程序设计实践测试报告

1. mini-client 程序

代码如下：

```cpp
#include <boost/asio.hpp>
#include <boost/locale.hpp>
#include <string>
#include <vector>
#include <iostream>
#include <locale>
#include <codecvt>
#include <cstring>
#include <cstdlib>

#include "../include/cpp-base64/base64.h"
using namespace boost::asio;

static const char *kHost = "localhost";
static const char *kPort = "12345";

std::string ToUTF8(const std::string &gb2312)
{
    return boost::locale::conv::to_utf<char>(gb2312.c_str(), std::string("gb2312"));
}

int main()
{
    std::system("chcp 936");
    io_context ioc;
    try
    {
        ip::tcp::resolver resolver(ioc);
        auto ep = resolver.resolve(ip::tcp::v4(), kHost, kPort);

        ip::tcp::socket socket(ioc);

        connect(socket, ep);

        while (true)
        {
            std::string request;

            while (!request.size())
            {
                std::getline(std::cin, request);
            }

            std::cout << "raw: " << request << std::endl;
            std::cout << "UTF8" << request << std::endl;
            request = base64_encode(reinterpret_cast<const unsigned char *>(request.c_str()), requ
            std::cout << "b64: " << request << std::endl;
            write(socket, buffer(request, request.size()));

            std::vector<unsigned char> buf(10240);
            std::string reply;
            auto len = socket.read_some(buffer(buf));
            for (int i = 0; i < len; i++)
                reply.push_back(buf[i]);

            std::cout << "b64_reply: " << reply << std::endl;
            std::cout << "reply: " << base64_decode(reply) << std::endl;
        }
    }
    catch (const std::exception & e)
    {
        std::cerr << e.what() << std::endl;
    }
}
```

用于接受测试输入，并将输入发送到服务端，再将从服务端发回的响应打印至屏幕上。

下为测试所用的输入片段：

- 登录请求：
  - 请求1：
    测试正确的登录。

    ```
    {"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_pswd"}
    ```

    成功登陆账号。
    即

    ```
    {
        "EventGroup": "Account",
        "Event": "LogIn",
        "ID": "test_id",
        "Pswd": "test_pswd"
    }
    ```

    预期结果：

    ```
    {
        "EventGroup": "Account",
        "Event": "Reply",
        "Result": true
    }
    ```

    结果：

    ```
    {"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_pswd"}
    raw: {"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_pswd"}
    UTF8{"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_pswd"}
    b64: eyJFdmVudEdyb3VwIjogIkFjY291bnQiLCJFdmVudCI6ICJMb2dJbiIsIklEIjogInRlc3RfaWQiLCJQc3dkIjogInRlc3RfcHN3ZCJ9
    b64_reply: eyJFdmVudEdyb3VwIjoiQWNjb3VudCIsIkV2ZW50IjoiUmVwbHkiLCJSZXN1bHQiOnRydWV9
    reply: {"EventGroup":"Account","Event":"Reply","Result":true}
    ```

  - 请求2：
    测试密码错误时的登录。

    ```
    {"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_psw"}
    ```

    即

    ```
    {
        "EventGroup": "Account",
        "Event": "LogIn",
        "ID": "test_id",
        "Pswd": "test_psw"
    }
    ```

    预期结果：
    密码错误，无法登录。

    ```
    {
        "EventGroup": "Account",
        "Event": "Reply",
        "Result": false
    }
    ```

    结果：

    ```
    {"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_psw"}
    raw: {"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_psw"}
    UTF8{"EventGroup": "Account","Event": "LogIn","ID": "test_id","Pswd": "test_psw"}
    b64: eyJFdmVudEdyb3VwIjogIkFjY291bnQiLCJFdmVudCI6ICJMb2dJbiIsIklEIjogInRlc3RfaWQiLCJQc3dkIjogInRlc3RfcHN3In0=
    b64_reply: eyJFdmVudEdyb3VwIjoiQWNjb3VudCIsIkV2ZW50IjoiUmVwbHkiLCJSZXN1bHQiOmZhbHNlfQ==
    reply: {"EventGroup":"Account","Event":"Reply","Result":false}
    ```

- 请求3:
  测试注册账号。

  ```
  {"EventGroup": "Account","Event": "LogIn","ID": "test_i","Pswd": "test_psw"}
  ```

  即

  ```
  {
      "EventGroup": "Account",
      "Event": "LogIn",
      "ID": "test_id",
      "Pswd": "test_pswd"
  }
  ```

  预期结果:
  成功注册账号。

  ```
  {
      "EventGroup": "Account",
      "Event": "Reply",
      "Result": true
  }
  ```

  结果:

```
{"EventGroup": "Account","Event": "LogIn","ID": "test_i","Pswd": "test_psw"}
raw: {"EventGroup": "Account","Event": "LogIn","ID": "test_i","Pswd": "test_psw"}
UTF8{"EventGroup": "Account","Event": "LogIn","ID": "test_i","Pswd": "test_psw"}
b64: eyJFdmVudEdyb3VwIjogIkFjY291bnQiLCJFdmVudCI6ICJMb2dJbiIsIklEIjogInRlc3RfaSIsIlBzd2QiOiAidGVzdF9wc3cifQ==
b64_reply: eyJFdmVudEdyb3VwIjoiQWNjb3VudCIsIkV2ZW50IjoiUmVwbHkiLCJSZXN1bHQiOnRydWV9
reply: {"EventGroup":"Account","Event":"Reply","Result":true}
```

- 请求4:
  测试 UTF-8 支持，重复两次，一次注册，一次登录。

  ```
  {"EventGroup": "Account","Event": "LogIn","ID": "没有","Pswd": "ない"}
  ```

  即

  ```
  {
      "EventGroup": "Account",
      "Event": "LogIn",
      "ID": "没有",
      "Pswd": "ない"
  }
  ```

  预期结果:
  成功注册和登录账号，两次均为成功。

  ```
  {
      "EventGroup": "Account",
      "Event": "Reply",
      "Result": true
  }
  ```

  结果:

```
{"EventGroup": "Account","Event": "LogIn","ID": "没有","Pswd": "ない"}
raw: {"EventGroup": "Account","Event": "LogIn","ID": "没有","Pswd": "ない"}
UTF8{"EventGroup": "Account","Event": "LogIn","ID": "没有","Pswd": "ない"}
b64: eyJFdmVudEdyb3VwIjogIkFjY291bnQiLCJFdmVudCI6ICJMb2dJbiIsIklEIjogIs6709AiLCJQc3dkIjogIqTKpKQifQ==
b64_reply: eyJFdmVudEdyb3VwIjoiQWNjb3VudCIsIkV2ZW50IjoiUmVwbHkiLCJSZXN1bHQiOnRydWV9
reply: {"EventGroup":"Account","Event":"Reply","Result":true}
{"EventGroup": "Account","Event": "LogIn","ID": "没有","Pswd": "ない"}
raw: {"EventGroup": "Account","Event": "LogIn","ID": "没有","Pswd": "ない"}
UTF8{"EventGroup": "Account","Event": "LogIn","ID": "没有","Pswd": "ない"}
b64: eyJFdmVudEdyb3VwIjogIkFjY291bnQiLCJFdmVudCI6ICJMb2dJbiIsIklEIjogIs6709AiLCJQc3dkIjogIqTKpKQifQ==
b64_reply: eyJFdmVudEdyb3VwIjoiQWNjb3VudCIsIkV2ZW50IjoiUmVwbHkiLCJSZXN1bHQiOnRydWV9
reply: {"EventGroup":"Account","Event":"Reply","Result":true}
```

- 同步备忘至服务端:

○ 请求1:
正常上传。

{"EventGroup": "Data","Event":"SyncFromClient","ID":"test_id","Records":[{"RecID":0,"Text

即

```
{
    "EventGroup": "Data",
    "Event":"SyncFromClient",
    "ID":"test_id",
    "Records":[
        {
            "RecID":0,
            "Text":"12345",
            "DueDate":"2017-09-12",
            "Done":false
        },
        {
            "RecID":1,
            "Text":"54321",
            "DueDate":"2017-09-13",
            "Done":false
        },
        {
            "RecID":2,
            "Text":"kyomoiitenki",
            "DueDate":"2123-09-12",
            "Done":true
        }
    ]
}
```

预期结果:
成功。

```
{
    "EventGroup": "Data",
    "Event": "SyncReply",
    "SyncResult": true
}
```

结果:

{"EventGroup": "Data","Event":"SyncFromClient","ID":"test_id","Records":[{"RecID":0,"Text":"12345","DueDate":"2017-09-12","Done":false},{"RecID":1,"Text":"54321","DueDate":"2017-09-13","Done":false},{"RecID":2,"Text":"kyomoiitenki","DueDate":"2123-09-12","Done":true}]}
raw: {"EventGroup": "Data","Event":"SyncFromClient","ID":"test_id","Records":[{"RecID":0,"Text":"12345","DueDate":"2017-09-12","Done":false},{"RecID":1,"Text":"54321","DueDate":"2017-09-13","Done":false},{"RecID":2,"Text":"kyomoiitenki","DueDate":"2123-09-12","Done":true}]}
UTF8{"EventGroup": "Data","Event":"SyncFromClient","ID":"test_id","Records":[{"RecID":0,"Text":"12345","DueDate":"2017-09-12","Done":false},{"RecID":1,"Text":"54321","DueDate":"2017-09-13","Done":false},{"RecID":2,"Text":"kyomoiitenki","DueDate":"2123-09-12","Done":true}]}
b64: eyJFdmVudEdyb3VwIjogIkRhdGEiLCJFdmVudCI6IlN5bmNGcm9tQ2xpZW50IiwiSUQiOiJ0ZXN0X2lkIiwiUmVjb3Jkcy16W3siUmVjSUQiOjAsIlR
leHQiOiIxMjM0NSIsIkR1ZURhdGUiOiIyMDE3LTA5LTEyIiwiRG9uZSI6ZmFsc2V9LHsiUmVjSUQiOjEsIlRleHQiOiI1NDMyMSIsIkR1ZURhdGUiOiIyMDE
3LTA5LTEzIiwiRG9uZSI6ZmFsc2V9LHsiUmVjSUQiOjIsIlRleHQiOiJreW9tb2lpdGVua2kiLCJEdWVEYXRlIjoiMjEyMy0wOS0xMiIsIkRvbmUiOnRydWV
9XX0=
b64_reply: eyJFdmVudEdyb3VwIjoiRGF0YSIsIkV2ZW50IjoiU3luY1JlcGx5IiwiU3luY1Jlc3VsdCI6dHJ1ZX0=
reply: {"EventGroup":"Data","Event":"SyncReply","SyncResult":true}

○ 请求2:
在请求1的基础上改变id为不存在的id。

{"EventGroup": "Data","Event":"SyncFromClient","ID":"不存在的名称","Records":[{"RecID":0,"

预期结果:
由于找不到该账户,返回失败。

```
    {
        "EventGroup": "Data",
        "Event": "SyncReply",
        "SyncResult": false
    }
```

结果:

{"EventGroup": "Data","Event":"SyncFromClient","ID":"不存在的名称","Records":[{"RecID":0,"Text":"12345","DueDate":"2017-
09-12","Done":false},{"RecID":1,"Text":"54321","DueDate":"2017-09-13","Done":false},{"RecID":2,"Text":"kyomoiitenki","Du
eDate":"2123-09-12","Done":true}]}
raw: {"EventGroup": "Data","Event":"SyncFromClient","ID":"不存在的名称","Records":[{"RecID":0,"Text":"12345","DueDate":"
2017-09-12","Done":false},{"RecID":1,"Text":"54321","DueDate":"2017-09-13","Done":false},{"RecID":2,"Text":"kyomoiitenki
","DueDate":"2123-09-12","Done":true}]}
UTF8{"EventGroup": "Data","Event":"SyncFromClient","ID":"不存在的名称","Records":[{"RecID":0,"Text":"12345","DueDate":"2
017-09-12","Done":false},{"RecID":1,"Text":"54321","DueDate":"2017-09-13","Done":false},{"RecID":2,"Text":"kyomoiitenki
","DueDate":"2123-09-12","Done":true}]}
b64: eyJFdmVudEdyb3VwIjogIkRhdGEiLCJFdmVudCI6IlN5bmNGcm9tQ2xpZW50IiwiSUQiOiKyu7Tm1Nq1xMP7s8YiLCJSZWNvcmRzIjpbeyJSZWNJRCI
6MCwiVGV4dCI6IjEyMzQ1IiwiRHVlRGF0ZSI6IjIwMTctMDktMTIiLCJEb25lIjpmYWxzZXOseyJSZWNJRCI6MSwiVGV4dCI6IjU0MzIxIiwiRHVlRGF0ZSI
6IjIwMTctMDktMTMiLCJEb25lIjpmYWxzZXOseyJSZWNJRCI6MiwiVGV4dCI6Imt5b21vaWl0ZW5raSIsIkR1ZURhdGUiOiIyMTIzLTA5LTEyIiwiRG9uZSI
6dHJ1ZX1dfQ==
b64_reply: eyJFdmVudEdyb3VwIjoiRGF0YSIsIkV2ZW50IjoiU3luY1JlcGx5IiwiU3luY1Jlc3VsdCI6IGZhbHNlfQ==
reply: {"EventGroup":"Data","Event":"SyncReply","SyncResult": false}

- 从服务端下载备忘请求
    - 请求1:
      正常请求，先执行上传请求中的请求1。

      ```
      {"EventGroup":"Data","Event":"SyncFromServer","ID":"test_id"}
      ```

      即

      ```
      {
          "EventGroup": "Data",
          "Event": "SyncFromServer",
          "ID": "test_id"
      }
      ```

      预期结果:
      返回正确的数据。

      ```
      {
          "EventGroup":"Data",
          "Event":"SyncData",
          "ID":"test_id",
          "Records":[
              {
                  "RecID":0,
                  "Text":"12345",
                  "DueDate":"2017-09-12",
                  "Done":false
              },
              {
                  "RecID":1,
                  "Text":"54321",
                  "DueDate":"2017-09-13",
                  "Done":false
              },
              {
                  "RecID":2,
                  "Text":"kyomoiitenki",
                  "DueDate":"2123-09-12",
                  "Done":true
              }
          ]
      }
      ```

      结果:

{"EventGroup":"Data","Event":"SyncFromServer","ID":"test_id"}
raw: {"EventGroup":"Data","Event":"SyncFromServer","ID":"test_id"}
UTF8{"EventGroup":"Data","Event":"SyncFromServer","ID":"test_id"}
b64: eyJFdmVudEdyb3VwIjoiRGF0YSIsIkV2ZW50IjoiU3luYOzyb21TZXJ2ZXIiLCJJRCI6InRlc3RfaWQifQ==
b64_reply: eyJFdmVudEdyb3VwIjoiRGF0YSIsIkV2ZW50IjoiU3luYORhdGEiLCJJRCI6InRlc3RfaWQiLCJSZWNvcmRzIjpbeyJSZWNJRCI6MCwiVGV4d
CI6IjEyMzQ1IiwiRHVlRGF0ZSI6IjIwMTctMDktMTIiLCJEb25lIjpmYWxzZX0seyJSZWNJRCI6MSwiVGV4dCI6IjU0MzIxIiwiRHVlRGF0ZSI6IjIwMTctM
DktMTMiLCJEb25lIjpmYWxzZX0seyJSZWNJRCI6MiwiVGV4dCI6Imt5b21vaWl0ZW5raSIsIkR1ZURhdGUiOiIyMTIzLTA5LTEyIiwiRG9uZSI6dHJ1ZX1df
Q==
reply: {"EventGroup":"Data","Event":"SyncData","ID":"test_id","Records":[{"RecID":0,"Text":"12345","DueDate":"2017-09-12
","Done":false},{"RecID":1,"Text":"54321","DueDate":"2017-09-13","Done":false},{"RecID":2,"Text":"kyomoiitenki","DueDate
":"2123-09-12","Done":true}]]}

- 请求2：

  改变ID为不存在于数据库中的ID。

  {"EventGroup":"Data","Event":"SyncFromServer","ID":"不存在的ID"}

  即

  ```
  {
      "EventGroup": "Data",
      "Event": "SyncFromServer",
      "ID": "test_id"
  }
  ```

  预期结果：

  返回失败。

  ```
  {
      "EventGroup": "Data",
      "Event": "SyncReply",
      "SyncResult": false
  }
  ```

  结果：

{"EventGroup":"Data","Event":"SyncFromServer","ID":"不存在的ID"}
raw: {"EventGroup":"Data","Event":"SyncFromServer","ID":"不存在的ID"}
UTF8{"EventGroup":"Data","Event":"SyncFromServer","ID":"不存在的ID"}
b64: eyJFdmVudEdyb3VwIjoiRGF0YSIsIkV2ZW50IjoiU3luYOzyb21TZXJ2ZXIiLCJJRCI6IrK7t0bU2rXESUQifQ==
b64_reply: eyJFdmVudEdyb3VwIjoiRGF0YSIsIkV2ZW50IjoiU3luY1JlcGx5IiwiU3luY1Jlc3VsdCI6IGZhbHNlfQ==
reply: {"EventGroup":"Data","Event":"SyncReply","SyncResult": false}

2. presure-test 程序

用于构造随机请求，包括有效和无效的请求，以及随机数据，并将构造的请求以多线程并行的方式发送至服务端。

运行截图：

```
PS C:\Users\Za\Desktop\temp\bin\performance-test> .\mini-client.exe
Init Random Vec
Start timer
Send 80000 requests in 3250.81 ms.
```

同时将服务端调试级别改为 WARN ：

23665 12:44:15 tid: 21964   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string {"EventGroup":"Account","Event":"CreateAccount","ID":"rkUu!~LP@Ia>q:g&#['BcAT_M9%N1IjJO~O?\]bEsvK{M;FSb3G_iL&iW`7,1^PF_T9>bfq
53W(W;u-jcN4wedmDy/znJMs8*S_k[s&M<Dgbo4`Ty@?RBU]t^KAufgkZyUJ4\tIT31{Yfv@)Mp#Sl*f1BV;}<,WM9X[P9H]#A)L;PkS/A&Ju@e1A/qCOSc&\3CiL3\.5v;<>J;hFV(^YTx/u
:>,y/%NG]H95)+~^52]lv*B|;G=[O'GMk!_%]Xgo#%!uw]}7Wkp(''mj)4*&g,h8?eI6l5(kxdP9eKYR<h_&F4%2k$4(?L>J+:a;-Y@>oZ_xv=~uYMUaZ^aO","Pswd":"rkUu!~LP@Ia>q:
g&#['BcAT_M9%N1IjJO~O?\]bEsvK{M;FSb3G_iL&iW`7,1^PF_T9>bfq53W(W;u-jcN4wedmDy/znJMs8*S_k[s&M<Dgbo4`Ty@?RBU]t^KAufgkZyUJ4\tIT31{Yfv@)Mp#Sl*f1BV;}<,W
M9X[P9H]#A)L;PkS/A&Ju@e1A/qCOSc&\3CiL3\.5v;<>J;hFV(^YTx/u:>,y/%NG]H95)+~^52]lv*B|;G=[O'GMk!_%]Xgo#%!uw]}7Wkp(''mj)4*&g,h8?eI6l5(kxdP9eKYR<h_&F4%2
k$4(?L>J+:a;-Y@>oZ_xv=~uYMUaZ^aO"}, parse error: Invalid escape character in string.

23666 12:44:15 tid: 21968   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string {"EventGroup":"Data","Event":"SyncFromClient","ID":"2/gVZ7;><1@.Gt*R_L9rnZ}tO88|6_Etf{clHX9kjZ:`H1_>D&[$jZl=tQ6,it2bEue_7*cDv
Mu:9?oDOXUxa@4o648&kz[,C+\Y98}cLw:oy/Ok#}{BcYSYaYuh9zz]/l}cR7}'JgL?D;!)RifU+~~t7,QCM)5Ns:lCo|s)%4X-OyY)wO/\AIu8@hMX}I7GzoqlsLf;}+/;3~?_5z-eiFrC<E
brU]J&1eFAIwf>f7A3/&}EfvOK|6>bNb$%S=QS{mp-TxBi%Qp,A7:jeq),b`Zh`dUKX_&]BSY`&=6Ul;T&e%k.6)w_BrqJ{'N*eR*igw4%KwKKO~qv/I\I)602lfWA}Nr\z2tTbryp+68>e1e
ohcceV<6D]gK8MZ2|cd>e=K9uC6\U{Hmt3q(gi5,f!LYQ/rKXJs_"}, parse error: Invalid escape character in string.

23667 12:44:15 tid: 22008   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string f?$,vREk|ClwEz*':a~$sA)_qZLWS&9F7y5E?:!aF]QeCr%>LR]wX!CcBwuLz1p+\Sr~<\azIAZs:2Jtcb@NF}9jM.ROOYLLlM,8*t\}gF}x=60s#v.<~>3,uoe.E
pBgi),NuH5v\^OW^#.PVQQLv$DvW!Y1'i4MwIhsG|QGdv<'zgw&HhQAu9kM@77rC)H9cuQrOIudR`7xG(,p{8![d!U\4{guC.T+;X|B3jhvrw93$*PA@|wM/cm]wtdI2h[W~/3/fJ@Qm_WJsN
gedWX}+R!29~N8WTF/#:cVz+dx#|}OW`Bb?S_x.Q39~uEZQK<-M-QT,3+KN=Qjt$h2c%1vnCbpHIp9_}=e8zJ+PX>!<\v&kew?7P:C:}]$K'OU^u6R#B)SjiD;K9\6Xp:lRkggjsR,&^g?K%K
]fHKOS;*v=xeITuD~fx-p6N%wEl!P<oW/Ux$Z/ud,Vs`eR4l6\H8=>X*Z1tZI,c.48qJwJ2Oi[I+bb, parse error: Invalid value.

23668 12:44:15 tid: 21948   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string {"EventGroup":"Account","Event":"LogIn","ID":"Gnh!PQ%^a5p%~#.9Xkzu5AeBH{UYxsl='e{<%~?:S>j>\#kgx/hCw!}'OBA?)}iX9?guLl}$?y!h_,s
syd/p_8e;YkL,)&Hnm32yyacHU%?j{Y3&/r7k+)Ff!v:>L;ET]5wG|jMZOP!;z>Qek4L#+N^w=dq5bPMq<HOu).Mct:^r=[.r)T{l^jWYXO}OXt8_ev~?OF<lHGiJIks3_\2]X#-g07dfVt~
\o^C`QN<rg;5u]Ri/DR,h:yRm#5LmW-spEfoI`7o*][*MWyv`p6Z#OplELz]!Xx%bx42k9Nv:ByEO^wLeFoM4EV","Pswd":"Gnh!PQ%^a5p%~#.9Xkzu5AeBH{UYxsl='e{<%~?:S>j>\#kgx
/hCw!}'OBA?)}iX9?guLl}$?y!h_,ssyd/p_8e;YkL,)&Hnm32yyacHU%?j{Y3&/r7k+)Ff!v:>L;ET]5wG|jMZOP!;z>Qek4L#+N^w=dq5bPMq<HOu).Mct:^r=[.r)T{l^jWYXO}OXt8_ev
~?OF<lHGiJIks3_\2]X#-g07dfVt~\o^C`QN<rg;5u]Ri/DR,h:yRm#5LmW-spEfoI`7o*][*MWyv`p6Z#OplELz]!Xx%bx42k9Nv:ByEO^wLeFoM4EV"}, parse error: Invalid esca
pe character in string.

23669 12:44:15 tid: 21964   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string mM~uG<4MC?k8@a%|Y$Jo?ClWl,c!QW7,B#E.NAJaw891|k#5Eoqq*WA';,iFIY]w6gOz/;7]rxchq(2, parse error: Invalid value.

23670 12:44:15 tid: 22008   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string rkUu!~LP@Ia>q:g&#['BcAT_M9%N1IjJO~O?\]bEsvK{M;FSb3G_iL&iW`7,1^PF_T9>bfq53W(W;u-jcN4wedmDy/znJMs8*S_k[s&M<Dgbo4`Ty@?RBU]t^KAuf
gkZyUJ4\tIT31{Yfv@)Mp#Sl*f1BV;}<,WM9X[P9H]#A)L;PkS/A&Ju@e1A/qCOSc&\3CiL3\.5v;<>J;hFV(^YTx/u:>,y/%NG]H95)+~^52]lv*B|;G=[O'GMk!_%]Xgo#%!uw]}7Wkp(''
mj)4*&g,h8?eI6l5(kxdP9eKYR<h_&F4%2k$4(?L>J+:a;-Y@>oZ_xv=~uYMUaZ^aO, parse error: Invalid value.

23671 12:44:15 tid: 21948   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string {"EventGroup":"Account","Event":"CreateAccount","ID":"Gnh!PQ%^a5p%~#.9Xkzu5AeBH{UYxsl='e{<%~?:S>j>\#kgx/hCw!}'OBA?)}iX9?guLl}
$?y!h_,ssyd/p_8e;YkL,)&Hnm32yyacHU%?j{Y3&/r7k+)Ff!v:>L;ET]5wG|jMZOP!;z>Qek4L#+N^w=dq5bPMq<HOu).Mct:^r=[.r)T{l^jWYXO}OXt8_ev~?OF<lHGiJIks3_\2]X#-g
07dfVt~\o^C`QN<rg;5u]Ri/DR,h:yRm#5LmW-spEfoI`7o*][*MWyv`p6Z#OplELz]!Xx%bx42k9Nv:ByEO^wLeFoM4EV","Pswd":"Gnh!PQ%^a5p%~#.9Xkzu5AeBH{UYxsl='e{<%~?:S
>j>\#kgx/hCw!}'OBA?)}iX9?guLl}$?y!h_,ssyd/p_8e;YkL,)&Hnm32yyacHU%?j{Y3&/r7k+)Ff!v:>L;ET]5wG|jMZOP!;z>Qek4L#+N^w=dq5bPMq<HOu).Mct:^r=[.r)T{l^jWYXO
}OXt8_ev~?OF<lHGiJIks3_\2]X#-g07dfVt~\o^C`QN<rg;5u]Ri/DR,h:yRm#5LmW-spEfoI`7o*][*MWyv`p6Z#OplELz]!Xx%bx42k9Nv:ByEO^wLeFoM4EV"}, parse error: Inva
lid escape character in string.

23672 12:44:15 tid: 22008   [WARN] F:\VS Projects\Memo\server\server\controller.h,MemoServer::Controller::Dispatch(78):
Cannot parse string {"EventGroup":"Data","Event":"SyncFromServer","ID":"rkUu!~LP@Ia>q:g&#['BcAT_M9%N1IjJO~O?\]bEsvK{M;FSb3G_iL&iW`7,1^PF_T9>bfq53
W(W;u-jcN4wedmDy/znJMs8*S_k[s&M<Dgbo4`Ty@?RBU]t^KAufgkZyUJ4\tIT31{Yfv@)Mp#Sl*f1BV;}<,WM9X[P9H]#A)L;PkS/A&Ju@e1A/qCOSc&\3CiL3\.5v;<>J;hFV(^YTx/u:>
,y/%NG]H95)+~^52]lv*B|;G=[O'GMk!_%]Xgo#%!uw]}7Wkp(''mj)4*&g,h8?eI6l5(kxdP9eKYR<h_&F4%2k$4(?L>J+:a;-Y@>oZ_xv=~uYMUaZ^aO"}, parse error: Invalid
escape character in string.

程序打印出大量的警告信息。

同时我们利用该程序探测是否有内存泄漏。

分析目标

启动项目
server

更改目标 ▼

可用工具

显示所有工具

☐ CPU 使用率
查看 CPU 执行代码时的时间耗费情况。当 CPU 遇到性能瓶颈时很有用

☐ GPU 使用情况
检查 DirectX 应用程序中的 GPU 使用情况。这有助于确定性能瓶颈是 CPU 还是 GPU

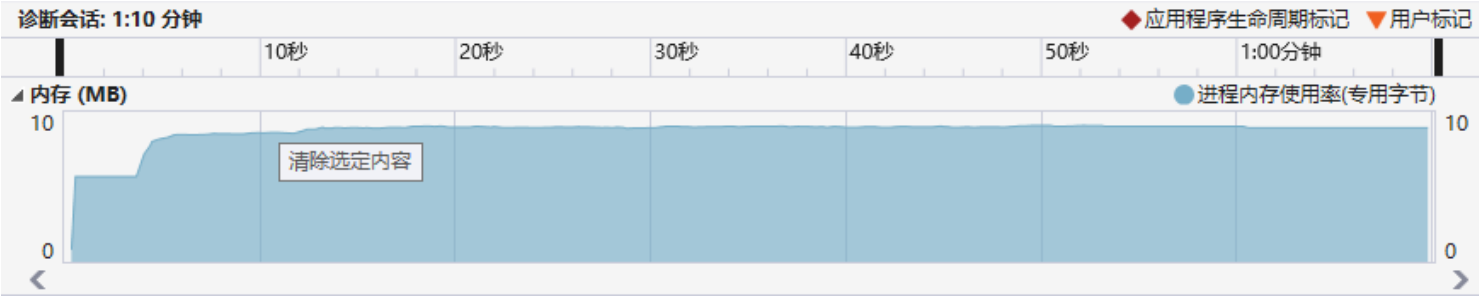☐ 检测
检测应用程序以调查确切的调用数和调用时间

☑ 内存使用率 ⚙
检查应用程序内存以查找内存泄漏等问题

开始

连续多次运行程序：

```
PS C:\Users\Za\Desktop\temp\bin\performance-test> .\mini-client.exe
Init Random Vec
Start timer
Send 80000 requests in 7348.75 ms.
PS C:\Users\Za\Desktop\temp\bin\performance-test> .\mini-client.exe
Init Random Vec
Start timer
Send 80000 requests in 9397.45 ms.
PS C:\Users\Za\Desktop\temp\bin\performance-test> .\mini-client.exe
Init Random Vec
Start timer
Send 80000 requests in 7908.67 ms.
PS C:\Users\Za\Desktop\temp\bin\performance-test> .\mini-client.exe
Init Random Vec
Start timer
Send 80000 requests in 8975.04 ms.
PS C:\Users\Za\Desktop\temp\bin\performance-test> .\mini-client.exe
Init Random Vec
Start timer
Send 80000 requests in 8400.94 ms.
```

内存变化:

内存所属:

标识符	计数 ▼	大小(字节)	模块
◢ 堆	7,156	2,451,196	
◢ RtlUserThreadStart	5,945	2,048,505	ntdll.dll
◢ BaseThreadInitThunk	5,945	2,048,505	kernel32.d
▷ thread_start<unsigned int (__cdecl*)(void *),1>	4,779	1,776,036	ucrtbased.
▷ mainCRTStartup	938	244,044	server.exe
▷ TppWorkerThread	228	28,425	ntdll.dll
◢ LdrInitializeThunk	1,211	402,691	ntdll.dll
◢ LdrpInitialize	1,211	402,691	ntdll.dll
◢ _LdrpInitialize	1,211	402,691	ntdll.dll
▷ LdrpInitializeThread	630	283,110	ntdll.dll
▷ LdrpInitializeProcess	580	119,221	ntdll.dll
▷ RtlInitializeHeapGC	1	360	ntdll.dll

没有泄露在堆中的内存。