

## SBC

Subtract with Carry subtracts a register value and the value of NOT (Carry flag) from a register value, and writes the result to the destination register. This instruction is used by the alias [NGC](#).

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
sf	1	0	1	1	0	1	0	0	0	0	Rm				0 0 0 0 0 0				Rn				Rd								
op S																															

### 32-bit (sf == 0)

SBC <Wd>, <Wn>, <Wm>

### 64-bit (sf == 1)

SBC <Xd>, <Xn>, <Xm>

```
integer d = UInt (Rd);
integer n = UInt (Rn);
integer m = UInt (Rm);
constant integer datasize = 32 << UInt (sf);
```

## Assembler Symbols

<Wd>	Is the 32-bit name of the general-purpose destination register, encoded in the "Rd" field.
<Wn>	Is the 32-bit name of the first general-purpose source register, encoded in the "Rn" field.
<Wm>	Is the 32-bit name of the second general-purpose source register, encoded in the "Rm" field.
<Xd>	Is the 64-bit name of the general-purpose destination register, encoded in the "Rd" field.
<Xn>	Is the 64-bit name of the first general-purpose source register, encoded in the "Rn" field.
<Xm>	Is the 64-bit name of the second general-purpose source register, encoded in the "Rm" field.

## Alias Conditions

Alias	Is preferred when
<a href="#">NGC</a>	Rn == '11111'

## Operation

```

bits(datasize) result;
bits(datasize) operand1 = X[n, datasize];
bits(datasize) operand2 = X[m, datasize];

operand2 = NOT(operand2);

(result, -) = AddWithCarry(operand1, operand2, PSTATE.C);

X[d, datasize] = result;

```

## Operational information

If PSTATE.DIT is 1:

- The execution time of this instruction is independent of:
  - The values of the data supplied in any of its registers.
  - The values of the NZCV flags.
- The response of this instruction to asynchronous exceptions does not vary based on:
  - The values of the data supplied in any of its registers.
  - The values of the NZCV flags.

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