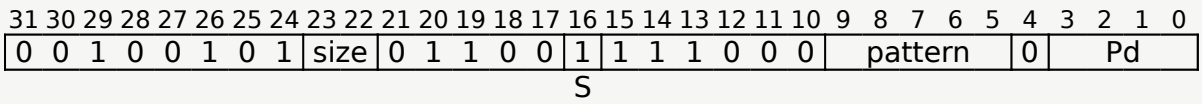
PTRUES

Initialise predicate from named constraint and set the condition flags

Set elements of the destination predicate to true if the element number satisfies the named predicate constraint, or to false otherwise. If the constraint specifies more elements than are available at the current vector length then all elements of the destination predicate are set to false.
The named predicate constraint limits the number of active elements in a single predicate to:

- A fixed number (VL1 to VL256)
- The largest power of two (POW2)
- The largest multiple of three or four (MUL3 or MUL4)
- All available, implicitly a multiple of two (ALL).

Unspecified or out of range constraint encodings generate an empty predicate or zero element count rather than Undefined Instruction exception. Sets the first (N), none (Z), !last (C) condition flags based on the predicate result, and the V flag to zero.




```
PTRUES <Pd>.<T>{, <pattern>}
```

```
if !HaveSVE() && !HaveSME() then UNDEFINED;
constant integer esize = 8 << UInt(size);
integer d = UInt(Pd);
boolean setflags = TRUE;
bits(5) pat = pattern;
```

Assembler Symbols

<Pd> Is the name of the destination scalable predicate register, encoded in the "Pd" field.

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

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

<pattern>

Is the optional pattern specifier, defaulting to ALL, encoded in “pattern”:

pattern	<pattern>
00000	POW2
00001	VL1
00010	VL2
00011	VL3
00100	VL4
00101	VL5
00110	VL6
00111	VL7
01000	VL8
01001	VL16
01010	VL32
01011	VL64
01100	VL128
01101	VL256
0111x	#uimm5
101x1	#uimm5
10110	#uimm5
1x0x1	#uimm5
1x010	#uimm5
1xx00	#uimm5
11101	MUL4
11110	MUL3
11111	ALL

Operation

```
CheckSVEEnabled();
constant integer VL = CurrentVL;
constant integer PL = VL DIV 8;
constant integer elements = VL DIV esize;
integer count = DecodePredCount(pat, esize);
bits(PL) result;
constant integer psize = esize DIV 8;

for e = 0 to elements-1
    bit pbit = if e < count then '1' else '0';
    Elem[result, e, psize] = ZeroExtend(pbit, psize);

if setflags then
    PSTATE.<N,Z,C,V> = PredTest(result, result, esize);
P[d, PL] = result;
```

Operational information

If FEAT_SVE2 is implemented or FEAT_SME is implemented, then 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.

If FEAT_SME is implemented and the PE is in Streaming SVE mode, then any subsequent instruction which is dependent on the NZCV condition flags written by this instruction might be significantly delayed.

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