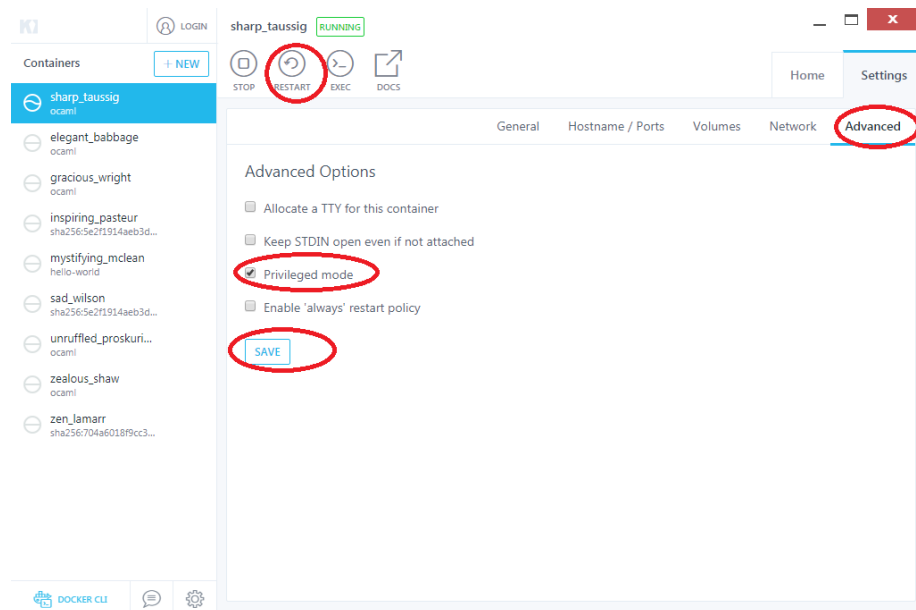


Docker 容器配置

设置以Privileged 特权模式启动容器，opam 需要权限



Setting ==> Advanced ==> Privileged ==> Save ==> Restart

安装 llvm cmake并确定llvm版本

```
apt-get update
apt install llvm cmake
lli -version
```

安装opam

```
apt install opam
opam init #下载 花时间
opam switch system
eval `opam config env`
```

opam 安装 ocaml llvm 包

```
opam install llvm.6.0.0
```

保留当前容器

```
docker ps
docker commit <id> sigcc/opam:v1 # <id> : container id
docker images
```

如下所示:



```
$ docker ps
```

CONTAINER ID	IMAGE	COMMAND
16dedbcc0be2	sigcc/ocaml	"/tini -- tttyd bash"
52 seconds ago		
Up 52 seconds	0.0.0.0:7680-7681->7680-7681/tcp	sharp_taussig

```
$ docker commit 16dedbcc0be2 sigcc/opam:v1
sha256:294cbaad7e2b9c47aa9ba859cf54818206bf7ce891495d22349021c176814313
```

```
$ docker images
```

REPOSITORY	TAG	IMAGE ID
sigcc/opam	v1	294cbaad7e2b
8 seconds ago		
1.75GB		
sigcc/ocaml	latest	09680c837260
7 weeks ago		
1.67GB		

编译 microc llvm项目

in Docker

rz 选择文件

```
root@f19995ee707b:~/workspace# ll
total 60
drwxr-xr-x 1 root root 4096 Sep  4 15:10 ./
drwx----- 1 root root 4096 Oct 30 09:08 ../
-rwxr-xr-x 1 root root 45893 Sep  4 14:45 lecture.ml*
root@f19995ee707b:~/workspace# rz
root@f19995ee707b:~/workspace# ll
total 76
drwxr-xr-x 1 root root 4096 Oct 30 09:22 ./
drwx----- 1 root root 4096 Oct 30 09:08 ../
-rwxr-xr-x 1 root root 45893 Sep  4 14:45 lecture.ml*
-rw----- 1 root root 16292 Nov 27 2016 microc-
llvm.tar.gz
```

```
tar xvf microc-llvm.tar.gz

root@f19995ee707b:~/workspace/microc-llvm# make
ocamlbuild -use-ocamlfind -pkgs llvm,llvm.analysis -cflags
-w,+a-4 \
    microc.native
Finished, 22 targets (0 cached) in 00:00:01.
```

```

root@f19995ee707b:~/workspace/microc-llvm# ll
total 64
drwxr-xr-x 4 root root 4096 Oct 30 09:23 ./
drwxr-xr-x 1 root root 4096 Oct 30 09:23 ../
-rw-rw-r-- 1 1000 1000 2212 Feb 22 2016 Makefile
-rw-rw-r-- 1 1000 1000 5421 Feb 22 2016 README
drwxr-xr-x 2 root root 4096 Oct 30 09:23 _build/
-rw-rw-r-- 1 1000 1000 2753 Feb 17 2016 ast.ml
-rw-rw-r-- 1 1000 1000 6920 Feb 21 2016 codegen.ml
-rw-rw-r-- 1 1000 1000 829 Feb 17 2016 microc.ml
lrwxrwxrwx 1 root root 48 Oct 30 09:23 microc.native ->
/root/workspace/microc-llvm/_build/microc.native*

root@f19995ee707b:~/workspace/microc-llvm# ./testall.sh
test-add1...OK
test-arith1...OK
test-arith2...OK
test-arith3...OK
test-fib...OK
test-for1...OK
....

?``sh

root@f19995ee707b:~/workspace/microc-llvm# cat tests/test-
hello.mc
int main()
{
    print(42);
    print(71);
    print(1);
    return 0;
}

root@f19995ee707b:~/workspace/microc-llvm# ./microc.native
< tests/test-hello.mc
; ModuleID = 'MicroC'
source_filename = "MicroC"

@fmt = private unnamed_addr constant [4 x i8] c"%d\0A\00"

declare i32 @printf(i8*, ...)

define i32 @main() {
entry:
    %printf = call i32 @printf(i8*, ...) @printf(i8* getelementptr
inbounds ([4 x i8], [4 x i8]* @fmt, i32 0, i32 0), i32 42)
    %printf1 = call i32 @printf(i8* getelementptr
inbounds ([4 x i8], [4 x i8]* @fmt, i32 0, i32 0), i32 71)
    %printf2 = call i32 @printf(i8* getelementptr
inbounds ([4 x i8], [4 x i8]* @fmt, i32 0, i32 0), i32 1)
    ret i32 0

```

```
}  
root@f19995ee707b:~/workspace/microc-llvm# lli hello.ll  
42  
71  
1
```