Device Network SDK (Fisheye)

Developer Guide

Legal Information

Contents

Chapter 1 Overview

This manual provides the integration methods and flows based on HCNetSDK for fisheye applications.

1.1 Introduction

The fisheye applications mainly realize the fisheye dewarping or expansion, E-PTZ control, some simple operations on fisheye view, and so on, during live view based on HCNetSDK. To realize fisheye expansion by software decoding, the APIs of PlayCtrl library SDK are also required.

1.2 Update History

Summary of Changes in Version 6.0.2.30_03/2019

1. Extended fisheye capability (***XML_FishEyeAbility*** , related API: ***NET_DVR_GetDeviceAbility*** , capability type: "FishEyeAbility"):
   added a node <**isSupport3DStreamMode**> (whether supports fisheye dewarping function).
2. Extended capability of capturing JPEG format picture (***XML_JpegCaptureAbility*** , related API: ***NET_DVR_GetDeviceAbility*** , capability type: "DEVICE_JPEG_CAP_ABILITY"):
   added a value "fishCirclePic" (picture with fisheye view) to the node <**picType**> (captured picture type).
3. Extended capture parameter structure (***NET_DVR_PICPARAM_V50*** , related API: ***NET_DVR_CapturePicture_V50***):
   added a value "3"-get picture with fisheye view to the parameter **byCapturePicType** (captured picture type).
4. Extended JPEG picture quality structure (***NET_DVR_JPEGPARA***):
   added a value "218"-1440 × 1440 to the parameter **wPicSize** (picture size).

Summary of Changes in Version 5.3.3_12/2017

New document.

Chapter 2 Enable Fisheye Expansion and E-PTZ Control

The fisheye expansion function can expand the live view scenes of fisheye camera to the multiple view combinations of fisheye view, panorama view, and PTZ view by different expansion modes. Four dewarping modes are supported in the SDK, including 360° panorama mode, dual-180° panorama mode, panorama mode, and PTZ mode. During the fisheye dewarping, you can also realize the E-PTZ control to zoom in/out, move, and rotate the image for view as needed.

Before You Start

- Make sure you have called ***NET_DVR_Init*** to initialize the resources.
- Make sure you have called ***NET_DVR_Login_V40*** to log in to device.

Steps

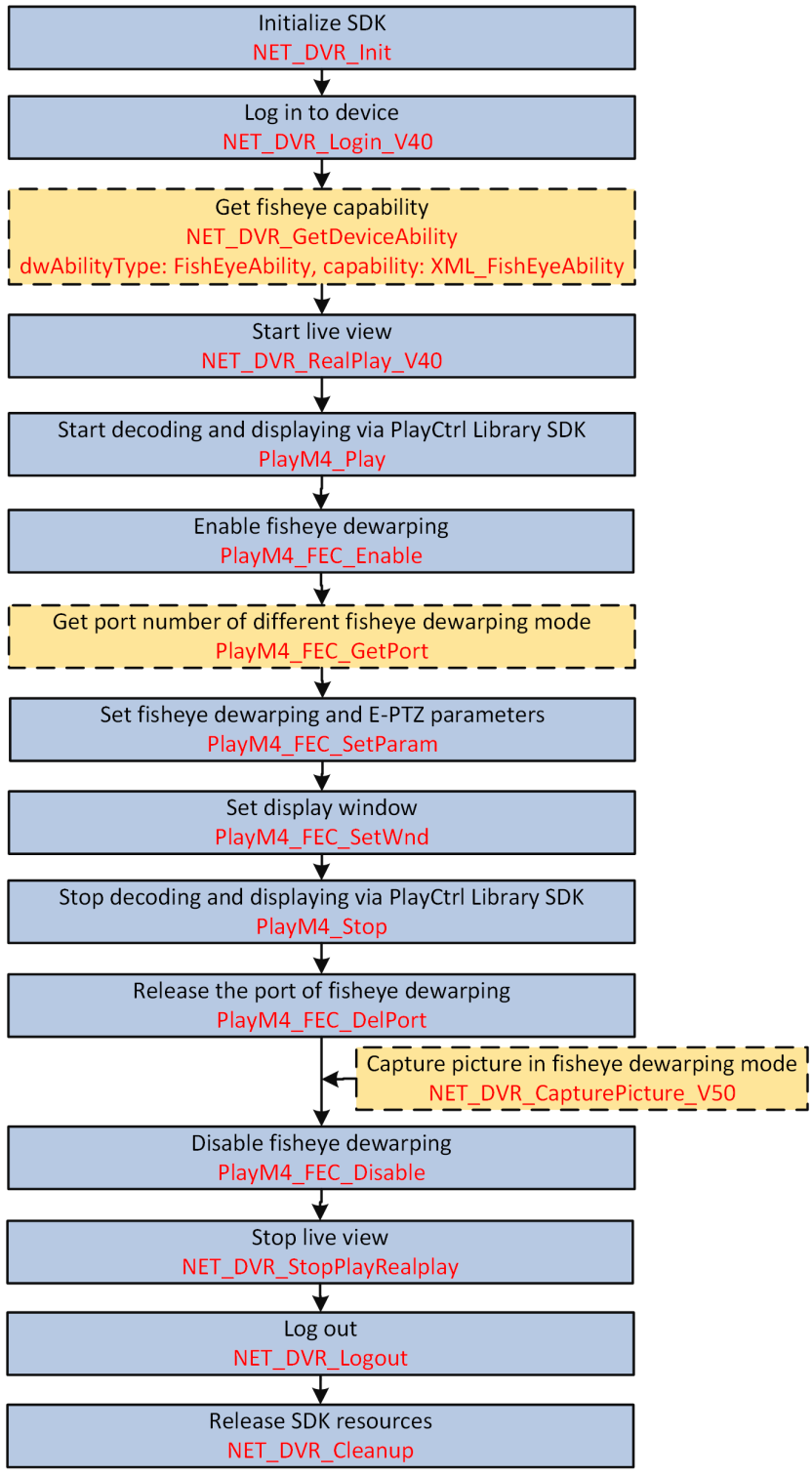

Figure 2-1 Programming Flow of Enabling Fisheye Dewarping and E-PTZ Control

Note

For the APIs whose name begins with "PlayM4" in this manual, refer to *Cross-Platform PlayCtrl Library SDK User Manual*.

1. **Optional:** Call ***NET_DVR_GetDeviceAbility*** , specify the capability type (**dwAbilityType**) as "FishEyeAbility" (macro definition value: 0x700), and set the input pointer (**pInBuf**) to ***XML_Desc_FishEyeIPCAbility*** for getting the fisheye capability to check the supported fisheye configuration parameters.

   The fisheye capability is returned in the message ***XML_FishEyeAbility*** by the output pointer (**pOutBuf**).
2. Call ***NET_DVR_RealPlay_V40*** to start the live view of fisheye camera.

   Note

   The display window handle (**hPlayWnd**) in the live view API should be set as null to directly set the callback function, or you can call ***NET_DVR_SetRealDataCallBack*** (PS stream) and ***NET_DVR_SetStandardDataCallBack*** (RTSP stream) to set the callback function for getting real-time stream data and call PlayCtrl Library SDK to decode and display.
3. Call PlayM4_Play to start decoding and displaying via PlayCtrl Library SDK.
4. Call PlayM4_FEC_Enable to enable the fisheye dewarping and get the playing channel No.
5. **Optional:** Call PlayM4_FEC_GetPort and set the **emPlaceType** and **emCorrectType** to get the port number of different fisheye dewarping mode. , set the device mounting type (wall mounting, ground mounting, and ceiling mounting) and dewarping mode (360° Panorama, Dual-180° Panorama, Panorama, and PTZ), and get the sub port for fisheye dewarping.
6. Call PlayM4_FEC_SetParam to set fisheye dewarping parameters (i.e., camera mounting type and dewarping mode) and E-PTZ parameters (i.e., motion, zooming, and rotation parameters).
7. Call PlayM4_FEC_SetWnd to set the window for displaying the fisheye dewarping results and E-PTZ operations.

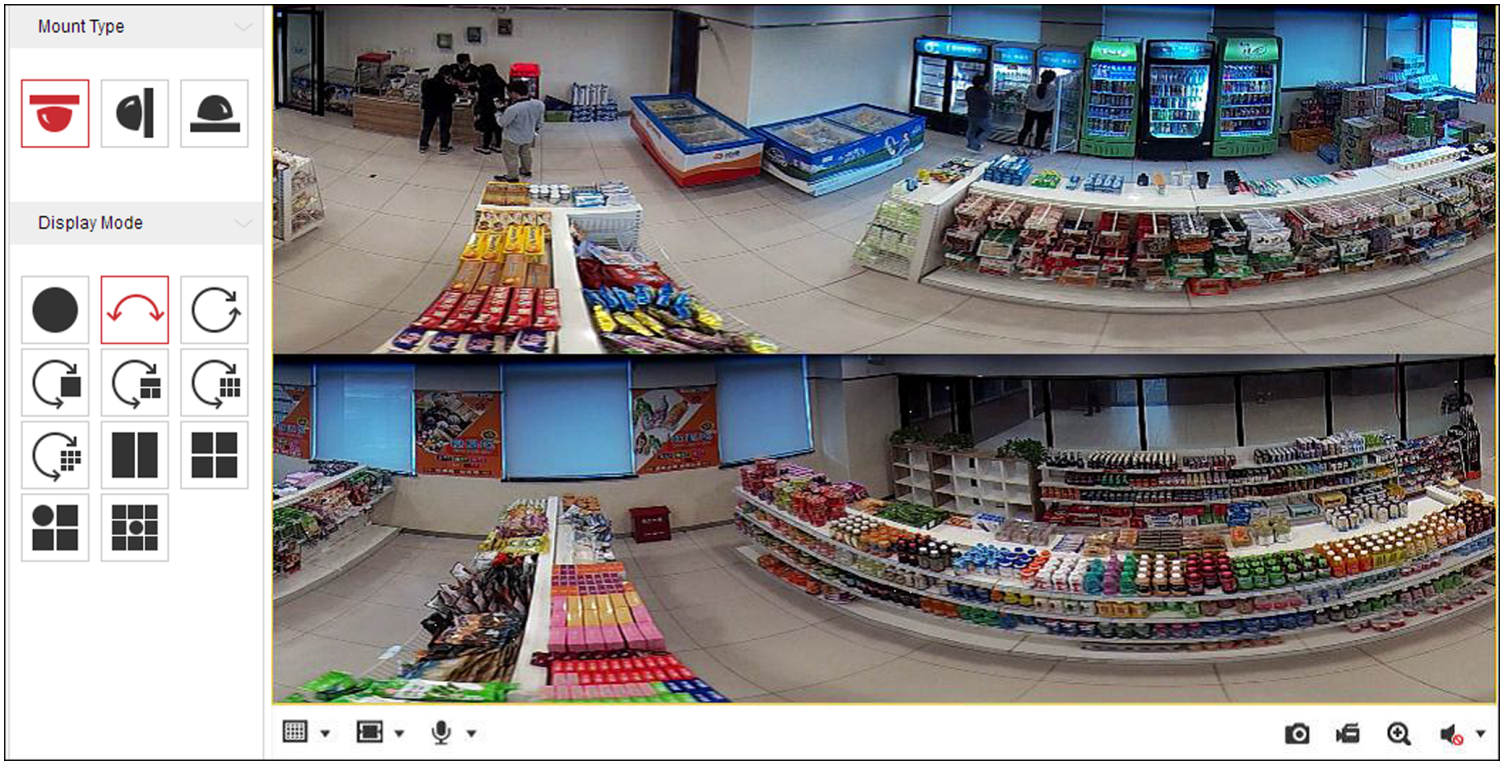

Figure 2-2 Fisheye Dewarping Results (Dual-180° Panorama View)

Figure 2-3 Fisheye Dewarping Results (Fisheye + 3PTZ View)

Figure 2-4 E-PTZ Control

In software decoding mode, the frames of PTZ views will be marked by different colors , and the images in the frames will be displayed in other display windows one by one. You can operate through the mouse one each display window to realize E-PTZ control of the corresponding PTZ view.

8. Call PlayM4_Stop to stop decoding and displaying via PlayCtrl Library SDK.
9. Call PlayM4_FEC_DelPort to release the port of fisheye dewarping.
10. Call PlayM4_FEC_Disable to disable fisheye dewarping.
11. **Optional:** Call ***NET_DVR_CapturePicture_V50*** to capture picture in fisheye view.

Note

To check if capture in fisheye view is supported device, you can call ***NET_DVR_GetDeviceAbility*** , specify the capability type (**dwAbilityType**) as "DEVICE_JPEG_CAP_ABILITY" (macro definition value: 0x00f), and set the input pointer (**pInBuf**) to ***XML_Desc_JpegCaptureAbility*** for getting the capability (***XML_JpegCaptureAbility***) of capturing JPEG format picture. If supports, the value of node <**picType**> can be "fishCirclePic".

12. Call ***NET_DVR_StopRealPlay*** to stop the live view.

Example

Sample Code for Enabling Fisheye Dewarping and E-PTZ Control via Player SDK

```
#include <stdio.h>
#include <iostream>
#include "stdafx.h"
#include "SynPlayMode.h"
#include "SynPlayModeDlg.h"
#include "PlayM4.h
#include "Windows.h"
void FisheyePlay()
{
   BOOL bRet = FALSE;
   FISHEYEPARAM stFEPara1 = {0};
   FISHEYEPARAM stFEPara2 = {0};
   FISHEYEPARAM stFEPara3 = {0};

   //Get the player SDK port
   PlayM4_GetPort(&m_lPort);
   if (-1 == m_lPort)
   {
        CString str;
        str.Format("PlayM4_GetPort fail\n");
        MessageBox(str);
        return;
   }

       //Open the video file to play
   if (FALSE == PlayM4_OpenFile(m_lPort,m_strFileName.GetBuffer(m_strFileName.GetLength())))
   {
        CString str;
        str.Format("PlayM4_OpenFile fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
        MessageBox(str);
        goto EXIT1;
   }

       //Play the video file
   if (FALSE == PlayM4_Play(m_lPort,GetDlgItem(IDC_FISHEYE_MAIN_WND)->GetSafeHwnd()))
   {
        CString str;
        str.Format("PlayM4_Play fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
        MessageBox(str);
        goto EXIT2;
   }

   //Enable the fisheye dewarping
   if (FALSE == PlayM4_FEC_Enable(m_lPort))
   {
        CString str;
        str.Format("PlayM4_FEC_Enable fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
        MessageBox(str);
        goto EXIT2;
   }

   //Sub port 1 , ceiling mounting, PTZ mode, get the sub port for fisheye dewarping
```

```
if (FALSE == PlayM4_FEC_GetPort(m_lPort,&m_nSubPort1,FEC_PLACE_CEILING,FEC_CORRECT_PTZ))
{
	CString str;
	str.Format("PlayM4_FEC_GetPort1 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
	MessageBox(str);
	goto EXIT3;
}

//Update the position and the zooming value
stFEPara1.nUpDateType = FEC_UPDATE_PTZPARAM | FEC_UPDATE_PTZZOOM; //Updated type
stFEPara1.stPTZParam.fPTZPositionX = 0.2; //The central coordinates of PTZ view
stFEPara1.stPTZParam.fPTZPositionY = 0.3;
stFEPara1.fZoom		= 0.1;  //The range parameter of PTZ view
// stCycleParam is available to all ssub ports of fisheye dewarping.

//Set fisheye dewarping parameters
if (FALSE == PlayM4_FEC_SetParam(m_lPort,m_nSubPort1,&stFEPara1))
{
	CString str;
	str.Format("PlayM4_FEC_SetParam1 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
	MessageBox(str);
	goto EXIT3;
}


//Sub port 2 , ceiling mounting, PTZ mode, get the sub port for fisheye dewarping
if (FALSE == PlayM4_FEC_GetPort(m_lPort,&m_nSubPort2,FEC_PLACE_CEILING,FEC_CORRECT_PTZ))
{
	CString str;
	str.Format("PlayM4_FEC_GetPort2 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
	MessageBox(str);
	goto EXIT3;
}

//Update the position
stFEPara2.nUpDateType = FEC_UPDATE_PTZPARAM;
stFEPara2.stPTZParam.fPTZPositionX = 0.7; //(0,1)
stFEPara2.stPTZParam.fPTZPositionY = 0.8; //(0,1)

   //Set fisheye dewarping parameters
if (FALSE == PlayM4_FEC_SetParam(m_lPort,m_nSubPort2,&stFEPara2))
{
	CString str;
	str.Format("PlayM4_FEC_SetParam2 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
	MessageBox(str);
	goto EXIT3;
}


//Zoom in/out
stFEPara3.nUpDateType = FEC_UPDATE_PTZZOOM;
stFEPara3.fZoom		= 0.9; //(0,1)
```

```
   //Set fisheye dewarping parameters
if (FALSE == PlayM4_FEC_SetParam(m_lPort,m_nSubPort2,&stFEPara3))
{
    CString str;
    str.Format("PlayM4_FEC_SetParam3 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
    MessageBox(str);
    goto EXIT3;
}


//Sub port 3 , ceiling mounting, PTZ mode, get the sub port for fisheye dewarping
if (FALSE == PlayM4_FEC_GetPort(m_lPort,&m_nSubPort3,FEC_PLACE_CEILING,FEC_CORRECT_PTZ))
{
    CString str;
    str.Format("PlayM4_FEC_GetPort2 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
    MessageBox(str);
    goto EXIT3;
}


   //Set fisheye dewarping parameters
stFEPara3.nUpDateType = FEC_UPDATE_PTZPARAM;
stFEPara3.stPTZParam.fPTZPositionX = 0.7; //(0,1)
stFEPara3.stPTZParam.fPTZPositionY = 0.8; //(0,1)
stFEPara3.fZoom                = 0.9; //(0,1)

if (FALSE == PlayM4_FEC_SetParam(m_lPort,m_nSubPort2,&stFEPara3))
{
    CString str;
    str.Format("PlayM4_FEC_SetParam3 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
    MessageBox(str);
    goto EXIT3;
}


//Set fisheye dewarping parameters
stFEPara3.nUpDateType = FEC_UPDATE_PTZZOOM;
if (FALSE == PlayM4_FEC_SetParam(m_lPort,m_nSubPort2,&stFEPara3))
{
    CString str;
    str.Format("PlayM4_FEC_SetParam3 fail[0x%x]\n",PlayM4_GetLastError(m_lPort));
    MessageBox(str);
    goto EXIT3;
}

//Set the display window
PlayM4_FEC_SetWnd(m_lPort,m_nSubPort1,GetDlgItem(IDC_FISHEYE_SUB_WND1)->GetSafeHwnd());
PlayM4_FEC_SetWnd(m_lPort,m_nSubPort2,GetDlgItem(IDC_FISHEYE_SUB_WND2)->GetSafeHwnd());
PlayM4_FEC_SetWnd(m_lPort,m_nSubPort3,GetDlgItem(IDC_FISHEYE_SUB_WND3)->GetSafeHwnd());

return;
```

```
EXIT3:
   //Delete the sub port of fisheye dewarping
   if (-1 != m_nSubPort1)
   {
        PlayM4_FEC_DelPort(m_lPort,m_nSubPort1);
        m_nSubPort1 = -1;
   }

      //Delete the sub port of fisheye dewarping
   if (-1 != m_nSubPort2)
   {
        PlayM4_FEC_DelPort(m_lPort,m_nSubPort2);
        m_nSubPort2 = -1;
   }

   //Delete the sub port of fisheye dewarping
   if (-1 != m_nSubPort3)
   {
        PlayM4_FEC_DelPort(m_lPort,m_nSubPort3);
        m_nSubPort3 = -1;
   }

   //Disable fisheye dewarping
   PlayM4_FEC_Disable(m_lPort);

EXIT2:
   PlayM4_CloseFile(m_lPort);
EXIT1:
   if (-1 != m_lPort)
   {
        PlayM4_FreePort(m_lPort);
        m_lPort = -1;
   }
}
```

What to do next

Call ***NET_DVR_Logout*** and ***NET_DVR_Cleanup*** to log out and release the resources.

Chapter 3 API Reference

3.1 NET_DVR_Cleanup

Release the resources after the program is ended.

API Definition

```
BOOL NET_DVR_Cleanup(
);
```

Return Values

Returns *TURE* for success, and returns *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.
The available error codes may be returned by this API are 0 and 3. See details in ***Device Network SDK Errors*** .

Remarks

- When calling this API, you cannot call other APIs at the same time.
- ***NET_DVR_Init*** and this API should be called by pair. That is, once the NET_DVR_Init is called, you should call NET_DVR_Cleanup to release the resources when exiting the program.

3.2 NET_DVR_GetErrorMsg

Return the error information of the last operation.

API Definition

```
char *NET_DVR_GetErrorMsg(
  LONG   *pErrorNo
);
```

Parameters

pErrorNo

[OUT] Error code pointer.

Return Values

The return values are the pointers of error information, see ***Device Network SDK Errors*** for details.

Remarks

You can call ***NET_DVR_GetLastError*** to get the error codes.

3.3 NET_DVR_GetLastError

Return the error code of the last operation.

API Definition

```
DWORD NET_DVR_GetLastError(
);
```

Return Values

The return values are error codes, see ***Device Network SDK Errors*** for details.

Remarks

You can also call ***NET_DVR_GetErrorMsg*** to directly get the error information.

3.4 NET_DVR_Init

Initialize the programming environment before calling other APIs.

API Definition

```
BOOL NET_DVR_Init(
);
```

Return Values

Returns *TURE* for success, and returns *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.
The available error codes of this API are 0, 41, and 53. See details in ***Device Network SDK Errors*** .

Remarks

Before initializing, you can call ***NET_DVR_SetSDKInitCfg*** to set the initialization parameters, such as supported capabilities, loading path of component libraries (only supported by Linux system), and so on.

See Also

NET_DVR_Cleanup

3.5 NET_DVR_Login_V40

Log in to the device (supports asynchronous login).

API Definition

```
LONG NET_DVR_Login_V40(
  NET_DVR_USER_LOGIN_INFO   pLoginInfo,
  NET_DVR_DEVICEINFO_V40    lpDeviceInfo
);
```

Parameters

pLoginInfo

[IN] Login parameters, including device address, user name, password, and so on. See details in the structure ***NET_DVR_USER_LOGIN_INFO*** .

lpDeviceInfo

[OUT] Device information. See details in the structure ***NET_DVR_DEVICEINFO_V40*** .

Return Values

- For asynchronous login, the callback function (***fLoginResultCallBack***) configured in the structure (***NET_DVR_USER_LOGIN_INFO***) returns the asynchronous login status, user ID and device information.
- For synchronous login, this API returns *-1* for logging failed, and returns other values for the returned user IDs. The user ID is unique, and it helps to realize the further device operations.
- If *-1* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

Remarks

- When **bUseAsynLogin** in **pLoginInfo** is 0, it indicates that login is in synchronous mode; when **bUseAsynLogin** in **pLoginInfo** is 1, it indicates that login is in asynchronous mode.
- Up to 2048 users are allowed to log in to HCNetSDK at same time, and the values of returned **UserID** are ranging from 0 to 2047.

See Also

NET_DVR_Logout

3.5.1 fLoginResultCallBack

Login Status Callback Function

Member	Data Type	Description
lUserID	LONG	User ID, which is returned by ***NET_DVR_Login_V40*** .
dwResult	DWORD	Login status: 0-asynchronously logging in failed, 1-asynchronously logged in.
lpDeviceInfo	***NET_DVR_DEVICEINFO_V40***	Device information, such as serial No., channel, capability, and so on.
pUser	void*	User data.

3.6 NET_DVR_Logout

Log out from devices.

API Definitions

```
BOOL NET_DVR_Logout(
  LONG    lUserID
);
```

Parameters

lUserID

[IN] User ID, which is returned by ***NET_DVR_Login_V40*** .

Return Values

Returns *TURE* for success, and returns *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.
The available error codes may be returned by this API are 0, 3, 7, 8, 9, 10, 14, 17, 41, 44, 47, 72, and 73. See details in ***Device Network SDK Errors*** .

3.7 NET_DVR_SetSDKInitCfg

Set initialization parameters.

API Parameters

```
BOOL NET_DVR_SetSDKInitCfg(
  NET_SDK_INIT_CFG_TYPE    enumType,
```

```
  void* const          lpInBuff
);
```

Parameters

enumType

[IN] Initialization parameter type. Different type values correspond to different parameters, see details in the table below.

Table 3-1 NET_SDK_INIT_CFG_TYPE

enumType	Value	Description	lpInBuff
NET_SDK_INIT_CFG_ABILITY	1	Capability supported by SDK.	***NET_DVR_INIT_CFG_ABILITY***
NET_SDK_INIT_CFG_SDK_PATH	2	Set loading path for component libraries (supported by both Linux and Windows system).	***NET_DVR_LOCAL_SDK_PATH***
NET_SDK_INIT_CFG_LIBEAY_PATH	3	Set path (including library name) for libeay32.dll (Windows), libcrypto.so (Linux), and libcrypto.dylib (Mac) of OpenSSL in version 1.1.1 and 1.0.2.	Path in string format, e.g., ***C:\\libeay32.dll***.
NET_SDK_INIT_CFG_SSLEAY_PATH	4	Set path (including library name) for ssleay32.dll (Windows), libssl.so (Linux), libssl.dylib (Mac) of OpenSSL in version 1.1.1 and 1.0.2.	Path in string format, e.g., ***C:\\ssleay32.dll***.

lpInBuff

[IN] Input parameter. Different parameter types correspond to different structures, see details in the table above.

Return Values

Returns *TURE* for success, and returns *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

Remarks

This API should be called before calling ***NET_DVR_Init*** to initialize and check the dependent libraries or capabilities.

3.8 NET_DVR_CapturePicture_V50

Capture pictures, which supports capturing fisheye view of fisheye camera and the calibrated scene of PanoVu series camera.

API Definition

```
BOOL NET_DVR_CapturePicture_V50(
  LONG                lUserID,
  LONG                lChannel,
  NET_DVR_PICPARAM_V50    lpPicParam,
  char                *sPicBuffer,
  DWORD                dwPicSize,
  DWORD                lpSizeReturned
);
```

Parameters

lUserID

[IN] Value returned by ***NET_DVR_Login_V40*** .

lChannel

[IN] Channel No.

lpPicParam

[IN] Capture parameters, including picture resolution, picture format, capture mode, and so on, refer to the structure for details.

sPicBuffer

[IN] Buffer for saving pictures, before calling this API, the user should allocate enough size for the buffer.

dwPicSize

[IN] Buffer size.

lpSizeReturned

[OUT] Actual size of the returned picture data.

Return Value

Return *TRUE* for success, and return *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

3.9 NET_DVR_ChangeWndResolution

Send the window change notification to PlayCtrl LibrarySDK when the size of display window changed (only applicable for Linux system).

API Definition

```
BOOL NET_DVR_ChangeWndResolution(
  LONG    lRealHandle
);
```

Parameters

lRealHandle

[IN] Live view handle, which is returned by ***NET_DVR_RealPlay_V40*** .

Return Values

Return *TRUE* for success, and return *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

3.10 NET_DVR_GetDeviceAbility

Get the device capabilities.

API Definition

```
BOOL NET_DVR_GetDeviceAbility(
  LONG    lUserID,
  DWORD    dwAbilityType,
  char    *pInBuf,
  DWORD    dwInLength,
  char    *pOutBuf,
  DWORD    dwOutLength
);
```

Parameters

lUserID

[IN] Value returned by ***NET_DVR_Login_V40*** .

dwAbilityType

[IN] Capability types, which are different according to different devices and functions.

pInBuf

[IN] Input parameter buffer pointer, which are different according to different devices and functions, and they are returned in the structure or messages.

dwInLength

[IN] Size of input buffer.

pOutBuf

[OUT] Output parameter buffer pointer, which are different according to different devices and functions, and they are returned in the structure or messages.

dwOutLength

[OUT] Size of buffer for receiving data.

Return Values

Returns *TRUE* for success, and returns *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

3.10.1 XML_Desc_FishEyeIPCAbility

Description to be inputted for getting fisheye capability.

```
<FishEyeIPCAbility version="2.0">
 <channelNO><!--req, channel No.--> </channelNO>
</FishEyeIPCAbility>
```

3.10.2 XML_Desc_JpegCaptureAbility

Input description message for getting device capability of capturing JPEG picture.

```
<JpegCaptureAbility version="2.0">
 <channelNO>
  <!--req, channel No.-->
 </channelNO>
  <!--opt, the node that responds to the request can be specified, and it can be the child node of the root node-->
 <ManualCapture/>
</JpegCaptureAbility>
```

3.10.3 XML_FishEyeAbility

FishEyeAbility message in XML format

```
<FishEyeAbility version="2.0">
 <channelNO><!--req, channel No.--></channelNO>
 <correctMode opt="chip,software"/><!--req, dewarping mode, by hardware or software-->
 <mountType opt="ceiling,table,wall"/><!--req, mounting type: ceiling mounting, table mounting, wall mounting-->
 <streamOutputMode opt="1,2,3,4,5,6 "/><!--req, index No. of stream output mode-->
 <realTimeOutput opt="true,false"/><!--req, whether to enable real-time output-->
 <previewMode opt="mode1,mode2,mode3,mode4,mode5,mode6"/>
 <!--req, this node is only returned by new device, and decode real-time stream by mode 1 to 6-->
```

```
 <NeedReboot>
  <RealTimeOutputChange>
   <!--whether to automatically reboot when editing real-time output mode: 1-reboot, if not rebbot, this node is not
displayed-->
  </RealTimeOutputChange>
 </NeedReboot>
 <MotionDetectTrack>
  <trackMode opt="auto"/><!--opt, motion tracking mode: auto-auto tracking-->
 </MotionDetectTrack>
 <TrackDevice><!--PTZ camera parameters-->
  <enabled opt="true,false"/><!--whether to enable tracking-->
  <transMode opt="netsdk,rs485"/><!--communication mode-->
  <TrackDevChan><!--channel parameter of PTZ camera-->
   <devAddress opt="ipv4,ipv6,domainName"/><!--address type-->
   <devPort min="8000" max="65535"/><!--port number-->
   <userNameLength min="0" max="32"/><!--length of user name-->
   <passwordLength min="0" max="16"/><!–length of password-->
   <channelNumber><!--channel No.--></channelNumber>
  </TrackDevChan>
  <CalibParam><!--calibration parameter of PTZ camera-->
   <calibPointNum min="2" max="6"/><!--number of calibration points-->
   <horizonPtzPos><!--whether to calibrate horizontal PTZ position--></horizonPtzPos>
  </CalibParam>
 </TrackDevice>
 <manualTrace><!--whether to enable manual tracking--></manualTrace>
 <PTZTrack><!--PTZ tracking parameter-->
  <TrackMode><!--tracking mode-->
   <trackAlways><!--always tracking--></trackAlways>
   <TrackByTime><!--tracking duration-->
    <trackTime min="1" max="60" default="10"/>
   </TrackByTime>
   <TrackNext><!--track the next target-->
    <trackTime min="1" max="10" default="2"/>
   </TrackNext>
  </TrackMode>
 </PTZTrack>
 <isSupport3DStreamMode><!--whether supports fisheye dewarping function--></isSupport3DStreamMode>
</FishEyeAbility>
```

3.10.4 XML_JpegCaptureAbility

JPEG picture capture capability message in XML format

```
<JpegCaptureAbility version="2.0">
 <channelNO>
  <!--required, channel No.-->
 </channelNO>
 <FindPicInfo><!--required, picture information-->
  <supportFileType opt=
"CMR,MOTION,ALARM,EDR,ALARMANDMOTION,manual,intelligentPic,pir,wlsensor,callhelp,previewScreenshot,facede
tection,LineDetection,FieldDetection,scenechangedetection,lockPlaybackScreenshot,INTELLIGENT,regionEntrance,regi
```

```
onExiting,loitering,group,rapidMove,parking,unattendedBaggage,attendedBaggage,VehicleDetection,HvtVehicleDetect
ion, faceSnap evidence, vcaEventGetUp, vcaEventAdvReachHeight, vcaEventToiletTarry, unregisteredStreetVendor,
illegalParking, wrongdirection,crosslane,vehicleexist,lanechange, turnround, pedestrian, roadblock, abandonedObject,
fogDetection, construction, congestion, trafficAccident,parallelParking, evidence,personQueueCounting,
personQueueTime, vcaEventSafetyHelmet, vibrationDetection, allType"/>
   <!--required, supported capture type: 0-scheduled capture, 1-motion detection capture, 2-alarm capture, 3-alarm or
motion detection capture, 4-alarm and motion detection capture, 6-manual capture, 9-VCA picture, 10-PIR alarm, 11-
wireless alarm, 12-emergency alarm, 0xa-capture in live view, 0xd-face detection, 0xe-line crossing detection, 0xf-
intrusion detection, 0x10-scene change detection, 0x11-capture in local playback, 0x12-VCA detection, 0x13-region
entrance detection, 0x14-region exiting detection, 0x15-loitering detection, 0x16-people gathering detection, 0x17-
fast moving detection, 0x18-parking detection, 0x19-unattended baggage detection, 0x1a-object removal detection,
0x1b-vehicle detection, 0x1c-mixed-traffic detection (enforcement event), 0x25-face capture, 0x2a-getting up
detection, 0x2b-climbing alarm, 0x2c-in-toilet overtime detection, 0x35-unregistered street vendor, 0x36-people
density detection (number of people pre-alarm), 0x37-absence detection, 0x38-number of people exception
detection, 0x39-violent motion detection, 0x3a-illegal parking detection, 0x3b-wrong-way driving detection, 0x3c-
driving on the lane line detection, 0x3d-motor vehicle on non-vehicle lane detection, 0x3e-illegal lane change
detection, 0x3f-U-turning detection, 0x40-pedestrian detection, 0x41-roadblock detection, 0x42-thrown object
detection, 0x43-fog detection, 0x44-construction detection, 0x45-congestion detection, 0x46-traffic accident
detection, 0x47-parallel parking detection, 0x48-trigger alarm manually, 0x52-people queuing-up detection, 0x53-
waiting time detection, 0x2d-hard hat detection, 0x58-vibration detection, 0xff-all-->
   <enableNeedCard opt="disable,able"/>
   <province
opt="1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,0xff"/>
    <!--required, province index-->
   <cardNumberLen min="" max=""/>
   <StartTime>
    <year min="" max=""/>
    <month min="" max=""/>
    <day min="" max=""/>
    <hour min="" max=""/>
    <minute min="" max=""/>
    <second min="" max=""/>
   </StartTime>
   <StopTime>
    <year min="" max=""/>
    <month min="" max=""/>
    <day min="" max=""/>
    <hour min="" max=""/>
    <minute min="" max=""/>
    <second min="" max=""/>
   </StopTime>
   <trafficType opt="license,vehicleType,illegalType"/>
   <vehicleType opt="smallCar,bigCar,bus,truck,car,minibus,smallTruck"/>
   <subHvtType opt="all,motorVehicle,nonMotorVehicle,pedestrian"/>
    <!--required, "all", "motorVehicle"-motor vehicle, "nonMotorVehicle"-non-motor vehicle, "pedestrian"-->
   <illegalType
opt="postPic,lowSpeed,highSpeed,retrograde,rushRedLight,pressLane,violateGuide,roadStrand,vehicleillegal,roadStan
d,changeLane,dirveillegalLane,violate,crossParking,greenParking"/>
   <region opt="Res,EU,ER,All"/>
    <!--required, region index: 0-reserved, 1-Europe (EU), 2-Russia (ER), 0xff-all-->
   <country opt="0,1,2,3,4,5,6,7,8,9,10,11,12,0xfe,0xff "/>
    <!--required, country index: 0-license plate recognition for this country is not supported by the algorithm library, 1-
```

```
Czech Republic (CZ), 2-France (FRA), 3-Germany (DE), 4-Spain (E), 5-Italy (IT), 6-Netherlands (NL), 7-Poland (PL), 8-Slovakia (SVK), 9-Belorussia (BY), 10-Moldova (MDA), 11-Russia (RU), 12-Ukraine (UA), 13-Belgium (BEL), 14-Bulgaria, 15-Denmark, 16-Finland, 17-United Kingdom, 18-Greece, 19-Croatia, 20-Hungary, 21-Israel, 22-Luxembourg, 23-Republic of Macedonia, 24-Norway, 25-Portugal, 26-Romania, 27-Serbia, 28-Republic of Azerbaijan, 29-Georgia, 30-Kazakhstan, 31-Republic of Lithuania, 32-Turkmenistan, 33-Uzbekistan, 34-Latvia, 35-Estonia, 36-Albania, 37-Austria, 38-Bosnia and Herzegovina, 39-Ireland, 40-Iceland, 41-Vatican, 42-Malta, 43-Sweden, 44-Switzerland, 45-Cyprus, 46-Turkey, 47-Slovenia, 48-Republic of Montenegro, 0xfe-unrecognized, 0xff-all-->
   <licenseLen min="" max=""/>
    <!--optional, the maximum and minimum length of the license plate number-->
   <supportAIDTFSType opt="illegalParking,wrongdirection crosslane,vehicleexist,lanechange, turnround, evidence"/>
    <!--optional, xs:string, event types for searching pictures both supported by AID and TFS-->
  </FindPicInfo>
  <SmartPicSearchInfo>
   <!--required-->
   <supportFileType  opt=
"vehicleDetection,faceFeature,facePicData,LineDetection,FieldDetection,unattendedBaggage,attendedBaggage,regionEntrance,regionExiting,parking,loitering,group,rapidMove,running,violentMotion,failDown,peopleNumChange,leavePosition,retentionParam,situationAnalysis,allType"/>
    <!--required, supported file type, 0("vehicleDetection")-vehicle search, 1("faceFeature")-facial features, 2("facePicData")-face picture data, 3("LineDetection“)-line crossing, 4("FieldDetection")-intrusion, 5-("unattendedBaggage")unattended baggage, 6("attendedBaggage")-object removal, 7("regionEntrance")-region entrance, 8("regionExiting")-region exiting, 9("parking")-illegal parking, 10("loitering")-loitering, 11("group")-people gathering, 12("rapidMove")-fast moving, 13("running")-people running, 14("violentMotion")-violent motion, 15("failDown")-people falling down, 16("peopleNumChange")-people number change, 17("leavePosition")-absence detection, 18("retentionParam")-overstay detection, 19("situationAnalysis")-situation analysis-->
   <StartTime>
    <year min="" max=""/>
    <month min="" max=""/>
    <day min="" max=""/>
    <hour min="" max=""/>
    <minute min="" max=""/>
    <second min="" max=""/>
   </StartTime>
   <StopTime>
    <year min="" max=""/>
    <month min="" max=""/>
    <day min="" max=""/>
    <hour min="" max=""/>
    <minute min="" max=""/>
    <second min="" max=""/>
   </StopTime>
   <VehicleCond>
    <!--required, this node will be returned if vehicle search is supported-->
    <licenseLen min="1" max="16"/>
     <!--required, license plate number length-->
    <country opt="czech,france,germany,spain,italy,netherlands,poland,slovakia,belorussia,moldova,russia,ukraine,"/>
     <!--required, country-->
   </VehicleCond>
   <FaceFeature>
    <!--required, facial features-->
    <sex opt="man,women"/>
    <withGlasses opt="true,false"/>
```

```
    <!--required, whether to support wearing glasses-->
  </FaceFeature>
  <FacePicData>
   <!--required, face picture data-->
   <faceScore min="0" max="100"/>
    <!--required, similarity-->
   <picType opt="jpg"/>
    <!--required, picture format-->
  </FacePicData>
  <isSupportFaceDataAnalysis>
   <!--optional, xs:boolean, whether to support face picture analysis: "true,false"-->
  </isSupportFaceDataAnalysis>
  <isSupportHumanMisinfo>
   <!--optional, xs:boolean, whether to get human body false alarms only: "true"-yes, this node is not returned-no-->
  </isSupportHumanMisinfo>
</SmartPicSearchInfo>
<ManualCapture>
  <!--required, manual capture-->
  <!--required, the network camera will return the supported resolution currently-->
  <ResolutionEntry>
   <!--required-->
   <resolutionName>
    <!--required, xs:string, resolution name, "CIF"...-->
   </resolutionName>
   <index>
    <!--required, xs:integer-->
   </index>
   <streamType>
    <!--optional, xs:string, "main,sub"-->
   </steamType>
  </ResolutionEntry>
  <ResolutionEntry>
   <!--required-->
   <resolutionName>
    <!--required, xs:string, resolution name, "4CIF"...-->
   </resolutionName>
   <index>
    <!--required, xs:integer-->
   </index>
   <streamType>
    <!--optional, xs:string, "main,sub"-->
   </steamType>
  </ResolutionEntry>
  <picQuality opt="best,better,normal"/>
   <!--picture quality: "best", "better", "normal"-->
</ManualCapture>
<SchedCapture>
  <!--required, scheduled capture-->
  <TimingCap>
   <!--required, scheduled capture-->
   <ResolutionEntry>
    <!--required-->
```

```
    <resolutionName>
      <!--required, xs:string, resolution name, "CIF"...-->
    </resolutionName>
    <index>
      <!--required, xs:integer-->
    </index>
    <streamType>
      <!--optional, xs:string, stream type, "main,sub"-->
    </steamType>
  </ResolutionEntry>
  <ResolutionEntry>
    <!--required-->
    <resolutionName>
      <!--required, xs:string, resolution name, "4CIF"...-->
    </resolutionName>
    <index>
      <!--required, xs:integer-->
    </index>
  </ResolutionEntry>
  <intervalUnit>
    <!--required, time interval unit, s/ms-->
  </intervalUnit>
  <interval min="" max="" opt="0"/>
    <!--required, xs:integer, capture interval-->
  <RecorderDuration min="" max=""/>
    <!--required, days to keep the captured pictures-->
  <DayCapture>
    <!--required, all-day capture-->
    <captureType opt="timing,motion,alarm,motionOrAlarm,motionAndAlarm,vca, command"/>
      <!--required, capture type-->
  </DayCapture>
  <TimeSlot>
    <!--required, scheduled capture-->
    <slotNum><!--required, time period--></slotNum>
    <captureType opt="timing,motion,alarm,motionOrAlarm,motionAndAlarm,vca, command"/>
      <!--required, capture type-->
  </TimeSlot>
  <HolidayDay>
    <!--required, all-day capture on holidays-->
    <captureType opt="timing,motion,alarm,motionOrAlarm,motionAndAlarm,vca, command"/>
      <!--required, capture type-->
  </HolidayDay>
  <HolidayTimeSlot>
    <!--required, scheduled capture on holidays-->
    <slotNum>
      <!--required, time period-->
    </slotNum>
    <captureType opt="timing,motion,alarm,motionOrAlarm,motionAndAlarm,vca, command"/>
      <!--required, capture type-->
  </HolidayTimeSlot>
</TimingCap>
<EventCap>
```

```
    <eventType opt="motion,hide,loss,PIR,wireless,callhelp,vca,facedDetect ,
lineDetection,fieldDetection,sceneChangeDetection"/>
      <!--required, xs:string, event type-->
    <ResolutionEntry>
      <!--req-->
      <resolutionName>
        <!--required, xs:string, resolution name, "CIF"...-->
      </resolutionName>
      <index>
        <!--required, xs:integer-->
      </index>
      <streamType>
        <!--optional, xs:string, stream type: "main,sub"-->
      </steamType>
    </ResolutionEntry>
    <ResolutionEntry>
      <!--required-->
      <resolutionName>
        <!--required, xs:string, resolution name, "4CIF"...-->
      </resolutionName>
      <index>
        <!--required, xs:integer-->
      </index>
      <streamType>
        <!--optional, xs:string, stream type: "main,sub"-->
      </steamType>
    </ResolutionEntry>
    <intervalUnit>
      <!--required, time interval unit, s/ms-->
    </intervalUnit>
    <interval min="" max="" opt="0"/>
      <!--required, xs:integer, capture interval-->
    <capTimes min="" max=""/>
      <!--required, xs:integer, number of captured pictures-->
    <eventCapChan opt="1,2"/>
      <!--required, xs:integer, channle that can be triggered by event to capture-->
    <alarmInCapChan opt="1,2"/>
      <!--required, xs:integer, channel that can be triggered by alarm input to capture-->
  </EventCap>
  <AdvancedParam>
    <!--optional, advanced configuration parameters for capture-->
    <streamType opt="0-mainstream,1-substream,2-stream3,3-stream4,4-stream5">
      <!--optional, xs:string, stream type-->
    </streamType>
  </AdvancedParam>
 </SchedCapture>
 <WindowCapture>
  <!--required, capture capability on video wall window-->
  <FreeShowBoard>
    <!--required, capture resolution supported by fluent video decoder-->
    <ResolutionEntry>
      <!--required-->
```

```
      <resolutionName>
       <!--required, xs:string, resolution name, "CIF"...-->
      </resolutionName>
      <index>
       <!--required, xs:integer-->
      </index>
     </ResolutionEntry>
     <ResolutionEntry>
      <resolutionName>
       <!--required, xs:string, resolution name, "4CIF"...-->
      </resolutionName>
      <index>
       <!--required, xs:integer-->
      </index>
     </ResolutionEntry>
    </FreeShowBoard>
    <NormalDecBoard>
     <!--required, capture resolution supported by non-fluent video decoder-->
     <ResolutionEntry>
      <!--req-->
      <resolutionName>
       <!--required, xs:string, resolution name, "CIF"...-->
      </resolutionName>
      <index>
       <!--required, xs:integer-->
      </index>
     </ResolutionEntry>
     <ResolutionEntry>
      <resolutionName>
       <!--required, xs:string, resolution name, "4CIF"...-->
      </resolutionName>
      <index>
       <!--required, xs:integer-->
      </index>
     </ResolutionEntry>
    </NormalDecBoard >
   </WindowCapture>
   <VcaDecCapture>
    <!--optional, VCA decoding capture capability-->
    <picQuality opt="best,better,normal"/>
     <!--picture quality: "best", "better", "normal"-->
    <ResolutionEntry>
     <!--req-->
     <resolutionName>
      <!--required, xs:string, resolution name, "CIF"...-->
     </resolutionName>
     <index>
      <!--required, xs:integer-->
     </index>
    </ResolutionEntry>
    <ResolutionEntry>
     <resolutionName>
```

```
      <!--required, xs:string, resolution name, "4CIF"...-->
     </resolutionName>
     <index>
      <!--required, xs:integer-->
     </index>
    </ResolutionEntry>
  </VcaDecCapture>
  <CapturePicture><!--optional, capture capability-->
   <Resolution><!--required, supported resolution-->
    <value opt="218-1440*1440,255-auto"/>
  </Resolution>
  <picQuality opt="best,good,normal"/><!--required, picture quality level, 0-high, 1-medium, 2-low-->
  <picFormat opt="0-Jpeg"/><!--required, captured picture format: 0-JPEG-->
  <picType opt="normal,calibPanoramicPic,calibPanoramicPicinFlash,fishCirclePic"/>
  <!--required, captured picture type: normal, calibPanoramicPic-calibrated picture of PanoVu series camera (reboot
FPJA to refresh and get picture, the longest timeout is 30 minutes), calibPanoramicPicinFlash-get existing calibrated
picture of PanoVu series camera from Flash, fishCirclePic-fisheye view picture-->
  </CapturePicture>
</JpegCaptureAbility>
```

3.11 NET_DVR_GetDVRConfig

Get the device configuration information.

API Definition

```
BOOL NET_DVR_GetDVRConfig(
  LONG      lUserID,
  DWORD     dwCommand,
  LONG      lRuleID,
  LONG      lChannel,
  LPVOID    lpOutBuffer,
  DWORD     dwOutBufferSize,
  LPDWORD   lpBytesReturned
);
```

Parameters

lUserID

[IN] Value returned by ***NET_DVR_Login_V40*** .

dwCommand

[IN] Device getting commands, which are different according to different getting functions.

lRuleID

[IN] Rule ID.

lChannel

[IN] Channel No. (NIC No.), which varies with different commands. 0xffffffff-invalid or all channels, 1-main NIC, 2-extended NIC.

lpOutBuffer

[OUT] Pointer of buffer to receive data. For different getting functions, the structures of this parameter are different.

dwOutBufferSize

[IN] Size of buffer to receive data (unit: byte). It cannot be 0.

lpBytesReturned

[OUT] Pointer of actually received data size. It cannot be NULL.

Return Values

Returns *TRUE* for success, and returns *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.
The following error codes may be returned by this API: 0, 3, 6, 7, 8, 9, 10, 12, 17, 41, 43, 44, 47, 72, 73, and 76. See the corresponding error types and descriptions in the ***Device Network SDK Errors*** .

See Also

NET_DVR_SetDVRConfig

3.12 NET_DVR_GetIPCProtoList_V41

Get the network camera protocol list supported by the device.

API Definition

```
BOOL NET_DVR_GetIPCProtoList_V41(
  LONG                      lUserID,
  NET_DVR_IPC_PROTO_LIST_V41    lpProtoList
);
```

Parameters

lUserID

[IN] Value returned by ***NET_DVR_Login_V40***

lpProtoList

[IN] Network camera protocol list, refer to the structure ***NET_DVR_IPC_PROTO_LIST_V41*** for details.

Return Values

Returns *TRUE* for success, and returns *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

Remarks

This API is used to get the external network camera protocols supported by device. When calling this API, set **pBuffer** and **dwBufLen** in the structure ***NET_DVR_IPC_PROTO_LIST_V41*** to "null" and "0", and then get the valid number of network camera protocols. Finally, allocate the cache according to the number of protocols and call this API again to get protocol details.

3.13 NET_DVR_RealPlay_V40

Start live view.

API Definition

```
LONG NET_DVR_RealPlay_V40(
  LONG                lUserID,
  NET_DVR_PREVIEWINFO     lpPreviewInfo,
  REALDATACALLBACK        fRealDataCallBack_V30,
  void                *pUser
);
```

Parameters

lUserID

[IN] Value returned by ***NET_DVR_Login_V40*** .

lpPreviewInfo

[IN] Live view parameters, see the definitions in the structure ***NET_DVR_PREVIEWINFO*** .

fRealDataCallBack_V30

[IN] Stream data callback function, see details in ***REALDATACALLBACK*** .

pUser

[IN] User data.

Return Values

Return *-1* for failure, and returns other values as the handle parameters of ***NET_DVR_StopRealPlay*** .
If *-1* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

Remarks

- The callback function in this API can be set as null, so the callback function will not call back the stream data to user. But the user can still call ***NET_DVR_SetRealDataCallBack*** or ***NET_DVR_SetStandardDataCallBack*** to register a callback function to get the stream data.
- When the platform or system is offline, the device will keep the streaming connection for 10 seconds.
- For developing in Linux system, the live view API will import valid window handle and you should call ***NET_DVR_ChangeWndResolution*** to notify the PlayCtrl Library SDK to get the window size before changing the window size during live view. For developing in Window system, the window size is self-adaptive without calling any other API.

3.13.1 REALDATACALLBACK

Stream data callback function.

Callback Function Definition

```
typedef void(CALLBACK *REALDATACALLBACK)(
  LONG     lRealHandle,
  DWORD    dwDataType,
  BYTE     *pBuffer,
  DWORD    dwBufSize,
  void     *pUser
);
```

Parameters

lRealHandle

[OUT] Current live view handle, which is returned by ***NET_DVR_RealPlay_V40*** .

dwDataType

[OUT] Data type, see details in the following table.

Type Macro Definition	Value	Description
NET_DVR_SYSHEAD	1	System header data.
NET_DVR_STREAMDATA	2	Stream data (including video & audio stream, or video stream).
NET_DVR_ AUDIOSTREAMDATA	3	Audio stream data.
NET_DVR_PRIVATE_DATA	112	Private data, including VCA information.

pBuffer

[OUT] Pointer of buffer to save data.

dwBufSize

[OUT] Buffer size.

pUser

[OUT] User data.

Remarks

This callback function is not applicable for the operations or API that may take a long time.

3.14 NET_DVR_SetDVRConfig

Set the device parameters.

API Definition

```
BOOL NET_DVR_SetDVRConfig(
  LONG     lUserID,
  DWORD    dwCommand,
  LONG     lChannel,
  LPVOID   lpInBuffer,
  DWORD    dwInBufferSize
);
```

Parameters

lUserID

[IN] Value returned by ***NET_DVR_Login_V40*** .

dwCommand

[IN] Device configuration commands, which are different according to different configuration functions.

lChannel

[IN] Channel No. (NIC No.), which varies with different commands. 0xFFFFFFFF-invalid, 1-main NIC, 2-extended NIC.

lpInBuffer

[IN] Pointer of input data buffer. For different configuration functions, the structures of this parameter are different.

dwInBufferSize

[IN] Size of input data buffer (unit: byte).

Return Values

Returns *TRUE* for success, and returns *FALSE* for failure.

If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.
The following error codes may be returned by this API: 0, 3, 6, 7, 8, 9, 10, 12, 17, 41, 43, 44, 47, 72, 73, and 76. See the corresponding error types and descriptions in the ***Device Network SDK Errors*** .

See Also

NET_DVR_GetDVRConfig

3.15 NET_DVR_SetRealDataCallBack

Set a callback function for getting the real-time stream data.

API Definition

```
BOOL NET_DVR_SetRealDataCallBack(
  LONG              lRealHandle,
  fRealDataCallBack    cbRealDataCallBack,
  DWORD             dwUser
);
```

Parameters

lRealHandle

[IN] Value returned by ***NET_DVR_RealPlay_V40*** .

cbRealDataCallBack

[IN] Stream data callback function, see details in ***fRealDataCallBack*** .

dwUser

[IN] User data.

Return Values

Return *TRUE* for success, and return *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

Remarks

- This API provides the function of starting/stopping callback and processing data. When the callback function ***fRealDataCallBack*** is set to non-null, it will start callback and processing data. Otherwise, callback and data processing will be stopped.
- The first called back packet is a file header in 40-byte, which is for the following decoding, and then the encoded stream will be called back. The maximum size of callback data is 256 bytes.

3.15.1 fRealDataCallBack

Stream data callback function.

Callback Function Definition

```
typedef void(CALLBACK *fRealDataCallBack)(
  LONG     lRealHandle,
  DWORD    dwDataType,
  BYTE     *pBuffer,
  DWORD    dwBufSize,
  DWORD    *dwser
);
```

Parameters

lRealHandle

[OUT] Current live view handle.

dwDataType

[OUT] Data type, see details in the following table.

Type Macro Definition	Value	Description
NET_DVR_SYSHEAD	1	System header data.
NET_DVR_STREAMDATA	2	Stream data (including video & audio stream, or video stream).
NET_DVR_ AUDIOSTREAMDATA	3	Audio stream data.
NET_DVR_METADATA_DATA	107	Metadata data packet transmitted via ISAPI.
NET_DVR_PRIVATE_DATA	112	Private data, including VCA information.

pBuffer

[OUT] Pointer of buffer to save data.

dwBufSize

[OUT] Buffer size.

dwUser

[OUT] User data.

Remarks

This callback function is not applicable for the operations or API that may take a long time.

3.16 NET_DVR_SetStandardDataCallBack

Register a callback function for getting the standard real-time stream data.

API Definition

```
BOOL NET_DVR_SetStandardDataCallBack(
  LONG              lRealHandle,
  fStdDataCallBack    cbStdDataCallBack,
  DWORD             dwUser
);
```

Parameters

lRealHandle

[IN] Value returned by ***NET_DVR_RealPlay_V40*** .

cbRealDataCallBack

[IN] Standard stream data callback function, see details in ***fStdDataCallBack*** .

dwUser

[IN] User data.

Return Values

Return *TRUE* for success, and return *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.

Remarks

- This API provides the function of starting/stopping callback and processing data. When the callback function ***fStdDataCallBack*** is set as non-null, it will start callback and processing data. Otherwise, callback and data processing will be stopped.
- The first called back packet is a file header in 40-byte, which is for the following decoding, and then the standard stream (with 12-byte RTP header) will be called back.
- The callback function of standard stream should be supported by device.

3.16.1 fStdDataCallBack

Standard stream data callback function.

Callback Function Definition

```
typedef void(CALLBACK *fStdDataCallBack)(
  LONG     lRealHandle,
  DWORD    dwDataType,
  BYTE     *pBuffer,
  DWORD    dwBufSize,
  DWORD    *dwser
);
```

Parameters

lRealHandle

[OUT] Current live view handle.

dwDataType

[OUT] Data type, see details in the following table.

Type Macro Definition	Value	Description
NET_DVR_SYSHEAD	1	System header data.
NET_DVR_STREAMDATA	2	Stream data (including video & audio stream, or video stream).
NET_DVR_STD_VIDEODATA	4	Standard video stream data (standard 264, MPEG4).
NET_DVR_STD_AUDIODATA	5	Standard audio stream data (G722 audio data).
NET_DVR_PRIVATE_DATA	112	Private data, including VCA information.
Others	0x00-G711U Audio, 0x04-G723 Audio, 0x08-G711A Audio, 0x0b-PCM16 Audio, 0x0e-Mpeg(MP2L2) Audio, 0x12-G729 Audio, 0x1A-MJPEG Audio, 0x68-AAC Audio, and so on.	pyload type in standard RTP, no transformation. The data of all types should be imported to player SDK when decoding and displaying stream.

pBuffer

[OUT] Pointer of buffer to save data.

dwBufSize

[OUT] Buffer size.

dwUser

[OUT] User data.

Remarks

This callback function is not applicable for the operations or API that may take a long time.

3.17 NET_DVR_StopRealPlay

Stop live view.

API Definition

```
BOOL NET_DVR_StopRealPlay(
  LONG   lRealHandle
);
```

Parameters

lRealHandle

[IN] Live view handle, which is returned by ***NET_DVR_RealPlay_V40*** .

Return Values

Return *TRUE* for success, and return *FALSE* for failure.
If *FALSE* is returned, you can call ***NET_DVR_GetLastError*** to get the error code.
The following error codes may be returned: 0, 3, 12, 17, 41, 67, and 65. See details in ***Device Network SDK Errors*** .

Appendix A. Data Structure

A.1 DATE_TIME

Date and Time Structure

Member	Data Type	Description
year	short	Year.
month	short	Month.
dayOfWeek	short	Days of the week: 0-Sunday, 1-Monday, 2-Tuesday, 3-Wednesday, 4-Thursday, 5-Friday, 6-Saturday.
day	short	Day.
hour	short	Hour.
minute	short	Minute.
second	short	Second.
milliSecond	short	Millisecond.

A.2 NET_DVR_DEVICEINFO_V30

Device parameter structure (V30).

Device Parameter Structure (V30)

Member	Data Type	Description
sSerialNumber	BYTE	Device serial No.
byAlarmInPortNum	BYTE	Number of analog alarm inputs
byAlarmOutPortNum	BYTE	Number of analog alarm outputs
byDiskNum	BYTE	Number of HDDs
byDVRType	BYTE	Device type
byChanNum	BYTE	Number of analog channels

Member	Data Type	Description
byStartChan	BYTE	Start No. of analog channel, which starts from 1.
byAudioChanNum	BYTE	Number of two-way audio channels
byIPChanNum	BYTE	Number of digital channels, low 8-bit.
byZeroChanNum	BYTE	Number of channel-zero
byMainProto	BYTE	Transmission protocol type of main stream: 0-private protocol (default), 1-RTSP, 2-private protocol+RTSP
bySubProto	BYTE	Transmission protocol type of sub-stream: 0-private protocol (default), 1-RTSP, 2-private protocol+RTSP
bySupport	BYTE	Capabilities, if the result of bitwise operation is 0, it refers that the capability is not supported, if the result is 1, it indicates that the capability is supported. • bySupport&0x1: whether supports VCA search. • bySupport&0x2: whether supports backup. • bySupport&0x4: whether supports getting encoding parameters. • bySupport&0x8: whether supports dual-NIC. • bySupport&0x10: whether supports remote SADP. • bySupport&0x20: whether supports RAID card. • bySupport&0x40: whether supports searching in IPSAN directory. • bySupport&0x80: whether supports RTP over RTSP.
bySupport1	BYTE	Extended capabilities, if the result of bitwise operation is 0, it refers that the capability is not supported, if the result is 1, it indicates that the capability is supported. • bySupport1&0x1: whether supports SNMP with version 30. • bySupport1&0x2: whether supports playback and downloading video files.

Member	Data Type	Description
		• bySupport1&0x4: whether supports setting the arming priority. • bySupport1&0x8: whether supports extending the arming time period. • bySupport1&0x10: whether supports multiple HDDs (more than 33). • bySupport1&0x20: whether supports RTP over RTSP. • bySupport1&0x80: whether supports license plate recognition alarm.
bySupport2	BYTE	Extended capabilities, if the result of bitwise operation is 0, it refers that the capability is not supported, if the result is 1, it indicates that the capability is supported. • bySupport2&0x1: whether supports getting stream via URL. • bySupport2&0x2: whether supports FTP with version 40. • bySupport2&0x4: whether supports ANR. • bySupport2&0x20: whether supports getting device status. • bySupport2&0x40: whether supports encrypting stream.
wDevType	WORD	Device model
bySupport3	BYTE	Extended capabilities, if the result of bitwise operation is 0, it refers that the capability is not supported, while, if the result is 1, it indicates that the capability is supported. • bySupport3&0x1: whether supports multi-stream. • bySupport3&0x4: whether supports configuring by group (e.g., image, alarm input, alarm output, user, device status, JPEG picture capture, continuous and scheduled capture, .HDD group management, and so on). • bySupport3&0x20: whether supports getting stream via DDNS.

Member	Data Type	Description
byMultiStreamProto	BYTE	Whether supports multi-stream, if the result of bitwise operation is 0, it refers to not support, if the result is 1, it refers to support. • byMultiStreamProto&0x1: whether supports third-stream. • byMultiStreamProto&0x2: whether supports fourth-stream. • byMultiStreamProto&0x40: whether supports main stream. • byMultiStreamProto&0x80: whether supports sub-stream.
byStartDChan	BYTE	Start No. of digital channel, 0-no digital channel (e.g., DVR, network camera).
byStartDTalkChan	BYTE	Start No. of two-way audio channel, 0-no two-way audio channel.
byHighDChanNum	BYTE	Number of digital channels, high 8-bit.
bySupport4	BYTE	Extended capabilities, if the result of bitwise operation is 0, it refers that the capability is not supported, if the result is 1, it indicates that the capability is supported. • bySupport4&0x01: whether all stream types support RTSP and private protocol. • bySupport4&0x02: whether the device supports transmitting form format data via API (NET_DVR_STDXMLConfig). • bySupport4&0x10: whether supports loading network disk by domain name.
byLanguageType	BYTE	Supported language types, if the result of bitwise operation is 0, it refers to not support, if the result is 1, it refers to support. • byLanguageType ==0: this field is not supported by device. • byLanguageType&0x1: whether supports Chinese. • byLanguageType&0x2: whether supports English.
byVoiceInChanNum	BYTE	Number of audio input channels

Member	Data Type	Description
byStartVoiceInChanNo	BYTE	Start No. of audio input channel, 0-invalid.
byRes3	Array of BYTE	Reserved, set to 0.
byMirrorChanNum	BYTE	Number of mirror channels
wStartMirrorChanNo	WORD	Start No. of mirror channel
byRes2	Array of BYTE	Reserved, set to 0.

Remarks

- The maximum number of digital channels equal to byIPChanNum+byHighDChanNum*256.
- For login via text protocol, the following parameters are not supported: **byMainProto**, **bySubProto**, **bySupport**, **bySupport1**, **bySupport2**, **bySupport3**, **bySupport4**, **bySupport5**, **bySupport6**, **bySupport7**, **byMultiStreamProto**, **byStartDTalkChan**, **byVoiceInChanNum**, **byStartVoiceInChanNo**, **byMirrorChanNum**, and **wStartMirrorChanNo**.

See Also

NET_DVR_DEVICEINFO_V40

A.3 NET_DVR_DEVICEINFO_V40

Device Parameter Structure (V40)

Member	Data Type	Description
struDeviceV30	***NET_DVR_DEVICEINFO_V30***	Device parameters
bySupportLock	BYTE	Whether supports locking function: 1-support.
byRetryLoginTime	BYTE	Remaining login attempts, it is valid when the user name or password is incorrect and the **bySupportLock** is 1.
byPasswordLevel	BYTE	Password strength: 0-invalid, 1-default password, 2-valid password, 3-risky password. For default password or risky password, the users are reminded to change password.
byProxyType	BYTE	Proxy type: 0-no proxy, 1-standard proxy, 2-EHome proxy.

Member	Data Type	Description
dwSurplusLockTime	DWORD	Remaining locking time, unit: second. It is valid only when **bySupportLock** is 1. During the locing time, if the user try to log in to again, the remaining locking time will resume to 30 minutes.
byCharEncodeType	BYTE	Character encodings. 0-no decoding information, 1-GB2312 (Simplified Chinese), 2-GBK, 3-BIG5 (Traditional Chinese), 4-Shift_JIS (Japanese), 5-EUC-KR (Korean), 6-UTF-8, 7-ISO8859-1, 8-ISO8859-2, 9-ISO8859-3, …, 21-ISO8859-15 (Western European)
bySupportDev5	BYTE	Whether to support getting the parameters of devices that support HCNetSDK version 5.0 or above, the size of device name and type name are extended to 64 bytes.
bySupport	BYTE	Whether it supports uploading changes, it depends on the result of bitwise AND (&) operation: 0-not support, 1-support. The result of **bySupport**&0x1 indicates that this member is reserved; the result of **bySupport**&0x2 indicates that whether it supports uploading changes: 0-not support, 1-support. This member is the capability set extension.
byLoginMode	BYTE	Login mode: 0-login via private protocol, 1-login via text protocol. For private protocol, the default login port number is 8000, and for text protocol, the default login port number is 80 or 443.
dwOEMCode	DWORD	OEM code.
iResidualValidity	int	Remaining valid days of the user's password, unit: day. If the negative number is returned, it indicates that the password being used has expired. For example, if -3 is returned, it indicates that the password being used has expired for three days.
byResidualValidity	BYTE	Whether the member **iResidualValidity** is valid: 0-invalid, 1-valid.

Member	Data Type	Description
bySingleStartDTalkChan	BYTE	Start channel No. for connecting independent audio tracks to the device. The value 0 is reserved and invalid. The channel No. of audio tracks cannot start from 0.
bySingleDTalkChanNums	BYTE	Total number of channels of the device connected with independent tracks, 0-not support.
byPassWordResetLevel	BYTE	Whether to prompt the non-admin user to change the password: 0 (invalid), 1 (If the administrator creates a non-admin user account with an initial password, the non-admin user will be prompted "Please change the initial password" each time he/she logs in to the device until he/she changes the initial password), 2(If the non-admin user's password has been changed by the administrator, the non-admin user will be prompted "Please set a new password" each time he/she logs in to the device until he/she changes the password).
bySupportStreamEncrypt	BYTE	Whether it supports stream encryption, it depends on the result of bitwise AND (&) operation: 0-no, 1-yes. The result of **bySupportStreamEncrypt**&0x1 indicates whether to support RTP/TLS streaming, the result of **bySupportStreamEncrypt**&0x2 indicates whether to support SRTP/UDP streaming, and the result of **bySupportStreamEncrypt**&0x4 indicates whether to support SRTP/MULTICAST streaming.
byRes2	Array of BYTE	Reserved, set to 0.

Remarks

- Four character types are allowed in the password, including digits, lowercase letters, uppercase letters and symbols. The maximum password length is 16 bits, and there are four password strength levels, see details below:

- Level 0 (Risky Password): The password length is less than 8 bits, or only contains one kind of the character types. Or the password is the same with the user name, or is the mirror writing of the user name.
- Level 1 (Weak Password): The password length is more than or equal to 8 bits, and contains two kinds of the character types. Meanwhile, the combination should be (digits + lowercase letters) or (digits + uppercase letters).
- Level 2 (Medium Password): The password length is more than or equal to 8 bits, and contains two kinds of the character types. Meanwhile, the combination cannot be (digits + lowercase letters) and (digits + uppercase letters).
- Level 3 (Strong Password): The password length is more than or equal to 8 bits, and at least contains three kinds of the character types.

- For login via text protocol, the following parameters are not supported: **bySupportLock**, **byRetryLoginTime**, **byPasswordLevel**, **byProxyType**, **dwSurplusLockTime**, **byCharEncodeType**, and **bySupportDev5**.

A.4 NET_DVR_INIT_CFG_ABILITY

Initialization Capability Structure

Member	Data Type	Description
enumMaxLoginUsersNum	INIT_CFG_MAX_NUM	Maximum number of users can log in, see details below: enum _INIT_CFG_MAX_NUM_{ INIT_CFG_NUM_2048 = 2048, INIT_CFG_NUM_5120 = 5120, INIT_CFG_NUM_10240 = 10240, INIT_CFG_NUM_15360 = 15360, INIT_CFG_NUM_20480 = 20480 }INIT_CFG_MAX_NUM
enumMaxAlarmNum	INIT_CFG_MAX_NUM	Maximum number of alarm channels, see details below: enum _INIT_CFG_MAX_NUM_{ INIT_CFG_NUM_2048 = 2048, INIT_CFG_NUM_5120 = 5120, INIT_CFG_NUM_10240 = 10240, INIT_CFG_NUM_15360 = 15360, INIT_CFG_NUM_20480 = 20480 }INIT_CFG_MAX_NUM
byRes	Array of BYTE	Reserved, set to 0.

Remarks

By default, up to 2048 channels are supported. More channels require higher computer performance and network bandwidth.

See Also

NET_DVR_SetSDKInitCfg

A.5 NET_DVR_LOCAL_SDK_PATH

Path Information Structure for Loading Component Libraries

Member	Data Type	Description
sPath	Array of char	Component libraries' addresses
byRes	Array of BYTE	Reserved.

Remarks

If the path of HCNetSDKCom folder and HCNetSDK libraries are same, but the path of executable programs are different, you can call ***NET_DVR_SetSDKInitCfg*** to specify the path of HCNetSDKCom folder to make sure the component libraries are loaded normally.

A.6 NET_DVR_USER_LOGIN_INFO

Structure About Login Parameters

Member	Data Type	Description
sDeviceAddress	char	Device IP address, or domain name.
byUseTransport	BYTE	Enable capability transmission or not: 0-no (default), 1-yes.
wPort	WORD	Device port number, e.g., 8000 (when login by private protocol), 80 (when login by text protocol).
sUserName	char	User name for logging in to device.
sPassword	char	Login password.
cbLoginResult	***fLoginResultCallBack***	Callback function used to return login status, it is valid only when **bUseAsynLogin** is "1".

Member	Data Type	Description
pUser	void*	User data.
bUseAsynLogin	BOOL	Whether to enable asynchronous login: 0-no, 1-yes.
byProxyType	BYTE	Proxy server type: 0-no proxy, 1-standard proxy, 2-EHome proxy.
byUseUTCTime	BYTE	0-not convert (default), 1-input or output UTC time, 2-input or output local time.
byLoginMode	BYTE	Login mode: 0-login by private protocol, 1-login by text protocol, 2-self-adaptive (it is available when the protocol type supported by device is unknown, and this mode does not support asynchronous login).
byHttps	BYTE	Whether to enable TLS for login (by private protocol or by text protocol): 0-no, 1-yes, 2-self-adaptive (which is usually used when the protocol type supported by device is unknown. Both HTTP and HTTPS requests will be sent).
iProxyID	LONG	Proxy server No.
byVerifyMode	BYTE	Whether to enable verification mode: 0-no, 1-bidirectional verification (currently not available), 2-unidirectional verification (it is valid when **byLoginMode** is 0 and **byHttps** is 1); when **byVerifyMode** is 0, CA certificate is not required, when **byVerifyMode** is 2, you should call NET_DVR_SetSDKLocalCfg to load CA certificate, and the enumeration value is "NET_SDK_LOCAL_CFG_CERTIFICATION".
byRes3	BYTE[]	Reserved, the maximum length is 119 bytes.

A.7 NET_SDK_CALLBACK_STATUS_NORMAL

Enumeration About Persistent Connection Status

Enumeration Type	Marco Definition Value	Description
NET_SDK_CALLBACK_STATUS_ SUCCESS	1000	Succeeded.
NET_SDK_CALLBACK_STATUS_ PROCESSING	1001	Connecting. The **lpBuffer** is 4-byte status.
NET_SDK_CALLBACK_STATUS_ FAILED	1002	Failed. The **lpBuffer** is the value of 4-byte status and 4-byte error code.

A.8 NET_VCA_RECT

Structure About Rectangle Region Coordinate Parameters

Member	Data Type	Description
fX	float	X-coordinate of frame's upper-left corner, it ranges from 0.000 to 1.
fY	float	Y-coordinate of frame' upper-left corner, it ranges from 0.000 to 1.
fWidth	float	Frame width, it ranges from 0.000 to 1.
fHeight	float	Frame height, it ranges from 0.000 to 1.

A.9 NET_DVR_DDNS_STREAM_CFG

Structure about IP Server and stream server configuration.

Structure Definition

```
struct{
  BYTE            byEnable;
  BYTE            byRes1[3];
  NET_DVR_IPADDR    struStreamServer;
  WORD              wStreamServerPort;
  BYTE            byStreamServerTransmitType;
  BYTE            byRes2;
  NET_DVR_IPADDR    struIPServer;
```

```
  WORD          wIPServerPort;
  BYTE          byRes3[2];
  BYTE          sDVRName[NAME_LEN/*32*/];
  WORD          wDVRNameLen;
  WORD          wDVRSerialLen;
  BYTE          sDVRSerialNumber[SERIALNO_LEN/*48*/];
  BYTE          sUserName[NAME_LEN/*32*/];
  BYTE          sPassWord[PASSWD_LEN/*16*/];
  WORD          wDVRPort;
  BYTE          byRes4[2];
  BYTE          byChannel;
  BYTE          byTransProtocol;
  BYTE          byTransMode;
  BYTE          byFactoryType;
}NET_DVR_DDNS_STREAM_CFG, *LPNET_DVR_DDNS_STREAM_CFG;
```

Members

byEnable

Whether to enable: 0-no, 1-yes

byRes1

Reserved, set to 0

struStreamServer

IP address of stream media server, refer to the structure ***NET_DVR_IPADDR_UNION*** for details.

wStreamServerPort

Stream server port number

byStreamServerTransmitType

Transmission protocol type of stream media server: 0-TCP, 1-UDP

byRes2

Reserved, set to 0

struIPServer

IP address of IPServer, refer to the structure ***NET_DVR_IPADDR_UNION*** for details.

wIPServerPort

IPServer port No.

byRes3

Reserved, set to 0

sDVRName

Device name

wDVRNameLen

Device name size

wDVRSerialLen

Device serial No. size

sDVRSerialNumber

Device serial No.

sUserName

Device user name

sPassWord

Device password

wDVRPort

Device port No.

byRes4

Reserved, set to 0

byChannel

Device channel No.

byTransProtocol

Transmission protocol type: 0-TCP, 1-UDP

byTransMode

Steam type: 0-main stream, 1-sub-stream

byFactoryType

Network camera protocol list.

A.10 NET_DVR_DEV_CHAN_INFO_EX

Structure about front-end device information.

Structure Definition

```
struct{
  BYTE    byChanType;
  BYTE    byStreamId[STREAM_ID_LEN/*32*/];
  BYTE    byRes1[3];
  DWORD   dwChannel;
  BYTE    byRes2[24];
  BYTE    byAddress[MAX_DOMAIN_NAME/*64*/];
  WORD    wDVRPort;
  BYTE    byChannel;
  BYTE    byTransProtocol;
  BYTE    byTransMode;
  BYTE    byFactoryType;
  BYTE    byDeviceType;
  BYTE    byDispChan;
  BYTE    bySubDispChan;
```

```
  BYTE    byResolution;
  BYTE    byRes[2];
  BYTE    sUserName[NAME_LEN/*32*/];
  BYTE    sPassword[PASSWD_LEN/*16*/];
}NET_DVR_DEV_CHAN_INFO_EX,*LPNET_DVR_DEV_CHAN_INFO_EX;
```

Members

byChanType

Channel type: 0-normal channel, 1-channel-zero, 2-stream ID, 3-local input source

byStreamId

Stream ID, it is valid only when the **byChanType** is 2.

byRes1

Reserved

dwChannel

Channel No., it is valid only when the byChanType is 0, 1, 3. If the channel type is local input source, this member is the local source index No.

byRes2

Reserved

byAddress

Device IP address or domain name

wDVRPort

Device port number

byChannel

Invalid

byTransProtocol

Transfer protocol type: 0-TCP, 1-UDP

byTransMode

Stream mode: 0-main stream, 1-sub-stream

byFactoryType

Front-end device manufacturer

byDeviceType

Device type (for MVC only): 1-network camera, 2-encoding device

byDispChan

Display channel No.

bySubDispChan

Sub display channel No.

byResolution

Resolution: 1- CIF, 2- 4CIF, 3- 720P, 4- 1080P, 5- 500W

byRes

Reserved, set to 0.

sUserName

User name for log in to device.

sPassword

Device password.

See Also

NET_DVR_DEC_STREAM_DEV_EX

A.11 NET_DVR_DEC_DDNS_DEV

Configuration parameter structure about getting stream by DDNS.

Structure Definition

```
struct{
  NET_DVR_DEV_DDNS_INFO        struDdnsInfo;
  NET_DVR_STREAM_MEDIA_SERVER   struMediaServer;
}NET_DVR_DEC_DDNS_DEV,*LPNET_DVR_DEC_DDNS_DEV;
```

Members

struDdnsInfo

DDNS configuration parameters, see the structure ***NET_DVR_DEV_DDNS_INFO*** for details.

struMediaServer

Stream media server configuration parameters, see the structure ***NET_DVR_STREAM_MEDIA_SERVER*** for details.

See Also

NET_DVR_DEC_STREAM_MODE

A.12 NET_DVR_DEV_DDNS_INFO

Configuration parameter structure about DDNS.

Structure Definition

```
struct{
  BYTE    byDevAddress[MAX_DOMAIN_NAME/*64*/];
  BYTE    byTransProtocol;
  BYTE    byTransMode;
  BYTE    byDdnsType;
  BYTE    byRes1;
  BYTE    byDdnsAddress[MAX_DOMAIN_NAME/*64*/];
  WORD    wDdnsPort;
  BYTE    byChanType;
  BYTE    byFactoryType;
  DWORD   dwChannel;
  BYTE    byStreamId[STREAM_ID_LEN/*32*/];
  BYTE    sUserName[NAME_LEN/*32*/];
  BYTE    sPassword[PASSWD_LEN/*16*/];
  WORD    wDevPort;
  BYTE    byRes2[2];
}NET_DVR_DEV_DDNS_INFO,*LPNET_DVR_DEV_DDNS_INFO;
```

Members

byDevAddress

Device domain name

byTransProtocol

Transfer protocol type: 0-TCP, 1-UDP, 2-multicast

byTransMode

Stream mode: 0-main stream, 1-sub-stream

byDdnsType

DDNS type: 0-IPServer, 1-Dyndns, 2- PeanutHull, 3- NO-IP, 4-hiDDNS

byRes1

Reserved

byDdnsAddress

DDNS address

wDdnsPort

DDNS port number

byChanType

Channel type: 0-normal channel, 1-channel-zero, 2-stream ID

byFactoryType

Front-end device manufacturer

dwChannel

Device channel No.

byStreamId

Stream ID, it is valid only when the **byChanType** is 2.

sUserName

User name for log in to device

sPassword

Device password.

wDevPort

Device port number

byRes2

Reserved

See Also

NET_DVR_DEC_DDNS_DEV

A.13 NET_DVR_DEC_STREAM_DEV_EX

Configuration parameter structure about getting stream from device.

Structure Definition

```
struct{
  NET_DVR_STREAM_MEDIA_SERVER    struStreamMediaSvrCfg;
  NET_DVR_DEV_CHAN_INFO_EX       struDevChanInfo;
}NET_DVR_DEC_STREAM_DEV_EX,*LPNET_DVR_DEC_STREAM_DEV_EX;
```

Members

struStreamMediaSvrCfg

Stream media server configuration parameters, see the structure ***NET_DVR_STREAM_MEDIA_SERVER*** for details.

struDevChanInfo

Device channel configuration parameters, see the structure ***NET_DVR_DEV_CHAN_INFO_EX*** for details.

See Also

NET_DVR_DEC_STREAM_MODE

A.14 NET_DVR_DEC_STREAM_MODE

Configuration parameter union about streaming mode.

Structure Definition

```
union{
  NET_DVR_DEC_STREAM_DEV_EX    struDecStreamDev;
  NET_DVR_PU_STREAM_URL        struUrlInfo;
  NET_DVR_DEC_DDNS_DEV         struDdnsDecInfo;
  BYTE                         byRes[300];
}NET_DVR_DEC_STREAM_MODE,*LPNET_DVR_DEC_STREAM_MODE;
```

Members

struDecStreamDev

Get stream from device or stream media server by IP address or domain name, see the structure ***NET_DVR_DEC_STREAM_DEV_EX*** for the configuration details.

struUrlInfo

Get stream from device or stream media server by URL, see the structure ***NET_DVR_PU_STREAM_URL*** for the configuration details.

struDdnsDecInfo

Get stream from device by DDNS, see the structure ***NET_DVR_DEC_DDNS_DEV*** for the configuration details.

byRes

Reserved, set to 0.

A.15 NET_DVR_ETHERNET_V30

Ethernet Configuration Structure

Member	Data Type	Description
struDVRIP	***NET_DVR_IPADDR_UNION***	Device IP address
struDVRIPMask	***NET_DVR_IPADDR_UNION***	Mask of device IP address
dwNetInterface	DWORD	Network interface type: 1-10MBase-T; 2-10MBase-T (full duplex); 3-100MBase-TX; 4-100M (full duplex); 5-10M/100M/1000M (self-adaptive); 6-1000M (full duplex)
wDVRPort	WORD	Device port No.
wMTU	WORD	MTU settings, the default is 1500.

Member	Data Type	Description
byMACAddr	Array of BYTE	Device physical address.
byEthernetPortNo	BYTE	Network interface No.: 0-invalid, 1-interface 0, 2-interface 1, and so on. This parameter is read-only.
byRes	Array of BYTE	Reserved.

A.16 NET_DVR_GET_STREAM_UNION

Union of streaming mode.

Structure Definition

```
union{
  NET_DVR_IPCHANINFO        struChanInfo;
  NET_DVR_PU_STREAM_CFG_V41   struPUStream;
  NET_DVR_IPSERVER_STREAM     struIPServerStream;
  NET_DVR_DDNS_STREAM_CFG     struDDNSStream;
  NET_DVR_PU_STREAM_URL       struStreamUrl;
  NET_DVR_HKDDNS_STREAM       struHkDDNSStream;
  NET_DVR_IPCHANINFO_V40      struIPChan;
}NET_DVR_GET_STREAM_UNION,*LPNET_DVR_GET_STREAM_UNION;
```

Members

struChanInfo

Network channel information for getting stream directly, refer to the structure ***NET_DVR_IPCHANINFO*** for details.

struPUStream

Get stream from stream media server, refer to the structure ***NET_DVR_PU_STREAM_CFG_V41*** for details.

struIPServerStream

Get stream after getting device IP address by IPServer, refer to the structure ***NET_DVR_IPSERVER_STREAM*** for details.

struDDNSStream

Get device IP address by IPServer, and then get stream from stream media server, refer to the structure ***NET_DVR_DDNS_STREAM_CFG*** for details.

struStreamUrl

Get stream from the device or stream media server by URL

struHkDDNSStream

Connect to the device by hkDDNS and then get stream from the device, refer to the structure ***NET_DVR_HKDDNS_STREAM*** for details.

struIPChan

Get stream directly from device (extended), refer to the structure ***NET_DVR_IPCHANINFO_V40*** for details.

See Also

NET_DVR_STREAM_MODE

A.17 NET_DVR_HKDDNS_STREAM

Structure about hkDDNS streaming configuration.

Structure Definition

```
struct{
  BYTE   byEnable;
  BYTE   byRes[3];
  BYTE   byDDNSDomain[64];
  WORD   wPort;
  WORD   wAliasLen;
  BYTE   byAlias[NAME_LEN/*32*/];
  WORD   wDVRSerialLen;
  BYTE   byRes1[2];
  BYTE   byDVRSerialNumber[SERIALNO_LEN/*48*/];
  BYTE   byUserName[NAME_LEN/*32*/];
  BYTE   byPassWord[PASSWD_LEN/*16*/];
  BYTE   byChannel;
  BYTE   byRes2[11];
}NET_DVR_HKDDNS_STREAM,*LPNET_DVR_HKDDNS_STREAM;
```

Members

byEnable

Whether to enable: 0-no, 1-yes

byRes

Reserved, set to 0

byDDNSDomain

hiDDNS server address

wPort

hkDDNS port No., default: 80

wAliasLen

Alias size

byAlias

Alias

wDVRSerialLen

Serial No.size

byRes1

Reserved, set to 0

byDVRSerialNumber

Serial nNo.

byUserName

Device user name

byPassWord

Device password

byChannel

Device channel No.

byRes2

Reserved, set to 0

See Also

NET_DVR_GET_STREAM_UNION

A.18 NET_DVR_IPADDR_UNION

IP Address Union

Member	Data Type	Description
szIPv4	char[]	IPv4 address. The maximum length is 16 bytes.
szIPv6	char[]	IPv6 address. The maximum length is 256 bytes.

A.19 NET_DVR_IPCHANINFO

Structure about network device channel information.

Structure Definition

```
struct{
  BYTE    byEnable;
  BYTE    byIPID;
  BYTE    byChannel;
  BYTE    byIPIDHigh;
  BYTE    byRes[32];
}NET_DVR_IPCHANINFO, *LPNET_DVR_IPCHANINFO;
```

Members

byEnable

Network device channel online status, it is read only. 0-connecting to network device by HDVR or NVR failed, the channel is offline; 1-connected, the channel is online.

byIPID

Low 8-byte in device ID, **byIPID**==**iDevID**/256.

byChannel

Channel No. of network device, for example, if the network channel No.1 of device A corresponds to the channel No.4 of device B, the **byChannel** is 4.

byIPIDHigh

High 8-byte in device ID, **byIPIDHigh**==**iDevID** /256

byRes

Reserved, set to 0

Remarks

The **iDevID** is the device ID, and **iDevID**==**byIPIDHigh***256 + **byIPID**. It is used to search for the device information (array parameter in **struIPDevInfo** in ***NET_DVR_IPPARACFG_V40***). The relation between **iDevID** and **iDevInfoIndex** is: **iDevID**==**iDevInfoIndex**+**iGroupNO***64+1.

A.20 NET_DVR_IPCHANINFO_V40

Structure about network device channel information (extended).

Structure Definition

```
struct{
  BYTE    byEnable;
  BYTE    byRes1;
  WORD    wIPID;
  DWORD   dwChannel;
  BYTE    byTransProtocol;
  BYTE    byTransMode;
```

```
  BYTE    byFactoryType;
  BYTE    byRes[241];
}NET_DVR_IPCHANINFO_V40, *LPNET_DVR_IPCHANINFO_V40;
```

Members

byEnable

Network device channel online status, read only. 0-connecting to network channel by HDVR or NVR failed, the channel is offline; 1-connected, the channel is online.

byRes1

Reserved, set to 0

wIPID

Network device ID

dwChannel

Network device channel No., e.g., if the network channel No.1 of device A corresponds to the channel No.4 of device B, the byChannel is 4.

byTransProtocol

Transmission protocol type: 0-TCP, 1-UDP, 2-multicast, 0xff-aslf-adaptive

byTransMode

Stream type: 0-main stream, 1-sub-stream

byFactoryType

Call ***NET_DVR_GetIPCProtoList_V41*** to get the network camera protocol list.

byRes

Reserved, set as 0

A.21 NET_DVR_IPC_PROTO_LIST_V41

Structure about network camera protocol list.

Structure Definition

```
struct{
  DWORD    dwSize;
  DWORD    dwProtoNum;
  BYTE     *pBuffer;
  DWORD    dwBufferLen;
  BYTE     byRes[32];
}NET_DVR_IPC_PROTO_LIST_V41,*LPNET_DVR_IPC_PROTO_LIST_V41;
```

Members

dwSize

Structure size

dwProtoNum

Valid number of network camera protocols

pBuffer

Protocol list buffer, used to save structure ***NET_DVR_PROTO_TYPE*** (the number of structures is the value of **dwProtoNum**).

dwBufferLen

Buffer size, size sum of structures ***NET_DVR_PROTO_TYPE*** (the number of structures is the value of **dwProtoNum**).

byRes

Reserved, set to 0.

Related API

NET_DVR_GetIPCProtoList_V41

A.22 NET_DVR_IPDEVINFO_V31

Structure about network device information.

Structure Definition

```
struct{
  BYTE            byEnable;
  BYTE            byProType;
  BYTE            byEnableQuickAdd;
  BYTE            byCameraType;
  BYTE            sUserName[NAME_LEN/*32*/];
  BYTE            sPassword[PASSWD_LEN/*16*/];
  BYTE            byDomain[MAX_DOMAIN_NAME/*64*/];
  NET_DVR_IPADDR     struIP;
  WORD              wDVRPort;
  BYTE            szDeviceID[DEV_ID_LEN/*1*/];
  BYTE            byEnableTiming;
  BYTE            byRes2;
}NET_DVR_IPDEVINFO_V31, *LPNET_DVR_IPDEVINFO_V31;
```

Members

byEnable

Whether the network device is enabled

byProType

Protocol type: 0-Hikvision private protocol (default), 1-Panasonic private protocol, 2-Sony private protocol,...For getting more protocol types, you can call ***NET_DVR_GetIPCProtoList_V41*** .

byEnableQuickAdd

Whether supports quick adding: 0-no, 1-yes. When quickly adding, the device IP address and protocol type are required.

byCameraType

Camera function: 0-none, 1-teacher tacking, 2-student tracking, 3-teacher panoramic view, 4-student panoramic view, 5-multimedia, 6-teacher location, 7-student location, 8-blackboard writing location, 9-blackboard writing

sUserName

User name

sPassword

Password

byDomain

Domain name

struIP

IP address, refer to the structure ***NET_DVR_IPADDR_UNION*** for details.

wDVRPort

Port No.

szDeviceID

Reserved.

byEnableTiming

Whether enables automatic time synchronization between NVR and network camera: 0-reserved, 1-no, 2-yes

byRes2

Reserved, set to 0

Remarks

- When all network channels of one network device are deleted, the "IPID-1" of all network channel parameters in network device channel does not correspond to the subscript value of this network device parameters, the local network device parameters will be deleted.
- If the domain name does not exist and IPv4 address is valid, the IPv4 address will be adopted to access; if both the domain name and IPv4 do not exist, but IPv6 is valid, the IPv6 address will be adopted to access.

A.23 NET_DVR_IPPARACFG_V40

Configuration parameter structure of network devices and channels.

Structure Definition

```
struct{
  DWORD              dwSize;
  DWORD              dwGroupNum;
  DWORD              dwAChanNum;
  DWORD              dwDChanNum;
  DWORD              dwStartDChan;
  BYTE               byAnalogChanEnable[MAX_CHANNUM_V30/*64*/];
  NET_DVR_IPDEVINFO_V31   struIPDevInfo[MAX_IP_DEVICE_V40/*64*/];
  NET_DVR_STREAM_MODE     struStreamMode[MAX_CHANNUM_V30/*64*/];
  BYTE               byRes2[20];
}NET_DVR_IPPARACFG_V40, *LPNET_DVR_IPPARACFG_V40;
```

Members

dwSize

Structure size

dwGroupNum

Total number of groups supported by device, read-only

dwAChanNum

Maximum number of analog channels, read-only

dwDChanNum

Number of digital channels, read-only

dwStartDChan

Start No. of digital channel, read-only

byAnalogChanEnable

Whether to enable analog channel: 0-no, 1-yes. E.g., byAnalogChanEnable[i]=1 indicates that the channel No.(i+1) is enabled.

struIPDevInfo

Network device information, see details in ***NET_DVR_IPDEVINFO_V31*** .

struStreamMode

Streaming types, see details in the structure ***NET_DVR_STREAM_MODE*** .

byRes2

Reserved, set to 0.

A.24 NET_DVR_IPSERVER_STREAM

Structure about IP server mode configuration.

Structure Definition

```
struct{
  BYTE          byEnable;
  BYTE          byRes[3];
  NET_DVR_IPADDR    struIPServer;
  WORD            wPort;
  WORD            wDvrNameLen;
  BYTE          byDVRName[NAME_LEN/*32*/];
  WORD            wDVRSerialLen;
  WORD            byRes1[2];
  BYTE          byDVRSerialNumber[SERIALNO_LEN/*48*/];
  BYTE          byUserName[NAME_LEN/*32*/];
  BYTE          byPassWord[PASSWD_LEN/*16*/];
  BYTE          byChannel;
  BYTE          byRes2[11];
}NET_DVR_IPSERVER_STREAM, *LPNET_DVR_IPSERVER_STREAM;
```

Members

byEnable

Whether to enable: 0-no, 1-yes

byRes

Reserved, set to 0

struIPServer

IPServer IP address, refer to the structure ***NET_DVR_IPADDR_UNION*** for details.

wPort

IPServer port No.

wDvrNameLen

DVR name size

byDVRName

DVR name

wDVRSerialLen

Serial No. size

byRes1

Reserved, set to 0

byDVRSerialNumber

DVR serial No.

byUserName

DVR user name

byPassWord

DVR password

byChannel

DVR channel No.

byRes2

Reserved, set to 0

A.25 NET_DVR_JPEGPARA

Structure about information of picture in JPEG format.

Structure Definition

```
struct{
  WORD      wPicSize;
  WORD      wPicQuality;
}NET_DVR_JPEGPARA,*LPNET_DVR_JPEGPARA;
```

Members

wPicSize

Picture size: 0-CIF(352 × 288/352 × 240), 1-QCIF(176 × 144/176 × 120), 2-4CIF(704 × 576/704 × 480) or D1(720 × 576/720 × 486), 3-UXGA(1600 × 1200), 4-SVGA(800 × 600), 5-HD720P(1280 × 720), 6-VGA(640 × 480), 7-XVGA(1280 × 960), 8-HD900P(1600 × 900), 9-HD1080P(1920 × 1080), 10-2560 × 1920, 11-1600 × 304, 12-2048 × 1536, 13-2448 × 2048, 14-2448 × 1200, 15-2448 × 800, 16-XGA(1024 × 768), 17-SXGA(1280 × 1024), 18-WD1(960 × 576/960 × 480), 19-1080I (1920 × 1080), 20-576 × 576, 21-1536 × 1536, 22-1920 × 1920, 23-320 × 240, 24-720 × 720, 25-1024 × 768, 26-1280 × 1280, 27-1600 × 600, 28-2048 × 768, 29-160 × 120, 75-336 × 256, 78-384 × 256, 79-384 × 216, 80-320 × 256, 82-320 × 192, 83-512 × 384, 127-480 × 272, 128-512 × 272, 161-288 × 320, 162-144 × 176, 163-480 × 640, 164-240 × 320, 165-120 × 160, 166-576 × 720, 167-720 × 1280, 168-576 × 960, 180-180 × 240, 181-360 × 480, 182-540 × 720, 183-720 × 960, 184-960 × 1280, 185-1080 × 1440, 215-1080 × 720 (reserved), 216-360 × 640 (reserved), 218-1440 × 1440, 500-384 × 288, 0xff-Auto.

wPicQuality

Picture quality: 0-high, 1-medium, 2-low

A.26 NET_DVR_NETCFG_V50

Network Configuration Structure

Member	Data Type	Description
dwSize	DWORD	Structure size.
struEtherNet	Array of ***NET_DVR_ETHERNET_V30***	Ethernet interface
struRes1	Array of	Reserved, set to 0.
struAlarmHostIpAddr	***NET_DVR_IPADDR_UNION***	Listening service IP address
byRes2	Array of BYTE	Reserved, set as 0
wAlarmHostIpPort	WORD	Listening service port No.
byUseDhcp	BYTE	Whether to enable DHCP: 0xff- invalid; 0-disable, 1-enable
byIPv6Mode	BYTE	Allocation mode of IPv6 address: 0-by router advertisement, 1-by manual setting, 2-by enabling DHCP allocation.
struDnsServer1IpAddr	***NET_DVR_IPADDR_UNION***	IP address of domain name server 1
struDnsServer2IpAddr	***NET_DVR_IPADDR_UNION***	IP address of domain name server 2
byIpResolver	Array of BYTE	IP resolver domain name or IP address (if the port No. of device is 8000, the domain name is not supported).
wIpResolverPort	WORD	IP resolver port No.
wHttpPortNo	WORD	HTTP port No.
struMulticastIpAddr	***NET_DVR_IPADDR_UNION***	Multicast group address
struGatewayIpAddr	***NET_DVR_IPADDR_UNION***	Gateway address
struPPPoE	***NET_DVR_PPPOECFG***	PPPoE parameters
byEnablePrivateMulticastDiscovery	BYTE	Private multicast search (SADP): 0-default, 1-enable, 2-disable

Member	Data Type	Description
byEnableOnvifMulticastDiscovery	BYTE	Onvif multicast search (SADP): 0-default, 1-enable, 2-disable
wAlarmHost2IpPort	WORD	Port No. of listening host 2.
struAlarmHost2IpAddr	***NET_DVR_IPADDR_UNION***	IP address of listening host 2
byEnableDNS	BYTE	DNS address setting mode: 0-automatically get, 1-manually set.
byRes	Array of BYTE	Reserved, set to 0

Remarks

- For device only supports the private protocol with version 3.0 or lower, when the parameter **byUseDhcp**="0xff", you should set the device IP address to null, and then the device will automatically get the DHCP information.
- When the parameter **byIPv6Mode** is set to 0 or 2, setting IPv6 address in the parameter **struEtherNet** is not required, it will be obtained automatically by the device; when **byIPv6Mode** is set to 1, you should set IPv6 address. As there are multiple IPv6 addresses, the IPv6 address of current logged-in device may be different with that in **struEtherNet**.

A.27 NET_DVR_PICPARAM_V50

Capture parameter structure

Structure Definition

```
struct{
  NET_DVR_JPEGPARA    struParam;
  BYTE            byPicFormat;
  BYTE            byCapturePicType;
  BYTE            byRes[254];
}NET_DVR_PICPARAM_V50, *LPNET_DVR_PICPARAM_V50;
```

Members

struParam

Picture parameter, including picture resolution and quality, refer to the structure ***NET_DVR_JPEGPARA*** for details.

byPicFormat

Picture format: 0-JPEG

byCapturePicType

Capture mode: 0-normal capture, 1-capture calibrated picture of PanoVu series camera (reboot and refresh FPJA to get picture, the maximum timeout is 3 minutes) , 2-get calibrated picture of PanoVu series camera from Flash, 3-capture picture in fisheye view of fisheye camera.

byRes

Reserved, set to 0.

Related API

NET_DVR_CapturePicture_V50

A.28 NET_DVR_PPPOECFG

PPPoE Configuration Structure

Member	Data Type	Description
dwPPPOE	DWORD	Whether to enable PPPoE: 0-no, 1-yes.
sPPPoEUser	Array of BYTE	PPPoE user name.
sPPPoEPassword	Array of char	PPPoE password.
struPPPoEIP	***NET_DVR_IPADDR_UNION***	PPPoE IP address

A.29 NET_DVR_PREVIEWINFO

Structure about Live View Parameters

Member	Data Type	Description
lChannel	LONG	Channel No., the analog channel No. starts from 1, the start No. of digital channel is obtained by calling API ***NET_DVR_GetDVRConfig*** with the command of ***NET_DVR_GET_IPPARACFG_V40*** (command No.1062), and the parameter is returned by the

Member	Data Type	Description
		structure ***NET_DVR_IPPARACFG_V40*** .
dwStreamType	DWORD	Stream type: 0-main stream, 1-sub-stream, 2-third stream, 3-virtual stream, and so on.
dwLinkMode	DWORD	Stream transmission mode: 0-TCP, 1-UDP, 2-multicast, 3-RTP, 4-RTP/RTSP, 5-RSTP/HTTP, 6-HRUDP, 7-RTSP/HTTPS, 8-NPQ (Network Protocol Quality).
hPlayWnd	HWND	Handle of display window, "NULL"-not decode and display.
bBlocked	DWORD	0-non-blocking streaming (check the success once requesting for connection, if receiving stream failed or playing failed, the live view exception will be uploaded for notification, which can reduce the pausing duration during auto-switch), 1-blocking streaming (check the success until playing ended, if network exception, the connection failed message is returned after 5 second timeout, so it is not application for auto-switch).
bPassbackRecord	DWORD	Whether to enable ANR function: 0-no, 1-yes. The ANR function helps to synchronize the camera's data automatically after the network is restored, this function should be supported by device.
byPreviewMode	BYTE	Live view mode: :0-nomal mode, 1-delay mode

Member	Data Type	Description
byStreamID	Array[BYTE]	Stream ID,which consist of letters, digits, and underlines. It is valid when **lChannel** equals to "0xffffffff". The maximum length is 32 bytes (macro definition: STREAM_ID_LEN).
byProtoType	BYTE	Application layer streaming protocol: 0-private protocol (default), 1-RTSP, 2-RTSP stream encryption. The supported protocol of main stream and sub-stream is returned by the structure ***NET_DVR_DEVICEINFO_V30*** (related parameters: **byMainProto** and **bySubProto**). This parameter is valid only when the device supports both the private protocol and RTSP. For RTSP stream encryption, if **dwLinkMode** is 0, the transmission mode is TCP, and the signaling and stream will be encrypted by TLS; if **dwLinkMode** is 1, the transmission mode is UDP, then the signaling will be encrypted by TLS and the stream will be encrypted by SRTP; if **dwLinkMode** is 2, the transmission mode is multicast, then the signaling will be encrypted by TLS and the stream will be encrypted by SRTP; other transmission mode is not supported.
byRes1	BYTE	Reserved.
byVideoCodingType	BYTE	Encoding and decoding type of stream data: 0-genral, 1-raw

Member	Data Type	Description
		data from thermal detector (encryption information of temperature data)
dwDisplayBufNum	DWORD	Maximum frames can be buffered in the PlayCtrl library buffer, parameter value: 1, 6 (default, self-adaptive), 15. If this parameter is set to 0, the value will automatically change to 1.
byNPQMode	BYTE	NPQ mode: 0-directly connected, 1-via stream media
byRes	Array[BYTE]	Reserved, set to 0. The maximum length is 215 bytes.

Remarks

- The parameters **dwStreamType** (stream type), **dwLinkMode** (connection type), **bPassbackRecord** (ANR), **byPreviewMode** (delay live view mode), **byStreamID** (stream ID), should be supported by device.
- The API ***NET_DVR_RealPlay_V40*** supports live view in multicast mode (set **dwLinkMode** to 2) without setting multicast group address. As the lower layer will automatically get the configured multicast group address (**struMulticastIpAddr** in the structure ***NET_DVR_NETCFG_V50***) from the device .
- NPQ (Network Protocol Quality) is a service library to improve the transmission quality of video and audio data by network technology. The transmission is based on UDP, and the transmitted video and audio data is in RTP container format, so the network bandwidth usage can be estimated according to the packet loss rate and RTT of RTCP. And then the stream sender will change the stream encoding strategy and bit rate to meet the current network situation.
- When the value of **dwLinkMode** is 0, and the value of **byVideoCodingType** is 1, it indicates getting raw stream data. The supported types of raw data includes thermal raw data, temperature data, and real-time raw data. The default type is thermal raw data. The temperature data is uploaded in the format of ***STREAM_FRAME_INFO_S*** .

A.30 NET_DVR_PROTO_TYPE

Structure about protocol parameters.

Structure Definition

```
struct{
  DWORD   dwType;
  BYTE    byDescribe[DESC_LEN/*16*/];
}NET_DVR_PROTO_TYPE,*LPNET_DVR_PROTO_TYPE;
```

Members

dwType

Protocol value

byDescribe

Protocol description

Remarks

- The descriptions (**byDescribe**) of different protocol types (**dwType**) are shown in the table below.

```
enum tagNET_DVR_IPC_ENUM_UNIFY{
  ENUM_IPC_PROTOCOL_INVALID = -1,
  ENUM_IPC_PROTOCOL_HIKVISION = 0,      //HIKVISION
  ENUM_IPC_PROTOCOL_PANASONIC = 1,      //PANASONIC
  ENUM_IPC_PROTOCOL_SONY = 2,           //SONY
  ENUM_IPC_PROTOCOL_AXIS = 4,           //AXIS
  ENUM_IPC_PROTOCOL_SANYO = 5,          //SANYO
  ENUM_IPC_PROTOCOL_BOSCH = 6,          //BOSCH
  ENUM_IPC_PROTOCOL_ZAVIO = 7,          //ZAVIO
  ENUM_IPC_PROTOCOL_GRANDEYE,           //GRANDEYE
  ENUM_IPC_PROTOCOL_PROVIDEO = 16,      //PROVIDEO
  ENUM_IPC_PROTOCOL_ARECONT = 10,       //ARECONT
  ENUM_IPC_PROTOCOL_ACTI = 11,          //ACTI
  ENUM_IPC_PROTOCOL_PELCO = 12,         //PELCO
  ENUM_IPC_PROTOCOL_VIVOTEK = 13,       //VIVOTEK
  ENUM_IPC_PROTOCOL_DAHUA = 3,          //DAHUA
  ENUM_IPC_PROTOCOL_SAMSUNG = 15,       //SAMSUNG
  ENUM_IPC_PROTOCOL_PSIA = 17,          //PSIA
  ENUM_IPC_PROTOCOL_ONVIF = 18,         //ONVIF
  ENUM_IPC_PROTOCOL_BRICKCOM = 19,      //BRICKCOM
  ENUM_IPC_PROTOCOL_CANON = 23,         //CANON
  ENUM_IPC_PROTOCOL_HUINT = 32,         //HUINT
  ENUM_IPC_PROTOCOL_INFINOVA = 14,      //INFINOVA
  ENUM_IPC_PROTOCOL_HIK_STD_H264,       //HIKVISION STANDARD H.264
  ENUM_IPC_PROTOCOL_HIK_STD_MPEG4,      //HIKVISION STANDARD MPEG4
  ENUM_IPC_PROTOCOL_SUNELL,             //SUNELL
  ENUM_IPC_PROTOCOL_ATEME,              //ATEME
  ENUM_IPC_PROTOCOL_LAUNCH,             //LAUNCH
  ENUM_IPC_PROTOCOL_YAAN,               //YAAN
  ENUM_IPC_PROTOCOL_BLUESKY,            //BLUESKY
  ENUM_IPC_PROTOCOL_BLUESKYLIMIT,       //BLUESKYLIMIT
  ENUM_IPC_PROTOCOL_TDWY,               //TIANDY
```

```
ENUM_IPC_PROTOCOL_HBGK,             //HBGK
ENUM_IPC_PROTOCOL_SANTACHI,         //SANTACHI
ENUM_IPC_PROTOCOL_HIGHEASY,         //HIGHEASY
ENUM_IPC_PROTOCOL_HANBANG,          //HANBANG
ENUM_IPC_PROTOCOL_SAMSUNG_3120,     //SAMSUNG 3120
ENUM_IPC_PROTOCOL_SAMSUNG_3080,     //SAMSUNG 3080
ENUM_IPC_PROTOCOL_SAMSUNG_2000,     //SAMSUNG 2000
ENUM_IPC_PROTOCOL_SAMSUNG_5200,     //SAMSUNG 5200
ENUM_IPC_PROTOCOL_JINGYUAN,         //JINGYUAN
ENUM_IPC_PROTOCOL_VIDEOTREC,        //VIDEOTREC
ENUM_IPC_PROTOCOL_CHENOVA,          //CHENOVA
ENUM_IPC_PROTOCOL_FENGHUO,          //FENGHUO
ENUM_IPC_PROTOCOL_ZB_5301,          //ZB_5301
ENUM_IPC_PROTOCOL_ZB_5401,          //ZB_5401
ENUM_IPC_PROTOCOL_HAIXIN,           //HISENSE
ENUM_IPC_PROTOCOL_ZHONGYINGXIN,     //ZHONGYINGXIN
ENUM_IPC_PROTOCOL_AVUN,             //AVUN
ENUM_IPC_PROTOCOL_GOVTY,            //GOVTY
ENUM_IPC_PROTOCOL_SAE,              //SAE
ENUM_IPC_PROTOCOL_DONGFANGWANGLI,   //NETPOSA
ENUM_IPC_PROTOCOL_CHANGHONG,        //CHANGHONG
ENUM_IPC_PROTOCOL_H3C,              //H3C
ENUM_IPC_PROTOCOL_BAIAN,            //BAIAN
ENUM_IPC_PROTOCOL_HAT,              //HAT
ENUM_IPC_PROTOCOL_YUANYE,           //YUANYE
ENUM_IPC_PROTOCOL_HIKCARD,          //HIKVISION BOARD CARD
ENUM_IPC_PROTOCOL_HAIXINCAP,        //HISENSE CAPTURE CAMERA
ENUM_IPC_PROTOCOL_WENANCAP,         //WENAN CAPTURE CAMERA
ENUM_IPC_PROTOCOL_XUNMEI,           //XUNMEI
ENUM_IPC_PROTOCOL_BAIWO,            //BAIWO
ENUM_IPC_PROTOCOL_APD,              //APD
ENUM_IPC_PROTOCOL_REACHDEV,         //REACHDEV
ENUM_IPC_PROTOCOL_XUNMEI_DAHUA,     //XUNMEI_DAHUA OEM
ENUM_IPC_PROTOCOL_HUANGHE,          //HUANGHE
ENUM_IPC_PROTOCOL_LIANCHEN,         //LIANCHEN
ENUM_IPC_PROTOCOL_CHENGYE,          //CHENGYE
ENUM_IPC_PROTOCOL_VISIONDIGI,       //VISIONDIGI
ENUM_IPC_PROTOCOL_HENGHE,           //HENGHE
ENUM_IPC_PROTOCOL_KODAK,            //KODAK
ENUM_IPC_PROTOCOL_AIRONIX,          //AIRONIX
ENUM_IPC_PROTOCOL_LG,               //LG
ENUM_IPC_PROTOCOL_HASEE,            //HASEE
ENUM_IPC_PROTOCOL_8000ME,           //8000ME
ENUM_IPC_PROTOCOL_POVITEL,          //POVITEL
ENUM_IPC_PROTOCOL_YIVIEW,           //YIVIEW
ENUM_IPC_PROTOCOL_TIANYUE,          //TIANYUE
ENUM_IPC_PROTOCOL_HOWELL,           //HOWELL
ENUM_IPC_PROTOCOL_WAPA,             //WAPA
ENUM_IPC_PROTOCOL_SANLE,            //SANLE
ENUM_IPC_PROTOCOL_HIKCARD_ENCRYPTION,  //ENCRYPTED HIKVISION BOARD CARD
ENUM_IPC_PROTOCOL_JUNSDA,           //JUNSDA
ENUM_IPC_PROTOCOL_LIYUAN,           //LIYUAN
```

```
  ENUM_IPC_PROTOCOL_XINCHAN,          //XINCHAN
  ENUM_IPC_PROTOCOL_BITE,             //BITE
  ENUM_IPC_PROTOCOL_MEIAN,            //MEIAN
  ENUM_IPC_PROTOCOL_ROSEEK,           //ROSEEK
  ENUM_IPC_PROTOCOL_AEBELL,           //AEBELL
  ENUM_IPC_PROTOCOL_JSL_ST,           //JSL ST
  ENUM_IPC_PROTOCOL_VIMICRO,          //VIMICRO
  ENUM_IPC_PROTOCOL_TYPE,             //MAX MANUFACTURER TYPE
}NET_DVR_IPC_ENUM_UNIFY

enum _NET_DVR_IPC_ENUM_{
  ENUM_BUSINESS_INVALID = -1,
  ENUM_BUSINESS_HIKVISION = 0,
  ENUM_BUSINESS_PANASONIC,
  ENUM_BUSINESS_SONY,
  ENUM_BUSINESS_AXIS,
  ENUM_BUSINESS_SANYO,
  ENUM_BUSINESS_BOSCH,
  ENUM_BUSINESS_ZAVIO,
  ENUM_BUSINESS_GRANDEYE,
  ENUM_BUSINESS_PROVIDEO,
  ENUM_BUSINESS_ARECONT,       //9
  ENUM_BUSINESS_ACTI,
  ENUM_BUSINESS_PELCO,
  ENUM_BUSINESS_VIVOTEK,
  ENUM_BUSINESS_INFINOVA,
  ENUM_BUSINESS_DAHUA,         //14
  ENUM_BUSINESS_HIK_STD_H264 = 0x20,
  ENUM_BUSINESS_HIK_STD_MPEG4,
  ENUM_BUSINESS_SUNELL,        //SUNELL
  ENUM_BUSINESS_ATEME,
  ENUM_BUSINESS_LAUNCH,        //LAUNCH
  ENUM_BUSINESS_YAAN,          //YAAN
  ENUM_BUSINESS_BLUESKY,       //BLUESKY
  ENUM_BUSINESS_BLUESKYLIMIT,  //BLUESKYLIMIT
  ENUM_BUSINESS_TDWY,          //TIANDY
  ENUM_BUSINESS_HBGK,          //HBGK
  ENUM_BUSINESS_SANTACHI,      //SANTACHI
  ENUM_BUSINESS_HIGHEASY,      //HIGHEASY
  ENUM_BUSINESS_SAMSUNG,
  ENUM_BUSINESS_URL_RTSP = 0x40,//Streaming via URL
  ENUM_BUSINESS_ONVIF,
  ENUM_MAX_BUSINESS_TYPE,      //Maximum manufacturer type
}NET_DVR_IPC_ENUM
```

- If the device supports unified network camera protocol, the supported protocol types are enumerated in NET_DVR_IPC_ENUM_UNIFY; otherwise, the supported protocol types are enumerated in NET_DVR_IPC_ENUM.

A.31 NET_DVR_PU_STREAM_CFG_V41

Dynamic decoding parameter structure.

Structure Definition

```
struct{
  DWORD                 dwSize;
  BYTE                  byStreamMode;
  BYTE                  byStreamEncrypt;
  BYTE                  byRes1[2];
  NET_DVR_DEC_STREAM_MODE    uDecStreamMode;
  DWORD                 dwDecDelayTime;
  BYTE                  sStreamPassword[STREAM_PASSWD_LEN/*12*/];
  BYTE                  byRes2[48];
}NET_DVR_PU_STREAM_CFG_V41,*LPNET_DVR_PU_STREAM_CFG_V41;
```

Members

dwSize

Structure size

byStreamMode

Streaming mode: 0-invalid, 1-get stream by IP address or domain name, 2-get stream by URL, 3-get stream from device by DDNS.

byStreamEncrypt

Whether to encrypt the stream: 0-no, 1-yes.

byRes1

Reserved, set to 0

uDecStreamMode

Streaming configuration parameters, see the structure ***NET_DVR_DEC_STREAM_MODE*** for details.

dwDecDelayTime

Decoding delay time duration, unit: millisecond.

sStreamPassword

Stream encryption password. The sensitive information should be encrypted.

byRes2

Reserved, set to 0.

A.32 NET_DVR_PU_STREAM_URL

Configuration parameter structure about getting stream by URL.

Structure Definition

```
struct{
  BYTE    byEnable;
  BYTE    strURL[240];
  BYTE    byTransPortocol;
  WORD    wIPID;
  BYTE    byChannel;
  BYTE    byRes[7];
}NET_DVR_PU_STREAM_URL,*LPNET_DVR_PU_STREAM_URL;
```

Members

byEnable

Enable/disable getting stream by URL: 0-disable, 1-enable.

strURL

Stream URL

byTransPortocol

Transfer protocol type: 0-TCP, 1-UDP

wIPID

Device ID= iDevInfoIndex + iGroupNO*64 +1

byChannel

Device channel No.

byRes

Reserved, set to 0.

Remarks

The stream URL format is {rtsp://ip[:port]/urlExtension}[?username=username][?password=password][?linkmode=linkmode]. You can also customize the URL format if the network camera supports custom URL.

A.33 NET_DVR_STREAM_MEDIA_SERVER

Structure about stream media server parameters.

Structure Definition

```
struct{
  BYTE    byValid;
  BYTE    byRes1[3];
  BYTE    byAddress[MAX_DOMAIN_NAME/*64*/];
  WORD    wDevPort;
  BYTE    byTransmitType;
  BYTE    byRes2[5];
}NET_DVR_STREAM_MEDIA_SERVER,*LPNET_DVR_STREAM_MEDIA_SERVER;
```

Members

byValid

Enable/disable stream media server to get stream: 0-disable, 1-enable.

byRes1

Reserved, set to 0.

byAddress

IP address or domain name of stream media server

wDevPort

Port number of stream media server

byTransmitType

Transfer protocol type: 0-TCP, 1-UDP

byRes2

Reserved, set to 0.

See Also

NET_DVR_DEC_STREAM_DEV_EX
NET_DVR_DEC_DDNS_DEV

A.34 NET_DVR_STREAM_MODE

Structure about steaming mode configuration.

Structure Definition

```
struct{
  BYTE                  byGetStreamType;
  BYTE                  byRes[3];
  NET_DVR_GET_STREAM_UNION  uGetStream;
}NET_DVR_STREAM_MODE,*LPNET_DVR_STREAM_MODE;
```

Members

byGetStreamType

Streaming mode:

- 0-get stream from device directly
- 1-get stream from stream media server
- 2-get stream from device after getting the IP address by IPServer
- 3-get the device IP address by IPServer, and then get stream from stream media server
- 4-get stream from stream media server by URL
- 5-get steam from device after connecting the device via hkDDNS
- 6-get steam from device directly (extended)

byRes

Reserved, set to 0

uGetStream

Union of streaming modes, refer to ***NET_DVR_GET_STREAM_UNION*** for details.

See Also

NET_DVR_IPPARACFG_V40

A.35 STREAM_FRAME_INFO_S

Stream Frame Data Structure

Member	Data Type	Description
u32MagicNo	UINT	ASCLL code of "FRMI".
u32HeaderSize	UINT	Structure size.
u32StreamType	UINT	Data types, which are enumerated in ***STREAM_TYPE_E*** .
u32StreamLen	UINT	Data size.
/	union	Real-time data union.
/	union	Additional information union.

Member	Data Type	Description
res	Array[UINT]	Reserved. The maximum length is 12 bytes.
u32CrcVal	UINT	Verification code of structure, which is used to verify the data before the structure.

Table A-1 RT Data Union

Member	Data Type	Description
stRTDataInfo;	***STREAM_RT_DATA_INFO_S***	Real-time data details.
u32Res1	Array[UINT]	Reserved. The maximum length is 12 bytes.

Table A-2 Additional Information Union

Member	Data Type	Description
stFsSuppleInfo	***STREAM_FS_SUPPLE_INFO_S***	Additional details.
u32Res2	Array[UINT]	Reserved. The maximum length is 4 bytes.

A.36 STREAM_FS_SUPPLE_INFO_S

Additional Details Structure

Member	Data Type	Description
u32TmDataMode	UINT	Data size mode: 0: 4-byte, 1: 2-byte.
u32TmScale	UINT	Temperature scale.
u32TmOffset	UINT	Temperature offset. Currently, the value is 0.
res	UINT	One byte reserved.

A.37 STREAM_RT_DATA_INFO_S

Structure about Real-Time Data Details

Member	Data Type	Description
u32RTDataType	UINT	Data type, 1: 14-bit raw data, 2: temperature data, 3: YUV data.
u32FrmNum	UINT	Number of frames.
u32StdStamp	UINT	Relative time stamp.
stTime	***DATE_TIME***	Absolute time stamp.
u32Width	UINT	Width.
u32Height	UINT	Height.
u32Len	UINT	Length.
u32Fps	UINT	Frame rate.
u32Chan	UINT	Channel No.

A.38 STREAM_TYPE_E

Stream Type Enumeration

Enumeration Type	Macro Definition Value	Description
ENUM_STREAM_H264_TYPE	0	H.264 video stream data
ENUM_STREAM_H265_TYPE	1	H.265 video stream data.
ENUM_STREAM_JPEG_TYPE	2	JPEG picture data
ENUM_STREAM_AUD_TYPE	3	Audio data.
ENUM_STREAM_META_TYPE	4	Metadata.
ENUM_STREAM_UPDATE_TYPE	5	Change data.
ENUM_STREAM_RTDATA_TYPE	6	Real-time data.

Appendix B. Device Network SDK Errors

The errors that may occur during the device network SDK integration are listed here for reference. You can search for the error descriptions according to the error codes or names returned by a specific API (NET_DVR_GetLastError or NET_DVR_GetErrorMsg).

General Errors

Error Name	Error Code	Error Description
NET_DVR_NOERROR	0	No error.
NET_DVR_PASSWORD_ERROR	1	Incorrect user name or password.
NET_DVR_NOENOUGHPRI	2	No permission.
NET_DVR_NOINIT	3	Uninitialized.
NET_DVR_CHANNEL_ERROR	4	Incorrect channel No.
NET_DVR_OVER_MAXLINK	5	No more device can be connected.
NET_DVR_VERSIONNOMATCH	6	Version mismatches.
NET_DVR_NETWORK_FAIL_CONNECT	7	Connecting to device failed. The device is offline or network connection timed out.
NET_DVR_NETWORK_SEND_ERROR	8	Sending data to device failed.
NET_DVR_NETWORK_RECV_ERROR	9	Receiving data from device failed.
NET_DVR_NETWORK_RECV_TIMEOUT	10	Receiving data from device timed out.
NET_DVR_NETWORK_ERRORDATA	11	The data sent to the device is illegal, or the data received from the device error. E.g. The input data is not supported by the device for remote configuration.
NET_DVR_ORDER_ERROR	12	API calling order error.
NET_DVR_OPERNOPERMIT	13	No permission for this operation.
NET_DVR_COMMANDTIMEOUT	14	Executing device command timed out.
NET_DVR_ERRORSERIALPORT	15	Incorrect serial port No. The specified serial port does not exist.

Error Name	Error Code	Error Description
NET_DVR_ERRORALARMPORT	16	Alarm port No. error. The alarm input or output port of the specified device does not exist.
NET_DVR_PARAMETER_ERROR	17	Incorrect parameter. The input or output parameters of the SDK API is empty, or the parameter value or format is invalid.
NET_DVR_CHAN_EXCEPTION	18	Device channel is in exception status.
NET_DVR_NODISK	19	No HDD in the device.
NET_DVR_ERRORDISKNUM	20	Incorrect HDD No.
NET_DVR_DISK_FULL	21	HDD full.
NET_DVR_DISK_ERROR	22	HDD error.
NET_DVR_NOSUPPORT	23	Device does not support this function.
NET_DVR_BUSY	24	Device is busy.
NET_DVR_MODIFY_FAIL	25	Failed to edit device parameters.
NET_DVR_PASSWORD_FORMAT_ ERROR	26	Invalid password format.
NET_DVR_DISK_FORMATING	27	HDD is formatting. Failed to startup.
NET_DVR_DVRNORESOURCE	28	Insufficient device resources.
NET_DVR_DVROPRATEFAILED	29	Device operation failed.
NET_DVR_OPENHOSTSOUND_FAIL	30	Failed to collect local audio data or open audio output during two-way audio and broadcast.
NET_DVR_DVRVOICEOPENED	31	Two-way audio channel is occupied.
NET_DVR_TIMEINPUTERROR	32	Incorrect time input.
NET_DVR_NOSPECFILE	33	No video file for playback.
NET_DVR_CREATEFILE_ERROR	34	Failed to create a file during local recording, saving picture, getting configuration file or downloading video file remotely.
NET_DVR_FILEOPENFAIL	35	Failed to open a file. The file does not exist or directory error.

Error Name	Error Code	Error Description
NET_DVR_OPERNOTFINISH	36	Operation conflicted.
NET_DVR_GETPLAYTIMEFAIL	37	Failed to get the current played time.
NET_DVR_PLAYFAIL	38	Failed to play.
NET_DVR_FILEFORMAT_ERROR	39	Invalid file format.
NET_DVR_DIR_ERROR	40	File directory error.
NET_DVR_ALLOC_RESOURCE_ERROR	41	Allocating resources failed.
NET_DVR_AUDIO_MODE_ERROR	42	Invalid sound card mode error. The opened sound play mode and configured mode mismatched.
NET_DVR_NOENOUGH_BUF	43	Insufficient buffer for receiving data or saving picture.
NET_DVR_CREATESOCKET_ERROR	44	Failed to create SOCKET.
NET_DVR_SETSOCKET_ERROR	45	Failed to set SOCKET.
NET_DVR_MAX_NUM	46	No more registrations and live views can be connected.
NET_DVR_USERNOTEXIST	47	The user doest not exist. The user ID is logged out or unavailable.
NET_DVR_WRITEFLASHERROR	48	Writing FLASH error during device upgrade.
NET_DVR_UPGRADEFAIL	49	Failed to upgrade device. Network problem or language mismatches.
NET_DVR_CARDHAVEINIT	50	The decoding card is already initialized.
NET_DVR_PLAYERFAILED	51	Failed to call the function of player SDK.
NET_DVR_MAX_USERNUM	52	No more users can log in to.
NET_DVR_GETLOCALIPANDMACFAIL	53	Failed to get the IP address or physical address of local PC.
NET_DVR_NOENCODEING	54	The decoding function of this channel is not enabled.
NET_DVR_IPMISMATCH	55	IP address mismatches.

Error Name	Error Code	Error Description
NET_DVR_MACMISMATCH	56	MAC address mismatches.
NET_DVR_UPGRADELANGMISMATCH	57	The language of upgrade file mismatches.
NET_DVR_MAX_PLAYERPORT	58	No more channels can be started to play.
NET_DVR_NOSPACEBACKUP	59	Insufficient space to back up file.
NET_DVR_NODEVICEBACKUP	60	No backup device found.
NET_DVR_PICTURE_BITS_ERROR	61	Picture pixel bit mismatches. Only 24 bits are allowed.
NET_DVR_PICTURE_DIMENSION_ ERROR	62	Too large picture. The height*width should be less than 128x256.
NET_DVR_PICTURE_SIZ_ERROR	63	Too large picture. The picture size should be smaller than 100K.
NET_DVR_LOADPLAYERSDKFAILED	64	Failed to load the player(PlayCtrl.dll, SuperRender.dll, AudioRender.dll) to the current directory.
NET_DVR_LOADPLAYERSDKPROC_ ERROR	65	Failed to find the function in player SDK.
NET_DVR_LOADDSSDKFAILED	66	Failed to load the DS SDK to the current directory.
NET_DVR_LOADDSSDKPROC_ERROR	67	Failed to find the function in the DS SDK.
NET_DVR_DSSDK_ERROR	68	Failed to call the API in the hardware decoding library.
NET_DVR_VOICEMONOPOLIZE	69	The sound card is exclusive.
NET_DVR_JOINMULTICASTFAILED	70	Failed to join to multicast group.
NET_DVR_CREATEDIR_ERROR	71	Failed to create log file directory.
NET_DVR_BINDSOCKET_ERROR	72	Failed to bind socket.
NET_DVR_SOCKETCLOSE_ERROR	73	Socket disconnected. Network disconnected or the destination is unreachable.

Error Name	Error Code	Error Description
NET_DVR_USERID_ISUSING	74	Operation is executing. Failed to log out.
NET_DVR_SOCKETLISTEN_ERROR	75	Failed to listen.
NET_DVR_PROGRAM_EXCEPTION	76	Program exception.
NET_DVR_WRITEFILE_FAILED	77	Failed to write file during local recording, downloading file remotely or saving picture.
NET_DVR_FORMAT_READONLY	78	The HDD is read-only. Formatting is forbidden.
NET_DVR_WITHSAMEUSERNAME	79	The user name already exists.
NET_DVR_DEVICETYPE_ERROR	80	Device model mismatches when importing parameters.
NET_DVR_LANGUAGE_ERROR	81	Language mismatches when importing parameters.
NET_DVR_PARAVERSION_ERROR	82	Software version mismatches when importing parameters.
NET_DVR_IPCHAN_NOTALIVE	83	The external IP channel is offline live view.
NET_DVR_RTSP_SDK_ERROR	84	Failed to load StreamTransClient.dll.
NET_DVR_CONVERT_SDK_ERROR	85	Failed to load SystemTransform.dll.
NET_DVR_IPC_COUNT_OVERFLOW	86	No more IP channels can access to.
NET_DVR_MAX_ADD_NUM	87	No more video tags can be added.
NET_DVR_PARAMMODE_ERROR	88	Invalid parameter mode of image enhancement.
NET_DVR_CODESPITTER_OFFLINE	89	Code distributer is offline.
NET_DVR_BACKUP_COPYING	90	Device is backing up.
NET_DVR_CHAN_NOTSUPPORT	91	This operation is not supported by the channel.
NET_DVR_CALLINEINVALID	92	The height line is too concentrated, or the length line is not inclined enough.

Error Name	Error Code	Error Description
NET_DVR_CALCANCELCONFLICT	93	Cancel calibration conflict, if the rule and global actual size filter are configured.
NET_DVR_CALPOINTOUTRANGE	94	The calibration point is out of limitation.
NET_DVR_FILTERRECTINVALID	95	The size filter does not meet the requirement.
NET_DVR_DDNS_DEVOFFLINE	96	Device has not registered to DDNS.
NET_DVR_DDNS_INTER_ERROR	97	DDNS internal error.
NET_DVR_FUNCTION_NOT_SUPPORT_OS	98	This function is not supported by this Operating system.
NET_DVR_DEC_CHAN_REBIND	99	Decoding channel binding display output is limited.
NET_DVR_INTERCOM_SDK_ERROR	100	Failed to load the two-way audio SDK of the current directory.
NET_DVR_NO_CURRENT_UPDATEFILE	101	No correct upgrade packet.
NET_DVR_USER_NOT_SUCC_LOGIN	102	Login failed.
NET_DVR_USE_LOG_SWITCH_FILE	103	The log switch file is under using.
NET_DVR_POOL_PORT_EXHAUST	104	No port can be bound in the port pool.
NET_DVR_PACKET_TYPE_NOT_SUPPORT	105	Incorrect stream packaging format.
NET_DVR_IPPARA_IPID_ERROR	106	Incorrect IPID for IP access configuration.
NET_DVR_LOAD_HCPREVIEW_SDK_ERROR	107	Failed to load the live view component.
NET_DVR_LOAD_HCVOICETALK_SDK_ERROR	108	Failed to load the audio component.
NET_DVR_LOAD_HCALARM_SDK_ERROR	109	Failed to load the alarm component.
NET_DVR_LOAD_HCPLAYBACK_SDK_ERROR	110	Failed to load the playback component.

Error Name	Error Code	Error Description
NET_DVR_LOAD_HCDISPLAY_SDK_ ERROR	111	Failed to load the display component.
NET_DVR_LOAD_HCINDUSTRY_SDK_ ERROR	112	Failed to load application component.
NET_DVR_LOAD_ HCGENERALCFGMGR_SDK_ERROR	113	Failed to load the general configuration management component.
NET_DVR_CORE_VER_MISMATCH	121	Component version and core version mismatched when loading the component singly.
NET_DVR_CORE_VER_MISMATCH_ HCPREVIEW	122	Live view component version and core version mismatched.
NET_DVR_CORE_VER_MISMATCH_ HCVOICETALK	123	Audio component version and the core version mismatched.
NET_DVR_CORE_VER_MISMATCH_ HCALARM	124	Alarm component version and the core version mismatched.
NET_DVR_CORE_VER_MISMATCH_ HCPLAYBACK	125	Playback component version and the core version mismatched.
NET_DVR_CORE_VER_MISMATCH_ HCDISPLAY	126	Display component version and the core version mismatched.
NET_DVR_CORE_VER_MISMATCH_ HCINDUSTRY	127	Application component version and the core version mismatched.
NET_DVR_CORE_VER_MISMATCH_ HCGENERALCFGMGR	128	General configuration management component version and the core version mismatched.
NET_DVR_COM_VER_MISMATCH_ HCPREVIEW	136	Live view component version and SDK version mismatched.
NET_DVR_COM_VER_MISMATCH_ HCVOICETALKy	137	Audio component version and SDK version mismatched.
NET_DVR_COM_VER_MISMATCH_ HCALARM	138	Alarm component version and SDK version mismatched.
NET_DVR_COM_VER_MISMATCH_ HCPLAYBACK	139	Playback component version and SDK version mismatched.

Error Name	Error Code	Error Description
NET_DVR_COM_VER_MISMATCH_ HCDISPLAY	140	Display component version and SDK version mismatched.
NET_DVR_COM_VER_MISMATCH_ HCINDUSTRY	141	Application component version and SDK version mismatched.
NET_DVR_COM_VER_MISMATCH_ HCGENERALCFGMGR	142	General configuration management component version and SDK version mismatched.
NET_DVR_ALIAS_DUPLICATE	150	Duplicated alias(for HiDDNS configuration).
NET_DVR_USERNAME_NOT_EXIST	152	User name does not exist (error code of network camera and network speed dome with version from 5.1.7 to 5.3.1).
NET_ERR_USERNAME_LOCKED	153	The user name is locked.
NET_DVR_INVALID_USERID	154	Invalid user ID.
NET_DVR_LOW_LOGIN_VERSION	155	The version is too low.
NET_DVR_LOAD_LIBEAY32_DLL_ ERROR	156	Failed to load libeay32.dl.l
NET_DVR_LOAD_SSLEAY32_DLL_ ERROR	157	Failed to load ssleay32.dll.
NET_ERR_LOAD_LIBICONV	158	Failed to load libiconv.dll.
NET_ERR_SSL_CONNECT_FAILED	159	Connecting to SSL failed.
NET_DVR_TEST_SERVER_FAIL_ CONNECT	165	Failed to connect to test server.
NET_DVR_NAS_SERVER_INVALID_DIR	166	Failed to load NAS server to the directory, Invalid directory, or incorrect user name and password.
NET_DVR_NAS_SERVER_ NOENOUGH_PRI	167	Failed to load NAS server th the directory. No permission.
NET_DVR_EMAIL_SERVER_NOT_ CONFIG_DNS	168	The server uses domain name without configuring DNS, the domain name may be invalid.

Error Name	Error Code	Error Description
NET_DVR_EMAIL_SERVER_NOT_CONFIG_GATEWAY	169	No gateway configured. Sending email may be failed.
NET_DVR_TEST_SERVER_PASSWORD_ERROR	170	Incorrect user name or password of test server.
NET_DVR_EMAIL_SERVER_CONNECT_EXCEPTION_WITH_SMTP	171	Interaction exception between device and SMTP server.
NET_DVR_FTP_SERVER_FAIL_CREATE_DIR	172	FTP server creating directory failed.
NET_DVR_FTP_SERVER_NO_WRITE_PIR	173	FTP server has no wirting permission.
NET_DVR_IP_CONFLICT	174	IP conflicted.
NET_DVR_INSUFFICIENT_STORAGEPOOL_SPACE	175	Storage pool space is full.
NET_DVR_STORAGEPOOL_INVALID	176	Invalid cloud storage pool. No storage pool configured or incorrect storage pool ID.
NET_DVR_EFFECTIVENESS_REBOOT	177	Restart to take effect.
NET_ERR_ANR_ARMING_EXIST	178	The ANR arming connection already exists(the error will be returned when arming with ANR function if the private SDK protocol arming connection is established).
NET_ERR_UPLOADLINK_EXIST	179	The ANR uploading connection already exists(the error will be returned when EHome protocol and private SDK protocol do not support ANR at the same time).
NET_ERR_INCORRECT_FILE_FORMAT	180	The imported file format is incorrect.
NET_ERR_INCORRECT_FILE_CONTENT	181	The imported file content is incorrect.
NET_ERR_MAX_HRUDP_LINK	182	No more HRUDP can be connected to device.
NET_ERR_MAX_PORT_MULTIPLEX	183	Maximum number of multiplexed ports reaches.
NET_ERR_CREATE_PORT_MULTIPLEX	184	Creating port multiplier failed.

Error Name	Error Code	Error Description
NET_DVR_NONBLOCKING_CAPTURE_NOTSUPPORT	185	Non-blocking picture capture is not supported.
NET_SDK_ERR_FUNCTION_INVALID	186	Invalid function. The asynchronous mode is enabled.
NET_SDK_ERR_MAX_PORT_MULTIPLEX	187	Maximum number of multiplex ports reached.
NET_DVR_INVALID_LINK	188	Link has not been created or the link is invalid.
NET_DVR_NAME_NOT_ONLY	200	This name already exists.
NET_DVR_OVER_MAX_ARRAY	201	The number of RAID reaches the upper-limit.
NET_DVR_OVER_MAX_VD	202	The number of virtual disk reaches the upper-limit.
NET_DVR_VD_SLOT_EXCEED	203	The virtual disk slots are full.
NET_DVR_PD_STATUS_INVALID	204	The physical disk for rebuilding RAID is error.
NET_DVR_PD_BE_DEDICATE_SPARE	205	The physical disk for rebuilding RAID is specified as hot spare.
NET_DVR_PD_NOT_FREE	206	The physical disk for rebuilding RAID is busy.
NET_DVR_CANNOT_MIG2NEWMODE	207	Failed to migrate the current RAID type to the new type.
NET_DVR_MIG_PAUSE	208	Migration is paused.
NET_DVR_MIG_ABOUTED	209	Migration is cancelled.
NET_DVR_EXIST_VD	210	Failed to delete RAID. Virtual disk exists in the RAID.
NET_DVR_TARGET_IN_LD_FUNCTIONAL	211	Target physical disk is a part of the virtual disk and it is working normally.
NET_DVR_HD_IS_ASSIGNED_ALREADY	212	The specified physical disk is allocated as virtual disk.
NET_DVR_INVALID_HD_COUNT	213	The number of physical disks and specified RAID level mismatched.

Error Name	Error Code	Error Description
NET_DVR_LD_IS_FUNCTIONAL	214	The RAID is normal. Failed to rebuild.
NET_DVR_BGA_RUNNING	215	Background task is executing.
NET_DVR_LD_NO_ATAPI	216	Failed to create virtual disk by ATAPI disk.
NET_DVR_MIGRATION_NOT_NEED	217	There is no need to migrate the RAID.
NET_DVR_HD_TYPE_MISMATCH	218	The physical disk type is not allowed.
NET_DVR_NO_LD_IN_DG	219	No virtual disk. Operation failed.
NET_DVR_NO_ROOM_FOR_SPARE	220	Insufficient disk space. Failed to allocate the disk as hot spare.
NET_DVR_SPARE_IS_IN_MULTI_DG	221	The disk is already allocated as the hot spare of one RAID.
NET_DVR_DG_HAS_MISSING_PD	222	No disk in the RAID.
NET_DVR_NAME_EMPTY	223	The name is empty.
NET_DVR_INPUT_PARAM	224	Incorrect input parameters.
NET_DVR_PD_NOT_AVAILABLE	225	The physical disk is not available.
NET_DVR_ARRAY_NOT_AVAILABLE	226	The RAID is not available.
NET_DVR_PD_COUNT	227	Incorrect number of physical disks.
NET_DVR_VD_SMALL	228	Insufficient virtual disk space.
NET_DVR_NO_EXIST	229	Not exist.
NET_DVR_NOT_SUPPORT	230	This operation is not supported.
NET_DVR_NOT_FUNCTIONAL	231	The RAID status is exception.
NET_DVR_DEV_NODE_NOT_FOUND	232	The device node of virtual disk does not exist.
NET_DVR_SLOT_EXCEED	233	No more slots are allowed.
NET_DVR_NO_VD_IN_ARRAY	234	No virtual disk exists in the RAID.
NET_DVR_VD_SLOT_INVALID	235	Invalid virtual disk slot.
NET_DVR_PD_NO_ENOUGH_SPACE	236	Insufficient physical disk space.
NET_DVR_ARRAY_NONFUNCTION	237	Only the RAID in normal status supports to be migrated.

Error Name	Error Code	Error Description
NET_DVR_ARRAY_NO_ENOUGH_ SPACE	238	Insufficient RAID space.
NET_DVR_STOPPING_SCANNING_ ARRAY	239	Pulling disk out safely or rescanning.
NET_DVR_NOT_SUPPORT_16T	240	Creating RAID with size larger than 16T is not supported.
NET_DVR_ERROR_DEVICE_NOT_ ACTIVATED	250	The device is not activated (login failed.)
NET_DVR_ERROR_RISK_PASSWORD	251	Risky password.
NET_DVR_ERROR_DEVICE_HAS_ ACTIVATED	252	The device is already activated.
NET_DVR_ID_ERROR	300	The configured ID is invalid.
NET_DVR_POLYGON_ERROR	301	Invalid polygon shape.
NET_DVR_RULE_PARAM_ERROR	302	Invalid rule parameters.
NET_DVR_RULE_CFG_CONFLICT	303	Configured information conflicted.
NET_DVR_CALIBRATE_NOT_READY	304	No calibration information.
NET_DVR_CAMERA_DATA_ERROR	305	Invalid camera parameters.
NET_DVR_CALIBRATE_DATA_UNFIT	306	Invalid inclination angle for calibration.
NET_DVR_CALIBRATE_DATA_ CONFILICT	307	Calibration error.
NET_DVR_CALIBRATE_CALC_FAIL	308	Failed to calculate calibration parameter values of camera.
NET_DVR_CALIBRATE_LINE_OUT_ RECT	309	The inputted calibration line exceeds the external sample rectangle.
NET_DVR_ENTER_RULE_NOT_READY	310	No region entrance is configured.
NET_DVR_AID_RULE_NO_INCLUDE_ LANE	311	No lane configured in the traffic event rull(especially for traffic jam or driving against the traffic).
NET_DVR_LANE_NOT_READY	312	Lane not configured.
NET_DVR_RULE_INCLUDE_TWO_WAY	313	Two different directions are contained in event rule.

Error Name	Error Code	Error Description
NET_DVR_LANE_TPS_RULE_CONFLICT	314	Lane and data rule conflicted.
NET_DVR_NOT_SUPPORT_EVENT_TYPE	315	This event type is not supported.
NET_DVR_LANE_NO_WAY	316	The lane has no direction.
NET_DVR_SIZE_FILTER_ERROR	317	Invalid size of filter frame.
NET_DVR_LIB_FFL_NO_FACE	318	No face picture exists in the image inputted when positioning feature point.
NET_DVR_LIB_FFL_IMG_TOO_SMALL	319	The inputted image is too small when positioning feature point.
NET_DVR_LIB_FD_IMG_NO_FACE	320	No face picture exists in the image inputted when detecting single face picture.
NET_DVR_LIB_FACE_TOO_SMALL	321	Face picture is too small when building model.
NET_DVR_LIB_FACE_QUALITY_TOO_BAD	322	The face picture quality is too poor when building model.
NET_DVR_KEY_PARAM_ERR	323	The configured advanced parameter is incorrect.
NET_DVR_CALIBRATE_DATA_ERR	324	Calibration sample number error, or data value error, or the sample points are beyond the horizontal line.
NET_DVR_CALIBRATE_DISABLE_FAIL	325	Canceling calibration is not allowed for configured rules.
NET_DVR_VCA_LIB_FD_SCALE_OUTRANGE	326	The minimum width and height of maximum filter frame are twice or more larger than the maximum width and height of minimum filter frame.
NET_DVR_LIB_FD_REGION_TOO_LARGE	327	Too large detection region. The maximum region should be 2/3 of the image.
NET_DVR_TRIAL_OVERDUE	328	Trial period is ended.
NET_DVR_CONFIG_FILE_CONFLICT	329	Device type and configuration file conflicted.

Error Name	Error Code	Error Description
NET_DVR_FR_FPL_FAIL	330	Failed to positioning face feature points.
NET_DVR_FR_IQA_FAIL	331	Failed to test face picture quality.
NET_DVR_FR_FEM_FAIL	332	Failed to extract the face feature points.
NET_DVR_FPL_DT_CONF_TOO_LOW	333	The face detection validity is too low when positioning face feature points.
NET_DVR_FPL_CONF_TOO_LOW	334	The validity of feature points positionong is too low.
NET_DVR_E_DATA_SIZE	335	Data size mismatches.
NET_DVR_FR_MODEL_VERSION_ERR	336	Incorrect model version in face model library.
NET_DVR_FR_FD_FAIL	337	Failed to detect face in the face recognition library.
NET_DVR_FA_NORMALIZE_ERR	338	Failed to normalize face attribute.
NET_DVR_DOG_PUSTREAM_NOT_MATCH	339	Dongle type and camera type mismatched.
NET_DVR_DEV_PUSTREAM_NOT_MATCH	340	Camera version mismatches.
NET_DVR_PUSTREAM_ALREADY_EXISTS	341	This camera is already added to other channels of devices.
NET_DVR_SEARCH_CONNECT_FAILED	342	Failed to connect to face retrieval server.
NET_DVR_INSUFFICIENT_DISK_SPACE	343	Insufficient storage space.
NET_DVR_DATABASE_CONNECTION_FAILED	344	Failed to connect to database.
NET_DVR_DATABASE_ADM_PW_ERROR	345	Incorrect database user name and password.
NET_DVR_DECODE_YUV	346	Decoding failed.
NET_DVR_IMAGE_RESOLUTION_ERROR	347	Invalid picture resolution

Error Name	Error Code	Error Description
NET_DVR_CHAN_WORKMODE_ ERROR	348	Invalid channel working mode.
NET_ERROR_TRUNK_LINE	711	Sub system is configured as the trunk line.
NET_ERROR_MIXED_JOINT	712	Mixed joint is not supported.
NET_ERROR_DISPLAY_SWITCH	713	Switch of display channel is not supported.
NET_ERROR_USED_BY_BIG_SCREEN	714	Decoded resource is occupied by the big screen.
NET_ERROR_USE_OTHER_DEC_ RESOURCE	715	Using resources of other sub system is not allowed.
NET_ERROR_SCENE_USING	717	The scene is being used.
NET_ERR_NO_ENOUGH_DEC_ RESOURCE	718	Insufficient resources for decoding.
NET_ERR_NO_ENOUGH_FREE_ SHOW_RESOURCE	719	Insufficient resources for display.
NET_ERR_NO_ENOUGH_VIDEO_ MEMORY	720	Insufficient video storage resources.
NET_ERR_MAX _VIDEO_NUM	721	Insufficient resources for multiple channels.
NET_ERR_WINDOW_COVER_FREE_ SHOW_AND_NORMAL	722	Windows cover free display output channel and normal output channel.
NET_ERR_FREE_SHOW_WINDOW_ SPLIT	723	Window division is not supported for free display windows.
NET_ERR_INAPPROPRIATE_ WINDOW_FREE_SHOW	724	For the windows whose number is not integral multiple of the number of output channels, free display is not supported.
NET_DVR_TRANSPARENT_WINDOW_ NOT_SUPPORT_SPLIT	725	For windows whose transparency configuration is enabled, window division is not supported.
NET_DVR_SPLIT_WINDOW_NOT_ SUPPORT_TRANSPARENT	726	For windows whose window division is enabled, transparency configuration is not supported.

Error Name	Error Code	Error Description
NET_ERR_TERMINAL_BUSY	780	The terminal busy.
NET_DVR_FUNCTION_RESOURCE_ USAGE_ERROR	791	Failed to enable this function. The resources is occupied by other functions.
NET_DVR_DEV_NET_OVERFLOW	800	Network traffic is out of the limitation.
NET_DVR_STATUS_RECORDFILE_ WRITING_NOT_LOCK	801	Failed to lock. The video file is recording.
NET_DVR_STATUS_CANT_FORMAT_ LITTLE_DISK	802	Failed to format HDD. The HDD space is too small.
NET_SDK_ERR_REMOTE_DISCONNEC	803	Failed to connect to the remote terminal.
NET_SDK_ERR_RD_ADD_RD	804	Spare server cannot be added to spare server.
NET_SDK_ERR_BACKUP_DISK_EXCEPT	805	Backup disk exception.
NET_SDK_ERR_RD_LIMIT	806	No more spare server can be added.
NET_SDK_ERR_ADDED_RD_IS_WD	807	The added spare server is a working server.
NET_SDK_ERR_ADD_ORDER_WRONG	808	Adding flow error.
NET_SDK_ERR_WD_ADD_WD	809	Working server cannot be added to working server.
NET_SDK_ERR_WD_SERVICE_EXCETP	810	CVR service exception (For N+1 mode, it refers to CVR working server exception).
NET_SDK_ERR_RD_SERVICE_EXCETP	811	Spare CVR server exception.
NET_SDK_ERR_ADDED_WD_IS_RD	812	The added working server is spare server.
NET_SDK_ERR_PERFORMANCE_LIMIT	813	The performance reaches the upper-limit.
NET_SDK_ERR_ADDED_DEVICE_EXIST	814	This device already exists.
NET_SDK_ERR_INQUEST_RESUMING	815	Inquest resuming.
NET_SDK_ERR_RECORD_BACKUPING	816	Inquest video backing up.

Error Name	Error Code	Error Description
NET_SDK_ERR_DISK_PLAYING	817	Playing.
NET_SDK_ERR_INQUEST_STARTED	818	Inquest started.
NET_SDK_ERR_LOCAL_OPERATING	819	Locally operating.
NET_SDK_ERR_INQUEST_NOT_START	820	Inquest is not started.
NET_SDK_ERR_CHAN_AUDIO_BIND	821	The channel is not bound or binding two-way audio failed.
NET_DVR_N_PLUS_ONE_MODE	822	Ddevice is in N+1 mode. Cloud storage is not supported.
NET_DVR_CLOUD_STORAGE_OPENED	823	Cloud storage mode is enbaled.
NET_DVR_ERR_OPER_NOT_ALLOWED	824	Operation failed. The device is in N+0 taken over status.
NET_DVR_ERR_NEED_RELOCATE	825	The device is in N+0 taken over status. Get re-positioning information and try again.
NET_SDK_ERR_IR_PORT_ERROR	830	IR output error.
NET_SDK_ERR_IR_CMD_ERROR	831	IR output port command number error
NET_SDK_ERR_NOT_INQUESTING	832	Device is not in inquest status.
NET_SDK_ERR_INQUEST_NOT_ PAUSED	833	Device is not in paused status.
NET_DVR_CHECK_PASSWORD_ MISTAKE_ERROR	834	Incorrect verification code.
NET_DVR_CHECK_PASSWORD_NULL_ ERROR	835	Verification code is required.
NET_DVR_UNABLE_CALIB_ERROR	836	Failed to calibrate.
NET_DVR_PLEASE_CALIB_ERROR	837	Calibration first.
NET_DVR_ERR_PANORAMIC_CAL_ EMPTY	838	Panoramic calibration is empty in Flash.
NET_DVR_ERR_CALIB_FAIL_ PLEASEAGAIN	839	Calibration failed, please try again.

Error Name	Error Code	Error Description
NET_DVR_ERR_DETECTION_LINE	840	Rule line configuration error. Please try again and make sure the line is within the red region.
NET_DVR_EXCEED_FACE_IMAGES_ ERROR	843	No more face pictures can be added.
NET_DVR_ANALYSIS_FACE_IMAGES_ ERROR	844	Picture recognition failed.
NET_ERR_ALARM_INPUT_OCCUPIED	845	A<-1 alarm number is used for triggering vehicle capture.
NET_DVR_FACELIB_DATABASE_ERROR	846	Database version in face picture library mismatched.
NET_DVR_FACELIB_DATA_ERROR	847	Face picture library data error.
NET_DVR_FACE_DATA_ID_ERROR	848	Invalid face data PID.
NET_DVR_FACELIB_ID_ERROR	849	Invalid face picture library ID.
NET_DVR_EXCEED_FACE_LIBARY_ ERROR	850	No more face picture libraries can be established..
NET_DVR_PIC_ANALYSIS_NO_ TARGET_ERROR	851	No target recognized in the picture.
NET_DVR_SUBPIC_ANALYSIS_ MODELING_ERROR	852	Sub picture modeling failed.
NET_DVR_PIC_ANALYSIS_NO_ RESOURCE_ERROR	853	No VCA engine supports picture secondary recognition.
NET_DVR_ANALYSIS_ENGINES_NO_ RESOURCE_ERROR	854	No VCA engine.
NET_DVR_ANALYSIS_ENGINES_ USAGE_EXCEED_ERROR	855	Overload. The engine CPU reached 100%.
NET_DVR_EXCEED_HUMANMISINFO_ FILTER_ENABLED_ERROR	856	No more false alarm channel can be enabled.
NET_DVR_NAME_ERROR	857	Name error.
NET_DVR_NAME_EXIST_ERROR	858	The name already exists.
NET_DVR_FACELIB_PIC_IMPORTING_ ERROR	859	The pictures is importing to face picture library.

Error Name	Error Code	Error Description
NET_DVR_PIC_FORMAT_ERROR	864	Invalid picture format.
NET_DVR_PIC_RESOLUTION_ INVALID_ERROR	865	Invalid picture resolution.
NET_DVR_PIC_SIZE_EXCEED_ERROR	866	The picture size is too large.
NET_DVR_PIC_ANALYSIS_TARGRT_ NUM_EXCEED_ERROR	867	Too many targets in the picture.
NET_DVR_ANALYSIS_ENGINES_ LOADING_ERROR	868	Initializing analysis engine.
NET_DVR_ANALYSIS_ENGINES_ ABNORMA_ERROR	869	Analysis engine exception.
NET_DVR_ANALYSIS_ENGINES_ FACELIB_IMPORTING	870	Analysis engine is importing pictures to face picture library.
NET_DVR_NO_DATA_FOR_ MODELING_ERROR	871	No data for modeling.
NET_DVR_FACE_DATA_MODELING_ ERROR	872	Device is modeling picture. Concurrent processing is not supported.
NET_ERR_FACELIBDATA_OVERLIMIT	873	No more face picture can be added to the device (the data of imported face picture library)
NET_DVR_ANALYSIS_ENGINES_ ASSOCIATED_CHANNEL	874	Channel is linked to the analysis engine.
NET_DVR_ERR_CUSTOMID_LEN	875	The minimum length of upper layer custom ID is 32 bytes.
NET_DVR_ERR_CUSTOMFACELIBID_ REPEAT	876	The applied custom face picture library ID is duplicated
NET_DVR_ERR_CUSTOMHUMANID_ REPEAT	877	The applied custom person ID is duplicated.
NET_DVR_ERR_URL_DOWNLOAD_ FAIL	878	URL download failed.
NET_DVR_ERR_URL_DOWNLOAD_ NOTSTART	879	URL download has not started.

Error Name	Error Code	Error Description
NET_DVR_CFG_FILE_SECRETKEY_ ERROR	880	The security verification key of configuration file is error.
NET_DVR_THERMOMETRY_REGION_ OVERSTEP_ERROR	883	Invalid thermometry region
NET_DVR_ERR_TOO_SHORT_ CALIBRATING_TIME	894	Too short time for calibration.
NET_DVR_ERR_AUTO_CALIBRATE_ FAILED	895	Auto calibration failed.
NET_DVR_ERR_VERIFICATION_FAILED	896	Verification failed.
NET_DVR_NO_TEMP_SENSOR_ERROR	897	No temperature sensor.
NET_DVR_PUPIL_DISTANCE_ OVERSIZE_ERROR	898	The pupil distance is too large.
NET_ERR_WINCHAN_IDX	901	Window channel index error.
NET_ERR_WIN_LAYER	902	Window layer number error(the count of window layers on a single screen exceeds the max number).
NET_ERR_WIN_BLK_NUM	903	Window block number error(the count of screens that single window overlays exceeds the max number).
NET_ERR_OUTPUT_RESOLUTION	904	The output resolution error.
NET_ERR_LAYOUT	905	Layout index error.
NET_ERR_INPUT_RESOLUTION	906	The input resolution is not supported.
NET_ERR_SUBDEVICE_OFFLINE	907	The sub-device is off-line.
NET_ERR_NO_DECODE_CHAN	908	There is no free decoding channel.
NET_ERR_MAX_WINDOW_ABILITY	909	The upper limit of window number.
NET_ERR_ORDER_ERROR	910	Calling order error.
NET_ERR_PLAYING_PLAN	911	Be playing plan.
NET_ERR_DECODER_USED	912	Decoder board is being used.
NET_ERR_OUTPUT_BOARD_DATA_ OVERFLOW	913	Output board data overflow
NET_ERR_SAME_USER_NAME	914	Duplicate user name

Error Name	Error Code	Error Description
NET_ERR_INVALID_USER_NAME	915	Invalid user name
NET_ERR_MATRIX_USING	916	Input matrix is in use.
NET_ERR_DIFFERENT_CHAN_TYPE	917	Different channel type (the type of matrix output channel mismatches that of the controller input channel)
NET_ERR_INPUT_CHAN_BINDED	918	Input channel has been bound by other matrix
NET_ERR_BINDED_OUTPUT_CHAN_OVERFLOW	919	The matrix output channels in use exceeded the number bound by matrix and controller
NET_ERR_MAX_SIGNAL_NUM	920	Number of input signals reached upper limit
NET_ERR_INPUT_CHAN_USING	921	Input channel is in use
NET_ERR_MANAGER_LOGON	922	Administrator has logged in, operation failed
NET_ERR_USERALREADY_LOGON	923	The user has logged in, operation failed
NET_ERR_LAYOUT_INIT	924	Scene is initializing, operation failed
NET_ERR_BASEMAP_SIZE_NOT_MATCH	925	Base image size does not match
NET_ERR_WINDOW_OPERATING	926	Window is in other operation, operation failed
NET_ERR_SIGNAL_UPLIMIT	927	Number of signal source window reached upper limit
NET_ERR_WINDOW_SIZE_OVERLIMIT	943	The window size exceeds the limit.
NET_ERR_MAX_WIN_OVERLAP	951	The number of windows overlap has reached the maximum limit.
NET_ERR_STREAMID_CHAN_BOTH_VALID	952	stream ID and channel number are both valid.
NET_ERR_NO_ZERO_CHAN	953	The device has no zero channel.
NEED_RECONNECT	955	Need redirection (for transcoding system)

Error Name	Error Code	Error Description
NET_ERR_NO_STREAM_ID	956	The stream ID does not exist.
NET_DVR_TRANS_NOT_START	957	The transcoding has not been started.
NET_ERR_MAXNUM_STREAM_ID	958	The number of stream ID has reached the maximum limit.
NET_ERR_WORKMODE_MISMATCH	959	The work mode does not match with the requirement.
NET_ERR_MODE_IS_USING	960	It Has been working in current mode.
NET_ERR_DEV_PROGRESSING	961	The device is in processing
NET_ERR_PASSIVE_TRANSCODING	962	It is in transcoding.
NET_DVR_ERR_WINDOW_SIZE_ PLACE	975	Wrong window position.
NET_DVR_ERR_RGIONAL_ RESTRICTIONS	976	Screen distance exceeds the limit.
NET_DVR_ERR_CLOSE_WINDOWS	984	Operation failed. Close the window first.
NET_DVR_ERR_MATRIX_LOOP_ ABILITY	985	Beyond the cycle decoding capacity.
NET_DVR_ERR_MATRIX_LOOP_TIME	986	Invalid cycle decoding time.
NET_DVR_ERR_LINKED_OUT_ABILITY	987	No more linked camera can be added.
NET_ERR_RESOLUTION_NOT_ SUPPORT_ODD_VOUT	990	The resolution is not supported (odd No.).
NET_ERR_RESOLUTION_NOT_ SUPPORT_EVEN_VOUT	991	The resolution is not supported (even No.).
NET_ERR_UnitConfig_Failed	998	Unit configuration failed.
XML_ABILITY_NOTSUPPORT	1000	Getting capability node is not supported
XML_ANALYZE_NOENOUGH_BUF	1001	Not enough output memory
XML_ANALYZE_FIND_LOCALXML_ ERROR	1002	Failed to find related local xml
XML_ANALYZE_LOAD_LOCALXML_ ERROR	1003	Loading local xml error

Error Name	Error Code	Error Description
XML_NANLYZE_DVR_DATA_FORMAT_ERROR	1004	Device capability data format error
XML_ANALYZE_TYPE_ERROR	1005	Capability set type error
XML_ANALYZE_XML_NODE_ERROR	1006	XML capability node format error
XML_INPUT_PARAM_ERROR	1007	Input capability XML node value error
XML_VERSION_MISMATCH	1008	XML version does not match
NET_ERR_TRANS_CHAN_START	1101	Transparent channel has been open, operation failed
NET_ERR_DEV_UPGRADING	1102	Device is upgrading
NET_ERR_MISMATCH_UPGRADE_PACK_TYPE	1103	Upgrade pack type does not match
NET_ERR_DEV_FORMATTING	1104	Device is formatting
NET_ERR_MISMATCH_UPGRADE_PACK_VERSION	1105	Upgrade pack version does not match
NET_ERR_PT_LOCKED	1106	PT is locked.
NET_DVR_ERR_ILLEGAL_VERIFICATION_CODE	1111	Illegal verification code. Change the verification code.
NET_DVR_ERR_LACK_VERIFICATION_CODE	1112	No verification code. Enter the verification code.
NET_DVR_ERR_FORBIDDEN_IP	1113	The IP address cannot be configured.
NET_DVR_ERR_HTTP_BKN_EXCEED_ONE	1125	Up to one channel's ANR function can be enabled.
NET_DVR_ERR_FORMATTING_FAILED	1131	Formatting HDD failed.
NET_DVR_ERR_ENCRYPTED_FORMATTING_FAILED	1132	Formatting encrypted HDD failed.
NET_DVR_ERR_WRONG_PASSWORD	1133	Verifying password of SD card failed. Incorrect password.
NET_ERR_SEARCHING_MODULE	1201	Searching peripherals.
NET_ERR_REGISTERING_MODULE	1202	Registering external module
NET_ERR_GETTING_ZONES	1203	Getting arming region parameter
NET_ERR_GETTING_TRIGGERS	1204	Getting trigger

Error Name	Error Code	Error Description
NET_ERR_ARMED_STATUS	1205	System is in arming status
NET_ERR_PROGRAM_MODE_STATUS	1206	System is in programming mode
NET_ERR_WALK_TEST_MODE_STATUS	1207	System is in pacing measuring mode
NET_ERR_BYPASS_STATUS	1208	Bypass status
NET_ERR_DISABLED_MODULE_ STATUS	1209	Function not enabled
NET_ERR_NOT_SUPPORT_OPERATE_ ZONE	1210	Operation is not supported by arming region
NET_ERR_NOT_SUPPORT_MOD_ MODULE_ADDR	1211	Module address cannot be modified
NET_ERR_UNREGISTERED_MODULE	1212	Module is not registered
NET_ERR_PUBLIC_SUBSYSTEM_ ASSOCIATE_SELF	1213	Public sub system associate with its self
NET_ERR_EXCEEDS_ASSOCIATE_ SUBSYSTEM_NUM	1214	Number of associated public sub system reached upper limit
NET_ERR_BE_ASSOCIATED_BY_ PUBLIC_SUBSYSTEM	1215	Sub system is associated by other public sub system
NET_ERR_ZONE_FAULT_STATUS	1216	Arming region is in failure status
NET_ERR_SAME_EVENT_TYPE	1217	Same event type exists in enable event trigger alarm output and disable event trigger alarm output
NET_ERR_ZONE_ALARM_STATUS	1218	Arming region is in alarm status
NET_ERR_EXPANSION_BUS_SHORT_ CIRCUIT	1219	Extension bus short-circuit
NET_ERR_PWD_CONFLICT	1220	Password conflict, e.g., lock password is identical with duress password
NET_ERR_DETECTOR_GISTERED_BY_ OTHER_ZONE	1221	Detector has been registered by other arming regions
NET_ERR_DETECTOR_GISTERED_BY_ OTHER_PU	1222	Detector has been registered by other hosts
NET_ERR_DETECTOR_DISCONNECT	1223	Detector offline
NET_ERR_CALL_BUSY	1224	Device in call

Error Name	Error Code	Error Description
NET_ERR_FILE_NAME	1357	File name error, empty or invalid
NET_ERR_BROADCAST_BUSY	1358	Device in broadcast
NET_DVR_ERR_LANENUM_EXCEED	1400	Over the number of lanes.
NET_DVR_ERR_PRAREA_EXCEED	1401	Recognition area is too large.
NET_DVR_ERR_LIGHT_PARAM	1402	Signal lamp access parameters error.
NET_DVR_ERR_LANE_LINE_INVALID	1403	Lane configuration error.
NET_DVR_ERR_STOP_LINE_INVALID	1404	Stop line configuration error.
NET_DVR_ERR_LEFTORRIGHT_LINE_INVALID	1405	Turn left / right boundary configuration error.
NET_DVR_ERR_LANE_NO_REPEAT	1406	Overlay lane number repetition.
NET_DVR_ERR_PRAREA_INVALID	1407	The polygon does not meet the requirements.
NET_DVR_ERR_LIGHT_NUM_EXCEED	1408	Video detection of traffic light signal exceeds the maximum number of.
NET_DVR_ERR_SUBLIGHT_NUM_INVALID	1409	Video detection of traffic signal lamp lights are not legitimate
NET_DVR_ERR_LIGHT_AREASIZE_INVALID	1410	The size of the video detection of traffic light input signal lamp is not valid.
NET_DVR_ERR_LIGHT_COLOR_INVALID	1411	The color of the video detection of traffic light input signal lamp color is not legitimate.
NET_DVR_ERR_LIGHT_DIRECTION_INVALID	1412	The direction property of the video detection of traffic light input light is not valid.
NET_DVR_ERR_LACK_IOABLITY	1413	Lack of IO ablity.
NET_DVR_ERR_FTP_PORT	1414	FTP port error.
NET_DVR_ERR_FTP_CATALOGUE	1415	FTP catalogue error.
NET_DVR_ERR_FTP_UPLOAD_TYPE	1416	FTP upload type error.
NET_DVR_ERR_FLASH_PARAM_WRITE	1417	Setting param flash write error.

Error Name	Error Code	Error Description
NET_DVR_ERR_FLASH_PARAM_READ	1418	Getting param flash read error.
NET_DVR_ERR_PICNAME_DELIMITER	1419	Pic name delimiter error.
NET_DVR_ERR_PICNAME_ITEM	1420	Pic name item error.
NET_DVR_ERR_PLATE_RECOGNIZE_TYPE	1421	Plate recognize type error.
NET_DVR_ERR_CAPTURE_TIMES	1422	Capture times error.
NET_DVR_ERR_LOOP_DISTANCE	1423	Loop distance error.
NET_DVR_ERR_LOOP_INPUT_STATUS	1424	Loop input status error.
NET_DVR_ERR_RELATE_IO_CONFLICT	1425	Related IO conflict.
NET_DVR_ERR_INTERVAL_TIME	1426	Interval time error.
NET_DVR_ERR_SIGN_SPEED	1427	Sign speed error.
NET_DVR_ERR_PIC_FLIP	1428	Flip is used.
NET_DVR_ERR_RELATE_LANE_NUMBER	1429	Related lane number error.
NET_DVR_ERR_TRIGGER_MODE	1430	Trigger mode error.
NET_DVR_ERR_DELAY_TIME	1431	Delay time error.
NET_DVR_ERR_EXCEED_RS485_COUNT	1432	Exceed RS485 count.
NET_DVR_ERR_RADAR_TYPE	1433	Radar type error.
NET_DVR_ERR_RADAR_ANGLE	1434	Radar angle error.
NET_DVR_ERR_RADAR_SPEED_VALID_TIME	1435	Radar speed valid time error.
NET_DVR_ERR_RADAR_LINE_CORRECT	1436	Radar line correct error.
NET_DVR_ERR_RADAR_CONST_CORRECT	1437	Radar const correct error.
NET_DVR_ERR_RECORD_PARAM	1438	Record param error.
NET_DVR_ERR_LIGHT_WITHOUT_COLOR_AND_DIRECTION	1439	Light number and other param error.

Error Name	Error Code	Error Description
NET_DVR_ERR_LIGHT_WITHOUT_ DETECTION_REGION	1440	Light number and detection region error.
NET_DVR_ERR_RECOGNIZE_ PROVINCE_PARAM	1441	Plate recognize Province param error.
NET_DVR_ERR_SPEED_TIMEOUT	1442	IO Speed TimeOut Param error.
NET_DVR_ERR_NTP_TIMEZONE	1443	NTP TimeZone Param error.
NET_DVR_ERR_NTP_INTERVAL_TIME	1444	NTP Interval Time error.
NET_DVR_ERR_NETWORK_CARD_ NUM	1445	Network Card Num error.
NET_DVR_ERR_DEFAULT_ROUTE	1446	Default Route error.
NET_DVR_ERR_BONDING_WORK_ MODE	1447	Banding Work Mode error.
NET_DVR_ERR_SLAVE_CARD	1448	Sub-Card error.
NET_DVR_ERR_PRIMARY_CARD	1449	Primary Card error.
NET_DVR_ERR_DHCP_PPOE_WORK	1450	DHCP and PPOE not Meanwhile start.
NET_DVR_ERR_NET_INTERFACE	1451	Net Interface invalid.
NET_DVR_ERR_MTU	1452	Invalid MTU parameters.
NET_DVR_ERR_NETMASK	1453	Netmask address invalid.
NET_DVR_ERR_IP_INVALID	1454	IP address invalid.
NET_DVR_ERR_MULTICAST_IP_ INVALID	1455	Multicast IP address invalid.
NET_DVR_ERR_GATEWAY_INVALID	1456	Gateway address invalid.
NET_DVR_ERR_DNS_INVALID	1457	DNS Param invalid.
NET_DVR_ERR_ALARMHOST_IP_ INVALID	1458	AlarmHost IP invalid.
NET_DVR_ERR_IP_CONFLICT	1459	IP address Conflict.
NET_DVR_ERR_NETWORK_SEGMENT	1460	IP not support Multi Network segment.
NET_DVR_ERR_NETPORT	1461	NetPort error.
NET_DVR_ERR_PPPOE_NOSUPPORT	1462	PPPoE is not supported.

Error Name	Error Code	Error Description
NET_DVR_ERR_DOMAINNAME_NOSUPPORT	1463	Not Support Domain Name.
NET_DVR_ERR_NO_SPEED	1464	Speed Not Enabled.
NET_DVR_ERR_IOSTATUS_INVALID	1465	IO Status invalid.
NET_DVR_ERR_BURST_INTERVAL_INVALID	1466	Burst Interval invalid.
NET_DVR_ERR_RESERVE_MODE	1467	Reserve Mode invalid.
NET_DVR_ERR_LANE_NO	1468	Lane No error.
NET_DVR_ERR_COIL_AREA_TYPE	1469	Coil Area Type error.
NET_DVR_ERR_TRIGGER_AREA_PARAM	1470	Trigger Area Param error.
NET_DVR_ERR_SPEED_LIMIT_PARAM	1471	Speed Limit Param error.
NET_DVR_ERR_LANE_PROTOCOL_TYPE	1472	Lane Protocol Type error.
NET_DVR_ERR_INTERVAL_TYPE	1473	Capture Interval Type error.
NET_DVR_ERR_INTERVAL_DISTANCE	1474	Capture Interval Distance error.
NET_DVR_ERR_RS485_ASSOCIATE_DEVTYPE	1475	Rs485 Associate DevType error.
NET_DVR_ERR_RS485_ASSOCIATE_LANENO	1476	Rs485 Associate LaneNo error.
NET_DVR_ERR_LANENO_ASSOCIATE_MULTIRS485	1477	LaneNo Associate MulitRs485 error.
NET_DVR_ERR_LIGHT_DETECTION_REGION	1478	Light Detection Region error.
NET_DVR_ERR_DN2D_NOSUPPORT	1479	UnSupport Capture Frame 2D Noise Reduction.
NET_DVR_ERR_IRISMODE_NOSUPPORT	1480	UnSupport scene Mode.
NET_DVR_ERR_WB_NOSUPPORT	1481	UnSupport White Balance Mode.
NET_DVR_ERR_IO_EFFECTIVENESS	1482	IO Effectiveness invalid.

Error Name	Error Code	Error Description
NET_DVR_ERR_LIGHTNO_MAX	1483	Access Detector Lights Red / Yellow Overrun.
NET_DVR_ERR_LIGHTNO_CONFLICT	1484	Access Detector Lights Red / Yellow Conflict.
NET_DVR_ERR_CANCEL_LINE	1485	Trigger straight line error.
NET_DVR_ERR_STOP_LINE	1486	Subject line area stop line error.
NET_DVR_ERR_RUSH_REDLIGHT_LINE	1487	Red light trigger lines error.
NET_DVR_ERR_IOOUTNO_MAX	1488	IO out port error.
NET_DVR_ERR_IOOUTNO_ AHEADTIME_MAX	1489	IO out ahead time error.
NET_DVR_ERR_IOOUTNO_ IOWORKTIME	1490	IO out inwork time error.
NET_DVR_ERR_IOOUTNO_ FREQMULTI	1491	IO out frequency multiplication error.
NET_DVR_ERR_IOOUTNO_DUTYRATE	1492	IO out duty rate error.
NET_DVR_ERR_VIDEO_WITH_ EXPOSURE	1493	IO out work mode error.
NET_DVR_ERR_PLATE_BRIGHTNESS_ WITHOUT_FLASHDET	1494	Plate enable in plate compensate mode on.
NET_DVR_ERR_RECOGNIZE_TYPE_ PARAM	1495	Recognize Type error.
NET_DVR_ERR_PALTE_RECOGNIZE_ AREA_PARAM	1496	Plate Recognize Area Param error.
NET_DVR_ERR_PORT_CONFLICT	1497	Port Conflict.
NET_DVR_ERR_LOOP_IP	1498	IP cannot be the loopback address.
NET_DVR_ERR_DRIVELINE_SENSITIVE	1499	Driveline sensitivity error.
NET_ERR_VQD_TIME_CONFLICT	1500	The time period conflict.
NET_ERR_VQD_PLAN_NO_EXIST	1501	The diagnostic plan of VQD dese not exist.
NET_ERR_VQD_CHAN_NO_EXIST	1502	The channel dese not exist.

Error Name	Error Code	Error Description
NET_ERR_VQD_CHAN_MAX	1503	The total number of VQD plans exceeds the max limit.
NET_ERR_VQD_TASK_MAX	1504	The total number of VQD tasks exceeds the max limit.
NET_DVR_ERR_EXCEED_MAX_ CAPTURE_TIMES	1600	Capture times exceed 2 in flash mode.
NET_DVR_ERR_REDAR_TYPE_ CONFLICT	1601	Radar type conflict.
NET_DVR_ERR_LICENSE_PLATE_NULL	1602	The license plate is null.
NET_DVR_ERR_WRITE_DATABASE	1603	Failed to write data into the database.
NET_DVR_ERR_LICENSE_EFFECTIVE_ TIME	1604	The effective time of license plate error.
NET_DVR_ERR_PRERECORDED_ STARTTIME_LONG	1605	The pre recorded start time is greater than the number of illegal capture.
NET_DVR_ERR_TRIGGER_RULE_LINE	1606	Trigger rule line error.
NET_DVR_ERR_LEFTRIGHT_ TRIGGERLINE_NOTVERTICAL	1607	Left and right trigger line is not vertical.
NET_DVR_ERR_FLASH_LAMP_MODE	1608	Flash lamp mode error.
NET_DVR_ERR_ILLEGAL_SNAPSHOT_ NUM	1609	Illegal capture number error.
NET_DVR_ERR_ILLEGAL_DETECTION_ TYPE	1610	Illegal detection type error.
NET_DVR_ERR_POSITIVEBACK_ TRIGGERLINE_HIGH	1611	Positive back to trigger line height error.
NET_DVR_ERR_MIXEDMODE_ CAPTYPE_ALLTARGETS	1612	Mixed mode only supports capture type all targets.
NET_DVR_ERR_CARSIGNSPEED_ GREATERTHAN_LIMITSPEED	1613	Car sign speed greater than speed limit value.
NET_DVR_ERR_BIGCARSIGNSPEED_ GREATERTHAN_LIMITSPEED	1614	Big car sign speed limit greater than speed limit value.
NET_DVR_ERR_BIGCARSIGNSPEED_ GREATERTHAN_CARSIGNSPEED	1615	Big car sign speed limit is greater than the car sign speed limit value.

Error Name	Error Code	Error Description
NET_DVR_ERR_BIGCARLIMITSPEED_ GREATERTHAN_CARLIMITSPEED	1616	Big car speed limit value is greater than the car speed limit value.
NET_DVR_ERR_ BIGCARLOWSPEEDLIMIT_ GREATERTHAN_CARLOWSPEEDLIMIT	1617	Big car low speed limit value is greater than the car low speed limit value.
NET_DVR_ERR_CARLIMITSPEED_ GREATERTHAN_EXCEPHIGHSPEED	1618	Car speed limit greater than exception high speed value.
NET_DVR_ERR_BIGCARLIMITSPEED_ GREATERTHAN_EXCEPHIGHSPEED	1619	Big car speed limit greater than exception high speed value.
NET_DVR_ERR_STOPLINE_ MORETHAN_TRIGGERLINE	1620	Stopping more than straight lines trigger lines.
NET_ERR_TIME_OVERLAP	1900	Time periods overlap
NET_ERR_HOLIDAY_PLAN_OVERLAP	1901	Holiday plan overlap
NET_ERR_CARDNO_NOT_SORT	1902	Card number is not sorted
NET_ERR_CARDNO_NOT_EXIST	1903	Card number does not exist
NET_ERR_ILLEGAL_CARDNO	1904	Card number error
NET_ERR_ZONE_ALARM	1905	Arming region is in arming status (parameter cannot be modified)
NET_ERR_ZONE_OPERATION_NOT_ SUPPORT	1906	Arming region does not support the operation
NET_ERR_INTERLOCK_ANTI_ CONFLICT	1907	Interlock and anti-passback configuration conflict
NET_ERR_DEVICE_CARD_FULL	1908	Card full (return after card reached 10,000)
NET_ERR_HOLIDAY_GROUP_ DOWNLOAD	1909	Failed to download holiday group
NET_ERR_LOCAL_CONTROL_OFF	1910	Distributed access controller offline
NET_ERR_LOCAL_CONTROL_DISADD	1911	Distributed access controller is not added
NET_ERR_LOCAL_CONTROL_HASADD	1912	Distributed access controller is added
NET_ERR_LOCAL_CONTROL_ DOORNO_CONFLICT	1913	Conflict with added distributed access controller

Error Name	Error Code	Error Description
NET_ERR_LOCAL_CONTROL_ COMMUNICATION_FAIL	1914	Distributed access controller communication failed
NET_ERR_OPERAND_INEXISTENCE	1915	Operation object does not exist (operation to door, alarm output, alarm input, return when the object is not added)
NET_ERR_LOCAL_CONTROL_OVER_ LIMIT	1916	Distributed access controller exceeded device capability upper limit
NET_ERR_DOOR_OVER_LIMIT	1917	Door exceeded device capability upper limit
NET_ERR_ALARM_OVER_LIMIT	1918	Alarm input and output exceeded device capability upper limit
NET_ERR_LOCAL_CONTROL_ ADDRESS_INCONFORMITY_TYPE	1919	Distributed access controller address does not match with type
NET_ERR_NOT_SUPPORT_ONE_ MORE_CARD	1920	not support one person multi-card
NET_ERR_DELETE_NO_EXISTENCE_ FACE	1921	The face picture does not exist.
NET_ERR_DOOR_SPECIAL_ PASSWORD_REPEAT	1922	Repeated door door duress code, the super password, or the dismiss code.
NET_ERR_AUTH_CODE_REPEAT	1923	Repeated device authentication code
NET_ERR_DEPLOY_EXCEED_MAX	1924	No more devices can be armed.
NET_ERR_NOT_SUPPORT_DEL_FP_ BY_ID	1925	The fingerprint module does not support deleting fingerprint by finger ID.
NET_ERR_TIME_RANGE	1926	Invalid range of the effective period.
NET_ERR_CAPTURE_TIMEOUT	1927	Collection timed out.
NET_ERR_LOW_SCORE	1928	Low quality of collected data.
NET_ERR_OFFLINE_CAPTURING	1929	The device is collecting data offline and cannot respond.
NET_DVR_ERR_OUTDOOR_ COMMUNICATION	1950	Communication exception with outdoor terminal

Error Name	Error Code	Error Description
NET_DVR_ERR_ROOMNO_ UNDEFINED	1951	Room number is not set
NET_DVR_ERR_NO_CALLING	1952	No call
NET_DVR_ERR_RINGING	1953	Ringing
NET_DVR_ERR_IS_CALLING_NOW	1954	Call in progress
NET_DVR_ERR_LOCK_PASSWORD_ WRONG	1955	Incorrect smart lock password
NET_DVR_ERR_CONTROL_LOCK_ FAILURE	1956	Lock control failure
NET_DVR_ERR_CONTROL_LOCK_ OVERTIME	1957	Lock control timed out
NET_DVR_ERR_LOCK_DEVICE_BUSY	1958	Smart lock device busy
NET_DVR_ERR_UNOPEN_REMOTE_ LOCK_FUNCTION	1959	Remote lock control not enabled
NET_DVR_ERR_FILE_NOT_COMPLETE	2100	Downloaded file is incomplete
NET_DVR_ERR_IPC_EXIST	2101	The camera already exists
NET_DVR_ERR_ADD_IPC	2102	Camera has been added to the channel
NET_DVR_ERR_OUT_OF_RES	2103	Not enough network bandwidth
NET_DVR_ERR_CONFLICT_TO_ LOCALIP	2104	IP address of camera conflicts with that of DVR
NET_DVR_ERR_IP_SET	2105	Invalid IP address
NET_DVR_ERR_PORT_SET	2106	Invalid port number
NET_ERR_WAN_NOTSUPPORT	2107	Not in the same LAN, cannot set security question or export GUID file
NET_ERR_MUTEX_FUNCTION	2108	Mutually exclusive function
NET_ERR_QUESTION_CONFIGNUM	2109	Error in number of security question configurations
NET_ERR_FACECHAN_NORESOURCE	2110	All the face VCA channels are occupied.
NET_ERR_DATA_CALLBACK	2111	Data is calling back.

Error Name	Error Code	Error Description
NET_ERR_ATM_VCA_CHAN_IS_ RELATED	2112	The VCA channel is already linked.
NET_ERR_ATM_VCA_CHAN_IS_ OVERLAPED	2113	The VCA channel is already overlayed.
NET_ERR _FACE_CHAN_UNOVERLAP_ EACH_OTHER	2114	The face channels cannot be overlayed.
NET_DVR_SMD_ENCODING_ NORESOURSE	2116	Insufficient SMD encoding resource
NET_DVR_SMD_DECODING_ NORESOURSE	2117	Insufficient SMD decoding resource
NET_DVR_FACELIB_DATA_ PROCESSING	2118	Face picture library data is in processing
NET_DVR_ERR_LARGE_TIME_ DIFFRENCE	2119	There is a great time difference between device and server.
NET_DVR_NO_SUPPORT_WITH_ PLAYBACK	2120	It is not supported. Playback is enabled.
NET_DVR_CHANNEL_NO_SUPPORT_ WITH_SMD	2121	It is not supported. SMD of channel is enabled.
NET_DVR_CHANNEL_NO_SUPPORT_ WITH_FD	2122	It is not supported. Face capture of channel is enabled.
NET_DVR_ILLEGAL_PHONE_NUMBER	2123	Invalid telephone number
NET_DVR_ILLEGAL_CERITIFICATE_ NUMBER	2124	Invalid ID No.
NET_DVR_ERR_CHANNEL_ RESOLUTION_NO_SUPPORT	2125	The channel resolution is not supported
NET_DVR_ERR_CHANNEL_ COMPRESSION_NO_SUPPORT	2126	The channel encoding format is not supported
NET_DVR_ERR_CLUSTER_DEVICE_ TOO_LESS	2127	Deleting is not allowed. The number of devices is not enough
NET_DVR_ERR_CLUSTER_DEL_ DEVICE_CM_PLAYLOAD	2128	Deleting is not allowed. The device is cluster host.
NET_DVR_ERR_CLUSTER_DEVNUM_ OVER_UPPER_LIMIT	2129	No more devices can be added.

Error Name	Error Code	Error Description
NET_DVR_ERR_CLUSTER_DEVICE_TYPE_INCONFORMITY	2130	Device type mismatched.
NET_DVR_ERR_CLUSTER_DEVICE_VERSION_INCONFORMITY	2131	Device version mismatched.
NET_DVR_ERR_CLUSTER_IP_CONFLICT	2132	Cluster system IP address conflict: ipv4 address conflict, invalid ipv6.
NET_DVR_ERR_CLUSTER_IP_INVALID	2133	Invalid cluster system IP address: invalid ipv4, invalid ipv6.
NET_DVR_ERR_CLUSTER_PORT_CONFLICT	2134	Cluster system port conflict
NET_DVR_ERR_CLUSTER_PORT_INVALID	2135	Invalid cluster system port
NET_DVR_ERR_CLUSTER_USERNAEM_OR_PASSWORD_INVALID	2136	Invalid user name or password
NET_DVR_ERR_CLUSTER_DEVICE_ALREADY_EXIST	2137	The device already exists.
NET_DVR_ERR_CLUSTER_DEVICE_NOT_EXIST	2138	The device does not exist.
NET_DVR_ERR_CLUSTER_NON_CLUSTER_MODE	2139	The device working mode is not the cluster mode .
NET_DVR_ERR_CLUSTER_IP_NOT_SAME_LAN	2140	IP addresses are in different LAN. Building cluster or extending capacity for NVRs in different LAN is not allowed.
NET_DVR_ERR_IDENTITY_KEY	2147	Incorrect interaction password
NET_DVR_MISSING_IDENTITY_KEY	2148	Interaction password is missing
NET_DVR_ERR_CAPTURE_PACKAGE_FAILED	2141	Capturing packets failed.
NET_DVR_ERR_CAPTURE_PACKAGE_PROCESSING	2142	Capturing packet.
NET_DVR_ERR_SAFETY_HELMET_NO_RESOURCE	2143	No enough hard hat detection resource.

Error Name	Error Code	Error Description
NET_DVR_NO_SUPPORT_WITH_ ABSTRACT	2144	This function is not supported. Video synopsis is already enabled.
NET_DVR_INSUFFICIENT_DEEP_ LEARNING_RESOURCES	2146	No more deep learning resources can be added.
NET_DVR_NO_SUPPORT_WITH_ PERSON_DENSITY_DETECT	2149	People gathering density is enabled, it is not supported
NET_DVR_IPC_RESOLUTION_ OVERFLOW	2150	The network camera resolution is too large
NET_DVR_IPC_BITRATE_OVERFLOW	2151	The network camera bitrate is too large
NET_DVR_ERR_INVALID_TASKID	2152	Invalid taskID
NET_DVR_PANEL_MODE_NOT_ CONFIG	2153	The ATM panel mode is not configured.
NET_DVR_NO_HUMAN_ENGINES_ RESOURCE	2154	No enough engine resource
NET_DVR_ERR_TASK_NUMBER_ OVERFLOW	2155	No more task data is allowed
NET_DVR_ERR_COLLISION_TIME_ OVERFLOW	2156	Collision time is over the limit
NET_DVR_ERR_EVENT_NOTSUPPORT	2159	Subscribing alarm/event is not supported.
NET_DVR_IPC_NUM_REACHES_LIMIT	2184	The max. number of network camera channels reached.
NET_DVR_IOT_NUM_REACHES_LIMIT	2185	The max. number of IoT channels reached
NET_DVR_IOT_CHANNEL_DEVICE_ EXIST	2186	Device of the IoT channel already exists.
NET_DVR_IOT_CHANNEL_DEVICE_ NOT_EXIST	2187	Device of the IoT channel does not exist.
NET_DVR_INVALID_IOT_PROTOCOL_ TYPE	2188	Invalid IoT protocol type
NET_DVR_INVALID_EZVIZ_SECRET_ KEY	2189	Invalid verification code

Error Name	Error Code	Error Description
NET_DVR_DUPLICATE_IOT_DEVICE	2190	Duplicated IoT device
NET_DVR_ERROR_NEED_DOUBLE_ VERIFICATION	2206	Double verification is required
NET_DVR_NO_DOUBLE_ VERIFICATION_USER	2207	No double verification user
NET_DVR_TIMESPAN_NUM_OVER_ LIMIT	2209	Max. number of time buckets reached
NET_DVR_CHANNEL_NUM_OVER_ LIMIT	2210	Max. number of channels reached
NET_DVR_NO_SEARCH_ID_ RESOURCE	2211	Insufficient searchID resources
NET_DVR_SWITCH_TIMEDIFF_LESS_ LIMIT	2249	Time difference between power on and off should be less than 10 minutes.
NET_DVR_NO_SUPPORT_DELETE_ STRANGER_LIB	2262	Deleting stranger library is not supported
NET_DVR_NO_SUPPORT_CREATE_ STRANGER_LIB	2263	Creating stranger library is not supported
NET_DVR_SSD_FILE_SYSTEM_ERROR	2266	SSD file system error
NET_DVR_INSUFFICIENT_SSD__FOR_ FPD	2267	Insufficient SSD space for person frequency detection
NET_DVR_SMRDISK_NOT_SUPPORT_ RAID	2269	SMR disk does not support RAID.
NET_DVR_ERR_NOTSUPPORT_ DEICING	3001	Device does not support deicing function under current status.(Deicing function is only supported under the power status of POE+, AC24V, and DC12V).
NET_DVR_ERR_THERMENABLE_ CLOSE	3002	Temperature measurement function is not enabled. (The enable function in NET_DVR_THERMOMETRY_ BASICPARAM is not turned on)
NET_DVR_ERR_PANORAMIC_LIMIT_ OPERATED	3004	Panoramic map and limit cannot be operated at same time

Error Name	Error Code	Error Description
NET_DVR_ERR_SMARTH264_ROI_ OPERATED	3005	SmartH264 and ROI cannot be enabled at the same time.
NET_DVR_ERR_RULENUM_LIMIT	3006	No more rules can be added.
NET_DVR_ERR_LASER_DEICING_ OPERATED	3007	Laser and deicing function cannot be enabled at the same time.
NET_DVR_ERR_OFFDIGITALZOOM_ OR_MINZOOMLIMIT	3008	Please disable the digital zoom function or set the zoom limit to the minimum value. Otherwise, when enabling smoke and fire detection, abnormal event detection, ship detection, defective point correction, temperature measurement, smoke and fire shielding function, this error code will be prompted.
NET_DVR_SYNCHRONIZEFOV_ERROR	3010	Field of view synchronization failed.
NET_DVR_RULE_SHIELDMASK_ CONFLICT_ERROR	3013	The rule region conflicts with the shielded area.
NET_DVR_ERR_NO_SAFETY_HELMET_ REGION	3501	The hard hat detection area is not configured.
NET_DVR_ERR_UNCLOSED_SAFETY_ HELMET	3502	The hard hat detection is enabled.
NET_DVR_UPLOAD_HBDLIBID_ERROR	3504	Incorrect ID of human body picture library (incorrect HBDID or customHBDID)

RTSP Communication Library Related Errors

Error Name	Error Code	Error Description
NET_DVR_RTSP_ERROR_ NOENOUGHPRI	401	Authentication failed: if server returns 401, it will change to this error code
NET_DVR_RTSP_ERROR_ALLOC_ RESOURCE	402	Failed to allocate the resource
NET_DVR_RTSP_ERROR_PARAMETER	403	Parameter error

Error Name	Error Code	Error Description
NET_DVR_RTSP_ERROR_NO_URL	404	The assigned URL does not exist: when the server returns 404, SDK turns to this error code. E.g. the channel is not available, or the channel does not support sub stream
NET_DVR_RTSP_ERROR_FORCE_STOP	406	The user forces to exit midway
NET_DVR_RTSP_GETPORTFAILED	407	RTSP port getting error.
NET_DVR_RTSP_DESCRIBERROR	410	RTSP DECRIBE communicate error
NET_DVR_RTSP_ DESCRIBESENDTIMEOUT	411	Sending "RTSP DECRIBE" is timeout.
NET_DVR_RTSP_DESCRIBESENDERROR	412	Failed to send "RTSP DECRIBE".
NET_DVR_RTSP_ DESCRIBERECVTIMEOUT	413	Receiving "RTSP DECRIBE" is timeout.
NET_DVR_RTSP_ DESCRIBERECVDATALOST	414	Receiving data of "RTSP DECRIBE" error.
NET_DVR_RTSP_DESCRIBERECVERROR	415	Failed to receive "RTSP DECRIBE".
NET_DVR_RTSP_DESCRIBESERVERERR	416	"RTSP DECRIBE, the device returns the error code: 501 (failed to allocate the resource in the device)
NET_DVR_RTSP_SETUPERROR	420	(or 419), RTSP SETUP interaction error. Generally, it is that the address(URL) returned by the device is not accessible, or it is rejected by the server
NET_DVR_RTSP_SETUPSENDTIMEOUT	421	Sending "RTSP SETUP" is timeout.
NET_DVR_RTSP_SETUPSENDERROR	422	Sending "RTSP SETUP" error.
NET_DVR_RTSP_SETUPRECVTIMEOUT	423	Receiving "RTSP SETUP" is timeout.
NET_DVR_RTSP_SETUPRECVDATALOST	424	Receiving data of "RTSP SETUP" error.
NET_DVR_RTSP_SETUPRECVERROR	425	Failed to receive "RTSP SETUP".
NET_DVR_RTSP_OVER_MAX_CHAN	426	"RTSP SETUP" device returns the error that values 401 or 501. It

Error Name	Error Code	Error Description
		exceeds the max connection number.
NET_DVR_RTSP_PLAYERROR	430	RTSP PLAY interaction error.
NET_DVR_RTSP_PLAYSENDTIMEOUT	431	Sending "RTSP PLAY" is timeout.
NET_DVR_RTSP_PLAYSENDERROR	432	Sending "RTSP PLAY" error.
NET_DVR_RTSP_PLAYRECVTIMEOUT	433	Receiving "RTSP PLAY" is timeout.
NET_DVR_RTSP_PLAYRECVDATALOST	434	Receiving data of "RTSP PLAY" error.
NET_DVR_RTSP_PLAYRECVERROR	435	Failed to receive "RTSP PLAY".
NET_DVR_RTSP_PLAYSERVERERR	436	"RTSP PLAY" device returns the error that values 401 or 501.
NET_DVR_RTSP_TEARDOWNERROR	440	RTSP TEARDOWN interaction error.
NET_DVR_RTSP_ TEARDOWNSENDTIMEOUT	441	Sending "RTSP TEARDOWN" is timeout.
NET_DVR_RTSP_ TEARDOWNSENDERROR	442	Sending "RTSP TEARDOWN" error.
NET_DVR_RTSP_ TEARDOWNRECVTIMEOUT	443	Receiving "RTSP TEARDOWN" is timeout.
NET_DVR_RTSP_ TEARDOWNRECVDATALOST	444	Receiving data of "RTSP TEARDOWN" error.
NET_DVR_RTSP_ TEARDOWNRECVERROR	445	Failed to receive "RTSP TEARDOWN".
NET_DVR_RTSP_ TEARDOWNSERVERERR	446	"RTSP TEARDOWN" device returns the error that values 401 or 501.

Software Decoding Library Related Errors

Error Name	Error Code	Error Description
NET_PLAYM4_NOERROR	500	No error.
NET_PLAYM4_PARA_OVER	501	Input parameter is invalid.
NET_PLAYM4_ORDER_ERROR	502	API calling order error.
NET_PLAYM4_TIMER_ERROR	503	Failed to create multimedia clock.

Error Name	Error Code	Error Description
NET_PLAYM4_DEC_VIDEO_ERROR	504	Failed to decode video data.
NET_PLAYM4_DEC_AUDIO_ERROR	505	Failed to decode audio data.
NET_PLAYM4_ALLOC_MEMORY_ ERROR	506	Failed to allocate memory.
NET_PLAYM4_OPEN_FILE_ERROR	507	Failed to open the file.
NET_PLAYM4_CREATE_OBJ_ERROR	508	Failed to create thread event.
NET_PLAYM4_CREATE_DDRAW_ ERROR	509	Failed to create DirectDraw object.
NET_PLAYM4_CREATE_OFFSCREEN_ ERROR	510	Failed to create backstage cache for OFFSCREEN mode.
NET_PLAYM4_BUF_OVER	511	Buffer overflow, failed to input stream.
NET_PLAYM4_CREATE_SOUND_ ERROR	512	Failed to create audio equipment.
NET_PLAYM4_SET_VOLUME_ ERROR	513	Failed to set the volume.
NET_PLAYM4_SUPPORT_FILE_ONLY	514	This API can be called only for file playback mode.
NET_PLAYM4_SUPPORT_STREAM_ ONLY	515	This API can be called only when playing stream.
NET_PLAYM4_SYS_NOT_SUPPORT	516	Not support by the system. Decoder can only work on the system above Pentium 3.
NET_PLAYM4_FILEHEADER_ UNKNOWN	517	There is no file header.
NET_PLAYM4_VERSION_ INCORRECT	518	The version mismatch between decoder and encoder.
NET_PLAYM4_INIT_DECODER_ ERROR	519	Failed to initialize the decoder.
NET_PLAYM4_CHECK_FILE_ERROR	520	The file is too short, or the stream data is unknown.
NET_PLAYM4_INIT_TIMER_ERROR	521	Failed to initialize multimedia clock.
NET_PLAYM4_BLT_ERROR	522	BLT failure.

Error Name	Error Code	Error Description
NET_PLAYM4_UPDATE_ERROR	523	Failed to update overlay surface
NET_PLAYM4_OPEN_FILE_ERROR_MULTI	524	Failed to open video & audio stream file.
NET_PLAYM4_OPEN_FILE_ERROR_VIDEO	525	Failed to open video stream file.
NET_PLAYM4_JPEG_COMPRESS_ERROR	526	JPEG compression error.
NET_PLAYM4_EXTRACT_NOT_SUPPORT	527	Don't support the version of this file.
NET_PLAYM4_EXTRACT_DATA_ERROR	528	Extract video data failed.

Container Format Conversion Library Related Errors

Error Name	Error Code	Error Description
NET_CONVERT_ERROR_NOT_SUPPORT	581	This container format is not supported.

Two Way Audio Library Related Errors

Error Name	Error Code	Error Description
NET_AUDIOINTERCOM_OK	600	No error.
NET_AUDIOINTECOM_ERR_NOTSUPORT	601	Not support.
NET_AUDIOINTECOM_ERR_ALLOC_MEMERY	602	Memory allocation error.
NET_AUDIOINTECOM_ERR_PARAMETER	603	Parameter error.
NET_AUDIOINTECOM_ERR_CALL_ORDER	604	API calling order error.
NET_AUDIOINTECOM_ERR_FIND_DEVICE	605	No audio device
NET_AUDIOINTECOM_ERR_OPEN_DEVICE	606	Failed to open the audio device
NET_AUDIOINTECOM_ERR_NO_CONTEXT	607	Context error.
NET_AUDIOINTECOM_ERR_NO_WAVFILE	608	WAV file error.
NET_AUDIOINTECOM_ERR_INVALID_TYPE	609	The type of WAV parameter is invalid

Error Name	Error Code	Error Description
NET_AUDIOINTECOM_ERR_ENCODE_FAIL	610	Failed to encode data
NET_AUDIOINTECOM_ERR_DECODE_FAIL	611	Failed to decode data
NET_AUDIOINTECOM_ERR_NO_PLAYBACK	612	Failed to play audio
NET_AUDIOINTECOM_ERR_DENOISE_FAIL	613	Failed to denoise
NET_AUDIOINTECOM_ERR_UNKOWN	619	Unknown

QoS Stream Control Library Related Errors

Error Name	Error Code	Error Description
NET_QOS_ERR_SCHEDPARAMS_BAD_ MINIMUM_INTERVAL	678	Incorrect predefined minimum interval.
NET_QOS_ERR_SCHEDPARAMS_BAD_ FRACTION	679	Incorrect predefined score.
NET_QOS_ERR_SCHEDPARAMS_INVALID_ BANDWIDTH	680	Invalid predefined bandwidth.
NET_QOS_ERR_PACKET_TOO_BIG	687	The packet size is too large.
NET_QOS_ERR_PACKET_LENGTH	688	Invalid packet size.
NET_QOS_ERR_PACKET_VERSION	689	Incorrect packet versio information.
NET_QOS_ERR_PACKET_UNKNOW	690	Unknown packet.
NET_QOS_ERR_OUTOFMEM	695	Out of memory.
NET_QOS_ERR_LIB_NOT_INITIALIZED	696	The library is not initialized.
NET_QOS_ERR_SESSION_NOT_FOUND	697	No session found.
NET_QOS_ERR_INVALID_ARGUMENTS	698	Invalid parameters.
NET_QOS_ERROR	699	QoS Stream Control Library error.
NET_QOS_OK	700	No error.

NPQ (Network Protocol Quality) Related Error

Error Name	Error Code	Error Description
NET_ERR_NPQ_PARAM	8001	NPQ library: Incorrect parameter.
NET_ERR_NPQ_SYSTEM	8002	NPQ library: Operating system error.
NET_ERR_NPQ_GENRAL	8003	NPQ library: Internal error.
NET_ERR_NPQ_PRECONDITION	8004	NPQ library: Calling sequence error.
NET_ERR_NPQ_NOTSUPPORT	8005	NPQ library: This function is not supported.
NET_ERR_NPQ_NOTCALLBACK	8100	No data is called back.
NET_ERR_NPQ_LOADLIB	8101	Loading NPQ library failed.
NET_ERR_NPQ_STEAM_CLOSE	8104	The NPQ function of this stream is not enabled.
NET_ERR_NPQ_MAX_LINK	8110	No more streaming channel's NPQ function can be enabled.
NET_ERR_NPQ_STREAM_CFG_ CONFLICT	8111	The configured encoding parameters conflicted.