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Subject: What does this compiling error mean exactly?  
Posted by [sinpeople](#) on Sun, 01 Nov 2020 16:27:21 GMT  
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Hi folks,

I have a piece of program from this forum. It works fine before I tried to extend it under its current framework.

Please give newbie a help hand.

The code I added is:

```
struct Stage{
    int stageID;
    int stageDuration;
};

struct SignalScheduleMessage : AMessage {
    Time time;
    int nCycleID;
    int nStages;
    Vector<Stage> stages;

    virtual void Serialize(Stream& s) {
        s % time % nCycleID % nStages;
        for(int i=0; i<stages.GetCount(); i++)
            s % stages[i].stageID % stages[i].stageDuration;
    }
};
```

and

```
RegisterMessage<SignalScheduleMessage>(3); // do that for all of your messages
```

The compiling time error message is the following:

The full package of the code (after extension) is here  
`#include <Core/Core.h>`

```
namespace Upp {

struct AMessage {
    virtual void Serialize(Stream& s) = 0;
```

```

    virtual ~AMessage() {}
};

typedef Function< void (One<AMessage>&) > MessageMake;

VectorMap<int, MessageMake> message_maker;

template <class T>
void RegisterMessage(int messageid)
{
    message_maker.Add(messageid, [](One<AMessage>& m) { m.Create<T>(); });
}

// =====
//   Messages definition
// =====
struct TemperatureMessage : AMessage {
    double altitude, temperature;

    virtual void Serialize(Stream& s) {
        s % altitude % temperature;
    }
};

struct WarningMessage : AMessage {
    String text;

    virtual void Serialize(Stream& s) {
        s % text;
    }
};

struct Stage{
    int stageID;
    int stageDuration;
};

struct SignalScheduleMessage : AMessage {
    Time time;
    int nCycleID;
    int nStages;
    Vector<Stage> stages;

    virtual void Serialize(Stream& s) {
        s % time % nCycleID % nStages;
        for(int i=0; i<stages.GetCount(); i++)

```

```

        s % stages[i].stageID % stages[i].stageDuration;
    }
};

// =====
//   Message registration
// =====

INITBLOCK {
    RegisterMessage<TemperatureMessage>(1); // do that for all of your messages
    RegisterMessage<WarningMessage>(2); // do that for all of your messages
    RegisterMessage<SignalScheduleMessage>(3); // do that for all of your messages
};

void ProcessRequest(const String& data)
{
    stringstream ss(data); // error handling for now omitted
    int client_id = ss.Get32();
    int message_id = ss.Get32();
    One<AMessage> m;
    int q = message_maker.Find(message_id);
    if(q < 0)
        return;
    (message_maker[q])(m); // create the required concrete message
    ss % *m; // load data to struct
}

}
using namespace Upp;

CONSOLE_APP_MAIN
{
}

```

Thank you very much!

Best Regards  
David WANG

## File Attachments

1) [Capture.JPG](#), downloaded 282 times

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Subject: Re: What does this compiling error mean exactly?  
Posted by [Klugier](#) on Sun, 01 Nov 2020 16:52:37 GMT

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Hello David,

Vector requires from the type it holds to be movable. In your case following lines should fix the compilation issue:

```
struct Stage : Moveable<Stage> {  
    int stageID;  
    int stageDuration;  
};
```

For more info please read following Core tutorial page related to Vector container. Alternatively you could replace Vector with Array and then the Movable pattern is not required, however you will lose performance. For more info please read chapters related to Array.

You could also read article about Moveable. It describes in details why the compilation error is there.

Klugier

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