

A separate README.txt is in /system

Lab5Answers

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Test case 1:

Null process created main() using create(), and main() print out its page directory entries if that entry is present.

Output:

entry address : 4218880 pd base 1024

entry address : 4218884 pd base 1025

entry address : 4218888 pd base 1026

entry address : 4218892 pd base 1027

entry address : 4221184 pd base 1028

The first four entry addresses correspond to the addresses in bytes of the four shared page tables mapping the first 16MB of the memory. The last entry address is the 576th entry in the page directory which maps the page table of the device memory. The pd_base is the index of the five frames in the inverted page table, the five frames are initialized to hold the five page tables that were initialized.

Test case 2:

test process destruction: one process was created by main() and print out its page directory address and terminates. The same process was created again by main() afterwards.

output:

page directory address 4222976, it should be 4227072

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This indicates that the old process terminates and deleted its page directory (no page table was deleted since hook_ptable_delete was not triggered, because the process had requested no pages).

Test case 3

Main() spawns a process Lab5_test1, who does the following:

1. Call vgetmem which requests 2*4096 bytes from the virtual heap. This will lead to two page

faults since it is installing two 8-byte nodes of the free list into two different virtual pages, the head node of the list will be located at the first 8 bytes of page 4096, and its next node will be located at the first 8 bytes of page 4098.

2. Call `vfreemem` to free 4096 bytes starting from address `4096*4097`. This will lead to another page fault since the operation is installing a new node of the free list into the first 8 bytes of page 4097.
3. Call `get_faults()` and Terminates.

Output:

Page fault for address 16777220

Created page table 1032

Page fault for address 16785408

a 16777216

Page fault for address 16781312

pf_counter 3

Deleted page table 8

The output agrees with the design.