XEngine Backstage Service Docment

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# Preface

## Reader

Development ,test

## **Overview**

This document contains related technical descriptions and interface definitions

## Associate Module

The service used XEngine as Network Toolki.if you want to use code,you have to installed XEngine

And This service used library for jsoncpp

# 一 Technical structure

The HTTP protocol is used as the basic communication protocol,support tcp and udp

## TCP

TCP protocol is faster and has more functions.

## HTTP

The control message get through the POST method

RPC uses HTTP as the communication protocol

# 二 Configure Env

## 2.1 WINDOWS

Need to download XEngine.

Complie and run and debug by vs2019.

Download address:https://gitee.com/xyry/libxengine

https://github.com/libxengine/xengine

### 2.1.1 Configure Environment

Follow the instructions in the XEngine Readme file to execute the script to configure the environment. If succeed, you will see the following values in your system environment variables.



You need jsoncpp env.you can install through vcpkg

And you can download for youself:https://github.com/open-source-parsers/jsoncpp/

If you download for youself,you need install and complie by youself and configure project attributes vc++ path in your vs2019

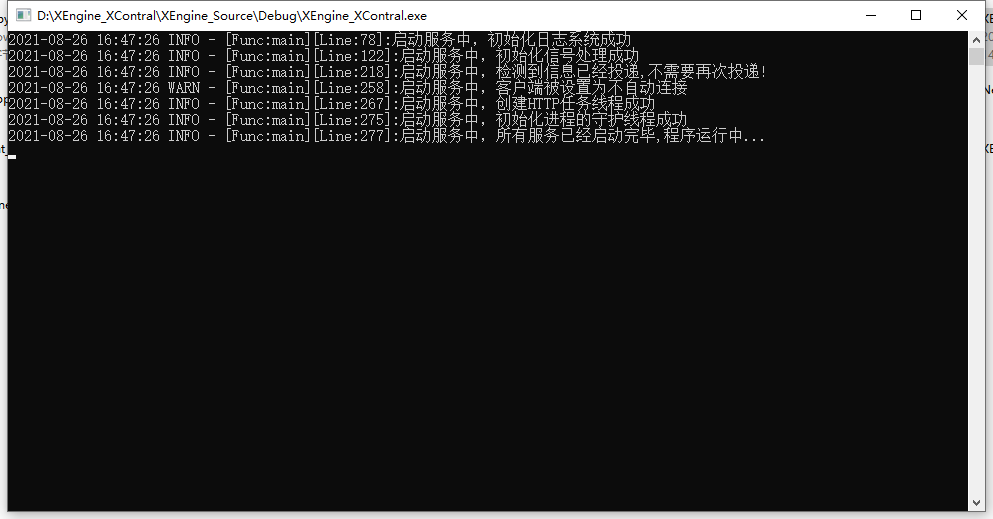
### 2.1.2 complie and run

When you complete with configuration.you can come in code path.open XEngine.sln by vs2019.and choice x86(debug or release) or x64(just release) complie.

If environment not have error.complie is succesed.contrain 3 module and 2 program(LINUX only one)

And you need copy file under XEngine\_Release to your complied dir.next step copy file under XEngine depend Module and jsoncpp module to your complied dir.

If not have error,you can see follow the infomation



Note: You can use the VSCopy.bat script to automatically copy dependent XEngine modules to your program directory

## 2.2 LINUX

### 2.2.1 Evnironment Configure

If you use linux.you must running on ubuntu(20.04) or centos(8.x)...

After download complete.you can install xengine it by the shell file.

Execute command:sudo XEngine\_LINEnv.sh -i 3

of course,and need install jsoncpp environment to your system.

Ubuntu:sudo apt install libjsoncpp-devel -y

Centos:sudo dnf install jsoncpp-devel -y

### 2.2.2 Complie and Run

Configure complete.you can complie it.open terminal in you xengine\_storage dir and execute command.

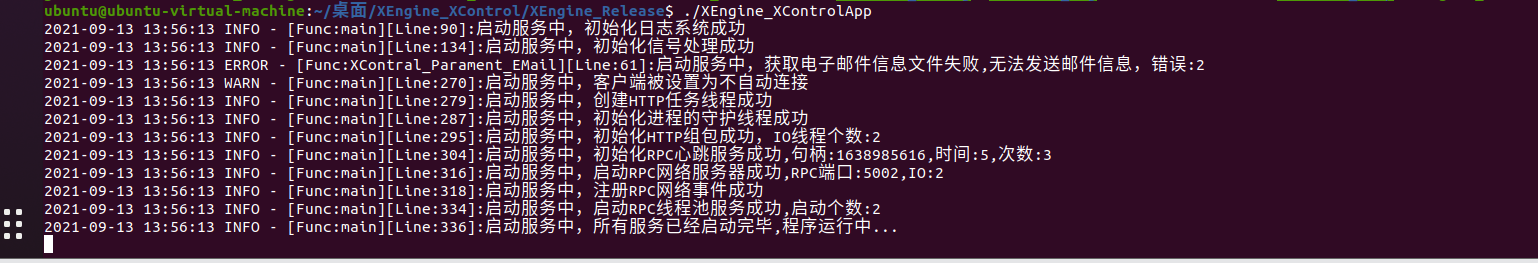
complie:make

install:make FLAGS=InstallAll

clean:make FLAGS=CleanAll

If there is no error.you can see complied XEngine\_XControlApp file in XEngine\_Release

You can running at terminal.if there is no error,you can infomation:



## 2.3 Version Requirements

### 2.3.1 System Version

Minimum version requirements:

WINDOWS: win7 sp1

Ubuntu:20.04

Centos:8.x

### 2.3.2 Software Version

Minimum version requirements:

XEngine:V7.21

JsonCpp:V1.9.4

# 三 Interface Protocol

## 3.1 Backstage service protocol

Backstage service protocol used to Backstage program service,Applicable to XEngine\_XControl service.A machine can be managed through this service. The background service agreement does not reply to the confirmation package

The back-end service protocol adopts HTTP RESTFUL API. Request-response mode

### 3.1.1 Protocol processing

Note: The "unOperatorCode" field must be included in the JSON of each protocol: 0x5001. This field represents the type of protocol that needs to be processed. This type can be found through the protocol header, for example, 0x5001 means download.

### 3.1.2 Backstage management agreement

#### 3.1.2.1 Download

{  
    **"DownloadUrl"**:**"[http://www.xyry.org/file.exe](http://www.xyry.org/file.exe" \t "https://www.json.cn/_blank)"**,  
    **"SaveUrl"**:**"C:\1\file.exe"**  
}

#### 3.5.2.2 Delete file

{  
    **"DeleteFile"**:**"C:\1\file.exe"**  
}

#### 3.1.2.3 Delete folder

{  
    **"DeleteDir"**:**"C:\1\"**  
}

#### 3.1.2.4 upload files

The upload file protocol uses FTP to upload files. You must have a FTP server. When the command is received by the client, the file will be uploaded immediately.

{  
    **"UPLoadFile"**:**"C:\1\file.exe"**,  
 **"UPLoadUrl"**:**"ftp://ftpuser:123123@192.168.1.103/1.rar"**  
}

#### 3.1.2.5 Get file list

##### 3.1.2.5.1 request

{  
    **"PostUrl"**:**"[http://www.xyry.org/api/listfile](http://www.xyry.org/api/listfile" \t "https://www.json.cn/json/_blank)"**,  
    **"FilePath"**:**"C:\1\file.exe"**  
}

##### 3.1.2.5.2 reply

If it succeeds, then an HTTP POST request will be sent to the POSTURL address you specified. And load the JSON content in the following format

{  
    **"Count"**:**2**,  
    **"List"**:[  
        {  
            **"FileName"**:**"1.exe"**,  
            **"FileDir"**:**"C:\1\"**  
        },  
        {  
            **"FileName"**:**"2.exe"**,  
            **"FileDir"**:**"C:\1\"**  
        }  
    ]  
}

#### 3.1.2.6 Create Process

Protocol body: ExecShow, 1 represents front-end display, 0 represents running to the background

{  
    **"ExecShow"**:**1**,  
    **"ExecFile"**:**"C:\1\1.exe"**  
}

#### 3.1.2.7 Stop Process

{  
    **"tszProcessName"**:**"1.exe"**  
}

#### 3.1.2.8 send messages

Only windows

{  
    **"MessageBox"**:**"Pop-up message"**  
}

#### 3.1.2.9 Shut down the system

Protocol body: Refer to the SystemApi\_System\_Shutdown function parameter of the system module for the supported types

{  
    **"ShutDownType"**:1  
}

#### 3.1.2.10 Excuting command

{  
    **"tszExecCmd"**:**"Command to execute"**  
}

#### 3.1.2.11 connect

{  
    **"tszIPAddr"**:**"ip address"**,  
    **"nPort"**:**32**,  
    **"nIPType"**:**2**  
}

nIPType means TCP or UDP, which needs to be set according to the socket header file definition type

## 3.2 RPC Protocol

At present, the RPC protocol use HTTP+JSON mode, and does not use protobuf and other modes, and support for protobuf will be added in the future.

### 3.2.1 Request

Request Method:POST

Request Url:无

Request Context:

{  
    **"XRpc\_FunctionName"**:**"XEngine\_AddMethod"**,  
    **"XRpc\_ParamCount"**:**2**,  
    **"XRpc\_ParameteArray"**:[  
        {  
            **"ParameteLen"**:**4**,  
            **"ParameteType"**:**3**,  
            **"ParameteValue"**:**1**  
        },  
        {  
            **"ParameteLen"**:**4**,  
            **"ParameteType"**:**3**,  
            **"ParameteValue"**:**2**  
        }  
    ],  
    **"XRpc\_ReturnType"**:**3**  
}

Glossary:

* XRpc\_FunctionName:call function name
* XRpc\_ParamCount:parament count
* XRpc\_ParameteArray:parament list
* ParameteLen:parament size,like :4 sizeof(int)
* ParameteType:parament types,refer to:ENUM\_PROTOCOL\_XRPC\_PARAMETE\_TYPE
* ParameteValue:parament value
* XRpc\_ReturnType:return types,refer to:ENUM\_PROTOCOL\_XRPC\_PARAMETE\_TYPE

### 3.2.2 回复

HTTP Code Represents the processing result. The load content is as follows:

{  
    **"XRpc\_FunctionName"**:**"XEngine\_AddMethod"**,  
    **"XRpc\_ReturnLen"**:**4**,  
    **"XRpc\_ReturnType"**:**3**,  
    **"XRpc\_ReturnValue"**:**3**  
}

# 四 Configure Description

## 4.1 Service Configure

Basic Configure File:XEngine\_Config.json

### 4.1.1 basic configure

* tszTaskUrl:HTTP task address
* tszTmpFile:temp file save address
* tszAPPDeamon:service deamon local process address
* bAutoStart:whether set auto start
* bHideWnd:start auto hide windows

### 4.1.2 Time Configure

ClientTime Configure

* nCheckTime:process check time of wait,unit second
* nErrorTime:Maximum allowable number of process startup errors

### 4.1.3 Client Configure

ClientConfig Configure

* bEnable:1 is enable heartbeat,0 disable
* nIPType:Network type, TCP or UDP
* nPort:port
* tszIPAddr:service ip address

### 4.1.4 Log Configure

LogConfig Configure

* nMaxSize:Log file size
* nMaxCount:Log File Number
* nLogLeave:Allow save level
* tszLogFile:log file address

### 4.1.5 Version Configure

VersionList Array

### 4.1.6 RPC Configure

RPCConfig Configure

* nPort:RPC Service port
* nThread:RCP service threads
* nClient:max client count
* nTimeCheck:timeout check number
* nTimeOut:timeout second

## 4.2 process deamon configure

Configure file:XEngine\_ConfigList.json

ListCount:deamon process number

ListArray:process list

* APPName:process name
* APPPath:process path
* APPAutoStart:whether auto start
* APPService:whether is service
* APPReTime:set auto restart,unit second
* APPEnable:whether enable configure

# 五 Advanced configuration

## 5.1 EMail Report

Email report is to send a report email to the specified email address when the program is started for the first time.

You need to configure it before start the software.

This configuration will be encrypted by the program, because some sensitive information is designed.

### 5.1.1 Configure File

Configure File:XControl\_EMail.ini

[Email]

* SmtpAddr=email service
* SmtpUser=user
* SmtpPass=password
* SmtpFrom=sender email address

[SendTo]

* AddrList=should report address,Can be multiple,use ; split

### 5.1.2 Build configuration

you can generate the configuration file through the program. Execute the program and add parameters XEngine\_XControl.exe -c 1

Encrypted mail configuration,no parameters,Files to be encrypted:

./XControl\_Config/XControl\_EMail.ini

Encrypted file:./XControl\_Config/XControl\_EMail.ini.dat

Note: You must place the file according to the format. After the encryption is complete, you can delete XControl\_EMail.ini and keep XControl\_EMail.ini.dat

## 5.2 Service Configure

### 5.2.1 Windows

Windows Need use XEngine\_Deamon program.the program just only running windows.the program running through service.

The daemon is in the tszAPPDeamon of the configuration file XEngine\_Config.json

配置使用管理员运行控制台

Configure use to consolo by administrator

Install service:XEngine\_Deamon.exe /install

Delete service:XEngine\_Deamon.exe /uninstall

### 5.2.2 Linux

Linux set service through xControl.service script

Fist copy all file to /usr/sbin/XEngine\_XControl.

Execute command:

Start service:sudo systemctl start xControl

Auto service:sudo systemctl enable xControl

Stop service:sudo systemctl stop xControl

# appendix

## Appendix 1 Type Define

reference file:XEngine\_CommHdr.h

## Appendix 2 Protocol Define

reference file:XEngine\_ProtocolHdr.h

## Appendix 3 Transformation Definition

reference file:XEngine\_Types.h only LINUX

## Appendix 4 update log