## FTSSEL

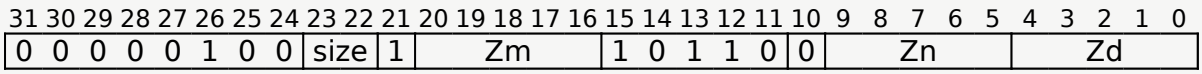
Floating-point trigonometric select coefficient

The FTSSEL instruction selects the coefficient for the final multiplication in the polynomial series approximation. The instruction places the value 1.0 or a copy of the first source vector element in the destination element, depending on bit 0 of the quadrant number q held in the corresponding element of the second source vector. The sign bit of the destination element is copied from bit 1 of the corresponding value of q. This instruction is unpredicated.

To compute sin(x) or cos(x) the instruction is executed with elements of the first source vector set to x, adjusted to be in the range -Ï€/4 < x â‰¤ Ï€/4.

The elements of the second source vector hold the corresponding value of the quadrant q number as an integer not a floating-point value. The value q satisfies the relationship (2q-1) Ã— Ï€/4 < x â‰¤ (2q+1) Ã— Ï€/4.

This instruction is illegal when executed in Streaming SVE mode, unless FEAT_SME_FA64 is implemented and enabled.




**FTSSEL <Zd>.<T>, <Zn>.<T>, <Zm>.<T>**

```
if !HaveSVE() then UNDEFINED;
if size == '00' then UNDEFINED;
constant integer esize = 8 << UInt(size);
integer n = UInt(Zn);
integer m = UInt(Zm);
integer d = UInt(Zd);
```

### Assembler Symbols

<Zd> Is the name of the destination scalable vector register, encoded in the "Zd" field.

<T> Is the size specifier, encoded in “size”:

| size | <T> |
|---|---|
| 00 | RESERVED |
| 01 | H |
| 10 | S |
| 11 | D |

<Zn> Is the name of the first source scalable vector register, encoded in the "Zn" field.

<Zm> Is the name of the second source scalable vector register, encoded in the "Zm" field.

**Operation**

```
CheckNonStreamingSVEEnabled();
constant integer VL = CurrentVL;
constant integer PL = VL DIV 8;
constant integer elements = VL DIV esize;
bits(VL) operand1 = Z[n, VL];
bits(VL) operand2 = Z[m, VL];
bits(VL) result;

for e = 0 to elements-1
    bits(esize) element1 = Elem[operand1, e, esize];
    bits(esize) element2 = Elem[operand2, e, esize];
    Elem[result, e, esize] = FPTrigSSel(element1, element2);

Z[d, VL] = result;
```

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