

# How to disassemble a program using xobjdump

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version	1.1.1
scope	Example. This code is provided as example code for a user to base their code on.
description	How to disassemble a program using xobjdump
boards	Unless otherwise specified, this example runs on the SliceKIT Core Board, but can easily be run on any XMOS device by using a different XN file.

The xTIMEcomposer tools contain the *xobjdump* utility, which you can use to disassemble a given executable. For example, compile the following code:

```
#include <print.h>

int main() {
    printstr("Hello World!\n");
    return 0;
}
```

From the command line, the resulting executable can be disassembled as follows:

```
xobjdump -d a.xe
```

This will produce the following output:

```
....
<main>:
      0x000100ac: 44 77:      entsp (u6)      0x4
      0x000100ae: 4e 68:      ldc (ru6)       r1, 0xe
      0x000100b0: 00 f0 05 60: ldaw (lru6)    r0, dp[0x5]
      0x000100b4: 00 f0 4d d0: bl (lui10)     0x4d <printstr>
      0x000100b8: 40 68:      ldc (ru6)       r1, 0x0
      0x000100ba: 42 54:      stw (ru6)       r1, sp[0x2]
      0x000100bc: 01 54:      stw (ru6)       r0, sp[0x1]
      0x000100be: 02 5c:      ldw (ru6)       r0, sp[0x2]
      0x000100c0: c4 77:      retsp (u6)      0x4
....
```

You can use *xobjdump* to intermix the source lines with the disassembly output. This is enabled via the *-S* command line option:

```
xobjdump -S a.xe
```

This will produce the following output:

```
....  
int main() {  
    0x000100ac: 44 77:      entsp (u6)      0x4  
    0x000100ae: 4e 68:      ldc (ru6)       r1, 0xe  
    printstr("Hello World!\n");  
    0x000100b0: 00 f0 05 60: ldaw (lru6)     r0, dp[0x5]  
    0x000100b4: 00 f0 4d d0: bl (lu10)      0x4d <printstr>  
    0x000100b8: 40 68:      ldc (ru6)       r1, 0x0  
    return 0;  
    0x000100ba: 42 54:      stw (ru6)       r1, sp[0x2]  
    0x000100bc: 01 54:      stw (ru6)       r0, sp[0x1]  
    0x000100be: 02 5c:      ldw (ru6)       r0, sp[0x2]  
    0x000100c0: c4 77:      retsp (u6)      0x4  
....
```



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