Modern X86 Assembly Language Programming

MIPS Assembly Language Programming
The Art of 64-Bit Assembly, Volume 1
Raspberry Pi Assembly Language Raspbian Beginners
LINUX Assembly Language Programming
64-bit Assembly Programming for Linux
16- and 32-Bit Low-Level Programming for the PC and Windows
Programming with 64-Bit ARM Assembly Language
Covers x86 64-bit, AVX, AVX2, and AVX-512
ARM Cortex-M3
The Easy Guide to Get Started
32-Bit, 64-Bit, Sse, and Avx
Learn to Program with Assembly
Covers Armv8-A 32-bit, 64-bit, and SIMD
Learn x86, ARM, and RISC-V architectures and the design of smartphones, PCs, and cloud servers

C++ High Performance
Low-Level Programming
Modern Computer Architecture and Organization
Single Board Computer Development for Raspberry Pi and Mobile Devices
Master the art of optimizing the functioning of your C++ code, 2nd Edition
Extreme C
Beginning x64 Assembly Programming
Modern coding for MASM, SSE & AVX
Intel® X86-64, SSE, AVX
Assembly Language Programming
Modern X86 Assembly Language Programming
Modern X86 Assembly Language Programming
The Art of Assembly Language, 2nd Edition
Modern Parallel Programming with C++ and Assembly Language
32-bit, 64-bit, SSE, and AVX
Modern X86 Assembly Language Programming
Modern X86 Assembly Language Programming
Assembly Language Step-by-Step
Step-By-Step
Zen of Assembly Language: Knowledge

Introduction to Assembly Language Programming
Assembly Language Programming and Organization of the IBM PC
X86 SIMD Development Using AVX, AVX2, and AVX-512
Taking you to the limit in Concurrency, OOP, and the most advanced capabilities of C
Third Edition - for Linux and OS X
Reversing

SLADE SWANSON

MIPS Assembly Language Programming
Packt Publishing Ltd
-Access Real mode from Protected mode; Protected mode from Real mode Apply OOP concepts to assembly language programs Interface assembly language programs with high-level languages Achieve direct hardware manipulation and memory access

Explore the archite
The Art of 64-Bit Assembly, Volume 1 No Starch Press
Assembly Language for x86 Processors, 6/e is ideal for undergraduate courses in assembly language programming and introductory courses in computer systems and computer architecture. Written specifically for the Intel/Windows/DOS platform, this complete and fully updated study of assembly language teaches students to write and debug programs at the

machine level. Based on the Intel processor family, the text simplifies and demystifies concepts that students need to grasp before they can go on to more advanced computer architecture and operating systems courses. Students put theory into practice through writing software at the machine level, creating a memorable experience that gives them the confidence to work in any OS/machine-oriented environment. Proficiency in one other programming language, preferably Java, C, or C++, is recommended.

Raspberry Pi Assembly Language Raspbian Beginners CreateSpace

This book introduces programmers to 64 bit Intel assembly language using the Microsoft Windows operating system. The book also discusses how to use the free integrated development environment, ebe, designed by the author specifically to meet the needs of assembly language programmers.Ebe is a C++ program which uses the Qt library to implement a GUI environment consisting of a source window, a data window, a register window, a floating point register window, a backtrace window, a console window, a terminal window, a project window and a pair of teaching tools called the "Toy Box" and the "Bit Bucket".The source window includes a full-featured text editor with convenient controls for assembling, linking and debugging a program. The project facility allows a program to be built from C source code files and assembly source files. Assembly is performed automatically using the yasm

assembler and linking is performed with ld or gcc. Debugging operates by transparently sending commands into the gdb debugger while automatically displaying registers and variables after each debugging step.The Toy Box allows the use to enter variable definitions and expressions in either C++ or Fortran and it builds a program to evaluate the expressions. Then the user can inspect the format of each expression.The Bit Bucket allows the user to explore how the computer stores and manipulates integers and floating point numbers.Additional information about ebe can be found at http://www.rayseyfarth.com. The book is intended as a first assembly language book for programmers experienced in high level programming in a language like C or C++.The assembly programming is performed using the yasm assembler automatically from the ebe IDE under the Linux operating system.The book primarily teaches how to write assembly code compatible with C programs. The reader will learn to call C functions from assembly language and to call assembly functions from C in addition to writing complete programs in assembly language. The gcc compiler is used internally to compile C programs.The book starts early emphasizing using ebe to debug programs. Being able to single-step assembly programs is critical in learning assembly programming. Ebe makes this far easier than using gdb directly. Highlights of the book include doing input/output programming using

Windows API functions and the C library, implementing data structures in assembly language and high performance assembly language programming.Early chapters of the book rely on using the debugger to observe program behavior. After a chapter on functions, the user is prepared to use printf and scanf from the C library to perform I/O. The chapter on data structures covers singly linked lists, doubly linked circular lists, hash tables and binary trees. Test programs are presented for all these data structures. There is a chapter on optimization techniques and 3 chapters on specific optimizations. One chapter covers how to efficiently count the 1 bits in an array with the most efficient version using the recently-introduced popcnt instruction. Another chapter covers using SSE instructions to create an efficient implementation of the Sobel filtering algorithm. The final high performance programming chapter discusses computing correlation between data in 2 arrays. There is an AVX implementation which achieves 20.5 GFLOPs on a single core of a Core i7 CPU. A companion web site, http://www.rayseyfarth.com, has a collection of PDF slides which instructors can use for in-class presentations and source code for sample programs.

LINUX Assembly Language Programming
Apress

Gain the fundamentals of x86 64-bit assembly language programming and focus on the updated aspects of the x86 instruction set that are most relevant to application software development. This

book covers topics including x86 64-bit programming and Advanced Vector Extensions (AVX) programming. The focus in this second edition is exclusively on 64-bit base programming architecture and AVX programming. Modern X86 Assembly Language Programming's structure and sample code are designed to help you quickly understand x86 assembly language programming and the computational capabilities of the x86 platform. After reading and using this book, you'll be able to code performance-enhancing functions and algorithms using x86 64-bit assembly language and the AVX, AVX2 and AVX-512 instruction set extensions. What You Will Learn Discover details of the x86 64-bit platform including its core architecture, data types, registers, memory addressing modes, and the basic instruction set Use the x86 64-bit instruction set to create performance-enhancing functions that are callable from a high-level language (C++) Employ x86 64-bit assembly language to efficiently manipulate common data types and programming constructs including integers, text strings, arrays, and structures Use the AVX instruction set to perform scalar floating-point arithmetic Exploit the AVX, AVX2, and AVX-512 instruction sets to significantly accelerate the performance of computationally-intense algorithms in problem domains such as image processing, computer graphics, mathematics, and statistics Apply various coding strategies and techniques to optimally exploit the x86 64-bit, AVX,

AVX2, and AVX-512 instruction sets for maximum possible performance Who This Book Is For Software developers who want to learn how to write code using x86 64-bit assembly language. It’s also ideal for software developers who already have a basic understanding of x86 32-bit or 64-bit assembly language programming and are interested in learning how to exploit the SIMD capabilities of AVX, AVX2 and AVX-512.
64-bit Assembly Programming for Linux Packt Publishing Ltd
Modern X86 Assembly Language ProgrammingCovers x86 64-bit, AVX, AVX2, and AVX-512Apress
16- and 32-Bit Low-Level Programming for the PC and Windows Apress
Many programmers have limited effectiveness because they don't have a deep understanding of how their computer actually works under the hood. In Learn to Program with Assembly, you will learn to program in assembly language - the language of the computer itself. Assembly language is often thought of as a difficult and arcane subject. However, author Jonathan Bartlett presents the material in a way that works just as well for first-time programmers as for long-time professionals. Whether this is your first programming book ever or you are a professional wanting to deepen your understanding of the computer you are working with, this book is for you. The book teaches 64-bit x86 assembly language running on the Linux operating system. However, even if you are not running Linux, a provided Docker image

will allow you to use a Mac or Windows computer as well. The book starts with extremely simple programs to help you get your grounding, going steadily deeper with each chapter. At the end of the first section, you will be familiar with most of the basic instructions available on the processor that you will need for any task. The second part deals with interactions with the operating system. It shows how to make calls to the standard library, how to make direct system calls to the kernel, how to write your own library code, and how to work with memory. The third part shows how modern programming language features such as exception handling, object-oriented programming, and garbage collection work at the assembly language level. Additionally, the book comes with several appendices covering various topics such as running the debugger, vector processing, optimization principles, a list of common instructions, and other important subjects. This book is the 64-bit successor to Jonathan Bartlett's previous book, Programming from the Ground Up, which has been a programming classic for more than 15 years. This book covers similar ground but with modern 64-bit processors, and also includes a lot more information about how high level programming language features are implemented in assembly language. What You Will Learn How the processor operates How computers represent data internally How programs interact with the operating system How to write and use dynamic code libraries How high-

level programming languages implement their features Who This Book Is ForAnyone who wants to know how their computer really works under the hood, including first time programmers, students, and professionals.

Programming with 64-Bit ARM Assembly Language Prentice Hall Professional

Assembly is a low-level programming language that's one step above a computer's native machine language. Although assembly language is commonly used for writing device drivers, emulators, and video games, many programmers find its somewhat unfriendly syntax intimidating to learn and use. Since 1996, Randall Hyde's The Art of Assembly Language has provided a comprehensive, plain-English, and patient introduction to 32-bit x86 assembly for non-assembly programmers. Hyde's primary teaching tool, High Level Assembler (or HLA), incorporates many of the features found in high-level languages (like C, C++, and Java) to help you quickly grasp basic assembly concepts. HLA lets you write true low-level code while enjoying the benefits of high-level language programming. As you read The Art of Assembly Language, you'll learn the low-level theory fundamental to computer science and turn that understanding into real, functional code. You'll learn how to: –Edit, compile, and run HLA programs –Declare and use constants, scalar variables, pointers, arrays, structures, unions, and namespaces –Translate arithmetic expressions (integer and

floating point) –Convert high-level control structures This much anticipated second edition of The Art of Assembly Language has been updated to reflect recent changes to HLA and to support Linux, Mac OS X, and FreeBSD. Whether you're new to programming or you have experience with high-level languages, The Art of Assembly Language, 2nd Edition is your essential guide to learning this complex, low-level language.

Covers x86 64-bit, AVX, AVX2, and AVX-512 Createspace Independent Publishing Platform

Begins with the most fundamental, plain-English concepts and everyday analogies progressing to very sophisticated assembly principles and practices. Examples are based on the 8086/8088 chips but all code is usable with the entire Intel 80X86 family of microprocessors. Covers both TASM and MASM. Gives readers the foundation necessary to create their own executable assembly language programs.

ARM Cortex-M3 John Wiley & Sons

Mastering ARM hardware architecture opens a world of programming for nearly all phones and tablets including the iPhone/iPad and most Android phones. It’s also the heart of many single board computers like the Raspberry Pi. Gain the skills required to dive into the fundamentals of the ARM hardware architecture with this book and start your own projects while you develop a working knowledge of assembly language for the ARM 64-bit processor.

You'll review assembly language programming for the ARM Processor in 64-bit mode and write programs for a number of single board computers, including the Nvidia Jetson Nano and the Raspberry Pi (running 64-bit Linux). The book also discusses how to target assembly language programs for Apple iPhones and iPads along with 64-Bit ARM based Android phones and tablets. It covers all the tools you require, the basics of the ARM hardware architecture, all the groups of ARM 64-Bit Assembly instructions, and how data is stored in the computer's memory. In addition, interface apps to hardware such as the Raspberry Pi's GPIO ports. The book covers code optimization, as well as how to inter-operate with C and Python code. Readers will develop enough background to use the official ARM reference documentation for their own projects. With Programming with 64-Bit ARM Assembly Language as your guide you'll study how to read, reverse engineer and hack machine code, then be able to apply these new skills to study code examples and take control of both your ARM devices' hardware and software. What You'll Learn Make operating system calls from assembly language and include other software libraries in your projects Interface apps to hardware devices such as the Raspberry Pi GPIO ports Reverse engineer and hack code Use the official ARM reference documentation for your own projects Who This Book Is For Software developers who have already learned to program in a higher-level language like

Python, Java, C#, or even C and now wish to learn Assembly programming. *The Easy Guide to Get Started* Modern X86 Assembly Language ProgrammingCovers x86 64-bit, AVX, AVX2, and AVX-512
Master x86 language from the Linux point of view with this one-concept-at-a-time guide. Neveln gives an "under the hood" perspective of how Linux works and shows how to create device drivers. The CD-ROM includes all source code from the book plus edlinas, an x86 simulator that's perfect for hands-on, interactive assembler development. *32-Bit, 64-Bit, Sse, and Avx* Apress
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

Learn to Program with Assembly No Starch Press

ARM designs the cores of microcontrollers which equip most "embedded systems" based on 32-bit processors. Cortex M3 is one of these designs, recently developed by ARM with microcontroller applications in mind. To conceive a particularly optimized piece of software (as is often the case in the world of embedded systems) it is often necessary to know how to program in an assembly language. This book explains the basics of programming in an assembly language, while being based on the architecture of Cortex M3 in detail and developing many examples. It is written for people who have never programmed in an assembly language and is thus didactic and progresses step by step by defining the concepts

necessary to acquiring a good understanding of these techniques.

Covers Armv8-A 32-bit, 64-bit, and SIMD Wiley

A no-nonsense, practical guide to current and future processor and computer architectures, enabling you to design computer systems and develop better software applications across a variety of domains Key Features Understand digital circuitry with the help of transistors, logic gates, and sequential logic Examine the architecture and instruction sets of x86, x64, ARM, and RISC-V processors Explore the architecture of modern devices such as the iPhone X and high-performance gaming PCs Book Description Are you a software developer, systems designer, or computer architecture student looking for a methodical introduction to digital device architectures but overwhelmed by their complexity? This book will help you to learn how modern computer systems work, from the lowest level of transistor switching to the macro view of collaborating multiprocessor servers. You'll gain unique insights into the internal behavior of processors that execute the code developed in high-level languages and enable you to design more efficient and scalable software systems. The book will teach you the fundamentals of computer systems including transistors, logic gates, sequential logic, and instruction operations. You will learn details of modern processor architectures and instruction sets including x86, x64, ARM, and RISC-V. You will see how to

implement a RISC-V processor in a low-cost FPGA board and how to write a quantum computing program and run it on an actual quantum computer. By the end of this book, you will have a thorough understanding of modern processor and computer architectures and the future directions these architectures are likely to take. What you will learn Get to grips with transistor technology and digital circuit principles Discover the functional elements of computer processors Understand pipelining and superscalar execution Work with floating-point data formats Understand the purpose and operation of the supervisor mode Implement a complete RISC-V processor in a low-cost FPGA Explore the techniques used in virtual machine implementation Write a quantum computing program and run it on a quantum computer Who this book is for This book is for software developers, computer engineering students, system designers, reverse engineers, and anyone looking to understand the architecture and design principles underlying modern computer systems from tiny embedded devices to warehouse-size cloud server farms. A general understanding of computer processors is helpful but not required.

Learn x86, ARM, and RISC-V architectures and the design of smartphones, PCs, and cloud servers

Apress

The most comprehensive treatment of advanced assembler programming ever published, this book presents a way of programming that involves intuitive,

right-brain thinking. Also probes hardware aspects that affect code performance and compares programming techniques.
C++ High Performance Apress
C++ High Performance, Second Edition enables you to measure and identify bottlenecks in the code and eradicate them to amplify your application's working speed without compromising the readability of your C++ codebase
Low-Level Programming Orange Groove Books
Push the limits of what C - and you - can do, with this high-intensity guide to the most advanced capabilities of C Key Features Make the most of C's low-level control, flexibility, and high performance A comprehensive guide to C's most powerful and challenging features A thought-provoking guide packed with hands-on exercises and examples Book Description There's a lot more to C than knowing the language syntax. The industry looks for developers with a rigorous, scientific understanding of the principles and practices. Extreme C will teach you to use C's advanced low-level power to write effective, efficient systems. This intensive, practical guide will help you become an expert C programmer. Building on your existing C knowledge, you will master preprocessor directives, macros, conditional compilation, pointers, and much more. You will gain new insight into algorithm design, functions, and structures. You will discover how C helps you squeeze maximum performance out of critical, resource-constrained applications. C still

plays a critical role in 21st-century programming, remaining the core language for precision engineering, aviations, space research, and more. This book shows how C works with Unix, how to implement OO principles in C, and fully covers multi-processing. In Extreme C, Amini encourages you to think, question, apply, and experiment for yourself. The book is essential for anybody who wants to take their C to the next level. What you will learn Build advanced C knowledge on strong foundations, rooted in first principles Understand memory structures and compilation pipeline and how they work, and how to make most out of them Apply object-oriented design principles to your procedural C code Write low-level code that’s close to the hardware and squeezes maximum performance out of a computer system Master concurrency, multithreading, multi-processing, and integration with other languages Unit Testing and debugging, build systems, and inter-process communication for C programming Who this book is for Extreme C is for C programmers who want to dig deep into the language and its capabilities. It will help you make the most of the low-level control C gives you.

Modern Computer Architecture and Organization Packt Publishing Ltd

Gain the fundamentals of Armv8-A 32-bit and 64-bit assembly language programming. This book emphasizes Armv8-A assembly language topics that are relevant to modern software development. It is designed to help you

quickly understand Armv8-A assembly language programming and the computational resources of Arm's SIMD platform. It also contains an abundance of source code that is structured to accelerate learning and comprehension of essential Armv8-A assembly language constructs and SIMD programming concepts. After reading this book, you will be able to code performance-optimized functions and algorithms using Armv8- A 32-bit and 64-bit assembly language. Modern Arm Assembly Language Programming accentuates the coding of Armv8-A 32-bit and 64-bit assembly language functions that are callable from C++. Multiple chapters are also devoted to Armv8-A SIMD assembly language programming. These chapters discuss how to code functions that are used in computationally intense applications such as machine learning, image processing, audio and video encoding, and computer graphics. The source code examples were developed using the GNU toolchain (g++, gas, and make) and tested on a Raspberry Pi 4 Model B running Raspbian (32-bit) and Ubuntu Server (64-bit). It is important to note that this is a book about Armv8-A assembly language programming and not the Raspberry Pi. What You Will Learn See essential details about the Armv8-A 32-bit and 64-bit architectures including data types, general purpose registers, floating-point and SIMD registers, and addressing modes Use the Armv8-A 32-bit and 64-bit instruction sets to create performance-enhancing functions that are callable from C++

Employ Armv8-A assembly language to efficiently manipulate common data types and programming constructs including integers, arrays, matrices, and user-defined structures Create assembly language functions that perform scalar floating-point arithmetic using the Armv8-A 32-bit and 64-bit instruction sets Harness the Armv8-A SIMD instruction sets to significantly accelerate the performance of computationally intense algorithms in applications such as machine learning, image processing, computer graphics, mathematics, and statistics. Apply leading-edge coding strategies and techniques to optimally exploit the Armv8-A 32-bit and 64-bit instruction sets for maximum possible performance Who This Book Is For Software developers who are creating programs for Armv8-A platforms and want to learn how to code performance-enhancing algorithms and functions using the Armv8-A 32-bit and 64-bit instruction sets. Readers should have previous high-level language programming experience and a basic understanding of C++.

Single Board Computer Development for Raspberry Pi and Mobile Devices Pearson

ARM 64-Bit Assembly Language carefully explains the concepts of assembly language programming, slowly building from simple examples towards complex programming on bare-metal embedded systems. Considerable emphasis is put on showing how to develop good, structured assembly code. More advanced topics such as fixed and floating point mathematics, optimization

and the ARM VFP and NEON extensions are also covered. This book will help readers understand representations of, and arithmetic operations on, integral and real numbers in any base, giving them a basic understanding of processor architectures, instruction sets, and more. This resource provides an ideal introduction to the principles of 64-bit ARM assembly programming for both the professional engineer and computer engineering student, as well as the dedicated hobbyist with a 64-bit ARM-based computer. Represents the first true 64-bit ARM textbook Covers advanced topics such as fixed and floating point mathematics, optimization and ARM NEON Uses standard, free open-source tools rather than expensive proprietary tools Provides concepts that are illustrated and reinforced with a large number of tested and debugged assembly and C source listings

Master the art of optimizing the functioning of your C++ code, 2nd Edition Apress

Modern Assembly Language Programming with the ARM Processor is a tutorial-based book on assembly language programming using the ARM processor. It presents the concepts of assembly language programming in different ways, slowly building from simple examples towards complex programming on bare-metal embedded systems. The ARM processor was chosen as it has fewer instructions and irregular addressing rules to learn than most other architectures, allowing more time to spend on teaching assembly language

programming concepts and good programming practice. In this textbook, careful consideration is given to topics that students struggle to grasp, such as registers vs. memory and the relationship between pointers and addresses, recursion, and non-integral binary mathematics. A whole chapter is dedicated to structured programming principles. Concepts are illustrated and reinforced with a large number of tested and debugged assembly and C source listings. The book also covers advanced topics such as fixed and floating point mathematics, optimization, and the ARM VFP and NEONTM extensions. PowerPoint slides and a solutions manual are included. This book will appeal to professional embedded systems engineers, as well as computer engineering students taking a course in assembly language using the ARM processor. Concepts are illustrated and reinforced with a large number of tested and debugged assembly and C source listing Intended for use on very low-cost platforms, such as the Raspberry Pi or pcDuino, but with the support of a full Linux operating system and development tools Includes discussions of advanced topics, such as fixed and floating point mathematics, optimization, and the ARM VFP and NEON extensions

Extreme C Newnes

This book is about programming the Intel(R) X86-X64 in assembly language using the "free" version of Microsoft(R) Visual Studio 17 software. The X86 implies the 16-bit legacy Intel(R) 8086 processor up through the 64-bit Intel(R)

core i7 and even beyond.

Related with Modern X86 Assembly Language Programming:
• Introduction To Sociology Textbook Pdf : click here