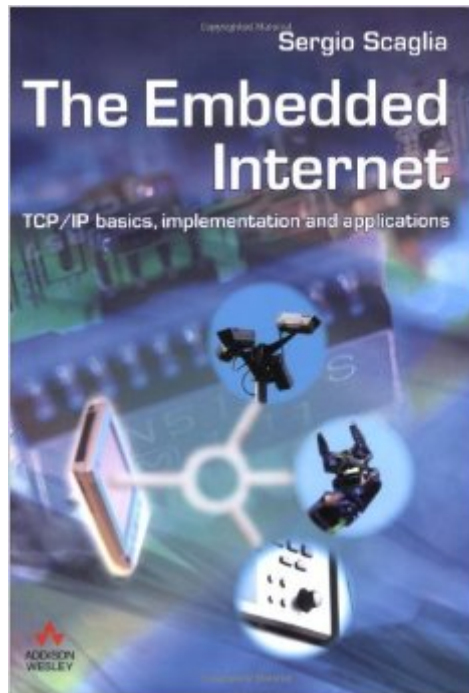


The book was found

# The Embedded Internet: TCP/IP Basics, Implementation And Applications



## Synopsis

In *The Embedded Internet* Sergio Scaglia examines the techniques that programmers will need to learn to obtain internet connectivity for their embedded systems. Sometimes this will be relatively straight-forward, using TCP/IP stack implementations which already exist. Sometimes, this will be much more difficult, requiring whole new implementations to be developed. Either way, *The Embedded Internet* will be the ideal starting place for programmers to learn and develop these skills. The book is structured in three parts. The first part comprehensively covers TCP/IP. This gives the reader the necessary background knowledge of the internet that they will need when considering embedded systems connectivity. The second part details how to implement embedded internet systems. The third and final part gives a conceptual overview of just a handful of the countless ways in which internet connectivity can benefit an embedded system.

## Book Information

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## Customer Reviews

Just looking for a TCP/IP course? This book will certainly help you. Are you involved with Embedded Systems and need to learn TCP/IP? Then, THIS IS THE BOOK FOR YOU! The book presents three parts: First part (theory) provides a comprehensive course about TCP/IP. Concepts are very clear and graphics are simply impressive. Very easy to read and learn. The second part has 12 Labs, where a COMPLETE TCP/IP Stack is developed and explained. From the drivers (ethernet and serial interface) to the application protocols (webserver, email client) are created from scratch, step by step. All the needed software is provided (compiler and source code). This is, perhaps, the best way to really understand TCP/IP. After finishing the Labs, now I can say that I really understand the

subject (this didn't happen when I read TCP/IP conventional -and boring - text books). The third part presents applications where embedded internet is used. First time I see a book detailing "real applications". The concept for Embedded Web Services is introduced and an additional Lab shows how to use Web Services from an embedded systems. All the source code works without problems and the Labs behave exactly as the book states. This book should be used in those courses which pretend to cover TCP/IP in a professional manner.

I bought the book because I wanted to write my own TCP/IP stack for an ARM micro I was developing for. The FREE stacks that are available are written to fit many different micros and end up being very difficult to debug should an issue arise. They ALL use a HEAP which is a big no-no for me. I just can't understand solutions that use heap with micros having very small amounts of ram. I had read all of the various RFC's but could not completely grasp TCP enough to complete my implementation -- so I bought this book. I would divide this book into three sections --- 1/3 theory, 1/3 code implementation, 1/3 fluff (pages filled with examples where an imbedded stack could be used --- not of interest to me --- waste of space --- makes the book thick enough to justify the price). The Theory discusses all of the basic TCP/IP stack aspects well except DHCP. DHCP is addressed in a few pages way in the back of the book --- like an after thought. It's a shame since you have to have an IP address before you can use the stack --- so I felt the subject of dynamically acquiring an IP address poorly addressed. The RFC's on this topic are straight forward so it's not a big negative. The theory on TCP was excellent (what I purchased it for). The author describes a primitive TCP implementation and then the reasons and mechanisms for improving upon it. All my reading of the RFC's made much more sense after reading the TCP section. The second part of the book is for class room lab assignments. It assumes you have a specific development board and tools (neither I had nor was interested in). The "Implementation" code examples in the labs implement the VERY basic aspects of a stack. It assumes you receive a message in a buffer and you pass off a buffer for transmission. If you are interested in how a stack might be integrated with a MAC --- none of that is addressed. The code is written for single thread usage. I use my own RTOS and found many instances where the code was NOT thread safe. It's OK for teaching/learning -- NOT for real world use. The TCP code implementation is very basic. Remember I stated that the theory section explained the issues with a basic TCP implementation and the means to address them. The code implementation of those means is left to the reader. The basic code in the lab examples allows you to implement a TCP connection, close and data transfer. I think the book is great as a learning tool. The author did not just reprint the various RFC's but explains the various stack components in a

way that is easier to grasp. Please note -- the book also covers IP and UDP. I was already well versed in those areas so I did not spend much time in those areas of the book. Again -- good book to learn from. Joe

This book is just amazing. It gives a background if you didn't study yet, but it gives to you a really practical knowledge. This book goes to the core of embedded systems in networks. But you need always to verify the RFC's if you want to add some advanced techniques.

This is one of the best book on Networking. I wanted to refresh my knowledge of networking for a new job and I picked up this book. It turn out to be the best book I have read on networking. I needed real code examples showing how to implement TCP/IP stacks with real world examples. This book has it all.- Content is really comprehensive.- It start with low level basics, goes step by step through all the important protocol stacks (TCP, IP, HTTP, SMTP, FTP etc....).- Very good flow - first part of the book is theory, second part is code and third part is practical example- It is easy to read. No usage of cryptic language and complex mathematical equations.- Comes with a code examples of TCP/IP stack (CD included)- Good explanation of concepts using analogies. To sum up, this book is an excellent learning resource. Compared to Tatenbaum its much easier read and more in depth.

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