SUBPS

Subtract Pointer, setting Flags subtracts the 56-bit address held in the second source register from the 56-bit address held in the first source register, sign-extends the result to 64-bits, and writes the result to the destination register. It updates the condition flags based on the result of the subtraction.

This instruction is used by the alias CMPP.

Integer
(FEAT_MTE)

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
1	0	1	1 1 0 1 0 1 1 0	Xm	0	0	0	0	0	0	Xn	Xd

```
SUBPS <Xd>, <Xn|SP>, <Xm|SP>
```

```
if !IsFeatureImplemented(FEAT_MTE) then UNDEFINED;
integer d = UInt(Xd);
integer n = UInt(Xn);
integer m = UInt(Xm);
```

Assembler Symbols

<Xd> Is the 64-bit name of the general-purpose destination register, encoded in the "Xd" field.

<Xn|SP> Is the 64-bit name of the first source general-purpose register or stack pointer, encoded in the "Xn" field.

<Xm|SP> Is the 64-bit name of the second general-purpose source register or stack pointer, encoded in the "Xm" field.

Alias Conditions

Alias	Is preferred when
CMPP	`S == '1' && Xd == '11111'`

Operation

```
bits(64) operand1 = if n == 31 then SP[] else X[n, 64];
bits(64) operand2 = if m == 31 then SP[] else X[m, 64];
operand1 = SignExtend(operand1<55:0>, 64);
operand2 = SignExtend(operand2<55:0>, 64);

bits(64) result;
bits(4) nzcv;

operand2 = NOT(operand2);
(result, nzcv) = AddWithCarry(operand1, operand2, '1');
```

```
PSTATE.<N,Z,C,V> = nzcv;
X[d, 64] = result;
```

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