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# CCNA

## 200-301, Volume 2

2nd Edition

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# *CCNA 200-301 Official Cert Guide, Volume 2, Second Edition*

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**Wendell Odom**, CCIE Enterprise No. 1624, was the first Cisco Press author for Cisco certification guides. He wrote all prior editions of this book, along with books on topics ranging from introductory networking to CCENT, CCNA R&S, CCNA DC, CCNP ROUTE, CCNP QoS, and CCIE R&S. In his four decades as a networker, he has worked as a network engineer, consultant, systems engineer, instructor, and course developer. He now spends his time focused on updating the CCNA books, his blog ([www.certskills.com](http://www.certskills.com)), building his new CCNA YouTube channel ([www.youtube.com/@NetworkUpskill](http://www.youtube.com/@NetworkUpskill)), and teaching online ([www.certskills.com/courses](http://www.certskills.com/courses)). You can find him at [www.Linkedin.com/in/WendellOdom](http://www.Linkedin.com/in/WendellOdom), Twitter (@WendellOdom), and at his blog, which provides a variety of free CCNA learning resources.

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**Denise Donohue**, CCIE No. 9566 (Routing and Switching), has worked with information systems since the mid-1990s and network architecture since 2004. During that time, she has worked with a wide range of networks, private and public, of all sizes, across most industries. Her focus is on aligning business and technology. Denise has authored several Cisco Press books and frequently shares her knowledge in webinars and seminars, and at conferences.

# Dedications

*Wendell Odom:*

For Raymond Lanier Odom, still the best dad ever.

*Jason Gooley:*

To my family: Mother, thank you for always being my guiding light from up above. To my wife, Jamie, your love and support mean the world to me. To my children, Kaleigh and Jaxon, always believe in yourself and go for your dreams, no matter how lofty they may seem. To my father, thanks for believing in that stubborn kid so many years ago! To my brother, thanks for always having my back broham. Thank you, God—without you none of this would be possible!

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Chris Cleveland did the development editing for the very first Cisco Press exam certification guide way back in 1998, and he still can't seem to get away from us! Seriously, when Brett and I first discuss any new book, my first priority is to ask whether Chris has time to develop the book—and lobby if there are any barriers! It's always a pleasure working with you, Chris.

The technical editors also have a meaningful positive impact on the books. And we got Denise to do it! Denise and I teamed up to write the *CCIE R&S Official Cert Guide* for two editions, and she has written extensively herself—which is why I wondered if we could get her help. Her deep technical skills to go along with her unique insights into the book authoring process have been a great help to both weed out the mistakes and get good advice on how to improve the chapters.

Cisco's move to an annual exam update cadence (they at least consider updating each exam once per year) has more impact on the production side of our publishing process than it does on the authoring side. Knowing early that both Sandra and Tonya are back at it, finding ways to continue the high

quality while being creative with the new publication cycle, sets me more at ease. When writing, I could rest knowing that the second half of the process, which happens after I've finished 99 percent of my work, will be done well!

Thanks to all the production team for making the magic happen. I usually do not interact with you directly beyond Sandra and Tonya, but I see your work, and the books truly improve through the process! From fixing all my grammar and passive-voice sentences to pulling the design and layout together, they do it all; thanks for putting it all together and making it look easy.

A special thank you to you readers who write in with suggestions and possible errors, and especially those of you who post online at the Cisco Learning Network and at my blog ([www.certskills.com](http://www.certskills.com)). More so than any edition I can remember, reader comments have had more to do with changes I made to improve existing content in these editions. The comments I received directly and those I overheard by participating at CLN made this edition a better book. (See the heading "Feedback Information" just a page or so back to see how to get in touch with us!)

My wonderful wife Kris and I reached our 25th anniversary while working on the early draft of this edition. She makes this challenging work lifestyle a breeze—even happily scheduling our 25th anniversary vacation around the book schedule! Thanks to my daughter Hannah for perspectives on how 20-somethings think about learning and studying. And thanks to Jesus Christ, Lord of everything in my life.

**Jason Gooley:**

I would like to thank Wendell for trusting me and having me on this amazing journey. Looking forward to our future work together!

Thank you to everyone at Pearson and Cisco Press for always making sure our products are of the best quality!

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