
Subject: Re: Convert struct to string and reconstruct a struct from string

Posted by [mirek](#) on Sun, 01 Nov 2020 14:39:58 GMT

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

sinpeople wrote on Sat, 31 October 2020 16:43+Mirek

Thank you very much for this great example. It did really broaden my horizon in terms of C++ knowledge as a newbie.

Now I am having difficulties in handing the binary message for sending and receiving; The sending/receiving has been verified. Only the data format seems not very correct.

```
void LocalCtrl::RpcRequest()
{
    TrafficMessage m;
    m.traffic = "Lots of Traffic";
    String data = StoreAsString(m);
    SendCmd(Traffic, data);
}
```

```
void LocalCtrl::SendCmd(enum MessageIDs msgID, String data)
{
    ClientUDPHead udpHead(local_cfg.nID, regional_cfg.strIP, regional_cfg.nPort);

    UdpRpcCmd(udpHead, msgID, data);
}
```

The "UdpRpcCmd" will eventually calls the following function to send message to server side

```
void UdpCmd(ClientUDPHead head, enum MessageIDs msgID, String data)
```

```
{
    UrrClient urr;
    urr.SetServer(head.strDestIP, head.nDestPort);

    int tm = GetTickCount();
    String strCmd = Format("%d%d%s", head.clientID, msgID, data);

    strCmd = urr.Call(strCmd);
    int tm2 = GetTickCount();

    String strMsg;
    if(strCmd.GetCount())
    {
        strMsg = Format("Request: %s, Response: %s in %d ms", data, strCmd, tm2-tm);
    }
    else
```

```

{
    strMsg = Format("Request: %s, Time out!", data);
}

//Do something account to RpcCmd request;
notify->OnReplyUdpRpcCmd(strMsg, (int) Random(500), Format(GetSysTime())); //notify result
}

```

I need to combine three things together before sending it out. Initially I used this one to combine the strings together.

```
String strCmd = Format("%d%d%s", head.clientID, msgID, data);
```

The server side can pick up the messages correctly. But I failed to extract them properly with the sample code below

```

for(;;)
{
    UrrRequest r;
    if(urr.Accept(r))
    {
        stringstream ss(~r); // 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
    /*
    Vector<String> tokens = Split(~r, [](int c) { return c == ':' || c == '\t' || c == ' ' || c == ',' || c == '.' ? 1
: 0; });

    if(tokens.GetCount()>=2) // local_ctrl.nID + Command ID;
    {
        int nFind = ctrl.Find(tokens[0]);
        if(nFind != -1)
        {
            ctrl[nFind]->UdpRpcCmd(r);
        }
    }
    */
}
}

```

Both the client_id and message_id are very big numbers. In fact, the clien_id is an int and

message_id is an enum which starts from 1;

How to combine 2 or more strings and separate them properly after network transmission in this case?

Thank you so much!

David WANG

I think you are mixing text interpretation (Format) and binary one (ss.Get32). Use StringStream on both sides..

Mirek
