使用方法

```
#in llvm-project/test/Lab5-test
#这个指令会自动生成所有的外联后bolt文件，并自动执行所有的样例
#具体的bolt运行指令会在exec中可见
#也可./run.sh -h获取脚本使用方法
./run.sh -br

#flags
BOLT_FLAGS="-aarch64-outlining -icf=1 -eliminate-unreachable=1 -peepholes=all -
split-functions=0 -inline-small-functions=0 -align-blocks=0 -align-functions=4 -
reorder-blocks=none -reorder-functions=none -simplify-rodata-loads -lite=0"
```

```
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test$ ./run.sh -h
./run.sh: illegal option -- h
Usage: ./run.sh [-b] [-d] [-r] [-t target]
  -b            Run BOLT (Generate binary)
  -d            Run Disassembly (Generate .asm)
  -r            Run Benchmark (Execute .bolt binary)
  -t <name>     Target specific benchmark (basicmath, bf, lame, lout)

Example:
  ./run.sh -bdr                (Run all stages for ALL benchmarks)
  ./run.sh -b -t basicmath     (Only BOLT basicmath)
  ./run.sh -dr -t lame         (Disasm and Run lame)
```

修改位置

```
llvm-project/bolt/lib/Passes/AArch64Outlining.cpp
llvm-project/bolt/include/bolt/Passes/AArch64Outlining.h
llvm-project/bolt/include/bolt/Core/MCPlusBuilder.h
llvm-project/bolt/lib/Target/AArch64/AArch64MCPlusBuilder.cpp
llvm-project/bolt/lib/Rewrite/BinaryPassManager.cpp
```

优化效果

```
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test/basicmath$ size -A basicmath_large.bolt | grep text
.bolt.org.text          16436      2112
.text                   15968   4194304
.text.injected            360   4210272
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test/basicmath$ cd ../blowfish/
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test/blowfish$ size -A bf.bolt | grep text
.bolt.org.text           3832      2240
.text                    2124   4194304
.text.injected            304   4196428
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test/blowfish$ cd ../lame/
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test/lame$ size -A lame.bolt | grep text
.bolt.org.text          87100     12288
.text                   84072   4194304
.text.injected           2060   4278376
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test/lame$ cd ../typeset/lout-3.24/
zhuoyixu@ampere1:~/llvm-project/test/Lab5-test/typeset/lout-3.24$ size -A lout.bolt | grep text
.bolt.org.text         399640     25024
.text                  353168   4194304
.text.injected          19264   4547472
```