



CCIE R&S v5 Troubleshooting Bootcamp

Instructor Introduction

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- CCIE Routing and Switching – 2007

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Recommended Approach

- » Do Configuration Lab
- » Do TS Lab 1 then watch Lab 1 Videos
- » Do TS Lab 2 then watch Lab 2 Videos
- » Do TS Lab 3 then watch Lab 3 Videos
- » Do TS Lab 4 then watch Lab 4 Videos

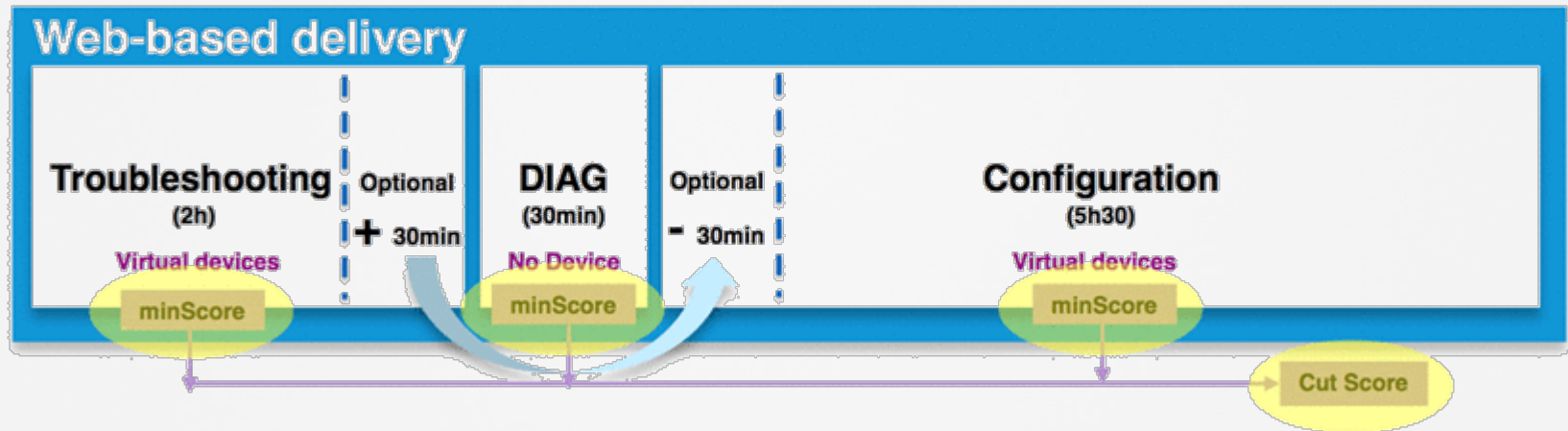
Recommended Prerequisites

» Working knowledge of the topics covered in the R&S Advanced Technologies Class

- Layer 2
 - Ethernet, PPP
- Layer 3
 - IPv4, IPv6, Routing Logic, RIP, EIGRP, OSPF, BGP, Multicast, MPLS L3 VPN, DMVPN
- Misc.
 - QoS, IOS Features & Management

Lab Format – Sections and Scoring

» Three sections: Troubleshooting, Diagnosis, and Configuration



if $\{[\forall \text{mod}: (\text{mod_Score} \geq \text{mod_minScore})] \ \&\& \ [\sum(\text{mod_Score}) \geq \text{Lab_CutScore}]\}$;
then PASS

Troubleshooting Section

» Lab Exam Format

- 2 to 2.5 hours in length
- Symptom based tickets with results originated solutions
- Separate restrictions and requirements from the configuration section – DO NOT remove technology
- 15 minute warning displayed before the section ends
- At the end of the section your access is automatically disconnected

Troubleshooting Section

» Lab Equipment

- ~30 virtualized routers and switches
 - ~26 emulated IOS based routers using L3 IOL
 - ~4 virtualized IOS based switches using L2 IOL
- IOS 15.3T based for routers
- IOS 15.0S based for switches

Strategy

- » Read over the tickets before starting
 - Look for any restrictions and note them
 - Look for tickets that involve the same devices
- » Do NOT spend too much time on any one ticket
- » Attempt to do the tickets in order, but also follow proceeding rule

Strategy

- » Do not assume every problem is a complex issue
- » Understanding the technology is the one silver bullet to troubleshooting the technology
- » Change things as little as possible and as close to the source of the problem as possible to effect change

Restrictions

- » Do not change the following configuration on any device:
 - Hostname
 - Enable password
 - Console or VTY configuration
- » Use the password of "cisco" for any authentication.

Restrictions

- » Points are awarded for finding and resolving faults in the topology. An inserted fault is an introduced break for a scenario that was previously working. Depending on the scenario, fixing inserted faults could require one or multiple command lines on the same or multiple devices.

Restrictions

- » The resolution of one incident MAY depend on the resolution of previous incident(s). The dependency will not be visible if incidents are resolved in sequence.
- » There are NO physical faults in the network.
- » Do not change any routing protocol boundaries. Refer to the provided diagram.

Restrictions

- » Do not remove any feature configured in order to resolve a ticket; you must resolve the issue rather than removing the configuration.
- » Static, default routes or static mroutes are NOT permitted unless preconfigured.

Restrictions

- » Routes to null0 that are generated as a result of a dynamic routing protocol solution are permitted.
- » Routers do not need to ping themselves when verifying reachability.
- » Tunneling and policy based routing is not permitted unless preconfigured.

Good Luck!