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The two different program files are available only in the 64-bit operating system. The 32-bit operating system will have only a single program file folder. The main difference is that the program

...

Difference between Program Files (x86) and Program Files folders in Windows 10

At its annual World Wide Developer Conference, Apple dropped many jaws when

announcing that their Mac line will be switching away from Intel processors before the year is out. Intel’s x86 ...

Ditching X86, Apple Starts An ARM Race

It's one of the

most popular and robust Android emulators around, allowing you to run 32-bit and 64-bit games and apps for Android on your Windows desktop. If you can, enable AMD-V or Intel VT-x ...

How to run Android apps in Windows

But that’s not to say hackers and makers haven’t been interested in an SBC with a proper x86 processor ... absolutely trounced by the pokiest of

Intel’s Celeron CPUs. The performance ...

New Part Day: Hackboard 2, An X86 Single-Board Computer

There are a few other settings to check as well and possible manual adjustments ...

One based on arm64 (64-bit ARM) and one based on x86_64 (64-bit Intel). In this case, developers need Xcode ...

Mac Catalyst

The Apple M1 chip has been seen to offer much better

performance and thermal efficiency than the latest Intel x86-64 chips used in the previous Mac machines. The upgraded versions – Apple M1 Pro ...

Are MediaTek and Qualcomm feeling

pressure from in-house chips?

Intel’s 12th Gen CPUs offer very nice performance, and the pricing of these chips is also good — but what about the super-expensive Z690 motherboards and DDR5 memory? APC

has the answers with ...

The purpose of this text is to provide a reference for University level assembly language and systems programming

courses. Specifically, this text addresses the x86-64 instruction set for the popular x86-64 class of processors using the Ubuntu 64-bit Operating System (OS). While the provided code

and various examples should work under any Linux-based 64-bit OS, they have only been tested under Ubuntu 14.04 LTS (64-bit). The x86-64 is a Complex Instruction Set Computing (CISC) CPU design. This

refers to the internal processor design philosophy. CISC processors typically include a wide variety of instructions (sometimes overlapping), varying instructions sizes, and a

wide range of addressing modes. The term was retroactively coined in contrast to Reduced Instruction Set Computer (RISC3).

Learn Intel 64 assembly

language and architecture, become proficient in C, and understand how the programs are compiled and executed down to machine instructions, enabling you to write robust, high-performance code. Low-Level

Programming explains Intel 64 architecture as the result of von Neumann architecture evolution. The book teaches the latest version of the C language (C11) and assembly language from scratch. It

covers the entire path from source code to program execution, including generation of ELF object files, and static and dynamic linking. Code examples and exercises are included

along with the best code practices. Optimization capabilities and limits of modern compilers are examined, enabling you to balance between program readability and performance. The use of various

performance-gain techniques is demonstrated, such as SSE instructions and pre-fetching. Relevant Computer Science topics such as models of computation and formal grammars are addressed, and their

practical value explained. What You'll Learn Low-Level Programming teaches programmers to: Freely write in assembly language Understand the programming model of Intel 64 Write

maintainable and robust code in C11 Follow the compilation process and decipher assembly listings Debug errors in compiled assembly code Use appropriate models of computation to

greatly reduce program complexity Write performance-critical code Comprehend the impact of a weak memory model in multi-threaded applications Who This Book Is For Intermediate to advanced programmers and

programming students

A number of widely used contemporary processors have instruction-set extensions for improved performance in multi-media applications. The aim is to

allow operations to proceed on multiple pixels each clock cycle. Such instruction-sets have been incorporated both in specialist DSPchips such as the Texas C62xx (Texas Instruments,

1998) and in general purpose CPU chips like the Intel IA32 (Intel, 2000) or the AMD K6 (Advanced Micro Devices, 1999). These instruction-set extensions are typically based on the Single Instruc tion-

stream Multiple Data-stream (SIMD) model in which a single instruction causes the same mathematical operation to be carried out on several operands, or pairs of operands, at the same time. The

level or parallelism supported ranges from two floating point operations, at a time on the AMD K6 architecture to 16 byte operations at a time on the Intel P4 architecture. Whereas

processor architectures are moving towards greater levels of parallelism, the most widely used programming languages such as C, Java and Delphi are structured around a model of computation

in which operations takeplace on a single value at a time. This was appropriate when processors worked this way, but has become an impediment to programmers seeking to make use of the performance

offered by multi-media instruction -sets. The introduction of SIMD instruction sets (Peleg et al.

The following list describes what you can get from this book: Information that

lets you get set up to develop using the Yocto Project. Information to help developers who are new to the open source environment and to the distributed revision control system Git, which the Yocto

Project uses. An understanding of common end-to-end development models and tasks. Information about common development tasks generally used during image development for embedded

devices. Information on using the Yocto Project integration of the QuickEMUlator (QEMU), which lets you simulate running on hardware an image you have built using the OpenEmbedded

build system. Many references to other sources of related information.

Information in manual gives an overview of the ARM (Advanced RISC Machines) architecture.

Describes the programmer's model, the ARM instruction set, the differences between 32-bit and 26-bit architectures, the Thumb instruction set, ARM system architecture, and the system control

processer. Gives examples of coding algorithms.

Intelligent readers who want to build their own embedded computer systems--installed in everything from cell phones to

cars to handheld organizers to refrigerators--will find this book to be the most in-depth, practical, and up-to-date guide on the market. Designing Embedded Hardware carefully steers between the

practical and philosophical aspects, so developers can both create their own devices and gadgets and customize and extend off-the-shelf systems. There are hundreds of books to choose

from if you need to learn programming, but only a few are available if you want to learn to create hardware. Designing Embedded Hardware provides software and hardware engineers with

no prior experience in embedded systems with the necessary conceptual and design building blocks to understand the architectures of embedded systems. Written to provide the depth of

coverage and real-world examples developers need, Designing Embedded Hardware also provides a road-map to the pitfalls and traps to avoid in designing embedded systems.

Designing Embedded Hardware covers such essential topics as: The principles of developing computer hardware Core hardware designs Assembly language concepts Parallel I/O

Analog-digital conversion
Timers (internal and external)
UART Serial Peripheral Interface Inter-Integrated Circuit Bus
Controller Area Network (CAN)
Data Converter Interface (DCI)
Low-power

operation This invaluable and eminently useful book gives you the practical tools and skills to develop, build, and program your own application-specific computers.

Beginning and

experienced programmers will use this comprehensive guide to persistent memory programming. You will understand how persistent memory brings together several new software/hardware

requirements, and offers great promise for better performance and faster application startup times—a huge leap forward in byte-addressable capacity compared with current DRAM

offerings. This revolutionary new technology gives applications significant performance and capacity improvements over existing technologies. It requires a new way of thinking and developing,

which makes this highly disruptive to the IT/computing industry. The full spectrum of industry sectors that will benefit from this technology include, but are not limited to, in-memory and traditional

databases, AI, analytics, HPC, virtualization, and big data. Programming Persistent Memory describes the technology and why it is exciting the industry. It covers the operating system and hardware

requirements as well as how to create development environments using emulated or real persistent memory hardware. The book explains fundamental concepts; provides an

introduction to persistent memory programming APIs for C, C++, JavaScript, and other languages; discusses RMDA with persistent memory; reviews security features; and presents many examples. Source

code and examples that you can run on your own systems are included. What You'll Learn Understand what persistent memory is, what it does, and the value it brings to the industry Become familiar with the

operating system and hardware requirements to use persistent memory Know the fundamentals of persistent memory programming: why it is different from current programming methods, and what developers

need to keep in mind when programming for persistence Look at persistent memory application development by example using the Persistent Memory Development Kit (PMDK)Design and optimize data

structures for persistent memoryStudy how real-world applications are modified to leverage persistent memoryUtilize the tools available for persistent memory programming,

application performance profiling, and debugging Who This Book Is For C, C++, Java, and Python developers, but will also be useful to software, cloud, and hardware architects across a broad

spectrum of sectors, including cloud service providers, independent software vendors, high performance compute, artificial intelligence, data analytics, big data, etc.

A Guide to Kernel Exploitation: Attacking the Core discusses the theoretical techniques and approaches needed to develop reliable and effective kernel-level exploits, and

applies them to different operating systems, namely, UNIX derivatives, Mac OS X, and Windows. Concepts and tactics are presented categorically so that even when a specifically

detailed vulnerability has been patched, the foundational information provided will help hackers in writing a newer, better attack; or help pen testers, auditors, and the like develop

a more concrete design and defensive structure. The book is organized into four parts. Part I introduces the kernel and sets out the theoretical basis on which to build the rest of the

book. Part II focuses on different operating systems and describes exploits for them that target various bug classes. Part III on remote kernel exploitation analyzes the

effects of the remote scenario and presents new techniques to target remote issues. It includes a step-by-step analysis of the development of a reliable, one-shot, remote exploit for a real

vulnerabilitya bug affecting the SCTP subsystem found in the Linux kernel. Finally, Part IV wraps up the analysis on kernel exploitation and looks at what the future may hold. Covers a range of

operating system families – UNIX derivatives, Mac OS X, Windows Details common scenarios such as generic memory corruption (stack overflow, heap overflow, etc.) issues, logical bugs and race conditions

Delivers the reader from user-land exploitation to the world of kernel-land (OS) exploits/attacks , with a particular focus on the steps that lead to the creation of successful techniques, in

order to give to the reader something more than just a set of tricks

A compiler translates a program written in a high level language into a program written in a lower level language. For

students of computer science, building a compiler from scratch is a rite of passage: a challenging and fun project that offers insight into many different aspects of computer

science, some deeply theoretical, and others highly practical. This book offers a one semester introduction into compiler construction, enabling the reader to build a simple compiler that

accepts a C-like language and translates it into working X86 or ARM assembly language. It is most suitable for undergraduate students who have some experience programming in C, and have

taken courses in data structures and computer architecture.