

```
1: // $Id: futuretimes.c,v 1.41 2013-05-17 17:42:18-07 - - $
2:
3: #include <limits.h>
4: #include <locale.h>
5: #include <stdio.h>
6: #include <stdlib.h>
7: #include <time.h>
8:
9: #define SEC_PER_DAY (24 * 60 * 60)
10: #define SEC_PER_YEAR (SEC_PER_DAY * 365 + SEC_PER_DAY / 4)
11: const time_t localtime_segfault = (time_t) INT_MAX * SEC_PER_YEAR;
12:
13: int main (void) {
14:     setlocale (LC_NUMERIC, "en_US");
15:     printf ("sizeof (time_t) = %ld\n", sizeof (time_t));
16:     for (time_t when = 1; when > 0; when = when * 2 + 1) {
17:         if (when > localtime_segfault) break;
18:         char *timeformat = "%b %d %a %H:%M:%S %Z";
19:         char buffer[256];
20:         struct tm *tm = localtime (&when);
21:         strftime (buffer, sizeof buffer, timeformat, tm);
22:         printf ("%25ld = %15d %s\n", when, tm->tm_year + 1900, buffer);
23:     }
24:     printf ("%25ld = %15d = INT_MAX (localtime_segfault)\n",
25:             localtime_segfault, INT_MAX);
26:     printf ("%25ld = %15ld = LONG_MAX\n", LONG_MAX,
27:             LONG_MAX / SEC_PER_YEAR);
28:     return EXIT_SUCCESS;
29: }
30:
31: //TEST// ./futuretimes >futuretimes.lis
32: //TEST// mkpspdf futuretimes.ps futuretimes.c* futuretimes.lis
33:
```

[illegible]

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\$cmps012b-wm/Labs-cmps012m/lab8c-unixprog-stat/testdata/  
futuretimes.lis

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```
1:  sizeof (time_t) = 8
2:                                1 =          1,969 Dec 31 Wed 16:00:01 PST
3:                                3 =          1,969 Dec 31 Wed 16:00:03 PST
4:                                7 =          1,969 Dec 31 Wed 16:00:07 PST
5:                               15 =          1,969 Dec 31 Wed 16:00:15 PST
6:                               31 =          1,969 Dec 31 Wed 16:00:31 PST
7:                               63 =          1,969 Dec 31 Wed 16:01:03 PST
8:                              127 =          1,969 Dec 31 Wed 16:02:07 PST
9:                              255 =          1,969 Dec 31 Wed 16:04:15 PST
10:                             511 =          1,969 Dec 31 Wed 16:08:31 PST
11:                            1,023 =          1,969 Dec 31 Wed 16:17:03 PST
12:                            2,047 =          1,969 Dec 31 Wed 16:34:07 PST
13:                            4,095 =          1,969 Dec 31 Wed 17:08:15 PST
14:                            8,191 =          1,969 Dec 31 Wed 18:16:31 PST
15:                           16,383 =          1,969 Dec 31 Wed 20:33:03 PST
16:                           32,767 =          1,970 Jan 01 Thu 01:06:07 PST
17:                           65,535 =          1,970 Jan 01 Thu 10:12:15 PST
18:                          131,071 =          1,970 Jan 02 Fri 04:24:31 PST
19:                          262,143 =          1,970 Jan 03 Sat 16:49:03 PST
20:                          524,287 =          1,970 Jan 06 Tue 17:38:07 PST
21:                         1,048,575 =          1,970 Jan 12 Mon 19:16:15 PST
22:                         2,097,151 =          1,970 Jan 24 Sat 22:32:31 PST
23:                         4,194,303 =          1,970 Feb 18 Wed 05:05:03 PST
24:                         8,388,607 =          1,970 Apr 07 Tue 18:10:07 PST
25:                        16,777,215 =          1,970 Jul 13 Mon 21:20:15 PDT
26:                        33,554,431 =          1,971 Jan 24 Sun 00:40:31 PST
27:                        67,108,863 =          1,972 Feb 16 Wed 09:21:03 PST
28:                       134,217,727 =          1,974 Apr 03 Wed 03:42:07 PDT
29:                       268,435,455 =          1,978 Jul 04 Tue 14:24:15 PDT
30:                       536,870,911 =          1,987 Jan 05 Mon 10:48:31 PST
31:                      1,073,741,823 =          2,004 Jan 10 Sat 05:37:03 PST
32:                      2,147,483,647 =          2,038 Jan 18 Mon 19:14:07 PST
33:                      4,294,967,295 =          2,106 Feb 06 Sat 22:28:15 PST
34:                      8,589,934,591 =          2,242 Mar 16 Wed 05:56:31 PDT
35:                     17,179,869,183 =          2,514 May 29 Tue 18:53:03 PDT
36:                     34,359,738,367 =          3,058 Oct 25 Mon 20:46:07 PDT
37:                     68,719,476,735 =          4,147 Aug 20 Sun 00:32:15 PDT
38:                    137,438,953,471 =          6,325 Apr 08 Wed 08:04:31 PDT
39:                    274,877,906,943 =         10,680 Jul 13 Tue 23:09:03 PDT
40:                    549,755,813,887 =         19,391 Jan 25 Tue 04:18:07 PST
41:                   1,099,511,627,775 =         36,812 Feb 19 Sun 16:36:15 PST
42:                   2,199,023,255,551 =          71,654 Apr 09 Thu 18:12:31 PDT
43:                   4,398,046,511,103 =        141,338 Jul 18 Fri 19:25:03 PDT
44:                   8,796,093,022,207 =        280,707 Feb 03 Sun 20:50:07 PST
45:                  17,592,186,044,415 =        559,444 Mar 08 Fri 01:40:15 PST
46:                  35,184,372,088,831 =        1,116,918 May 14 Sat 12:20:31 PDT
47:                  70,368,744,177,663 =        2,231,866 Sep 25 Tue 07:41:03 PDT
48:                 140,737,488,355,327 =        4,461,763 Jun 19 Sun 22:22:07 PDT
49:                 281,474,976,710,655 =        8,921,556 Dec 07 Fri 02:44:15 PST
50:                 562,949,953,421,311 =       17,841,143 Nov 13 Sat 13:28:31 PST
51:                1,125,899,906,842,623 =       35,680,317 Sep 25 Tue 10:57:03 PST
52:                2,251,799,813,685,247 =       71,358,665 Jun 19 Mon 05:54:07 PST
53:                4,503,599,627,370,495 =      142,715,360 Dec 05 Fri 19:48:15 PST
54:                9,007,199,254,740,991 =      285,428,751 Nov 11 Sun 23:36:31 PST
55:               18,014,398,509,481,983 =      570,855,533 Sep 22 Fri 07:13:03 PST
56:               36,028,797,018,963,967 =     1,141,709,097 Jun 12 Sat 22:26:07 PST
57:               67,769,429,938,567,200 =     2,147,483,647 = INT_MAX (localtime_segfaul
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**11:45:28**

\$cmps012b-wm/Labs-cmps012m/lab8c-unixprog-stat/testdata/  
futuretimes.lis

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58: 9,223,372,036,854,775,807 = 292,271,023,045 = LONG\_MAX