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Encoding	Pseud

SIMD&FP **SME** Base SVE Instructions **Instructions Instructions Instructions** 

## **SQCVTUN**

Multi-vector signed saturating unsigned extract narrow and interleave

Saturate the signed integer value in each element of the four source vectors to unsigned integer value that is quarter the original source element width, and place the four-way interleaved results in the guarter-width destination elements.

This instruction is unpredicated.

## SME2 (FEAT SME2)

```
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 1 0 0 0 0 0 1 sz 1 1 1 0 0 1 1 1 1 1 0 0 0
                                                                        1 0
                                                                  Zn
                                                                                   Zd
```

```
\label{eq:sqcvtun} $$\operatorname{SQCVTUN} < \operatorname{Zd}_{\cdot} < T_{\cdot}, \ \{ < \operatorname{Zn1}_{\cdot} < \operatorname{Tb}_{\cdot} - < \operatorname{Zn4}_{\cdot} < T_{\cdot} > \ \}$$
if !HaveSME2() then UNDEFINED;
constant integer esize = 8 << UInt(sz);</pre>
integer n = <u>UInt</u>(Zn:'00');
integer d = <u>UInt</u>(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 "sz":

SZ	<t></t>
0	В
1	Н

<Zn1>

Is the name of the first scalable vector register of a multivector sequence, encoded as "Zn" times 4.

<Tb>

Is the size specifier, encoded in "sz":

SZ	<tb></tb>
0	S
1	D

<Zn4>

Is the name of the fourth scalable vector register of a multivector sequence, encoded as "Zn" times 4 plus 3.

## **Operation**

```
CheckStreamingSVEEnabled();
constant integer VL = CurrentVL;
constant integer elements = VL DIV (4 * esize);
bits(VL) result;

for e = 0 to elements-1
    for i = 0 to 3
        bits(VL) operand = Z[n+i, VL];
        integer element = SInt(Elem[operand, e, 4 * esize]);
        Elem[result, 4*e + i, esize] = UnsignedSat(element, esize);
Z[d, VL] = result;
```

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