

for  $\alpha \in \mathbb{R}$  and  $m \in \mathbb{N}$

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参考了 [Rs 程序设计语言学习](#) r s 语言。

## Boo ing Tacs

A1:

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```

Domain0 Region06      : 0x0000000000000000-0xffffffffffffffff M: ( ) S/U: (R,W,X)
Domain0 Next Address  : 0x0000000080200000
Domain0 Next Arg1     : 0x0000000082200000
Domain0 Next Mode     : S-mode
Domain0 SysReset      : yes
Domain0 SysSuspend    : yes

Boot HART ID         : 0
Boot HART Domain     : root
Boot HART Priv Version : v1.10
Boot HART Base ISA    : rv64imafdc
Boot HART ISA Extensions : zicntr
Boot HART PMP Count   : 16
Boot HART PMP Granularity : 2 bits
Boot HART PMP Address Bits: 54
Boot HART MHPM Info   : 0 (0x00000000)
Boot HART Debug Triggers : 0 triggers
Boot HART MIDELEG     : 0x0000000000001666
Boot HART MEDELEG     : 0x000000000000f0b509
[20 ms] Hello, World!
[136 ms] Goodbye, World!
root@eacaa2d969fb:/workspaces/Tacos#

```

## Debugging

First instruction

B1: The first instruction has a see e ce isola t0, entry\_pgtable n erdhe \_entry l ad.

B2: 0 80200000, asho n in boot.rs

From ZSB LoSBm

B3: 0xFFFFFC080000000

SB, kernel m id en p ssingm

B4:

- hard\_id: 0
- dtb: 0x82200000(2183135232)

B5:

- Domain0 Next Address: 0x0000000080200000
- Domain0 Next Arg1: 0x0000000082200000
- Domain0 Next Mode: S-mode
- Boot HART ID: 0

B6:

- Domain0 Next Arg1 = dtb
- Boot HART ID = hard\_id

( ekno h ariscv h s3 o esdM-mode( Machine M e),S-mode(S per isor M e)dra Udmode(User M e)d

SB In erf as

B7:

- a7 stores EID of SBI, hi lteq la `CONSOLE_PUTCHAR = 0x01, 1`
- a6 stores fid = 0, 0

Kernel Mini or

C1:

```
[15 ms] Hello, World!
PKUOS> whoami
[1445 ms] 2200013188
PKUOS> ess
[3846 ms] Invalid command
PKUOS> exit
[5082 ms] Goodbye, World!
```

C2: A reader's input is if n on `console_getchar()`. fo n `read()` f n on in `io.rs` b ord  
kno ho o sei. So l ette d o i ple en l ike n h i s m