

**ST1B (scalar plus scalar, tile slice)**

Contiguous store of bytes from 8-bit element ZA tile slice

The slice number within the tile is selected by the sum of the slice index register and immediate offset, modulo the number of 8-bit elements in a vector. The immediate offset is in the range 0 to 15. The memory address is generated by a 64-bit scalar base and an optional 64-bit scalar offset which is added to the base address. Inactive elements are not written to memory.

**SME**  
**(FEAT\_SME)**

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	1	0	0	0	0	0	0	0	1	Rm				V	Rs	Pg				Rn				0	off4					
msz<1>msz<0>																															

**ST1B { ZA0<HV>.B[<Ws>, <offs>] }, <Pg>, [<Xn|SP>{, <Xm>}]**

```
if !HaveSME() then UNDEFINED;
integer n = UInt(Rn);
integer m = UInt(Rm);
integer g = UInt('0':Pg);
integer s = UInt('011':Rs);
integer t = 0;
integer offset = UInt(off4);
constant integer esize = 8;
boolean vertical = V == '1';
```

**Assembler Symbols**

- <HV>

Is the horizontal or vertical slice indicator, encoded in "V":

V	<HV>
0	H
1	V
- <Ws>

Is the 32-bit name of the slice index register W12-W15, encoded in the "Rs" field.
- <offs>

Is the slice index offset, in the range 0 to 15, encoded in the "off4" field.
- <Pg>

Is the name of the governing scalable predicate register P0-P7, encoded in the "Pg" field.
- <Xn|SP>

Is the 64-bit name of the general-purpose base register or stack pointer, encoded in the "Rn" field.

<Xm> Is the optional 64-bit name of the general-purpose offset register, defaulting to XZR, encoded in the "Rm" field.

## Operation

```
CheckStreamingSVEAndZAEEnabled();
constant integer VL = CurrentVL;
constant integer PL = VL DIV 8;
constant integer dim = VL DIV esize;
bits(64) base;
bits(64) addr;
bits(PL) mask = P[g, PL];
bits(64) moffs = X[m, 64];
bits(32) index = X[s, 32];
integer slice = (UInt(index) + offset) MOD dim;
bits(VL) src;
constant integer mbytes = esize DIV 8;
boolean contiguous = TRUE;
boolean nontemporal = FALSE;
boolean tagchecked = TRUE;
AccessDescriptor accdesc = CreateAccDescSME(MemOp_STORE, nontemporal, c

if n == 31 then
    if AnyActiveElement(mask, esize) ||
        ConstrainUnpredictableBool(Unpredictable_CHECKSPNONEACTIVE) t
        CheckSPAlignment();
    base = SP[];
else
    base = X[n, 64];

src = ZAslice[t, esize, vertical, slice, VL];
for e = 0 to dim-1
    addr = base + UInt(moffs) * mbytes;
    if ActivePredicateElement(mask, e, esize) then
        Mem[addr, mbytes, accdesc] = Elem[src, e, esize];
    moffs = moffs + 1;
```

## Operational information

If PSTATE.DIT is 1, the timing of this instruction is insensitive to the value of the data being loaded or stored when its governing predicate register contains the same value for each execution.

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Internal version only: isa v33.64, AdvSIMD v29.12, pseudocode  
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