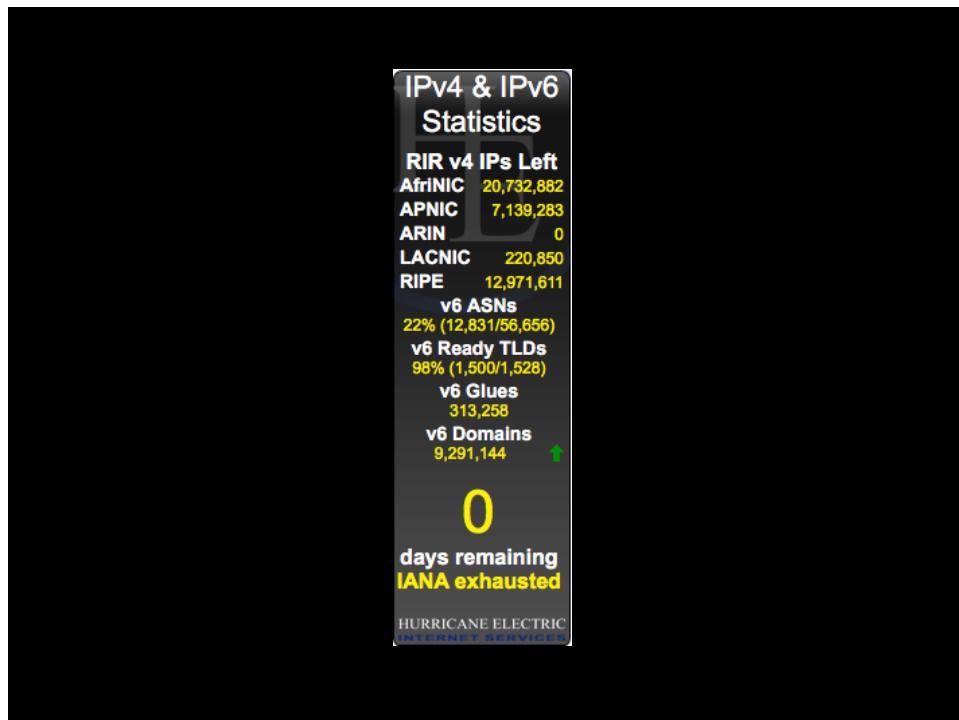
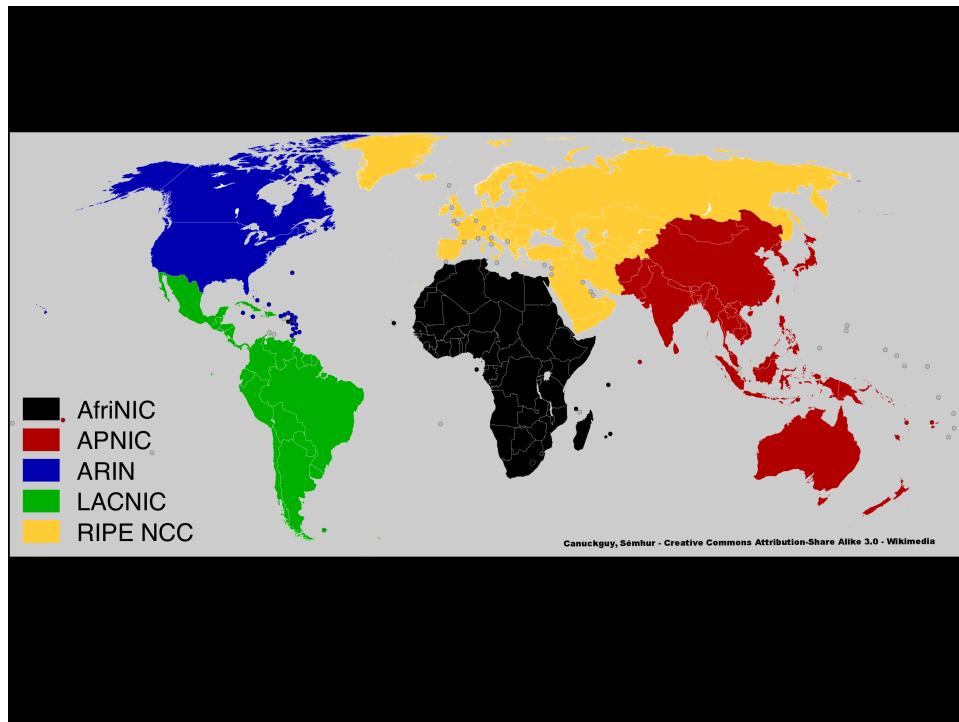


IPv4
1974 - 1983
32-bit address
 $\sim 4.2 \times 10^9$ possibilities
network + subnetwork + host
4 octets in decimal separated by periods
100.125.125.255
DNS record type A



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

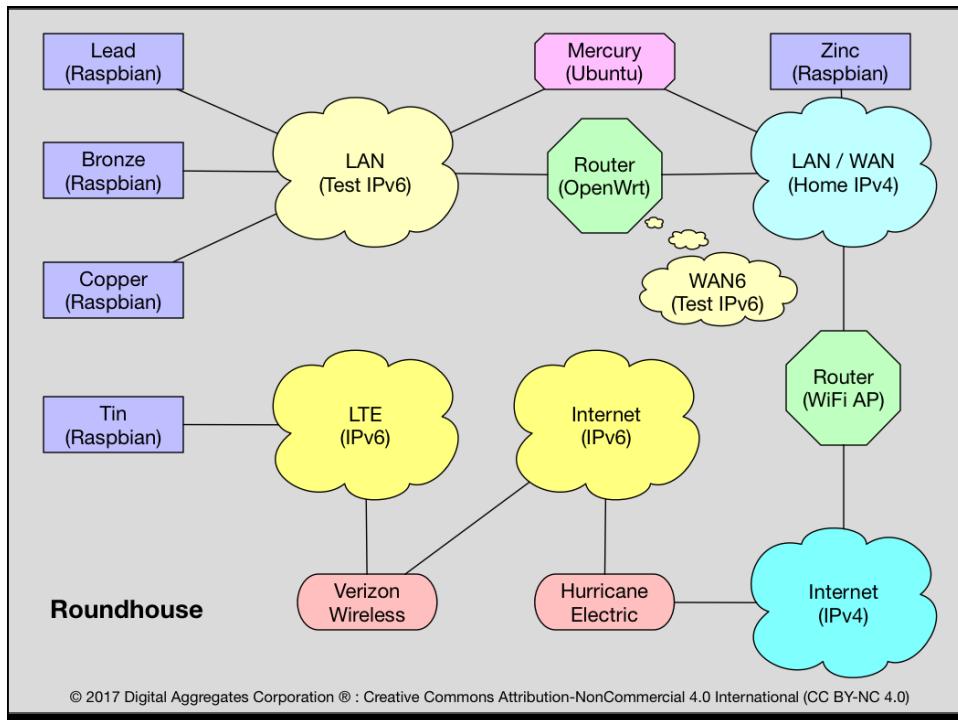
prefix (48 bits) + subnetwork (16 bits) + interface (64 bits)

8 hexets in hexadecimal separated by colons

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

DNS record type AAAA



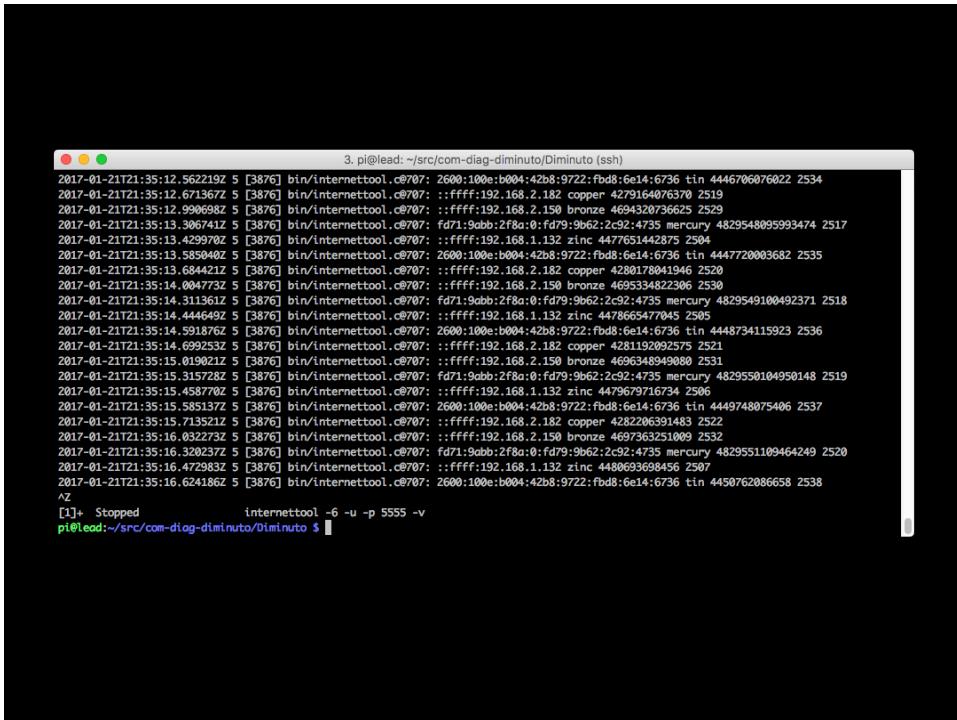


```

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

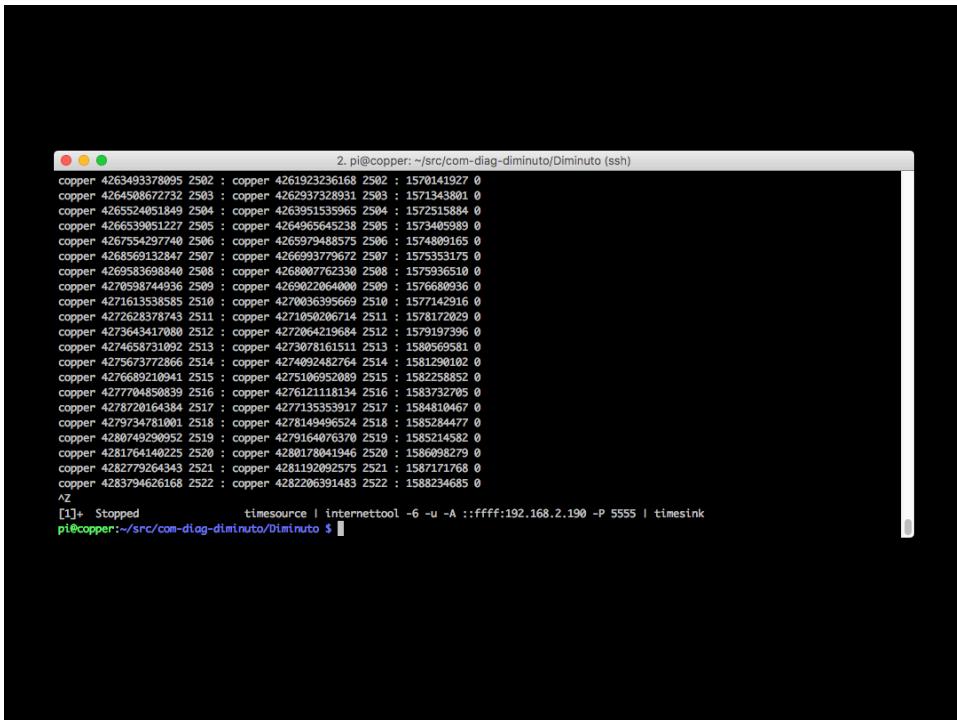
```



```

pi@lead: ~/src/com-diag-diminuto/Diminuto (ssh)
2017-01-21T21:55:12.562219Z 5 [3876] bin/internettool.c@0:707: 2600:100e:b004:42b8:9722:fd8:6e14:6736 tin 4446700070022 2534
2017-01-21T21:55:12.671367Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.182 copper 4279164076370 2519
2017-01-21T21:55:12.990698Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.150 bronze 4694320736625 2529
2017-01-21T21:55:13.306741Z 5 [3876] bin/internettool.c@0:707: fd71:9dbb:2f8a:0:fd79:9:6e14:6736 cinc 4477651442875 2504
2017-01-21T21:55:13.429970Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.1.132 zinc 4477651442875 2504
2017-01-21T21:55:13.585040Z 5 [3876] bin/internettool.c@0:707: 2600:100e:b004:42b8:9722:fd8:6e14:6736 tin 4447720003682 2535
2017-01-21T21:55:13.684421Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.182 copper 4280178041946 2520
2017-01-21T21:55:14.004773Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.150 bronze 4695334822306 2530
2017-01-21T21:55:14.311361Z 5 [3876] bin/internettool.c@0:707: fd71:9dbb:2f8a:0:fd79:9:6e14:6736 mercury 4829549100492371 2518
2017-01-21T21:55:14.444640Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.1.132 zinc 4478665477045 2505
2017-01-21T21:55:14.591876Z 5 [3876] bin/internettool.c@0:707: 2600:100e:b004:42b8:9722:fd8:6e14:6736 tin 4448734115923 2536
2017-01-21T21:55:14.699253Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.182 copper 4281192092575 2521
2017-01-21T21:55:15.019021Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.150 bronze 4696348949080 2531
2017-01-21T21:55:15.315728Z 5 [3876] bin/internettool.c@0:707: fd71:9dbb:2f8a:0:fd79:9:6e14:6736 mercury 4829550104950148 2519
2017-01-21T21:55:15.458770Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.1.132 zinc 4479679716734 2506
2017-01-21T21:55:15.585137Z 5 [3876] bin/internettool.c@0:707: 2600:100e:b004:42b8:9722:fd8:6e14:6736 tin 4449748075406 2537
2017-01-21T21:55:15.713521Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.182 copper 4282206391483 2522
2017-01-21T21:55:16.032273Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.2.150 bronze 4697363251009 2532
2017-01-21T21:55:16.320237Z 5 [3876] bin/internettool.c@0:707: fd71:9dbb:2f8a:0:fd79:9:6e14:6736 mercury 4829551109464249 2520
2017-01-21T21:55:16.472983Z 5 [3876] bin/internettool.c@0:707: ::ffff:192.168.1.132 zinc 4480693698456 2507
2017-01-21T21:55:16.624186Z 5 [3876] bin/internettool.c@0:707: 2600:100e:b004:42b8:9722:fd8:6e14:6736 tin 4450762086658 2538
^Z
[1]+ Stopped                  internettool -6 -u -p 5555 &v
pi@lead:~/src/com-diag-diminuto/Diminuto $ 

```



```

pi@copper: ~/src/com-diag-diminuto/Diminuto (ssh)
copper 4263493378095 2502 : copper 4261923236168 2502 : 1570141927 0
copper 4264508672732 2503 : copper 4262937328931 2503 : 1571343801 0
copper 4265524051849 2504 : copper 4263951535965 2504 : 1572515884 0
copper 4266539051227 2505 : copper 4264965645238 2505 : 1573405989 0
copper 4267554297740 2506 : copper 4265979488575 2506 : 1574809165 0
copper 4268569132847 2507 : copper 4266993779672 2507 : 157533175 0
copper 4269583698840 2508 : copper 426800776230 2508 : 1575936510 0
copper 4270598744936 2509 : copper 4269022064000 2509 : 1576680936 0
copper 427161353585 2510 : copper 4270035395669 2510 : 1577142916 0
copper 4272628378743 2511 : copper 427105020674 2511 : 1578170229 0
copper 4273643417088 2512 : copper 4272064219684 2512 : 1579197396 0
copper 427465873109 2513 : copper 4273073161511 2513 : 1580569581 0
copper 427567377286 2514 : copper 4274092482764 2514 : 1581290102 0
copper 4276689210941 2515 : copper 4275106952089 2515 : 1582258852 0
copper 42777044850839 2516 : copper 4276121118134 2516 : 1583732705 0
copper 4278720164384 2517 : copper 4277135353917 2517 : 1584810467 0
copper 4279734781008 2518 : copper 4278149496524 2518 : 1585284477 0
copper 4280749299952 2519 : copper 4279164076370 2519 : 1585214582 0
copper 4281764140225 2520 : copper 4280178041946 2520 : 1586098279 0
copper 4282779264343 2521 : copper 4281192092575 2521 : 1587171768 0
copper 4283794626168 2522 : copper 4282206391483 2522 : 1588234685 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 4431255543453 2508 : tin 4430482500059 2518 : 773042944 -10
tin 443227037831 2509 : tin 4431496236449 2519 : 77101382 -10
tin 4433284725906 2510 : tin 4432510149734 2520 : 774576172 -10
tin 4434299051378 2511 : tin 4433524332184 2521 : 774719194 -10
tin 4435313694817 2512 : tin 4434538805104 2522 : 775609713 -10
tin 4436327910758 2513 : tin 4435552203752 2523 : 775707006 -10
tin 4437343161281 2514 : tin 4436566199745 2524 : 776961536 -10
tin 4438357827482 2515 : tin 4437580164956 2525 : 776662526 -10
tin 4439372489828 2516 : tin 4438594001000 2526 : 778488828 -10
tin 444036900077 2517 : tin 4439607948920 2527 : 778952057 -10
tin 4441401735302 2518 : tin 4440622077984 2528 : 779657318 -10
tin 4442416582389 2519 : tin 4441636447571 2529 : 780134818 -10
tin 4443431466401 2520 : tin 4442693085803 2530 : 781160598 -10
tin 4444445823852 2521 : tin 4443664415545 2531 : 781408307 -10
tin 4445460868230 2522 : tin 444678141642 2532 : 782726588 -10
tin 4446475283441 2523 : tin 4445692213102 2533 : 783070359 -10
tin 44474950149278 2524 : tin 4446706076022 2534 : 784073256 -10
tin 4448504845790 2525 : tin 4447720003682 2535 : 784842108 -10
tin 4449519512460 2526 : tin 4448734115923 2536 : 785396537 -10
tin 4450534160691 2527 : tin 4449748075406 2537 : 786085285 -10
tin 4451548562726 2528 : tin 4450762086658 2538 : 786476068 -10
^Z
[1]+ Stopped timesource | internettool -6 -u -A 2001:470:4b:4e2:92d3:e519:6d57:b1e4 -P 5555 | timesink
pi@tin:~/src/com-diag-diminuto/Diminuto$
```

```
8.jsloan@mercury: ~/src/com-diag-diminuto/Diminuto (ssh)
mercury 4829531033839482 2500 : mercury 4829531022155634 2500 : 11683848 0
mercury 4829532037866306 2501 : mercury 482953202684888 2501 : 11775418 0
mercury 4829533042015649 2502 : mercury 4829533030132063 2502 : 11883586 0
mercury 4829534045642675 2503 : mercury 4829534033768419 2503 : 11874256 0
mercury 4829535049362729 2504 : mercury 4829535037617631 2504 : 11745998 0
mercury 48295360538373631 2505 : mercury 4829536042128972 2505 : 11708659 0
mercury 4829537053394457 2506 : mercury 4829537046628691 2506 : 11765766 0
mercury 4829538062925306 2507 : mercury 48295380511666608 2507 : 11758698 0
mercury 4829539067367612 2508 : mercury 4829539055702547 2508 : 11664465 0
mercury 4829540071716075 2509 : mercury 4829540060206481 2509 : 11569594 0
mercury 482954107610136 2510 : mercury 4829541064713511 2510 : 11396625 0
mercury 4829542080415817 2511 : mercury 4829542069015449 2511 : 11400368 0
mercury 4829543084895120 2512 : mercury 4829543073349639 2512 : 11545485 0
mercury 4829544089371123 2513 : mercury 4829544077891111 2513 : 11480012 0
mercury 48295450933897382 2514 : mercury 4829545082385426 2514 : 11511956 0
mercury 48295460938428628 2515 : mercury 4829546086922794 2515 : 11505834 0
mercury 4829547102892446 2516 : mercury 4829547091436849 2516 : 11455599 0
mercury 4829548107348416 2517 : mercury 4829548095993474 2517 : 11354942 0
mercury 4829549111728465 2518 : mercury 4829549100492371 2518 : 11236094 0
mercury 4829550116205191 2519 : mercury 48295501040959148 2519 : 11255043 0
mercury 4829551120858635 2520 : mercury 482955110946249 2520 : 11394386 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 4679084851431 2512 : bronze 4677084268858 2512 : 2000582873 0
bronze 4680099718399 2513 : bronze 4678098389186 2513 : 2001329123 0
bronze 468114512478 2514 : bronze 4679112212782 2514 : 2002299696 0
bronze 4682129482793 2515 : bronze 4680126534972 2515 : 2003127821 0
bronze 4683144229909 2516 : bronze 4681139990080 2516 : 2004309018 0
bronze 4684158721444 2517 : bronze 4682154096332 2517 : 2004625112 0
bronze 4685173381915 2518 : bronze 4683167789512 2518 : 2005592403 0
bronze 468618893481 2519 : bronze 4684181545973 2519 : 2006547598 0
bronze 4687202773990 2520 : bronze 4685195429830 2520 : 2007344070 0
bronze 4688217554997 2521 : bronze 4686209380382 2521 : 2008254695 0
bronze 4689232326614 2522 : bronze 4687223458081 2522 : 2008875633 0
bronze 4690247158440 2523 : bronze 4688237344630 2523 : 2009813810 0
bronze 4691261903077 2524 : bronze 4689251375101 2524 : 2010527976 0
bronze 469227653834 2525 : bronze 4690265050592 2525 : 2011443289 0
bronze 4693291707458 2526 : bronze 4691278961826 2526 : 20122805632 0
bronze 4694306235117 2527 : bronze 4692293009693 2527 : 2013225424 0
bronze 469521375888 2528 : bronze 4693306798915 2528 : 2014576673 0
bronze 4696336197674 2529 : bronze 4694320736625 2529 : 2015461049 0
bronze 4697351138718 2530 : bronze 4695334822306 2530 : 2016316412 0
bronze 4698366093826 2531 : bronze 4696348949880 2531 : 2017144746 0
bronze 4699381768619 2532 : bronze 4697363251009 2532 : 2018517610 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 4462009436678 2487 : zinc 4460411892568 2487 : 1597544110 0
zinc 446302491629 2488 : zinc 4461426045383 2488 : 1598446246 0
zinc 4464039458611 2489 : zinc 4462440151323 2489 : 1599307288 0
zinc 4465054275697 2490 : zinc 4463454013982 2490 : 1600261715 0
zinc 4466069281897 2491 : zinc 4464468132891 2491 : 1601149006 0
zinc 4467083907630 2492 : zinc 4465482224373 2492 : 1601682757 0
zinc 4468099223413 2493 : zinc 4466496100032 2493 : 1603123381 0
zinc 4469113887739 2494 : zinc 4467510629878 2494 : 1603257861 0
zinc 4470128738054 2495 : zinc 4468524464948 2495 : 1604274006 0
zinc 4471143219620 2496 : zinc 4469538564727 2496 : 1604654893 0
zinc 4472158098632 2497 : zinc 447055249679 2497 : 1605648953 0
zinc 4473172820823 2498 : zinc 4471566721036 2498 : 1606009787 0
zinc 4474187353013 2499 : zinc 4472580826559 2499 : 1606526454 0
zinc 4475202368271 2500 : zinc 4473594926514 2500 : 1607441662 0
zinc 4476216864477 2501 : zinc 4474609103491 2501 : 1607760986 0
zinc 4477231854688 2502 : zinc 4475623112974 2502 : 1608741714 0
zinc 4478246435472 2503 : zinc 4476637123446 2503 : 1609312026 0
zinc 4479261346724 2504 : zinc 4477651442875 2504 : 1609903849 0
zinc 4480275850006 2505 : zinc 4478665477045 2505 : 1610373016 0
zinc 4481290599594 2506 : zinc 4479679716734 2506 : 1610882269 0
zinc 4482305336576 2507 : zinc 4480693698456 2507 : 1611638120 0
^Z
[1]+ Stopped timesource | internettool -4 -u -A 192.168.1.241 -P 5555 | timesink
pi@zinc:~/src/com-diag-diminuto/Diminuto $
```

