**DAILY ASSESSMENT FORMAT**

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| **Course:** | **Coursera** | **USN:** | **4AL15EC024** |
| **Topic:** | **Network security and vulnerabilities** | **Semester & Section:** | **8th A** |
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| **FORENOON SESSION DETAILS** |
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| **REPORT**  **ROUTING**  Routing is the process of selecting a path for traffic in a network or between or across multiple networks. Broadly, routing is performed in many types of networks, including circuit-switched networks, such as the public switched telephone network, and computer networks, such as the Internet.  **IP ADDRESS STRUCTURE AND NETWORK CLASSES:**   * So any remaining place holders get a zero. You can see each octet contains eight bits, which is why it is called an octet. An IP address is divided into a network portion and a host portion, which is something that you can configure on your own computer. But most of the time computers are set up now to allow DHCP or Dynamic Host Configuration Protocol to dynamically configure IP addresses for you. So let's take a look at this in action. By logging into our server, server 100, let's take a look at the interface IP address * This whole number is called the CIDR range. The slash 24 defines how many bits of the IP address are dedicated to the network portion of the address. So each IPv4 address has a network portion and a host portion. The size of the host portion defines how many hosts or endpoints this network segment can hold. In this example, the network portion uses 24 bits of the 32-bit address, which leaves eight bits for the host portion * Two raised to the eighth power is 256. So that's the largest number of hosts that this network segment can support, 0-255. In the early days of IPv4, networks used the classful addressing schema, which allowed for only five different address ranges * In class B networks, the first two octets we dedicated to the network and the last two to the host. Class C networks have the first three octets dedicated to the network, and only the last octet is dedicated to the host.   **IP PROTOCOL AND TRAFFIC ROUTING**  The Internet Protocol, or IP protocol, works with layer 3 devices which use the IP header to identify and process traffic. All routers inspect the destination address of each packet, but stateful firewalls also inspect the source address so they can identify where the traffic is coming from. As we saw in the last video, IP addresses are represented by a quad dot notation or a string of four numbers separated by dots, for example, 10.195.210.10. As you can see, there are four octets or four groups of eight binary bits separated by dots. In decimal form, an eight-digit binary number can take on a value from 0-255, always a positive integer. In binary form, the range is expressed as 00000000-11111111. A routable protocol is a protocol that can be routed outside of the network it was originated in. Normally, this would be the Internet. IP is a routable protocol, but not all IP addresses are routable.  **INTRODUCTION TO THE IPV6 ADDRESS SCHEMA**  Since the world is running out of IP addresses using IPv4 protocol, the latest version of the IP protocol, IPv6 extends the address length from 32 bits to 128 bits. We're going to be dealing with hex numbers now, so refer back to the first video in the lesson, if you need a refresher   * An IPv6 address being 128 bits long, is four times longer than the 32 bit IPv4 address. But that does not give us only four times as many addresses. In the first video in this lesson, we learned that 2 the 32nd power gives us just under 4.3 billion possible addresses. Well, 2 to the 128th power in decimal format is about 3.4 times 10 to the 28th power. Which, according to Wikipedia would be called 34 octillion * But that's a very big number, like the number of atoms in an elephant big. An IPv6 address is divided into eight four-digit hexadecimal values, each separated by a colon as shown here. Each single hexadecimal digit can have 16 possible values, which makes it a four-bit long binary. So a group of four hex numbers would be 16 bits. And there are eight of these in the IPv6 address, so 8 times 16 brings us up to 128 bits. There are a few rules to remember when representing an IPv6 address. |

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| **AFTERNOON SESSION DETAILS** | | | |
| **REPORT**  **Get Cozy with the Setup Menu**  There are three main categories in the Setup menu: Administration, Platform Tools, and Settings. Let’s take a look at what’s available.   * **Administration:** The Administration category is where you manage your users and data. You can do things like add users, change permissions, import and export data, and create email templates. * **Platform Tools:** You do most of your customization in Platform Tools. You can view and manage your data model, create apps, modify the user interface, and deploy new features to your users. If you decide to try your hand at programmatic development, Platform Tools is where you manage your code as well. * **Settings:** Finally, Settings is where you manage your company information and org security. You can do things like add business hours, change your locale, and view your org’s history.   **UNDERSTAND THE SALESFORCE ARCHITECTURE**  **Learning Objectives**   * After completing this unit, you’ll be able to: * Define key terms related to the Salesforce architecture. * Find information related to trust. * Explain at least one use case for Salesforce APIs. | | | |