.ı¦ı.ı¦ı. **Networking**
CISCO **Academy**

Lab - Research Networking Standards

Objectives

- **Research Networking Standards Organizations**
- **Reflect on Internet and Computer Networking Experiences**

Background / Scenario

Using web search engines like Google, research the non-profit organizations that are responsible for establishing international standards for the internet and the development of internet technologies.

Required Resources

Device with internet access

Instructions

Step 1: Research Networking Standards Organizations

In this step, you will identify some of the major standards organizations and important characteristics, such as the number of years in existence, the size of their membership, the important historical figures, some of the responsibilities and duties, organizational oversight role, and the location of the organization's headquarters.

Use a web browser or websites for various organizations to research information about the following organizations and the people who have been instrumental in maintaining them.

You can find answers to the questions below by searching the following organizational acronyms and terms: ISO, ITU, ICANN, IANA, IEEE, EIA, TIA, ISOC, IAB, IETF, W3C, RFC, and Wi-Fi Alliance.

1. Who is Jonathan B. Postel and what is he known for?

    Jon Postel developed Simple Mail Transfer Protocol (SMTP) and administered the Internet Assigned Numbers Authority (IANA). He was

    also the editor for Request for Comment (RFC).

2. Which two related organizations are responsible for managing the top-level domain name space and the root Domain Name System (DNS) name servers on the internet?

    The International Corporation for Assigned Names and Numbers (ICANN) and the Internet Assigned Numbers Authority (IANA)

    are responsible for managing the top-level domain name space and the root Domain Name System (DNS) name servers.

3. Vinton Cerf has been called one of main fathers of the internet. What internet organizations did he chair or help found? What internet technologies did he help to develop?

Vinton Cerf co-founded Internet Society (ISOC), helped create and served as the chair of the International Corporation for Assigned Names and Numbers

(ICANN), was the president of the Association for Computing Machinery (ACM), and served as the chair of Internet Architecture Board (IAB).

4. What organization is responsible for publishing Request for Comments (RFC)?

    Request for Comments (RFC) is published by the Internet Engineering Task Force (IETF)

5. What do RFC 349 and RFC 1700 have in common?

    RFC 349 and RFC 1700 are port numbers.

6. What RFC number is the ARPAWOCKY? What is it?

    RFC 527 is a joke.

7. Who founded the World Wide Web Consortium (W3C)?

    Tim Berners-Lee founded the World Wide Web Consortium (W3C) at MIT

8. Name 10 World Wide Web (WWW) standards that the W3C develops and maintains?

    HTML, CSS, XML, CGI, DOM, SOAP, WSDL, EME, OWL, SKOS

9. Where is the Institute of Electrical and Electronics Engineers (IEEE) headquarters located and what is the significance of its logo?

    The IEEE is headquartered in New York. The logo design illustrates the right hand grip rule.

10. What is the IEEE standard for the Wi-Fi Protected Access 2 (WPA2) security protocol?

    WPA2 is based off of the IEEE 802.11i standard.

11. Is the Wi-Fi Alliance a non-profit standards organization? What is their goal?

    The Wi-Fi alliance is a non-profit and their goal is to ensure interoperability and backwards support.

12. Who is Hamadoun Touré?

    Hamadoun Touré is the Secretary General of the International Telecommunication Union (ITU).

13. What is the International Telecommunication Union (ITU) and where is it headquartered?

The ITU's headquarters are located in Geneva, Switzerland. The ITU is the United Nations agency that is responsible for information and communication technologies.

14. Name the three ITU sectors.

    Radio communication, Standardization and Development

15. What does the RS in RS-232 stand for and which organization introduced it?

    RS stands for "Recommended Standard" and was created by the EIA.

16. What is SpaceWire?

    SpaceWire is a standard for networks onboard spacecraft.

17. What is the mission of the ISOC and where are its headquarters located?

The Internet Society (ISOC) headquarters are located in Geneva, Switzerland and Reston, Virginia. They say their mission is "to assure the open development, evolution and use of the internet for the benefit of all people throughout the world."

18. What organizations does the IAB oversee?

    The IAB oversees the Internet Research Task Force (IRTF) and the Internet Engineering Task Force (IETF).

19. What organization oversees the IAB?

    The ISOC oversees the IAB.

20. When was the ISO founded and where are its headquarters located?

The International Organization for Standardization (ISO) was founded in 1947 and its headquarters are located in Geneva, Switzerland.

Step 2: Reflect on Internet and Computer Networking Experiences

Take a moment to think about the internet today in relation to the organizations and technologies you have just researched. Then answer the following questions.

1. How do the internet standards allow for greater commerce? What potential problems could we have if we did not have the IEEE?

Internet standards ensure interpretability between different devices made by different companies. Without standards, many companies would develop their own protocols, potentially making their devices incompatible with other companies' products.

2. What potential problems could we have if we did not have the W3C?

Without the W3C, there would not be a common standard that would allow easy communication and distribution of information.

3. What can we learn from the example of the Wi-Fi Alliance with regard to the necessity of networking standards?

If manufacturers follow the same standards, it allows for backward compatibility and interoperability. This encourages competition, causing the manufacturers to create better products and lower the prices. Without standards, most devices would not work together and there would not be as much of an incentive to develop better products.