How The Compiler Works

Compile Process

GCC

LLVM (clang)

Pre-Compiler

Source Code

Compiler

Source Code w/ Expanded Macros

Assembler

Assembly

Linker

Relocatable Obj Programs (multiple files)

Executable

Front-End Compiler

Back-End Compiler

Intermediate Form

Pre-Compiler

Compiler

Assembler

Linker

Source Code

Source Code w/ Expanded Macros

Assembly

Relocatable Obj Programs (multiple files)

Executable

Front-End Compiler

Back-End Compiler

Intermediate Form

LLVM Optimizer

LLVM Intermediate Form

AMDG Assembly Generator

x86_64 Assembly Generator

ARM Assembly Generator

Fortran

Java

CC

CC

Fortran

Java