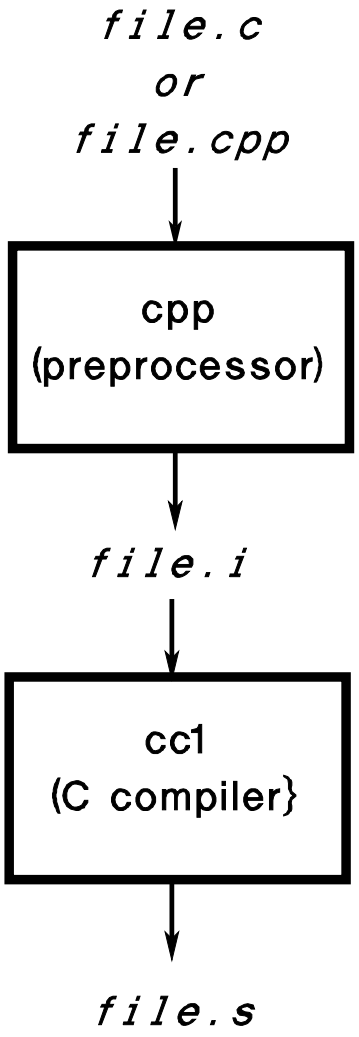
Typical C/C++ Language Processing



To do all the steps, type:
gcc file.c (for C, or)
g++ file.c (for C++)

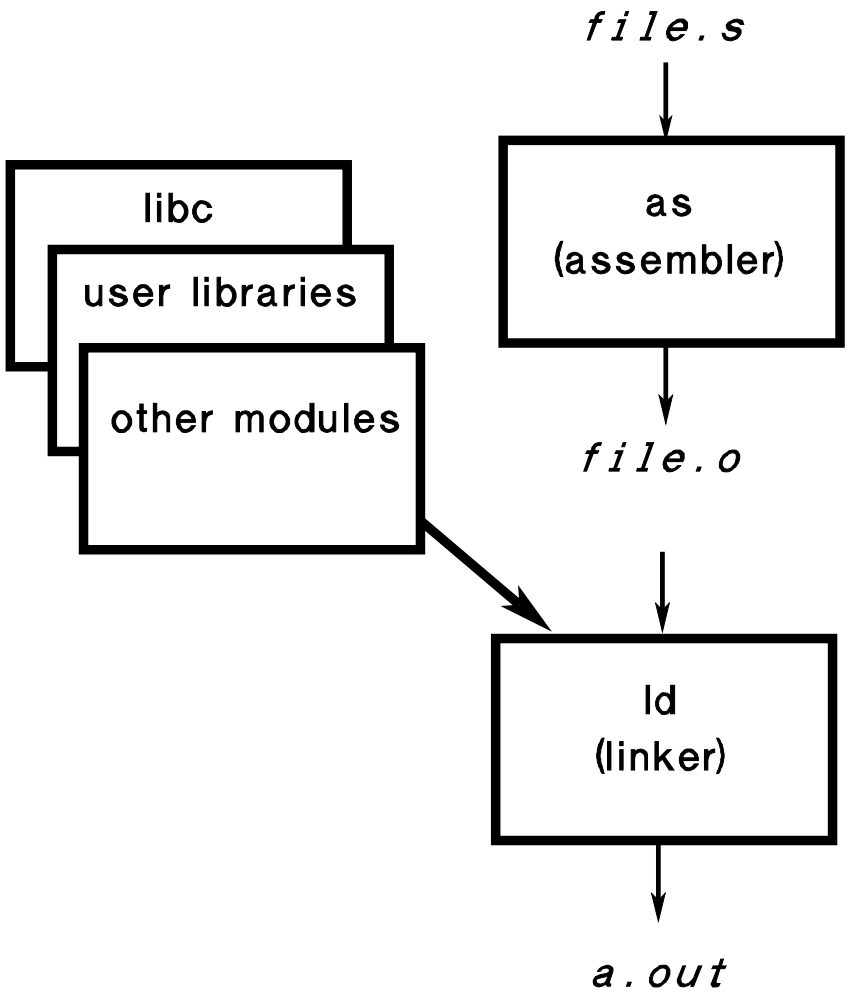
Handles #include, #define, #if, etc.

To Stop here, type:
g++ -E file.cpp

This is the actual compiler

To stop here, type:
g++ -S file.cpp

C/C++ Language Processing (cont'd)



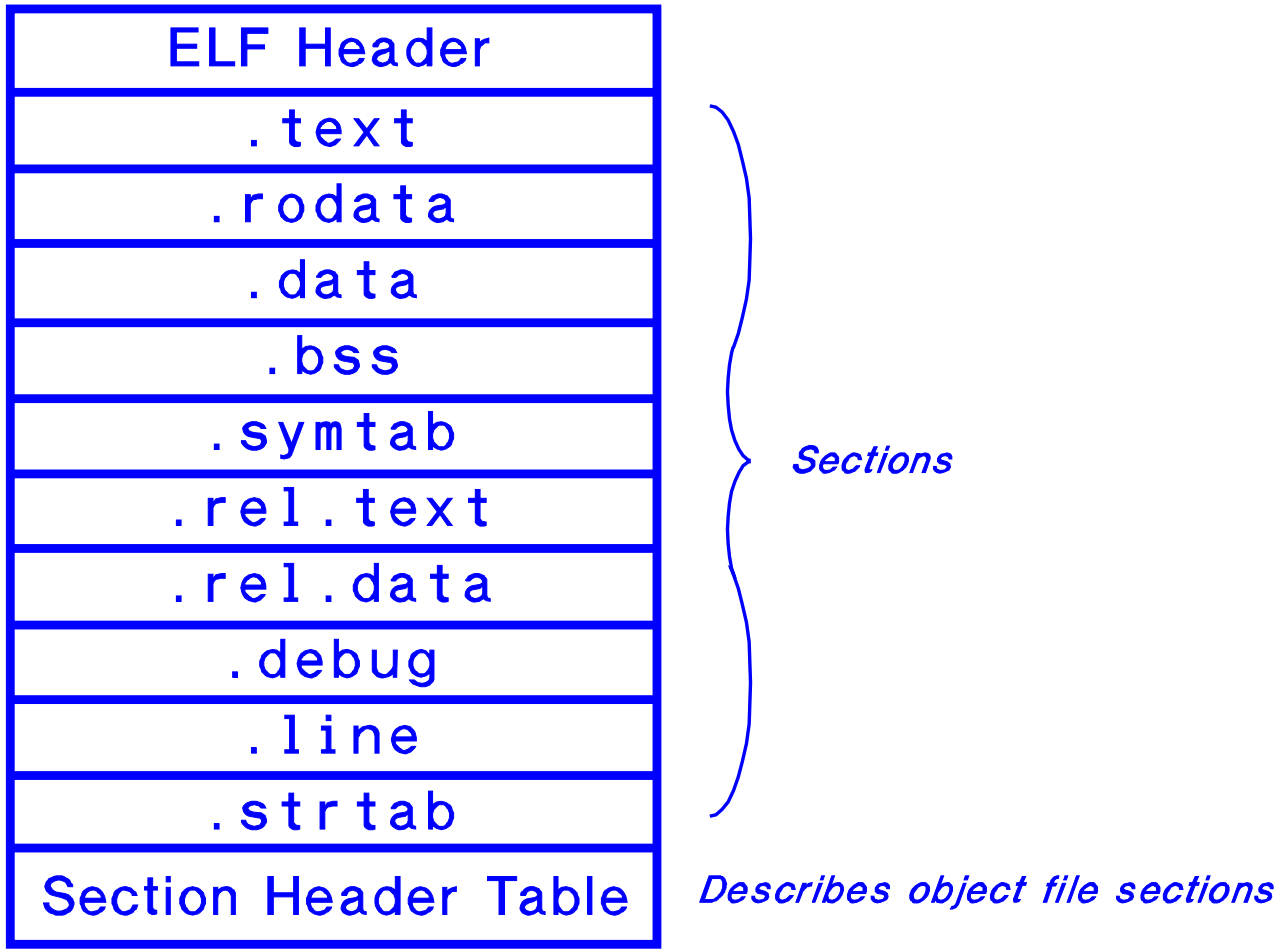
Translates from assembly language into machine (binary) – unique to each processor type

Object file – to stop here:
g++ -c file.cpp
It is common to stop hee

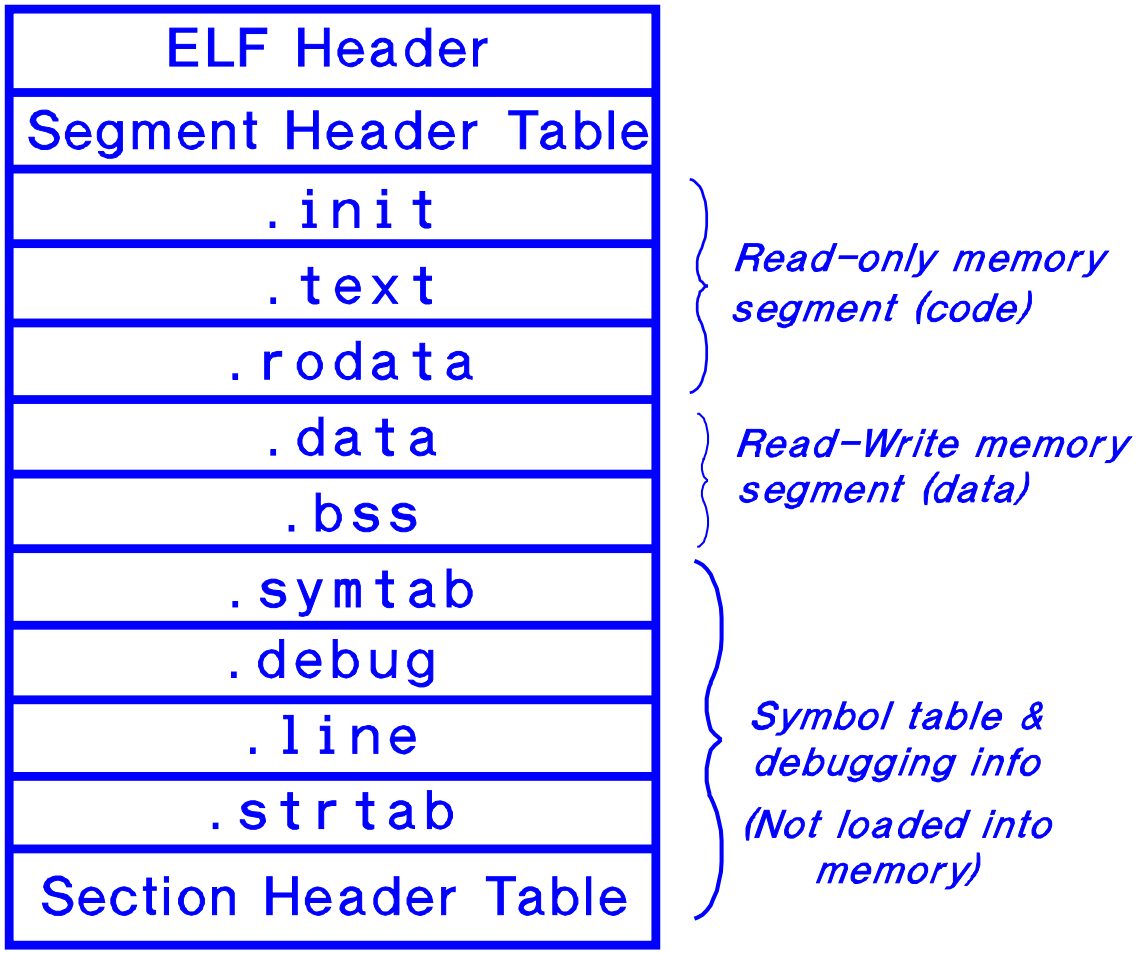
"Knits" together (links) all of the independent program modules

This is probably called *file.exe* on Windows systems

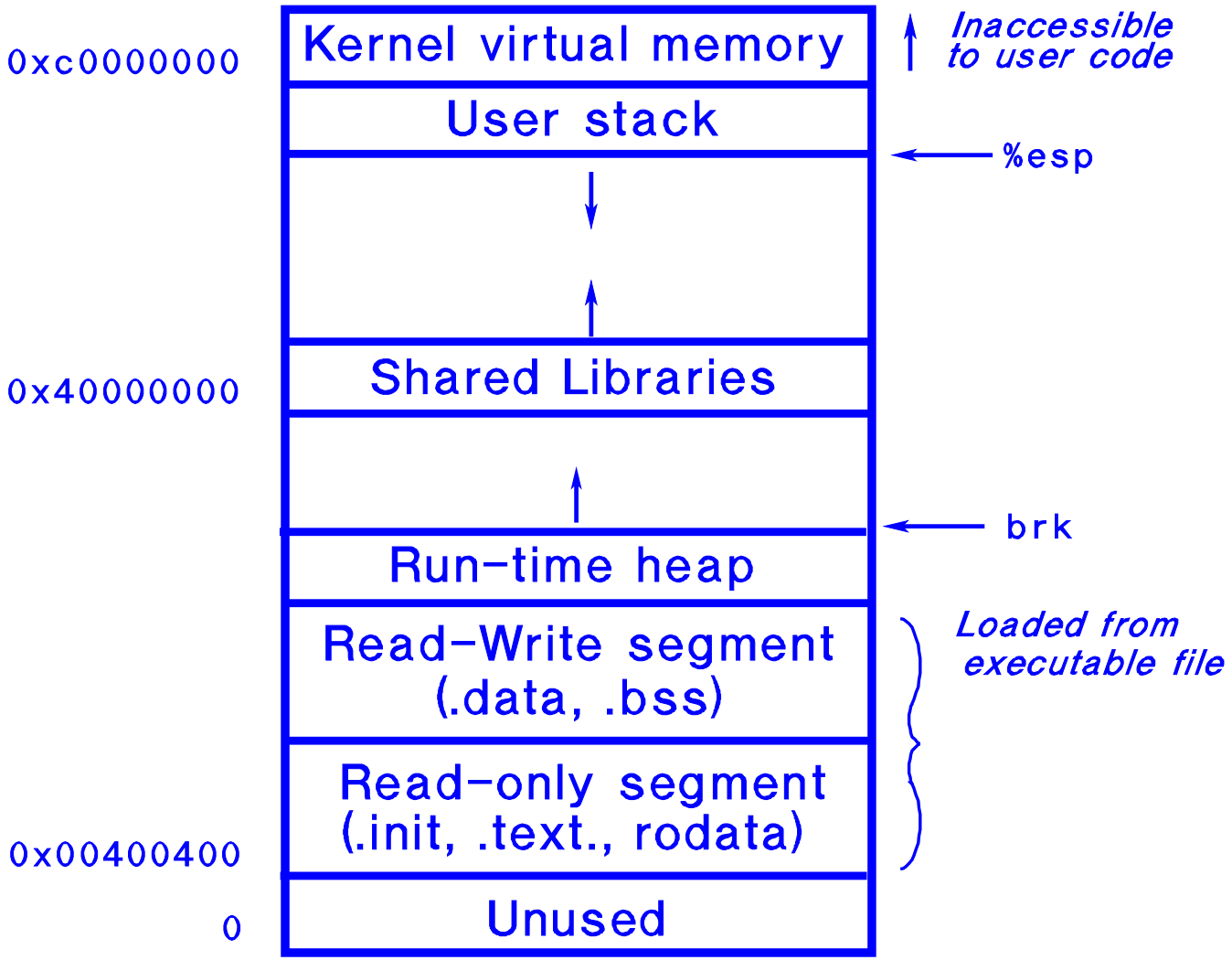
ELF – Relocatable Object File



ELF - Executable File



LINUX Runtime Memory Image



CCOM0050

LINUX Startup Pseudo-Code

```
/* crt1.o  */

_start:                              /* entry point in .text  */
        call __libc_init_first       /* startup code in .text */
        call _init                   /* startup code in .init */
        call atexit                  /* startup code in .text */
        /* set up argument list for main here */
        call main                    /* application main code */
        call _exit                   /* returns control to shell */
```