



**CCBOOTCAMP's**  
**Approach and Methodology**  
**for CCIE Routing and Switching**

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## Introduction

Since 1998, CCBOOTCAMP, a division of Network Learning, Inc., a Cisco Learning Solutions Partner, has become the industry leader in developing CCIE training products and services. To date, we have helped over two thousand experts obtain their CCIE certification; view our online Hall of Fame, <http://www.ccbootcamp.com/about-ccbootcamp/ccie-hall-of-fame.html>.

This document outlines the CCBOOTCAMP recommended approach toward attaining your CCIE certification using our proven self-study and instructor-led methods.

## Requirements for Certification

There are no formal prerequisites for CCIE certification, meaning no other professional certifications or training courses are required. To attain certification, all CCIE candidates must first pass a written qualification exam, and then the corresponding hands-on lab exam. However, candidates are expected to have an in-depth understanding of all topics found in the exam blueprints, and are strongly encouraged to have three- to five-years of job-related experience before attempting the certification process. For additional information, please review the exam preparation materials referenced below.

### Step One: CCIE Routing and Switching Written Exam

The first step is to pass a two-hour written qualification exam, covering networking concepts and some equipment commands. You must pass the written exam before you are eligible to schedule the lab exam.

- [Written Exam Information](#)
- [Schedule and Pay for Written Exam](#)

### Step Two: CCIE Routing and Switching Lab Exam

The second step is an intense, eight-hour, hands-on exam that includes two sections: Troubleshooting and Configuration. CCIE Routing and Switching lab exam will begin with the troubleshooting section and end with the configuration section. The troubleshooting section requires you to configure and troubleshoot a series of complex networks to given specifications. Knowledge of troubleshooting is an important skill and candidates are expected to diagnose and solve issues as part of the CCIE lab exam. You will not configure end-user systems, but are responsible for all devices residing in the network (hubs, etc.).

Please note that you must make your first lab attempt within 18 months of passing your written exam, and you must pass the lab within three years of passing the written exam to achieve CCIE certification.

- [Lab Exam Information](#)
- [Schedule and Pay for Lab Exam](#)

## **CCIE Routing and Switching Written Exam Preparation**

To assist you with your preparation for the CCIE Routing and Switching Written Exam, CCBOOTCAMP offers two products/services:

- 1) CCIE Routing and Switching Written Exam Study Guide
- 2) CCIE Routing and Switching 5-Day Instructor-Led Written Boot Camp

## **CCIE Routing and Switching Written Exam Study Guide**

Brad Ellis, founder and CEO of CCBOOTCAMP, along with his CCIE Routing and Switching team, has authored a best-selling CCIE Routing and Switching Written Exam Study Guide, containing all material needed to pass the current CCIE Routing and Switching Written Exam. In this five-hundred plus page book, every topic in the blueprint is covered in detail.

### Chapter Titles

- Chapter 1: Implement Layer 2 Technologies
- Chapter 2: Implement IPv4
- Chapter 3: Implement IPv6
- Chapter 4: Implement MPLS Layer 3 VPNs
- Chapter 5: Implement IP Multicast
- Chapter 6: Implement Network Security
- Chapter 7: Implement Network Services
- Chapter 8: Implement Quality of Service (QoS)
- Chapter 9: Troubleshoot a Network
- Chapter 10: Optimize a Network

## **CCIE Routing and Switching 5-Day Instructor-Led Written Boot Camp**

The CCIE Routing and Switching 5-Day Instructor-Led Written Boot Camp is comprised of four days intense coverage of the CCIE Routing and Switching Written Exam blueprint, covering all relevant technologies, and providing detailed whiteboard examples of each. This methodology is closely aligned to the approach we use in our lab boot camps. At the end of each day of classroom instruction, every student receives over 150 practice questions to work on in preparation for the next day's instruction. In addition, we include a complimentary version of CCBOOTCAMP's CCIE Routing and Switching Written Exam Study Guide. Written classes are taught from 9am - 5pm Monday through Thursday, and on Friday, students take their CCIE Routing and Switching Written Exam.

## **Recommended Approach for the CCIE Routing and Switching Written Exam**

We highly recommend our students prepare in advance by spending two to four weeks reviewing and developing an understanding of our CCIE Routing and Switching Written Exam Study Guide. After a perspective student feels comfortable with the material, we recommend they attend our written boot camp. The written boot camp will round out their individual knowledge base, and will also lay the foundation for the next step – studying for the CCIE Routing and Switching Lab Exam. Our proven approach to learning has resulted in our students achieving a 97% pass rate. The 3% who do not pass their exam on Friday

following the class typically falter due to a lack of pre-class preparation and evening practice test question review.

## **CCIE Routing and Switching Lab Exam Preparation**

To assist you in your preparations for the CCIE Routing and Switching Lab Exam, CCBOOTCAMP offers the following products:

- CCIE Routing and Switching Virtual Racks
- CCIE Routing and Switching Home Lab Kits
- CCIE Routing and Switching Technology Lab Workbook
- CCIE Routing and Switching Advanced Lab Workbook
- CCIE IPV6 Lab Guide Version 1.0
- CCIE Routing and Switching 5-Day Instructor-Led Foundation Lab Boot Camp
- CCIE Routing and Switching 5-Day Instructor-Led Advanced Lab Boot Camp
- CCIE Routing and Switching 5-Day Instructor-Led Mock Lab Boot Camp

## **CCIE Routing and Switching Virtual Racks**

CCBOOTCAMP has spent over \$7M (Cisco list price) on the most advanced Routing and Switching training racks in the Cisco training industry. CCBOOTCAMP training racks are loaded with the latest Cisco gear, including (but not limited to): ten (10) Cisco 2811 ISR routers (running the same code used in the Cisco CCIE lab); four (4) Catalyst 3560 switches running EMI code; Frame Relay Switch, and a Terminal Server. These virtual racks are used for instructor led classroom training and are also available for remote rack rental. Enrollment in the Routing and Switching program includes rack sessions each lasting eight hours in duration.

## **CCIE Routing and Switching Home Lab Kits**

CCBOOTCAMP can assemble the perfect home lab to fit most any budget. We include all devices, cables, device memory and miscellaneous parts necessary to meet your requirements. By having CCBOOTCAMP prepare your home lab kit, you can be assured of receiving all relevant items needed for a successful lab.

## **CCIE IPV6 Lab Guide Version 1.0**

The IPV6 Lab Guide is a technology focused workbook containing practice labs, examples, and detailed explanations that are geared around IPV6 implementation, techniques, and theory. This practice lab guide will give students an in-depth understanding and comprehension of the IPV6 technologies and applications.

## **CCIE Routing and Switching Technology Lab Workbook**

The CCIE Routing and Switching Technology Lab Workbook utilizes a "by technology" approach to tackle each complete technology a student could encounter on their lab exam. Each chapter contains technology focused labs that break down the technology into its roots via a series of mini-labs. This workbook includes complete step-by-step walk throughs and solutions.

- Chapter 1: 3560-I Questions
- Chapter 2: Frame Relay Questions
- Chapter 3: RIP
- Chapter 4: EIGRP

Chapter 5: OSPF  
Chapter 6: BGP  
Chapter 7: PIM/Multicast  
Chapter 8: QoS  
Chapter 9: IP and IOS Services  
Chapter 10: IP  
Chapter 11: IPv6  
Chapter 12: Security Questions

## **CCIE Routing and Switching Advanced Lab Workbook**

The Advanced Lab Workbook contains five complete lab scenario simulations. These lab scenarios are sometimes considered more difficult than the actual CCIE Lab Exam itself! Each scenario is a comprehensive mock lab, containing a variety of technologies. With each scenario, a complete walk-through and the solution are included. Each scenario is a step-by-step, brick-by-brick analysis of the many techniques and approaches required to solve the mock lab scenario.

## **CCIE Routing and Switching 5-Day Instructor-Led Foundation Lab Boot Camp**

CCIE Routing and Switching 5-Day Instructor-Led Foundation Boot Camps are a mixture of lectures and labs with focus on teaching the fundamentals of the technologies and developing a strong understanding of key concepts. Foundation classes are typically for the student who is approximately six months prior to taking their CCIE Lab Exam. Before attending this course, students should be at the CCNP level of training and experience. Prior passing of the CCIE Routing and Switching Written Exam is strongly suggested, but not required. Foundation classes are taught from 9am - 5pm Monday through Friday.

## **CCIE Routing and Switching 5-Day Instructor-Led Advanced Lab Boot Camp**

If you can only attend one CCIE Routing and Switching Lab course this is the course for you. The CCIE Routing and Switching 5-Day Advanced Lab Boot Camps are for students in the final stages of preparing for their CCIE Lab Exam. This boot camp focuses on individual student weaknesses and filling the gaps in the individual student's background of knowledge. The CCIE Routing and Switching Advanced Lab Boot Camp will comprise of advanced technology focused labs and white boarding sessions; no questions go unanswered. This is the only boot camp that covers the CCIE Routing and Switching Lab Blueprint from A-Z. CCIE Routing and Switching Advanced Lab Boot Camp begins each morning at 9am and typically runs for eight plus hours. On Friday the boot camp runs from 9am - 5pm. Courses are available at a variety of locations, and are also available for access via WebEx; CCBOOTCAMP's online training classroom.

## **CCIE Routing and Switching 5-Day Instructor-Led Mock Lab Boot Camp**

CCIE Routing and Switching Instructor-Led Mock Lab Boot Camps are five days of strictly mock labs. The mock lab class is for students who have already mastered all of the advanced lab topics, yet desire additional practice in building speed, logical methods of approach, and solid test-taking conditioning. Each day is spent on tackling a mock-lab scenario with feedback from the mock proctor (instructor) after the day is finished. This boot camp is a great addition to our 5-Day CCIE Advanced Lab Boot Camp. These boot camps are taught from 9am - 5pm Monday through Friday. All mock lab classes are available for access via WebEx; CCBOOTCAMP's online training classroom.

## **Recommended Approach for the CCIE Routing and Switching Lab Exam**

In preparation for taking the CCIE Routing and Switching Lab Exam, CCBOOTCAMP recommends spending two- to three-months focusing on building a strong foundation and understanding of core routing protocols and layer 2 technologies. A great resource for additional, self-paced training is the CCIE Routing and Switching Technology Lab Workbook. This workbook has technology-focused labs that concentrate on the core technologies. Upon completion of the technology workbook, CCBOOTCAMP recommends attending the CCIE Routing and Switching Foundation Boot Camp.

Once the core routing and switching technologies are completely understood, focus should be placed on interaction between the technologies. The best way to practice is by completing all available advanced labs. This includes the CCIE RS Advanced Lab Workbook and IPv6 Lab Workbook. This process typically takes another two- to three-months. At this point, CCBOOTCAMP recommends attending the CCIE Routing and Switching Advanced Lab Boot Camp, which covers advanced technologies and specific deficiencies at a level that is customized around the individual student. Once the advanced topics and integration of technologies have been mastered, shift focus to concentrate on specific lab exam items, such as speed, exam approach, and recognizing "gotchas." CCBOOTCAMP offers the CCIE Routing and Switching Instructor-Led Mock Lab Boot Camp, containing five days of strictly mock labs. The mock lab class is for those who have already mastered all of the advanced lab topics, yet desire additional practice in building speed, logical methods of approach, and solid test-taking conditioning.

The CCIE Routing and Switching Lab Exam should be scheduled early in CCIE Lab preparation process. This will assist students in planning out their training all the way to the first attempt of the lab exam. The student should plan on taking the CCIE Routing and Switching Lab Exam within two weeks - thirty days of attending the CCIE Routing and Switching Advanced Lab Boot Camp and CCIE Routing and Switching Mock Lab Boot Camp. If the student elects to take the CCIE Routing and Switching Advanced Lab Boot Camp, with a thirty day break, and then attend the CCIE Routing and Switching Mock Lab Boot Camp the student should take their lab exam within two weeks of the boot camp.



## Appendix A – Company Information

### About CCBOOTCAMP

In 1998, Network Learning, Inc. began with a vision to develop smarter, more advanced products and services for the Cisco training community. Since our humble beginnings, Network Learning, Inc. has grown into a leading Cisco Learning Partner with several dedicated single, dual, triple and quad CCIE instructors who lead our classes, author our workbooks, develop our labs, support our products, and most importantly, who give our customers the knowledge and skills they need to succeed in today's rapidly evolving networked business world.

Through our specialized Cisco Certification training division, CCBOOTCAMP, we are known for effectively raising the level of integrity, commitment, skill and knowledge with Cisco Certified experts worldwide. No other training company in the world has a higher level of personalized instruction to help you succeed than Network Learning, Inc. Our quality of service and support speaks for itself. Just ask our previously certified customers.

Our state of the art facility houses the finest equipment in the Cisco training industry. We have spent over \$7M (Cisco list price) to date building the most advanced training racks for our students to utilize. We have 16 full CCIE Routing and Switching racks that contain the following: 10 Cisco 2811s running 12.4T, 4 Cisco Catalyst 3560s running EMI code, Frame-relay switch, and Terminal Server. We have 16 full Security racks that contain the following: 10 Cisco 2811s running 12.4T Adv Enterprise Services, 4 Cisco Catalyst 3560s running 12.2, Cisco 4235 IPS Sensor running 6.x, 2 Cisco ASA-5510s running 8.x, ACS/CA Server running 4.x, Frame-relay switch, Terminal Server, and Test PC. We have 16 full Service Provider racks that contain the following: 10 Cisco 2811s running 12.4T, 4 Cisco Catalyst 3560s running EMI code, 1 Cisco 3640 with ATM, 1 Backbone LS1010 connected ATM to backbone Cisco 3640, Frame-relay switch, and Terminal Server. We have 16 full Voice racks that contain the following: 3 Cisco 2811s running 12.4T (HQ, Branch 1, Branch 2), 1 Cisco 2811 for PSTN/WAN cloud, 1 Catalyst 3750G 12.2.x, 7 Cisco 7960G IP Phones, 1 Server with Unified Communications Manager 7.0 Pub, 1 Server with Unified Communications Manager 7.0 Subscriber, 1 Server with Unity Connection 7.0, 1 Server with Presence 7.0, 1 Server with CallCenter 7.0, and 1 NM-CUE (Cisco Unity Express Network Module).

No other training company in the world offers this level of training equipment to their customers.

Because we own and operate our training facility and equipment, we are able to support and scale class sizes from a minimum of two (2) students, to a maximum of ten (10) students for our CCIE boot camp classes, to ensure each student receives ample one-on-one instruction from our CCIE certified trainers. We also provide each individual student their own gear to work with. Our students do not share gear, regardless of which level course they are enrolled in.

Headquartered in the United States in Henderson, Nevada, we offer certification classes and boot camps at remote locations all around the globe, with the majority of our classes held at our state of the art facility, less than six miles from Las Vegas McCarran International Airport. For additional information, visit us at [www.ccbootcamp.com](http://www.ccbootcamp.com).



## Contact CCBOOTCAMP

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Henderson, NV 89014

Toll Free: 877.NLI.CCIE  
Phone: 702.968.5100  
Fax: 702.446.0357  
Website: <http://www.ccbootcamp.com>  
Email: [sales@ccbootcamp.com](mailto:sales@ccbootcamp.com)

## Customer Support Web Sites

<http://www.routerie.com> (Routing and Switching / Service Provider)

<http://www.securityie.com> (Security)

<http://www.voiceie.com> (Voice)

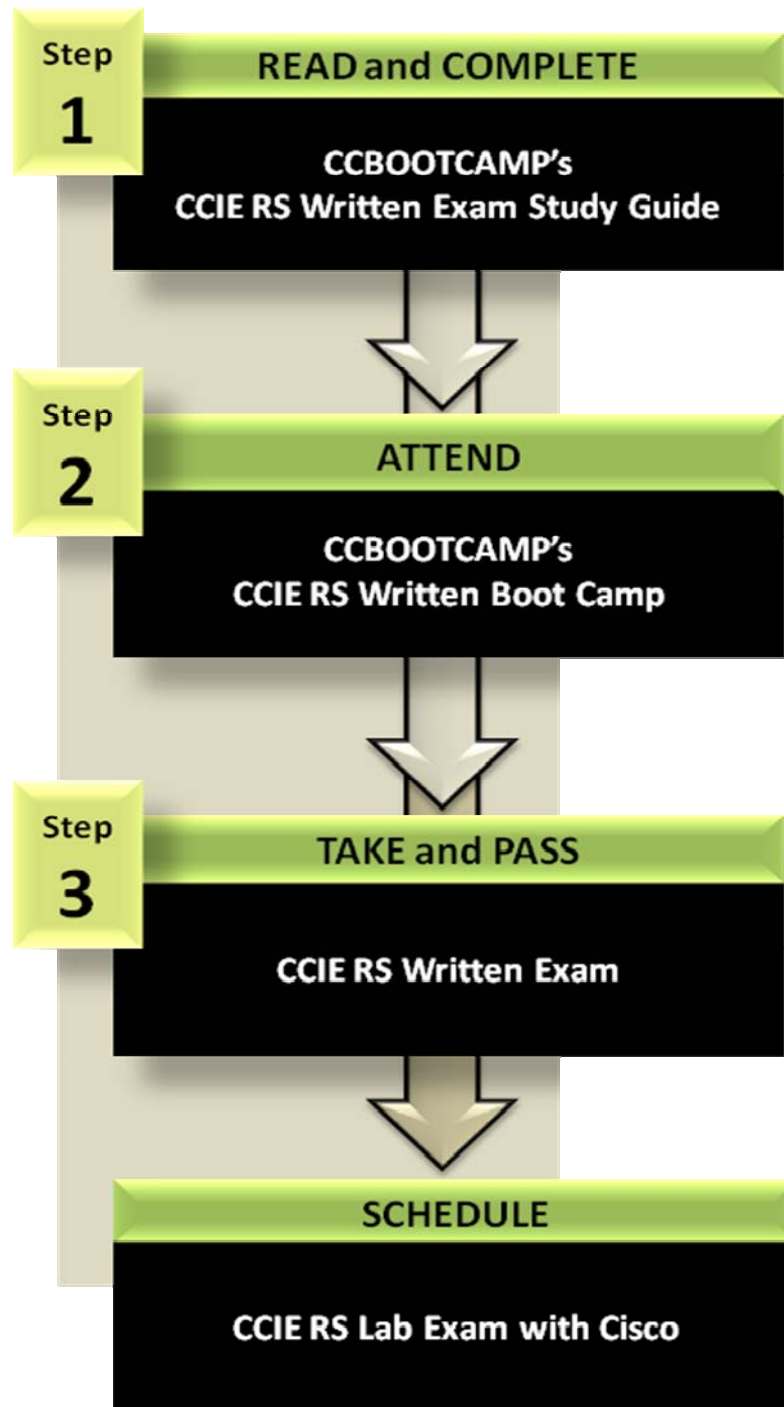
## Appendix B – Online Training

### Online Training Classroom

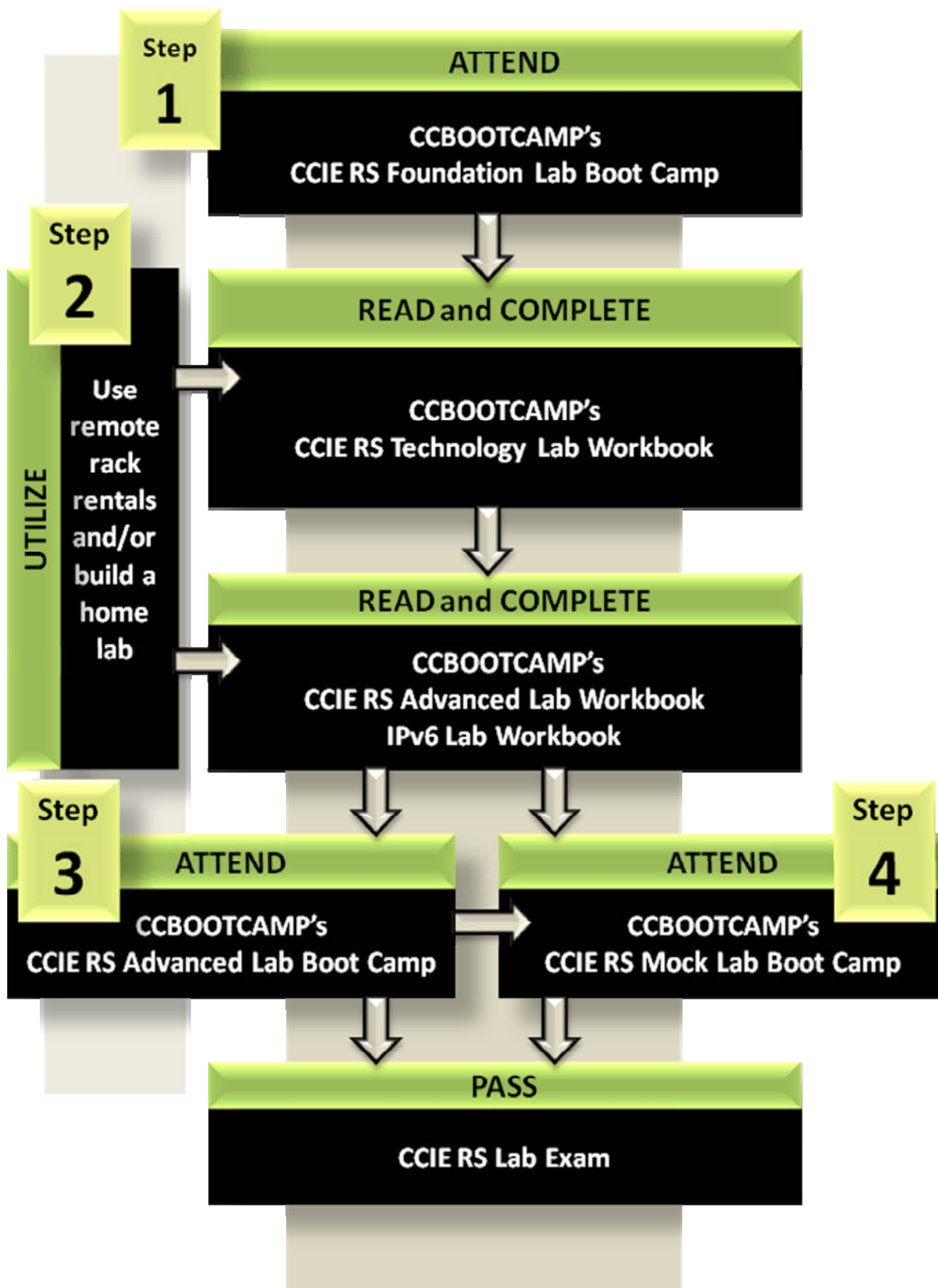
While CCBOOTCAMP prefers that students attend our boot camps in person at one of our facilities, we can accommodate those who cannot be physically present via WebEx; CCBOOTCAMP's online classroom. CCBOOTCAMP utilizes state of the art technology to provide online classrooms for remote training of students around the globe. Our online classrooms provide audio, direct messaging, whiteboard, and shared applications via desktop interaction with our live instructor. If you would like a demonstration of our online classroom configuration, please email us at: [sales@ccbootcamp.com](mailto:sales@ccbootcamp.com).

Appendix C – Training Flowchart

## CCBOOTCAMP's Approach and Methodology for CCIE RS Written



## CCBOOTCAMP's Approach and Methodology for CCIE RS Lab



## Appendix E – Pre-Lab Checklist

- Remove all possible work/life variables from your mind and your schedule to increase your chances, and to ensure you are physically and mentally ready for your exam!
- Arrive at the testing city/location at least one day prior to your scheduled exam. If your time zone is plus/minus more than six hours difference from the time zone of the Cisco office where you will be taking your exam, plan on arriving at least two days prior to the exam to adjust your body to the local time.
- Drive to the facility where your lab exam will be held in advance to be certain you know how long it will take you to get to the testing location on the day of your exam.
- Find a good, reliable place to eat breakfast near the testing facility.
- The night before your exam, be sure to eat a healthy dinner consisting of protein and complex carbohydrates. Stay away from greasy, fatty, and sugary foods. Also, if you want to eat meat, try to eat chicken or fish, though avoid red meat as it takes your body longer to digest.
- Get a good night's rest. Do not stay up the entire night trying to cram or study last minute materials. Do not take any type of sleep aid that could still be in your system the following day.
- Wake up at least ninety minutes before your exam start time. Shower, get dressed, and go eat breakfast.
- At breakfast, eat only healthy foods. No greasy, fatty, or sugary items should be consumed. Eat fruits, vegetables, oatmeal, etc.
- Arrive at the testing facility at least fifteen minutes prior to your scheduled exam time.
- Relax, breathe, focus, and trust your instincts.

**Good Luck!**