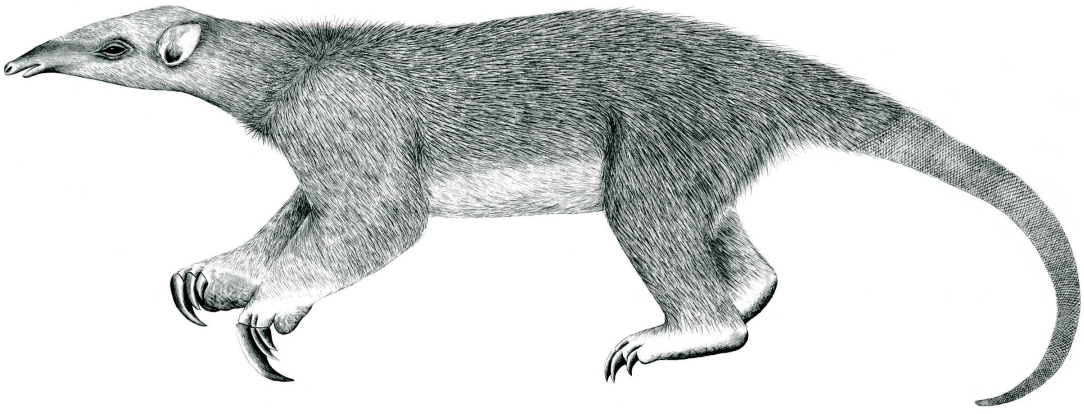
Tranalyzer2

dhcpDecode

Dynamic Host Configuration Protocol (DHCP)



Tranalyzer Development Team

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1 dhcpDecode

1.1 Description

This dhcpDecode plugin analyzes DHCP traffic.

1.2 Configuration Flags

The following flags can be used to control the output of the plugin:

Name	Default	Description	Flags
DHCPMOTOUT	1	Message types/options representation: 0: bitfield, 1: numbers, 2: names	
DHCPOPTMAX	20	maximum stored options	DHCPMOTOUT=0
DHCPMSGMAX	20	maximum stored message types	DHCPMOTOUT=0
DHCPNMMAX	10	maximal number of domain/host names per flow	
DHCPMASKFRMT	1	Netmask representation: 0: hex, 1: IP	
DHCP_ADD_CNT	0	Print the number of times a given mac/domain/host appeared	
DHCP_FLAG_MAC	0	Store a global mapping IP→MAC and add the source and destination MAC address to every flow [EXPERIMENTAL]	
DHCP_FM_DEBUG	0	print debug information about DHCP_FLAG_MAC operations	

1.3 Flow File Output

The dhcpDecode plugin outputs the following columns:

Column	Type	Description	Flags
dhcpStat	H16	Status, warnings and errors	
dhcpMTypeBF	H32	Message type bitfield	DHCPMOTOUT=0
dhcpMType	R(U8)	Message type number list	DHCPMOTOUT=1
dhcpMTypeNms	R(SC)	Message type name list	DHCPMOTOUT=2
dhcpHWType	H64	Hardware type	
dhcpCHWAdd	R(MAC)	Client hardware addresses	DHCP_ADD_CNT=0
dhcpCHWAdd_HWCnt	R(MAC_U32)	Client hardware addresses and count	DHCP_ADD_CNT=1
If IPV6_ACTIVATE=0|2, the following columns are output:			
dhcpNetmask	H32/IP4	Network mask	DHCPMASKFRMT=0/1
dhcpGWIP	IP4	Gateway IP	
dhcpDnsIP	IP4	DNS IP	
dhcpHopCnt	H32	Hop Count	
dhcpSrvName	S	Server host name	
dhcpBootFile	S	Boot file name	
dhcpOptCnt	U16	Option Count	
dhcpOptBF1_BF2_BF3	H64_H64_H64	Options bitfield	DHCPMOTOUT=0

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Column	Type	Description	Flags
dhcpOpts	R(U8)	Options	DHCPMOTOUT=1
dhcpOptNms	R(S)	Options names	DHCPMOTOUT=2
dhcpOptBF1_BF2_BF3	H64_H64_H64	Option bitfield	DHCPBITFLD=1
dhcpHosts	R(S)	Maximal DHCPNMMAX hosts	DHCP_ADD_CNT=0
dhcpHosts_HCnt	R(S_U16)	Maximal DHCPNMMAX hosts and count	DHCP_ADD_CNT=1
dhcpDomains	R(S)	Maximal DHCPNMMAX domains	DHCP_ADD_CNT=0
dhcpDomains_DCnt	R(S_U16)	Maximal DHCPNMMAX domains and count	DHCP_ADD_CNT=1
dhcpMaxSecEl	U16	Maximum seconds elapsed	
dhcpLeaseT	U32	Lease time	
dhcpRenewT	U32	Renewal time	
dhcpRebindT	U32	Rebind time	
dhcpCliIP	IP4	DHCP client IP	
dhcpYourIP	IP4	DHCP your (client) IP	
dhcpNextServer	IP4	DHCP next server IP	
dhcpRelay	IP4	DHCP relay agent IP	
dhcpLFlow	U64	DHCP linked flow	
dhcpSrcMac	MAC	DHCP source MAC address	DHCP_FLAG_MAC=1
dhcpDstMac	MAC	DHCP destination MAC address	DHCP_FLAG_MAC=1

1.3.1 dhcpStat

The dhcpStat status bit field is to be interpreted as follows:

dhcpStat	Description
0x0001	DHCP detected
0x0002	Boot request
0x0004	Boot reply
0x0008	Broadcast
0x0010	Client ID (option 61) different from client MAC address (DHCP header)
0x0020	Option overload: server host name and/or boot file name carry options
0x0040	Seconds elapsed probably encoded as little endian
0x0080	Non Ethernet hardware
0x0100	Option list truncated... increase DHCPOPTMAX or DHCPMSGMAX
0x0200	Client HW address, domain or host name list truncated... increase DHCPNMMAX
0x0400	—
0x0800	Warning: unknown message type
0x1000	Error: DHCP invalid length
0x2000	Error: DHCP magic number corrupt
0x4000	Error: DHCP options corrupt
0x8000	Something weird happened...

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1.3.2 dhcpMType and dhcpMTypeBF

For IPv4, the `dhcpMType` and `dhcpMTypeBF` columns are to be interpreted as follows:

dhcpMType	dhcpMTypeBF	Description
0	0x0000 0001	—
1	0x0000 0002	DHCP Discover Message
2	0x0000 0004	DHCP Offer Message
3	0x0000 0008	DHCP Request Message
4	0x0000 0010	DHCP Decline Message
5	0x0000 0020	DHCP Acknowledgment Message
6	0x0000 0040	DHCP Negative Acknowledgment Message
7	0x0000 0080	DHCP Release Message
8	0x0000 0100	DHCP Informational Message
9	0x0000 0200	DHCP Force Renew Message
10	0x0000 0400	DHCP Lease Query Message
11	0x0000 0800	DHCP Lease Unassigned Message
12	0x0000 1000	DHCP Lease Unknown Message
13	0x0000 2000	DHCP Lease Active Message
14	0x0000 4000	DHCP Bulk Lease Query Message
15	0x0000 8000	DHCP Lease Query Done Message
16	0x0001 0000	DHCP Active Lease Query Message
17	0x0002 0000	DHCP Lease Query Status Message
18	0x0004 0000	DHCP TLS Message
19	0x0008 0000	—
–	0x8000 0000	All values bigger than 30 are reported here

For IPv6, the `dhcpMType` and `dhcpMTypeBF` columns are to be interpreted as follows:

dhcpMType	dhcpMTypeBF	Description
0	0x0000 0001	DHCPv6 Reserved
1	0x0000 0002	DHCPv6 SOLICIT
2	0x0000 0004	DHCPv6 ADVERTISE
3	0x0000 0008	DHCPv6 REQUEST
4	0x0000 0010	DHCPv6 CONFIRM
5	0x0000 0020	DHCPv6 RENEW
6	0x0000 0040	DHCPv6 REBIND
7	0x0000 0080	DHCPv6 REPLY
8	0x0000 0100	DHCPv6 RELEASE

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dhcpMType	dhcpMTypeBF	Description
9	0x0000 0200	DHCPv6 DECLINE
10	0x0000 0400	DHCPv6 RECONFIGURE
11	0x0000 0800	DHCPv6 INFORMATION-REQUEST
12	0x0000 1000	DHCPv6 RELAY-FORW
13	0x0000 2000	DHCPv6 RELAY-REPL
14	0x0000 4000	DHCPv6 LEASEQUERY
15	0x0000 8000	DHCPv6 LEASEQUERY-REPLY
16	0x0000 1000	DHCPv6 RELAY-FORW
17	0x0000 2000	DHCPv6 RELAY-REPL
18	0x0000 4000	DHCPv6 LEASEQUERY
19	0x0000 8000	DHCPv6 LEASEQUERY-REPLY
20	0x0001 0000	DHCPv6 LEASEQUERY-DONE
21	0x0002 0000	DHCPv6 LEASEQUERY-DATA
22	0x0004 0000	DHCPv6 RECONFIGURE-REQUEST
23	0x0008 0000	DHCPv6 RECONFIGURE-REPLY
24	0x0010 0000	DHCPv6 DHCPV4-QUERY
25	0x0020 0000	DHCPv6 DHCPV4-RESPONSE
26	0x0040 0000	DHCPv6 ACTIVELEASEQUERY
27	0x0080 0000	DHCPv6 STARTTLS

1.3.3 dhcpHWType

The dhcpHWType column is to be interpreted as follows:

	dhcpHWType	Description
2^0	(=0x0000 0000 0000 0001)	—
2^1	(=0x0000 0000 0000 0002)	Ethernet
2^2	(=0x0000 0000 0000 0004)	Experimental Ethernet
2^3	(=0x0000 0000 0000 0008)	Amateur Radio AX.25
2^4	(=0x0000 0000 0000 0010)	Proteon ProNET Token Ring
2^5	(=0x0000 0000 0000 0020)	Chaos
2^6	(=0x0000 0000 0000 0040)	IEEE 802
2^7	(=0x0000 0000 0000 0080)	ARCNET
2^8	(=0x0000 0000 0000 0100)	Hyperchannel
2^9	(=0x0000 0000 0000 0200)	Lanstar
2^{10}	(=0x0000 0000 0000 0400)	Autonet Short Address
2^{11}	(=0x0000 0000 0000 0800)	LocalTalk
2^{12}	(=0x0000 0000 0000 1000)	LocalNet (IBM PCNet or SYTEK LocalNET)

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dhcpHWType		Description
2^{13}	(=0x0000 0000 0000 2000)	Ultra link
2^{14}	(=0x0000 0000 0000 4000)	SMDS
2^{15}	(=0x0000 0000 0000 8000)	Frame Relay
2^{16}	(=0x0000 0000 0001 0000)	ATM, Asynchronous Transmission Mode
2^{17}	(=0x0000 0000 0002 0000)	HDLC
2^{18}	(=0x0000 0000 0004 0000)	Fibre Channel
2^{19}	(=0x0000 0000 0008 0000)	ATM, Asynchronous Transmission Mode
2^{20}	(=0x0000 0000 0010 0000)	Serial Line
2^{21}	(=0x0000 0000 0020 0000)	ATM, Asynchronous Transmission Mode
2^{22}	(=0x0000 0000 0040 0000)	MIL-STD-188-220
2^{23}	(=0x0000 0000 0080 0000)	Metricom
2^{24}	(=0x0000 0000 0100 0000)	IEEE 1394.1995
2^{25}	(=0x0000 0000 0200 0000)	MAPOS
2^{26}	(=0x0000 0000 0400 0000)	Twinaxia
2^{27}	(=0x0000 0000 0800 0000)	EUI-64
2^{28}	(=0x0000 0000 1000 0000)	HIPARP
2^{29}	(=0x0000 0000 2000 0000)	IP and ARP over ISO 7816-3
2^{30}	(=0x0000 0000 4000 0000)	ARPSec
2^{31}	(=0x0000 0000 8000 0000)	IPsec tunnel
2^{32}	(=0x0000 0001 0000 0000)	Infiniband
2^{33}	(=0x0000 0002 0000 0000)	CAI, TIA-102 Project 25 Common Air Interface
2^{34}	(=0x0000 0004 0000 0000)	Wiegand Interface
2^{35}	(=0x0000 0008 0000 0000)	Pure IP
2^{63}	(=0x8000 0000 0000 0000)	All values bigger than 62 are reported here

1.3.4 dhcpHopCnt

The dhcpHopCnt column is to be interpreted as follows:

dhcpHopCnt	Description
0x00000000-0x00010000	Number of hops (0–16) $\left(2^{\text{HopCount}}\right)$
0x80000000	Invalid hop count (> 16)

1.3.5 dhcpOptBF1_BF2_BF3

The dhcpOptBF1_BF2_BF3 column is to be interpreted as follows:

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	dhcpOptBF1	Description
2^0	(=0x0000.0000.0000.0001)	Pad
2^1	(=0x0000.0000.0000.0002)	Subnet Mask
2^2	(=0x0000.0000.0000.0004)	Time Offset (deprecated)
2^3	(=0x0000.0000.0000.0008)	Router
2^4	(=0x0000.0000.0000.0010)	Time Server
2^5	(=0x0000.0000.0000.0020)	Name Server
2^6	(=0x0000.0000.0000.0040)	Domain Name Server
2^7	(=0x0000.0000.0000.0080)	Log Server
2^8	(=0x0000.0000.0000.0100)	Quote Server
2^9	(=0x0000.0000.0000.0200)	LPR Server
2^{10}	(=0x0000.0000.0000.0400)	Impress Server
2^{11}	(=0x0000.0000.0000.0800)	Resource Location Server
2^{12}	(=0x0000.0000.0000.1000)	Host Name
2^{13}	(=0x0000.0000.0000.2000)	Boot File Size
2^{14}	(=0x0000.0000.0000.4000)	Merit Dump File
2^{15}	(=0x0000.0000.0000.8000)	Domain Name
2^{16}	(=0x0000.0000.0001.0000)	Swap Server
2^{17}	(=0x0000.0000.0002.0000)	Root Path
2^{18}	(=0x0000.0000.0004.0000)	Extensions Path
2^{19}	(=0x0000.0000.0008.0000)	IP Forwarding enable/disable
2^{20}	(=0x0000.0000.0010.0000)	Non-local Source Routing enable/disable
2^{21}	(=0x0000.0000.0020.0000)	Policy Filter
2^{22}	(=0x0000.0000.0040.0000)	Maximum Datagram Reassembly Size
2^{23}	(=0x0000.0000.0080.0000)	Default IP Time-to-live
2^{24}	(=0x0000.0000.0100.0000)	Path MTU Aging Timeout
2^{25}	(=0x0000.0000.0200.0000)	Path MTU Plateau Table
2^{26}	(=0x0000.0000.0400.0000)	Interface MTU
2^{27}	(=0x0000.0000.0800.0000)	All Subnets are Local
2^{28}	(=0x0000.0000.1000.0000)	Broadcast Address
2^{29}	(=0x0000.0000.2000.0000)	Perform Mask Discovery
2^{30}	(=0x0000.0000.4000.0000)	Mask supplier
2^{31}	(=0x0000.0000.8000.0000)	Perform router discovery
2^{32}	(=0x0000.0001.0000.0000)	Router solicitation address
2^{33}	(=0x0000.0002.0000.0000)	Static routing table
2^{34}	(=0x0000.0004.0000.0000)	Trailer encapsulation
2^{35}	(=0x0000.0008.0000.0000)	ARP cache timeout
2^{36}	(=0x0000.0010.0000.0000)	Ethernet encapsulation
2^{37}	(=0x0000.0020.0000.0000)	Default TCP TTL
2^{38}	(=0x0000.0040.0000.0000)	TCP keepalive interval
2^{39}	(=0x0000.0080.0000.0000)	TCP keepalive garbage

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	dhcpOptBF1	Description
2^{40}	(=0x0000.0100.0000.0000)	Network Information Service Domain
2^{41}	(=0x0000.0200.0000.0000)	Network Information Servers
2^{42}	(=0x0000.0400.0000.0000)	NTP servers
2^{43}	(=0x0000.0800.0000.0000)	Vendor specific information
2^{44}	(=0x0000.1000.0000.0000)	NetBIOS over TCP/IP name server
2^{45}	(=0x0000.2000.0000.0000)	NetBIOS over TCP/IP Datagram Distribution Server
2^{46}	(=0x0000.4000.0000.0000)	NetBIOS over TCP/IP Node Type
2^{47}	(=0x0000.8000.0000.0000)	NetBIOS over TCP/IP Scope
2^{48}	(=0x0001.0000.0000.0000)	X Window System Font Server
2^{49}	(=0x0002.0000.0000.0000)	X Window System Display Manager
2^{50}	(=0x0004.0000.0000.0000)	Requested IP Address
2^{51}	(=0x0008.0000.0000.0000)	IP address lease time
2^{52}	(=0x0010.0000.0000.0000)	Option overload
2^{53}	(=0x0020.0000.0000.0000)	DHCP message type
2^{54}	(=0x0040.0000.0000.0000)	Server identifier
2^{55}	(=0x0080.0000.0000.0000)	Parameter request list
2^{56}	(=0x0100.0000.0000.0000)	Message
2^{57}	(=0x0200.0000.0000.0000)	Maximum DHCP message size
2^{58}	(=0x0400.0000.0000.0000)	Renew time value
2^{59}	(=0x0800.0000.0000.0000)	Rebinding time value
2^{60}	(=0x1000.0000.0000.0000)	Class-identifier
2^{61}	(=0x2000.0000.0000.0000)	Client-identifier
2^{62}	(=0x4000.0000.0000.0000)	NetWare/IP Domain Name
2^{63}	(=0x8000.0000.0000.0000)	NetWare/IP information

	dhcpOptBF2	Description
2^{64}	(=0x0000.0000.0000.0001)	Network Information Service+ Domain
2^{65}	(=0x0000.0000.0000.0002)	Network Information Service+ Servers
2^{66}	(=0x0000.0000.0000.0004)	TFTP server name
2^{67}	(=0x0000.0000.0000.0008)	Bootfile name
2^{68}	(=0x0000.0000.0000.0010)	Mobile IP Home Agent
2^{69}	(=0x0000.0000.0000.0020)	Simple Mail Transport Protocol Server
2^{70}	(=0x0000.0000.0000.0040)	Post Office Protocol Server
2^{71}	(=0x0000.0000.0000.0080)	Network News Transport Protocol Server
2^{72}	(=0x0000.0000.0000.0100)	Default World Wide Web Server
2^{73}	(=0x0000.0000.0000.0200)	Default Finger Server
2^{74}	(=0x0000.0000.0000.0400)	Default Internet Relay Chat Server
2^{75}	(=0x0000.0000.0000.0800)	StreetTalk Server

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	dhcpOptBF2	Description
2^{76}	(=0x0000.0000.0000.1000)	StreetTalk Directory Assistance Server
2^{77}	(=0x0000.0000.0000.2000)	User Class Information
2^{78}	(=0x0000.0000.0000.4000)	SLP Directory Agent
2^{79}	(=0x0000.0000.0000.8000)	SLP Service Scope
2^{80}	(=0x0000.0000.0001.0000)	Rapid Commit
2^{81}	(=0x0000.0000.0002.0000)	FQDN, Fully Qualified Domain Name
2^{82}	(=0x0000.0000.0004.0000)	Relay Agent Information
2^{83}	(=0x0000.0000.0008.0000)	Internet Storage Name Service
2^{84}	(=0x0000.0000.0010.0000)	—
2^{85}	(=0x0000.0000.0020.0000)	—
2^{86}	(=0x0000.0000.0040.0000)	—
2^{87}	(=0x0000.0000.0080.0000)	—
2^{88}	(=0x0000.0000.0100.0000)	—
2^{89}	(=0x0000.0000.0200.0000)	—
2^{90}	(=0x0000.0000.0400.0000)	—
2^{91}	(=0x0000.0000.0800.0000)	—
2^{92}	(=0x0000.0000.1000.0000)	—
2^{93}	(=0x0000.0000.2000.0000)	—
2^{94}	(=0x0000.0000.4000.0000)	—
2^{95}	(=0x0000.0000.8000.0000)	—
2^{96}	(=0x0000.0001.0000.0000)	—
2^{97}	(=0x0000.0002.0000.0000)	—
2^{98}	(=0x0000.0004.0000.0000)	—
2^{99}	(=0x0000.0008.0000.0000)	—
2^{100}	(=0x0000.0010.0000.0000)	—
2^{101}	(=0x0000.0020.0000.0000)	—
2^{102}	(=0x0000.0040.0000.0000)	—
2^{103}	(=0x0000.0080.0000.0000)	—
2^{104}	(=0x0000.0100.0000.0000)	—
2^{105}	(=0x0000.0200.0000.0000)	—
2^{106}	(=0x0000.0400.0000.0000)	—
2^{107}	(=0x0000.0800.0000.0000)	—
2^{108}	(=0x0000.1000.0000.0000)	—
2^{109}	(=0x0000.2000.0000.0000)	—
2^{110}	(=0x0000.4000.0000.0000)	—
2^{111}	(=0x0000.8000.0000.0000)	—
2^{112}	(=0x0001.0000.0000.0000)	—
2^{113}	(=0x0002.0000.0000.0000)	—
2^{114}	(=0x0004.0000.0000.0000)	—
2^{115}	(=0x0008.0000.0000.0000)	—

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	dhcpOptBF2	Description
2^{116}	(=0x0010.0000.0000.0000)	—
2^{117}	(=0x0020.0000.0000.0000)	—
2^{118}	(=0x0040.0000.0000.0000)	—
2^{119}	(=0x0080.0000.0000.0000)	—
2^{120}	(=0x0100.0000.0000.0000)	—
2^{121}	(=0x0200.0000.0000.0000)	—
2^{122}	(=0x0400.0000.0000.0000)	—
2^{123}	(=0x0800.0000.0000.0000)	—
2^{124}	(=0x1000.0000.0000.0000)	—
2^{125}	(=0x2000.0000.0000.0000)	—
2^{126}	(=0x4000.0000.0000.0000)	—
2^{127}	(=0x8000.0000.0000.0000)	—

	dhcpOptBF3	Description
2^{128}	(=0x0000.0000.0000.0001)	TFTP Server IP address
2^{129}	(=0x0000.0000.0000.0002)	Call Server IP address
2^{130}	(=0x0000.0000.0000.0004)	Discrimination string
2^{131}	(=0x0000.0000.0000.0008)	Remote statistics server IP address
2^{132}	(=0x0000.0000.0000.0010)	802.1P VLAN ID
2^{133}	(=0x0000.0000.0000.0020)	802.1Q L2 Priority
2^{134}	(=0x0000.0000.0000.0040)	Diffserv Code Point
2^{135}	(=0x0000.0000.0000.0080)	HTTP Proxy for phone-specific applications
2^{136}	(=0x0000.0000.0000.0100)	PANA Authentication Agent
2^{137}	(=0x0000.0000.0000.0200)	LoST Server
2^{138}	(=0x0000.0000.0000.0400)	CAPWAP Access Controller addresses
2^{139}	(=0x0000.0000.0000.0800)	OPTION-IPv4_Address-MoS
2^{140}	(=0x0000.0000.0000.1000)	OPTION-IPv4_FQDN-MoS
2^{141}	(=0x0000.0000.0000.2000)	SIP UA Configuration Service Domains
2^{142}	(=0x0000.0000.0000.4000)	OPTION-IPv4_Address-ANDSF
2^{143}	(=0x0000.0000.0000.8000)	OPTION-IPv6_Address-ANDSF
2^{144}	(=0x0000.0000.0001.0000)	—
2^{145}	(=0x0000.0000.0002.0000)	—
2^{146}	(=0x0000.0000.0004.0000)	—
2^{147}	(=0x0000.0000.0008.0000)	—
2^{148}	(=0x0000.0000.0010.0000)	—
2^{149}	(=0x0000.0000.0020.0000)	—
2^{150}	(=0x0000.0000.0040.0000)	TFTP server address or Etherboot-GRUB configuration path name
2^{151}	(=0x0000.0000.0080.0000)	status-code

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	dhcpOptBF3	Description
2^{152}	(=0x0000.0000.0100.0000)	base-time
2^{153}	(=0x0000.0000.0200.0000)	start-time-of-state
2^{154}	(=0x0000.0000.0400.0000)	query-start-time
2^{155}	(=0x0000.0000.0800.0000)	query-end-time
2^{156}	(=0x0000.0000.1000.0000)	dhcp-state
2^{157}	(=0x0000.0000.2000.0000)	data-source
2^{158}	(=0x0000.0000.4000.0000)	—
2^{159}	(=0x0000.0000.8000.0000)	—
2^{160}	(=0x0000.0001.0000.0000)	—
2^{161}	(=0x0000.0002.0000.0000)	—
2^{162}	(=0x0000.0004.0000.0000)	—
2^{163}	(=0x0000.0008.0000.0000)	—
2^{164}	(=0x0000.0010.0000.0000)	—
2^{165}	(=0x0000.0020.0000.0000)	—
2^{166}	(=0x0000.0040.0000.0000)	—
2^{167}	(=0x0000.0080.0000.0000)	—
2^{168}	(=0x0000.0100.0000.0000)	—
2^{169}	(=0x0000.0200.0000.0000)	—
2^{170}	(=0x0000.0400.0000.0000)	—
2^{171}	(=0x0000.0800.0000.0000)	—
2^{172}	(=0x0000.1000.0000.0000)	—
2^{173}	(=0x0000.2000.0000.0000)	—
2^{174}	(=0x0000.4000.0000.0000)	—
2^{175}	(=0x0000.8000.0000.0000)	Etherboot
2^{176}	(=0x0001.0000.0000.0000)	IP Telephone
2^{177}	(=0x0002.0000.0000.0000)	Etherboot, PacketCable and CableHome
2^{178}	(=0x0004.0000.0000.0000)	—
2^{179}	(=0x0008.0000.0000.0000)	—
2^{180}	(=0x0010.0000.0000.0000)	—
2^{181}	(=0x0020.0000.0000.0000)	—
2^{182}	(=0x0040.0000.0000.0000)	—
2^{183}	(=0x0080.0000.0000.0000)	—
2^{184}	(=0x0100.0000.0000.0000)	—
2^{185}	(=0x0200.0000.0000.0000)	—
2^{186}	(=0x0400.0000.0000.0000)	—
2^{187}	(=0x0800.0000.0000.0000)	—
2^{188}	(=0x1000.0000.0000.0000)	—
2^{189}	(=0x2000.0000.0000.0000)	—
2^{190}	(=0x4000.0000.0000.0000)	—
2^{191}	(=0x8000.0000.0000.0000)	—

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1.4 Packet File Output

In packet mode (`-s` option), the dhcpDecode plugin outputs the following columns:

Column	Type	Description	Flags
dhcpStat	H16	Status, warnings and errors	
dhcpMTypeBF	H32	Message type bitfield	DHCPMOTOUT=0
dhcpMType	R(U8)	Message type number list	DHCPMOTOUT=1
dhcpMTypeNms	R(SC)	Message type name list	DHCPMOTOUT=2
dhcpHops	U8	Number of hops	
dhcpHWType	H64	Hardware type	
dhcpTransID	U16	Transaction Identifier	
dhcpOptBF1_BF2_BF3	H64_H64_H64	Options bitfield	DHCPMOTOUT=0
dhcpOpts	R(U8)	Options	DHCPMOTOUT=1
dhcpOptNms	R(S)	Options names	DHCPMOTOUT=2
dhcpLFlow	U16	Linked flow	

1.5 Plugin Report Output

The number of DHCP packets of each type (Section 1.3.2) is reported.

1.6 TODO

- DHCPv6

1.7 References

- RFC2131: Dynamic Host Configuration Protocol
- RFC2132: DHCP Options and BOOTP Vendor Extensions

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