MOVA (vector to array, four registers)

Move four vector registers to four ZA single-vector groups

The instruction operates on four ZA single-vector groups. The vector numbers forming the single-vector group within each quarter of the ZA array are selected by the sum of the vector select register and immediate offset, modulo quarter the number of ZA array vectors.

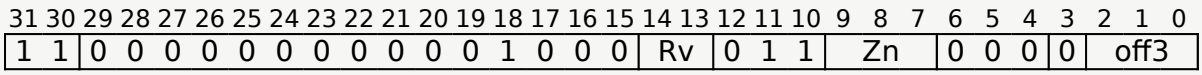
The vector group symbol VGx4 indicates that the instruction operates on four ZA single-vector groups.

The preferred disassembly syntax uses a 64-bit element size, but an assembler should accept any element size if it is used consistently for all operands. The vector group symbol is preferred for disassembly, but optional in assembler source code.

This instruction is unpredicated.

This instruction is used by the alias MOV (vector to array, four registers).

SME2
(FEAT_SME2)




```
MOVA ZA.D[<Wv>, <offs>{, VGx4}], { <Zn1>.D-<Zn4>.D }
```

```
if !HaveSME2() then UNDEFINED;
integer v = UInt('010':Rv);
integer offset = UInt(off3);
integer n = UInt(Zn:'00');
constant integer nreg = 4;
```

Assembler Symbols

<Wv>	Is the 32-bit name of the vector select register W8-W11, encoded in the "Rv" field.
<offs>	Is the vector select offset, in the range 0 to 7, encoded in the "off3" field.
<Zn1>	Is the name of the first scalable vector register of a multi-vector sequence, encoded as "Zn" times 4.
<Zn4>	Is the name of the fourth scalable vector register of a multi-vector sequence, encoded as "Zn" times 4 plus 3.

Operation

```
CheckStreamingSVEAndZAEnabled();
constant integer VL = CurrentVL;
```

```
integer vectors = VL DIV 8;
integer vstride = vectors DIV nreg;
bits(32) vbase = X[v, 32];
integer vec = (UInt(vbase) + offset) MOD vstride;

for r = 0 to nreg-1
    bits(VL) result = Z[n + r, VL];
    ZAvector[vec, VL] = result;
    vec = vec + vstride;
```

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.

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