

408530049 許家文

1.

readelf-d/usr/bin/ls

```
ulohg@ulohg-VirtualBox:~$ readelf -d /usr/bin/ls

Dynamic section at offset 0x21a58 contains 28 entries:
   Tag               Type              Name/Value
0x0000000000000001 (NEEDED)          Shared library: [libselinux.so.1]
0x0000000000000001 (NEEDED)          Shared library: [libc.so.6]
0x000000000000000c (INIT)            0x4000
0x000000000000000d (FINI)            0x17574
0x0000000000000019 (INIT_ARRAY)      0x22010
0x000000000000001b (INIT_ARRAYSZ)      8 (bytes)
0x000000000000001a (FINI_ARRAY)      0x22018
0x000000000000001c (FINI_ARRAYSZ)      8 (bytes)
0x000000006ffffef5 (GNU_HASH)          0x3a0
0x0000000000000005 (STRTAB)            0x1190
0x0000000000000006 (SYMTAB)            0x488
0x000000000000000a (STRSZ)             1612 (bytes)
0x000000000000000b (SYMENT)            24 (bytes)
0x0000000000000015 (DEBUG)              0x0
0x0000000000000003 (PLTGOT)            0x22c58
0x0000000000000002 (PLTRELSZ)          2544 (bytes)
0x0000000000000014 (PLTREL)             RELA
0x0000000000000017 (JMPREL)            0x2cb8
0x0000000000000007 (RELA)              0x1968
0x0000000000000008 (RELASZ)            4944 (bytes)
0x0000000000000009 (RELAENT)            24 (bytes)
0x000000000000001e (FLAGS)              BIND_NOW
0x000000006ffffffb (FLAGS_1)            Flags: NOW PIE
0x000000006ffffffe (VERNEED)            0x18f8
0x000000006fffffff (VERNEEDNUM)         1
0x000000006ffffff0 (VERSYM)             0x17dc
0x000000006ffffff9 (RELACOUNT)          193
0x0000000000000000 (NULL)              0x0
```

readelf-d~/busybox/\_install/bin/busybox

```
ulohg@ulohg-VirtualBox:~$ readelf -d ~/busybox/_install/bin/busybox

There is no dynamic section in this file.
```

2.

```
ulohg@ulohg-VirtualBox:~$ sudo chroot ~/busybox/_install/ ash
/ # whoami
whoami: unknown uid 0
/ # ls
bin      linuxrc  sbin     usr
/ #
```

3. Busybox在單一的可執行文件中提供了精簡的Unix工具集。由於BusyBox執行檔的檔案比較小, 使得它非常適合使用於嵌入式系統。