



# THE CCIE BLUEPRINT

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## Introduction

What is the CCIE?

If you are reading this book then I would assume you know what you are letting yourself in for, but if you are looking for information about the CCIE then I will just provide a brief introduction here.

The Cisco Certified Internetwork Expert (CCIE) is a technical certification offered by Cisco and is regarded as the most prestigious networking certification in the industry. It consists of a two hour written exam and an 8 hour hands on lab exam.

At the time of print there are currently six tracks you can take.

Routing & Switching, Collaboration, Data Center, Security, Service Provider and Wireless.

The most popular track has always been Routing & Switching. The reason for this is mainly around the availability of hardware to practice on, the amount of study materials available and the fact that it covers the most general topics of networking.

Most engineers will pass the Routing & Switching exam first and then pick a specialisation relevant to their job for a second and maybe a third, fourth or fifth!

There is no hard and fast rule to this and you can pick whichever track you want. There are also no pre-requisites to the CCIE. All you have to do is pass the written and book the lab.

I started my CCIE journey in 2009, 6 years before writing this book. I have made a lot of mistakes, spent a lot of money and wasted a lot of time; none of which I will ever get back.

The reason for this book is to try to answer all of the questions that I am always getting asked on my blog [www.rogerperkin.co.uk](http://www.rogerperkin.co.uk) and to help you shorten your CCIE journey, it is to empower you to believe you can pass the exam and to save you some money and make sure you pass your CCIE in the most time efficient way.

This is not a technical book and I will not be going into OSPF areas and BGP route reflectors etc. There are many resources available for teaching you the technical aspects of passing the CCIE, what is not available is a book that covers the softer side of passing the exam.

How do you start? How do you balance study and family life?

I have a new baby can I study for CCIE? How long is it going to take? etc etc.

This book is based on real world experience from someone who has been through the journey the hard way, I have sacrificed family holidays, weekends and spent far too much money on achieving this goal, which, now that it is complete I am so glad that I persevered.

A lot of people start the journey and a lot of people give up along the way, disillusioned by the amount of technical content that has to be mastered, saying this exam is impossible to pass and it's not for them.

The truth is the CCIE lab exam (whichever track you take) is an achievable goal that any network engineer can obtain, you just need one thing and that is determination.

If you really want to pass this exam you will.

My motto for life and to pass this exam is "**Relentless Pursuit.**"

Never give up and you will get there.

## Acknowledgements

I would like to publicly acknowledge the support of my wife and daughter throughout this journey who have had to put up with many evenings and weekends without me there and accepted the sacrifice of family holidays where I have had to study instead of going camping for 2 weeks.

I could not have done it without their support and the belief that I would accomplish my goal.

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## Chapter 1 – My Journey

I started my life in IT in 2001 as a Desktop support engineer for a local company. I quickly moved up to server support (mainly windows NT4 and Novell) and in 2003 decided I wanted to start learning about networking. Whilst still in the server support role I self-studied for and passed the CCNA. I just bought the book, had a switch and a couple routers at work and taught myself.

From that point on I was hooked, I could see so many avenues open to me, Wireless, Switching, Routing, Voice etc.

I continued on the Routing & Switching track and over the next two years started to pick up some network tasks at work and when the main network guy left I took his role.

I was now managing a network that spanned 2 buildings and had over 900 users.

Over the next few years I learnt everything there was to know about the network, dial up links, internet circuits, VPN's and Firewalls etc. I loved my job but wanted to take it further so I started to study for my CCNP.

This journey took me two more years and along the way I picked up some other Cisco specialisations including IPS specialist, VPN specialist and Firewall specialist. I finally passed my CCNP in 2005. It was at this time that I started to think about the CCIE, so I bought the CCIE written certification guide and started to read it.

Very soon after this we had a new addition to our family. My daughter was born in December 2005. All my studying stopped – there never seemed to be enough time in the day to even get enough sleep let alone study for the CCIE!

4 years passed and in 2009 I made my first attempt at the CCIE written which I failed. I tried again 6 months later and passed. My CCIE journey had started!

During this time I had also changed jobs and was now working for a company with a European network, managing multiple sites across different countries brought its own unique set of challenges and I learnt a lot more about remote network support.

My boss knew about my desire to pass the CCIE and said he was happy to support me and to pay for one attempt at the lab, so I purchased the INE workbooks and videos and started learning. I made my first attempt at the CCIE lab exam (Version 4) in April 2013 and failed.

**This was my first mistake**, I went to the lab far too early and had no real expectation of passing, I was caught up in the moment of going to Brussels and seeing what the lab was actually like without any real focus on making a passing attempt.

(Unless you have money to burn I do not recommend this approach, only go to the lab when you feel you have a real chance of passing.)

It is a common perception among CCIE candidates that they will use the first attempt as a reconnaissance mission, see what the lab is like and to calm their nerves for the next attempt.

This is a really bad idea, unless you are a really nervous person, going to the lab is just like sitting in a room at a PC and doing a practice lab. Your nerves will soon pass. The only difference is that it has cost you money and the time pressure is real. Once you pass a certain point that you know you are not going to pass you get very low. I will talk more about this later in the book.

The CCIE lab did what it said on the tin – it found my weaknesses and exploited them. I failed the trouble-shooting section badly and simply ran out of time in the configuration section.

On a positive note I found out about the journey from my home to Diegem, I saw the CCIE lab exam room, met the proctor and experienced the lab.

There is a short video here showing my journey from Southampton to Diegem.

<https://www.youtube.com/watch?v=4JxeAe6qisl>

It taught me a lot and it made me realise that you are on your own with just your knowledge to get you through the exam.

I can impart all that knowledge here so you do not have to waste your money finding out yourself.

My studying up to this point had been quite relaxed with no real time pressures and I hadn't even done a full mock lab. This was my mock lab and it was an expensive mistake. I hadn't actually lost anything as my company had paid for this attempt so I was quite relaxed and ready to try again.

When I asked my boss if he could pay for a second attempt he said no. So my next attempt was going to be funded myself.

This added some real focus to my studies, when you are spending your own money on the lab, travel and hotels it adds up.

For me this totalled nearly £1500.

My next attempt was in December 2013 and I failed again, this time however I was so much closer and finished the troubleshooting and also managed to finish the config, however I did not have any time for verification. The result – fail on both sections. I had obviously broken some requirements for troubleshooting and made some mistakes in config which I did not have time to verify.

This just made me more determined to pass and after a long discussion with my wife about how I was going to spend another £1500 on the CCIE and would be studying more she agreed that she would support me for another attempt.

This will be covered a lot more later in the book, but I cannot emphasise how much the support of your family is for your CCIE journey.

It was around this time that Cisco announced Version 5 of the Routing & Switching lab – I had 6 months to pass V4. So I made another study plan and booked the lab for the last week of V4 and put it on the credit card.

This time thought I had nailed it, TS went really well and I finished configuration with time to spare. The result was TS pass, configuration fail. My L2 score was 33% I must have made some big error which caused me a loss of points there and also affected other sections.

Following this failure I decided enough is enough and I could not keep spending money on this and I needed to focus on my family. So I took some time out of CCIE, resigned to the fact that maybe I was never going to make it.

At the back of my mind was the thought that I had come this far and put so much into it already I can't give up.

After a few weeks I did start studying again and I also managed to change jobs, this time working for a Gold Partner, this was the turning point as my new boss offered to pay for 2 more attempts and support me in any way I needed.

Brilliant! My CCIE dream was back on track.

The only minor problem was that the exam was now Version 5 and included DMVPN, the good news was that Frame Relay and PFR was gone.

So I took 6 months of focussed study time to ensure I had the entire blueprint covered and booked the exam for May 2015.

The topology for version 5 is 30 routers and it also now included the diagnostic section. 3 questions which are like helpdesk tickets to be answered in 30 minutes.

I passed troubleshooting and diagnostic and failed configuration, I had some issues with DMVPN which I could just not fix which meant I did not get end to end reachability in my topology.

Again I was close but no cigar, but I knew this time I had a second attempt in my back pocket. So my plan on the train home was to book again for 30 days and finally nail this exam.

I was then hit with the Cisco retake policy which meant I had to now wait for 90 days before I went back again. So that's what I did and booked the exam for August 27<sup>th</sup> 2015

On my fifth attempt everything went like clockwork I flew through the troubleshooting in under 90 minutes, answered all 3 diagnostic questions and had a full 5 ½ hours for the configuration. I finished that with at least 90 minutes to verify – it was at this point that I knew I had passed as there was nothing that could go wrong now.

I knew I had answered all the troubleshooting questions without breaking any restrictions, I was unsure about one diagnostic question (you only need 2 to pass diagnostic) so I was not too worried. I had triple checked all the questions for configuration and had pinged every router that I needed to about 4 times.

The next 12 hours were the longest of my life. On my previous attempts when I had failed I had the results by the time I had got back into the UK, about 4 hours later, however on this occasion I did not get the email from Cisco.

The journey back on the train is when you start going over all the tasks in your head, and I was starting to convince myself that I had failed as I had already added up 10 points that I had lost due to mis-configuration.

I had to clear my mind and just forget it. I arrived home just before midnight, 7 hours after I had finished the lab and still no email. I then continued to check my emails until 1:30 am.

The email finally arrived at 5:30 am which I opened at 6am as I could not sleep.

It was then I saw what every CCIE candidate dreams of seeing; your CCIE number.

**I was CCIE #50038!**

I ran back into the bedroom and woke my wife up and she started screaming which woke my daughter up who came in and she started screaming. My journey was over.

It had taken me nearly 6 years from my first written attempt and cost me more than it should but I had finally achieved my goal.

The next day was just a dream as I spent most of the day emailing, texting and phoning everyone telling them the good news. This is the best moment about passing your CCIE.

So that was my journey, during the next chapters of this book I will go through the motivation you need to become a CCIE, how to start, how to balance family life and study, how to focus your study time, my bootcamp experiences, how to study and how to minimise the cost.

My journey took far longer than it should and you should really be aiming on 1-2 years as a realistic goal.