

ELF1 7 Examples - 7 Relocs Listings - ELF Study 1999

Young W. Lim

2020-01-20 Mon

- 1 Based on
 - Relocs background in shared object and executable files
- 2 1. `-fno-pic` case symbol listings
 - `-fno-pic` case symbol listings in `rel.o`
 - `-fno-pic` case symbol listings in `librel.so`
 - `-fno-pic` case symbol listings in `main.o`
 - `-fno-pic` case symbol listings in `run_dynamic`
- 3 2. `default` case symbol listings
 - default symbol listing in `rel.o`
 - default symbol listing in `librel.so`
 - default symbol listing in `main.o`
 - default symbol listing in `run_dynamic`
- 4 3. `-fPIC` case symbol listings
 - `-fPIC` symbol listing in `rel.o`
 - `-fPIC` symbol listing in `librel.so`
 - `-fPIC` symbol listing in `main.o`
 - `-fPIC` symbol listing in `run_dynamic`

"Study of ELF loading and relocs", 1999

http://netwinder.osuosl.org/users/p/patb/public_html/elf_relocs.html

I, the copyright holder of this work, hereby publish it under the following licenses: GNU head Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled GNU Free Documentation License.

CC BY SA This file is licensed under the Creative Commons Attribution ShareAlike 3.0 Unported License. In short: you are free to share and make derivative works of the file under the conditions that you appropriately attribute it, and that you distribute it only under a license compatible with this one.

Compiling 32-bit program on 64-bit gcc

- `gcc -v`
- `gcc -m32 t.c`
- `sudo apt-get install gcc-multilib`
- `sudo apt-get install g++-multilib`
- `gcc-multilib`
- `g++-multilib`
- `gcc -m32`
- `objdump -m i386`
- `-Wl,-q`

TOC: Relocs background in shared object and executable files

- Relocs in a PIC shared object (.so) file
- Relocs in a non-PIC executable file
- PIC, PIE, and non-PIC executables

Example library code

```
typedef struct {
    char* p;
    char (*f)(int);
} _st;

char fPub(int a) {
    return a;
}

static char fLocal(int b) {
    return b;
}

char cPub;           // uninitialized
static char cLocal; // uninitialized

_st a[] = { { &cLocal, // 1
             fLocal }, // 2
            { &cPub, // 3
             fPub } }; // 4

int foo(int a) { // 5
    return fPub(a) // 6
        + fLocal(a) // 7
        + (int) &cPub // 8
        + cPub // 9
        + (int) &cLocal // 10
        + cLocal; // 11
}
```

http://netwinder.osuosl.org/users/p/patb/public_html/elf_relocs.html

Example executable code

- the main function code

```
extern int fPub(int);
extern int cPub;

int main() {
    return fPub(123)    // 1
           + cPub;     // 2
}
```

http://netwinder.osuosl.org/users/p/patb/public_html/elf_relocs.html

Using a shared library

- creating a shared library

```
gcc -m32 -fPIC -c -g rel.c  
gcc -m32 -shared rel.o -o librel.so
```

- linking with a shared library

```
gcc -m32 -c -g main.c  
gcc -m32 main.o -Wl,-q -L/home/young/ -lrel -o run_dynamic
```

- run a dynamic executable

```
LD_LIBRARY_PATH=/home/young/ ./run_dynamic
```

<https://reneyffenegger.ch/notes/development/languages/C-C-plus-plus/GCC/create-libraries/index>

.symtab, rel.o, -fno-pic (1/1)

Symbol table '.symtab' contains 14 entries:

Num:	Valor	Tam	Tipo	Unión	Vis	Nombre	Ind
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	FILE	LOCAL	DEFAULT	ABS	rel.c
2:	00000000	0	SECTION	LOCAL	DEFAULT	1	
3:	00000000	0	SECTION	LOCAL	DEFAULT	3	
4:	00000000	0	SECTION	LOCAL	DEFAULT	5	
5:	00000008	8	FUNC	LOCAL	DEFAULT	1	fLocal
6:	00000000	1	OBJECT	LOCAL	DEFAULT	5	cLocal
7:	00000000	0	SECTION	LOCAL	DEFAULT	7	
8:	00000000	0	SECTION	LOCAL	DEFAULT	8	
9:	00000000	0	SECTION	LOCAL	DEFAULT	6	
10:	00000000	8	FUNC	GLOBAL	DEFAULT	1	fPub
11:	00000001	1	OBJECT	GLOBAL	DEFAULT	COM	cPub
12:	00000000	16	OBJECT	GLOBAL	DEFAULT	3	a
13:	00000010	77	FUNC	GLOBAL	DEFAULT	1	foo

.dynsym, librel.so, -fno-pic (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
2:	00000000	0	SECTION	LOCAL	DEFAULT	1	
3:	00000000	0	SECTION	LOCAL	DEFAULT	3	
4:	00000000	0	SECTION	LOCAL	DEFAULT	4	
5:	00000000	0	SECTION	LOCAL	DEFAULT	6	
6:	00000000	0	SECTION	LOCAL	DEFAULT	7	
7:	00000000	0	SECTION	LOCAL	DEFAULT	5	
8:	00000000	47	FUNC	GLOBAL	DEFAULT	1	main
9:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	fPub
10:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	cPub

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__cxa_finalize
2:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__ITM_registerTMCloneTable
3:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__ITM_deregisterTMCloneTab
4:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
5:	000004bd	77	FUNC	GLOBAL	DEFAULT	9	foo
6:	00002020	0	NOTYPE	GLOBAL	DEFAULT	18	_edata
7:	00002024	0	NOTYPE	GLOBAL	DEFAULT	19	_end
8:	00000368	0	FUNC	GLOBAL	DEFAULT	6	_init
9:	000004ad	8	FUNC	GLOBAL	DEFAULT	9	fPub
10:	00002022	1	OBJECT	GLOBAL	DEFAULT	19	cPub

.symtab, librel.so, -fno-pic (1/3)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000114	0	SECTION	LOCAL	DEFAULT	1	
2:	00000138	0	SECTION	LOCAL	DEFAULT	2	
3:	00000180	0	SECTION	LOCAL	DEFAULT	3	
4:	00000260	0	SECTION	LOCAL	DEFAULT	4	
5:	000002e8	0	SECTION	LOCAL	DEFAULT	5	
6:	00000368	0	SECTION	LOCAL	DEFAULT	6	
7:	00000390	0	SECTION	LOCAL	DEFAULT	7	
8:	000003a0	0	SECTION	LOCAL	DEFAULT	8	
9:	000003b0	0	SECTION	LOCAL	DEFAULT	9	
10:	0000050c	0	SECTION	LOCAL	DEFAULT	10	
11:	00000520	0	SECTION	LOCAL	DEFAULT	11	
12:	00000554	0	SECTION	LOCAL	DEFAULT	12	
13:	00001f30	0	SECTION	LOCAL	DEFAULT	13	
14:	00001f34	0	SECTION	LOCAL	DEFAULT	14	
15:	00001f38	0	SECTION	LOCAL	DEFAULT	15	
16:	00001ff0	0	SECTION	LOCAL	DEFAULT	16	
17:	00002000	0	SECTION	LOCAL	DEFAULT	17	
18:	0000200c	0	SECTION	LOCAL	DEFAULT	18	
19:	00002020	0	SECTION	LOCAL	DEFAULT	19	
20:	00000000	0	SECTION	LOCAL	DEFAULT	20	

.symtab, librel.so, -fno-pic (2/3)

21:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
22:	000003c0	0	FUNC	LOCAL	DEFAULT	9	deregister_tm_clones
23:	00000400	0	FUNC	LOCAL	DEFAULT	9	register_tm_clones
24:	00000450	0	FUNC	LOCAL	DEFAULT	9	__do_global_ctors_aux
25:	00002020	1	OBJECT	LOCAL	DEFAULT	19	completed.7282
26:	00001f34	0	OBJECT	LOCAL	DEFAULT	14	__do_global_ctors_aux_fin
27:	000004a0	0	FUNC	LOCAL	DEFAULT	9	frame_dummy
28:	00001f30	0	OBJECT	LOCAL	DEFAULT	13	__frame_dummy_init_array_
29:	00000000	0	FILE	LOCAL	DEFAULT	ABS	rel.c
30:	000004b5	8	FUNC	LOCAL	DEFAULT	9	fLocal
31:	00002021	1	OBJECT	LOCAL	DEFAULT	19	cLocal
32:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
33:	00000608	0	OBJECT	LOCAL	DEFAULT	12	__FRAME_END__
34:	00000000	0	FILE	LOCAL	DEFAULT	ABS	
35:	00001f38	0	OBJECT	LOCAL	DEFAULT	15	_DYNAMIC
36:	00002020	0	OBJECT	LOCAL	DEFAULT	18	__TMC_END__
37:	0000200c	0	OBJECT	LOCAL	DEFAULT	18	__dso_handle
38:	000004a9	0	FUNC	LOCAL	DEFAULT	9	__x86.get_pc_thunk.dx
39:	000003b0	4	FUNC	LOCAL	DEFAULT	9	__x86.get_pc_thunk.bx
40:	00000520	0	NOTYPE	LOCAL	DEFAULT	11	__GNU_EH_FRAME_HDR

.symtab, librel.so, -fno-pic (3/3)

41: 00002000	0	OBJECT	LOCAL	DEFAULT	17	_GLOBAL_OFFSET_TABLE_
42: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__cxa_finalize
43: 00000368	0	FUNC	GLOBAL	DEFAULT	6	_init
44: 000004ad	8	FUNC	GLOBAL	DEFAULT	9	fPub
45: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
46: 00002022	1	OBJECT	GLOBAL	DEFAULT	19	cPub
47: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
48: 00002020	0	NOTYPE	GLOBAL	DEFAULT	19	__bss_start
49: 0000050c	0	FUNC	GLOBAL	DEFAULT	10	_fini
50: 000004bd	77	FUNC	GLOBAL	DEFAULT	9	foo
51: 00002020	0	NOTYPE	GLOBAL	DEFAULT	18	_edata
52: 00002024	0	NOTYPE	GLOBAL	DEFAULT	19	_end
53: 00002010	16	OBJECT	GLOBAL	DEFAULT	18	a
54: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__

.symtab, main.o, -fno-pic (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
2:	00000000	0	SECTION	LOCAL	DEFAULT	1	
3:	00000000	0	SECTION	LOCAL	DEFAULT	3	
4:	00000000	0	SECTION	LOCAL	DEFAULT	4	
5:	00000000	0	SECTION	LOCAL	DEFAULT	6	
6:	00000000	0	SECTION	LOCAL	DEFAULT	7	
7:	00000000	0	SECTION	LOCAL	DEFAULT	5	
8:	00000000	47	FUNC	GLOBAL	DEFAULT	1	main
9:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	fPub
10:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	cPub

.dynsym, run_dynamic, -fno-pic (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
2:	00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@GLIBC_2.1.3 (2)
3:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
4:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@GLIBC_2.0 (3)
5:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
6:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	fPub
7:	00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
8:	0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
9:	000006ac	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
10:	00002008	0	NOTYPE	GLOBAL	DEFAULT	32	__bss_start
11:	00002008	1	OBJECT	GLOBAL	DEFAULT	32	cPub
12:	00000450	0	FUNC	GLOBAL	DEFAULT	11	_init
13:	00000694	0	FUNC	GLOBAL	DEFAULT	17	_fini

.symtab, run_dynamic, -fno-pic (1/4)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000154	0	SECTION	LOCAL	DEFAULT	1	
2:	00000168	0	SECTION	LOCAL	DEFAULT	2	
3:	00000188	0	SECTION	LOCAL	DEFAULT	3	
4:	000001ac	0	SECTION	LOCAL	DEFAULT	4	
5:	000001ec	0	SECTION	LOCAL	DEFAULT	5	
6:	000002cc	0	SECTION	LOCAL	DEFAULT	6	
7:	0000039a	0	SECTION	LOCAL	DEFAULT	7	
8:	000003b8	0	SECTION	LOCAL	DEFAULT	8	
9:	000003e8	0	SECTION	LOCAL	DEFAULT	9	
10:	00000440	0	SECTION	LOCAL	DEFAULT	10	
11:	00000450	0	SECTION	LOCAL	DEFAULT	11	
12:	00000480	0	SECTION	LOCAL	DEFAULT	13	
13:	000004b0	0	SECTION	LOCAL	DEFAULT	14	
14:	000004c0	0	SECTION	LOCAL	DEFAULT	15	
15:	00000694	0	SECTION	LOCAL	DEFAULT	17	
16:	000006a8	0	SECTION	LOCAL	DEFAULT	19	
17:	000006b0	0	SECTION	LOCAL	DEFAULT	20	
18:	000006e4	0	SECTION	LOCAL	DEFAULT	21	
19:	00001ec8	0	SECTION	LOCAL	DEFAULT	23	
20:	00001ecc	0	SECTION	LOCAL	DEFAULT	25	

.symtab, run_dynamic, -fno-pic (2/4)

21:	00001ed0	0	SECTION	LOCAL	DEFAULT	27	
22:	00001fd8	0	SECTION	LOCAL	DEFAULT	28	
23:	00002000	0	SECTION	LOCAL	DEFAULT	29	
24:	00002008	0	SECTION	LOCAL	DEFAULT	31	
25:	00002008	0	SECTION	LOCAL	DEFAULT	32	
26:	00000000	0	SECTION	LOCAL	DEFAULT	33	
27:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
28:	00002008	0	OBJECT	LOCAL	DEFAULT	31	__TMC_LIST__
29:	00000510	0	FUNC	LOCAL	DEFAULT	15	deregister_tm_clones
30:	00000550	0	FUNC	LOCAL	DEFAULT	15	register_tm_clones
31:	000005a0	0	FUNC	LOCAL	DEFAULT	15	__do_global_dtors_aux
32:	00002009	1	OBJECT	LOCAL	DEFAULT	32	completed.7282
33:	00001ecc	0	OBJECT	LOCAL	DEFAULT	25	__do_global_dtors_aux_fin
34:	000005f0	0	FUNC	LOCAL	DEFAULT	15	frame_dummy
35:	00001ec8	0	OBJECT	LOCAL	DEFAULT	23	__frame_dummy_init_array_
36:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
37:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
38:	000007c0	0	OBJECT	LOCAL	DEFAULT	21	__FRAME_END__
39:	00000000	0	FILE	LOCAL	DEFAULT	ABS	
40:	00001ecc	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_end

.symtab, run_dynamic, -fno-pic (3/4)

41: 00001ed0	0	OBJECT	LOCAL	DEFAULT	27	_DYNAMIC
42: 00001ec8	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_start
43: 000006b0	0	NOTYPE	LOCAL	DEFAULT	20	__GNU_EH_FRAME_HDR
44: 00001fd8	0	OBJECT	LOCAL	DEFAULT	28	__GLOBAL_OFFSET_TABLE_
45: 00000690	2	FUNC	GLOBAL	DEFAULT	15	__libc_csu_fini
46: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__ITM_deregisterTMCloneTab
47: 00000500	4	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.bx
48: 00002000	0	NOTYPE	WEAK	DEFAULT	29	data_start
49: 00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
50: 00000694	0	FUNC	GLOBAL	DEFAULT	17	_fini
51: 000005f9	0	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.dx
52: 00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@@GLIBC_2.1
53: 00002000	0	NOTYPE	GLOBAL	DEFAULT	29	__data_start
54: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
55: 00002004	0	OBJECT	GLOBAL	HIDDEN	29	__dso_handle
56: 000006ac	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
57: 00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@@GLIBC_
58: 00000630	93	FUNC	GLOBAL	DEFAULT	15	__libc_csu_init
59: 0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
60: 000004c0	0	FUNC	GLOBAL	DEFAULT	15	_start

.symtab, run_dynamic, -fno-pic (4/4)

61:	000006a8	4	OBJECT	GLOBAL	DEFAULT	19	_fp_hw
62:	00002008	0	NOTYPE	GLOBAL	DEFAULT	32	__bss_start
63:	000005fd	47	FUNC	GLOBAL	DEFAULT	15	main
64:	00002008	1	OBJECT	GLOBAL	DEFAULT	32	cPub
65:	00002008	0	OBJECT	GLOBAL	HIDDEN	31	__TMC_END__
66:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
67:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	fPub
68:	00000450	0	FUNC	GLOBAL	DEFAULT	11	_init

.symtab, rel.o, default (1/2)

Symbol table '.symtab' contains 22 entries:

Num:	Valor	Tam	Tipo	Unión	Vis	Nombre	Ind
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	FILE	LOCAL	DEFAULT	ABS	rel.c
2:	00000000	0	SECTION	LOCAL	DEFAULT	3	
3:	00000000	0	SECTION	LOCAL	DEFAULT	5	
4:	00000000	0	SECTION	LOCAL	DEFAULT	6	
5:	00000012	18	FUNC	LOCAL	DEFAULT	3	fLocal
6:	00000000	1	OBJECT	LOCAL	DEFAULT	6	cLocal
7:	00000000	0	SECTION	LOCAL	DEFAULT	7	
8:	00000000	0	SECTION	LOCAL	DEFAULT	9	
9:	00000000	0	SECTION	LOCAL	DEFAULT	10	
10:	00000000	0	SECTION	LOCAL	DEFAULT	12	
11:	00000000	0	SECTION	LOCAL	DEFAULT	13	
12:	00000000	0	SECTION	LOCAL	DEFAULT	11	
13:	00000000	0	SECTION	LOCAL	DEFAULT	1	
14:	00000000	0	SECTION	LOCAL	DEFAULT	2	

.symtab, rel.o, default (2/2)

```
15: 00000000    18 FUNC      GLOBAL DEFAULT    3 fPub
16: 00000000     0 FUNC      GLOBAL HIDDEN     9 __x86.get_pc_thunk.ax
17: 00000000     0 NOTYPE    GLOBAL DEFAULT   UND _GLOBAL_OFFSET_TABLE_
18: 00000001     1 OBJECT    GLOBAL DEFAULT   COM cPub
19: 00000000    16 OBJECT    GLOBAL DEFAULT    7 a
20: 00000024    96 FUNC      GLOBAL DEFAULT    3 foo
21: 00000000     0 FUNC      GLOBAL HIDDEN    10 __x86.get_pc_thunk.bx
```

.dynsym, librel.so, default (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
2:	00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@GLIBC_2.1.3 (2)
3:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
4:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@GLIBC_2.0 (3)
5:	00000000	0	OBJECT	GLOBAL	DEFAULT	UND	cPub
6:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
7:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	fPub
8:	00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
9:	0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
10:	0000069c	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
11:	00002008	0	NOTYPE	GLOBAL	DEFAULT	32	__bss_start
12:	0000043c	0	FUNC	GLOBAL	DEFAULT	11	_init
13:	00000684	0	FUNC	GLOBAL	DEFAULT	17	_fini

.symtab, librel.so, default (1/4)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000154	0	SECTION	LOCAL	DEFAULT	1	
2:	00000168	0	SECTION	LOCAL	DEFAULT	2	
3:	00000188	0	SECTION	LOCAL	DEFAULT	3	
4:	000001ac	0	SECTION	LOCAL	DEFAULT	4	
5:	000001e8	0	SECTION	LOCAL	DEFAULT	5	
6:	000002c8	0	SECTION	LOCAL	DEFAULT	6	
7:	00000396	0	SECTION	LOCAL	DEFAULT	7	
8:	000003b4	0	SECTION	LOCAL	DEFAULT	8	
9:	000003e4	0	SECTION	LOCAL	DEFAULT	9	
10:	0000042c	0	SECTION	LOCAL	DEFAULT	10	
11:	0000043c	0	SECTION	LOCAL	DEFAULT	11	
12:	00000460	0	SECTION	LOCAL	DEFAULT	13	
13:	00000490	0	SECTION	LOCAL	DEFAULT	14	
14:	000004a0	0	SECTION	LOCAL	DEFAULT	15	
15:	00000684	0	SECTION	LOCAL	DEFAULT	17	
16:	00000698	0	SECTION	LOCAL	DEFAULT	19	
17:	000006a0	0	SECTION	LOCAL	DEFAULT	20	
18:	000006d4	0	SECTION	LOCAL	DEFAULT	21	
19:	00001ecc	0	SECTION	LOCAL	DEFAULT	23	
20:	00001ed0	0	SECTION	LOCAL	DEFAULT	25	

.symtab, librel.so, default (2/4)

21:	00001ed4	0	SECTION	LOCAL	DEFAULT	27	
22:	00001fd4	0	SECTION	LOCAL	DEFAULT	28	
23:	00002000	0	SECTION	LOCAL	DEFAULT	29	
24:	00002008	0	SECTION	LOCAL	DEFAULT	31	
25:	00002008	0	SECTION	LOCAL	DEFAULT	32	
26:	00000000	0	SECTION	LOCAL	DEFAULT	33	
27:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
28:	00002008	0	OBJECT	LOCAL	DEFAULT	31	__TMC_LIST__
29:	000004f0	0	FUNC	LOCAL	DEFAULT	15	deregister_tm_clones
30:	00000530	0	FUNC	LOCAL	DEFAULT	15	register_tm_clones
31:	00000580	0	FUNC	LOCAL	DEFAULT	15	__do_global_dtors_aux
32:	00002008	1	OBJECT	LOCAL	DEFAULT	32	completed.7282
33:	00001ed0	0	OBJECT	LOCAL	DEFAULT	25	__do_global_dtors_aux_fin
34:	000005d0	0	FUNC	LOCAL	DEFAULT	15	frame_dummy
35:	00001ecc	0	OBJECT	LOCAL	DEFAULT	23	__frame_dummy_init_array_
36:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
37:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
38:	000007b8	0	OBJECT	LOCAL	DEFAULT	21	__FRAME_END__
39:	00000000	0	FILE	LOCAL	DEFAULT	ABS	
40:	00001ed0	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_end

.symtab, librel.so, default (3/4)

41: 00001ed4	0	OBJECT	LOCAL	DEFAULT	27	_DYNAMIC
42: 00001ecc	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_start
43: 000006a0	0	NOTYPE	LOCAL	DEFAULT	20	__GNU_EH_FRAME_HDR
44: 00001fd4	0	OBJECT	LOCAL	DEFAULT	28	__GLOBAL_OFFSET_TABLE_
45: 00000680	2	FUNC	GLOBAL	DEFAULT	15	__libc_csu_fini
46: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
47: 000004e0	4	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.bx
48: 00002000	0	NOTYPE	WEAK	DEFAULT	29	data_start
49: 00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
50: 00000684	0	FUNC	GLOBAL	DEFAULT	17	_fini
51: 000005d9	0	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.dx
52: 00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@@GLIBC_2.1
53: 00002000	0	NOTYPE	GLOBAL	DEFAULT	29	__data_start
54: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
55: 00002004	0	OBJECT	GLOBAL	HIDDEN	29	__dso_handle
56: 0000069c	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
57: 00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@@GLIBC_
58: 00000620	93	FUNC	GLOBAL	DEFAULT	15	__libc_csu_init
59: 0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
60: 000004a0	0	FUNC	GLOBAL	DEFAULT	15	_start

.symtab, librel.so, default (4/4)

61:	00000698	4	OBJECT	GLOBAL	DEFAULT	19	_fp_hw
62:	00002008	0	NOTYPE	GLOBAL	DEFAULT	32	__bss_start
63:	000005dd	61	FUNC	GLOBAL	DEFAULT	15	main
64:	00000000	0	OBJECT	GLOBAL	DEFAULT	UND	cPub
65:	00002008	0	OBJECT	GLOBAL	HIDDEN	31	__TMC_END__
66:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
67:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	fPub
68:	0000043c	0	FUNC	GLOBAL	DEFAULT	11	_init

.symtab, main.o, default (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
2:	00000000	0	SECTION	LOCAL	DEFAULT	2	
3:	00000000	0	SECTION	LOCAL	DEFAULT	4	
4:	00000000	0	SECTION	LOCAL	DEFAULT	5	
5:	00000000	0	SECTION	LOCAL	DEFAULT	6	
6:	00000000	0	SECTION	LOCAL	DEFAULT	8	
7:	00000000	0	SECTION	LOCAL	DEFAULT	9	
8:	00000000	0	SECTION	LOCAL	DEFAULT	7	
9:	00000000	0	SECTION	LOCAL	DEFAULT	1	
10:	00000000	61	FUNC	GLOBAL	DEFAULT	2	main
11:	00000000	0	FUNC	GLOBAL	HIDDEN	6	__x86.get_pc_thunk.bx
12:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	_GLOBAL_OFFSET_TABLE_
13:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	fPub
14:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	cPub

.dynsym, run_dynamic, default (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
2:	00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@GLIBC_2.1.3 (2)
3:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
4:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@GLIBC_2.0 (3)
5:	00000000	0	OBJECT	GLOBAL	DEFAULT	UND	cPub
6:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
7:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	fPub
8:	00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
9:	0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
10:	0000069c	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
11:	00002008	0	NOTYPE	GLOBAL	DEFAULT	32	__bss_start
12:	0000043c	0	FUNC	GLOBAL	DEFAULT	11	_init
13:	00000684	0	FUNC	GLOBAL	DEFAULT	17	_fini

.symtab, run_dynamic, default (1/4)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000154	0	SECTION	LOCAL	DEFAULT	1	
2:	00000168	0	SECTION	LOCAL	DEFAULT	2	
3:	00000188	0	SECTION	LOCAL	DEFAULT	3	
4:	000001ac	0	SECTION	LOCAL	DEFAULT	4	
5:	000001e8	0	SECTION	LOCAL	DEFAULT	5	
6:	000002c8	0	SECTION	LOCAL	DEFAULT	6	
7:	00000396	0	SECTION	LOCAL	DEFAULT	7	
8:	000003b4	0	SECTION	LOCAL	DEFAULT	8	
9:	000003e4	0	SECTION	LOCAL	DEFAULT	9	
10:	0000042c	0	SECTION	LOCAL	DEFAULT	10	
11:	0000043c	0	SECTION	LOCAL	DEFAULT	11	
12:	00000460	0	SECTION	LOCAL	DEFAULT	13	
13:	00000490	0	SECTION	LOCAL	DEFAULT	14	
14:	000004a0	0	SECTION	LOCAL	DEFAULT	15	
15:	00000684	0	SECTION	LOCAL	DEFAULT	17	
16:	00000698	0	SECTION	LOCAL	DEFAULT	19	
17:	000006a0	0	SECTION	LOCAL	DEFAULT	20	
18:	000006d4	0	SECTION	LOCAL	DEFAULT	21	
19:	00001ecc	0	SECTION	LOCAL	DEFAULT	23	
20:	00001ed0	0	SECTION	LOCAL	DEFAULT	25	

.symtab, run_dynamic, default (2/4)

21:	00001ed4	0	SECTION	LOCAL	DEFAULT	27	
22:	00001fd4	0	SECTION	LOCAL	DEFAULT	28	
23:	00002000	0	SECTION	LOCAL	DEFAULT	29	
24:	00002008	0	SECTION	LOCAL	DEFAULT	31	
25:	00002008	0	SECTION	LOCAL	DEFAULT	32	
26:	00000000	0	SECTION	LOCAL	DEFAULT	33	
27:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
28:	00002008	0	OBJECT	LOCAL	DEFAULT	31	__TMC_LIST__
29:	000004f0	0	FUNC	LOCAL	DEFAULT	15	deregister_tm_clones
30:	00000530	0	FUNC	LOCAL	DEFAULT	15	register_tm_clones
31:	00000580	0	FUNC	LOCAL	DEFAULT	15	__do_global_dtors_aux
32:	00002008	1	OBJECT	LOCAL	DEFAULT	32	completed.7282
33:	00001ed0	0	OBJECT	LOCAL	DEFAULT	25	__do_global_dtors_aux_fin
34:	000005d0	0	FUNC	LOCAL	DEFAULT	15	frame_dummy
35:	00001ecc	0	OBJECT	LOCAL	DEFAULT	23	__frame_dummy_init_array_
36:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
37:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
38:	000007b8	0	OBJECT	LOCAL	DEFAULT	21	__FRAME_END__
39:	00000000	0	FILE	LOCAL	DEFAULT	ABS	
40:	00001ed0	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_end

.symtab, run_dynamic, default (3/4)

41: 00001ed4	0	OBJECT	LOCAL	DEFAULT	27	_DYNAMIC
42: 00001ecc	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_start
43: 000006a0	0	NOTYPE	LOCAL	DEFAULT	20	__GNU_EH_FRAME_HDR
44: 00001fd4	0	OBJECT	LOCAL	DEFAULT	28	_GLOBAL_OFFSET_TABLE_
45: 00000680	2	FUNC	GLOBAL	DEFAULT	15	__libc_csu_fini
46: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
47: 000004e0	4	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.bx
48: 00002000	0	NOTYPE	WEAK	DEFAULT	29	data_start
49: 00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
50: 00000684	0	FUNC	GLOBAL	DEFAULT	17	_fini
51: 000005d9	0	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.dx
52: 00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@@GLIBC_2.1
53: 00002000	0	NOTYPE	GLOBAL	DEFAULT	29	__data_start
54: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
55: 00002004	0	OBJECT	GLOBAL	HIDDEN	29	__dso_handle
56: 0000069c	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
57: 00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@@GLIBC_
58: 00000620	93	FUNC	GLOBAL	DEFAULT	15	__libc_csu_init
59: 0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
60: 000004a0	0	FUNC	GLOBAL	DEFAULT	15	_start

.symtab, run_dynamic, default (4/4)

```
61: 00000698      4 OBJECT GLOBAL DEFAULT 19 _fp_hw
62: 00002008      0 NOTYPE GLOBAL DEFAULT 32 __bss_start
63: 000005dd     61 FUNC GLOBAL DEFAULT 15 main
64: 00000000      0 OBJECT GLOBAL DEFAULT UND cPub
65: 00002008      0 OBJECT GLOBAL HIDDEN 31 __TMC_END__
66: 00000000      0 NOTYPE WEAK DEFAULT UND _ITM_registerTMCloneTable
67: 00000000      0 FUNC GLOBAL DEFAULT UND fPub
68: 0000043c      0 FUNC GLOBAL DEFAULT 11 _init
```


.symtab. rel.o, -fPIC (1/1)

Symbol table '.symtab' contains 22 entries:

Num:	Valor	Tam	Tipo	Unión	Vis	Nombre	Ind
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	FILE	LOCAL	DEFAULT	ABS	rel.c
2:	00000000	0	SECTION	LOCAL	DEFAULT	3	
3:	00000000	0	SECTION	LOCAL	DEFAULT	5	
4:	00000000	0	SECTION	LOCAL	DEFAULT	6	
5:	00000012	18	FUNC	LOCAL	DEFAULT	3	fLocal
6:	00000000	1	OBJECT	LOCAL	DEFAULT	6	cLocal
7:	00000000	0	SECTION	LOCAL	DEFAULT	7	
8:	00000000	0	SECTION	LOCAL	DEFAULT	9	
9:	00000000	0	SECTION	LOCAL	DEFAULT	10	
10:	00000000	0	SECTION	LOCAL	DEFAULT	12	
11:	00000000	0	SECTION	LOCAL	DEFAULT	13	
12:	00000000	0	SECTION	LOCAL	DEFAULT	11	
13:	00000000	0	SECTION	LOCAL	DEFAULT	1	
14:	00000000	0	SECTION	LOCAL	DEFAULT	2	
15:	00000000	18	FUNC	GLOBAL	DEFAULT	3	fPub

.symtab, rel.o, -fPIC (2/2)

```
16: 00000000      0 FUNC      GLOBAL HIDDEN      9 __x86.get_pc_thunk.ax
17: 00000000      0 NOTYPE    GLOBAL DEFAULT    UND _GLOBAL_OFFSET_TABLE_
18: 00000001      1 OBJECT    GLOBAL DEFAULT    COM cPub
19: 00000000     16 OBJECT    GLOBAL DEFAULT      7 a
20: 00000024    102 FUNC      GLOBAL DEFAULT      3 foo
21: 00000000      0 FUNC      GLOBAL HIDDEN     10 __x86.get_pc_thunk.bx
```

.dynsym, librel.so, -fPIC (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__cxa_finalize
2:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
3:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
4:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
5:	000004d1	102	FUNC	GLOBAL	DEFAULT	10	foo
6:	00002024	0	NOTYPE	GLOBAL	DEFAULT	19	_edata
7:	00002028	0	NOTYPE	GLOBAL	DEFAULT	20	_end
8:	00000350	0	FUNC	GLOBAL	DEFAULT	7	_init
9:	000004ad	18	FUNC	GLOBAL	DEFAULT	10	fPub
10:	00002026	1	OBJECT	GLOBAL	DEFAULT	20	cPub
11:	00002024	0	NOTYPE	GLOBAL	DEFAULT	20	__bss_start
12:	00002014	16	OBJECT	GLOBAL	DEFAULT	19	a
13:	0000053c	0	FUNC	GLOBAL	DEFAULT	11	_fini

.symtab, librel.so, -fPIC (1/3)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000114	0	SECTION	LOCAL	DEFAULT	1	
2:	00000138	0	SECTION	LOCAL	DEFAULT	2	
3:	00000180	0	SECTION	LOCAL	DEFAULT	3	
4:	00000260	0	SECTION	LOCAL	DEFAULT	4	
5:	000002e8	0	SECTION	LOCAL	DEFAULT	5	
6:	00000348	0	SECTION	LOCAL	DEFAULT	6	
7:	00000350	0	SECTION	LOCAL	DEFAULT	7	
8:	00000380	0	SECTION	LOCAL	DEFAULT	8	
9:	000003a0	0	SECTION	LOCAL	DEFAULT	9	
10:	000003b0	0	SECTION	LOCAL	DEFAULT	10	
11:	0000053c	0	SECTION	LOCAL	DEFAULT	11	
12:	00000550	0	SECTION	LOCAL	DEFAULT	12	
13:	0000058c	0	SECTION	LOCAL	DEFAULT	13	
14:	00001f24	0	SECTION	LOCAL	DEFAULT	14	
15:	00001f28	0	SECTION	LOCAL	DEFAULT	15	
16:	00001f2c	0	SECTION	LOCAL	DEFAULT	16	
17:	00001fec	0	SECTION	LOCAL	DEFAULT	17	
18:	00002000	0	SECTION	LOCAL	DEFAULT	18	
19:	00002010	0	SECTION	LOCAL	DEFAULT	19	
20:	00002024	0	SECTION	LOCAL	DEFAULT	20	

.symtab, librel.so, -fPIC (2/3)

21:	00000000	0	SECTION	LOCAL	DEFAULT	21	
22:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
23:	000003c0	0	FUNC	LOCAL	DEFAULT	10	deregister_tm_clones
24:	00000400	0	FUNC	LOCAL	DEFAULT	10	register_tm_clones
25:	00000450	0	FUNC	LOCAL	DEFAULT	10	__do_global_dtors_aux
26:	00002024	1	OBJECT	LOCAL	DEFAULT	20	completed.7282
27:	00001f28	0	OBJECT	LOCAL	DEFAULT	15	__do_global_dtors_aux_fin
28:	000004a0	0	FUNC	LOCAL	DEFAULT	10	frame_dummy
29:	00001f24	0	OBJECT	LOCAL	DEFAULT	14	__frame_dummy_init_array_
30:	00000000	0	FILE	LOCAL	DEFAULT	ABS	rel.c
31:	000004bf	18	FUNC	LOCAL	DEFAULT	10	fLocal
32:	00002025	1	OBJECT	LOCAL	DEFAULT	20	cLocal
33:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
34:	00000658	0	OBJECT	LOCAL	DEFAULT	13	__FRAME_END__
35:	00000000	0	FILE	LOCAL	DEFAULT	ABS	
36:	00001f2c	0	OBJECT	LOCAL	DEFAULT	16	_DYNAMIC
37:	00002024	0	OBJECT	LOCAL	DEFAULT	19	__TMC_END__
38:	00000537	0	FUNC	LOCAL	DEFAULT	10	__x86.get_pc_thunk.ax
39:	00002010	0	OBJECT	LOCAL	DEFAULT	19	__dso_handle
40:	000004a9	0	FUNC	LOCAL	DEFAULT	10	__x86.get_pc_thunk.dx

.symtab, librel.so, -fPIC (3/3)

41:	000003b0	4	FUNC	LOCAL	DEFAULT	10	__x86.get_pc_thunk.bx
42:	00000550	0	NOTYPE	LOCAL	DEFAULT	12	__GNU_EH_FRAME_HDR
43:	00002000	0	OBJECT	LOCAL	DEFAULT	18	_GLOBAL_OFFSET_TABLE_
44:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__cxa_finalize
45:	00000350	0	FUNC	GLOBAL	DEFAULT	7	_init
46:	000004ad	18	FUNC	GLOBAL	DEFAULT	10	fPub
47:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
48:	00002026	1	OBJECT	GLOBAL	DEFAULT	20	cPub
49:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
50:	00002024	0	NOTYPE	GLOBAL	DEFAULT	20	__bss_start
51:	0000053c	0	FUNC	GLOBAL	DEFAULT	11	_fini
52:	000004d1	102	FUNC	GLOBAL	DEFAULT	10	foo
53:	00002024	0	NOTYPE	GLOBAL	DEFAULT	19	_edata
54:	00002028	0	NOTYPE	GLOBAL	DEFAULT	20	_end
55:	00002014	16	OBJECT	GLOBAL	DEFAULT	19	a
56:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__

.symtab, main.o, -fPIC (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
2:	00000000	0	SECTION	LOCAL	DEFAULT	2	
3:	00000000	0	SECTION	LOCAL	DEFAULT	4	
4:	00000000	0	SECTION	LOCAL	DEFAULT	5	
5:	00000000	0	SECTION	LOCAL	DEFAULT	6	
6:	00000000	0	SECTION	LOCAL	DEFAULT	8	
7:	00000000	0	SECTION	LOCAL	DEFAULT	9	
8:	00000000	0	SECTION	LOCAL	DEFAULT	7	
9:	00000000	0	SECTION	LOCAL	DEFAULT	1	
10:	00000000	61	FUNC	GLOBAL	DEFAULT	2	main
11:	00000000	0	FUNC	GLOBAL	HIDDEN	6	__x86.get_pc_thunk.bx
12:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	_GLOBAL_OFFSET_TABLE_
13:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	fPub
14:	00000000	0	NOTYPE	GLOBAL	DEFAULT	UND	cPub

.dynsym, run_dynamic, -fPIC (1/1)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_deregisterTMCloneTab
2:	00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@GLIBC_2.1.3 (2)
3:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
4:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@GLIBC_2.0 (3)
5:	00000000	0	OBJECT	GLOBAL	DEFAULT	UND	cPub
6:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
7:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	fPub
8:	00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
9:	0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
10:	0000069c	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
11:	00002008	0	NOTYPE	GLOBAL	DEFAULT	32	__bss_start
12:	0000043c	0	FUNC	GLOBAL	DEFAULT	11	_init
13:	00000684	0	FUNC	GLOBAL	DEFAULT	17	_fini

.symtab, run_dynamic, -fPIC (1/4)

Num:	Value	Size	Type	Bind	Vis	Ndx	Name
0:	00000000	0	NOTYPE	LOCAL	DEFAULT	UND	
1:	00000154	0	SECTION	LOCAL	DEFAULT	1	
2:	00000168	0	SECTION	LOCAL	DEFAULT	2	
3:	00000188	0	SECTION	LOCAL	DEFAULT	3	
4:	000001ac	0	SECTION	LOCAL	DEFAULT	4	
5:	000001e8	0	SECTION	LOCAL	DEFAULT	5	
6:	000002c8	0	SECTION	LOCAL	DEFAULT	6	
7:	00000396	0	SECTION	LOCAL	DEFAULT	7	
8:	000003b4	0	SECTION	LOCAL	DEFAULT	8	
9:	000003e4	0	SECTION	LOCAL	DEFAULT	9	
10:	0000042c	0	SECTION	LOCAL	DEFAULT	10	
11:	0000043c	0	SECTION	LOCAL	DEFAULT	11	
12:	00000460	0	SECTION	LOCAL	DEFAULT	13	
13:	00000490	0	SECTION	LOCAL	DEFAULT	14	
14:	000004a0	0	SECTION	LOCAL	DEFAULT	15	
15:	00000684	0	SECTION	LOCAL	DEFAULT	17	
16:	00000698	0	SECTION	LOCAL	DEFAULT	19	
17:	000006a0	0	SECTION	LOCAL	DEFAULT	20	
18:	000006d4	0	SECTION	LOCAL	DEFAULT	21	
19:	00001ecc	0	SECTION	LOCAL	DEFAULT	23	
20:	00001ed0	0	SECTION	LOCAL	DEFAULT	25	

.symtab, run_dynamic, -fPIC (1/4)

21:	00001ed4	0	SECTION	LOCAL	DEFAULT	27	
22:	00001fd4	0	SECTION	LOCAL	DEFAULT	28	
23:	00002000	0	SECTION	LOCAL	DEFAULT	29	
24:	00002008	0	SECTION	LOCAL	DEFAULT	31	
25:	00002008	0	SECTION	LOCAL	DEFAULT	32	
26:	00000000	0	SECTION	LOCAL	DEFAULT	33	
27:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
28:	00002008	0	OBJECT	LOCAL	DEFAULT	31	__TMC_LIST__
29:	000004f0	0	FUNC	LOCAL	DEFAULT	15	deregister_tm_clones
30:	00000530	0	FUNC	LOCAL	DEFAULT	15	register_tm_clones
31:	00000580	0	FUNC	LOCAL	DEFAULT	15	__do_global_dtors_aux
32:	00002008	1	OBJECT	LOCAL	DEFAULT	32	completed.7282
33:	00001ed0	0	OBJECT	LOCAL	DEFAULT	25	__do_global_dtors_aux_fin
34:	000005d0	0	FUNC	LOCAL	DEFAULT	15	frame_dummy
35:	00001ecc	0	OBJECT	LOCAL	DEFAULT	23	__frame_dummy_init_array_
36:	00000000	0	FILE	LOCAL	DEFAULT	ABS	main.c
37:	00000000	0	FILE	LOCAL	DEFAULT	ABS	crtstuff.c
38:	000007b8	0	OBJECT	LOCAL	DEFAULT	21	__FRAME_END__
39:	00000000	0	FILE	LOCAL	DEFAULT	ABS	
40:	00001ed0	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_end

.symtab, run_dynamic, -fPIC (1/4)

41: 00001ed4	0	OBJECT	LOCAL	DEFAULT	27	_DYNAMIC
42: 00001ecc	0	NOTYPE	LOCAL	DEFAULT	23	__init_array_start
43: 000006a0	0	NOTYPE	LOCAL	DEFAULT	20	__GNU_EH_FRAME_HDR
44: 00001fd4	0	OBJECT	LOCAL	DEFAULT	28	__GLOBAL_OFFSET_TABLE_
45: 00000680	2	FUNC	GLOBAL	DEFAULT	15	__libc_csu_fini
46: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__ITM_deregisterTMCloneTab
47: 000004e0	4	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.bx
48: 00002000	0	NOTYPE	WEAK	DEFAULT	29	data_start
49: 00002008	0	NOTYPE	GLOBAL	DEFAULT	31	_edata
50: 00000684	0	FUNC	GLOBAL	DEFAULT	17	_fini
51: 000005d9	0	FUNC	GLOBAL	HIDDEN	15	__x86.get_pc_thunk.dx
52: 00000000	0	FUNC	WEAK	DEFAULT	UND	__cxa_finalize@@GLIBC_2.1
53: 00002000	0	NOTYPE	GLOBAL	DEFAULT	29	__data_start
54: 00000000	0	NOTYPE	WEAK	DEFAULT	UND	__gmon_start__
55: 00002004	0	OBJECT	GLOBAL	HIDDEN	29	__dso_handle
56: 0000069c	4	OBJECT	GLOBAL	DEFAULT	19	_IO_stdin_used
57: 00000000	0	FUNC	GLOBAL	DEFAULT	UND	__libc_start_main@@GLIBC_
58: 00000620	93	FUNC	GLOBAL	DEFAULT	15	__libc_csu_init
59: 0000200c	0	NOTYPE	GLOBAL	DEFAULT	32	_end
60: 000004a0	0	FUNC	GLOBAL	DEFAULT	15	_start

.symtab, run_dynamic, -fPIC (1/4)

61:	00000698	4	OBJECT	GLOBAL	DEFAULT	19	_fp_hw
62:	00002008	0	NOTYPE	GLOBAL	DEFAULT	32	__bss_start
63:	000005dd	61	FUNC	GLOBAL	DEFAULT	15	main
64:	00000000	0	OBJECT	GLOBAL	DEFAULT	UND	cPub
65:	00002008	0	OBJECT	GLOBAL	HIDDEN	31	__TMC_END__
66:	00000000	0	NOTYPE	WEAK	DEFAULT	UND	_ITM_registerTMCloneTable
67:	00000000	0	FUNC	GLOBAL	DEFAULT	UND	fPub
68:	0000043c	0	FUNC	GLOBAL	DEFAULT	11	_init