
Subject: Strange program crash
Posted by [deep](#) on Wed, 20 Feb 2013 19:57:57 GMT
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I am facing strange program crash.

System windows 7 64 bits, UPP5800, MSC10,

Test code.

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

using namespace Upp;

struct MyApp : TopWindow {
    Image image;
    #define MAX_COL 750
    #define MAX_ROW 750

    struct Node
    {
        struct Node *Header;
        struct Node *Left;
        struct Node *Right;
        struct Node *Up;
        struct Node *Down;
        char IDName;
        int IDNum;
    };

    struct Node Root;
    struct Node Roots[MAX_COL];

    char Data[MAX_COL][MAX_ROW];

    // struct Node Matrix[MAX_COL][MAX_ROW];

    void Paint(Draw& w) {
        w.DrawRect(GetSize(), Cyan());
        w.DrawImage(10, 10, image);
    }

    MyApp() {
        ImageDraw iw(100, 40);
        iw.Alpha().DrawRect(0, 0, 100, 40, GrayColor(0));
        iw.Alpha().DrawEllipse(0, 0, 100, 40, GrayColor(255));
        iw.DrawEllipse(0, 0, 100, 40, Yellow());
    }
};
```

```
iw.DrawText(26, 10, "Image", Arial(16).Bold());  
image = iw;  
}  
};
```

```
GUI_APP_MAIN  
{  
  MyApp().Sizeable().Run();  
}
```

This code runs ok.

When I uncomment line with struct Node Matrix[MAX_COL][MAX_ROW]; Program crashes on run.

Crash report

Problem signature:

Problem Event Name: APPCRASH
Application Name: Test1.exe
Application Version: 0.0.0.0
Application Timestamp: 51252483
Fault Module Name: Test1.exe
Fault Module Version: 0.0.0.0
Fault Module Timestamp: 51252483
Exception Code: c00000fd
Exception Offset: 002c4207
OS Version: 6.1.7601.2.1.0.256.1
Locale ID: 2057
Additional Information 1: 3a6e
Additional Information 2: 3a6e02c22fcc91129d3773f5deb0f79b
Additional Information 3: 39ad
Additional Information 4: 39ad623814f92b971a57f1c746b1a539

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What can be the mistake ?

Subject: Re: Strange program crash
Posted by [Lance](#) on Wed, 20 Feb 2013 20:17:18 GMT

It seems you have a stack overflow.

The MyApp object with the line uncommented is pretty big. When your program tries to create it on the stack, it may cause a stack overflow. You should generally avoid to allocate objects with this magnitude of size on the stack as stack is more limited than the heap.

Subject: Re: Strange program crash
Posted by [deep](#) on Fri, 22 Feb 2013 19:06:00 GMT
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Hi Lance,

Thank you for your response.

Now I converted the Array struct Node Matrix[MAX_COL][MAX_ROW];
to Vector of Node. Changed declaration to

```
struct Node : Moveable<Node>
```

and

```
Vector< Vector<xNode>> Matrix;
```

This is working. I initialize this in for loop.

Now I have another problem.
Actually I am converting some c code to upp.

```
code in c  
struct node *RowHeader[MAX_ROW];
```

I have declared it as vector.

```
Vector<Node> *RootHeader;
```

Now how do I set size to MAX_ROW for this vector?

I tried

```
RootHeader->Add() in for loop  
(*RootHeader).Add() in for loop  
RootHeader->SetCount(MAX_ROW);
```

What is correct syntax.

Program crashes here with following

Problem signature:

Problem Event Name: APPCRASH

Application Name: Test1.exe

Application Version: 0.0.0.0

Application Timestamp: 5127b75d

Fault Module Name: Test1.exe

Fault Module Version: 0.0.0.0

Fault Module Timestamp: 5127b75d

Exception Code: c0000005

Exception Offset: 00026a9c

OS Version: 6.1.7601.2.1.0.256.1

Locale ID: 2057

Additional Information 1: 0a9e

Additional Information 2: 0a9e372d3b4ad19135b953a78882e789

Additional Information 3: 0a9e

Additional Information 4: 0a9e372d3b4ad19135b953a78882e789

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Subject: Re: Strange program crash

Posted by [Lance](#) on Sat, 23 Feb 2013 04:06:40 GMT

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code in c

```
struct node *RowHeader[MAX_ROW];
```

more likely translates to

```
typedef struct node Node;
// actually, in C you need the struct, in
// c++, it can be opted out
// so
// typedef node Node;
// is the same
Vector<Node*> RootHeader;
```

However, you may want to put the dynamically allocated node* into some smart pointer so that they will be delete'd (free'd).

or you can do it yourself

```
class MyNodeContainer : public Vector<node*>
{
public:
    ~MyNodeContainer()
    {
        for(int i=0; i<GetCount(); ++i)
            delete (*this)[i];
            // or free((*this)[i]); if the nodes are malloc'ed
    }
    and other method, eg, constructors,..
}
```

Subject: Re: Strange program crash
Posted by [Lance](#) on Sat, 23 Feb 2013 04:18:57 GMT
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You don't need to set the size in front.

If you know you will need that many nodes, you may want to Reserve(MAX_ROW);

If for some reason you want the vector to be with that many nodes, you can use the At() method of Upp::Vector, but be advised that your Vector of node pointers will be filled with uninitialized pointers; that's something you don't necessarily want.

C++ containers, eg. std::vector<T> and Upp::Vector<T>, unlike C array, can change its size dynamically to accommodate more elements with ease and with high performance (amortized constant speed). So you can safely ignore the MAX_ROW etc part when you translate C code into C++.

Subject: Re: Strange program crash
Posted by [Lance](#) on Sat, 23 Feb 2013 04:25:46 GMT
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```
Vector<Node> *RootHeader;
```

Here RootHeader is a pointer to a Vector<Node> object. eg.

```
Vector<Node> nodes;
```

```
Vector<Node> * RootHeader=&nodes;
```

```
//or
```

```
Vector<Node> * p=new Vector<Node>();
```

while

```
Vector<Node*> RootHeader;
```

```
// here on the other hand, RootHeader if a Vector of pointer to Node objects. Vector can be  
thought of as dynamic array.
```