

# OBJECTIVE

## understand hardware 2.4

### MANAGE GAME PERFORMANCE

**SCENARIO:** Southridge Video is planning to create a video game to promote their new movie, A Tale of Two Gamers. The movie is about two high school students; one lives in a large city and the other lives in a remote village. They meet each other while playing as opponents in a variety of online role-playing games. The movie follows them as they become friends who decide to create their own video game that will change their lives forever.

The game being planned by Southridge Video relies heavily on graphics and allows users to choose from many different scenarios for game play.

1. Which of the following is a single-chip processor that renders 2-D and 3-D graphics and videos?
  - a. CPU
  - b. GPU
  - c. transistor
2. If the new role-playing game were to be played on the Windows Phone®, which profile would be used?
  - a. HiDef
  - b. MobilePro
  - c. Reach
3. Which of the following is required to use a HiDef profile?
  - a. A computer with at least DirectX 10® or the Xbox 360®.
  - b. A computer with at least DirectX 9® or the Windows Phone.
  - c. The Windows Phone or the Xbox 360.

**HINT**



*A profile is a feature set that is implemented in hardware.*

## Answers

1. Which of the following is a single-chip processor that renders 2-D and 3-D graphics and videos?
  - b. **GPU.** GPU stands for Graphic Processing Unit, and it is used for rendering 2-D and 3-D graphics and videos.
2. If the new role-playing game were to be played on the Windows Phone, which profile would be used?
  - c. **Reach:** Reach is the default profile for Windows Phone.
3. Which of the following is required to use a HiDef profile?
  - a. **A computer with at least DirectX 10 or the Xbox 360.**

## Essential details

- The **central processing unit (CPU)** is the “brains” of a computer, which processes instructions received from software.
- A **graphic processing unit (GPU)** is a single-chip processor that renders 2-D and 3-D graphics and videos.
- **HiDef** is a profile used for higher-performance computers with at least DirectX 10 and the Xbox 360 because of its higher graphics capabilities. It is the default profile for Microsoft Windows®-based computers and the Xbox 360.
- **Reach** is a profile used most often for limited hardware capabilities. Reach is the default profile used for the Windows Phone and can be used for Windows-based computers and the Xbox 360.
- **Shaders** are computer programs that control how the display will look on the screen.

### FAST TRACK HELP

- **Difference Between CPU and GPU**  
<http://www.differencebetween.net/technology/difference-between-cpu-and-gpu/>
- **What Is a Profile?**  
<http://msdn.microsoft.com/en-us/library/ff604995.aspx>
- **Reach vs. HiDef**  
<http://blogs.msdn.com/b/shawnhar/archive/2010/03/12/reach-vs-hidef.aspx>

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