

Motherboards

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

1. Identify motherboard technologies.

Exam Objective: Given a scenario, install and configure motherboards, central processing units (CPUs), and add-on cards.

Description: In this episode, we will dive into motherboards. We will discuss different form factors such as ATX, ITX and BTX as well as motherboard connection types and compatibility.

- Motherboard form factor
 - Advanced Technology eXtended (ATX)
 - 12 x 9.6in
 - 20/20+4/24 pin PSU connector
 - PS/2 ports
 - I/O panel (standardized)
 - Air flow (push/pull)
 - CPU/PSU fan placement
 - Information Technology eXtended (ITX)
 - developed by VIA Technologies
 - low power

- fanless (passive) cooling
 - Same specs as ATX
- Balanced Technology eXtended (BTX)
 - Intended to be a replacement for ATX
 - Better thermal design
 - Hardware components are mounted closer together.
- Motherboard Connector Types
 - Peripheral Component Interconnect (PCI)
 - PCI Express
 - Power connectors
 - 20/20+4/24 pin main power connector
 - 4 pin CPU connector (P4)
 - 8 pin CPU connector (EPS)
 - SATA ports (7-pin connector)
 - M.2
 - Headers
 - CPU and system fans
- Motherboard compatibility
 - Intel vs. AMD
 - Server (non-standardized)
 - Laptop (non-standardized)
 - Mobile (non-standardized)
 - Desktop/workstation (non-standardized and standardized)