CS 486: Assignment 4
Page walk

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Due: 20 Mar 2015

Due: **20 Mar 2015 at start of class**

1   Overview

Memory allocation is an important component of OS design. The first step is to be able to walk the page table.

Xen maps the guest in multiples of 4 megabytes of storage, with at least 512KB guaranteed to be free. Therefore, your page allocator may use this existing virtual memory.

2   Details

You are to implement the interface:

tableWalk(vaddr) Given a virtual address, walk a 32-bit PAE page table. For each level, print out the flags (symbolically), machine address, and virtual address.

You should put in as many check as possible to ensure that these interfaces are being used correctly and are returning correct values.

3   Background

In order to complete this assignment, you should be (or become) familiar with the hardware layout of page allocators, as described in the Intel Systems Programming mode. These topics will be/have been covered in class; further information may be found in the text, on the course webpage, and in the Xen headers.