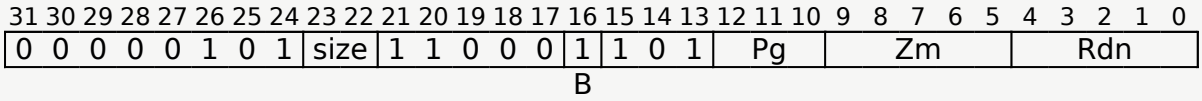
CLASTB (scalar)

Conditionally extract last element to general-purpose register

From the source vector register extract the last active element, and then zero-extend that element to destructively place in the destination and first source general-purpose register. If there are no active elements then destructively zero-extend the least significant element-size bits of the destination and first source general-purpose register.



CLASTB <R><dn>, <Pg>, <R><dn>, <Zm>.<T>

```
if !HaveSVE() && !HaveSME() then UNDEFINED;
constant integer esize = 8 << UInt(size);
integer g = UInt(Pg);
integer dn = UInt(Rdn);
integer m = UInt(Zm);
constant integer csize = if esize < 64 then 32 else 64;
boolean isBefore = TRUE;
```

Assembler Symbols

<R>

Is a width specifier, encoded in “size”:

size	<R>
01	W
x0	W
11	X

<dn>

Is the number [0-30] of the source and destination general-purpose register or the name ZR (31), encoded in the "Rdn" field.

<Pg>

Is the name of the governing scalable predicate register P0-P7, encoded in the "Pg" field.

<Zm>

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

<T>

Is the size specifier, encoded in “size”:

size	<T>
00	B
01	H
10	S
11	D

Operation

```
CheckSVEEnabled();
constant integer VL = CurrentVL;
constant integer PL = VL DIV 8;
constant integer elements = VL DIV esize;
bits(PL) mask = P[g, PL];
bits(esize) operand1 = X[dn, esize];
bits(VL) operand2 = Z[m, VL];
bits(csize) result;
integer last = LastActiveElement(mask, esize);

if last < 0 then
    result = ZeroExtend(operand1, csize);
else
    if !isBefore then
        last = last + 1;
        if last >= elements then last = 0;
    result = ZeroExtend(Elem[operand2, last, esize], csize);

X[dn, csize] = result;
```

Operational information

If FEAT_SME is implemented and the PE is in Streaming SVE mode, then any subsequent instruction which is dependent on the general-purpose register written by this instruction might be significantly delayed.

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