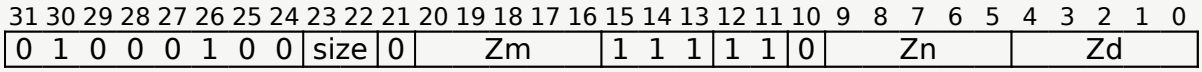
TBLQ

Programmable table lookup within each quadword vector segment (zeroing)

For each 128-bit destination vector segment, reads each element of the corresponding second source (index) vector segment and uses its value to select an indexed element from the corresponding first source (table) vector segment. The indexed table element is placed in the element of the destination vector that corresponds to the index vector element. If an index value is greater than or equal to the number of elements in a 128-bit vector segment then it places zero in the corresponding destination vector element. This instruction is unpredicated.

SVE2
(FEAT_SVE2p1)




```
TBLQ <Zd>.<T>, { <Zn>.<T> }, <Zm>.<T>
```

```
if !HaveSVE2p1() && !HaveSME2p1() 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	B
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

```
CheckSVEEnabled();
constant integer VL = CurrentVL;
constant integer PL = VL DIV 8;
constant integer segments = VL DIV 128;
constant integer elements = 128 DIV esize;
bits(VL) operand1 = Z[n, VL];
bits(VL) operand2 = Z[m, VL];
bits(VL) result;

for s = 0 to segments-1
    for e = 0 to elements-1
        integer idx = UInt(Elem[operand2, s * elements + e, esize]);
        if idx < elements then
            Elem[result, s * elements + e, esize] = Elem[operand1, s *
        else
            Elem[result, s * elements + e, esize] = Zeros(esize);

Z[d, VL] = 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.

Internal version only: isa v33.64, AdvSIMD v29.12, pseudocode no_diffs_2023_09_RC2, sve v2023-06_rel ; Build timestamp: 2023-09-18T17:56