
Subject: [SOLVED] Why long long int seems to be 32 bit longer?

Posted by [forlano](#) on Mon, 29 Jul 2019 06:19:03 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hello,

perhaps this is not U++ related but it depends by some compiler flag I am not aware of (MSVC 2017).

According to wikipedia https://en.wikipedia.org/wiki/C_data_types

long long int

should be 64 bit longer. Now I want to set the bits of such number.

Here is a simple code that set the kth bit in a long long int

```
#include <Core/Core.h>
using namespace Upp;
#include <climits>

// set the kth bit
long long int setKthBit(int n, int k)
{
    return ((1 << k) | n);
}

int getKthBit(int n, int k)
{
    return (n & ( 1 << k )) >> k;
}

CONSOLE_APP_MAIN
{ unsigned long long num = 0, n;
  int k = 30;
  n = setKthBit(num, k);
  printf("%llu \n", n);
  Cout()<<getKthBit(n,k);
  //Cout() << "unsigned long long max = " << ULLONG_MAX ;
}
```

What I observe is that for k>30 the code does not work. It seems it cannot use a proper 64 bit number.

what am I missing?

Thanks,
Luigi

Subject: Re: Why long long int seems to be 32 bit longer?

Posted by [Tom1](#) on Mon, 29 Jul 2019 07:59:46 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hi Luigi,

It seems you have your function parameter 'n' defined as int instead of long long int.

Best regards,

Tom

Subject: Re: Why long long int seems to be 32 bit longer?

Posted by [koldo](#) on Mon, 29 Jul 2019 08:17:31 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hi Luigi

Yes. I would declare n like this:

```
long long int setKthBit(unsigned long long n, int k)
```

```
int getKthBit(unsigned long long n, int k)
```

In addition, maybe it should be used

```
1ULL << k
```

instead of

```
1 << k
```

Subject: Re: Why long long int seems to be 32 bit longer?

Posted by [forlano](#) on Mon, 29 Jul 2019 18:24:38 GMT

[View Forum Message](#) <> [Reply to Message](#)

Hello Tom and Iñaki,

thanks a lot for fixing my code. Only three terrible bugs in less than 10 row, almost a record! :)
Now it works perfectly.

I hope to be able to save the long long int in a xml file and read it without loss of bits.

Best regards,

Luigi

PS: corrected code

```
#include <Core/Core.h>
```

```
using namespace Upp;
```

```
// set the kth bit
unsigned long long int setKthBit(unsigned long long int n, int k)
{
    return ((1ULL << k) | n);
}
```

```
int getKthBit(unsigned long long int n, int k)
{
    return (n & ( 1ULL << k )) >> k;
}
```

```
CONSOLE_APP_MAIN
{ unsigned long long int num = 0, n;
  int k = 60;
  n = setKthBit(num, k);
  printf("%llu \n", n);

  Cout()<<getKthBit(n,k);
}
```
