CCNA 640-802 Bible - Describe the Operation of Cisco Routers

1. During startup, the router displays the following error message: boot: cannot open "flash:" What will the router do next? A: Because of damaged flash memory, the router will fail the POST. B: It will attempt to locate the IOS from a TFTP server. If this fails, it will initiate the setup dialog. C: It will attempt to locate the IOS from a TFTP server. If this fails, it will load a limited IOS from ROM. D: It will attempt to locate the configuration file from a TFTP server. If this fails, it will initiate the setup dialog. E: It will attempt to locate the configuration file from a TFTP server. If this fails, it will load a limited configuration from ROM. **Correct Answers: C** Explanation: The boot sequence of a Cisco router is shown below: **Booting up the router and locating the Cisco IOS** 1. POST (power on self test) 2. Bootstrap code executed 3. Check Configuration Register value (NVRAM) which can be modified using the config-register command 0 = ROM Monitor mode 1 = ROM IOS 2 - 15 = startup-config in NVRAM 4. Startup-config file: Check for boot system commands (NVRAM) If boot system commands in startup-config a. Run boot system commands in order they appear in startup-config to locate the IOS b. [If boot system commands fail, use default fallback sequence to locate the IOS (Flash,TFTP, ROM)?] If no boot system commands in startup-config use the default fallback sequence in locating the IOS: a. Flash (sequential) b. TFTP server (netboot) c. ROM (partial IOS) or keep retrying TFTP depending upon router model 5. If IOS is loaded, but there is no startup-config file, the router will use the default fallback sequence for locating the IOS and then it will enter setup mode or the setup dialogue. 6. If no IOS can be loaded, the router will get the partial IOS version from ROM 2. There are no boot system commands in a router configuration in NVRAM. What is the fallback sequence that the router will use to find an IOS during reload? A: TFTP server, Flash, NVRAM B: ROM, NVRAM, TFTP server C: NVRAM, TFTP server, ROM D: Flash, TFTP server, ROM E: Flash, NVRAM, ROM **Correct Answers: D** Explanation: Booting up the Router: Cisco routers can boot Cisco IOS software from these locations: 1. Flash memory 2. TFTP server 3. ROM (not full Cisco IOS) 3. Refer to the exhibit. The technician wants to upload a new IOS in the router while keeping the existing IOS. What is the maximum size of an IOS file that could be loaded if the original IOS is also kept in flash?

A: 3 MB B: 4 MB C: 5 MB D: 7 MB E: 8 MB **Correct Answers: B** Explanation: Based on the output provided, the total amount of flash memory available is 8388608 bytes (8 MB), but the existing IOS is using up 3803056 bytes (3 MB), so in order to fit both IOS files into the flash the new image must be no greater than the amount of available memory, which is 4585552 bytes (4 MB). 4. A Cisco router is booting and has just completed the POST process. It is now ready to find and load an IOS image. What function does the router perform next? A: It checks the configuration register. B: It attempts to boot from a TFTP server. C: It loads the first image file in flash memory. D: It inspects the configuration file in NVRAM for boot instructions. **Correct Answers: A** 5. What will happen after changing the configuration register to 0x2142 and rebooting the router? (Choose two.) A:The IOS image will be ignored. B:The router will prompt to enter initial configuration mode. C:The configuration in flash memory will be booted. D:Any configuration entries in NVRAM will be ignored. **Correct Answers: B, D** Explanation: This question is to check the knowledge of the recovery of the router's password. In normal situation, the configuration register's value is 0x2102?here it is 0x2142?that indicates that it is unnecessary to load startup-config file when rebooting. We can alter the value of the configuration register to change the way in which the router operates and boots. By default, the router will find and load the routing configuration file?startup-config file?stored in NVRAM. When recovering the password, it is necessary to boot the sixth bit of the configuration register to tell the router to ignore NVRAM content. The value of the configuration resister with the sixth bit booted is 0x2142.