

## General Support Intrinsics

Intrinsic	Operation	Corresponding instruction
<a href="#">mm_empty</a>	Empty register	<code>MOVMSKB</code>
<a href="#">mm_cvtsi32_si64</a>	Convert 32-bit integer to 64-bit integer	<code>MOVBQ2SI</code>
<a href="#">mm_cvtsi64_si32</a>	Convert 64-bit integer to 32-bit integer	<code>MOVBQ2SI</code>
<a href="#">mm_packs_pi16</a>	Pack 16-bit integers to 32-bit integers	<code>PACKSSWB</code>
<a href="#">mm_packs_pi32</a>	Pack 32-bit integers to 64-bit integers	<code>PACKSSDW</code>
<a href="#">mm_packs_pu16</a>	Pack 16-bit unsigned integers to 32-bit unsigned integers	<code>PACKUSWB</code>
<a href="#">mm_unpackhi_pi8</a>	Interleave high 8-bit bytes	<code>UNPCKHBW</code>
<a href="#">mm_unpackhi_pi16</a>	Interleave high 16-bit words	<code>UNPCKHWD</code>
<a href="#">mm_unpackhi_pi32</a>	Interleave high 32-bit doublewords	<code>UNPCKHDQ</code>
<a href="#">mm_unpacklo_pi8</a>	Interleave low 8-bit bytes	<code>UNPCKLBW</code>
<a href="#">mm_unpacklo_pi16</a>	Interleave low 16-bit words	<code>UNPCKLWD</code>
<a href="#">mm_unpacklo_pi32</a>	Interleave low 32-bit doublewords	<code>UNPCKLDQ</code>

## Packed Arithmetic Intrinsics

Intrinsic	Operation	Corresponding instruction	Result value bits
<a href="#">mm_add_pi8</a>	Add 8-bit integers	<code>PADDQB</code>	8
<a href="#">mm_add_pi16</a>	Add 16-bit integers	<code>PADDQW</code>	16
<a href="#">mm_add_pi32</a>	Add 32-bit integers	<code>PADDQD</code>	32
<a href="#">mm_adds_pi8</a>	Add signed 8-bit integers	<code>PADDSB</code>	8
<a href="#">mm_adds_pi16</a>	Add signed 16-bit integers	<code>PADDSW</code>	16
<a href="#">mm_adds_pu8</a>	Add unsigned 8-bit integers	<code>PADDUSB</code>	8
<a href="#">mm_adds_pu16</a>	Add unsigned 16-bit integers	<code>PADDUSW</code>	16
<a href="#">mm_sub_pi8</a>	Subtract 8-bit integers	<code>PSUBQB</code>	8
<a href="#">mm_sub_pi16</a>	Subtract 16-bit integers	<code>PSUBQW</code>	16
<a href="#">mm_sub_pi32</a>	Subtract 32-bit integers	<code>PSUBQD</code>	32
<a href="#">mm_subs_pi8</a>	Subtract signed 8-bit integers	<code>PSUBSB</code>	8
<a href="#">mm_subs_pi16</a>	Subtract signed 16-bit integers	<code>PSUBSW</code>	16
<a href="#">mm_subs_pu8</a>	Subtract unsigned 8-bit integers	<code>PSUBUSB</code>	8
<a href="#">mm_subs_pu16</a>	Subtract unsigned 16-bit integers	<code>PSUBUSW</code>	16
<a href="#">mm_madd_pi16</a>	Multiply-add 16-bit integers	<code>PMAQD</code>	32
<a href="#">mm_mulhi_pi16</a>	Multiply high 16-bit integers	<code>MULHW</code>	16
<a href="#">mm_mullo_pi16</a>	Multiply low 16-bit integers	<code>MULLW</code>	16

## Logical Intrinsics

Intrinsic	Operation	Corresponding instruction
<a href="#">mm_and_si64</a>	Bitwise AND	<code>PAND</code>
<a href="#">mm_andnot_si64</a>	Logical AND NOT	<code>PANDN</code>

[mm\\_or\\_si64](#) Bitwise OR  
[mm\\_xor\\_si64](#) Bitwise Exclusive OR

## Compare Intrinsics

Intrinsic Name    C File    C++ File    Instruction  
[mm\\_cmpeq\\_pi8](#)    Equals 8    PCMPEQB  
[mm\\_cmpeq\\_pi16](#)    Equals 16    PCMPEQW  
[mm\\_cmpeq\\_pi32](#)    Equals 32    PCMPEQD  
[mm\\_cmpgt\\_pi8](#)    Greater than    PCMPGTB  
[mm\\_cmpgt\\_pi16](#)    Greater than    PCMPGTW  
[mm\\_cmpgt\\_pi32](#)    Greater than    PCMPGTD

## Set Intrinsics

Intrinsic Name    C File    C++ File    Instruction  
[mm\\_setzero\\_si64](#)    Sets to 0    No    No  
[mm\\_set\\_pi32](#)    Sets integer to value    Yes    Yes  
[mm\\_set\\_pi16](#)    Sets integer to value    Yes    Yes  
[mm\\_set\\_pi8](#)    Sets integer to value    Yes    Yes  
[mm\\_set1\\_pi32](#)    Sets integer to value    Yes    Yes  
[mm\\_set1\\_pi16](#)    Sets integer to value    Yes    Yes  
[mm\\_set1\\_pi8](#)    Sets integer to value    Yes    Yes  
[mm\\_setr\\_pi32](#)    Sets integer to value    Yes    Yes  
[mm\\_setr\\_pi16](#)    Sets integer to value    Yes    Yes  
[mm\\_setr\\_pi8](#)    Sets integer to value    Yes    Yes

## **MMX Intrinsic - Stefano Tommesani**

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