C Programming Language Operators

Operator	Description	Binary Operator	Unary Operator	Ternary Operator	Associativity	Precedence	Notes
`--`	Arithmetic - decrement (postfix)		✓		left-to-right	Highest	
`( )`	Parenthesis, function call				left-to-right		
`.`	Member of structure/union	✓			left-to-right		
`[ ]`	Array subscript				left-to-right		
`++`	Arithmetic - increment (postfix)		✓		left-to-right		
`->`	Pointer to structure/union	✓			left-to-right		
`(`*`type`*`){`*`init`*`}`	Compound literal				left-to-right		Added in C99
`-`	Arithmetic - minus sign (negative)		✓		right-to-left		
`--`	Arithmetic - decrement (prefix)		✓		right-to-left		
`!`	Logical NOT		✓		right-to-left		
`&`	Address Reference (address-of)		✓		right-to-left		
`*`	Address Dereference		✓		right-to-left		
`~`	Bitwise - one's complement		✓		right-to-left		
`+`	Arithmetic - plus sign (positive)		✓		right-to-left		
`++`	Arithmetic - increment (prefix)		✓		right-to-left		
`sizeof`	Data type size in bytes		✓		right-to-left		
`type cast`	Explicit data type conversion		✓		right-to-left		
`_Alignof`	Alignment requirement in bytes		✓		right-to-left		Added in C11
`%`	Arithmetic - modulus	✓			left-to-right		
`*`	Arithmetic - multiplication	✓			left-to-right		
`/`	Arithmetic - division	✓			left-to-right		
`-`	Arithmetic - subtraction	✓			left-to-right		
`+`	Arithmetic - addition	✓			left-to-right		
`<<`	Bitwise - shift-left	✓			left-to-right		
`>>`	Bitwise - shift-right	✓			left-to-right		
`<`	Relational - less-than	✓			left-to-right		
`<=`	Relational - less-than-or-equal	✓			left-to-right		
`>`	Relational - greater-than	✓			left-to-right		
`>=`	Relational - greater-than-or-equal	✓			left-to-right		
`!=`	Relational - not-equal	✓			left-to-right		
`==`	Relational - equal	✓			left-to-right		
`&`	Bitwise AND	✓			left-to-right		
`^`	Bitwise XOR	✓			left-to-right		
`|`	Bitwise OR	✓			left-to-right		
`&&`	Logical AND	✓			left-to-right		
`||`	Logical OR	✓			left-to-right		
`? :`	Conditional			✓	right-to-left		
`%=`	Modulus assignment	✓			right-to-left		
`&=`	Bitwise AND assignment	✓			right-to-left		
`*=`	Multiplication assignment	✓			right-to-left		
`/=`	Division assignment	✓			right-to-left		
`^=`	Bitwise XOR assignment	✓			right-to-left		
`|=`	Bitwise OR assignment	✓			right-to-left		
`+=`	Addition assignment	✓			right-to-left		
`<<=`	Bitwise shift-left assignment	✓			right-to-left		
`=`	Assignment	✓			right-to-left		
`-=`	Subtraction assignment	✓			right-to-left		
`>>=`	Bitwise shift-right assignment	✓			right-to-left		
`,`	Comma sequence	✓			left-to-right	Lowest	

Operator Precedence

Operators in the same group have equal precedence.