

# RAM Types and Channels

Many types of Random Access Memory (RAM) are present in devices. RAM is a temporary form of data storage and is volatile, meaning that data on RAM is lost when a device is turned off. The system board inside a device will dictate the type of RAM installed on a device.

Many system boards have multiple channels for RAM, meaning that individual RAM chips can be grouped and used as one unit, making RAM run faster compared to a system's CPU.

## Purpose

Upon completing this project, you will better understand RAM, its different iterations, channels, and how RAM functions through those channels.

## Steps for Completion

1. Which type of RAM chip is usually installed in a laptop?
  - a. \_\_\_\_\_
2. What adjustment can be made to virtual RAM on a virtual machine?
  - a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Which type of RAM chip has built-in support for CRC?
  - a. \_\_\_\_\_
4. Which type of RAM chip is a 240-pin chip with a top data rate of 2133 Mbps?
  - a. \_\_\_\_\_
5. Which type of RAM chip manages its power through the memory module?
  - a. \_\_\_\_\_
6. What specific type of error does ECC RAM correct?
  - a. \_\_\_\_\_
7. What is the usual indicator of a multi-channel memory socket on a system board?
  - a. \_\_\_\_\_
8. Which multi-channel system board is the most powerful of all the multi-channel system boards?
  - a. \_\_\_\_\_

## Project Details

### Project file

N/A

### Estimated completion time

10 minutes

### Video reference

#### Domain 3

#### Topic: RAM

**Subtopics:** Virtual RAM; SODIMM; DDR3; DDR4; DDR5; ECC; Single-Channel; Dual-Channel; Triple-Channel; Quad-Channel

### Objectives covered

#### 3 Hardware

**3.2** Given a scenario, install the appropriate RAM

##### 3.2.1 RAM Types

###### 3.2.1.1 Virtual RAM

**3.2.1.2** Small outline dual inline memory module (SODIMM)

**3.2.1.3** Double Data Rate 3 (DDR3)

**3.2.1.4** Double Data Rate 4 (DDR4)

**3.2.1.5** Double Data Rate 5 (DDR5)

**3.2.1.6** Error correction code (ECC) RAM

##### 3.2.2 Single-channel

##### 3.2.3 Dual-channel

##### 3.2.4 Triple-channel

##### 3.2.5 Quad-channel