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**README**

**Parts of OS Development (biased toward x86)**

Intro

What is an OS

Why develop an OS

Developing for x86

<http://en.wikipedia.org/wiki/X86_instruction_listings>

Develop on Windows (use PE format)

<http://ksrenevasan.blogspot.com/2005/10/writing-multiboot-pe-kernels-using.html>

Suggestions: <http://www.osdever.net/tutorials/mysuggestions.php>

Tools

Assembler, Compiler,

Boot Loader

Roll Your Own (RYO)

Utilize a Multi-Boot-Loader like GRUB, LILO, etc

Real Mode

Protected Mode

: <http://linuxgazette.net/issue82/raghu.html>

Crash course in pmode: <http://www.geocities.com/SiliconValley/2151/pmode.html>

Virtual Memory

Segmentation

Global Descriptor Table (GDT)

http://en.wikibooks.org/wiki/X86\_Assembly/Global\_Descriptor\_Table

Local Descriptor Table (LDT)

Interrupt Descriptor Table (IDT)

Memory Management

GRUB hands off the size of RAM in a multi-boot header

<http://www.osdev.org/osfaq2/index.php/How%20do%20I%20determine%20the%20amount%20of%20RAM%3F>

Start by writing a flat memory model using the simple GDT of one code segment (4GB) and one data segment (4GB).

<http://en.wikipedia.org/wiki/Memory_manager>

<http://www.osdever.net/tutorials/memory1.php>  
<http://www.osdever.net/tutorials/memory2.php>

Multitasking

http://www.osdever.net/tutorials/multitasking.php

Video

Standard VGA address: 0xb8000 (using standard segmenting 0xb800:0)

Real Mode Interrupt Functions

My walkthrough building Tranix!

Tips/Problems

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Prob:

undefined reference to '\_\_stack\_chk\_fail'

Desc:

This problem occurs when the gcc compiler thinks you have a possible buffer

overflow, or the code cannot be statically proven to be safe to such a bug.

Soln:

add -fno-stack-protector to the CFLAGS as an argument to gcc

<http://hackinglinux.blogspot.com/2006/11/resolving-stackchkfail-error.html>

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Prob:

Desc:

Soln: