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Shell Scripting

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Steve Parker

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For my daughters, Bethany and Emily, and my wife, Jackie. Putting up with a professional geek is never easy, particularly when it leads to a career which often means a lot of travel and time spent away from home. Also to God, from whom comes all wisdom, intelligence, and learning. The better we understand the Creation, the better chance we have of understanding the Creator.

For it is written:

"I will destroy the wisdom of the wise;
the intelligence of the intelligent I will frustrate.
Where is the wise man? Where is the scholar? Where is the philosopher of this age? Has not God made foolish the wisdom of the world?…For the foolishness of God is wiser than man's wisdom, and the weakness of God is stronger than man's strength."

1 Corinthians chapter 1, verses 19, 20, and 25

ABOUT THE AUTHOR

STEVE PARKER is a Unix and Linux consultant with 20 years' experience with Unix, and 15 years' experience with GNU/Linux. He wrote and maintains the online shell scripting tutorial at `http://steve-parker.org/sh/sh.shtml`.

Steve provides IT consultancy services, and can also provide training courses in shell scripting as well as Unix and Linux technologies. He can be contacted via `http://sgpit.com/`.

ABOUT THE TECHNICAL EDITOR

JOHN KENNEDY has worked with Linux (and Unix) as a system administrator since 1997. He has worked with Red Hat, SUSE, Debian, Ubuntu, Solaris, and HP-UX. He started bash scripting in 2000 because he felt he was doing too much work and wanted something to do the tedious jobs for him.

Before learning the joys of Linux and Unix, John was in the U.S. Air Force for nine years working as a communications systems operator and spent time in Germany, Texas, and England. Since leaving the military he has lived in Nebraska and Pennsylvania, and is now back in England.

John currently works as an Infrastructure Engineer for a media company based in London. He lives near Oxford with his wife, Michele, and son, Kieran. He has a daughter, Denise, who just finished her university degree in the U.S.

When John is not on his computer, he enjoys watching football (soccer) with his son, spending time with his family, and relaxing.

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From a personal perspective, I would like to thank all of the people behind Acorn, Sinclair, and other companies in the early 1980s for making affordable computers for kids to learn real programming with. Also the BBC for their foresight in the entire BBC Micro project, the TV programs that they put behind it, and the development work that they pursued. The next generation needs something like the BBC Micro project; not using fancy IDEs to write apps for phones, but working at the bare metal with real systems. The Arduino project deserves credit for promoting this at the hardware level; it is an excellent project, making it easy to hack hardware without having to have a knowledgeable uncle on hand to translate resistor values. The Free Software infrastructure, particularly with more recent injections like the Google Summer of Code, is another ideal breeding ground for this love of hacking to develop afresh for a new (GNU?) generation. The idea of a generation growing up knowing only how to *use* devices, not how to *develop* them, is a disturbing one. The projects mentioned above provide hope for the future.

I also want to thank ICL, where I met Douglas and Capitan, Jit, and Ketan. We tested DRS/NX, and had direct access to userspace and kernel developers. That was a rare treat, and it was where I fell in love with Unix. Also the guys who used to hang out on `comp.unix.shell` back in the days when Usenet was still readable; you taught us so much, and we must have seemed so naïve (which we were).

What I gained at ICL by being employed by the same company as the kernel and userspace developers became available to everyone with the GNU/Linux operating system. In the course of writing this book, I have been able to quote e-mails written by people that I have never met (and probably will never meet) in the discussion of Unix, Linux, and shell features. Similarly, in a professional context, I have had the honor of chatting online with the key developers of specific Linux kernel features to discuss how they are implemented in different versions of the Linux kernel, none of which would be possible with a different development model. Similarly, Chet Ramey, the maintainer of the bash shell, has responded to emails about implementation details.

From a professional and IT community perspective, I would like to thank Ken Thompson, Dennis Ritchie, Brian Kernighan, Doug McIlroy, David Korn, and Steve Bourne (to name but a few) for C, Unix, and the environment that is so easily taken for granted. The concepts these visionaries came up with have lasted for 40 years and more.

I also thank Dr. Richard M. Stallman for giving the GNU project to the world, for the GPL and the Free Software Foundation, and for dedicating a lifetime to promoting software freedom. The world needs idealists, and Stallman is one of these. It is my belief that Stallman will be proved by history to be right, that it is better to share developments than to hide them. That is the scientific tradition, and it must also be applied to computer science if it is to be treated seriously as a scientific endeavor.

My thanks to all of the GNU programmers and Linux kernel developers for putting all of these Free Software pieces together into a variety of different usable and Free OSs. Also the other Unix developers, who write code under a variety of licenses for various employers.

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CONTENTS