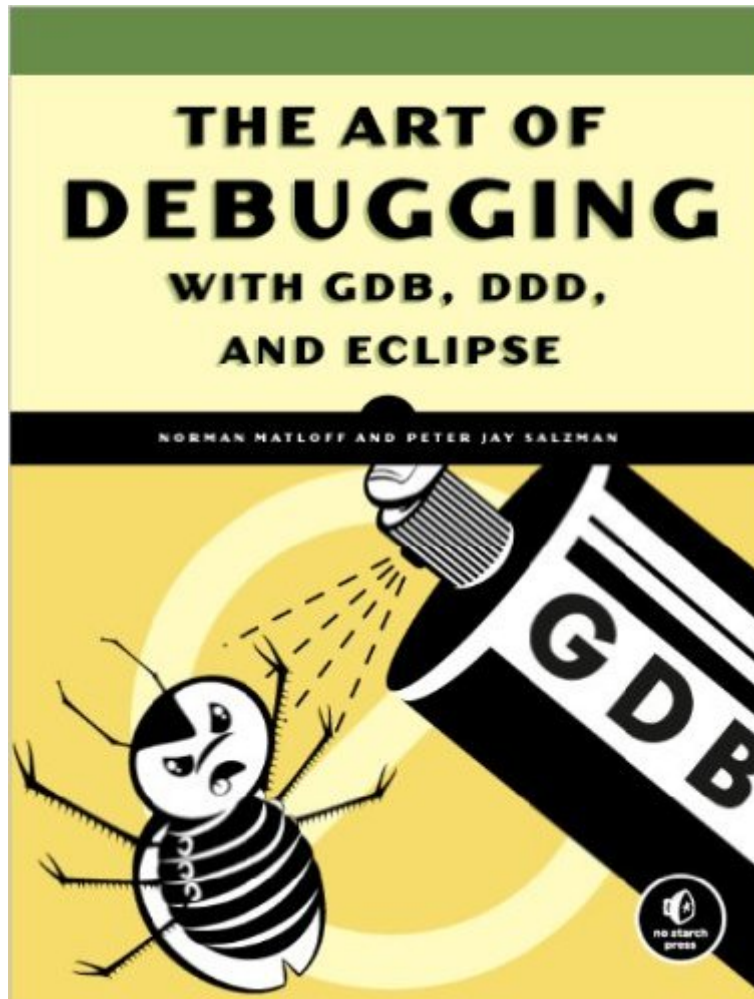


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The Art Of Debugging With GDB And DDD



Synopsis

Debugging is crucial to successful software development, but even many experienced programmers find it challenging. Sophisticated debugging tools are available, yet it may be difficult to determine which features are useful in which situations. The Art of Debugging is your guide to making the debugging process more efficient and effective. The Art of Debugging illustrates the use three of the most popular debugging tools on Linux/Unix platforms: GDB, DDD, and Eclipse. The text-command based GDB (the GNU Project Debugger) is included with most distributions. DDD is a popular GUI front end for GDB, while Eclipse provides a complete integrated development environment. In addition to offering specific advice for debugging with each tool, authors Norm Matloff and Pete Salzman cover general strategies for improving the process of finding and fixing coding errors, including how to: Inspect variables and data structures Understand segmentation faults and core dumps Know why your program crashes or throws exceptions Use features like catchpoints, convenience variables, and artificial arrays Avoid common debugging pitfalls Real world examples of coding errors help to clarify the authors' guiding principles, and coverage of complex topics like thread, client-server, GUI, and parallel programming debugging will make you even more proficient. You'll also learn how to prevent errors in the first place with text editors, compilers, error reporting, and static code checkers. Whether you dread the thought of debugging your programs or simply want to improve your current debugging efforts, you'll find a valuable ally in The Art of Debugging.

Book Information

File Size: 6194 KB

Print Length: 280 pages

Simultaneous Device Usage: Unlimited

Publisher: No Starch Press; 1 edition (August 20, 2009)

Publication Date: August 20, 2009

Sold by:Â Digital Services LLC

Language: English

ASIN: B002N3M6U4

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Not Enabled

Best Sellers Rank: #447,152 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #32

inÂ Books > Computers & Technology > Programming > Languages & Tools > Debugging #256

inÂ Books > Computers & Technology > Programming > Software Design, Testing & Engineering >

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Customer Reviews

I must come clean first - I know the authors. Peter asked me to review one of the sections in the book many ages ago when the book was in its infancy. The book has progressed much since then, and I must admit this is much more than I was expecting from a book about debugging! Chapters 1 through 3 are the starter chapters that discuss the core debugging paradigms such as breakpoints and variable analysis. Chapter 1 goes through some of the basic concepts of debugging for those new to the idea (e.g., hobbyists and just-out-of-college programmers) but it's probably less useful for those already familiar with the concept. Chapter 2 goes through the basic debugging operations, such as setting breakpoints and analyzing variables, with an emphasis on how breakpoints can be set, cleared, and triggered using various methods. Chapter 3 goes through more on how variables of different storages can be viewed and displayed. Chapters 4 and 5 are where things start to get interesting. Chapter 4 discusses how the debugger can be used to analyze core dumps, and touches on operating system concepts just enough to be productive in debugging for those not familiar with OS architectures. Chapter 5 discusses debugging threaded applications. As examples, applications written using popular multi-threaded and multi-process libraries such as pthread, MPI, and OpenMP are discussed, which makes the chapter more practical. Chapter 6 is an interesting chapter. Section 6.1 goes through some common compiler error messages and how one should interpret them. They're concepts all first semester programming course students should read.

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