MicroKosm Kernel API
Version 1.0

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Core Syscall API

2.1 Comprehensive list of syscalls

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4	PMAlloc	uptr *base, usize length, usize flags
5	VMFree	uptr base, usize length

2.2 Debug syscalls

WARNING: *the all the following syscalls are for debug purposes only. On production systems, their presence is not guaranteed and not recomended. They are inherently more insecure than normal syscalls, so it is advised to remove them if the system isn't meant for debugging and testing of critical modules.*

2.2.1 PrintK

Vector number	Name	Arguments
1	PrintK	const char *message

TLDR Prints a debug message to the kernel log.

Explaination The mechanism of this syscall is identical to the kernel function. It takes as an argument a NULL-terminated string. There are no checks associated with the function.

2.3 Memory syscalls

2.3.1 VMalloc

Vector number	Name	Arguments
3	VMalloc	uptr base, usize length, usize flags

TLDR Allocates a virtually continuous swath of memory from the virtual address defined in *base* with the length defined in *length*. Flags are passed through the *flags* parameter.

Explaination

2.3.2 PMalloc

Vector number	Name	Arguments
4	PMAlloc	uptr *base, usize length, usize flags

TLDR Allocates a physically continuous swath of memory with the length defined in *length*. The virtual address is returned in the *uptr* pointed to by *base*. Flags are passed through the *flags* parameter.

Explaination

2.3.3 VMFree

Vector number	Name	Arguments
5	VMFree	uptr base, usize length

TLDR Frees a virtually continuous swath of memory with base of ⌊base⌋ and the length defined in *length*. It can free memory allocated both by the VMAlloc and the PMalloc syscalls.

Explaination

Chapter 3

Tables API

3.1 User TCB

Chapter 4

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