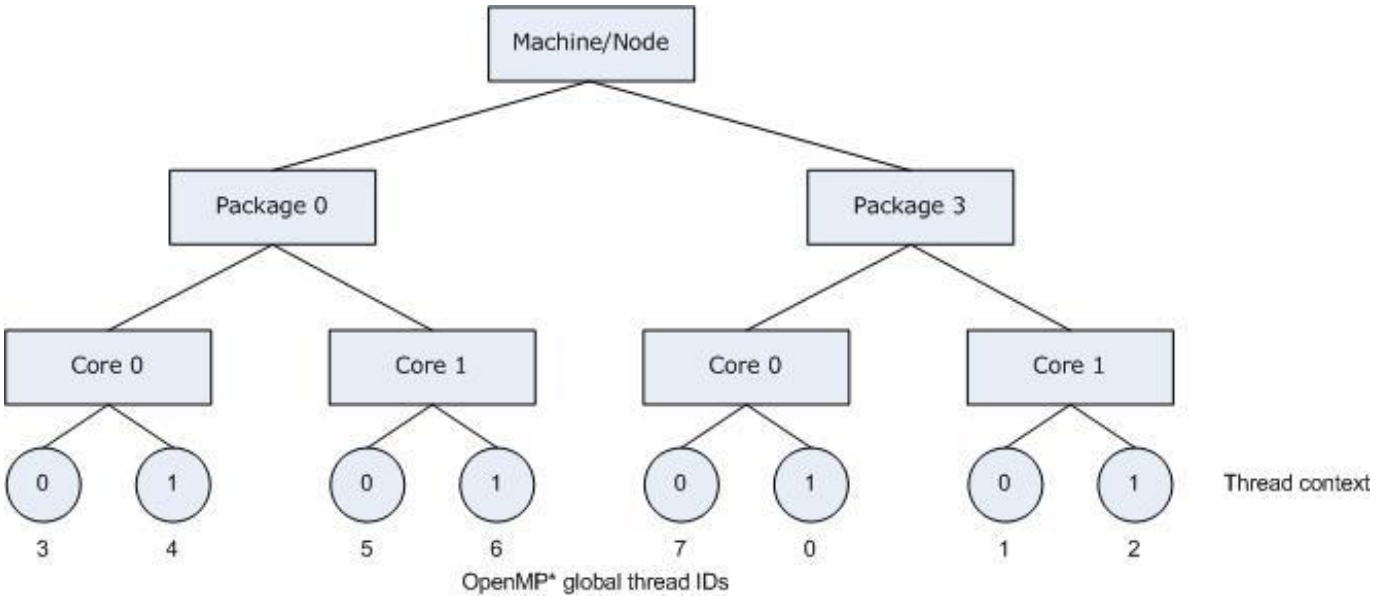

IDE Equivalent

None

Alternate Options

None

Example

Consider the following single-precision sequence for function exp2f:

Operation:	y = exp2f(x)
Accuracy:	1.014 ulp
Instructions:	4 (2 without fix-up)

The following shows the 2-instruction sequence without the fix-up:

```
vcvtfxpntps2dq  zmm1 {k1}, zmm0, 0x50      // zmm1 <-- rndToInt(2^24
* x)
vexp223ps       zmm1 {k1}, zmm1            // zmm1 <-- exp2(x)
```

However, the above 2-instruction sequence will not correctly process NaNs. To process Nans correctly, the following fix-up must be included following the above instruction sequence:

```
vpxord          zmm2, zmm2, zmm2              // zmm2 <-- 0
vfixupnanps     zmm1 {k1}, zmm0, zmm2 {aaaa} // zmm1 <-- QNaN(x) if x
is NaN <F>
```

If the vfixupnanps instruction is not included, the sequence correctly processes any arguments except NaN values. For example, the following options generate the 2-instruction sequence:

```
-fimf-domain-exclusion=2:exp2f      <- NaNs are excluded (2
corresponds to NaNs)
-fimf-domain-exclusion=6:exp2f      <- NaNs and infinities are
excluded (4 corresponds to infinities; 2 + 4 = 6)
-fimf-domain-exclusion=7:exp2f      <- NaNs, infinities, and extremes
are excluded (1 corresponds to extremes; 2 + 4 + 1 = 7)
-fimf-domain-exclusion=15:exp2f     <- NaNs, infinities, extremes,
and denormals are excluded (8 corresponds to denormals;  2 + 4 + 1 +
8=15)
```

If the vfixupnanps instruction is included, the sequence correctly processes any arguments including NaN values. For example, the following options generate the 4-instruction sequence:

```
-fimf-domain-exclusion=1:exp2f      <- only extremes are excluded (1
corresponds to extremes)
-fimf-domain-exclusion=4:exp2f      <- only infinities are excluded
(4 corresponds to infinities)
-fimf-domain-exclusion=8:exp2f      <- only denormals are excluded (8
corresponds to denormals)
-fimf-domain-exclusion=13:exp2f     <- only extremes, infinities and
denormals are excluded (1 + 4 + 8 = 13)
```

Parent topic: Floating-Point Options