

## Operator Precedence and Associativity

The table below lists the C and C++ operators and their precedence and associativity values. The highest precedence level is at the top of the table.

Symbol	Name or Meaning	Associativity
<b>++</b>	Post-increment	Left to right
<b>--</b>	Post-decrement	
<b>( )</b>	Function call	
<b>[ ]</b>	Array element	
<b>-&gt;</b>	Pointer to object (struct) member	
<b>.</b>	Object (struct) member	
<b>++</b>	Pre-increment	Right to left
<b>--</b>	Pre-decrement	
<b>!</b>	Logical NOT	
<b>~</b>	Bitwise NOT	
<b>-</b>	Unary minus	
<b>+</b>	Unary plus	
<b>&amp;</b>	Address	
<b>*</b>	Indirection	
<b>sizeof</b>	Size in bytes	
<b>new</b>	Allocate program memory	
<b>delete</b>	Deallocate program memory	
<b>( type )</b>	Type cast [for example, (float) i]	
<b>.*</b>	Pointer to member (objects)	Left to right
<b>-&gt;*</b>	Pointer to member (pointers)	
<b>*</b>	Multiply	Left to right
<b>/</b>	Divide	
<b>%</b>	Remainder	

<b>+</b>	<b>Add</b>	Left to right
<b>-</b>	<b>Subtract</b>	
<b>&lt;&lt;</b>	<b>Left shift</b>	Left to right
<b>&gt;&gt;</b>	<b>Right shift</b>	
<b>&lt;</b>	<b>Less than</b>	Left to right
<b>&lt;=</b>	<b>Less than or equal to</b>	
<b>&gt;</b>	<b>Greater than</b>	
<b>&gt;=</b>	<b>Greater than or equal to</b>	
<b>==</b>	<b>Equal</b>	Left to right
<b>!=</b>	<b>Not equal</b>	
<b>&amp;</b>	<b>Bitwise AND</b>	Left to right
<b>^</b>	<b>Bitwise exclusive OR</b>	Left to right
<b> </b>	<b>Bitwise OR</b>	Left to right
<b>&amp;&amp;</b>	<b>Logical AND</b>	Left to right
<b>  </b>	<b>Logical OR</b>	Left to right
<b>? :</b>	<b>Conditional</b>	Right to left
<b>=</b>	<b>Assignment</b>	Right to left
<b>*=, /=, %=, +=, -=, &lt;&lt;=, &gt;&gt;=, &amp;=, ^=,  =</b>	<b>Compound assignment</b>	
<b>,</b>	<b>Comma</b>	Left to right

Lowest Precedence