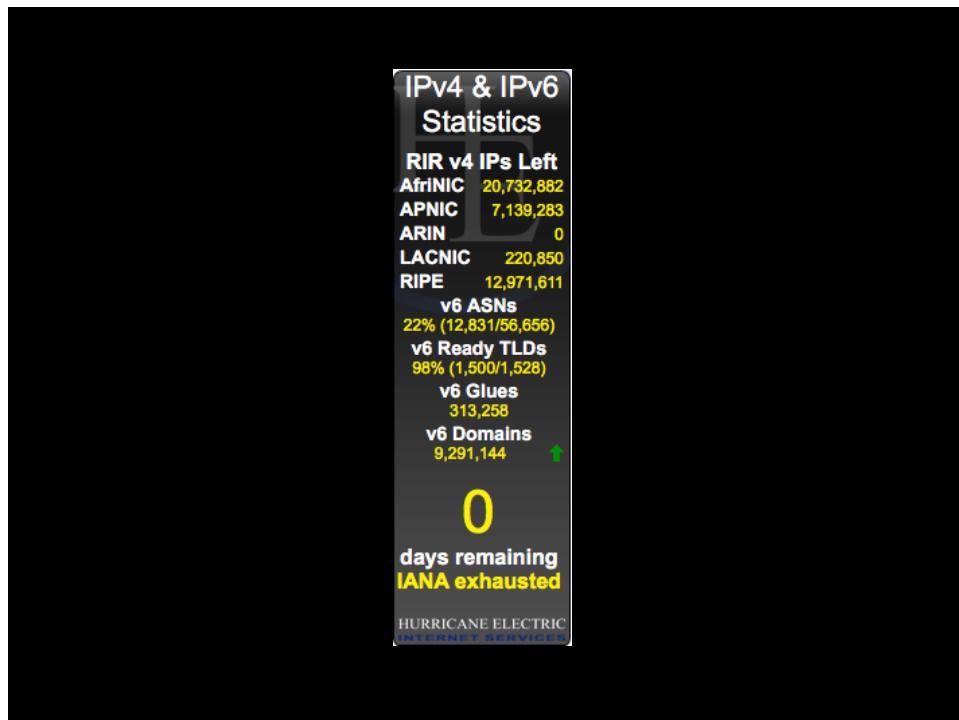
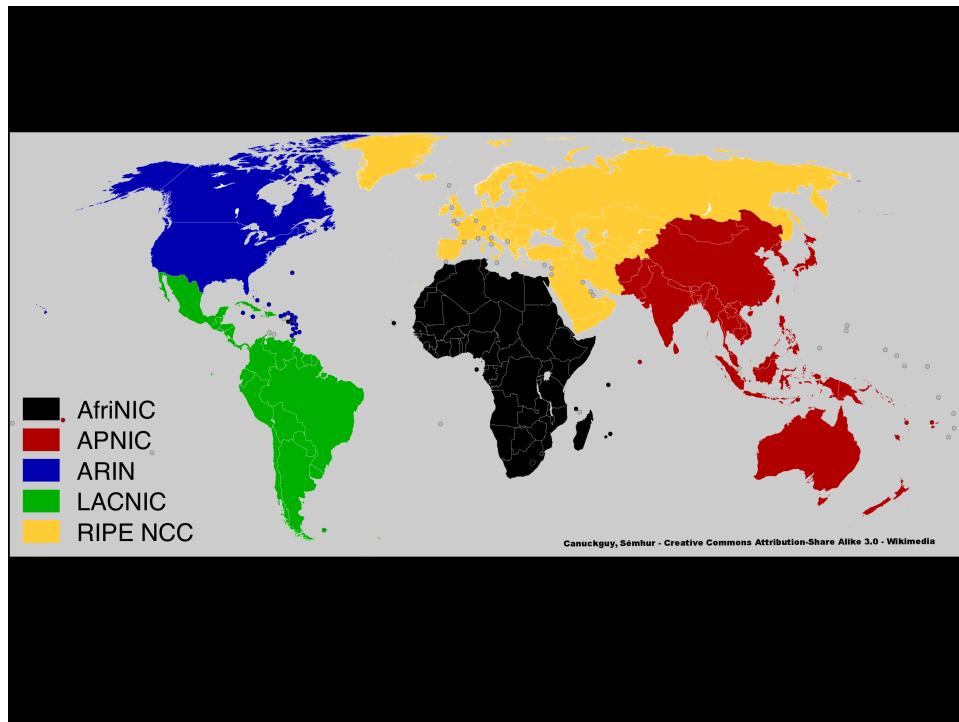


IPv4
1974 - 1983
32-bit address
 $\sim 4.2 \times 10^9$ possibilities
network + subnetwork + host
4 octets in decimal separated by periods
100.125.125.255
DNS record type A



TCP/UDP

16-bit port number

$\sim 6.5 \times 10^4$ possibilities

connection or service

decimal

80

http

IPv6

1995 - 2005

128-bit address

$\sim 3.4 \times 10^{38}$ possibilities

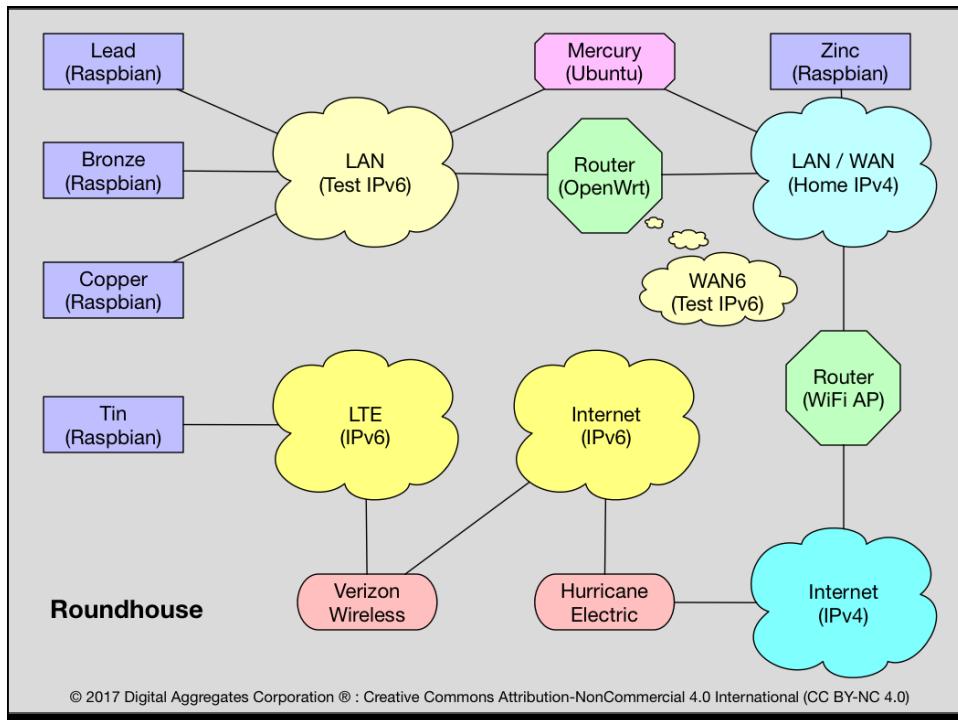
prefix (48 bits) + subnetwork (16 bits) + interface (64 bits)

8 hexets in hexadecimal separated by colons

2600:100e:b003:f288:c265:6cae:85c8:4f68

DNS record type AAAA





```

192.168.2.190
0:0:0:0:0:ffff:192.168.2.190
          ::ffff:192.168.2.190

192.168.1.241:5555
fd71:9abb:2f8a:0:1ffa:1d19:2d51:88cf
          fd71:9abb:2f8a::bb6
          fe80::a2b7:5f4b:a1a3:7cf9
          0:0:0:0:0:0:0:1
          ::1
          2001:470:4b:4e2:92d3:a519:6d57:b1e4

```

```
3. pi@lead: ~/src/com-diag-diminuto/Diminuto (ssh)
2017-01-23T20:43:07.262821Z ::ffff:192.168.7.182 "copper 173954619884813 595\n"
2017-01-23T20:43:07.325426Z ::ffff:192.168.1.132 "zinc 1741538885462 591\n"
2017-01-23T20:43:07.629231Z 2600:100e:b004:42b8:9722:fd8:6e14:6736 "tin 174122116141240 604\n"
2017-01-23T20:43:07.767777Z fd71:9abb:2f8c:0:b89c:c93d:88f8:b280 "mercury 4999221443019994 595\n"
2017-01-23T20:43:07.795667Z ::ffff:192.168.2.150 "bronze 174370676945343 601\n"
2017-01-23T20:43:08.276609Z ::ffff:192.168.2.182 "copper 173955633715545 594\n"
2017-01-23T20:43:08.340051Z ::ffff:192.168.1.132 "zinc 174152403013835 592\n"
2017-01-23T20:43:08.581895Z 2600:100e:b004:42b8:9722:fd8:6e14:6736 "tin 174123129861243 605\n"
2017-01-23T20:43:08.769700Z fd71:9abb:2f8c:0:b89c:c93d:88f8:b280 "mercury 4999222444931345 596\n"
2017-01-23T20:43:08.809532Z ::ffff:192.168.2.150 "bronze 174371690826960 602\n"
2017-01-23T20:43:09.290706Z ::ffff:192.168.2.182 "copper 173956647509298 595\n"
2017-01-23T20:43:09.354097Z ::ffff:192.168.1.132 "zinc 174153416934099 593\n"
2017-01-23T20:43:09.589210Z 2600:100e:b004:42b8:9722:fd8:6e14:6736 "tin 174124143773016 606\n"
2017-01-23T20:43:09.771607Z fd71:9abb:2f8c:0:b89c:c93d:88f8:b280 "mercury 4999223446835164 597\n"
2017-01-23T20:43:09.823793Z ::ffff:192.168.2.150 "bronze 174372705062587 603\n"
2017-01-23T20:43:10.304585Z ::ffff:192.168.2.182 "copper 17395761708311 596\n"
2017-01-23T20:43:10.368316Z ::ffff:192.168.1.132 "zinc 174154430984830 594\n"
2017-01-23T20:43:10.623296Z 2600:100e:b004:42b8:9722:fd8:6e14:6736 "tin 174125157640519 607\n"
2017-01-23T20:43:10.773462Z fd71:9abb:2f8c:0:b89c:c93d:88f8:b280 "mercury 4999224448685995 598\n"
2017-01-23T20:43:10.837729Z ::ffff:192.168.2.150 "bronze 174373719117695 604\n"
2017-01-23T20:43:11.317713Z ::ffff:192.168.2.182 "copper 173958675442429 597\n"
^Z
[1]+ Stopped      internettool -6 -u -p 5555 -v
pi@lead:~/src/com-diag-diminuto/Diminuto $
```

```
3. pi@copper: ~/src/com-diag-diminuto/Diminuto (ssh)
copper 173938766848586 577 : copper 173938395646540 577 : 371202046 0
copper 173939782237964 578 : copper 173939410087323 578 : 372150641 0
copper 173940797302446 579 : copper 173940423910556 579 : 373391890 0
copper 173941814989063 580 : copper 173941437768943 580 : 377220120 0
copper 173942829507919 581 : copper 173942451634988 581 : 377872931 0
copper 173943844096266 582 : copper 173943465767596 582 : 378322679 0
copper 173944858664487 583 : copper 173944480101608 583 : 378562879 0
copper 173945873264907 584 : copper 17394594091247 584 : 379173660 0
copper 173946884746263 585 : copper 173946508883488 585 : 380392775 0
copper 173947903030433 586 : copper 17394751954221 586 : 381076212 0
copper 173948918468508 587 : copper 173948535772245 587 : 382696263 0
copper 173949933039246 588 : copper 17394950028289 588 : 383810951 0
copper 173950948316169 589 : copper 173950563901104 589 : 384415065 0
copper 173951962880912 590 : copper 17395178109804 590 : 384771108 0
copper 173952978448206 591 : copper 17395291932360 591 : 386515846 0
copper 173953992998886 592 : copper 173953605819342 592 : 387179544 0
copper 173955088437013 593 : copper 173954619884813 593 : 388552200 0
copper 173956023117225 594 : copper 173955633715545 594 : 389401680 0
copper 173957037917383 595 : copper 173956647509298 595 : 390400805 0
copper 173958852494209 596 : copper 173957661708311 596 : 390785898 0
copper 17395906803118 597 : copper 173958675442429 597 : 392590689 0
^Z
[1]+ Stopped      timesource | internettool -6 -u -A ::ffff:192.168.2.190 -P 5555 | timesink
pi@copper:~/src/com-diag-diminuto/Diminuto $
```

```
7.screen
tin 174109445830082 580 : tin 174104878953432 587 : 166076639 -7
tin 1741060595814 581 : tin 174105892694372 588 : 166891442 -7
tin 174107074222483 582 : tin 174106906535939 589 : 167686545 -7
tin 17410808876497 583 : tin 174107920437764 590 : 168438733 -7
tin 174109103412593 584 : tin 174108934453026 591 : 168959567 -7
tin 17411011761346 585 : tin 174109948319540 592 : 169341806 -7
tin 174111131979839 586 : tin 17410962211993 593 : 169767846 -7
tin 174112146358070 587 : tin 174111976203035 594 : 170155035 -7
tin 174113160932344 588 : tin 174112990104236 595 : 170828108 -7
tin 174114175724065 589 : tin 174114003937624 596 : 171786441 -7
tin 174115189796256 590 : tin 174115017919189 597 : 171877067 -7
tin 174116204348081 591 : tin 174116831897890 598 : 172450191 -7
tin 174117218938917 592 : tin 174117846034767 599 : 172904150 -7
tin 1741182323431523 593 : tin 174118859937219 600 : 173494304 -7
tin 174119247982516 594 : tin 174119674159252 601 : 173823264 -7
tin 174120262268196 595 : tin 174120088020766 602 : 174247430 -7
tin 174121276730498 596 : tin 174121101969883 603 : 174760607 -7
tin 174122324152104 597 : tin 174122116141240 604 : 208010864 -7
tin 174123338439659 598 : tin 174123129861243 605 : 208578416 -7
tin 174124353177839 599 : tin 174124143773016 606 : 209404823 -7
tin 174125367454613 600 : tin 174125157640519 607 : 209814094 -7
^Z
[1]+ Stopped timesource | internettool -6 -u -A 2001:470:4b:4e:92d3:e519:6d57:b1e4 -P 5555 | timesink
pi@pi:~/src/com-diag-diminuto/Diminuto$
```

```
8.jsloan@mercury:~/src/com-diag-diminuto/Diminuto (ssh)
mercury 4999204373940108 578 : mercury 4999204370936669 578 : 2967439 0
mercury 4999205378484957 579 : mercury 4999205375481422 579 : 3003535 0
mercury 4999206383847750 580 : mercury 4999206380112840 580 : 2934910 0
mercury 4999207387554371 581 : mercury 4999207384634426 581 : 2919945 0
mercury 4999208392203061 582 : mercury 4999208389270679 582 : 2932382 0
mercury 4999209396762969 583 : mercury 4999209393826018 583 : 2936951 0
mercury 49992104009210545 584 : mercury 4999210397905961 584 : 3004584 0
mercury 4999211404782130 585 : mercury 4999211402090843 585 : 2691287 0
mercury 4999212499546884 586 : mercury 499921246519240 586 : 3027644 0
mercury 4999213414855434 587 : mercury 4999213411126510 587 : 2928928 0
mercury 4999214418603637 588 : mercury 4999214415684130 588 : 2919507 0
mercury 4999215422647869 589 : mercury 4999215419952386 589 : 2695483 0
mercury 4999216427266322 590 : mercury 4999216424325531 590 : 2940791 0
mercury 4999217431821553 591 : mercury 4999217428937451 591 : 2884102 0
mercury 4999218436265769 592 : mercury 4999218433407639 592 : 2858130 0
mercury 4999219440507667 593 : mercury 4999219437762699 593 : 2744798 0
mercury 4999220443306624 594 : mercury 4999220441140159 594 : 2166465 0
mercury 4999221445009678 595 : mercury 4999221443019994 595 : 1989684 0
mercury 4999221445009678 595 : mercury 4999221443019994 595 : 1989684 0
mercury 4999222444931345 596 : mercury 4999222444931345 596 : 1557961 0
mercury 4999223448117629 597 : mercury 4999223446835164 597 : 1282465 0
mercury 4999224449872856 598 : mercury 4999224448665995 598 : 1186861 0
^Z
[1]+ Stopped timesource | internettool -6 -u -A fd71:9dbb:2f8a:0:1ffa:1d19:2d51:88cf -P 5555 | timesink
jsloan@mercury:~/src/com-diag-diminuto/Diminuto$
```

```
9. pi@bronze: ~/src/com-diag-diminuto/Diminuto (ssh)
bronze 174353857517389 584 : bronze 1743534399245504 584 : 418271885 0
bronze 174354872166975 585 : bronze 174354453467485 585 : 418699490 0
bronze 17435586635051 586 : bronze 174355467586551 586 : 419648500 0
bronze 174356901346200 587 : bronze 174356481406763 587 : 419939437 0
bronze 1743579161113181 588 : bronze 1743574954643015 588 : 420670166 0
bronze 174358930876518 589 : bronze 17435859515518 589 : 421361000 0
bronze 174359945641936 590 : bronze 1743595263603749 590 : 422683187 0
bronze 1743600960382306 591 : bronze 174360537671825 591 : 422710479 0
bronze 174361976836223 592 : bronze 174361551430422 592 : 424599801 0
bronze 174362990782987 593 : bronze 174362565389383 593 : 425383604 0
bronze 17436400573041 594 : bronze 174363579143396 594 : 426429645 0
bronze 174365020244138 595 : bronze 174364593128763 595 : 427115375 0
bronze 174366035144973 596 : bronze 1743656671256162 596 : 427988811 0
bronze 1743670497335797 597 : bronze 174366621212676 597 : 428520894 0
bronze 174368064745343 598 : bronze 17436735174136 598 : 429571207 0
bronze 174369079479200 599 : bronze 174368448953931 599 : 430525269 0
bronze 174370094497380 600 : bronze 174369663064671 600 : 431432509 0
bronze 174371109101862 601 : bronze 1743706769454343 601 : 432156519 0
bronze 174372123746916 602 : bronze 174371690826960 602 : 432919956 0
bronze 174373138514159 603 : bronze 174372705862587 603 : 433451572 0
bronze 174374152974109 604 : bronze 174373719117695 604 : 433856414 0
^Z
[1]+ Stopped timesource | internettool -4 -u -A 192.168.2.190 -P 5555 | timesink
pi@bronze:~/src/com-diag-diminuto/Diminuto $
```

```
6. pi@zinc: ~/src/com-diag-diminuto/Diminuto (ssh)
zinc 174134491396564 574 : zinc 174134150919254 574 : 340477310 0
zinc 17413550977348 575 : zinc 174135165124413 575 : 340852935 0
zinc 174136520598185 576 : zinc 174136179064469 576 : 341533716 0
zinc 17413753541697 577 : zinc 174137193191971 577 : 342222726 0
zinc 174138549963346 578 : zinc 174138207146766 578 : 342816580 0
zinc 174139565160640 579 : zinc 174139220997810 579 : 344162830 0
zinc 174140579783925 580 : zinc 174140234736698 580 : 345945227 0
zinc 174141594764291 581 : zinc 174141248590483 581 : 346254888 0
zinc 174142609435780 582 : zinc 174142262765860 582 : 346671841 0
zinc 174143624070651 583 : zinc 174143276694280 583 : 347376371 0
zinc 17414463876336 584 : zinc 174144290362147 584 : 348401215 0
zinc 174145653362795 585 : zinc 17414504375118 585 : 348987674 0
zinc 174146667986232 586 : zinc 174146318383715 586 : 349602517 0
zinc 174147682522935 587 : zinc 17414732634497 587 : 349888454 0
zinc 174148696953265 588 : zinc 174148346645856 588 : 350307413 0
zinc 174149711480191 589 : zinc 174149360672005 589 : 35080019 0
zinc 174150726192078 590 : zinc 1741503749050038 590 : 351283038 0
zinc 174151740670725 591 : zinc 174151388854562 591 : 351816163 0
zinc 174152755525207 592 : zinc 174152403013835 592 : 352511372 0
zinc 174153770154741 593 : zinc 174153416934099 593 : 353220642 0
zinc 174154784856985 594 : zinc 174154430384830 594 : 353872153 0
^Z
[1]+ Stopped timesource | internettool -4 -u -A 192.168.1.241 -P 5555 | timesink
pi@zinc:~/src/com-diag-diminuto/Diminuto $
```

