



CISCO NETWORKING ACADEMY PROGRAM



CCNA 2:

Routers and Routing Basics v3.0

Skills-Based Assessment

Student Version

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CCNA 2 Skills-Based Assessment

Student Name: _____ Date: _____ Start time: _____

Circle one:

Location: Anniston or Boaz

Circle one:

Version 1 2 3 4 5 6 7 8 9 10

Instructor provided information:

The WAN IP network address is _____ with a subnet mask of _____.

The local LAN has been assigned an IP network address of _____.

Each subnet of the above network needs to accommodate _____ host addresses.

Use the _____ usable subnet for the LAN. Do not use subnet zero as the first subnet.

The IGRP AS number is _____.

Points Summary:

Section 1: Basic Planning _____ (___%)

Section 2: Security Planning _____ (___%)

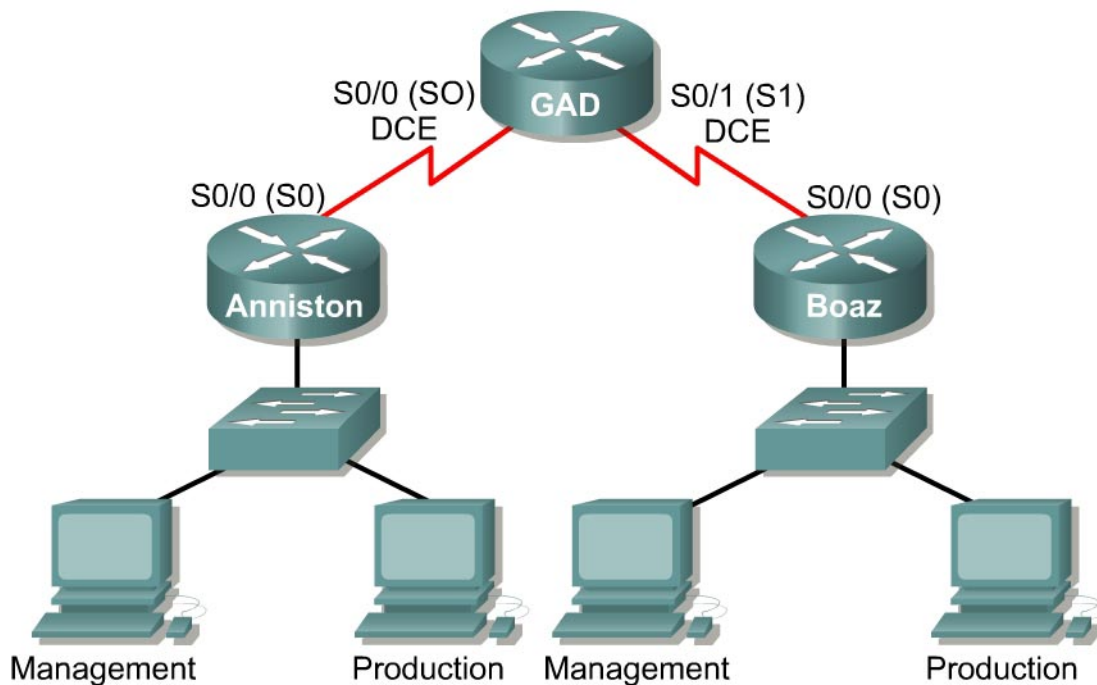
Section 3: Cabling _____ (___%)

Section 4: Basic Configuration _____ (___%)

Section 5: Security Configuration _____ (___%)

Section 6: Troubleshooting _____ (___%)

Total Points: _____



This exam will occur in stages. Each element is a set of instructions that needs to be accomplished. The instructor will initial each task as it is completed. Proceed to the next task only after the instructor has approved the current task.

The six elements of this exam are:

1. Basic planning
2. Security planning
3. Cabling
4. Basic configuration
5. Security configuration
6. Troubleshooting

The scenario is that Gadsden (GAD) is the regional headquarters of the company. Anniston and Boaz are branch offices. Each network associate (student) will be responsible for a single branch office. The internetwork team leader (instructor) is responsible for the regional router (GAD).

A network address and specific number of hosts per subnet have been assigned for the local LAN. From the instructor provided information, the subnet address, the subnet mask, the first and last usable addresses, and the broadcast address for each site of the LAN need to be determined.

Step 1: Basic Planning**Time: 20 minutes****Points _____**

Using the chart below, plan the first ten usable subnets of the LAN network address that was provided by the instructor.

Subnet	Subnet Address	Subnet Mask (/x)	First Host	Last Host	Broadcast
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

The WAN interface of GAD is assigned the lowest usable address in the subnetwork.

Identify and use the second lowest usable WAN address for the S0, or S0/0, interface of the assigned router _____.

For security reasons, all of the production workstations will be assigned the lower-half of the IP addresses of the assigned subnet by the instructor. All network devices and management stations will be assigned the upper half of the IP address numbers of the subnet assigned by the instructor. From this upper half range of addresses, the Ethernet router interface is to be assigned the highest usable address.

Identify the required IP address of the Ethernet interface on the assigned router.

The host configurations must also be planned. Using the chart below, complete the host information.

Branch: Anniston or Boaz	IP Address Range (Usable)
Production Host Range (Lower half)	
Management Host Range (Upper half)	

Production Host

IP address _____

Subnet Mask _____

Default Gateway _____

Management Host

IP address _____

Subnet Mask _____

Default Gateway _____

Before proceeding to the next step have instructor approve this step.

Instructor _____

Step 2: Security Planning

Time: 30 minutes

Points _____

There are several security concerns in the internetwork. Develop Access Control Lists (ACLs) to address security issues. The following are the concerns:

1. The company has an Intranet Web server host that all systems can reach at IP address 172.16.0.1 with only HTTP access. No other protocols will be permitted to this site.
2. The company also has a server pool in the 209.0.0.0/24 network. The server pool addresses are divided in half. The servers in the upper half of the address range are reachable by management hosts using all possible IP protocols. The servers in the lower half of the address range are reachable by all LAN hosts using all possible IP protocols. The servers should not be accessible by any other hosts.
3. The company has discovered an Internet Web server at 198.0.0.1 that is known to contain viruses. All hosts are to be banned from reaching this site.

These security requirements should be accomplished with a single access list. Plan the access list required to accomplish these tasks, to which interface this will be applied, and the direction the list will be applied.

Place the ACL plan information below:

Before proceeding to the next step have instructor approve this step.

Instructor _____

Step 3: Cabling**Time: 10 minutes****Points** _____

Now that the planning process is complete, it is time to construct the physical layer. Using the diagram, connect all the associated hardware for the local branch.

Before proceeding to the next step have instructor approve this step.

Instructor _____

Step 4: Basic Configuration **Time: 15 minutes** **Points** _____

Apply a basic configuration to the router. This configuration should include all the normal configuration items. These items include but are not limited to router name, passwords, interface descriptions, routing, host table, and a banner to be displayed before login.

The management workstation and the production workstation should also be configured with the appropriate information.

Routing and connectivity should be verified before notifying the instructor.

Before proceeding to the next step have the instructor approve this step.

Instructor _____

Step 5: Security Configuration

Time: 15 minutes

Points _____

After the basic functionality is in place, security needs to be added to the configuration. Using the security requirement and planning from previous steps, implement and test these basic security functions.

The listed security requirements should be verified before notifying the instructor.

Before proceeding to the next step have the instructor approve this step.

Instructor _____

Step 6: Troubleshooting**Time: 10 minutes****Points** _____

Now that everything is successfully configured, the instructor will introduce some problems. The steps and commands used to correct these issues must be documented. The `show running-config` command should be used only as a last resort.

Symptom / Cause	Commands / Results	Detailed Solutions	Initials

Instructor _____ End time _____