                    INTERNET PROTOCOL t1 and t2 ADDRESS SPACE

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E Terrell   [Page 1]

TABLE   OF   CONTENTS

Abstract

Abstract

This paper provides a visualization of the lack of IP Address Control,
a Blunder, which may be excused partly because of the impossibility of
Predicting the Current, as well as the Future use and growth of the
Internet. Furthermore, this investigation also attempts a Critical
Analysis for Current use of the HD-Ratio in the IPv4 and IPv6 IP
Specifications. Moreover, while the IPv4 and IPv6 specifications are
indeed the primary focus. To provide a fair comparison however, this
Analysis requires, if not mandates, the use of the IPt1 and IPt2
specifications as well. The reasoning here nevertheless, is the
difference in the respective Addressing Schematics. Where by, the
primary focuses of the former renders a greater significance to the
HOST IP Address (Assignment), while the focus of the latter emphasizes
only the Network IP Address. However, it shall be concluded, this
distinction affects the Efficiency, which is the RATIO of Total Number
of Nodes that can be attached to Service the Global Networking Community,
and the Number of available IP Addresses used for the Connection.

In other words, this 'Analysis is Argument' focusing upon the HD-Ratio,
which results in the introduction of the foundation Defining the
'INTERNET PROTOCOL t1 and t2 ADDRESS SPACE', that exceeds the
Requirements specified in RFC1550, Defining a New IP Addressing System.

"This work is Dedicated to my first and only child, 'Yahnay', who is;
 the Mover of Dreams, the Maker of Reality, and the 'Princess of the
 New Universe'. (E.T.)"

Introduction: Analysis and Impact of the IPv4 Internet Protocol
             Address Space, which Questions the Current Use of
             and Application of the 'CIDR Notation'

    The mathematical learning curve regarding an understanding of such
    concepts as 'Bit Mapping' the 'Network Portion of an IP Address' can
    be long and arduous. And this is seen especially true, when trying to
    grasp the 'How-To's' and functional purpose of 'CIDR'. And while, I
    have read the works from only a few authors whose approach makes a
    distinction, as would be a noted difference in the interpretation of
    the definition of 'CIDR'. I have noted moreover, their approach is not
    a pronounced separation, as would be an unquestionable distinction used
    in the 'Water and Oil' analogy from Chemistry. However, the beginner,
    would understand quite clearly the difference between the 'Front-End'
    and 'Back-End' approaches used in "Supernetting of an IP Address".
    Where by the 'Bit Mapping' of the 'Network Portion', would represent
    the 'Front-End' approach, and the 'Bit Mapping' of the 'Host Portion'
    would represent the 'Back-End' approach, in what is defined, or called
    the "Supernetting of an IP Address", or 'CIDR'. Nevertheless, while the
    mathematical operation involved in either the 'Front-End' or 'Back-End'
    usage of 'CIDR' is not, by themselves, confusing or conflicting
    operations. Still, a lot remains the Wishful Dream, or on the 'Wish List'
    of the hopeful, regarding a greater Specificity in the definition and
    distinction of the functional 'Parameters' associated with the conventions
    used in the 'CIDR' notation representing a Network IP Address. Needless
    to say, this becomes even more evident when trying to understand the
    "INTERNET PROTOCOL V4 ADDRESS SPACE", which was developed and used by
    IANA as a guide, or scheme, Denoting some Method used to determine IP
    Address Availability, Special Assignment, and Allocation.

    In other words, TABLE 1, the "IPv4 Internet Protocol Address Space",
    according to the current standards and definition of 'CIDR', one would
    conclude that there is a great number of IP Addresses wasted on HOST
    Assignments. And this is apparent from the 'Bit Map' definition assigned
    to the notation "/8". Where in any 32 Bit IP Addressing format, this
    'Bit Mapping' notation accounts for (Class A = 126 x 254^3) 2,064,770,064
    IP Addresses under the current IPv4 specification, that is, without using
    the 'Front-End' indicator from Class A. And then, when it is used, it
    would it would account, (again using the current definitions of 'CIDR')
    an assignment, or allocation of more than 16 Million IP Address
    (1 X 245^3). Which, to say the very least, amounts to IP Address waste,
    because this has the effect of providing a Host with Network Status. 'Not
    to mention that most of the companies, who has such an arrangement are
    not "IPS's".

E Terrell   [Page 4]

Nevertheless, the Mathematical Problem(s) encompassing these definitions far out weight the problems associated with IP Address Waste. In other words, the Current Methods and Definitions of 'CIDR', regarding it use in 'Bit Mapping' an IP Address, is Mathematically Incorrect. Or just plain Wrong! In other words, an '8 Bit Mapping' Designation under the Current '32 Bit IP Specification', can only account for '255' IP Addresses (And NO more than that!). To be more specific however, what this means Mathematically, is that, there is only '1' of the '4' '8 Bit Quadrants' being used, which sets the Parameters for the Total Number of IP Addresses Assigned. Moreover, the use of only '1' Quadrant, as a means for specification, regarding the total number of IP Addresses assigned, is an Error, which can not be used to Account for the 'Diversity in Number', regarding the Total Number Combinations Derived from the Calculation of the Total Number of IP Addresses Contained in the IP Address Class.

Unfortunately however, the above argument leads to a mathematical Proof, which revives an Old Argument regarding the Method of Enumeration using the Binary Numbering System. In other words, the Total, or Inclusive Count, which would represent the '8 Bit Mapping' notation, '/8', would not yield the Binary Number '255'. It would in fact represent '256', because Zero, under the Current Binary Specification, is indeed a Binary Number (0000). Furthermore, it should be understood, that this does serve not only the explanation for the ongoing argument, but the Current Definition of the Modern Binary System as well. Which is to say, under the Current, or Modern Binary System, {11111111} = '8 Bits' = '255', does not follow from the Definition of '2', representing Base, in what is clearly (And has been Defined as Being) an Exponential, represented by the equation, 2^N (Where N = some Positive Integer). In which case, the the Total, or Inclusive Count for an '8 Bit' translation of a Binary Number representing an Integer, would be given by the equation, '$2^8 = 256$'. This moreover, Mathematically implies the equation, $8^{32} = 256^4$, which would be interpreted as meaning; 'There are '32' Bits used to represent the '4,294,967,296' Integers, which represents the Total Number of IP Addresses contained in the IPv4 Addressing Specification. Nevertheless, while the counting methods used in the Binary System remain in Dispute, an adequate representation for the 'CIDR' Notation can be determined using the Current Binary Methods for Enumeration. That is, given by TABLE 2, we have:

```
                         TABLE 1

                IPv4 Internet Protocol Address Space



Address Block      Registry - Purpose                        Date
--------------- ------------------------------------------- ------
000/8           IANA - Reserved                             Sep 81
001/8           IANA - Reserved                             Sep 81
002/8           IANA - Reserved                             Sep 81
003/8           General Electric Company                    May 94
004/8           Bolt Beranek and Newman Inc.                Dec 92
005/8           IANA - Reserved                             Jul 95
006/8           Army Information Systems Center             Feb 94
007/8           IANA - Reserved                             Apr 95
008/8           Bolt Beranek and Newman Inc.                Dec 92
009/8           IBM                                         Aug 92
010/8           IANA - Private Use                          Jun 95
011/8           DoD Intel Information Systems               May 93
012/8           AT&T Bell Laboratories                      Jun 95
013/8           Xerox Corporation                           Sep 91
014/8           IANA - Public Data Network                  Jun 91
015/8           Hewlett-Packard Company                     Jul 94
016/8           Digital Equipment Corporation               Nov 94
017/8           Apple Computer Inc.                         Jul 92
018/8           MIT                                         Jan 94
019/8           Ford Motor Company                          May 95
020/8           Computer Sciences Corporation               Oct 94
021/8           DDN-RVN                                     Jul 91
022/8           Defense Information Systems Agency          May 93
023/8           IANA - Reserved                             Jul 95
024/8           ARIN - Cable Block                          May 01
                   (Formerly IANA - Jul 95)
025/8           Royal Signals and Radar Establishment       Jan 95
026/8           Defense Information Systems Agency          May 95
027/8           IANA - Reserved                             Apr 95
028/8           DSI-North                                   Jul 92
029/8           Defense Information Systems Agency          Jul 91
030/8           Defense Information Systems Agency          Jul 91
031/8           IANA - Reserved                             Apr 99
032/8           Norsk Informasjonsteknologi                 Jun 94
033/8           DLA Systems Automation Center               Jan 91
034/8           Halliburton Company                         Mar 93
035/8           MERIT Computer Network                      Apr 94
036/8           IANA - Reserved                             Jul 00
                   (Formerly Stanford University - Apr 93)
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037/8        IANA - Reserved                        Apr 95
038/8        Performance Systems International       Sep 94
039/8        IANA - Reserved                        Apr 95
040/8        Eli Lily and Company                   Jun 94
041/8        IANA - Reserved                        May 95
042/8        IANA - Reserved                        Jul 95
043/8        Japan Inet                             Jan 91
044/8        Amateur Radio Digital Communications   Jul 92

045/8        Interop Show Network                   Jan 95
046/8        Bolt Beranek and Newman Inc.           Dec 92
047/8        Bell-Northern Research                 Jan 91
048/8        Prudential Securities Inc.             May 95
049/8        Joint Technical Command                May 94
             Returned to IANA                       Mar 98
050/8        Joint Technical Command                May 94
             Returned to IANA                       Mar 98
051/8        Deparment of Social Security of UK     Aug 94
052/8        E.I. duPont de Nemours and Co., Inc.   Dec 91
053/8        Cap Debis CCS                          Oct 93
054/8        Merck and Co., Inc.                    Mar 92
055/8        Boeing Computer Services               Apr 95
056/8        U.S. Postal Service                    Jun 94
057/8        SITA                                   May 95
058/8        IANA - Reserved                        Sep 81
059/8        IANA - Reserved                        Sep 81
060/8        IANA - Reserved                        Sep 81
061/8        APNIC - Pacific Rim                    Apr 97
062/8        RIPE NCC - Europe                      Apr 97
063/8        ARIN                                   Apr 97
064/8        ARIN                                   Jul 99
065/8        ARIN                                   Jul 00
066/8        ARIN                                   Jul 00
067/8        ARIN                                   May 01
068/8        ARIN                                   Jun 01
069-079/8    IANA - Reserved                        Sep 81
080/8        RIPE NCC                               Apr 01
081/8        RIPE NCC                               Apr 01
082-095/8    IANA - Reserved                        Sep 81
096-126/8    IANA - Reserved                        Sep 81
127/8        IANA - Reserved                        Sep 81
128-191/8    Various Registries                     May 93
```

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192/8        Various Registries - MultiRegional       May 93
193/8        RIPE NCC - Europe                         May 93
194/8        RIPE NCC - Europe                         May 93
195/8        RIPE NCC - Europe                         May 93
196/8        Various Registries                        May 93
197/8        IANA - Reserved                           May 93
198/8        Various Registries                        May 93
199/8        ARIN - North America                      May 93
200/8        ARIN - Central and South America          May 93
201/8        Reserved - Central and South America      May 93
202/8        APNIC - Pacific Rim                       May 93
203/8        APNIC - Pacific Rim                       May 93
204/8        ARIN - North America                      Mar 94
205/8        ARIN - North America                      Mar 94
206/8        ARIN - North America                      Apr 95
207/8        ARIN - North America                      Nov 95
208/8        ARIN - North America                      Apr 96
209/8        ARIN - North America                      Jun 96
210/8        APNIC - Pacific Rim                       Jun 96
211/8        APNIC - Pacific Rim                       Jun 96
212/8        IPE NCC - Europe                          Oct 97
213/8        RIPE NCC - Europe                         Mar 99
214/8        US-DOD                                    Mar 98
215/8        US-DOD                                    Mar 98
216/8        ARIN - North America                      Apr 98
217/8        RIPE NCC - Europe                         Jun 00
218/8           APNIC - Pacific Rim                    Dec 00
219/8           APNIC                                  Sep 01
220/8           APNIC                                  Dec 01
221-223/8       IANA - Reserved                        Sep 81
224-239/8    IANA - Multicast                          Sep 81
240-255/8    IANA - Reserved                           Sep 81
```

```
                          TABLE 2


                IPv4 'Bit Mapped' IP Address Distribution
               Derived from the Modern Method for Binary Enumeration
                        Using the 'CIDR' Notation

            1                    2              3              4

    Network IP Address      Number of IP   Exponential     Total
     Class Range          Addresses Issued   equation     Number of
      /Starting            /for the Octet    yielding    IP Addresses
       Network             Representing     Total Number    Issued
       Prefix:             the IP Address   IP Addresses
    Number of Bits          Class Range       Issued
         |                      |               |             |
         V                      V               V             V
    "/New 'CIDR'
      Notation"


                             CLASS A


      0-126/00:8    =        0/8      =       2^0   =        1

      0-126/00:8    =        1/8      =       2^1   =        2

      0-126/00:8    =        2/8      =       2^2   =        4
                              |               |             |
                              V               V             V
      0-126/00:8    =        6/8      =       2^6   =        64
                              |               |             |
                              V               V             V
      0-126/00:8    =        X/8      =       2^X   =        126


    --------------------------------------------------------


                             CLASS B


      128-191/10:16   =     0/16      =        2^0   =        1

      128-191/10:16   =     1/16      =        2^1   =        2
                              |                 |             |
                              V                 V             V
      128-191/10:16   =     X/16      =        2^X   =      16,256


    --------------------------------------------------------
```

```
                    CLASS C

   192-223/110:24   =    0/24     =      2^0  =       1

   192-223/110:24   =    1/24     =      2^1  =       2
                         |                |           |
                         V                V           V
   192-223/110:24   =    X/24     =      2^X  =  2,064,512
```

   Nevertheless, while Table 2 provides a better description and use of the
   'CIDR' notation, it falls extricably short from the full exploitation, and
   the actual representation regarding the True Value of 'CIDR'. In other
   words, the real Value for the use of 'CIDR', would be seen to take
   advantage of the Total Number of IP Addresses contained in the IPv4
   specification, and not just the limited number of IP Addresses contained
   in 'Class C'. Where by, it should be very clear, that while Table 1 does
   provide an easily discernable explanation of the IP Addresses Allocated.
   Now. It also shows the IP Address waste, because it does nothing to change,
   nor fix the Loss of more than 16 Million IP Addresses, for every IP Address
   issued, which represents the Number IP Addresses wasted on HOST Address
   assignment. Nonetheless, Re-Defining the CIDR' Notation as depicting the
   'Network Prefix' and the 'Bit Range it Uses', as used in Table 2, under
   column '1', does indeed provide the necessary foundation for its full
   exploitation, and establishes a smooth Transition, which is represented
   in the 'IPt1 IP Addressing Specification' (See Chapter II). Needless to
   say, this method clearly follows from the definition of 'CIDR', and builds
   upon the foundation, logically, that is has already established.

Chapter I: Analysis IPv4, IPv6, IPt1, and IPt2 address space using
         the HD-Ratio

    As shown in RFC1715, and RFC3194, the HD-ratio proved to be a Dismal
    Failure for use as an indicator to determine IP Address use and
    Distribution Efficiencies. In fact, it can easily be concluded that the
    IPt1 and IPt2 IP Specification are the only Addressing Protocols which
    meet the All of the Requirements outlined in RFC1550, especially since,
    they were Logically Derived from the IPv4 IP Specification. In other
    words, the IPt1 and IPt2 Protocol Specifications not only meet the
    Transitional requirements, as would be viewed as meeting all of the
    Engineering considerations required under RFC1550, but it also offers
    a more Gradual, and yet Infinite Expansion Possibilities, to meet the
    challenge that only the Colonization of the Universe could provide.

    Needless to say, when examining the benefits of using the HD-Ratio, one
    would discover, that is has absolutely No application regarding the
    determination of the Efficiency Rating for the IPt1 and IPt2 Addressing
    Protocol Specification, because these protocols makes use of more than
    99.999+% of the IP Addresses contained in this Addressing System. And
    while, some of the additional protocol definitions and specifications,
    which increased the benefits of the IPv4 foundation, has been remarked,
    or viewed as being unnecessary Growing Pains. These remarks should not be
    considered as being anything but unintelligent babblings. As an example,
    the use of 'CIDR', while not fully exploited, followed logically the
    foundation of the IPv4 Specification, and paved the way for the
    Mathematical and Logical derivation of a 2 New IP Addressing Systems,
    which Completely exploited the Solid Foundation provided by the IPv4
    Specification. In other words, at best, the HD-Ratio, like the H-Ratio,
    is a Beguilement, whose only purpose is to deceive, because surely the
    Logarithmic Equation described in RFC1715 could not serve any vital
    purpose. In which case, the author would have been better off using the
    elementary method for calculating the actual Efficiency Rating (see
    Eq. 1). Because taking the Log to the Base 10, using this equation, would
    not have derived any practical meaning, at least not one which could be
    translated into some actuate determination for some Efficiency Rating
    regarding the IP Addressing Systems. And this becomes even more apparent,
    when it is realized that the Number of Bits used to represent an IP
    Address does not account for the Total Number of IP Addresses available
    in the IP Addressing System.

```
                         Eq. 1

                  log (number of objects)
         H = -----------------------
                     available bits
```

Furthermore, while RFC3194 provides a more actuate Logarithmic Equation,
for Efficiency Determination, its usage would be more applicable in a
Current Use scenario (See Eq. 2). This becomes even more apparent when it
is realized that the 'Numerator' used in the equation is a 'Constant', and
not the result derived from some 'Sampling Related to a Statistical
Analyses of the World's Population Growth, or Decline Patterns.

```
                         Eq. 2


                  log(number of allocated objects)
         HD = ------------------------------------------
                  log(maximum number of allocatable objects)
```

Even still, suppose for a moment that Eq. 2 were a valid representation
for the determination of the Efficient Rating for an IP Addressing System.
And suppose even further, that a test was needed to determine the value of
the IPt1 Addressing Specification, then the results from the Calculations
using this equation would be 'Startling', because the 'HD-Ratio' would
approach NEARLY a VALUE of '1'. This is because all of the available IP
Addresses, which are available in this IP Addressing Specification are
used for Network Assignment, the point of 'Demarcation', that excludes
the use of a viable Network IP Address for Host Address Assignment. And
if you would note Table 3, and the Currently Acceptable IP Network
Addressing Practices, then it would be realized, that the Entire World
could Actually be Networked using only Section 'A-1' from Class A of IPt1
IP Addressing Specification.

Furthermore, since the Prefixes used in the IPt2 IP Protocol Specification
can not be used in any calculation, which would be required for the
Determination of the Efficiency Rating regarding the use of the Total
Number of IP Address. Then their use within the IPt2 Protocol
Specification is indeed an Enhancement, which can only be viewed as a
Magnification Freebie. That is, without question, IPt2 allows a more
Gradual Growth that can quite easily be Expanded to Infinity (See Tables
4 and 5). In which case, Population Growth really does not matter, because
it is now a Variable that has been removed from the Equation.

Nevertheless, while there was some mention of a comparison to other
Addressing Systems, there was No mention regarding the way these Numbering
Systems were used or even Allocated (i.e. The telephony System). In other
words, their mention was pointless, because no clear foundation, that
could be viewed as having establish the Point upon which an Argument
could be based was ever mentioned or shown to exist. In a word; 'I
actually did not understand the point, nor purpose of either RFC1715 nor
RFC3194, because it seems that these RFCs were focused more upon the
Logarithmic Equation, rather than the reported objective regarding the
Efficiency Rating, and the Determination of the most efficient IP
Addressing scheme that should be used. Furthermore, while I have read
some mention regarding the 'Address Space Allocation Table(s), it was
never pointed out, that the 'Address Allocation Table' (Or "INTERNET
PROTOCOL ADDRESS SPACE") could quite literally invalidate any calculation
regarding efficiency, because such a TABLE can also be INEFFICIENT.

```
                              Table 3

          "Reality of the Mathematical Addressing Schematic for the
           'IPt1' Addressing System Using the Modern Binary System."
           (Where the Value for the variable 'Y' is given by the Laws
            of the Octet, and the System contains 4.145 x 10^9 Addresses.)


1. Total IP Addresses for Class A = 126 x 254^3 = 2,064,770,064
   Total available IP Addresses for Class A = 126 x 254^3
   Total available IP Host Addresses Equals 126 x 254^N
   (Where N = Number of Octet, and 'Y' equals the Address
    Range '128 - 254', 1 - 126 is not included in the
    Address Range Represented by the equation
            'Y = 254 - 126'.)


   Class A-1, 1 - 126, Default Subnet Mask 255.y.x.x:
   1,040,514,048 Networks and 8,129,016 Hosts: 0

   Class A-2, 1 - 126, Default Subnet Mask 255.255.y.x:
   516,160,512 Networks and 32,004 Hosts

   Class A-3, 1 - 126, Default Subnet Mask 255.255.255.y:
   256,048,128 Networks and 126 Hosts

   Class A-4, 1 - 126, Default Subnet Mask 255.255.255.255:
   252,047,376 Network / MultiCast IP Addresses / AnyCast


2. Total IP Addresses for Class B = 64 x 254^3 = 1,048,772,096
   Total available IP Addresses for Class B = 64 x 254^3
   Total available IP Host Addresses Equals 64 x 254^N
   (Where N = Number of Octet, and 'Y' equals the Address
    Range '254 - Q'; 128 - 191 is not included in the
    Address Range Represented by the equation
          'Y = 254 - 64'.)

   Class B-1, 128 - 191, Default Subnet Mask 255.y.x.x:
   784,514,560 Networks and 4,129,024 Hosts: 10

   Class B-2, 128 - 191, Default Subnet Mask 255.255.y.x:
   197,672,960 Networks and 16,256 Hosts

   Class B-3, 128 - 191, Default Subnet Mask 255.255.255.y:
   49,807,360 Networks and 64 Hosts

   Class B-4, 128 - 191, Default Subnet Mask 255.255.255.255:
   16,777,216 Network / MultiCast IP Addresses / AnyCast
```

3. Total IP Addresses for Class C = 32 x 254^3 = 524,386,048
   Total available IP Addresses for Class C = 32 x 254^3
   Total available IP Host Addresses Equals 32 x 254^N
   (Where N = Number of Octet, and 'Y' equals the Address
    Range '254 – Q'; 192 – 223 is not included in the
    Address Range Represented by the equation
          'Y = 254 – 32.)

   Class C-1, 192 – 223, Default Subnet Mask 255.y.x.x:
   458,321,664 Networks and 2,064,512 Hosts: 110

   Class C-2, 192 – 223, Default Subnet Mask 255.255.y.x:
   57,741,312 Networks and 8,128 Hosts

   Class C-3, 192 – 223, Default Subnet Mask 255.255.255.y:
   7,274,496 Networks and 32 Hosts

   Class C-4, 192 – 223, Default Subnet Mask 255.255.255.255:
   1,048,576 Network / MultiCast IP Addresses / AnyCast

4. Total IP Addresses for Class D = 16 x 254^3 = 262,193,024
   Total available IP Addresses for Class D = 16 x 254^3
   Total available IP Host Addresses Equals 16 x 254^N
   (Where N = Number of Octet, and 'Y' equals the Address
    Range '254 – Q'; 224 – 239 is not included in the
    Address Range Represented by the equation
          'Y = 254 – 16'.)

   Class D-1, 224 – 239, Default Subnet Mask 255.y.x.x:
   245,676,928 Networks and 1,032,256 Hosts: 1110

   Class D-2, 224 – 239, Default Subnet Mask 255.255.y.x:
   15,475,712 Networks and 4,064 Hosts

   Class D-3, 224 – 239, Default Subnet Mask 255.255.255.y:
   974,848 Networks and 16 Hosts

   Class D-4, 224 – 239, Default Subnet Mask 255.255.255.255:
   65,536 Network / MultiCast IP Addresses / AnyCast

5. Total IP Addresses for Class E = 15 x 254^3 = 245,805,960
   Total available IP Addresses for Class E = 15 x 254^3
   Total available IP Host Addresses Equals 15 x 254^N
   (Where N = Number of Octet, and 'Y' equals the Address
    Range '254 - Q'; 240 - 254 is not included in the
    Address Range Represented by the equation
         'Y = 254 - 15'.)

   Class E-1, 240 - 254, Default Subnet Mask 255.y.x.x:
   231,289,860 Networks and 967,740 Hosts: 1111

   Class E-2, 240 - 254, Default Subnet Mask 255.255.y.x:
   13,658,850 Networks and 3,810 Hosts

   Class E-3, 240 - 254, Default Subnet Mask 255.255.255.y:
   806,625 Networks and 15 Hosts

   Class E-4, 240 - 254, Default Subnet Mask 255.255.255.255:
   50,625 Network / MultiCast IP Addresses / AnyCast

                             Table 4

                    Reality of the Structure of the
                 Addressing Schematic Design for the IPt2
              Protocol Specification Using The Modern Binary System
                      Which yields a Combined Total
                      of 2.67 x 10^14 IP Addresses

                 '254'   '254'   One Copy Of
                 Total   IP Area Code   'IPt1' Addressing
                Zone IP   Addresses   Schematic
               Addresses   per   per 'IP Area Code'
               | | 'Zone IP'   253 x 254^3
               v   v   Address   IP Addresses

              | Zone IP | IP Area Code | IP Address
              ++
              ... 255   :   255   : 255.000.000.000
                   | | |
                   V   V   V
             <-Global-Net | InterNet | IntraNet

Table 5

     "Reality of the Structure of the Schematic for the 'IPt2' IP Specification
        Using the Modern Binary System."(Where the Value for the variable 'Y'
           is given by the Laws of the Octet, and Total Number of Available
                     IP Addresses Equals 2.67 x 10^14.)

1. Total IP Addresses for 'Class A' having '254' 'Zone IP' Addresses

                              = 254 x 254 x 126 x 254^3
                              = 254 x 254 x 2,064,770,064
                              = 1.332107 x 10^14

   Total of 254 IP 'IP Area Code' Addresses per 'Zone IP' Address

                              = 254 x 126 x 254^3
                              = 254 x 2,064,770,064
                              = 5.244516 x 10^11

Distribution per 'Zone IP' Address yielding the 'IP Area Code' Addresses

   Class A-1, 1 - 126, Default Subnet Mask 255.y.x.x:
   2.642906 x 10^11 Networks and 8,129,016 Hosts: 0

   Class A-2, 1 - 126, Default Subnet Mask 255.255.y.x:
   1.311048 x 10^11 Networks and 32,004 Hosts

   Class A-3, 1 - 126, Default Subnet Mask 255.255.255.y:
   6.503622 x 10^10 Networks and 126 Hosts

   Class A-4, 1 - 126, Default Subnet Mask 255.255.255.255:
   6.4020034 x 10^10 Network / MultiCast IP Addresses / AnyCast

2. Total IP Addresses for 'Class B' having '254' 'Zone IP' Addresses

                              = 254 x 254 x 64 x 254^3
                              = 254 x 254 x 1,048,772,096
                              = 6.766258 x 10^13

   Total of 254 IP 'IP Area Code' Addresses per 'Zone IP' Address

                              = 254 x 64 x 254^3
                              = 254 x 1,048,772,096
                              = 2.663881 x 10^11

Distribution per 'Zone IP' Address yielding the 'IP Area Code' Addresses

   Class B-1, 128 - 191, Default Subnet Mask 255.y.x.x:
   1.992667 x 10^11 Networks and 4,129,024 Hosts: 10

   Class B-2, 128 - 191, Default Subnet Mask 255.255.y.x:
   5.0208932 x 10^10 Networks and 16,256 Hosts

   Class B-3, 128 - 191, Default Subnet Mask 255.255.255.y:
   1.2651069 x 10^10 Networks and 64 Hosts

   Class B-4, 128 - 191, Default Subnet Mask 255.255.255.255:
   4.2614129 x 10^9 Network / MultiCast IP Addresses / AnyCast

3. Total IP Addresses for 'Class C' having '254' 'Zone IP' Addresses

                                  = 254 x 254 x 32 x 254^3
                                  = 254 x 254 x 524,386,048
                                  = 3.383129 x 10^13

   Total of 254 IP 'IP Area Code' Addresses per 'Zone IP' Address

                                  = 254 x 32 x 256^3
                                  = 254 x 524,386,048
                                  = 1.331941 x 10^11

Distribution per 'Zone IP' Address yielding the 'IP Area Code' Addresses

   Class C-1, 192 – 223, Default Subnet Mask 255.y.x.x:
   1.164137 x 10^11 Networks and 2,064,512 Hosts: 110

   Class C-2, 192 – 223, Default Subnet Mask 255.255.y.x:
   1.466629 x 10^10 Networks and 8,128 Hosts

   Class C-3, 192 – 223, Default Subnet Mask 255.255.255.y:
   1.8477220 x 10^9 Networks and 32 Hosts

   Class C-4, 192 – 223, Default Subnet Mask 255.255.255.255:
   2.663383 x 10^8 Network / MultiCast IP Addresses / AnyCast

4. Total IP Addresses for 'Class D' having '254' 'Zone IP' Addresses

                             = 254 x 254 x 16 x 254^3
                             = 254 x 254 x 262,193,024
                             = 1.691558 x 10^13

   Total of 254 IP 'IP Area Code' Addresses per 'Zone IP' Address

                             = 254 x 16 x 254^3
                             = 254 x 262,193,024
                             = 6.659677 x 10^10

Distribution per 'Zone IP' Address yielding the 'IP Area Code' Addresses

   Class D-1, 224 - 239, Default Subnet Mask 255.y.x.x:
   6.240194 x 10^10 Networks and 1,032,256 Hosts: 1110

   Class D-2, 224 - 239, Default Subnet Mask 255.255.y.x:
   3.930831 x 10^9 Networks and 4,064 Hosts

   Class D-3, 224 - 239, Default Subnet Mask 255.255.255.y:
   2.476114 x 10^8 Networks and 16 Hosts

   Class D-4, 224 - 239, Default Subnet Mask 255.255.255.255:
   1.6646144 x 10^7 Network / MultiCast IP Addresses / AnyCast

5. Total IP Addresses for 'Class E' having '254' 'Zone IP' Addresses

                             = 254 x 254 x 15 x 254^3
                             = 254 x 254 x 245,805,960
                             = 1.585842 x 10^13

   Total of 254 IP 'IP Area Code' Addresses per 'Zone IP' Address

                             = 254 x 15 x 254^3
                             = 254 x 245,805,960
                             = 6.243471 x 10^10

Distribution per 'Zone IP' Address yielding the 'IP Area Code' Addresses

   Class E-1, 240 - 254, Default Subnet Mask 255.y.x.x:
   5.874762 x 10^10 Networks and 967,740 Hosts: 1111

   Class E-2, 240 - 254, Default Subnet Mask 255.255.y.x:
   3.4693479 x 10^9 Networks and 3,810 Hosts

   Class E-3, 240 - 254, Default Subnet Mask 255.255.255.y:
   2.0488275 x 10^8 Networks and 15 Hosts

   Class E-4, 240 - 254, Default Subnet Mask 255.255.255.255:
   1.285875 x 10^7 Network / MultiCast IP Addresses / AnyCast

Chapter II: Suggestion for the IPt1 and IPt2 Internet Protocol Address
         Space, Supernetting and the New 'CIDR' Notation

    The "Internet Protocol v4 Address Space" allocation Table, as noted in
    'Table 1' above, can retain the same IP Address Allocation, in the 'IPt1
    IP Protocol Specification'. In fact, the only guide lines that would be
    different, and appropriated, are those governing the 'Host' Address
    Allocation, whose derivation is Defined by 'The Laws of the Octet'.
    Furthermore, noting Table 2, it should be understood that it represents
    an 'IP Address Allocation / Translation Guide', which would be used to
    determine the total Number of Available IP Addresses when converting from
    the IPv4 to the IPt1 Addressing Specifications. This Table represents
    the IP Address conversion, which should be viewed as extremely important,
    because the IPt1 Specification makes use of nearly all of the total number
    of IP Addresses for use as the Network IP Address. And while there are
    Host Addresses Assigned, there are No Viable network IP Addresses wasted
    or used for this purpose (See The Laws of the Octet.).

    Nevertheless, the description shown in Table 6 provides an Example, which
    describes the 'Supernetting of an IP Address' when using the 'IPt1'
    specification, which also uses the New Notation for 'CIDR'. However, this
    is a Practice, 'Supernetting of an IP Address', that can only be used
    BEHIND the 'Point of Demarcation' (The 'VIABLE Network IP Address'), for
    the purpose of Subnet creation, because to do so otherwise would not only
    be in violation of 'The Laws of the Octet', but it would create an
    Addressing Conflict within the IP Addressing Scheme itself. Even still,
    is should nevertheless be very clear, that the 'CIDR' Notation represents
    the 'Bit Mapped Displacement' of the Network IP Address, and nothing more.

    Moreover, since the IPt1 specification uses the same IP Addressing methods
    for enumeration, as that used in IPv4. It can quite easily be employed, and
    replace, in every scenario now occupied and used by the IPv4 Specification.
    There is an exception however, which translates into recovery of wasted IP
    Addresses that can be recovered from the "Internet Protocol v4 Address
    Space". In other words, as previously mentioned, the primary difference
    between these IP Specifications, beyond the Schematic itself, is the way
    they each use and assign 'Host IP Addresses'. Where by, the assignment
    of '1' IP Address, is just that, because there are No 16 Million Host IP
    Addresses that will accompany this assignment under the IPt1 specification.
    And while this may be viewed as a problem with the IPt1 specification, it
    certainly does not become a consideration for the implementation of the
    IPt2 Addressing Specification. In fact, the IPt2 Addressing Specification
    not only provides foundation for the possibility for Unlimited IP
    Addresses, it simplifies the "Internet Protocol Address Space" Table,
    (See Table 7) while reducing the Management Burden associated with the
    Allocation of IP Addresses.

```
                         TABLE 6


              IPt1 'Bit Mapped' IP Address Distribution
            Derived from the Modern Method for Binary Enumeration
                       Using the 'CIDR' Notation

          1                     2              3              4

   Network IP Address      Number of      Exponential     Total
     Class Range             BITS           equation     Number of
    /Starting Point                         yielding       HOST
    of the Network                       Total Number IP Addresses
       Prefix:                               HOST
    Number of Bits                        IP Addresses
         |                     |              |            |
         V                     V              V            V
   "/New 'CIDR'
     Notation"

                              CLASS A



                             Class A-1



     0-126/00:8     =        8/8        =       2^X   =  8,129,016



     -------------------------------------------------------



                             Class A-2



     0-126/00:16    =       16/8        =       2^X   =   32,004



     -------------------------------------------------------
```

```
                       Class A-3


    0-126/00:24    =     24/8      =     2^X  =     126



    --------------------------------------------------------


                       Class A-4


    0-126/00:25    =     25/8      =     2^7  =     128
                          |                |          |
                          V                V          V
    0-126/00:30    =     30/8      =     2^2  =      4


    0-126/00:31    =     31/8      =     2^1  =      2


    0-126/00:32    =     32/8      =     2^0  =      0




                        CLASS B


                       Class B-1


    0-126/10:8    =      8/16      =     2^X  = 4,129,024



    --------------------------------------------------------
```

Class B-2

       128-191/10:16   =   16/16   =   2^X =   16,256

                          Class B-3

       128-191/10:24   =   24/16   =   2^X =   32

                          Class B-4

       128-191/10:25   =   25/16   =   2^7 =   128
                               | | |
                               V   V   V
       128-191/10:30   =   30/16   =   2^4 =   4

       128-191/10:31   =   31/16   =   2^1 =   2

       128-191/10:32   =   32/16   =   2^0 =   0

CLASS C

                            Class C-1

      192-223/110:8   =   8/24   =   2^X = 2,064,512

                            Class C-2

      192-223/110:16   =   16/24   =   2^X =   8,128

                            Class C-3

      192-223/110:24   =   24/24   =   2^X = 32

```
                    Class C-4


   0-126/110:25    =    25/24     =    2^7 =    128
                        |              |        |
                        V              V        V
   0-126/110:30    =    30/24     =    2^2 =    4


   0-126/110:31    =    31/24     =    2^1 =    2


   0-126/110:32    =    32/24     =    2^0 =    0




                     CLASS D



                     Class D-1


   224-239/1110:8   =    8/28      =    2^X  = 1,032,256



   -------------------------------------------------------



                     Class D-2


   224-239/1110:16   =    16/28       =    2^X =  4,064



   -------------------------------------------------------
```

Class D-3

     224-239/1110:24 =   24/28   =   2^X =   16

                          Class D-4

     224-239/1110:25   =   25/28   =   2^7 =   128
                             | | |
                             V   V   V
     224-239/1110:30   =   30/28   =   2^2 =   4

     224-239/1110:31   =   31/28   =   2^1 =   2

     224-239/1110:32   =   32/28   =   2^0 =   0

                          CLASS E

                          Class E-1

     240-254/1111:8   =   8/~29   =   2^X = 967,740

IPt1 and IPt2 ADDRESS SPACE   October 15, 2002

```
                      Class E-2


     240-254/1111:16   =   16/~29    =      2^X  =  3,810



     ----------------------------------------------------------


                      Class E-3


     240-254/1110:24   =   24/~29    =      2^X  =    15



     ----------------------------------------------------------


                      Class E-4

     240-254/1111:25   =   25/~29    =    2^7  =    128
                             |                 |          |
                             V                 V          V
     240-254/1111:30   =   30/~29    =    2^2  =     4


     240-254/1111:31   =   31/~29    =    2^1  =     2


     240-254/1111:32   =   32/~29    =    2^0  =     0
```

```
                              Table 7

                 INTERNET PROTOCOL t2 ADDRESS SPACE

        IPt2 IP Address Prefix          IPt1 Address    Distribution  Date
         /         |        \         /  Schematic  \   /Purpose\   /   \
       CIDR     Zone IP    IP Area       IP Address      |         |
      Network      |        Code         Assignment      V         V
     Descriptor    V
     ----------+--------+-----------+---------------------+---------+--------
        None     000:      000:       000.000.000.000       None     4/2002
        All      001:      All:       XXX.XXX.XXX.XXX        NA       4/2002
        All      002:      All:       XXX.XXX.XXX.XXX        SA       4/2002
        All      003:      All:       XXX.XXX.XXX.XXX        EU       4/2002
        All      004:      All:       XXX.XXX.XXX.XXX        OS       4/2002
        All      005:      All:       XXX.XXX.XXX.XXX        AU       4/2002
        All      006:      All:       XXX.XXX.XXX.XXX        AF       4/2002
        All   007-254:     All:       XXX.XXX.XXX.XXX   IANA/RESERVED 4/2002
        All   001-254:   001-254:     000.000.000.000   IANA/EMERGENCY4/2002
       /00:8     255:      255:       127.000.000.000   IANA/LoopBack 4/2002
```

```
                   INTERNET PROTOCOL t2 ADDRESS SPACE INDEX

     CONTIENTS      COUNTRIES    IP AREA CODE DISTRIBUTION   DATE    COMMENTS
     /ZONE IP\      /      \     /                      \    /  \   /       \
   -----------+-----------+---------------------------+-------+---------
      'NA'     |    '3'            '60'                   4/2002   NONE
     NORTH     | UNITED
    AMERICA    | STATES        '001 - 050:'              4/2002   NONE
      001:     |
              | MEXICO        '051 - 054:'              4/2002   NONE
 IP AREA CODE |
    CONTIENT   | CANADA        '055 - 060:'              4/2002   NONE
    SURPLUS    |
     '194'     |
   -----------+-----------+---------------------------+-------+---------
      'SA'     |   '38'           '88'                   4/2002   NONE
     SOUTH     |
    AMERICA    | Brazil        '001 - 050:'              4/2002   NONE
      002:     |
              | Antigua       '051 - 052:'              4/2002   NONE
 IP AREA CODE | and Barbuda
    CONTIENT   |
    SURPLUS    | Aruba            '053:'                 4/2002   NONE
     '166'     |
              | Bahamas          '054:'                 4/2002   NONE
              |
              | Barbados         '055:'                 4/2002   NONE
              |
              | Cayman Islands   '056:'                 4/2002   NONE
              |
              | Cuba             '057:'                 4/2002   NONE
              |
              | Dominica         '058:'                 4/2002   NONE
              |
              | Dominican Republic '059:'               4/2002   NONE
              |
              | Grenada          '060:'                 4/2002   NONE
              |
              | Guadeloupe       '061:'                 4/2002   NONE
              |
              | Jamaica          '062:'                 4/2002   NONE
              |
              | Haiti            '063:'                 4/2002   NONE
              |
              | Martinique       '064:'                 4/2002   NONE
```

```
|
| Puerto Rico        '065:'                    4/2002   NONE
|
| Saint Kitts        '066:'                    4/2002   NONE
|  and Nevis
|
|
| Saint Lucia        '067:'                    4/2002   NONE
|
| Trinidad           '068:'                    4/2002   NONE
| and Tobago
|
|
| Virgin Islands     '069:'                    4/2002   NONE
|
| Belize             '070:'                    4/2002   NONE
|
| Costa Rica         '071:'                    4/2002   NONE
|
| El Salvador        '072:'                    4/2002   NONE
|
| Guatemala          '073:'                    4/2002   NONE
|
| Honduras           '074:'                    4/2002   NONE
|
| Nicaragua          '075:'                    4/2002   NONE
|
| Panama             '076:'                    4/2002   NONE
|
| Argentina          '077:'                    4/2002   NONE
|
| Bolivia            '078:'                    4/2002   NONE
|
| Chile              '079:'                    4/2002   NONE
|
| Colombia           '080:'                    4/2002   NONE
|
| Ecuador            '081:'                    4/2002   NONE
|
| French Guiana      '082:'                    4/2002   NONE
|
| Guyana             '083:'                    4/2002   NONE
|
| Paraguay           '084:'                    4/2002   NONE
```

```
              |
              |   Peru                '085:'              4/2002   NONE
              |
              |   Suriname            '086:'              4/2002   NONE
              |
              |   Uruguay             '087:'              4/2002   NONE
              |
              |   Venezuela           '088:'              4/2002   NONE
              |
              |
 -----------+-----------+-------------------------+-------+---------
   'EU'      |   '45'              '74'              4/2002   NONE
  EUROPE     |
              |   Belarus             '001'               4/2002   NONE
   003:      |
              |   Russian         '002 - 031:'          4/2002   NONE
 IP AREA CODE |   Federation
  CONTIENT    |
  SURPLUS     |   Bulgaria            '032:'              4/2002   NONE
   '180'      |
              |   Czech Republic      '033:'              4/2002   NONE
              |
              |   Hungary             '034:'              4/2002   NONE
              |
              |   Moldova             '035:'              4/2002   NONE
              |
              |   Poland              '036:'              4/2002   NONE
              |
              |   Romania             '037:'              4/2002   NONE
              |
              |   Slovakia            '038:'              4/2002   NONE
              |
              |   Ukraine             '039:'              4/2002   NONE
              |
              |   Denmark             '040:'              4/2002   NONE
              |
              |   Estonia             '041:'              4/2002   NONE
              |
              |   Faeroe Islands      '042:'              4/2002   NONE
              |
              |   Finland             '043:'              4/2002   NONE
              |
              |   Iceland             '044:'              4/2002   NONE
              |
              |   Ireland             '045:'              4/2002   NONE
              |
```

```
        │  Latvia              '046:'                4/2002   NONE
        │
        │  Lithuania           '047:'                4/2002   NONE
        │
        │  Norway              '048:'                4/2002   NONE
        │
        │  Sweden              '049:'                4/2002   NONE
        │
        │  United Kingdom      '050:'                4/2002   NONE
        │
        │  Albania             '051:'                4/2002   NONE
        │
        │  Andorra             '052:'                4/2002   NONE
        │
        │  Bosnia              '053:'                4/2002   NONE
        │  and Herzegowina
        │
        │  Croatia (Hrvatska)  '054:'                4/2002   NONE
        │
        │  Gibraltar           '055:'                4/2002   NONE
        │
        │  Greece              '056:'                4/2002   NONE
        │
        │  Vatican City State  '057:'                4/2002   NONE
        │
        │  Italy               '058:'                4/2002   NONE
        │
        │  Macedonia           '059:'                4/2002   NONE
        │
        │  Malta               '060:'                4/2002   NONE
        │
        │  Portugal            '061:'                4/2002   NONE
        │
        │  San Marino          '062:'                4/2002   NONE
        │
        │  Slovenia            '063:'                4/2002   NONE
        │
        │  Spain               '064:'                4/2002   NONE
        │
        │  Yugoslavia          '065:'                4/2002   NONE
        │
        │  Austria             '066:'                4/2002   NONE
        │
        │  Belgium             '067:'                4/2002   NONE
        │
        │  France              '068:'                4/2002   NONE
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```
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                      |  Germany            '069:'                  4/2002   NONE
                      |
                      |  Liechtenstein      '070:'                  4/2002   NONE
                      |
                      |  Luxembourg         '071:'                  4/2002   NONE
                      |
                      |  Monaco             '072:'                  4/2002   NONE
                      |
                      |  Netherlands        '073:'                  4/2002   NONE
                      |
                      |  Switzerland        '074:'                  4/2002   NONE
                      |
                      |
                      |
   -----------+-----------+---------------------------+-------+---------
      'OS'     |   '23'                 '23'                  4/2002   NONE
    OCEANIA    |
    STATES     |  Australia          '001:'                  4/2002   NONE
     004:      |
               |  Wallis             '002:'                  4/2002   NONE
  IP AREA CODE |  and Futuna Islands
   CONTIENT    |
    SURPLUS    |  New Zealand        '003:'                  4/2002   NONE
     '231'     |
               |  Fiji               '004:'                  4/2002   NONE
               |
               |  Papua New Guinea   '005:'                  4/2002   NONE
               |
               |  New Caledonia      '006:'                  4/2002   NONE
               |
               |  Solomon Islands    '007:'                  4/2002   NONE
               |
               |  Vanuatu            '008:'                  4/2002   NONE
               |
               |  Guam               '009:'                  4/2002   NONE
               |
               |  Kiribati           '010:'                  4/2002   NONE
               |
               |  Marshall Islands   '011:'                  4/2002   NONE
               |
               |  Micronesia         '012:'                  4/2002   NONE
               |
               |  Nauru              '013:'                  4/2002   NONE
               |
               |  Palau              '014:'                  4/2002   NONE
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	American Samoa	'015:'		4/2002	NONE
	Northern Mariana Islands	'016:'		4/2002	NONE
	Cook Islands	'017:'		4/2002	NONE
	French Polynesia (Tahiti)	'018:'		4/2002	NONE
	Niue	'019:'		4/2002	NONE
	Pitcairn	'020:'		4/2002	NONE
	Samoa	'021:'		4/2002	NONE
	Tonga	'022:'		4/2002	NONE
	Tuvalu	'023:'		4/2002	NONE

'AU' AFRICAN UNION 005:	'55'	'55'	4/2002	NONE
IP AREA CODE CONTIENT SURPLUS '199'	Burundi	'001'	4/2002	NONE
	Democratic Republic of the Congo	'002:'	4/2002	NONE
	Djibouti	'003:'	4/2002	NONE
	Eritrea	'004:'	4/2002	NONE
	Ethiopia	'005:'	4/2002	NONE
	Kenya	'006:'	4/2002	NONE
	Madagascar	'007:'	4/2002	NONE
	Malawi	'008:'	4/2002	NONE
	Mauritania	'009:'	4/2002	NONE
	Mozambique	'010:'	4/2002	NONE

Réunion	'011:'	4/2002	NONE
Rwanda	'012:'	4/2002	NONE
Seychelles	'013:'	4/2002	NONE
Somalia	'014:'	4/2002	NONE
Tanzania	'015:'	4/2002	NONE
Uganda	'016:'	4/2002	NONE
Zambia	'017:'	4/2002	NONE
Zimbabwe	'018:'	4/2002	NONE
Angola	'019:'	4/2002	NONE
Cameroon	'020:'	4/2002	NONE
Chad	'021:'	4/2002	NONE
Congo	'022:'	4/2002	NONE
Equatorial Guinea	'023:'	4/2002	NONE
Central African Republic	'024:'	4/2002	NONE
Gabon	'025:'	4/2002	NONE
Sao Tome and Principe	'026:'	4/2002	NONE
Algeria	'027:'	4/2002	NONE
Egypt	'028:'	4/2002	NONE
Libyan Arab Jamahiriya	'029:'	4/2002	NONE
Morocco	'030:'	4/2002	NONE
Sudan	'031:'	4/2002	NONE
Tunisia	'032:'	4/2002	NONE

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| Western Sahara    '033:'                4/2002   NONE
|
| Botswana          '034:'                4/2002   NONE
|
| Lesotho           '035:'                4/2002   NONE
|
| Namibia           '036:'                4/2002   NONE
|
| South Africa      '037:'                4/2002   NONE
|
| Swaziland         '038:'                4/2002   NONE
|
| Benin             '039:'                4/2002   NONE
|
| Burkina Faso      '040:'                4/2002   NONE
|
| Cape Verde        '041:'                4/2002   NONE
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| Côte d'Ivoire     '042:'                4/2002   NONE
|
| Gambia, The       '043:'                4/2002   NONE
|
| Ghana             '044:'                4/2002   NONE
|
| Guinea            '045:'                4/2002   NONE
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| Guinea-Bissau     '046:'                4/2002   NONE
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| Liberia           '047:'                4/2002   NONE
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| Mali              '048:'                4/2002   NONE
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| Mauritania        '049:'                4/2002   NONE
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| Niger             '050:'                4/2002   NONE
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| Nigeria           '051:'                4/2002   NONE
|
| Saint Helena      '052:'                4/2002   NONE
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| Senegal           '053:'                4/2002   NONE
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| Sierra Leone      '054:'                4/2002   NONE
|
| Togo              '055:'                4/2002   NONE
```

```
                |
                |
                |
      -----------+-----------+--------------------------+-------+---------
        'AF'     |   '55'          '151'                  4/2002   NONE
        ASIAN    |
      FEDERATION |   China          '001-051'            4/2002   NONE
        006:     |
                 |   Japan          '052:'               4/2002   NONE
    IP AREA CODE |
       CONTIENT  |   Korea (North)  '053:'               4/2002   NONE
       SURPLUS   |
        '103'    |   Korea (South)  '054:'               4/2002   NONE
                 |
                 |   Macau          '055:'               4/2002   NONE
                 |
                 |   Mongolia       '056:'               4/2002   NONE
                 |
                 |   Taiwan         '057:'               4/2002   NONE
                 |
                 |   Afghanistan    '058:'               4/2002   NONE
                 |
                 |   Bangladesh     '059:'               4/2002   NONE
                 |
                 |   Bhutan         '060:'               4/2002   NONE
                 |
                 |   India          '061-111'            4/2002   NONE
                 |
                 |   Iran           '112:'               4/2002   NONE
                 |
                 |   Kazakhstan     '113:'               4/2002   NONE
                 |
                 |   Kyrgyzstan     '114:'               4/2002   NONE
                 |
                 |   Maldives       '115:'               4/2002   NONE
                 |
                 |   Nepal          '116:'               4/2002   NONE
                 |
                 |   Pakistan       '117:'               4/2002   NONE
                 |
                 |   Sri Lanka      '118:'               4/2002   NONE
                 |
                 |   Tajikistan     '119:'               4/2002   NONE
                 |
                 |   Turkmenistan   '120:'               4/2002   NONE
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```

```
| Uzbekistan         '121:'              4/2002   NONE
|
| Brunei Darussalam  '122:'              4/2002   NONE
|
| Cambodia           '123:'              4/2002   NONE
|
| East Timor         '124:'              4/2002   NONE
|
| Indonesia          '125:'              4/2002   NONE
|
| Laos               '126:'              4/2002   NONE
|
| Malaysia           '152:'              4/2002   NONE
|
| Myanmar (Burma)    '128:'              4/2002   NONE
|
| Philippines        '129:'              4/2002   NONE
|
| Singapore          '130:'              4/2002   NONE
|
| Thailand           '131:'              4/2002   NONE
|
| Viet Nam           '132:'              4/2002   NONE
|
| Armenia            '133:'              4/2002   NONE
|
| Azerbaijan         '134:'              4/2002   NONE
|
| Bahrain            '135:'              4/2002   NONE
|
| Cyprus             '136:'              4/2002   NONE
|
| Georgia            '137:'              4/2002   NONE
|
| Iraq               '138:'              4/2002   NONE
|
| Israel             '139:'              4/2002   NONE
|
| Jordan             '140:'              4/2002   NONE
|
| Kuwait             '141:'              4/2002   NONE
|
| Lebanon            '142:'              4/2002   NONE
|
| Gambia, The        '143:'              4/2002   NONE
```

```
             |
             | Oman                '144:'                   4/2002   NONE
             |
             | Qatar               '145:'                   4/2002   NONE
             |
             | Palestine           '146:'                   4/2002   NONE
             |
             | Saudi Arabia        '147:'                   4/2002   NONE
             |
             | Syria               '148:'                   4/2002   NONE
             |
             | Turkey              '149:'                   4/2002   NONE
             |
             | United Arab         '150:'                   4/2002   NONE
             | Emirates
             |
             | Yemen               '151:'                   4/2002   NONE
             |
   ------------+------------+----------------------------+-------+---------
```

   Nevertheless, any careful examination and study of Table 7, the "INTERNET
   PROTOCOL t2 ADDRESS SPACE", and its INDEX. Anyone would readily conclude;
   'It does not matter if the World's Population Doubled or Tripled in 5, 10,
   or 15 years from now, because the number of IP Addresses contained in the
   Surplus of IP Area Code Addresses, for each Continent, would presently
   sustain a 20 Billion total World Population, and this says nothing about
   the Reserve IP Addresses allocation to IANA. In fact, if there is an
   agreement (which it will be) regarding the New Binary System, it will not
   pose any difficulties for IANA, because these IP Specifications were
   derived and first discovered, using the New Method of Enumeration, as
   defined by the New Binary System. In other words, the IPt1 and IPt2 IP
   Protocol Specifications overwhelmingly surpasses every Requirement
   Specified in RFC1550.

     It has been mention that the IPt1 IP Specification differs only in 2
     primary areas from that of the IPv4 IP Addressing system. And these
     differences account for the use of more than 99.999...+ % of the total
     number of available IP Addresses contained in this System of Addressing,
     and the way Host IP Addresses are allocated. Needless to say, other than
     the Schematic itself, that's it. In other words, the use of 'APRA and
     IN-ADD.APRA functions the same in the IPt1 IP Specification, and except
     for the 'SIGHT' of the Prefixes used in the IPt2 Specification, their use
     functions the same under this IP Specification as well. In other words,
     the Prefixes used in the IPt2 IP Specification, serve only the provisions
     regarding stability, control, management, and increase the Number of IP
     Addresses (And nothing more!). Because other than these benefits, the
     Prefixes used in the IPt2 IP Specification does absolutely nothing to
     effect, nor change any other the practices or procedures used in the
     IPv4 Protocol. Furthermore, while I do not advocate the used of the
     Primary IP Protocol in Networking Household Appliances, (behind the
     demarcation). It should be clearly understood, not only is the IPt2 IP
     Specification well suited for this application, but there is absolutely No
     Protocol Requirement, or Demand, it is not suited to address...And it goes
     without saying, it does indeed, maintain a sufficient supply of IP
     Addresses, regardless (The 'IPtX' IP Specification: See Table 8).

                              Table 8

                         'IPtX IP Specification'

                    IPt1   =   32 Bit

                    IPt2   =   64 Bit

                    IPt3   =   96 Bit

                    IPt4   =   128 Bit

                    IPt5   =   160 Bit

                     :   :   :
                     :   :   :

                    IPtX   =   Infinity

This document, whose only objective was the explanation for the
method(s) used in the Efficiency Determination of an IP Addressing
Specification, and the development of a possible (Suggestion) "INTERNET
PROTOCOL ADDRESS SPACE" for the 'IPt1 and IPt2 IP Addressing
Specifications', which actually did not directly raise any security
issues. Hence, there are no issues raised that warrant Security
Considerations.

Figure 1; Visualizing the Zone IP and IP Area Code

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