

FMOV (scalar, immediate)

Floating-point move immediate (scalar). This instruction copies a floating-point immediate constant into the SIMD&FP destination register. Depending on the settings in the [CPACR_EL1](#), [CPTR_EL2](#), and [CPTR_EL3](#) registers, and the current Security state and Exception level, an attempt to execute the instruction might be trapped.

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	0	0	1	1	1	1	0	f	t	y	p	e	1	imm8				1	0	0	0	0	0	0	0	0	0	Rd			

**Half-precision (ftype == 11)
(FEAT_FP16)**

FMOV <Hd>, #<imm>

Single-precision (ftype == 00)

FMOV <Sd>, #<imm>

Double-precision (ftype == 01)

FMOV <Dd>, #<imm>

```
if ftype == '10' || (ftype == '11' && !IsFeatureImplemented(FEAT_FP16))
integer d = UInt(Rd);
constant integer datasize = 8 << UInt(ftype EOR '10');
bits(datasize) imm = VFPEExpandImm(imm8, datasize);
```

Assembler Symbols

- <Dd> Is the 64-bit name of the SIMD&FP destination register, encoded in the "Rd" field.
- <Hd> Is the 16-bit name of the SIMD&FP destination register, encoded in the "Rd" field.
- <Sd> Is the 32-bit name of the SIMD&FP destination register, encoded in the "Rd" field.
- <imm> Is a signed floating-point constant with 3-bit exponent and normalized 4 bits of precision, encoded in the "imm8" field. For details of the range of constants available and the encoding of <imm>, see [Modified immediate constants in A64 floating-point instructions](#).

Operation

```
CheckFPEnabled64();  
V[d, datasize] = imm;
```

Base Instructions	SIMD&FP Instructions	SVE Instructions	SME Instructions	Index by Encoding	Sh Pseu
-----------------------------------	------------------------------------------	----------------------------------	----------------------------------	-----------------------------------	-----------------------------

Internal version only: isa v33.64, AdvSIMD v29.12, pseudocode
no_diffs_2023_09_RC2, sve v2023-06_rel ; Build timestamp: 2023-09-18T17:56
Copyright Â© 2010-2023 Arm Limited or its affiliates. All rights reserved. This
document is Non-Confidential.