

# ARM64 Floating Point Conversions

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Floating point to floating point

**BFCVT** Hn, Sn : 32-bit S → 16-bit H  
**FCVT** An, Bn : H/S/D → H/S/D

round to 32- or 64-bit integer in S or D  
**FRINT32** -- **X** : current rounding mode  
**FRINT64** -- **Z** : round towards zero

round to integral in H, S or D  
**FRIN** -- **TA** : to nearest, ties to Away  
**FRIN** -- **TI** : using current rounding mode  
**FRIN** -- **TM** : towards  $-\infty$   
**FRIN** -- **TN** : to nearest, ties to Even  
**FRIN** -- **TP** : towards  $+\infty$   
**FRIN** -- **TX** : exact  
**FRIN** -- **TZ** : towards zero

Floating point to general-purpose

round to integer in W or X  
**FCV** -- **TA** : to nearest, ties to Away  
**FCV** -- **TM** : towards  $-\infty$   
**FCV** -- **TN** : to nearest, ties to Even -- **S** to signed integer  
**FCV** -- **TP** : towards  $+\infty$  -- **U** to unsigned integer  
**FCV** -- **TZ** : towards zero

**FJCVTZS** : convert 64-bit D to 32-bit signed integer in W  
rounding towards zero

General purpose to floating point

**SCVTF** : converts signed integer in W or X to H, S or D  
**UCVTF** : converts unsigned integer in W or X to H, S or D  
using rounding mode in FPCR