

User Space

User commands

Shell (sh)

Program Development

as ar b bas ed db for ld nm ...

File Management

ls cp cmp mkdir ln ...

Text Processing

wc cat sort

Multiuser Commands

login chown chmod su who ...

User Messaging

mail mesg write

Document Preparation

roff form pr ...

Games

bj chess moo ttt

Administrator and System Commands

Filesystem Management

check mkfs mount umount rkd rkl rkf ...

Peripheral access

bcd dtf lbppt rew tap type ...

...

Library

Assembly Subroutines Library

atof atoi ctime exp fptrap ftoa get itoa log mesg ptime putc sin switch

B Library

char getchr putchar printf lchar execl execv intr link mkdir ctime ...

Kernel Space

System Call Interface

break cent chdir chmod chown close creat exec exit fork fstat getuid gtty ilgins intr link mkdir mdate mount open quit read rele seek setuid smdate stat stime stty tell time umount unlink wait write

Boot Loader

I/O Subsystem

Special Devices

Line discipline tty Raw character Raw disk

Filesystem

inode layer
block layer

Device Drivers

Character Devices

Keyboard Printer Paper tape ...

Block Devices

rk: RK03 disk
rf: RF11 disk
mem

Process Control Subsystem

Scheduler
Swap manager
Memory manager
...

Kernel Utility Functions
iget
access
mget
wakeup
sleep
namei
panic
free
alloc