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# Controller-Based Wireless LAN Fundamentals: An End-to-end Reference Guide To Design, Deploy, Manage, And Secure 802.11 Wireless Networks



## Synopsis

Controller-Based Wireless LAN Fundamentals An end-to-end reference guide to design, deploy, manage, and secure 802.11 wireless networks — Jeff Smith Jake Woodhams Robert Marg — As wired networks are increasingly replaced with 802.11n wireless connections, enterprise users are shifting to centralized, next-generation architectures built around Wireless LAN Controllers (WLC). These networks will increasingly run business-critical voice, data, and video applications that once required wired Ethernet. — In Controller-Based Wireless LAN Fundamentals, three senior Cisco wireless experts bring together all the practical and conceptual knowledge professionals need to confidently design, configure, deploy, manage, and troubleshoot 802.11n networks with Cisco Unified Wireless Network (CUWN) technologies. — The authors first introduce the core principles, components, and advantages of next-generation wireless networks built with Cisco offerings. Drawing on their pioneering experience, the authors present tips, insights, and best practices for network design and implementation as well as detailed configuration examples. — Next, they illuminate key technologies ranging from WLCs to Lightweight Access Point Protocol (LWAPP) and Control and Provisioning of Wireless Access Points (CAPWAP), Fixed Mobile Convergence to WiFi Voice. They also show how to take advantage of the CUWN's end-to-end security, automatic configuration, self-healing, and integrated management capabilities. — This book serves as a practical, hands-on reference for all network administrators, designers, and engineers through the entire project lifecycle, and an authoritative learning tool for new wireless certification programs. This is the only book that Fully covers the principles and components of next-generation wireless networks built with Cisco WLCs and Cisco 802.11n AP Brings together real-world tips, insights, and best practices for designing and implementing next-generation wireless networks Presents start-to-finish configuration examples for common deployment scenarios Reflects the extensive first-hand experience of Cisco experts — — Gain an operational and design-level understanding of WLAN Controller (WLC) architectures, related technologies, and the problems they solve Understand 802.11n, MIMO, and protocols developed to support WLC architecture Use Cisco technologies to enhance wireless network reliability, resilience, and scalability while reducing operating expenses Safeguard your assets using Cisco Unified Wireless Network's advanced security features Design wireless networks capable of serving as an enterprise's primary or only access network and supporting advanced mobility services Utilize Cisco Wireless Control System (WCS) to plan, deploy, monitor, troubleshoot, and report on wireless networks throughout their lifecycles Configure Cisco wireless LANs for multicasting Quickly troubleshoot problems with Cisco controller-based wireless LANs — This book is part of the Cisco Press® Fundamentals Series.

Books in this series introduce networking professionals to new networking technologies, covering network topologies, sample deployment concepts, protocols, and management techniques.   
Category: Wireless Covers: Cisco Controller-Based Wireless LANs

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## Customer Reviews

I've been in the IT business for over 20 years and have purchased and read literally hundreds of books on various related subjects during that time. This has got to rank among the absolute worst of them. To begin with, I cannot detect even the slightest touch of an editor to this material. Information is repeated incessantly, often with identical wording, and occasionally on the same page. Sentence structure is often somewhere between awkward and outright ungrammatical, especially in the first few chapters. There are also plenty of typos - traffic glows instead of traffic flows was kind of funny, but it gets old after a bit. It gets to the point where at some points I couldn't figure out if the authors were directly contradicting themselves or simply couldn't crank out a coherent sentence. Thank goodness for Google. Between the deeply annoying repetition and obtuse writing style, the book reads like the authors were pressured to hit some specific length or word count and then just padded the pages until they hit it, randomly bludgeoning the English language as they went. If "data deduplication" were applied to this book, its page count would likely drop from about 300 pages to somewhere around 75. This would be something one could, with a great deal of patience, look past if the book in fact imparted the knowledge necessary to (as the title implies) design, deploy, manage,

and secure 802.11 wireless networks based on Cisco's Wireless Access Controllers. While I'm normally loathe to deliver spoilers in book reviews, I must in this case warn you that at the end the answer is "no." You will certainly know the names of the various pieces of the puzzle (how could you not after all of the repetition?)

There are several nice features about this book. The first is a chapter that gives a high level explanation of 802.11n, which is the latest and highest bandwidth wireless standard. The chapter refers to some 500 pages of the actual formal standard, but only hard core people in the wireless field will ever directly use the standard. Instead, we see that 802.11n can give 100Mb/s wireless bandwidth. Which is pretty fantastic, compared to the earlier 802.11 a/b/g standards. So how is this possible? In short, thru the use of multiple antennas for transmission and receiving. The catchy acronym MIMO summarises this idea. The chapter has several neat diagrams that illustrate the antenna configurations. Typically, the diagrams have boxes that say DSP [digital signal processor], that are hooked to the antennas. As you might expect, even if you are not an electrical engineer, these conceal a vast amount of rapid and complex number crunching. The ongoing march of Moore's Law is what enables the building in silicon of these new DSPs that can handle multiple antennas. The chapter also refers to various antenna parameters that can be tweaked, but does not go into any details. Perhaps only a few readers will actually need to adjust those parameters. I suspect that the typical network sysadmin does not do much or know much about antenna design. So the chapter's level of discussion is adequate for most readers. Another chapter looks at Cisco's implementation of wireless LAN security. This is at a more detailed pace than the 802.11n chapter. The algorithms are covered in some depth, and take as their starting point and motivation the inadequacies of Wired Equivalent Privacy [WEP]. (The book cautions you to never use WEP.) The difference between these 2 chapters is telling.

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