```
 1: File: endian.c
 2:      1  // $Id: endian.c,v 1.4 2014-05-20 21:45:24-07 - - $
 3:      2
 4:      3  // Illustrate endianness.
 5:      4
 6:      5  #include <arpa/inet.h>
 7:      6  #include <stdio.h>
 8:      7
 9:      8  typedef union union32 { uint32_t num; char chr[4]; } union32;
10:      9  typedef union union16 { uint16_t num; char chr[2]; } union16;
11:     10
12:     11  void print32 (const char *label, const union32 *val) {
13:     12     printf ("%-8s: 0x%08X =", label, val->num);
14:     13     for (int i = 0; i < 4; ++i) printf (" %02X", val->chr[i]);
15:     14     printf ("\n");
16:     15  }
17:     16
18:     17  void print16 (const char *label, const union16 *val) {
19:     18     printf ("%-8s: 0x%04X =", label, val->num);
20:     19     for (int i = 0; i < 2; ++i) printf (" %02X", val->chr[i]);
21:     20     printf ("\n");
22:     21  }
23:     22
24:     23  int main () {
25:     24     union union32 n32 = {0x12345678};
26:     25     print32 ("Original", &n32);
27:     26     n32.num = htonl (n32.num);
28:     27     print32 ("Network", &n32);
29:     28     n32.num = ntohl (n32.num);
30:     29     print32 ("Host", &n32);
31:     30
32:     31     union union16 n16 = {0x1234};
33:     32     print16 ("Original", &n16);
34:     33     n16.num = htons (n16.num);
35:     34     print16 ("Network", &n16);
36:     35     n16.num = ntohs (n16.num);
37:     36     print16 ("Host", &n16);
38:     37
39:     38     return 0;
40:     39  }
41:
42: File: endian.output.sparc
43:      1  -bash-16$ uname -srmpi
44:      2  SunOS 5.10 sun4v sparc SUNW,SPARC-Enterprise-T2000
45:      3  -bash-17$ ./endian
46:      4  Original: 0x12345678 = 12 34 56 78
47:      5  Network : 0x12345678 = 12 34 56 78
48:      6  Host    : 0x12345678 = 12 34 56 78
49:      7  Original: 0x1234 = 12 34
50:      8  Network : 0x1234 = 12 34
51:      9  Host    : 0x1234 = 12 34
52:
53: File: endian.output.x86_64
54:      1  -bash-23$ uname -srmpi
55:      2  Linux 2.6.32-431.11.2.el6.x86_64 x86_64 x86_64 x86_64
56:      3  -bash-24$ ./endian
57:      4  Original: 0x12345678 = 78 56 34 12
58:      5  Network : 0x78563412 = 12 34 56 78
59:      6  Host    : 0x12345678 = 78 56 34 12
60:      7  Original: 0x1234 = 34 12
61:      8  Network : 0x3412 = 12 34
62:      9  Host    : 0x1234 = 34 12
63:
```