

```
1: // $Id: predefmacros.cc,v 1.4 2013-09-20 14:47:05-07 - - $
2:
3: //
4: // Print out the values of various macros and test whether some
5: // compiler and operating system flags are present.
6: //
7: // References:
8: // http://sourceforge.net/apps/mediawiki/predef/
9: // See links to Compilers and Operating Systems
10: //
11:
12: #include <string>
13: #include <vector>
14: using namespace std;
15:
16: #include <errno.h>
17: #include <libgen.h>
18: #include <stdio.h>
19: #include <stdlib.h>
20:
21: char *progname = NULL;
22: int exit_status = EXIT_SUCCESS;
23:
```

```
24:
25: #ifdef __unix__
26:
27: const vector<string> uname_opts = {
28:     "--all",
29:     "--kernel-name",
30:     "--nodename",
31:     "--kernel-release",
32:     "--kernel-version",
33:     "--machine",
34:     "--processor",
35:     "--hardware-platform",
36:     "--operating-system",
37: };
38:
39: void run_program (const char *program) {
40:     printf ("%s = ", program);
41:     FILE *command = popen (program, "r");
42:     if (command == NULL) {
43:         fprintf (stderr, "%s: %s: %s\n", progname,
44:                 program, strerror (errno));
45:         exit_status = EXIT_FAILURE;
46:     } else {
47:         char buffer[0x10000];
48:         for (;;) {
49:             char *eof = fgets (buffer, sizeof buffer, command);
50:             if (eof) break;
51:             printf ("%s", buffer);
52:         }
53:         pclose (command);
54:     }
55: }
56:
57: void print_unames () {
58:     system ("date\n");
59:     const char *const *end = uname_opts + uname_size;
60:     for (auto citor = uname_opts.cbegin();
61:          citor != uname_opts.cend(); ++citor) {
62:         string uname_buffer = "echo -n uname " + *citor
63:                               + "' = ' ; uname " + *citor;
64:         system (uname_buffer);
65:     }
66: }
67:
68: #else
69:
70: void print_unames () {
71:     throw "Praeterea, censeo Microflaccidem esse delendam.";
72: }
73:
74: #endif
75:
```

```
76:
77: #define PRINTS(ID) printf (#ID " = \"%s\\\"\\n", ID);
78: #define PRINTD(ID) printf (#ID " = %d\\n", ID);
79:
80: int main (int argc, char **argv) {
81:     progname = basename (argv[0]);
82:     print_unames ();
83:
84:     PRINTS (__FILE__);
85:     PRINTD (__LINE__);
86:     PRINTS (__DATE__);
87:     PRINTS (__TIME__);
88:     PRINTD (__STDC__);
89:     PRINTS (__func__);
90:
91:     #ifdef __cplusplus
92:     PRINTD (__cplusplus);
93:     #endif
94:
95:     #ifdef __unix__
96:     PRINTD (__unix__);
97:     #endif
98:
99:     #ifdef __linux__
100:    PRINTD (__linux__);
101:    #endif
102:
103:    #ifdef __x86_64__
104:    PRINTD (__x86_64__);
105:    #endif
106:
107:    #ifdef __GNUC__
108:    PRINTD (__GNUC__);
109:    PRINTD (__GNUC_MINOR__);
110:    PRINTD (__GNUC_PATCHLEVEL__);
111:    #endif
112:
113:    #ifdef _POSIX_VERSION
114:    PRINTS (_POSIX_VERSION);
115:    #endif
116:
117:    #ifdef _XOPEN_VERSION
118:    PRINTS (_XOPEN_VERSION);
119:    #endif
120:
121:    return exit_status;
122: }
123:
124: //TEST// runprogram.perl -x predefmacros.lis ./predefmacros
125: //TEST// mkpspdf predefmacros.ps predefmacros.cc* predefmacros.lis
126:
```

```
1: * @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ mkc: starting predefmacros.cc
2: * predefmacros.cc: $Id: predefmacros.cc,v 1.4 2013-09-20 14:47:05-07 -
3: - $
4: * g++ -g -O0 -Wall -Wextra -std=gnu++0x predefmacros.cc -o predefmacros
5: -lm
```

```

1:
2: .....
3: log: predefmacros.log
4: .....
5:
6:     1  Script   : /afs/cats.ucsc.edu/courses/cmcs012b-wm/bin/runprogram.perl
7:     2  limit c  :      0 max core file size (KB)
8:     3  limit f  : 4194303 max output file size (KB)
9:     4  limit t  : 4294967295 max CPU time (sec)
10:    5  stdin   : /dev/null
11:    6  stdout  : predefmacros.out
12:    7  stderr  : predefmacros.err
13:    8  log     : predefmacros.log
14:    9  listing : predefmacros.lis
15:   10 Command : ./predefmacros
16:   11 starting: pid 23661: 14:47:05.00
17:   12 finished: pid 23661: 14:47:05.00, real 0.00, user 0.00, sys 0.01
18:   13 pstatus: 0x0000 EXIT STATUS = 0
19:
20: .....
21: stdin: /dev/null
22: .....
23:
24:
25: .....
26: stdout: predefmacros.out
27: .....
28:
29:     1  Fri Sep 20 14:47:05 PDT 2013
30:     2  uname --all = Linux unix2.ic.ucsc.edu 2.6.32-220.23.1.el6.x86_64 #1
SMP Mon Jun 18 18:58:52 BST 2012 x86_64 x86_64 x86_64 GNU/Linux
31:     3  uname --kernel-name = Linux
32:     4  uname --nodename = unix2.ic.ucsc.edu
33:     5  uname --kernel-release = 2.6.32-220.23.1.el6.x86_64
34:     6  uname --kernel-version = #1 SMP Mon Jun 18 18:58:52 BST 2012
35:     7  uname --machine = x86_64
36:     8  uname --processor = x86_64
37:     9  uname --hardware-platform = x86_64
38:    10  uname --operating-system = GNU/Linux
39:    11  __FILE__ = "predefmacros.cc"
40:    12  __LINE__ = 85
41:    13  __DATE__ = "Sep 20 2013"
42:    14  __TIME__ = "14:42:10"
43:    15  __STDC__ = 1
44:    16  __func__ = "main"
45:    17  __cplusplus = 1
46:    18  __unix__ = 1
47:    19  __linux__ = 1
48:    20  __x86_64__ = 1
49:    21  __GNUC__ = 4
50:    22  __GNUC_MINOR__ = 4
51:    23  __GNUC_PATCHLEVEL__ = 6
52:
53: .....
54: stderr: predefmacros.err
55: .....
56:

```