

```
int8_t: 1 byte  
uint8_t: 1 byte  
int16_t: 2 bytes  
uint16_t: 2 bytes  
int32_t: 4 bytes  
uint32_t: 4 bytes  
int64_t: 8 bytes  
uint64_t: 8 bytes
```

Ranges of various data types:

```
char: -128 to 127 (signed)  
unsigned char: 0 to 255  
short: -32768 to 32767  
unsigned short: 0 to 65535  
int: -2147483648 to 2147483647  
unsigned int: 0 to 4294967295  
long: -9223372036854775808 to 9223372036854775807  
unsigned long: 0 to 18446744073709551615  
long long: -9223372036854775808 to 9223372036854775807  
unsigned long long: 0 to 18446744073709551615  
float: 1.17549e-38 to 3.40282e+38  
double: 2.22507e-308 to 1.79769e+308  
long double: 3.3621e-4932 to 1.18973e+4932  
bool: 0 or 1  
wchar_t: -2147483648 to 2147483647  
int8_t: -128 to 127  
uint8_t: 0 to 255  
int16_t: -32768 to 32767  
uint16_t: 0 to 65535  
int32_t: -2147483648 to 2147483647  
uint32_t: 0 to 4294967295
```

`int64_t`: -9223372036854775808 to 9223372036854775807

`uint64_t`: 0 to 18446744073709551615

Sizes and ranges of various data types:

`char`:

Size: 1 byte

Range: -128 to 127 (signed)

Range: 0 to 255 (unsigned)

`short`:

Size: 2 bytes

Range: -32768 to 32767 (signed)

Range: 0 to 65535 (unsigned)

`int`:

Size: 4 bytes

Range: -2147483648 to 2147483647 (signed)

Range: 0 to 4294967295 (unsigned)

`long`:

Size: 8 bytes

Range: -9223372036854775808 to 9223372036854775807 (signed)

Range: 0 to 18446744073709551615 (unsigned)

`long long`:

Size: 8 bytes

Range: -9223372036854775808 to 9223372036854775807 (signed)

Range: 0 to 18446744073709551615 (unsigned)

`float`:

Size: 4 bytes

Range: 1.17549e-38 to 3.40282e+38

`double`:

Size: 8 bytes

Range: 2.22507e-308 to 1.79769e+308

`long double`:

Size: 16 bytes

Range: 3.3621e-4932 to 1.18973e+4932

bool:

Size: 1 byte

Range: 0 or 1

wchar\_t:

Size: 4 bytes

Range: -2147483648 to 2147483647

int8\_t:

Size: 1 byte

Range: -128 to 127

uint8\_t:

Size: 1 byte

Range: 0 to 255

int16\_t:

Size: 2 bytes

Range: -32768 to 32767

uint16\_t:

Size: 2 bytes

Range: 0 to 65535

int32\_t:

Size: 4 bytes

Range: -2147483648 to 2147483647

uint32\_t:

Size: 4 bytes

Range: 0 to 4294967295

int64\_t:

Size: 8 bytes

Range: -9223372036854775808 to 9223372036854775807

uint64\_t:

Size: 8 bytes

Range: 0 to 18446744073709551615