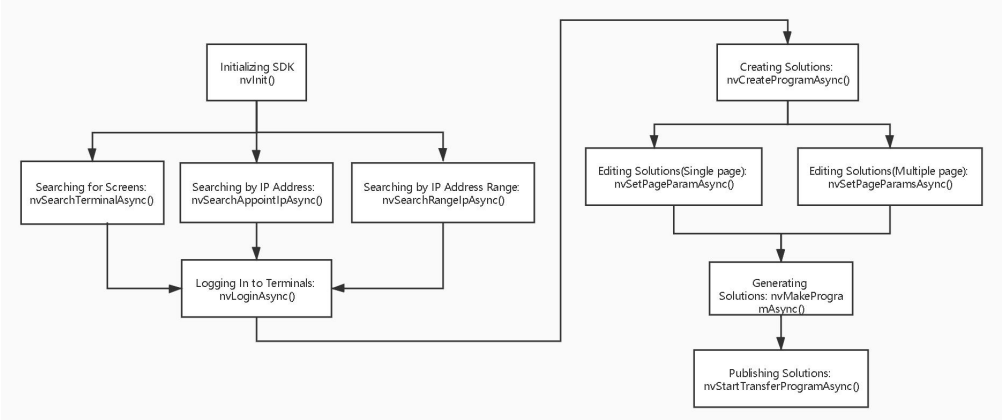
1、Introduction

Introduction

This is the upper computer SDK that allows users to develop software for player control. Supported operating systems:

- Win7/10(C/C++/C#/Java)
    - 32-bit
    - 64-bit
- Linux(C/C++/Java)
    - Ubuntu18.04
    - NeoKylin V7
    - CentOS 7.6
- Android 5.0 and later(Java)
    - armeabi-v7a
    - arm64-v8a
- Mac(C/C++/Java)
    - 10.12 and later
- iOS(C/C++)
    - 11.0 and later

Procedure to Make a Solution



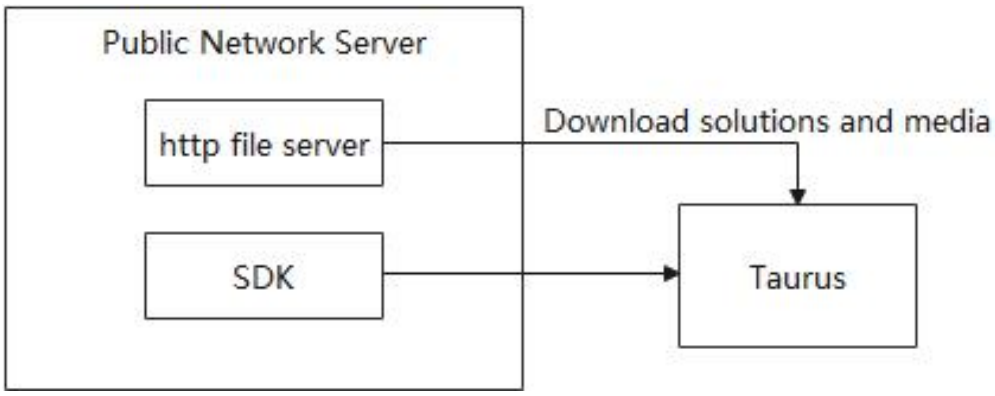
Solution data structure

Public Network SDK Configuration Description

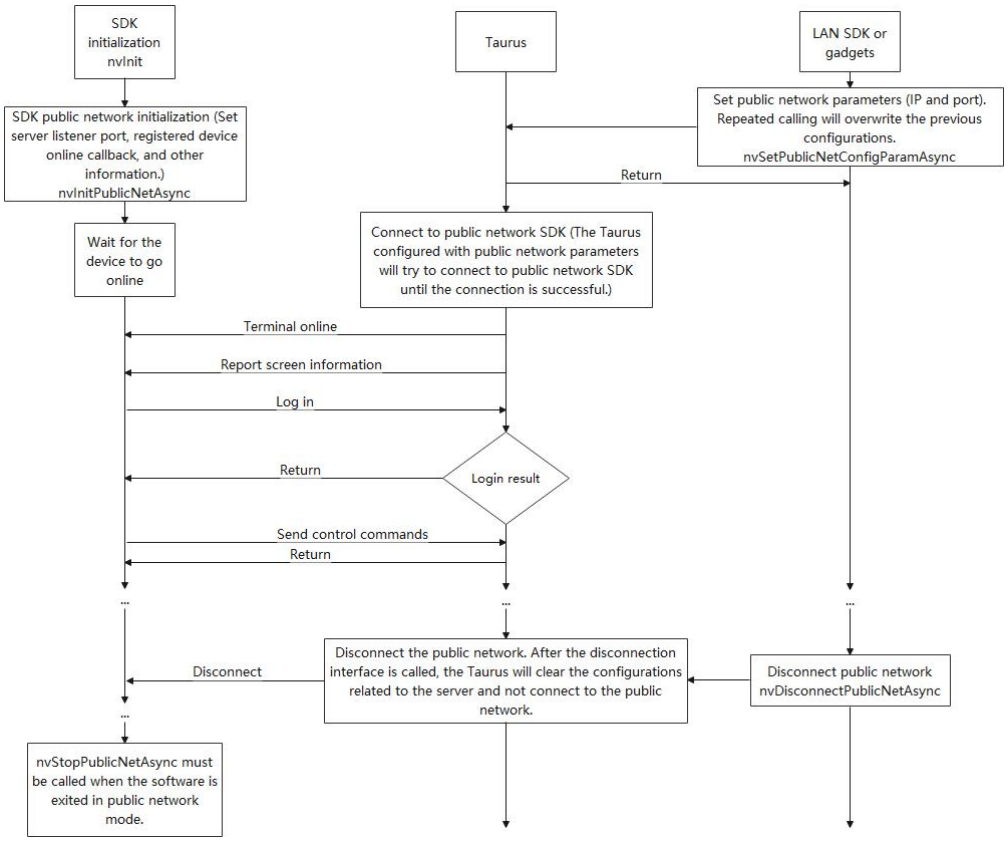
See the following to configure and use SDK public network mode.

1. Below is the relationship between the public server, http file server, public SDK and Taurus

1. SDK must be deployed on the server of the public network.
2. The http file server must be set up on the server where SDK is deployed. The http file server is configured by the user. The file server that comes with either node js or python can be used. (The following is the procedure to configure nodejs httpserver.)



2.Public Network SDK Configuration Procedure



3. SDK Interface Calling

1. To use public network SDK, the nvInitPublicNetAsync interface must be called after the nvInit interface to complete SDK public network initialization. (nvInitPublicNetAsync is used for setting the server listener port, the local address and url of the http file server, registered device online callback, and other information.)
2. After the device goes online, the online callback set by the nvInitPublicNetAsync interface will be triggered to call back the screen information of the online devices.
3. After a device goes online, the interfaces to log in, send control commands, create solutions, and publish solutions can be called normally.
4. To exit the software, the nvStopPublicNetAsync interface must be called to stop the public network service.

4. Taurus Configuration

1. Note that the Taurus earlier than V3.4.0 does not support public network mode.
2. Before connecting to public network SDK, configure server parameters for the Taurus. A set of SDK of connecting to a

LAN can be used for connecting to the Taurus for configuration.

3. Call the nvSetPublicNetConfigParamAsync interface to configure the public network parameters of the Taurus, including setting server IP, port and other information.
4. After the public network parameter configuration is done, the Taurus will connect to the public network SDK automatically. If the connection fails, the Taurus will try to reconnect to the server within one minute until the connection succeeds.
5. Calling the nvDisconnectPublicNetAsync interface will stop the Taurus from connecting to the public network SDK.

5. How to configure the http file server

1. Download and install node js. Download link: http://nodejs.cn/download/
2. Install httpserver: Open Command Prompt and type the following command to install httpserver globally. npm install -g http-server
3. Use: Choose file directory of the httpserver configuration, open Command Prompt, and type http-server to start successfully.

Notes

1 Possible reasons why the T card cannot be found:

1 Multiple applications or ViPlex Express for docking the SDK are launched, causing the UDP port to be used. 2 Multiple network cards in the computer are working. 3 They are not on the same LAN. You can try to search by IP address.

2 Problems of using SDK dynamic library and remedies to the problems :

2.1. In Linux, when errors like “lib***.so file too short” occur, the software connection may fail. You can try to delete the original files and use ln -s to regenerate software connection. For example: ./libcurl.so: file too short, first, “rm libcurl.so”, then, “ln -s libcurl.so.4.3.0 libcurl.so”.

2.2. For java projects, use absolute path when JNA is used for loading so library. For example:

```
//winodws
 ViplexCore instance = (ViplexCore) Native.loadLibrary("D:\\nova\\novasdk\\lviplexcore.dll",ViplexCore.class);
 //或者 linux
```

```
  ViplexCore instance = (ViplexCore) Native.loadLibrary("home/nova/novasdk/libviplexcore.so",ViplexCore.class);
```

```
2.3. For java projects, if you want to use relative path, add the SDK dynamic library to the classpath environment variable. There are following methods (or you can search for relevant tutorials to add the path), for example:
    2.3.1. Command Prompt, for example: javac -cp "C:\Users\HiWin10\Downloads\ViplexCore3.3.0.01_x64\bin"   (See details in SDK demo/java/Download files of runDemo.sh or runDemo.bat.)
    2.3.2. Import environment variable. For example:    export CLASSPATH=$CLASSPATH:home/user/ViplexCore3.3.0.01_x64/
    2.3.3. For springboot projects:  java -Xbootclasspath/a:/home/nova/novasdk/
```

3 Other options

1. Only one global instance of ViplexCore needs to be maintained. If multiple instances are initialized, SDK will not be used normally.
2. The global initialization interface needs to be called only once.

Ports used by SDK in LAN mode:

UDP port: 16600, 16601 Common login mode: TCP: 16603, FTP: 16602 Sysset login: TCP: 16605, FTP: 16604

Online Manual

You can see the online manual for development at: Taurus SDK

Linux

The caller needs to link to the thread library: -lpthread Static loading requires the caller to set QT program (qmake sample): CONFIG += qt

2、Global Error Codes

Error Code	Name	Description
0x00(0)	OK	Successful
0x01(1)	ERR_COMMON	Generic error
0x02(2)	ERR_NULL	The parameter is empty.
0x03(3)	ERR_INVALID_PARAM	Invalid parameter
0x04(4)	ERR_TIMEOUT	Timeout
0x05(5)	ERR_IO_EXCEPTION	IO exception

Error Code	Name	Description
0x06(6)	ERR_INTERRUPTED	Interrupt exception
0x07(7)	ERR_INCOMPLETED	Incomplete
0x08(8)	ERR_INCOMPLETED_SET	Incomplete settings
0x09(9)	ERR_ALREADY_DONE	Already done
0x0A(10)	ERR_SECURITY	Security issue
0x0B(11)	ERR_PERMISSION_DENIED	Permission denied
0x0C(12)	ERR_NOT_IMPLEMENTED	Function not implemented
0x0D(13)	ERR_REMOTE_EXCEPTION	Remote procrdure call exception Commonly used for the communication exception between processes
0x0F(15)	ERR_UNSUPPORTEDENCODING	Encoding not supported
0x10(16)	ERR_JSON_EXCEPTION	Json exception
0x11(17)	ERR_FORBIDDEN	Access forbidden
0x12(18)	ERR_NO_SESSION	No session connection
0x13(19)	ERR_NOT_EXISTED	Not exist
0x14(20)	ERR_NO_SPACE	No session connection
0x15(21)	ERR_DATABASE_EXCEPTION	Database exception
0x16(22)	ERR_TOO_FREQUENTLY	Operation too frequent
0x17(23)	ERR_ALREADY_EXISTED	Already exist
0x18(24)	ERR_VERIFY_FAILED	Verification failed (such as file MD5 not consistent, system upgrade package verification failed)
0x19(25)	ERR_FILE_ILLEGAL	Invalid or wrong upgrade package
0x20(32)	ERR_SIGNATURE_NO_MATCH	Signature not match (upgrade package)
0x21(33)	ERR_ACCOUNT_NOT_EXIST	Account not exist
0x22(34)	ERR_SCREEN_NOT_CONFIG	Screen not configured
0x23(35)	ERR_NETWORK	Network error
0x24(36)	ERR_UNSUPPORTED	Terminal not supported
0x25(37)	ERR_LORA_SLAVE_UNSUPPORTED	RF slave devices not supported (such as setting a volume, brightness, time and time zone for the slave devices)
0x33(51)	ERR_NOT_ONE_FPGA	The number of FPGA verified by the product and platform during upgrade is not one.
0x34(52)	ERR_NOT_SUPPORT_PRODUCT	The terminal product is not supported during upgrade verification.
0x35(53)	ERR_VERSION_LOW	The version of the software to be upgraded is earlier than the version of the software installed in the current terminal.
0x36(54)	ERR_NOT_SUPPORT_PLATFORM	The terminal platform is not supported during upgrade verification.
0x42(66)	ERR_BEYOND_AUTHORIZED_COUNT	The number exceeded the allowed number during registration.
0x43(67)	ERR_LOGIN_LOCKED	During login, the wrong password was entered for three concecutive times.

Error Code	Name	Description
0xFF06(65286)	LOG_INIT_ERR	Initialize sdk--Log error
0xFF07(65287)	DB_INIT_ERR	Initialize sdk--Database error
0xFF08(65288)	VALUE_RANGE_ERROR	Parameter does not meet the requirements--Value exceeded the valid range
0xFF14(65300)	RemoteHostClosedError	Terminal disconnected--tcp disconnected (server disconnected)
0xFF18(65304)	SocketTimeoutError	Connection failed—socket timed out
0xFF21(65313)	SN_IS_ILLEGAL	Login--Invalid sn
0xFF22(65314)	ERR_PATH_NOT_EXIST	Upgrade--The path passed while obtaining the file list is wrong.
0xFF23(65315)	ERR_FILE_NUZIP_FAILED	Upgrade--Failed to unzip the file while obtaining RAR json file content.
0xFF24(65316)	ERR_DESCRIPTION_JSON_NULL	Upgrade--The json file is empty while obtaining RAR json file content.
0xFF25(65317)	PARAM_IS_EXCEPTION	Parameter does not meet the requirements--Change password--Parameter error
0xFF27(65319)	NO_MATCH_FILE	The file with the specified suffix is not found in the specified path.
0xFF28(65320)	UPDATE_PACKAGE_UPLOADING	Upgrade--Start to upload the installation package during OS or APP upgrade.
0xFF29(65321)	START_UPDATE	Upgrade--Start to upgrade after the installation package is uploaded during OS or APP upgrade.
0xFF30(65328)	DIR_NOT_EXIST	The specified path does not exists while solution generation.
0xFF3a(65338)	CREATE_JSONFILE_FAILED	When writting the generated solution into the Json file, failed to open the folder and unable to write the data.
0xFF3b(65339)	UPLOAD_FILE	Some files were not uploaded via FTP. This status code will be reported in real time.
0xFF3c(65340)	CREATEPROGRAM_ERROR	When creating a solution, read the existing "programId" from the database. Read error means that the solution is not created successfully.
0xFF3e(65342)	PROGRAMTEMPLATE_DATABASE_EMPTY	There is no default templates in the database when the user adds a template.
0xFF3f(65343)	ERR_CHANGEPWD_OLDPWDERR	The original password does not meet the requirements--Change password--The old password is wrong.
0xFF40(65344)	ERR_UPDATEPACKAGE_TRANSPORT	Upgrade--The installation package is uploaded during OS or APP upgrade.
0xFF41(65345)	TEMPLATEID_IS_ERROR	The passed ID is incorrect while editing the template. The ID does not exist in the database.
0xFF43(65347)	ERR_INSERTERROR	Operation failed--Update database--Failed to insert database.
0xFF44(65348)	ERR_DELETEERROR	Operation failed--Failed to delete

Error Code	Name	Description
		database.
0xFF45(65349)	ERR_TCP_UNCONNECTED	Terminal disconnected --TCP not connected
0xFF46(65350)	ERR_NOT_LOGIN	Terminal disconnected--Screen not logged in
0XFF47(65351)	ERR_PWDERROR_CLEARPASSWORD	Login interface return--The terminal returns the user name and password. But the login input parameter is to remember the password. Help handy clear password and use a special code ID.
0xFF48(65352)	OLD_DATABASE_ISEMPTY	During data transfer, there is no data in the old data and the input parameter is empty.
0xFF49(65353)	ERR_ALREADY_LOGIN	You have already logged in to the terminal. Please do not log in again.
0XFF51(65361)	ERR_UNGETFIRMWARE_VERSIONISNULL	Please call the interface of obtaining firmware version information.
0XFF52(65362)	MEDIA_UPLOADING	Media is uploading
0XFF53(65363)	ERR_FTP_SEND_ERROR	Failed to send ftp: Network disconnected.
0xFF54(65364)	ERR_VERISON_ROLLBACK	Version rollback error
0xFF55(65365)	ERR_NOT_SUPPORT_VERIFY	The current terminal does not support upgrade feasibility verification.
0xFF56(65366)	ERR_FEEDBACK_FAILED	Failed to upload feedback.
0xFF57(65367)	ERR_NETWORKCONNECT	Network detection exception
0xFF58(65368)	USB_NO_AVAILABLE_SPACE	There is not enough space in the USB drive.
0xFF59(65369)	UPDATE_PACKAGE_DOWNLOADING	Upgrade package is being downloaded.
0xFF5A(65370)	ERR_GET_ONLINE_PACKAGE_FAILED	Failed to obtain online upgrade package.
0xFF5B(65371)	ERR_STOP_DOWNLOAD_UPDATE_PACKAGE	Terminate upgrade package download
0xFF5C(65372)	ERR_DOWNLOAD_UPDATE_PACKAGE_FAILED	Failed to download upgrade package
0xFF5D(65373)	ERR_LOCAL_FILE	Failed to open the local file. Unable to open local file and write data while downloading file.
0xFF5E(65374)	ERR_CURL_INIT	curl initialization failed (http access initialization failed)
0xFF5F(65375)	ERR_FILE_VERIFY_IFAILED	File verification failed
0xFFFF(65535)	CALLBACK_TIMEOUT	Interface timeout

3、Change History

- 2020

Date	Modified By	Modifications
October 29	Zhang Hualong	Simplified the solution editing.
August 25	Zhang Hualong	Prepared this manual.

- 2021

Date	version	Modified By	Modifications
January 19	3.3.0	Qi Hongtao	Added the problems that may occur during the use of the sdkso library in Linux and remedies to the problems on the “Notes” page.
February 2	3.3.0	Qi Hongtao	1. Supports multi-thread batch command settings. 2. Supports multi-thread solution publishing. 3. Fixed the problem that commands cannot be sent because the callback is blocked by the upper layer. 4. Supports multi-thread screenshot sending.
February 5	3.3.0	Qi Hongtao	Added the function of specify an IP address when search is not used.
February 5	3.3.0	Liu Na	Changed the app installation interface.
February 23	3.3.0	Liu Na	Added error code description. 0xFF16(65302)
February 23	3.3.0	Liu Na	Added audio media.
May 31	3.4.0	Gu Zhonghao	Added public network configuration instructions.
July 13	3.5.0	Dang Jintao	1. Improved advanced solutions. 2. Improved solution publishing progress.

4、Interface Examples

4.1、Initialization

4.1.1、Initializing SDK

Description:

- This is an SDK initialization interface. SDK initialization must be done by calling this interface before you calling the SDK interfaces.

Request URL:

- `int nvInit(const char *sdkRootDir, const char *credentials);`

Request Method:

-

Request Parameter Sample

-

```
{
  "company":"NovaStar",
  "phone":"029-68216000",
  "email":"hr@novastar.tech"
}
```

Parameters:

Parameter	Required	Type	Description
sdkRootDir	Yes	string	Store path of SDK logs and database
credentials	Yes	object	Company information. It is convenient to notify users of upgrade when SDK has bugs or critical updates are available.
company	Yes	string	Company name
phone	Yes	string	Phone number
email	Yes	string	Email address

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Initialization successful 65286 Log initialization failed 65287 Database initialization failed

Remark

-

4.1.2、(iOS) Setting Mobile Platform Type

Description:

- If the caller is iOS, calling this interface will be required. For other platforms, this interface can be ignored.

Request URL:

- `void nvSetPlatform(const char *platform);`

Request Method:

-

Parameters:

Parameter	Required	Type	Description
platform	Yes	string	Due to the special mechanism of screen lock/background on iOS, udp search requires some special handling. Fill in ‘ios`.

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remark

-

4.2、Search, Connection and Login

4.2.1、Searching for Screens

Description:

- Search for all the screens connected to the current Wi-Fi network.

Request URL:

- `void nvSearchTerminalAsync(ExportViplexCallback callback)`

Request Method:

-

Return Sample

-

```
{
  "sn":"20393844393033",
  "productName":"AX200",
  "width":400,
  "height":800,
```

```
  "rotation":0,
  "aliasName":"XianYataScreen",
  "logined":true,
  "username":[
    "admin"
  ],
  "tcpPort":16603,
  "ftpPort":16602,
  "syssetFtpPort":16604,
  "syssetTcpPort":16605,
  "key":"novaStar",
  "platform":"rk3368",
  "privacy":true,
  "terminalState":0,
  "ignoreTime":100029432434,
  "hasPassword":true,
  "password":"12345678"
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Search successful. Result is the searched content. 65302The UDP listening port (16600) is in use, which may cause data not to return. If no data is returned, please release the port and then restart SDK. Note: The machine may be installed with multiple network cards and some computers such as laptops may have one network card and multiple IP addresses, so the port of an IP address may be used and some ports may not be used. That’s why “may cause data not to return” is used in the above. 65535 Search timeout. No terminals are found to match the search within 4s.
sn	string	Product SN
productName	string	Product name
width	int	Screen width (pixel)
height	int	Screen height (pixel)
rotation	int	Rotation angle: 0, 90, 180, 270
aliasName	string	Screen alias
logined	boolean	Whether the terminal is logged in
username	string_array	If the terminal is already logged in, it will be the login user name.
tcpPort	int	tcp connection port
ftpPort	int	ftp connection port
syssetFtpPort	int	System setting ftp port
syssetTcpPort	int	System setting tcp port
key	string	Key returned from the terminal, involved in ftp password generation rules
platform	string	System platform information (rk3368 and rk312x is currently displayed.)

Parameter	Type	Description
privacy	boolean	True denotes that the terminal supports encryption. It must be true if it is a new terminal.
password	string	Password
terminalState	int	Current screen status. “terminalState” has 6 values and each represents: 0: No terminal connected 1: Connected successfully but not logged in 2: Logged in by others 3: Logged in successfully 4: Wrong password 5: Offline. The terminal cannot be found at the moment but was found before.
ignoreTime	long	Record the timestamp when clicking ignore password.
hasPassword	boolean	Remember password: true denotes yes; false denotes no.

备注

-

4.2.2、Logging In to Terminals

Description:

- The login interface and tcp connection are combined. If the tcp is disconnected at a certain time, the error information will be returned from this interface.

Request URL:

- `void nvLoginAsync(const char *data,ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "ip":"",
  "username":"admin",
  "password":"123456",
  "loginType":0,
  "rememberPwd":0
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
ip	No	string	If this field is not passed in, log in to the device returned by the search interface according to SN. If this field is passed in, you can directly log in to the specified device without searching.
username	Yes	string	UserName
password	Yes	string	Password
loginType	Yes	int	0: Log in to screen management 1: Log in to system settings (with a secret code) 2: Log in to diagnosis module 3: LCT logine Yes int 5:Public SDK Login
rememberPwd	Yes	int	Remember password 0: No 1: Yes

Return Sample

```
{
  "logined":true,
  "password":"123456",
  "sn":"BZSA17332J0A20002272",
  "username":"admin",
  "validation":true,
  "validition":true,
  "loginedUsernames":[
    "admin"
  ],
  "encrypt":""
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
sn	string	Unique product SN
username	string	User name
password	string	Password
validition	boolean	Whether the user name and password is valid. (A field left over from the older version)
validation	boolean	Whether the user name and password is valid. (A field added in the new version)
logined	boolean	Whether the login is successful.
loginedUsernames	string_array	login user name. This field is valid when “logined” is “false” and “validation” is “true”.

Parameter	Type	Description
encrypt	string	The secret code for the password is used for retrieving the password. This field is valid when “logined” is “false” and “validation” is “false”.

Remark Login result:
When the returned code == 0:
1、 Login is successful when “logined” is “true” and “validition” is “true”.
2、 The terminal is logged in by others when “logined” is “false” and “validition” is “ true”.
3、 The password is wrong when “logined” is “false” and “validition” is “false”

Please pay attention to the error code.

4.2.3、Searching by IP Address

Description:

- Search for a screen by specifying an IP address.

Request URL:

- `void nvSearchAppointIpAsync(const char * AppointIp, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "ip":"172.18.179.243"
}
```

Parameters:

Parameter	Required	Type	Description
AppointIp	Yes	string	Specify an IP address

Return Sample

```
{
```

```
  "sn":"20393844393033",
  "productName":"AX200",
  "width":400,
  "height":800,
  "rotation":0,
  "aliasName":"XianYataScreen",
  "logined":true,
  "username":[
    "admin"
  ],
  "tcpPort":16603,
  "ftpPort":16602,
  "syssetFtpPort":16604,
  "syssetTcpPort":16605,
  "key":"novaStar",
  "platform":"rk3368",
  "privacy":true,
  "terminalState":0,
  "ignoreTime":100029432434,
  "hasPassword":true,
  "password":"12345678"
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Search successful. Result is the searched content. 65535 Search timeout. No terminals are found to match the search within 4s.
sn	string	Product SN
productName	string	Product name
width	int	Screen width (pixel)
height	int	Screen height (pixel)
rotation	int	Rotation angle: 0, 90, 180, 270
aliasName	string	Screen alias
logined	boolean	Whether the terminal is logged in
username	string_array	If the terminal is already logged in, it will be the login user name.
tcpPort	int	tcp connection port
ftpPort	int	ftp connection port
syssetFtpPort	int	System setting ftp port
syssetTcpPort	int	System setting tcp port
key	string	Key returned from the terminal, involved in ftp password generation rules
platform	string	System platform information (rk3368 and rk312x is currently displayed.)
privacy	boolean	True denotes that the terminal supports encryption. It must be true if it is a new terminal.
password	string	Password

Parameter	Type	Description
terminalState	int	Current screen status. “terminalState” has 6 values and each represents: 0: No terminal connected 1: Connected successfully but not logged in 2: Logged in by others 3: Logged in successfully 4: Wrong password 5: Offline. The terminal cannot be found at the moment but was found before.
ignoreTime	long	Record the timestamp when clicking ignore password.
hasPassword	boolean	Remember password: true denotes yes; false denotes no.

Remark

-

4.2.4、Searching by IP Address Range

Description:

- Search for screens by specifying an IP address range.

Request URL:

- `void nvSearchRangeIpAsync(const char * data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
    "data": {
        "ipStart": "172.18.179.1",
        "ipEnd": "172.18.179.255"
    }
}
```

Parameters:

Parameter	Required	Type	Description
data	Yes	object	Start IP and end IP
ipStart	Yes	string	Start IP
ipEnd	Yes	string	end IP

Return Sample


```
{
  "sn":"20393844393033",
  "productName":"AX200",
  "width":400,
  "height":800,
  "rotation":0,
  "aliasName":"XianYataScreen",
  "logined":true,
  "username":[
    "admin"
  ],
  "tcpPort":16603,
  "ftpPort":16602,
  "syssetFtpPort":16604,
  "syssetTcpPort":16605,
  "key":"novaStar",
  "platform":"rk3368",
  "privacy":true,
  "terminalState":0,
  "ignoreTime":100029432434,
  "hasPassword":true,
  "password":"12345678"
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Search successful. Result is the searched content. 65535 Search timeout. No terminals are found to match the search within 4s.
sn	string	Product SN
productName	string	Product name
width	int	Screen width (pixel)
height	int	Screen height (pixel)
rotation	int	Rotation angle: 0, 90, 180, 270
aliasName	string	Screen alias
logined	boolean	Whether the terminal is logged in
username	string_array	If the terminal is already logged in, it will be the login user name.
tcpPort	int	tcp connection port
ftpPort	int	ftp connection port
syssetFtpPort	int	System setting ftp port
syssetTcpPort	int	System setting tcp port
key	string	Key returned from the terminal, involved in ftp password generation rules
platform	string	System platform information (rk3368 and rk312x is currently displayed.)

Parameter	Type	Description
privacy	boolean	True denotes that the terminal supports encryption. It must be true if it is a new terminal.
password	string	Password
terminalState	int	Current screen status. “terminalState” has 6 values and each represents: 0: No terminal connected 1: Connected successfully but not logged in 2: Logged in by others 3: Logged in successfully 4: Wrong password 5: Offline. The terminal cannot be found at the moment but was found before.
ignoreTime	long	Record the timestamp when clicking ignore password.
hasPassword	boolean	Remember password: true denotes yes; false denotes no.

Remark

-

4.2.5、Obtaining All Terminals from the Database

Description:

- View the information of all the terminals.

Request URL:

- `void nvFindAllTerminalsAsync(ExportViplexCallback callback);`

Request Method:

-

Return Sample

-


```
[
  {
    "aliasName":"Taurus-49999787",
    "ftpPort":16602,
    "hasPassWord":false,
    "height":1080,
    "ignoreTime":0,
    "ip":"172.16.9.205",
    "key":"novaStar",
    "logined":false,
    "loginedUsernames":[
      ""
```

```
    ],
    "password":"",
    "platform":"rk312x",
    "privacy":true,
    "productName":"TC300",
    "sn":"BZSA07194A0049999787",
    "syssetFtpPort":16604,
    "syssetTcpPort":16605,
    "tcpPort":16603,
    "terminalState":5,
    "username":[

    ],
    "width":1920
  }
]
```


Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
sn	string	Product SN
productName	string	Product name
width	int	Screen width (pixel)
height	int	Screen height (pixel)
rotation	int	Rotation angle: 0, 90, 180, 270
aliasName	string	Screen alias
logined	boolean	Whether the terminal is logged in
username	string_array	If the terminal is already logged in, it will be the login user name.
tcpPort	int	tcp connection port
ftpPort	int	ftp connection port
syssetFtpPort	int	System setting ftp port
syssetTcpPort	int	System setting tcp port
key	string	Key returned from the terminal, involved in ftp password generation rules
platform	string	System platform information (rk3368 and rk312x is currently displayed.)
privacy	boolean	True denotes that the terminal supports encryption. It must be true if it is a new terminal.
password	string	Password
terminalState	int	Currentscreen status (The value can be found in the database is always 5)
ignoreTime	long	Record the timestamp when clicking ignore password.
hasPassword	boolean	Remember password: true denotes yes; false denotes no.
configInfo	object	Supported module
installedPackageVersions	object	Installed software version

Parameter	Type	Description
productInfo	object	Device information
firmwareInfo	object	Firmware version information
screenMosaicInfo	object	Multi-screen mosaic information

Remark

4.2.6、Changing Password

Description:

- Change the login password of the screen.

Request URL:

- `void nvChangePassWordAsync(const char *data,ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"12345787454544",
  "reSetInfo":{
    "username":"admin",
    "password":"123456",
    "newPassword":"12345678"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
username	Yes	string	User name
password	Yes	string	Old password
newPassword	Yes	string	New password

Return Sample

```
changepassword success
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Changed successfully

Remark

-

4.2.7、Deleting Screens

Description:

- This is an interface used for deleting a specific screen.

Request URL:

- `void nvDelTerminalInfoAsync(const char *data,ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "type":"deleteTerminal"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	″deleteTerminal” means that this action is to “delete the screen (terminal)”.

Return Sample

```
Success
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Deleted successfully 65348 Failed to delete 12 The parameter type is wrong. The interface is not implemented yet.
data	string	Error code description. This can be ignored.

Remark

-

4.2.8、Storing Screen Information (Data Inheritance)

Description:

- This interface This interface is the screen data inheritance in the older version.

Request URL:

- `void nvSetScreenInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-


```
[
  {
    "aliasName":"Taurus-10006848",
    "screenMosaicInfo":{
      "order":456,
      "videoSource":127
    },
    "ftpPort":16602,
    "hasPassWord":false,
    "height":400,
    "ignoreTime":0,
    "ip":"192.168.1.113",
    "key":"novaStar",
    "logined":false,
    "password":"",
    "productName":"T6",
    "sn":"BZSA79353N1310006848",
    "syssetFtpPort":16604,
    "syssetTcpPort":16605,
    "tcpPort":16603,
    "terminalState":0,
```

```
    "width":400
  }
]
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
productName	No	string	Product name
width	No	int	Screen width (pixel)
height	No	int	Screen height (pixel)
rotation	No	int	Rotation angle: 0, 90, 180, 270
aliasName	No	string	Screen alias
logined	No	boolean	Whether the terminal is logged in
username	No	string_array	If the terminal is already logged in, it will be the login user name.
tcpPort	No	int	tcp connection port
ftpPort	No	int	ftp connection port
syssetFtpPort	No	int	System setting ftp port
syssetTcpPort	No	int	System setting tcp port
key	No	string	Key returned from the terminal, involved in ftp password generation rules
screenMosaicInfo	No	object	object Screen mosaic information
order	No	int	Mosaic order
videoSource	No	int	Number of video sources

Return Sample

```
Success
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Stored successfully 65347 Failed to store
data	string	Error code description. This can be ignored.

Remark

-

4.2.9、Clearing Password

Description:

- Clear the screen password.

Request URL:

- `void nvDelTerminalInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "type":"clearPassWord"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	″clearPassWord” means that this action is to “clear the password”.

Return Sample

```
Success
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Cleared successfully 65348 Failed to delete 12The parameter type is wrong. The interface is not implemented yet.
data	string	Error code description. This can be ignored.

Remark

-

4.2.10、Obtaining Screen Mosaic Information

Description:

- Obtain the screen mosaic information.

Request URL:

- `void nvGetTerminalInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "type":"getSystemInfo"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	"getSystemInfo" means that this action is to "obtain the system information".

Return Sample

```
{
  "mosaicWidth":400,
  "mosaicHeight":400,
  "mosaicNum":10
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 12 The parameter type is wrong. The interface is not implemented yet.
mosaicWidth	int	Mosaic width
mosaicHeight	int	Mosaic height
mosaicNum	int	Total number of screens used for the mosaic

Remark

-

4.2.11、Setting Ignoring Time for Weak Password

Description:

- After the timestamp of clicking “Ignore weak password” option is set, the field you set is returned when you call “Search for screens”, otherwise, a null string will be returned. <br&After the timestamp is set, the “Ignore weak password” modal box will not appear for some time in the future.

Request URL:

- `void nvSetTerminalInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "type":"setIgnoreTime",
  "value": 123456789012345
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	″getSystemInfo” means that this action is to “set ignoring time for weak password”.
value	Yes	int	Timestamp (ms) to set, for example, 1113259324242

Return Sample

```
Success
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Setting successful

Parameter	Type	Description
		65347 Setting failed 12 The parameter type is wrong. The interface is not implemented yet.
data	string	Error code description. This can be ignored.

Remark

-

4.2.12、Setting System Information

Description:

- Set “System Information”. Set some sn unrelated configuration information. For details, see the following parameters.

Request URL:

- `void nvSetSystemInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "mosaicWidth":400,
  "mosaicHeight":400,
  "lang":"cn",
  "demo":true,
  "userType":"user"
}
```

Parameters:

Parameter	Required	Type	Description
mosaicWidth	Yes	int	Mosaic width
mosaicHeight	Yes	int	Mosaic height
lang	Yes	string	Multi-language
demo	Yes	bool	Whether it is demo
userType	Yes	string	User mode

Return Sample

```
Success
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Setting successful 65347 Setting failed
data	string	Error code description. This can be ignored.

Remark

-

4.2.13、Logging Out of Terminals

Description:

- Note: After logout, successful or failed is returned. The long connection of the login interface becomes invalid automatically.

Request URL:

- `void nvLogoutAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "loginType":0
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
loginType	Yes	int	0: Disconnect screen management

Parameter	Required	Type	Description
			1: Disconnect system settings (secret code) 2: Disconnect diagnosis module 3:Log out of LCT

Return Sample

```
disconnetSuccess
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Logout successful
data	string	Error code description. This can be ignored.

Remark

-

4.3、Solutions

4.3.1、Publishing Solutions

Description:

- This is an interface used for publishing solutions.

Request URL:

- `void nvStartTransferProgramAsync(const char *data, ExportViplexCallback callBack)`

Request Method:

-

Request Parameter Sample

-

```
{
    "sn": "",
    "iconPath": "",
    "iconName": "",
    "sendProgramFilePaths": {
        "programPath": "",
```

```
        "mediasPath": {
            "C:/test/test.mp4": "test.mp4"
        }
    },
    "programName": "",
    "deviceIdentifier": "",
    "startPlayAfterTransferred": true,
    "insertPlay": true
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique identifier
iconPath	Yes	string	Thumbnail path
iconName	Yes	string	Thumbnail name
programPath	Yes	string	Solution path
mediasPath	Yes	map	{Media path: Media name}
programName	Yes	string	Solution name
deviceIdentifier	Yes	string	Unique ID of the solution
startPlayAfterTransferred	Yes	bool	Whether to start playback immediately
insertPlay	Yes	bool	Whether to insert content

Remarks The solution publishing interface has many callbacks. Real-time file progress callback and publishing result callback 。

Return Sample Return Sample of Real-time File Progress

```
{
    "m_curBytes": 0,
    "m_totalBytes":10000
}
```

Return Parameter Description

Parameter	Type	Description
m_curBytes	long long	Real-time upload progress of the current media
m_totalBytes	long long	Size of all the media files in the current solution

Callback Sample of File Sending Successful

```
{"code":65362,"data":"all media update finish"}
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	0 Sent successfully 2062 File transfer terminated 2027 Local network connection disconnected 2048 FTP timeout
data	string	Description of the returned error code

Remarks

-

4.3.2、Creating Solutions

Description:

- This is an interface used for creating solutions.

Request URL:

- `void nvCreateProgramAsync(const char *data, ExportViplexCallback callBack)`

Request Method:

-

Request Parameter Sample

-

```
{
  "name":"jiemu1",
  "width":400,
  "height":400,
  "tplID":1,
  "winInfo":{
    "height":100,
    "width":100,
    "left":0,
    "top":0,
    "zindex":0,
    "index":0
  }
}
```

Parameters:

Parameter	Required	Type	Description
name	Yes	String	Solution name
width	Yes	int	Width
height	Yes	int	Height

Parameter	Required	Type	Description
tplID	Yes	int	Template ID
winInfo	Yes	int	Window information: When "tplID" is set to 1-6, select the corresponding template; When "tplID" is set to 0, use the information in "winInfo".
left	Yes	float	Left proportion
top	Yes	float	Top proportion
zindex	Yes	int	Z order

Return Sample

```
{
  "onSuccess":
  {
    "programID": 1
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65340 Failed to create solution
data	string	Detailed information of the returned error code
onSuccess	object	
programID	int	ID of the created solution

Remarks

-

4.3.3、Generating Solutions

Description:

- This is an interface used for generating solutions.

Request URL:

- `void nvMakeProgramAsync(const char *data, ExportViplexCallback callBack)`

Request Method

-

Request Parameter Sample

-

```
{
  "programID":1,
  "outPutPath":"test",
  "mediasPath":[
    {
      "oldPath":"test",
      "newPath":"test"
    }
  ]
}
```

Complex solutions

```
{
  "programID":1,
  "outPutPath":"C:/Users/nova_test",
  "mediasPath":[
    {
      "oldPath":"test",
      "newPath":"test"
    }
  ],
  "complexProgram":{
    "name":"复杂节目",
    "programRegular":[
      {
        "priority":1,
        "programID":1,
        "constraints":[
          {
            "startTime":"1970-01-01T14:17:00Z 8:00",
            "endTime":"4017-12-30T14:17:59Z 8:00",
            "cron":[
              "0 0 0 ? * 1,2,3,4,5,6,7"
            ]
          },
          {
            "startTime":"1970-01-01T14:19:00Z 8:00",
            "endTime":"4017-12-30T14:19:59Z 8:00",
            "cron":[
              "0 0 0 ? * 1,2,3,4,5,6,7"
            ]
          }
        ]
      },
      {
        "priority":2,
        "programID":2,
        "constraints":[
          {
            "startTime":"1970-01-01T14:18:00Z 8:00",
            "endTime":"4017-12-30T14:18:59Z 8:00",
            "cron":[
              "0 0 0 ? * 1,2,3,4,5,6,7"
            ]
          },
```

```
            {
              "startTime":"1970-01-01T14:20:00Z 8:00",
              "endTime":"4017-12-30T14:20:59Z 8:00",
              "cron":[
                "0 0 0 ? * 1,2,3,4,5,6,7"
              ]
            }
          ]
        }
      ]
    }
}
```

Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution ID
outPutPath	Yes	string	Path of the protocol related to solution generation
oldPath	Yes	string	Original file path (used when IOS cannot obtain the original file)
newPath	Yes	string	Current file path (Copy the source file to a certain path when IOS cannot obtain the original file.)
complexProgram	No	object	Solutions are related to schedules.
name	Yes	object	Name. When complexProgram takes effect, it cannot be empty. The original solution will be overwritten when the names are the same.
programRegular	Yes	objectArray	Schedule rules
priority	Yes	int	Priority. When the time conflicts, the solution with a greater value will be played first.
programID	Yes	int	Solution id, solutions requiring to be scheduled
constraints	Yes	objectArray	Time constraint. A solution can be set with multiple timeslots.
cron	Yes	StringArray	Each control solution uses cron expression array. When there are multiple cron expressions, the relationship between the expressions is or.
startTime	Yes	string	Valid start date
endTime	Yes	string	Valid end date

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65338 Failed to create Json file
data	string	Description of the returned error code

Remarks

-

4.3.4、Obtaining Media File MD5 Codes

Description:

- This is an interface used for obtaining media file MD5 codes.

Request URL:

- `void nvGetFileMD5Async(const char *data, ExportViplexCallback callBack)`

Request Method:

-

Request Parameter Sample

-

```
{
  "filePath":"C:/test/media"
}
```

Parameter:

Parameter	Required	Type	Description
filePath	Yes	string	Media file path

Return Sample

```
{
  "data":"12d4sa654d564ddauioaj4163"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	string	MD5 code returned successfully. If failed, the correponding description of the error code will be returned.

Remarks

-

4.3.5、Editing Multi-Page Solutions

Description:

- Edit multi-page solutions. This interface supports solutions containing multiple pages. The solution used in the sample contains two pages. The first page plays analog clock and the second page plays colorful text.

Request URL:

- `void nvSetPageProgramsAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "programID":1,
  "sceneItems":[
    {
      "id":1,
      "page":{
        "id":1,
        "name":"Solution 06",
        "widgetContainers":[
          {
            "contents":{
              "widgets":[
                {
                  "constraints":[
                    {
                      "cron":[
                        "0 0 0 ? * 1,2,3,4,5,6,7"
                      ],
                      "endTime":"4017-12-30T23:59:59Z 8:00",
                      "startTime":"1970-01-01T00:00:00Z 8:00"
                    }
                  ],
                  "duration":5000,
                  "metadata":{
                    "date":{
                      "textAttributes":{
                        "font":{
                          "size":16
                        },
```

```
                        "textColor":"#ffffff00"
                      },
                      "weekTemplates":[
                        "Sunday",
                        "Monday",
                        "Tuesday",
                        "Wednesday",
                        "Thursday",
                        "Friday",
                        "Saturday"
                      ]
                    },
                    "hourHand":{
                      "color":"#ffffff00"
                    },
                    "minuteHand":{
                      "color":"#ff00ff00"
                    },
                    "secondHand":{
                      "color":"#ffff0000"
                    },
                    "text":{
                      "text":"",
                      "textAttributes":{
                        "font":{
                          "size":12
                        },
                        "textColor":"#ffff0000"
                      }
                    }
                  },
                  "name":"Analog Clock",
                  "type":"ANALOG_CLOCK"
                }
              ]
            }
          }
        ]
      },
      "rules":"TIMES",
      "repeatCount":1,
      "name":"scene1",
      "enable":false,
      "type":"PLAYLIST",
      "backgroundColor":"#00ff0000",
      "backgroundDrawable":"",
      "backgroundMusic":"",
      "constraints":[
        {
          "startTime":"1970-01-01T00:00:00Z 08:00",
          "endTime":"4017-12-30T23:59:59Z 8:00",
          "cron":[
            "0 0 0 ? * 1,2,3,4,5,6,7"
          ]
        }
      ]
    },
    {
      "id":2,
      "page":{
        "name":"Solution 01",
```

```
        "widgetContainers":[
          {
            "contents":{
              "widgets":[
                {
                  "constraints":[
                    {
                      "cron":[
                        "0 0 0 ? * 1,2,3,4,5,6,7"
                      ],
                      "endTime":"4017-12-30T23:59:59Z 8:00",
                      "startTime":"1970-01-01T00:00:00Z 8:00"
                    }
                  ],
                  "duration":10000,
                  "metadata":{
                    "content":{
                      "content":"Enter your text",
                      "scrollAttributes":{
                        "effects":{
                          "speed":5,
                          "animation":"MARQUEE_LEFT",
                          "isHeadTail":false,
                          "headTailSpacing":"10",
                          "speedByPixelEnable":false
                        }
                      },
                      "textAttributes":{
                        "effects":{
                          "type":"GRADIENT_HORIZONTAL",
                          "colors":[
                            "#FF0000",
                            "#FF00B050",
                            "#FFC00000",
                            "#FF007BD4",
                            "#FFFFFF00",
                            "#FF00FF"
                          ],
                          "texture":""
                        },
                        "textColor":"#FF0000",
                        "font":{
                          "family":[
                            "Arial"
                          ],
                          "style":"NORMAL",
                          "size":50,
                          "isUnderline":false
                        }
                      }
                    }
                  },
                  "dataSource":"",
                  "type":"COLORFUL_TEXT",
                  "name":"Colorful text",
                  "originalDataSource":"",
                  "isSupportSpecialEffects":true
                }
              ]
            },
            "id":1,
```

```
            "name":"widgetContainers1"
          }
        ]
      },
      "rules":"TIMES",
      "repeatCount":1,
      "name":"scene2",
      "enable":false,
      "type":"PLAYLIST",
      "backgroundColor":"#00ff0000",
      "backgroundDrawable":"",
      "backgroundMusic":"",
      "constraints":[
        {
          "startTime":"1970-01-01T00:00:00Z 08:00",
          "endTime":"4017-12-30T23:59:59Z 8:00",
          "cron":[
            "0 0 0 ? * 1,2,3,4,5,6,7"
          ]
        }
      ]
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution ID (ID returned after creating a solution)
sceneItems	Yes	objectArray	Scene. A scene contains one page and multiple scenes contain multiple pages.
id	Yes	int	Unique scene
enable	No	bool	Scene validity, true: Play (default), false: Don't play
type	No	string	PAGE or PLAYLIST (default)
rules	No	string	Playback rule, TIMES: Play by the number of times (default)
repeatCount	No	int	Number of repeats. This is valid when the playback is based on the number of times. Default: 1
backgroundColor	No	string	Color value, standard format, four bytes from the highest to the lowest: "ARGB", for example, #00ff0000 (red), default: #00ff0000
backgroundDrawable	No	string	url, background image path. It can be from the Internet or the local file system. The background color and image cannot take effect simultaneously. The background image is preferred when both are set.
backgroundMusic	No	string	Background music path. The URL can be from the Internet or local file system.
constraints	No	object	Time restriction, valid time range. There is no this option when the playback is based on the number of times. It never expires by default.
startTime	No	string	Start time, can include time only or date and time

Parameter	Required	Type	Description
			zone as required.
cron	No	stringArray	cron expression
endTime	No	string	End time
page	Yes	object	Page. For the specific content on the page, see the pageInfo in the detailed media description in solution editing and complex solution editing.

Return Sample

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.6、Configure default system template

Description:

- Interface to configure default system template

Request URL:

- `void nvSetSystemTplInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "data":[
    {
      "data":[
        {
          "width":1,
          "height":1,
          "left":0,
          "top":0,
```

```
          "zindex":0,
          "index":0
        }
      ]
    },
    {
      "data":[
        {
          "width":0.5,
          "height":1,
          "left":0,
          "top":0,
          "zindex":0,
          "index":0
        },
        {
          "width":0.5,
          "height":1,
          "left":0.5,
          "top":0,
          "zindex":1,
          "index":1
        }
      ]
    },
    {
      "data":[
        {
          "width":1,
          "height":0.5,
          "left":0,
          "top":0,
          "zindex":0,
          "index":0
        },
        {
          "width":1,
          "height":0.5,
          "left":0,
          "top":0.5,
          "zindex":1,
          "index":1
        }
      ]
    },
    {
      "data":[
        {
          "width":0.3333,
          "height":1,
          "left":0,
          "top":0,
          "zindex":0,
          "index":0
        },
        {
          "width":0.3333,
          "height":1,
          "left":0.3333,
          "top":0,
          "zindex":1,
```

```
          "index":1
        },
        {
          "width":0.3333,
          "height":1,
          "left":0.6666,
          "top":0,
          "zindex":2,
          "index":2
        }
      ]
    },
    {
      "data":[
        {
          "width":1,
          "height":0.3333,
          "left":0,
          "top":0,
          "zindex":0,
          "index":0
        },
        {
          "width":1,
          "height":0.3333,
          "left":0,
          "top":0.3333,
          "zindex":1,
          "index":1
        },
        {
          "width":1,
          "height":0.3333,
          "left":0,
          "top":0.6666,
          "zindex":2,
          "index":2
        }
      ]
    },
    {
      "data":[
        {
          "width":0.5,
          "height":0.5,
          "left":0,
          "top":0,
          "zindex":0,
          "index":0
        },
        {
          "width":0.5,
          "height":0.5,
          "left":0.5,
          "top":0,
          "zindex":1,
          "index":1
        },
        {
          "width":0.5,
          "height":0.5,
```

```
            "left":0,
            "top":0.5,
            "zindex":2,
            "index":2
          },
          {
            "width":0.5,
            "height":0.5,
            "left":0.5,
            "top":0.5,
            "zindex":3,
            "index":3
          }
        ]
      }
    ]
}
```

Parameters:

Parameter	Required	Type	Description
width	Yes	int	width
height	Yes	int	height
left	Yes	float	Proportion to left
top	Yes	float	Proportion to top
zindex	Yes	int	Z order
index	Yes	int	Small window ID

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	Description of the corresponding error code returned

Remark

-

4.3.7、Add custom templates

Description:

- Interface to add custom templates

Request URL:

- `void nvAddTplAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "data":[
    {
      "data":[
        {
          "width":1,
          "height":1,
          "left":0,
          "top":0,
          "zindex":0,
          "index":0
        }
      ]
    }
  ],
  "size":{
    "width":400,
    "height":400
  }
}
```

Parameters:

Parameter	Required	Type	Description
width	Yes	int	width
height	Yes	int	height
left	Yes	float	Proportion to left
top	Yes	float	Proportion to top
zindex	Yes	int	Z order
index	Yes	int	Small window ID
width	Yes	int	Template width
height	Yes	int	Template height

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	Description of the corresponding error code returned
tplID	int	Added template ID

Remark

-

4.3.8、Edit custom templates

Description:

- Interface to edit custom templates

Request URL:

- `void nvEditTplAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "tplID":1,
  "data":[
    {
      "data":[
        {
          "width":1,
          "height":1,
          "left":0,
          "top":0,
          "zindex":0,
          "index":0
        }
      ]
    }
  ],
  "size":{
    "width":400,
    "height":400
  },
  "isSystemTpl":true
```

```
}
```

Parameters:

Parameter	Required	Type	Description
tplID	Yes	int	Template id
width	Yes	int	width
height	Yes	int	height
left	Yes	float	Proportion to left
top	Yes	float	Proportion to top
zindex	Yes	int	Z order
index	Yes	int	Small window ID
width	Yes	int	Template width
height	Yes	int	Template height

Return Sample

```
{
  "tplID":1
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	Description of the corresponding error code returned

Remark

-

4.3.9、Delete custom templates

Description:

- Interface to delete custom templates

Request URL:

- `void nvDeleteTplAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "tplID":[
    1,
    2,
    3
  ]
}
```

Parameters:

Parameter	Required	Type	Description
tplID	Yes	intArray	Template id

Return Sample

```
{
  "tplID":1
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	Description of the corresponding error code returned

Remark

-

4.3.10、Obtain local solutions

Description:

- Interface to obtain local solutions

Request URL:

- void nvGetProgramAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
""
```

Parameters:

Parameter	Required	Type	Description
data	Yes	string	data means any string, “” or any string”

Return Sample


```
{
    "programList": [{
        "height": 400,
        "name": "jiemu1",
        "page": [{
            "id": 1,
            "name": "pageNew",
            "widgetContainers": [{
                "audioGroup": "",
                "backgroundColor": "#00000000",
                "backgroundDrawable": "",
                "border": {
                    "TempBorderBackgroud": "",
                    "backgroundColor": "#FF000000",
                    "borderSource": "",
                    "effects": {
                        "animation": "CLOCK_WISE",
                        "headTailSpacing": "",
                        "isHeadTail": false,
                        "speed": 0,
                        "speedByPixelEnable": true
                    },
                    "foregroundColor": "#FF008000",
                    "originalBorderSource": "",
                    "style": 0,
                    "styleForExpress": 0,
                    "width": 0
                },
                "contents": {
                    "widgetGroups": [],
                    "widgets": [{
                        "backgroundColor": "#00ff0000",
                        "backgroundDrawable": "/local/media/dog.png",
                        "backgroundMusic": "/local/media/1.mp3",
                        "border": {
                            "backgroundColor": "#ff000000",
                            "borderThickness": "2px,3px,5%,6",
                            "cornerRadius": "2%",
                            "effects": {
                                "animation": "CLOCK_WISE",
                                "headTailSpacing": "",
                                "isHeadTail": false,
                                "speed": 0,
```

```
                                "speedByPixelEnable": true
                            },
                            "name": "border",
                            "style": 0
                        },
                        "constraints": [{
                            "cron": [],
                            "endTime": "2017-02-10T12:15:15Z+8:00",
                            "startTime": "2016-11-14T12:15:15Z+8:00"
                        }],
                        "dataSource": "26a0debe893d5c837270c60dde4639
13.png",
                        "displayRatio": "ORIGINAL",
                        "duration": 10000,
                        "enable": true,
                        "functionStorage": "",
                        "id": 1,
                        "inAnimation": {
                            "duration": 1000,
                            "type": 1
                        },
                        "isSupportSpecialEffects": false,
                        "layout": {
                            "height": "0.5",
                            "width": "0.5",
                            "x": "0",
                            "y": "0"
                        },
                        "name": "",
                        "originalDataSource": "D:/nova/dog.png",
                        "outAnimation": {
                            "duration": 0,
                            "type": 0
                        },
                        "repeatCount": 1,
                        "type": "PICTURE",
                        "zOrder": 100
                    }]
                },
                "enable": true,
                "id": 1,
                "itemsSource": "",
                "layout": {
                    "height": "28.63%",
                    "width": "35.73%",
                    "x": "50.00%",
                    "y": "0.00%"
                },
                "name": "widgetContainers1",
                "pickCount": 0,
                "pickPolicy": "ORDER",
                "zOrder": 0
            }],
            "widgetGroups": [],
            "widgets": []
        }],
        "programID": 1,
        "width": 400
    }]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	Description of the corresponding error code returned
programList	objectArray	Local solution list
name	string	Solution name
programID	int	Solution ID
height	int	Solution height
width	int	Solution width
page	int	Solution page information. For details, see page in editing solutions.

Remark

-

4.3.11、Delete local solutions

Description:

- Interface to delete local solutions

Request URL:

- `void nvDeleteProgramAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
"programID":[
1,
2,
3
]
}
```

-

Parameters:

Parameter	Required	Type	Description
programID	Yes	intArray	Solution ID array

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	Description of the corresponding error code returned

Remark

-

4.3.12、Cancel publishing solutions

Description:

- Interface to cancel publishing solutions

Request URL:

- `void nvStopProgramTransferAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
""
```

Parameters:

Parameter	Required	Type	Description
data	Yes	string	data means any string, “” or any string

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	Description of the corresponding error code returned

Remark

-

4.3.13、Obtain template list

Description:

- Interface to obtain template list

Request URL:

- `void nvGetCustomerTplAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
"string"
```

Parameters:

Parameter	Required	Type	Description
data	Yes	string	The parameter data can be any string, but this parameter is required.

Return Sample

```
{
  "templates":[
    {
      "data":[
        {
          "width":1,
          "height":1,
          "left":0,
          "top":0,
```

```
            "zindex":0,
            "index":0
          }
        ]
      }
  ],
  "size":{
    "width":400,
    "height":400
  },
  "isSystemTpl":true
}
```

Return Parameter Description

Parameter	Type	Description
width	int	width
height	int	height
left	float	Proportion to left
top	float	Proportion to top
index	int	Small window ID
width	int	Template width
height	int	Template height
isSystemTpl	bool	User template
code	int	Error codes: 0 Obtained successfully 65535timeout

Remark

-

4.3.1、Solution Editing

4.3.1.1、Simple Weather Forecast

Description:

- Simple weather forcast, corresponding media type: SIMPLE_WEATHER. The weather forcast can display text information only and the text properties can only be modified together.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "id": 1,
        "name": "节目 01",
        "widgetContainers": [{
            "contents": {
                "widgets": [{
                    "constraints": [{
                        "cron": ["0 0 0 ? * 1,2,3,4,5,6,7"],
                        "endTime": "4017-12-30T23:59:59Z+8:00",
                        "startTime": "1970-01-01T00:00:00Z+8:00"
                    }],
                    "duration": 5000,
                    "metadata": {
                        "area": {
                            "city": "西安",
                            "country": "中国",
                            "county": "西安",
                            "province": "陕西省"
                        },
                        "effects": {
                            "animation": "MARQUEE_LEFT"
                        },
                        "isShowInOneLine": false,
                        "refreshPeriod": 300000,
                        "regular": "天气:$w\n 温度:$t\n 风力:$b 级\n 当前
温度:$c\n 湿度:$h",
                        "temperatureUnit": "Celsius",
                        "textAttributes": {
                            "font": {
                                "family": ["Times", "Georia", "New Yo
rk"]
                            },
                            "textColor": "#ffff0000"
                        }
                    },
                    "type": "SIMPLE_WEATHER"
                }]
            }
        }]
    }
}
```

Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Show id (id returned by creating show)

Parameter	Required	Type	Description
pageID	Yes	int	pageId (the current version pageId is 1)
pageInfo	Yes	Object	page details
id	Yes	int	id identification
name	Yes	string	name
widgetContainers	Yes	objectArray	Window pendant container
contents	Yes	object	Window pendant content
widgets	Yes	objectArray	Window pendant
constraints	Yes	object	The playback condition constraints on the media, for the media playback validity constraints, temporarily support to a time valid range
cron	Yes	stringArray	cron expression
endTime	Yes	string	End Time
startTime	Yes	string	Starting time
duration	Yes	long	Play time, the unit is milliseconds. Play time means the time for the media to play once. When it is -1, it means according to the actual time of the media. For example, the time to play once is different on different sizes of screens.
metadata	Yes	object	Metadata, which is a collection of private data members of a window widget
area	Yes	object	Region, where the weather information is to be obtained
city	Yes	string	City
country	Yes	string	Country
county	Yes	string	County
province	Yes	string	Province
effects	Yes	object	Playback effect. Only the scrolling animation is currently supported.
animation	Yes	string	Animation: NONE, MARQUEE_LEFT, MARQUEE_UP, MARQUEE_RIGHT, MARQUEE_DOWN
isShowInOneLine	Yes	bool	Display in a singe line or multiple lines
refreshPeriod	Yes	long	Refresh interval (ms)
regular	No	string	Display rules. Includes place holders and the information to be displayed.
temperatureUnit	Yes	string	Celsius or Fahrenheit
textAttributes	Yes	object	Text properties. See the definition of text properties to describe the properties of weather forcast text.
font	No	object	Text description
family	Yes	stringArray	Font type array. When there are multiple font types, the foremost one is preferred. If the foremost one is invalid, the next one will be used. If there is no this font library, the default font will be used.
textColor	Yes	string	Foreground color of text
type	Yes	string	Type, PICTURE: indicates the picture type; VIDEO:

Parameter	Required	Type	Description
			indicates the video type; AUDIO: indicates the audio type; GIF: indicates the gif animation type; HTML: indicates the embedded webpage; PLUGIN_H5: indicates the html5 offline component class; RICH_TEXT: rich text; ARCH_TEXT: Comprehensive text. This type of text has very rich text characteristics and a wide range of attributes. See the comprehensive text chapter for specific format definitions. The previous text style is used and has historical reasons, so we named it ARCH_TEXT "pain". But its function is really powerful; ANALOG_CLOCK: analog clock; DIGITAL_CLOCK: digital clock; SIMPLE_RSS: simple RSS media; SIMPLE_WEATHER: simple weather forecast, which only contains the current weather conditions, does not support the image format, and the text can only modify the attributes in a unified manner; BORDER: Frame, which means that the media type is frame; STREAM_VIDEO: means streaming media implemented locally; PICTURE_GROUP: picture group pendant, mainly playing a group of picture groups

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.2、Analog Clock

Description:

- This field denotes the metadata in an analog clock. The corresponding media type is: ANALOG_CLOCK.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-


```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "id": 1,
        "name": "节目 06",
        "widgetContainers": [{
            "contents": {
                "widgets": [{
                    "constraints": [{
                        "cron": ["0 0 0 ? * 1,2,3,4,5,6,7"],
                        "endTime": "4017-12-30T23:59:59Z+8:00",
                        "startTime": "1970-01-01T00:00:00Z+8:00"
                    }],
                    "duration": 5000,
                    "metadata": {
                        "date": {
                            "textAttributes": {
                                "font": {
                                    "size": 16
                                },
                                "textColor": "#ffffff00"
                            },
                            "weekTemplates": ["星期日", "星期一", "星期
二", "星期三", "星期四", "星期五", "星期六"]
                        },
                        "hourHand": {
                            "color": "#ffffff00"
                        },
                        "minuteHand": {
                            "color": "#ff00ff00"
                        },
                        "secondHand": {
                            "color": "#ffff0000"
                        },
                        "text": {
                            "text": "",
                            "textAttributes": {
                                "font": {
                                    "size": 12
                                },
                                "textColor": "#ffff0000"
                            }
                        }
                    },
                    "name": "模拟时钟",
                    "type": "ANALOG_CLOCK"
                }]
            }
        }]
    }
}
```


Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Show id (id returned by creating show)
pageID	Yes	int	pageId (the current version pageId is 1)
pageInfo	Yes	Object	page details
id	Yes	int	id identification
name	Yes	string	name
widgetContainers	Yes	objectArray	Window pendant container
contents	Yes	object	Window pendant content
widgets	Yes	objectArray	Window pendant
constraints	Yes	object	The playback condition constraints on the media, for the media playback validity constraints, temporarily support to a time valid range
cron	Yes	stringArray	cron expression
endTime	Yes	string	End Time
startTime	Yes	string	Starting time
duration	Yes	long	Play time, the unit is milliseconds. Play time means the time for the media to play once. When it is -1, it means according to the actual time of the media. For example, the time to play once is different on different sizes of screens.
metadata	Yes	object	Metadata, which is a collection of private data members of a window widget
-date	Yes	object	Date object
--textAttributes	Yes	object	Date text properties
font	Yes	object	Text description
size	Yes	object	Date text size
textColor	Yes	object	The foreground color of the date text
weekTemplates	Yes	stringarray	Template of the day of week, 7 data items represent Monday to Sunday, respectively.
-hourHand	Yes	object	Hour hand properties
color	Yes	string	hour hand color
-minuteHand	Yes	object	Minute hand properties
color	Yes	string	Minute hand color
-secondHand	Yes	object	Second hand properties
color	Yes	string	Second hand color
-text	Yes	object	Text attribute object
text	Yes	string	Text
--textAttributes	No	object	Text attributes
font	Yes	object	Text description
size	Yes	object	text size
textColor	Yes	object	Foreground color of text
name	Yes	string	name
type	Yes	string	Type, PICTURE: indicates the picture type; VIDEO:

Parameter	Required	Type	Description
			indicates the video type; AUDIO: indicates the audio type; GIF: indicates the gif animation type; HTML: indicates the embedded webpage; PLUGIN_H5: indicates the html5 offline component class; RICH_TEXT: rich text; ARCH_TEXT: Comprehensive text. This type of text has very rich text characteristics and a wide range of attributes. See the comprehensive text chapter for specific format definitions. The previous text style is used and has historical reasons, so we named it ARCH_TEXT "pain". But its function is really powerful; ANALOG_CLOCK: analog clock; DIGITAL_CLOCK: digital clock; SIMPLE_RSS: simple RSS media; SIMPLE_WEATHER: simple weather forecast, only contains the current weather conditions, does not support the image format, the text can only modify the attributes uniformly; BORDER: Frame, which means that the media type is frame; STREAM_VIDEO: means streaming media implemented locally; PICTURE_GROUP: picture group pendant, mainly playing a group of picture groups

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.3、Video, GIF and Image

Description:

- Edit solutions. This interface details video, GIF and image. Metadata is empty.

Request URL:

- "void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);"

Request Method

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"节目 01",
    "widgetContainers":[
      {
        "contents":{
          "widgets":[
            {
              "constraints":[
                {
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ],
                  "endTime":"4017-12-30T23:59:59Z 8:00",
                  "startTime":"1970-01-01T00:00:00Z 8:00"
                }
              ],
              "duration":5000,
              "dataSource":"f239518bb2aa5a52806b751cc3100a04.jpg",
              "type":"PICTURE",
              "name":"liuwen1.jpg",
              "originalDataSource":"D:/liuwen1.jpg"
            }
          ]
        },
        "id":1,
        "name":"widgetContainers1"
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
name	Yes	string	widgetContainers name	
contents	Yes	object	Window widget content	
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.	

Parameter	Required	Type	Description	
startTime	Yes	string	Start time	
endTime	Yes	string	End time	
cron	Yes	stringArray	cron expression	
type	Yes	string	Type VIDEO: Video; GIF: GIF Animation	
name	Yes	string	Name	
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.	
dataSource	Yes	string	"MD5 value of media file"	
originalDataSource	Yes	string	Data source, media path of the original platform	

Return Sample

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.4、Web Page

Description:

- Edit solutions. This interface details the web page widgets. The metadata is empty. The type is: HTML.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"节目 01",
    "widgetContainers":[
      {
        "contents":{
          "widgets":[
            {
              "constraints":[
                {
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ],
                  "endTime":"4017-12-30T23:59:59Z 8:00",
                  "startTime":"1970-01-01T00:00:00Z 8:00"
                }
              ],
              "duration":10000,
              "inAnimation":{
                "duration":1000,
                "type":1
              },
              "dataSource":"https://www.baidu.com/",
              "type":"HTML",
              "name":"网页",
              "originalDataSource":"",
              "isSupportSpecialEffects":true
            }
          ]
        },
        "id":1,
        "name":"widgetContainers1"
      }
    ]
  }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
contents	Yes	object	Window widget content	
name	Yes	string	widgetContainers name	
widgets	Yes	objectArray	Window widget	
id	Yes	int	Uniqie ID, must remain unique in the whole solution.	

Parameter	Required	Type	Description
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
dataSource	Yes	string	Web address
name	Yes	string	Media name

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.5、Digital Clock

Description:

-Edit solutions. Details of digital click

Request URL:

- `void nvSetPageParamAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

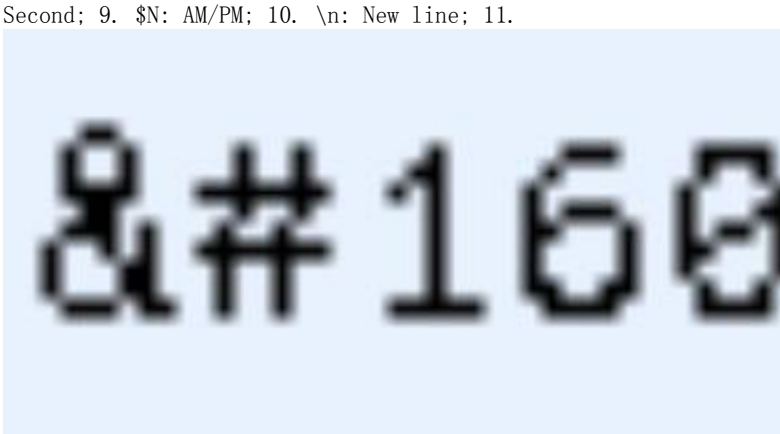
-

Request Parameter Sample

-


```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "name": "节目 01",
        "widgetContainers": [{
            "contents": {
                "widgetGroups": [],
                "widgets": [{
                    "type": "PICTURE",
                    "constraints": {
                        "cron": [],
                        "endTime": "4017-12-30T23:59:59Z 8:00",
                        "startTime": "1970-01-01T00:00:00Z 8:00"
                    },
                    "metadata": {
                        "zone": "America/Anchorage",
                        "gmt": "UTC-08:00",
                        "regular": "$MM/$dd/$yyyy\n$E\n$HH:$mm:$ss",
                        "weekTemplates": ["Sunday", "Monday", "Tuesda
y", "Wednesday", "Thursday", "Friday", "Saturday"],
                        "solidText": {
                            "text": "",
                            "textAttributes": {}
                        },
                        "suffixTemplates": ["AM", "PM"],
                        "textAttributes": {
                            "backgroundColor": "#00ff00",
                            "font": {
                                "isUnderline": false,
                                "size": 8,
                                "style": "NORMAL"
                            },
                            "letterSpacing": 0,
                            "textColor": "#ffff0000"
                        }
                    },
                    "duration": 3605000,
                    "name": "IMG_20200916_111857.jpg"
                }]
            }
        }]
    }
}
```

Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned during solution creating)
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
id	Yes	int	id
widgets	Yes	objectArray	Window widget
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animat page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH text. This type of text is rich with features and has a variety c the detailed format definition, see the integrated text chapter. style is still used. And there are some historical reasons. So we ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Ana DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPL weather forecast. Only the current weather is displayed and image supported. The properties of text can only be modified together; The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_ widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is n the media type is streaming media, web page, gif, video, and imag animation effect).
zone	Yes	string	Time zone, such as "Asia/Shanghai"
gmt	Yes	string	Time zone gmt such as "GMT-08:00"
regular	Yes	string	Display rules of digital clock, placeholder definition: 1. $dd: D 3. $yyyy: Year, two-digit year $yy; 4. $E: A placeholder of the d $HH: Hour, 24-hour time; 6. $hh: Hour, 12-hour time; 7. $mm: Minu Second; 9. $N: AM/PM; 10. \n: New line; 11.  : Space
weekTemplates	Yes	stringArray	Week template. 7 data items represent Monday to Sunday, respectiv
suffixTemplates	Yes	stringArray	Time suffix. 2 data items, AM or PM
textAttributes	Yes	object	Digital clock style text properties
backgroundColor	Yes	string	Background color, defaults to 00FFFFFF
textColor	Yes	string	Text foreground color, defaults to #FF0000

Parameter	Required	Type	Description
font	Yes	object	Text description
family	Yes	stringarray	Font type array. When there are multiple font types, the foremost If the foremost one is unavailable, the next one will be preferre this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic, 4. BO and italic
size	Yes	int	Size. The unit of font currently supports pixel only. It defaults
isUnderline	Yes	bool	Underline
solidText	No	object	Text property object
text	No	string	Text
textAttributes	No	object	Text properties. See clock properties textAttributes
constraints	Yes	object	Playback constraints on media, media validity constraints. Only t range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.1.6、Text

Description:

-Edit solutions. Details of ArchText

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-


```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"program1",
    "widgetContainers":[
      {
        "contents":{
          "widgets":[
            {
              "constraints":[
                {
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ],
                  "endTime":"4017-12-30T23:59:59Z+8:00",
                  "startTime":"1970-01-01T00:00:00Z+8:00"
                }
              ],
              "duration":10000,
              "metadata":{
                "content":{
                  "autoPaging":true,
                  "backgroundMusic":{
                    "duration":0,
                    "isTextSync":false
                  },
                  "displayStyle":{
                    "scrollAttributes":{
                      "effects":{
                        "animation":"MARQUEE_LEFT",
                        "speed":3
                      }
                    },
                    "type":"STATIC"
                  },
                  "paragraphs":[
                    {
                      "backgroundColor":"#00000000",
                      "horizontalAlignment":"CENTER",
                      "letterSpacing":0,
                      "lineSpacing":0,
                      "lines":[
                        {
                          "segs":[
                            {
                              "content":"Welcome SDK!"
                            }
                          ]
                        }
                      ],
                      "verticalAlignment":"CENTER"
                    }
```

```
                    ],
                    "textAttributes":[
                      {
                        "backgroundColor":"#ff000000",
                        "attributes":{
                          "font":{
                            "family":[
                              "Helvetica"
                            ],
                            "isUnderline":false,
                            "size":60,
                            "style":"NORMAL"
                          },
                          "letterSpacing":0,
                          "textColor":"#ffff0000"
                        }
                      }
                    ]
                  }
                },
                "name":"text",
                "type":"ARCH_TEXT"
              }
            ]
          },
          "id":1,
          "name":"widgetContainers1"
        }
      ]
    }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
widgets	Yes	objectArray	Window widget	
name	Yes	string	Name	
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful;	

Parameter	Required	Type	Description
			ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
displayStyle	Yes	object	Display style
scrollAttributes	Yes	object	Scrolling property description
effects	Yes	object	Scrolling animation description
animation	Yes	string	MARQUEE_LEFT or MARQUEE_UP
speed	Yes	float	Speed, unit: px/s or grade (1-10)
type	Yes	string	PAGE_SWITCH means to swicth by page. SCROLL means to scrolling text. STATIC means static. (If the text content is bigger than the screen, only the first screen will be displayed.)
paragraphs	Yes	objectArray	Paragraph description
verticalAlignment	Yes	string	Vertical alignment: BOTTOM, CENTER, TOP
horizontalAlignment	Yes	string	Vertical alignment: LEFT,CENTER,RIGHT
backgroundColor	Yes	string	Paragrah background color
lineSpacing	Yes	string	Line spacing (pixel)
letterSpacing	Yes	int	Character spacing (pixel)
lines	Yes	object	Line description
content	Yes	string	Content to display
textAttributes	Yes	objectArray	Text property list
attributes	Yes	object	Text property description
textColor	Yes	string	Text foreground color, defaults to #FF0000.
font	Yes	object	Text description
family	Yes	stringarray	Font type array. When there are multiple font types, the foremost one is preferred. If the foremost one is unavailable, the next one will be preferred. If there is no this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic, 4. BOLD_ITALIC: Bold and italic
size	Yes	int	Size. The unit currently supports pixel onle and size defaults to 16.
name	No	string	Audio name
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.

Parameter	Required	Type	Description	
startTime	Yes	string	Start time	
endTime	Yes	string	End time	
cron	Yes	stringArray	cron expression	

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.1.7、Colorful Text

Description:

- Edit solutions. This interface is an example of colorful text. The media type is: COLORFUL_TEXT.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"节目 01",
    "widgetContainers":[
      {
```

```
        "contents":{
          "widgets":[
            {
              "constraints":[
                {
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ],
                  "endTime":"4017-12-30T23:59:59Z 8:00",
                  "startTime":"1970-01-01T00:00:00Z 8:00"
                }
              ],
              "duration":10000,
              "metadata":{
                "content":{
                  "content":"请输入文字!",
                  "scrollAttributes":{
                    "effects":{
                      "speed":5,
                      "animation":"MARQUEE_LEFT",
                      "isHeadTail":false,
                      "headTailSpacing":"10",
                      "speedByPixelEnable":false
                    }
                  },
                  "textAttributes":{
                    "effects":{
                      "type":"GRADIENT_HORIZONTAL",
                      "colors":[
                        "#FF0000",
                        "#FF00B050",
                        "#FFC00000",
                        "#FF007BD4",
                        "#FFFFFF00",
                        "#FF00FF"
                      ],
                      "texture":""
                    },
                    "textColor":"#FF0000",
                    "font":{
                      "family":[
                        "Arial"
                      ],
                      "style":"NORMAL",
                      "size":50,
                      "isUnderline":false
                    }
                  }
                }
              },
              "dataSource":"",
              "type":"COLORFUL_TEXT",
              "name":"炫彩字",
              "originalDataSource":"",
              "isSupportSpecialEffects":true
            }
          ]
        },
        "id":1,
        "name":"widgetContainers1"
```

```
        }
      ]
    }
}
```

Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
contents	Yes	object	Window widget content	
name	Yes	string	widgetContainers name	
widgets	Yes	objectArray	Window widget	
id	Yes	int	Uniqie ID, must remain unique in the whole solution.	
name	Yes	string	Name	
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.	
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).	
content	Yes	object	Detailed settings of colorful text	
-content	Yes	string	Display text content	

Parameter	Required	Type	Description
-scrollAttributes	Yes	object	Scrolling property description
--effects	Yes	object	Scrolling animation description
animation	Yes	string	MARQUEE_LEFT or MARQUEE_RIGHT
speed	Yes	float	Speed, unit: px/s or grade (1-10)
speedByPixelEnable	Yes	bool	True denotes px/s while false denotes grade. Defaults to false.
isHeadTail	Yes	bool	Enable head to tail, not enabled by default (false)
headTailSpacing	Yes	string	Spacing between the head and tail, unit: screen percentage (%)
--textAttributes	Yes	object	Text property list
---effects	Yes	object	Playback animation of colorful text
type	Yes	string	Animation effects, 5 animation effects in the text properties, GRADIENT_HORIZONTAL (Horizontal gradient), GRADIENT_VERTICAL (Vertical gradient), GRADIENT_OBLIQUE (Diagonal gradient), FADE_IN_FADE_OUT (Fade), TEXTURE (texture)
colors	Yes	stringObject	Color gradient
texture	No	string	This is available when the type is TEXTURE. Image name, such as 1.jpg
textColor	No	string	Text foreground color, defaults to #FF0000
font	Yes	object	Text description
family	Yes	stringarray	ont type array. When there are multiple font types, the foremost one is preferred. If the foremost one is unavailable, the next one will be preferred. If there is no this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic, 4. BOLD_ITALIC: Bold and italic
size	Yes	int	Size. The unit currently supports pixel onle and size defaults to 16.
isUnderline	Yes	bool	Underline
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.

Parameter	Required	Type	Description
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.8、Environment Monitoring Media

Description:

- Edit solutions. Environment monitoring media, corresponding media type: RT_MEDIA

Request URL:

- void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);

Request Method:

-

Request Parameter Sample

-

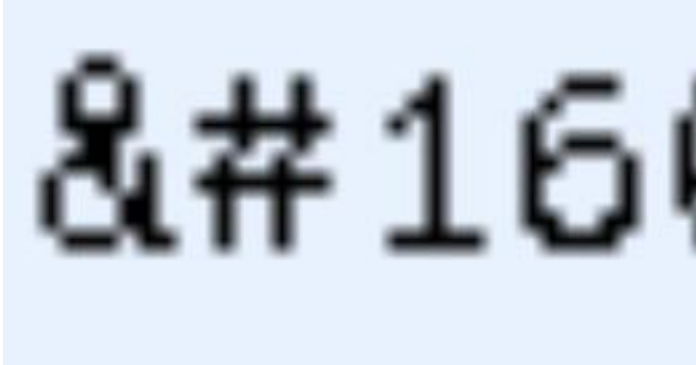
```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"节目 01",
    "widgetContainers":[
      {
        "contents":{
          "widgets":[
            {
```

```
              "constraints":[
                {
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ],
                  "endTime":"4017-12-30T23:59:59Z 8:00",
                  "startTime":"1970-01-01T00:00:00Z 8:00"
                }
              ],
              "duration":10000,
              "metadata":{
                "updatePeriod":10000,
                "temperatureUnit":"Celsius",
                "regular":"噪音:$n\n 温度:$t\n 气湿:$AH\n 气压:$AP\n 风速:
$WS\n 风向:$WD\nPM2.5:$PM2.5\nPM10:$PM10\nCO2:$CO2\n",
                "solidText":{
                  "text":"",
                  "textAttributes":{
                    "textColor":"#FFF56E00",
                    "font":{
                      "family":[
                        "Arial"
                      ],
                      "style":"NORMAL",
                      "size":12,
                      "isUnderline":false
                    }
                  }
                },
                "textAttributes":{
                  "textColor":"#FFF56E00",
                  "font":{
                    "family":[
                      "楷体"
                    ],
                    "style":"NORMAL",
                    "size":32,
                    "isUnderline":false
                  }
                },
                "valueTextAttributes":{
                  "textColor":"#FFF56E00",
                  "font":{
                    "family":[
                      "Arial"
                    ],
                    "style":"NORMAL",
                    "size":16,
                    "isUnderline":false
                  }
                },
                "unitTextAttributes":{
                  "textColor":"#FFF56E00",
                  "font":{
                    "family":[
                      "Arial"
                    ],
                    "style":"NORMAL",
                    "size":32,
                    "isUnderline":false
```

```
    }
  },
  "displayStyle":{
    "type":"PAGE_SWITCH",
    "pageSwitchAttributes":{
      "inAnimation":{
        "type":1,
        "duration":1000
      },
      "remainDuration":3000
    },
    "scrollAttributes":{
      "effects":{
        "speed":3,
        "animation":"MARQUEE_UP",
        "isHeadTail":false,
        "headTailSpacing":"10",
        "speedByPixelEnable":false
      }
    }
  },
  "layoutStyles":[
    {
      "type":1,
      "horizontalAlignment":"RIGHT",
      "proportion":50
    },
    {
      "type":0,
      "horizontalAlignment":"CENTER",
      "proportion":1
    },
    {
      "type":4,
      "horizontalAlignment":"CENTER",
      "proportion":49
    }
  ],
  "regularContents":[
    {
      "key":"$t",
      "type":0,
      "unit":"℃"
    },
    {
      "key":"$n",
      "type":0,
      "unit":"dB"
    },
    {
      "key":"$WS",
      "type":0,
      "unit":"km/h"
    },
    {
      "key":"$WD",
      "type":0,
      "unit":"",
      "Templates":[
        "北风",
```

```
                        "东北风",
                        "东风",
                        "东南风",
                        "南风",
                        "西南风",
                        "西风",
                        "西北风"
                      ]
                    },
                    {
                      "key":"$AT",
                      "type":0,
                      "unit":"℃"
                    },
                    {
                      "key":"$AP",
                      "type":0,
                      "unit":"kPa"
                    },
                    {
                      "key":"$AH",
                      "type":0,
                      "unit":"%RH"
                    },
                    {
                      "key":"$PM2.5",
                      "type":0,
                      "unit":"μg/m3"
                    },
                    {
                      "key":"$PM10",
                      "type":0,
                      "unit":"μg/m3"
                    },
                    {
                      "key":"$CO2",
                      "type":0,
                      "unit":"ppm"
                    }
                  ]
                },
                "dataSource":"",
                "type":"RT_MEDIA",
                "name":"环境监测",
                "originalDataSource":"",
                "isSupportSpecialEffects":true
              }
            ]
          },
          "id":1,
          "name":"widgetContainers1"
        }
      ]
    }
}
```


Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned during solution creating)
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
id	Yes	int	id
contents	Yes	object	Window widget content
name	Yes	string	widgetContainers name
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich tex text. This type of text is rich with features and has a va the detailed format definition, see the integrated text ch style is still used. And there are some historical reasons ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLO DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media weather forecast. Only the current weather is displayed an supported. The properties of text can only be modified tog The media type is border; STREAM_VIDEO: Local RSS media; P widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This fie the media type is streaming media, web page, gif, video, a animation effect).
updatePeriod	Yes	long	Update interval (ms). (0 means to read only once.)
temperatureUnit	Yes	string	Temperature sensor, Celsius or Fahrenheit
regular	Yes	string	Playback rules: 1. $longitude: Longitude; 2. $latitude: La Altitude; 4. $PM2.5: PM2.5, unit: μg/m3; 5. $WS: Wind spe scale, Type: 0: km/h, 1: m/s, km/h by default, 2: Scale; 6 $WD: Wind direction; 8. $h: Humidity; 9. $t:Temperature, u 0: ℃ (default), 1: ℉; 10. $n Noise, unit: dB; 11. $CO2: μg/m3; 12. $AT: Air temperature, unit: ℃, ℉, °, type C 13. $AH: Air humidity, unit: RH; 14. $AP: Air pressure, un Torr, kgf/cm2, Type: 0: KPa, 1: bar, 2: atm, 3: mmHg, 4: T default: KPa; 15. $SH: Soil humidity (custom-made), unit: temperature (custom-made), unit: ℃, ℉, °, Type: 0: ℃ (New line; 18: 

Parameter	Required	Type	Description
			: Space
solidText	No	object	Text
text	Yes	string	Text content
textAttributes	No	object	Title style
textColor	No	string	Text foreground color, defaults to #FF0000.
font	Yes	object	Text description
family	Yes	stringarray	Font type array. When there are multiple font types, the f If the foremost one is unavailable, the next one will be p this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic and italic
size	Yes	int	Size. Currently the unit can only be pixel and the default
isUnderline	Yes	bool	Underline
textAttributes	Yes	object	Tag text properties, same as textAttributes
valueTextAttributes	Yes	object	Numeric value text properties, same as textAttributes
unitTextAttributes	Yes	object	unit text properties, same as textAttributes
displayStyle	Yes	object	Display style
type	Yes	string	PAGE_SWITCH means to swicth by page. SCROLL means to scrol static. (If the text content is bigger than the screen, on be displayed.)
pageSwitchAttributes	Yes	object	property of switching by page
inAnimation	Yes	object	Entrance animation
type	No	int	Entrance animation type, no animation by default
duration	Yes	long	Animation duration (ms)
remianDuration	Yes	long	Duration of stay (ms)
--effects	Yes	object	Scrolling animation description
animation	Yes	string	MARQUEE_LEFT or MARQUEE_UP
speed	Yes	float	Speed, unit: px/s or grade (1-10)
speedByPixelEnable	Yes	bool	True denotes px/s while false denotes grade. Defaults to f
isHeadTail	Yes	bool	Enable head to tail, not enabled by default (false)
headTailSpacing	Yes	string	Spacing between the head and tail, unit: screen percentage
-layoutStyles	Yes	objectarray	Layout style array
type	Yes	int	0: Spacing, 1: custom tag, 2: Number, 3: Unit, 4: Number,
horizontalAlignment	Yes	string	Horizontal alignment: LEFT, CENTER, RIGHT
verticalAlignment	Yes	string	Vertical alignment: BOTTOM, CENTER, TOP (V1.9.0)
proportion	Yes	int	Maximum range: 100
-regularContents	Yes	objectarray	Media content
key	Yes	string	For details, see the placeholder definition of regular and
unit	Yes	string	Unit of corresponding value
type	Yes	int	Conversion type of different units
templates	Yes	stringarray	Only available for wind direction, must be follow the orde "East", "South east", "South", "South east", "West", "Nort

Parameter	Required	Type	Description
duration	Yes	long	Playback duration (ms), the length of time that the media the media plays according to its actual length of time, fo durations of scrolling text on screens of different resolu
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data fi
originalDataSource	Yes	string	Data source, media path of the original platform
constraints	Yes	object	Playback constraints on media, media validity constraints. range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.9、Streaming Media

Description:

- Edit solutions. This interface details streaming media. The corresponding media type is: STREAM_MEDIA.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
```

```
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"节目 01",
    "widgetContainers":[
      {
        "contents":{
          "widgets":[
            {
              "constraints":[
                {
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ],
                  "endTime":"4017-12-30T23:59:59Z 8:00",
                  "startTime":"1970-01-01T00:00:00Z 8:00"
                }
              ],
              "duration":10000,
              "metadata":{
                "subType":"STREAM",
                "modelData":{
                  "src":"http://ivi.bupt.edu.cn/hls/cctv1hd.m3u8",
                  "volume":100,
                  "stream_media_type":"m3u8",
                  "stream_media_protocol_type":"hls"
                }
              },
              "dataSource":"",
              "type":"STREAM_MEDIA",
              "name":"流媒体",
              "originalDataSource":"",
              "isSupportSpecialEffects":true
            }
          ]
        },
        "id":1,
        "name":"widgetContainers1"
      }
    ]
  }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
contents	Yes	object	Window widget content	

Parameter	Required	Type	Description
name	Yes	string	widgetContainers name
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
modelData	Yes	object	Streaming media parameter
src	Yes	string	Streaming media URL
stream_media_protocol_type	Yes	string	Streaming media protocol type
stream_media_type	Yes	string	Streaming media type
volume	Yes	int	Streaming media volume
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time

Parameter	Required	Type	Description
cron	Yes	stringArray	cron expression
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.10、Timer

Description:

- Edit solutions. Timer media, corresponding media type: COUNT_TIMER

Request URL:

- void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);

Request Method:

-

Request Parameter Sample

-

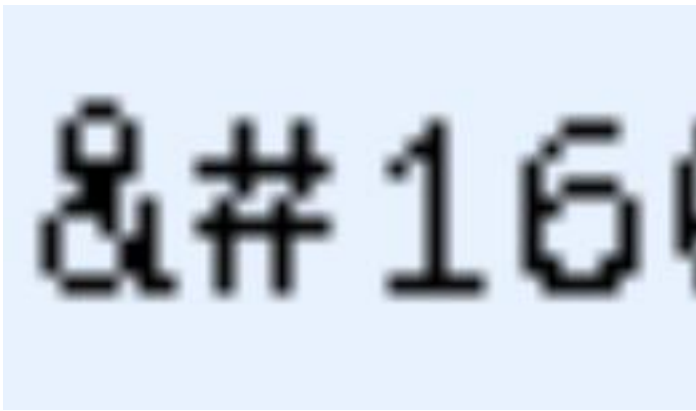
```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"节目 01",
    "widgetContainers":[
      {
        "contents":{
          "widgets":[
            {
              "constraints":[
                {
                  "cron":[
```

```
            "0 0 0 ? * 1,2,3,4,5,6,7"
          ],
          "endTime":"4017-12-30T23:59:59Z 8:00",
          "startTime":"1970-01-01T00:00:00Z 8:00"
        }
      ],
      "duration":10000,
      "metadata":{
        "solidText":{
          "textAttributes":{
            "font":{
              "size":48,
              "isUnderline":false,
              "family":[
                "Arial"
              ],
              "style":"NORMAL"
            },
            "textColor":"#FF0000"
          },
          "text":""
        },
        "textAttributes":{
          "font":{
            "size":48,
            "isUnderline":false,
            "family":[
              "Arial"
            ],
            "style":"NORMAL"
          },
          "textColor":"#FF0000"
        },
        "regularNew":"$d $Ud $H $UH $m $Um $s $Us",
        "units":[
          {
            "zero":"天",
            "name":"$Ud",
            "singular":"天",
            "plural":"天"
          },
          {
            "zero":"时",
            "name":"$UH",
            "singular":"时",
            "plural":"时"
          },
          {
            "zero":"分",
            "name":"$Um",
            "singular":"分",
            "plural":"分"
          },
          {
            "zero":"秒",
            "name":"$Us",
            "singular":"秒",
            "plural":"秒"
          }
```

```
                ],
                "regular":"$d 天 $H 时 $m 分 $s 秒",
                "targetDateTime":1602864000000,
                "countType":"COUNT_DOWN"
              },
              "dataSource":"",
              "type":"COUNT_TIMER",
              "name":"计时器",
              "originalDataSource":"",
              "isSupportSpecialEffects":true
            }
          ]
        },
        "id":1,
        "name":"widgetContainers1"
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned during solution creating)
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
id	Yes	int	id
contents	Yes	object	Window widget content
name	Yes	string	widgetContainers name
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich tex text. This type of text is rich with features and has a va the detailed format definition, see the integrated text ch style is still used. And there are some historical reasons ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLO DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media weather forecast. Only the current weather is displayed an supported. The properties of text can only be modified tog The media type is border; STREAM_VIDEO: Local RSS media; P widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This fie the media type is streaming media, web page, gif, video, a animation effect).
regular	Yes	string	Playback rules, 1. $T: Fixed text; 2. $d: Day; 3. $H: Hour Second; 6. $Ud: Unit of day; 7. $UH: Unit of hour; 8. $Um: Unit of second; 10. \n: New line; 11.

Parameter	Required	Type	Description
			 : Space
regularNew	Yes	string	Rule: Terminals of V1.5.0 and later support singular and p media. A new rule was added.
units	Yes	object	Unit replacement array
name	Yes	string	Alternative name
singular	Yes	string	Singular name
plural	Yes	string	Plural name
zero	Yes	string	Unit when the value is 0
solidText	Yes	object	Fixed text property object
text	No	string	Fixed text
textAttributes	No	object	Fixed text display
textColor	Yes	string	Text foreground color, defaults to #FF0000.
---font	Yes	object	Text description
----family	Yes	stringarray	Font type array. When there are multiple font types, the f If the foremost one is unavailable, the next one will be p this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic and italic
size	Yes	int	Size. Currently the unit can only be pixel and the default
isUnderline	Yes	bool	Underline
targetDateTime	Yes	long	UTC timestamp (ms)
countType	Yes	string	Timer type (COUNT_DOWN:
textAttributes	Yes	object	Timer text properties. Refer to textAttributes of fixed te
duration	Yes	long	Playback duration (ms), the length of time that the media the media plays according to its actual length of time, fo durations of scrolling text on screens of different resolu
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data fi
originalDataSource	Yes	string	Data source, media path of the original platform
constraints	Yes	object	Playback constraints on media, media validity constraints. range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression

Parameter	Required	Type	Description
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.1.11、Image (with an Animation Effect)

Description:

-Edit solutions. This interface details video, GIF and image

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "name": "节目 01",
        "widgetContainers": [{
            "contents": {
                "widgets": [{
                    "constraints": [{
                        "cron": ["0 0 0 ? * 1,2,3,4,5,6,7"],
                        "endTime": "4017-12-30T23:59:59Z 8:00",
                        "startTime": "1970-01-01T00:00:00Z 8:00"
                    }],
                    "inAnimation":{
                        "duration":1000,
                        "type":1
```

```
                        },
                        "metadata": {
                            "scrollAttributes": {
                                "effects": {
                                    "animation": "MARQUEE_UP",
                                    "speed": 3.0
                                }
                            }
                        },
                        "duration": 5000,
                        "dataSource": "f239518bb2aa5a52806b751cc3100a04.j
pg",
                        "type": "PICTURE",
                        "name": "liuwen1.jpg",
                        "originalDataSource": "D:/liuwen1.jpg"
                    }]
                },
                "id": 1,
                "name": "widgetContainers1"
            }]
        }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
contents	Yes	object	Window widget content	
widgets	Yes	objectArray	Window widget	
name	Yes	string	Name	
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of	

Parameter	Required	Type	Description
			images.
inAnimation	Yes	object	Entrance animation
type	Yes	int	1.0x00:无特效;2.0x01:随机动画 1.0X00: No effect; 2.0x01: Random; 3.0x10: Push from left; 4.0x11: Push from top; 5.0x12: Push from right; 6.0x13: Push from bottom; 7.0x14: Zoom in; 8.0x15: Split (vertical out); 9.0x16: Split (horizontal out); 10.0x20: Pan from left; 11.0x21: Pan from top; 12.0x22: Pan from right; 13.0x23: Pan from bottom; 14.0x30: Pan from bottom; 15.0x31: Indent from top; 16.0x32: Indent from right; 17.0x33: Indent from bottom; 18.0x34: Indent (vertical in); 19.0x35: Indent (horizontal in); 20.0x40: Uncover from top; 21.0x41: Uncover from bottom; 22.0x50: Split (horizontal in); 23.0x51: Split (vertical in); 24.0x60: Horizontal blinds; 25.0x61: Vertical blinds; 26.0x70: Split and expand from bottom; 27.0x80: TBD; 28.0x90: Wheel; 29.0xA0: Comb (vertical); 30.0xB0: Fade in; 31.0xB1: Fade out; 32.0xC0: Stack from left; 33.0xC1: Stack from top; 34.0xC2: Stack from right; 35.0xC3: Stack from bottom; 36.0xD0: Left laser; 37.0xD1: Top laser; 38.0xD2: Right laser; 39.0xD3: Bottom laser; 40.0xE0: Scroll from right; 41.0xE1: Scroll from bottom; 42.0xE2: Scroll from left; 43.0xE3: Scroll from top; 44.0xF0: Cover from top; 45.0xF1: Cover from bottom; 46.0xF2: Cover (vertical out); 47.0xF3: Cover (vertical in);
duration	Yes	long	Animation duration (ms) When the type is none, this is meaningless.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
scrollAttributes	No	object	Scrolling property description
effects	object	Yes	Scrolling animation description
animation	Yes	string	Animation effect: MARQUEE_LEFT, MARQUEE_RIGHT, MARQUEE_UP, MARQUEE_DOWN. NONE means the scrolling animation is not supported.
speed	Yes	float	Speed (pixel/second)
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.1.12、Audio

Description:

- An audio widget is a property of the window widget container, which is designed to add background music to each widget container. In other words, a music widget is not an independent media item and is a common properties of each window. To call audio media, audioFileName must be corresponding to audioGroup in WidgetContainer so that background music can be added to the specified WidgetContainer.

Request URL:

- `void nvSetAudioMedioProgramAsync(const char *data,ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "programID":1,
  "taskInfo":[
    {
      "audioFileName":"audioList1.json",
      "data":{
        "audioList":[
```

```
            {
              "enable":true,
              "originalDataSource":"F:/test/test111.mp3"
            },
            {
              "enable":true,
              "originalDataSource":"F:/test/test222.mp3"
            }
          ],
          "playPolicy":"ORDER"
        }
      },
      {
        "audioFileName":"audioList2.json",
        "data":{
          "audioList":[
            {
              "enable":true,
              "originalDataSource":"F:/test/test333.mp3"
            }
          ],
          "playPolicy":"ORDER"
        }
      }
    ]
}
```

Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned after solution creation)
taskInfo	Yes	object	Detailed upgrade information
audioFileName	Yes	string	The generated json file names of a solution cannot be the same. The audioGroup field in WidgetContainer must be the same as the content here.
data	Yes	objectArray	Audio media
audioList	Yes	object	Audio media list. A widgetContainer can be added with multiple audio media items.
enable	No	bool	Denotes whether independent audio is available. True by default
originalDataSource	Yes	string	Audio media path
playPolicy	No	string	Playback order, ORDER: Play in order, RANDOM: Play at random, Defaults to “ORDER”.

Return Sample

```
_param code int  `0` Obtained successfully `65381`timeout
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65381timeout

Remark

-

4.3.2、Complex Solution Editing

4.3.2.1、Image (with an Animation Effect)

Description:

-Edit solutions. Details of ArchText

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "name": "节目 01",
        "widgetContainers": [{
            "audioGroup": "",
            "backgroundColor": "#00000000",
            "backgroundDrawable": "",
            "contents": {
                "widgetGroups": [],
                "widgets": [{
                    "id": 1,
                    "enable": true,
                    "repeatCount": 1,
                    "layout": {
                        "y": "0",
                        "height": "100%",
                        "x": "0",
                        "width": "100%"
                    },
                    "backgroundColor": "#00000000",
                    "backgroundDrawable": "",
```

```
                    "backgroundMusic": "",
                    "zOrder": 0,
                    "displayRatio": "FULL",
                    "outAnimation": {
                        "type": 0,
                        "duration": 0
                    },
                    "dataSource": "4ab22addfa68f0e1110571a3c4766f2b.j
pg",
                    "type": "PICTURE",
                    "constraints": {
                        "cron": [],
                        "endTime": "4017-12-30T23:59:59Z 8:00",
                        "startTime": "1970-01-01T00:00:00Z 8:00"
                    },
                    "border": {
                        "borderThickness": "2px,3px,5%,6",
                        "style": 0,
                        "backgroundColor": "#ff000000",
                        "name": "border",
                        "cornerRadius": "2%",
                        "effects": {
                            "headTailSpacing": "",
                            "isHeadTail": false,
                            "speedByPixelEnable": true,
                            "speed": 0,
                            "animation": "CLOCK_WISE"
                        }
                    },
                    "inAnimation": {
                        "type": 0,
                        "duration": 1000
                    },
                     "metadata":{
    "scrollAttributes":{
      "effects":{
        "animation":"MARQUEE_UP",
        "speed":3.0
      }
    }
  },
                    "duration": 3605000,
                    "name": "IMG_20200916_111857.jpg",
                    "originalDataSource": "/storage/emulated/0/DCIM/C
amera/IMG_20200916_111857.jpg",
                    "functionStorage": "",
                    "isSupportSpecialEffects": false
                }]
            },
            "enable": true,
            "id": 1,
            "itemsSource": "",
            "layout": {
                "height": "1.0",
                "width": "1.0",
                "x": "0.0",
                "y": "0.0"
            },
            "name": "widgetContainers1",
            "pickCount": 0,
            "pickPolicy": "ORDER",
```

```
            "zOrder": 0
        }]
    }
}
```

Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default	
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
backgroundDrawable	Yes	string	Background image resource, empty by dfault	
contents	Yes	object	Window widget content	
widgetGroups	Yes	objectArray	Window widgets	
enable	Yes	bool	Validity. All the media will not be played if this is invalid.	
itemsSource	Yes	string	Media list	
layout	Yes	object	Layout	
x	Yes	string	Start x (such as 0.2568)	
y	Yes	string	Start y (such as 0.2568)	
width	Yes	string	Width (such as 0.5000)	
height	Yes	string	height (such as 0.5000)	
name	Yes	string	widgetContainers name	
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is valid. It make sense when the value is greater than 0.	
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount	
zOrder	Yes	int	z order	

Parameter	Required	Type	Description
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
scrollAttributes	No	object	Scrolling property description
effects	object	Yes	Scrolling animation description
animation	Yes	string	Animation effect: MARQUEE_LEFT, MARQUEE_RIGHT, MARQUEE_UP, MARQUEE_DOWN. NONE means the scrolling animation is not supported.
speed	Yes	float	Speed (pixel/second)
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes

Parameter	Required	Type	Description
			from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take effect simultaneously. If both are available, background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)
isHeadTail	No	boolean	Connect head to tail
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.
functionStorage	Yes	string	Empty by default
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
"success"
```

Return Parameter Description

Parameter Type	Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.2.2、Web Page

Description:

- Edit solutions. This interface details the web page widgets. The metadata is empty. The type is: HTML.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"Solution 01",
    "widgetContainers":[
      {
        "audioGroup":"",
        "backgroundColor":"#00000000",
        "backgroundDrawable":"",
        "contents":{
          "widgetGroups":[

          ],
          "widgets":[
            {
              "id":1,
              "enable":true,
              "repeatCount":1,
              "layout":{
                "y":"0",
                "height":"100%",
                "x":"0",
```

```
              "width":"100%"
            },
            "backgroundColor":"#00000000",
            "backgroundDrawable":"",
            "backgroundMusic":"",
            "zOrder":0,
            "displayRatio":"FULL",
            "outAnimation":{
              "type":0,
              "duration":0
            },
            "constraints":[{
              "cron":[

              ],
              "endTime":"4017-12-30T23:59:59Z 8:00",
              "startTime":"1970-01-01T00:00:00Z 8:00"
            }],
            "border":{
              "borderThickness":"2px,3px,5%,6",
              "style":0,
              "backgroundColor":"#ff000000",
              "name":"border",
              "cornerRadius":"2%",
              "effects":{
                "headTailSpacing":"",
                "isHeadTail":false,
                "speedByPixelEnable":true,
                "speed":0,
                "animation":"CLOCK_WISE"
              }
            },
            "inAnimation":{
              "type":0,
              "duration":1000
            },
            "duration":3605000,
            "dataSource":"https://www.baidu.com/",
            "type":"HTML",
            "name":"网页 g",
            "originalDataSource":"",
            "functionStorage":"",
            "isSupportSpecialEffects":false
          }
        ]
      },
      "enable":true,
      "id":1,
      "itemsSource":"",
      "layout":{
        "height":"1.0",
        "width":"1.0",
        "x":"0.0",
        "y":"0.0"
      },
      "name":"widgetContainers1",
      "pickCount":0,
      "pickPolicy":"ORDER",
      "zOrder":0
    }
```

```
      ]
   }
}
```

Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default	
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
backgroundDrawable	Yes	string	Background image resource, empty by dfault	
contents	Yes	object	Window widget content	
widgetGroups	Yes	objectArray	Window widgets	
enable	Yes	bool	Validity. All the media will not be played if this is invalid.	
itemsSource	Yes	string	Media list	
layout	Yes	object	Layout	
x	Yes	string	Start x (such as 0.2568)	
y	Yes	string	Start y (such as 0.2568)	
width	Yes	string	Width (such as 0.5000)	
height	Yes	string	height (such as 0.5000)	
name	Yes	string	widgetContainers name	
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is valid. It make sense when the value is greater than 0.	
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount	
zOrder	Yes	int	z order	

Parameter	Required	Type	Description
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. Otherwise, this filed will be used. FULL: Full screen; ORIGINAL_SIZE: Original size (starts from the top left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4:3; R16_9：16:9; R4_3：4:3; CUSTOM: Custom, layout must be valid when you fill out this.

Parameter	Required	Type	Description
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take effect simultaneously. If both are available, background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)
isHeadTail	No	boolean	Connect head to tail
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
speedByPixelEnable	No	boolean	True means pixel/second and false means

Parameter	Required	Type	Description
			grade.
functionStorage	Yes	string	Empty by default
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.2.3、RSS Media

Description:

- Edit solutions. This interface details RSS media. The corresponding media type is: SIMPLE_RSS.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"pageNew",
    "widgetContainers":[
      {
```

```
        "zOrder":1,
        "layout":{
          "x":"0",
          "y":"0",
          "width":"1",
          "height":"1"
        },
        "border":{
          "foregroundColor":"#FF008000",
          "width":1,
          "name":"border",
          "borderThickness":"0px,0px,0px,0px",
          "cornerRadius":"2%",
          "backgroundColor":"#FF000000",
          "style":0,
          "styleForExpress":0,
          "effects":{
            "speed":3,
            "animation":"CLOCK_WISE",
            "isHeadTail":false,
            "headTailSpacing":"10",
            "speedByPixelEnable":false
          }
        },
        "contents":{
          "widgets":[
            {
              "layout":{
                "x":"0%",
                "y":"0%",
                "width":"100%",
                "height":"100%"
              },
              "inAnimation":{
                "type":0,
                "duration":1000
              },
              "outAnimation":{
                "type":0,
                "duration":1000
              },
              "border":{
                "foregroundColor":"#FF008000",
                "width":1,
                "name":"border",
                "borderThickness":"0px,0px,0px,0px",
                "cornerRadius":"2%",
                "backgroundColor":"#FF000000",
                "style":0,
                "styleForExpress":0,
                "effects":{
                  "speed":3,
                  "animation":"CLOCK_WISE",
                  "isHeadTail":false,
                  "headTailSpacing":"10",
                  "speedByPixelEnable":false
                }
              },
              "constraints":[
                {
                  "startTime":"1970-01-01T00:00:00Z 8:00",
```

```
      "endTime":"4012-01-01T23:59:59Z 8:00",
      "cron":[
        "0 0 0 ? * 1,2,3,4,5,6,7"
      ]
    }
  ],
  "metadata":{
    "updatePeriod":60000,
    "titleEnable":true,
    "pubTimeEnable":true,
    "bodyEnable":true,
    "bodyImageEnable":false,
    "displayStyle":{
      "type":"PAGE_SWITCH",
      "singleLine":true,
      "pageSwitchAttributes":{
        "inAnimation":{
          "type":17,
          "duration":1000
        },
        "remainDuration":5000
      },
      "scrollAttributes":{
        "effects":{
          "speed":5,
          "animation":"MARQUEE_UP",
          "isHeadTail":false,
          "headTailSpacing":"10",
          "speedByPixelEnable":false
        }
      },
      "offset":{
        "x":0,
        "y":0
      }
    },
    "textAttributes":{
      "title":{
        "backgroundColor":"#00FFFFFF",
        "textColor":"#FF0000",
        "font":{
          "family":[
            "Arial"
          ],
          "style":"NORMAL",
          "size":18,
          "isUnderline":false
        },
        "shadowEnable":false,
        "ShadowRadius":0,
        "ShadowDx":0,
        "shadowDy":0,
        "shadowColor":"#00ff00",
        "strokeEnable":false,
        "strokeWidth":0,
        "letterSpacing":0
      },
      "pubTime":{
        "backgroundColor":"#00FFFFFF",
        "textColor":"#FFFF00",
        "font":{
```

```
                    "family":[
                      "Arial"
                    ],
                    "style":"NORMAL",
                    "size":16,
                    "isUnderline":false
                  },
                  "shadowEnable":false,
                  "ShadowRadius":0,
                  "ShadowDx":0,
                  "shadowDy":0,
                  "shadowColor":"#00ff00",
                  "strokeEnable":false,
                  "strokeWidth":0,
                  "letterSpacing":0
                },
                "body":{
                  "backgroundColor":"#00FFFFFF",
                  "textColor":"#00FF00",
                  "font":{
                    "family":[
                      "Arial"
                    ],
                    "style":"NORMAL",
                    "size":18,
                    "isUnderline":false
                  },
                  "shadowEnable":false,
                  "ShadowRadius":0,
                  "ShadowDx":0,
                  "shadowDy":0,
                  "shadowColor":"#00ff00",
                  "strokeEnable":false,
                  "strokeWidth":0,
                  "letterSpacing":0
                }
              }
            },
            "displayRatio":"FULL",
            "filesize":1024,
            "zOrder":1,
            "dataSource":"http://tech.qq.com/web/it/telerss.xml",
            "backgroundColor":"#00000000",
            "backgroundDrawable":"",
            "backgroundMusic":"",
            "name":"RSS",
            "enable":true,
            "type":"SIMPLE_RSS",
            "duration":10000,
            "repeatCount":1,
            "id":100000,
            "uuid":"099a5635-8250-4392-9ede-964087db8bc6"
          }
        ],
        "widgetGroups":[
        ],
        "widgetContainer":[
        ],
        "enable":false,
        "zOrder":0,
        "id":0,
```

```
          "uuid":"5a0e9597-737a-428f-acd8-a0846b480d97"
        },
        "PCType":0,
        "name":"页面 1",
        "enable":true,
        "pickPolicy":"ORDER",
        "id":200000,
        "uuid":"3ee6e06b-5a05-4cd7-84b8-c8668b4f6d53"
      }
    ]
  }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default	
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
backgroundDrawable	Yes	string	Background image resource, empty by dfault	
contents	Yes	object	Window widget content	
widgetGroups	Yes	objectArray	Window widgets	
enable	Yes	bool	Validity. All the media will not be played if this is invalid.	
itemsSource	Yes	string	Media list	
layout	Yes	object	Layout	
x	Yes	string	Start x (such as 0.2568)	
y	Yes	string	Start y (such as 0.2568)	
width	Yes	string	Width (such as 0.5000)	
height	Yes	string	height (such as 0.5000)	
name	Yes	string	widgetContainers name	
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is valid. It make sense when the value is greater than 0.	
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will	

Parameter	Required	Type	Description
			not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount
zOrder	Yes	int	z order
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
updatePeriod	No	long	Update interval, defaults to 60000ms
titleEnable	No	bool	Show/Hide title. Show by default (true)
pubTimeEnable	No	bool	Show/Hide publishing time. Show by default (true)
bodyEnable	No	bool	Show/Hide main part. Show by default (true)
bodyImageEnable	No	bool	Show/Hide the images in the main part. Show by default (true)
-displayStyle	Yes	object	Display style
type	Yes	string	PAGE_SWITCH or SCROLL means to swich by page or scroll text. PAGE_SWITCH means that PageSwitchAttributes is valid and SCROLL means that ScrollAttributes is valid.

Parameter	Required	Type	Description
--pageSwitchAttributes	Yes	object	Property of switching by page
---inAnimation	Yes	object	Entrance animation
type	No	int	Entrance animation type, no animation by default
duration	Yes	long	Animation duration (ms)
remianDuration	Yes	long	Duration of stay (ms)
--scrollAttributes	No	object	Scrolling property description
---effects	object	Yes	Scrolling animation description
animation	Yes	string	1. MARQUEE_LEFT: Scroll from right (single line by default), 2. MARQUEE_UP: Scroll from bottom (entire screen), 3. MARQUEE_DOWN: Scroll from top (entire screen), 4. MARQUEE_RIGHT: Scroll from left (single line, text order reversed)
speed	Yes	float	Speed (pixel/second)
-textAttributes	Yes	object	Text properties
--title	Yes	object	Title font style
backgroundColor	No	string	Background color, defaults to 00FFFFFF.
textColor	No	string	Text foreground color, defaults to #FF0000.
---font	Yes	object	Text description
----family	Yes	stringarray	Font type array. When there are multiple font types, the foremost one is preferred. If the foremost one is unavailable, the next one will be preferred. If there is no this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic, 4. BOLD_ITALIC: Bold and italic
size	Yes	int	Size. Currently the unit can only be pixel and the default size is 16.
isUnderline	Yes	bool	Underline
letterSpacing	Yes	int	Character spacing (pixel), defaults to 0.
shadowEnable	Yes	bool	Enable shadow, false by default
shadowRadius	Yes	int	The shadow radius is in pixels and defaults to 10.
shadowDx	Yes	int	X axis offset
shadowDy	Yes	int	Y axis offset
shadowColor	Yes	string	Shadow color, defaults to #00ff00
strokeEnable	Yes	bool	Whether the outline takes effect
strokeWidth	Yes	int	Outline width
strokeColor	Yes	string	Outline color
--pubTime	Yes	object	Time text font, same as title
--body	Yes	object	Body text font, same as title

Parameter	Required	Type	Description
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. Otherwise, this filed will be used. FULL: Full screen; ORIGINAL_SIZE: Original size (starts from the top left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4:3; R16_9：16:9; R4_3：4:3; CUSTOM: Custom，layout must be valid when you fill out this.
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take effect simultaneously. If both are available, background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border

Parameter	Required	Type	Description	
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.	
style	No	int	Style	
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
name	No	string	Name	
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.	
effects	No	object	Animation effect	
speed	No	float	Speed, pixel/second	
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)	
isHeadTail	No	boolean	Connect head to tail	
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)	
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.	
functionStorage	Yes	string	Empty by default	
isSupportSpecialEffects	Yes	string	Support for playabck effect	

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.2.4、Colorful Text

Description:

- Edit solutions. This interface is an example of colorful text. The media type is: COLORFUL_TEXT.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-


```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "name": "pageNew",
        "widgetContainers": [{
            "zOrder": 1,
            "layout": {
                "x": "0",
                "y": "0",
                "width": "1",
                "height": "1"
            },
            "border": {
                "foregroundColor": "#FF008000",
                "width": 1,
                "name": "border",
                "borderThickness": "0px,0px,0px,0px",
                "cornerRadius": "2%",
                "backgroundColor": "#FF000000",
                "style": 0,
                "styleForExpress": 0,
                "effects": {
                    "speed": 3,
                    "animation": "CLOCK_WISE",
                    "isHeadTail": false,
                    "headTailSpacing": "10",
                    "speedByPixelEnable": false
                }
            },
            "contents": {
                "widgets": [{
                    "layout": {
                        "x": "0%",
                        "y": "0%",
                        "width": "100%",
                        "height": "100%"
                    },
                    "inAnimation": {
                        "type": 0,
                        "duration": 1000
                    },
                    "outAnimation": {
                        "type": 0,
                        "duration": 1000
                    },
                    "border": {
```

```
                        "foregroundColor": "#FF008000",
                        "width": 1,
                        "name": "border",
                        "borderThickness": "0px,0px,0px,0px",
                        "cornerRadius": "2%",
                        "backgroundColor": "#FF000000",
                        "style": 0,
                        "styleForExpress": 0,
                        "effects": {
                            "speed": 3,
                            "animation": "CLOCK_WISE",
                            "isHeadTail": false,
                            "headTailSpacing": "10",
                            "speedByPixelEnable": false
                        }
                    },
                    "constraints": [{
                        "startTime": "1970-01-01T00:00:00Z 8:00",
                        "endTime": "4012-01-01T23:59:59Z 8:00",
                        "cron": [
                            "0 0 0 ? * 1,2,3,4,5,6,7"
                        ]
                    }],
                    "metadata": {
                        "content": {
                            "content": "请输入文字!",
                            "scrollAttributes": {
                                "effects": {
                                    "speed": 5,
                                    "animation": "MARQUEE_LEFT",
                                    "isHeadTail": false,
                                    "headTailSpacing": "10",
                                    "speedByPixelEnable": false
                                }
                            },
                            "textAttributes": {
                                "effects": {
                                    "type": "GRADIENT_HORIZONTAL",
                                    "colors": ["#FF0000",
                                        "#FF00B050",
                                        "#FFC00000",
                                        "#FF007BD4",
                                        "#FFFFFF00",
                                        "#FF00FF"
                                    ],
                                    "texture": ""
                                },
                                "backgroundColor": "#00FFFFFF",
                                "textColor": "#FF0000",
                                "font": {
                                    "family": [
                                        "Arial"
                                    ],
                                    "style": "NORMAL",
                                    "size": 50,
                                    "isUnderline": false
                                },
                                "shadowEnable": false,
                                "ShadowRadius": 0,
                                "ShadowDx": 2,
```

```
                                    "shadowDy": 2,
                                    "shadowColor": "#6128bf",
                                    "strokeEnable": false,
                                    "strokeWidth": 2,
                                    "strokeColor": "#6128bf",
                                    "letterSpacing": 1
                                }
                            }
                        },
                        "displayRatio": "FULL",
                        "filesize": 1024,
                        "zOrder": 1,
                        "backgroundColor": "#FF1F8787",
                        "backgroundDrawable": "",
                        "backgroundMusic": "",
                        "name": "炫彩字",
                        "enable": true,
                        "type": "COLORFUL_TEXT",
                        "duration": 10000,
                        "repeatCount": 1,
                        "id": 100000,
                        "uuid": "3dc02eef-b736-4817-b107-ea4c696e61f1"
                    }],
                    "widgetGroups": [],
                    "widgetContainer": [],
                    "enable": false,
                    "zOrder": 0,
                    "id": 0,
                    "uuid": "71052088-28d3-48cf-9f03-08e16e189fe8"
                },
                "PCType": 0,
                "name": "页面 1",
                "enable": true,
                "pickPolicy": "ORDER",
                "id": 200000,
                "uuid": "9e2a4114-6bec-4cb0-8d3e-93652ff0bb50"
            }]
        }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default	
backgroundColor	Yes	string	Color value, standard format. Four bytes	

Parameter	Required	Type	Description
			from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	Background image resource, empty by dfault
contents	Yes	object	Window widget content
widgetGroups	Yes	objectArray	Window widgets
enable	Yes	bool	Validity. All the media will not be played if this is invalid.
itemsSource	Yes	string	Media list
layout	Yes	object	Layout
x	Yes	string	Start x (such as 0.2568)
y	Yes	string	Start y (such as 0.2568)
width	Yes	string	Width (such as 0.5000)
height	Yes	string	height (such as 0.5000)
name	Yes	string	widgetContainers name
pickCount	Yes	int	When the content of pickPolicy contains 'N', this is valid. It make sense when the value is greater than 0.
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount
zOrder	Yes	int	z order
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast.

Parameter	Required	Type	Description
			Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
content	Yes	object	Detailed settings of colorful text
-content	Yes	string	Display text content
-scrollAttributes	Yes	object	Scrolling property description
--effects	Yes	object	Scrolling animation description
animation	Yes	string	MARQUEE_LEFT or MARQUEE_RIGHT
speed	Yes	float	Speed, unit: px/s or grade (1-10)
speedByPixelEnable	Yes	bool	True denotes px/s while false denotes grade. Defaults to false.
isHeadTail	Yes	bool	Enable head to tail, not enabled by default (false)
headTailSpacing	Yes	string	Spacing between the head and tail, unit: screen percentage (%)
--textAttributes	Yes	object	Text property list
---effects	Yes	object	Playback animation of colorful text
type	Yes	string	Animation effects, 5 animation effects in the text properties, GRADIENT_HORIZONTAL (Horizontal gradient), GRADIENT_VERTICAL (Vertical gradient), GRADIENT_OBLIQUE (Diagonal gradient), FADE_IN_FADE_OUT (Fade), TEXTURE (texture)
colors	Yes	stringObject	Color gradient
texture	No	string	This is available when the type is TEXTURE. Image name, such as 1.jpg
backgroundColor	No	string	Background color, defaults to 00FFFFFF
textColor	No	string	Text foreground color, defaults to #FF0000
---font	Yes	object	Text description
----family	Yes	stringarray	ont type array. When there are multiple font types, the foremost one is preferred. If the foremost one is unavailable, the next one will be preferred. If there is no this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic, 4. BOLD_ITALIC: Bold and italic
size	Yes	int	Size. The unit currently supports pixel

Parameter	Required	Type	Description
			onle and size defaults to 16.
isUnderline	Yes	bool	Underline
letterSpacing	Yes	int	Character spacing (pixel), defaults to 0.
shadowEnable	Yes	bool	Enable shadow, false by default
shadowRadius	Yes	int	Shadow radius is in pixels and defaults to 10.
shadowDx	Yes	int	X axis offset
shadowDy	Yes	int	Y axis offset
shadowColor	Yes	string	Shadow color, defaults to #00ff00.
strokeEnable	Yes	bool	Whether the outline takes effect
strokeWidth	Yes	int	Outline width
strokeColor	Yes	string	Outline color
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. Otherwise, this filed will be used. FULL: Full screen; ORIGINAL_SIZE: Original size (starts from the top left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4:3; R16_9：16:9; R4_3：4:3; CUSTOM: Custom, layout must be valid when you fill out this.
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)

Parameter	Required	Type	Description
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take effect simultaneously. If both are available, background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)
isHeadTail	No	boolean	Connect head to tail
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.
functionStorage	Yes	string	Empty by default
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.2.5、Environment Monitoring Media

Description:

- Edit solutions. Environment monitoring media, corresponding media type: RT_MEDIA

Request URL:

- void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);

Request Method:

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"pageNew",
    "widgetContainers":[
      {
        "zOrder":1,
        "layout":{
          "x":"0",
          "y":"0",
          "width":"1",
          "height":"1"
        },
        "border":{
          "foregroundColor":"#FF008000",
          "width":1,
          "name":"border",
          "borderThickness":"0px,0px,0px,0px",
          "cornerRadius":"2%",
          "backgroundColor":"#FF000000",
          "style":0,
          "styleForExpress":0,
          "effects":{
            "speed":3,
            "animation":"CLOCK_WISE",
            "isHeadTail":false,
            "headTailSpacing":"10",
            "speedByPixelEnable":false
          }
        },
        "contents":{
```

```
          "widgets":[
            {
              "layout":{
                "x":"0%",
                "y":"0%",
                "width":"100%",
                "height":"100%"
              },
              "inAnimation":{
                "type":0,
                "duration":1000
              },
              "outAnimation":{
                "type":0,
                "duration":1000
              },
              "border":{
                "foregroundColor":"#FF008000",
                "width":1,
                "name":"border",
                "borderThickness":"0px,0px,0px,0px",
                "cornerRadius":"2%",
                "backgroundColor":"#FF000000",
                "style":0,
                "styleForExpress":0,
                "effects":{
                  "speed":3,
                  "animation":"CLOCK_WISE",
                  "isHeadTail":false,
                  "headTailSpacing":"10",
                  "speedByPixelEnable":false
                }
              },
              "constraints":[
                {
                  "startTime":"1970-01-01T00:00:00Z 8:00",
                  "endTime":"4012-01-01T23:59:59Z 8:00",
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ]
                }
              ],
              "metadata":{
                "updatePeriod":60000,
                "temperatureUnit":"Celsius",
                "regular":"噪音:$n\n 温度:$t\n 气湿:$AH\n 气压:$AP\n 风速:
$WS\n 风向:$WD\nPM2.5:$PM2.5\nPM10:$PM10\nCO2:$CO2\n",
                "solidText":{
                  "text":"",
                  "textAttributes":{
                    "backgroundColor":"#00FFFFFF",
                    "textColor":"#FFF56E00",
                    "font":{
                      "family":[
                        "Arial"
                      ],
                      "style":"NORMAL",
                      "size":12,
                      "isUnderline":false
                    },
```

```
      "shadowEnable":false,
      "ShadowRadius":0,
      "ShadowDx":0,
      "shadowDy":0,
      "shadowColor":"#00ff00",
      "strokeEnable":false,
      "strokeWidth":0,
      "letterSpacing":0
    }
  },
  "textAttributes":{
    "backgroundColor":"#00FFFFFF",
    "textColor":"#FFF56E00",
    "font":{
      "family":[
        "楷体"
      ],
      "style":"NORMAL",
      "size":32,
      "isUnderline":false
    },
    "shadowEnable":false,
    "ShadowRadius":0,
    "ShadowDx":0,
    "shadowDy":0,
    "shadowColor":"#00ff00",
    "strokeEnable":false,
    "strokeWidth":0,
    "letterSpacing":0
  },
  "valueTextAttributes":{
    "backgroundColor":"#00FFFFFF",
    "textColor":"#FFF56E00",
    "font":{
      "family":[
        "Arial"
      ],
      "style":"NORMAL",
      "size":16,
      "isUnderline":false
    },
    "shadowEnable":false,
    "ShadowRadius":0,
    "ShadowDx":0,
    "shadowDy":0,
    "shadowColor":"#00ff00",
    "strokeEnable":false,
    "strokeWidth":0,
    "letterSpacing":0
  },
  "unitTextAttributes":{
    "backgroundColor":"#00FFFFFF",
    "textColor":"#FFF56E00",
    "font":{
      "family":[
        "Arial"
      ],
      "style":"NORMAL",
      "size":32,
      "isUnderline":false
```

```
      },
      "shadowEnable":false,
      "ShadowRadius":0,
      "ShadowDx":0,
      "shadowDy":0,
      "shadowColor":"#00ff00",
      "strokeEnable":false,
      "strokeWidth":0,
      "letterSpacing":0
    },
    "temperatureCompensation":0,
    "displayStyle":{
      "type":"PAGE_SWITCH",
      "singleLine":true,
      "pageSwitchAttributes":{
        "inAnimation":{
          "type":1,
          "duration":1000
        },
        "remainDuration":3000
      },
      "scrollAttributes":{
        "effects":{
          "speed":3,
          "animation":"MARQUEE_UP",
          "isHeadTail":false,
          "headTailSpacing":"10",
          "speedByPixelEnable":false
        }
      },
      "offset":{
        "x":0,
        "y":0
      }
    },
    "layoutStyles":[
      {
        "type":1,
        "horizontalAlignment":"RIGHT",
        "proportion":50
      },
      {
        "type":0,
        "horizontalAlignment":"CENTER",
        "proportion":1
      },
      {
        "type":4,
        "horizontalAlignment":"CENTER",
        "proportion":49
      }
    ],
    "regularContents":[
      {
        "key":"$t",
        "type":0,
        "unit":"℃",
        "compensation":0.0
      },
      {
```

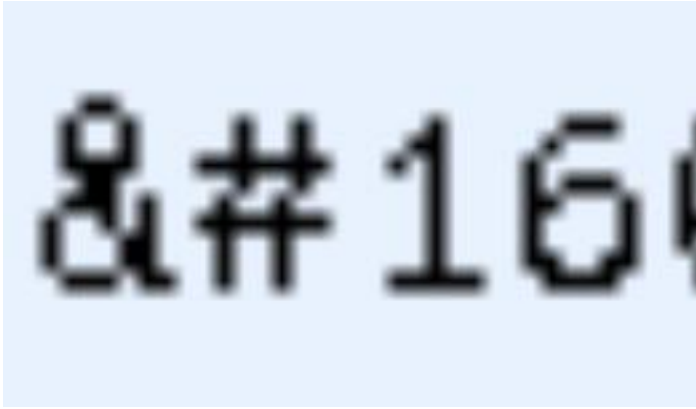
```
      "key":"$n",
      "type":0,
      "unit":"dB",
      "compensation":0.0
    },
    {
      "key":"$WS",
      "type":0,
      "unit":"km/h",
      "compensation":0.0
    },
    {
      "key":"$WD",
      "type":0,
      "unit":"",
      "compensation":0.0,
      "Templates":[
        "北风",
        "东北风",
        "东风",
        "东南风",
        "南风",
        "西南风",
        "西风",
        "西北风"
      ]
    },
    {
      "key":"$AT",
      "type":0,
      "unit":"℃",
      "compensation":0.0
    },
    {
      "key":"$AP",
      "type":0,
      "unit":"kPa",
      "compensation":0.0
    },
    {
      "key":"$AH",
      "type":0,
      "unit":"%RH",
      "compensation":0.0
    },
    {
      "key":"$PM2.5",
      "type":0,
      "unit":"μg/m³",
      "compensation":0.0
    },
    {
      "key":"$PM10",
      "type":0,
      "unit":"μg/m³",
      "compensation":0.0
    },
    {
      "key":"$CO2",
```

```
                    "type":0,
                    "unit":"ppm",
                    "compensation":0.0
                  }
                ]
              },
              "displayRatio":"FULL",
              "filesize":1024,
              "zOrder":1,
              "backgroundColor":"#FF1F8787",
              "backgroundDrawable":"",
              "backgroundMusic":"",
              "name":"环境监测",
              "enable":true,
              "type":"RT_MEDIA",
              "duration":10000,
              "repeatCount":1,
              "id":100000,
              "uuid":"3dc02eef-b736-4817-b107-ea4c696e61f1"
            }
          ],
          "widgetGroups":[
          ],
          "widgetContainer":[
          ],
          "enable":false,
          "zOrder":0,
          "id":0,
          "uuid":"71052088-28d3-48cf-9f03-08e16e189fe8"
        },
        "PCType":0,
        "name":"页面 1",
        "enable":true,
        "pickPolicy":"ORDER",
        "id":200000,
        "uuid":"9e2a4114-6bec-4cb0-8d3e-93652ff0bb50"
      }
    ]
  }
}
```


Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned during solution creating)
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
id	Yes	int	id
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Avai V1.3.4 and later. Empty by default
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)

Parameter	Required	Type	Description
backgroundDrawable	Yes	string	Background image resource, empty by dfault
contents	Yes	object	Window widget content
widgetGroups	Yes	objectArray	Window widgets
enable	Yes	bool	Validity. All the media will not be played if this is inva
itemsSource	Yes	string	Media list
layout	Yes	object	Layout
x	Yes	string	Start x (such as 0.2568)
y	Yes	string	Start y (such as 0.2568)
width	Yes	string	Width (such as 0.5000)
height	Yes	string	height (such as 0.5000)
name	Yes	string	widgetContainers name
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is val the value is greater than 0.
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArr ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArr played this time will not be played next time. The value c RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramd scenarios for playback. The value of n is from pickCount; on luck; RANDOM_N: Play n items randomly. The value of n i
zOrder	Yes	int	z order
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich tex text. This type of text is rich with features and has a va the detailed format definition, see the integrated text ch style is still used. And there are some historical reasons ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLO DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media weather forecast. Only the current weather is displayed an supported. The properties of text can only be modified tog The media type is border; STREAM_VIDEO: Local RSS media; P widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This fie the media type is streaming media, web page, gif, video, a animation effect).
updatePeriod	Yes	long	Update interval (ms). (0 means to read only once.)
temperatureUnit	Yes	string	Temperature sensor, Celsius or Fahrenheit
regular	Yes	string	Playback rules: 1. $longitude: Longitude; 2. $latitude: La Altitude; 4. $PM2.5: PM2.5, unit: μg/m3; 5. $WS: Wind spe scale, Type: 0: km/h, 1: m/s, km/h by default, 2: Scale; 6 $WD: Wind direction; 8. $h: Humidity; 9. $t:Temperature, u 0: ℃ (default), 1: ℉; 10. $n Noise, unit: dB; 11. $CO2: μg/m3; 12. $AT: Air temperature, unit: ℃, ℉, °, type C 13. $AH: Air humidity, unit: RH; 14. $AP: Air pressure, un

Parameter	Required	Type	Description
			Torr, kgf/cm2, Type: 0: KPa, 1: bar, 2: atm, 3: mmHg, 4: T default: KPa; 15. $SH: Soil humidity (custom-made), unit: temperature (custom-made), unit: ℃, ℉, ° , Type: 0: ℃ (New line; 18:  : Space
-solidText	No	object	Text
text	Yes	string	Text content
--textAttributes	No	object	Title style
backgroundColor	No	string	Background color, defaults to 00FFFFFF.
textColor	No	string	Text foreground color, defaults to #FF0000.
---font	Yes	object	Text description
----family	Yes	stringarray	Font type array. When there are multiple font types, the f If the foremost one is unavailable, the next one will be p this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic and italic
size	Yes	int	Size. Currently the unit can only be pixel and the default
isUnderline	Yes	bool	Underline
letterSpacing	Yes	int	Character spacing (pixel), defaults to 0.
shadowEnable	Yes	bool	Enable shadow, false by default
shadowRadius	Yes	int	The shadow radius is in pixels and defaults to 10.
shadowDx	Yes	int	X axis offset
shadowDy	Yes	int	Y axis offset
shadowColor	Yes	string	Shadow color, defaults to #00ff00
strokeEnable	Yes	bool	Whether the outline takes effect
strokeWidth	Yes	int	Outline width
strokeColor	Yes	string	Outline color
-textAttributes	Yes	object	Tag text properties, same as textAttributes
-valueTextAttributes	Yes	object	Numeric value text properties, same as textAttributes
-unitTextAttributes	Yes	object	unit text properties, same as textAttributes
temperatureCompensation	Yes	object	Temperature compensation value, range: -50~5, default: 0
-displayStyle	Yes	object	Display style
type	Yes	string	PAGE_SWITCH means to swicth by page. SCROLL means to scrol

Parameter	Required	Type	Description
			static. (If the text content is bigger than the screen, on be displayed.)
--pageSwitchAttributes	Yes	object	property of switching by page
---inAnimation	Yes	object	Entrance animation
type	No	int	Entrance animation type, no animation by default
duration	Yes	long	Animation duration (ms)
remianDuration	Yes	long	Duration of stay (ms)
--effects	Yes	object	Scrolling animation description
animation	Yes	string	MARQUEE_LEFT or MARQUEE_UP
speed	Yes	float	Speed, unit: px/s or grade (1-10)
speedByPixelEnable	Yes	bool	True denotes px/s while false denotes grade. Defaults to f
isHeadTail	Yes	bool	Enable head to tail, not enabled by default (false)
headTailSpacing	Yes	string	Spacing between the head and tail, unit: screen percentage
-layoutStyles	Yes	objectarray	Layout style array
type	Yes	int	0: Spacing, 1: custom tag, 2: Number, 3: Unit, 4: Number,
horizontalAlignment	Yes	string	Horizontal alignment: LEFT, CENTER, RIGHT
verticalAlignment	Yes	string	Vertical alignment: BOTTOM, CENTER, TOP (V1.9.0)
proportion	Yes	int	Maximum range: 100
-regularContents	Yes	objectarray	Media content
key	Yes	string	For details, see the placeholder definition of regular and
unit	Yes	string	Unit of corresponding value
type	Yes	int	Conversion type of different units
compensation	Yes	double	Compensation value. For details, see the placeholder defin related properties
templates	Yes	stringarray	Only available for wind direction, must be follow the orde "East", "South east", "South", "South east", "West", "Nort
duration	Yes	long	Playback duration (ms), the length of time that the media the media plays according to its actual length of time, fo durations of scrolling text on screens of different resolu
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. will be used. FULL: Full screen; ORIGINAL_SIZE: Original s left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4: 4:3; CUSTOM: Custom, layout must be valid when you fill ou
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does n

Parameter	Required	Type	Description
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data fi
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or color and image cannot take effect simultaneously. If both background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel a supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel an
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK rotation)
isHeadTail	No	boolean	Connect head to tail
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.
functionStorage	Yes	string	Empty by default
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.2.6、Streaming Media

Description:

- Edit solutions. This interface details streaming media. The corresponding media type is: STREAM_MEDIA.

Request URL:

- void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);

Request Method:

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"pageNew",
    "widgetContainers":[
      {
        "zOrder":1,
        "layout":{
          "x":"0",
          "y":"0",
          "width":"1",
          "height":"1"
        },
        "border":{
          "foregroundColor":"#FF008000",
          "width":1,
          "name":"border",
          "borderThickness":"0px,0px,0px,0px",
          "cornerRadius":"2%",
          "backgroundColor":"#FF000000",
          "style":0,
          "styleForExpress":0,
          "effects":{
            "speed":3,
            "animation":"CLOCK_WISE",
            "isHeadTail":false,
            "headTailSpacing":"10",
            "speedByPixelEnable":false
          }
        },
        "contents":{
```

```
          "widgets":[
            {
              "layout":{
                "x":"0%",
                "y":"0%",
                "width":"100%",
                "height":"100%"
              },
              "inAnimation":{
                "type":0,
                "duration":1000
              },
              "outAnimation":{
                "type":0,
                "duration":1000
              },
              "border":{
                "foregroundColor":"#FF008000",
                "width":1,
                "name":"border",
                "borderThickness":"0px,0px,0px,0px",
                "cornerRadius":"2%",
                "backgroundColor":"#FF000000",
                "style":0,
                "styleForExpress":0,
                "effects":{
                  "speed":3,
                  "animation":"CLOCK_WISE",
                  "isHeadTail":false,
                  "headTailSpacing":"10",
                  "speedByPixelEnable":false
                }
              },
              "constraints":[
                {
                  "startTime":"1970-01-01T00:00:00Z 8:00",
                  "endTime":"4012-01-01T23:59:59Z 8:00",
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ]
                }
              ],
              "metadata":{
                "subType":"STREAM",
                "modelData":{
                  "src":"http://ivi.bupt.edu.cn/hls/cctv1hd.m3u8",
                  "volume":100,
                  "stream_media_type":"m3u8",
                  "stream_media_protocol_type":"hls"
                }
              },
              "displayRatio":"FULL",
              "filesize":1024,
              "zOrder":1,
              "backgroundColor":"#00000000",
              "backgroundDrawable":"",
              "backgroundMusic":"",
              "name":"流媒体",
              "enable":true,
              "type":"STREAM_MEDIA",
```

```
                "duration":10000,
                "repeatCount":1,
                "id":100000,
                "uuid":"099a5635-8250-4392-9ede-964087db8bc6"
              }
            ],
            "widgetGroups":[
            ],
            "widgetContainer":[
            ],
            "enable":false,
            "zOrder":0,
            "id":0,
            "uuid":"5a0e9597-737a-428f-acd8-a0846b480d97"
          },
          "PCType":0,
          "name":"页面 1",
          "enable":true,
          "pickPolicy":"ORDER",
          "id":200000,
          "uuid":"3ee6e06b-5a05-4cd7-84b8-c8668b4f6d53"
        }
      ]
    }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default	
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
backgroundDrawable	Yes	string	Background image resource, empty by dfault	
contents	Yes	object	Window widget content	
widgetGroups	Yes	objectArray	Window widgets	
enable	Yes	bool	Validity. All the media will not be played if this is invalid.	
itemsSource	Yes	string	Media list	
layout	Yes	object	Layout	

Parameter	Required	Type	Description
x	Yes	string	Start x (such as 0.2568)
y	Yes	string	Start y (such as 0.2568)
width	Yes	string	Width (such as 0.5000)
height	Yes	string	height (such as 0.5000)
name	Yes	string	widgetContainers name
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is valid. It make sense when the value is greater than 0.
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount
zOrder	Yes	int	z order
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description

Parameter	Required	Type	Description
			of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
modelData	Yes	object	Streaming media parameter
src	Yes	string	Streaming media URL
stream_media_protocol_type	Yes	string	Streaming media protocol type
stream_media_type	Yes	string	Streaming media type
volume	Yes	int	Streaming media volume
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. Otherwise, this filed will be used. FULL: Full screen; ORIGINAL_SIZE: Original size (starts from the top left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4:3; R16_9：16:9; R4_3：4:3; CUSTOM: Custom，layout must be valid when you fill out this.
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take

Parameter	Required	Type	Description	
			effect simultaneously. If both are available, background image will be preferred.	
zOrder	Yes	int	z order	
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.	
startTime	Yes	string	Start time	
endTime	Yes	string	End time	
cron	Yes	stringArray	cron expression	
border	No	object	Border	
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.	
style	No	int	Style	
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
name	No	string	Name	
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.	
effects	No	object	Animation effect	
speed	No	float	Speed, pixel/second	
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)	
isHeadTail	No	boolean	Connect head to tail	
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)	
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.	
functionStorage	Yes	string	Empty by default	
isSupportSpecialEffects	Yes	string	Support for playabck effect	

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.2.7、Timer

Description:

- Edit solutions. Timer media, corresponding media type: COUNT_TIMER

Request URL:

- void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);

Request Method:

-

Request Parameter Sample

-

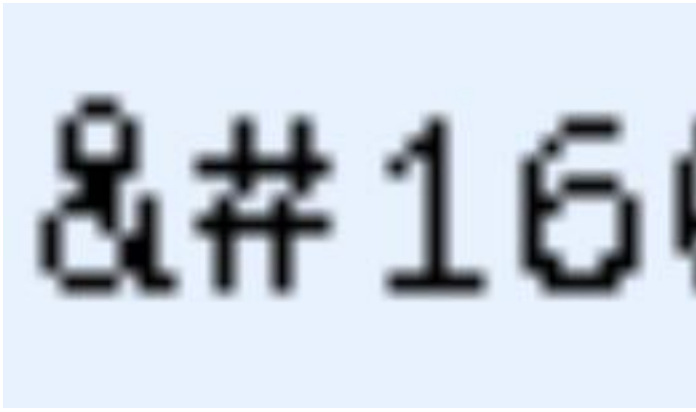
```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"pageNew",
    "widgetContainers":[
      {
        "zOrder":1,
        "contents":{
          "widgets":[
            {
              "constraints":[
                {
                  "startTime":"1970-01-01T00:00:00Z 8:00",
                  "endTime":"4012-01-01T23:59:59Z 8:00",
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ]
                }
              ],
              "metadata":{
                "regular":"$d 天$H 时$m 分$s 秒",
                "regularNew":"$d$Ud$H$UH$m$Um$s$Us",
                "solidText":{
                  "textAttributes":{
                    "font":{
                      "size":48,
                      "isUnderline":false,
                      "family":[
                        "Arial"
                      ],
                      "style":"NORMAL"
                    },
                    "textColor":"#FF0000",
                    "backgroundColor":"#00FFFFFF",
```

```
      "shadowEnable":false,
      "ShadowRadius":0,
      "ShadowDx":0,
      "shadowDy":0,
      "shadowColor":"#00ff00",
      "strokeEnable":false,
      "strokeWidth":0,
      "letterSpacing":0
    },
    "text":""
  },
  "textAttributes":{
    "font":{
      "size":48,
      "isUnderline":false,
      "family":[
        "Arial"
      ],
      "style":"NORMAL"
    },
    "textColor":"#FF0000",
    "backgroundColor":"#00FFFFFF",
    "shadowEnable":false,
    "ShadowRadius":0,
    "ShadowDx":0,
    "shadowDy":0,
    "shadowColor":"#00ff00",
    "strokeEnable":false,
    "strokeWidth":0,
    "letterSpacing":0
  },
  "units":[
    {
      "zero":"天",
      "name":"$Ud",
      "singular":"天",
      "plural":"天"
    },
    {
      "zero":"时",
      "name":"$UH",
      "singular":"时",
      "plural":"时"
    },
    {
      "zero":"分",
      "name":"$Um",
      "singular":"分",
      "plural":"分"
    },
    {
      "zero":"秒",
      "name":"$Us",
      "singular":"秒",
      "plural":"秒"
    }
  ],
  "targetDateTime":1602864000000,
  "countType":"COUNT_DOWN"
```

```
                },
                "filesize":1024,
                "zOrder":1,
                "dataSource":"",
                "name":"计时器",
                "enable":true,
                "type":"COUNT_TIMER",
                "duration":10000,
                "repeatCount":1,
                "id":100000
              }
            ],
            "zOrder":0,
            "id":0
          },
          "PCType":0,
          "name":"页面 1",
          "enable":true,
          "pickPolicy":"ORDER",
          "id":200000
        }
      ]
    }
}
```


Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned during solution creating)
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
id	Yes	int	id
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Avai V1.3.4 and later. Empty by default
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
backgroundDrawable	Yes	string	Background image resource, empty by dfault
contents	Yes	object	Window widget content
widgetGroups	Yes	objectArray	Window widgets
enable	Yes	bool	Validity. All the media will not be played if this is inva
itemsSource	Yes	string	Media list
layout	Yes	object	Layout
x	Yes	string	Start x (such as 0.2568)
y	Yes	string	Start y (such as 0.2568)
width	Yes	string	Width (such as 0.5000)
height	Yes	string	height (such as 0.5000)
name	Yes	string	widgetContainers name

Parameter	Required	Type	Description
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is val the value is greater than 0.
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArr ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArr played this time will not be played next time. The value c RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramd scenarios for playback. The value of n is from pickCount; on luck; RANDOM_N: Play n items randomly. The value of n i
zOrder	Yes	int	z order
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich tex text. This type of text is rich with features and has a va the detailed format definition, see the integrated text ch style is still used. And there are some historical reasons ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLO DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media weather forecast. Only the current weather is displayed an supported. The properties of text can only be modified tog The media type is border; STREAM_VIDEO: Local RSS media; P widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This fie the media type is streaming media, web page, gif, video, a animation effect).
regular	Yes	string	Playback rules, 1. $T: Fixed text; 2. $d: Day; 3. $H: Hour Second; 6. $Ud: Unit of day; 7. $UH: Unit of hour; 8. $Um: Unit of second; 10. \n: New line; 11.  : Space
regularNew	Yes	string	Rule: Terminals of V1.5.0 and later support singular and p media. A new rule was added.
units	Yes	object	Unit replacement array
name	Yes	string	Alternative name
singular	Yes	string	Singular name
plural	Yes	string	Plural name
zero	Yes	string	Unit when the value is 0

Parameter	Required	Type	Description
solidText	Yes	object	Fixed text property object
text	No	string	Fixed text
textAttributes	No	object	Fixed text display
backgroundColor	Yes	string	Background color, defaults to 00FFFFFF.
textColor	Yes	string	Text foreground color, defaults to #FF0000.
---font	Yes	object	Text description
----family	Yes	stringarray	Font type array. When there are multiple font types, the f If the foremost one is unavailable, the next one will be p this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic and italic
size	Yes	int	Size. Currently the unit can only be pixel and the default
isUnderline	Yes	bool	Underline
letterSpacing	No	int	Character spacing (pixel), defaults to 0.
shadowEnable	No	bool	Enable shadow, false by default
shadowRadius	No	int	The shadow radius is in pixels and defaults to 10.
shadowDx	No	int	X axis offset
shadowDy	No	int	Y axis offset
shadowColor	No	string	Shadow color, defaults to #00ff00
strokeEnable	No	bool	Whether the outline takes effect
strokeWidth	No	int	Outline width
strokeColor	No	string	outline color
targetDateTime	Yes	long	UTC timestamp (ms)
countType	Yes	string	Timer type (COUNT_DOWN:
textAttributes	Yes	object	Timer text properties. Refer to textAttributes of fixed te
duration	Yes	long	Playback duration (ms), the length of time that the media the media plays according to its actual length of time, fo durations of scrolling text on screens of different resolu
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. will be used. FULL: Full screen; ORIGINAL_SIZE: Original s left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4: 4:3; CUSTOM: Custom, layout must be valid when you fill ou
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does n
outAnimation	Yes	object	Exit animation

Parameter	Required	Type	Description
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data fi
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or color and image cannot take effect simultaneously. If both background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel a supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel an
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK rotation)
isHeadTail	No	boolean	Connect head to tail
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.
functionStorage	Yes	string	Empty by default
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.2.8、Video, GIF and Image

Description:

- Edit solutions. This interface uses image as an example.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-


```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "name":"Solution 01",
    "widgetContainers":[
      {
        "audioGroup":"",
        "backgroundColor":"#00000000",
        "backgroundDrawable":"",
        "contents":{
          "widgetGroups":[

          ],
          "widgets":[
            {
              "id":1,
              "enable":true,
              "repeatCount":1,
              "layout":{
                "y":"0",
                "height":"100%",
                "x":"0",
                "width":"100%"
              },
              "backgroundColor":"#00000000",
              "backgroundDrawable":"",
              "backgroundMusic":"",
              "zOrder":0,
              "displayRatio":"FULL",
              "outAnimation":{
                "type":0,
                "duration":0
              },
              "dataSource":"4ab22addfa68f0e1110571a3c4766f2b.jpg",
              "type":"PICTURE",
```

```
              "constraints":{
                "cron":[

                ],
                "endTime":"4017-12-30T23:59:59Z 8:00",
                "startTime":"1970-01-01T00:00:00Z 8:00"
              },
              "border":{
                "borderThickness":"2px,3px,5%,6",
                "style":0,
                "backgroundColor":"#ff000000",
                "name":"border",
                "cornerRadius":"2%",
                "effects":{
                  "headTailSpacing":"",
                  "isHeadTail":false,
                  "speedByPixelEnable":true,
                  "speed":0,
                  "animation":"CLOCK_WISE"
                }
              },
              "metadata":{

              },
              "inAnimation":{
                "type":0,
                "duration":1000
              },
              "duration":3605000,
              "name":"IMG_20200916_111857.jpg",
              "originalDataSource":"/storage/emulated/0/DCIM/Camera/I
MG_20200916_111857.jpg",
              "functionStorage":"{\"index\":1,\"speed\":3.0,\"turn\":
0,\"scroll\":0,\"random\":true,\"id\":\"1281444\",\"subtabId\":0}",
              "isSupportSpecialEffects":false
            }
          ]
        },
        "enable":true,
        "id":1,
        "itemsSource":"",
        "layout":{
          "height":"1.0",
          "width":"1.0",
          "x":"0.0",
          "y":"0.0"
        },
        "name":"widgetContainers1",
        "pickCount":0,
        "pickPolicy":"ORDER",
        "zOrder":0
      }
    ]
  }
}
```


Parameters:

Parameter	Required	Type	Description

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default	
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
backgroundDrawable	Yes	string	Background image resource, empty by dfault	
contents	Yes	object	Window widget content	
widgetGroups	Yes	objectArray	Window widgets	
enable	Yes	bool	Validity. All the media will not be played if this is invalid.	
itemsSource	Yes	string	Media list	
layout	Yes	object	Layout	
x	Yes	string	Start x (such as 0.2568)	
y	Yes	string	Start y (such as 0.2568)	
width	Yes	string	Width (such as 0.5000)	
height	Yes	string	height (such as 0.5000)	
name	Yes	string	widgetContainers name	
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is valid. It make sense when the value is greater than 0.	
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount	
zOrder	Yes	int	z order	
widgets	Yes	objectArray	Window widget	
id	Yes	int	Uniqie ID, must remain unique in the whole solution.	
mid	Yes	int	Unique ID of media resource	
name	Yes	string	Name	
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO:	

Parameter	Required	Type	Description
			Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. Otherwise, this filed will be used. FULL: Full screen; ORIGINAL_SIZE: Original size (starts from the top left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4:3; R16_9：16:9; R4_3：4:3; CUSTOM: Custom, layout must be valid when you fill out this.
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or

Parameter	Required	Type	Description
			downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take effect simultaneously. If both are available, background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)
isHeadTail	No	boolean	Connect head to tail
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.
functionStorage	Yes	string	Empty by default
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.2.9、Text

Description:

-Edit solutions. Details of ArchText

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "name": "节目 01",
        "widgetContainers": [{
            "audioGroup": "",
            "backgroundColor": "#00000000",
            "backgroundDrawable": "",
            "contents": {
                "widgetGroups": [],
                "widgets": [{
                    "id": 1,
                    "enable": true,
                    "repeatCount": 1,
                    "layout": {
                        "y": "0",
                        "height": "100%",
                        "x": "0",
```

```
                        "width": "100%"
                    },
                    "backgroundColor": "#00000000",
                    "backgroundDrawable": "",
                    "backgroundMusic": "",
                    "zOrder": 0,
                    "displayRatio": "FULL",
                    "outAnimation": {
                        "type": 0,
                        "duration": 0
                    },
                    "dataSource": "4ab22addfa68f0e1110571a3c4766f2b.j
pg",
                    "type": "PICTURE",
                    "constraints": {
                        "cron": [],
                        "endTime": "4017-12-30T23:59:59Z 8:00",
                        "startTime": "1970-01-01T00:00:00Z 8:00"
                    },
                    "border": {
                        "borderThickness": "2px,3px,5%,6",
                        "style": 0,
                        "backgroundColor": "#ff000000",
                        "name": "border",
                        "cornerRadius": "2%",
                        "effects": {
                            "headTailSpacing": "",
                            "isHeadTail": false,
                            "speedByPixelEnable": true,
                            "speed": 0,
                            "animation": "CLOCK_WISE"
                        }
                    },
                    "inAnimation": {
                        "type": 0,
                        "duration": 1000
                    },
                    "metadata": {
                        "content": {
                            "displayStyle": {
                                "pageSwitchAttributes": {
                                    "inAnimation": {
                                        "duration": 1000,
                                        "type": 224
                                    },
                                    "remainDuration": 5000
                                },
                                "scrollAttributes": {
                                    "effects": {
                                        "animation": "MARQUEE_LEFT",
                                        "headTailSpacing": "10",
                                        "isHeadTail": false,
                                        "speed": 3.0,
                                        "speedByPixelEnable": false
                                    }
                                },
                                "singleLine": false,
                                "type": "SCROLL"
                            },
                            "paragraphs": [{
                                "backgroundColor": "#00000000 ",
```

```
                                "horizontalAlignment": "CENTER",
                                "letterSpacing": 0,
                                "lineSpacing": 0,
                                "lines": [{
                                    "segs": [{
                                        "attributeKey": 1,
                                        "content": "Welcome Handy!"
                                    }]
                                }],
                                "verticalAlignment": "CENTER"
                            }],
                            "textAttributes": [{
                                "attributes": {
                                    "ShadowDx": 2,
                                    "ShadowRadius": 10,
                                    "backgroundColor": "#ff000000",
                                    "font": {
                                        "family": ["Arial"],
                                        "isUnderline": false,
                                        "size": 20,
                                        "style": "NORMAL"
                                    },
                                    "letterSpacing": 0,
                                    "shadowColor": "#00ff00",
                                    "shadowDy": 2,
                                    "shadowEnable": false,
                                    "strokeEnable": false,
                                    "strokeWidth": 0,
                                    "textColor": "#ffff0000"
                                },
                                "key": 1
                            }],
                            "autoPaging": true,
                            "backgroundMusic": {
                                "duration": 0,
                                "isTextSync": false
                            }
                        }
                    },
                    "duration": 3605000,
                    "name": "IMG_20200916_111857.jpg",
                    "originalDataSource": "/storage/emulated/0/DCIM/C
amera/IMG_20200916_111857.jpg",
                    "functionStorage": "",
                    "isSupportSpecialEffects": false
                }]
            },
            "enable": true,
            "id": 1,
            "itemsSource": "",
            "layout": {
                "height": "1.0",
                "width": "1.0",
                "x": "0.0",
                "y": "0.0"
            },
            "name": "widgetContainers1",
            "pickCount": 0,
            "pickPolicy": "ORDER",
            "zOrder": 0
        }]
```

```
    }
}
```

Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*
pageID	Yes	int	pageId (pageId of the current version is 1.)	
pageInfo	Yes	Object	page details	
name	Yes	string	Name	
widgetContainers	Yes	objectArray	Window widget container	
id	Yes	int	id	
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default	
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
backgroundDrawable	Yes	string	Background image resource, empty by dfault	
contents	Yes	object	Window widget content	
widgetGroups	Yes	objectArray	Window widgets	
enable	Yes	bool	Validity. All the media will not be played if this is invalid.	
itemsSource	Yes	string	Media list	
layout	Yes	object	Layout	
x	Yes	string	Start x (such as 0.2568)	
y	Yes	string	Start y (such as 0.2568)	
width	Yes	string	Width (such as 0.5000)	
height	Yes	string	height (such as 0.5000)	
name	Yes	string	widgetContainers name	
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is valid. It make sense when the value is greater than 0.	
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount	
zOrder	Yes	int	z order	
widgets	Yes	objectArray	Window widget	

Parameter	Required	Type	Description
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
displayStyle	Yes	object	Display style
pageSwitchAttributes	No	object	Property of switching by page
inAnimation	Yes	object	Entrance animation
type	Yes	int	Entrance animation type, no animation by default
duration	Yes	long	Animation duration (ms)
remianDuration	Yes	long	Duration of stay (ms)
scrollAttributes	Yes	object	Scrolling property description
effects	Yes	object	Scrolling animation description
animation	Yes	string	MARQUEE_LEFT or MARQUEE_UP
speed	Yes	float	Speed, unit: px/s or grade (1-10)
speedByPixelEnable	No	bool	True denotes px/s while false denotes grade. Defaults to false.
isHeadTail	No	bool	Enable head to tail, not enabled by default (false)
headTailSpacing	No	string	Spacing between the head and tail, unit: screen percentage (%)
singleLine	No	bool	Display text in a single line or not
type	Yes	string	PAGE_SWITCH means to swicth by page. SCROLL

Parameter	Required	Type	Description
			means to scrolling text. STATIC means static. (If the text content is bigger than the screen, only the first screen will be displayed.)
paragraphs	Yes	objectArray	Paragraph description
verticalAlignment	Yes	string	Vertical alignment: BOTTOM, CENTER, TOP
horizontalAlignment	Yes	string	Vertical alignment: LEFT,CENTER,RIGHT
backgroundColor	Yes	string	Paragrah background color
lineSpacing	Yes	string	Line spacing (pixel)
letterSpacing	Yes	int	Character spacing (pixel)
lines	Yes	object	Line description
attributeKey	No	int	Corresponding text property key
content	Yes	string	Content to display
textAttributes	Yes	objectArray	Text property list
key	No	int	Corresponding to attributeKey. Set the corresponding paragraph.
attributes	Yes	object	Text property description
backgroundColor	Yes	string	Background color, defaults to 00FFFFFF.
textColor	Yes	string	Text foreground color, defaults to #FF0000.
font	Yes	object	Text description
family	Yes	stringarray	Font type array. When there are multiple font types, the foremost one is preferred. If the foremost one is unavailable, the next one will be preferred. If there is no this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic, 4. BOLD_ITALIC: Bold and italic
size	Yes	int	Size. The unit currently supports pixel onle and size defaults to 16.
isUnderline	Yes	bool	Underline
shadowEnable	No	bool	Enable shadow, false by default
shadowRadius	No	int	Shadow radius is in pixels and defaults to 10.
shadowDx	No	int	X axis offset
shadowDy	No	int	Y axis offset
shadowColor	No	string	Shadow color, defaults to #00ff00.
autoPaging	No	bool	Whether to display content on multiple pages. False means to display the content that can be displayed on the screen. Defaults to true.
backgroundMusic	No	object	Text background music
id	No	int	Audio id
name	No	string	Audio name

Parameter	Required	Type	Description
dataSource	No	string	Audio source
duration	No	long	Audio length
isTextSync	No	bool	Whether to sync audio with text
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. Otherwise, this filed will be used. FULL: Full screen; ORIGINAL_SIZE: Original size (starts from the top left); ORIGINAL_RATIO: Original ratio, similar to 16:9, 4:3; R16_9：16:9; R4_3：4:3; CUSTOM: Custom, layout must be valid when you fill out this.
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take effect simultaneously. If both are available, background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time

Parameter	Required	Type	Description	
endTime	Yes	string	End time	
cron	Yes	stringArray	cron expression	
border	No	object	Border	
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.	
style	No	int	Style	
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)	
name	No	string	Name	
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.	
effects	No	object	Animation effect	
speed	No	float	Speed, pixel/second	
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)	
isHeadTail	No	boolean	Connect head to tail	
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)	
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.	
functionStorage	Yes	string	Empty by default	
isSupportSpecialEffects	Yes	string	Support for playabck effect	

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.2.10、Digital Clock

Description:

-Edit solutions. Details of digital click

Request URL:

- void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);

Request Method:

-

Request Parameter Sample

-

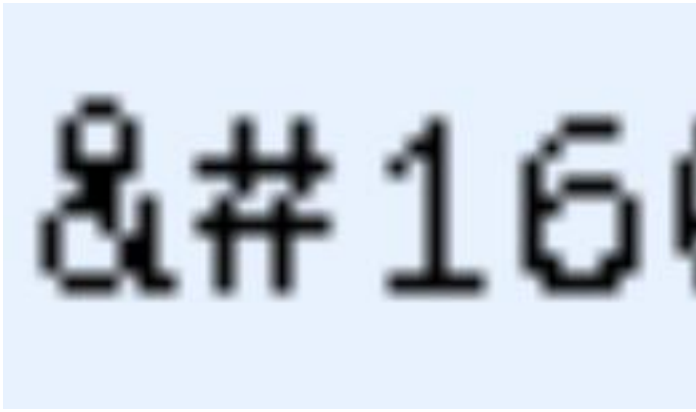

```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "name": "节目 01",
        "widgetContainers": [{
            "audioGroup": "",
            "backgroundColor": "#00000000",
            "backgroundDrawable": "",
            "contents": {
                "widgetGroups": [],
                "widgets": [{
                    "id": 1,
                    "enable": true,
                    "repeatCount": 1,
                    "layout": {
                        "y": "0",
                        "height": "100%",
                        "x": "0",
                        "width": "100%"
                    },
                    "backgroundColor": "#00000000",
                    "backgroundDrawable": "",
                    "backgroundMusic": "",
                    "zOrder": 0,
                    "displayRatio": "FULL",
                    "outAnimation": {
                        "type": 0,
                        "duration": 0
                    },
                    "dataSource": "4ab22addfa68f0e1110571a3c4766f2b.j
pg",
                    "type": "PICTURE",
                    "constraints": {
                        "cron": [],
                        "endTime": "4017-12-30T23:59:59Z 8:00",
                        "startTime": "1970-01-01T00:00:00Z 8:00"
                    },
                    "border": {
                        "borderThickness": "2px,3px,5%,6",
                        "style": 0,
```

```
                        "backgroundColor": "#ff000000",
                        "name": "border",
                        "cornerRadius": "2%",
                        "effects": {
                            "headTailSpacing": "",
                            "isHeadTail": false,
                            "speedByPixelEnable": true,
                            "speed": 0,
                            "animation": "CLOCK_WISE"
                        }
                    },
                    "inAnimation": {
                        "type": 0,
                        "duration": 1000
                    },
                    "metadata": {
                        "zone": "America/Anchorage",
                        "gmt": "UTC-08:00",
                        "regular": "$MM/$dd/$yyyy\n$E\n$HH:$mm:$ss",
                        "weekTemplates": ["Sunday", "Monday", "Tuesda
y", "Wednesday", "Thursday", "Friday", "Saturday"],
                        "solidText": {
                            "text": "",
                            "textAttributes": {}
                        },
                        "suffixTemplates": ["AM", "PM"],
                        "textAttributes": {
                            "ShadowDx": 2,
                            "ShadowRadius": 10,
                            "backgroundColor": "#00ff00",
                            "font": {
                                "family": ["Times", "Georia", "New Yo
rk"],
                                "isUnderline": false,
                                "size": 8,
                                "style": "NORMAL"
                            },
                            "letterSpacing": 0,
                            "shadowColor": "#00ff00",
                            "shadowDy": 0,
                            "shadowEnable": false,
                            "strokeEnable": true,
                            "strokeWidth": 115,
                            "textColor": "#ffff0000"
                        }
                    },
                    "duration": 3605000,
                    "name": "IMG_20200916_111857.jpg",
                    "originalDataSource": "/storage/emulated/0/DCIM/C
amera/IMG_20200916_111857.jpg",
                    "functionStorage": "",
                    "isSupportSpecialEffects": false
                }]
            },
            "enable": true,
            "id": 1,
            "itemsSource": "",
            "layout": {
                "height": "1.0",
                "width": "1.0",
                "x": "0.0",
```

```
                "y": "0.0"
            },
            "name": "widgetContainers1",
            "pickCount": 0,
            "pickPolicy": "ORDER",
            "zOrder": 0
        }]
    }
}
```

Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned during solution creating)
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
id	Yes	int	id
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Avai V1.3.4 and later. Empty by default
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
backgroundDrawable	Yes	string	Background image resource, empty by dfault
contents	Yes	object	Window widget content
widgetGroups	Yes	objectArray	Window widgets
enable	Yes	bool	Validity. All the media will not be played if this is inva
itemsSource	Yes	string	Media list
layout	Yes	object	Layout
x	Yes	string	Start x (such as 0.2568)
y	Yes	string	Start y (such as 0.2568)
width	Yes	string	Width (such as 0.5000)
height	Yes	string	height (such as 0.5000)
name	Yes	string	widgetContainers name
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is val the value is greater than 0.
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArr ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArr played this time will not be played next time. The value c RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramd scenarios for playback. The value of n is from pickCount; on luck; RANDOM_N: Play n items randomly. The value of n i
zOrder	Yes	int	z order
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource

Parameter	Required	Type	Description
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich tex text. This type of text is rich with features and has a va the detailed format definition, see the integrated text ch style is still used. And there are some historical reasons ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLO DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media weather forecast. Only the current weather is displayed an supported. The properties of text can only be modified tog The media type is border; STREAM_VIDEO: Local RSS media; P widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This fie the media type is streaming media, web page, gif, video, a animation effect).
zone	Yes	string	Time zone, such as "Asia/Shanghai"
gmt	Yes	string	Time zone gmt such as "GMT-08:00"
regular	Yes	string	Display rules of digital clock, placeholder definition: 1. 3. $yyyy: Year, two-digit year $yy; 4. $E: A placeholder c $HH: Hour, 24-hour time; 6. $hh: Hour, 12-hour time; 7. $m Second; 9. $N: AM/PM; 10. \n: New line; 11.  : Space
weekTemplates	Yes	stringArray	Week template. 7 data items represent Monday to Sunday, re
suffixTemplates	Yes	stringArray	Time suffix. 2 data items, AM or PM
textAttributes	Yes	object	Digital clock style text properties
backgroundColor	Yes	string	Background color, defaults to 00FFFFFF
textColor	Yes	string	Text foreground color, defaults to #FF0000
font	Yes	object	Text description
family	Yes	stringarray	Font type array. When there are multiple font types, the f If the foremost one is unavailable, the next one will be p this font library, the default font (Arial) will be used.
style	Yes	string	Type, 1. BOLD: Bold, 2. NORMAL: Regular, 3. ITALIC: Italic and italic
size	Yes	int	Size. The unit of font currently supports pixel only. It d
isUnderline	Yes	bool	Underline
shadowEnable	No	bool	Enable shadow, defaults to 认 false
shadowRadius	No	int	The unit of shadow radius is pixel and the radius defaults

Parameter	Required	Type	Description
shadowDx	No	int	X axis offset
shadowDy	No	int	Y axis offset
shadowColor	No	string	Shadow color, defaults to #00ff00
solidText	No	object	Text property object
text	No	string	Text
textAttributes	No	object	Text properties. See clock properties textAttributes
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does n
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data fi
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or color and image cannot take effect simultaneously. If both background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel a supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel an
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK rotation)
isHeadTail	No	boolean	Connect head to tail
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.
functionStorage	Yes	string	Empty by default
isSupportSpecialEffects	Yes	string	Support for playabck effect

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timeout 65285 Failed to edit page
data	string	Corresponding detailed information of the returned error code

Remarks

-

4.3.2.11、Simple Weather Forecast

Description:

- Simple weather forcast, corresponding media type: SIMPLE_WEATHER. The weather forcast can display text information only and the text properties can only be modified together.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
    "programID": 1,
    "pageID": 1,
    "pageInfo": {
        "name": "Solution 01",
        "widgetContainers": [{
            "audioGroup": "",
            "backgroundColor": "#00000000",
            "backgroundDrawable": "",
            "contents": {
                "widgetGroups": [],
                "widgets": [{
```

```
                    "id": 1,
                    "enable": true,
                    "repeatCount": 1,
                    "layout": {
                        "y": "0",
                        "height": "100%",
                        "x": "0",
                        "width": "100%"
                    },
                    "backgroundColor": "#00000000",
                    "backgroundDrawable": "",
                    "backgroundMusic": "",
                    "zOrder": 0,
                    "displayRatio": "FULL",
                    "outAnimation": {
                        "type": 0,
                        "duration": 0
                    },
                    "dataSource": "4ab22addfa68f0e1110571a3c4766f2b.j
pg",
                    "type": "SIMPLE_WEATHER",
                    "constraints": [{
                        "cron": [],
                        "endTime": "4017-12-30T23:59:59Z 8:00",
                        "startTime": "1970-01-01T00:00:00Z 8:00"
                    }],
                    "border": {
                        "borderThickness": "2px,3px,5%,6",
                        "style": 0,
                        "backgroundColor": "#ff000000",
                        "name": "border",
                        "cornerRadius": "2%",
                        "effects": {
                            "headTailSpacing": "",
                            "isHeadTail": false,
                            "speedByPixelEnable": true,
                            "speed": 0,
                            "animation": "CLOCK_WISE"
                        }
                    },
                    "metadata": {
                        "area": {
                            "country": "China",
                            "province": "Municipality",
                            "city": "Beijing",
                            "county": "County",
                            "cityCode": "101110101"
                        },
                        "weatherSource": 1,
                        "language": "en",
                        "cityNewCode": "CN123456",
                        "windSpeedUnit": "m",
                        "windType": "wind_sc",
                        "temperatureUnit": "Celsius",
                        "isShowUnit": true,
                        "refreshPeriod": 6000,
                        "regular": "Weather:$w\nCurrent temperature:
$c\nHumidity:$h\nWind:$b\nTemperaure:$t",
                        "isShowInOneLine": true,
                        "effects": {
                            "animation": "MARQUEE_LEFT",
```

```
                            "speed": 1,
                            "speedByPixelEnable": false,
                            "isHeadTail": false,
                            "headTailSpacing": "100"
                        },
                        "textAttributes": {
                            "backgroundColor": "#00ff00",
                            "textColor": "#ff0000",
                            "font": {
                                "family": [
                                    "Times",
                                    "Georia",
                                    "New York"
                                ],
                                "style": "Bold",
                                "size": 14,
                                "isUnderline": false
                            },
                            "shadowEnable": false,
                            "shadowRadius": 10,
                            "shadowDx": 2,
                            "shadowDy": 2,
                            "shadowColor": "#00ff00"
                        }
                    },
                    "inAnimation": {
                        "type": 0,
                        "duration": 1000
                    },
                    "duration": 3605000,
                    "name": "天气",
                    "originalDataSource": "",
                    "functionStorage": "",
                    "isSupportSpecialEffects": false
                }]
            },
            "enable": true,
            "id": 1,
            "itemsSource": "",
            "layout": {
                "height": "1.0",
                "width": "1.0",
                "x": "0.0",
                "y": "0.0"
            },
            "name": "widgetContainers1",
            "pickCount": 0,
            "pickPolicy": "ORDER",
            "zOrder": 0
        }]
    }
}
```


Parameters:

Parameter	Required	Type	Description	
programID	Yes	int	Solution id (id returned during solution creating)	*

Parameter	Required	Type	Description
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
id	Yes	int	id
audioGroup	Yes	string	Audio widget. For details, see the audio widget page. Available for terminals of V1.3.4 and later. Empty by default
backgroundColor	Yes	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	Background image resource, empty by dfault
contents	Yes	object	Window widget content
widgetGroups	Yes	objectArray	Window widgets
enable	Yes	bool	Validity. All the media will not be played if this is invalid.
itemsSource	Yes	string	Media list
layout	Yes	object	Layout
x	Yes	string	Start x (such as 0.2568)
y	Yes	string	Start y (such as 0.2568)
width	Yes	string	Width (such as 0.5000)
height	Yes	string	height (such as 0.5000)
name	Yes	string	widgetContainers name
pickCount	Yes	int	When the content of pickPolicy contains ‘N’, this is valid. It make sense when the value is greater than 0.
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount
zOrder	Yes	int	z order
widgets	Yes	objectArray	Window widget
id	Yes	int	Uniqie ID, must remain unique in the whole solution.
mid	Yes	int	Unique ID of media resource
name	Yes	string	Name
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT:

Parameter	Required	Type	Description
			Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT "Ache". But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
metadata	No	object	Media details. See detailed description of media. This field is not required when the media type is streaming media, web page, gif, video, and image (without animation effect).
area	Yes	object	Region, where the weather information is to be obtained
country	Yes	string	Country
province	Yes	string	Province
city	Yes	string	City
county	Yes	string	County
cityCode	No	string	City code[optional]If it is invalid, use the above field to match.
weatherSource	No	int	Source of the weather data, 1: HeWeather, 2: Yahoo, No field or 0 means that the protocol is the old one.
language	No	string	Display language of the weather data, such as zh-cn, en, jp, etc.
cityNewCode	No	string	A new fiels displaying the city code
windSpeedUnit	No	string	Wind speed unit: Metric: m; English: i; Defaults to metric unit
windType	No	string	Wind force type: wind_sc, wind speed: wind_spd; Defaults to wind force
temperatureUnit	Yes	string	Celsius or Fahrenheit
isShowUnit	No	bool	Show/hide unit. True means to show the unit (℃ or ℉) while false means to hide the unit and display the degree symbol only.
refreshPeriod	Yes	long	Refresh interval (ms)
regular	No	string	Display rules. Includes place holders and the information to be displayed.
isShowInOneLine	Yes	bool	Display in a singe line or multiple lines

Parameter	Required	Type	Description
effects	Yes	object	Playback effect. Only the scrolling animation is currently supported.
animation	Yes	string	Animation: NONE, MARQUEE_LEFT, MARQUEE_UP, MARQUEE_RIGHT, MARQUEE_DOWN
speed	No	float	Scrolling speed, unit: px/s or grade (1-10)
speedByPixelEnable	No	bool	True denotes px/s while false denotes grade.
isHeadTail	No	bool	Enable head to tail
headTailSpacing	No	string	Spacing between head and tail, unit: pixel or screen percentage (%)
textAttributes	Yes	object	Text properties. See the definition of text properties to describe the properties of weather forcast text.
backgroundColor	No	string	Background color
textColor	Yes	string	Foreground color of text
font	No	object	Text description
family	Yes	stringArray	Font type array. When there are multiple font types, the foremost one is preferred. If the foremost one is invalid, the next one will be used. If there is no this font library, the default font will be used.
style	Yes	string	Type
size	No	number	Size. Currentlt the unit of the size can only be pixel.
isUnderline	No	bool	Underline
shadowEnable	No	bool	Shadow
shadowRadius	No	number	Shadow radius is in pixels.
shadowDx	No	number	Offset of X axis
shadowDy	No	number	Offset of Y axis
shadowColor	No	string	Shadow color
duration	Yes	long	Playback duration (ms), the length of time that the media plays once. -1 means that the media plays according to its actual length of time, for example, the playback durations of scrolling text on screens of different resolutions are different.
repeatCount	Yes	int	Play count. -1 denotes unlimited.
layout	Yes	object	Layout
x	Yes	string	None
y	Yes	string	None
width	Yes	string	None
height	Yes	string	None
displayRatio	Yes	string	Display ratio. When layout is valid, layout is preferred. Otherwise, this filed will be used. FULL: Full screen; ORIGINAL_SIZE: Original size (starts from the top left); ORIGINAL_RATIO: Original ratio, similar to

Parameter	Required	Type	Description
			16:9, 4:3; R16_9：16:9; R4_3：4:3; CUSTOM: Custom，layout must be valid when you fill out this.
inAnimation	Yes	object	Entrance animation
type	Yes	int	Animation type
duration	Yes	long	Animation duration (ms). When type is invalid, this does not make sense.
outAnimation	Yes	object	Exit animation
dataSource	Yes	string	Unique ID of data source, can be url or downloaded data file (md5.png)
originalDataSource	Yes	string	Data source, media path of the original platform
backgroundMusic	Yes	string	Background music, path or url of the background music
backgroundColor	Yes	String	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
backgroundDrawable	Yes	string	url, background image path. It can be from the Internet or local file. Background color and image cannot take effect simultaneously. If both are available, background image will be preferred.
zOrder	Yes	int	z order
constraints	Yes	object	Playback constraints on media, media validity constraints. Only the valid time range is currently supported.
startTime	Yes	string	Start time
endTime	Yes	string	End time
cron	Yes	stringArray	cron expression
border	No	object	Border
borderThickness	No	string	Border width unit is similar to layout. Currently, pixel and percentage are supported.
style	No	int	Style
backgroundColor	No	string	Color value, standard format. Four bytes from the highest to lowest are "ARGB", such as #00ff0000 (red)
name	No	string	Name
cornerRadius	No	string	Border corner radius. The unit currently supports pixel and percentage.
effects	No	object	Animation effect
speed	No	float	Speed, pixel/second
animation	No	string	Animation type (CLOCK_WISE: Clockwise rotation, ANTI_CLOCK_WISE: counterclockwise rotation)
isHeadTail	No	boolean	Connect head to tail

Parameter	Required	Type	Description	
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)	
speedByPixelEnable	No	boolean	True means pixel/second and false means grade.	
functionStorage	Yes	string	Empty by default	
isSupportSpecialEffects	Yes	string	Support for playabck effect	

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

-

4.3.2.12、Analog Clock

Description:

- Analog clock, the corresponding media type is: ANALOG_CLOCK.

Request URL:

- `void nvSetPageProgramAsync(const char *data, ExportViplexCallback callBack);`

Request Method:

-

Request Parameter Sample

-

```
{
  "programID":1,
  "pageID":1,
  "pageInfo":{
    "id":1,
    "name":"节目 01",
    "pickPolicy":"ORDER_MODE",
    "sceneItems":[
```

```
{
  "backgroundColor":"#00000000",
  "backgroundDrawable":"",
  "backgroundMusic":"",
  "constraints":[
    {
      "cron":[
        "0 0 0 ? * 1,2,3,4,5,6,7"
      ],
      "endTime":"4017-12-30T23:59:59Z 8:00",
      "startTime":"1970-01-01T00:00:00Z 8:00"
    }
  ],
  "duration":10000,
  "enable":true,
  "id":1,
  "name":"scene1",
  "page":{
    "id":1,
    "name":"节目 06",
    "widgetContainers":[
      {
        "audioGroup":"",
        "backgroundColor":"#00000000",
        "backgroundDrawable":"",
        "contents":{
          "widgets":[
            {
              "backgroundColor":"#00000000",
              "backgroundDrawable":"",
              "backgroundMusic":"",
              "border":{
                "backgroundColor":"#FF000000",
                "borderThickness":"0px,0px,0px,0px",
                "cornerRadius":"2%",
                "effects":{
                  "animation":"CLOCK_WISE",
                  "headTailSpacing":"10",
                  "isHeadTail":false,
                  "speed":3,
                  "speedByPixelEnable":false
                },
                "name":"border",
                "style":0
              },
              "constraints":[
                {
                  "cron":[
                    "0 0 0 ? * 1,2,3,4,5,6,7"
                  ],
                  "endTime":"4017-12-30T23:59:59Z 8:00",
                  "startTime":"1970-01-01T00:00:00Z 8:00"
                }
              ],
              "dataSource":"",
              "displayRatio":"FULL",
              "duration":5000,
              "enable":true,
              "id":1,
              "inAnimation":{
```

```
    "duration":1000,
    "type":0
  },
  "layout":{
    "height":"100%",
    "width":"100%",
    "x":"0",
    "y":"0"
  },
  "metadata":{
    "background":{
      "color":"#00000000"
    },
    "date":{
      "enable":true,
      "regular":"$dd/$MM/$yyyy\n$E",
      "textAttributes":{
        "ShadowDx":0,
        "ShadowRadius":0,
        "backgroundColor":"",
        "font":{
          "family":[
          ],
          "isUnderline":false,
          "size":16,
          "style":"NORMAL"
        },
        "letterSpacing":0,
        "shadowColor":"",
        "shadowDy":0,
        "shadowEnable":false,
        "strokeEnable":false,
        "strokeWidth":0,
        "textColor":"#ffffff00"
      },
      "weekTemplates":[
        "星期日",
        "星期一",
        "星期二",
        "星期三",
        "星期四",
        "星期五",
        "星期六"
      ]
    },
    "gmt":"UTC 08:00",
    "hourHand":{
      "color":"#ffffff00",
      "enable":true
    },
    "hourScale":{
      "color":"#ff00ff00",
      "enable":true,
      "height":6,
      "shape":"RECTANGLE",
      "textAttributes":{
        "ShadowDx":0,
        "ShadowRadius":0,
        "backgroundColor":"",
```

```
      "font":{
        "family":[
        ],
        "isUnderline":false,
        "size":3,
        "style":"NORMAL"
      },
      "letterSpacing":0,
      "shadowColor":"",
      "shadowDy":0,
      "shadowEnable":false,
      "strokeEnable":false,
      "strokeWidth":0,
      "textColor":""
    },
    "width":6
  },
  "minuteHand":{
    "color":"#ff00ff00",
    "enable":true
  },
  "minuteScale":{
    "color":"#ff0000ff",
    "enable":true,
    "height":4,
    "shape":"RECTANGLE",
    "textAttributes":{
      "ShadowDx":0,
      "ShadowRadius":0,
      "backgroundColor":"",
      "font":{
        "family":[
        ],
        "isUnderline":false,
        "size":2,
        "style":"NORMAL"
      },
      "letterSpacing":0,
      "shadowColor":"",
      "shadowDy":0,
      "shadowEnable":false,
      "strokeEnable":false,
      "strokeWidth":0,
      "textColor":""
    },
    "width":4
  },
  "secondHand":{
    "color":"#ffff0000",
    "enable":true
  },
  "text":{
    "enable":false,
    "text":"",
    "textAttributes":{
      "ShadowDx":0,
      "ShadowRadius":0,
      "backgroundColor":"",
      "font":{
        "family":[
        ],
```

```
                            "isUnderline":false,
                            "size":12,
                            "style":"NORMAL"
                          },
                          "letterSpacing":0,
                          "shadowColor":"",
                          "shadowDy":0,
                          "shadowEnable":false,
                          "strokeEnable":false,
                          "strokeWidth":0,
                          "textColor":"#ffff0000"
                        }
                      },
                      "zone":"Asia/Shanghai"
                    },
                    "name":"模拟时钟",
                    "originalDataSource":"",
                    "outAnimation":{
                      "duration":0,
                      "type":0
                    },
                    "repeatCount":1,
                    "type":"ANALOG_CLOCK",
                    "zOrder":0
                  }
                ]
              },
              "enable":true,
              "id":1,
              "itemsSource":"",
              "layout":{
                "height":"100.00%",
                "width":"100.00%",
                "x":"0.00%",
                "y":"0.00%"
              },
              "name":"widgetContainers1",
              "pickCount":0,
              "pickPolicy":"ORDER",
              "zOrder":0
            }
          ],
          "widgets":[
          ]
        },
        "repeatCount":1,
        "rules":"TIMES",
        "type":"PAGE"
      }
    ],
    "uuid":""
  }
}
```


Parameters:

Parameter	Required	Type	Description
programID	Yes	int	Solution id (id returned during solution creating)

Parameter	Required	Type	Description
pageID	Yes	int	pageId (pageId of the current version is 1.)
pageInfo	Yes	Object	page details
id	Yes	int	id
name	Yes	string	Name
pickPolicy	Yes	string	ORDER: Play in original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Play n items separately in orderIDArray order. Items that are played this time will not be played next time. The value of n is from pickCount; RANDOM_ORDER: Play in a random order; RANDOM_ORDER_N: Ramdom order. Select n scenarios for playback. The value of n is from pickCount; RANDOM: Random, depends on luck; RANDOM_N: Play n items randomly. The value of n is from pickCount
sceneItems	Yes	Array	Preset list. If a playlist does not contain presets, it is considered to be empty and invalid.
backgroundColor	Yes	string	Color value. The four bytes in standard format from the highest to the lowest are “ARGB”, for example, #00ff0000 (red).
backgroundDrawable	Yes	string	Background image resource, empty by default
backgroundMusic	Yes	string	Background music path, url
constraints	Yes	objectArray	Time constraint, validity range This option is not available when the media is played by times. When the media is played by times, if this option is not available, it is valid within the time range.
cron	Yes	stringarray	cron
startTime	Yes	string	Start time or start date and time
endTime	Yes	string	End time or end date and time
duration	Yes	long	Playback duration. This is valid when the playback is based on the duration. Unit: ms
enable	Yes	bool	Preset validity true means to play the preset and false means not to play.
id	Yes	number	Keep unique in the whole playback plan
name	Yes	string	Name
page	Yes	object	Page
id	Yes	number	Keep unique in the whole playback plan
name	Yes	string	Name
widgetContainers	Yes	objectArray	Window widget container
audioGroup	Yes	string	Audio widget See details on the audio widget page. Terminals of V1.3.4 support this function and this is empty by default.
backgroundColor	Yes	string	Color value. The four bytes in standard format from the highest to the lowest are “ARGB”, for example, #00ff0000 (red).
backgroundDrawable	Yes	string	Background picture resource. It is empty by default.
contents	Yes	object	Window widget content

Parameter	Required	Type	Description
widgets	Yes	object	Window widget
backgroundColor	Yes	String	Color value. The four bytes in standard format from the highest to the lowest are “ARGB”, for example, #00ff0000 (red).
backgroundDrawable	Yes	string	url, background picture path The background picture can be from the Internet or the local file system. Background color and background picture cannot work simultaneously. If both are available, background picture will be preferred.
backgroundMusic	Yes	string	Background music Generally this is the path or url of the background music.
border	No	object	Border It denotes that the media type is border.
backgroundColor	Yes	String	Color value. The four bytes in standard format from the highest to the lowest are “ARGB”, for example, #00ff0000 (red).
borderThickness	No	string	The unit for border width is similar to layout. Currently, pixel and percentage are supported.
cornerRadius	No	string	The angular radius of the border Currently, the unit supports pixel and percentage only.
effects	No	object	Animation
animation	No	string	Animation type (CLOCK_WISE: Rotate clockwise, ANTI_CLOCK_WISE: Rotate anti-clockwise)
headTailSpacing	No	string	Spacing between head and tail (pixel or screen percentage)
isHeadTail	No	boolean	Enable head to tail
speed	No	float	Speed: pixel/second
speedByPixelEnable	No	boolean	Speed: pixel/second
name	Yes	string	
style	No	int	Style
constraints	Yes	objectArray	Media playback constraint Only a validity range is currently supported.
cron	Yes	stringArray	cron expression
startTime	Yes	string	Start time
endTime	Yes	string	End time
dataSource	Yes	string	Unique data source ID which can be a url or a downloaded data file (md5.png)
displayRatio	Yes	string	Display ratio When layout is valid, it is preferred. Otherwise, this field will be used. FULL: Full screen; ORIGINAL_SIZE: Keep original size. Display the media from the top left of the screen; ORIGINAL_RATIO: Keep original ratio, similar to 16:9, 4:3; R16_9: 16:9; R4_3: 4:3; CUSTOM: Custom, A custom ratio requires valid layout.
duration	Yes	long	Playback duration (ms), the time when the media is played once. -1 denotes that the playback is based on the actual media duration, for example, the time

Parameter	Required	Type	Description
			periods of playing scrolling text once on different sizes of displays are different.
enable	Yes	bool	Media validity When a media item is invalid, it will not be played.
id	Yes	int	Unique ID Keep unique in the whole playback plan
inAnimation	Yes	object	Entrance animations
duration	Yes	long	Animation duration (ms)
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT “Ache”. But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast. Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
layout	Yes	object	Layout
height	Yes	string	Height (for example, 0.5000)
width	Yes	string	Width (for example, 0.5000)
x	Yes	string	Start x (for example, 0.2568)
y	Yes	string	Start y (for example, 0.2568)
metadata	No	object	Media details See details in media description. This field is not available for streaming media, web pages, gif, video, and image (without animation).
-background	No	object	Clock background color The background color can be transparent or a drawable picture.
color	Yes	string	None
-date	Yes	object	Date
enable	No	boolean	Show date
regular	No	string	Date format, for example, $dd/$MM/$yyyy$E can be 17/02/2017 Friday
--textAttributes	Yes	object	Date text properties
shadowDx	No	number	x-axis offset
shadowRadius	No	number	Shadow radius (pixel)
backgroundColor	No	string	Background color
font	No	object	Font description
family	Yes	stringArray	Font type array When there are multiple fonts, the

Parameter	Required	Type	Description
			foremost one is preferred. If the foremost font is invalid, the next one will be preferred. If this font library does not exist, the default font will be used.
isUnderline	No	bool	Underline
size	No	number	Size. Currently the unit supports pixel only.
style	Yes	string	Type
letterSpacing	Yes	int	Character spacing, unit: pixel, 0 by default
shadowColor	No	string	Shadow color
shadowDy	No	number	y-axis offset
shadowEnable	No	bool	Enable shadow
strokeEnable	Yes	bool	Enable stroke
strokeWidth	Yes	int	Stroke width
textColor	Yes	string	Text foreground color
weekTemplates	Yes	stringarray	Template of the days of the week Seven data options represent Monday to Sunday.
gmt	No	string	Time zone gmt, for example, “GMT-08:00”
-hourHand	Yes	object	Hour hand properties
color	Yes	string	Hour hand color
enable	No	bool	Show
-hourScale	No	object	Hour scale
color	No	string	Color When the shape is rectangle or circle, this field denotes the shape color. When the shape is number, this field is invalid.
enable	No	bool	Show
height	No	int	Shape height
shape	No	string	Shape, RECTANGLE: Rectangle; OVAL: Circle or oval; DIGITAL: Number (This property is available for the hour hand only.)
--textAttributes	Yes	object	Text properties When the shape is number, this field denotes the text properties of number.
shadowDx	No	number	x-axis offset
shadowRadius	No	number	Shadow radius (pixel)
backgroundColor	No	string	Background color
font	No	object	Font description
family	Yes	stringArray	Font type array When there are multiple fonts, the foremost one is preferred. If the foremost font is invalid, the next one will be preferred. If this font library does not exist, the default font will be used.
isUnderline	No	bool	Underline
size	No	number	大Size. Currently the unit supports pixel only.
style	Yes	string	Type
letterSpacing	Yes	int	Character spacing, unit: pixel, 0 by default

Parameter	Required	Type	Description
shadowColor	No	string	Shadow color
shadowDy	No	number	y-axis offset
shadowEnable	No	bool	Enable shadow
strokeEnable	Yes	bool	Enable Stroke
strokeWidth	Yes	int	Stroke width
textColor	Yes	string	Text foreground color
width	No	int	Shape width
-minuteHand	Yes	object	Minute hand properties
color	Yes	string	Minute scale color
enable	No	bool	Show
-minuteScale	No	object	Minute scale
color	No	string	Color When the shape is rectangle or circle, this field denotes the shape color. When the shape is number, this field is invalid.
enable	No	bool	Show
height	No	int	Shape height
shape	No	string	Shape, RECTANGLE: Rectangle; OVAL: Circle or oval; DIGITAL: Number (This property is available for the hour hand only.)
--textAttributes	Yes	object	Text properties When the shape is number, this field denotes the text properties of number. •
shadowDx	No	number	x-axis offset
shadowRadius	No	number	Shadow radius (pixel)
backgroundColor	No	string	Background color
font	No	object	Font description
family	Yes	stringArray	Font type array When there are multiple fonts, the foremost one is preferred. If the foremost font is invalid, the next one will be preferred. If this font library does not exist, the default font will be used.
isUnderline	No	bool	Underline
size	No	number	Size. Currently the unit supports pixel only.
style	Yes	string	Type
letterSpacing	Yes	int	Character spacing, unit: pixel, 0 by default
shadowColor	No	string	Shadow color
shadowDy	No	number	y-axis offset
shadowEnable	No	bool	Enable shadow
strokeEnable	Yes	bool	Enable stroke
strokeWidth	Yes	int	Stroke width
textColor	Yes	string	Text foreground color
width	No	number	Shape width
-secondHand	Yes	object	Second hand property object

Parameter	Required	Type	Description
color	Yes	string	Second scale color
enable	No	bool	Show second hand
-text	Yes	object	Text properties
enable	No	boolean	Show text
text	Yes	string	Test
--textAttributes	Yes	object	Text properties
shadowDx	No	number	x-axis offset
shadowRadius	No	number	Shadow radius (pixel)
backgroundColor	No	string	Background color
font	No	object	Font description
family	Yes	stringArray	Font type array When there are multiple fonts, the foremost one is preferred. If the foremost font is invalid, the next one will be preferred. If this font library does not exist, the default font will be used.
isUnderline	No	bool	Underline
size	No	number	Size. Currently the unit supports pixel only.
style	Yes	string	Type
letterSpacing	Yes	int	Character spacing, unit: pixel, 0 by default
shadowColor	No	string	Shadow color
shadowDy	No	number	y-axis offset
shadowEnable	No	bool	Enable shadow
strokeEnable	Yes	bool	Enable stroke
strokeWidth	Yes	int	Stroke width
textColor	Yes	string	Text foreground color
zone	Yes	string	Time zone, for example, Asia/Shanghai
name	No	string	Name
originalDataSource	Yes	string	Data source, path of the media in the original platform
outAnimation	Yes	object	Entrance animation
duration	Yes	long	Animation duration (ms)
type	Yes	int	Animation type
repeatCount	Yes	int	Play count. -1 denotes unlimited times.
type	Yes	string	Type, PICTURE: Image; VIDEO: Video; AUDIO: Audio; GIF: GIF animation; HTML: Web page; PLUGIN_H5: html5 offline widget; RICH_TEXT: Rich text; ARCH_TEXT: Integrated text. This type of text is rich with features and has a variety of properties. for the detailed format definition, see the integrated text chapter. The original text style is still used. And there are some historical reasons. So we name it as ARCH_TEXT “Ache”. But its function is powerful; ANALOG_CLOCK: Analog clock; DIGITAL_CLOCK: Digital clock; SIMPLE_RSS: Simple RSS media; SIMPLE_WEATHER: Simple weather forecast.

Parameter	Required	Type	Description
			Only the current weather is displayed and images are not supported. The properties of text can only be modified together; BORDER: Border. The media type is border; STREAM_VIDEO: Local RSS media; PICTURE_GROUP: Image widget. Play a group of images.
zOrder	Yes	int	Z order
enable	Yes	bool	Media validity When a media item is invalid, it will not be played.
id	Yes	number	ID
itemsSource	Yes	string	Media list
layout	Yes	object	Layout
height	Yes	string	None
width	Yes	string	None
x	Yes	string	None
y	Yes	string	None
name	Yes	string	Name
pickCount	Yes	int	When the content of pickPolicycontains ‘N’, it is valid. It makes sense when it is greater than 0.
pickPolicy	Yes	string	ORDER: Play in the original order; ORDER_N: Play in orderIDArray order; ORDER_ONE_ANOTHER_N: Pick n items to play in orderIDArray order. Items picked this time cannot be picked next time. The value of n is from pickCount; RANDOM_ORDER: Play in random order During playback, the presets are sorted in random order. RANDOM_ORDER_N: Random sort. Pick n valid presets to play. The value of n is from pickCount. RANDOM: Pick at random; RANDOM_N: Play n items at random The value of n is from pickCount.
zOrder	Yes	int	Z order
widgets	Yes	object	Window widget
repeatCount	Yes	int	Times of repetition. This is valid when the playback is based on the number of times.
rules	Yes	string	Rules
type	Yes	string	PAGE or PLAYLIST
uuid	Yes	string	Uniquely identifies

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description

Remarks

4.4、Multifunction Card Power Management

4.4.1、Scheduled Power On

4.4.1.1、Setting Scheduled Power Off/Off

Description:

- This is an interface used for setting scheduled power on/off.

Request URL:

- `void nvSetTimingPowerSwitchStatusAsync(const char *data, ExportViplexCallback callback);`

Request Method:

Request Parameter Sample

```
{
  "sn":"123456",
  "taskInfo":{
    "type":"FUNCTIONPOWER",
    "source":{
      "type":1,
      "platform":1
    },
    "data":[
      {
        "commands":[
          {
            "conditions":[
              {
                "cron":[
                  "0 15 10 ? * *",
                  "0 0 12 * * ?"
                ],
                "action":0,
                "type":"power",
                "startTime":"2018-06-06",
                "endTime":"2018-06-07",
                "enable":false,
                "powerIndex":0,
```

```
                "flag":"abc"
              },
              {
                "cron":[
                  "0 15 10 ? * *",
                  "0 0 12 * * ?"
                ],
                "action":1,
                "type":"power",
                "startTime":"2018-06-06",
                "endTime":"2018-06-07",
                "enable":false,
                "powerIndex":1,
                "flag":"abc"
              }
            ]
          }
        ],
        "enable":false,
        "portIndex":0,
        "connectIndex":1
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	FUNCTIONPOWER (fixed)
source	Yes	Object	Where the task is published, such as VNNOX, CS, LCT, etc.
platform	Yes	int	Task published from 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: Care, 6: LCT
data	Yes	ObjectArray	A collection of tasks performed according to conditions
enable	Yes	bool	Enable switch performed according to conditions. If it is true, the scheduled tasks in the conditions will be performed. If it is false, no task will be performed.
portIndex	Yes	int	Ethernet port address of the multifunction card
connectIndex	Yes	int	No. of the device connected to the Ethernet port of the multifunction card
commands	Yes	ObjectArray	A collection of tasks performed according to conditions, support for multitask
conditions	Yes	ObjectArray	A collection of tasks performed according to conditions, support for multitask
cron	Yes	StringArray	Each control solution uses cron expression array. When there are multiple cron expressions, the relationship between the expressions is or.
action	Yes	int	Power: 0 On, 1 Off
type	Yes	string	Type of power switch, Represented as a string
startTime	Yes	string	Valid start date
endTime	Yes	string	Valid end date

Parameter	Required	Type	Description
enable	Yes	boolean	Enable switch performed according to conditions. If it is true, this cron expression will take effect. If it is false, the expression will not take effect.
powerIndex	Yes	int	Subscript of the multifunction card power (0-7 are currently supported)
flag	Yes	string	This field is dedicated to VNNOX, mobile phones and CS.

Return Sample

```
{
  "data":"12d4sa654d564ddauioaj4163"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	string	MD5 code is returned when it is successful. An error code and its description are returned when it is failed.

Remark

-

4.4.1.2、Obtaining Scheduled Power On/Off Status

Description:

- This is an interface used for obtaining power on-off status.

Request URL:

- `void nvGetTimingPowerSwitchStatusAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456"
```

```
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "data":[
    {
      "commands":[
        {
          "conditions":[
            {
              "action":0,
              "cron":[
                "0 15 10 ? * *",
                "0 0 12 * * ?"
              ],
              "enable":false,
              "endTime":"2018-06-07",
              "flag":"abc",
              "powerIndex":0,
              "startTime":"2018-06-06",
              "type":"power"
            },
            {
              "action":1,
              "cron":[
                "0 15 10 ? * *",
                "0 0 12 * * ?"
              ],
              "enable":false,
              "endTime":"2018-06-07",
              "flag":"abc",
              "powerIndex":1,
              "startTime":"2018-06-06",
              "type":"power"
            }
          ]
        }
      ],
      "connectIndex":1,
      "enable":false,
      "portIndex":0
    }
  ],
  "source":{
    "platform":1,
    "type":1
  },
  "type":"FUNCTIONPOWER"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	string	MD5 code is returned when it is successful. An error code and its description are returned when it is failed.
type	string	FUNCTIONPOWER (fixed)
source	Object	Where the task is published, such as VNNOX, CS, LCT, etc.
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT
data	ObjectArray	A collection of multifunction card tasks performed according to conditions
enable	bool	Enable switch performed according to conditions. If it is true, the scheduled tasks in the conditions will be performed. If it is false, no task will be performed.
portIndex	int	Ethernet port address of the multifunction card
connectIndex	int	No. of device connected to the Ethernet port of the multifunction card
commands	ObjectArray	A collection of tasks performed according to conditions, support for multitask
conditions	ObjectArray	A collection of tasks performed according to conditions, support for multitask
cron	StringArray	Each control solution uses cron expression array. When there are multiple cron expressions, the relationship between the expressions is or.
action	int	Power control: 0 On, 1 Off
type	string	Type of power switch, Represented as a string
startTime	string	Valid start date
endTime	string	Valid end date
enable	boolean	Enable switch performed according to conditions. If it is true, this cron expression will take effect. If it is false, the expression will not take effect.
powerIndex	int	Subscript of the multifunction card power (0-7 are currently supported)
flag	string	This field is dedicated to VNNOX, mobile phones and CS.

Remark

-

4.4.2、Real-Time Power Status

4.4.2.1、Obtaining Real-Time Power Status

Description:

- This is an interface used for obtaining real-time power status.

Request URL:

- `void nvGetRealtimePowerSwitchStatusAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "current_status_info":[
    {
      "portIndex":0,
      "connectIndex":1,
      "updatePowerIndexStates":[
        {
          "type":"Screen Power",
          "powerIndex:":0,
          "status":0
        },
        {
          "type":"Screen Power",
          "powerIndex:":1,
          "status":0
        },
        {
          "type":"Screen Power",
          "powerIndex:":2,
          "status":0
        },
        {
          "type":"Screen Power",
          "powerIndex:":3,
          "status":0
        },
```

```
        {
          "type":"Screen Power",
          "powerIndex:":4,
          "status":0
        },
        {
          "type":"Screen Power",
          "powerIndex:":5,
          "status":0
        },
        {
          "type":"Screen Power",
          "powerIndex:":6,
          "status":0
        },
        {
          "type":"Screen Power",
          "powerIndex:":7,
          "status":0
        }
      ]
    }
  ]
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	string	MD5 code is returned when it is successful. An error code and its description are returned when it is failed.
source	Object	Where the task is published, such as VNNOX, CS, LCT, etc.
type	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT
current_status_info	ObjectArray	Status of each power supply of the multifunction card
portIndex	int	Ethernet port address of the multifunction card
connectIndex	int	No. of device connected to the Ethernet port of the multifunction card
updatePowerIndexStates	ObjectArray	Status of each power supply of each multifunction card
type	string	Type of power switch, Represented as a string
powerIndex	int	Subscript of the multifunction card power (0-7 are currently supported)
status	int	0: On, 1: Off

Remark

-

4.4.3、Manual Power On

4.4.3.1、Setting Manual Power Off/Off

Description:

- This is an interface used for manually turning on/off power.

Request URL:

- `void nvSetManualPowerSwitchStatusAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456",
  "data":{
    "type":"FUNCTIONPOWER",
    "source":{
      "type":1,
      "platform":1
    },
    "data":[
      {
        "conditions":[
          {
            "action":1,
            "type":"Screen Power",
            "powerIndex":0
          },
          {
            "action":1,
            "type":"Fan Power",
            "powerIndex":1
          }
        ],
        "portIndex":0,
        "connectIndex":1
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Parameter	Required	Type	Description
data	Yes	ObjectArray	A collection of tasks performed according to conditions
conditions	Yes	ObjectArray	A collection of tasks performed according to conditions, support for multitask
action	Yes	int	Specific power control. 0: On, 1: Off
powerIndex	Yes	int	Subscript of the multifunction card power (0-7 are currently supported)
type	Yes	string	Type of power switch, Represented as a string
connectIndex	Yes	int	No. of device connected to the Ethernet port of the multifunction card
portIndex	Yes	int	Ethernet port address of the multifunction card
source	Yes	Object	Where the task is published, such as VNNOX, CS, LCT, etc.
platform	Yes	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT
type	Yes	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
type	Yes	string	FUNCTIONPOWER (fixed)

Return Sample

```
{
  "data":"12d4sa654d564ddauioaj4163"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	string	MD5 code is returned when it is successful. An error code and its description are returned when it is failed.

Remark

-

4.4.3.2、Obtaining Manual Power On/Off Status

Description:

- This is an interface used for obtaining manual power on/off status.

Request URL:

- `void nvGetManualPowerSwitchStatusAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "data":[
    {
      "conditions":[
        {
          "action":1,
          "powerIndex":0,
          "type":"Screen Power"
        },
        {
          "action":1,
          "powerIndex":1,
          "type":"Fan Power"
        }
      ],
      "connectIndex":1,
      "portIndex":0
    }
  ],
  "source":{
    "platform":1,
    "type":1
  },
  "type":"FUNCTIONPOWER"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	ObjectArray	A collection of multifunction card tasks performed according to conditions
conditions	ObjectArray	A collection of tasks performed according to conditions, support

Parameter	Type	Description
		for multitask
action	int	Specific power control. 0: On, 1: Off
powerIndex	int	Type of power switch, Represented as a string
type	string	Subscript of the multifunction card power (0-7 are currently supported)
connectIndex	int	No. of device connected to the Ethernet port of the multifunction card
portIndex	int	Ethernet port address of the multifunction card
source	Object	Where the task is published, such as VNNOX, CS, LCT, etc.
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT
type	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
type	string	FUNCTIONPOWER (fixed)

Remark

-

4.5、Volume Adjustment

4.5.1、Obtaining Volume

Description:

- This interface is used for obtaining the volume.

Request URL:

- `void nvGetVolumeAsync(const char * data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn": "BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "ratio":75.0
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Return data details
ratio	float	Volume percentage

Remark

-

4.5.2、Setting Volume

Description:

- This is an interface used for setting the volume.

Request URL:

- void nvSetVolumeAsync(const char * data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

```
{
  "sn": "BZSA17332J0A20002272",
  "volumeInfo": {
    "ratio": 10
  }
}
```

Parameters:

Parameter	Required	Type	Description

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
volumeInfo	Yes	Object	Request object
ratio	Yes	float	Volume percentage

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Return data details

Remark

-

4.5.1、 Setting Scheduled Volume Plan

4.5.1.1、Setting Scheduled Volume Plan

Description:

- This is an interface used for setting the volume as scheduled.

Request URL:

- `void nvSetTimingVolumeAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

```
{
  "sn":"BZSA79353N1310006847",
  "data":{
    "type":"VOLUME",
    "source":{
      "type":0,
      "platform":1
    },
```

```
    "enable":true,
    "conditions":[
      {
        "cron":[
          "0 15 10 ? * *"
        ],
        "value":50.0,
        "enable":true,
        "startTime":"2020-09-01 00:00:00",
        "endTime":"4016-06-06 23:00:00"
      },
      {
        "cron":[
          "0 15 10 ? * *"
        ],
        "value":0,
        "enable":true,
        "startTime":"2020-09-01 00:00:00",
        "endTime":"4016-06-06 23:00:00"
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Fixed to "VOLUME"
type	Yes	int	1NovaStar platform,0Third-party platform
platform	Yes	int	1From a mobile device,2From a traditional PC,3From a tablet,4From web
enable	Yes	bool	Enable switch performed according to conditions
cron	Yes	stringarray	The number of repeats. Each condition is represented as a cron expression.
value	Yes	float	Volume, 0-100
enable	Yes	bool	Enable switch performed according to this condition
startTime	Yes	string	Valid start time yyyy-MM-dd HH:mm:ss
endTime	Yes	string	Valid end time yyyy-MM-dd HH:mm:ss

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

•

4.5.2、 Obtaining Scheduled Volume Plan

4.5.2.1、Obtaining Scheduled Volume Plan

Description:

- This interface is used for obtaining the volume as scheduled.

Request URL:

- `void nvGetTimingVolumeAsync(const char *data, ExportViplexCallback callback);`

Request Method:

•

Request Parameter Sample

```
{
  "sn":"BZSA79353N1310006847"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "conditions":[
    {
      "value":50.0,
      "cron":[
        "0 15 10 ? * *"
      ],
      "enable":true,
      "endTime":"4016-06-06 24:00:00",
      "startTime":"2020-09-01 00:00:00"
    },
    {
      "value":0.0,
      "cron":[
        "0 15 10 ? * *"
      ],
      "enable":true,
```

```
      "endTime":"4016-06-06 24:00:00",
      "startTime":"2020-09-01 00:00:00"
    }
  ],
  "enable":true,
  "source":{
    "platform":1,
    "type":1
  },
  "type":"VOLUME"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
type	string	Fixed to "VOLUME"
type	int	1NovaStar platform,0Third-party platform
platform	int	1From a mobile device,2From a traditional PC,3From a tablet,4From web
enable	bool	Enable switch performed according to conditions
cron	stringarray	The number of repeats. Each condition is represented as a cron expression.
value	float	Volume, 0-100
enable	bool	Enable switch performed according to this condition
startTime	string	Valid start time yyyy-MM-dd HH:mm:ss
endTime	string	Valid end time yyyy-MM-dd HH:mm:ss

Remark

-

4.5.3、Obtaining Scheduled Volume Plan (0x99)

4.5.3.1、Obtaining Scheduled Volume Plan (0x99)

Description:

- This interface is used for obtaining the volume as scheduled.

Request URL:

- `void nvGetTimingVolumeFor0x99Async(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA79353N1310006847"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "conditions":[
    {
      "cron":[
        "0 15 10 ? * *"
      ],
      "enable":true,
      "endTime":"4016-06-06 24:00:00",
      "startTime":"2020-09-01 00:00:00",
      "value":50.0
    },
    {
      "cron":[
        "0 15 10 ? * *"
      ],
      "enable":true,
      "endTime":"4016-06-06 24:00:00",
      "startTime":"2020-09-01 00:00:00",
      "value":0.0
    }
  ],
  "enable":true,
  "orderId":-1,
  "source":{
    "platform":1,
    "type":1
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Parameter	Type	Description
type	int	1NovaStar platform,0Third-party platform
platform	int	1From a mobile device,2From a traditional PC,3From a tablet,4From web
enable	bool	Enable switch performed according to conditions
value	float	Volume, 0-100
enable	bool	Enable switch performed according to this condition
startTime	string	Valid start time yyyy-MM-dd HH:mm:ss
endTime	string	Valid end time yyyy-MM-dd HH:mm:ss

Remark

-

4.5.4、 Setting Scheduled Volume Plan (0x99)

4.5.4.1、Setting Scheduled Volume Plan (0x99)

Description:

- This is an interface used for setting the volume as scheduled.

Request URL:

- `void nvSetTimingVolumeFor0x99Async(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

```
{
  "sn":"123456",
  "data":{
    "enable":true,
    "conditions":[
      {
        "cron":[
          "0 15 10 ? * *"
        ],
        "value":50.0,
        "enable":true,
        "startTime":"2017-09-01 00:00:00",
        "endTime":"4016-06-06 24:00:00"
      },
```

```
      {
        "cron":[
          "0 15 10 ? * *"
        ],
        "value":0,
        "enable":true,
        "startTime":"2017-09-01 00:00:00",
        "endTime":"4016-06-06 24:00:00"
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
enable	Yes	bool	Enable switch performed according to conditions
cron	Yes	stringarray	The number of repeats. Each condition is represented as a cron expression.
value	Yes	float	Volume, 0-100
enable	Yes	bool	Enable switch performed according to this condition
startTime	Yes	string	Valid start time yyyy-MM-dd HH:mm:ss
endTime	Yes	string	Valid end time yyyy-MM-dd HH:mm:ss

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.6、VPN Connection Management

4.6.1、VPN Connection Management

4.6.1.1、Obtaining VPN Connection Information

Description:

- This is an interface used for obtaining VPN connection information.

Request URL:

- `void nvGetVPNConnectInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample


```
{
  "connectInfo":{
    "connectStatus":2,
    "failReasonCode":0
  },
  "guid":"decf313f-1014-44ad-a059-28ed58fce170",
  "networkInfo":{
    "ipAddress":"10.0.0.2"
  },
  "source":{
    "platform":2,
    "type":1
  },
  "taskAction":"VPN_CONNECT",
  "timestamp":"2020-07-13 T02:27:47 Z 00:00",
  "vpnInfo":{
    "address":"vpn.vnnox.com",
    "isReconnect":false,
    "name":"456",
    "password":"bOwVRSe8l4WnE6hCkItCEgLHFZpNndYx",
    "protocolType":1,
    "redialInterval":180,
    "redialNumber":3,
    "sessionTimeout":7200,
    "sharedSecretKey":"novastar.tech",
    "username":"vnnox"
```

```
  },
  "orderId":-1
}
```

Return Parameter Description

Parameter	Type	Description
connectInfo	object	Connection information
connectStatus	int	Connection status: 1. Connecting... 2. Connected 3. Disconnected
failReasonCode	int	Failure reason code, 0: Normal, ERR_INTERRUPTED: Disconnected actively after timeout, ERR_ALREADY_EXISTED: Command repeated. For other error codes, see error code description.
guid	string	Unique ID of the last command
timestamp	string	Timestamp
taskAction	string	Action: VPN_CLOSE, VPN_CONNECT
networkInfo	object	Network information
ipAddress	string	IP address
source	object	Resource information
type	int	Type: 1: NovaStar platform, 0: Third-party platform
platform	int	1: vnnox, 2: cs software
vpnInfo	object	vpn information
address	string	vpn address
isReconnect	boolean	Whether to reconnect
name	string	vpn name
password	string	Password
protocolType	string	vpn protocol type
redialInterval	int	Redial interval
redialNumber	int	Redial count
sessionTimeout	int	Session interval
sharedSecretKey	string	Shared secret key
username	string	User name

Remark

-

4.6.1.2、Setting VPN Connection Information

Description:

- This is an interface used for setting VPN connection information.

Request URL:

- `void nvSetVPNConnectInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":{
    "guid":"123456",
    "taskAction":"VPN_CLOSE",
    "source":{
      "type":1,
      "platform":2
    },
    "vpnInfo":{
      "name":"123456",
      "address":"vpn.vnnox.com",
      "protocolType":1,
      "username":"vnnox",
      "password":"123456",
      "sharedSecretKey":"novastar.tech",
      "redialNumber":3,
      "redialInterval":180,
      "sessionTimeout":7200,
      "isReconnect":false
    }
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	object	Setting the detailed information of VPN
guid	Yes	string	Unique ID of the command
taskAction	Yes	string	Action: VPN_CLOSE, VPN_CONNECT
source	No	object	Resource information
type	No	int	Type: 1: NovaStar platform, 0: Third-party platform
platform	No	int	Platform type: 1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
vpnInfo	Yes	object	vpn information
name	Yes	string	vpn name
address	Yes	string	vpn address
protocolType	Yes	string	vpn protocol type

Parameter	Required	Type	Description
username	Yes	string	User name
password	Yes	string	Password
sharedSecretKey	Yes	string	Shared secret key
redialNumber	Yes	int	Redial count
redialInterval	Yes	int	Redial interval
sessionTimeout	Yes	int	Session interval
isReconnect	Yes	boolean	Whether to reconnect

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	string	MD5 code is returned when it is successful. An error code and its description are returned when it is failed.

Remark

-

4.7、App Management

4.7.1、Installing Apps

Description:

- Install apps.

Request URL:

- `void nvStartUploadApkCoreAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA58503N1X30005257",
  "taskInfo":{
    "isLocal":false,
    "source":{
      "platform":2,
      "type":0
    },
    "tasks":[
      {
        "checkFeasibility":false,
        "executionType":"IMMEDIATELY",
        "packageType":"AUTO",
        "source":"/sdcard/Download/nova.priv.hand.easypluto_3.2.1.040
1_412.apk",
        "startupAfterBoot":false,
        "startupAfterInstalled":false,
        "updateType":"UPDATE",
        "version":""
      }
    ],
    "type":"UPDATE"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Detailed upgrade information
type	Yes	string	Fixed to “UPDATE” field
tasks	Yes	objectArray	Upgrade task
packageType	Yes	string	APP: Represents executable applications such as apk or exe. OS: Operating system package type of the non-differential package. OS_DIF: Operating system differential package type. FPGA: FPGA firmware application program. NUZIP: NovaStar’s package type. AUTO: Automatic
version	No	string	Upgrade is required only when the versions to upgrade is later than or equal to the current FPGA and operating system versions. Otherwise, upgrade will not be available.
executionType	Yes	string	IMMEDIATELY: Instant, BY_CONDITIONS: Scheduled. Upgrade according to conditions
size	No	long	File size (byte)
md5	No	string	MD5 of the file to be transferred
updateType	Yes	string	UPDATE: Upgrade, REPLACE: Replace
startupAfterInstalled	Yes	bool	Start immediately after installation, true: Start immediately after installation, false: Don’t start after installation
startupAfterBoot	Yes	bool	Run at startup, true: Run at startup, false: Don’t run at startup

Parameter	Required	Type	Description
conditions	No	object	To upgrade immediately, this option is empty.
start	No	string	Validity range, start time
cron	No	stringArray	Triggering condition, cron expression array. There can be multiple conditions. When there are multiple conditions, use or relation.
end	No	string	Validity range, end time
source	No	string	For LANs, it is the storage location. For public networks, it is the download link.
checkFeasibility	No	bool	Check for updates. This is available only for nuzip upgrade package detection.

Return Sample

```
{
  "data":"success"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.7.2、Obtaining Installed App Information

Description:

- Obtain installed app information.

Request URL:

- `void nvGetInstalledPackageInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
```

```
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique

Return Sample

```
{
    "appInfos": [{
        "packageName": "nova.priv.terminal.syssetting",
        "versionName": "1.0.2.0501",
        "versionCode": 102,
        "label": "systemSetting",
        "isNetWorkPermission": true
    }, {
        "packageName": "nova.priv.terminal.easypluto",
        "versionName": "1.0.2.0502",
        "versionCode": 102,
        "label": "easypluto",
        "isNetWorkPermission": true
    }]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
packageName	string	Package name
versionName	tring	Version name
versionCode	int	Version number
label	string	App name
isNetWorkPermission	boolean	Whether to allow network access

Remark

-

4.7.3、Obtaining Version Information of Running Apps

Description:

- Obtain the version information of runing apps.

Request URL:

- `void nvGetRunningPackageInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique

Return Sample

```
{
    "appInfos": [{
        "packageName": "nova.priv.terminal.syssetting",
        "versionName": "1.0.2.0501",
        "versionCode": 102,
        "label": "systemSetting",
        "isNetWorkPermission": true
    }, {
        "packageName": "nova.priv.terminal.easypluto",
        "versionName": "1.0.2.0502",
        "versionCode": 102,
        "label": "easypluto",
        "isNetWorkPermission": true
    }]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
packageName	string	Package name
versionName	tring	Version name
versionCode	int	Version number
label	string	App name
isNetWorkPermission	boolean	Whether to allow network access

Remark

-

4.7.4、Stopping Running Apps

Description:

- Stop running apps.

Request URL:

- `void nvForceStopAppAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
    "sn": "BZSA17332J0A20002272",
    "packageName": "nova.priv.terminal.screenService"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
packageName	Yes	string	Package name of the app to be stopped

Return Sample

```
{
  "data":"success"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.7.5、Uninstalling Android Apps

Description:

- Uninstall android apps.

Request URL:

- `void nvUninstallPackageAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
    "sn": "BZSA17332J0A20002272",
    "packageName": "nova.priv.terminal.screenService"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
packageName	Yes	string	Package name of the app to be uninstalled

Return Sample

```
{
  "data":"success"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.8、Play Logs

4.8.1、Play Log Path Obtaining

4.8.1.1、Obtaining Play Log Path

Description:

- This interface is used for obtaining play log path.

Request URL:

- void nvGetPlaylogPathAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "logList":[
    "2020-07-13.json"
  ],
  "url":"/sdcard/nova/viplex_terminal/play_log"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
logList	stringArray	Play log file name collection
url	string	Play log directory path

Remark

4.9、Fonts

4.9.1、Obtaining Fonts Supported by Terminal

Description:

- This interface is used for obtaining the fonts supported by the terminal.

Request URL:

- `void nvGetTerminalFontAsync(const char *data, ExportViplexCallback callback)`

Request Method:

Request Parameter Sample

```
{
  "sn":"123456"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique

Return Sample

```
{
  "supportFonts":[
    {
      "name":"Arial",
      "src":"system"
    },
    {
      "name":"Calibri",
      "src":"system"
    },
    {
      "name":"Wingdings2",
      "src":"system"
    },
    {
```

```
      "name":"SimSun",
      "src":"system"
    },
    {
      "name":"KaiTi",
      "src":"system"
    },
    {
      "name":"Microsoft YaHei",
      "src":"system"
    },
    {
      "name":"Agency FB",
      "src":"custom"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
supportFonts	ArrayObject	Terminal supported fonts
name	String	Font name
src	String	Font source. Currently includes “system” and “custom” and can be from a user in the future.

Remark

-

4.9.2、Deleting Fonts

Description:

- This is an interface used for deleting fonts.

Request URL:

- `void nvDeleteFontAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":{
    "fonts":[
      {
        "name":"Arail"
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Font information
fonts	Yes	object	Font list to be removed
name	Yes	string	Font name

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.9.3、Updating Fonts

Description:

- This is an interface used for updating fonts.

Request URL:

- `void nvUpdateFontAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "localFontPath":"C:\\Windows\\Fonts",
  "taskInfo":{
    "fonts":[
      {
        "name":"Agency FB",
        "style":[
          "Bold",
          "Italic",
          "Normal",
          "Underline",
          "Strikeout"
        ],
        "file":[
          "AGENCYB.TTF",
          "AGENCYB.TTF",
          "AGENCYB.TTF",
          "AGENCYB.TTF",
          "AGENCYB.TTF"
        ]
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
localFontPath	Yes	string	Storage directory of fonts
taskInfo	Yes	Object	Font information
fonts	Yes	objectArray	Font list to be added
name	Yes	string	Font name
style	Yes	stringArray	Font properties
file	Yes	stringArray	Font file name

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.10、Multi-Screen Mosaic

4.10.1、Obtaining Mosaic Parameters

Description:

- This interface is used for obtaining multi-screen mosaic parameters.

Request URL:

- `void nvGetSpliceInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "height":0,
  "isScale":false,
  "offsetX":0,
  "offsetY":0,
  "order":0,
  "orderNum":0,
  "videoSource":0,
  "width":0
}
```

Return Parameter Description

Parameter	Type	Description
order	int	Screen mosaic order

Parameter	Type	Description
width	int	Playback window width
height	int	Playback window height
offsetX	int	X offset of the video source
offsetY	int	Y offset of the video source
videoSource	int	Video source: Internal 0, HDMI 1
orderNum	int	Number of screens used for mosaic
isScale	bool	Scale, true: Scale to full screen, false: Don’ t scale
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.10.2、Setting Mosaic Parameters

Description:

- This interface is used for setting multi-screen mosaic parameters.

Request URL:

- `void void nvSetSpliceInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "SpliceInfo":{
    "height":400,
    "isScale":false,
    "offsetX":0,
    "offsetY":0,
    "order":0,
    "orderNum":0,
    "videoSource":0,
    "width":400
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
order	Yes	int	Screen mosaic order
width	Yes	int	Playback window width
height	Yes	int	Playback window height
offsetX	Yes	int	X offset of the video source
offsetY	Yes	int	Y offset of the video source
videoSource	Yes	int	Video source: Internal 0, HDMI 1
orderNum	int	Yes	Number of screens used for mosaic
isScale	bool	Yes	Scale, true: Scale to full screen, false: Don’t scale

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.11、Sensor Card

4.11.1、Obtaining Information of Sensors Supported by Terminal

Description:

- This is an interface for obtaining the information of the sensors supported by the terminal.

Request URL:

- `void nvGetSupportSensorInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "sensorInfos":[
    {
      "baudRate":115200,
      "connected":false,
      "functionId":10,
      "previewUnit":100,
      "previewValue":"-1000.0",
      "sensorId":85,
      "vendor":1,
      "vendorAliasName":"NovaStar"
    },
    {
      "baudRate":115200,
      "connected":false,
      "functionId":6,
      "previewUnit":60,
      "previewValue":"-1000.0",
      "sensorId":86,
      "vendor":1,
      "vendorAliasName":"NovaStar"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
sensorInfos	objectArray	Sensor information
functionId	int	Function ID 1: Carbon dioxide, 2: PM2.5, 3: PM10, 4: Air pressure, 5: Humidity, 6: Temperature, 7: Noise, 8: Wind speed, 9: Wind direction, 10: Ambient brightness, 11: Soil temperature, 12: Soil humidity
vendor	int	Manufacturer
sensorId	int	Sensor ID
baudRate	int	Baud rate of the sensor

Parameter	Type	Description
connected	boolean	Connected or not
vendorAliasName	String	English name of the manufacturer: NovaStar, Nenghui, JXCT
previewValue	String	Value of the detected sensor, default invalid value: -1000.0
previewUnit	int	Unit of values during detection, 0: Default, 1: Custom

Remark

-

4.11.2、Configuring Sensor Connection Options

Description:

- This is an interface used for configuring the connection options of the sensor.

Request URL:

- `void nvSetSupportSensorInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":{
    "isUpgradeSensorProgram":true,
    "sensorInfos":[
      {
        "functionId":10,
        "vendor":1,
        "sensorId":85,
        "baudRate":115200,
        "vendorAliasName":"NovaStar",
        "previewValue":"-1000.0",
        "previewUnit":100,
        "connected":true
      },
      {
        "functionId":6,
        "vendor":1,
        "sensorId":86,
        "baudRate":115200,
        "vendorAliasName":"NovaStar",
```

```
        "previewValue":"-1000.0",
        "previewUnit":60,
        "connected":true
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Settings
isUpgradeSensorProgram	No	bool	true: The upper computer supports readback of sensor preview data, false: Not supported
sensorInfos	Yes	ObjectArray	Sensor information
functionId	Yes	int	Function ID
vendor	Yes	int	Manufacturer
sensorId	Yes	int	Sensor ID
baudRate	Yes	int	Baud rate of the sensor
connected	Yes	boolean	Connected or not
vendorAliasName	Yes	string	English name of the manufacturer: NovaStar, Nenghui, JXCT
previewValue	Yes	string	Value of the detected sensor, default invalid value: "-1000.0"
previewUnit	Yes	int	Unit of values during detection, 0: Default, 1: Custom

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.12、RF Management

4.12.1、Obtaining Lora Information

Description:

- This is an interface used for obtaining Lora information.

Request URL:

- void nvGetLoraInfoAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "exist":true,
  "frequency":433,
  "power":1,
  "version":1,
  "channel":23,
  "baudRate":9600,
  "transSpeed":2.4,
  "workState":0,
  "modelNum":1
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully, 65535 Request timed out
exist	boolean	Module not exist
frequency	float	Frequency (MHz)
power	float	Power (w)
version	int	Version
channel	float	Channel
baudRate	int	Baud rate

Parameter	Type	Description
transSpeed	float	Data rate (k/bps)
workState	String	Working mode
modelNum	int	Module model

Remark

-

4.13、Terminal Power Control

4.13.1、Terminal Power Control

4.13.1.1、Setting Manual Multifunction Card Power Control Tasks

Description:

- This is an interface used for setting manual multifunction card power control tasks.

Request URL:

- `void nvSetPowerInfoManualAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":[
    {
      "conditions":[
        {
          "action":1,
          "type":"Screen Power",
          "powerIndex":0
        },
        {
          "action":0,
          "type":"Fan Power",
          "powerIndex":1
```

```
            }
        ],
        "portIndex":0,
        "connectIndex":1
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Settings
conditions	Yes	ObjectArray	A collection of tasks performed according to conditions, support for multitask
action	Yes	int	Specific power control. 0: On, 1: Off
type	Yes	string	Type of power switch, Represented as a string
powerIndex	Yes	int	No. of the device connected to the Ethernet port of the multifunction card
portIndex	Yes	int	Ethernet port address of the multifunction card
connectIndex	Yes	int	No. of the device connected the Ethernet port of multifunction card

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.13.1.2、Setting Scheduled Multifunction Card Power Control Tasks

Description:

- This is an interface used for setting scheduled multifunction card power control tasks.

Request URL:

- `void nvSetPowerInfoPolicyAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":[
    {
      "conditions":[
        {
          "action":0,
          "cron":[
            "00 33 14 * * ? *"
          ],
          "enable":true,
          "endTime":"4016-06-06",
          "flag":"a2fa3a07-e0da-94b107ff",
          "powerIndex":0,
          "startTime":"2020-08-28",
          "type":"Screen Power"
        },
        {
          "action":1,
          "cron":[
            "30 33 14 * * ? *"
          ],
          "enable":true,
          "endTime":"4016-06-06",
          "flag":"a2fa3a07-e0da-94b107ff",
          "powerIndex":0,
          "startTime":"2020-08-28",
          "type":"Screen Power"
        }
      ],
      "enable":true,
      "portIndex":0,
      "connectIndex":0
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Settings
conditions	Yes	ObjectArray	A collection of tasks performed according to conditions, support for multitask

Parameter	Required	Type	Description
action	Yes	int	Specific power control. 0: On, 1: Off
cron	Yes	StringArray	Each control solution uses cron expression array. When there are multiple cron expressions, the relationship between the expressions is or.
type	Yes	string	Type of power switch, Represented as a string
startTime	Yes	string	Valid start date
endTime	Yes	string	Valid end date
enable	Yes	boolean	Enable switch performed according to conditions If it is true, this cron expression will take effect. If it is false, the expression will not take effect.
powerIndex	Yes	int	Subscript of the multifunction card power (0-7 are currently supported)
flag	Yes	string	This field is dedicated to VNNOX, mobile phones and CS.
enable	Yes	bool	Enable switch performed according to conditions If it is true, the scheduled tasks in the conditions will be performed. If it is false, no task will be performed.
portIndex	Yes	int	Ethernet port address of the multifunction card
connectIndex	Yes	int	No. of the device connected the Ethernet port of multifunction card

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.13.1.3、Obtaining Scheduled Multifunction Card Power Control Tasks

Description:

- This is an interface used for obtaining scheduled multifunction card power control tasks.

Request URL:

- `void nvGetPowerInfoPolicyAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique

Return Sample


```
{
  "data":[
    {
      "conditions":[
        {
          "action":0,
          "cron":[
            "30 11 15 * * ? *"
          ],
          "enable":true,
          "endTime":"4016-06-06",
          "flag":"a2fa3a07-e0da-94b107ff",
          "powerIndex":0,
          "startTime":"2020-08-28",
          "status":-1,
          "type":"Screen Power"
        },
        {
          "action":1,
          "cron":[
            "00 12 15 * * ? *"
          ],
          "enable":true,
          "endTime":"4016-06-06",
          "flag":"a2fa3a07-e0da-94b107ff",
          "powerIndex":0,
          "startTime":"2020-08-28",
          "status":-1,
          "type":"Screen Power"
        }
      ],
      "connectIndex":0,
      "enable":true,
      "portIndex":0
    }
  ],
```

```
  "orderId":-1,
  "source":{
    "platform":1,
    "type":1
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
data	objectArray	A collection of multifunction card tasks performed according to conditions
conditions	objectArray	A collection of tasks performed according to conditions, support for multitask
action	int	Power control: 0 On, 1 Off
cron	stringArray	Each control solution uses cron expression array. When there are multiple cron expressions, the relationship between the expressions is or.
enable	bool	Enable switch performed according to conditions If it is true, this cron expression will take effect. If it is false, the expression will not take effect.
endTime	string	Valid end date
flag	string	This field is dedicated to VNNOX, mobile phones and CS.
powerIndex	int	Subscript of the multifunction card power (0-7 are currently supported)
startTime	string	Valid start date
status	int	Defaults to -1
type	string	Type of power switch, Represented as a string
connectIndex	int	No. of the device connected the Ethernet port of multifunction card
enable	bool	Enable switch performed according to conditions If it is true, the scheduled tasks in the conditions will be performed. If it is false, no task will be performed.
portIndex	int	Ethernet port address of the multifunction card
orderId	int	Defaults to -1
source	object	Where the task is published, such as VNNOX, CS, LCT, etc.
type	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT

Remark

-

4.13.1.4、Obtaining Multifunction Card Power Status

Description:

- This is an interface used for obtaining multifunction card power status.

Request URL:

- `void nvGetPowerInfoStatusAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample


```
{
  "current_status_info":[
    {
      "connectIndex":0,
      "portIndex":0,
      "updatePowerIndexStates":[
        {
          "powerIndex":0,
          "status":1,
          "type":"Screen Power"
        },
        {
          "powerIndex":1,
          "status":1,
          "type":"Screen Power"
        },
        {
          "powerIndex":2,
          "status":1,
          "type":""
        },
        {
          "powerIndex":3,
```

```
            "status":1,
            "type":""
          },
          {
            "powerIndex":4,
            "status":1,
            "type":""
          },
          {
            "powerIndex":5,
            "status":1,
            "type":""
          },
          {
            "powerIndex":6,
            "status":1,
            "type":""
          },
          {
            "powerIndex":7,
            "status":1,
            "type":""
          }
        ]
      }
    ],
    "source":{
      "platform":0,
      "type":1
    }
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
current_status_info	ObjectArray	Status of each power supply of the multifunction card
connectIndex	int	No. of device connected to the Ethernet port of the multifunction card
portIndex	int	Address of the Ethernet port connected to multifunction card
updatePowerIndexStates	ObjectArray	Status of each power supply of each multifunction card
powerIndex	int	Subscript of the each power supply (0-7 are currently supported)
type	string	Type of power switch, Represented as a string
status	int	0: On, 1: Off
source	object	Where the task is published, such as VNNOX, CS, LCT, etc.
type	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT

Remark

-

4.13.1.5、Setting Manual Board Power Control Tasks

Description:

- This is an interface setting manual board power control tasks.

Request URL:

- `void nvSetRelayPowerManualAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456",
  "taskInfo":[
    {
      "type":"Board Power",
      "powerIndex":1,
      "status":1
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	ObjectArray	Settings
type	Yes	string	Board power
powerIndex	Yes	int	Relay No.
status	Yes	int	Status: 1 On, 0 Off

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.13.1.6、Setting Scheduled Board Power Control Tasks

Description:

- This is an interface setting scheduled board power control tasks.

Request URL:

- void nvSetRelayPowerPolicyAsync(const char *data, ExportViplexCallback callback);

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZVA28407N3X20008006",
  "taskInfo":[
    {
      "cron":[
        "00 41 11 * * ? *"
      ],
      "powerIndex":0,
      "type":"Board Power",
      "status":1,
      "startTime":"2020-09-06",
      "endTime":"2020-09-30",
      "enable":true
    },
    {
      "cron":[
        "30 41 11 * * ? *"
      ],
      "powerIndex":1,
      "status":0,
      "type":"Board Power",
      "startTime":"2020-09-06",
      "endTime":"2020-09-30",
      "enable":true
    }
```

```
   ]
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	ObjectArray	Settings
cron	Yes	stringArray	Each control solution uses cron expression array. When there are multiple cron expressions, the relationship between the expressions is or.
type	Yes	string	Board power
powerIndex	Yes	int	Relay No.
status	Yes	int	Status: 1 On, 0 Off
startTime	Yes	string	Valid start date
endTime	Yes	string	Valid end date
enable	Yes	bool	Enable switch performed according to conditions If it is true, this cron expression will take effect. If it is false, the expression will not take effect.

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.13.1.7、Obtaining Scheduled Board Power Control Tasks

Description:

- This is an interface obtaining scheduled board power control tasks.

Request URL:

- `void nvGetRelayPowerPolicyAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "relayPolicyTask":[
    {
      "cron":[
        "00 41 11 * * ? *"
      ],
      "enable":true,
      "endTime":"2020-09-30",
      "powerIndex":0,
      "startTime":"2020-09-06",
      "status":1,
      "type":"Board Power"
    },
    {
      "cron":[
        "30 41 11 * * ? *"
      ],
      "enable":true,
      "endTime":"2020-09-30",
      "powerIndex":1,
      "startTime":"2020-09-06",
      "status":0,
      "type":"Board Power"
    }
  ],
  "source":{
    "platform":1,
    "type":1
  }
}
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
relayPolicyTask	objectArray	Scheduled control information of board power
cron	stringArray	Each control solution uses cron expression array. When there are multiple cron expressions, the relationship between the expressions is or.
enable	bool	Enable switch performed according to conditions If it is true, this cron expression will take effect. If it is false, the expression will not take effect.
endTime	string	Valid end date
powerIndex	int	Relay No.
startTime	string	Valid start date
status	int	Status: 1 On, 0 Off
type	string	Board power
type	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT

Remark

-

4.13.1.8、Obtaining Board Power Status

Description:

- This is an interface used for obtaining board power status.

Request URL:

- `void nvGetRelayPowerStatusAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "relayStatus":[
    {
      "powerIndex":0,
      "status":1,
      "type":"Board Power"
    }
  ],
  "source":{
    "platform":0,
    "type":1
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
relayStatus	objectArray	Board power status
type	string	Board power
powerIndex	int	Relay No.
status	int	Status: 1 On, 0 Off
type	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT

Remark

-

4.13.1.9、Configuring Board Power Status

Description:

- This is an interface used for configuring board power status.

Request URL:

- `void nvSetRelayPowerStatusAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"123456",
  "taskInfo":{
    "relayStatus":[
      {
        "type":"Board Power",
        "powerIndex":1,
        "status":1
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	ObjectArray	Settings
relayStatus	Yes	objectArray	Board power status
type	Yes	string	Board power
powerIndex	Yes	int	Relay No.
status	Yes	int	Status: 1 On, 0 Off

返 Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.13.2、Terminal Power Control Mode

4.13.2.1、Setting Terminal Power Control Mode

Description:

- This is an interface used for setting the terminal power control mode.

Request URL:

- `void nvSetPowerModeAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":{
    "mode":1
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Settings
mode	Yes	int	Power control mode. 1: Scheduled, 0: Manual

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.13.2.2、Obtaining Terminal Power Control Mode

Description:

- This is an interface used for obtaining the terminal power control mode.

Request URL:

- `void nvGetPowerModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
}
```

Request Parameter Sample

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "mode":1,
  "source":{
    "platform":1,
    "type":1
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
mode	int	Power control mode. 1: Scheduled, 0: Manual
source	object	Where the task is published, such as VNNOX, CS, LCT, etc.
type	int	Where the task is published, 1: NovaStar platform, 0: Third-party platform
platform	int	Where the task is published, 1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: iCare, 6: LCT

Remark

4.14、Video Source Control

4.14.1、Obtaining Current Video Source

Description:

- This is an interface for obtaining the current video source.

Request URL:

- `void nvGetVideoControlInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

Request Parameter Sample

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "type":"VIDEO_SOURCE_SWITCH",
  "source":{
    "type":1,
    "platform":1
  },
  "videoMode":1,
  "videoSource":0,
  "isScale":false,
  "offsetX":0,
  "offsetY":0,
  "conditions":[
    {
      "cron":"0 0 12 ? * *",
      "source":0,
      "enable":true
```

```
    },
    {
      "cron":"0 0 12 ? * *",
      "source":1,
      "enable":true
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
type	String	Fixed value: "VIDEO_SOURCE_SWITCH"
source	object	Where the command is sent
type	int	1: NovaStar platform, 0: Third-party platform
platform	int	0: Unknown, 1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web, 5: From the terminal
videoMode	int	Mode, HDMI preferred 0, Manual 1, Scheduled 2
videoSource	int	Video source SOURCE_INSIDE: Internal, 0; SOURCE_HDMI:HDMI, 1, This field is available in manual mode only.
isScale	boolean	Scale, true: Scale to full screen, false: Don’ t scale
offsetX	int	Offset X
offsetY	int	Offset Y
conditions	object	Task list
cron	String	cron expression, denoting the start time and repetition
source	int	Video source, SOURCE_INSIDE: Internal, 0; SOURCE_HDMI: HDMI, 1
enable	boolean	Whether the scheduled task takes effect

Remark

-

4.14.2、Setting Current Video Source

Description:

- This is an interface for setting the current video source.

Request URL:

- `void nvSetVideoControlInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
   "videdSourceInfo":{
    "type":"VIDEO_SOURCE_SWITCH",
    "source":{
      "type":1,
      "platform":1
    },
    "videoMode":1,
    "videoSource":0,
    "isScale":false,
    "offsetX":0,
    "offsetY":0,
    "conditions":[
      {
        "cron":"0 0 12 ? * *",
        "source":0,
        "enable":true
      },
      {
        "cron":"0 0 12 ? * *",
        "source":1,
        "enable":true
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Fixed value: “VIDEO_SOURCE_SWITCH”
source	Yes	object	Where the command is sent
type	Yes	int	1: NovaStar platform, 0: Third-party platform
platform	Yes	int	0: Unknown, 1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web, 5: From the terminal
videoMode	Yes	int	Mode, HDMI preferred 0, Manual 1, Scheduled 2
videoSource	Yes	int	Video source, SOURCE_INSIDE: Internal, 0; SOURCE_HDMI: HDMI, 1, This field is available in manual mode only.
isScale	Yes	boolean	Scale, true: Scale to full screen, false: Don’ t scale
offsetX	Yes	int	Offset X
offsetY	Yes	int	Offset Y
conditions	Yes	object	Task list
cron	Yes	string	cron expression, denoting the start time and repetition
source	Yes	int	Video source, SOURCE_INSIDE: Internal, 0; SOURCE_HDMI: HDMI, 1

Parameter	Required	Type	Description
enable	Yes	boolean	Whether the scheduled task takes effect

Return Sample

```
{
  "data":"success"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.14.1、EDID Control

4.14.1.1、Setting EDID

Description:

- This is an interface for setting EDID.

Request URL:

- void nvSetVideoEDIDAsync(const char *data,
  ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":{
    "width":1920,
    "height":1080,
    "fieldRate":50
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Settings
width	Yes	int	Screen width
height	Yes	int	Screen height
fieldRate	Yes	int	Field frequency, namely, refresh rate

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.14.2、EDID Control

4.14.2.1、Obtaining EDID

Description:

- This is an interface for obtaining EDID.

Request URL:

- `void nvGetVideoEDIDAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
```

```
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "fieldRate":60,
  "height":900,
  "width":1600
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
fieldRate	int	Field frequency, namely, refresh rate
height	int	Screen height
height	int	Screen width

Remark

-

4.14.3、Obtaining Video Source Status (0x99)

4.14.3.1、Obtaining Video Source Status (0x99)

Description:

- This is an interface used for obtaining the video source status (0x99).

Request URL:

- `void nvGetVideoSourcePolicyFor0x99Async(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA79353N1310006847"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "conditions":[
    {
      "cron":"0 0 12 ? * *",
      "enable":true,
      "source":0
    },
    {
      "cron":"0 0 12 ? * *",
      "enable":true,
      "source":1
    }
  ],
  "enable":true,
  "isScale":false,
  "offsetX":0,
  "offsetY":0,
  "orderId":-1,
  "videoMode":0,
  "videoSource":0
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
conditions	objectArray	A collection of tasks performed according to conditions, support for multitask
enable	bool	Enable switch
source	int	Video source, SOURCE_INSIDE: Internal, 0; SOURCE_HDMI: HDMI, 1
enable	bool	Enable switch
isScale	bool	Scale, true: Scale to full screen, false: Don’t scale
offsetX	int	Offset X
offsetY	int	Offset Y
orderId	int	Unique ID of the command

Parameter	Type	Description
videoMode	int	Mode, HDMI preferred 0, Manual 1, Scheduled 2
videoSource	int	Video source, SOURCE_INSIDE: Internal, 0; SOURCE_HDMI: HDMI, 1

Remark

-

4.14.4、Setting Video Source Status (0x99)

4.14.4.1、Setting Video Source Status (0x99)

Description:

- This is an interface used for setting the video source status.

Request URL:

- `void nvSetVideoSourceManualFor0x99Async(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZVA28407N3X20008006",
  "data":{
    "videoSource":0
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
videoSource	Yes	int	Video source, SOURCE_INSIDE: Internal, 0; SOURCE_HDMI: HDMI, 1

Return Sample

```
{
  "code":0
```

```
}
```

Return Parameter Description

Parameter	Type	Description

Remark

-

4.14.5、Setting Scheduled Video Source Status (0x99)

4.14.5.1、Setting Scheduled Video Source Status (0x99)

Description:

- This is an interface used for setting the scheduled video source status.

Request URL:

- `void nvSetVideoSourcePolicyFor0x99Async(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZVA28407N3X20008006",
  "data":{
    "enable":true,
    "conditions":[
      {
        "cron":"0 0 12 ? * *",
        "source":0,
        "enable":true
      },
      {
        "cron":"0 0 12 ? * *",
        "source":1,
        "enable":true
      }
    ]
```

```
   }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
conditions	Yes	objectArray	A collection of tasks performed according to conditions, support for multitask
enable	Yes	bool	Enable switch
source	Yes	int	Video source, SOURCE_INSIDE: Internal, 0; SOURCE_HDMI: HDMI, 1

Return Sample

```
{
  "code":0
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully

Remark

-

4.15、Screen User Information

4.15.1、Modifying Screen User Information

Description:

- This is an interface used for modifying the screen user information.

Request URL:

- `void nvSetUserInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "userInfo":{
    "aliasName":"easy-pluto",
    "registerAddress":{
      "country":"China",
      "province":"Shaanxi Province",
      "city":"Xi’ an City",
      "county":"Yanta District",
      "address":"2nd Keji Road, Xi’ an Software Park"
    }
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
userInfo	Yes	Object	Details
aliasName	Yes	string	Screen alias
registerAddress	Yes	object	Registered address
country	Yes	string	Country
province	Yes	string	Province
city	Yes	string	City
county	Yes	string	County/District
address	Yes	string	Detailed address

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code

Remark

-

4.15.2、Obtaining Screen User Information

Description:

- This is an interface used for obtaining the screen user information.

Request URL:

- `void nvGetUserInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "aliasName":"easy-pluto",
  "registerAddress":{
    "country":"China",
    "province":"Shaanxi Province",
    "city":"Xi’ an City",
    "county":"Yanta District",
    "address":"2nd Keji Road, Xi’ an Software Park"
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
aliasName	string	Screen alias
registerAddress	object	Registered address
country	string	Country

Parameter	Type	Description
province	string	Province
city	string	City
county	string	County/District
address	string	Detailed address

Remark

-

4.16、Other Screen Options

4.16.1、Firmware Version Information

Description:

- This is an interface for obtaining firmware version information. Terminals of all the versions have this interface for returning the terminal version information. <br&**V1.2.2 lacks the mac field.**

Request URL:

- `void nvGetFirmwareInfosAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "fpga":"1.0.0.1",
  "model":"AX100V010002CN0501",
  "mainVersion":"1.0.1",
  "productName":"T3",
  "aliasName":"easy-PHOJ05447J0330015353",
  "registerAddress":"Xi’an Software Park",
  "mac":"30:5A:3A:04:62:C3"
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Interface timeout
fpga	string	FPGA version
model	string	system version
mainVersion	string	Major version of the terminal software
productName	string	product name
aliasName	string	Screen alias
registerAddress	string	Screen address
mac	string	Screen MAC address

Remark

-

4.16.2、Installed Software Version Information

Description:

- Obtain the version information of the installed software.

Request URL:

- `void nvGetInstalledPackageVersionsAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-


```
{
```

```
  "sn":"BZSA17332J0A20002272",
  "packageInfo":{
    "packageName":[
      "nova.priv.terminal.syssetting",
      "nova.priv.terminal.easypluto"
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
packageInfo	Yes	object	*
packageName	Yes	string_array	Software package name array

Return Sample

```
{
  "result":[
    {
      "packageName":"nova.priv.terminal.syssetting",
      "versionName":"1.0.2.0501",
      "versionCode":102
    },
    {
      "packageName":"nova.priv.terminal.easypluto",
      "versionName":"1.0.2.0502",
      "versionCode":102
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Interface timeout
packageName	string	Package names
versionName	string	Version name
versionCode	int	Version number

Remark

-

4.16.3、Device Information

Description:

- Obtain terminal device information.

Request URL:

- void nvGetProductInfoAsync(const char *data, ExportViplexCallback callback);

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "productInfo":{
    "productName":"",
    "modelId":10043
  },
  "configInfo":{
    "videoSwitch":false,
    "displayDevice":"LED",
    "portConfig":[
      {
        "portNO":1,
        "isMainPort":true,
        "belongMainPort":0
      },
      {
        "portNO":2,
        "isMainPort":true,
        "belongMainPort":0
      }
    ]
  }
}
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Interface timeout
productInfo	object	Product information
productName	string	Product name such as T3 and T6
modelId	int	Product ID
configInfo	object	Configuration information
videoSwitch	bool	Support for video switching, true denotes yes, false denotes no.
displayDevice	string	Display device, including LED and LCD
portConfig	object_array	Ethernet port configuration
portNO	int	Ethernet port number, such as 1, 2, 3, and 4.
isMainPort	bool	Whether it is the master port
belongMainPort	int	Corresponding master port. If this is the master port, this field will be invalid.

Remark

-

4.16.4、Supported modules

Description:

- **Note: Before obtaining the information on supported modules, call the "Obtain firmware version information" interface to obtain the version. Otherwise, the information on supported modules cannot be obtained. For the field description, refer to the description in showdoc.**

Request URL:

- `void nvGetconfigurationAsync(const char *data, ExportViplexCallback resultCallBack);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
```

```
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	sn

Return Sample

```
{
  "config_info":{
    "REBOOT":true,
    "SCREENPOWER":true,
    "SYNC_PLAY":true,
    "SPOTS":true,
    "VIDEO_SOURCE_SWITCH":true,
    "UPDATE":true,
    "SCREENSHOT":true,
    "TIMEZONE":true,
    "POWER":true,
    "VOICE":true,
    "LIGHT":true,
    "UPDATEOS":true,
    "CARE":true,
    "VNNOX":true,
    "PLAYLOG":true,
    "COLORTEMPERATURE":true,
    "INDICATORLIGHT":true,
    "NEXUSFONT":true,
    "TERMINALINFO":true,
    "NEWPROTOCOL":true,
    "RELAYPOWER":true,
    "RELAYPOWERCONFIG":true,
    "FIXEDPOINT":true,
    "RESET":true,
    "Brightness":{
      "Validity":true,
      "CompleteCron":true,
      "FloatValue":true
    },
    "WIFI":true,
    "CustomResolution":true,
    "NetWork":{
      "IsSupport":true,
      "Wifi":true,
      "Wired":true,
      "AP":true,
      "Mobile":true,
      "IsSupportNetWorkCheck":true,
      "WiFiApSwitch":false
    },
    "VideoSource":{
      "IsSupport":true,
      "Hdmi":true,
      "Input":{
        "IsSupport":true,
        "Hdmi":true
```

```
    },
    "Output":{
      "IsSupport":true,
      "HdmiToLvds":true
    }
  },
  "RadioFrequencyManage":{
    "IsSupport":true,
    "IsSupportLoraInfo":true,
    "IsSupportProduct":true
  },
  "Upgrade":{
    "IsSupportCheckValid":true
  },
  "SourceOutMode":{
    "IsSupportChangeSourceOutMode":true
  },
  "ZipRunningLog":{
    "IsSupportZipRunningLogInfo":true
  },
  "ReceiveCard":{
    "IsSupport":true,
    "Config":true,
    "Temperature":true
  },
  "ScreenConfig":{
    "IsSupport":true,
    "Config":true,
    "ScreenJoint":true,
    "IsSupportProduct":true
  },
  "Monitoring":{
    "IsSupport":true,
    "ClearMedia":true,
    "Memory":true,
    "CPU":true,
    "AmbientBrightness":true
  },
  "TimeControl":{
    "IsSupport":true,
    "Manual":true,
    "NTP":true,
    "Lora":true,
    "DayLightOffset":false
  },
  "Resolution":{
    "IsSupport":true,
    "CustomResolution":true
  },
  "SensorBoard":{
    "IsSupport":true,
    "SensorInfo":true,
    "IsSupportProduct":true
  },
  "Rotation":{
    "IsSupport":false,
    "IsSupportProduct":false
  },
  "PlayManager":{
    "IsSupport":true,
    "ProgramListManager":true
```

```
    },
    "InfraredDetector":{
      "IsSupport":true,
      "IsSupportProduct":true
    }
  }
}
```

Return Parameter Description

Parameter	Type	Description
version	String	Terminal version
config_info	object	Supported functions
REBOOT	boolean	Support for restart
SCREENPOWER	boolean	Support for screen on/off
SYNC_PLAY	boolean	Support for synchronous playback
SPOTS	boolean	Support for content insertion
VIDEO_SOURCE_SWITCH	boolean	Support for video source switching
UPDATE	boolean	Support for upgrade
SCREENSHOT	boolean	Support for screenshot
SCREENSHOT_V2	boolean	Support for screenshot improvement
UPDATE_PROGRAM	boolean	Support for using new protocols to update solutions
TIMEZONE	boolean	Support for setting/obtaining time zone
POWER	boolean	Support for power control
VOICE	boolean	Support for volume control
LIGHT	boolean	Support for brightness control
UPDATEOS	boolean	Support for system upgrade
WIFI	boolean	Support for Wi-Fi Station
CARE	boolean	Support for iCare
VNNOX	boolean	Support for VNNOX
PLAYLOG	boolean	Support for play logs
COLORTEMPERATURE	boolean	Support for color temperature
INDICATORLIGHT	boolean	Support for indicators
NEXUSFONT	boolean	Support for font management
NEWPROTOCOL	boolean	Support for new protocols
RELAYPOWER	boolean	Support for board power
RELAYPOWERCONFIG	boolean	Support for board power configuration
RESET	boolean	Support for factory reset
FIXEDPOINT	boolean	Support for location targeting
TERMINALINFO	boolean	Support for terminal information
CustomResolution	boolean	Support for custom resolutions
Brightness-	object	Functions supported by the brightness module
Validity	boolean	Support for validity range

Parameter	Type	Description
CompleteCron	boolean	Support for complete Cron expression
FloatValue	boolean	Support for brightness values of Float type
Network-	object	Functions supported by the network module
IsSupport	boolean	Support for the network module
Wifi	boolean	Support for Wi-Fi (This field is used to judge whether Wi-Fi is supported in V1.3.3. The above Wi-Fi field was abandoned. It is still kept for compatibility.)
Wired	boolean	Support for wired networks
AP	boolean	Support for AP networks
IsSupportApChannelSet	boolean	Support for AP channel settings
Mobile	boolean	Support for mobile networks
IsSupportNetworkCheck	boolean	Support for network switching detection
IsSupportMultiDns	boolean	Support for multiple DNS addresses
WiFiApSwitch	boolean	Support for switching between Wi-Fi AP and Wi-Fi Station
Apn	boolean	Support for APN
AirPlane	boolean	Support for airplane mode
NetStateFor4G	boolean	Support for 4G network status detection
Restart4GModule	boolean	Support for powering on/off 4G modules
WorkStateFor4G	boolean	Support for 4G module working status detection
Log4G	boolean	Support for obtaining 4G play logs
IsSupportSimModeSwitch	boolean	Support for SIM mode switching
IsSupportGetModuleInfo	boolean	Support for obtaining module information
IsSupportModuleVersionUpdate	boolean	Support for module upgrade
VideoSource	object	Functions supported by the video source module (The VIDEO_SOURCE_SWITCH field cannot meet ViPlex Express, so this field is added.)
IsSupport	boolean	Support for the video source module
Hdmi	boolean	Support for HDMI video sources
Input	object	Input source
IsSupport	boolean	Support for input sources
Hdmi	boolean	Support for HDMI input sources
Output	object	Output source
IsSupport	boolean	Support for output sources
HdmiToLvds	boolean	Support for HDMI and LVDS output sources
RadioFrequencyManage-	object	Functions supported by the RF management module
IsSupport	boolean	Support for the RF management module
IsSupportLoraInfo	boolean	Support for the Lora information detection function
IsSupportProduct	boolean	Whether the product especially the hardware supports this function
Upgrade	object	Upgrade module
IsSupportCheckValid	boolean	Support for upgrade feasibility

Parameter	Type	Description
SourceOutMode	object	Output source mode
IsSupportChangeSourceOutMode	boolean	Support for output source HDMI/DVI switching
ZipRunningLog	object	Obtain runtime file path
IsSupportZipRunningLogInfo	boolean	Support for switching the output source between HDMI and DVI
ReceiveCard	object	Functions related to receiving cards
IsSupport	boolean	Support for multifunction cards
Config	boolean	Support for multifunction card configuration
Temperature	boolean	Support for multifunction card temperature
ScreenConfig	object	Functions related to screen configuration
IsSupport	boolean	Support for functions related to screen configuration
Config	boolean	Support for configuration
ScreenJoint	boolean	Support for multi-screen mosaic
IsSupportProduct	boolean	Whether the product especially the hardware supports this function
Monitoring	object	Functions related to monitoring
IsSupport	boolean	Support for functions related to monitoring
ClearMedia	boolean	Support for media cleanup
Memory	boolean	Support for memory usage monitoring
CPU	boolean	Support for CPU usage monitoring
AmbientBrightness	boolean	Support for ambient brightness monitoring
TimeControl	object	Functions related to time synchronization
IsSupport	boolean	Support for time synchronization
Manual	boolean	Support for manual time synchronization
NTP	boolean	Support for NTP time synchronization
Lora	boolean	Support for Lora time synchronization
DayLightOffset	boolean	Support for daylight saving time offset
Resolution	object	Functions related to resolutions
IsSupport	boolean	Support for resolutions
CustomResolution	boolean	Support for custom resolutions. The CustomResolution field above was abandoned. But it is still kept for compatibility.
SensorBoard	object	Functions related to sensor cards
IsSupport	boolean	Support for sensor cards
SensorInfo	boolean	Support for obtaining and setting sensor information (reserved)
IsSupportProduct	boolean	Whether the product especially the hardware supports this function
Rotation	object	Rotation function
IsSupport	boolean	Support for rotation
IsSupportProduct	boolean	Whether the product especially the hardware supports this function

Parameter	Type	Description
PlayManager	object	Playback management, mainly for obtaining playback status, switching solutions and control solution playback
IsSupport	boolean	Support for playback management
ProgramListManager	boolean	Support for solution list management
InfraredDetector	object	Peripheral equipment adjustment function, infrared equipment (high/low level)
IsSupport	boolean	Support for peripheral equipment adjustment
IsSupportProduct	boolean	Whether the product especially the hardware supports this function
PowerManager	object	Power control
IsSupport	boolean	Support for power control
IsSupportProduct	boolean	Whether the product especially the hardware supports this function
RelayPower	boolean	Support for board power
RelayPowerConfig	boolean	Support for board power tags
SolidPower	boolean	Support for solid-state relays
PowerCustomConfig	boolean	Support for board and solid-state relay tags

Remark

-

4.16.1、Time Synchronization

4.16.1.1、Obtaining Time Zone

Description:

- This is an interface used for obtaining the time zone.

Request URL:

- `void nvGetCurrentTimeAndZoneAsync(const char * data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "utcTimeMillis":1585190230828,
  "timeZone":"Europe/London",
  "currentTime":"2020-03-26 02:37:10",
  "isTimeOffsetEnable":true,
  "beginTime":"",
  "endTime":"",
  "timeOffsetValue":0,
  "gmt":"GMT 08:00"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
utcTimeMillis	long	UTC time in millisecond
timeZone	string	Time zone, for example, “Asia/Shanghai”
gmt	string	Time zone GMT, for example, “GMT+08:00”
isTimeOffsetEnable	boolean	Whether to enable time compensation, true: enable, false: disable
beginTime	string	Compensation start date, for example, “2020-05-23”
endTime	string	Compensation end date, for example, “2020-12-23”
timeOffsetValue	long	time compensation value (s), For example: +6000

Remark

-

4.16.1.2、Setting Card Time

Description:

- This is an interface for setting the time of the card.

Request URL:

- `void nvCalibrateTimeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "currentTime":"2020-03-26 02:37:10",
  "timeZoneInfo":{
    "utcTimeMillis":1585190230828,
    "timeZone":"Europe/London",
    "isTimeOffsetEnable":true,
    "beginTime":"",
    "endTime":"",
    "timeOffsetValue":0,
    "gmt":"GMT-08:00"
  }
}
```

Parameters:

参数名	是否必选	类型	说明
sn	Yes	string	Unique product SN
currentTime	Yes	string	Time of the current time zone
timeZoneInfo	Yes	Object	Time zone details
utcTimeMillis	Yes	long	UTC time in millisecond
timeZone	Yes	string	Time zone, for example, “Asia/Shanghai”
gmt	Yes	string	Time zone GMT, for example, "GMT-08:00"
isTimeOffsetEnable	Yes	boolean	Whether to enable time compensation, true: enable, false: disable
beginTime	Yes	string	Compensation start date, for example, “2020-05-23”
endTime	Yes	string	Compensation end date, for example, "2020-05-23"
timeOffsetValue	Yes	long	Time compensation value (s), for example, -6000

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code
utcTimeMillis	long	UTC time in millisecond
timeZone	string	Time zone, for example, “Asia/Shanghai”
gmt	string	Time zone GMT, for example, "GMT-08:00"
isTimeOffsetEnable	boolean	Whether to enable time compensation, true: enable, false: disable
timeOffsetValue	long	time compensation value (s), for example, -6000

Remark

-

4.16.1.3、Obtaining Daylist Saving Time Status

Description:

- This is an interface used for obtaining whether the daylight saving time is observed.

Request URL:

- `void nvGetIsUseDayLightTimeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{"isUseDayLightTimeData":{"timeZone":"Asia/Shanghai","gmt":"GMT 08:00"}}
```

Parameters:

Parameter	Required	Type	Description
isUseDayLightTimeData	Yes	Object	Obtain whether the daylight saving time is observed
gmt	Yes	string	Time zone GMT

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.16.2、NTP Time Synchronization

4.16.2.1、Obtaining Time Synchronization Configuration

Description:

- Obtain time synchronization configuration. This interface can obtain the taskArray for NTP and Lora time synchronization. The versions are not distinguished. After obtaining the information via the old protocol, the older version is converted to 0x99 protocol.

Request URL:

- `void nvGetNetTimingInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "taskArray":[
    {
      "type":"LORA_SYNC",
      "action":5,
      "status":1,
      "data":{
        "enable":true,
        "address":1,
        "channel":23,
        "mode":"MASTER",
        "groupId":"novad101",
        "regulation":{
          "timeEnable":false,
          "brightnessEnable":true,
          "volumeEnable":true,
          "environmentalMonitoring":true
        }
      }
    },
    {
      "type":"NTP_CONFIG",
      "action":5,
      "status":1,
      "data":{
        "enable":true,
        "server":"http://ntpsss.net"
      }
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
source	object	Where the command is sent,
type	int	1: Nova's own platform, 0: third-party platform
platform	int	1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: Care, 6: LCT, 7: Lora
taskArray	object	Task array
type	string	Service type, fixed to : "NTP_CONFIG", or fixed to: "LORA_SYNC"
action	int	Command action, fixed to: ACTION_SET(5)
status	int	Successful or failed, 0: Unknown; 1: Successful; 2: Failed
data	object	NTP time synchronization configuration option
enable	boolean	Enable NTP or not
server	string	NTP server address

Parameter	Type	Description
data	object	RF time synchronization configuration option
enable	boolean	RF time synchronization enable
mode	string	Master and slave mode: "MASTER"or"SLAVE"
address	int	target address
channel	int	Target channel
groupId	string	Group ID. Assigned by users (string format, up to 10 bytes, limited by the upper computer)
regulation	object	Synchronization enable rule
timeEnable	boolean	Time synchronization enable
brightnessEnable	boolean	Brightness synchronization enable
volumeEnable	boolean	Volume synchronization enable
environmentalMonitoring	boolean	Environment monitoring data synchronization enable

Remark

-

4.16.2.2、NTP Time Synchronization

Description:

- Set time synchronization configuration, including NTP and Lora time synchronization. The configuration is applied in the form of array. They also can be applied separately.

Request URL:

- `void nvSetNetTimingInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "TimingInfo":{
    "source":{
      "type":1,
      "platform":1
    },
```

```
    "taskArray":[
      {
        "type":"LORA_SYNC",
        "action":4,
        "data":{
          "enable":true,
          "address":1,
          "channel":23,
          "mode":"MASTER",
          "groupId":"novad101",
          "regulation":{
            "timeEnable":false,
            "brightnessEnable":true,
            "volumeEnable":true,
            "environmentalMonitoring":true
          }
        }
      },
      {
        "type":"NTP_CONFIG",
        "action":4,
        "data":{
          "enable":true,
          "server":"http://ntpsss.net"
        }
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
TimingInfo	Yes	string	Time synchronization configuration object
source	Yes	object	Where the command is sent,
type	Yes	int	1: NovaStar platform, 0: Third-party platform
platform	Yes	int	1: Mobile phone, 2: CS, 3: Tablet, 4: VNNOX, 5: Care, 6: LCT, 7: Lora
taskArray	Yes	object	Task array
type	Yes	string	Service type, fixed to: “NTP_CONFIG”, or fixed to: “LORA_SYNC”
action	Yes	int	Action of this command, fixed to: ACTION_SET
data	Yes	object	NTP time synchronization configuration option
enable	Yes	boolean	NTP enable
server	Yes	string	NTP server address
data	Yes	object	RF time synchronization configuration option
enable	Yes	boolean	RF time synchronization enable
mode	Yes	string	Master and slave mode: “MASTER” or “SLAVE”
address	Yes	int	target address
channel	Yes	int	Target channel

Parameter	Required	Type	Description
groupId	Yes	string	Group ID. Assigned by users (string format, up to 10 bytes, limited by the upper computer)
regulation	Yes	object	Synchronization enable rule
timeEnable	Yes	boolean	Time synchronization enable
brightnessEnable	Yes	boolean	Brightness synchronization enable
volumeEnable	Yes	boolean	Volume synchronization enable
environmentalMonitoring	Yes	boolean	Environment monitoring data synchronization enable

Return Sample

```
{
  "taskArray":[
    {
      "action":4,
      "errorCode":0,
      "status":1,
      "type":"NTP_CONFIG"
    },
    {
      "action":4,
      "errorCode":0,
      "status":1,
      "type":"LORA_SYNC"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code
type	string	Service type, fixed to : "NTP_CONFIG" or "LORA_SYNC"
action	int	Command action, fixed to: ACTION_GET(4)
status	int	Successful or failed, 0: Unknown; 1: Successful; 2: Failed
errorCode	int	Error code

Remark

-

4.16.3、Time Synchronization Server List

4.16.3.1、Obtaining Time Server List

Description:

-

1. Obtain the time synchronization server list. It consists of two parts: user defined and obtained by the server. The list obtained by the server can return the corresponding address according to the language. Server list address is as follows: http://download.vnnox.com/vnnox_api_host/timehost.json 2. The list obtained by the server cannot be modified.

Request URL:

- `void nvGetNetTimingListInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "lang":"en"
}
```

Parameters:

Parameter	Required	Type	Description
lang	Yes	string	Language, English: en, Chinese: zh-cn, Japanese: jp, Korean: kr, Spanish: es, French: fr

Return Sample

```
{
  "serverInfo":[
    {
      "islocal":true,
      "label":"aa",
      "node":"www.baidu.com"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description
serverInfo	array	Return server list array
islocal	bool	Whether it is the data customize by the user, true: Customized, false: Obtained by server
label	string	Node name
node	string	Node address

Remark

-

4.16.3.2、Adding Time Synchronization Servers

Description:

- This is an interface used for adding time synchronization servers.

Request URL:

- `void nvAddNetTimingInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "label":"aa",
  "node":"www.baidu.com"
}
```

Parameters:

Parameter	Required	Type	Description
label	Yes	string	Node name
node	Yes	string	Node address

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.16.3.3、Deleting Time Synchronization Servers

Description:

- Delete the time synchronization server list. If there are two pieces of data with the same node and label, the first one will be deleted.

Request URL:

- `void nvDeleteNetTimingInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "label":"aa",
  "node":"www.baidu.com"
}
```

Parameters:

Parameter	Required	Type	Description
label	Yes	string	Node name
node	Yes	string	Node address

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.16.3.4、Modifying Time Synchronization Servers

Description:

- Modify time synchronization servers. If there are two pieces of data with the same node and label, the first one will be modified.

Request URL:

- `void nvUpdateNetTimingInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "oldServer":{
    "label":"zhangsan",
    "node":"123.123.123"
  },
  "newServer":{
    "label":"lisi",
    "node":"111.111.111"
  }
}
```

Parameters:

Parameter	Required	Type	Description
oldServer	Yes	Object	Modified server information

Parameter	Required	Type	Description
label	Yes	string	Node name
node	Yes	string	Node address
newServer	Yes	Object	New server information

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.16.3.5、Adding Time Synchronization Server Lists

Description:

- This is an interface used for adding time synchronization lists.

Request URL:

- void nvAddNetTimingInfoListAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "serverInfo":[
    {
      "label":"aa",
      "node":"www.baidu.com"
    },
    {
      "label":"aa",
      "node":"www.baidu.com"
```

```
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
serverInfo	Yes	array	Server list array
label	Yes	string	Node name
node	Yes	string	Node address

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.16.4、Screen Rotation

4.16.4.1、Setting Screen Rotation

Description:

- This function is available for V1.6.0 and later. After the screen is rotated, the width and height will be exchanged. Rotating a screen will also make the solution rotated and this setting is added.

Request URL:

- `void nvSetRotationAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"ROTATION",
        "action":4,
        "data":{
          "rotationValue":1
        }
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "ROTATION"
data	Yes	object	Screen rotation data
rotationValue	Yes	int	Only the following rotation angles are supported: 0: 0° , 1: 90° , 2: 180° , 3: 270°

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "taskArray":[
    {
      "type":"ROTATION",
      "action":4,
      "status":1,
      "errorCode":0
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36

Remark

-

4.16.4.2、Reading back Rotation Settings

Description:

- This function is available for V1.6.0 and later. After the screen is rotated, the width and height will be exchanged. Rotating a screen will also make the solution rotated and this setting is added.

Request URL:

- `void nvGetRotationAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"ROTATION",
        "action":5
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "ROTATION"
data	Yes	object	null

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "taskArray":[
    {
      "type":"ROTATION",
      "action":5,
      "status":1,
      "data":{
        "rotationValue":1
      }
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36
data	object	It is meaningless when the setting is failed. The rotation parameters will be saved when it is successful.
rotationValue	int	Only the following rotation angles are supported: 0: 0° , 1: 90° , 2: 180° , 3: 270°

Remark

-

4.16.5、Screen Size

4.16.5.1、Obtaining Screen Size

Description:

- This function is available for V1.7.0 and later. After a screen is rotated, the width and height of the solution are changed. The upper computer obtains the width and height as well as the rotation angle by using this interface.

Request URL:

- `void nvGetDisplayInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07201A0010000183",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"DISPLAY_INFO",
        "action":5
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "DISPLAY_INFO"
data	Yes	object	null

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "taskArray":[
    {
      "type":"DISPLAY_INFO",
      "action":5,
      "status":1,
      "data":{
        "width":400,
        "height":400,
        "rotation":0
      }
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36
width	int	Screen width
height	int	Screen height
rotation	int	Only the following rotation angles are supported: 0, 90, 180, 270

Remark

-

4.16.6、Time Synchronization (New Protocol 0x99)

4.16.6.1、Time Synchronization (New Protocol 0x99)

Description:

- This module is the interaction protocol between terminal time synchronization and VNNOX. Currently VNNOX only supports time zone synchronization and the protocol supports both time zone and time synchronization.

Request URL:

- `void nvSetTimeAndZoneAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07201A0010000183",
  "taskInfo":{
    "data":{
      "utcTimeMillis":1234455433,
      "timeZone":"Asia/Shanghai",
      "gmt":"GMT 08:00",
      "isTimeOffsetEnable":true,
      "beginTime":"5-23",
      "endTime":"12-23",
      "timeOffsetValue":6000
    }
  }
```

```
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "TIME_AND_ZONE"
data	Yes	object	Turn on/off the screen
utcTimeMillis	Yes	long	UTC time in millisecond. This field is 0 if the synchronization is only for the time zone.
timeZone	Yes	string	Time zone, for example, “Asia/Shanghai”
gmt	Yes	string	Time zone GMT, for example, "GMT-08:00"
isTimeOffsetEnable	Yes	boolean	Whether to enable time compensation, true: enable, false: disable
beginTime	Yes	string	Compensation start date, delivery start month and day, such as "5-23"
endTime	Yes	string	Compensation end date, delivery end month and day, such as "12-23"
timeOffsetValue	Yes	long	Time compensation value (s), for example, -6000

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36

Remark

-

4.16.7、Screenshots (New Protocol 0x99)

4.16.7.1、Screenshots (New Protocol 0x99)

Description:

- This module is the interaction protocol between terminal screenshots and VNNOX. (This interface is used by VNNOX. During used, TCP sends "width": 256, "height": 256, "type": "PNG")

Request URL:

- `void nvSetScreenShotAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07201A0010000183",
  "taskInfo":{
    "data":{
      "uploadOssInfo":{
        "accessid":"eMYWoIbIam9NsYRC",
        "host":"https://novacloud-test.oss-cn-hangzhou.aliyuncs.com",
        "policy":"eyJleHBpcmF0aW9uIjoiMjAxOS0xMS0yMVQwOTo0OTowMFoiLCJjb5nZSIsMCwxMDQ4NTc2=",
        "signature":"xt/XaiwvkNe3q2KlIRGN63iQSoI=",
        "expire":1574300940,
        "callback":"eyJjYWxsYmFja1VybCI6Imh0dHA6XC9cL3Rlc3QtcmVzdC52bm5veC5m9ybV",
        "dir":"CheckPlatform/"
      },
      "sessionID":"h0dHA6XC9cL3Rlc3QtcmVzdC52bm5veC5m9.jpg"
    }
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "SCREEN_SHOT"
data	Yes	object	Screenshot information
uploadOssInfo	Yes	object	Information of uploading screenshot file to OSS
accessid	Yes	string	Required information for upload OSS
host	Yes	string	Required information for upload OSS
policy	Yes	string	Required information for upload OSS
signature	Yes	string	Required information for upload OSS
expire	Yes	string	Required information for upload OSS
callback	Yes	string	Required information for upload OSS
dir	Yes	string	Required information for upload OSS
sessionID	Yes	string	Unique ID of screenshot

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36

Remark

-

4.17、Screen Brightness and Ambient Brightness

4.17.1、Mode Switching

4.17.1.1、Setting Mode

Description:

- This is an interface for setting the mode.

Request URL:

- `void nvSetBrightnessAdjustModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "brightnessAdjustModeInfo":{
    "mode":"MANUALLY"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Parameter	Required	Type	Description
brightnessAdjustModeInfo	Yes	Object	Request information object
mode	Yes	string	MANUALLY: Set manually, AUTO: Set automatically

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.17.1.2、Obtaining Mode

Description:

- This is an interface for obtaining the mode.

Request URL:

- `void nvGetBrightnessAdjustModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "mode":"MANUALLY ",
  "source":{
    "platform":1,
    "type":1
  },
  "type":"SCREEN_BRIGHTNESS"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code
type	String	Type: Screen switch is SCREENPOWER; Brightness module is SCREEN_BRIGHTNESS
source	object	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile terminal, cloud service, etc.
type	number	1: NovaStar platform, 0: Third-party platform
platform	number	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile terminal, cloud service, etc.
mode	String	MANUALLY: Set manually, AUTO: Set automatically

Remark

-

4.17.2、Manual Brightness Control

4.17.2.1、Setting Brightness Manually

Description:

- This is an interface for setting brightness manually.

Request URL:

- `void nvSetScreenBrightnessAsync(const char *data, ExportViplexCallback callback)`

equest Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "screenBrightnessInfo":{
    "ratio":45.0
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
screenBrightnessInfo	Yes	Object	Request information object
ratio	Yes	float	Screen brightness (%) (0-100)

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.17.2.2、Obtaining Brightness Manually

Description:

- This is an interface for obtaining brightness manually.

Request URL:

- `void nvGetScreenBrightnessAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Product unique serial number

Return Sample

```
{
  "ratio":45.0,
  "source":{
    "type":1,
    "platform":1
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 successfully obtained 65535 request timeout
data	Object	Return data details
ratio	float	Percentage of display brightness value (0 to 100)
source	Object	Indicates the publishing source of the task, our current terminal programs can come from different sources. Such as PC, mobile terminal, cloud service, etc.
type	int	1: Nova's own platform, 0: third-party platform.
platform	int	1: sent from a mobile terminal (such as a mobile phone), 2: means a traditional computer, 3: means a tablet, 4: means a vnnox terminal. 5: From iCare

Remark

-

4.17.3、Scheduled or Automatic Brightness Adjustment

4.17.3.1、Obtaining Brightness Adjustment Plan

Description:

- This is an interface for obtaining the brightness adjustment plan.

Request URL:

- `void nvGetBrightnessPolicyAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "brightnessPolicyInfo":{
    "isSupportCompleteCron":false
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
brightnessPolicyInfo	Yes	Object	Request information object
isSupportCompleteCron	No	bool	Whether the complete cron express and validity are supported. The parameter is not passed. It defaults to false.

Return Sample

```
{
  "enable":true,
  "source":{
    "platform":1,
    "type":1
  },
  "conditions":[
    {
      "opticalFailureInfo":{
        "enable":true,
        "screenBrightness":30
      },
      "enable":true,
      "crons":[
        "0 15 10 ? ** *"
      ],
      "startTime":"2017-09-01 00:00 : 00",
      "endTime":"4016-06-06 23:59:59",
```

```
      "segments":[
        {
          "screenBrightness":80,
          "environmentBrightness":12000
        },
        {
          "screenBrightness":60,
          "environmentBrightness":10000
        }
      ],
      "type":2,
      "args":[
        12000,
        20,
        80,
        40,
        10
      ]
    },
    {
      "opticalFailureInfo":{
        "enable":true,
        "screenBrightness":30
      },
      "enable":true,
      "crons":[
        "0 15 10 ? **"
      ],
      "startTime":"2017-09-01 00:00:00",
      "endTime":"4016-06-06 23:59:59",
      "segments":[

      ],
      "type":1,
      "args":[
        30
      ]
    }
  ],
  "type":"BRIGHTNESS",
  "segmentConfig":{
    "opticalFailureInfo":{
      "enable":true,
      "screenBrightness":30
    },
    "segments":[
      {
        "screenBrightness":80,
        "environmentBrightness":12000
      },
      {
        "screenBrightness":60,
        "environmentBrightness":10000
      }
    ],
    "args":[
      12000,
      20,
      80,
      40,
      10
```

```
    ]
  },
  "timeStamp":"2018-07-19 11:27:15"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Returned parameter
type	string	Fixed to "BRIGHTNESS"
source	object	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile devices, cloud service, etc.
type	number	1: NovaStar platform, 0: Third-party platform
platform	number	1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
enable	boolean	Enable switch. All are valid when it is true.
conditions	object	A collection of tasks performed according to conditions, support for multi-condition trigger
type	number	Adjustment type, 1: Scheduled adjustment, 2: Automatic adjustment
cron	array	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
startTime	string	Policy validity start time yyyy-MM-dd HH:mm:ss
endTime	string	Policy validity end time yyyy-MM-dd HH:mm:ss, permanent validity expires in 4016-06-06 23:59:59
args	object	Brightness adjustment parameters. During scheduled adjustment, “args” has only one value, that is the brightness percentage. During automatic adjustment, “args” has five values: maximum ambient brightness, minimum ambient brightness, maximum screen brightness, minimum screen brightness, number of subsections
segments	object	Subsection settings of brightness adjustment parameters
environmentBrightness	number	Ambient brightness
screenBrightness	number	Screen brightness corresponding to ambient brightness
opticalFailureInfo	object	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained during automatic brightness adjustment. This field is only available for automatic brightness adjustment.
enable	boolean	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained during automatic brightness adjustment.
screenBrightness	number	Fixed brightness value
enable	boolean	Enable switch of the plan
segmentConfig	object	segmentsConfig field of the subsection data configured according to ambient brightness. For the internal fields, see

Parameter	Type	Description
		the parameter description of automatic brightness adjustment.
timeStamp	string	Timestamp of the current data, for future use

Remark

-

4.17.3.2、Setting Brightness Adjustment Plan

Description:

-

1. Terminals of V1.3.1 and later: Support “starttime” and “endtime”. The maximum screen brightness and minimum screen brightness in “args” support floating-point type. “screenBrightness” supports floating-point type. Terminals earlier than V1.3.1 do not support “starttime” and “endtime” and screen brightness support floating-point type. To send a scheduled task, “args” has only one value which denotes the brightness. For V1.3.1 and later, the type is floating point. For earlier than V1.3.1, the type is integer. 2. Support for floating-point type depends on the supported module. Supported: The maximum screen brightness and minimum screen brightness in “args” support floating-point type. “screenBrightness” supports floating-point type. Not supported: The maximum screen brightness, minimum screen brightness and “screenBrightness” in “args” support int only.

Request URL:

- `void nvSetBrightnessPolicyAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "type":"BRIGHTNESS",
    "source":{
      "type":0,
      "platform":1
    },
    "enable":true,
    "conditions":[
      {
        "type":2,
        "cron":[
          "0 15 10 ? ** *"
        ],
        "args":[
          12000,
          20,
          80,
          40,
          10
        ],
        "startTime":"2017-09-01 00:00 : 00",
        "endTime":"4016-06-06 23:59:59",
        "enable":true
      },
      {
        "type":1,
        "cron":[
          "0 15 10 ? **"
        ],
        "startTime":"2017-09-01 00:00:00",
        "endTime":"4016-06-06 23:59:59",
        "args":[
          30
        ],
        "enable":true
      }
    ],
    "segmentConfig":{
      "args":[
        12000,
        20,
        80,
        40,
        10
      ],
      "segments":[
        {
          "environmentBrightness":12000,
          "screenBrightness":80
        },
        {
          "environmentBrightness":10000,
          "screenBrightness":60
        }
      ],
      "opticalFailureInfo":{
        "enable":true,
        "screenBrightness":30
      }
```

```
    },
    "timeStamp":"2018-07-19 11:27:15"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Request information object
type	Yes	string	Fixed to "BRIGHTNESS"
source	Yes	object	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile terminal, cloud service, etc.
type	Yes	number	1: NovaStar platform, 0: Third-party platform
platform	Yes	number	1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
enable	Yes	boolean	Enable switch
conditions	Yes	object	A collection of tasks performed according to conditions, support for multi-condition trigger
type	Yes	number	Adjustment type, 1: Scheduled adjustment, 2: Automatic adjustment
cron	Yes	array	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or. (For the detailed cron formats, see the attachments.)
args	Yes	array	Brightness adjustment parameters. During scheduled adjustment, “args” has only one value, that is the brightness percentage. During automatic adjustment, “args” has five values: maximum ambient brightness, minimum ambient brightness, maximum screen brightness, minimum screen brightness, number of subsections.
startTime	Yes	string	Policy validity start time yyyy-MM-dd HH:mm:ss (No this field when the version is earlier than 1.3.1)
endTime	Yes	string	Policy validity end time yyyy-MM-dd HH:mm:ss, permanent validity expires in 4016-06-06 23:59:59 (No this field when the version is earlier than 1.3.1)
segments	No	object	Subsection settings of brightness adjustment parameters, (In each scheduled task when the version is earlier than 1.3.1; Same level as the scheduled task list when the version is 1.3.1 or later)
environmentBrightness	No	int	ambient brightness
screenBrightness	No	number	Screen brightness corresponding to ambient brightness
opticalFailureInfo	No	object	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained

Parameter	Required	Type	Description
			during automatic brightness adjustment. This field is only available for automatic brightness adjustment.
enable	Yes	boolean	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained during automatic brightness adjustment.
screenBrightness	No	number	Fixed brightness value
enable	Yes	boolean	Enable switch of the plan
segmentConfig	No	object	Subsection data configured according to ambient brightness. For the internal fields, see the parameter description of automatic brightness adjustment.
timeStamp	Yes	string	Timestamp of the current data, for future use

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.17.4、Manual Brightness Adjustment

4.17.4.1、Setting Brightness Manually

Description:

- This is an interface for setting brightness manually.

Request URL:

- `void nvGetEnvironmentBrightnessAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "value":1000
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code
value	int	Ambient brightness (LUX)

Remark

-

4.17.5、Manual Brightness Adjustment (0x99)

4.17.5.1、Setting Brightness Manually

Description:

- This is an interface for obtaining ambient brightness.

Request URL:

- `void nvsetManualBrightnessFor0x99Async(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"MANUAL_BRIGHTNESS",
        "orderId":12356,
        "action":4,
        "data":{
          "ratio":60.0
        }
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed value: "MANUAL_BRIGHTNESS"
data	Yes	object	Brightness command
ratio	Yes	float	Brightness percentage

Return Sample

```
{
  "taskArray":[
    {
      "type":"MANUAL_BRIGHTNESS",
      "orderId":12356,
      "action":4,
      "status":1,
      "errorCode":0
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	Yes	Error code. See details in: http://172.16.80.64/index.php?s=/3&page_id=36

Remark

-

4.17.6、Scheduled or Automatic Brightness Adjustment (0x99)

4.17.6.1、Setting Brightness Adjustment Plan

Description:

- This is an interface for setting the brightness adjustment plan.

Request URL:

- `void nvsetPolicyBrightnessFor0x99Async(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"POLICY_BRIGHTNESS",
        "orderId":12356,
        "action":4,
        "data":{
          "enable":true,
          "conditions":[
            {
              "type":2,
              "cron":[
                "0 15 10 ? * *"
              ],
              "args":[
                12000,
                20,
                80,
```

```
            40,
            10
          ],
          "segments":[
            {
              "environmentBrightness":12000,
              "screenBrightness":80
            },
            {
              "environmentBrightness":10000,
              "screenBrightness":60
            }
          ],
          "opticalFailureInfo":{
            "enable":true,
            "screenBrightness":30
          },
          "startTime":"2017-09-01 00:00:00",
          "endTime":"4016-06-06 23:59:59",
          "enable":true
        },
        {
          "type":1,
          "cron":[
            "0 15 10 ? * *"
          ],
          "args":[
            30
          ],
          "enable":true,
          "startTime":"2017-09-01 00:00:00",
          "endTime":"4016-06-06 23:59:59"
        }
      ],
      "segmentConfig":{
        "args":[
          12000,
          20,
          80,
          40,
          10
        ],
        "segments":[
          {
            "environmentBrightness":12000,
            "screenBrightness":80
          },
          {
            "environmentBrightness":10000,
            "screenBrightness":60
          }
        ],
        "opticalFailureInfo":{
          "enable":true,
          "screenBrightness":30
        }
      },
      "timeStamp":"2018-07-19 11:27:15"
    }
  }
]
```

```
    }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	object	Request information object
source	Yes	object	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile terminal, cloud service, etc.
platform	Yes	number	1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
enable	Yes	boolean	Enable switch
conditions	Yes	object	A collection of tasks performed according to conditions, support for multi-condition trigger
type	Yes	number	Adjustment type, 1: Scheduled adjustment, 2: Automatic adjustment
cron	Yes	string array	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
args	Yes	object	Brightness adjustment parameters. During scheduled adjustment, “args” is brightness percentage. During automatic adjustment, “args” is the automatic adjustment parameter.
startTime	Yes	string	Policy validity start time yyyy-MM-dd HH:mm:ss
endTime	Yes	string	Policy validity end time yyyy-MM-dd HH:mm:ss, permanent validity expires in 4016-06-06 23:59:59
segments	Yes	object	Subsection settings of brightness adjustment parameters
environmentBrightness	Yes	number	Ambient brightness value
screenBrightness	Yes	number	Screen brightness corresponding to ambient brightness
opticalFailureInfo	Yes	object	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained during automatic brightness adjustment. This field is only available for automatic brightness adjustment.
enable	Yes	boolean	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained during automatic brightness adjustment.
screenBrightness	Yes	number	Fixed brightness value
enable	Yes	boolean	Enable switch of the plan
segmentConfig	Yes	object	Subsection data configured according to ambient brightness. For the internal fields, see the parameter description of automatic brightness

Parameter	Required	Type	Description
			adjustment.
timeStamp	Yes	string	Timestamp of the current data, for future use

Return Sample

```
{
  "taskArray":[
    {
      "type":"POLICY_BRIGHTNESS",
      "orderId":12356,
      "action":4,
      "status":1,
      "errorCode":1,
      "data":null
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
status	int	Task execution result: 1-Successful, 2-Failed, 3-Unknown
errorCode	int	It is meaningless when successful. When it is failed, the cause of failure is returned.
data	null	null Specific returned data

Remark

-

4.17.6.2、Obtaining Brightness Adjustment Plan

Description:

- This is an interface for obtaining the brightness adjustment plan.

Request URL:

- ""

Request Method:

-

Request Parameter Sample

-

```
void nvgetPolicyBrightnessFor0x99Async(const char *data, ExportViplex
Callback  callback)
```

Return Sample

```
{
  "taskInfo":{
    "source":{
      "type":0,
      "platform":1
    },
    "enable":true,
    "conditions":[
      {
        "type":2,
        "cron":[
          "0 15 10 ? * * *"
        ],
        "startTime":"2017-09-01 00:00:00",
        "endTime":"4016-06-06 23:59:59",
        "args":[
          12000,
          20,
          80,
          40,
          10
        ],
        "segments":[
          {
            "environmentBrightness":12000,
            "screenBrightness":80
          },
          {
            "environmentBrightness":10000,
            "screenBrightness":60
          }
        ],
        "opticalFailureInfo":{
          "enable":true,
          "screenBrightness":30
        },
        "enable":true
      },
      {
        "type":1,
        "cron":[
          "0 15 10 ? * *"
        ],
        "startTime":"2017-09-01 00:00:00",
        "endTime":"4016-06-06 23:59:59",
        "args":[
          30
        ],
        "enable":true
      }
    ],
    "segmentConfig":{
```

```
      "args":[
        12000,
        20,
        80,
        40,
        10
      ],
      "segments":[
        {
          "environmentBrightness":12000,
          "screenBrightness":80
        },
        {
          "environmentBrightness":10000,
          "screenBrightness":60
        }
      ],
      "opticalFailureInfo":{
        "enable":true,
        "screenBrightness":30
      }
    },
    "timeStamp":"2018-07-19 11:27:15"
  }
}
```


Return Parameter Description

Parameter	Required	Type	Description
taskInfo	Yes	object	Return data
source	Yes	object	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile terminal, cloud service, etc.
platform	Yes	number	1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
enable	Yes	boolean	Enable switch
conditions	Yes	object	A collection of tasks performed according to conditions, support for multi-condition trigger
type	Yes	number	Adjustment type, 1: Scheduled adjustment, 2: Automatic adjustment
cron	Yes	stringarray	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
args	Yes	object	Brightness adjustment parameters. During scheduled adjustment, “args” is brightness percentage. During automatic adjustment, “args” is the automatic adjustment parameter.
startTime	Yes	string	Policy validity start time yyyy-MM-dd HH:mm:ss
endTime	Yes	string	Policy validity end time yyyy-MM-dd HH:mm:ss, permanent validity expires in 4016-06-06 23:59:59

Parameter	Required	Type	Description
segments	Yes	object	Subsection settings of brightness adjustment parameters
environmentBrightness	Yes	number	Brightness value
screenBrightness	Yes	number	Screen brightness corresponding to ambient brightness
opticalFailureInfo	Yes	object	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained during automatic brightness adjustment. This field is only available for automatic brightness adjustment.
enable	Yes	boolean	Whether to adjust the screen brightness to the fixed value if the ambient brightness cannot be obtained during automatic brightness adjustment.
screenBrightness	Yes	number	Fixed brightness value
enable	Yes	boolean	Enable switch of the plan
segmentConfig	Yes	object	ubsection data configured according to ambient brightness. For the internal fields, see the parameter description of automatic brightness adjustment.
timeStamp	Yes	string	Timestamp of the current data, for future use
errorCode	Yes	int	It is meaningless when successful. When it is failed, the cause of failure is returned.

Remark

-

4.18、Temperature and Color Temperature

4.18.1、Color Temperature

4.18.1.1、Obtaining Color Temperature

Description:

- This is an interface for obtaining the color temperature.

Request URL:

- `void nvGetColorTemperatureAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "colorTemperature":9300
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
colorTemperature	int	Color Temperature

Remark

-

4.18.1.2、Setting Color Temperature

Description:

- The current terminal cannot set an accurate color temperature. Three types of color temperatures are provided: 9300, 6500, 4700. Readback is also the same.

Request URL:

- `void nvSetColorTemperatureAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "colorTemperatureInfo":{
    "colorTemperature":6500
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
colorTemperatureInfo	Yes	Object	Color temperature details
colorTemperature	Yes	int	Color temperature value

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code

Remark

-

4.18.2、Temperature

4.18.2.1、Obtaining Cabinet Temperature

Description:

- This is an interface for obtaining the cabinet temperature.

Request URL:

- `void nvGetScreenUnitTempAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "temps":[
    {
      "bx":0,
      "by":0,
      "value":20
    },
    {
      "bx":128,
      "by":0,
      "value":25
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code
temps	object	Array object
bx	int	X coordinate
by	int	Y coordinate
value	float	Temperature value

Remark

-

4.19、Screen on

4.19.1、off Management

4.19.1.1、Setting Mode

Description:

- This is an interface for setting the mode.

Request URL:

- void nvSetScreenPowerModeAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "mode":"MANUALLY"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details
mode	Yes	string	MANUALLY: Set manually, AUTO: Set automatically

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code

Remark

4.20、Screen on or off Management

4.20.1、Mode Switching

4.20.1.1、Obtaining Mode

Description:

- This is an interface for obtaining the mode.

Request URL:

- `void nvGetScreenPowerModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

Request Parameter Sample

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "mode":"MANUALLY",
  "source":{
    "platform":1,
    "type":1
  },
  "type":"SCREENPOWER"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
type	String	Type: Screen switch is SCREENPOWER; Brightness module is SCREEN_BRIGHTNESS
source	object	For details, see the definition in the appendix.
type	number	1: NovaStar platform, 0: Third-party platform
platform	number	1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
mode	String	MANUALLY: Set manually, AUTO: Set automatically

Remark

-

4.20.2、Manual Screen On or Off

4.20.2.1、Setting Manual Screen on/off Status

Description:

- This is an interface used for setting manual screen on/off status.

Request URL:

- `void nvSetScreenPowerStateAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "state":"OPEN"
  }
}
```

Parameters:

Parameter	Required	Type	Description

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details
state	Yes	string	Screen on/off status, "OPEN": On, "CLOSE": Off

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code

Remark

-

4.20.2.2、Obtaining Manual Screen on/off Status

Description:

- This is an interface used for obtaining manual screen on/off status.

Request URL:

- `void nvGetScreenPowerStateAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "state":"UNKNOW"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
state	string	Screen status, "OPEN": On, "CLOSE": Off

Remark

-

4.20.3、Scheduled Screen On or Off

4.20.3.1、Obtaining Scheduled Screen On/Off

Description:

- This is an interface used for scheduled screen on/off

Request URL:

- `void nvGetScreenPowerPolicyAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "type":"SCREENPOWER",
  "source":{
    "type":0,
    "platform":1
  },
  "enable":true,
  "conditions":[
    {
      "cron":[
        "0 15 10 ? * *",
        "0 0 12 * * ?"
      ],
      "action":"OPEN",
      "enable":true
    },
    {
      "cron":[
        "0 15 10 ? * *",
        "0 0 12 * * ?"
      ],
      "action":"CLOSE",
      "enable":true
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
type	string	Fixed to "SCREENPOWER"
source	object	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile terminal, cloud service, etc.
type	number	1: NovaStar platform, 0: Third-party platform
platform	number	1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
enable	boolean	Enable switch performed according to conditions
conditions	object	A collection of tasks performed according to conditions, support for multitask
cron	(string)array	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
action	String	"OPEN": On, "CLOSE": Off
enable	boolean	Enable switch performed according to conditions

Remark

-

4.20.3.2、Setting Screen on/off Status

Description:

- This is an interface used for obtaining the screen on/off status.

Request URL:

- void nvSetScreenPowerPolicyAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093",
  "taskInfo":{
    "type":"SCREENPOWER",
    "source":{
      "type":0,
      "platform":1
    },
    "enable":true,
    "conditions":[
      {
        "cron":[
          "0 15 10 ? * *",
          "0 0 12 * * ?"
        ],
        "action":"OPEN",
        "enable":true
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details

Parameter	Required	Type	Description
type	Yes	string	Fixed to "SCREENPOWER"
source	No	object	Where the task is published. Currently, the solutions of terminals can be published from different platforms, such as PC, mobile terminal, cloud service, etc.
type	No	number	1: NovaStar platform, 0: Third-party platform
platform	No	number	1: From a mobile device (such as mobile phone), 2: From a traditional PC, 3: From a tablet, 4: From web
enable	Yes	boolean	Enable switch performed according to conditions
conditions	Yes	object	A collection of tasks performed according to conditions, support for multitask
cron	Yes	(string)array	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
action	Yes	String	"OPEN": On, "CLOSE": Off
enable	Yes	boolean	Enable switch performed according to conditions

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code

Remark

-

4.20.4、Screen On or Off (New Protocol 0x99)

4.20.4.1、Turning on/off Screens Immediately

Description:

- This module is the interaction protocol between terminals and VNNOX for turning on/off screens, including turning on/off screens immediately and as scheduled. VNNOX does not support the concept of mode. Both immediate and scheduled screen on/off can be executed.

Request URL:

- `void nvsetScreenPowerManual0x99Async(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"SCREEN_POWER_MANUAL",
        "orderId":12356,
        "action":4,
        "data":{
          "state":"OPEN"
        }
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "SCREEN_POWER_MANUAL"
data	Yes	object	Turn on/off the screen
state	Yes	String	Screen on/off status, "OPEN": On, "CLOSE": Off

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "taskArray":[
    {
      "type":"SCREEN_POWER_MANUAL",
      "orderId":12356,
```

```
      "action":4,
      "status":1,
      "errorCode":0
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36

Remark

-

4.20.4.2、Scheduled Screen on/off Status

Description:

- This module is the interaction protocol between terminals and VNNOX for turning on/off screens, including turning on/off screens immediately and as scheduled. VNNOX does not support the concept of mode. Both immediate and scheduled screen on/off can be executed.

Request URL:

- `void nvsetScreenPowerPolicy0x99Async(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"SCREEN_POWER_POLICY",
        "orderId":12356,
```

```
        "action":4,
        "data":{
          "enable":true,
          "conditions":[
            {
              "cron":[
                "0 15 10 ? * *",
                "0 0 12 * * ?"
              ],
              "action":"OPEN",
              "enable":true
            },
            {
              "cron":[
                "0 0 18 ? * *",
                "0 0 12 * * ?"
              ],
              "action":"CLOSE",
              "enable":true
            }
          ]
        }
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "SCREEN_POWER_POLICY"
data	Yes	object	Turn on/off the screen
enable	Yes	boolean	Enable switch. True means to take effects while false means not to take effects. Scheduled tasks will not be executed.
conditions	Yes	object	A collection of tasks performed according to conditions, support for multitask
cron	Yes	string	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
action	Yes	enum	"OPEN": On, "CLOSE": Off
enable	Yes	boolean	Enable switch performed according to conditions

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "taskArray":[
    {
      "type":"SCREEN_POWER_POLICY",
      "orderId":12356,
```

```
      "action":4,
      "status":1,
      "errorCode":0
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36

Remark

-

4.20.4.3、Obtaining Screen on/off Status

Description:

- This module is the interaction protocol between terminals and VNNOX for turning on/off screens, including turning on/off screens immediately and as scheduled. VNNOX does not support the concept of mode. Both immediate and scheduled screen on/off can be executed.

Request URL:

- `void nvGetScreenPowerManual0x99Async(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"SCREEN_POWER_MANUAL",
        "orderId":12356,
```

```
        "action":5,
        "data":null
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "SCREEN_POWER_MANUAL"
data	Yes	object	null

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
  "taskArray":[
    {
      "type":"SCREEN_POWER_MANUAL",
      "orderId":12356,
      "action":5,
      "status":1,
      "errorCode":0,
      "data":{
        "state":"OPEN"
      }
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36
data	object	turn on/off the screen
state	String	Screen on/off status, "OPEN": On, "CLOSE": Off

Remark

-

4.20.4.4、Obtaining Scheduled Screen on/off Commands

Description:

- This module is the interaction protocol between terminals and VNNOX for turning on/off screens, including turning on/off screens immediately and as scheduled. VNNOX does not support the concept of mode. Both immediate and scheduled screen on/off can be executed.

Request URL:

- `void nvGetScreenPowerPolicyFor0x99Async(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "source":{
      "type":1,
      "platform":1
    },
    "taskArray":[
      {
        "type":"SCREEN_POWER_POLICY",
        "orderId":12356,
        "action":5,
        "data":null
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	string	Service type, fixed to: "SCREEN_POWER_POLICY"
data	Yes	object	null

Return Sample

```
{
  "source":{
    "type":1,
    "platform":1
  },
```

```
  "taskArray":[
    {
      "type":"SCREEN_POWER_POLICY",
      "orderId":12356,
      "action":5,
      "status":1,
      "errorCode":0,
      "data":{
        "source":{
          "type":1,
          "platform":1
        },
        "enable":true,
        "conditions":[
          {
            "cron":[
              "0 15 10 ? * *",
              "0 0 12 * * ?"
            ],
            "action":"OPEN",
            "enable":true
          },
          {
            "cron":[
              "0 0 18 ? * *",
              "0 0 12 * * ?"
            ],
            "action":"CLOSE",
            "enable":true
          }
        ]
      }
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
errorCode	short	Error code. See details at: http://172.16.80.64/index.php?s=/3&page_id=36
data	object	turn on/off the screen
enable	boolean	Enable switch. True means to take effects while false means not to take effects. Scheduled tasks will not be executed.
conditions	object	A collection of tasks performed according to conditions, support for multitask
cron	string	The number of repeats. Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
action	enum	"OPEN": On, "CLOSE": Off
enable	boolean	Enable switch performed according to conditions

Remark

4.21、Playlist Management

4.21.1、Deleting Playlists

Description:

- This is an interface for deleting playlists.

Request URL:

- `void nvDeletePlayListAsync(const char *data, ExportViplexCallback callback);`

Request Method:

Request Parameter Sample

```
{
  "sn":"BZSA17332J0A20002272",
  "taskInfo":{
    "solutions":[
      {
        "name":"program1",
        "identifier":"ccdc78e192d8d97bfd01c82881038a39"
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
identifier	Yes	string	Unique ID of a playback plan
name	Yes	string	Playlist name

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.21.2、Playing Playlists

Description:

- This is an interface for playing the playlists in solutions.

Request URL:

- void nvStartPlayAsync(const char *data, ExportViplexCallback callback);

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "identifier":"62932662fb727f42d695201aa91e32c8"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
identifier	Yes	string	Unique ID of a playback plan

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.21.3、Pausing Playlist Playback

Description:

- This is an interface for pausing playlist playback.

Request URL:

- `void nvPausePlayAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "identifier":"62932662fb727f42d695201aa91e32c8"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
identifier	Yes	string	Unique ID of a playback plan

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.21.4、Resuming Playlist Playback

Description:

- This is an interface for resuming playlist playback.

Request URL:

- `void nvResumePlayAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "identifier":"62932662fb727f42d695201aa91e32c8"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
identifier	Yes	string	Unique ID of a playback plan

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.21.5、Stopping Playlist Playback

Description:

- This is an interface used for stopping the playlist playback.

Request URL:

- void nvStopPlayAsync(const char *data, ExportViplexCallback callback);

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "identifier":"62932662fb727f42d695201aa91e32c8"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
identifier	Yes	string	Unique ID of a playback plan

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.21.6、Reading back Playlists

Description:

- This is an interface for obtaining the playlists in solutions.

Request URL:

- `void nvGetProgramInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "programInfos":[
    {
      "identifier":"62932662fb727f42d695201aa91e32c8",
      "name":"PlayLists1",
      "thumbnailUrl":"program_868679025220684_1/program_thumb.png",
      "statusCode":1,
      "source":0
    },
    {
      "identifier":"62932662fb727f42d695201aa91e32c8",
      "name":"PlayLists2",
      "thumbnailUrl":"program_868679025220684_2/program_thumb.png",
      "statusCode":1,
      "source":1
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
name	string	Playlist name
thumbnailUrl	string	Absolute path of playlist thumbnails
statusCode	int	Playlist playback status (0 Stopped; 1 Playing; 2 Paused)
identifier	string	Unique ID of a playback plan. Here it refers to the content. Same content has the same ID. Currently saves the md5 code of planList.
source	int	Playlist source (0LAN, 1VNNOX;)

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.22、Advanced Features

4.22.1、Turning on/off Synchronous Playback

Description:

- This is an interface used for turning on/off the synchronous playback.

Request URL:

- `void nvSetSyncPlayAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "enable":true
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
enable	Yes	bool	Turn on or off the synchronous playback.

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.22.2、Obtaining Synchronous Playback Configuration

Description:

- This is an interface used for obtaining the synchronous playback configuration.

Request URL:

- `void nvGetSyncPlayAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "data":{
    "enable":false
  }
}
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully, 65535 Request timed out
enable	bool	Whether to turn on synchronous playback for the terminal

Remark

-

4.22.3、Restoring Factory Settings

Description:

- This is an interface used for restoring a terminal to its factory settings.

Request URL:

- `void nvSetReBootWipeUserDataAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "setInfo":{
    "reason":"terminal connect failed"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
reason	Yes	string	Reason to restoring to factory settings

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.22.4、Clearing All Media

Description:

- This is an interface used for clearing all the media.

Request URL:

- void nvClearAllMediasAsync(const char *data,
  ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.22.5、Obtaining OTG USB Status

Description:

- This is an interface used for obtaining the OTG USB status.

Request URL:

- `void nvGetOTGUSBModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "value":1.0
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
value	double	USB availability, 1 USB not available, 2 USB available, adb adjustable

Remark

-

4.22.6、Setting OTG USB Status

Description:

- This is an interface used for setting the OTG USB status.

Request URL:

- `void nvSetOTGUSBModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "modeInfo":{
    "value":2.0
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
value	Yes	double	USB availability 1 USB not available, 2 USB available, adb adjustable

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.22.7、Setting Current Resolution

Description:

- This is an interface used for setting the current resolution.

Request URL:

- void nvSetCurrentResolutioAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "resolutionInfo":{
    "displayMode":1,
    "resolutionValue":"1280X720p-60"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
displayMode	Yes	int	Display mode, defaulting to DISPLAY_INTERFACE_TV(1)
resolutionValue	Yes	string	Resolution

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.22.8、Obtaining Current Resolution

Description:

- This is an interface used for obtaining the current resolution.

Request URL:

- void nvGetCurrentResolutionAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "requestInfo":{
    "displayMode":1
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
displayMode	Yes	int	Display mode

Return Sample

```
{
  "value":"960x2048p-60"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
value	string	Resolution

Remark

-

4.22.9、Obtaining Resolutions Supported by a Terminal

Description:

- This is an interface used for obtaining the resolutions supported by a terminal.

Request URL:

- `void nvGetSupportedResolutionAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{"sn":"BZSA17332J0A20002272", "requestInfo":{"displayMode":1}}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
displayMode	Yes	int	Display mode

Return Sample

```
{
  "result":[
    {
      "value":"2048x256p-60"
    },
    {
      "value":"4096x512p-60"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
value	string	Resolution

Remark

-

4.22.10、Obtaining Terminal Output Status

Description:

- This is an interface used for obtaining the output status of a terminal.

Request URL:

- `void nvGetHdmiOutputStatusAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "value":1
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully, 65535 Request timed out
value	int	1 HDMI, 0 RGB

Remark

-

4.22.11、Setting Terminal Output Status

Description:

- This is an interface used for setting the output status of a terminal.

Request URL:

- `void setHdmiOutputStatusAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

equest Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "info":{
    "value":1
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
value	Yes	int	1 HDMI, 0 RGB

Return Sample

```
"sccuss"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully, 65535 Request timed out

Remark

-

4.22.12、Setting Custom Resolution

Description:

- This is an interface used for setting current resolutions.

Request URL:

- `void nvSetCustomResolutionAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "info":{
    "displayMode":1,
    "width":1920,
    "height":1080
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
displayMode	Yes	int	Display mode
width	Yes	int	Screen width
height	Yes	int	Screen height

Return Sample

```
"sccuss"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully, 65535 Request timed out

Remark

-

4.22.1、Restart

4.22.1.1、Obtaining Restart Tasks

Description:

- This is an interface used for obtaining the restart tasks you set.

Request URL:

- `void nvGetReBootTaskAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "conditions":[
    {
      "cron":[
        "0 15 10 ? * *",
        "0 0 12 * * ?"
      ],
      "enable":true
    }
  ],
  "executionType":"BY_CONDITIONS",
  "reason":"Just to test",
  "source":{
    "platform":1,
    "type":0
  },
  "type":"REBOOT"
}
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
cron	stringarray	Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
enable	bool	Whether to enable this condition
executionType	string	IMMEDIATELY Restart immediately; BY_CONDITIONS Restart according to the conditions
reason	string	Reason to restart
platform	int	1From a mobile device,2From a traditional PC,3From a tablet,4`From web
type	int	1NovaStar platform,0Third-party platform
type	string	Fixed to "REBOOT"
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.22.1.2、Setting Restart Tasks

Description:

- This is an interface for setting restarts.(To set to restarting a player immediately, access system settings first.)

Request URL:

- `void void nvSetReBootTaskAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "type":"REBOOT",
    "source":{
      "type":0,
      "platform":1
    },
    "executionType":"IMMEDIATELY",
    "reason":"Just to test",
```

```
    "conditions":[
      {
        "cron":[
          "0 15 10 ? * *",
          "0 0 12 * * ?"
        ],
        "enable":true
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
cron	Yes	stringarray	Each condition is represented as a cron expression. When it is a array, the relationship between the cron expressions is or.
enable	Yes	bool	Whether to enable this condition
executionType	Yes	string	IMMEDIATELY Restart immediately; BY_CONDITIONS Restart according to the conditions
reason	Yes	string	Reason to restart
platform	Yes	int	1From a mobile device,2From a traditional PC,3From a tablet,4From web
type	Yes	int	1NovaStar platform,0Third-party platform
type	Yes	string	Fixed to "REBOOT"

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.23、Collectors and Receivers

4.23.1、Obtaining Collector and Receiver Configuration

Description:

- This is an interface for obtaining the collector and receiver configuration.

Request URL:

- `void nvGetPickerReceiverAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZWA17422J1X20000093"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "pickers":[
    {
      "period":1000,
      "pickType":"PERIOD",
      "receivers":[
        {
          "outputDestination":"TCP_NET_WORK",
          "persistent":false
        }
      ],
      "type":"CPU_USAGE"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully
pickers	objectArray	Collector list
period	long	Collecting interval (ms). This is available for periodic collection.

Parameter	Type	Description
pickType	string	PERIOD: Periodic collection, AUTO: Automatic
receivers	object	Associated receivers
outputDestination	string	FILE: Collected file, TCP_NET_WORK: Automatic, CONSOLE: Console, such as the console of a terminal
persistent	bool	true: Permanent, valid after power off and on, false: Only added to the memory
type	string	CPU_USAGE: CPU usage, CPU_TERMPATURE: CPU temperature, MEMORY_USAGE: Memory usage, WIFI_STATE_CHANGED: Wi-Fi status change

Remark

-

4.23.2、Deleting Collectors and Receivers

Description:

- This is an interface used for deleting collectors and receivers.

Request URL:

- `void nvDeleteCollectorAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "info":{
    "type":[
      "CPU_USAGE"
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Parameter	Required	Type	Description
info	Yes	object	Deleted collector type
type	Yes	list	Deleted collector type list

Return Sample

```
"sccuss"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.23.3、Adding Collectors and Receivers

Description:

- This is an interface used for adding collectors and receivers.

Request URL:

- void nvAddCollectorAsync(const char *data,
  ExportViplexCallback callback);

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "info":{
    "pickers":[
      {
        "type":"CPU_USAGE",
         "pickType":"PERIOD",
        "period":1000,
        "receivers":[
          {
            "outputDestination":"TCP_NET_WORK",
            "persistent":false
          }
```

```
          ]
        }
      ]
    }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
info	Yes	object	Collector data entity
pickers	Yes	object	Collector data list
type	Yes	string	Collector type
pickType	Yes	string	PERIOD or AUTO
period	Yes	long	Collection interval
receivers	Yes	object	Associated receivers
outputDestination	Yes	enum	Collection output paths include file, network and console.
persistent	Yes	bool	Permanent or not

Return Sample

```
"sccuss"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.24、Upgrade Management

4.24.1、Searching for Available Upgrade Packages

Description:

- This is an interface used for searching for the local upgrade packages in a specified file system.

Request URL:

- `void nvQueryUpdateFileByTypeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "paths":[
    "C:/Users/Public/viplexcore/fileundertest/test2"
  ],
  "types":[
    "*.nuzip"
  ],
  "pageIndex" : 0,
  "pageSize" : 100
}
```

Parameters:

Parameter	Required	Type	Description
paths	Yes	string	Specify the path for file search
types	Yes	string	suffix of the specified file
pageIndex	Yes	int	Current page number
pageSize	Yes	int	Maximum page number

Return Sample

```
{
  "files":[
    "C:/Users/Public/viplexcore/fileundertest/test2/ViPlex Express V
1.10.0.0302 Setup.nuzip",
    "C:/Users/Public/viplexcore/fileundertest/test2/ViPlex Express V
1.10.0.0601.nuzip"
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error
files	stringArray	Absolute path of the files found as a result of the search

Remark

-

4.24.2、Searching for Online Upgrade Packages

Description:

- This is an interface used for obtaining available online upgrade packages.

Request URL:

- `void nvGetOnlineUpgradeFileAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "productName":"T2"
}
```

Parameters:

Parameter	Required	Type	Description
productName	Yes	Product	type

Return Sample

```
{
  "onlineUpdatePackageInfos":[
    {
      "url":"http://static.vnnox.com/cn/vnnox_system/product_upgrade/accessory/UPDATE_OS_T1T2_TAURUSV020101CN0601.nuzip",
      "type":"NEWEST",
      "version":"TAURUSV020101CN0601",
      "size":300213139,
      "md5":"7673ec78e817e7b19963738d9b6f6d2b"
    },
    {
      "url":"http://static.vnnox.com/cn/vnnox_system/product_upgrade/accessory/UPDATE_OS_T3T4_TAURUSV020101CN0601.nuzip",
      "type":"STABLE",
      "version":"TAURUSV020501CN0501",
      "size":3012146482,
      "md5":"7673ec78e817e7b19963738d9b6f6d2b"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0
onlineUpdatePackageInfos	Object	JSON object
url	string	online upgrade package download link
type	string	Upgrade version type: stable version "STABLE", latest version "NEWEST"
version	string	Upgrade package version
size	long	Upgrade package (byte)
md5	string	Upgrade package md5 code

Remark

- code int Error codes: 0 Obtained successfully; 65370 Failed to obtain online upgrade package; 65376 Network connection error; result string Returned information. For the detailed return sample and field description, see **Return Sample** and **Return Parameter Description**

4.24.3、Stopping Download

Description:

- This is an interface used for stopping downloading online upgrade packages.

Request URL:

- void nvStopDownloadUpgradeFileAsync(const string _this_and_change_data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
""
```

Parameter :

Parameter	Required	Type	Description
data	Yes	string	Requested JSON parameters. For the detailed parameter sample and field description, see ‘Request Parameter Sample’ and ‘Parameters’

Parameter	Required	Type	Description
callback	Yes	ExportViplexCallback	callback function to receive returned values

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0

Remark

- code int Error codes: 0 Obtained successfully result string Returned information. For the detailed return sample and field description, see **Return Sample** and **Return Parameter Description**

4.24.4、Obtaining Upgrade Description File Content

Description:

- Obtain the upgrade file description in the package.

Request URL:

- void nvReadFileContentFromZipFileAsync(const string _this_and_change_data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "zipFilePaths":[
    "/sdcard/Android/data/UPDATE_OS_TAURUSV010501CN0301.nuzip"
  ],
   "dFileNames":[
    "package_description.json"
  ]
}
```

Parameters:

Parameter	Required	Type	Description
zipFilePaths	Yes	Package	Package path
dFileNames	Yes	json	file name, corresponding to the package path

Return Sample


```
{
  "zipFileContents":[
    {
      "commonSupportedProducts": [
        "T1",
         "T2",
         "T3",
         "T4",
         "T6",
         "T8",
         "T1-4G",
         "T2-4G",
         "TC300"
      ],
       "description": "fgfgg",
       "totalSize": 34537490,
       "excutionType": "UPDATE",
       "version": "2.0.0.0602",
       "createdDate": "2020-03-13T11:32:51Z 08:00",
       "packetType": "BUNDLE",
       "packages": [
        {
          "version": "2.0.0.0602",
           "supportedPlatforms": [
            "rk3368",
             "rk312x"
          ],
           "name": "Daemon-Terminal-release_2.0.0.0601-signed-aligne
d.apk",
           "supportedProducts": [
            "T1",
             "T2",
             "T3",
             "T4",
             "T6",
             "T8",
             "T1-4G",
             "T2-4G",
             "TC300"
          ],
           "identifier": "RGFlbW9uLVRlcm1pbmFsLXJlbGVhc2VfMi4wLjAuMDY
wMS1zaWduZWQtYWxpZ25lZC5hcGs=",
           "type": "APP",
           "startupAfterInstalled": "true",
           "size": 6674478
        },
         {
          "version": "2.0.0.0602",
           "supportedPlatforms": [
            "rk3368",
             "rk312x"
          ],
```

```
            "name": "Router-Terminal-release_2.0.0.0601-signed-aligne
d.apk",
            "supportedProducts": [
             "T1",
              "T2",
              "T3",
              "T4",
              "T6",
              "T8",
              "T1-4G",
              "T2-4G",
              "TC300"
           ],
            "identifier": "Um91dGVyLVRlcm1pbmFsLXJlbGVhc2VfMi4wLjAuMDY
wMS1zaWduZWQtYWxpZ25lZC5hcGs=",
            "type": "APP",
            "startupAfterInstalled": "true",
            "size": 6442643
         },
          {
           "version": "2.0.0.0602",
            "supportedPlatforms": [
             "rk3368",
              "rk312x"
           ],
            "name": "ScreenService-Terminal-release_2.0.0.0601-signed-
aligned.apk",
            "supportedProducts": [
             "T1",
              "T2",
              "T3",
              "T4",
              "T6",
              "T8",
              "T1-4G",
              "T2-4G",
              "TC300"
           ],
            "identifier": "U2NyZWVuU2VydmljZS1UZXJtaW5hbC1yZWxlYXNlXzI
uMC4wLjA2MDEtc2lnbmVkLWFsaWduZWQuYXBr",
            "type": "APP",
            "startupAfterInstalled": "true",
            "size": 18543383
         },
          {
           "version": "2.0.0.11",
            "supportedPlatforms": [
             "rk312x"
           ],
            "name": "FPGA_T1-4G_T2-4G_2.0.0.11.bit.bin",
            "supportedProducts": [
             "T1-4G",
              "T2-4G"
           ],
            "identifier": "RlBHQV9UMS00R19UMi00R18yLjAuMC4xMS5iaXQuYml
u",
            "type": "FPGA",
            "startupAfterInstalled": "true",
            "size": 465883
         },
          {
```

```
          "version": "2.0.0.13",
           "supportedPlatforms": [
            "rk3368"
          ],
           "name": "FPGA_T1_T2_2.0.0.13.bit.bin",
           "supportedProducts": [
            "T1",
             "T2"
          ],
           "identifier": "RlBHQV9UMV9UMl8yLjAuMC4xMy5iaXQuYmlu",
           "type": "FPGA",
           "startupAfterInstalled": "true",
           "size": 803425
        },
         {
          "version": "2.0.0.11",
           "supportedPlatforms": [
            "rk3368"
          ],
           "name": "FPGA_T3_JT100_2.0.0.11.bit.bin",
           "supportedProducts": [
            "T3",
             "JT100"
          ],
           "identifier": "RlBHQV9UM19KVDEwMF8yLjAuMC4xMS5iaXQuYmlu",
           "type": "FPGA",
           "startupAfterInstalled": "true",
           "size": 803701
        },
         {
          "version": "2.0.0.18",
           "supportedPlatforms": [
            "rk3368"
          ],
           "name": "FPGA_T4_T6_T8_2.0.0.18.bit.bin",
           "supportedProducts": [
            "T4",
             "T6",
             "T8"
          ],
           "identifier": "RlBHQV9UNF9UNl9UOF8yLjAuMC4xOC5iaXQuYmlu",
           "type": "FPGA",
           "startupAfterInstalled": "true",
           "size": 803977
        }
      ]
    }
  ],
  "zipFilePaths":[
    "data/data/com.example.myapp/app_flutter/log/UPDATE_APP_2.0.0.060
2.nuzip"
  ]
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error

Parameter	Type	Description
zipFileContents	string	json content
zipFilePaths	string	File path

Remark

- code int Error code: 0 Obtained successfully; 65314, Wrong file parameter Description; 65315, Failed to unzip package; 65316, json file is empty; result string Returned information. For the detailed return sample and field description, see **Return Sample** and **Return Parameter Description**

4.24.5、Stopping Upgrade

Description:

- This is an interface used for interrupt upgrade package transmission.

Request URL:

- void nvStopCurrentUpdateTaskAsync(const string _this_and_change_data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07313J0350001034"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0, Obtained successfully;

Remark

- code int Error code; result string Returned information. For the detailed return sample and field description, see **Return Sample** and **Return Parameter Description**

4.24.6、Judging Whether a Package Is Available for Upgrade

Description:

- This is an interface used for judge whether the package is available for upgrade.

Request URL:

- void nvUpdateVerifyAsync(const string _this_and_change_data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-


```
{"sn":"BZSA07313J0350001034","verifyInfo":{"version": "TAURUSV010300CN1701","totalSize": 279077363,"description": "TAURUSV010300CN1701","packetType": "SINGLE","excutionType": "UPDATE","createdDate": "2018-08-10T21:04:23Z 08:00","packages": [{"type": "OS","version": "TAURUSV010300CN1701","name": "TAURUSV010300CN1701.zip"identifier": "VEFVUlVTVjAxMDMwMENOMTcwMS56aXA=","size": 279077363,"startupAfterInstalled": true,"isUpgradeAppAfterOS":true,"supportedProducts": ["T1","T2"],"supportedPlatforms":["rk3368","rk312x"]}]}}
```


Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
verifyInfo	Yes	Object	JSON object

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0, Obtained successfully;

Remark

- code int Error codes: 0 Obtained successfully; 11 Permission denied; 20 No enough available space; 24 Verification failed; 25 Upgrade package invalid or wrong; 26 Signature does not match; 51 During upgrade, the number of FPGA verified through the product and platform is not one; 52 The terminal product does not support upgrade verification; 53 The version of the software to be upgraded is earlier than the version of the software installed on the current terminal; 54 Terminal platform does not support upgrade verification; 65364 Downgrade to a lower version, no verification, returns version downgrade error; 65365 Current terminal version does not support upgrade verification; 65350 Terminal disconnected result string Returned information. For the detailed return sample and field description, see **Return Sample** and **Return Parameter Description**

4.25、Network Configuration

4.25.1、Wi-Fi

4.25.1.1、Obtaining Wi-Fi List

Description:

- This is an interface used for obtaining the Wi-Fi list.

Request URL:

- void nvGetWifiListAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique

Return Sample

```
{
  "result":[
    {
      "ssid":"AirStation",
      "bssid":"00:24:a5:bc:f4:56",
      "level":4,
      "security":"PSK:WPA2",
      "state":5
    },
    {
      "ssid":"ESAY_PLUTO",
      "bssid":"c8:3a:35:47:ee:08",
      "level":3,
      "security":"WPA",
      "state":0
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
result	jsonarray	Wi-Fi list, json array
ssid	String	Wi-Fi SSID
bssid	String	Wi-Fi BSSID
level	int	Wi-Fi signal strength
security	String	Password encryption method, PSK: WPA, PSK: WPA2, PSK: WPA_WPA2, EAP, WEP, NONE
state	int	Wi-Fi status

Remark

-

4.25.1.2、Connecting to Wi-Fi

Description:

- This is an interface used for connecting to Wi-Fi.

Request URL:

- `void nvConnectWifiNetworkAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "ssid":"AP10006847",
    "password":"12345678"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details
ssid	Yes	String	Wi-Fi SSID
password	Yes	String	Password

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error
data	Object	Description

Remark

-

4.25.1.3、Disconnecting Wi-Fi Connection

Description:

- This is an interface used for disconnecting Wi-Fi connection.

Request URL:

- `void nvDisconnectWifiNetworkAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "ssid":"AP10006847"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details
ssid	Yes	String	Wi-Fi SSID

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error
data	Object	Description

Remark

-

4.25.1.4、Obtaining Wi-Fi Status

Description:

- This is an interface used for obtaining the Wi-Fi status.

Request URL:

- `void nvGetWifiEnabledAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "state":1
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
state	int	1 On, 0 Off

Remark

-

4.25.1.5、Turning on/off Wi-Fi Status

Description:

- This is an interface used for turning on/off Wi-Fi.

Request URL:

- void nvSetWifiEnabledAsync(const char *data,
  ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "state":1
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details
state	Yes	int	1 On, 0 Off

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error
data	Object	Description

Remark

-

4.25.1.6、Deleting Remembered Passwords

Description:

- This is an interface used for deleting remembered passwords.

Request URL:

- `void nvSendForgetWifiCommandAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "taskInfo":{
    "ssid":"AP10006847"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details
ssid	Yes	String	Wi-Fi SSID

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully 65535 Request timed out 19 Not exist
data	Object	Description of the error code

Remark

- When the deleted Wi-Fi password is empty, the returned ErrorCode is: ERR_NOT_EXISTED

4.25.2、Wi-Fi Switching

4.25.2.1、Obtaining Current Wi-Fi AP/Station Status

Description:

- This is an interface used for obtaining Wi-Fi AP/Station status.

Request URL:

- `void nvGetWifiCurrentStatusAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "taskArray":[
    {
      "type":"WIFI_AP_STATION_SWITCH",
      "action":5,
      "status":1,
      "data":{
        "state":0
      }
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
taskArray	objectArray	Task type, fixed to WIFI_AP_STATION_SWITCH
action	int	Action of this command, ACTION_GET
status	int	Task execution result: 1-Successful, 2-Failed, 3-Unknown
data	Object	Specific command protocol
state	int	Current Wi-Fi AP/Station status, 0 Wi-Fi AP, 1 Wi-Fi Station

Remark

-

4.25.3、4G Network

4.25.3.1、Obtaining Mobile Network Configuration

Description:

- This is an interface used for obtaining the mobile network configuration information.

Request URL:

- `void nvGetMobileNetworkAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "basicConfigs":{
    "mobileData":true,
    "dataRoaming":true,
    "enable4G":true,
    "level":1
  },
  "advanced":{
    "networkType":"AUTO",
    "APN":{
      "providerName":"China Mobile"
    }
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
basicConfigs	object	Basic configuration
mobileData	boolean	Mobile data on/off
dataRoaming	boolean	Roaming on/off
enable4G	boolean	Enable 4G network or not
level	int	4G network signal strength 0~5
advanced	object	Advanced features
networkType	enum	Network type. For details, see the description (Only AUTO is currently supported)
APN	object	APN settings, reserved
providerName	string	SIM card carrier

Remark

- AUTO: Select automatically inside the module

4.25.3.2、Setting Mobile Network Configuration

Description:

- This is an interface used for setting mobile network configuration.

Request URL:

- `void nvSetMobileNetworkAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "mobileData":{
    "basicConfigs":{
      "mobileData":true,
      "dataRoaming":true,
      "enable4G":true
    },
    "advanced":{
      "networkType":"AUTO",
      "APN":{
        "providerName":"China Mobile"
      }
    }
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
mobileData	Yes	Object	Request object
basicConfigs	Yes	object	Basic configuration
mobileData	Yes	boolean	Turn on/off mobile data
dataRoaming	Yes	boolean	Turn on/off roaming
enable4G	Yes	boolean	Enable/Disable 4G network
advanced	Yes	object	Advanced features
networkType	Yes	enum	Network type. Only AUTO is currently supported.
APN	Yes	object	APN settings, reserved
providerName	string	SIM	card carrier

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value

Remark

- AUTO: Select automatically inside the module

4.25.3.3、Obtaining Whether There Is a Mobile Network Module

Description:

- This is an interface used for obtaining whether there is a mobile network module.

Request URL:

- `void nvIsMobileModuleExistedAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "existed":true
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
existed	boolean	true Exists, false Not exist

Remark

-

4.25.4、Wired Network

4.25.4.1、Obtaining Wired Network Information

Description:

- This is an interface used for obtaining wired network information.

Request URL:

- `void nvGetEthernetInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "ethernets":[
    {
      "scopeId":0,
      "name":"eth0",
      "dhcp":false,
      "ip":"192.168.1.127",
      "mask":"255.255.255.0",
      "gateWay":"17.16.20.1",
      "dns":[
        "211.20.1.67"
      ]
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error
data	Object	Description
ethernets	object	Wired
scopeId	int	scopeId, If you do not know this or use the default value, enter -1.
name	string	Name, such as eth0, etc. It can be specified.
dhcp	boolean	true means to use the dynamic address for allocation. The following field is invalid.
ip	string	IP address
mask	string	Subnet mask
gateWay	string	Gateway
dns	string	object DNS

Remark

-

4.25.4.2、Setting Wired Network Information

Description:

- Set and carefully check the IP address and other information. Otherwise the terminal will not be found.

Request URL:

- `void nvSetEthernetInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "taskInfo":{
    "ethernets":[
      {
        "scopeId":-1,
        "name":"eth0",
        "dhcp":true,
```

```
        "ip":"172.16.9.192",
        "mask":"255.255.255.0",
        "gateWay":"172.16.9.254",
        "dns":[
          "172.16.0.201",
          "172.16.0.202"
        ]
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
taskInfo	Yes	Object	Details
ethernets	Yes	Array	None
scopeId	Yes	int	scopeId, If you do not know this or use the default value, enter -1.
name	Yes	string	Name, such as eth0, etc. It can be specified.
dhcp	Yes	boolean	true means to use the dynamic address for allocation. The following field is invalid.
ip	Yes	string	IP address
mask	Yes	string	Subnet mask
gateWay	Yes	string	Gateway
dns	string	object	DNS

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the error code

Remark

-

4.25.5、Wi-Fi AP

4.25.5.1、Obtaining Wi-Fi AP information

Description:

- This is an interface used for obtaining the Wi-Fi AP information.

Request URL:

- `void nvgGetAPNetworkAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":""
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "aliasName":"AP",
  "password":"12345678",
  "suffix":"20002272"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error
data	Object	Description
aliasName	String	AP alias
suffix	String	AP suffix
password	String	AP password, 8<=Password length<=32, Must contain letters and numbers. Special characters are not allowed.
channelId	int	Channel, range: 1-11

Remark

-

4.25.5.2、Setting Wi-Fi AP Information

Description:

- This is an interface used for setting the Wi-Fi AP information.

Request URL:

- void nvSetAPNetworkAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "aliasName":"AP",
  "suffix":"0016",
  "password":"12345678",
  "channelId":10
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
aliasName	Yes	String	AP alias
suffix	Yes	String	AP suffix
password	Yes	String	AP password, 8<=Password length<=32, Must contain letters and numbers. Special characters are not allowed.
channelId	Yes	int	Channel, range: 1-11

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value

Remark

-

4.25.5.3、Obtaining APN Information

Description:

- This is an interface used for obtaining APN information.

Request URL:

- void nvGetAPNInfoAsyncAsync(const char *data,
  ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "APNs":[
    {
      "carrier":"Orange FR-MMS",
      "mcc":"208",
      "mnc":"01",
      "apn":"orange.acte",
      "user":"orange",
      "password":"orange",
      "server":"*",
      "port":"80",
      "mmsc":"http://mms.orange.fr",
      "mmsproxy":"192.168.010.200",
      "mmsport":"8080",
      "type":"mms",
      "isUserDefined":false,
      "isUsed":true
```

```
    },
    {
      "carrier":"MMS (China Mobile)",
      "mcc":"460",
      "mnc":"00",
      "apn":"cmwap",
      "server":"*",
      "proxy":"10.0.0.172",
      "mmsc":"http://mmsc.monternet.com",
      "mmsproxy":"10.0.0.172",
      "mmsport":"80",
      "type":"mms",
      "protocol":"IPV4V6",
      "isUserDefined":false,
      "isUsed":true
    }
  ]
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
APNs	Object	APN list
carrier	string	APN name. Can be empty. Displays only the apn name in the apn list.
mcc	string	A three-digit number used for identifying the country of the mobile user
mnc	string	A two- or three-digit number used for identifying the PLMN that the mobile user belongs to
apn	string	APN network identity (access point name). This is a required parameter. This identity is assigned by the carrier.
user	string	User name
password	string	Password
server	string	Server address
proxy	string	Proxy server address
port	string	Proxy server port
mmsc	string	MMS relay server/multimedia message service center (MMSC), exchange server of MMS
mmsproxy	string	MMS proxy server address
mmsport	string	MMS proxy server port number
type	string	APN type
protocol	string	Supported protocol, defaulting to IPV4
authtype	string	APN authentication protocol
roamingProtocol	string	APN roaming protocol
isUserDefined	boolean	custom or not
isUsed	boolean	In use or not

Remark

-

4.25.5.4、Setting APN information

Description:

- This is an interface used for setting APN information.

Request URL:

- void nvSetAPNInfoAsync(const char *data,
  ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-


```
{
  "sn":"BZSA17313J0820001562",
  "APNs":[
    {
      "carrier":"Orange FR-MMS",
      "mcc":"208",
      "mnc":"01",
      "apn":"orange.acte",
      "user":"orange",
      "password":"orange",
      "server":"*",
      "port":"80",
      "mmsc":"http://mms.orange.fr",
      "mmsproxy":"192.168.010.200",
      "mmsport":"8080",
      "type":"mms",
      "isUserDefined":false,
      "isUsed":true
    },
    {
      "carrier":"MMS (China Mobile)",
      "mcc":"460",
      "mnc":"00",
      "apn":"cmwap",
      "server":"*",
      "proxy":"10.0.0.172",
      "mmsc":"http://mmsc.monternet.com",
      "mmsproxy":"10.0.0.172",
      "mmsport":"80",
      "type":"mms",
      "protocol":"IPV4V6",
```

```
      "isUserDefined":false,
      "isUsed":true
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
APNs	Yes	Object	APN list
carrier	Yes	string	APN name. Can be empty. Displays only the apn name in the apn list.
mcc	Yes	string	A three-digit number used for identifying the country of the mobile user
mnc	Yes	string	A two- or three-digit number used for identifying the PLMN that the mobile user belongs to
apn	Yes	string	APN network identity (access point name). This is a required parameter. This identity is assigned by the carrier.
user	Yes	string	User name
password	Yes	string	Password
server	Yes	string	Server address
proxy	Yes	string	Proxy server address
port	Yes	string	Proxy server port
mmsc	Yes	string	relay server/multimedia message service center (MMSC), exchange server of MMS
mmsproxy	Yes	string	MMS proxy server address
mmsport	Yes	string	MMS proxy server port number
type	Yes	string	APN type
protocol	Yes	string	Supported protocol, defaulting to IPV4
authtype	Yes	string	APN authentication protocol
roamingProtocol	Yes	string	string APN roaming protocol
isUserDefined	Yes	bool	custom or not
isUsed	Yes	bool	In use or not

Return Sample

```
{
  "basicConfigs":{
    "mobileData":true,
    "dataRoaming":true,
     "enable4G":true,
    "level":1
  },
   "advanced":{
    "networkType":"AUTO",
     "APN":{
```

```
        "providerName":"China Mobile"
    }
  }
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	object	Return success parameter
basicConfigs	object	Basic configuration
mobileData	bool	Mobile data
dataRoaming	bool	Mobile data roaming
enable4G	bool	4G data
level	int	Data signal strength
advanced	object	Advanced configuration
networkType	string	Network type
APN	object	APN information
providerName	string	Supplier name

Remark

-

4.25.5.5、Turning on/off Airplane Mode

Description:

- This is an interface used for turning on or off airplane mode.

Request URL:

- `void nvSetFlightModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
```

```
  "enable":true
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
enable	Yes	bool	Turn on/off airplane mode

Return Sample

```
{
  "errorDiscription":"the description that describe the error in detail."
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	object	Return failure data

Remark

-

4.25.5.6、Obtaining Airplane Mode Status

Description:

- This is an interface used for obtaining the airplane mode status.

Request URL:

- `void nvGetFlightModeAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
```

```
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "enable":true
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
enable	bool	Airplane mode status

Remark

-

4.25.5.7、Obtaining 4G Network Status

Description:

- This is an interface used for obtaining 4G network status.

Request URL:

- nvGet4GNetworkStatusAsync(const string _this_and_change_data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "mobileNetState":0,
  "netType":1
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
mobileNetState	int	4G network status, 1 Normal 2 Abnormal 0 Unknown (Currently connected to a wired or Wi-Fi network)
netType	int	Network type, 0: No network, 1: Wired network, 2: Wi-Fi, 3: 2G, 4: 3G, 5: 4G, 6: Unknown

Remark

-

4.25.5.8、Obtaining AP Status

Description:

- This is an interface used for obtaining the AP status.

Request URL:

- `nvGetAPNetworkOpenStatusAsync(const string _this_and_change_data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "ebable":true
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
enable	bool	AP status

Remark

-

4.25.5.9、Turning on/off AP Status

Description:

- This is an interface used for turning on or off AP status.

Request URL:

- nvSetAPNetworkOpenStatusAsync(const string _this_and_change_data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "enable":true
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
enable	Yes	bool	AP status

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.25.5.10、Switching AP/Station (Only the TC300 supports AP switching.)

Description:

- The functions of this module is to set and read back Wi-Fi AP/Station switching.

Request URL:

- `void nvSetWifiApStationSwitchAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07201A0010000183",
  "data":{
    "state":1,
    "ssid":"novastar",
    "password":"nova123456"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
data	Yes	Object	Command protocol
state	Yes	int	Switch Wi-Fi AP/Station status, 0 means to switch to Wi-Fi AP, 1 means to switch to Wi-Fi Station.
ssid	Yes	string	When state is 1 (Wi-Fi Station), it denotes the SSID of the connected Wi-Fi. When state is 0 (Wi-Fi AP), it denotes the SSID of the AP.
password	Yes	string	When state is 1 (Wi-Fi Station), it denotes the password of the connected Wi-Fi. When state is 0 (Wi-Fi AP), it denotes the password of the AP.

Return Sample

```
"data":null
```

Return Parameter Description

Parameter	Type	Description
errorCode	int	It is meaningless when successful. When it is failed, the cause of failure is returned.

Remark

-

4.25.6、4G Module Information

4.25.6.1、Obtaining 4G Module Information (customized version. Currently the common version does not has the data structure body which may be added in the future.)

Description:

- This is an interface used for obtaining 4G module information.

Request URL:

- `void nvGetModuleInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07201A0010000183"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
type	Yes	String	GET_MODULE_INFO

Return Sample

```
{
  "data":{
    "imei":"123456",
    "model":"ZTE",
    "version":"1.0.0"
  }
}
```

Return Parameter Description

Parameter	Type	Description
imei	string	Module imei number
model	string	Module model
version	string	Module version (Currently it is not sure the version is Redtea soft SIM or Gosuncn module)
errorCode	int	It is meaningless when successful. When it is failed, the cause of failure is returned.

Remark

-

4.26、Screen Configuration

4.26.1、Screen Configuration

4.26.1.1、Obtaining Screen Configuration Information

Description:

- This is an interface used for obtaining screen configuration information.

Request URL:

- `void void nvGetScreenAttributeAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample


```
{
  "screenAttributes":[
    {
      "id":1,
      "screenSource":0,
      "xCount":1,
      "yCount":1,
      "xOffset":0,
      "yOffset":0,
      "portNumber":2,
      "orders":[
        0,
        1
      ],
      "scanInfos":[
        {
          "width":128,
          "height":128,
          "x":0,
          "y":0,
          "xInPort":0,
          "yInPort":0,
          "portIndex":0,
```

```
            "connectIndex":0
          }
        ]
      }
    ]
}
```

Return Parameter Description

Parameter	Type	Description
id	int	Screen ID
screenSource	int	Screen configuration parameter source (0 Mobile phone, 1 LCT)
xCount	int	Number of receiving cards in the X direction
yCount	int	Number of receiving cards in the Y direction
xOffset	int	Offset coordinates of the display position in the X direction
yOffset	int	Offset coordinates of the display position in the Y direction
portNumber	int	Number of Ethernet ports being used
orders	intArray	8 data flow patterns in total. The array content order is according to the Ethernet port size in order from small to large
scanInfos	object	A collection of receiving card information
width	int	Receiving card width
height	int	Receiving card height
x	int	X coordinate of the display card where the receiving card is connected
y	int	Y coordinate of the display card where the receiving card is connected
xInPort	int	X coordinate of the area loaded by the Ethernet port connected to the receiving card
yInPort	int	Y coordinate of the area loaded by the Ethernet port connected to the receiving card
portIndex	int	Subscript of the Ethernet port connected to the receiving card
connectIndex	int	No. of the device connected the Ethernet port of multifunction card
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.26.1.2、Setting Screen Configuration

Description:

- This is an interface used for setting screen configuration.

Request URL:

- `void void nvSetScreenAttributeAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "screenAttributes":[
    {
      "id":0,
      "orders":[
        0,
        1
      ],
      "portNumber":1,
      "scanInfos":[
        {
          "connectIndex":0,
          "height":256,
          "portIndex":0,
          "width":256,
          "x":0,
          "xInPort":0,
          "y":0,
          "yInPort":0
        }
      ],
      "screenSource":1,
      "xCount":1,
      "xOffset":0,
      "yCount":1,
      "yOffset":0
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
id	Yes	int	Screen ID
screenSource	Yes	int	Screen configuration parameter source (0 Mobile phone, 1 LCT)
xCount	Yes	int	Number of receiving cards in the X direction
yCount	Yes	int	Number of receiving cards in the Y direction
xOffset	Yes	int	Offset coordinates of the display position in the X direction
yOffset	Yes	int	Offset coordinates of the display position in the Y direction
portNumber	Yes	int	Number of Ethernet ports being used

Parameter	Required	Type	Description
orders	Yes	intArray	8 data flow patterns in total. The array content order is according to the Ethernet port size in order from small to large
scanInfos	Yes	object	A collection of receiving card information
width	Yes	int	Receiving card width
height	Yes	int	Receiving card height
x	Yes	int	X coordinate of the display card where the receiving card is connected
y	Yes	int	Y coordinate of the display card where the receiving card is connected
xInPort	Yes	int	X coordinate of the area loaded by the Ethernet port connected to the receiving card
yInPort	Yes	int	Y coordinate of the area loaded by the Ethernet port connected to the receiving card
portIndex	Yes	int	Subscript of the Ethernet port connected to the receiving card
connectIndex	Yes	int	No. of the device connected the Ethernet port of multifunction card

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error

Remark

-

4.26.2、Screen Configuration via Receiving Card Files

4.26.2.1、Configuring Screens via Receiving Card Files

Description:

- This is an interface used for terminals to configure screen by using receiving card files. The service logic of this interface consists of 3 steps: 1 Obtain file upload path; 2 Upload local files to the specified path; 3 Configure the screen

Request URL:

- `void nvSetRecvCardFileAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "filePath":"C:/test",
  "fileName":"5036.rcfgx"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
filePath	Yes	string	Screen configuration file location
fileName	Yes	string	Screen configuration file name

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.27、iCare Configuration

4.27.1、Obtaining iCare Configuration Information

Description:

- This is an interface used for obtaining iCare configuration information.

Request URL:

- `void nvGetIcareConfigInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "requestInfo":{
    "language":"zh-cn"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
language	Yes	string	zh-cn Chinese, en English

Return Sample

```
{
  "state":true,
  "serverNodes":[
    {
      "label":"Test",
      "node":"t.novaicare.com"
    },
    {
      "label":"US node",
      "node":"care-us.novaicare.com"
    },
    {
      "label":"China node",
      "node":"care.novaicare.com"
    }
  ],
  "url":"t.novaicare.com",
  "username":"XXX",
  "isOnline":true
}
```

Return Parameter Description

Parameter	Type	Description
state	bool	Status, true: On, false: Off
serverNodes	object	Addresses of all servers
label	string	Server name
node	string	Server address
url	string	Address of the currently connected server
username	string	Bound user name
isOnline	bool	Online status, true: Online, false: Offline
code	int	Error codes: 0 Obtained successfully 65535 Request timed out

Remark

-

4.27.2、Setting iCare Configuration Information

Description:

- This is an interface used for setting iCare configuration information.

Request URL:

- `void nvSetIcareConfigInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA17332J0A20002272",
  "requestInfo":{
    "state":true,
    "url":"care.novaicare.com",
    "username":"XXX"
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
state	Yes	bool	Status, true: On, false: Off
url	Yes	string	Address of the currently connected server
username	Yes	string	Bound user name

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully, 33 Account not exist, 34 Screen not configured, 65535 Request timed out

Remark

-

4.28、Terminal Cloud Configuration

4.28.1、Binding to Cloud Server

Description:

- This is an interface used for binding to the cloud server.

Request URL:

- `void nvSetBindPlayerAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "playerInfo":{
    "baseUrl":"https://api-cn.vnnox.com",
    "data":{
      "playerList":[
```

```
        {
          "identifier":"84f37cb1a12783654780f47da13b55db##dangjintao
",
          "isUsed":true,
          "name":"dangjintao",
          "playerIdentifier":"BZSA07194A0049999716"
        }
      ],
      "token":"f2972f5a403d5e13d1c6103f91bf78a58055bfd5"
    },
    "isNewVnnox":true,
    "password":"123456",
    "username":"gmt"
  }
}
```


Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
baseUrl	Yes	string	Host address for the terminal to access the corresponding server during server replacement
password	Yes	string	Player authentication password
username	Yes	string	Player authentication user name
isNewVnnox	Yes	bool	Whether the latest VNNOX is bound
token	Yes	string	Player interaction TOKEN (The interaction between the player and server requires this TOKEN to be added into the header of the http protocol.)
identifier	Yes	string	Unique ID of the server player (Identifier obtained from VNNOX+" ##player name")
isUsed	Yes	bool	Whether the server player is bound
name	Yes	string	Server player name
playerIdentifier	Yes	string	Unique ID of terminal player

Return Sample


```
""
```


Return Parameter Description

Parameter	Type	Description
code	int	Error

Remark

-

4.28.2、Obtaining Player List

Description:

- This is an interface used for obtaining the player list.

Request URL:

- `void nvGetCloudPlayerListAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "host":"http://beta-rest.vnnox.com",
  "data":{
    "username":"qht1003077897",
    "password":"qht1003077897",
    "playerType":2
  }
}
```

Parameters:

Parameter	Required	Type	Description
host	Yes	string	Server address
username	Yes	string	Player authentication user name
password	Yes	string	Player authentication password
playerType	Yes	int	1 Synchronous, 2 Asynchronous

Return Sample

```
{
  "status":[
    10000
  ],
  "data":{
    "token":"654ad5s64f65w46f5e456wa4f",
    "playerList":[
      {
        "name":"player_1",
        "identifier":"654ad-5s64f6-5w46-f5e45-6wa4f",
        "isUsed":true,
        "playerIdentifier":"33-22-44-22-44"
      }
    ]
  }
```

```
}
```

Return Parameter Description

Parameter	Type	Description
status	int	Return result status
token	string	Player interaction TOKEN (Interaction between player and server)
name	string	Server player name
identifier	string	Unique ID of the server player
isUsed	bool	Whether the server player is bound
playerIdentifier	string	Unique ID of terminal player
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.28.3、Obtaining Player Binding Information

Description:

- This is an interface for obtaining player binding information.

Request URL:

- `void nvGetBindPlayerAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "isBind":true,
  "errorDescription":" ",
  "baseUrl":"http://test.vnnox.com",
  "password":"wxgaly199425",
  "username":"wxgaly",
  "status":[
    10000
  ],
  "data":{
    "token":"9e49437a8bc44ba790389524b74c76acdc7909e6",
    "playerList":[
      {
        "identifier":"103190fdfa52c37516aae26a9d00ed7c",
        "isUsed":true,
        "name":"Asynchronous 1",
        "playerIdentifier":"30:34:00:00:00:17"
      }
    ]
  }
}
```


Return Parameter Description

Parameter	Type	Description
isBind	bool	Whether the terminal player is bound
errorDescription	string	Error information why the player is not bound
baseUrl	string	Host address for the terminal to access the corresponding server during server replacement
password	string	Player authentication password
username	string	Player authentication user name
status	intarray	Current player heartbeat status (10000 denotes that the heartbeat is normal.)
token	string	Player interaction TOKEN (Interaction between player and server)
name	string	Server player name
identifier	string	Unique ID of the server player
isUsed	bool	Whether the server player is bound
playerIdentifier	string	Unique ID of terminal player
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.29、Monitoring

4.29.1、Obtaining the Monitoring Information of the Sending Card

Description:

- This is an interface used for obtaining the monitoring of the sending card.

Request URL:

- `void nvGetSendCardMonitorInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "sendCardMonitorInfo":[
    {
      "isDVIConnected": true,
      "DVIRate": 60,
      "redundancePortInfo": [
        {
          "isRedundant": false,
          "devMappingList": [
            {
              "devIndex": 0,
              "devType": 1
            },
            {
              "devIndex": 0,
              "devType": 2
            },
            {
              "devIndex": 0,
              "devType":3
            }
          ],
          "deviceWorkState": 1
```

```
        },
            {
          "isRedundant": true,
          "devMappingList": [
            {
              "devIndex": 0,
              "devType": 1
            },
            {
              "devIndex": 0,
              "devType": 2
            },
            {
              "devIndex": 1,
              "devType": 3
            }
          ],
          "deviceWorkState": 0
        }
      ],
      "deviceMapList": [
        {
          "deviceIndex": 0,
          "deviceType": 1
        },
         {
          "deviceIndex": 0,
          "deviceType": 2
        }
      ],
      "deviceWorkState": 0
    }
  ]
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out
sendCardMonitorInfo	object	Sending card monitoring data
deviceWorkState	int	Working status, OK=1, Error=1, Unknown=2
deviceMapList	object	device location
deviceIndex	int	Device location number
deviceType	int	Device type
isDVIConnected	boolean	DVI connected or not
DVIRate	int	DVI refresh rate, available only when DVI is connected
redundancePortInfo	object	Ethernet port information list
deviceWorkState	int	Working status, OK=1, Error=1, Unknown=2
deviceMapList	object	device location
deviceIndex	int	Device location number
deviceType	int	Device type
isRedundant	boolean	Ethernet port redundancy

Remark

-

4.29.2、Obtaining Receiving Card Quantity and Information

Description:

- This is an interface used for obtaining receiving card quantity and information.

Request URL:

- `void nvGetReceiverCountAndInfoAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "receiveCardRegionInfo":[
    {
      "senderIndex": 0,
      "portIndex": 0,
      "connectIndex": 0,
      "X": 0,
      "Y": 0,
      "XInPort": 0,
      "YInPort": 0,
      "width": 400,
      "height": 400,
      "rowIndexInScreen": 0,
      "colIndexInScreen": 0
```

```
      }
   ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out
receiveCardRegionInfo	object	Locations and sizes of all the receiving cards
senderIndex	byte	Connected sending card number. -1 means a blank is left.
portIndex	byte	Output port number
connectIndex	int	Sequence number of the output port
X	int	X coordinate on the display card
Y	int	Y coordinate on the display card
XInPort	int	X coordinate in the loaded area
YInPort	int	Y coordinate in the loaded area
width	int	pixel capacity width
height	int	pixel capacity height
rowIndexInScreen	int	In which row on the screen
colIndexInScreen	int	In which column on the screen

Remark

-

4.29.3、Obtaining Monitoring Information According to Receiving Card Index

Description:

- This is an interface used for obtaining the monitoring information according to the receiving card index.

Request URL:

- `void nvGetMonitorInfoByReceiverIndexAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "info":{
    "receiveCardRegionInfo": [
      {
        "portIndex":0,
        "connectedIndex":0
      },
      {
        "portIndex":0,
        "connectedIndex":1
      }
    ]
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
receiveCardRegionInfo	Yes	object	Location of the receiving card to be obtained
portIndex	Yes	byte	output port number, Ethernet port location
connectedIndex	Yes	int	Sequence number of the output port

Return Sample

```
{
  "receiveCardRegionInfo":[
    {
      "portIndex":0,
      "connectedIndex":0
    },
    {
      "portIndex":0,
      "connectedIndex":1
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out
screenMonitorData	object	Monitoring data
receiveCardMonitorInfo	object	receiving card monitoring data
deviceWorkState	int	Working status, OK=1, Error=1, Unknown=2
deviceMapList	object	Receiving card location index
deviceIndex	int	Device location number
deviceType	int	Device type
temprature	float	Receiving card board temperature

Parameter	Type	Description
voltage	float	Receiving card board voltage
monitorCardMonitorInfo	object	Monitoring data of monitoring card
deviceWorkState	int	Working status, OK=1, Error=1, Unknown=2
deviceMapList	object	device location
deviceIndex	int	Device location number
deviceType	int	Device type
temperatureUpdateInfo	object	Temperature status information
isUpdate	boolean	Whether to update
temprature	float	Temperature value. -255 denotes invalid temperature.
humidityUpdateInfo	object	Temperature status information
isUpdate	boolean	Whether to update
humidity	float	Temperature value
smokeUpdateInfo	object	Smoke status information
isUpdate	boolean	Whether to update
smoke	boolean	Whether there are smokes
cabinDoorUpdateInfo	object	Cabinet door status information
isUpdate	boolean	Whether to update
isDoorOpen	boolean	Whether the cabinet door is open
fansUpdateInfo	object	Fan status information
isUpdate	boolean	Whether to update
fansMonitorInfoCollection	HashMap	Fan speed. Key denotes the sequence number of the fan and value denotes the fan speed.
powerUpdateInfo	object	Power supply status information
isUpdate	boolean	Whether to update
powerMonitorInfoCollection	HashMap	Voltage monitoring. Key denotes the sequence number of the power supply and value denotes the voltage of the monitoring card. 0 denotes the voltage of the monitoring card and 1-8 denote the voltage values of the 8 power supplies.
socketCableUpdateInfo	object	Flat cable status information
isUpdate	boolean	Whether to update
socketCableMonitorInfoList	object	Flat cable information
deviceWorkState	int	Working status, OK=1, Error=1, Unknown=2
deviceMapList	object	Working status, OK=1, Error=1, Unknown=2
deviceIndex	int	device location
deviceType	int	Device location number
socketCableInfoMap	HashMap	key is int; value is object List
isCableOK	boolean	Device location number
cableType	int	Flat cable data type
moduleUpdateInfo	object	Module status information
isUpdate	boolean	Whether to update

Parameter	Type	Description
moduleMonitorInfoCollection	HashMap	Voltage monitoring, keyint, value is Object, ModuleStatus
deviceWorkStatus	int	Working status
busIndex	int	Bus subscript of flash
flashIndex	int	flash subscript
rowIndex	int	row coordinates
colIndex	int	Column coordinates
temperature	float	Temperature
voltage	float	Voltage
workTime	long	Working time

Remark

-

4.29.1、System Parameters

4.29.1.1、Obtaining Hard Disk Storage Information

Description:

- This is an interface used for obtaining the hard disk storage information.

Request URL:

- void void nvGetAvailableStorageDataAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "diskAvailableSize":3.67,
  "diskTotalSize":3.96,
  "storageInfos":[
    {
      "diskAvailableSize":3938967552,
      "diskCriticalSize":524288000,
      "diskReserveSize":0,
      "diskTotalSize":4248846336,
      "type":"LOCAL"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
diskTotalSize	float	External storage capacity (GB)
diskAvailableSize	float	Available space (GB)
storageInfos	object	Storage space
diskAvailableSize	float	Available disk space size (Byte)
diskCriticalSize	float	Threshold for insufficient disk storage (Byte). When the free storage space size is les than the threshold, some functions may not be used normally.
diskReserveSize	float	Reserved space in the disk (Byte)
diskTotalSize	float	Disk storage capacity (Byte)
type	string	Disk type, LOCAL Internal storage (SD card) EXTERNAL External storage (USB drive, etc.)
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.29.1.2、Obtaining CPU Usage

Description:

- This is an interface for obtaining the CPU usage.

Request URL:

- `void nvGetCPUUsageAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "value":18
}
```

Return Parameter Description

Parameter	Type	Description
value	float	CPU usage
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.29.1.3、Obtaining CPU Temperature

Description:

- This is an interface for obtaining the CPU temperature.

Request URL:

- `void nvGetCPUTempAsyncAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "value":38.8
}
```

Return Parameter Description

Parameter	Type	Description
value	float	CPU usage
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.29.1.4、Obtaining Available Storage

Description:

- This is an interface for obtaining the available storage space size.

Request URL:

- `void nvGetAvailableMemoryAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{
  "value":18
}
```

Return Parameter Description

Parameter	Type	Description
value	float	CPU usage
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.30、Screen Management

4.30.1、Obtaining Terminal Screenshots

Description:

- This is an interface used for obtaining the terminal screenshots.

Request URL:

- `void nvDownLoadScreenshotAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"",
  "width":100,
  "height":100,
  "downLoadDirectoryPath":"d://",
  "pictureName":"a.png",
  "pictureType":1
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
width	Yes	int	Image width
height	Yes	int	Image height
pictureType	Yes	int	Image format, 0: png, 1: jpg
downLoadDirectoryPath	Yes	string	Screenshot download path
pictureName	Yes	string	Screenshot file name

Return Sample

```
{
  "code":0,
  "path":"/cache/screenShots/screenshot.png"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
path	string	Screenshot path

Remark

-

4.31、Others

4.31.1、Data Migration

4.31.1.1、Migrating Data

Description:

- This is an interface used for migrating data.

Request URL:

- void nvDataBaseMigrationAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "templates":[
    {
      "data":[
        {
          "width":0.4,
          "height":0.4,
          "left":0.4,
          "top":0.4,
          "zindex":1,
          "index":0
        }
      ]
    }
  ],
  "size":[
    {
      "height":300,
      "width":300
    }
  ],
  "program":[
    {
      "ID":"15",
      "programName":"name",
      "PLAYLIST":"",
      "Width":"400",
      "Height":"400"
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
ID	Yes	string	Solution ID
programName	Yes	string	Solution name
PLAYLIST	Yes	string	playlist.json file content

Parameter	Required	Type	Description
Width	Yes	string	Solution resolution width
Height	Yes	string	Solution resolution height
templates	Yes	object	Custom template information
width	Yes	int	Template window width
height	Yes	int	Template window height
left	Yes	float	Left proportion of the window in the template
top	Yes	float	Top proportion of the window in the template
zindex	Yes	int	Z order
index	Yes	int	ID of the window in the template
width	Yes	int	Template width
templates	Yes	int	custom template information

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.31.2、Thumbnail Download

4.31.2.1、Downloading Thumbnails

Description:

- This is an interface used for downloading thumbnails.

Request URL:

- `void nvDownLoadFilesAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07194A0049999716",
  "remotePathsAndFileNames":{
    "sdcard/nova/viplex_terminal/program/program_DANGJT-P1/tu1/35384d
b4-d10a-4db8-a1fe-54479706376f.png":"1.png",
    "sdcard/nova/viplex_terminal/program/program_DANGJT-P1/tu2/296653
e7-814c-4fad-9198-c731c0770d8c.png":"2.png"
  },
  "downLoadDirectoryPath":"/data/data/com.example.myhandy_android/app
_flutter/log",
  "fileType":".png"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
remotePathsAndFileNames	Yes	map	{"Thumbnail download path": "Custom file name"}
downLoadDirectoryPath	Yes	string	Specified path where the thumbnails will be stored
fileType	Yes	string	File type

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.31.3、Obtaining Specified Type of Files in a Specified Path

4.31.3.1、Obtaining Specified Type of Files in a Specified Path

Description:

- This is an interface used for obtaining specified type of files in a specified path.

Request URL:

- `void nvQueryFileByTypeAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "paths":[
    "C:/"
  ],
  "types":[
    ".txt"
  ],
  "pageIndex":0,
  "pageSize":100
}
```

Parameters:

Parameter	Required	Type	Description
paths	Yes	string	Search path
types	Yes	string	File type to be searched
pageIndex	Yes	int	Number of items displayed on each page (currently not used, can be set to any value)
pageSize	Yes	int	Maximum value to be searched (currently not used, can be set to any value)

Return Sample

```
{
  "files":[
    "C:/1.txt"
  ]
}
```

Return Parameter Description

Parameter	Type	Description
files	stringarray	A collection of files found with a specified suffix
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

•

4.31.4、Node Server List

4.31.4.1、Obtaining Node Server List

Description:

- This is an interface used for obtaining the hard disk storage information.

Request URL:

- `void nvGetNodeServerListAsync(const char *data, ExportViplexCallback callback);`

Request Method:

•

Request Parameter Sample

•

```
{
  "lang":"en"
}
```

Parameters:

Parameter	Required	Type	Description
lang	Yes	string	Language, English: en, Chinese: zh-cn, Japanese: jp, Korean: kr, Spanish: es, French: fr

Return Sample

```
{
  "serverInfo":[
    {
      "islocal":true,
      "label":"aa",
      "node":"www.baidu.com"
    }
  ]
}
```

Return Parameter Description

Parameter	Type	Description
islocal	bool	External storage capacity (GB)
diskAvailableSize	float	Whether it is the data customize by the user, true: Customized, false: Obtained by server
label	string	Node name
node	string	Node address
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.31.4.2、Adding Node Servers

Description:

- This is an interface used for adding time synchronization servers.

Request URL:

- `void nvAddNodeServerListAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "label":"aa",
  "node":"www.baidu.com"
}
```

Parameters:

Parameter	Required	Type	Description
label	Yes	string	Node name
node	Yes	string	Node address

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.31.4.3、Deleting Node Servers

Description:

- Delete the time synchronization server list. If there are two pieces of data with the same node and label, the first one will be deleted.

Request URL:

- `void nvDeleteNodeServerListAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "label":"aa",
  "node":"www.baidu.com"
}
```

Parameters:

Parameter	Required	Type	Description
label	Yes	string	Node name
node	Yes	string	Node address

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.31.4.4、Modifying Node Servers

Description:

- Modify time synchronization servers. If there are two pieces of data with the same node and label, the first one will be modified.

Request URL:

- `void nvUpdateNetTimingInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "oldServer":{
    "label":"zhangsan",
    "node":"123.123.123"
  },
  "newServer":{
    "label":"lisi",
    "node":"111.111.111"
  }
}
```

Parameters:

Parameter	Required	Type	Description
oldServer	Yes	Object	Modified server information
label	Yes	string	Node name
node	Yes	string	Node address

Parameter	Required	Type	Description
newServer	Yes	Object	New server information

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.31.4.5、Adding Server List

Description:

- This is an interface used for adding server list.

Request URL:

- void nvAddNetTimingInfoListAsync(const char *data, ExportViplexCallback callback)

Request Method:

-

Request Parameter Sample

-

```
{
  "serverInfo":[
    {
      "label":"aa",
      "node":"www.baidu.com"
    },
    {
      "label":"aa",
      "node":"www.baidu.com"
    }
  ]
}
```

Parameters:

Parameter	Required	Type	Description
serverInfo	Yes	array	Server list array
label	Yes	string	Node name
node	Yes	string	Node address

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Error code description

Remark

-

4.31.5、Feedback

4.31.5.1、Uploading User Feedback

Description:

- This is an interface used for uploading user feedback.

Request URL:

- `void nvUploadFeedbackInfoAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{"sn":","contact":"minyf@novastar.tech","description":"My feedback is about DSDS","attacheds":[{"dir":"feedback/handy/20200301/abc.jpg"},{"dir":"feedback/handy/20200301/abc.zip"}]}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
contact	No	string	Contact methods
description	Yes	string	Feedback description
attacheds	No	Object	Attachments
dir	No	string	Directory to upload files to Alibaba Cloud

Return Sample

```
{
  "logid":"225be01205",
  "status":0,
  "data":"ok"
}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	Object	Description of the returned value
logid	string	Request log ID
status	int	Result, 0-Success, other values means failure. For details, see the meanings of codes.
errmsg	string	When it is wrong, an description will be returned.

Remark

-

4.31.5.2、Canceling Feedback Upload

Description:

- This is an interface used for canceling feedback upload.

Request URL:

- `void nvUploadFeedBackFileStateAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "state":true
}
```

Parameters:

Parameter	Required	Type	Description
state	No	bool	true means to continue the download, false means to stop the download, defaulting to false

Return Sample

```
"success"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535 Request timed out
data	string	Description of the returned value

Remark

-

4.31.6、Binding Improvements

4.31.6.1、Whether Cloud Is Available

Description:

- This is an interface used for judging whether the cloud is available.

Request URL:

- `void nvIsCommonCloudAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "baseUrl":"https://api-cn.vnnox.com"
}
```

Parameters:

Parameter	Required	Type	Description
baseurl	Yes	string	Player binding address

Return Sample

```
{
  "status":[
    10000
  ],
  "data":{
    "isCloud":1
  }
}
```

Return Parameter Description

Parameter	Type	Description
status	intarray	Status code returned to the server: 10000 Successful, 10306Incorrect URL format
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.31.6.2、Verifying Player Names

Description:

- This is an interface used for verifying player names.

Request URL:

- `void nvIsExistPlayerNameAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "baseUrl":"https://test-rest-k8s.vnnox.com",
  "data":{
    "token":"f2972f5a403d5e13d1c6103f91bf78a58055bfd5",
    "playerName":"dangjintao"
  }
}
```

Parameters:

Parameter	Required	Type	Description
baseurl	Yes	string	Player binding address
token	Yes	string	Player interaction TOKEN (Interaction between player and server)
playerName	Yes	string	Player name

Return Sample

```
{
  "status":[
    10000
  ],
  "data":{
    "playerName":"dangjintao"
  }
}
```

Return Parameter Description

Parameter	Type	Description
status	intarray	Status code returned to the server: 10000 Successful, 10201, token in http[header] is empty, 10202 token in http[header] is wrong, 10210 The player name already exists
playerName	string	Player name
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.31.6.3、Obtaining Tokens

Description:

- This is an interface used for verifying player names.

Request URL:

- `void nvGetTokenAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "baseUrl":"https://test-rest-k8s.vnnox.com",
  "data":{
    "username":"gmt",
    "password":"123456"
  }
}
```

Parameters:

Parameter	Required	Type	Description
baseurl	Yes	string	Player binding address
username	Yes	string	Player user name
password	Yes	string	Player password

Return Sample

```
{
  "status":[
    10000
  ],
  "data":{
    "token":"654ad5s64f65w46f5e456wa4f",
    "timeout":3600
  }
}
```

Return Parameter Description

Parameter	Type	Description
status	intarray	Status code returned to the server: 10000 Successful, 10001 Incorrect user name or password
token	string	Player interaction TOKEN (The interaction between the player and server requires this TOKEN to be added into the header of the http protocol.)

Parameter	Type	Description
timeout	int	token timeout interval (s)
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.31.6.4、Obtaining the Unique ID of a Player

Description:

- This is an interface used for obtaining the unique ID of a player.

Request URL:

- `void nvGetPlayerIdentiferAsync(const char *data, ExportViplexCallback callback)`

Request Method:

-

Request Parameter Sample

-

```
{
  "baseUrl":"https://test-rest-k8s.vnnox.com",
  "data":{
    "token":"f2972f5a403d5e13d1c6103f91bf78a58055bfd5",
    "number":1
  }
}
```

Parameters:

Parameter	Required	Type	Description
baseurl	Yes	string	Player binding address
token	Yes	string	Player interaction TOKEN (Interaction between player and server)
number	Yes	int	Number of obtained Ids (int up to 1000, regarded as 1000 if exceeds 1000.)

Return Sample

```
{
  "status":[
    10000
  ],
  "data":{
    "identifierList":[
      "b518fd5c1ac9e6c68d20ed97c749b490"
    ]
  }
}
```

Return Parameter Description

Parameter	Type	Description
status	intarray	Status code returned to the server: 10000 Successful, 10201, token in http[header] is empty, 10202 token in http[header] is wrong
identifierList	stringarray	Unique ID
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.31.7、Obtaining Time Zone List

4.31.7.1、Obtaining Time Zone List

Description:

- This is an interface used for obtaining the time zone list. The time returned is the daylight saving time. (The standard time is returned in the countries that do not observe the daylight saving time.)

Request URL:

- `void nvGetTimeZoneAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "data":"anystring"
}
```

Parameters:

Parameter	Required	Type	Description
data	Yes	string	The parameter data is required, but it can be any string.

Return Sample


```
{
  "Pacific/Midway":"Pacific/Midway (UTC-11:00)",
  "Pacific/Honolulu":"Pacific/Honolulu (UTC-10:00)",
  "America/Anchorage":"America/Anchorage (UTC-08:00)",
  "America/Los_Angeles":"America/Los_Angeles (UTC-07:00)",
  "America/Tijuana":"America/Tijuana (UTC-07:00)",
  "America/Phoenix":"America/Phoenix (UTC-07:00)",
  "America/Chihuahua":"America/Chihuahua (UTC-06:00)",
  "America/Denver":"America/Denver (UTC-06:00)",
  "America/Costa_Rica":"America/Costa_Rica (UTC-06:00)",
  "America/Regina":"America/Regina (UTC-06:00)",
  "America/Mexico_City":"America/Mexico_City (UTC-05:00)",
  "America/Chicago":"America/Chicago (UTC-05:00)",
  "America/Bogota":"America/Bogota (UTC-05:00)",
  "America/New_York":"America/New_York (UTC-04:00)",
  "America/Caracas":"America/Caracas (UTC-04:30)",
  "America/Barbados":"America/Barbados (UTC-04:00)",
  "America/Manaus":"America/Manaus (UTC-04:00)",
  "America/Santiago":"America/Santiago (UTC-03:00)",
  "America/Sao_Paulo":"America/Sao_Paulo (UTC-03:00)",
  "America/St_Johns":"America/St_Johns (UTC-04:00)",
  "America/Argentina/Buenos_Aires":"America/Argentina/Buenos_Aires (U
TC-03:00)",
  "America/Montevideo":"America/Montevideo (UTC-03:00)",
  "America/Godthab":"America/Godthab (UTC-02:00)",
  "Atlantic/South_Georgia":"Atlantic/South_Georgia (UTC-02:00)",
  "Atlantic/Cape_Verde":"Atlantic/Cape_Verde (UTC-01:00)",
  "Atlantic/Azores":"Atlantic/Azores (UTC 00:00)",
  "Africa/Casablanca":"Africa/Casablanca (UTC 00:00)",
  "Europe/London":"Europe/London (UTC 00:00)",
  "Africa/Brazzaville":"Africa/Brazzaville (UTC 01:00)",
  "Africa/Windhoek":"Africa/Windhoek (UTC 01:00)",
  "Europe/Amsterdam":"Europe/Amsterdam (UTC 02:00)",
  "Europe/Belgrade":"Europe/Belgrade (UTC 02:00)",
  "Europe/Brussels":"Europe/Brussels (UTC 02:00)",
  "Europe/Sarajevo":"Europe/Sarajevo (UTC 02:00)",
  "Africa/Harare":"Africa/Harare (UTC 02:00)",
  "Africa/Cairo":"Africa/Cairo (UTC 02:00)",
  "Asia/Beirut":"Asia/Beirut (UTC 03:00)",
  "Europe/Athens":"Europe/Athens (UTC 03:00)",
  "Europe/Helsinki":"Europe/Helsinki (UTC 03:00)",
  "Asia/Jerusalem":"Asia/Jerusalem (UTC 03:00)",
  "Asia/Amman":"Asia/Amman (UTC 03:00)",
  "Europe/Minsk":"Europe/Minsk (UTC 03:00)",
  "Asia/Baghdad":"Asia/Baghdad (UTC 03:00)",
  "Europe/Moscow":"Asia/Baghdad (UTC 03:00)",
```

```
  "Asia/Kuwait":"Asia/Kuwait (UTC 03:00)",
  "Africa/Nairobi":"Africa/Nairobi (UTC 03:00)",
  "Asia/Baku":"Asia/Baku (UTC 05:00)",
  "Asia/Tbilisi":"Asia/Tbilisi (UTC 04:00)",
  "Asia/Yerevan":"Asia/Yerevan (UTC 04:00)",
  "Asia/Dubai":"Asia/Dubai (UTC 04:00)",
  "Asia/Tehran":"Asia/Tehran (UTC 04:30)",
  "Asia/Kabul":"Asia/Kabul (UTC 04:30)",
  "Asia/Karachi":"Asia/Karachi (UTC 05:00)",
  "Asia/Oral":"Asia/Oral (UTC 05:00)",
  "Asia/Yekaterinburg":"Asia/Yekaterinburg (UTC 05:00)",
  "Asia/Calcutta":"Asia/Calcutta (UTC 05:30)",
  "Asia/Colombo":"Asia/Colombo (UTC 05:30)",
  "Asia/Katmandu":"Asia/Katmandu (UTC 05:45)",
  "Asia/Almaty":"Asia/Almaty (UTC 06:00)",
  "Asia/Rangoon":"Asia/Rangoon (UTC 06:30)",
  "Asia/Krasnoyarsk":"Asia/Krasnoyarsk (UTC 07:00)",
  "Asia/Bangkok":"Asia/Bangkok (UTC 07:00)",
  "Asia/Shanghai":"Asia/Shanghai (UTC 08:00)",
  "Asia/Hong_Kong":"Asia/Hong_Kong (UTC 08:00)",
  "Asia/Irkutsk":"Asia/Irkutsk (UTC 08:00)",
  "Asia/Kuala_Lumpur":"Asia/Kuala_Lumpur (UTC 08:00)",
  "Australia/Perth":"Australia/Perth (UTC 08:00)",
  "Asia/Taipei":"Asia/Taipei (UTC 08:00)",
  "Asia/Seoul":"Asia/Seoul (UTC 09:00)",
  "Asia/Tokyo":"Asia/Tokyo (UTC 09:00)",
  "Asia/Yakutsk":"Asia/Yakutsk (UTC 09:00)",
  "Australia/Adelaide":"Australia/Adelaide (UTC 09:30)",
  "Australia/Darwin":"Australia/Darwin (UTC 09:30)",
  "Australia/Brisbane":"Australia/Brisbane (UTC 10:00)",
  "Australia/Hobart":"Australia/Hobart (UTC 10:00)",
  "Australia/Sydney":"Australia/Sydney (UTC 10:00)",
  "Asia/Vladivostok":"Asia/Vladivostok (UTC 10:00)",
  "Pacific/Guam":"Pacific/Guam (UTC 10:00)",
  "Asia/Magadan":"Asia/Magadan (UTC 10:00)",
  "Pacific/Majuro":"Pacific/Majuro (UTC 12:00)",
  "Pacific/Auckland":"Pacific/Auckland (UTC 12:00)",
  "Pacific/Fiji":"Pacific/Fiji (UTC 12:00)",
  "Pacific/Tongatapu":"Pacific/Tongatapu (UTC 13:00)"
}
```


Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.32、Upgrade module

4.32.1、Upgrade system version

Description:

- Upgrade system version

Request URL:

- void nvUpdateOSAsync(const string &data, ViplexCallback callback)

Request Method: Header :

Parameter	Required	Type	Descriptio
data	Yes	string	Requested JSON parameters. For the detailed parameter sample and field description, see ‘Request Parameter Sample’ and ‘Parameters’
callback	Yes	ExportViplexCallback	Callback function used to receive returned values

Request Parameter Sample

```
"{\"sn\":\"BZSA07313J0350001034\",\"filePath\":\"data/data/com.example.myapp/app_flutter/log/UPDATE_APP_2.1.0.0301.CTM1.0.2.nuzip\"}"
```

Parameters:

Parameter	Required	Type	Description
filePath	Yes	Upgrade package path	*
sn	Yes	Terminal SN	*

Return Sample

```
""
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully 65535Request timed out

Remark

-

4.33、Public network configuration

4.33.1、Public network initialization

Description:

SDK public network initialization interface. SDK initialization must be done by calling this interface before you call the SDK interfaces.

Request URL:

- `void nvInitPublicNetAsync(const char *data, ViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
    "publicModule": true,
    "encrypt": true,
    "certificatePath": "E:/bin/cert",
    "port": 16603,
    "httpserverUrl": "http://192.168.1.103:8080",
    "httpserverLocalPath": "E:/httpserverpath"
}
```

Parameters:

Parameter	Required	Type	Description
publicModule	Yes	Use a public network	*
encrypt	Yes	Encrypt the channel	*
port	Yes	tcpserver listener port number	*
certificatePath	No	When channel encryption is selected, specify the SSL certificate path. The certificate resides in SDKbin/cert.	*
httpserverUrl	Yes	http file server url	*
httpserverLocalPath	Yes	Local address of the file server	*

Return Sample

```
 {"sn":"20393844393033","productName":"AX200","width":400,"height":800,"rotation":0,"aliasName":"XianYataScreen","logined":true,"username":["admin"],"tcpPort":16603,"ftpPort":16602,"syssetFtpPort":16604,"syssetTcpPort":16605,"key":"novaStar","platform":"rk3368","privacy":true,"terminalState":0,"ignoreTime":100029432434,"hasPassword":true,"password":"12345678"}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0
sn	string	Product SN
productName	string	Product Name
width	int	Screen width
height	int	Screen height
rotation	int	Angle of rotation
aliasName	string	Screen alias
logined	boolean	Logged in
username	string_array	If the terminal is already logged in, it will be the login user name.
tcpPort	int	tcp connection port
ftpPort	int	ftp connection port
syssetFtpPort	int	System settings ftp port
syssetTcpPort	int	System settings tcp port
key	string	Key returned by the terminal
platform	string	System platform information (rk3368 appears for the moment.)
privacy	boolean	True denotes that the terminal supports encryption. It must be true if it is a new terminal.
password	string	Password
terminalState	int	Current screen status. terminalState has 6 values in total.
ignoreTime	long	Record the timestamp of clicking ignore password
hasPassword	boolean	Whether to remember password: true denotes yes; false denotes no.

Remark

-

4.33.2、SDK to stop public network service

Description:

- Stop public network service. In public network mode, this interface must be called before the user exits an application.

Request URL:

- `void nvStopPublicNetAsync(ViplexCallback callback);`

Request Method:

Return Sample

```
_param code int Error codes: `0`Obtained successfully
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
data	string	The description of the corresponding error code after failure is returned.

Remark

-

4.33.3、Configure public network parameters

Description:

- Configure public network parameters

Request URL:

- `void nvSetPublicNetConfigParamAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA07313J0350000975",
  "data":{
    "host":"192.168.1.100",
    "port":16603,
    "timeout":10000,
    "isEncrypt":false
  }
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN
host	Yes	string	Public network server IP
port	Yes	int	Public network server port

Parameter	Required	Type	Description	
timeout	Yes	int	Timeou	
isEncrypt	Yes	bool	Whether to choose the encryption channel	*

Return Sample

```
_param code int Error codes: `0`successful
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 successful
data	string	The description of the corresponding error code after failure is returned.

Remark

-

4.33.4、The terminal is disconnected from the public network.

Description:

- The terminal is disconnected from the public network.

Request URL:

- `void nvDisconnectPublicNetAsync(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{\"sn\":\"123456\"}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```

```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 successful
data	string	The description of the corresponding error code after failure is returned.

Remark

-

4.33.5、Obtain public network connection configuration of the terminal

Description:

- Obtain public network connection configuration of the terminal

Request URL:

- `void nvGetPublicNetParamAsync(const char *data, ExportViplexCallback callback);`

Request Method:

```

```

Request Parameter Sample

```
{\"sn\":\"123456\"}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product SN

Return Sample

```
{\"isBound\":true,\"host\":\"192.168.1.1\",\"port\":80,\"isEncrypt\":true}
```

Return Parameter Description

Parameter	Type	Description
code	int	Error codes: 0 Obtained successfully
isBound	bool	Whether the terminal is connected to the server
host	string	Server IP
port	int	Server port
isEncrypt	bool	Whether to encrypt

Remark

-

4.34、Terminal logs

4.34.1、Obtain terminal play logs

Description:

- Obtain play logs. The called interface will call back for may times and return the download progress, for example, {“m_curBytes”:11896905,”m_totalBytes”:19896905,”status”:1}

Request URL:

- `void nvDownloadTerminalPlayLog(const char *data,ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA79353N1310006847",
  "fileName":"test_upload",
  "filePath":"E:/test"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product ID
fileName	Yes	string	Name of the file where logs are saved

Parameter	Required	Type	Description
filePath	Yes	string	Path where logs are saved

Return Sample

```
"E:/test/test_upload/play_log"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully 65535 Request timed out 65381 Download completed

Remark

-

4.34.2、Obtain terminal logs

Description:

- Obtain terminal logs, including operation logs and play logs.

Request URL:

- `void nvDownloadTerminalPlayLog(const char *data, ExportViplexCallback callback);`

Request Method:

-

Request Parameter Sample

-

```
{
  "sn":"BZSA79353N1310006847",
  "fileName":"test_upload",
  "filePath":"E:/test"
}
```

Parameters:

Parameter	Required	Type	Description
sn	Yes	string	Unique product ID
fileName	Yes	string	Name of the file where logs are saved

Parameter	Required	Type	Description
filePath	Yes	string	Path where logs are saved

Return Sample

```
"download termianl log finished"
```

Return Parameter Description

Parameter	Type	Description
code	int	Error code: 0 Obtained successfully 65535 Request timed out 65381 Download completed

Remark

-