinkType Value 294

LinkType Name LINKTYPE\_USB\_2\_0\_FULL\_SPEED

Description Full-Speed USB 2.0, 1.1, or 1.0 packets

Reference [LINKTYPE\_USB\_2\_0\_FULL\_SPEED]

LinkType Value 295

LinkType Name LINKTYPE\_USB\_2\_0\_HIGH\_SPEED

Description High-Speed USB 2.0 packets

Reference [LINKTYPE\_USB\_2\_0\_HIGH\_SPEED]

LinkType Value 296

LinkType Name LINKTYPE\_AUERSWALD\_LOG

Description Auerswald Logger Protocol

Reference [Auerswald-Logger]

LinkType Value 297

LinkType Name LINKTYPE\_ZWAVE\_TAP

Description Z-Wave packets, with a metadata header

Reference [LINKTYPE\_ZWAVE\_TAP]

LinkType Value 298

LinkType Name LINKTYPE\_SILABS\_DEBUG\_CHANNEL  
Description Silicon Labs debug channel protocol  
Reference [Silabs-Debug-Channel]

LinkType Value 299  
LinkType Name LINKTYPE\_FIRA\_UCI  
Description Ultra-wideband (UWB) controller interface protocol (UCI)  
Reference [LINKTYPE\_FIRA\_UCI]

LinkType Value 300  
LinkType Name LINKTYPE\_MDB  
Description MDB (Multi-Drop Bus) protocol  
Reference [MDB-PCAP]

LinkType Value 301  
LinkType Name LINKTYPE\_DECT\_NR  
Description DECT-2020 New Radio (NR) MAC layer  
Reference [LINKTYPE\_DECT\_NR]

#### 2.2.2. Guidance for Designated Experts

When processing a request for an allocation, the Designated Experts will encourage the requester to provide a specification at a stable URL.

There is no requirement for a specification, but often review of the specification allows the Designated Expert to determine if the allocation actually is a duplicate of another 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.

Registrations for specifications that are not publicly available are acceptable. This includes specifications obtained via liaison agreements (such as to ITU-T, drafts, IEEE, etc.), those that may eventually be made public, or those for which no public document will be available.

The minimal requirement is to provide a contact for that link type.

For other documents, the Designated Expert will need use their judgement, or consult the OPSAWG or an Area Director.

### 3. 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.

### 4. 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 Rizzo, 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.

### 5. Acknowledgments

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