Internet Draft
Category: Proposed Standard
Expires: March 3rd, 2008

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ETT-R&D Publications

September 2007

The IPtX Dynamic Host Configuration Protocol; DHCPvIPtX-MX

'draft-terrell-iptx-mx-dhcp-specification-02'

Status of this Memo

Intellectual Property Rights (IPR) Statement

Requirements Terminology

The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL, when they appear in this document, are to be interpreted as described in [RFC-2119].

Conventions

Please note, the mathematical operators that cannot be represented in the 'txt' file format, which represent; the '^' Carrot sign for Super-Script, and the 'v' sign is used for Sub-Script(or Nested).

This Internet-Draft will expire on January 27th, 2008.

Abstract

This document defines the IPtX Specification for the 'Dynamic Host Configuration Protocol'; IPtX / IPtX-MX DHCP (DHCPvIPtX-MX), which provides Backwards Compatibility with the IPv4 Specification without compromise or change to current DHCP Server and Client Configuration and / or Operational Requirements. And more importantly, because the IPtX / IPtX-MX Specification represents a 3 State Binary IP Addressing Specification, there are 2 IP Address Band Specifications; Mobile IP Address Pool and a Stationary IP Address Pool, with a 3 Dimensional Locator, which represents a 3 IP Address Coordinate System that uses an EMERGENCY Broadcast [e911] to establish a Synchronized LINK with 3 different [KNOWN] Router Locations and the MAC Address, to Triangulate the Location of any Node Connected to the Network -

[Given that - The 3 IP Address Coordinate System uses the CIDR Network Descriptors, '/0000:00', '+/0000:00', '-/0000:00' to differentiate the IP Address Broadcasting Node's Location to the 3 different [KNOWN] Router Locations, the differentiated IP Addresses however, must use the same IPtX-MX MAC Address to identify the Node's Hardware.]

Table of Contents

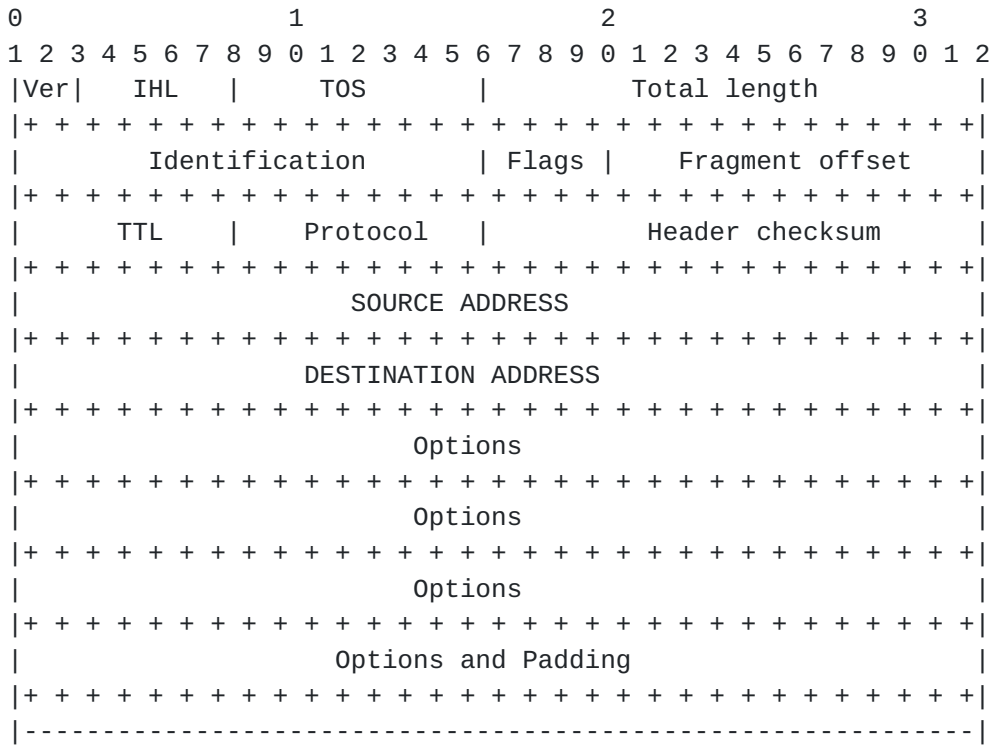
Introduction

The DHCPv4 Header, which was derived from the Bootp Protocol (RFC 951 Bootstrap Protocol), other than Commands, has not changed since 1985. And clearly, the purpose or functional use of DHCPv4 not is obsolete, because there are several viable reasons not to assign a Static IP Address to a Client. Especially when the Client is only a Guest of the Network. In other words, if any improvement in Performance or Use necessitates Change, then the DHCPvIPtX-MX Specification prescribes the logically viable reason(s) for making the changes.

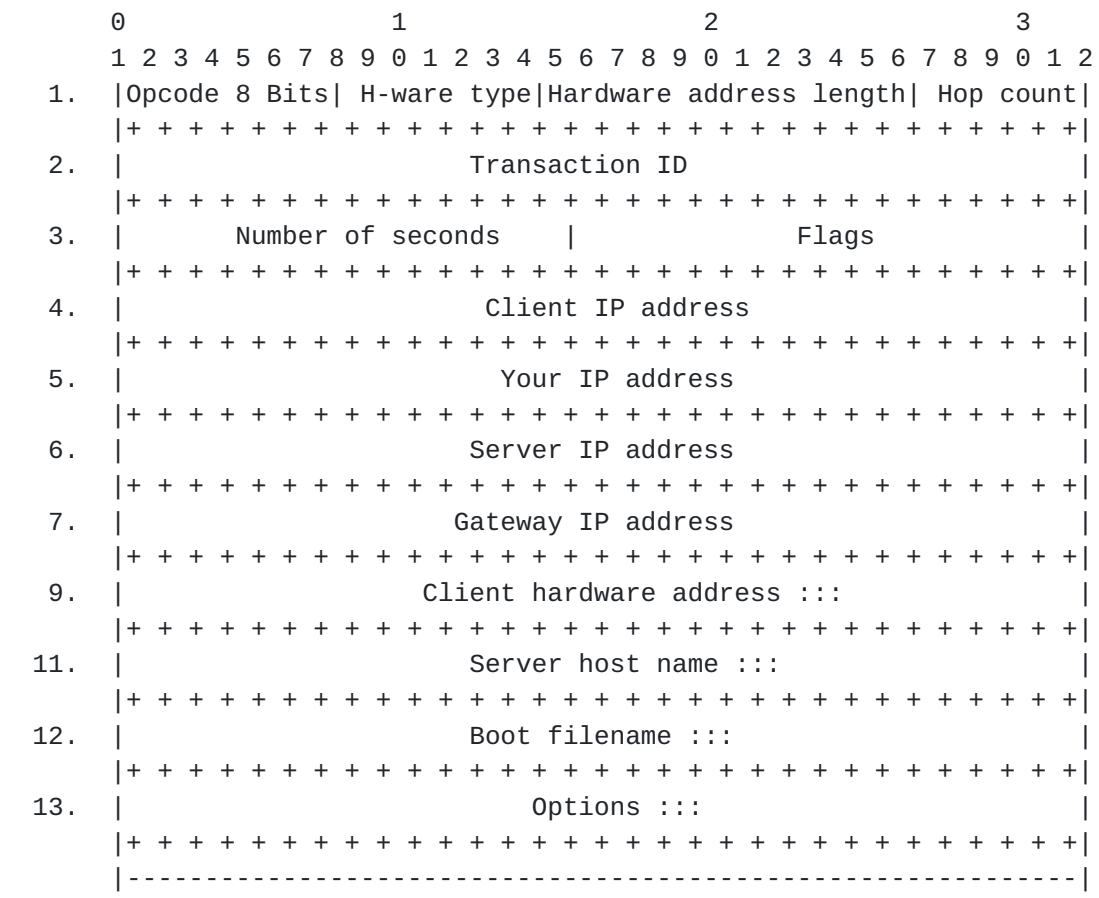
IANA Consideration

I. The DHCPv4 and DHCPv6 Header Design Specification

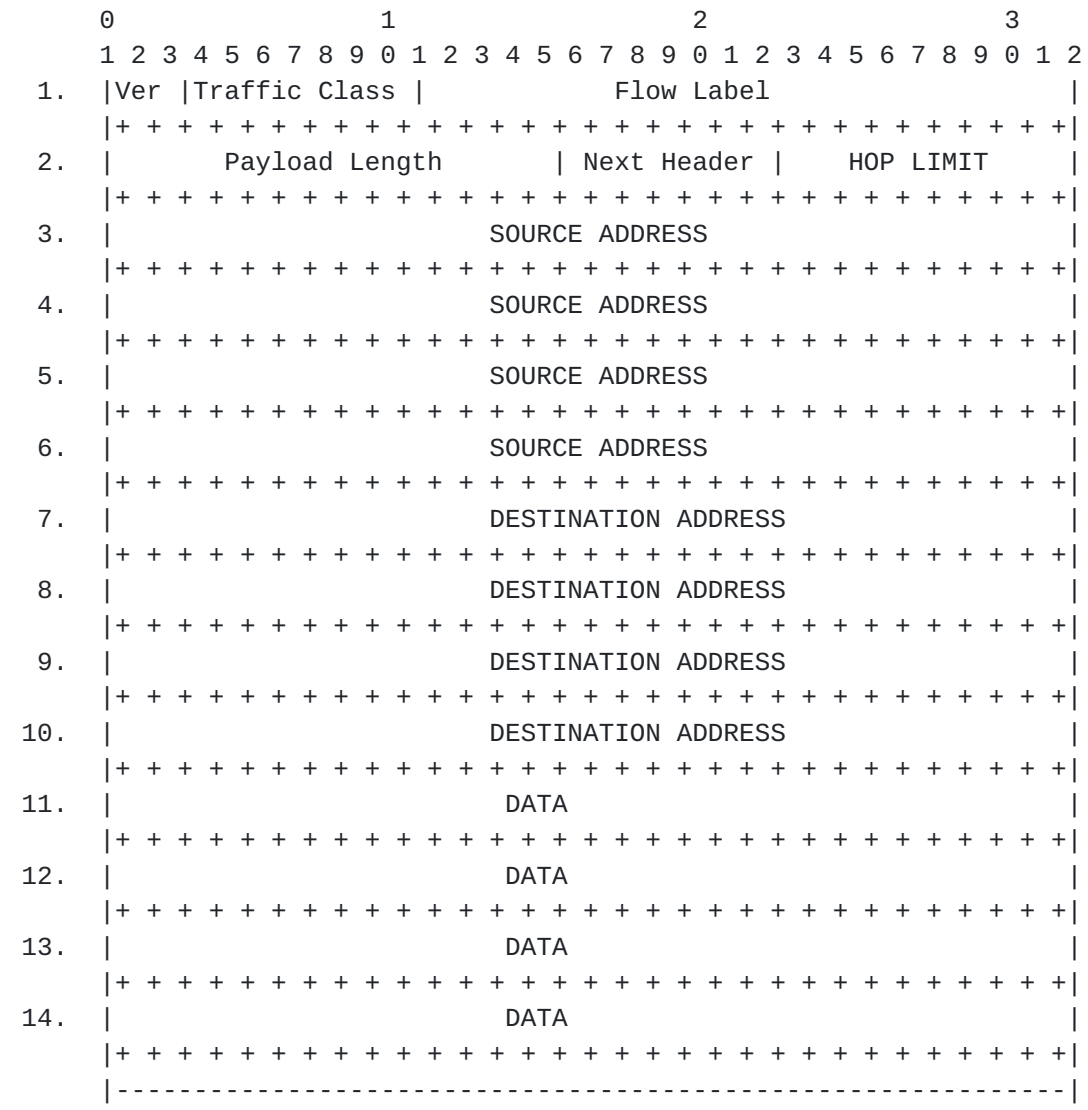
IPv4 32 Bit Header



DHCPv4 32 Bit Header

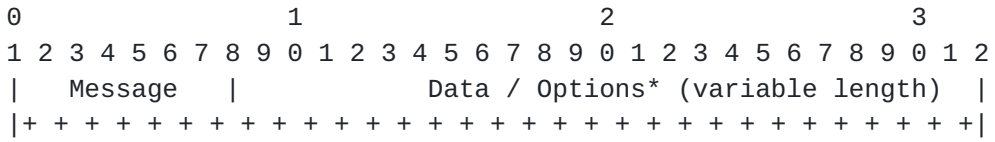


IPv6 32 Bit Header

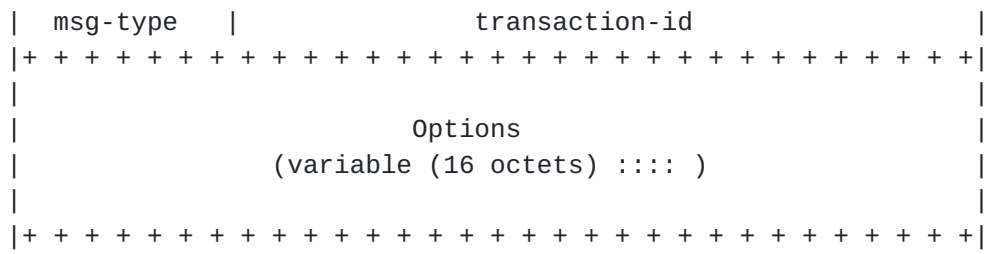


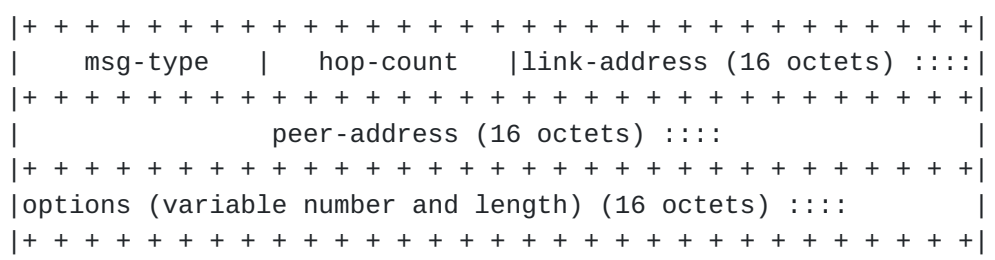
Note: IPv6 Header Bit-Map Length = 14 x 4 Octets = 56 Octets
14 x 32 Bits = 56 Octets = IPv6 Header 448 Bits

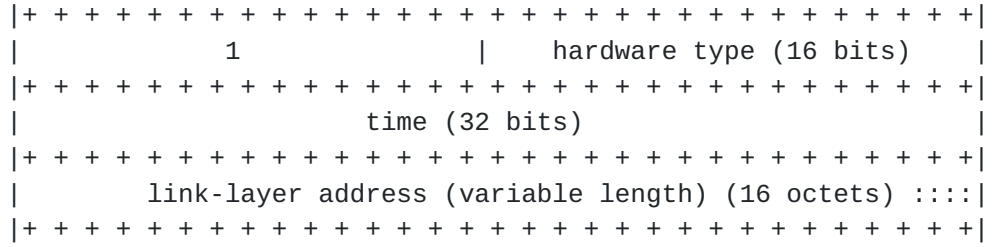
DHCPv6 32 Bit Header

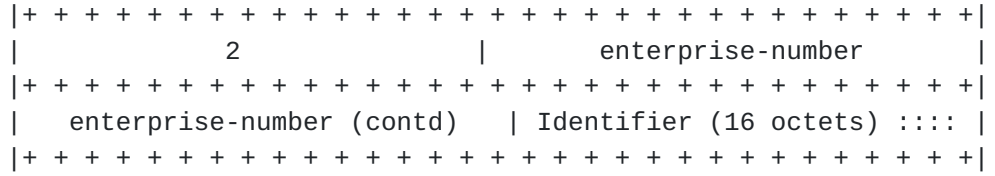


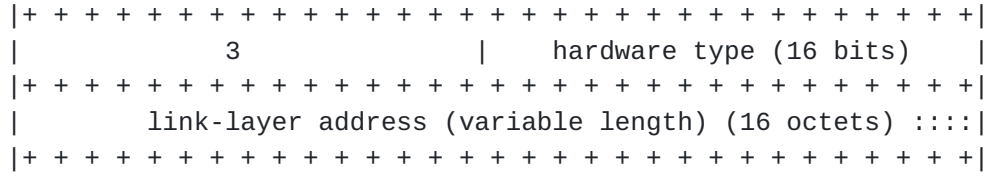
Data / Options Information Fields*

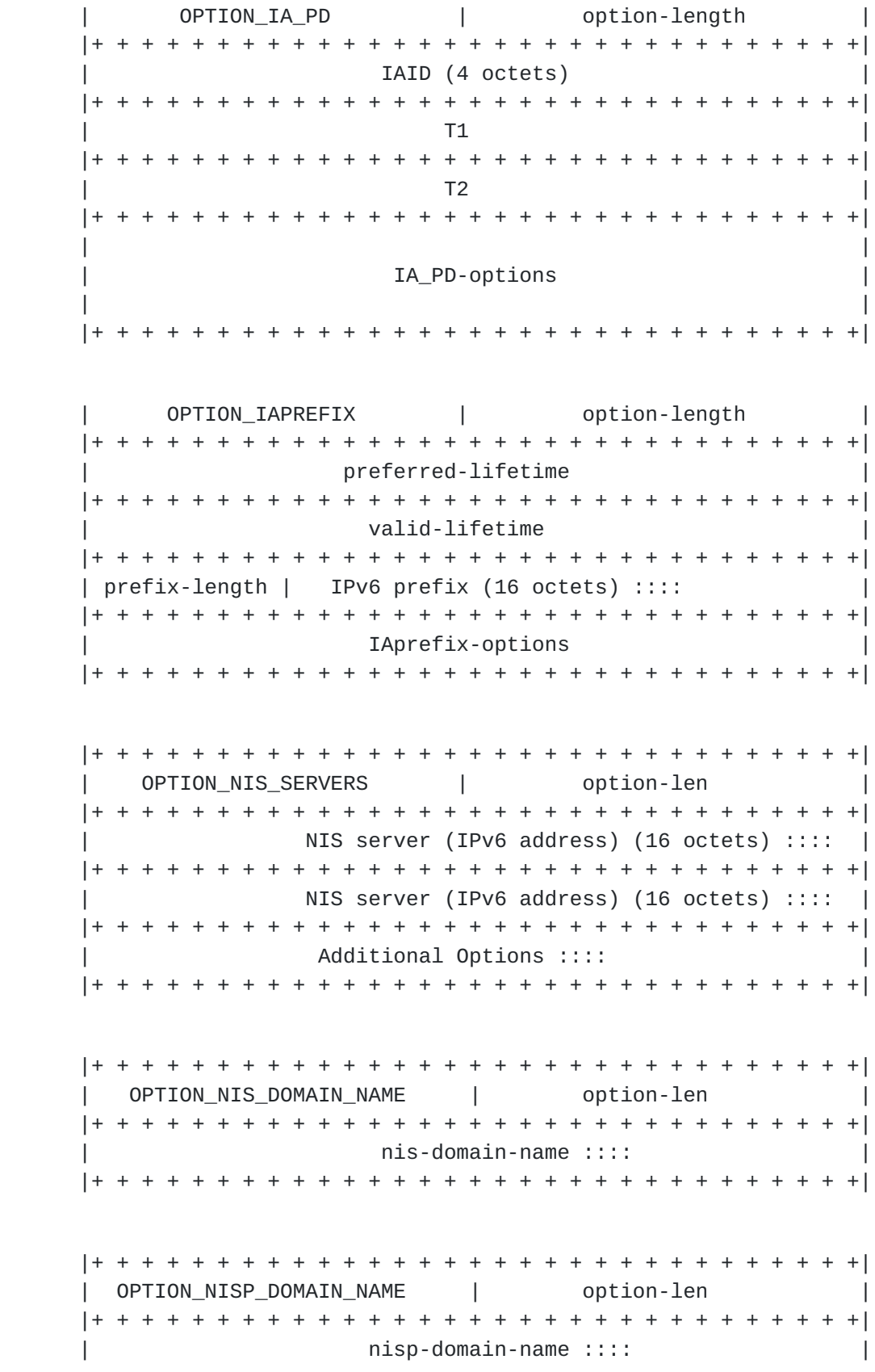


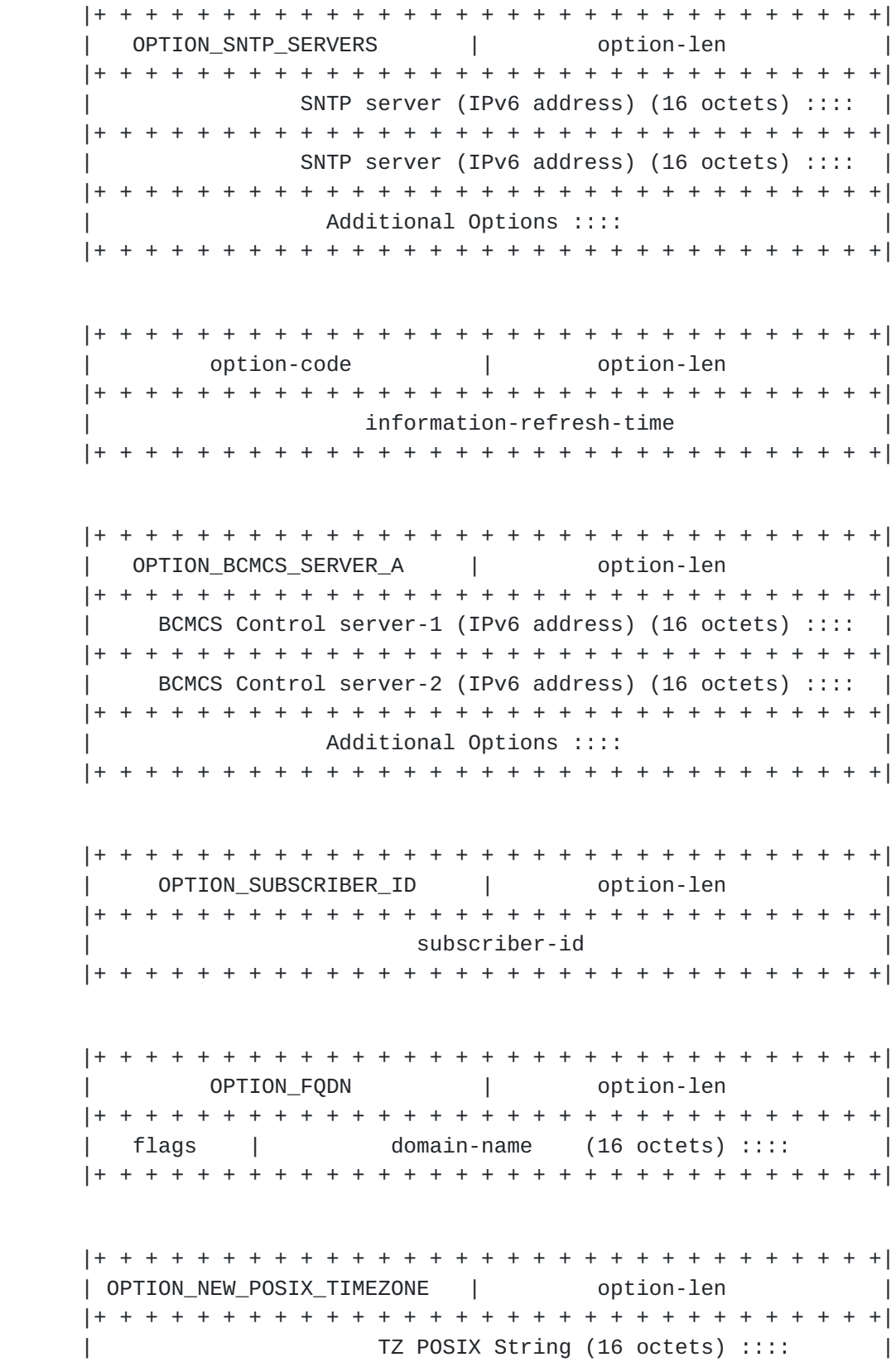


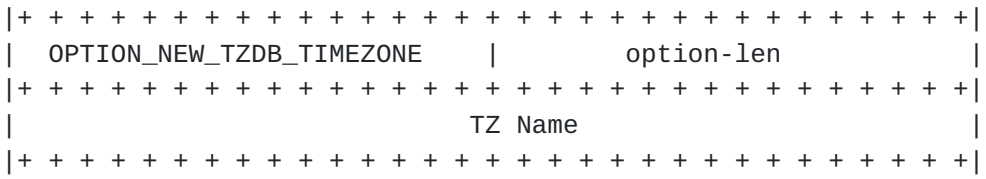






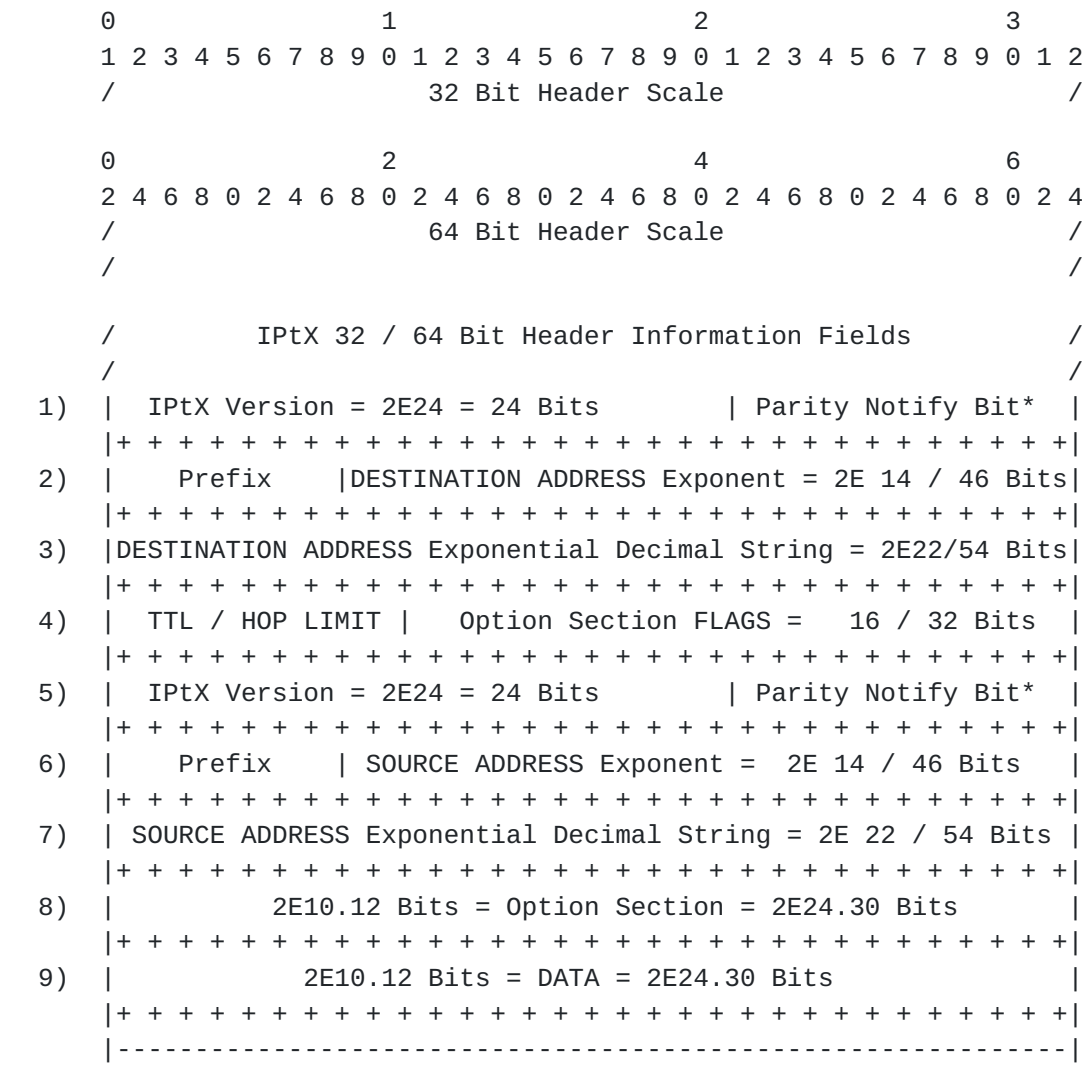

OPTION_IA_PD
option-length
IAID (4 octets)
T1
T2
IA_PD-options
OPTION_IAPREFIX
option-length
preferred-lifetime
valid-lifetime
prefix-length
IPv6 prefix (16 octets) ::::
IAprefix-options
OPTION_NIS_SERVERS
option-len
NIS server (IPv6 address) (16 octets) ::::
NIS server (IPv6 address) (16 octets) ::::
Additional Options ::::
OPTION_NIS_DOMAIN_NAME
option-len
nis-domain-name ::::
OPTION_NISP_DOMAIN_NAME
option-len
nisp-domain-name ::::


OPTION_SNTP_SERVERS
option-len
SNTP server (IPv6 address) (16 octets) ::::
SNTP server (IPv6 address) (16 octets) ::::
Additional Options ::::
option-code
option-len
information-refresh-time
OPTION_BCMCS_SERVER_A
option-len
BCMCS Control server-1 (IPv6 address) (16 octets) ::::
BCMCS Control server-2 (IPv6 address) (16 octets) ::::
Additional Options ::::
OPTION_SUBSCRIBER_ID
option-len
subscriber-id
OPTION_FQDN
option-len
flags
domain-name (16 octets) ::::
OPTION_NEW_POSIX_TIMEZONE
option-len
TZ POSIX String (16 octets) ::::

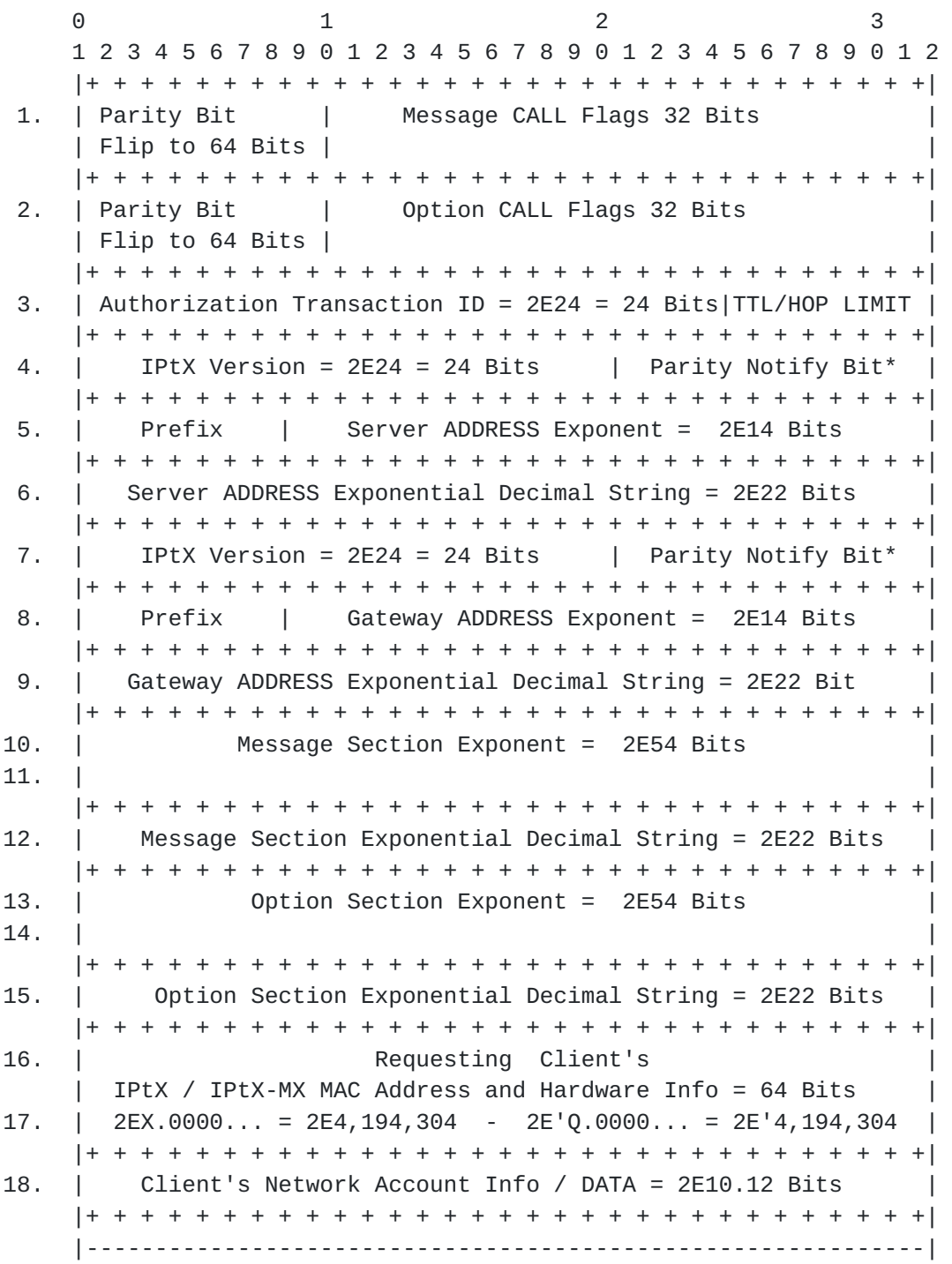

OPTION_NEW_TZDB_TIMEZONE
option-len
TZ Name

II. The IPtX / IPtX-MX 32 Bit Header Design Specification

IPtX / IPTX-MX 32 / 64 Bit Header

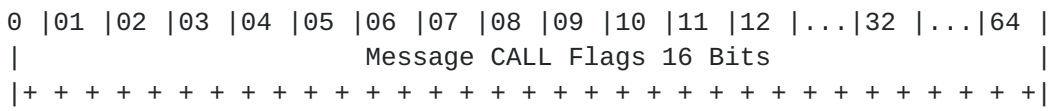


DHCPvIPtX-MX 32 Bit Header



Note: Client's MAC Address is used as SOURCE Address when Requesting Client is on the Backbone of the DHCP Server's Network.

In the structure of the Header noted above, for example, where each numbered Line defines a 32 Bit Field in a Transmission Sequence having the format of a Sentence, defines the 'Message and Option CALL Flag Fields' as a Set of Pointers interfacing with the 'Message and Options Section Fields', which defines a Set of Instructions ENCODED by the 'DCE Unit' that Performs a DHCP Task - as given below;



01 - SOLICIT.

02 - ADVERTISE.

03 - REQUEST.

04 - CONFIRM.

05 - RENEW.

06 - REBIND.

07 - REPLY.

08 - RELEASE.

09 - DECLINE.

10 - RECONFIGURE.

11 - INFORMATION-REQUEST.

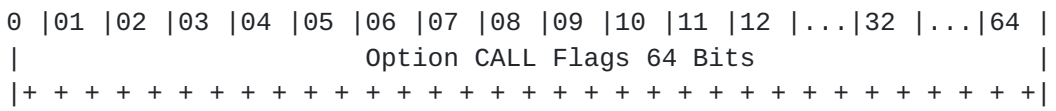
12 - RELAY-FORW.

13 - RELAY-REPL.

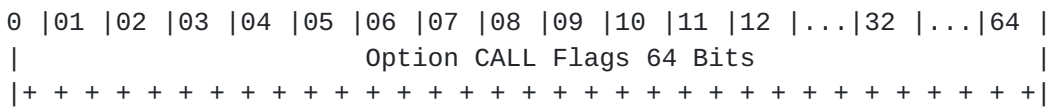
14 - Undefined.

: :
: :
: :

64 - Undefined.



01 - OPTION_CLIENTID.	******	17 - OPTION_VENDOR_OPTS.	
02 - OPTION_SERVERID.	******	18 - OPTION_INTERFACE_ID.	
03 - OPTION_IA_NA.	******	19 - OPTION_RECONF_MSG.	
04 - OPTION_IA_TA.	******	20 - OPTION_RECONF_ACCEPT.	
05 - OPTION_IAADDR.	******	21 - SIP Servers Domain Name List.	
06 - OPTION_ORO.	******	22 - SIP Servers IPtX Address List.	
07 - OPTION_PREFERENCE.	******	23 - DNS Recursive Name Server.	
08 - OPTION_ELAPSED_TIME.	******	24 - Domain Search List.	
09 - OPTION_RELAY_MSG.	******	25 - OPTION_IA_PD	
10 - undefined.	******	26 - OPTION_IAPREFIX	
11 - OPTION_AUTH.	******	27 - OPTION_NIS_SERVERS	
12 - OPTION_UNICAST.	******	28 - OPTION_NISP_SERVERS	
13 - OPTION_STATUS_CODE.	******	29 - OPTION_NIS_DOMAIN_NAME	
14 - OPTION_RAPID_COMMIT.	******	30 - OPTION_NISP_DOMAIN_NAME	
15 - OPTION_USER_CLASS.	******	31 - SNTP server list.	
16 - OPTION_VENDOR_CLASS.	******	32 - Information Refresh Time.	



33 - BCMCS Controller Domain Name list.

34 - BCMCS Controller IPtX address list.

35 - undefined.

36 - OPTION_GEOCONF_CIVIC.

37 - OPTION_REMOTE_ID.

38 - Relay Agent Subscriber-ID.

39 - FQDN, Fully Qualified Domain Name.

40 - OPTION_PANA_AGENT.

41 - OPTION_NEW_POSIX_TIMEZONE.

42 - OPTION_NEW_TZDB_TIMEZONE.

43 - OPTION_ERO.

44 - OPTION_LQ_QUERY.

45 - OPTION_CLIENT_DATA.

46 - OPTION_CLT_TIME.

47 - OPTION_LQ_RELAY_DATA.

48 - OPTION_LQ_CLIENT_LINK.

*** 49 - Undefined.

*** 50 - Undefined.

*** 51 - Undefined.

*** 52 - Undefined.

*** 53 - Undefined.

*** 54 - Undefined.

*** 55 - Undefined.

*** 56 - Undefined.

*** 57 - Undefined.

*** 58 - Undefined.

*** 59 - Undefined.

*** 60 - Undefined.

*** 61 - Undefined.

*** 62 - Undefined.

*** 63 - Undefined.

*** 64 - Undefined.

RECALL; -- Using the 'Data Compression' Ratio; '2EX : 1', or 2^X --

Example of Encoding the Bit-Map of the Equation for the 'Message and Option Section Fields'

Example of Text to encode...

'I went to the store today.'

I = 01001001 = 73 = 2EX ~ 2E8

went = 01110111011001010110111001110100 = 2,003,136,116 = 2EX ~ 2E32

to = 0111010001101111 = 29,807 = 2EX ~ 2E16

the = 011101000110100001100101 = 7,628,901 = 2EX ~ 2E24

store = 01110011011101000110111101110001001100101 = 495,874,699,877 = 2EX ~ 2E40

today = 011101000110111101100100011000010111100 1 = 500,085,055,865 = 2EX ~ 2E40

' . ' = 00101110 = 46 = 2EX ~ 2E8

The Equivalent Binary Numerical Conversion to be Transmitted;

'I went to the store today.' 'Iwenttothestoretoday.'

```
01001001001000000111011011001        01001001011101111011001010111011
01011011100111010000100000111        10011101000111010001101111011111
01000110111100100000011101000l        01000110100001100101011100l101
10100001100101001000000111001l        11010001101111011100l001100101
01111010001101111011100l0011001        01111010001101111011001000110000
01001000000111010001101111011O        010111100100101110
01000110000101111001001011l0
```

208 Bits 168 Bits

In other words, everything is counted, which includes the Blank SPACES Separating every word the sentence contains -

168 Bit Sentence '6 Words' = 'I went to the store today.'

Blank Space ' ' separating Words

00100000

8 Bits

Now... 'Taking it Away' yields;

'I went to the store today.'

I = 01001001 ~ 2E8 = 73

Blank Space ' ' = 00100000 ~ 2E8 = 32

went = 01110111011001010111011100111010000
~ 2E32 = 2,003,136,116

Blank Space ' ' = 00100000 ~ 2E8 = 32

to = 01110100011011110 ~ 2E16 = 29,807

Blank Space ' ' = 00100000 ~ 2E8 = 32

the = 011101000110100001100101 0 ~ 2E24 = 7,628,901

Blank Space ' ' = 00100000 ~ 2E8 = 32

store = 011100110111010001101111011100100110010 10
~ 2E40 = 495,874,699,877

Blank Space ' ' = 00100000 ~ 2E8 = 32

today = 011101000110111101100100011000010111100 10
~ 2E40 = 500,085,055,865

- No Blank Space Separating the 'WORD' and the 'Period' -

' . ' = 00101110 ~ 2E8 = 46 (No Blank Space or 'Carriage Return'
after the Period.)

And... 'Putting it Together' yields;

'I + went + to + the + store + today + .'

I = 01001001 = 73 +

Blank Space = 00100000 = 32 +

went = 01110111011001010110111001110100 = 2,003,136,116 +

Blank Space = 00100000 = 32 +

to = 01110100011011110 = 29,807 +

Blank Space = 00100000 = 32 +

the = 011101000110100001100101O = 7,628,901 +

Blank Space = 00100000 = 32 +

store = 01110011011101000110111101110010011001010 = 495,874,699,877 +

Blank Space = 00100000 = 32 +

today = 011101000110111101100100011000010111110010 = 500,085,055,865 +

No Blank Space = Zero

' . ' = 00101110 = 46

Assembling (Joining) the Data Stream yields;

I(73) + Blank(32) + went(2,003,136,116) + Blank(32) + to(29,807) +
Blank(32) + the(7,628,901) + Blank(32) + store(495,874,699,877) +
Blank(32) + today(500,085,055,865) + Period(46)

= 73 + 32 + 2003136116 + 32 + 29807 + 32 + 7628901 + 32 +
495874699877 + 32 + 500085055865 + 46 = 60 Digit Number

= 733,220,031,361,163,229,807,327,628,901,324,958,746,
998,773,250,008,505,586,546 = 2E198.868003799...

= 2 E 198 . 868003799 ...
= 11 01000101 11000110 . 11001110111100101011111101O111
= 2E198.868003799... = 48 Bit-Mapped Displacement
[' . ' = 8 Bits = 00101110 = 46]
48 - 56 Bits vs 208 Bits - 6 - 7 Octets vs 26 Octets

- Or -

= 60 Digit Number = 'I went to the store today.' = 2E198.868003799...

And this is equivalent to 26 Bytes, or approximately 208 Bits.

- Or -

2E198.868003799... ~ 2E208 = an approximate Bit-Mapped Displacement
of 20 Bits (4 + 8 + 8). Or 20 Bits vs 208 Bits;
represents the difference between Bit-Mapping
the 'Data Stream', as compared to Bit-Mapping
the Equation of the 'Data Stream'.

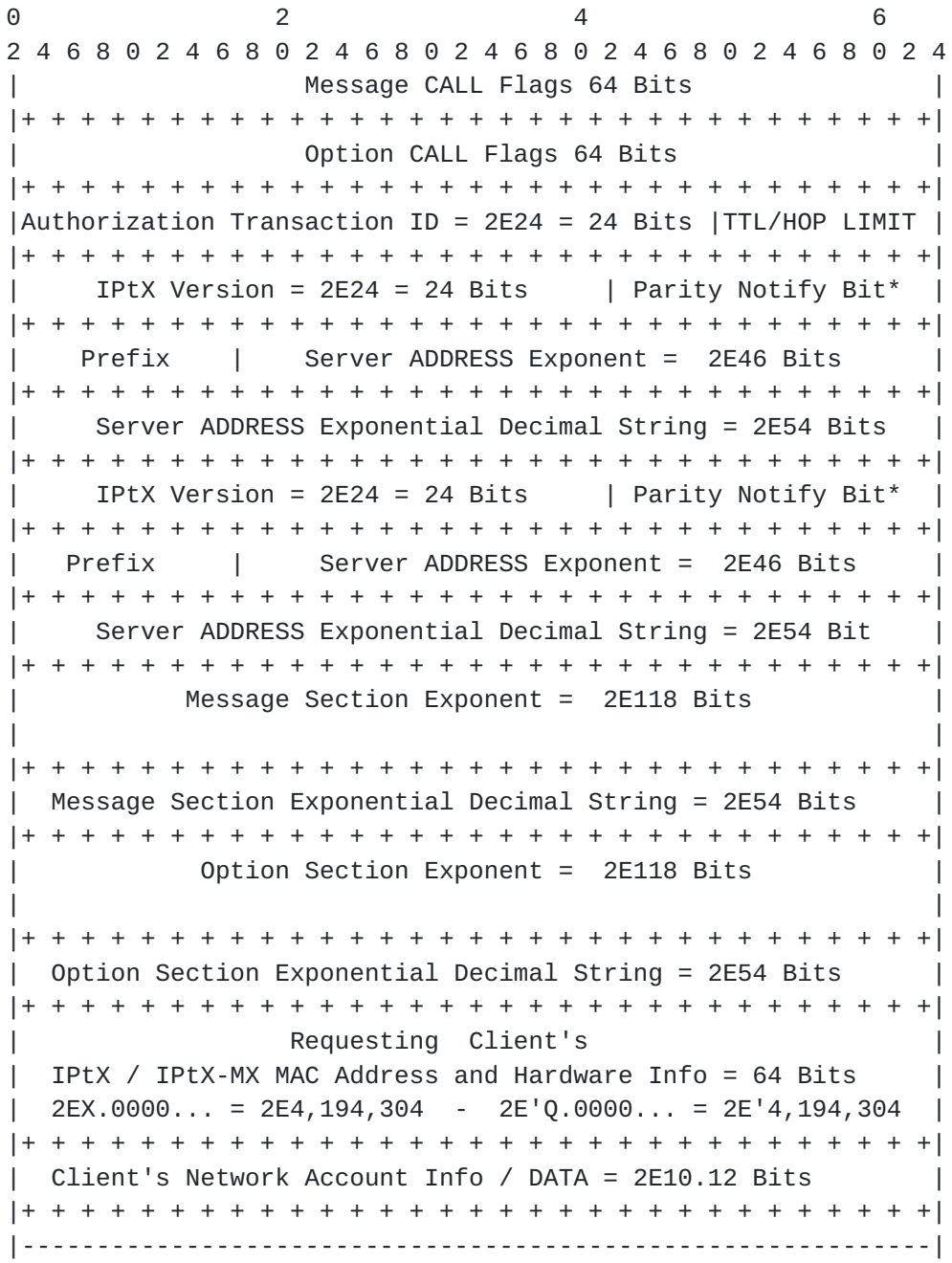
Note: The Bit Mapped example used above follows from the Current
Binary Translation, which includes the Askew Error!

And more importantly, the Compression Ratio becomes even greater, by some Exponential factor, as the amount of Data, which is to be Compressed, increases. - e.g. 100Mbyte (800 MBit ~ 100,000,000 Octets) Document is compressed to '2E800,000,000', or (4 + 8 + 30) 42 Bits (~ 6 Octets)[Approximating a '20,000,000 to 1' Bit-Mapped Compression Ratio].

Furthermore, it should be readily concluded, since each of the numbered Line in the DHCPvIPtX-MX Header defines a 32 Bit Field in a Transmission Sequence having the format of a Sentence, also defines the 'Message and Option CALL Flag Fields' as a Set of Pointers interfacing with the 'Message and Option Section Fields'. Where the 'Message and Options Section Fields' contains the Set of Instructions ENCODED by the 'DCE Unit', can Perform any assigned DHCP Task.

III. The IPtX / IPtX-MX 64 Bit Header Design Specification

DHCPvIPtX-MX 64 Bit Header



Note: Client's MAC Address is used as SOURCE Address when Requesting Client is on the Backbone of the DHCP Server's Network.

IV. IPtX / IPtX-MX Mobile IP Addressing Specification

There is a far greater growth potential, which expands the IPtX IP Addressing Protocol Family Specification, well beyond the results from the use of a Single IP Address Band Specification. That is, when adding the use of the 'Bar E' notation to the 'DCE Unit' {2E'Q} (given that the Members of the 'Real Number Set' represents every possible Numeral, denoting an Infinite Set), the IP Address Pool Total defined by the IPtX Specification increases to an amount equal to 'Bit-Mapping' every Element, or Member defined by the 'Set of Real' Numbers. In other words, the IPtX /IPtX-MX Specification defines a Logical 3 State Binary (2 Band) IP Addressing Specification, defining a Stationary and a Mobile IP Addressing Bands in a 3 Dimensional Space. - As given by;

-- IPtX / IPtX-MX Specification --

Stationary Band = 0000:2EX.0000...

Mobile Band = 0000:2E'X.0000...

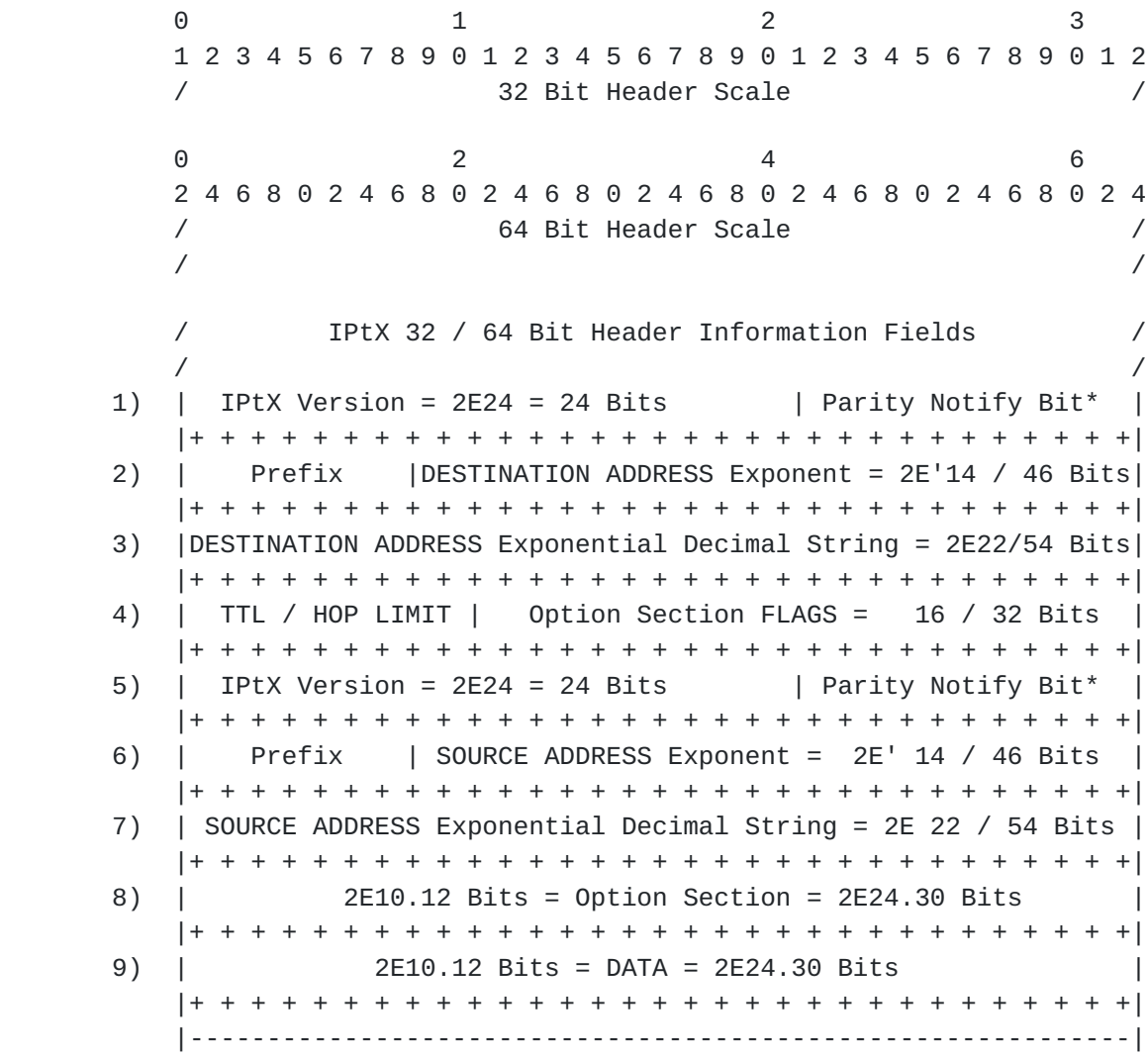
And more importantly, with each of these Address Band Specification there is a corresponding 'MAC Address' Specification - as given by;

-- IPtX / IPtX-MX Specification --

Stationary Band 'MAC Address Specification = 2EX.0000...

Mobile Band 'MAC Address Specification = 2E'X.0000...

IPtX / IPTX-MX 32 / 64 Bit Mobile Header



V. IPtX / IPtX-MX Subnet ID

It is extremely important to note, the general procedures for Subnetting, or allocating IP Address to a Sub-Division of the Network remain unchanged. That is, while the Subnet Mask has changed, Subnetting or allocating IP Address to a smaller Sub-Division of the Network remains unchanged, because it provides an easy method to account for every Node in the Structure of Network Hierarchal Scheme. However, because of the number of available IP Address in the IPtX / IPtX-MX IP Address Pool, Supernetting, as it were, is no longer a viable procedure or useful concept, especially since the IPtX / IPtX-MX Specification Sequentially counts every available IP Address.

Note: The Subnet Mask, now defined as the Subnet ID for the Stationary and Mobile IP Address Bands is given by;

Stationary Band Subnet ID = 0000:DCE Unit.0000...

Mobile Band Subnet ID = 0000:DCE' Unit.0000...

Special IANA Considerations

Clearly, further exploitation of the 'DCE Unit'; since it has been shown that the Binary Exponential Base 2 Algorithm, '2EX', sequentially counts using successive additions of "1's". The 'Preferred' Design of the 'Message CALL Flags Field' and the 'Option CALL Flags Field' in the DHCPvIPtX-MX 32 / 64 Bit Header Specification, is given by;

Note: The using the 'DCE Unit' to redefine the 32 and 64 Bit Scales to represent a 'One to One' Correspondence with the Set of Integers, Bit-Maps each Flag as the Incremental Progression from 1 thru 32, or 64. And while this defines the Flags Progression in each Field, the Sequence Order of the Integer(s) representing the Bit Mapped Flag(s) is Function Governed. Hence, from pages 17 thru 21, the procedure for converting the first '3' 'Bit-Mapped Flag(s)', which represents the Sequence 1, 2, and 3, is given by;

Given that - the example of the Text to encode...

'1, 2, 3' '123'

00110001001011000010000000110010000110011001000110011 56 Bits 24 Bits

Recalling that everything is counted, which includes the 'COMMA(s)' and the 'BLANK SPACE(s)' Separating every Numeral the Sequence contains -

Hence, the Numerical Sequence represents a '56 Bit Sentence';

BLANK SPACE = 00100000 = 8 Bits

COMMA = 00101100 = 8 Bits

Note: The Bit Mapped example used above follows from the Current Binary Translation, which includes the Askew Error!

'Taking it Away' yields: " 1, 2, 3 "	'Putting it Together' yields; " 1 + , + ' ' + 2 , + ' ' + 3 "
'1' = 00110001 = 49 = 2EX ~ 2E8	'1' = 00110001 = 49
	+
'Comma' = 00101100 = 44 = 2EX ~ 2E8	'Comma' = 00101100 = 44
	+
'Space' = 00100000 = 32 = 2EX ~ 2E8	'Space' = 00100000 = 32
	+
'2' = 00110010 = 50 = 2EX ~ 2E8	'2' = 00110010 = 50
	+
'Comma' = 00101100 = 44 = 2EX ~ 2E8	'Comma' = 00101100 = 44
	+
'Space' = 00100000 = 32 = 2EX ~ 2E8	'Space' = 00100000 = 32
	+
'3' = 00110011 = 51 = 2EX ~ 2E8	'3' = 00110011 = 51

Note: Encoding and Decoding the 'Binary Assembler', '2EX', representing the 'Assembled Data Stream' defining the 'DCE Unit', uses the "Punctuation" (Semi Colon, Commas, Spaces, Carriage Return... etc - in particular, the 'Blank Space') as 8 Bit HOOKS, to Decode or Encoded the 'Set of Instructions' - Given that; an individual Character or Numeral equals 8 Bits (2E8, or 2^8), where the HOOKS are used to define the Boundary Length of a Word or Numerical Sequence that is equal to 1 or more 8 Bit Octets, and contained in the Sentence defining any combination of Characters, Words, Numerals, and / or Punctuations. And clearly, once the 'Blank Spaces' has been identified, Decoding in a Right to Left or Left to Right 8 Bit

Pattern would easily identify the remaining 8 Bit (Individual) Characters, Digits, and Punctuation(s) the Sentence contains.

And Assembling or Joining the Number Stream, '1, 2, 3', yields;

1(49) + Comma(44) + Space(32) + 2(50) + Comma(44) + Space(32) + 3(51)

= 49 + 44 + 32 + 50 + 44 + 32 + 51

= 49,443,250,443,251

= 14 Digit Number

~ 2E45.4598888888...

= 2 E 45 . 4598888888 ...
= 11 01000101 00101101 . 100010010000111010111100110111000

= 2E45.4598888888... = 51 Bit-Mapped Displacement

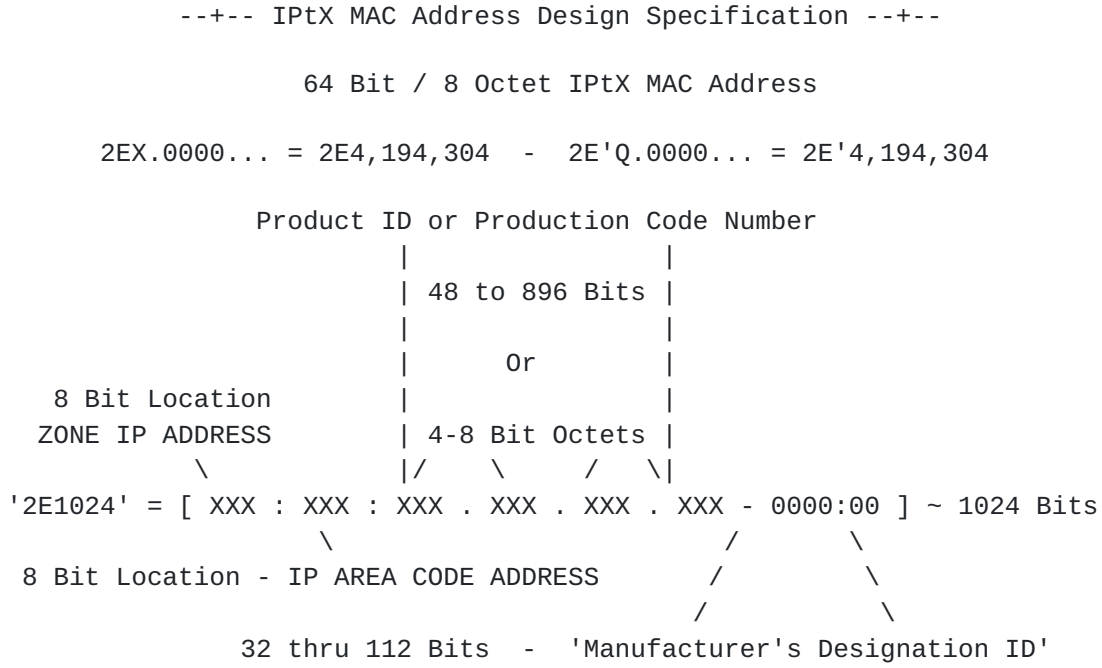
Furthermore, after realizing that Binary Exponential Base 2 Operations can be 'Nested', employing the same Backbone method used to exhaust all of the available IPtX-MX IP Addresses. Using the Assemblage of the 'Backbone ISP ID', the 'Backbone Network Account ID', the 'Backbone Users Account ID', and the 'Users IP Address' into the 'DCE Unit' of the IP Address (See 'Work in Progress' [12]). The 'Binary Assembler', '2EX', it should also be Mathematically concluded, can also be used to represent a Group, or several 'Nested Binary Exponential Base 2 Operations' - as given by;

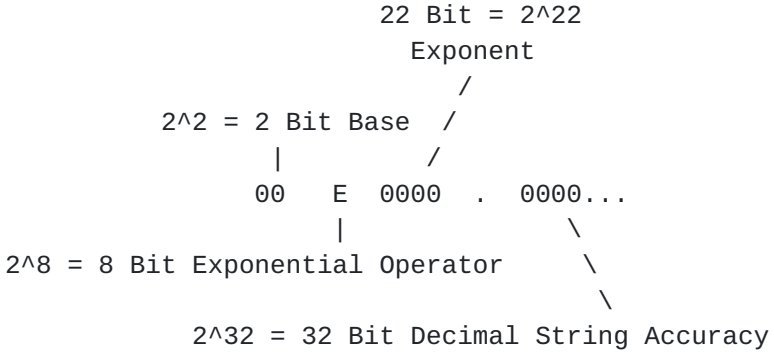
2EX > / = 2EA + 2EB + 2EC + 2ED + 2EE + 2EF + ... + 2EZ

2EX > / = 2EA x 2EB x 2EC x 2ED x 2EE x 2EF x ... x 2EZ

In other words, for example, the IPtX-MX MAC Address's 'Data Field Section', which represents the 'Product ID or Production Code Number' - The Nesting of several 'Binary Exponential Base 2 Operations' makes it possible to Write a Detailed Description of the Entire Product; or create a 'Product Form', which includes any relevant Date(s), Detailed Description, Use, and a Product ID. And this, together with the 'ZONE and IP AREA CODE Addresses', and the

'Manufacturer's Designation ID' completes the Address Code identifying the 'Hardware' and / or 'Product' - because the IPtX-MX MAC Addressing Specification could also replace the BAR CODE method, which is currently being used for 'Product Identification'.





- Using several (Nested) "Binary Assembler's", '2EX', the 'Blank Space', and the 'Carriage Return' defines the beginnings of a Language Syntax utilizing fundamental principles, which are key characteristics of 'Binary Assembler' Programming -

- Given the 'Encoded Lines' to be 'Assembled' yields;

'2E198.868003799...' = 'I went to the store today.'

```
Assembler =   2        E       198    .  868003799... = 2EQ
Binary    =  11 01000101  11000110   .  11001110111100101011111111010111
```

```
 Encode    =   4       69       198  46  868003799...
```

46,919,846,868,003,799.. = 469198 '46' 868003799...

Line 1 - 2E198.868003799... = 46,919,846,868,003,799...

Blank Space = 32

Line 2 - 2E198.868003799... = 46,919,846,868,003,799...

Blank Space = 32

Line 3 - 2E198.868003799... = 46,919,846,868,003,799...

Blank Space = 32

Line 4 - 2E198.868003799... = 46,919,846,868,003,799...

[Where the 46 = Period, or the Decimal Point in the Equation, defines the Bit-Mapped Pattern; '2 - 8 - 8 - 8(46) - And All Remaining Bits', as the 'Binary Bit-Map Sequence Key'. However, while a Second Level of Compression is impressive, any further Compression could cause a reduction in the Accuracy of the Exponential Decimal String of the Binary Assembler, 2EX, defining each of the Coded Lines.]

- The Lines to Encode...

Line 1 + 'Space' + Line 2 + 'Space' + Line 3 + 'Space' + Line 4

46,919,846,868,003,799 + '32' + 46,919,846,868,003,799
+ '32' + 46,919,846,868,003,799... + '32' + 46,919,846,868,003,799

= 46,919,846,868,003,799,324,691,984,686,800,379,932,469,198,468,
680,037,993,246,919,846,868,003,799 = 74 Digit Number = 2EQ

~ 2E244.73... = 2EQ

= 2 E 244 . 73 ...
= 11 01000101 11110100 . 1001001 ... = 25 Bits
[4(208) + 32(46) + 24(32) = 888 Bit Length - Reduced to 25 Bits]

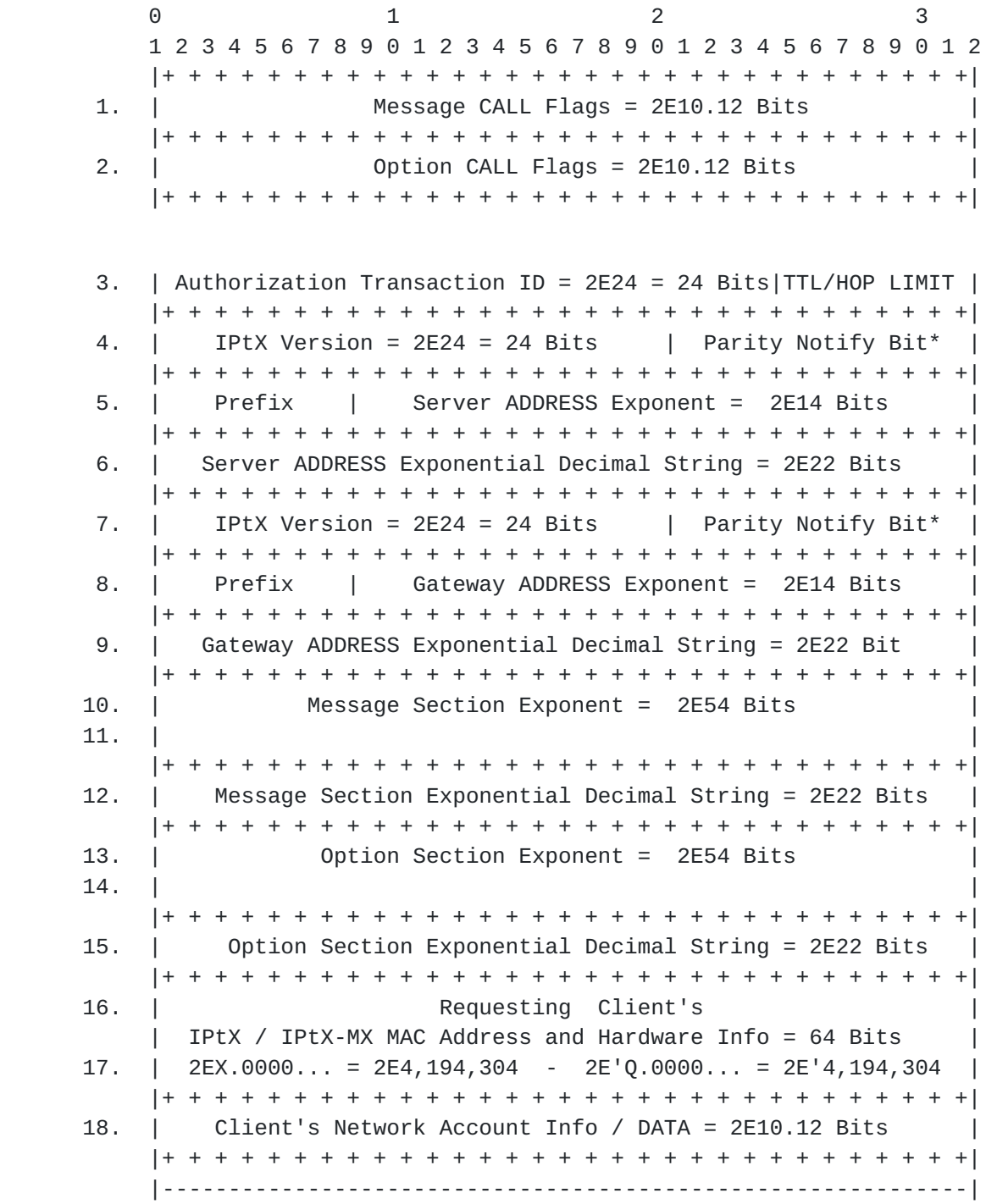
- Given That -

2EX > / = 2EA + 2EB + 2EC + 2ED + 2EE + 2EF + ... + 2EQ

2EX > / = 2EA x 2EB x 2EC x 2ED x 2EE x 2EF x ... x 2EQ

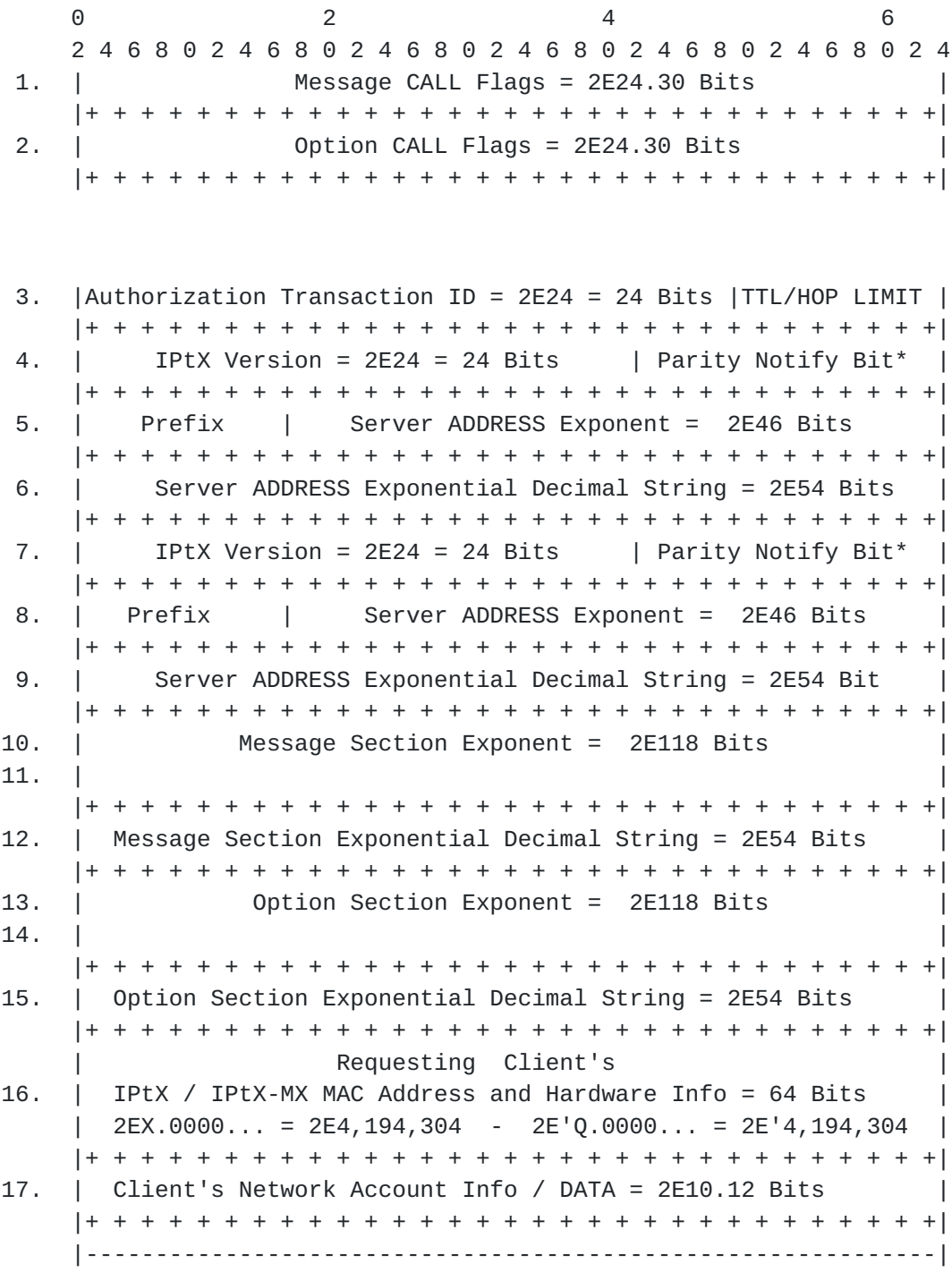
Note: The Bit Mapped example used above follows from the Current Binary Translation, which includes the Askew Error!

DHCPvIPtX-MX 32 Bit Header



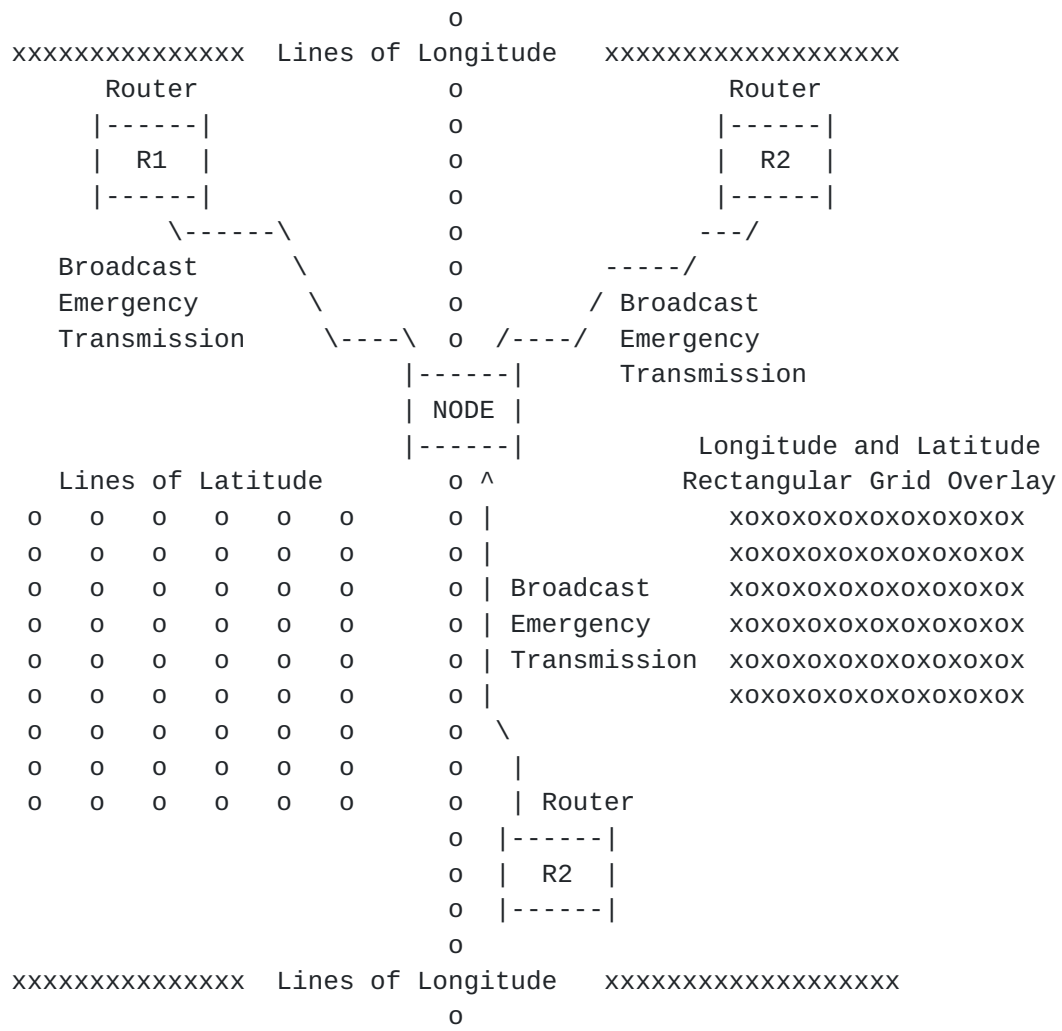
Note: Client's MAC Address is used as SOURCE Address when Requesting
Client is on the Backbone of the DHCP Server's Network.

DHCPvIPtX-MX 64 Bit Header



Note: Client's MAC Address is used as SOURCE Address when Requesting Client is on the Backbone of the DHCP Server's Network.

Example of a 3D Grid Locator Scheme using a 3 IP Address Coordinate System in conjunction with a Longitude and Latitude Rectangular Grid Overlay -



Noting more specifically that;

IANA EMERGENCY BROADCAST IP ADDRESS PROTOCOL

001-256| 001-256:| All: | - - - - e .911 | All |IANA/Emer| 7/07

Representing on the Backbone, the IPtX-MX IP Address Mask given by;

0000:2E911.0000...

Prefix:	Zone IP:	IP Area Code:	Emergency Response Address	/XA
0000:	2	E	911 .	0000...
11111111	11	11001010	1110001111 .	1111...

Note: The Exponential Decimal String, '1111...', is used to Derive / Assign the additional IP Addresses on / for the 'e911 Emergency Response Network'.

Note - IANA \ IEEE Special Consideration -

- The Method used for Electronic Signal Propagation to Distinguish between Zero = '0', and Binary 1 = '00' -

1) A Single Position Binary 2 State Switch - Single Position 2 State Switch |X,Y| - Yielding; |*| = 0 Or |1| = 1

a) Single Position / 2 State Switch - True Or False

b) 2 States defines the Choice of either a '0' or a '1'

c) '0' defines a No Electronic Signal Pattern '*' = 0

d) '1' defines a True electronic Signal Pattern '1v1' = 1

2) A Double Position Binary 3 State Switch - Double Position 3 State Switch |*,X,Y| - Yielding; |*,0| = 0, |0,0| = 1, |0,1| = 2, |1,0| = 3, and |1,1| = 4 -

a) Double Position / 3 State Switch - True, False, or No Response

b) 3 States defines the Choice or Combination of either '*0', '00', '01'

c) '0' defines No Electronic Signal Pattern '*' = 0

d) '00' defines a True electronic Signal Pattern '00v1' = 1

e) '01' defines a True electronic Signal Pattern '01v1' = 2

Security Considerations

There are No Security Considerations presented in this document.

Work(s) in Progress;

Computer Science / Internet Technology:

These drafts represent the twelve chapters of the Networking Bible, designing a Network IP Addressing Specification that maintains a 100 Percent backward compatibility with the IPv4 Specification. In other words, this is a design specification developed from the Theory of the Expansion of the IPv4 IP Addressing Specification, which allowed the representation of the Network for the entire World on paper, and the possibility of an Infinite IP Address Pool. Nevertheless, the Internet-Drafts listed below, 'Cited as Work(s) in Progress', explain the design Specification for the development of the IPtX (IP Telecommunications Specification) Protocol Addressing System and the correction of the Mathematical Error in the Binary System.

1. http://www.ietf.org/internet-drafts/draft-terrell-logic-analy-bin-ip-spec-ipv7-ipv8-10.txt - 'Work(s) in Progress'
   (Foundational Theory for the New IPtX family IP Addressing Specification, and the Binary Enumeration correction)

2. http://www.ietf.org/internet-drafts/draft-terrell-simple-proof-support-logic-analy-bin-02.txt - 'Work(s) in Progress'
   (The completion of the 2nd Proof correcting the error in Binary Enumeration)

3. http://www.ietf.org/internet-drafts/draft-terrell-visual-change-redefining-role-ipv6-01.pdf - 'Work(s) in Progress'
   (Argument against the deployment of IPv6)

4. http://www.ietf.org/internet-drafts/draft-terrell-schem-desgn-ipt1-ipt2-cmput-tel-numb-02.pdf - 'Work(s) in Progress'
   (The foundation of the New IPtX IP Addressing Spec now similar to the Telephone Numbering System)

5. http://www.ietf.org/internet-drafts/draft-terrell-internet-protocol-t1-t2-ad-sp-06.pdf - 'Work(s) in Progress'
   (The IPtX IP Addressing Specification Address Space/IP Address Allocation Table; establishes the visual perspective that actually represents Networking Schematic of the entire World.)

6. http://www.ietf.org/internet-drafts/draft-terrell-iptx-spec-def-cidr-ach-net-descrip-01.pdf - 'Work(s) in Progress'
   (Re-Defining 'CIDR' {Classless Inter-Domain Routing

Architecture} for the IPtX Addressing Standard)

7. http://www.ietf.org/internet-drafts/draft-terrell-math-quant-new-para-redefi-bin-math-04.pdf - 'Work(s) in Progress'
(The completion of the 3rd Proof correcting the error in Binary Enumeration)

8. http://www.ietf.org/internet-drafts/draft-terrell-gwebs-vs-ieps-00.pdf
(Global Wide Emergency Broadcast System) 'Work(s) in Progress'

9. http://www.ietf.org/internet-drafts/draft-terrell-iptx-dhcp-req-iptx-ip-add-spec-00.pdf - 'Work(s) in Progress'
(The development of DHCP {Dynamic Host Configuration Protocol} for the IPTX IP Addressing Spec)

10. http://www.ietf.org/internet-drafts/draft-terrell-iptx-dns-req-iptx-ip-add-spec-03.pdf - 'Work(s) in Progress'
(The development of DNS {Domain Naming Specification} for IPTX IP Addressing Spec)

11. http://www.ietf.org/internet-drafts/draft-terrell-math-quant-ternary-logic-of-binary-sys-10.pdf(Derived the Binary System from the proof of "Fermat's Last Theorem", and Developed the Ternary Logic for the Binary System) 'Work(s) in Progress'

12. http://www.ietf.org/internet-drafts/draft-terrell-cidr-net-descrpt-expands-iptx-add-spc-20.pdf 'Work(s) in Progress'
(An application of Quantum Scale Theory, the 2^X : 1 Compression Ratio, the Expansion derived from the 'CIDR Network Descriptor, and the Mathematics of Quantification provided the foundation for the development of the "Intelligent Quantum Tunneling Worm Protocol"; A Routable Mathematical Exponential Expression, BackEnd IP Addressing Space using the Compression Ratio 2^X : 1.)

13. http://www.ietf.org/internet-drafts/draft-terrell-iptx-mx-dns-specification-04.pdf (The development of the IPtX / IPtX-MX DNS {Domain Name Service} for IPTX IP Addressing Specification) 'Work(s) in Progress'

14. http://www.ietf.org/internet-drafts/draft-terrell-iptx-mx-dhcp-specification-00.pdf (The development of the IPtX / IPtX-MX DHCP {Dynamic Host Configuration Protocol} for IPTX IP Addressing Specification) 'Work(s) in Progress'

NOTE: These Drafts has Expired at www.ietf.org Web Site. However, you can still find copies of these Manuscripts posted at Web Sites

all over the World. Suggestion; Perform Internet Search using either 'Yahoo' or 'Google' - Keyword: 'ETT-R&D Publications'}.

Normative References

Pure Mathematics:

1. The Proof of Fermat's Last Theorem; The Revolution in Mathematical Thought {Nov 1979} E. Terrell

2. The Rudiments of Finite Algebra; The Results of Quantification {July 1983} E. Terrell

3. The Rudiments of Finite Geometry; The Results of Quantification {June 2003} E. Terrell

4. The Rudiments of Finite Trigonometry; The Results of Quantification {July 2004} E. Terrell

5. The Mathematics of Quantification and the Metamorphosis of Pi:Tau {October 200} E. Terrell

6. The Mathematics of Quantification & The Rudiments of Finite Physics The Analysis of Newton's Laws of Motion...the Graviton' {December 2004) E. Terrell

7. Squaring the Circle? First! What is the Circle's Area? {January 2005}
   The Rhind Papyrus Tale, and the 10,000 year old quest involving "Squaring the Circle"; derivation of the equation resolving the Area of the Circle. An illusion perplexing the Sight and Mind of the greatest mathematicians for about 10,000 years, which maintains an elementary algebraic solution:
   (Pi(r)/2)^2 = Area of Circle.

Informative References

1. G Boole (Dover publication, 1958) "An Investigation of The Laws of Thought" On which is founded The Mathematical Theories of Logic and Probabilities; and the Logic of Computer Mathematics.

2. R Carnap (University of Chicago Press, 1947 / 1958) "Meaning and Necessity" A study in Semantics and Modal Logic.

3. R Carnap (Dover Publications, 1958) " Introduction to Symbolic Logic and its Applications"

4. Regis Desmeules (Cisco Press, April 24, 2003) " Cisco Self-Study: Implementing Cisco IPv6 Networks "

5. Gary C. Kessler (Auerbach Press, August 1997) " Handbook on Local Area Networks "

6. R. Hinden (Nokia) and S. Deering (Cisco Systems) RFC 2373 - " IP Version 6 Addressing Architecture "

7. Hartley, R.V.L; "Transmission of Information," Bell System Technical Journal, July 1928

8. Reza, Fazlollah M.; An Introduction to Information Theory. New York: Dover, 1994.

9. David J. C. MacKay; Information Theory, Inference, and Learning Algorithms Cambridge: Cambridge University Press, 2003.

10. DHCP Implementation and Security RFCs: 2939, 3004, 3011, 3046, 3118, 3203, 3256, 3361, 3396, 3397, 3442, 3456, 3495, 3527, 3594, 3634, 3679, 3825, 3925, 3942, 3993, 4014, 4030, 4039, 4174, 4280, 4361, 4388, 4390, 4578, 1541, 2489, 3315, 3319, 3646, 3633, 3898, 4075, 4242, 4280, 4776, 2855, 1542, 1534, 2131, 4361, 2132, 3942, 2485, 2563, 2610, 2855, 2937, 4649, 4580, 4704, 4833, 3315, 4361, 3319, 3633, 3646, 3736, 3898, 4075, 4076, 4280, and 4339.

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"This work is Dedicated to my first and only child, 'Princess Yahnay', because she is the gift of Dreams, the true treasure of my reality, and the 'Princess of the Universe'. (E.T. 2007)"

Intellectual Property

Acknowledgement

Funding for the RFC Editor function is provided by the IETF

Administrative Support Activity (IASA).