

A set-associative cache consists of 64 lines, or slots, divided into four-line sets. Main memory contains 4K blocks of 128 words each. Show the format of main memory addresses.

A two-way set-associative cache has lines of 16 bytes and a total size of 8 kB. The 64-MB main memory is byte addressable. Show the format of main memory addresses. For the hexadecimal main memory addresses 111111, 666666, BBBBBB, show the following information, in hexadecimal format:

- a.** Tag, Line, and Word values for a direct-mapped cache, using the format of Figure 4.10
- b.** Tag and Word values for an associative cache, using the format of Figure 4.12
- c.** Tag, Set, and Word values for a two-way set-associative cache, using the format of Figure 4.15

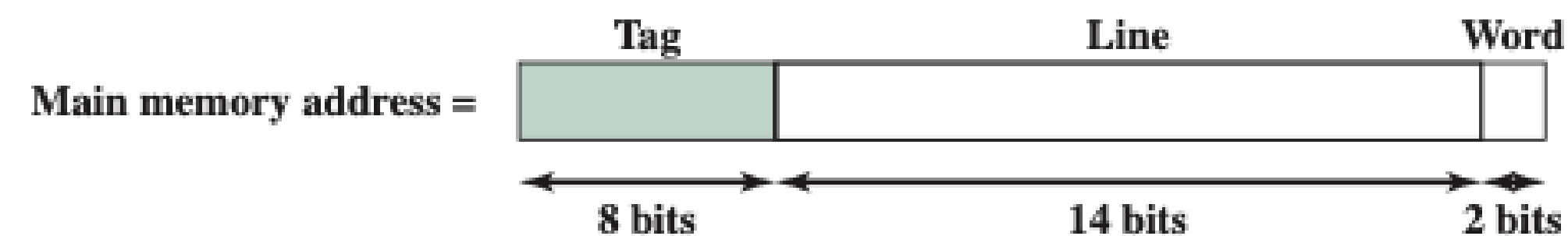
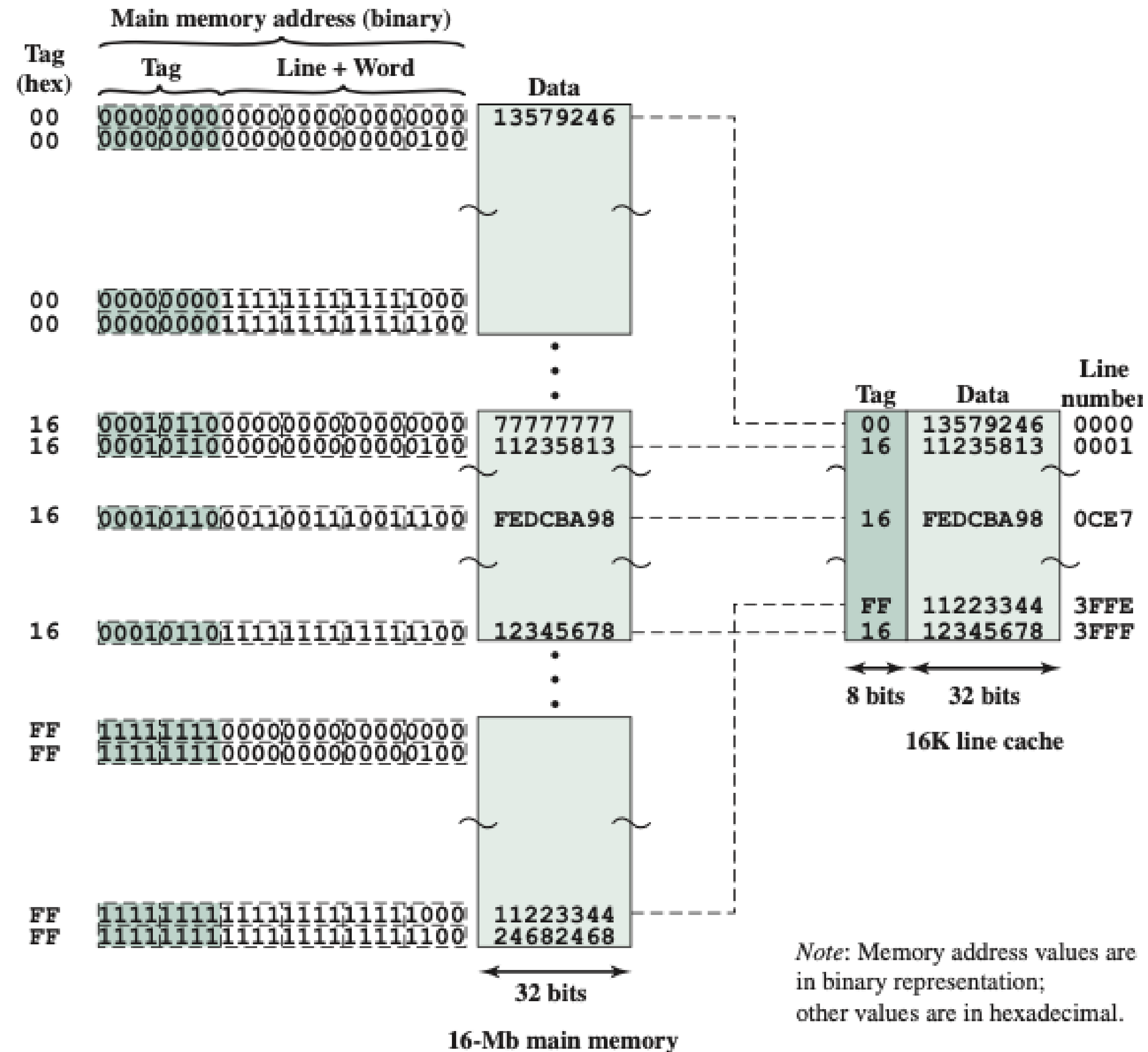


Figure 4.10 Direct Mapping Example

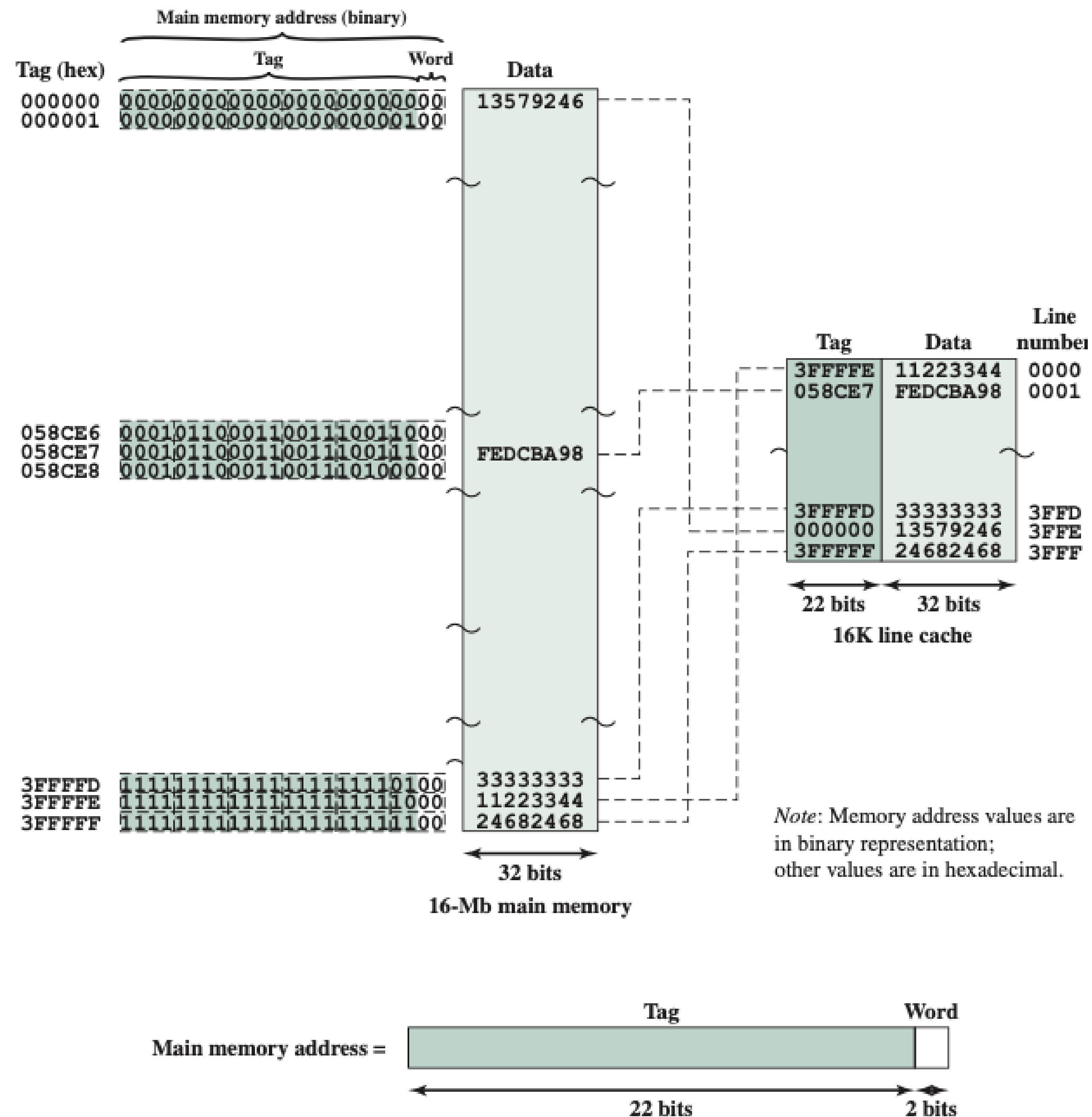


Figure 4.12 Associative Mapping Example

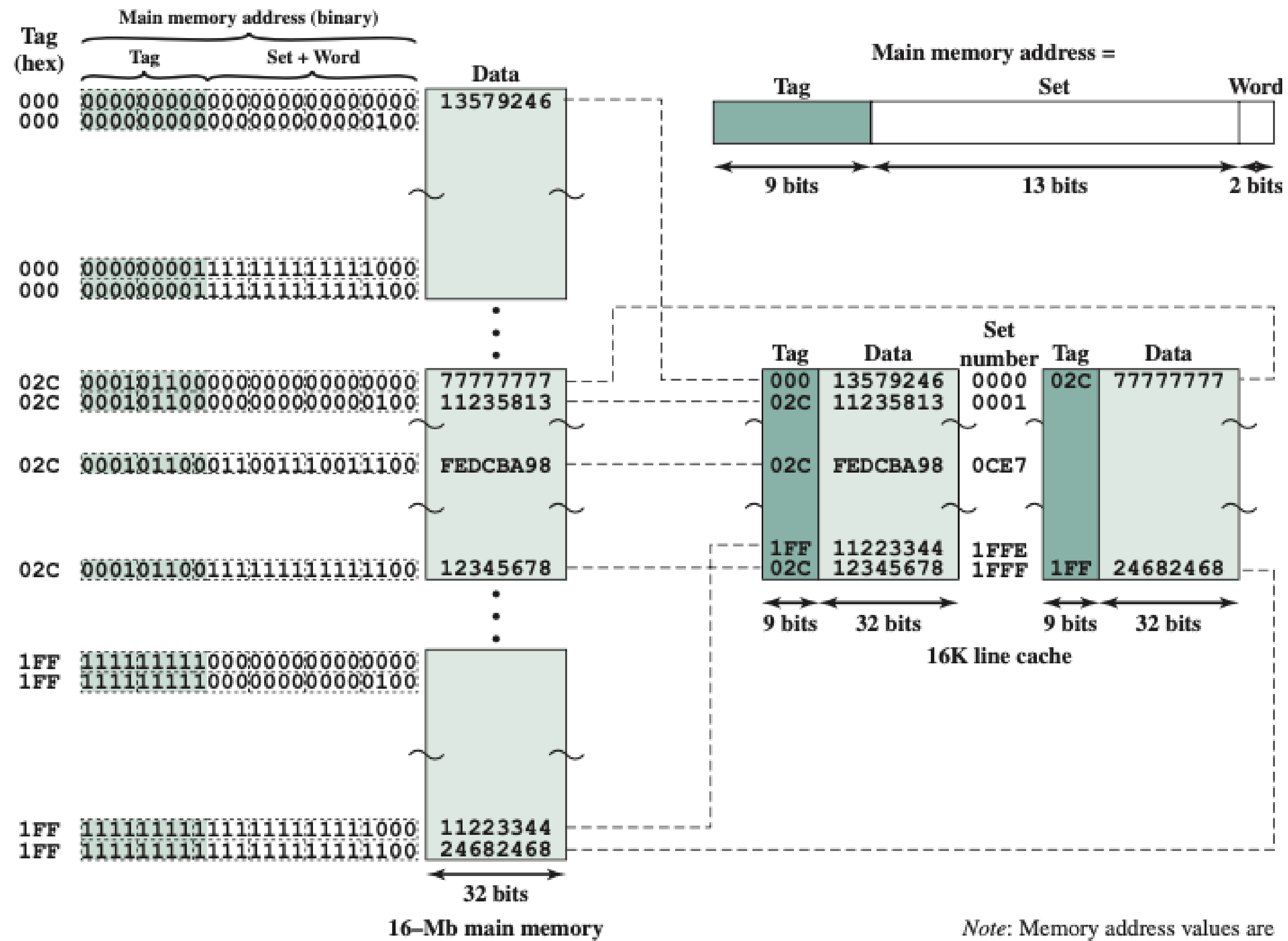


Figure 4.15 Two-Way Set-Associative Mapping Example