

IN-CLASS STUDENT ACTIVITY 2.3: WORK WITH THE NETWORK

Lesson Objective 2.3:

Work with the network. *Topics:* TCP and UDP.

Resources, software, and additional files needed for this lesson:

1. Internet access

Guiding questions:

1. Describe how web services are created in Microsoft Visual Studio®.
2. How can the designer plan for geographic areas that do not have Internet access?
3. What types of games typically use TCP and UDP?

Student Activity:

Directions to the student:

1. Read the scenario.
2. Read the article: UDP vs. TCP: <http://gafferongames.com/networking-for-game-programmers/udp-vs-tcp/>
3. Follow the Think-Pair-Share discussion model:
 - a. **Think:** Respond to the first question without consulting anyone else in class.
 - b. **Pair:** Discuss your answer with a partner. Change or add to your response, then work together to come up with additional ideas.
 - c. **Share:** Each pair shares their thoughts with the class. Discuss interesting answers or answers you disagree with.
4. After this discussion, look over your response. Add good examples from other groups. Repeat this process for each discussion question

Scenario:

Michael Allen has just graduated from the Graphic Design Institute with a degree in game design. He has been searching for a job and has his first interview scheduled with a prominent game design company. The company wants to hire only employees with a fundamental knowledge of networking as it relates to game design. Michael knows he is not ready for the interview but had found several online resources that will help him prepare.

Content:

1. For the following online/networked games, state whether UDP or TCP is the more likely transmission choice based upon what you have learned about data transmission. Explain your reasons for each choice.
 - a. Multiplayer football game
 - b. Gears of War (multiplayer)
 - c. Checkers
 - d. Halo®: Reach (multiplayer)
 - e. Single-Player Arcade Game
 - f. FIFA Soccer 12
 - g. Backgammon
 - h. Microsoft® Flight Simulator (multiplayer)
 - i. Tic-tac-toe
 - j. MMORPG
 - k. Chess
 - l. Zoo Tycoon 2
 - m. World of Warcraft
 - n. Lego Star Wars
 - o. Plants vs. Zombies
2. Developers typically do not combine UDP and TCP when creating a networked game. Why?
3. Why is UDP described as an “unreliable” protocol?