Processors

At the end of this episode, I will be able to:

1. Identify characteristics and features of central processing units.
   Exam Objective: 3.4 - Given a scenario, install and configure motherboards, central processing units (CPUs), and add-on cards.

Description: In this episode, we discuss central processing units or CPUs, their characteristics, features and attributes.

- CPU **Architecture**
  - **x64 vs. x86**
    - 64-bit vs. 32-bit
    - 4 GB memory (RAM) limitation in 32-bit
  - Acorn RISC Machine (**ARM**)
    - Low power
    - Passively cooled
    - Mobile devices
    - 32-bit and 64-bit
  - **Single core and Multicore**
  - **Multithreading** (Demo in Task Manager)
    - Intel = Hyperthreading (logically dividing

physical cores)
        - AMD = Simultaneous Multithreading (SMT)
    - Virtualization support
    - **Socket Types**
        - Land grid array (LGA)
        - Pin grid array (PGA)
        - Ball grid array (BGA)
    - Intel **CPUs and Sockets**
        - 7th Gen
            - i7, i9 = LGA2066
            - i7 = LGA1151
        - 8th and 9th Gen
            - i7,i5,i3 = LGA1151 (Socket H4)
        - 10th Gen
            - i9,i7,i5,i3 = LGA1200
        - Xeon
            - LGA2066
    - AMD CPUs and Sockets
        - Ryzen = Socket TR4 (LGA-based)
        - Ryzen = AM4 Socket
        - Athlon = AM2+
        - Athlon/Sempron= FM2
        - Eypc and Opteron

- Additional Reference Materials
    - Not applicable if blank