34.1 Cross-Reference

The cross-reference in Table 34-1 summarizes how the flags in the processor’s EFLAGS register are affected by each instruction. For detailed information on how flags are affected, see “Instruction Set Reference”. The following codes describe how the flags are affected:

| T  | Instruction tests flag. |
| M  | Instruction modifies flag (either sets or resets depending on operands). |
| 0  | Instruction resets flag. |
| 1  | Instruction sets flag. |
| —  | Instruction’s effect on flag is undefined. |
| R  | Instruction restores prior value of flag. |
| Blank | Instruction does not affect flag. |

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*Note: OF, SF, ZF, AF, PF, CF, TF, IF, DF, NT, RF indicate the EFLAGS flags.*

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Table 34-1. EFLAGS Cross-Reference (Continued)
Table 34-1. EFLAGS Cross-Reference (Continued)

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34.2 EFLAGS Condition Codes

Table 34-2 gives all the condition codes that can be tested for by the CMOVcc, FCMOVcc, Jcc and SETcc instructions. The condition codes refer to the setting of one or more status flags (CF, OF, SF, ZF, and PF) in the EFLAGS register. The “Mnemonic” column gives the suffix (cc) added to the
instruction to specific the test condition. The “Condition Tested For” column describes the condition specified in the “Status Flags Setting” column. The “Instruction Subcode” column gives the opcode suffix added to the main opcode to specify a test condition.

Table 34-2. EFLAGS Condition Codes

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<th>Condition Tested For</th>
<th>Instruction Subcode</th>
<th>Status Flags Setting</th>
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<td>Overflow</td>
<td>0000</td>
<td>OF = 1</td>
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<td>No overflow</td>
<td>0001</td>
<td>OF = 0</td>
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<tr>
<td>B NAE</td>
<td>Below</td>
<td>0010</td>
<td>CF = 1</td>
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<tr>
<td>NB AE</td>
<td>Not below</td>
<td>0011</td>
<td>CF = 0</td>
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<tr>
<td>E Z</td>
<td>Equal</td>
<td>0100</td>
<td>ZF = 1</td>
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<tr>
<td>NE NZ</td>
<td>Not equal</td>
<td>0101</td>
<td>ZF = 0</td>
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<td>BE NA</td>
<td>Below or equal</td>
<td>0110</td>
<td>(CF OR ZF) = 1</td>
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<tr>
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<td>Neither below nor equal</td>
<td>0111</td>
<td>(CF OR ZF) = 0</td>
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<td>No parity</td>
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</table>

Many of the test conditions are described in two different ways. For example LE (less or equal) and NG (not greater) describe the same test condition. Alternate mnemonics are provided to make code more intelligible.

The terms “above” and “below” are associated with the CF flag and refer to the relation between two unsigned integer values. The terms “greater” and “less” are associated with the SF and OF flags and refer to the relation between two signed integer values.