

FMAXV

Floating-point maximum recursive reduction to scalar

Floating-point maximum horizontally over all lanes of a vector using a recursive pairwise reduction, and place the result in the SIMD&FP scalar destination register. Inactive elements in the source vector are treated as -Infinity.

When FPCR.AH is 0, the behavior is as follows:

- Negative zero compares less than positive zero.
- When FPCR.DN is 0, if either value is a NaN, the result is a quiet NaN.
- When FPCR.DN is 1, if either value is a NaN, the result is Default NaN.

When FPCR.AH is 1, the behavior is as follows:

- If both values are zeros, regardless of the sign of either zero, the result is the second value.
- If either value is a NaN, regardless of the value of FPCR.DN, the result is the second value.

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
0	1	1	0	0	1	0	1	size	0	0	0	1	1	0	0	0	1	Pg													

FMAXV <V><d>, <Pg>, <Zn>.<T>

```
if !HaveSVE() && !HaveSME() then UNDEFINED;
if size == '00' then UNDEFINED;
constant integer esize = 8 << UInt(size);
integer g = UInt(Pg);
integer n = UInt(Zn);
integer d = UInt(Vd);
```

Assembler Symbols

<V>

Is a width specifier, encoded in “size”:

size	<V>
00	RESERVED
01	H
10	S
11	D

<d>

Is the number [0-31] of the destination SIMD&FP register, encoded in the “Vd” field.

- <Pg> Is the name of the governing scalable predicate register P0-P7, encoded in the "Pg" field.
- <Zn> Is the name of the source scalable vector register, encoded in the "Zn" field.
- <T> Is the size specifier, encoded in "size":

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

Operation

```

CheckSVEEnabled();
constant integer VL = CurrentVL;
constant integer PL = VL DIV 8;
bits(PL) mask = P[g, PL];
bits(VL) operand = if AnyActiveElement(mask, esize) then Z[n, VL] else
bits(esize) identity = FPInfinity('1', esize);

V[d, esize] = ReducePredicated(ReduceOp\_FMAX, operand, mask, identity);

```

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[SIMD&FP
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