



Merit LILIN Ent. Co., Ltd.
LILIN NVR/DVR SDK Document

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Chapter 1. Introduction

Chapter 1.1. Overview

This document specifies the Software Development Kit (SDK) of Merit LILIN NVR Touch Series.

The SDK consists of two parts HTTP application programming interface and H.264 ActiveX control programming guide.

Chapter 1.2. Product Support List

NVR100L/NVR200L/NVR400L/NVR1400/NVR2400

NVR3216/NVR3416/NVR5832

NVR Touch NVR104/NVR109/NVR116/NVR404c/VD022 Series

DVR 7 or 8 Series

DVR 3 or 5 Series

Chapter 2. Documentation

Chapter 2.1. General notations

Chapter 2.1.1. General abbreviations

CGI : Common Gateway Interface – a standardized way to communicate between a client (e.g., a web browser) and a server (e.g., a web server). NVR Touch Series are communicated via HTTP CGI. The response of the HTTP CGI is represented as XML format for client application.

Chapter 2.2. Convention of this document

In URL syntax and in descriptions of CGI parameters, text in *italic* within angle brackets denotes that is to be replaced with either a value or a string. When replacing the text string, the angle brackets shall also be replaced.

Chapter 3. HTTP CGI Command Get Parameters

This section describes DVR parameters gotten from a DVR via CGI interface.

Chapter 3.1. Get NVR alarm settings

Syntax:

<http://<ServerIP>/alarmsetting>

Example:

<http://192.168.0.111/alarmsetting>

Return:

```
<?xml version="1.0"
encoding="Big5" ?> - <alarmsetting>
```

```
<sysbuzzer>0</sysbuzze>
<maxchan>16</maxchan>
```

Parameters:

Parameters	Note
< sysbuzzer >	System buzzer on or off when alarm triggered
< maxchan >	Maximum channel

[XML camera 1 alarm setting]

[XML camera 2 alarm setting]

[XML camera 3 alarm setting]

[XML camera 16 alarm setting]
</alarmsetting>

where [XML camera N alarm setting] is:

```
- <channel1>
<chname>CAM01</chname>
  <motion_enable>1</motion_enable>
  <motion_area>1</motion_area>
  <motion_trace>0</motion_trace>
  <sensor_type>0</sensor_type>
  <buzzer_time>0</buzzer_time>
  <alarm_time>5</alarm_time>
</channel1>
```

Parameters:

Parameters	Note
<chname>	Channel name of the camera
<motion_enable>	Motion enable flag
<motion_area>	Motion area flag for full area
<motion_trace>	Motion tracer on/off flag
<sensor_type>	Sensor type
<buzzer_time>	Buzzer time in sec
<alarm_time>	Alarm duration in sec

Chapter 3.1.1. Triggering digital output

The following command can trigger digital output.

Syntax:

<http://<ServerIP>/Relay?on=<iState>&CH=0&num=<iCH>>

Example:

<http://192.168.0.111/Relay?on=0&ch=0&num=0>

Parameters:

Parameters	Note
<iState>	0: close, 1: trigger/open
CH	CH=0, reserved
<iCH>	1~4 of the relay output

NVR	Digital output	On=0	On=1
NVR3 series (FW V1.0.35#2131)	NO	ON	OFF
	NC	OFF	ON
NVR5 series (FW V4.0.20#3035)	NO (only)	OFF	ON

Note: Please check number of digital outputs from the NVR you are using.

Chapter 3.1.2. Simulate digital input triggering

The following command can simulate the trigger for a digital input.

Syntax:

<http://<ServerIP>/trigger?digitalinput=<CH>&state=<iState>>

Example:

<http://192.168.0.111/trigger?digitalinput=0>

Parameters:

Parameters	Note
CH	Channel #, zero based
<iState>	0: end of an event, 1: start of an event

Chapter 3.2. Get NVR status

Syntax:

<http://<ServerIP>/status>

Example:

<http://192.168.0.111/status>

Return:

```
<?xml version="1.0" encoding="Big5" ?> -
<dvr>
[XML record section] [XML HDD
section] [XML machine section]

</dvr>
```

Chapter 3.2.1. Get NVR recording setting where [XML record section] is:

```
- <rec> <dvr_record>1</dvr_record>
<rmode>1</rmode> <roverwrite>1</roverwrite>
<maxchan>4</maxchan> [XML camera 1 section] [XML
camera 2 section]
```

[XML camera N section] </rec>

Parameters:

Parameters	Note
<dvr_record>	0:manual record 1: schedule record,
<rmode>	DVR only, 0: CIF, 1: D1.
<roverwrite>	The HDDs have already overwritten.
<rlimit>	Limit video recordings for playback, European standard.
<rprerec>	Prelarm recording mode in seconds: 0=Off
<maxchan>	Maximum number of channels

Chapter 3.2.2. Get NVR camera recording setting where [XML camera 1 section] is:

```
- <ch1> <chname>CAM01</chname>
  <status>4</status>
  <fps>30</fps>
  <quality>2</quality>
  <source>0</source>
  <resolution>0</resolution>
</ch1>
```

Parameters:

Parameters	Note
<chname>	Camera name, unicode supported.
<status>	Status: 4: schedule, 0: off
<fps>	Frame per second of an IP camera
<quality>	

<source>	Source: 0: close, 1: IP camera, 2: demo video
<resolution>	
<postrec>	Dwell for alarm post recording in seconds.
<weightrec>	Alarm weighted recording mode
<recaudio>	Record audio: 0=OFF, 1=ON

Chapter 3.2.3. Get NVR HDD status

You can also use this CGI below:

Syntax:

<http://<ServerIP>/systemsetup?submenu=hddinfo>

Example:

<http://192.168.0.111/systemsetup?submenu=hddinfo>

where [XML HDD section] is:

```
- <hdd> <pri_m_installed>0</pri_m_installed>
  <pri_m_hdd_size>0</pri_m_hdd_size>
  <pri_s_installed>LITE-ON DVDRW LH-20A1P</pri_s_installed>
  <pri_s_hdd_size>0</pri_s_hdd_size>
  <sec_m_installed>1</sec_m_installed>
  <sec_m_hdd_size>149</sec_m_hdd_size>
  <sec_s_installed>0</sec_s_installed>
  <sec_s_hdd_size>0</sec_s_hdd_size>
  <hdWriteSpeed>20091.36 KB/sec</hdWriteSpeed> <hdReadSpeed>12467.06
  KB/sec</hdReadSpeed> <recstart>08/02/01 13:43:32</recstart>
  <recend>08/02/03 22:03:00</recend>
  <used_hdd>99</used_hdd>
  <averhour>59</averhour> <averday>2</averday>
  <cwhdd>3</cwhdd> <overwritten>1</overwritten>
</hdd>
```

Parameters:

Parameters	Note
<pri_m_installed>	Primary master IDE channel detection status
<pri_m_hdd_size>	Size of primary master IDE channel detected
<pri_s_installed>	Primary slave IDE channel detection status
<pri_s_hdd_size>	Size of primary slave IDE channel detected
<sec_m_installed>	Secondary master IDE channel detection status
<sec_m_hdd_size>	Size of secondary master IDE channel detected
<sec_s_installed>	Secondary slave IDE channel detection status
<sec_s_hdd_size>	Size of secondary slave IDE channel detected
<hdWriteSpeed>	Approx HDD writing speed
<hdReadSpeed>	Approx HDD reading speed
<recstart>	Recording starting time
<recend>	Recording ending time
<used_hdd>	Percentage used of the HDDs
<averhour>	Average recording hours estimated
<averday>	Average recording day estimated
<cwhdd>	Current writing HDD
<overwritten>	Overwritten, yes or no

Chapter 3.2.4. Get NVR machine status

where [XML machine section] is:

```
- <machine>
  <rs485id>0</rs485id>
  <client>1</client>
  <boot>02/01 13:35</boot>
  <kernel>2.6</kernel>
</machine>
```

Parameters:

Parameters	Note
<rs485id>	RS-485/DVR ID of the DVR
<client>	Number of client access now
<boot>	Last rebooting time
<kernel>	Kernel version
<temperature>	Device temperature in Celsius. -1 means that the device does have the hardware built-in.
<fan>	OK means that the fan is running.

Chapter 3.2.5. Get NVR local time

Syntax:

<http://<ServerIP>/getclock>

Example:

<http://192.168.0.111/getclock>

```
hr=16
min=26
sec=29
mn=6
date=11
year=2018
area=0
time_sync_type=0
ntp_update_interval=0
ntp_server=time.stdtime.gov.tw
ntp_status=-empty-
```

Chapter 3-3. Get NVR system status

Syntax:

<http://<ServerIP>/status?CMD=getsystemstatus>

Example:

<http://192.168.0.111/status?CMD=getsystemstatus>

Return:

```
<?xml version="1.0" encoding="UTF-8"?>
<GetSystemStatusResponse>
<EnvironmentStatus>
<Fan>ok</Fan> /* Fan ok or fail*/
<Temperature>40 Celsius</Temperature> /* Temperature */
```




```
</EnvironmentStatus>
<HardDrivesStatus>
<MaxHardDriveNumber>9</MaxHardDriveNumber>          /* Maximum drives */
  <HardDrive01>
    <SATAPortNumber>9</SATAPortNumber>                /* SATA channel */
    <ModelName>WDC WD20EARX-00PASB0</ModelName>        /* HDD model number */
    <SerialNumber> WD-WCAZAD494855</SerialNumber>      /* HDD serial number */
    <Capacity>1863 MB</Capacity>                       /* HDD capacity */
    <Status>ok</Status>
  </HardDrive01>
  <HardDrive02>
    <SATAPortNumber>none</SATAPortNumber>              /*none : */
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive02>
  <HardDrive03>
    <SATAPortNumber>none</SATAPortNumber>
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive03>
  <HardDrive04>
    <SATAPortNumber>none</SATAPortNumber>
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive04>
  <HardDrive05>
    <SATAPortNumber>none</SATAPortNumber>
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive05>
  <HardDrive06>
    <SATAPortNumber>none</SATAPortNumber>
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive06>
  <HardDrive07>
    <SATAPortNumber>none</SATAPortNumber>
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive07>
  <HardDrive08>
    <SATAPortNumber>none</SATAPortNumber>
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive08>
  <HardDrive09>
    <SATAPortNumber>none</SATAPortNumber>
    <ModelName>none</ModelName>
    <SerialNumber>none</SerialNumber>
    <Capacity>none</Capacity>
  </HardDrive09>
</HardDrivesStatus>
</GetSystemStatusResponse>
```

Parameters:

Parameters	Note
<MaxHardDriveNumber>	RS-485/DVR ID of the DVR
<SATAPortNumber>	Mapped SATA channel (hardware)
<ModelName>	HDD model number
<Capacity>	HDD capacity

<Status>	ok: in recording file system error: HDD file system error detected IO error: HDD IO error detected S.M.A.R.T fail: SMART error detected unformat:Unformatted HDD
----------	--

Chapter 3.3. Get camera status

Syntax:

<http://<ServerIP>/status?CMD=getcamerastatus>

Example:

<http://192.168.0.111/status?CMD=getcamerastatus>

Return:

```
<?xml version="1.0" encoding="UTF-8"?>
<GetCameraStatusResponse>
  <CameraStatus>
    <MaxCameraNumber>4</MaxCameraNumber>      /* NVR number of channels */
    <Camera01>
      <SourceType>ipcamera</SourceType>          /* Source type */
      <SourceHealth>connected</SourceHealth>
      <Alarmed>no</Alarmed>
      <Motioned>no</Motioned>
    </Camera01>
    <Camera02>
      <SourceType>off</SourceType>
      <SourceHealth>none</SourceHealth>
      <Alarmed>none</Alarmed>
      <Motioned>none</Motioned>
    </Camera02>
    <Camera03>
      <SourceType>ipcamera</SourceType>
      <SourceHealth>connected</SourceHealth>
      <Alarmed>yes</Alarmed>
      <Motioned>no</Motioned>
    </Camera03>
    <Camera04>
      <SourceType>off</SourceType>
      <SourceHealth>none</SourceHealth>
      <Alarmed>none</Alarmed>
      <Motioned>none</Motioned>
    </Camera04>
  </CameraStatus>
</GetCameraStatusResponse>
```

Parameters:

Parameters	Note
<MaxCameraNumber>	Maximum number of cameras
<SourceType>	Channel source type: ipcamera: IP camera connection off: The channel is not set for IP camera demovideo: Demo video mode
<SourceHealth>	Channel healthy status: connected: The camera is connected. loss: The camera is lost. none: The channel is in none IP camera mode or demo video model.
<Alarmed>	Digital input status: no: No digital input alarm yes: Digital input alarm is active. none: The camera is in none IP camera mode or demo video mode.

<Motioned>	Motion status: no: No motion alarm yes: Motion alarm is active. none: The camera is in none IP camera mode or demo video mode.
------------	---

Chapter 3.4. Direct camera CGI bypass communication

Syntax:

[http://<ServerIP>/camerasetup?submenu=general&cmd=cgiforward&detail=\(cgiforward;ch:<CH>nsbp;method:getsnsbp;auth:basicsnsbp;uri:<Base64EncodedURL>\);](http://<ServerIP>/camerasetup?submenu=general&cmd=cgiforward&detail=(cgiforward;ch:<CH>nsbp;method:getsnsbp;auth:basicsnsbp;uri:<Base64EncodedURL>);)

Example #1:

[http://admin:1111@192.168.0.111:80/camerasetup?submenu=general&cmd=cgiforward&detail=\(cgiforward;ch:0nsbp;method:getsnsbp;auth:basicsnsbp;uri:c2VydmVlICAgnsbp;\);](http://admin:1111@192.168.0.111:80/camerasetup?submenu=general&cmd=cgiforward&detail=(cgiforward;ch:0nsbp;method:getsnsbp;auth:basicsnsbp;uri:c2VydmVlICAgnsbp;);)

Note: “c2VydmVlICAg” is “server” in Based64 encrypted. See server configuration from API reference in IP camera HTTP API SDK.

Example #2:

[http://admin:1111@192.168.0.111:80/camerasetup?submenu=general&cmd=cgiforward&detail=\(cgiforward;ch:0nsbp;method:getsnsbp;auth:basicsnsbp;uri:c2V0aW8/cmVsYXkxPTE=nsbp;\);](http://admin:1111@192.168.0.111:80/camerasetup?submenu=general&cmd=cgiforward&detail=(cgiforward;ch:0nsbp;method:getsnsbp;auth:basicsnsbp;uri:c2V0aW8/cmVsYXkxPTE=nsbp;);)

Note: “c2V0aW8/cmVsYXkxPTE=” is “setio?relay1=1” in Based64 encrypted. See relay control from API reference in IP camera HTTP API SDK.

Parameters:

Parameters	Note
<MaxCameraNumber>	Maximum number of cameras
<CH>	CH: channel #, 0~15
<Base64EncodedURL>	Refer to IP camera HTTP API document. uri:c2VydmVlICAg = url: server

Chapter 4. HTTP CGI Command Set Parameters

Chapter 4.1. Set alarm Email parameters

Syntax:

<http://<ServerIP>/alarm?cmd=set&ENABLE=<On>&FROM=<MailFrom>&TO=<MailTo>&SERVER=<MailServer>&AUTHORIZATION=<On>&USERNAME=<AuthName>&USERPWD=<AuthPassword>&ATTACHJPEGFILE=<AttachJpeg>>

Example:

<http://<ServerIP>/alarm?cmd=set&ENABLE=1&FROM=user@example.com&TO=user@example.com&SERVER=example.com&AUTHORIZATION=1&USERNAME=TestName&USERPWD=abcd&ATTACHJPEGFILE=1>

Parameters:

Parameters	Values	Note
ENABLE=<On>	1: On; 0: Off	Enable to sent alarmed email
<MailFrom>	user@example.com	Email address
<MailTo>	sendto@example.com	Mail to email address
AUTHORIZATION=<On>	1: on; 0: off	Enable email server authentication option
<AuthName>		Username of the email host server (sender)
<AuthPassword>		Password of the email host server (sender)
<AttachJpeg>	1:on ; 0:off	Enable attaching JPEG

Chapter 4.2. Set alarm settings

Syntax:

<http://<ServerIP>/alarmsetting?cmd=set&CAM0=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM1=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM2=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM3=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM4=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM5=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM6=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM7=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM8=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM9=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM10=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM11=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM12=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM13=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM14=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&CAM15=<MotionEnable>:<MotionTrace>:<SensorType>:<AlarmTime>:<BuzzerTime>:<MotionArea>&BENABLE=<BuzzerOn>>

Example:

<http://<ServerIP>/alarmsetting?cmd=set&CAM0=1:1:1:10:0:1&CAM1=0:0:0:5:5:0&CAM2=.....&BENABLE=0>

Parameters:

Parameters	Values	Note
<MotionEnable>	1: On; 0: Off	Enable motion detection of a channel.
<MotionTrace>	1: On; 0: Off	Enable motion tracer of a channel.
<SensorType>	1: N/O; 2: O/C; 0: Off	Normal open/normal close/none
<AlarmTime>	1~99	Alarm duration
<BuzzerTime>	1~99	Buzzer time
<MotionArea>	1: full area; 0: none	Motion area
<BuzzerOn>	1: Enable; 0: disable	Buzzer on or off

Chapter 4.3. Set record settings

Syntax:

<http://<ServerIP>/status?cmd=set&RECRESOLUTION=<Imagemode>&CAM0=<RecordMode>:<PostRecTime>:<WeightRec>:<RecordAudio>&CAM1=<RecordMode>:<PostRecTime>:<WeightRec>:<RecordAudio>&SYSREC=<RecMode>&OVERWRITE=<On>>

Example:

<http://<ServerIP>/status?cmd=set&RECRESOLUTION=1&CAM0=0:5:0:1&CAM1=0:3:0:0&CAM2=...&SYSREC=1&OVERWRITE=1>

Parameters:

Parameters	Values	Note
<ImageMode>	0 or 1	Reserved
<RecMode>	0: No record; 4: Schedule record	Schedule recording of a channel
<PostRecTime>	0 (Off) – 100 (sec)	0: Off – 100 sec
<WeightRec>	0 (Off) – 1 (On)	0: Off – 1: On
<RecordAudio>	0 (Off) – 100 (sec)	0: Off – 1: On

<On>	1: Overwritten; 0: Not to overwrite	
------	-------------------------------------	--

Chapter 4.4. Set schedule settings

Chapter 4.4.1. Apply for all schedule

Syntax:

<http://<ServerIP>/setrecschedule?cmd=all&all=<SchType>>

Example:

<http://192.168.0.111/setrecschedule?cmd=all&all=Always>

Parameter	Values	Note
<SchType>	"Always"/"Sensor"/"Motion"	Apply all for schedule table

Chapter 4.4.2. Set schedule by hour

Syntax:

<http://<ServerIP>/setrecschedule?cmd=hour&day=<Day>&hour=<Hour>&type=<SchType>>

Example:

<http://192.168.0.111/setrecschedule?cmd=hour&day=1&hour=10&type=Sensor>

Parameters:

Parameter	Values	Note
<Day>	0: Monday, 1: Tuesday~6: Saturday	Day code for the schedule table
<Hour>	Hour: 1~24	Hour of the schedule table
<SchType>	"Always"/"Sensor"/"Motion"	Alarm recording triggering type

Chapter 4.5. Reboot NVR

Syntax:

http://<ServerIP>/connection?cmd=reboot_server

http://<ServerIP>/genser?cmd=reboot_server

Example:

http://<ServerIP>/connection?cmd=reboot_server

Chapter 4.6. NVR settings

Syntax:

http://<ServerIP>/genser?cmd=set&LANGUAGE=<LangType>&WEBCAMNAME=<485-ID>&C_LIMIT=<UserLimit>&AUTOLOGOUT=<ForceLog>

Example:

http://<ServerIP>/genser?cmd=set&LANGUAGE=0&WEBCAMNAME=1&C_LIMIT=7&AUTOLOGOUT=0

Parameters:

Parameter	Values	Note
<LangType>	0: English 1: Traditional Chinese 2: Simplified Chinese 3: Deutsch	

	4: Francais 5: Italiano 7: Espanol	
<485-ID>	0~255	ID of the DVR
<UserLimit>	3~10	User remote access count limit
<ForceLog>	0: disable; auto logout 1: enable	Force to logout from IE interface.

Chapter 4.7. NVR network settings

Syntax:

<http://<ServerIP>/netstate?cmd=set&IPADDR=<IPAddr>&MASK=<Mask>&GATEWAY=<Gateway>&DNS1=<Dns1>&PPPOEACCOUNT=<PPPoEAccount>&PPOEPASSWORD=<PPPoEPassword>&NPORT=<Videoport>&HTTPPORT=<HttpPort>&MODE=<Mode>>

Example:

http://<ServerIP>/netstate?cmd=set&IPADDR=192.168.1.164&MASK=255.255.255.0&GATEWAY=192.168.1.1&DNS1=168.95.192.1&PPPOEACCOUNT=12345678@hinet.net&PPPOEPASSWORD=*****&NPORT=3100&HTTPPORT=80&MODE=1

Parameters:

Parameter	Values	Note
<IPAddr>	xxx.xxx.xxx.xxx	
<Mask>	xxx.xxx.xxx.xxx	
<Gateway>	xxx.xxx.xxx.xxx	
<Dns1>	xxx.xxx.xxx.xxx	Domain Name System
<PPPoEAccount>		ISP provided PPPoE account
<PPPoEPassword>		ISP provided PPPoE password
<Videoport >	1~65535	ActiveX accessed video and audio streaming port number
<HttpPort>	1~65535	Browser accessed port number
<Mode>	1~3	1: Static 2: DHCP 3: PPPoE

Chapter 4.8. Set user

Syntax:

http://<ServerIP>/changepw?cmd=<UserType>&OLD_PWD=<OldPass>&NEW_FPWD=<FirstNewPwd>&NEW_SPWD=<ConfirmNewPwd>

Example:

http://192.168.0.111/changepw?cmd=AMD&OLD_PWD=1111&NEW_FPWD=1111&NEW_SPWD=1111

or

http://192.168.0.111/changepw?cmd=DBUSER2&OLD_PWD=3333&NEW_FPWD=1111&NEW_SPWD=1111&DB_User_Name=LILIN&DB_User_Type=1

Parameters:

Parameter	Values	Note
<UserType>	AMD OPE GUE DBUSER1~ DBUSER12	Administrator/operator/guest or other user
<OldPass>	**** ~ *****	4 to 8 length charter or number
< FirstNewPwd >	**** ~ *****	
< ConfirmNewPwd>	**** ~ *****	
DB_User_Name	**** ~ *****	If set the user not the default.

DB_User_Type	1~3	1 to 8 length charter. 1: Administrator's default control limit. 2: Operator's default control limit. 3: Guest's default control limit.
--------------	-----	--

Chapter 4.9. Set FTP JPEG Snapshot Configuration

Syntax:

http://<ServerIP>/ftp_trans?CMD=set&ftp_addr=<IPAddr> &ftp_port=<Port>&ftp_account=<Account>&ftp_password=<Password> &ftp_file_prefix=<Prefix>&ftp_file_posfix=<Posfix>&ftp_file_format=<Fileformat> &continuos_send=<Cont.> &continuos_dwell=<Cont.dwell>&alarm_send=<Alarm>&alarm_dwell=<Alarm dwell> &cam1<Dest path>:<Enable> &cam2<Dest path>:<Enable>

Parameters:

Parameter	Values	Note
<IPAddr>	xxx.xxx.xxx.xxx	FTP Server IP Address.
<Port>	1~65535	FTP Server Port.
<Account>	xxxxxxxxxxxxxx	FTP Login Account
<Password>	*****	FTP Login Pssword
<Prefix>	xxxxxxx	JPEG File Name Prefix(If not using with "-empty-")
<Posfix>	xxxxxxx	JPEG File Name Posfix(If not using with "-empty-")
<Fileformat>	"/YYYYMMDDhhmmss" Or "/hh_mm_ss_MM_DD_YYYY" Or "/MM_DD_hh_mm_ss_YY" Or "/MM_DD_hh_mm_ss_YYYY"	JPEG File Name Format
<Cont.>	0~1	1:Enable Continuous Send JPEG. 0:Disabl
<Cont. dwell>	1~3600	Send JPEG Dwell (sec.)
<Alarm>	0~1	1:Enable Alarmed Send JPEG 0:Disable
<Alarm dwell>	10~60	Alarmed Send JPEG Dwell
<Dest path>	xxxxxxxxxxxxxxxx	JPEG File Saved Path.
<Enable>	0~1	1:Enable Camera JPEG Send.

Chapter 4.9.1. Get FTP JPEG snapshot configuration

Syntax:

http://<ServerIP>/ftp_trans

where [XML machine section] is:

```
<ftp_trans> <maxchan>4</maxchan>
<cam1> <chname>CAM01</chname>
  <ftp_channel_send>1</ftp_channel_send>
  <ftp_channel_dest_dir>/Cam1</ftp_channel_dest_dir> </cam1>
<cam2> <chname>CAM02</chname>
  <ftp_channel_send>1</ftp_channel_send> <ftp_channel_dest_dir>/Cam2</ftp_channel_dest_dir> </cam2>
<cam3> <chname>CAM03</chname>
  <ftp_channel_send>1</ftp_channel_send> <ftp_channel_dest_dir>/Cam3</ftp_channel_dest_dir> </cam3>
<cam4> <chname>CAM04</chname>
  <ftp_channel_send>1</ftp_channel_send> <ftp_channel_dest_dir>/Cam4</ftp_channel_dest_dir> </cam4>
<ftp_addr>www.fisnap.com</ftp_addr> <ftp_port>21</ftp_port> <ftp_account>admin</ftp_account>
<ftp_password>1111</ftp_password> <ftp_file_prefix>dvr304_</ftp_file_prefix>
<ftp_file_posfix>_test</ftp_file_posfix>
```



```
<ftp_file_format>/hh_mm_ss_MM_DD_YYYY</ftp_file_format> <continuos_send>1</continuos_send>  
<continuos_dwell>5</continuos_dwell> <alarm_send>0</alarm_send> <alarm_dwell>10</alarm_dwell>  
</ftp_trans>
```

Parameters:

Parameters	Note
<maxchan>	Max Camera Channel
<chname>	Camera Name
<ftp_channel_send>	Enable/Disable JPEG Transmission
<ftp_channel_dest_dir>	JPEG File Destination Path
<ftp_addr>	FTP Server IP Address
<ftp_port>	FTP Sever Port
<ftp_account>	FTP Server Login Account
<ftp_password>	FTP Server Login Password
<ftp_file_prefix>	JPEG File Name Prefix
<ftp_file_posfix>	JPEG File Name Posfix
<ftp_file_format>	JPEG File Name Format
<continuos_send>	Enable/Disable Continous Send JPEG
<continuos_dwell>	Send JPEG Dwell (sec.)
<alarm_send>	Enable/Disable Alarmed Send JPEG
<alarm_dwell>	Alarmed Send JPEG Dwell(sec.)

Chapter 4.10 Firmware update

Perform firmware update for a DVR/NVR.

Syntax:

http://<ServerIP>/firm_up

Protocol:

HTTP Post with the binary firmware to the DVR/NVR.

POST /firm_up HTTP/1.1

Host: 192.168.8.182

Connection: keep-alive

Content-Length: 17211483

Authorization: Basic YWRtaW46MTExMQ==

Origin: <http://192.168.8.182>

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)

Chrome/60.0.3112.113 Safari/537.36

Content-Type: multipart/form-data; boundary=----WebKitFormBoundaryouO02Utczi8DDpOh

Accept: */*

Referer: <http://192.168.8.182/newlang1/menu.html>

Accept-Encoding: gzip, deflate

Accept-Language: fr,zh-TW;q=0.8,zh;q=0.6,en-US;q=0.4,en;q=0.2

Cookie: LANGUAGE=0; OEM=1; PRODUCT_NAME=NVR5832; RAID_ENABLED=0;

FIRMWARE_NAME=Flashnvr5832.bin; MAX_CONECTION=10; LOGOUT=0; TYPENAME=ADMIN;

METADATAREADER=1; METADATALOG=1; ADMIN_AUTHORITY_NETWORK_LIVE=1;

ADMINNETSETUP=1; ADMINPB=1; ADMINBACKUP=1; ADMINPTZSETUP=1;

ADMIN_AUTHORITY_EVENT=1; ADMIN_AUTHORITY_ALARM=1; ADMIN_AUTHORITY_SHUTDOWN=1;

LOG_MODE=2; LOG_ID=ADMIN; UNAME=ADMIN; SYSOXID=mteNmq==; SYSOXVER=2833;

DB_USER_NUM=0; WEBCAMNAME=0; VIDEOSYSTEM=0; VIDEOHTTPPORT=3100_80;

MAX_CAMERA_CHANNEL=32; VIEWERSIZE=1

Chapter 5. PTZ Control



In this chapter, all the commands are in CGI format. The command can be tested and verified via an Internet browser. To test the command, please replace "<serverIP>" with DVR 3Series/NDR 1Series's IP or domain name address

Note: all the commands in this chapter are case sensitive.

Chapter 5.1. Send PTZ command

Syntax:

[http://<serverIP>/PTZControl?camid=<value>\[&<parameter>=<value>...\]](http://<serverIP>/PTZControl?camid=<value>[&<parameter>=<value>...])

Parameters:

Parameter	Values	Description
camid	1~16	Camera channel for pan, tilt, or zoom
rpan	-8~8	Pan relatively (positive value means pan right)
rtilt	-8~8	Tilt relatively (positive value means tilt up)
rzoom	-1~1	Zoom relatively (positive value means zoom in)

Example: Set camera #1 to pan right with speed 7.

<http://<serverIP>/PTZControl?camid=1&rpan=7>

Chapter 5.2. Call a PTZ's preset

Syntax:

[http://<serverIP>/PTZControl?camid=<value>\[&<parameter>=<value>...\]](http://<serverIP>/PTZControl?camid=<value>[&<parameter>=<value>...])

Parameters:

Parameter	Values	Description
camid	1~16	Camera channel for preset setting
goto_preset	1 ~ 64	Goto a preset position according to the preset number
set_preset	1 ~ 64	Assign a preset number to a preset position.
dwel	1~255	Dwell
pspeed	1~8	Speed

Example: Set camera 1 to go to preset point 3.

<http://<serverIP>/PTZControl?camid=1&gotopreset=3>

Chapter 5.3. Save presets

Syntax:

http://<serverIP>/PTZControl?camid=1&set_preset=3&dwel=5&pspeed=8

Chapter 5.4. Set PTZ's focus, iris, rotate and auto state commands

Syntax:

[http://<serverIP>/PTZControl?camid=<value>\[&<parameter>=<value>...\]](http://<serverIP>/PTZControl?camid=<value>[&<parameter>=<value>...])

Parameters:

Parameter	Values	Description
camid	1~16	Camera channel for setting about command



focus	-1 and 1	1 for focus far and -1 for focus near.
Iris	-1 and 1	1 for iris large and -1 for iris small.
rotate	1	Let ptz rotate 180 degree.
autopan	-1 and 1	1 for start auto pan and -1 for stop auto pan
autofocus	1	Set ptz auto focus status on
autoiris	1	Set ptz auto iris status on

Chapter 5.5. Auto pan

Example: Set camera 1 to autopan.

<http://<serverIP>/PTZControl?camid=1&autopan=1>

Chapter 6. Event List

Chapter 6.1. Get event history

To get event list and record list, please use the following command to retrieve. The playback time information can be extracted from the event list and record list for video playback purpose.

Syntax:

http://<serverIP>/eventindex_file?event_page=<value>&rec_page=<value>

Syntax:

http://<serverIP>/backup?cmd=query&get_unit=minute&from=2022/02/21

Example:

http://<serverIP>/eventindex_file?event_page=1&rec_page=1

Example:

http://<serverIP>/eventindex_file=1?system_page=1

Example:

http://<serverIP>/backup?cmd=query&get_unit=minute&from=2022/02/21

Chapter 6.2. Get run-time alarm information

To get alarm information run-time, please type getalarmmotion CGI. DVR will return the current alarm status for motion or external alarm.

Syntax:

<http://<serverIP>/getalarmmotion<channel# from 0 to 15>>

Example:

<http://<serverIP>/getalarmmotion04>

Return:

--myboundary
Content-Type:
text/plain

CamTime:2011-11-10
11:57:13 MotionDetect=1
AlarmInputDetect=0

--myboundary
Content-Type:



text/plain

CamTime:2011-11-10
11:57:14 MotionDetect=1
AlarmInputDetect=0

--myboundary
Content-Type:
text/plain

CamTime:2011-11-10
11:57:14 MotionDetect=1
AlarmInputDetect=0

Chapter 6.3. Get meta text

To get meta data information from NVR such as ATM/POS/GPS, you can use the CGI to get the information.

Syntax:

<http://<serverIP>/getMetaText?ch=0&date=<YYYYMMDD>&time=<HH:MM:SS>>

Example:

<http://<serverIP>/getMetaText?ch=0&date=20141021&time=23:12:15>

Return:

Content-Description: ch=0 time=[20141021&time=23:12:15](#) encoding= text

Note: Encoding is text that is translated Unicode. Encoding is binary that is unformatted raw data format.

Chapter 6.4. Set meta text

If your device supports HTTP protocol, you can use HTTP protocol to send or to get the transactions.

Set transaction to NVR Touch series via HTTP

Syntax:

<a href="http://<serverIP>/sendMetaData?ch=<Ch>&data=<transaction>">http://<serverIP>/sendMetaData?ch=<Ch>&data=<transaction>

Example:

<http://192.168.0.111/sendMetaData?ch=1&data=123>

Return:

```
<metadata>
<channel>1</channel>
<alarm_ts>Fri Dec 13 12:44:47 2013</alarm_ts>
<data>123</data>
<result>1</result>
</metadata>
```

Chapter 6.5. Edge LPR camera

NVR supported : NVR6208E

6.5.1 Get LPR camera event start and end times.

Example:

http://192.168.0.111/eventindex_file?cmd=querybegin&toend

Response:

```
<EventFile>
  <EventDuration>
    <BeginDateTime>2021/11/23 11:27:00</BeginDateTime>
    <EndDateTime>2021/12/02 11:58:00</EndDateTime>
  </EventDuration>
  <EventDays>
    <Number>2</Number>
    <EventDay0>
      <DateTime>2021/11/23 00:00:00</DateTime>
    </EventDay0>
    <EventDay1>
      <DateTime>2021/11/29 00:00:00</DateTime>
    </EventDay1>
  </EventDays>
</EventFile>
```

6.5.2 Search LPR events

Example:

[http://192.168.0.111/eventindex_file?cmd=query&detail=\(range:begin:2021/11/24-07:41:00nsbp;end:2021/12/02-10:51:00nsbp;channel:11111111nsbp;type:000000000000001110000nsbp;\)](http://192.168.0.111/eventindex_file?cmd=query&detail=(range:begin:2021/11/24-07:41:00nsbp;end:2021/12/02-10:51:00nsbp;channel:11111111nsbp;type:000000000000001110000nsbp;))

Parameters:

Parameter	Values	Description
begin	YYYY/MM/DD-hh:mm:ss nsbp	Event beginning time.
end	YYYY/MM/DD-hh:mm:ss nsbp	Event ending time.
channel	11111111nsbp	The order is from right to left. 0: Disable the channel. 1: Enable the channel.
type	000000000000001110000nsbp	The order is from right to left. 0: Disable the event. 1: Enable the event. Position Event 1 Motion Detection 2 External Alarms 3 Manual Recording 4 META Data 5 LPR Denial List 6 LPR Allowed List 7 LPR Visitor List

Response:

```
<EventFile>
  <Event0>
    <Channel>0</Channel>
    <DateTime>2021/12/02 11:13:34</DateTime>
    <TimeInSeconds>1638411214</TimeInSeconds>
    <Disk>0</Disk>
    <Type>4</Type>
    <Img>eventindex_file?cmd=preview&time=1638411214&channel=0&disk=0</Img>
  </Event0>
  <Event1>
    <Channel>0</Channel>
    <DateTime>2021/12/02 11:13:34</DateTime>
    <TimeInSeconds>1638411214</TimeInSeconds>
    <Disk>0</Disk>
    <Type>5</Type>
    <Img>eventindex_file?cmd=preview&time=1638411214&channel=0&disk=0</Img>
  </Event1>
```

```

<Event2>
  <Channel>0</Channel>
  <DateTime>2021/12/02 11:13:34</DateTime>
  <TimeInSeconds>1638411214</TimeInSeconds>
  <Disk>0</Disk>
  <Type>6</Type>
  <Img>eventindex_file?cmd=preview&time=1638411214&channel=0&disk=0</Img>
</Event2>
<EventNumber>3</EventNumber>
<EventDetailLimit>8000</EventDetailLimit>
</EventFile>

```

6.5.3 Get LPR snapshots

Example:

http://192.168.0.111/eventindex_file?cmd=preview&time=1638405175&channel=1&disk=0

Parameter:

Parameter	Values	Description
time	Time stamp	Date & time
channel	Int.	Channel
disk	Int.	The order number of hard disk.

6.5.4 License plate recognitions

Example:

<http://192.168.0.111/recordeventcontent?cmd=plate&ch=0&time=1638411214&type=4&idx=0>

Parameters:

Parameter	Values	Description
ch	Int.	Channel
time	Time stamp	Date & time
type	4/5/6	The type list of LPR: 4: LPR Denial List. 5: LPR Allowed List. 6: LPR Visitor List.
idx	Int.	The order number of hard disk.

Response:

```

<RecordEventContent>
  <Cmd>plate</Cmd>
  <Index>0</Index>
  <Time>1638417463</Time>
  <Status>OK</Status>
  <Plate>YX2700 </Plate>
</RecordEventContent>

```

6.5.5 LPR number of records

Searching Event : Up to 8,000 events. Once searching are over 8,000 events, NVR will return Truncate and show 8,000th event time. If the user would like to choose 9,000th event, please modify the event beginning time and do search again.

```

<Truncate>
  <DateTime>2021/12/02 11:04:32</DateTime>

```



```
</Truncate>
<EventNumber>8000</EventNumber>
<EventDetailLimit>8000</EventDetailLimit>
```

Chapter 7. Backup

Chapter 7.1. Get recording list

Syntax:

http://<serverIP>/backup?backup?cmd=query&get_unit=minute&from=<StartDate>&to=<EndDate>

Parameters:

Parameter	Values	Description
StartDate	YYYY-MM-DD	Date format
EndDate	YYYY-MM-DD	Date format

```
<?xml version="1.0" encoding="UTF-8"?>
-<BackUp>
-<TimeSearch>
-<EndTime>
  <year>14</year>
  <month>10</month>
  <day>13</day>
  <hour>16</hour>
  <min>36</min>
  <sec>07</sec>
</EndTime>
-<StartTime>
  <year>14</year>
  <month>10</month>
  <day>11</day>
  <hour>02</hour>
  <min>00</min>
  <sec>00</sec>
</StartTime>
</TimeSearch>
<RecMinuteMAX>1000</RecMinuteMAX>
-<RecMinuteLIST>
-<RecMinute0>
<Minute>2014/10/13 14:44:00</Minute>
</RecMinute0>
-<RecMinute1>
<Minute>2014/10/13 14:33:00</Minute>
</RecMinute1>
-<RecMinute2>
<Minute>2014/10/13 14:05:00</Minute>
</RecMinute2>
-<RecMinute998>
<Minute>2014/10/13 08:45:00</Minute>
</RecMinute998>
-<RecMinute999>
<Minute>2014/10/13 08:51:00</Minute>
</RecMinute999>
</RecMinuteLIST>
<MaxChannel>16</MaxChannel>
</BackUp>
```



Chapter 7.2. Setup for backup

Syntax:

<http://<serverIP>/backup?startdate=YYYY/MM/DD&starttime=HH:MM:SS&endtime=HH:MM:SS&toavi=N&chflag=111111111111>

Example:

<http://192.168.3.191/backup?startdate=2011/03/01&starttime=9:0:0&enddate=2011/03/01&endtime=09:05:0&toavi=0&chflag=1111000000000000>

YYYY: year

MM: month

DD: day

Starttime: HH:MM:SS in time format

Toavi: convert it to AVI file format

Chflag: Please make sure the flag is 16 bytes

Note: MM: please subtract 1 from the month. For example, the backup month is august. The MM is 7.

Return: done: successful; fail: fail

Chapter 7.3. Get backup file list

Syntax:

http://<serverIP>/backup?get_ftpfile=1

Example:

http://<serverIP>/backup?get_ftpfile=1

Where:

[BackupFileList] is: - <Backup>

<fileopen>success</fileopen> <filecontent>MMDDHHmm.l64....</filecontent> </Backup>

Note: In your application, files can be downloaded via HTTP protocol.

Chapter 8. Get NVR/DVR/Video Decoder Device Information

Syntax:

<http://<serverIP>/server>

Example:

<http://admin:1111@192.168.0.111/server>

Return: Requested server configurations

HTTP/1.0 200 OK\r\n

Date: Thu, 01 Jan 1970 00:00:00 GMT\r\n

Connection: close\r\n

Content-Type: text/html\r\n

Content-Length: 244\r\n

\r\n

Device name=DVR816

id=7

owner name=

owner email=

MAC address=00:0F:FC:10:F7:E5

logoEnable=1



Software Version=1.1.2 Beta 1
Model=87 Language=0
DhcpEnable=0
Max channel=16
H.264 channel=16
JPEG channel=16
Device type=DVR
Matrix=1
EnableGetStreamPbTrans=1
EnableGetHDPBStream=1
EnableGetHDStream=1

Chapter 9. NVR/DVR/Video Decoder Live and Playback Streaming

Chapter 9.1. MJPEG live streaming

JPEG streaming for LILIN NVR/DVR/video decoder is only supported for live video. There is no playback streaming available for playback. The JPEG live streaming is more used by light CPU decoding device with less frame rate.

Syntax:

<http://<serverIP>/getimage<Channel>>

Example:

Ch01: <http://admin:1111@192.168.0.111/getimage00>
Ch02: <http://admin:1111@192.168.0.111/getimage01>
Ch03: <http://admin:1111@192.168.0.111/getimage02>
Ch04: <http://admin:1111@192.168.0.111/getimage03>
,
,
Ch16: <http://admin:1111@192.168.0.111/getimage15>

HTTP MJPEG streaming description

HTTP/1.0 200 OK\r\n

Content-Type: multipart/x-mixed-replace;boundary=--<boundary>\r\n\r\n

--<boundary>\n
<image> --
<boundary>\n
<image>
...
<boundary>\n

Where:

The <boundary> field in Merit LILIN digital device is <myboundary>\n.

The returned <image> field is:

Content-Type: image/jpeg\n

Content-Length: <jpeg image size> Stamp:<YYYYMMDD 00HHmmss TK SSSSSSSS>\n\n

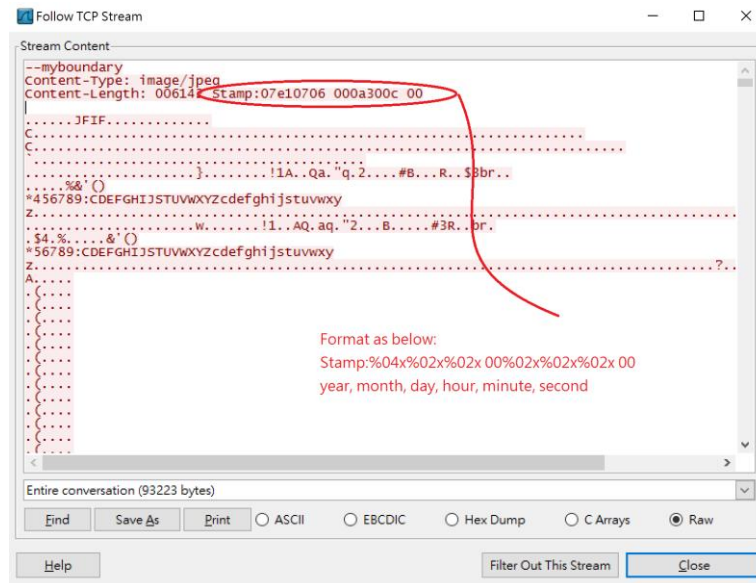
<JPEG image data>

Time stamp: <YYYYMMDD 00HHmmss TK SSSSSSSS>

Parameters:

Parameter	Values	Description
YYYY		Hex value of year

MM		Hex value of month
DD		Hex value of day
HH		Hex value of hour
mm		Hex value of minute
ss		Hex value of second



To verify MJPEG streaming or snapshot, type the CGI in the URL address box of FireFox.



Chapter 9.2. JPEG snapshot

The following CGI commands can provide JPEG snapshot over HTTP.

Syntax:

<http://<serverIP>/snap<Channel>>

Example:

Ch01: <http://admin:1111@192.168.0.111/snap00>

Ch02: <http://admin:1111@192.168.0.111/snap01>

Ch16: <http://admin:1111@192.168.0.111/snap15>



Chapter 9.3. H.264 live streaming

LILIN NVR/DVR/video decoder's live streaming is based on H.264 video compression. LILIN H.264 streaming is H.264 raw data.

Syntax:

<http://<serverIP>/getstream<Channel>>

Example of SD H.264 live stream:

Ch01: <http://admin:1111@192.168.0.111/getstream00>

Ch02: <http://admin:1111@192.168.0.111/getstream01>

Ch03: <http://admin:1111@192.168.0.111/getstream02>

Ch04: <http://admin:1111@192.168.0.111/getstream03>

Ch16: <http://admin:1111@192.168.0.111/getstream15>

Example of HD H.264 live stream:

Ch01: <http://admin:1111@192.168.0.111/gethstream00>

HTTP H.264 description:

HTTP/1.0 200 OK\r\n

Content-Type: multipart/x-mixed-replace;boundary=--<boundary>\r\n\r\n

--<boundary>\n

<image> --

<boundary>\n

<image>

...

<boundary>\n

Where:

The <boundary> field in Merit LILIN digital device is <myboundary>\n.

The returned <image> field is:

Content-Type: video/h264\n

Content-Length: <H.264 image size>

Stamp:<YYYYMMDD 00HHmmss TK SSSSSSSS>\n\n

<H.264 image data>

Chapter 9.4. H.264 playback stream

Merit LILIN playback stream of DVR/NVR platform contains extra 24 bytes playback header for each H.264 frame. The H.264 video raw data is followed by the 24 bytes playback header. The playback stream contains up to 16 channels of a particular time frame. If you want to play only for one channel due to CPU usage, please parse the 24 bytes header for the channel.

For synchronous audio and video playback, the audio frames are also in the playback stream. Please filter out the audio frames if your application does not need the audio.

Syntax of SD multiple playback streams:

<http://<serverIP>/getpbstream&date=YYYY/MM/DD&time=hh:mm:ss>

Syntax of HD multiple playback streams:

<http://<serverIP>/gethdpbstream&date=YYYY/MM/DD&time=hh:mm:ss>

Example of SD multiple H.264 playback streams:



<http://admin:1111@192.168.0.111/getpbstream&date=2011/06/28&time=11:30:00>

Example of HD multiple H.264 playback streams:

<http://admin:1111@192.168.0.111/gethdpbstream&date=2011/06/28&time=11:30:00>

Example of SD single H.264 playback stream:

<http://admin:1111@192.168.0.111/getpbstream&channel=0x0001&date=2011/06/28&time=11:30:00>

Example of HD single H.264 playback stream:

<http://admin:1111@192.168.0.111/gethdpbstream&channel=0x0001&date=2011/06/28&time=11:30:00>

Parameters:

Parameter	Values	Description
channel	YYYY-MM-DD	channel 1 => 0x0001 channel 2 => 0x0002 channel 3 => 0x0004 channel 4 => 0x0008 channel 5 => 0x0010 channel 6 => 0x0020 channel 7 => 0x0040 channel 8 => 0x0080 channel 9 => 0x0100 channel 10 => 0x0200 channel 11 => 0x0400 channel 12 => 0x0800 channel 13 => 0x1000 channel 14 => 0x2000 channel 15 => 0x4000 channel 16 => 0x8000

Chapter 9.5. H.264 playback stream control structure

Directly send the playback control structure through “getpbstream” socket to control streaming content such as fast forward, fast rewind, stop, and pause. The control structure detail is as below:

struct binary_command

```
{
    DWORD    channel;
    BYTE      mode;
    BYTE      action;
    time_t    rep_time;
    BYTE      rep_layout;
    BYTE      rep_speed;
    BYTE      rep_control;
    int       rep_dir;
};
```

Parameters:

Parameter	Value	Description
channel	0x00000000 to 0xFFFFFFFF	Turn on or off mapping channel, maximum 32 channel, depending on model. Ex: 0x00000001, turn on channel 1 turn off rest channels.
mode	Ignore	
action	Ignore	
rep_time	Ignore	
rep_layout	Ignore	
rep_speed	0x00 to 0x05	0x00: Normal speed 0x01: x2 0x02: x4 0x03: x8 0x04: x16

		0x05: x32 ※Only effected at rewind and fast forward
rep_control	0x11 to 0x18	0x11: Playback 0x12: Forward step 0x13: Fast forward 0x14: Stop 0x15: Pause 0x18: Rewind
rep_dir	Ignore	

HTTP H.264 Playback Stream Description:

Stream content |--RH--|--H.264-- |--RH--|--H.264-- |--RH--|-- AUDIO PCM-- |--RH-- |--H.264--

struct RH

```
{
    DWORD startcode;           // 0x5757
    DWORD rh_length ;          // RH + frame length
    BYTE User_level;
    DWORD time;                // time
    DWORD prev_rh_length;
    BYTE ch_id;                //channel id
    BYTE v_format;
    BYTE v_res;
    BYTE frame_type;
    BYTE gop;
    BYTE data_type;            // audio data or video
    BYTE reserved2;
}
```

Size of RH is 24 Byte

Where:.

startcode : 0x5757
rh_length : Size of RH added data size
time : UTC time with sec.
prev_rh_length : Prev length.
ch_id : 0~15 mean channel 1 ~ channel 15.
data_type : VIDEO_DATA= 0,AUDIO_DATA=1.

Chapter 9.6 HTTP audio input (PC to NVR)

Transport Protocol: HTTP

Audio coding type: PCM
Audio sample rate: 8kHz
Audio bitrate: 16kbps

<http://admin:1111@192.168.0.111/sendaudio>

Chapter 9.6.1 HTTP audio input relayed to an IP camera (PC to NVR to IP camera)

The CGI is used to forward PCM audio data to an IP camera connected by NVR.

http://admin:1111@192.168.0.111/sendaudio?ch=1&type=pcm&sample_rate=44100

HTTP request headers:

```
"POST /sendaudio?ch=1&type=pcm&sample_rate=44100 HTTP/1.1\r\n"
"Accept: */*\r\n"
"User-Agent: Mozilla/4.0 (compatible; MSIE 5.01; Windows NT 5.0)\r\n"
"Accept-Language: zh-tw\r\n"
"Content-Type: application/x-www-form-urlencoded\r\n"
"Host: 192.168.0.111\r\n"
"Connection: Keep-Alive\r\n"
"Cache-Control: no-cache\r\n"
```



```
"Cookie: LANG=0\r\n"
"Content-Length: 0\r\n" /* added for NVR's HTTPD */
"Authorization: Basic %s\r\n"
"\r\n"
```

Parameters:

Parameter	Value	Description
ch	0 - 15	Channel number of the IP camera
type	pcm	
Sample_rate	Number	44100 32000 16000 8000 (per IPCAM)*

Note: Please send raw audio data in PCM 16bits x 44100 Hz format. NVR will resample audio data based on sample rate of the target IP camera. If the given source sample_rate is 8000, 16000 or 32000, please make sure the target IPCAM can support same audio setting.

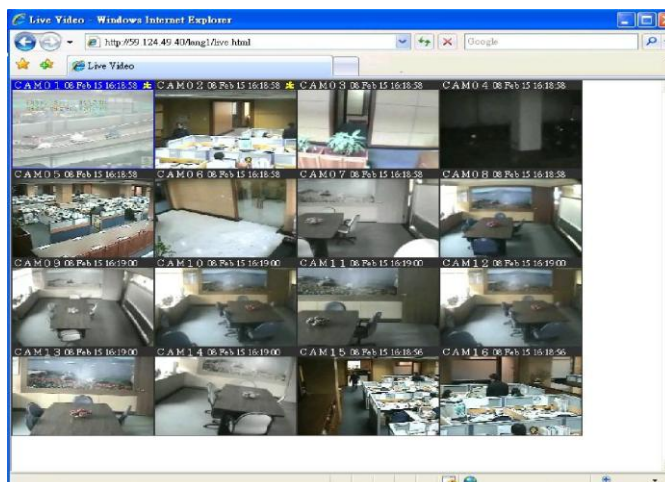
Chapter 10. ActiveX Control Integration

Microsoft ActiveX control technology is widely used by IP camera and/or DVR applications which remote video streaming get displayed on webs' or applications' user interfaces. NDR 1 and DVR 3 Series use same technology display video on an application. This chapter describes the usage of the ActiveX control

An HTML demo page and MFC source code sample can be found within this SDK package.

Chapter 10.1. ActiveX HTML Interface

Each DVR's HTML interface contains one demo page as in <http://<ServerIP>/lang1/live.html>. The HTML page is as below:



The code sample is as below:

```
<html>
<HEA>
<title>Live Video</title>
<META http-equiv=Content-Type content="text/html" />
<META HTTP-EQUIV="Expires" CONTENT="0" />
<META HTTP-EQUIV="Pragma" CONTENT="no-cache" />
<META HTTP-EQUIV="Cache-Control" CONTENT="no-cache" /> </HEAD>
<script language="JavaScript"> <!--
var viewerwidth = 720; var viewerheight = 480; function start_live()
{
    if(H264ActiveX.GetConnectionStatus() == 1)
    {
        H264ActiveX.LiveStart()
    }
    else
    {
        setTimeout("start_live();",2000);
    }
}
```



```

}

function start()
{
    var Port = 3100;
    var HostIP = "192.168.3.191"; var UserName = "admin"; var UserPassWord = "1111";
    H264ActiveX.Ip=HostIP; H264ActiveX.Port=Port;
    H264ActiveX.SetUserName(UserName); H264ActiveX.SetUserPassword(UserPassWord);
    H264ActiveX.Connect();
    Start_live();
}
//--> </script>
<body leftmargin="0" topmargin="0" marginwidth="0" marginheight="0"    onload="start();return true;">
<td height="480" valign="top" align="center" > <script language="JavaScript" type="text/javascript"> <!--
document.write('<OBJECT id=" H264ActiveX " codeBase="/WebDVR4.cab#Version=2,7,2,0" width="" +
viewerwidth + "" height="" + viewerheight + "" CLASSID="CLSID:2157CA97-6AF8-4387-AD13-
1826BD6DB853" ></OBJECT>');

//--> </script> </td>

```

Chapter 10.2. ActiveX MFC Interface

The demo MFC program is shown as below:

```

BOOL CWebDVR4_DemoDlg:: OnCreateAndConnect ()
{
    CDialog::OnInitDialog();
    // TODO: Add extra initialization here m_pWebDVR4 = NULL; m_pWebDVR4=
    new CWebDVR4; CRect rc;
    this->GetClientRect(&rc);
    m_ pWebDVR4 ->Create(NULL, WS_VISIBLE, rc, this, 0); m_ pWebDVR4 ->SetIp("59.124.49.40");
    m_ pWebDVR4 ->SetPortVideo(3100); m_ pWebDVR4 ->SetUserName("admin");
    m_ pWebDVR4 ->SetUserPassword("1111"); m_ pWebDVR4 ->Connect();
    while(m_pWebDVR4->GetConnectionStatus() == 0)
    {
        Sleep(3000);
    }
    m_pWebDVR4->LiveStart();
    return TRUE;    // return TRUE    unless you set the focus to a control
}

```

Chapter 10.3. Playback on DVR via ActiveX

Function: void SetPlayTime(LPCTSTR szPlayTime)

Description: Set day and time for playback

SzPlayTime = YYYY/MM/DD HH:MM:SS

Function: void Playback(void)

Description: Playback stored video at DVR via ActiveX Control.

Example:

```

void CWebDVR4_DemoDlg::OnPlaybackDemo()
{
    // TODO: Add your control notification handler code here if(m_pWebDVR4 == NULL)
    {
        CRect rcPanel; this->GetClientRect(&rcPanel); rcPanel.top=rcPanel.top;
        rcPanel.bottom = rcPanel.bottom - 40;
        m_pWebDVR4 = NULL; m_pWebDVR4 = new CWebDVR4;
        m_pWebDVR4->Create(NULL, WS_VISIBLE, rcPanel, this, 0); m_pWebDVR4-
        >SetIp("192.168.3.191"); m_pWebDVR4->SetPort(3100); m_pWebDVR4->SetUserName("admin");
        m_pWebDVR4->SetUserPassword("1111"); m_pWebDVR4->SetCodec(1);//0:JPEG Codec ; 1:H264
        Codec m_pWebDVR4->Connect(); while(m_pWebDVR4->GetConnectionStatus() == 0)
        {
            Sleep(3000);
        }
        m_pWebDVR4->SetPlayTime("2011/03/02 09:00:00"); m_pWebDVR4->Playback();
    }
}

```



}

}