

source --- vmlinux (kernel with ELF format)

target --- ulmage

in arch/arm/boot/Makefile

1. from vmlinux to Image

```
1. $(obj)/Image: vmlinux FORCE
2.     $(call if_changed,objcopy)
3.     @$ (kecho) ' Kernel: $@ is ready'
```

即Image是通过objcopy从vmlinux提取binary的结果

2. from Image to compressed vmlinux

```
1. $(obj)/compressed/vmlinux: $(obj)/Image FORCE
2.     $(Q)$(MAKE) $(build)=$(obj)/compressed $@
```

对arch/arm/boot/compressed/目录下的source build，就是把head.o,piggy.o与vmlinux链接起来

3. from compressed vmlinux to zImage

```
1. $(obj)/zImage: $(obj)/compressed/vmlinux FORCE
2.     $(call if_changed,objcopy)
3.     @$ (kecho) ' Kernel: $@ is ready'
```

即zImage是通过objcopy从compressed vmlinux提取binary的结果

4. from zImage to ulmage

```
1. $(obj)/uImage: $(obj)/zImage FORCE
2.     @$ (check_for_multiple_loadaddr)
3.     $(call if_changed,uimage)
4.     @$ (kecho) ' Image $@ is ready'
```

调用uimage Makefile function(实际上就是调用u-boot tool mkimage)生成ulmage