Intelligent Security API (General Application)

Developer Guide

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Chapter 1 Overview

This manual mainly introduces the protocol architecture, interaction or security specifications, general integrations (e.g., devie management and maintenance, alarm or event receiving, parameter configuration, etc.), and so on.

1.1 Introduction

The OPEN Intelligent Security Application Programming Interface (ISAPI) is a text protocol in RESTful style based on HTTP for communicating between security devices/servers (e.g., cameras, DVR, NVR, etc.) and client software/system. It defines the communication standard between device/server and client software/system via the Internet Protocol (IP), see the network topology and communication protocol layer framework in the figures below.

Note

REST (REpresentational State Transfer) is a protocol design method which abstracts all information as the resources. The abstracted resources are marked by the uniform identifies, i.e., URI (Uniform Resource Identifiers) for simple and extendable management.

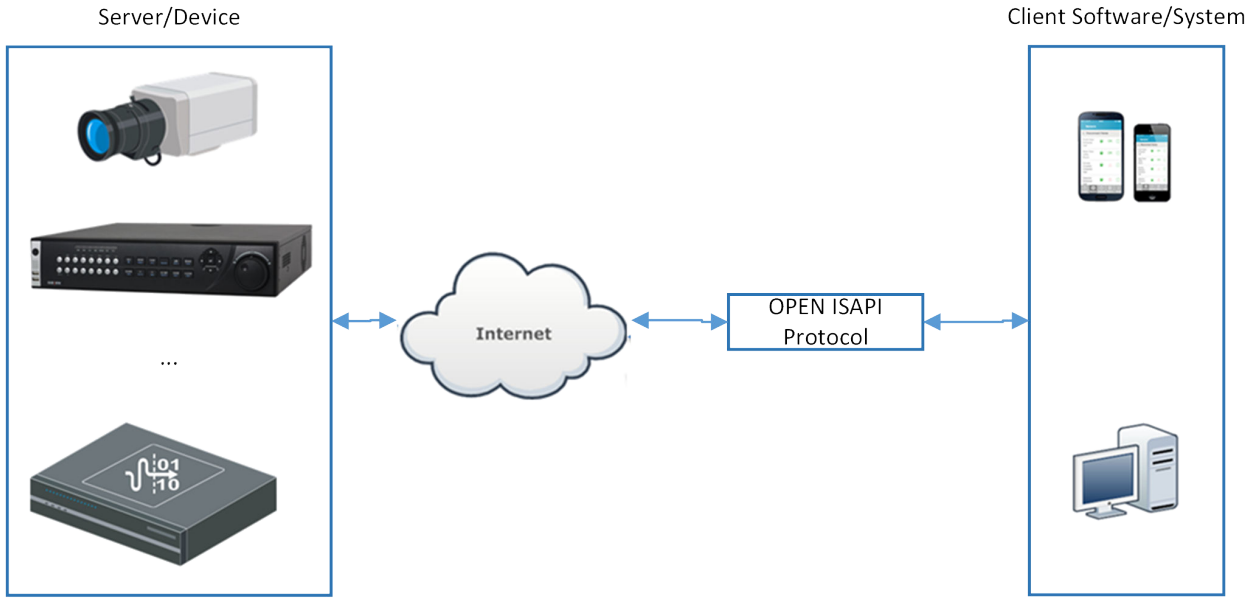


Figure 1-1 Network Topology

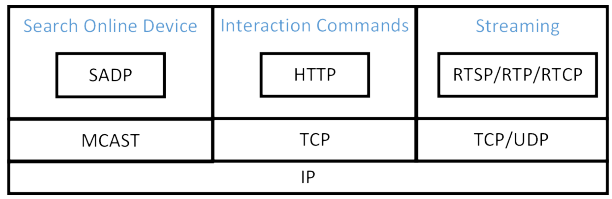


Figure 1-2 Communication Protocol Layer Framework

1.2 Update History

Summary of Changes in Version 2.0_Sept., 2019

Related Product: DS-2CD50 Series and DS-2CD70 Series Box Camera with Software Version 5.6.10; DS-2CD51 Series, DS-2CD55 Series, DS-2CD71 Series, and DS-2CD75 Series Dome Camera with Software Version 5.6.10; DS-2CD7A Series and DS-2CD5A Series Bullet Camera with Software Version 5.6.10

1. Extended device capability message ***XML_DeviceCap*** (related URL: ***/ISAPI/System/capabilities***):
   added a sub node <**supportSmartOverlapChannles**> (whether it supports stream configuration of smart events) to the node <**SysCap**>;
   added a node <**streamEncryptionType**> (stream encryption type).
2. Added URLs of configuring stream for displaying VCA rules of smart events:
   Get the capability: GET ***/ISAPI/Streaming/channels/<ID>/smartOverlap/capabilities?format=json*** ;
   Get or set stream parameters: GET or PUT ***/ISAPI/Streaming/channels/<ID>/smartOverlap?format=json*** .
3. Extended configuration capability message of IP address filter ***XML_Cap_IPFilter*** (related URL: ***/ISAPI/System/Network/ipFilter/capabilities***):
   added a sub node <**bitMaskIPV6**> (IPv6 prefix length) to the node <**AddressMask**> of <**IPFilterAddressList**>.
4. Extended e-PTZ parameter message ***XML_EPTZ*** (related URL: ***/ISAPI/Image/channels/<ID>/EPTZ***):
   added a node <**streamType**> (stream type).
5. Extended parameter message of a privacy mask region ***XML_PrivacyMaskRegion*** (related URL: ***/ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions/<ID>***):
   added a mask type "black" to the node <**maskType**>.
6. Added URLs of switching e-PTZ mode:
   Get capability: GET ***/ISAPI/Image/channels/<ID>/EPTZ/mode/capabilities?format=json*** ;
   Get or set parameters: GET or PUT ***/ISAPI/Image/channels/<ID>/EPTZ/mode?format=json*** .
7. Extended configuration capability message ***XML_LogServerCap*** and parameter message ***XML_LogServer*** of log server (related URLs: ***/ISAPI/System/logServer/capabilities*** and ***/ISAPI/System/logServer***):
   added a node <**transmissionEncryption**> (whether to enable transmission encryption).

8. Extended parameter message of security log server test ***XML_LogServerTestDescription*** (related URL: ***/ISAPI/System/logServer/test***):
   added a node <**transmissionEncryption**> (whether to enable transmission encryption).
9. Extended FTP capability message ***XML_Cap_FTPNotificationList*** (related URL: ***/ISAPI/System/Network/ftp/capabilities***):
   added a sub node <**BrokenNetHttp**> (whether it supports ANR (automatic network replenishment)) to the node <**FTPNotification**>.
10. Extended parameter message of a specific FTP server ***XML_FTPNotification*** (related URL: ***/ISAPI/System/Network/ftp/<ID>***):
    added a node <**brokenNetHttp**> (whether to enable ANR (automatic network replenishment)).
11. Extended configuration capability message ***XML_Cap_Track*** and parameter message ***XML_Track*** of a specific recording schedule (related URLs: ***/ISAPI/ContentMgmt/record/tracks/<ID>/capabilities*** and ***/ISAPI/ContentMgmt/record/tracks/<ID>***):
    added a node <**durationEnabled**> (whether to enable video expiry time).
12. Extended parameter message of all recording schedules ***XML_TrackList*** (related URL: ***/ISAPI/ContentMgmt/record/tracks***):
    added a sub node <**durationEnabled**> (whether to enable video expiry time) to the node <**Track**>.
13. Extended HDD management capability message ***XML_Cap_hddList*** (related URL: ***/ISAPI/ContentMgmt/Storage/hdd/capabilities***):
    added a sub node <**Encryption**> (encryption configuration) to the node <**hdd**>.
14. Extended parameter message of a specific HDD ***XML_hdd*** (related URL: ***/ISAPI/ContentMgmt/Storage/hdd/<ID>***):
    added a node <**encryptionStatus**> (encryption status).
15. Added a URL of formatting an encrypted HDD: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptFormat?format=json*** .
16. Added a URL of verifying HDD encryption password: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptVerfy?format=json*** .
17. Extended message of event capability supported by channel ***XML_ChannelEventCap*** (related URL: ***/ISAPI/Event/channels/<ID>/capabilities***):
    added an event type "certificateRevocation" (certificate is expired) to the node <**eventType**>.
18. Extended device event capability message ***XML_EventCap*** (related URL: ***/ISAPI/Event/capabilities***):
    added a node <**isSupportCertificateRevocation**> (whether it supports certificate expiry alarm).
19. Added the function of configuring certificate expiry alarm, refer to ***Configure Certificate Expiry Alarm*** .
20. Extended device protocol capability message ***XML_Cap_AdminAccessProtocolList*** and parameter message of all protocols supported by the device ***XML_AdminAccessProtocolList*** (related URLs: ***/ISAPI/Security/adminAccesses/capabilities*** and ***/ISAPI/Security/adminAccesses***):
    added a protocol type "SRTP" (Secure Real-Time Transport Protocol) to the sub node <**protocol**> of the node <**AdminAccessProtocol**>.

21. Extended parameter message of a specific protocol supported by the device ***XML_AdminAccessProtocol*** (related URL: ***/ISAPI/Security/adminAccesses/<ID>***):
    added a protocol type "SRTP" (Secure Real-Time Transport Protocol) to the node <**protocol**>.
22. Extended parameter message of a specific UPnP port ***XML_port*** and mapping status message of a specific UPnP port ***XML_portStatus*** (related URLs: ***/ISAPI/System/Network/UPnP/ports/<ID>*** and ***/ISAPI/System/Network/UPnP/ports/<ID>/status***):
    added a protocol type "SRTP" to the node <**internalPort**>.
23. Extended encoding capability message ***XML_Cap_StreamingChannel*** and encoding parameter message ***XML_StreamingChannel*** of a specific channel (related URLs: ***/ISAPI/Streaming/channels/<ID>/capabilities*** and ***/ISAPI/Streaming/channels/<ID>***):
    added a protocol type "SRTP" to the sub node <**streamingTransport**> of the node <**ControlProtocol**> of <**ControlProtocolList**> of <**Transport**>;
    added a sub node <**SRTPMulticast**> (SRTP multicast configuration) to the node <**Transport**>.
24. Extended storage capability message ***XML_RacmCap*** (related URL: ***/ISAPI/ContentMgmt/capabilities***):
    added two picture search conditions: "personQueueCounting" (people queuing-up detection) and "personQueueTime" (waiting time detection) to the node <**pictureSearchType**>.
25. Extended device security capability message ***XML_SecurityCap*** (related URL: ***/ISAPI/Security/capabilities***):
    added a node <**isSupportCertificateCustomID**> (whether it supports certificate configuration with custom ID).
26. Added a URL of getting CA (Certificate Authority) certificate capability: GET ***/ISAPI/Security/deviceCertificate/capabilities?format=json*** .
27. Added a URL of importing CA (Certificate Authority) certificate to device: PUT ***/ISAPI/Security/deviceCertificate?customID=*** .
28. Extended information message of multiple device certificates ***JSON_DeviceCertificates*** (related URL: ***/ISAPI/Security/deviceCertificate/certificates?format=json***):
    added two sub nodes: **status** (certificate status) and **customID** (custom certificate ID) to the node **CertificateInfo** of **CertificateInfoList**.
29. Added a URL of getting or deleting information of a specific device certificate: GET or DELETE ***/ISAPI/Security/deviceCertificate/certificates/<customID>?format=json*** .
30. Added URLs of configuring and managing client/server certificate:
    Get client/server certificate capability: GET ***/ISAPI/Security/serverCertificate/capabilities?format=json*** ;
    Get or generate PKCS#10 signature request of client/server self-signed certificate: GET or PUT ***/ISAPI/Security/serverCertificate/selfSignCert?customID=*** ;
    Generate PKCS#10 signature request: POST ***/ISAPI/Security/serverCertificate/certSignReq?customID=*** ;
    Get information of multiple client/server certificates in a batch: GET ***/ISAPI/Security/serverCertificate/certificates?format=json*** ;
    Get or delete information of a specific client/server certificate: GET or DELETE ***/ISAPI/Security/serverCertificate/certificates/<customID>?format=json*** ;

Import client/server certificate to device: POST ***/ISAPI/Security/serverCertificate/certificate?customID=*** ;
Export client/server certificate: GET ***/ISAPI/Security/serverCertificate/downloadCertSignReq?customID=*** .

31. Added URLs of selecting certificate:
Get capability: GET ***/ISAPI/Security/certificate/select/capabilities?format=json*** ;
Get or set parameters: GET or PUT ***/ISAPI/Security/certificate/select/<functinName>?format=json*** .
32. Added an alarm type "certificateRevocation" (certificate expiry alarm) in ***Supported Alarm/Event Types*** .

Summary of Changes in Version 2.0_Sept., 2019

Related Product: PanoVu PT Series Target Capture Camera in Version 5.5.23

1. Extended the rapid focus capability ***XML_Cap_EagleFocusing*** (related URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/capabilities***):
added one node <**isSupportAuto**> (whether device supports automatic calibration of rapid focus)
2. Added the function of automatically calibrating for rapid focus:
Get capability: GET ***/ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/auto/capabilities?format=json*** ;
Automatically calibrate for rapid focus: GET ***/ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/auto?format=json*** .
3. Extended the device capability message ***XML_DeviceCap*** (related URL: GET ***/ISAPI/System/capabilities***):
added two nodes <**guideEventSupport**> (events which support quick setup by instruction) and <**isSupportDevStatus**> (whether device supports getting device status).
4. Added the function of configuring quick setup instruction for specified event:
Get capability: GET ***/ISAPI/System/guideConfig/<guideEvent>/capabilities?format=json*** ;
Get parameters: GET ***/ISAPI/System/guideConfig/<guideEvent>?format=json*** .
5. Extended the device status message ***XML_DeviceStatus*** (related URL: GET ***/ISAPI/System/status***):
added one node <**AlertStreamServerList**> (user of arming device).

Summary of Changes in Version 2.0_Sept., 2019

Related Product: iDS-TDI300-A and iDS-TDI900-A Portable Speed Detector with Software Version 4.3.0

1. Extended device capability message ***XML_DeviceCap*** (related URL: ***/ISAPI/System/capabilities***):
added a node <**isSupportGuardAgainstTheft**> (whether it supports device anti-theft configuration);
added a sub node <**isSupportShutdown**> (whether it supports shutdown configuration) to the node <**SysCap**>.
2. Extended downloading capability message ***XML_DownloadAbility*** (related URL: ***/ISAPI/ContentMgmt/download/capabilities***):

added a node <**isSupportDownloadToUSB**> (whether it supports exporting files to devices via USB).

3. Added URLs of exporting files to devices via USB:
   Get capability: GET ***/ISAPI/ContentMgmt/download/toUSB/capabilities?format=json*** ;
   Export files: POST ***/ISAPI/ContentMgmt/download/toUSB?format=json*** ;
   Get exporting progress: GET ***/ISAPI/ContentMgmt/download/toUSB/<taskId>/progress?format=json*** .
4. Added URLs of configuring device anti-theft parameters:
   Get configuration capability: GET ***/ISAPI/System/guardAgainstTheft/capabilities*** ;
   Get or set parameters: GET or PUT ***/ISAPI/System/guardAgainstTheft*** .
5. Extended device status parameter message ***XML_DeviceStatus*** (related URL: ***/ISAPI/System/status***):
   added three nodes: <**dialSignalStrength**> (4G signal strength), <**USBStatusList**> (USB status list), and <**WifiStatusList**> (Wi-Fi status list).
6. Added a URL of shutting down the device: PUT ***/ISAPI/System/shutdown?format=json*** .
7. Extended configuration capability message ***XML_Cap_DeviceInfo*** and parameter message ***XML_DeviceInfo*** of device information (related URLs: ***/ISAPI/System/deviceInfo/capabilities*** and ***/ISAPI/System/deviceInfo***):
   added a node <**powerOnMode**> (device startup mode).
8. Added an event type "radarMeasurement" (radar measurement data) in ***Supported Alarm/Event Types*** .
9. Added a sub status code "0x40000010"-USBNotExist (USB device is not connected) to status code 4 (Invalid Operation) in ***Error Codes in ResponseStatus*** .

Summary of Changes in Version 2.0_Aug., 2019

Related Product: DS-K1T640 Series, DS-K1T671 Series, and DS-K5671 Series Face Recognition Terminal with Software Version 2.1.1

1. Added URLs of configuring audio input or output parameters of a specific channel:
   Get audio input capability: GET ***/ISAPI/System/Audio/AudioIn/channels/<ID>/capabilities*** ;
   Get or set audio input parameters: GET or PUT ***/ISAPI/System/Audio/AudioIn/channels/<ID>*** ;
   Get audio output capability: GET ***/ISAPI/System/Audio/AudioOut/channels/<ID>/capabilities*** ;
   Get or set audio output parameters: GET or PUT ***/ISAPI/System/Audio/AudioOut/channels/<ID>*** .
2. Extended device capability message ***XML_DeviceCap*** (related URL: ***/ISAPI/System/capabilities***):
   added a node <**isSupportIDCardInfoEvent**> (whether it supports ID card swiping event).

Summary of Changes in Version 2.0_Aug., 2019

Related Product Type: DS-76XXNI-I Series, DS-77XXNI-I Series, DS-86XXNI-I Series, and DS-96XXNI-I Series NVR in Version 4.22.000

1. Extended device capability message ***XML_DeviceCap*** (related URL: ***/ISAPI/System/capabilities***):
   added a node <**SHMCap**> (SHM (SkyHawk Health Management) capability).
2. Extended configuration capability message of alarm linkage actions ***XML_EventTriggersCap*** (related URL: ***/ISAPI/Event/triggersCap***):

added five nodes: <**HighHDTemperatureTriggerCap**> (HDD high temperature detection), <**LowHDTemperatureTriggerCap**> (HDD low temperature detection), <**HDImpactTriggerCap**> (HDD impact detection), <**HDBadBlockTriggerCap**> (HDD bad sector detection), and <**SevereHDFailureTriggerCap**> (HDD severe fault detection).

3. Extended alarm linkage capability type (***XML_EventTriggerCapType***):
   added a node <**isNotSupportCenterModify**> (whether editing configuration parameters of the surveillance center is not supported).
4. Added the function of configuring SHM (SkyHawk Health Management) alarm linkage:
   Get or set linkage parameters of HDD high temperature detection: GET or PUT ***/ISAPI/Event/triggers/highHDTemperature*** ;
   Get or set linkage parameters of HDD low temperature detection: GET or PUT ***/ISAPI/Event/triggers/lowHDTemperature*** ;
   Get or set linkage parameters of HDD impact detection: GET or PUT ***/ISAPI/Event/triggers/hdImpact*** ;
   Get or set linkage parameters of HDD bad sector detection: GET or PUT ***/ISAPI/Event/triggers/hdBadBlock*** ;
   Get or set linkage parameters of HDD severe fault detection: GET or PUT ***/ISAPI/Event/triggers/severeHDFailure*** .
5. Extended VCA search capability message ***JSON_IntelligentSearchCap*** (related URL: ***/ISAPI/SDT/Management/IntelligentSearch/capabilities?format=json***):
   added a value "unknown" to the node **vehicleType** (vehicle type).
6. Extended VCA search condition message ***JSON_IntelligentSearchCondition*** and VCA search result message ***JSON_IntelligentSearchResult*** (related URL: ***/ISAPI/SDT/Management/IntelligentSearch?format=json***):
   added a value "unknown" to the sub node **vehicleType** (vehicle type) of the node **vehicleInfo**.
7. Extended condition message of exporting VCA search results ***JSON_VCASearchExportCond*** (related URL: ***/ISAPI/SDT/Management/IntelligentSearch/export?format=json***):
   added a value "unknown" to the sub node **vehicleType** (vehicle type) of the node **vehicleInfo** of **targetInfo**.
8. Extended capability message ***XML_Cap_ExtraInfo*** and parameter message ***XML_ExtraInfo*** of storing additional information (related URLs: ***/ISAPI/ContentMgmt/Storage/ExtraInfo/capabilities*** and ***/ISAPI/ContentMgmt/Storage/ExtraInfo***):
   added a disk mode "RAID" to the node <**diskMode**>.
9. Extended supported alarm and event types in ***Supported Alarm/Event Types*** :
   added five event types: "highHDTemperature" (HDD High Temperature), "lowHDTemperature" (HDD Low Temperature), "hdImpact" (HDD Impact), "hdBadBlock" (HDD Bad Sector), and "severeHDFailure" (HDD Severe Fault).
10. Extended the log types in ***Log Types for ISAPI*** :
    added five exception log types: "highHDTemperature" (HDD High Temperature), "lowHDTemperature" (HDD Low Temperature), "hdImpact" (HDD Impact), "hdBadBlock" (HDD Bad Sector), and "severeHDFailure" (HDD Severe Fault);
    added two additional log types: "hdFormatStart" (Formatting HDD Started) and "hdFormatStop" (Formatting HDD Stopped).

Summary of Changes in Version 2.0_Aug., 2019

Related Product Type: Thermal & Optical Bi-spectrum Positioning System in Version 5.5.21

1. Extended the device capability ***XML_DeviceCap*** (related URL: GET ***/ISAPI/System/capabilities***): added two nodes <**isSupportInstallationAngleCalibration**> (whether it supports installation angle calibration) and <**isSupportZeroBiasCalibration**> (whether it supports zero bias calibration).
2. Added the function of calibrating accelerometer zero bias: PUT ***/ISAPI/System/zeroBiasCalibration/channels/<ID>?format=json*** .
3. Added the function of installation angle calibration:
   Get the calibration capabilities: GET ***/ISAPI/System/installationAngleCalibration/channels/<ID>/capabilities?format=json*** ;
   Get the calibration status: GET ***/ISAPI/System/installationAngleCalibration/channels/<ID>?format=json*** ;
   Calibrate installation angle: PUT ***/ISAPI/System/installationAngleCalibration/channels/<ID>?format=json*** .
4. Extended the log types ***Log Types for ISAPI*** :
   added one log "scheduledAngleCalibration" (scheduled angle calibration) to operation log type;
   added two logs "overvoltage" (high supply voltage) and "undervoltage"(low supply voltage) to exception log type.
5. Extended the device event capability message ***XML_EventCap*** (related URL: GET ***/ISAPI/Event/capabilities***):
   added one node <**isSupportVoltageInstable**> (whether device supports supply voltage exception alarm).
6. Extended the configuration capability of alarm linkage actions ***XML_EventTriggersCap*** (related URL: GET ***/ISAPI/Event/triggersCap***):
   added one node <**voltageInstableTriggerCap**> (supply voltage exception).
7. Added one alarm/event type: "voltageinstable" (supply voltage exception), see details in ***Configure Exception Alarm*** .

Summary of Changes in Version 2.0_Aug., 2019

Related Product: Traffic Terminal Server in Version 5.0.0

1. Added a URL to configure control parameters of a digital channel: ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/chanCtrl***
2. Added a URL to reboot digital channel: ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/reboot***
3. Added a URL to check port mapping is required for connecting to a digital channel: ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/portMapParam***
4. Added a URL to configure static routing parameters: ***/ISAPI/System/Network/StaticRoute*** .
5. Added URLs to configure log parameters:
   Get capability: GET ***/ISAPI/ContentMgmt/logConfig/capabilities***

Get or set parameters: GET or PUT ***/ISAPI/ContentMgmt/logConfig***

6. Added a URL to export the device log files: POST ***/ISAPI/ContentMgmt/logSearch/dataPackage*** .

Summary of Changes in Version 2.0_July, 2019

Related Product: DeepinMind NVR in Version 4.1.70

1. Added one alarm type "LFPD" (low frequency person detection alarm) to ***Supported Alarm/Event Types*** .
2. Extended log types ***Log Types for ISAPI*** :
   added one minor log type "remoteLFPDconfig" (remote configuration of low frequency person detection) to operation logs;
   added two minor log types "LFPDAlarmStart" (low frequency person alarm started) and "LFPDAlarmStop" (low frequency person alarm stopped) to alarm logs.
3. Extended the error codes, see details in ***Error Codes in ResponseStatus*** :
   added two error codes "0x60001051"-noSupportDeleteStrangerLib (deleting stranger library is not supported) and "0x60001052"-noSupportCreateStrangerLib (creating stranger library is not supported) to status code 6 (Invalid Message Content);
   added two error code "0x30001013"-SSDFileSystemIsError (SSD file system error) and "0x30001014"-insufficientSSDCapacityForFPD (insufficient SSD space for person frequency detection) to status code 3 (Device Error).
4. Extended the network resource statistics message ***JSON_resourceStatistics*** (related URL: ***/ISAPI/System/Network/resourceStatistics?format=json***):
   added two nodes **inputPictureBandwidth** (picture input bandwidth) and **outputPictureBandwidth** (picture output bandwidth).
5. Extended the intelligent capability message ***XML_IntelliCap*** :
   added one node <**isSupportFaceScore**> (whether camera supports face grading configuration).

Summary of Changes in Version 2.0_July, 2019

Related Product Type: DS-2TA03-7AVI, DS-2TA03-15VI, DS-2TA03-15SVI, DS-2TA06-25SVI, DS-2TA06-25VI, and DS-2TA03-25SVI Thermographic Automation Thermal Camera in Version 2.2

1. Added a request URL for getting image adjustment capability: GET ***/ISAPI/Image/channels/<ID>/color/capabilities*** .
2. Extended the image configuration capability of a specified channel ***XML_Cap_ImageChannel*** and the image configuration parameters message ***XML_ImageChannel*** (related URL: GET ***/ISAPI/Image/channels/<ID>/capabilities*** and ***/ISAPI/Image/channels/<ID>***):
   added one node <**TempRange**> (temperature range).
3. Added the function of configuring temperature range of a specified channel:
   Get capability: GET ***/ISAPI/Image/channels/<ID>/tempRange/capabilities*** ;
   Get temperature range parameters: GET ***/ISAPI/Image/channels/<ID>/tempRange*** ;
   Set temperature range: PUT ***/ISAPI/Image/channels/<ID>/tempRange*** .
4. Added a request URL for getting focus configuration capability:

GET ***/ISAPI/Image/channels/<ID>/focusConfiguration/capabilities*** .

5. Extended the focus parameters message ***XML_FocusConfiguration*** (related URL: ***/ISAPI/Image/channels/<ID>/focusConfiguration***):
   added one node <**highTemperaturePriority**> (whether to enable high temperature priority mode).

Summary of Changes in Version 2.0_July, 2019

Related Product Type: DS-PRI120 Security Radar

1. Extended the device capability message ***XML_DeviceCap*** (related URL: ***/ISAPI/System/capabilities***):
   added a node <**isSupportRadar**> (whether to support security radar).
2. Added seven sub status codes to status code 4 (Invalid Operation) in ***Error Codes in ResponseStatus*** :
   "0x4000802c"-masterSlaveIsEnable (The master-slave relationship has taken effect, the slave radar does not support this operation), "0x4000802d"-forceTrackNotEnabled (Mandatory tracking is disabled), "0x4000802e"-isNotSupportZoneConfigByLocalArea (This area does not support the zone type), "0x4000802f"-alarmLineCross (Trigger lines are overlapped), "0x40008030"-zoneDrawingOutOfRange (The drawn zone is out of detection range), "0x40008031"-alarmLineDrawingOutOfRange (The drawn trigger line is out of detection range), and "0x40008032"-hasTargetInWarningArea (The warning zone already contains targets. Whether to enable mandatory arming?).
3. Extended the log types ***Log Types for ISAPI*** :
   added six operation log types: "addZone" (Added Zone), "modZone" (Edited Zone), "delZone" (Deleted Zone), "addAlarmLine" (Added Trigger Line), "modAlarmLine" (Edited Trigger Line), and "delAlarmLine" (Deleted Trigger Line).

Summary of Changes in Version 2.0_July, 2019

Related Product: Thermographic Cube Camera in Version 1.0

1. Extended the device hardware configuration capabilities ***XML_Cap_HardwareService*** and ***XML_HardwareService*** :
   added one node <**captureWithSupplimentLightEnabled**> (enable snapshot supplement light or not).
2. Extended the PTZ control capability ***XML_PTZChanelCap*** and the PTZ control parameters ***XML_PTZChannel*** (related URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/capabilities*** and ***/ISAPI/PTZCtrl/channels/<ID>***):
   added two control protocols "modbus-RTU" and "modbus-ASCII" to node <**controlProtocol**>.
3. Extended the palettes parameters ***XML_Palettes*** (related URL: ***/ISAPI/Image/channels/<ID>/Palettes***):
   added one mode "Color3" to node <**mode**>.

Summary of Changes in Version 2.0_July, 2019

Related Products: DS-K1A802 Series, DS-K1A802A Series, and DS-K1A8503 Series Fingerprint Time Attendance Terminal; DS-K1T804 Series, DS-K1T8003 Series, and DS-K1T8004 Series Fingerprint Access Control Terminal.

1. Extended the query parameter of the URL for upgrading the slave device's firmware ***/ISAPI/System/updateFirmware?type=&id=*** :
   added a module type "uboot" to the query parameter **type**.
2. Extended the peripherals upgrade capability message ***XML_Cap_AcsUpdate*** (related URL: ***/ISAPI/System/AcsUpdate/capabilities***):
   added a upgrade type "uboot" to the node <**type**>.

Summary of Changes in Version 2.0_June, 2019

Related Products: DS-PHA Series Hybrid Security Control Panel, DS-PKG Series Wired Keypad, and DS-PM-RSWR Series RS-485 Wireless Receiver

1. Added a URL to upgrade peripheral module's firmware: PUT or POST ***/ISAPI/System/updateFirmware?type=&moduleAddress=*** .
2. Extended peripherals upgrade capability message ***XML_Cap_AcsUpdate*** (related URL: ***/ISAPI/System/AcsUpdate/capabilities***):
   added three upgrading types to the node <**type**>: "keypad", "wirelessRecv" (wireless receiving module), and "wiredZone" (wired zone module);
   added three nodes: <**keypadAddress**> (range of keypad module address), <**wirelessRecvAddress**> (range of wireless receiving module address), and <**wiredZoneAddress**> (range of wired zone module address).
3. Extended device information message ***XML_DeviceInfo*** (related URL: ***/ISAPI/System/deviceInfo***):
   added a device type "PHA" (Axiom hybrid security control panel) to the node <**deviceType**>.
4. Extended the log types ***Log Types for ISAPI*** :
   added four alarm log types: "RS-485AlarmInputModuleEvident" (RS-485 Zone Module Tampered), "RS-485AlarmInputModuleTamperReset" (RS-485 Zone Module Tampering Reset), "RS-485WirelessReceiverTamperEvident" (RS-485 Wireless Receiver Module Tampered), and "RS-485WirelessReceiverTamperEvidentReset" (RS-485 Wireless Receiver Module Tampering Reset);
   added six exception log types: "RS-485AlarmInputModuleDisconnected" (RS-485 Zone Module Offline), "RS-485AlarmInputModuleConnected" (RS-485 Zone Module Online), "RS-485WirelessReceiverDisconnected" (RS-485 Wireless Receiver Module Offline), "RS-485WirelessReceiverConnected" (RS-485 Wireless Receiver Module Online), "keypadDisconnected" (Keypad Offline), and "keypadConnected" (Keypad Online);
   added 9 operation log types: "delRS-485InputModule" (RS-485 Zone Module Deleted), "delRS-485OutputModule" (RS-485 Output Module Deleted), "delRS-485WirelessReceiver" (RS-485 Wireless Receiver Module Deleted), "enrollRS-485InputModule" (RS-485 Zone Module Registered), "enrollRS-485OutputModule" (RS-485 Output Module Registered), "delRS-485OutputModule" (RS-485 Output Module Deleted), "enrollRS-485WirelessReceiver"

(RS-485 Wireless Receiver Module Registered), "enrollKeypad" (Keypad Registered), and "delKeypad" (Keypad Deleted).

Summary of Changes in Version 2.0_June, 2019

Related Products: Thermal Network Bullet Camera; Thermal Bi-spectrum Network Bullet Camera; Thermal & Optical Network Turret Camera; Thermal Box Camera; Thermal Network Turret Camera in Version 5.5.20

1. Extended the capability of supplement light alarm linkage ***JSON_WhiteLightAlarmCap*** (related URL: GET ***/ISAPI/Event/triggers/notifications/whiteLightAlarm/capabilities?format=json***): added one node "**whiteLightMode**" (supplement light mode).
2. Extended the parameters of supplement light alarm linkage ***JSON_WhiteLightAlarm*** (related URL: ***/ISAPI/Event/triggers/notifications/whiteLightAlarm?format=json***): added one node "**whiteLightMode**" (supplement light mode).
3. Extended the encoding capability of a specific channel ***XML_Cap_StreamingChannel*** (related URL: GET ***/ISAPI/Streaming/channels/<ID>/capabilities***): added one node <**minimumResolutionSupportedBySmartCode**> (minimum resolution supported by smart coding).

Summary of Changes in Version 2.0_July, 2019

Related Product: Thermal & Optical Bi-spectrum Network Speed Dome; Thermal & Optical Bi-spectrum Positioning System; Thermal & Optical Bi-spectrum Network Stable PTZ Camera in Version 5.5.19

1. Added the function of target enhancement:
   Get the target enhancement capability: GET ***/ISAPI/Image/channels/<ID>/targetEnhancement/capabilities*** ;
   Get the target enhancement parameters: GET ***/ISAPI/Image/channels/<ID>/targetEnhancement*** ;
   Set the target enhancement parameters: PUT ***/ISAPI/Image/channels/<ID>/targetEnhancement*** .
2. Extended the on-screen display parameters of PTZ status ***XML_PTZOSDDisplay*** (related URL: ***/ISAPI/PTZCtrl/channels/<ID>/PTZOSDDisplay***): added one node: <**actionStatusDisplayEnabled**> (whether to display status or not).
3. Extended the configuration capability of alarm linkage actions ***XML_EventTriggersCap*** (related URL: ***/ISAPI/Event/triggersCap***): added two nodes: <**ShipsFlowDetectionTriggerCap**> (ship flow detection) and <**dredgerDetectionTriggerCap**> (dredger detection).
4. Added one sub type "dredgerDetectionAlarm" (dredger detection alarm) to alarm logs in ***Log Types for ISAPI*** .
5. Added one file search condition "dredgerDetection" to node <metadataDescriptor> in message ***XML_CMSearchDescription*** .

Summary of Changes in Version 2.0_June, 2019

Related Products: DS-2CD6845 Series and DS-2XM6825 Series Network Camera in Software Version 5.5.90

1. Extended wireless service capability message ***XML_Cap_WirelessServer*** and wireless service configuration message ***XML_WirelessServer*** (related URLs: ***/ISAPI/System/Network/interfaces/<ID>/wirelessServer/capabilities*** and ***/ISAPI/System/Network/interfaces/<ID>/wirelessServer***):
   added a node <**wifiApModeType**> (current wireless access point modes: "true, false, auto").
2. Extended device algorithm parameter message ***XML_AlgorithmsVersion*** (related URL: ***/ISAPI/System/algorithmsVersion***):
   added an algorithm name "depthMap" to the sub node <**name**>.
3. Extended capability message ***XML_Cap_VCAResource*** and configuration message ***XML_VCAResource*** of intelligent resource switching (related URLs: ***/ISAPI/System/Video/inputs/channels/<ID>/VCAResource/capabilities*** and ***/ISAPI/System/Video/inputs/channels/<ID>/VCAResource***):
   added an intelligent resource "verticalPeopleCounting" to the node <**type**>.
4. Extended video input mode message ***XML_CaptureMode*** (related URL: ***/ISAPI/Image/channels/<ID>/capturemode***):
   added two video input modes "26"-1944×1212@24fps and "27"-1944×1212@25fps to the node <**mode**>.
5. Extended two-way audio parameter message ***XML_TwoWayAudioChannel*** (related URL: ***/ISAPI/System/TwoWayAudio/channels/<ID>***):
   added two nodes <**lineOutForbidden**> (whether the audio output is not supported) and <**micInForbidden**> (whether the audio input is not supported).
6. Added six error codes, refer to ***Error Codes in ResponseStatus*** for details: 0x60000085 (DetectionLineOutofDetectionRegion), 0x60000086 (DetectionRegionError), 0x60000087 (DetectionRegionOutOfCountingRegion), 0x60000088 (PedalAreaError), 0x60000089 (DetectionAreaABError), and 0x6000008a (ABRegionCannotIntersect).

Summary of Changes in Version 2.0_June, 2019

Related Products: DS-PWA32 Series Wireless Security Control Panel

1. Extended the parameter message of a specific wireless hotspot ***XML_accessPoint*** (related URL: ***/ISAPI/System/Network/interfaces/<ID>/wireless/accessPointList/<ID>***):
   added a node <**connecting**> (whether the device is connecting to the Wi-Fi).
2. Extended the device capability message ***XML_DeviceCap*** (related URL: ***/ISAPI/System/capabilities***):
   added a node <**isSupportModuleLock**> (whether to support locking the module).
3. Extended the log types ***Log Types for ISAPI*** :
   added four alarm log types: "wirelessKeypadTamperEvident" (Wireless Keypad Tampered), "wirelessKeypadTamperEvidentReset" (Wireless Keypad Tamper Restored), "wirelessCardReaderTamperEvident" (Wireless Card Reader Tampered), and "wirelessCardReaderTamperEvidentReset" (Wireless Card Reader Tamper Restored);

added 12 exception logs: "wirelessKeypadOffline" (Wireless Keypad Disconnected), "wirelessKeypadOnline" (Wireless Keypad Connected), "wirelessCardReaderOffline" (Wireless Card Reader Disconnected), "wirelessCardReaderOnline" (Wireless Card Reader Connected), "keypadLowPower" (Low Keypad Battery), "keypadLowPowerRecovery" (Low Keypad Battery Recovered), "cardReaderLowPower" (Low Card Reader Battery), "cardReaderLowPowerRecovery" (Low Card Reader Battery Recovered), "wKeypadOvertime" (Wireless Keypad Heartbeat Timed Out), "wKeypadOvertimeRecovery" (Wireless Keypad Heartbeat Timeout Recovered), "wCardReaderOvertime" (Wireless Card Reader Heartbeat Timed Out), and "wCardReaderOvertimeRecovery" (Wireless Card Reader Heartbeat Timeout Recovered).

Summary of Changes in Version 2.0_May, 2019

Related Products: DS-K2600 Series Access Controller in Version 2.1.0

1. Extended device information message ***XML_DeviceInfo*** (related URL: ***/ISAPI/System/deviceInfo***):
   added a device type "ACS" to the node <**deviceType**>;
   added three nodes <**relayNum**> (number of local relays), <**electroLockNum**> (number of local electronic locks), and <**RS485Num**> (number of local RS-485).
2. Added two URLs for upgrading peripherals firmware:
   Get capability: GET ***/ISAPI/System/AcsUpdate/capabilities*** .
   Upgrade firmware: PUT or POST ***/ISAPI/System/updateFirmware?type=&id=*** .
3. Extended the remote permission message ***XML_remotePermission*** (related URL: ***/ISAPI/Security/UserPermission/<ID>***):
   added four nodes <**factoryReset**> (restore default parameters), <**arm**> (arm), <**disarm**> (disarm), and <**accessControl**> (access control).
4. Added the URLs to configure security mode level of the private protocol:
   Get the configuration capability: GET ***/ISAPI/Security/CommuMode/capabilities?format=json*** ;
   Get the parameters: GET ***/ISAPI/Security/CommuMode?format=json*** ;
   Set the parameters: PUT ***/ISAPI/Security/CommuMode?format=json*** .
5. Extended configuration capability message of EHome server access ***XML_Cap_EHome*** (related URL: ***/ISAPI/System/Network/Ehome/capabilities***):
   added two nodes: <**id**> (center ID) and <**GPRSAddressingFormatType**> (GPRS address type);
   added a protocol version "v2.6" to the node <**protocolVersion**>.
6. Extended the EHome server access configuration URL:
   added **centerID** query parameter to the EHome server access configuration URL: ***/ISAPI/System/Network/Ehome?centerID=*** .
7. Extended EHome server access parameter message ***XML_Ehome*** (related URLs: ***/ISAPI/System/Network/Ehome?centerID=*** and ***/ISAPI/System/Network/Ehome***):
   added a protocol version "v2.6" to the node <**protocolVersion**>.
8. Add the URLs to configure the report uploading method:
   Get the configuration capability of the report uploading method: GET ***/ISAPI/SecurityCP/ReportCenterCfg/capabilities?format=json*** ;

Get the parameters of the report uploading method: GET ***/ISAPI/SecurityCP/ReportCenterCfg/<ID>?format=json*** ;
Set the report uploading method: PUT ***/ISAPI/SecurityCP/ReportCenterCfg/<ID>?format=json*** .

9. Extended device capability message ***XML_DeviceCap*** (related URL: ***/ISAPI/System/capabilities***): added two nodes <**isSupportAcsUpdate**> (whether to support upgrading slave access control device) and <**isSupportAccessControlCap**> (whether to support access control capability).
10. Extended event/alarm subscription capability message ***XML_SubscribeEventCap*** and subscription parameter message ***XML_SubscribeEvent*** (related URLs: ***/ISAPI/Event/notification/subscribeEventCap*** and ***/ISAPI/Event/notification/subscribeEvent***): added four nodes <**minorAlarm**> (minor alarm type), <**minorException**> (minor exception type), <**minorOperation**> (minor operation type), and <**minorEvent**> (minor event type) to the node <**EventList**>.
11. Extended subscription response message ***XML_SubscribeEventResponse*** (related URL: ***/ISAPI/Event/notification/subscribeEvent***): added four nodes <**minorAlarm**> (minor alarm type), <**minorException**> (minor exception type), <**minorOperation**> (minor operation type), and <**minorEvent**> (minor event type) to the node <**FailedEventList**>.
12. Added a sub status code 0x60001024-"eventNotSupport" (event subscription is not supported) to status code 6 (Invalid Message Content) in ***Error Codes in ResponseStatus*** .

Summary of Changes in Version 2.0_May, 2019

Related Products: DS-2CD50 Series and DS-2CD70 Series Box Camera with Software Version 5.6.0; DS-2CD51 Series, DS-2CD55 Series, DS-2CD71 Series, and DS-2CD75 Series Dome Camera with Software Version 5.6.0; DS-2CD7A Series and DS-2CD5A Series Bullet Camera with Software Version 5.6.0

1. Added the URL to search for security logs: POST ***/ISAPI/ContentMgmt/security/logSearch*** .
2. Added the URLs to configure log server:
   Get capability: GET ***/ISAPI/System/logServer/capabilities*** ;
   Get parameter: GET ***/ISAPI/System/logServer*** ;
   Set parameter: PUT ***/ISAPI/System/logServer*** .
3. Added the URL to perform log server test: POST ***/ISAPI/System/logServer/test*** .
4. Extended security capability message ***XML_SecurityCap*** (related URL: ***/ISAPI/Security/capabilities***): added a node <**isSupportDeviceCertificatesManagement**> (whether supports device certificate management).
5. Added the URL to get the capability of searching device certificates in batch: GET ***/ISAPI/Security/deviceCertificate/certificates?format=json*** .
6. Added the URL to get the status of a device certificate or all certificates:
   For a certificate: GET ***/ISAPI/Security/deviceCertificate/certificates/<ID>/status?format=json*** ;
   For all certificates: GET ***/ISAPI/Security/deviceCertificate/certificates/status?format=json*** .
7. Added the URLs to regenerate an abnormal certificate or all abnormal certificates:
   For an abnormal certificate: PUT ***/ISAPI/Security/deviceCertificate/certificates/<ID>/recreate?format=json*** ;

For all abnormal certificates: PUT ***/ISAPI/Security/deviceCertificate/certificates/recreate?format=json*** .

8. Added the following certificate related and HDD formatting related error codes to the major error type of invalid operation, refer to ***Error Codes in ResponseStatus*** for details: 0x40002036 (noClientCertificate), 0x40002037 (noCACertificate), 0x40002038 (authenticationFailed), 0x40002039 (clientCertificateExpired), 0x4000203A (clientCertificateRevocation), 0x4000203B (CACertificateExpired), 0x4000203C (CACertificateRevocation), 0x4000203D (connectFail), 0x4000203F (loginNumExceedLimit), and hdFormatFail.
9. Extended steaming channel capability message (***XML_Cap_StreamingChannel***) and streaming channel parameter message (***XML_StreamingChannel***) (related URLs: ***/ISAPI/Streaming/channels/<ID>/capabilities*** and ***/ISAPI/Streaming/channels/<ID>***):
   added a sub node <**FecInfo**> (FEC information) to the node <**Multicast**>.
10. Added a URL of RTSP to start and stop multicast based on NPQ (Network Protocol Quality):
    Request for getting basic parameters: DESCRIBE ***rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=*** ;
    Request for getting session information: SETUP ***rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=*** ;
    Start multicast: PLAY ***rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=*** ;
    Stop multicast: TEARDOW ***rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=*** .
11. Extended HDD management capability message (***XML_Cap_hddList***) and HDD parameter message (***XML_hdd***) (related URLs: ***/ISAPI/ContentMgmt/Storage/hdd/capabilities*** and ***/ISAPI/ContentMgmt/Storage/hdd/<ID>***):
    added a node <**formatType**> (HDD formatting type).
12. Extended the HDD formatting URL ***/ISAPI/ContentMgmt/Storage/hdd/<ID>*** :
    added a query parameter to the URL for specifying formatting type to format HDD: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/format?formatType=*** .
13. Added an URL to format multiple specified HDDs in batch: PUT ***/ISAPI/ContentMgmt/Storage/hdd/specifyHddFormat?format=json*** .
14. Extended exposure parameter message ***XML_Exposure*** (related URL: ***/ISAPI/Image/channels/<ID>/exposure***):
    added an exposure type "pIris-General" to the node <**ExposureType**>;
    added a node <**PIrisGeneral**> (general iris configuration).
15. Extended event/alarm subscription capability message (***XML_SubscribeEventCap***) and subscription parameter message (***XML_SubscribeEvent***) (related URLs: ***/ISAPI/Event/notification/subscribeEventCap*** and ***/ISAPI/Event/notification/subscribeEvent***):
    added a node <**identityKey**> (subscription interaction command).

Summary of Changes in Version 2.0_May., 2019

Related Product Type: Thermal Network Bullet Camera; Thermal Bi-spectrum Network Bullet Camera; Thermal & Optical Network Turret Camera; Thermal Box Camera V5.5.18

1. Extended the device capability ***XML_DeviceCap*** (request URL: GET ***/ISAPI/System/capabilities***):
   added four nodes <**isSupportDisplayTrajectory**> (whether supports displaying trajectory), <**maximumSuperPositionTime**> (the maximum time of trajectory displaying),

<**isSupportCalibrationFile**> (whether supports importing calibration file), and <**isSupportUnitConfig**> (whether supports unit configuration).

2. Extended the audible warning configuration capability ***JSON_AudioAlarmCap*** (request URL: GET ***/ISAPI/Event/triggers/notifications/AudioAlarm/capabilities?format=json***):
   added one node <**alarmType**>; added three audible warning types to node <audioDescription>: 13-"Temperature abnormality, please deal with it as soon as possible", 14-"Smoking is prohibited in this area", 15-"Fire detected, please deal with it as soon as possible".
3. Extended the audible warning parameters ***JSON_AudioAlarm*** (request URL: ***/ISAPI/Event/triggers/notifications/AudioAlarm?format=json***):
   added one node <**alarmType**>; added three audible warning types to node <audioID>: 13-"Temperature abnormality, please deal with it as soon as possible", 14 -"Smoking is prohibited in this area", 15-"Fire detected, please deal with it as soon as possible".
4. Added one sub error code "**unitConfigurationNotInEffect**" (unit configuration is invalid) to 6-status code (invalid message content).
5. Added the function of unit unified configuration:
   Get the capability of unit unified configuration: GET ***/ISAPI/System/unitConfig/capabilities?format=json*** ;
   Get the unit unified configuration: GET ***/ISAPI/System/unitConfig?format=json*** ;
   Set the unit unified parameters: PUT ***/ISAPI/System/unitConfig?format=json*** .

Summary of Changes in Version 2.0_Mar., 2019

Related Product Type: DS-PWA32 Series Wireless Security Control Panel

1. Added the function of device diagnosis.
   Get the device diagnosis capability: GET ***/ISAPI/System/diagnosis/capabilities?format=json*** ;
   Diagnose the device: POST ***/ISAPI/System/diagnosis?format=json***
2. Added the function of serial port log redirection.
   Get the configuration capability of serial port log redirection: GET ***/ISAPI/System/serialLogCfg/capabilities?format=json*** ;
   Get the redirection parameters of serial port log: GET ***/ISAPI/System/serialLogCfg?format=json*** ;
   Set the redirection parameters of serial port log: PUT ***/ISAPI/System/serialLogCfg?format=json***
3. Added the function of exporting files from the device.
   Get the capability of exporting files from the device: GET ***/ISAPI/System/fileExport/capabilities?format=json*** ;
   Export files from the device: POST ***/ISAPI/System/fileExport?format=json***
4. Extended the security capability ***XML_SecurityCap*** (related URL: GET ***/ISAPI/Security/capabilities***):
   added two nodes: <**isSptUserEnabled**> (whether to support configuration of enabling user) and <**isSptAdminCap**> (whether to support getting administrator permission capability).
5. Extended the user parameters ***XML_User*** (related URL: GET or PUT ***/ISAPI/Security/users/<ID>***):
   added one node: <**enabled**> (whether to enable the user); added a value "manufacturer" to the node <**userLevel**> (user level).

6. Extended the user permission capability ***XML_UserPermissionCap*** (related URL: GET ***/ISAPI/Security/UserPermission/operatorCap***) and user permission parameters ***XML_UserPermission*** (related URL: GET or PUT ***/ISAPI/Security/UserPermission/<ID>***):
   added two values "installer" and "manufacturer" to the node <**userType**> (user type);
   added five sub nodes <**subSysOrZoneArm**> (partition or zone arming permission), <**subSysOrZoneDisarm**> (partition or zone disarming permission), <**subSysOrZoneClearArm**> (permission to clear partition or zone alarms), <**zoneBypass**> (permission to bypass zone), and <**zoneBypassRecover**> (permission to recover bypassing zone) to the node <**remotePermission**>.
7. Added a URL to get administrator's permission capability: GET ***/ISAPI/Security/UserPermission/adminCap*** .
8. Extended the EHome server access configuration capability ***XML_Cap_EHome*** (related URL: GET ***/ISAPI/System/Network/Ehome/capabilities***) and EHome server access configuration parameters ***XML_Ehome*** (related URL: GET or PUT ***/ISAPI/System/Network/Ehome***):
   added one node <**netWork**> (network type).
9. Extended the configuration capability message of listening host servers ***XML_HttpHostNotificationCap*** (related URL: GET ***/ISAPI/Event/notification/httpHosts/capabilities***) and parameter message of a listening server ***XML_HttpHostNotification*** (related URL: POST ***/ISAPI/Event/notification/httpHosts***):
   added a value "EHome" to the node <**protocolType**> (protocol type).
10. Extended the device capability ***XML_DeviceCap*** (related URL: GET ***/ISAPI/System/capabilities***):
    added five nodes <**isSptDiagnosis**> (whether to support device diagnosis), <**isSptSerialLogCfg**> (whether to support configuring serial port log redirection), <**isSptFileExport**> (whether to support exporting files from the device), <**isSptCertificationStandard**> (whether to support configuring authentication standard for security control panel), and <**isSptKeypadLock**> (whether to support locking keypad).
11. Extended the response message ***XML_ResponseStatus*** :
    added one node <**AdditionalErr**> (additional error status information);
    added a value "9-Additional Error" to the node <**statusCode**> (status code);
    added a value "Additional Error" to the node <**statusString**> (status description).
12. Extended the response message ***JSON_ResponseStatus*** :
    added one node <**AdditionalErr**> (additional error status information)
13. Extended error codes (see details in ***Error Codes in ResponseStatus***):
    added a sub status code 0x10000005-"armProcess" (arming process) to status code 1 (OK);
    added two sub status codes: 0x4000801C-"inPaceTest" (pacing mode) and 0x4000801D-"arming" (armed) to status code 4 (Invalid Operation).
14. Extended the log type :
    added 16 exception logs: "keyfobLowPower" (low keyfob battery), "keyfobPowerRecovery" (normal keyfob battery), "detectorOvertime" (detector heartbeat timed out), "detectorOvertimeRecovery" (detector heartbeat timeout restored), "wSirenOvertime" (wireless siren heartbeat timed out), "wSirenOvertimeRecovery" (wireless siren heartbeat timeout restored), "wOutputOvertime" (wireless output module heartbeat timed out),

"wOutputOvertimeRecovery" (wireless output module heartbeat timeout restored), "wRepeaterOvertime" (wireless repeater heartbeat timed out), "wRepeaterOvertimeRecovery" (wireless repeater heartbeat timeout restored), "rfJamming" (RF wireless communication blocked), "rfJammingRecovery" (RF wireless communication blocking restored), "batteryMiss" (storage battery loss), "batteryMissRecovery" (storage battery restored), "ARCUploadFailed" (ARC uploading failed), and "ARCUploadRecovery" (ARC uploading restored); added 18 operation logs: "armWithFault" (armed with fault), "entryDelay" (entering and exiting delay), "modArmConfig" (edit arming parameters), "modCertificateStandard" (edit authentication standard), "entryPaceTest" (pacing mode entered), "exitPaceTest" (pacing mode exited), "addNetOperator" (add operator), "modNetOperator" (edit operator information), "delNetOperator" (delete operator), "addNetInstaller" (add installer), "modNetInstaller" (edit installer information), "delNetInstaller" (delete installer), "addManufacturer" (add manufacturer), "modManufacturer" (edit manufacturer information), "delManufacturer" (delete manufacturer), "upgradeSuccessed" (upgraded), "upgradeFailed" (upgrading failed), and "zoneDisabled" (zone shielded); added five event logs: "keyPADlocked" (keypad locked), "keyPADunlocked" (keypad unlocked), "timeSynchronization" (time synchronization), "armFailed" (arming failed), and "ARCStart" (ARC connected).

Summary of Changes in Version 2.0_Mar., 2019

Related Product Type: Turing Series NVR V4.2.10

1. Extended the device capability ***XML_DeviceCap*** (related URL: GET ***/ISAPI/System/capabilities***):
   added six node <**isSupportAutoMaintenance**> (whether supports automatic maintenance), <**isSupportTimeCap**> (whether supports time capability), <**isSupportIntelligentSearch**> (whether supports intelligent search), <**IOTCap**> (IoT device access capability), <**isSupportChannelFullEventListCap**> (whether supports getting event capabilities of all channels) and <**isSupportAUXInfoCap**> (whether supports getting attributes capabilities of all channels)
2. Extended the device capability set ***XML_RacmCap*** (related URL: GET ***/ISAPI/ContentMgmt/capabilities***):
   added three nodes <**isSupportCountingSearchByUTC**> (whether supports whether supports UTC for people counting statistics search), <**isSupportPlaybackReverseByUTC**> (whether supports UTC for playback by time), <**recordSearchType**> (video file search condition)
3. Extended the device video capability set ***XML_VideoCap*** (related URL: GET ***/ISAPI/System/Video/capabilities***):
   added four nodes <**isSupportCounting**>, <**isSupportMultiChannelCounting**> (whether supports people counting of multiple channels), <**isSupportCountingCollection**> (whether supports people counting data replenishment), and <**isSupportHeatmapCollection**> (whether supports heat map data replenishment).
4. Extended the network capability sets ***XML_NetworkCap*** (related URL: GET ***/ISAPI/System/Network/capabilities***) :
   added two nodes <**isSupportPOEConfiguration**> (whether supports PoE port configuration), <**EZVIZSecretKey**> (whether supports editing verification code for Hik-Connect).
5. Added the function of PoE configuration.

Get PoE port configuration capability: GET ***/ISAPI/System/Network/POE/capabilities?format=json*** ;
Get PoE port parameters: GET ***/ISAPI/System/Network/POE?format=json*** ;
Set PoE port: PUT ***/ISAPI/System/Network/POE?format=json*** .

6. Extended the access protocol ***XML_AdminAccessProtocol*** (related URL: GET: ***/ISAPI/Security/adminAccesses/<ID>***):
   added three protocols to node <protocol>: "IoT", "TLS1_1Enable", "TLS1_2Enable".
7. Added the function of automatic maintenance.
   Get the capability of automatic maintenance configuration: GET ***/ISAPI/System/autoMaintenance/capabilities?format=json*** ;
   Get automatic maintenance configuration parameters: GET ***/ISAPI/System/autoMaintenance?format=json*** ;
   Set automatic maintenance: PUT ***/ISAPI/System/autoMaintenance?format=json*** .
8. Extended the time capability of device ***XML_Cap_Time*** (related URL: GET ***/ISAPI/System/time/capabilities***):
   added one node <**timeType**> (time type).
9. Added the function of IP address/MAC address filter configuration:
   Get IP address configuration capability: GET ***/ISAPI/System/Network/ipFilter/capabilities*** ;
   Get/Set the IP address filter configuration parameters: GET/PUT ***/ISAPI/System/Network/ipFilter*** ;
   Get MAC address configuration capability: GET ***/ISAPI/System/Network/MACFilter/capabilities*** ;
   Get/Set the MAC address filter configuration parameters: GET/PUT ***/ISAPI/System/Network/MACFilter*** .
10. Extended the log type ***Log Types for ISAPI*** :
    added two log types: "doubleVerificationPass" (doubel verification completed) and "eventUploadException" (uploading event failed or uploaded event lost); added one operation log: "localAddressFilterConfig/remoteAddressFilterConfig" (local/remote address filter configuration); added one minor alarm type: "securityControlPanelEvent" (security control panel event).
11. Extended the I/O capability ***XML_IOCap*** (related URL: GET ***/ISAPI/System/IO/capabilities***):
    added one node <**isSupportCombinationAlarm**> (whether supports composite alarm).
12. Extended the alarm input configuration capability ***XML_Cap_IOInputPortList*** (reltaed URL: GET ***/ISAPI/System/IO/inputs/capabilities***):
    added one node <**CombinationAlarmCap**> (composite alarm capability).
13. Extended the alarm input parameters ***XML_IOInputPort*** (related URL: GET ***/ISAPI/System/IO/inputs/<ID>***):
    added two nodes <**IODescriptor**> (I/O port description) and <**CombinationAlarm**> (composite alarm list).
14. Extended the device security capability ***XML_SecurityCap*** (related URL: GET ***/ISAPI/Security/capabilities***):
    added one node <**DoubleVerificationCap**> (double verification capability).
15. Added the function of double verification, see details in ***Configure Double Verification*** .

16. Extended the local permission ***XML_localPermission*** :
    added two nodes <**playBackDoubleVerification**> (whether supports double verification for playback) and <**backupDoubleVerification**> (whether supports double verification for backup).
17. Extended the remote permission ***XML_remotePermission*** :
    added one node <**playBackDoubleVerification**> (whether supports double verification for playback and download).
18. Extended the file download condition ***XML_downloadRequest*** :
    added two nodes <**userName**> (double verification user name), <**password**> (double verification password).
19. Extended error codes (see details in ***Error Codes in ResponseStatus***):
    added six sub status codes: 0x60001034-invalidEZVIZSecretKey (invalid verification code for Hik-Connect), 0x60001042- needDoubleVerification (double verification required), 0x60001043-noDoubleVerificationUser (no double verification user), 0x60001044-timeSpanNumOverLimit (max. number of time buckets reached), 0x60001045-channelNumOverLimit (max. number of channels reached), and 0x60001046-noSearchIDResource(insufficient searchID resources) to status code 6 (Invalid Message Content).
20. Added the data replenishment function, including people counting, heat map, temperature, and vehicle detection. Refer to ***Data Replenishment*** for details.
21. Extended the network camera information ***XML_InputProxyChannel*** :
    added three nodes <**deviceTypeName**> (device type name), <**serialNumber**> (device serial No.), and <**firmwareVersion**> (firmware code).
22. Extended the event/alarm subscription capability ***XML_SubscribeEventCap*** and event/alarm subscription messsage ***XML_SubscribeEvent*** :
    added one node: <**pictureURLType**> (alarm picture format).
23. Extended the device online upgrade capability ***XML_OnlineUpgradeCap*** :
    added one node <**isSupportTimingUpgrade**> (whether supports scheduled upgrade).
24. Extended the online upgrade parameters ***JSON_OnlineUpgradeParameter*** :
    added two parameters "timingUpgrade" (enable scheduled upgrade or not) and "upgradeTime" (upgrade time).
25. Added the function of IoT device access, for details refer to ***IoT Devices Access*** .
26. Extended the Hik-Connect access configurations ***XML_EZVIZ*** :
    added one node <**offlineStatus**> (device offline status).
27. Added the function of editing verification code for Hik-Connect:
    Request URL: PUT ***/ISAPI/System/Network/EZVIZ/secretKey?format=json*** .

Summary of Changes in Version 2.0_Feb., 2019

Related Product Type: Security Radar with Model DS-PR1-60

1. Added URL to set SSH server for access: ***/ISAPI/System/Network/ssh*** , refer to ***Network Access*** for details.
2. Extended network capability (***XML_NetworkCap*** , related URL: GET ***/ISAPI/System/Network/capabilities***):
   added a node <**isSupportEhome**> (whether supports EHome protocol).

Summary of Changes in Version 2.0_Jan., 2019

Related Product Type: Speed Dome V5.6.0 (H3)

1. Extended PTZ channel capability (***XML_PTZChanelCap*** , related URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/capabilities***):
   added two nodes <**pqrsZoom**> (zooming coordinates of Sony zoom camera module) and <**mnstFocus**>(focus coordinates of Sony zoom camera module).
2. Added URL to configure zoom and focus coordinates for Sony zoom camera module: ***/ISAPI/PTZCtrl/channels/<ID>/zoomFocus*** .
3. Added URL to configure OSD language: ***/ISAPI/System/Video/inputs/OSDLanguage***
4. Extended wireless configuration capability (***XML_Cap_Wireless*** , related URL: GET ***/ISAPI/System/Network/interfaces/<ID>/wireless/capabilities***):
   added node <**isSupportNullSsid**> (whether supports setting SSID to null).
5. Extended streaming channel capability (***XML_Cap_StreamingChannel*** , related URL: ***/ISAPI/Streaming/channels/<ID>/capabilities***):
   edited the minimum values of sub nodes <**videoDestPortNo**> and <**audioDestPortNo**> to "1" and added default values (8860) for these two nodes;
   added two sub nodes <**activeMulticastEnabled**> (whether to enable active multicast) and <**packagingFormat**> (container format) to the node <**Multicast**>.
6. Extended streaming channel parameter message (***XML_StreamingChannel*** , related URL: ***/ISAPI/Streaming/channels/<ID>***): added two sub nodes <**activeMulticastEnabled**> (whether to enable active multicast) and <**packagingFormat**> (container format) to the node <**Multicast**>.
7. Extended network access protocol capability and configuration message(and ***XML_AdminAccessProtocol*** , related URLs: ***/ISAPI/Security/adminAccesses/capabilities*** and ***/ISAPI/Security/adminAccesses/<ID>***):
   added a value "SDK_OVER_TLS" to the node <**protocol**> (protocol type);
   added three nodes <**TLS1_0Enable**> (whether to enable TLS v1.0), <**TLS1_1Enable**> (whether to enable TLS v1.1), and <**TLS1_2Enable**> (whether to enable TLS v1.2).
8. Extended UDnP interface configuration message (***XML_port*** , related URL: ***/ISAPI/System/Network/UPnP/ports/<ID>***) and mapping status message (***XML_portStatus*** , related URL: ***/ISAPI/System/Network/UPnP/ports/<ID>/status***):
   added a value "SDK_OVER_TLS" to the node <**internalPort**> (internal interface).
9. Added URL to get the socket IP of current connection: GET ***/ISAPI/System/Network/socketIP*** .
10. Extended alarm linkage capability (***XML_EventTriggersCap*** , related URL: GET ***/ISAPI/Event/triggersCap***):
    added two nodes <**isSupportWhiteLightAction**> (whether supports supplement light alarm linkage) and <**isSupportAudioAction**> (whether supports audible warning linkage).
11. Extended alarm linkage capability type (***XML_EventTriggerCapType***):
    added two node <**isSupportBeep**> (whether supports audible warning linkage) and <**isSupportWhiteLight**> (whether supports supplement light alarm linkage).
12. Extended alarm linkage action message (***XML_EventTriggerNotification***):
    added two linkage actions to the node <**notificationMethod**>, i.e., "beep"-audible warning and "whiteLight"-supplement light.

13. Added URLs to get configuration capability and configure parameters of supplement light alarm output:
    Get Capability: GET ***/ISAPI/Event/triggers/notifications/whiteLightAlarm/capabilities?format=json*** ;
    Get Parameter: GET ***/ISAPI/Event/triggers/notifications/whiteLightAlarm?format=json*** ;
    Set Parameter: PUT ***/ISAPI/Event/triggers/notifications/whiteLightAlarm?format=json*** .
14. Added URLs to get configuration capability and configure parameters of audible warning alarm output:
    Get Capability: GET ***/ISAPI/Event/triggers/notifications/AudioAlarm/capabilities?format=json*** ;
    Get Parameter: GET ;
    Set Parameter: PUT .
15. Extended dynamic capability (***XML_DynamicCap*** , related URL: ***/ISAPI/Streaming/channels/<ID>/dynamicCap***):
    added a audible prompt type, i.e., "prompt25" to the nodes <**smart264EnabledPrompt**> (audible prompt for Smart264 enabled) and <**smart265EnabledPrompt**> (audible prompt for Smart265 enabled).
16. Extended video capability (***XML_VideoCap*** , related URL: GET ***/ISAPI/System/Video/capabilities***):
    added nodes <**OSDLanguage**> (OSD language), <**channelFlexible**> (capability of getting channel status by condition).
17. Extended device capability (***XML_DeviceCap*** , related URL: GET ***/ISAPI/System/capabilities***):
    added nodes <**isSupportActiveMulticast**> (whether supports active multicast), <**isSupportGetLinkSocketIP**> (whether supports getting the socketIP of current connection), <**isSupportChangedUpload**> (whether supports uploading status changes), <**isSupportSimpleDevStatus**> (whether supports getting device working status), <**isSupportFlexible**> (whether supports getting channel status by condition), and <**isSupportTimeCap**> (whether supports time configuration).
18. Extended time configuration capability (***XML_Cap_Time*** , related URL: GET):
    added node <**timeType**> (time type, local or UTC time).
19. Added the function of alarm/event subscription, refer to ***Subscribe Alarm/Event in Arming Mode*** for details.

Summary of Changes in Version 2.0_Jan., 2019

Related Product Type: AX Panel

1. Extended the security capability ***XML_SecurityCap*** :
   added four nodes: <**keypadPassword**> (keypad password length), <**installerKeypadPassword**> (installer's keypad password length), <**operatorKeypadPassword**> (operator's keypad password length), and <**userOperateType**> (user operation type).
2. Extended the user parameters ***XML_User*** :
   added one node: <**userOperateType**> (user operation type).
3. Extended the search result parameters for log files ***XML_CMSearchResult*** :

added three nodes: <**object**> (operation object), <**params**> (parameters), and <**seq**> (serial No.) to <**logDescriptor**>.

4. Added an error code to : 0x4000801B-"inProgramMode" (The keypad is in programming mode).
5. Added two minor log types to operation logs in ***Log Types for ISAPI*** : "enterProgramMode"-The keypad programming mode is enabled; "existProgramMode"-The keypad programming mode is disabled.

Summary of Changes in Version 2.0_Dec., 2018

Related Product Type: Thermal Network Bullet Camera; Thermal Bi-spectrum Network Bullet Camera; Thermal & Optical Network Dome Camera V5.5.16
Related Product Model: DS-2TD21xx/V1 series, DS-2TD21xx/VP series, DS-2TD26xx series, DS-2TD26xx/V1 series, DS-2TD28xx series, DS-2TD28xx/V1 series, DS-2TD12xx/V1 series

1. Extended the alarm output capability ***XML_IOOutputPortList*** and alarm output port parameters ***XML_IOOutputPort*** :
   added one node **normalStatus** (normal status).
2. Added one URL of getting I/O output capability: ***/ISAPI/System/IO/outputs/capabilities***

Summary of Changes in Version 2.0_Oct., 2018

Related Product Type: Thermographic Automation Thermal Camera with Models DS-2TA03-15SVI and DS2TA06-25SVI

1. Added the function of lens correction:
   Get capability of lens correction configuration: GET ***/ISAPI/PTZCtrl/channels/<ID>/lensCorrection/capabilities?format=json***
   Get lens correction configuration parameters: GET ***/ISAPI/PTZCtrl/channels/<ID>/lensCorrection?format=json***
   Set lens correction: PUT ***/ISAPI/PTZCtrl/channels/<ID>/lensCorrection?format=json***
2. Extended the PTZ control capability ***XML_PTZChanelCap*** :
   added one node <**isSupportLensCorrection**> (whether supports lens correction).
3. Extended the attributes of specific channel ***XML_ChannelInfo*** :
   added two nodes: <**PanoramaCamera**>, <**GlobalCamera**>, added three sub nodes <**LensCorrection**> (lens correction), <**BurningPrevention**> (burning prevention) to <thermal> .

Summary of Changes in Version 2.0_Sept., 2018

Related Product Type: Network Thermographic Automation Camera DS-2TA03-4AUM
Extended the focus parameters configuration ***XML_FocusConfiguration*** : added two nodes <**focusStyle**> (focus type) and <**relativeFocusPos**> (relative focus value).

Chapter 2 Protocol

The design of ISAPI protocol adopts RESTful style, so this part introduces the predefined resource operation methods, protocol API (URL) format, interaction message format, time format, namespace, and error processing method.

2.1 Operation Method

The resource operation methods of ISAPI protocol are same as those of HTTP (Hyper Text Transport Protocol) and RTSP (Real Time Streaming Protocol), see details in the following table.

Note

The RTSP operation methods are mainly used to get the real-time stream for live view, two-way audio, and playback in this manual. For details about HTTP and RTSP, please refer to ***https://tools.ietf.org/html/rfc2612*** and ***https://tools.ietf.org/html/rfc2326*** .

Table 2-1 HTTP Operation Method

Method	Description
POST	Create resources. This method is only available for adding resource that does not exist before.
GET	Retrieve resources. This method cannot change the system status, only return data as the response to the requester.
PUT	Update resources. This method is usually for update the resource that already exists, but it can also be used to create the resource if the specific resource does not exist.
DELETE	Delete resources.

Table 2-2 RTSP Operation Method

Method	Description
OPTIONS	Get the supported RTSP operation methods. See the request and response message format below when interacting between client software and server. OPTIONS %s RTSP/1.0\r\n //Request URL CSeq:%u\r\n //Command No. User-Agent:%s\r\n //Client software name \r\n /*Succeeded*/ RTSP/1.0 200 OK\r\n //Succeeded CSeq: %u\r\n //Command No.

Method	Description
	Public: %s\r\n //Supported operation methods Date:%s\r\n //Date and time \r\n /*Failed*/ RTSP/1.0 4XX/5XX %s\r\n //Failed CSeq: %u\r\n //Command No. Date:%s\r\n //Date and time \r\n
DESCRIBE	Transfer basic information by SDP (Session Description Protocol, see ***https://tools.ietf.org/html/rfc2327***) files, such as URL with SETUP command and so on. See the request and response message format below when interacting between client software and server. DESCRIBE %s RTSP/1.0\r\n //URL CSeq:%u\r\n //Command No. Accept: application/sdp\r\n //The SDP description is accepted Authorization:%s\r\n //Authentication information User-Agent:%s\r\n //Client software name \r\n /*Succeeded*/ RTSP/1.0 200 OK\r\n //Succeeded or failed CSeq: %u\r\n //Command No. Content-Type: application/sdp\r\n //The SDP description exists behind the command Content-Base:%s\r\n //URL Content-Length: %d\r\n //The length of contents behind the command \r\n [content] //SDP description /*Failed*/ RTSP/1.0 4XX/5XX %s\r\n //Failed CSeq: %u\r\n //Command No. \r\n
SETUP	Interact the session information, such as transmission mode, port number, and so on. See the request and response message format below when interacting between client software and server. SETUP %s RTSP/1.0\r\n //URL CSeq:%u\r\n //Command No. Authorization:%s\r\n //Authentication information Session:%s\r\n //Session ID is only returned at the even number of times Transport: %s\r\n //Transmission protocol User-Agent:%s\r\nv //Client software name \r\n /*Succeeded*/ RTSP/1.0 200 OK \r\n //Succeeded

Method	Description
	CSeq: %u\r\n Session:%s\r\n //Session ID Transport: s% //Transmission method Date: s% //Date and time /*Failed*/ RTSP/1.0 4XX/5XX %s\r\n //Failed CSeq: %u\r\n //Command No. \r\n
PLAY	Start the stream transmission. See the request and response message format below when interacting between client software and server. PLAY %s RTSP/1.0\r\n //URL CSeq:%u\r\n //Command No. Authorization:%s\r\n //Authentication information Session:%s\r\n //Session ID Range: npt=%f-%f\r\n //Determine the play range User-Agent:%s\r\n //Client software name \r\n /*Succeeded*/ RTSP/1.0 200 OK \r\n //Succeeded CSeq: %u\r\n Session:%s\r\n RTP-Info:%s Date: %s /*Failed*/ RTSP/1.0 4XX/5XX %s\r\n //Failed CSeq: %u\r\n //Command No. Session:%s\r\n \r\n
PAUSE	Pause the stream transmission.
TEARDOWN	Stop the stream transmission. See the request and response message format below when interacting between client software and server. TEARDOWN %s RTSP/1.0\r\n //URL CSeq: %u\r\n //Command No. Authorization:%s\r\n //Authentication information Session:%s\r\n //Session ID User-Agent:%s\r\n //Client software name \r\n /*Succeeded*/ RTSP/1.0 200 OK \r\n //Succeeded CSeq: %u\r\n Session:%s\r\n

Method	Description
	Date:%s\r\n \r\n /*Failed*/ RTSP/1.0 4XX/5XX %s\r\n //Failed CSeq: %u\r\n //Command No. Session:%s\r\n \r\n

2.2 URL Format

URL (Uniform Resource Locator) is a further class of URIs, it can identify a resource and locate the resource by describing its primary access mechanism.

The format of URL is defined as the follows: ***<protocol>://<host>[:port][abs_path [?query]]***.

protocol

Protocol types, i.e., HTTP (version 1.1) and RTSP (version 1.0).

host

Host name, IP address, or the FQDN (Fully Qualified Domain Name) of network devices.

port

Port number of host service for listening the connection status of TCP (Transmission Control Protocol, see ***https://tools.ietf.org/html/rfc793***) or UDP (User Datagram Protocol, see ***https://tools.ietf.org/html/rfc768***). If this field is not configured, the default port number will be adopted. For HTTP, the default port number is 80, and for RTSP, the default port number is 554.

abs_path

Resource URI: /ServiceName/ResourceType/resource. Here, the **ServiceName** is ISAPI; the **ResourceType** is predefined with upper camel case according to different functions , see details in the following table; the resource is defined with lower camel case and can be extended in actual applications. E.g., /ISAPI/System/Network/interfaces.

Predefined URI Model	Description
/ISAPI/System/...	System related resources
/ISAPI/Security/...	Security related resources
/ISAPI/Streaming/...	Video streaming and management related resources
/ISAPI/Event...	Event/alarm related resources
/ISAPI/PTZCtrl/...	PTZ control related resources

Predefined URI Model	Description
/ISAPI/Image/...	Video encoding and image related resources
/ISAPI/ContentMgmt/...	Storage management related resources

query

Strings for describing resources information, including related parameters. The parameter names and values must be listed as the following format in this field: ?p1=v1&p2=v2&…&pn=vn.

Note

- To locate the connected device, when operating lower-level device via the URL, the **query** field should be filled as ?devIndex=uuid&p1=v1&p2=v2&…&pn=vn. The uuid (or guid) is a 32-byte (128 bits) random number, which is unique and generated by operating system when adding device, and its format is "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx".
- For message in JSON format, the **query** field should be filled as ?format=json&p1=v1&p2=v2&…&pn=vn. For details about message format, refer to the next section below. E.g.,http://10.17.132.22/ISAPI/System/time?foramt=json&devIndex=550e8400e29b41d4a716446655440000.

2.3 Message Format

For ISAPI protocol, the request and response messages generated among the interaction between devices and platform are data in XML format or JSON format.

Note

The message format here is only available for URLs based on HTTP.

XML Format

- For the previous integration, XML is a common format which may only cause a little changes in the later integration.
- Generally, for configuration information, the **Content-Type** in the XML format message is "application/xml; charset='UTF-8'", see details below.

```
//Request Message
GET /ISAPI/System/status HTTP/1.1
…

//Response Message
HTTP/1.1 200 OK
…
Content-Type: application/xml; charset="UTF-8"
…
<?xml version="1.0" encoding="UTF-8"?>
```

```
<DeviceStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
…
</DeviceStatus>
```

For data (e.g., firmware, configuration files), the **Content-Type** in the XML format message is "application/octet-stream", see details below.

```
//Request Message
PUT /ISAPI/System/configurationData HTTP/1.1
…
Content-Type: application/octet-stream
…
[proprietary configuration file data content]

//Response Message
HTTP/1.1 200 OK
…

Content-Type: application/xml; charset="UTF-8"
…
<?xml version="1.0" encoding="UTF-8"?>
<ResponseStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
…
</ResponseStatus>
```

JSON Format Message

- The leaf node (without any sub node) in the message is named by lower camel case, while the non-leaf node in the message in named by upper camel case.
- To communicate by the messages in JSON format, the devices must support the public specifications in ***http://www.ecma-international.org/publications/files/ECMA-ST/ECMA-404.pdf*** and HTTP with version 1.1.

Note

JSON is a lightweight data format which is a subset of JavaScript language and is small, fast, and easy to be parsed.

- Generally, for configuration information, the **Content-Type** of message is "application/json", see the example below:

```
//Request message
GET /ISAPI/System/status HTTP/1.1
…

//Response message
HTTP/1.1 200 OK
…
Content-Type: application/json
…
"DeviceStatus":""
…
```

For data (e.g., firmware, configuration files), the **Content-Type** of message is "application/octet-stream", see the example below:

```
//Request message
PUT /ISAPI/System/configurationData HTTP/1.1
…
Content-Type: application/octet-stream
…
[proprietary configuration file data content]

//Response message
HTTP/1.1 200 OK
…
Content-Type: application/json
…
"ResponseStatus":""
…
```

2.4 Others

Time Format

The time format in the ISAPI protocol adopts ISO8601 standard (see details in ***http://www.w3.org/TR/NOTE-datetime-970915***), that is, YYY-MM-DDThh:mm:ss.sTZD (e.g., 2017-08-16T20:17:06+08:00).

Namespace

For message in XML format, namespace is required. The following namespaces are available:

- xmlns=http://www.isapi.org/ver20/XMLSchema
- xmlns:xs="http://www.w3.org/2001/XMLSchema"
- xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
- xmlns:xlink="http://www.w3.org/1999/xlink"

Error Processing

During the integration applications of ISAPI protocol, when the error of URL based on HTTP occurred, the ResponseStatus message (in XML or JSON format) which contains error code will be returned. If the error of URL based on RTSP occurs, the corresponding status code will directly be returned, for details, refer to ***https://tools.ietf.org/html/rfc2326*** .

Chapter 3 Security

This part mainly introduces the authentication, user permission, and encryption in the integration applications of ISAPI.

3.1 Authentication

When communicating via ISAPI protocol, the digest of the session must be authenticated.

Note

- The authentication must based on *HTTP Authentication: Basic and Digest Access Authentication*, see ***https://tools.ietf.org/html/rfc2617*** for details.
- The request session must contain authentication information, otherwise, device will return *401* error code.

The message digest, which contains user name, password, specific nonce value, HTTP or RTSP operation methods, and request URL, is generated by the MD5 algorithm, see the calculation rules below.

qop=Undefined

Digest=MD5(MD5(A1):<nonce>:MD5(A2))

qop="auth:"

Digest=MD5(MD5(A1):<nonce>:<nc>:<cnonce>:<qop>:MD5(A2))

qop="auth-int:"

Digest=MD5(MD5(A1):<nonce>:<nc>:<cnonce>:<qop>:MD5(A2))

Note

- The **qop** is a value for determining whether the authentication is required.
- A1 and A2 are two data blocks required for digest calculation.
  A1: Data block about security, which contains user name, password, security domain, random number, and so on. If the digest calculation algorithm is MD5, A1=<user>:<realm>:<password>; if the algorithm is MD5-sess, A1=MD5(<user>:<realm>:<password>):<nonce>:<cnonce>.
  A2: Data block about message, such as URL, repeated requests, message body, and so on, it helps to prevent repeated, and realize the resource/message tamper-proof. If the **qop** is not defined or it is "auth:", A2=<request-method>:<uri-directive-value>; if the **qop** is "auth-int:", A2=<request-method>:<uri-directive-value>:MD5(<request-entity-body>).
- The **nonce** is the random number generated by service, the following generation formula is suggested: nonce = BASE64(time-stamp MD5(time-stamp ":" ETag ":" private-key)). The **time-stamp** in the formula is the time stamp generated by service or the unique serial No.; the **ETag** is

the value of HTTP ETag header in the request message; the **priviate-key** is the data that only known by service.

If authentication failed, the device will return the ***XML_ResponseStatus_AuthenticationFailed*** message, and the remaining authentication attempts will also be returned. If the remaining attempts is 0, the user will be locked at the next authentication attempt.

3.2 User Permission

Three user types with different permissions are adopted in the security specifications to control the access.

Administrator

The account of this user type is called "admin", which has the permissions to access all supported resources. And it must be activated at any time.

Operator

The account of this user type has the permissions to access common resources and less advanced resources, see details in the description of each resource.

Viewer

The account of this user type has the permissions to access common resources only, see details in the description of each resource.

3.3 Encryption

Two encryption modes are available, including all information encryption (based on HTTPs) and sensitive information (e.g., user name, password, card No. and so on) encryption.

Note

- The sensitive information varies with different applications, see details in the description of protocol messages.
- Encryption will not affect the escape behavior of contents in XML format, which means that the contents should be escaped before encrypting.

Encryption Capability

Before encrypting the information, the encryption capability of devices or client software should be obtained via the URL: GET ***/ISAPI/Security/capabilities*** to know the available encryption algorithm. The encryption algorithm information is returned by the **securityVersion** node in response message ***XML_SecurityCap*** .

Note

Different values of **securityVersion** node correspond to different encrypted contents and encryption modes. If node value is 1, it indicates that the encryption mode is AES128 CBC, and only the password will be encrypted; if the node value is 2, the AES256 CBC mode is adopted, and both the user name and password will be encrypted.

Encryption Flow

Flow of encrypting source data: **Source Data → Encode by Base64 Method → Encrypt in AES128/ AEC256 CBC Mode** .

Note

Encoding data by Base64 method is to be compatible with binary data and get the data size before encrypting by AES128/AEC256 CBC mode (the data size is not real after encrypting as 0 will be supplied).

Encryption Key

The key used for encryption is generated by iteratively encrypting the (Password +"AaBbCcDd1234!@#$") according to SHA256 algorithm. E.g., if the device password is abcd1234, then the key is SHA(SHA(SHA("abcd1234AaBbCcDd1234!@#$"))…).

Note

- The number of iterations is determined by device capability, see the node **keyIterateNum** in ***XML_SecurityCap*** message.
- If the password is changed when generating the key, the previous password will be used.
- The device gets the key when it is authenticated, and the client software/system calculates the key after logging in.

Encryption URL Format

The encryption modes are displayed by adding **query** parameters, i.e., **security** and **iv**, to the URL (e.g., /ISAPI/xxx?security=1&iv=xxx).

Note

- The parameter **security** is the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security**=1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security**=2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode.
- The parameter **iv** is the initialization vector, and it is required when **security**=1 or 2. The 16-byte hexadecimal iv of AES128/AES256 CBC mode is generated by client software or system, and it will be transformed to 32-byte characters when transmitting it to devices via URL. When encrypting in AES128/AES256 CBC mode, loop encryption by data block size is not required,

and after encrypting for once, the **iv** will be changed, so if there are two or more nodes to be encrypted, you should copy the iv during encoding to make sure the iv is same for encrypting each node.

- When you want to determine the value of **security** in the URL, you must compare the encryption scheme version No. of client software and device. If the supported versions are different, you should adopt the lower version. E.g., if the client software supports **security**=2, the device supports **security**=1, then **security**=1 will be adopted.

Suggestion About Extension

If there are other existing nodes in the message are regarded as sensitive information, you can add values to the parameter **security** in the URL, e.g., **security**=3 (encrypt added sensitive information in AES128 CBC mode) and **security**=4 (encrypt added sensitive information in AES256 CBC mode).

3.3.1 Encrypt Stream

To improve the security of real-time or history stream from devices and comply with the laws and regulations of some parts of oversea markets, we have provided the stream encryption function based on AES algorithm to encrypt the stream.

Steps

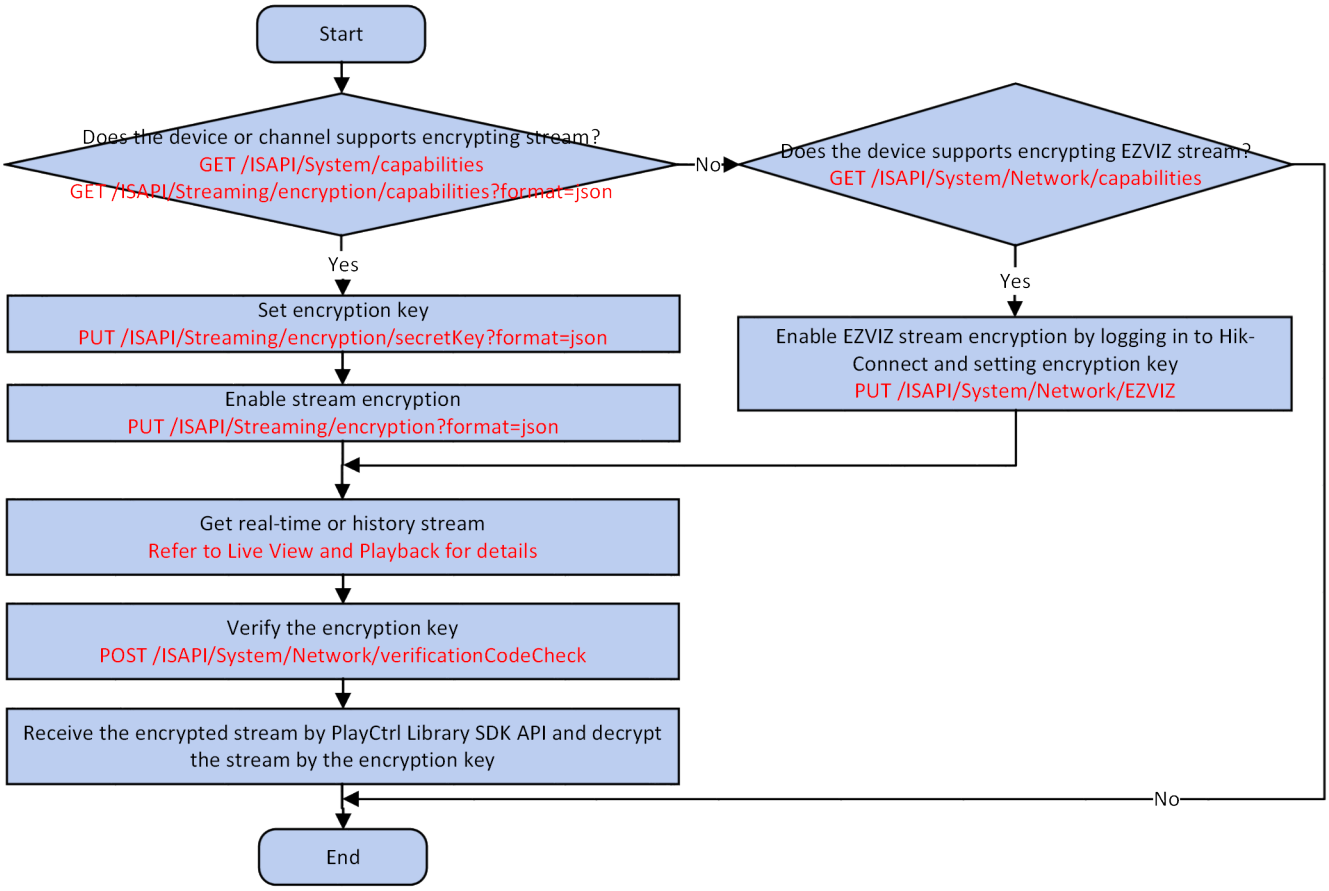


Figure 3-1 Programming Flow of Encrypting Stream

Note

- For devices with Hisilicon chips, up to 16 channels' stream can be encrypted. If the number of channels is larger than 16, the error "insufficient resources" will be returned when starting live view or playback.
- For Sky series devices, all channels' stream can be encrypted.
- The PlayCtrl library will not check if the stream is encrypted. If the stream is encrypted, but the decryption key is not configured or incorrect decryption key is configured, the display image will be black.
- If the encryption algorithm of the external stream is known, you can decrypt and play the stream without the PlayCtrl library.

1. Get device capability or encryption capability to check if the device or channel supports stream encryption by the request URL: GET ***/ISAPI/System/capabilities*** or ***/ISAPI/Streaming/encryption/capabilities?format=json*** .

- The node <**isSupportEncryption**> is not returned in the capability message ***XML_DeviceCap*** or the value of node <**enable**> in the capability message ***JSON_EncryptionCap*** is "false": perform the steps below.
  a. Get network capability to check if the device supports encrypting EZVIZ stream by the request URL: GET ***/ISAPI/System/Network/capabilities*** .

  Note

  If the node <**isSupportEZVIZ**> is returned in the capability message ***XML_NetworkCap*** and its value is "true", it indicates that encrypting EZVIZ stream is supported. Otherwise, please end this task.

  b. Log in to Hik-Connect and set encryption key to enable EZVIZ stream encryption by the request URL: PUT ***/ISAPI/System/Network/EZVIZ*** .
- The node <**isSupportEncryption**> is returned in the capability message ***XML_DeviceCap*** and its value is "true" or the value of node <**enable**> in the capability message ***JSON_EncryptionCap*** is "true": the device or channel supports stream encryption, and continue to perform the steps below.
  a. Set encryption key by the request URL: PUT ***/ISAPI/Streaming/encryption/secretKey?format=json*** .
  b. Enable stream encryption by the request URL: PUT ***/ISAPI/Streaming/encryption?format=json*** .

2. Get real-time or history stream, refer to ***Live View and Playback*** for details.
3. Verify the encryption key by the request URL: POST ***/ISAPI/System/Network/verificationCodeCheck*** .

Note

To check if verifying verification code is supported, you can call the URL: GET ***/ISAPI/System/Network/capabilities*** to get the device network capability (***XML_NetworkCap***). If supports, the node <**isSupportVerificationCodeCheck**> is returned in the capability and its value is "true".

4. Receive the encrypted stream by calling encrypted stream callback function (PlayM4_SetEncryptTypeCallBack) of PlayCtrl Library SDK and decrypt the stream by the encryption key.

Note

Refer to *Cross-Platform PlayCtrl Library SDK User Manual* for details of the encrypted stream callback function and playing of the decrypted stream.

3.3.2 Encrypt Sensitive Information

Some sensitive information (such as user name, password, and so on) in the messages should be encrypted to improve security during interaction with devices via ISAPI.

Steps

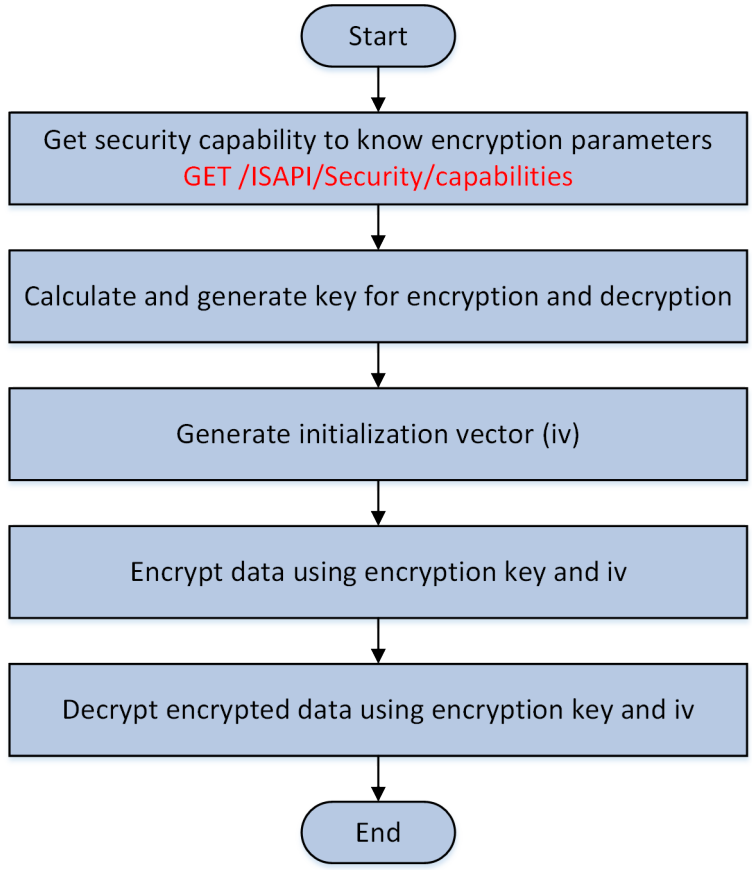


Figure 3-2 Programming Flow of Encrypting Sensitive Information

Note

Values of the following parameters in query parameters, XML messages, and JSON messages are sensitive information that needs to be encrypted.

Table 3-1 Sensitive Information to be Encrypted

Format	Parameters
Query	**identityKey** (identity key, which is the key of the private face picture library) and **secretkey** (secret key)
XML	<**userName**> (user name), <**password**> (password), <**loginPassword**> (login password), <**snmpAuthenticationPassword**> (SNMP authentication password), <**snmpPrivacyPassword**> (SNMP encryption password), <**accountName**> (account name), <**encryptionKey**> (encryption key), <**sharedKey**> (shared key), <**Username**> (user name), <**passwd**>(password), <**name**> (name),

Format	Parameters
	<**authPasswd**> (authentication password), <**passWord**> (password), <**key**> (key), <**tokenKey**> (token key), <**oldPwd**> (old password), <**newPwd**> (new password), and <**terminalPwd**> (terminal password)
JSON	"**userName**" (user name), "**password**" (password), "**loginPassword**" (login password), "**snmpAuthenticationPassword**" (SNMP authentication password), "**snmpPrivacyPassword**" (SNMP encryption password), "**accountName**" (account name), "**encryptionKey**" (encryption key), "**sharedKey**" (shared key), "**Username**" (user name), "**passwd**" (password), "**authPasswd**" (authentication password), "**passWord**" (password), "**key**" (key), "**tokenKey**" (token key), "**randomCode**" (random code), "**AK**" (access key), "**SK**" (encryption key), "**Card**" (card No.), "**Password**" (password), "**FingerPrint**" (fingerprint), "**TemporaryPassword**" (temporary password), "**RemoteControl**" (remote control), and "**WirelessInfo**" (wireless information)

1. Get the device security capability by the request URL: GET ***/ISAPI/Security/capabilities*** to know the encryption parameters.

   The security capability is returned in the message ***XML_SecurityCap*** . Nodes of encryption parameters include <**securityVersion**> (encryption scheme version), <**keyIterateNum**> (iteration times), <**isIrreversible**> (whether the password is irreversible), and <**salt**> (salt value).

   Note

   The salt value will be returned only when the request URL contains the query parameter **username**.

2. Calculate and generate the key for encryption and decryption according to the encryption parameters.
   - If <**isIrreversible**> is "true" and <**salt**> is also configured, the key is calculated and generated by iteratively encrypting the value of (user name+salt+password) with SHA256 algorithm.

     Note

     - The value of <**salt**> should be different for different users.
     - The password encrypted by this method is irreversible.

   - If <**isIrreversible**> is "false" or does not exist, and <**salt**> is null, the key is calculated and generated by iteratively encrypting the password with SHA256 algorithm.

     Note

     The password encrypted by this method is reversible.

3. Generate a byte array containing 16 elements randomly as the initialization vector (iv) and covert the byte array to character array.
4. Encrypt the data.

1) Convert iv from character array to byte array.
2) Encode the data to be encrypted by using base64.
3) Set the AES key based on the encryption key and the encryption version.

Note

Currently, only AES-128 encryption is supported, which indicates that the **securityVersion** is 1.

4) Encrypt the data by using iv and AES key in AES-CBC mode.
5) Convert the encrypted data to character array.

5. Decrypt the encrypted data.

1) Convert iv from character array to byte array.
2) Convert the encrypted data from character array to byte array.
3) Set the AES key based on the encryption key and the encryption version.

Note

Currently, only AES-128 encryption is supported, which indicates that the **securityVersion** is 1.

4) Decrypt the encrypted data by using iv and AES key in AES-CBC mode.
5) Decode the decrypted data by using base64.

Example

Sample Code of Encrypting Sensitive Information

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Security.Cryptography;
using System.Text;
using System.Threading.Tasks;

namespace SystemManagement.InformationEncryption
{
 class InfoEncryption
 {
  /// <summary>
  /// Generate initialization vector (iv)
  /// </summary>
  /// <param name="strInitVector"></param>
  /// <returns></returns>
  public static void GetInitVector(out string strInitVector)
  {
   byte[] szInitVector = new byte[16];
   Random ra = new Random();
   ra.NextBytes(szInitVector);
   byte[] byHexAes = AESEncryption.converByteArrayToCharArray(szInitVector, szInitVector.Length);
   strInitVector = Encoding.UTF8.GetString(byHexAes).ToLower();//This must be in lowercase.
  }

  /// <summary>
```

```
    /// Encrypt data with SHA256 algorithm. The data encrypted by this algorithm is reversible.
    /// </summary>
    /// <param name="strData"></param>
    /// <returns></returns>
    public static string sha256(string strData)
    {
      byte[] szData = Encoding.UTF8.GetBytes(strData);
      byte[] szHash = SHA256Managed.Create().ComputeHash(szData);
      byte[] szSha256 = AESEncryption.converByteArrayToCharArray(szHash, 32);//The standard algorithm is Hash. The
length 32 is set according to the sample document.
      return Encoding.UTF8.GetString(szSha256);
    }

    /// <summary>
    /// Encrypt (user name+salt+password) with SHA256 algorithm. The password encrypted by this algorithm is
irreversible.
    /// </summary>
    /// <param name="strUser"></param>
    /// <param name="szSalt"></param>
    /// <param name="strPassword"></param>
    /// <returns></returns>
    public static string calcSha256(string strUser, byte[] szSalt, string strPassword)
    {
      string strSrcData = strUser;
      byte[] szRealSalt = new byte[64];//The size of the salt value is 64 bits.
      if (szSalt.Length > 64)
      {
        return null;
      }
      Array.Copy(szSalt, szRealSalt, szSalt.Length);
      strSrcData = strSrcData + Encoding.UTF8.GetString(szRealSalt) + strPassword;
      return sha256(strSrcData);
    }

    /// <summary>
    /// Generate encryption key
    /// </summary>
    /// <param name="strUserName"></param>
    /// <param name="strSalt"></param>
    /// <param name="strPassword"></param>
    /// <param name="szOut"></param>
    /// <param name="iKeyIterateNum"></param>
    /// <param name="bIrreversible"></param>
    /// <returns></returns>
    public static void getEncryptKey(string strUserName, string strSalt, string strPassword, out byte[] szOut, int
iKeyIterateNum, bool bIrreversible)
    {
      byte[] szSalt = null;
      if (strSalt != null)
      {
        szSalt = Encoding.UTF8.GetBytes(strSalt);
      }
```

```
  string strSrcData = string.Empty;
  if (bIrreversible && szSalt.Length > 0)
  {
   string strIrrPsw = calcSha256(strUserName, szSalt, strPassword);
   if (strIrrPsw.Length > 64)
   {
    strSrcData = strIrrPsw.Substring(0,64);
   }
   else
   {
    strSrcData = strIrrPsw;
   }
  }
  else
  {
   if (strPassword.Length > 64)
   {
    strSrcData = strPassword.Substring(0,64);
   }
   else
   {
    strSrcData = strPassword;
   }
  }
  strSrcData +="AaBbCcDd1234!@#$";
  if (iKeyIterateNum <= 0)//Iterations
  {
   iKeyIterateNum = 100;
  }

  //For the SHA256 iteration, iKeyIterateNum represents the number of iterations returned by the capability set.
  for (int i = 0; i < iKeyIterateNum; i++)
  {
   strSrcData = sha256(strSrcData);
  }
  byte[] szSHA256 = Encoding.UTF8.GetBytes(strSrcData);

  //The result calculated with SHA256 algorithm is converted to a byte array for the last time.
  byte[] szByteArray = AESEncryption.convertCharArrayToByteArray(szSHA256, szSHA256.Length);

  if (szByteArray.Length > 32)
  {
   szOut = new byte[32];
   Array.Copy(szByteArray, szOut, 32);
  }
  else
  {
   szOut = new byte[szByteArray.Length];
   Array.Copy(szByteArray, szOut, szByteArray.Length);
  }
 }
```

```
    /// <summary>
    /// Encrypt content (sensitive information)
    /// </summary>
    /// <param name="strInitVextor"></param>
    /// <param name="szAESKey"></param>
    /// <param name="strSrcContent"></param>
    /// <param name="strOut"></param>
    /// <param name="iSecurityVersion"></param>
    /// <returns></returns>
    public static void getEncryptContent(string strInitVextor, byte[] szAESKey, string strSrcContent, out string strOut, int
iSecurityVersion)
    {
      if (iSecurityVersion != 1)//1 refers to the AES-128 algorithm. Currently only 1 is supported.
      {
        strOut = strSrcContent;
        return;
      }

      //Convert to UTF-8
      byte[] szInitVextor = Encoding.UTF8.GetBytes(strInitVextor);
      byte[] szInitVextorByteArray = AESEncryption.convertCharArrayToByteArray(szInitVextor, szInitVextor.Length);
      byte[] szSrcBytes = Encoding.UTF8.GetBytes(strSrcContent);
      string strSrcBase64 = Convert.ToBase64String(szSrcBytes);

      //AES encryption
      byte[] szAesData = AESEncryption.AesEncrypt(strSrcBase64, szAESKey, szInitVextorByteArray);
      byte[] szOut = AESEncryption.converByteArrayToCharArray(szAesData, szAesData.Length);
      strOut = Encoding.UTF8.GetString(szOut);
    }

    /// <summary>
    /// Decrypt content (sensitive information)
    /// </summary>
    /// <param name="strInitVextor"></param>
    /// <param name="szAESKey"></param>
    /// <param name="strSrcContent"></param>
    /// <param name="strOut"></param>
    /// <param name="iSecurityVersion"></param>
    /// <returns></returns>
    public static void getDecryptContent(string strInitVextor, byte[] szAESKey, string strSrcContent, out string strOut, int
iSecurityVersion)
    {
      if (iSecurityVersion != 1)//1 refers to the AES-128 algorithm. Currently only 1 is supported.
      {
        strOut = strSrcContent;
        return;
      }

      //Convert to UTF-8
      byte[] szInitVextor = Encoding.UTF8.GetBytes(strInitVextor);
      byte[] szInitVextorByteArray = AESEncryption.convertCharArrayToByteArray(szInitVextor, szInitVextor.Length);
      byte[] szSrcBytes = Encoding.UTF8.GetBytes(strSrcContent);
```

```
    byte[] szSrcByteArray = AESEncryption.convertCharArrayToByteArray(szSrcBytes, szSrcBytes.Length);
    string strAesData = AESEncryption.AesDecrypt(szSrcByteArray, szAESKey, szInitVextorByteArray);
    byte[] szOut = Convert.FromBase64String(strAesData);
    strOut = Encoding.UTF8.GetString(szOut);
   }
  }
}
```

Note

The sample code of the class AESEncryption is as shown below.

```
using System;
using System.Collections.Generic;
using System.IO;
using System.Linq;
using System.Security.Cryptography;
using System.Text;
using System.Threading.Tasks;

namespace SystemManagement.InformationEncryption
{
 class AESEncryption
 {
  /// <summary>
  /// Convert hexadecimal to binary
  /// </summary>
  /// <param name="chstr"></param>
  /// <returns></returns>
  public static byte hexToBinary(byte chstr)
  {
   char crtn = '\0';
   if (('0' <= chstr) && ('9' >= chstr))
   {
    crtn = (char)(chstr & 0x0F);
   }
   else if (('A' <= chstr) && ('F' >= chstr))
   {
    crtn = (char)(chstr - 'A' + 10);
   }
   else if (('a' <= chstr) && ('f' >= chstr))
   {
    crtn = (char)(chstr - 'a' + 10);
   }
   return (byte)crtn;
  }

  /// <summary>
  /// Convert a character array to a byte array
  /// </summary>
  /// <param name="pSrc"></param>
```

```
    /// <param name="nSrcLen"></param>
    /// <returns></returns>
    public static byte[] convertCharArrayToByteArray(byte[] pSrc, int nSrcLen)
    {
      byte[] byChallengeDst2 = new byte[nSrcLen / 2];
      for (int i = 0; i < nSrcLen; i = i + 2)
      {
        byChallengeDst2[i / 2] = (byte)(hexToBinary(pSrc[i]) << 4);
        byChallengeDst2[i / 2] += (byte)hexToBinary(pSrc[i + 1]);
      }
      return byChallengeDst2;
    }

    /// <summary>
    /// Convert a byte array to a character array
    /// </summary>
    /// <param name="pSrc"></param>
    /// <param name="nSrcLen"></param>
    /// <returns></returns>
    public static byte[] converByteArrayToCharArray(byte[] pSrc, int nSrcLen)
    {
      StringBuilder strB = new StringBuilder();
      for (int i = 0; i < nSrcLen; i++)
      {
        strB.Append(pSrc[i].ToString("x2"));//Here x must be in lowercase, which means converting to a lowercase
hexadecimal character.
      }
      return Encoding.UTF8.GetBytes(strB.ToString());
    }

    /// <summary>
    /// Encrypt in AES-CBC mode
    /// </summary>
    /// <param name="strSrcContent"></param>
    /// <param name="szAESKey"></param>
    /// <param name="iv"></param>
    /// <returns></returns>
    public static byte[] AesEncrypt(string strSrcContent, byte[] szAESKey, byte[] iv)
    {
      RijndaelManaged rijndaelCipher = new RijndaelManaged();
      rijndaelCipher.Mode = CipherMode.CBC;
      rijndaelCipher.Padding = PaddingMode.Zeros;//The end is all-zero padding
      rijndaelCipher.KeySize = 128;
      rijndaelCipher.BlockSize = 128;
      byte[] keyBytes = new byte[16];
      int len = szAESKey.Length;
      if (len > keyBytes.Length)
      {
        len = keyBytes.Length;
      }
```

```
    System.Array.Copy(szAESKey, keyBytes, len);
    rijndaelCipher.Key = keyBytes;
    rijndaelCipher.IV = iv;
    ICryptoTransform transform = rijndaelCipher.CreateEncryptor();
    byte[] szSrcContent = Encoding.UTF8.GetBytes(strSrcContent);
    byte[] szDstContent = transform.TransformFinalBlock(szSrcContent, 0, szSrcContent.Length);
    return szDstContent;
   }

   /// <summary>
   /// Decrypt in AES-CBC mode
   /// </summary>
   /// <param name="szSrcContent"></param>
   /// <param name="szAESKey"></param>
   /// <param name="iv"></param>
   /// <returns></returns>
   public static string AesDecrypt(byte[] szSrcContent, byte[] szAESKey, byte[] iv)
   {
    RijndaelManaged rijndaelCipher = new RijndaelManaged();
    rijndaelCipher.Mode = CipherMode.CBC;
    rijndaelCipher.Padding = PaddingMode.Zeros;//The end is all-zero padding
    rijndaelCipher.KeySize = 128;
    rijndaelCipher.BlockSize = 128;
    byte[] keyBytes = new byte[16];
    int len = szAESKey.Length;
    if (len > keyBytes.Length)
    {
     len = keyBytes.Length;
    }
    System.Array.Copy(szAESKey, keyBytes, len);
    rijndaelCipher.Key = keyBytes;
    rijndaelCipher.IV = iv;
    ICryptoTransform transform = rijndaelCipher.CreateDecryptor();
    byte[] szDstContent = transform.TransformFinalBlock(szSrcContent, 0, szSrcContent.Length);

    //After decrypting the last 16 bytes of the ciphertext, the decrypted data of the last 16 bytes will be checked.
    //If the value of the last byte is 16, the 16-byte string data will be discarded.
    //If the value of the last byte is smaller than 16, it indicates that the original text was padded during encryption.
The padding will be discarded.
    for (int i = 0; i < szDstContent.Length; i++)
    {
     if (szDstContent[i] <= 16)
     {
      szDstContent[i] = 0;
     }
    }
     //The \0 at the end needs to be removed.
    return Encoding.UTF8.GetString(szDstContent).Replace("\0", "");
   }
  }
}
```

3.4 Security Service

Management and Configuration

- Get or set advanced parameters of security management
  Request URL: GET or PUT ***/ISAPI/Security/advanced?format=json***
- Get or set security questions in batch
  Request URL: GET or PUT ***/ISAPI/Security/questionConfiguration***
- Search for security logs
  Request URL: POST ***/ISAPI/ContentMgmt/security/logSearch***
- Security Mode Level of Private Protocol
  - Get configuration capability of security mode level of private protocol
    Request URL: GET ***/ISAPI/Security/CommuMode/capabilities?format=json***
  - Get parameters of security mode level of private protocol
    Request URL: GET ***/ISAPI/Security/CommuMode?format=json***
  - Set parameters of security mode level of private protocol
    Request URL: PUT ***/ISAPI/Security/CommuMode?format=json***
- Get capability of selecting certificate
  Request URL: GET ***/ISAPI/Security/certificate/select/capabilities?format=json***
- Get or set parameters of selecting certificate
  Request URL: GET or PUT ***/ISAPI/Security/certificate/select/<functinName>?format=json***

Network Certificate

- Get CA (Certificate Authority) certificate capability
  Request URL: GET ***/ISAPI/Security/deviceCertificate/capabilities?format=json***
- Import network certificate to device
  Request URL: PUT ***/ISAPI/Security/deviceCertificate***
- Import CA (Certificate Authority) certificate to device
  Request URL: PUT ***/ISAPI/Security/deviceCertificate?customID=***
- Network Certificate Search
  - Get capability of certificate search
    Request URL: GET ***/ISAPI/Security/deviceCertificate/certificates/capabilities?format=json***
  - Search for certificate information in a batch
    Request URL: GET ***/ISAPI/Security/deviceCertificate/certificates?format=json***
  - Search for information of a specific device certificate
    Request URL: GET ***/ISAPI/Security/deviceCertificate/certificates/<customID>?format=json***
- Delete network certificate
  Request URL: DELETE ***/ISAPI/Security/deviceCertificate/certificates/<ID>*** or ***/ISAPI/Security/deviceCertificate/certificates/<customID>?format=json***

Authentication Certificate

- Get, generate, or delete certificate signature request

Request URL: GET, PUT , or DELETE ***/ISAPI/Security/serverCertificate/certSignReq***

- Download authentication certificate
  Request URL: GET ***/ISAPI/Security/serverCertificate/downloadCertSignReq***
- Get, install, or delete authentication certificate
  Request URL: GET, PUT , or DELETE ***/ISAPI/Security/serverCertificate/certificate***
- Authentication Certificate Status Search
  - Get status of one authentication certificate
    Request URL: GET ***/ISAPI/Security/deviceCertificate/certificates/<ID>/status?format=json***
  - Get status of all authentication certificates
    Request URL: GET ***/ISAPI/Security/deviceCertificate/certificates/status?format=json***
- Generate one authentication certificate
  Request URL: PUT ***/ISAPI/Security/deviceCertificate/certificates/<ID>/recreate?format=json***
- Generate all authentication certificates
  Request URL: PUT ***/ISAPI/Security/deviceCertificate/certificates/recreate?format=json***

Client/Server Certificate

- Get client/server certificate capability
  Request URL: GET ***/ISAPI/Security/serverCertificate/capabilities?format=json***
- Generate PKCS#10 signature request of client/server certificate
  Request URL: POST ***/ISAPI/Security/serverCertificate/certSignReq?customID=***
- Get or generate PKCS#10 signature request of client/server self-signed certificate
  Request URL: GET or PUT ***/ISAPI/Security/serverCertificate/selfSignCert?customID=***
- Get information of multiple client/server certificates in a batch
  Request URL: GET ***/ISAPI/Security/serverCertificate/certificates?format=json***
- Get or delete information of a specific client/server certificate
  Request URL: GET or DELETE ***/ISAPI/Security/serverCertificate/certificates/<customID>?format=json***
- Import client/server certificate to device
  Request URL: POST ***/ISAPI/Security/serverCertificate/certificate?customID=***
- Export client/server certificate
  Request URL: GET ***/ISAPI/Security/serverCertificate/downloadCertSignReq?customID=***

Chapter 4 Login

- Login by digest
  Request URL: GET ***/ISAPI/Security/userCheck***
- Lock for illegal login
  Request URL: GET or PUT ***/ISAPI/Security/illegalLoginLock***
- Get or set maximum failed login attempts
  Request URL: GET or PUT ***/ISAPI/Security/loginLinkNum?format=json***

Chapter 5 Device Management

This chapter lists the request URLs for getting device information, managing network cameras, getting the capabilities of network cameras, and so on.

- Get device capability
  Request URL: GET ***/ISAPI/System/deviceInfo/capabilities***
- Get device information
  Request URL: GET ***/ISAPI/System/deviceInfo***

5.1 Device Activation

5.1.1 Directly Activate Device

For the connected devices, you must activate them to make sure the device password is reconfigured and the password string conforms to the security rule.

Steps

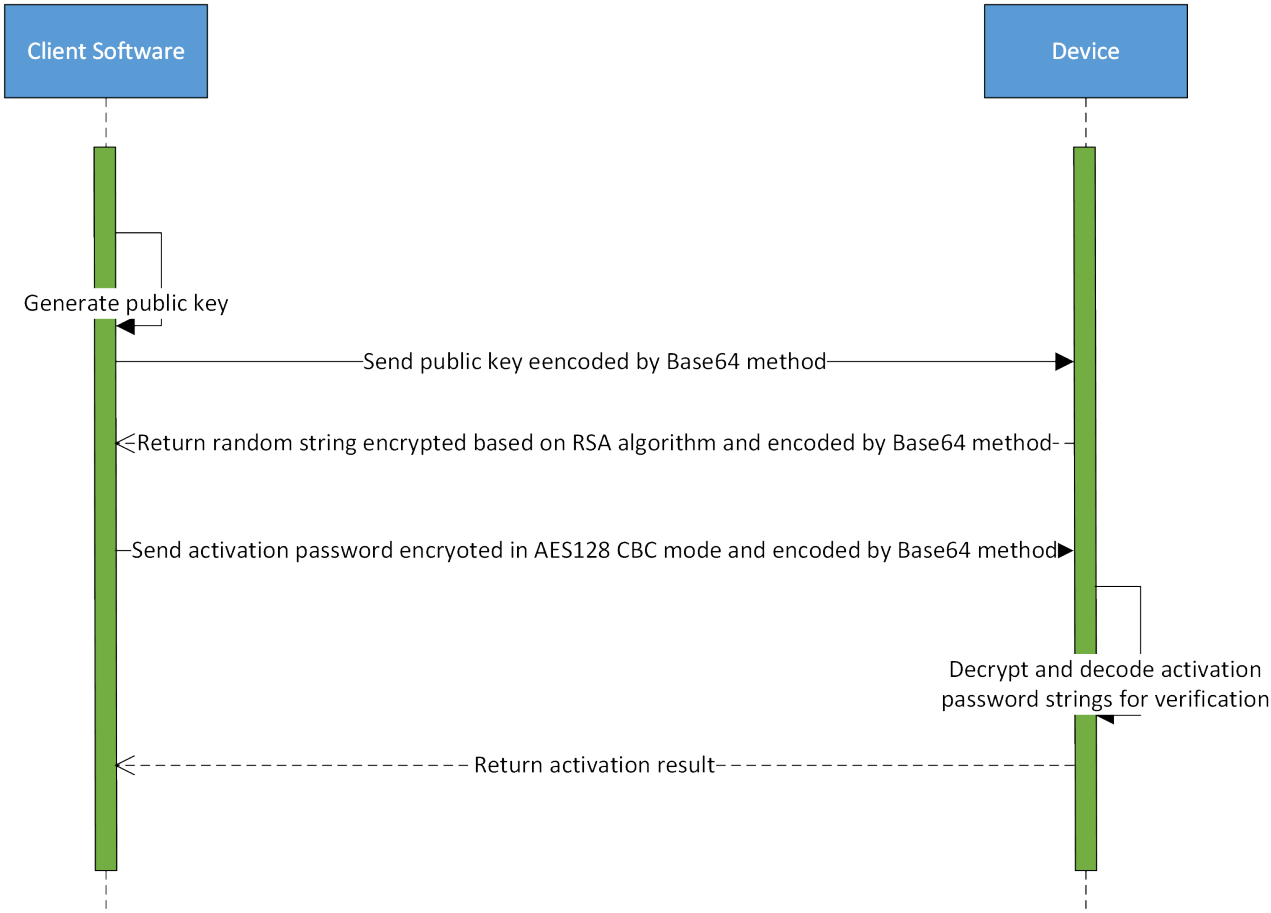


Figure 5-1 Direct Activation Sequence Diagram

1. Client software generates public and private key.

   Note

   The size of public key is 1024 bits (128 bytes). When transforming to the hexadecimal string, each byte corresponds to two characters (e.g., **127 → FF**), so the public key is transformed to a 256-byte string finally.

2. Client software encodes the public key (a 256-byte string) by Base64 method and sends it to device.
3. Device decodes the encoded public key by Base64 method and generates random strings.
4. Device encrypts the random strings based on RSA algorithm and encodes the encrypted strings by Base64 method.
5. Client software gets the encrypted and encoded random strings via the URL: POST ***/ISAPI/Security/challenge*** .
6. Client software decodes the obtained random strings by Base64 method and decrypts the random strings by using private key.

7. Client software encrypts the activation password with the random strings in AES128 CBC mode and encodes the password by Base64 method.
8. Client software sends the activation password strings to device via the URL: PUT ***/ISAPI/System/activate*** .

Note

The sent activation password strings consist of first 16 characters of random strings and actual password.

Example

If the first 16 characters of random strings is "aaaabbbbccccdddd", and the actual password is "Abc12345", the encrypted activation password strings is "aaaabbbbccccddddAbc12345".

9. Device decodes the activation password by Base64 method and decrypts the password with the random string in AES128 CBC mode for verification.
10. Device starts activating and sends the activation result to client software.

5.1.2 Activate Network Camera via NVR

For network devices, except directly activating them, you can also activate them via NVR if they can be searched on the same network domain of NVR.

Steps

1. Call ***/ISAPI/ContentMgmt/InputProxy/search*** by GET method to search for the online network devices in the same network domain with the NVR.
2. **Optional:** Call ***/ISAPI/ContentMgmt/InputProxy/channels/activate/capabilities*** by GET method to get the activation capability of network devices for reference.
3. Call ***/ISAPI/ContentMgmt/InputProxy/channels/activate*** by PUT method to activate the searched online devices via NVR.

5.2 Reset Password by Setting Recovery Email

A recovery email is added or configured for resetting the password as required. The admin user can set a recovery email after activating the device, and then receive the verification code from the manufacturer via the recovery email to reset the device password.

Before You Start

Make sure you have activated the device.

Steps

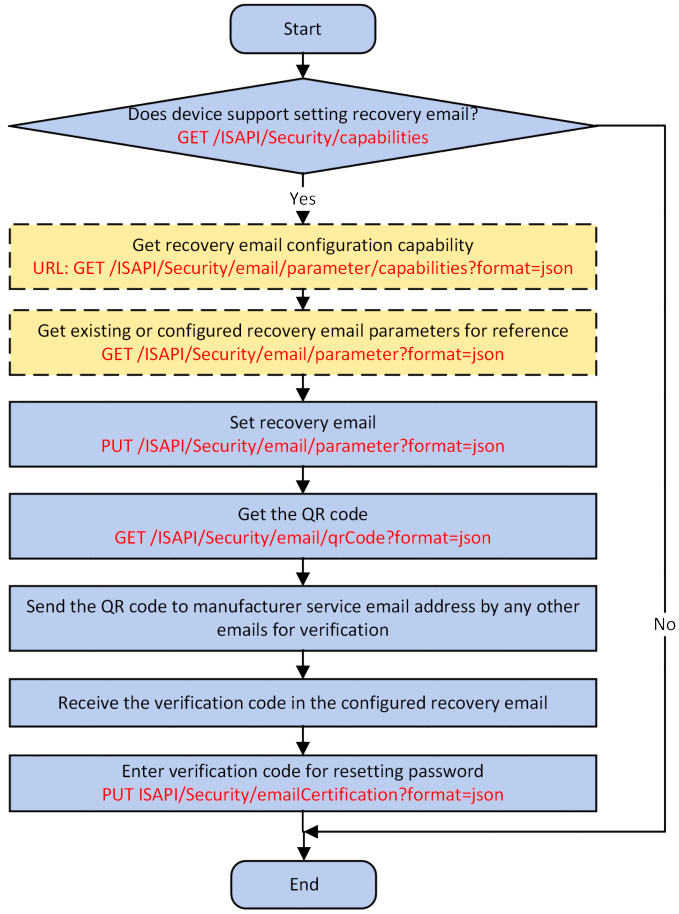


Figure 5-2 Programming Flow of Resetting Password by Setting Recovery Email

Note

You can reset password by other methods, such as answering security question, importing GUID files, and so on. But all methods should be supported by device, so you should call the request URL: GET ***/ISAPI/Security/extern/capabilities*** to get the other security capability (***XML_externSecurityCap***) before choosing method to reset password.

1. Check if the device supports setting recovery email by the request URL: GET ***/ISAPI/Security/capabilities*** .

   The security capability is returned in the message ***XML_SecurityCap*** .

   If the node <**isSupportSecurityEmail**> exits in the returned message and its value is "true", it indicates that setting recovery email is supported by the device, and you can continue to perform the following steps; otherwise, end this task.

2. **Optional:** Get recovery email configuration capability by the request URL: GET ***/ISAPI/Security/email/parameter/capabilities?format=json*** .

The recovery email configuration capability is returned in the message ***JSON_SecurityEmailCap*** by the output parameter pointer (**lpOutputParam**).

3. **Optional:** Get the existing or configured recovery email parameters for reference by the request URL: GET ***/ISAPI/Security/email/parameter?format=json*** .
4. Set the recovery email for the device by the request URL: PUT ***/ISAPI/Security/email/parameter?format=json*** .
5. Get the QR code of the recovery email by the request URL: GET ***/ISAPI/Security/email/qrCode?format=json*** .
6. Send the QR code to manufacturer service email address by any other emails for verification.
7. Receive the verification code in the configured recovery email.
8. Enter the received verification code for resetting the device password by the request URL: PUT ***/ISAPI/Security/emailCertification?format=json*** .

5.3 Online Upgrade Device

For the devices that can connect to Guarding Vision Server, you can online upgrade their firmware via Guarding Vision Client, and get the upgrade progress. Besides, in the condition of bad network, you can also enable automatic download of upgrade package in the background to improve the upgrade speed.

Before You Start

Make sure you have activated the device.

Steps

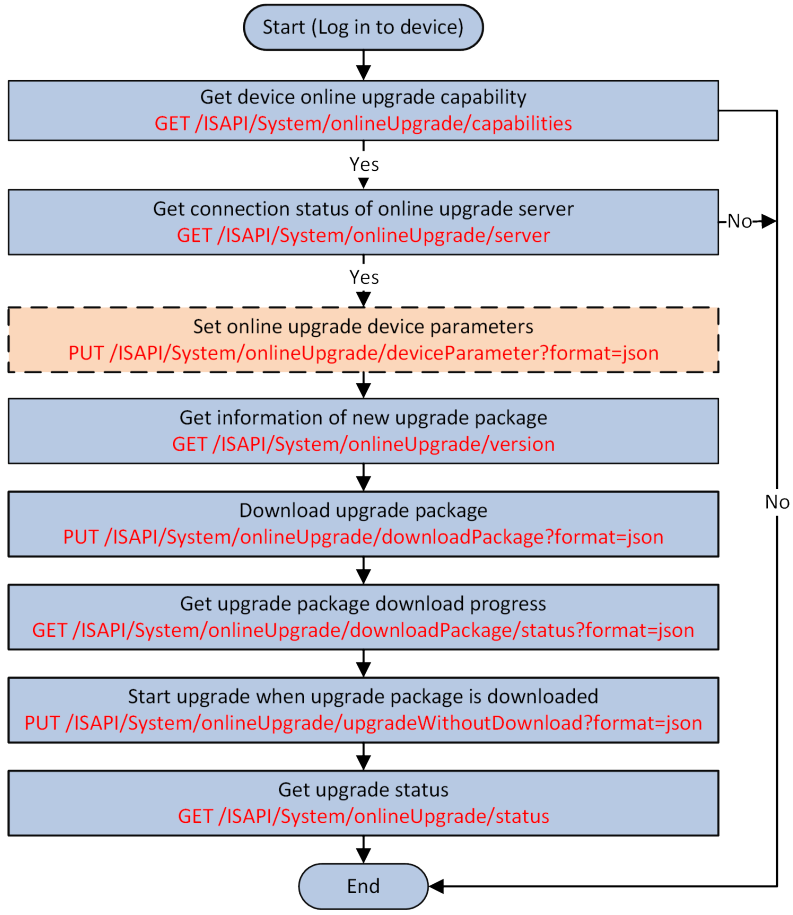


Figure 5-3 Programming Flow of Online Upgrade Device

1. Check if the device support online upgrade via the URL: GET ***/ISAPI/System/onlineUpgrade/capabilities*** .

   The online upgrade capability set is returned in ***XML_OnlineUpgradeCap*** .

2. Get the connection status of online upgrade server via the URL: GET ***/ISAPI/System/onlineUpgrade/server*** .

   Note

   Only when the node <**connectStatus**> is returned and values "true", you can go on for next step. Otherwise, you should end this task.

   The upgrade server connection status is returned in ***XML_OnlineUpgradeServer*** .

3. **Optional:** Set the device online upgrade parameters via the URL: PUT ***/ISAPI/System/onlineUpgrade/deviceParameter?format=json*** .

Note

Before setting the device online upgrade parameters, you can get these parameters via the URL: GET ***/ISAPI/System/onlineUpgrade/deviceParameter?format=json*** .

4. Get the new upgrade package information via the URL: GET ***/ISAPI/System/onlineUpgrade/version*** .
5. Download the upgrade package via the URL: PUT ***/ISAPI/System/onlineUpgrade/downloadPackage?format=json*** .
6. **Optional:** During downloading the upgrade package, you can perform the following operations.

Pause Download	URL: PUT ***/ISAPI/System/onlineUpgrade/downloadPackage/pause?format=json***
Resume Download	URL: PUT ***/ISAPI/System/onlineUpgrade/downloadPackage/resume?format=json***
Cancel Download	URL: DELETE ***/ISAPI/System/onlineUpgrade/downloadPackage?format=json***

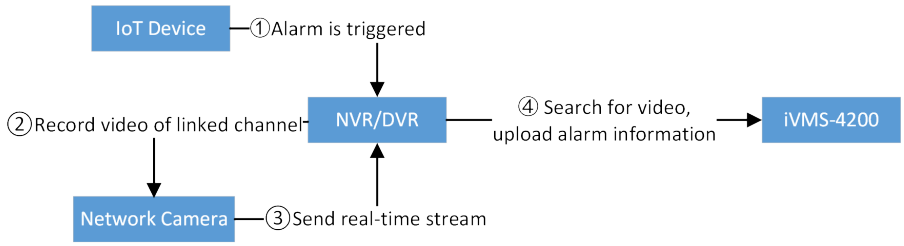
7. Get the upgrade package download progress via the URL: GET ***/ISAPI/System/onlineUpgrade/downloadPackage/status?format=json*** .
8. Start upgrade when the upgrade package is downloaded via the URL: PUT ***/ISAPI/System/onlineUpgrade/upgradeWithoutDownload?format=json*** .
9. Get the upgrade status via the URL: GET ***/ISAPI/System/onlineUpgrade/status*** .

5.4 IoT Devices Access

The IoT devices here include access control terminal, security control panel, video intercom, analog camera RF, etc. The NVR/DVR supports accessing IoT devices for device management, status search, event/alarm linkage, and alarm receiving. When the IoT devices are added to NVR/DVR, the NVR/DVR can receive the alarm of IoT device, link the channel for recording, and receive the real-time stream when alarm is triggered.

This chapter mainly introduces the methods of adding IoT devices, and configuring event/alarm of IoT devices.

Application Scenario



5.4.1 Add IoT Devices to NVR/DVR

For convenient management of IoT device, such as status searching, event/alarm linkage, alarm receiving, and so on, you should add the IoT device to NVR/DVR first.

Before You Start

Make sure you have logged in to the device.

Steps

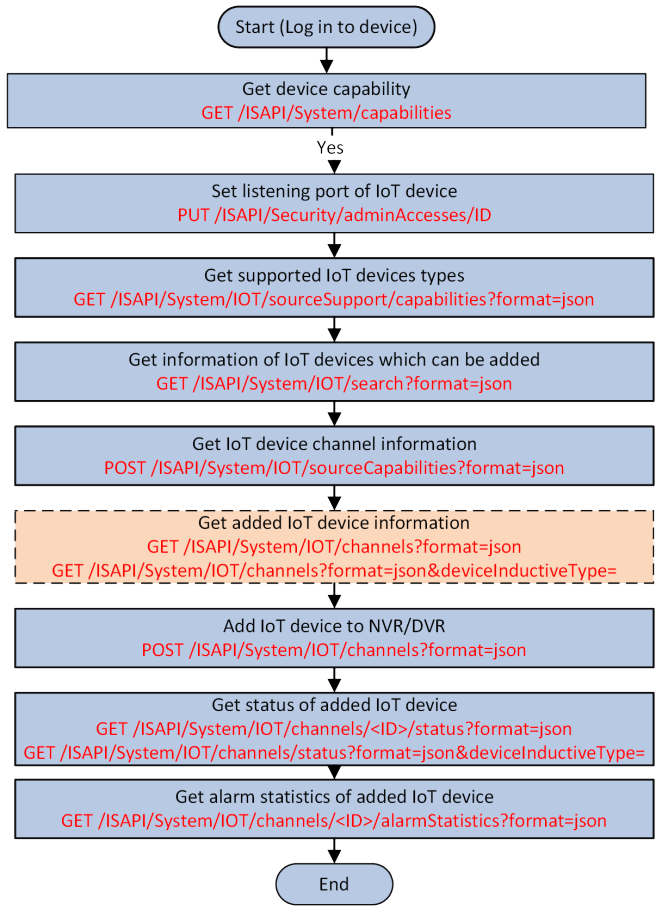


Figure 5-4 Programming Flow of Adding IoT Device to NVR/DVR

1. Get the device capability by the URL: GET ***/ISAPI/System/capabilities*** to check if the IoT device access function is supported via the node <**IOTCap**>.

   The device capability ***XML_DeviceCap*** is returned.

2. Configure listening port before adding the OPTEX and Luminite IoT devices by the URL: PUT ***/ISAPI/Security/adminAccesses/<ID>*** , and set the value of <**protocol**> in ***XML_AdminAccessProtocol*** to "IOT".
3. Get the supported IoT devices types of device by the URL: GET ***/ISAPI/System/IOT/sourceSupport/capabilities?format=json*** .

   The supported IoT devices types are returned in ***JSON_IOTSourceSupport*** .

4. Get information of IoT devices which can be added by the URL: GET ***/ISAPI/System/IOT/search?format=json*** .

   The IoT devices which can be added is returned in ***JSON_IOTSourceList*** .

5. Get the number of IoT device channels which can be added by the URL: POST ***/ISAPI/System/IOT/sourceCapabilities?format=json*** .

   The supported source capability is returned in ***JSON_SourceCapabilities*** .

6. **Optional:** Get the information of added IoT devices.
   - Get the information of added IoT devices by the URL: GET ***/ISAPI/System/IOT/channels?format=json*** .
   - Get the information of added IoT devices according to inductive type by the URL: GET ***/ISAPI/System/IOT/channels?format=json&deviceInductiveType=*** .
7. Add the IoT device to NVR/DVR by the URL: POST ***/ISAPI/System/IOT/channels?format=json*** .
8. Set the basic parameters of added IoT device according to channel ID by the URL: PUT ***/ISAPI/System/IOT/channels/<ID>/basicParam?format=json*** .
9. **Optional:** Set the specified added IoT device according to channel ID by the URL: PUT ***/ISAPI/System/IOT/channels/<ID>?format=json*** .

   Note

   Before setting the specified IoT device, you can get the IoT device by the URL: GET ***/ISAPI/System/IOT/channels/<ID>?format=json*** .

10. **Optional:** Delete the added IoT device.
    - Delete the specified IoT channel by the URL: DELETE ***/ISAPI/System/IOT/channels/<ID>?format=json*** .
    - Delete all channels (video channel and IoT channel) of added IoT device by the URL: DELETE ***/ISAPI/System/IOT/channels/<ID>/all?format=json*** .
11. Get the status of added IoT device.
    - Get the status of added IoT device by the URL: GET ***/ISAPI/System/IOT/channels/status?format=json*** .
    - Get the status of added IoT device according to inductive type by the URL: GET ***/ISAPI/System/IOT/channels/status?format=json&deviceInductiveType=*** .
    - Get the status of specified channel of added IoT device by the URL: GET ***/ISAPI/System/IOT/channels/<ID>/status?format=json***
12. Get the alarm statistics of added IoT device according to channel ID by the URL: GET ***/ISAPI/System/IOT/channels/<ID>/alarmStatistics?format=json***
13. **Optional:** Get the linked channel informaiton of added IoT device by the URL: POST ***/ISAPI/System/accessDevice/associatedChannel?format=json***
14. **Optional:** Import or export the list of added IoT devices.

    Import Import the list of added IoT devices by the URL: PUT ***/ISAPI/System/IOT/channelConfig?format=json***

    Export Export the list of added IoT devices by the URL: GET ***/ISAPI/System/IOT/channelConfig?format=json***

Example

```
PUT /ISAPI/System/IOT/channelConfig?format=json
Accept: text/html, application/xhtml+xml,
Accept-Language: us-EN
Content-Type: File/ Opaque Data
User-Agent: Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0)
Accept-Encoding: gzip, deflate
Host: 10.10.36.29:8080
Content-Length: 9907
Connection: Keep-Alive
Cache-Control: no-cache
Content-Disposition: form-data; name="XX";
Content-Length: 9907

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..
..... $.' ",#..(7),01444.'9=82<.342...C.           ....
```

5.4.2 Configure Alarm of IoT Device

When the IoT device is added to NVR/DVR, you can configure the alarm parameters such as arming schedule, linkage method, OSD, and so on for receiving the alarm of IoT device.

Before You Start

- Make sure you have logged in to the device.
- Make sure the IoT device is added to NVR/DVR.

Steps

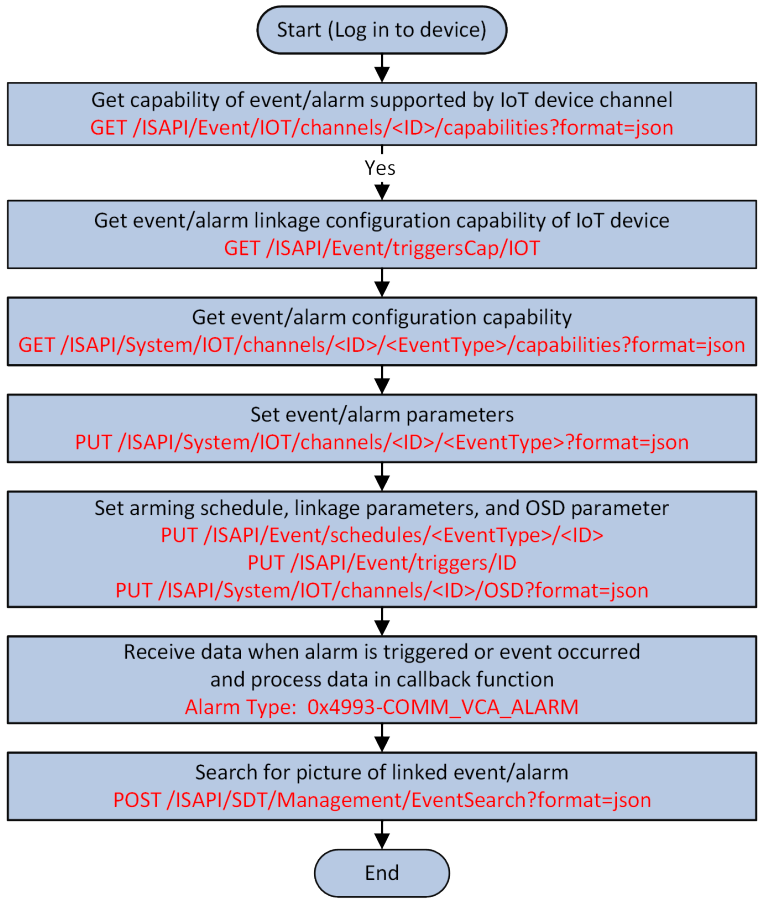

Figure 5-5 Programming Flow of Configuring Alarm of IoT Device

1. Get the IoT device channel capability by the URL: GET ***/ISAPI/Event/IOT/channels/<ID>/capabilities?format=json*** .

   The event capability supported by IoT device channel is returned in ***JSON_IOTChannelEventCap*** .
2. Get the event/alarm linkage configuration capability of IoT device by the URL: GET ***/ISAPI/Event/triggersCap/IOT*** .

   The capability is returned in ***XML_IOTTriggersCap*** .
3. Get the event configuration capability by the URL: GET ***/ISAPI/System/IOT/channels/<ID>/<EventType>/capabilities?format=json*** .

   The event configuration capability is returned in ***JSON_XXCap*** .
4. Set the event/alarm parameters by the URL: PUT ***/ISAPI/System/IOT/channels/<ID>/<EventType>?format=json*** .
5. Set the arming schedule by the URL: PUT ***/ISAPI/Event/schedules/<EventType>/<ID>***
6. Set the event/alarm linkage parameters by the URL: PUT ***/ISAPI/Event/triggers/<ID>*** .
7. Configure OSD.

1) Get the OSD configuration capability by the URL: GET ***/ISAPI/System/IOT/channels/<ID>/OSD/capabilities?format=json*** .
2) Get the OSD parameters by the URL: GET ***/ISAPI/System/IOT/channels/<ID>/OSD?format=json*** .
3) Set the OSD parameters by the URL: PUT ***/ISAPI/System/IOT/channels/<ID>/OSD?format=json*** .

8. Receive event/alarm information.
- Receive event/alarm in arming mode, see details in ***Receive Alarm/Event in Arming Mode*** .
- Receive event/alarm in listening mode, see details in ***Receive Alarm/Event in Listening Mode*** .

9. Search for the picture of linked event/alarm by the URL: POST ***/ISAPI/SDT/Management/EventSearch?format=json*** .

Note

Before searching for event, you can get the event search capability by the URL: GET ***/ISAPI/SDT/Management/EventSearch/capabilities?format=json*** .

10. Optional: Get linked channel of searched event by the URL: POST ***/ISAPI/System/IOT/linkageChannels?format=json*** .

Chapter 6 Device Maintenance

6.1 Basic

Shut Down, Reboot and Restore to Default Settings

- Shut down device
  Request URL: PUT ***/ISAPI/System/shutdown?format=json***
- Reboot device
  Request URL: PUT ***/ISAPI/System/reboot***
- Restore device to default settings
  Request URL: PUT ***/ISAPI/System/factoryReset?mode=***

Upgrade

- Get upgrade capability of peripherals' firmwares
  Request URL: GET ***/ISAPI/System/AcsUpdate/capabilities***
- Upgrade device's firmware
  Request URL: PUT or POST ***/ISAPI/System/updateFirmware***
- Upgrade slave device's firmware
  Request URL: PUT or POST ***/ISAPI/System/updateFirmware?type=&id=***
- Upgrade peripheral module's firmware
  Request URL: PUT or POST ***/ISAPI/System/updateFirmware?type=&moduleAddress=***
- Get device upgrading status
  Request URL: GET ***/ISAPI/System/upgradeStatus***

Configuration File

- Get capability of exporting files from device
  Request URL: GET ***/ISAPI/System/fileExport/capabilities?format=json***
- Securely export files from device
  Request URL: POST ***/ISAPI/System/fileExport?format=json***

Note

To check if exporting files from device is supported by the device, you can call GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the node <**isSptFileExport**> will be returned.

Algorithm Version

Get algorithm version information of device
Request URL: GET ***/ISAPI/System/algorithmsVersion***

6.1.1 Securely Export and Import Configuration Files

You can export configuration files of devices to back up basic device parameters (such as network parameters, stream parameters, etc.) timely, and the configuration files will be encrypted with the encryption key when being exported. If several devices adopt the same configuration, you can import configuration files to configure multiple devices in a batch. The devices will decrypt the encrypted configuration file using the encryption key which ensures that the configuration file cannot be used by unauthorized devices.

Steps

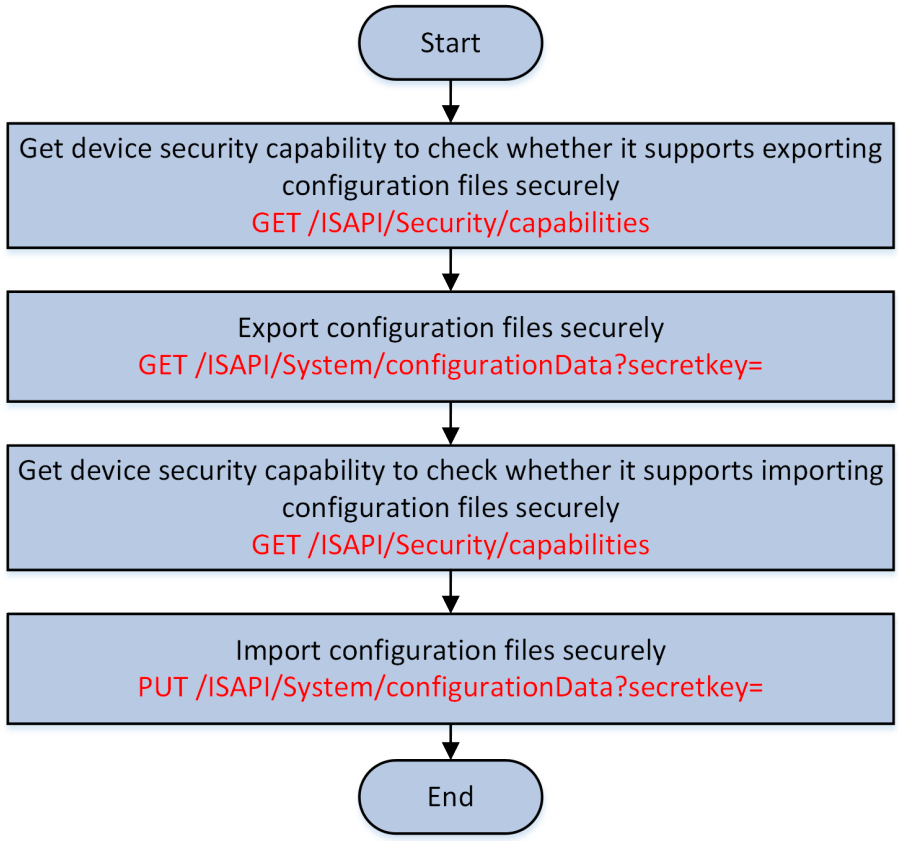

Figure 6-1 Programming Flow of Securely Exporting and Importing Configuration Files

1. Call GET ***/ISAPI/Security/capabilities*** to get the device security capability for checking whether the device supports securely exporting configuration files.

   The device security capability is returned in the message ***XML_SecurityCap*** .

   If this function is supported by the device, the node <**isSupportConfigFileExport**> will be returned and its value is "true", then you can perform the following steps.

   Otherwise, please end this task.

2. Call GET ***/ISAPI/System/configurationData?secretkey=*** to export the configuration file from the device securely.

Note

The query parameter **secretKey** is the sensitive information that should be encrypted for transmission, and the parameter range to be encrypted is determined by the attributes "min" and "max" of the node <**cfgFileSecretKeyLenLimit**> in message ***XML_SecurityCap*** . For details about encrypting sensitive information, refer to ***Encrypt Sensitive Information*** .

3. Call GET ***/ISAPI/Security/capabilities*** to get the device security capability for checking whether the device supports securely importing configuration files.

   The device security capability is returned in the message ***XML_SecurityCap*** .

   If this function is supported by the device, the node <**isSupportConfigFileImport**> will be returned and its value is "true", then you can perform the following steps.

   Otherwise, please end this task.

4. Call PUT ***/ISAPI/System/configurationData?secretkey=*** to import the configuration file to the device securely.

Note

- The query parameter **secretKey** is the sensitive information that should be encrypted for transmission, and the parameter range to be encrypted is determined by the attributes "min" and "max" of the field <**cfgFileSecretKeyLenLimit**> in the message ***XML_SecurityCap*** . For details about encrypting sensitive information, refer to ***Encrypt Sensitive Information*** .
- The value of **secretKey** for importing the configuration file should be the same as that for exporting the file. Otherwise, importing will fail.

6.2 Log

Log Search

- Search for logs
  Request URL: POST ***/ISAPI/ContentMgmt/logSearch***
- Export log files
  Request URL: POST ***/ISAPI/ContentMgmt/logSearch/dataPackage***

Serial Port Log Redirection

- Get configuration capability of serial port log redirection
  Request URL: GET ***/ISAPI/System/serialLogCfg/capabilities?format=json***
- Get or set parameters of serial port log redirection
  Request URL: GET or PUT ***/ISAPI/System/serialLogCfg?format=json***

Note

To check if configuring serial port log redirection is supported by the device, you can call GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the node <**isSptSerialLogCfg**> will be returned.

Log Configuration

- Get log configuration capability
  Request URL: GET ***/ISAPI/ContentMgmt/logConfig/capabilities***
- Get or set log parameters
  Request URL: GET or PUT ***/ISAPI/ContentMgmt/logConfig***

6.3 Status

- Get device status capability
  Request URL: GET ***/ISAPI/System/workingstatus/capabilities?format=json***
- Get all statuses of device
  Request URL: GET ***/ISAPI/System/workingstatus?format=json***
- Channel Status
  - Get status(es) of all channels or one channel
    Request URL: GET or POST ***/ISAPI/System/workingstatus/chanStatus?format=json***
  - Get statuses of all channels by condition
    Request URL: POST ***/ISAPI/System/Video/inputs/channels?format=json***
  - Get status of one channel by condition
    Request URL: POST ***/ISAPI/System/Video/inputs/channels/<ID>?format=json***

    Note

    To check if getting channel status by condition is supported by device, you can call GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the node <**isSupportFlexible**> will be returned.

- Get status(es) of all HDDs or one HDD
  Request URL: GET or POST ***/ISAPI/System/workingstatus/hdStatus?format=json***
- Get triggered I/O status
  Request URL: GET ***/ISAPI/System/workingstatus/IOStatus?format=json***
- Get CPU and memory status
  Request URL: GET ***/ISAPI/System/status***
- Upload status changes
  Refer to ***Subscribe Alarm/Event in Arming Mode*** for integration process of uploading device status changes, and the node <**type**> in the request message ***XML_SubscribeEvent*** for the URLs (POST ***/ISAPI/Event/notification/subscribeEvent*** and PUT ***/ISAPI/Event/notification/subscribeEvent/<ID>***) should be set to "statusChanged".

The changes details can be obtained by calling the URL GET ***/ISAPI/Event/notification/alertStream*** .

Note

To check if getting device status and uploading status changes are supported by device, you can call GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the nodes <**isSupportSimpleDevStatus**>, <**isSupportSimpleDevStatus**>, and <**isSupportChangedUpload**> will be returned and their values are "true".

6.4 Calibration

Accelerometer Zero Bias Calibration

- Get device capability to check if device supports accelerometer zero bias calibration
  Request URL: GET ***/ISAPI/System/capabilities*** ; the device capability is returned in the message ***XML_DeviceCap*** .
  If supports, the node <**isSupportZeroBiasCalibration**> is returned in the message ***XML_DeviceCap*** and its value is "true".
- Calibrate accelerometer zero bias
  Request URL: PUT ***/ISAPI/System/zeroBiasCalibration/channels/<ID>?format=json***

Installation Angle Calibration

- Get the device capability to check if device supports installation angle calibration
  Request URL: GET ***/ISAPI/System/capabilities*** ; the device capability is returned in the message ***XML_DeviceCap*** .
  If supports, the node <**isSupportInstallationAngleCalibration**> is returned in the message ***XML_DeviceCap*** and its value is "true".
- Get capability of installation angle calibration
  Request URL: GET ***/ISAPI/System/installationAngleCalibration/channels/<ID>/capabilities?format=json***
- Get installation angle calibration status or calibrate installation angle
  Request URL: GET or PUT ***/ISAPI/System/installationAngleCalibration/channels/<ID>?format=json***

6.5 Advanced

Automatic Maintenance

- Get configuration capability of automatic maintenance
  Request URL: GET ***/ISAPI/System/autoMaintenance/capabilities?format=json***
- Get or set parameters of automatic maintenance
  Request URL: GET or PUT ***/ISAPI/System/autoMaintenance?format=json***

Note

To check if the device supports automatic maintenance, you can call the request URL: GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the node <**isSupportAutoMaintenance**> will be returned.

Device Diagnosis

- Get device diagnosis capability
  Request URL: GET ***/ISAPI/System/diagnosis/capabilities?format=json***
- Diagnose device
  Request URL: POST ***/ISAPI/System/diagnosis?format=json***

Note

To check if configuring device diagnosis is supported by the device, you can call GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the node <**isSptDiagnosis**> will be returned.

Device Anti-Theft

- Get device anti-theft configuration capaiblity
  Request URL: GET ***/ISAPI/System/guardAgainstTheft/capabilities***
- Get or set device anti-theft parameters
  Request URL: GET or PUT ***/ISAPI/System/guardAgainstTheft***

Note

To check if the anti-theft configuration is supported by the device, you can call GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If this function is supported, the node <**isSupportGuardAgainstTheft**> will be returned and its value is "true".

Chapter 7 User Management

You can add, edit, and delete users to manage for logging in to the device via ISAPI protocol. And you can also assign permission to users according to actual needs.

Manage Users

- Add one user
  Request URL: GET ***/ISAPI/Security/users***
- Get, edit, or delete all users
  Request URL: GET, PUT, or DELETE ***/ISAPI/Security/users***
- Get, edit, or delete one user
  Request URL: GET, PUT, or DELETE ***/ISAPI/Security/users/<ID>***

User Permission

- Get guest's permission capability
  Request URL: GET ***/ISAPI/Security/UserPermission/viewerCap***
- Get operator's permission capability
  Request URL: GET ***/ISAPI/Security/UserPermission/operatorCap***
- Get administrator's permission capability
  Request URL: GET ***/ISAPI/Security/UserPermission/adminCap***
- Get User Permission
  - Get permissions of all users
    Request URL: GET ***/ISAPI/Security/UserPermission***
  - Get permission of one user
    Request URL: GET ***/ISAPI/Security/UserPermission/<ID>***
  - Get local permission of one user
    Request URL: GET ***/ISAPI/Security/UserPermission/<ID>/localPermission***
  - Get remote permission of one user
    Request URL: GET ***/ISAPI/Security/UserPermission/<ID>/remotePermission***
- Assign Permission
  - Assign permission to all users
    Request URL: PUT ***/ISAPI/Security/UserPermission***
  - Assign permission to one user
    Request URL: PUT ***/ISAPI/Security/UserPermission/<ID>***
  - Assign local permission to one user
    Request URL: PUT ***/ISAPI/Security/UserPermission/<ID>/localPermission***
  - Assign remote permission to one user
    Request URL: PUT ***/ISAPI/Security/UserPermission/<ID>/remotePermission***

Lock and Unlock User

- Get configuration capability of user locking and unlocking

Request URL: GET ***/ISAPI/System/userLock/config/capabilities?format=json*** .
- Get information of all locked users
  Request URL: GET ***/ISAPI/System/userLock/lockedUsers?format=json***
- Get user locking parameter
  Request URL: GET ***/ISAPI/System/userLock/config?format=json***
- Lock user
  Request URL: PUT ***/ISAPI/System/userLock/config?format=json***
- Unlock user
  Request URL: PUT ***/ISAPI/System/userLock/unlockUser?format=json***

7.1 Configure Double Verification

Double verification helps to protect the critical video files of NVR/DVR by limiting playback and download. The basic concept is that two users should always be required to start playback and download. For example, when a normal user A (operator or guest) wants to play back the video of a channel which requires double verification, he/she should ask a double verification user to enter the correct user name and password for double verification.

Before You Start
Make sure you have logged in to the device.

Steps

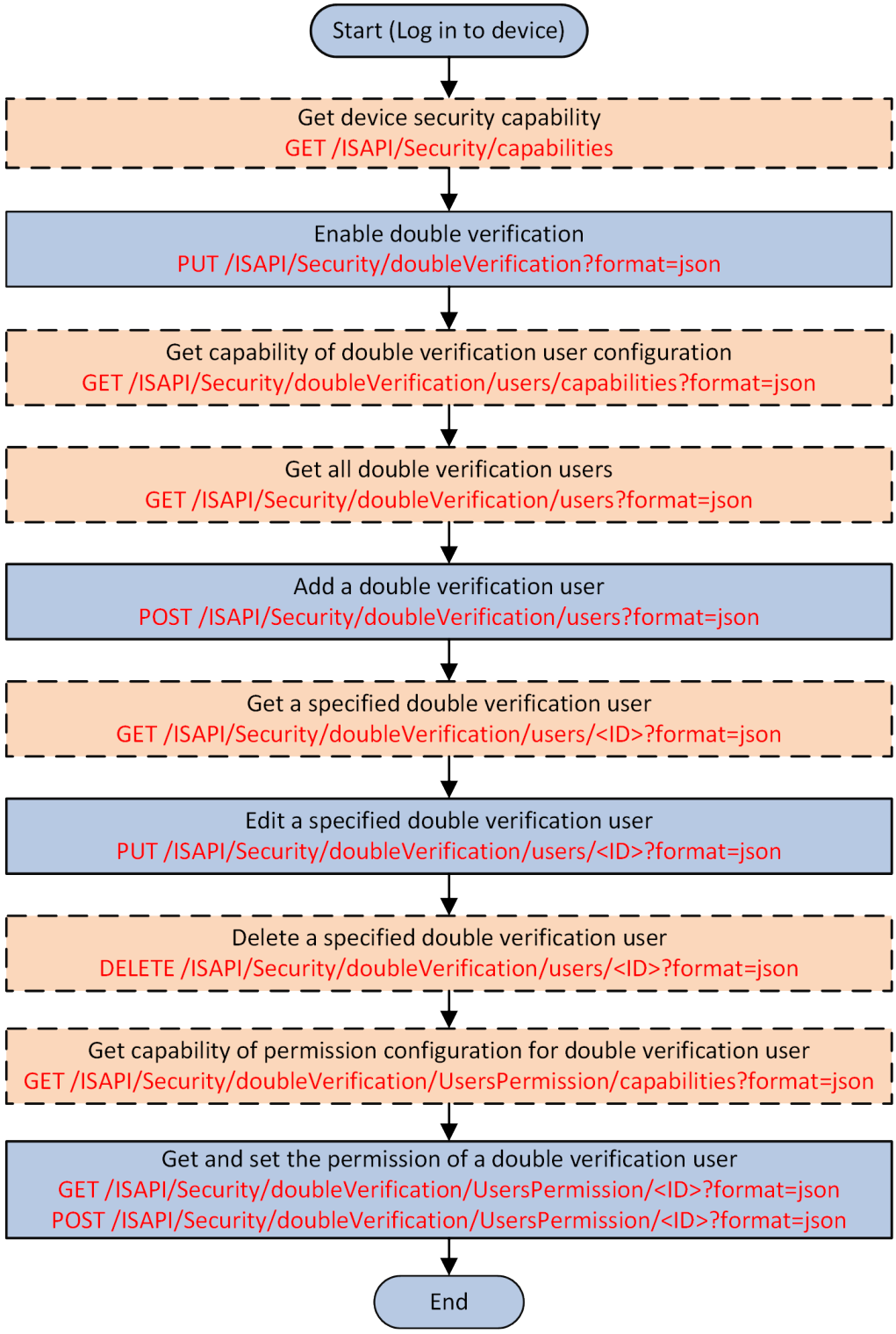

Figure 7-1 Programming Flow of Configuring Double Verification

Note

- Only the admin can configure double verification.
- The admin is not required for double verification.
- The double verification user name and password is only for double verification, and cannot be used for login.

1. **Optional:** Get the device security capability via the URL: GET ***/ISAPI/Security/capabilities*** to check whether the double verification function is supported.

   The security capability ***XML_SecurityCap*** is returned.
2. Enable double verification via the URL: PUT ***/ISAPI/Security/doubleVerification?format=json***

   Note

   Before enabling double verification, you can check whether double verification is enabled via the URL: GET ***/ISAPI/Security/doubleVerification?format=json*** .
3. **Optional:** Get the capability of double verification user configuration via the URL: GET ***/ISAPI/Security/doubleVerification/users/capabilities?format=json*** .
4. Add a double verification user via the URL: POST ***/ISAPI/Security/doubleVerification/users?format=json*** .

   Note

   Before adding a double verification user, you can get all verification users via the URL: GET ***/ISAPI/Security/doubleVerification/users?format=json*** .

   The ID of added double verification user is returned in ***JSON_id*** .
5. Edit a specified double verification user via the URL: PUT ***/ISAPI/Security/doubleVerification/users/<ID>?format=json*** .

   Note

   Before editing the double verification user, you can get the user information via the URL: GET ***/ISAPI/Security/doubleVerification/users/<ID>?format=json*** .
6. **Optional:** Delete a specified double verification user via the URL: DELETE ***/ISAPI/Security/doubleVerification/users/<ID>?format=json*** .
7. **Optional:** Get the capability of permission configuration for double verification users via the URL: GET ***/ISAPI/Security/doubleVerification/UsersPermission/capabilities?format=json*** .
8. Set the permission of a specified double verification user via the URL: PUT ***/ISAPI/Security/doubleVerification/UsersPermission/<ID>?format=json*** .

   Note

   Before setting the permission of a double verification user, you can get the permission parameters via the URL: GET ***/ISAPI/Security/doubleVerification/UsersPermission/<ID>?format=json*** .

What to do next

Configure the user permission, determine whether double verification are required for them during playback and download.

Chapter 8 Video and Audio

This part provides the request URLs to implement the video and audio related functions, such as video search, live view, playback, two-way audio, control video in live view (e.g., focus and iris adjustment), and so on.

8.1 Video Search and Downloading

The continuously recorded video files, or videos stored in the local storage of devices, or videos recorded based on event/alarm or command, can be searched for playback as required. You can also download the video files.

Search Video

- Get search conditions
  Request URL: GET ***/ISAPI/ContentMgmt/search/profile***
- Search video files
  Request URL: POST ***/ISAPI/ContentMgmt/search***

Note

This URL is not only used to search video files, it can also be used to search any resources stored in the device.

- Search video files by time
  Request URL: POST ***/ISAPI/ContentMgmt/record/tracks/<ID>/dailyDistribution***
- Search VCA Event
  - Get capability of searching video files by VCA event
    Request URL: GET ***/ISAPI/ContentMgmt/SmartSearch/capabilities***
  - Search video files by VCA event
    Request URL: POST ***/ISAPI/ContentMgmt/SmartSearch***

Download Video

- Get downloading capability
  Request URL: GET ***/ISAPI/ContentMgmt/download/capabilities***
- Download video files
  Request URL: POST ***/ISAPI/ContentMgmt/download***
- Get capability of exporting video or picture files to devices via USB
  Request URL: GET ***/ISAPI/ContentMgmt/download/toUSB/capabilities?format=json***
- Export video or picture files to devices via USB
  Request URL: POST ***/ISAPI/ContentMgmt/download/toUSB?format=json***
- Get progress of exporting video or picture files to devices via USB
  Request URL: GET ***/ISAPI/ContentMgmt/download/toUSB/<taskId>/progress?format=json***

Note

To check if exporting video or picture files to devices via USB is supported by the device, you can call the request URL: GET ***/ISAPI/ContentMgmt/download/capabilities*** to get the downloading capability (***XML_DownloadAbility***). If this function is supported, the node <**isSupportDownloadToUSB**> will be returned and its value is "true".

8.1.1 VCA Search

After enabling dual-VCA on the camera, you can search video files for behavior analysis (such as line crossing detection, intrusion detection, loitering detection, fast movement, and so on.) and feature object (such as people, vehicles, human face, license plates, and so on), which is helpful for searching quickly and locating alarm event.

Before You Start

Make sure you have activated the device.

Steps

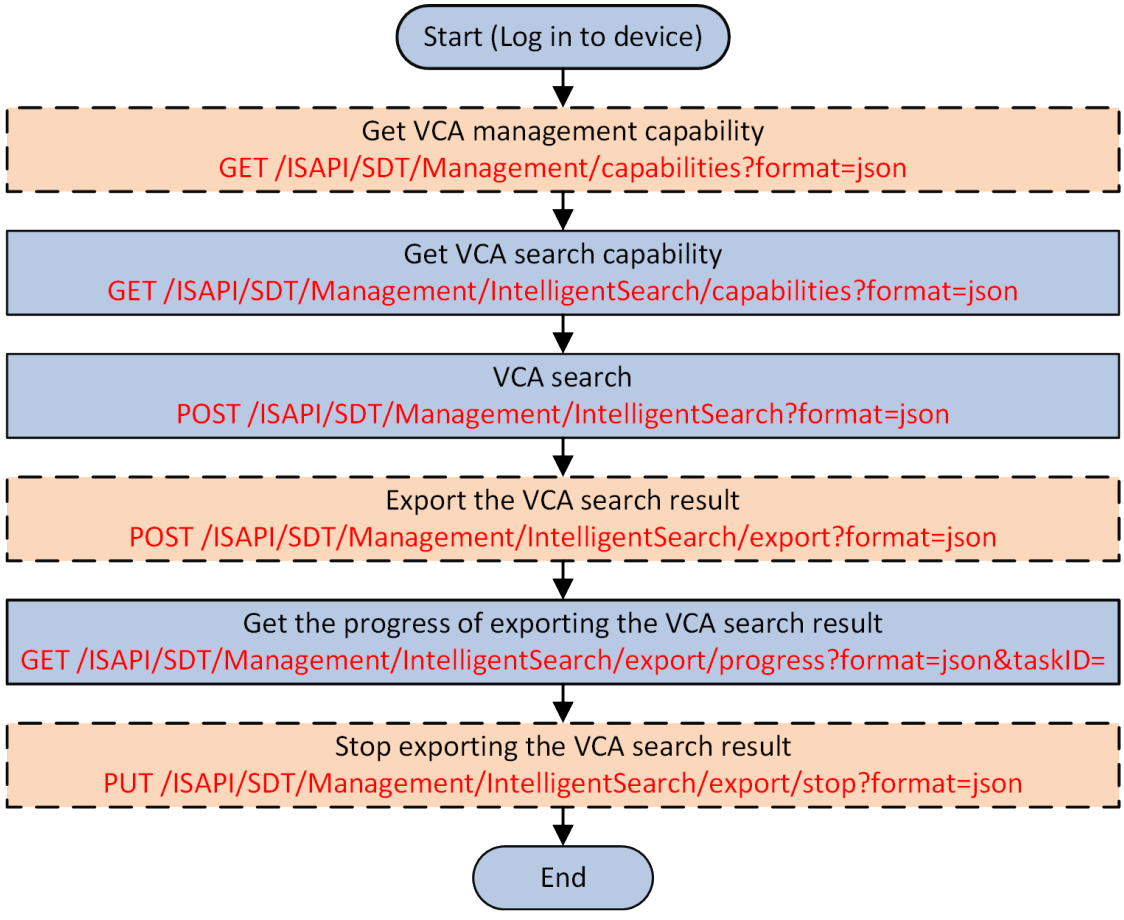

Figure 8-1 Programming Flow of VCA Search

1. **Optional:** Get the VCA management capability to check whether the VCA search function is supported by request URL: GET ***/ISAPI/SDT/Management/capabilities?format=json*** .

   The VCA management capability is returned in ***JSON_Cap_IntelliManagement*** .

   If the node **isSuportIntelligentSearch** exits in the returned message and its value is "true", it indicates that VCA search is supported by the device, and you can continue to perform the following steps; otherwise, end this task.
2. Get the VCA search capability by the request URL: GET ***/ISAPI/SDT/Management/IntelligentSearch/capabilities?format=json***

   The VCA capability is returned in ***JSON_IntelligentSearchCap*** .
3. Start VCA search by the request URL: POST ***/ISAPI/SDT/Management/IntelligentSearch?format=json*** .

   Note

   You should repeatedly call this URL until the node "progress" in returned message ***JSON_IntelligentSearchResult*** values "100". It indicates the VCA search is completed.

   The searched result will be returned in ***JSON_IntelligentSearchResult*** .
4. Export the searched result the request URL: POST ***/ISAPI/SDT/Management/IntelligentSearch/export?format=json*** .

   The exporting task information is returned in ***JSON_VCASearchExportTaskInfo*** .
5. Get the progress of exporting VCA search result by the request URL: GET ***/ISAPI/SDT/Management/IntelligentSearch/export/progress?format=json&taskID=*** .

   Note

   Only when the node "progress" in returned message values "100", it indicates exporting is completed.

   The progress information is returned in ***JSON_VCASearchExportProgress*** .
6. **Optional:** Stop exporting the VCA search result by the request URL: PUT ***/ISAPI/SDT/Management/IntelligentSearch/export/stop?format=json*** .

8.2 Live View and Playback

Live view helps to remotely get the real-time video or audio of monitoring area and know the status of human, vehicle, object, and so on. During live view, you can record and store the remarkable videos for remotely playback.

Live View

- Start or stop live view
  Request URL: PLAY or TEARDOW
- Auto-Switch in Live View

  - Get configuration capability of live view auto-switch
    Request URL: GET ***/ISAPI/System/Video/outputs/PreviewSwitch/capabilities***
  - Get configuration capability of live view auto-switch by video output
    Request URL: GET ***/ISAPI/System/Video/outputs/PreviewSwitch/capabilities?videoOutType=***
  - Get or set parameters of live view auto-switch
    Request URL: GET or PUT ***/ISAPI/System/Video/outputs/PreviewSwitch?groupID=&videoOutType=***
    Request URL: GET ***/ISAPI/System/Video/outputs/PreviewSwitch?groupID=&videoOutType=&previewFrameNo=***
- Control in Live View
  - Perform manual focus
    Request URL: PUT ***/ISAPI/System/Video/inputs/channels/<ID>/focus***
  - Manually adjust iris
    Request URL: PUT ***/ISAPI/System/Video/inputs/channels/<ID>/iris***

Playback

- Start or stop playback
  Request URL: PLAY or TEARDOW ***rtsp://<host>[:port]/ISAPI/Streaming/tracks/<ID>?starttime=&endtime=***
- Refresh video index before playback for instant playback
  Request URL: PUT ***/ISAPI/ContentMgmt/record/control/manualRefresh/channels/<ID>***

Example

Sample Code for Starting and Stopping Live View

```
Start Live View:
DESCRIBE rtsp://10.17.133.46:554/ISAPI/streaming/channels/101 RTSP/1.0
CSeq: 0
Accept:application/sdp
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 401 Unauthorized
CSeq: 0
WWW-Authenticate: Digest realm="4419b66d2485", nonce="47f172cffa4ce6e6942bbdcfa5931d0f", stale="FALSE"
Date: Tue, Mar 14 2017 10:42:35 GMT

DESCRIBE rtsp://10.17.133.46:554/ISAPI/streaming/channels/101 RTSP/1.0
CSeq:1
Accept:application/sdp
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="47f172cffa4ce6e6942bbdcfa5931d0f",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/channels/101",
response="da5deb4033515f74ed0483d2da3f7fe0"
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 1
```

```
Content-Type: application/sdp
Content-Length: 604

v=0
o=- 1489488155469547 1489488155469547 IN IP4 10.17.133.46
s=Media Presentation
e=NONE
b=AS:5100
t=0 0
a=control:*
m=video 0 RTP/AVP 96
c=IN IP4 0.0.0.0
b=AS:5000
a=recvonly
a=x-dimensions:1280,720
a=control:trackID=1
a=rtpmap:96 H264/90000
a=fmtp:96 profile-level-id=420029;
packetization-mode=1;
sprop-parameter-sets=Z2QAH6wXKgFAFuhAAAHCAABX5CE=,
aP44sA==
m=audio 0 RTP/AVP 8
c=IN IP4 0.0.0.0
b=AS:50
a=recvonly
a=control:trackID=2
a=rtpmap:8 PCMA/8000
a=Media_header:MEDIAINFO=494D4B4801020000040000011171011040 1F000000FA000000000000000000000000000
0000000000;
a=appversion:1.0
SETUP rtsp://10.17.133.46:554/ISAPI/streaming/channels/101/trackID=1 RTSP/1.0
CSeq:2
Authorization: Digest username="admin", realm="4419b66d2485",
nonce="47f172cffa4ce6e6942bbdcfa5931d0f",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/channels/101",
response="db78bce6e6883ed2a7fb3adbd1631b1d"
Transport:RTP/AVP/UDP;unicast;client_port=20044-20045;ssrc=0
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 2
Session: 846509115;timeout=60
Transport: RTP/AVP/UDP;unicast;client_port=20044-20045;ssrc=2933ec5a;server_port=8372-8373;mode="play"
Date: Tue, Mar 14 2017 10:42:35 GMT

SETUP rtsp://10.17.133.46:554/ISAPI/streaming/channels/101/trackID=2 RTSP/1.0
CSeq:3
Authorization: Digest username="admin", realm="4419b66d2485",
nonce="47f172cffa4ce6e6942bbdcfa5931d0f",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/channels/101",
response="db78bce6e6883ed2a7fb3adbd1631b1d"
Session:846509115;timeout=60
```

```
Transport:RTP/AVP/UDP;unicast;client_port=20046-20047;ssrc=0
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 3
Session: 846509115;timeout=60
Transport: RTP/AVP/UDP;unicast;client_port=20046-20047;ssrc=439bd478;server_port=8374-8375;mode="play"
Date: Tue, Mar 14 2017 10:42:35 GMT

PLAY rtsp://10.17.133.46:554/ISAPI/streaming/channels/101 RTSP/1.0
CSeq:4
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="47f172cffa4ce6e6942bbdcfa5931d0f",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/channels/101",
response="66fcea1521a99fba336fd0c4e444a732"
Session:846509115;timeout=60
Rate-Control:yes
Scale:1.000
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 4
Session: 846509115
Scale: 1.0
RTP-Info: url=trackID=1;seq=55143,url=trackID=2;seq=38217
Date: Tue, Mar 14 2017 10:42:35 GMT

Stop Live View
TEARDOWN rtsp://10.17.133.46:554/ISAPI/streaming/channels/101 RTSP/1.0
CSeq: 5
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="47f172cffa4ce6e6942bbdcfa5931d0f",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/channels/101",
response="31d5e172b87db528aa5b1dc07af3f530"
Session:846509115;timeout=60
User-Agent: NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 5
Session: 846509115
Date: Tue, Mar 14 2017 10:42:36 GMT
```

Example

Sample Code for Starting and Stopping Playback

```
Enable:
DESCRIBE rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq:0
Accept:application/sdp
```

```
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 401 Unauthorized
CSeq: 0
WWW-Authenticate: Digest realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
stale="FALSE"
Date: Tue, Mar 14 2017 10:57:23 GMT

DESCRIBE rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq:1
Accept:application/sdp
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="1ebae505abbafd431fb433cec6e85189"
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 1
Content-Type: application/sdp
Content-Length: 604

v=0
o=- 1489489043122939 1489489043122939 IN IP4 10.17.133.46
s=Media Presentation
e=NONE
b=AS:5100
t=0 0
a=control:*
m=video 0 RTP/AVP 96
c=IN IP4 0.0.0.0
b=AS:5000
a=recvonly
a=x-dimensions:1280,720
a=control:trackID=1
a=rtpmap:96 H264/90000
a=fmtp:96 profile-level-id=420029; packetization-mode=1; sprop-parameter-
sets=Z2QAH6wXKgFAFuhAAAHCAABX5CE=,aP44sA==
m=audio 0 RTP/AVP 8
c=IN IP4 0.0.0.0
b=AS:50
a=recvonly
a=control:trackID=2
a=rtpmap:8 PCMA/8000
a=Media_header:MEDIAINFO=494D4B4801020000040000011171011040 1F000000FA0000000000000000000000000000
0000000000;
a=appversion:1.0
```

```
SETUP rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z/trackID=1 RTSP/1.0
CSeq:2
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="6a7a733b41908bd9549a4ac07c498509"
Transport:RTP/AVP/UDP;unicast;client_port=20056-20057;ssrc=0
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 2
Session: 2049381566;timeout=60
Transport: RTP/AVP/UDP;unicast;client_port=20056-20057;ssrc=7d3c07bc;server_port=8220-8221;mode="play"
Date: Tue, Mar 14 2017 10:57:23 GMT

SETUP rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z/trackID=2 RTSP/1.0
CSeq:3
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="6a7a733b41908bd9549a4ac07c498509"
Session:2049381566;timeout=60
Transport:RTP/AVP/UDP;unicast;client_port=20058-20059;ssrc=0
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 3
Session: 2049381566;timeout=60
Transport: RTP/AVP/UDP;unicast;client_port=20058-20059;ssrc=06557745;server_port=8226-8227;mode="play"
Date: Tue, Mar 14 2017 10:57:23 GMT

PLAY rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq:4
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="fb986d385a7d839052ec4f0b2b70c631"
Session:2049381566;timeout=60
Range:clock=20170313T230652Z-20170314T025706Z
Rate-Control:yes
Scale:1.000
User-Agent:NKPlayer-1.00.00.081112
```

```
RTSP/1.0 200 OK
CSeq: 4
Session: 2049381566
Scale: 1.000
RTP-Info: url=trackID=1;seq=1,url=trackID=2;seq=1
Date: Tue, Mar 14 2017 10:57:23 GMT

Pause:
PAUSE rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq: 5
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="d229c4d2419df553212bc7d74bbfd432"
Session:2049381566;timeout=60
User-Agent: NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 5
Session: 2049381566
Date: Tue, Mar 14 2017 10:57:24 GMT

Play in 2× Speed:
PLAY rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq:6
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="fb986d385a7d839052ec4f0b2b70c631"
Session:2049381566;timeout=60
Scale:2.000
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 6
Session: 2049381566
Scale: 2.000
RTP-Info: url=trackID=1;seq=1,url=trackID=2;seq=1
Date: Tue, Mar 14 2017 10:57:24 GMT

Pause:
PAUSE rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq: 7
Authorization: Digest username="admin",
realm="4419b66d2485",
```

```
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="d229c4d2419df553212bc7d74bbfd432"
Session:2049381566;timeout=60
User-Agent: NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 7
Session: 2049381566
Date: Tue, Mar 14 2017 10:57:25 GMT

Play in 4× Speed:
PLAY rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq:8
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="fb986d385a7d839052ec4f0b2b70c631"
Session:2049381566;timeout=60
Scale:4.000
User-Agent:NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 8
Session: 2049381566
Scale: 4.000
RTP-Info: url=trackID=1;seq=1,url=trackID=2;seq=1
Date: Tue, Mar 14 2017 10:57:25 GMT

Disable:
TEARDOWN rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z RTSP/1.0
CSeq: 9
Authorization: Digest username="admin",
realm="4419b66d2485",
nonce="a0ecd9b1586ff9461f02f910035d0486",
uri="rtsp://10.17.133.46:554/ISAPI/streaming/tracks/101?
starttime=20170313T230652Z&endtime=20170314T025706Z",
response="50c86f44780a497ee07622b70c050bcd"
Session:2049381566;timeout=60
User-Agent: NKPlayer-1.00.00.081112

RTSP/1.0 200 OK
CSeq: 9
Session: 2049381566
Date: Tue, Mar 14 2017 10:57:28 GMT
```

8.3 Start Two-Way Audio

Two-way audio function enables the voice talk of the camera. You can get not only the live video but also the real-time audio from the camera. If the device has multiple two-way audio channels, you can select the channel to start two-way audio.

Steps

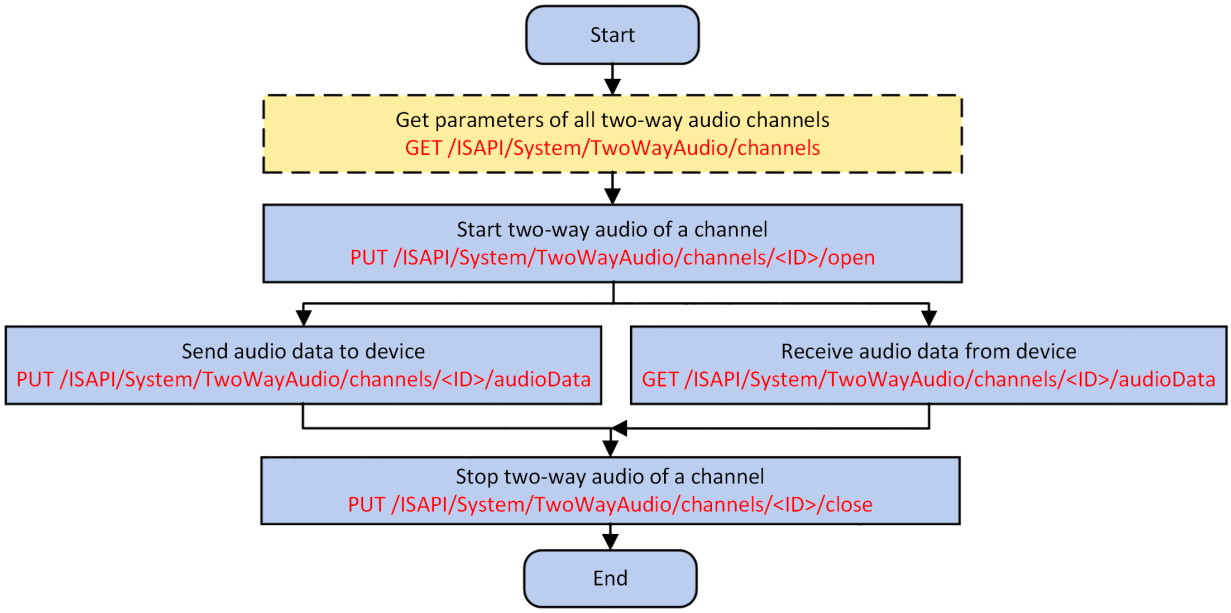

Figure 8-2 Programming Flow of Starting Two-Way Audio

1. **Optional:** Get parameters, including channel No., encoding mode, and so on, of all two-way audio channels by the request URL: GET ***/ISAPI/System/TwoWayAudio/channels*** .
2. Specify a channel of device to start the two-way audio by the request URL: PUT ***/ISAPI/System/TwoWayAudio/channels/<ID>/open***
3. Perform the following operations to transmit the audio data between platform and device.

Send Audio Data to Device	Request URL: PUT ***/ISAPI/System/TwoWayAudio/channels/<ID>/audioData***
Receive Audio Data from Device	Request URL: GET ***/ISAPI/System/TwoWayAudio/channels/<ID>/audioData***

4. Stop two-way audio of the specific channel by the request URL: PUT ***/ISAPI/System/TwoWayAudio/channels/<ID>/close*** .

8.4 Stream Encoding

The following request URLs are used for configuring encoding parameters of video and audio stream by one channel or multiple channels.

Encode Stream of Multiple Channels

- Get or set encoding parameters of multiple channels
  Request URL: GET or PUT ***/ISAPI/Streaming/channels***
- Get encoding status of multiple channels
  Request URL: GET ***/ISAPI/Streaming/status***

Encode Stream of One Channel

- Get encoding capability of one channel
  Request URL: GET ***/ISAPI/Streaming/channels/<ID>/capabilities***
- Get dynamic encoding capability of one channel
  Request URL: GET ***/ISAPI/Streaming/channels/<ID>/dynamicCap*** .
- Get or set encoding parameters of one channel
  Request URL: GET or PUT ***/ISAPI/Streaming/channels/<ID>***
- Get encoding status of one channel
  Request URL: GET ***/ISAPI/Streaming/channels/<ID>/status***

Chapter 9 Capture and Recording

For some remarkable views in the live view, you can manually capture the views or record the video segments and save the captured pictures or videos to the configured storage. For recording, you can also configure recording schedule to record videos continuously or based on command or event.

Capture

Request URL: GET ***/ISAPI/Streaming/channels/<ID>/picture***

Recording

- Get video track type
  Request URL: GET ***/ISAPI/ContentMgmt/record/profile***
- Set storage for recorded files
  Request URL: ***/ISAPI/ContentMgmt/record/storageMounts***

  Note

  To check if setting recording storage is supported, you can call the request URL: GET ***/ISAPI/ContentMgmt/capabilities*** to get the device storage management capability (***XML_RacmCap***).

- Recording Schedule
  - Get configuration capability of a recording schedule
    Request URL: GET ***/ISAPI/ContentMgmt/record/tracks/<ID>/capabilities***
  - Get all recording schedules
    Request URL: GET ***/ISAPI/ContentMgmt/record/tracks***
  - Add a recording schedule
    Request URL: POST ***/ISAPI/ContentMgmt/record/tracks***
  - Set a recording schedule
    Request URL: PUT ***/ISAPI/ContentMgmt/record/tracks/<ID>***
- Manual Recording
  - Start manual recording
    Request URL: POST ***/ISAPI/ContentMgmt/record/control/manual/start/tracks/<ID>***
  - Stop manual recording
    Request URL: POST ***/ISAPI/ContentMgmt/record/control/manual/stop/tracks/<ID>***

Chapter 10 PTZ Control

PTZ control is to implement the panning, tilting, zoom functions of cameras, set presets for specific monitoring areas to fast switch the cameras as needed, and group the user-defined presets as a scanning track for patrol.

Basic PTZ Parameters

- Get PTZ control capability
  Request URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/capabilities***
- Get or set zoom/focus coordinate parameters
  Request URL: GET or PUT ***/ISAPI/PTZCtrl/channels/<ID>/zoomFocus***
- Maximum Tilt Angle
  - Get configuration capability of maximum tilt angle
    Request URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/maxelevation/capabilities***
  - Get or set parameters of maximum tilt angle
    Request URL: GET or PUT ***/ISAPI/PTZCtrl/channels/<ID>/maxelevation*** .
- Get PTZ position information of current channel
  Request URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/save***
- Set PTZ position information of current channel
  Request URL: PUT ***/ISAPI/PTZCtrl/channels/<ID>/save?format=json***
- Get PTZ status of a specific channel
  Request URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/status***

Other PTZ Parameters

- Lens
  - Initialize lens
    Request URL: PUT ***/ISAPI/PTZCtrl/channels/<ID>/onepushfoucs/reset***
  - Get lens correction capability
    Request URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/lensCorrection/capabilities?format=json***
  - Get or set lens correction parameters
    Request URL: GET or PUT ***/ISAPI/PTZCtrl/channels/<ID>/lensCorrection?format=json***

    Note

    To check if the lens correction is supported by device, you can call the request URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/capabilities*** to get the PTZ control capability (***XML_PTZChanelCap***). If supports, the node <**isSupportLensCorrection**> will be returned.

- Get or set PTZ locking time duration
  Request URL: GET or PUT ***/ISAPI/PTZCtrl/channels/<ID>/lockPTZ***

Note

You can call the request URL: GET ***/ISAPI/PTZCtrl/channels/<ID>/capabilities*** to get the supported locking time duration (<**lockTime**>) from the PTZ control capability (***XML_PTZChanelCap***).

- Get or set PTZ OSD parameters
  Request URL: GET or PUT ***/ISAPI/PTZCtrl/channels/<ID>/PTZOSDDisplay***

PTZ Auxiliaries Control

- Get or set all PTZ auxiliaries status
  Request URL: GET or PUT ***/ISAPI/PTZCtrl/channels/<ID>/auxcontrols***
- Get or set the status of single PTZ auxiliary
  Request URL: GET or PUT ***/ISAPI/PTZCtrl/channels/<ID>/auxcontrols/<ID>***

E-PTZ Parameters

- Get or set e-PTZ parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/EPTZ***
- Get capability of switching e-PTZ mode
  Request URL: GET ***/ISAPI/Image/channels/<ID>/EPTZ/mode/capabilities?format=json***
- Get or set parameters of switching e-PTZ mode
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/EPTZ/mode?format=json***

Chapter 11 Storage Management

- Get capability of storing additional information
  Request URL: GET ***/ISAPI/ContentMgmt/Storage/ExtraInfo/capabilities***
- Get or set parameters for storing additional information
  Request URL: GET or PUT ***/ISAPI/ContentMgmt/Storage/ExtraInfo***

11.1 HDD Management

The HDD (Hard Disk Drive) is used for storage. Before storing information in HDD, you must format it, and you can also reallocate its space for better storage management.

HDD Configuration

- Get HDD management capability
  Request URL: GET ***/ISAPI/ContentMgmt/Storage/hdd/capabilities***
- Get parameters of all HDDs
  Request URL: GET ***/ISAPI/ContentMgmt/Storage/hdd***
- Get or set parameters of one HDD
  Request URL: GET or PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>***
- Get parameters of all HDD quotas
  Request URL: ***/ISAPI/ContentMgmt/Storage/quota***
- Verify HDD encryption password
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptVerfy?format=json***

HDD Formatting

- Format all HDDs
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/format***
- Specify formatting type to format one HDD
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/format?formatType=***
- Format multiple specified HDDs
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/specifyHddFormat?format=json***
- Format an encrypted HDD
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptFormat?format=json***
- Get formatting status of one HDD
  Request URL: GET ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/formatStatus***

HDD Checking

- Get or set parameters for checking HDD status
  Request URL: GET or PUT ***/ISAPI/ContentMgmt/Storage/hdd/SMARTTest/config***
- Start checking HDD status
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/SMARTTest/start***

- Get HDD checking status
  Request URL: GET ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/SMARTTest/status***
- Start checking bad sectors of a HDD
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/start***
- Get bad sector checking status of a HDD
  Request URL: GET ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/status***
- Pause checking bad sectors of a HDD
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/pause***
- Resume checking bad sectors of a HDD
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/resume***
- Stop checking bad sectors of a HDD
  Request URL: PUT ***/ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/stop***

SHM (SkyHawk Health Management) Alarm Linkage

- Get or set linkage parameters of HDD high temperature detection
  Request URL: GET or PUT ***/ISAPI/Event/triggers/highHDTemperature***
- Get or set linkage parameters of HDD low temperature detection
  Request URL: GET or PUT ***/ISAPI/Event/triggers/lowHDTemperature***
- Get or set linkage parameters of HDD impact detection
  Request URL: GET or PUT ***/ISAPI/Event/triggers/hdImpact***
- Get or set linkage parameters of HDD bad sector detection
  Request URL: GET or PUT ***/ISAPI/Event/triggers/hdBadBlock***
- Get or set linkage parameters of HDD severe fault detection
  Request URL: GET or PUT ***/ISAPI/Event/triggers/severeHDFailure***

Chapter 12 Alarm/Event

When the alarm is triggered or the event occurred, if you have configured alarm/event uploading parameters, you can receive and process the alarm/event information in the third-party platform or system by calling the request URLs of ISAPI. Two modes are available for receiving alarms, including arming mode and listening mode.

Arming Mode

When the alarm is triggered or event occurred, the third-party platform or system can send the request URL to the device for getting the alarm/event stream, and then the device uploads the response message with alarm/event information.

Listening Mode

When alarm is triggered or event occurred, the device uploads the alarm information automatically, and then the third-party platform or system can receives the alarm/event by configuring listening port of HTTP host server.

12.1 Receive Alarm/Event in Arming Mode

When alarm is triggered or event occurred, and the alarm/event linkage is configured, you can send request message to device for getting the alarm/event stream, and then the device uploads the corresponding response message, which contains alarm/event information.

Before You Start

Make sure you have configured alarm/event and triggered the alarm/event. For configuring alarm/event parameters, refer to the some typical applications of alarm/event configuration.

Steps

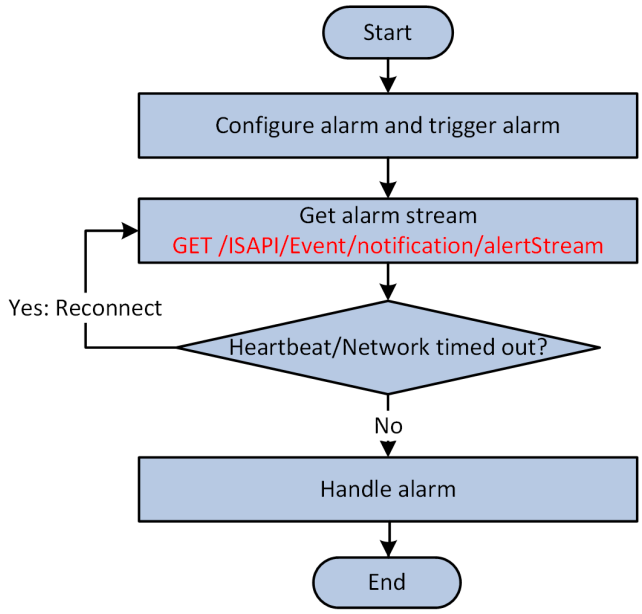

Figure 12-1 Programming Flow of Receiving Alarm/Event in Arming Mode

1. Call ***/ISAPI/Event/notification/alertStream*** by GET to get the alarm/event stream.
2. Check if the heartbeat receiving timed out or network disconnected.
   - If the heartbeat keeps alive and the network still connected, perform the following step to continue.
   - If the heartbeat receiving timed out or network disconnected, perform the above step repeatedly until reconnected.
3. Receive and process the alarm/event information.

Example

Sample Code of Receiving Alarm/Event in Arming Mode (without Binary Picture Data)

```
GET /ISAPI/Event/notification/alertStream HTTP/1.1
Host: data_gateway_ip
Connection: Keep-Alive

HTTP/1.1 401 Unauthorized
Date: Sun, 01 Apr 2018 18:58:53 GMT
Server:
Content-Length: 178
Content-Type: text/html
Connection: keep-alive
Keep-Alive: timeout=10, max=99
WWW-Authenticate: Digest qop="auth",
realm="IP Camera(C2183)",
nonce="4e5468694e7a42694e7a4d364f4449354d7a6b354d54513d",
stale="FALSE"

GET /ISAPI/Event/notification/alertStream HTTP/1.1
Authorization: Digest username="admin",
```

```
realm="IP Camera(C2183)",
nonce="4e5468694e7a42694e7a4d364f4449354d7a6b354d54513d",
uri="/ISAPI/Event/notification/alertStream",
cnonce="3d183a245b8729121ae4ca3d41b90f18",
nc=00000001,
qop="auth",
response="f2e0728991bb031f83df557a8f185178"
Host: 10.6.165.192

HTTP/1.1 200 OK
MIME-Version: 1.0
Connection: close
Content-Type: multipart/mixed; boundary=<frontier>

--<frontier>
Content-Type: application/xml; charset="UTF-8"
Content-Length: text_length

<EventNotificationAlert/>
--<frontier>
```

Note

Some alarm data is in JSON format, so the **Content-Type** may be "application/xml" or "application/json".

12.2 Receive Alarm/Event in Listening Mode

When alarm is triggered or event occurred, and the alarm/event linkage is configured, the device uploads the alarm/event information automatically, you can receive the alarm/event by configuring the listening port of HTTP host server.

Before You Start

Make sure you have configured alarm/event and triggered the alarm/event. For configuring alarm/event parameters, refer to the some typical applications of alarm/event configuration.

Steps

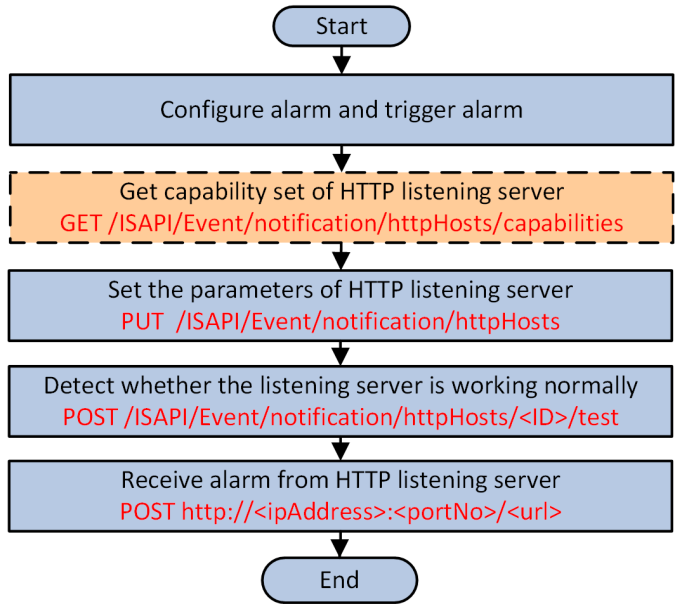

Figure 12-2 Programming Manual of Receiving Alarm/Event in Listening Mode

1. **Optional:** Call ***/ISAPI/Event/notification/httpHosts/capabilities*** by GET method to get the capability of HTTP listening server.
2. Call ***/ISAPI/Event/notification/httpHosts*** by PUT method to set the parameters (including listening address and listening port) of HTTP listening server.

Note

Before setting the listening server, you'd better perform GET operation on the above URL to get default or configured parameters for reference.

3. Call ***/ISAPI/Event/notification/httpHosts/<ID>/test*** by POST method to check if the listening server is working normally.
4. Call ***http://ipAddress:portNo/url*** by POST method to receive the alarm/event information from the listening server.

Example

Sample Code of Receiving Alarm/Event in Listening Mode

- with Binary Picture Data

```
//Request
POST requestUrl HTTP/1.1
Host: data_gateway_ip:port
Accept-Language: en-US
Date: YourDate
Content-Type: multipart/form-data;boundary=<frontier>
Content-Length: body_length
Connection: keep-alive

--<frontier>
```

```
Content-Disposition: form-data; name="Event_Type"
Content-Type: text/xml
Content-Length: xml_length

<EventNotificationAlert/>
--<frontier>
Content-Disposition: form-data; name="Picture_Name"
Content-Length: image_length
Content-Type: image/pjpeg

[binary picture data]
--<frontier>--

//Response
HTTP/1.1 HTTP statusCode
Date: YourDate
Connection: close
```

- without Binary Picture Data

```
//Request
POST requestUrl HTTP/1.1
Host: data_gateway_ip:port
Accept-Language: en-US
Date: YourDate
Content-Type: text/xml;
Content-Length: text_length
Connection: Close

<EventNotificationAlert/>

//Response
HTTP/1.1 HTTP statusCode
Date: YourDate
Connection: close
```

Note

- The **Host** is the HTTP server domain name or IP address and port No.
- Some alarm data is in JSON format, so the **Content-Type** may be "text/xml" or "text/json".

12.3 Subscribe Alarm/Event in Arming Mode

For arming mode, the platform will connect to the devices automatically and send commands to the devices for uploading alarm/event information when the alarm is triggered or event occurred. To reduce the CPU and bandwidth usage of platform, and improve the device processing performance, the platform can subscribe alarm/event types to receive alarm/event information as required.

Before You Start

Configure alarm/event and trigger the alarm/event. For configuring alarm/event parameters, refer to the some typical applications of alarm/event configuration.

Steps

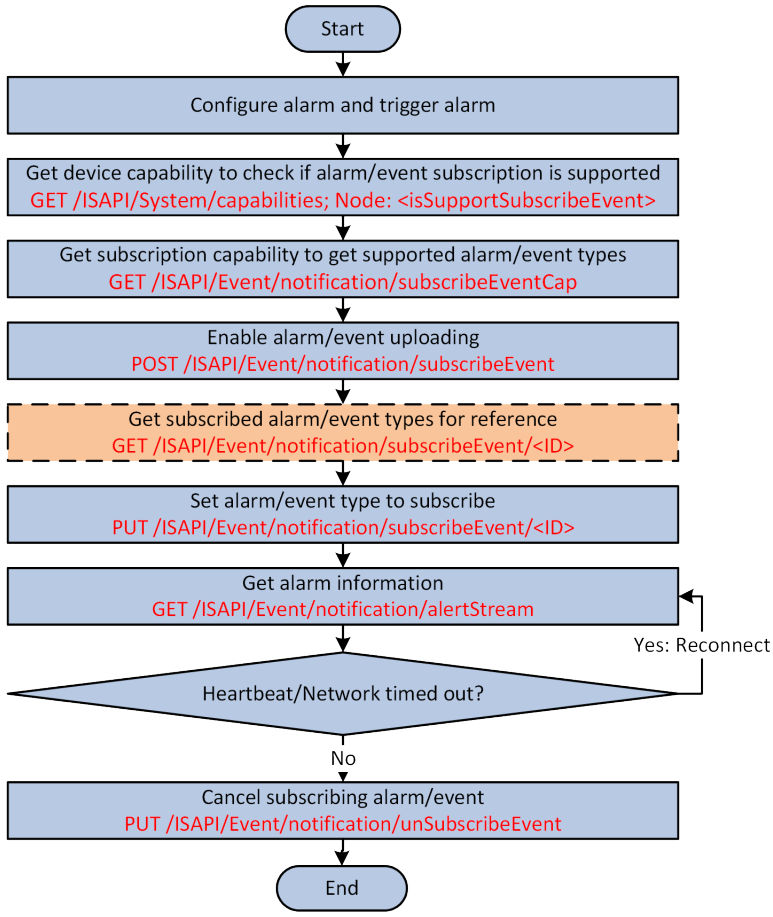

Figure 12-3 Programming Flow of Subscribing Alarm/Event in Arming Mode

1. Get device capability to check if alarm/event subscription is supported by the request URL: GET ***/ISAPI/System/capabilities*** .

   The device capability is returned in the message ***XML_DeviceCap*** .

   If the node <**isSupportSubscribeEvent**> is also returned in the message and its value is "true", it indicates that alarm/event subscription is supported by device, and you can continue to perform the following steps;

   Otherwise, alarm/event subscription is not supported, please end the task.
2. Get subscription capability to get supported alarm/event types by the request URL: GET ***/ISAPI/Event/notification/subscribeEventCap*** .

   The alarm/event subscription capability is returned in the message ***XML_SubscribeEventCap*** .
3. Enable alarm/event uploading by the request URL: POST ***/ISAPI/Event/notification/subscribeEvent*** .

Note

The sub node <**type**> of event type list (**EventList**) in the request message ***XML_SubscribeEvent*** for the URL can be set to different values (refer to *Supported Alarm/Event Types* for details) to subscribe different types of alarm/event information.

4. **Optional:** Get subscribed alarm/event types for reference by the request URL: GET ***/ISAPI/Event/notification/subscribeEvent/<ID>*** .
5. Set alarm/event type to subscribe by the request URL: PUT ***/ISAPI/Event/notification/subscribeEvent/<ID>*** .

Note

The sub node <**type**> of event type list (**EventList**) in the request message ***XML_SubscribeEvent*** for the URL can be set to different values (refer to *Supported Alarm/Event Types* for details) to subscribe different types of alarm/event information.

6. Receive the alarm/event information by the request URL: GET ***/ISAPI/Event/notification/alertStream*** .
7. Check if the heartbeat receiving timed out or network disconnected.
   - If the heartbeat keeps alive and the network still connected, perform the following step to continue.
   - If the heartbeat receiving timed out or network disconnected, perform the above step repeatedly until reconnected.
8. Cancel subscribing alarm/event by the request URL: PUT ***/ISAPI/Event/notification/unSubscribeEvent*** .

12.4 Configure Exception Alarm

To monitor the device status, you can configure the exception alarm, such as supply voltage exception, PoE power exception, and so on. When the exception occurs, the configured linkage action will be triggered and the alarm information will be uploaded automatically.

Supply Voltage Exception

- Get configuration capability of alarm linkage action
  Request URL: GET ***/ISAPI/Event/triggersCap***
- Get or set the linkage action of supply voltage exception alarm
  Request URL: GET or PUT ***/ISAPI/Event/triggers/<ID>*** , and the <ID> in the URL is "voltageinstable"
- Receive supply voltage exception alarm in listening mode
  Refer to ***Receive Alarm/Event in Listening Mode*** for details, the event type is "voltageinstable", and the alarm information is returned in message ***JSON_EventNotificationAlert_voltageinstable***

Note

To check if the device supports supply voltage exception alarm, you can call the request URL: GET ***/ISAPI/Event/capabilities*** to get the device event capability (***XML_EventCap***). If supports, the node <**isSupportVoltageInstable**> will be returned.

12.5 Configure Certificate Expiry Alarm

Generally, the device certificate is only valid in a specific period of time. You can configure the certificate expiry alarm to remind the user a few days in advance. When the certificate is expired, the alarm will be triggered and uploaded automatically.

Steps

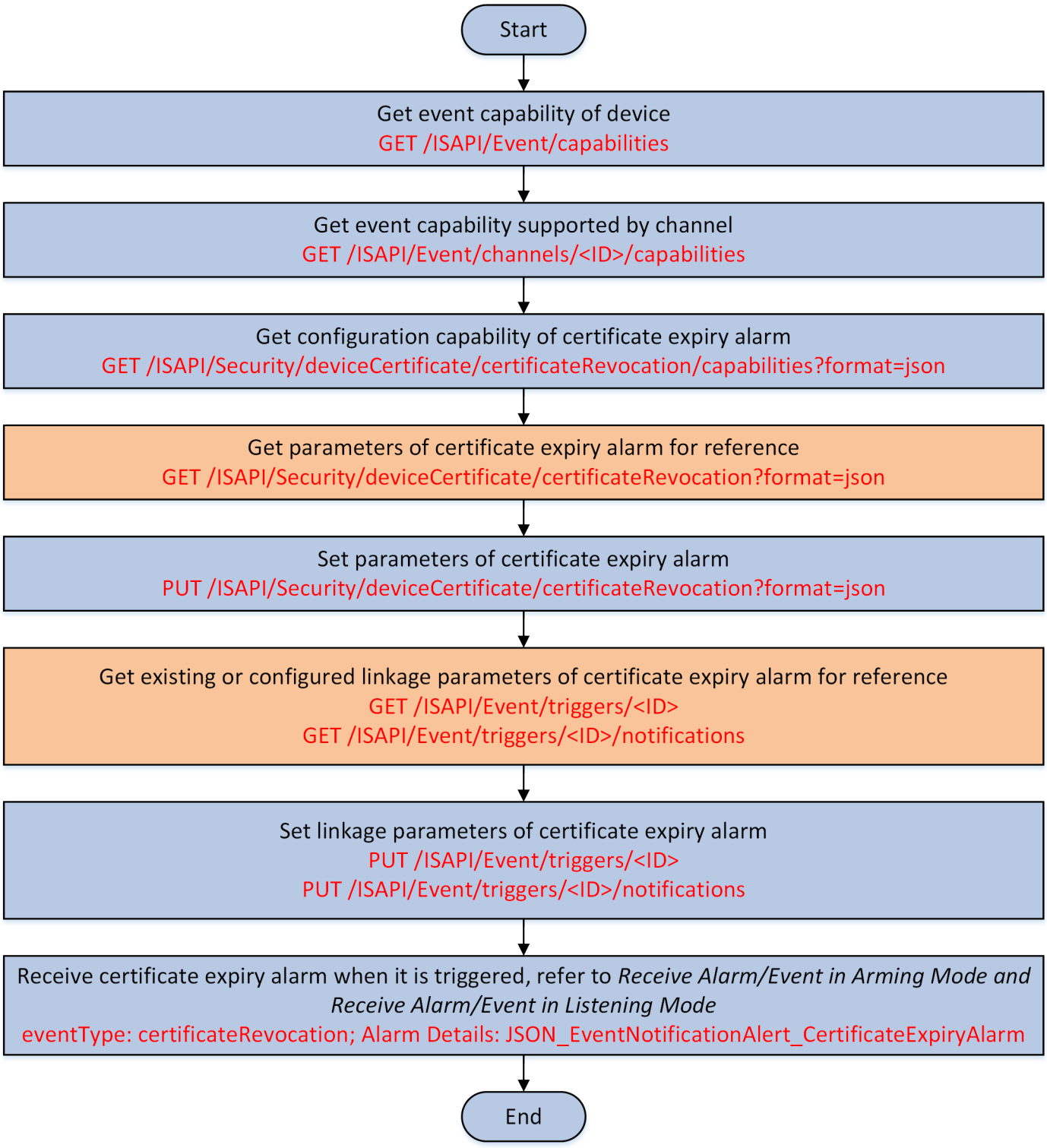

Figure 12-4 Programming Flow of Configuring Certificate Expiry Alarm

1. Get the event capability of the device by the request URL: GET ***/ISAPI/Event/capabilities*** to check whether the device supports certificate expiry alarm.

   The event capability of the device is returned in the message ***XML_EventCap*** . If the certificate expiry alarm is supported, the node <**isSupportCertificateRevocation**> will be returned and its value is "true", then you can perform the following steps. Otherwise, please end this task.
2. Get the event capability of the channel by the request URL: GET ***/ISAPI/Event/channels/<ID>/capabilities*** to check whether the certificate expiry alarm is supported by the channel.

   The event capability supported by the channel is returned in the message ***XML_ChannelEventCap*** . If the certificate expiry alarm is supported, the node <**eventType**> will be returned and it contains "certificateRevocation".
3. Get the configuration capability of certificate expiry alarm by the request URL: GET ***/ISAPI/Security/deviceCertificate/certificateRevocation/capabilities?format=json*** to know the supported parameters of certificate expiry alarm that can be configured.
4. **Optional:** Get the parameters of certificate expiry alarm by the request URL: GET ***/ISAPI/Security/deviceCertificate/certificateRevocation?format=json*** to get the existing or configured parameters for reference.
5. Set the parameters of certificate expiry alarm by the request URL: PUT ***/ISAPI/Security/deviceCertificate/certificateRevocation?format=json*** .
6. **Optional:** Get the linkage parameters of certificate expiry alarm by the request URL: GET ***/ISAPI/Event/triggers/<ID>*** or ***/ISAPI/Event/triggers/<ID>/notifications*** to get the existing or configured parameters for reference.

   Note

   The <**ID**> in the request URL refers to the channel No., and it should be set to the format "certificateRevocation-<channelID>".
7. Set the linkage parameters of certificate expiry alarm by the request URL: PUT ***/ISAPI/Event/triggers/<ID>*** or ***/ISAPI/Event/triggers/<ID>/notifications*** .

   Note

   The <**ID**> in the request URL refers to the channel No., and it should be set to the format "certificateRevocation-<channelID>".
8. **Optional:** Receive the uploaded certificate expiry alarm in arming mode (see details in ***Receive Alarm/Event in Arming Mode***) or in listening mode (see details in ***Receive Alarm/Event in Listening Mode***) when the certificate is expired.

   The certificate expiry alarm details are returned in the message ***JSON_EventNotificationAlert_CertificateExpiryAlarmMsg*** , and the corresponding alarm type (**eventType**) is "certificateRevocation".

Chapter 13 Parameter Configuration

13.1 I/O Settings

I/O (Alarm Input and Output)

- Get I/O configuration capability
  Request URL: GET ***/ISAPI/System/IO/capabilities*** .
- Get I/O status
  Request URL: GET ***/ISAPI/System/IO/status***

Alarm Input

- Get configuration capability of alarm inputs
  Request URL: GET ***/ISAPI/System/IO/inputs/capabilities*** .
- Get parameters of all alarm inputs
  Request URL: GET ***/ISAPI/System/IO/inputs***
- Get or set parameters of one alarm input
  Request URL: GET or PUT ***/ISAPI/System/IO/inputs/<ID>***
- Get status of one alarm input
  Request URL: GET ***/ISAPI/System/IO/inputs/<ID>/status***
- Alarm Input Configuration of Digital Channel

Note

To check if the alarm input configuration of digital channel is supported, you can call the request URL: GET ***/ISAPI/ContentMgmt/capabilities*** to get the device storage management capability (***XML_RacmCap***).
If this function is supported, the node <**isSupportIOInputProxy**> is returned and its value is "true".

  - Get or set alarm input parameters of all digital channels
    Request URL: GET or PUT ***/ISAPI/ContentMgmt/IOProxy/inputs***
  - Added alarm input configuration of a specific digital channel
    Request URL: POST ***/ISAPI/ContentMgmt/IOProxy/inputs***
  - Get or set alarm input parameters of a specific digital channel
    Request URL: GET or PUT ***/ISAPI/ContentMgmt/IOProxy/inputs/<ID>***
  - Delete alarm input configuration of a specific digital channel
    Request URL: DELETE ***/ISAPI/ContentMgmt/IOProxy/inputs/<ID>***
  - Get alarm input status of a specific digital channel
    Request URL: GET ***/ISAPI/ContentMgmt/IOProxy/inputs/<ID>/status***

Alarm Output

- Basic Alarm Output Parameters

  - Get configuration capability of alarm outputs
    Request URL: GET ***/ISAPI/System/IO/outputs/capabilities***
  - Get parameters of all alarm outputs
    Request URL: GET ***/ISAPI/System/IO/outputs***
  - Get or set parameters of one alarm output
    Request URL: GET or PUT ***/ISAPI/System/IO/outputs/<ID>***
  - Get status of one alarm output
    Request URL: GET ***/ISAPI/System/IO/outputs/<ID>/status***
- Supplement Light Alarm Output
  - Get configuration capability of supplement light alarm outputs
    Request URL: GET ***/ISAPI/Event/triggers/notifications/whiteLightAlarm/capabilities?format=json***
  - Get or set parameters of supplement light alarm outputs
    Request URL: GET or PUT ***/ISAPI/Event/triggers/notifications/whiteLightAlarm?format=json***
- Audible Alarm Output
  - Get configuration capability of audible alarm outputs
    Request URL: GET ***/ISAPI/Event/triggers/notifications/AudioAlarm/capabilities?format=json***
  - Get or set parameters of audible alarm outputs
    Request URL: GET or PUT ***/ISAPI/Event/triggers/notifications/AudioAlarm?format=json***
- Manually trigger an alarm output
  Request URL: PUT ***/ISAPI/System/IO/outputs/<ID>/trigger***
- Alarm Output Configuration of Digital Channel

Note

To check if the alarm output configuration of digital channel is supported, you can call the request URL: GET ***/ISAPI/ContentMgmt/capabilities*** to get the device storage management capability (***XML_RacmCap***).
If this function is supported, the node <**isSupportIOOutputProxy**> is returned and its value is "true".

  - Get or set alarm output parameters of all digital channels
    Request URL: GET or PUT ***/ISAPI/ContentMgmt/IOProxy/outputs***
  - Added alarm output configuration of a specific digital channel
    Request URL: POST ***/ISAPI/ContentMgmt/IOProxy/outputs***
  - Get or set alarm output parameters of a specific digital channel
    Request URL: GET or PUT ***/ISAPI/ContentMgmt/IOProxy/outputs/<ID>***
  - Delete alarm output configuration of a specific digital channel
    Request URL: DELETE ***/ISAPI/ContentMgmt/IOProxy/outputs/<ID>***
  - Get alarm output status of a specific digital channel
    Request URL: GET ***/ISAPI/ContentMgmt/IOProxy/outputs/<ID>/status***
  - Trigger alarm output of a specific digital channel
    Request URL: PUT ***/ISAPI/ContentMgmt/IOProxy/outputs/<ID>/trigger***

Note

The alarm details are uploaded by the message ***XML_EventNotificationAlert_IOSensorAlarmMsg*** .

13.2 Video/Image Settings

Basic Image Parameters

- Get image configuration capability
  Request URL: GET ***/ISAPI/Image/channels/<ID>/capabilities*** .
- Get or set image parameters of all channels
  Request URL: GET or PUT ***/ISAPI/Image/channels***
- Get or set image parameters of one channel
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>***
- Get basic image parameters of all channels
  Request URL: GET ***/ISAPI/Image/channels/<ID>/imageModes***
- Get basic image parameters of one channel
  Request URL: GET ***/ISAPI/Image/channels/<ID>/imageMode/<ID>***
- Reset image parameters
  Request URL: PUT ***/ISAPI/Image/channels/<ID>/reset***
- Restore to default image settings
  Request URL: PUT ***/ISAPI/Image/channels/<ID>/restore***

Camera Video/Image Parameters

- Get or set day/night mode parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/ISPMode***
- Get or set image auto flip parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/ImageFlip***
- Get or set wide dynamic range (WDR) parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/WDR***
- Get or set backlight compensation (BLC) parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/BLC***
- Get or set day/night auto switch parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/IrcutFilter***
- Get or set 3-dimention digital noise reduction (3D DNR) parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/noiseReduce***
- Get or set white balance (WB) parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/whiteBalance***
- Exposure
  - Get or set exposure parameters

Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/exposure***
  - Get or set shutter parameters in exposure mode
    Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/shutter***
  - Get or set gain parameters in exposure mode
    Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/gain***
- Get or set sharpness parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/sharpness***
- Get or set defog parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/dehaze***
- Get or set image standard
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/powerLineFrequency***
- Image Adjustment
  - Get image adjustment capability
    Request URL: GET ***/ISAPI/Image/channels/<ID>/color/capabilities***
  - Get or set image adjustment parameters
    Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/color***
- Get or set image rotate mode parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/corridor***

Other Video/Image Parameters

- Focus
  - Get focus configuration capability
    Request URL: GET ***/ISAPI/Image/channels/<ID>/focusConfiguration/capabilities***
  - Get or set focus parameters
    Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/focusConfiguration***
  - Perform regional focus
    Request URL: PUT ***/ISAPI/Image/channels/<ID>/regionalFocus***

    Note

    To check if the regional focus is supported by device, you can call the request URL: GET to get the image capability (***XML_ImageCap***). If supports, the node <**isSupportRegionalFocus**> will be returned in the capability.
- Get or set target colorating parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/Palettes***
- On Screen Display (OSD)
  - Get or set OSD parameters
    Request URL: GET or PUT ***/ISAPI/System/Video/inputs/channels/<ID>/overlays***
  - Get or set text language of OSD
    Request URL: GET ***/ISAPI/System/Video/inputs/OSDLanguage***

Note

To check if the OSD language configuration is supported by device, you can call the request URL: GET / to get the video capability (***XML_VideoCap***). If supports, the node <**OSDLanguage**> will be returned.

- Stream Configuration for Displaying VCA Rules of Smart Events
  - Get capability of configuring stream for displaying VCA rules of smart events
    Request URL: GET ***/ISAPI/Streaming/channels/<ID>/smartOverlap/capabilities?format=json***
  - Get or set stream parameters for displaying VCA rules of smart events
    Request URL: GET or PUT ***/ISAPI/Streaming/channels/<ID>/smartOverlap?format=json***

Note

To check if the stream configuration for displaying VCA rules of smart events is supported by the device, you can call the request URL: GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If this function is supported, the node <**supportSmartOverlapChannles**> will be returned and its value is "true".

- Target Enhancement
  - Get target enhancement capability
    Request URL: GET ***/ISAPI/Image/channels/<ID>/targetEnhancement/capabilities***
  - Get or set target enhancement parameters
    Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/targetEnhancement***
- Privacy Mask
  - Get configuration capability of privacy mask
    Request URL: GET ***/ISAPI/System/Video/inputs/channels/<ID>/privacyMask/privacyMaskCap***
  - Get or set privacy mask parameters
    Request URL: GET or PUT ***/ISAPI/System/Video/inputs/channels/<ID>/privacyMask***
  - Get or set multiple privacy mask regions
    Request URL: GET or PUT ***/ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions***
  - Get or set one privacy mask region
    Request URL: GET or PUT ***/ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions/<ID>***
- Get or set video input mode parameters
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/capturemode***
- Distortion Correction
  - Get configuration capability of distortion correction
    Request URL: GET ***/ISAPI/Image/channels/<ID>/lensDistortionCorrection/capabilities***
  - Get or set distortion correction parameters
    Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/lensDistortionCorrection***
- Target Cropping
  - Get configuration capability of target cropping

Request URL: GET ***/ISAPI/Streaming/channels/<ID>/regionClip/capabilities***
  - Get or set target cropping parameters
    Request URL: GET or PUT ***/ISAPI/Streaming/channels/<ID>/regionClip***
- Temperature Range
  - Get temperature range configuration capability
    Request URL: GET ***/ISAPI/Image/channels/<ID>/tempRange/capabilities***
  - Get or set temperature range
    Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/tempRange***

13.3 Audio Settings

Basic Audio Configuration

- Get audio capability
  Request URL: GET ***/ISAPI/System/Audio/capabilities***
- Get dynamic audio capability by channel
  Request URL: GET ***/ISAPI/System/Audio/channels/<ID>/dynamicCap***
- Get parameters of all audio channels
  Request URL: GET ***/ISAPI/System/Audio/channels***
- Get parameters of a specific audio channel
  Request URL: GET ***/ISAPI/System/Audio/channels/<ID>***

Audio Input Configuration

- Get audio input capability of a specific channel
  Request URL: GET ***/ISAPI/System/Audio/AudioIn/channels/<ID>/capabilities***
- Get or set audio input parameters of a specific channel
  Request URL: GET or PUT ***/ISAPI/System/Audio/AudioIn/channels/<ID>***

Audio Output Configuration

- Get audio output capability of a specific channel
  Request URL: GET ***/ISAPI/System/Audio/AudioOut/channels/<ID>/capabilities***
- Get or set audio output parameters of a specific channel
  Request URL: GET or PUT ***/ISAPI/System/Audio/AudioOut/channels/<ID>***

13.4 Channel Settings

Basic Channel Parameters

- Get all channels' attributes
  Request URL: GET ***/ISAPI/AUXInfo/attributes/Channels***
- Get one channel's attributes
  Request URL: GET ***/ISAPI/AUXInfo/attributes/Channels/<ID>***

Video Input Channel

- Get configuration capability by video input channel
  Request URL: GET ***/ISAPI/System/Video/inputs/channels/<ID>/capabilities***
- Get parameters of all video input channels
  Request URL: GET ***/ISAPI/System/Video/inputs/channels?format=json***
- Get parameters of one video input channel
  Request URL: ***/ISAPI/System/Video/inputs/channels/<ID>?format=json***

Video Output Channel

- Get parameters of all video outputs
  Request URL: GET ***/ISAPI/System/Video/outputs***
- Get configuration capability by video output channel
  Request URL: GET ***/ISAPI/System/Video/outputs/channels/<ID>/capabilities***
- Get parameters of all video output channels
  Request URL: GET ***/ISAPI/System/Video/outputs/channels***
- Get parameters of one video output channel
  Request URL: GET ***/ISAPI/System/Video/outputs/channels/<ID>***

Digital Channel

Note

To check if the digital channel management or configuration is supported, you can call the request URL: GET ***/ISAPI/ContentMgmt/capabilities*** to get the device storage management capability (***XML_RacmCap***).

- Get management capability of all digital channels
  GET ***/ISAPI/ContentMgmt/InputProxy/channels/capabilities***
- Get management capability of one digital channel
  GET ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/capabilities***
- Get supported number of digital channels
  Request URL: POST ***/ISAPI/ContentMgmt/InputProxy/sourceCapability***
- Get parameters of all digital channels
  Request URL: GET ***/ISAPI/ContentMgmt/InputProxy/channels***
- Get status of all digital channels
  Request URL: GET ***/ISAPI/ContentMgmt/InputProxy/channels/status***
- Get, add, or delete parameters of one digital channel
  Request URL: GET, POST, or PUT ***/ISAPI/ContentMgmt/InputProxy/channels***
- Get status of one digital channel
  Request URL: GET ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/status***
- Get or set control parameters of a digital channel
  Request URL: GET or PUT ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/chanCtrl***
- Reboot a digital channel

Request URL: GET ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/reboot***

- Check if port mapping is required for connecting to a digital channel
  Request URL: POST ***/ISAPI/ContentMgmt/InputProxy/channels/<ID>/portMapParam***

13.5 Peripherals Settings

- Get configuration capability of built-in supplement light
  Request URL: GET ***/ISAPI/Image/channels/<ID>/SupplementLight/capabilities***
- Get or set parameters of built-in supplement light
  Request URL: GET or PUT ***/ISAPI/Image/channels/<ID>/SupplementLight***

Note

To check if configuring built-in supplement light is supported, you can call the request URL: GET ***/ISAPI/Image/channels/<ID>/capabilities*** to get the image channel capability (***XML_Cap_ImageChannel***). If supports, the node <**SupplementLight**> will be returned in the message.

Chapter 14 System Configuration

14.1 Network Settings

This chapter lists the request URLs for communication and network configurations of devices, including network interface settings, wireless network settings, network access settings, email settings, and so on.

- Get network capability
  Request URL: GET ***/ISAPI/System/Network/capabilities***
- Import network certificate
  Request URL: GET ***/ISAPI/Security/deviceCertificate***
- Remotely get connection socket IP
  Request URL: GET ***/ISAPI/System/Network/socketIP***

Note

To check if getting socket IP is supported by device, you can call the request URL: GET ***/ISAPI/System/Network/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the node <**isSupportGetLinkSocketIP**> will be returned.

- Network Self-Adaptive
  - Get self-adaptive configuration capability
    Request URL: GET ***/ISAPI/System/Network/adaption/capabilities?format=json***
  - Get self-adaptive parameters
    Request URL: GET ***/ISAPI/System/Network/adaption?format=json&streamType=***
  - Set self-adaptive parameters
    Request URL: PUT ***/ISAPI/System/Network/adaption?format=json&streamType=***

  Note

  To check if network self-adaptive configuration is supported, you can get the network capability ***XML_NetworkCap*** by the request URL: ***/ISAPI/System/Network/capabilities*** . If supports, the node <**Adaption**> will be returned in the capability message.

14.1.1 Email

- Get email configuration capability
  Request URL: GET ***/ISAPI/System/Network/mailing/capabilities***
- Get or set parameters of multiple emails
  Request URL: GET or PUT ***/ISAPI/System/Network/mailing***
- Get or set parameters of one email

Request URL: GET or PUT ***/ISAPI/System/Network/mailing/<ID>***

- Execute email test
  Request URL: POST ***/ISAPI/System/Network/mailing/test***

14.1.2 Network Access

Protocol Access

- Get configuration capability of protocol access
  Request URL: ***/ISAPI/Security/adminAccesses/capabilities***
- Get or set access parameters of multiple protocols
  Request URL: GET or PUT ***/ISAPI/Security/adminAccesses***
- Get or set access parameters of one protocol
  Request URL: GET or PUT ***/ISAPI/Security/adminAccesses/<ID>***
- 802.1 Protocol Access
  - Get 802.1 protocol access capability
    Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/ieee802.1x/capabilities***
  - Get or set access parameters of 802.1 protocol
    Request URL: GET or PUT ***/ISAPI/System/Network/interfaces/<ID>/ieee802.1x***

Hik-Connect Access

- Get or set access parameters of Hik-Connect
  Request URL: GET or PUT ***/ISAPI/System/Network/EZVIZ***

Note

To check if the device supports accessing to Hik-Connect, you can call the request URL: GET ***/ISAPI/System/Network/capabilities*** to get the network capability (***XML_NetworkCap***). If supports, the node <**isSupportEhome**> will be returned in the capability and its value is "true".

- Edit verification code for Hik-Connect
  Request URL: PUT ***/ISAPI/System/Network/EZVIZ/secretKey?format=json***

Note

To check if the device supports editing verification code for Hik-Connect, you can call the request URL: GET ***/ISAPI/System/Network/capabilities*** to get the network capability sets ***XML_NetworkCap*** . If supports, the node <**secretKey**> will be returned.

EHome Server Access

- Get configuration capability of EHome server access
  Request URL: GET ***/ISAPI/System/Network/Ehome/capabilities***
- Get or set access parameters of EHome server
  Request URL: GET or PUT ***/ISAPI/System/Network/Ehome***

- Get or set access parameters of EHome server according to the center ID
  Request URL: GET or PUT ***/ISAPI/System/Network/Ehome?centerID=***
- Get configuration capability of report uploading method
  Request URL: GET ***/ISAPI/SecurityCP/ReportCenterCfg/capabilities?format=json***
- Get or set parameters of report uploading method
  Request URL: GET or PUT ***/ISAPI/SecurityCP/ReportCenterCfg/<ID>?format=json***

Note

To check if the device supports accessing to EHome server, you can call the request URL: GET ***/ISAPI/System/Network/capabilities*** to get the network capability (***XML_NetworkCap***). If supports, the node <**isSupportEZVIZ**> will be returned in the capability and its value is "true".

SSH Server Access

Get or set access parameters of SSH server
Request URL: GET or PUT ***/ISAPI/System/Network/ssh***

Note

To check if the device supports accessing to SSH server, you can call the request URL: GET ***/ISAPI/System/Network/capabilities*** to get the network capability (***XML_NetworkCap***). If supports, the node <isSupportSSH> will be returned in the capability and its value is "true".

14.1.3 Network Interface

Network Interface

- Get configuration capability of one network interface
  Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/capabilities***
- Get information of multiple network interfaces
  Request URL: GET ***/ISAPI/System/Network/interfaces***
- Get or set parameters of one network interface
  Request URL: GET or PUT ***/ISAPI/System/Network/interfaces/<ID>***
- Get IP address of one network interface
  Request URL: GET or PUT ***/ISAPI/System/Network/interfaces/<ID>/ipAddress***

PoE

- Get configuration capability of PoE port
  Request URL: GET ***/ISAPI/System/Network/POE/capabilities?format=json***
- Get or set PoE port parameters
  Request URL: GET or PUT ***/ISAPI/System/Network/POE?format=json***

UPnP

- Get or set UPnP parameters

Request URL: GET or PUT ***/ISAPI/System/Network/UPnP***
- Get or set parameters of all UPnP ports
  Request URL: GET or PUT ***/ISAPI/System/Network/UPnP/ports***
- Get or set parameters of one UPnP port
  Request URL: GET or PUT ***/ISAPI/System/Network/UPnP/ports/<ID>***
- Get mapping statuses of all UPnP ports
  Request URL: GET ***/ISAPI/System/Network/UPnP/ports/status***
- Get mapping status of one UPnP port
  Request URL: GET ***/ISAPI/System/Network/UPnP/ports/<ID>/status***

14.1.4 Wireless Network

Wi-Fi

- Get Wi-Fi configuration capability
  Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/wireless/capabilities***
- Get or set Wi-Fi parameters of one network interface
  Request URL: GET or PUT ***/ISAPI/System/Network/interfaces/<ID>/wireless***

Wireless Hotspot

- Get configuration capability of wireless hotspot
  Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/wirelessServer/capabilities***
- Get or set wireless hotspot parameters
  Request URL: GET or PUT ***/ISAPI/System/Network/interfaces/<ID>/wirelessServer***
- Get list of devices connected to hotspot
  Request URL: GET
- Get information of a device connected to hotspot
  Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/wireless/accessDeviceList/<ID>***
- Get capability of devices connected to hotspot
  Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/wireless/accessDeviceList/capabilities***
- Get hotspot list
  Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/wireless/accessPointList***
- Get one hotspot information
  Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/wireless/accessPointList/<ID>***

Wireless Dial

- Get configuration capability of wireless dial
  Request URL: GET ***/ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dial/capabilities***
- Get or set wireless dial parameters
  Request URL: GET or PUT ***/ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dial***

14.1.5 Network Service

Software Service

- Get configuration capability of software service
  Request URL: GET ***/ISAPI/System/Software/channels/<ID>/capabilities***
- Get or set parameters of software service
  Request URL: GET or PUT ***/ISAPI/System/Software/channels/<ID>***

Session Initialization Protocol (SIP) Server

- Get SIP server capability
  Request URL: GET ***/ISAPI/System/Network/SIP/<ID>/capabilities***
- Get or set parameters of all SIP servers
  Request URL: GET or PUT ***/ISAPI/System/Network/SIP***
- Get or set parameters of one SIP server
  Request URL: GET or PUT ***/ISAPI/System/Network/SIP/<ID>***
- Get configuration capability of SIP server
  Request URL: GET ***/ISAPI/System/Network/SIP/<ID>/SIPInfo/capabilities***
- Get or set information of one SIP server
  Request URL: GET or PUT ***/ISAPI/System/Network/SIP/<ID>/SIPInfo***
- Get or set information of all SIP servers
  Request URL: GET or PUT ***/ISAPI/System/Network/SIP/<ID>/SIPInfo/multiInfo***

File Transfer Protocol (FTP) Server

- Get configuration capability of FTP server
  Request URL: GET ***/ISAPI/System/Network/ftp/capabilities***
- Get or set parameters of one FTP server
  Request URL: GET or PUT ***/ISAPI/System/Network/ftp/<ID>***
- Get or set parameters of all FTP servers
  Request URL: GET or PUT ***/ISAPI/System/Network/ftp***
- Perform FTP server test
  Request URL: POST ***/ISAPI/System/Network/ftp/test***

Dynamic Domain Name Server (DDNS)

- Get DDNS configuration capability
  Request URL: GET ***/ISAPI/System/Network/DDNS/capabilities***
- Get or set parameters of all DDNSs
  Request URL: GET or PUT ***/ISAPI/System/Network/DDNS***
- Get or set parameters of one DDNS
  Request URL: GET or PUT ***/ISAPI/System/Network/DDNS/<ID>***
- Get configuration capability of dynamic domain name

Request URL: GET ***/ISAPI/System/Network/interfaces/<ID>/dynamicHostName/capabilities?format=json***

- Get or set dynamic domain name
  Request URL: GET or PUT ***/ISAPI/System/Network/interfaces/<ID>/dynamicHostName?format=json***

Note

To check if setting dynamic domain name is supported, you can call the request URL: GET ***/ISAPI/System/Network/capabilities*** to get the network capability (***XML_NetworkCap***). If supports, the node <**isSupportDynamicHostName**> is returned and its value is "true".

Log Server

- Get log server configuration capability
  Request URL: GET ***/ISAPI/System/logServer/capabilities***
- Get or set log server parameters
  Request URL: GET or PUT ***/ISAPI/System/logServer***
- Perform log server text
  Request URL: POST ***/ISAPI/System/logServer/test***

Static Routing

Get, set, or delete static routing parameters
Request URL: GET, PUT, or DELETE ***/ISAPI/System/Network/StaticRoute***

14.2 Time Settings

This chapter lists the request URLs for device time configuration, including setting time, setting time zone, and so on.

- Get time configuration capability
  Request URL: GET ***/ISAPI/System/time/capabilities***

Note

To check if time configuration is supported, you can call the request URL: GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap***). If supports, the node <**isSupportTimeCap**> will be returned.

- Get or set time type
  Request URL: GET or PUT ***/ISAPI/System/time/timeType?format=json***
- Get or set time parameters
  Request URL: GET or PUT ***/ISAPI/System/time***
- Get or set time zone
  Request URL: GET or PUT ***/ISAPI/System/time/timeZone***
- Get or set local time parameters

Request URL: GET or PUT ***/ISAPI/System/time/localTime***

- NTP Server
  - Get NTP server capability
    Request URL: GET ***/ISAPI/System/time/ntpServers/capabilities***
  - Get, set, or delete multiple NTP servers
    Request URL: GET, PUT, or DELETE ***/ISAPI/System/time/ntpServers***
  - Get set, or delete one NTP server
    Request URL: GET, PUT, or DELETE ***/ISAPI/System/time/ntpServers/<ID>***
  - Add one NTP server
    Request URL: POST ***/ISAPI/System/time/ntpServers***
  - Execute NTP server test
    Request URL: POST ***/ISAPI/System/time/ntpServers/test***

14.3 System Diagnose

This chapter lists the request URLs for getting system diagnose information and the exporting status.

- Get diagnose information
  Request URL: GET ***/ISAPI/System/diagnosedData***
- Get process of exporting diagnose information
  URL: GET ***/ISAPI/System/diagnosedData/exportStatus***

Note

To check if getting disgnose information is supported, you can call the request URL: GET ***/ISAPI/System/capabilities*** to get the device capability (***XML_DeviceCap*** >. If supports, the node <**isSupportDiagnosedData**> will be returned.

14.4 Data Replenishment

In the condition of disconnection between platform and NVR, the NVR saves the data of people counting, heat map, temperature, and vehicle. When the connection is resumed, the platform can get the specified data from NVR during disconnection period.

People Counting Data Replenishment

- Get data replenishment capability of people counting
  Request URL: GET ***/ISAPI/System/Video/inputs/channels/counting/collection/capabilities?format=json***

Note

Before getting people counting data replenishment capability, you should check whether this function is supported by the device via the node <**isSupportCountingCollection**> in ***XML_VideoCap*** , URL: GET ***/ISAPI/System/Video/capabilities*** .

- Perform data replenishment of people counting
  Request URL: POST ***/ISAPI/System/Video/inputs/channels/counting/collection?format=json***

Heat Map Data Replenishment

- Get data replenishment capability of heat map
  Request URL: GET ***/ISAPI/System/Video/inputs/channels/heatMap/collection/capabilities?format=json***

Note

Before getting people counting data replenishment capability, you should check whether this function is supported by the device via the node <**isSupportHeatmapCollection**> in ***XML_VideoCap*** , URL: GET ***/ISAPI/System/Video/capabilities*** .

- Perform data replenishment of heat map
  Request URL: POST ***/ISAPI/System/Video/inputs/channels/heatMap/collection?format=json***

Temperature Data Replenishment

- Get data replenishment capability of temperature
  Request URL: GET ***/ISAPI/Thermal/temperature/collection/capabilities?format=json***

Note

Before getting temperature data replenishment capability, you should check whether this function is supported by the device via the node <**isSupportTemperatureCollection**> in ***XML_ThermalCap*** , URL: GET ***/ISAPI/Thermal/capabilities*** .

- Perform temperature data replenishment
  Request URL: POST ***/ISAPI/Thermal/temperature/collection?format=json***

Vehicle Detection Data Replenishment

- Get VCA search capability
  Request URL: GET ***/ISAPI/SDT/Management/IntelligentSearch/capabilities?format=json***
- Search for vehicle detection data
  Request URL: POST ***/ISAPI/SDT/Management/IntelligentSearch?format=json***

Note

Before searching for vehicle detection data, you should check whether the device supports this function. When the node <**isSupportIntelligentSearch**> is returned in device capability sets ***XML_DeviceCap*** , and values "true".

Chapter 15 Request URL

The intelligent security API in request URL format for realizing the functions in this manual are listed here for reference. You can search for the URLs and view their definitions.

15.1 /ISAPI/AUXInfo

15.1.1 /ISAPI/AUXInfo/attributes/Channels

Get the attributes of channels.

Request URL Definition

Table 15-1 GET /ISAPI/AUXInfo/attributes/Channels

Method	GET
Description	Get the attributes of channels.
Query	None.
Request	None.
Response	***XML_ChannelInfoList***

15.1.2 /ISAPI/AUXInfo/attributes/Channels/<ID>

Get the attributes of a specific channel according to channel ID.

Request URL Definition

Table 15-2 GET /ISAPI/AUXInfo/attributes/Channels/<ID>

Method	GET
Description	Get the attributes of a specific channel according to channel ID.
Query	None.
Request	None.
Response	***XML_ChannelInfo***

Remarks

The <**ID**> in the request URL is the channel ID.

15.2 /ISAPI/ContentMgmt

15.2.1 /ISAPI/ContentMgmt/capabilities

Get storage capability.

GET /ISAPI/ContentMgmt/capabilities

Method	GET
Description	Get storage capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_RacmCap*** Failed: ***XML_ResponseStatus***

15.2.2 /ISAPI/ContentMgmt/download

Download the file via plug-in.

Request URL Definition

Table 15-3 GET /ISAPI/ContentMgmt/download

Method	GET
Description	Download the file.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_downloadRequest***
Response	File

15.2.3 /ISAPI/ContentMgmt/download/capabilities

Get the downloading capability sets.

Request URL Definition

Table 15-4 GET /ISAPI/ContentMgmt/download/capabilities

Method	GET
Description	Get the downloading capability sets.
Query	None.
Request	None.
Response	Succeeded: ***XML_DownloadAbility*** Failed: ***XML_ResponseStatus***

15.2.4 /ISAPI/ContentMgmt/download/toUSB/<taskId>/progress?format=json

Get the progress of exporting files to devices via USB.

Request URL Definition

Table 15-5 GET /ISAPI/ContentMgmt/download/toUSB/<taskId>/progress?format=json

Method	GET
Description	Get the progress of exporting files to devices via USB.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_ProgressInfo*** Failed: ***JSON_ResponseStatus***

Remarks

The <**taskId**> in the request URL refers to the task ID, and it is returned in the message ***JSON_ExporttoUSB_TaskInfo*** after calling the request URL: POST ***/ISAPI/ContentMgmt/download/toUSB?format=json*** .

15.2.5 /ISAPI/ContentMgmt/download/toUSB/capabilities?format=json

Get the capability of exporting files to devices via USB.

Request URL Definition

Table 15-6 GET /ISAPI/ContentMgmt/download/toUSB/capabilities?format=json

Method	GET
Description	Get the capability of exporting files to devices via USB.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_Cap_ExportInfo*** Failed: ***JSON_ResponseStatus***

15.2.6 /ISAPI/ContentMgmt/download/toUSB?format=json

Export files to devices via USB.

Request URL Definition

Table 15-7 POST /ISAPI/ContentMgmt/download/toUSB?format=json

Method	POST
Description	Export files to devices via USB.
Query	**format**: determine the format of request or response message.
Request	***JSON_ExportInfo***
Response	Succeeded: ***JSON_ExporttoUSB_TaskInfo*** Failed: ***JSON_ResponseStatus***

15.2.7 /ISAPI/ContentMgmt/InputProxy/channels

Operations about management of all digital channels.

Request URL Definition

Table 15-8 GET /ISAPI/ContentMgmt/InputProxy/channels

Method	GET
Description	Get parameters of all digital channels.
Query	None.

Request	None.
Response	***XML_InputProxyChannelList***

Table 15-9 PUT /ISAPI/ContentMgmt/InputProxy/channels

Method	PUT
Description	Set parameters of all digital channels.
Query	None.
Request	***XML_InputProxyChannelList***
Response	***XML_ResponseStatus***

Table 15-10 POST /ISAPI/ContentMgmt/InputProxy/channels

Method	POST
Description	Add a digital channel.
Query	None.
Request	***XML_InputProxyChannel***
Response	***XML_ResponseStatus***

15.2.8 /ISAPI/ContentMgmt/InputProxy/channels/<ID>

Operations about management of a specific digital channel.

Request URL Definition

Table 15-11 GET /ISAPI/ContentMgmt/InputProxy/channels/<ID>

Method	GET
Description	Get parameter of a specific digital channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_InputProxyChannel*** Failed: ***XML_ResponseStatus***

Table 15-12 PUT /ISAPI/ContentMgmt/InputProxy/channels/<ID>

Method	PUT
Description	Set parameters of a specific digital channel.
Query	None.

Request	***XML_InputProxyChannel***
Response	***XML_ResponseStatus***

Table 15-13 DELETE /ISAPI/ContentMgmt/InputProxy/channels/<ID>

Method	DELETE
Description	Delete a specific digital channel.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel ID.

15.2.9 /ISAPI/ContentMgmt/InputProxy/channels/<ID>/capabilities

Get management capability of a specific digital channel.

Request URL Definition

Table 15-14 GET /ISAPI/ContentMgmt/InputProxy/channels/<ID>/capabilities

Method	GET
Description	Get management capability of a specific digital channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_InputProxyChannel*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel ID.

15.2.10 /ISAPI/ContentMgmt/InputProxy/channels/<ID>/chanCtrl

Get or set control parameters of a specific channel.

Request URL Definition

Table 15-15 GET /ISAPI/ContentMgmt/InputProxy/channels/<ID>/chanCtrl

Method	GET
Description	Get control parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_ChanCtrl*** Failed: ***XML_ResponseStatus***

Table 15-16 PUT /ISAPI/ContentMgmt/InputProxy/channels/<ID>/chanCtrl

Method	PUT
Description	Set control parameters of a specific channel.
Query	None.
Request	***XML_ChanCtrl***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.2.11 /ISAPI/ContentMgmt/InputProxy/channels/<ID>/portMapParam

Check if port mapping is required for connecting to camera.

Request URL Definition

Table 15-17 POST /ISAPI/ContentMgmt/InputProxy/channels/<ID>/portMapParam

Method	POST
Description	Check if port mapping is required for connecting to camera according to the IP address of terminal.
Query	None.
Request	***XML_PortMapParam***
Response	Succeeded: ***XML_PortMapParamRet*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.2.12 /ISAPI/ContentMgmt/InputProxy/channels/<ID>/reboot

Reboot a specific channel.

Request URL Definition

Table 15-18 GET /ISAPI/ContentMgmt/InputProxy/channels/<ID>/reboot

Method	GET
Description	Reboot a specific channel.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.2.13 /ISAPI/ContentMgmt/InputProxy/channels/<ID>/status

Get status of a specific digital channel.

Request URL Definition

Table 15-19 GET /ISAPI/ContentMgmt/InputProxy/channels/<ID>/status

Method	GET
Description	Get status of a specific digital channel.
Query	None.
Request	None.
Response	***XML_InputProxyChannelStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel ID.

15.2.14 /ISAPI/ContentMgmt/InputProxy/channels/activate

Activate the network devices.

Request URL Definition

Table 15-20 PUT /ISAPI/ContentMgmt/InputProxy/channels/activate

Method	PUT
Description	Activate the network devices.
Query	None
Request	***XML_VideoSourceActivation***
Response	***XML_ResponseStatus***

15.2.15 /ISAPI/ContentMgmt/InputProxy/channels/activate/capabilities

Get capability of activating network devices.

Request URL Definition

Table 15-21 GET /ISAPI/ContentMgmt/InputProxy/channels/activate/capabilities

Method	GET
Description	Get capability of activating network devices.
Query	None
Request	None.
Response	Succeeded: ***XML_VideoSourceActivationCapability*** Failed: ***XML_ResponseStatus***

15.2.16 /ISAPI/ContentMgmt/InputProxy/channels/capabilities

Get management capability of all digital channels.

Request URL Definition

Table 15-22 GET /ISAPI/ContentMgmt/InputProxy/channels/capabilities

Method	GET
Description	Get management capability of all digital channels.
Query	None.

Request	None.
Response	

15.2.17 /ISAPI/ContentMgmt/InputProxy/channels/status

Get status of all digital channels.

Request URL Definition

Table 15-23 GET /ISAPI/ContentMgmt/InputProxy/channels/status

Method	GET
Description	Get status of all digital channels.
Query	None.
Request	None.
Response	***XML_InputProxyChannelStatusList***

15.2.18 /ISAPI/ContentMgmt/InputProxy/search

Search for network cameras in the LAN (Local Area Network) that can be connected.

Request URL Definition

Table 15-24 GET /ISAPI/ContentMgmt/InputProxy/search

Method	GET
Description	Search for network cameras in the LAN (Local Area Network) that can be connected.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoSourceList*** Failed: ***XML_ResponseStatus***

15.2.19 /ISAPI/ContentMgmt/InputProxy/sourceCapability

Get supported number of digital channels.

Request URL Definition

Table 15-25 POST /ISAPI/ContentMgmt/InputProxy/sourceCapability

Method	POST
Description	Get supported number of digital channels.
Query	None.
Request	***XML_sourceDescriptor***
Response	***XML_sourceCapability***

15.2.20 /ISAPI/ContentMgmt/IOProxy/inputs

Operations about the alarm input configuration of all digital channels.

Request URL Definition

Table 15-26 GET /ISAPI/ContentMgmt/IOProxy/inputs

Method	GET
Description	Get the alarm input parameters of all digital channels.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOProxyInputPortList*** Failed: ***XML_ResponseStatus***

Table 15-27 PUT /ISAPI/ContentMgmt/IOProxy/inputs

Method	PUT
Description	Set the alarm input parameters of all digital channels.
Query	None.
Request	***XML_IOProxyInputPortList***
Response	***XML_ResponseStatus***

Table 15-28 POST /ISAPI/ContentMgmt/IOProxy/inputs

Method	POST
Description	Add the alarm input configuration of a specific digital channel.
Query	None.

Request	***XML_IOProxyInputPort***
Response	***XML_ResponseStatus***

15.2.21 /ISAPI/ContentMgmt/IOProxy/inputs/<ID>

Operations about the alarm input configuration of a specific digital channel.

Request URL Definition

Table 15-29 GET /ISAPI/ContentMgmt/IOProxy/inputs/<ID>

Method	GET
Description	Get the alarm input parameters of a specific digital channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOProxyInputPort*** Failed: ***XML_ResponseStatus***

Table 15-30 PUT /ISAPI/ContentMgmt/IOProxy/inputs/<ID>

Method	PUT
Description	Set the alarm input parameters of a specific digital channel.
Query	None.
Request	***XML_IOProxyInputPort***
Response	***XML_ResponseStatus***

Table 15-31 DELETE /ISAPI/ContentMgmt/IOProxy/inputs/<ID>

Method	DELETE
Description	Delete the alarm input configuration of a specific digital channel.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel No.

15.2.22 /ISAPI/ContentMgmt/IOProxy/inputs/<ID>/status

Get the alarm input status of a specific digital channel.

Request URL Definition

Table 15-32 GET /ISAPI/ContentMgmt/IOProxy/inputs/<ID>/status

Method	GET
Description	Get the alarm input status of a specific digital channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOPortStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel No.

15.2.23 /ISAPI/ContentMgmt/IOProxy/outputs

Operations about the alarm output configuration of all digital channels.

Request URL Definition

Table 15-33 GET /ISAPI/ContentMgmt/IOProxy/outputs

Method	GET
Description	Get the alarm output parameters of all digital channels.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOProxyOutputPortList*** Failed: ***XML_ResponseStatus***

Table 15-34 PUT /ISAPI/ContentMgmt/IOProxy/outputs

Method	PUT
Description	Set the alarm output parameters of all digital channels.
Query	None.

Request	***XML_IOProxyOutputPortList***
Response	***XML_ResponseStatus***

Table 15-35 POST /ISAPI/ContentMgmt/IOProxy/outputs

Method	POST
Description	Add the alarm output configuration of a specific digital channel.
Query	None.
Request	***XML_IOProxyOutputPort***
Response	***XML_ResponseStatus***

15.2.24 /ISAPI/ContentMgmt/IOProxy/outputs/<ID>

Operations about the alarm output configuration of a specific digital channel.

Request URL Definition

Table 15-36 GET /ISAPI/ContentMgmt/IOProxy/outputs/<ID>

Method	GET
Description	Get the alarm output parameters of a specific digital channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOProxyOutputPort*** Failed: ***XML_ResponseStatus***

Table 15-37 PUT /ISAPI/ContentMgmt/IOProxy/outputs/<ID>

Method	PUT
Description	Set the alarm output parameters of a specific digital channel.
Query	None.
Request	***XML_IOProxyOutputPort***
Response	***XML_ResponseStatus***

Table 15-38 DELETE /ISAPI/ContentMgmt/IOProxy/outputs/<ID>

Method	DELETE
Description	Delete the alarm output configuration of a specific digital channel.
Query	None.

Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel No.

15.2.25 /ISAPI/ContentMgmt/IOProxy/outputs/<ID>/status

Get the alarm output status of a specific digital channel.

Request URL Definition

Table 15-39 GET /ISAPI/ContentMgmt/IOProxy/outputs/<ID>/status

Method	GET
Description	Get the alarm output status of a specific digital channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOPortStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel No.

15.2.26 /ISAPI/ContentMgmt/IOProxy/outputs/<ID>/trigger

Trigger alarm output of a specific digital channel.

Request URL Definition

Table 15-40 PUT /ISAPI/ContentMgmt/IOProxy/outputs/<ID>/trigger

Method	PUT
Description	Trigger alarm output of a specific digital channel.
Query	None.
Request	***XML_IOPortData***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the digital channel No.

15.2.27 /ISAPI/ContentMgmt/logConfig

Get or set log parameters.

Request URL Definition

Table 15-41 GET /ISAPI/ContentMgmt/logConfig

Method	GET
Description	Get log parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_LogConfig*** Failed: ***XML_ResponseStatus***

Table 15-42 PUT /ISAPI/ContentMgmt/logConfig

Method	PUT
Description	Set log parameters.
Query	None.
Request	***XML_LogConfig***
Response	***XML_ResponseStatus***

15.2.28 /ISAPI/ContentMgmt/logConfig/capabilities

Get log configuration capability.

Request URL Definition

Table 15-43 GET /ISAPI/ContentMgmt/logConfig/capabilities

Method	GET
Description	Get log configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_LogConfig*** Failed: ***XML_ResponseStatus***

15.2.29 /ISAPI/ContentMgmt/logSearch

Search for log files.

Request URL Definition

Table 15-44 POST /ISAPI/ContentMgmt/logSearch

Method	POST
Description	Search for log files.
Query	None.
Request	***XML_CMSearchDescription***
Response	Succeeded: ***XML_CMSearchResult*** Failed: ***XML_ResponseStatus***

15.2.30 /ISAPI/ContentMgmt/logSearch/dataPackage

Export device log files.

Request URL Definition

Table 15-45 POST /ISAPI/ContentMgmt/logSearch/dataPackage

Method	POST
Description	Export device log files.
Query	None.
Request	***XML_CMSearchDataPackage***
Response	Succeeded: ***XML_CMSearchDataPackageResult*** Failed: ***XML_ResponseStatus***

15.2.31 /ISAPI/ContentMgmt/record/control/manualRefresh/channels/<ID>

Refresh the video mode manually before playback.

Request URL Definition

Table 15-46 PUT /ISAPI/ContentMgmt/record/control/manualRefresh/channels/<ID>

Method	PUT
Description	Refresh the video mode manually before playback.

Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.2.32 /ISAPI/ContentMgmt/record/control/manual/start/tracks/<ID>

Start manual recording.

Request URL Definition

Table 15-47 POST /ISAPI/ContentMgmt/record/control/manual/start/tracks/<ID>

Method	POST
Description	Start manual recording.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the recording channel ID.

15.2.33 /ISAPI/ContentMgmt/record/control/manual/stop/tracks/<ID>

Stop manual recording of a specific channel.

Request URL Definition

Table 15-48 POST /ISAPI/ContentMgmt/record/control/manual/stop/tracks/<ID>

Method	POST
Description	Stop manual recording of a specific channel.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the recording channel ID.

15.2.34 /ISAPI/ContentMgmt/record/profile

Get video track type.

Request URL Definition

Table 15-49 GET /ISAPI/ContentMgmt/record/profile

Method	GET
Description	Get video track type.
Query	None.
Request	None.
Response	Succeeded: ***XML_CMSRecordProfile*** Failed: ***XML_ResponseStatus***

15.2.35 /ISAPI/ContentMgmt/record/storageMounts

Set recording storage parameters.

Request URL Definition

Table 15-50 PUT /ISAPI/ContentMgmt/record/storageMounts

Method	PUT
Description	Set recording storage parameters, including root directory, size, and so on.
Query	None.
Request	***XML_MountList***
Response	***XML_ResponseStatus***

15.2.36 /ISAPI/ContentMgmt/record/tracks

Operations about recording schedule configuration.

Request URL Definition

Table 15-51 GET /ISAPI/ContentMgmt/record/tracks

Method	GET
Description	Get all recording schedules.

Query	None.
Request	None.
Response	Succeeded: ***XML_TrackList*** Failed: ***XML_ResponseStatus***

Table 15-52 PUT /ISAPI/ContentMgmt/record/tracks

Method	PUT
Description	Set all recording schedules.
Query	None.
Request	***XML_TrackList***
Response	***XML_ResponseStatus***

Table 15-53 POST /ISAPI/ContentMgmt/record/tracks

Method	POST
Description	Add a recording schedule.
Query	None.
Request	***XML_Track***
Response	***XML_ResponseStatus***

15.2.37 /ISAPI/ContentMgmt/record/tracks/<ID>

Operations about a recording schedule.

Request URL Definition

Table 15-54 GET /ISAPI/ContentMgmt/record/tracks/<ID>

Method	GET
Description	Get a recording schedule.
Query	None.
Request	None.
Response	Succeeded: ***XML_Track*** Failed: ***XML_ResponseStatus***

Table 15-55 PUT /ISAPI/ContentMgmt/record/tracks/<ID>

Method	PUT
Description	Set a recording schedule.
Query	None.
Request	***XML_Track***
Response	***XML_ResponseStatus***

Table 15-56 DELETE /ISAPI/ContentMgmt/record/tracks/<ID>

Method	DELETE
Description	Delete a recording schedule.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the recording schedule ID.

15.2.38 /ISAPI/ContentMgmt/record/tracks/<ID>/capabilities

Get the configuration capability of the recording schedule.

Request URL Definition

Table 15-57 GET /ISAPI/ContentMgmt/record/tracks/<ID>/capabilities

Method	GET
Description	Get the configuration capability of the recording schedule.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_Track*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the recording schedule ID.

15.2.39 /ISAPI/ContentMgmt/record/tracks/<ID>/dailyDistribution

Search recorded video files by date.

Request URL Definition

Table 15-58 POST /ISAPI/ContentMgmt/record/tracks/<ID>/dailyDistribution

Method	POST
Description	Search recorded video files by date.
Query	None.
Request	***XML_trackDailyParam***
Response	***XML_trackDailyDistribution***

Remarks

The <**ID**> in the request URL refers to the recording channel ID.

15.2.40 /ISAPI/ContentMgmt/search

Search for specified resources.

Request URL Definition

Table 15-59 GET or POST /ISAPI/ContentMgmt/search

Method	GET or POST
Description	Search for specific resources.
Query	None.
Request	***XML_CMSearchDescription***
Response	Succeeded: ***XML_CMSearchResult*** Failed: ***XML_ResponseStatus***

Example

Sample Code for Searching Video Files Stored in Device

```
POST /ISAPI/ContentMgmt/search HTTP/1.1
Host: 10.17.132.49
Content-Length: 493
Connection: Keep-Alive
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e7a46474e305a454d5445365a4445314e6a51345a54413d",
uri="/ISAPI/ContentMgmt/search",
```

```
cnonce="ce22590094d2f2bb352fc3c4cd2a1ca3",
nc=00000019,
response="ad6f2c23636f25c6db5911a113375ea9",
qop="auth"

<?xml version="1.0" encoding="utf-8"?>
<CMSearchDescription>
 <searchID>C77384AD-66A0-0001-E7C2-1151F04F90B0</searchID>
 <trackIDList>
  <trackID>101</trackID>
 </trackIDList>
 <timeSpanList>
  <timeSpan>
   <startTime>2017-03-13T16:00:00Z</startTime>
   <endTime>2017-03-16T15:59:59Z</endTime>
  </timeSpan>
 </timeSpanList>
 <maxResults>40</maxResults>
 <searchResultPostion>0</searchResultPostion>
 <metadataList>
  <metadataDescriptor>//recordType.meta.std-cgi.com</metadataDescriptor>
 </metadataList>
</CMSearchDescription>

HTTP/1.1 200 OK
Date: Wed, 15 Mar 2017 09:40:02 GMT
Connection: close
Content-Length: 1649
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<CMSearchResult version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <searchID>{C77384AD-66A0-0001-E7C2-1151F04F90B0}</searchID>
 <responseStatus>true</responseStatus>
 <responseStatusStrg>OK</responseStatusStrg>
 <numOfMatches>29</numOfMatches>
 <matchList>
  <searchMatchItem>
   <sourceID>{0000000000-0000-0000-0000-000000000000}</sourceID>
   <trackID>101</trackID>
   <timeSpan>
    <startTime>2017-03-14T10:32:01Z</startTime>
    <endTime>2017-03-14T10:40:42Z</endTime>
   </timeSpan>
   <mediaSegmentDescriptor>
    <contentType>video</contentType>
    <codecType>H.264-BP</codecType>
    <playbackURI>rtsp://10.17.132.49/Streaming/tracks/101/?
starttime=20170314T103201Z&amp;endtime=20170314T104042Z&amp;name=ch01_08000000016000000&amp;size
=260358144</playbackURI>
   </mediaSegmentDescriptor>
   <metadataMatches>
```

```
      <metadataDescriptor>recordType.meta.isapi.com/timing</metadataDescriptor>
     </metadataMatches>
    </searchMatchItem>
    <searchMatchItem>
     <sourceID>{0000000000-0000-0000-0000-000000000000}</sourceID>
     <trackID>101</trackID>
     <timeSpan>
      <startTime>2017-03-14T10:40:42Z</startTime>
      <endTime>2017-03-14T10:53:14Z</endTime>
     </timeSpan>
     <mediaSegmentDescriptor>
      <contentType>video</contentType>
      <codecType>H.264-BP</codecType>
      <playbackURI>rtsp://10.17.132.49/Streaming/tracks/101/?
starttime=20170314T104042Z&amp;endtime=20170314T105314Z&amp;name=ch01_08000000017000000&amp;size
=260603904</playbackURI>
     </mediaSegmentDescriptor>
     <metadataMatches>
      <metadataDescriptor>recordType.meta.isapi.com/timing</metadataDescriptor>
     </metadataMatches>
    </searchMatchItem>
   </matchList>
</CMSearchResult>
```

15.2.41 /ISAPI/ContentMgmt/search/profile

Get video search conditions.

Request URL Definition

Table 15-60 GET /ISAPI/ContentMgmt/search/profile

Method	GET
Description	Get video search conditions.
Query	None.
Request	None.
Response	Succeeded: ***XML_CMSearchProfile*** Failed: ***XML_ResponseStatus***

15.2.42 /ISAPI/ContentMgmt/security/logSearch

Search for security logs.

Request URL Definition

Table 15-61 POST /ISAPI/ContentMgmt/security/logSearch

Method	POST
Description	Search for security logs.
Query	None.
Request	***XML_CMSearchDescription***
Response	Succeeded: ***XML_CMSearchResult*** Failed: ***XML_ResponseStatus***

15.2.43 /ISAPI/ContentMgmt/SmartSearch

Search for video files by VCA event.

Request URL Definition

Table 15-62 POST /ISAPI/ContentMgmt/SmartSearch

Method	POST
Description	Search for video files by VCA event.
Query	None.
Request	***XML_SmartSearchDescription***
Response	***XML_SmartSearchResult***

15.2.44 /ISAPI/ContentMgmt/SmartSearch/capabilities

Get capability of searching videos by VCA event.

Request URL Definition

Table 15-63 GET /ISAPI/ContentMgmt/SmartSearch/capabilities

Method	GET
Description	Get capability of searching videos by VCA event.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_SmartSearchDescription***

	Failed: ***XML_ResponseStatus***

15.2.45 /ISAPI/ContentMgmt/Storage/ExtraInfo

Operations about the configuration for storing additional information.

Request URL Definition

Table 15-64 GET /ISAPI/ContentMgmt/Storage/ExtraInfo

Method	GET
Description	Get the parameters for storing additional information.
Query	None.
Request	None.
Response	Succeeded: ***XML_ExtraInfo*** Failed: ***XML_ResponseStatus***

Table 15-65 PUT /ISAPI/ContentMgmt/Storage/ExtraInfo

Method	PUT
Description	Set the parameters for storing additional information.
Query	None.
Request	***XML_ExtraInfo***
Response	***XML_ResponseStatus***

15.2.46 /ISAPI/ContentMgmt/Storage/ExtraInfo/capabilities

Get the capability of storing additional information.

Request URL Definition

Table 15-66 GET /ISAPI/ContentMgmt/Storage/ExtraInfo/capabilities

Method	GET
Description	Get the capability of storing additional information.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_ExtraInfo*** Failed: ***XML_ResponseStatus***

15.2.47 /ISAPI/ContentMgmt/Storage/hdd

Get configuration parameters of all HDDs.

Request URL Definition

Table 15-67 GET /ISAPI/ContentMgmt/Storage/hdd

Method	GET
Description	Get configuration parameters of all HDDs.
Query	None.
Request	None.
Response	Succeeded: ***XML_hddList*** Failed: ***XML_ResponseStatus***

15.2.48 /ISAPI/ContentMgmt/Storage/hdd/<ID>

Get and set parameters for a specific HDD.

Request URL Definition

Table 15-68 GET /ISAPI/ContentMgmt/Storage/hdd/<ID>

Method	GET
Description	Get parameters for a specific HDD.
Query	None.
Request	None.
Response	Succeeded: ***XML_hdd*** Failed: ***XML_ResponseStatus***

Table 15-69 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>

Method	PUT
Description	Set parameters for a specific HDD.
Query	None.
Request	***XML_hdd***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD ID.

15.2.49 /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/pause

Pause checking bad sectors of a HDD.

Request URL Definition

Table 15-70 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/pause

Method	PUT
Description	Pause checking bad sectors of a HDD.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD No.

15.2.50 /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/resume

Resume checking dad sectors of a HDD.

Request URL Definition

Table 15-71 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/resume

Method	PUT
Description	Resume checking dad sectors of a HDD.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD No.

15.2.51 /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/start

Start checking bad sectors of a HDD.

Request URL Definition

Table 15-72 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/start

Method	PUT
Description	Start checking bad sectors of a HDD.
Query	None.
Request	***XML_BadSectorsTest***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD No.

15.2.52 /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/status

Get bad sector checking status of a HDD.

Request URL Definition

Table 15-73 GET /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/status

Method	GET
Description	Get bad sector checking status of a HDD.
Query	None.
Request	None.
Response	Succeeded: ***XML_BadSectorsTestStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD No.

15.2.53 /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/stop

Stop checking bad sectors of a HDD.

Request URL Definition

Table 15-74 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/BadSectorsTest/stop

Method	PUT
Description	Stop checking bad sectors of a HDD.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD No.

15.2.54 /ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptFormat?format=json

Format an encrypted HDD.

Request URL Definition

Table 15-75 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptFormat?format=json

Method	PUT
Description	Format an encrypted HDD.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **format**: determine the format of request or response message.
Request	***JSON_EncryptFormat***
Response	***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD ID.

15.2.55 /ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptVerfy?format=json

Verify the HDD encryption password.

Request URL Definition

Table 15-76 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/encryptVerfy?format=json

Method	PUT
Description	Verify the HDD encryption password.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **format**: determine the format of request or response message.
Request	***JSON_EncryptVerfy***
Response	***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD ID.

15.2.56 /ISAPI/ContentMgmt/Storage/hdd/<ID>/formatStatus

Get the formatting status of a specific HDD.

Request URL Definition

Table 15-77 GET /ISAPI/ContentMgmt/Storage/hdd/<ID>/formatStatus

Method	GET
Description	Get the formatting status of a specific HDD.
Query	None.
Request	None.
Response	Succeeded: ***XML_formatStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD ID.

15.2.57 /ISAPI/ContentMgmt/Storage/hdd/<ID>/format?formatType=

Format a specific HDD according to the specified formatting type. This URL is only available for SD card.

Request URL Definition

Table 15-78 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/format?formatType=

Method	PUT
Description	Format a specific HDD according to the specified formatting type.
Query	**formatType**: formatting type, the available values are "EXT4" and "FAT32". But if you adopt the default formatting type "FAT32", this query parameter is not required in the URL.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD ID.

15.2.58 /ISAPI/ContentMgmt/Storage/hdd/SMARTTest/config

Operations about the configuration of HDD SMART status detection.

Request URL Definition

Table 15-79 GET /ISAPI/ContentMgmt/Storage/hdd/SMARTTest/config

Method	GET
Description	Get the parameters of HDD SMART status detection.
Query	None.
Request	None.
Response	Succeeded: ***XML_SMARTTestConfig*** Failed: ***XML_ResponseStatus***

Table 15-80 PUT /ISAPI/ContentMgmt/Storage/hdd/SMARTTest/config

Method	PUT
Description	Set the parameters of HDD SMART status detection.
Query	None.
Request	***XML_SMARTTestConfig***
Response	***XML_ResponseStatus***

15.2.59 /ISAPI/ContentMgmt/Storage/hdd/<ID>/SMARTTest/start

Start checking HDD status.

Request URL Definition

Table 15-81 PUT /ISAPI/ContentMgmt/Storage/hdd/<ID>/SMARTTest/start

Method	PUT
Description	Start checking HDD status.
Query	None.
Request	***XML_HDDSMARTTest***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD No.

15.2.60 /ISAPI/ContentMgmt/Storage/hdd/<ID>/SMARTTest/status

Get HDD checking status.

Request URL Definition

Table 15-82 GET /ISAPI/ContentMgmt/Storage/hdd/<ID>/SMARTTest/status

Method	GET
Description	Get HDD checking status.
Query	None.
Request	None.
Response	Succeeded: ***XML_SMARTTestStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the HDD No.

15.2.61 /ISAPI/ContentMgmt/Storage/hdd/capabilities

Get HDD management capability.

Request URL Definition

Table 15-83 GET /ISAPI/ContentMgmt/Storage/hdd/capabilities

Method	GET
Description	Get HDD management capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_hddList*** Failed: ***XML_ResponseStatus***

15.2.62 /ISAPI/ContentMgmt/Storage/hdd/format

Format all HDDs.

Request URL Definition

Table 15-84 PUT /ISAPI/ContentMgmt/Storage/hdd/format

Method	PUT
Description	Format all HDDs.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.2.63 /ISAPI/ContentMgmt/Storage/hdd/specifyHddFormat?format=json

Specify multiple HDDs to be formatted.

Request URL Definition

Table 15-85 PUT /ISAPI/ContentMgmt/Storage/hdd/specifyHddFormat?format=json

Method	PUT
Description	Specify multiple HDDs to format.
Query	**format**: determine the format of request or response message.
Request	***JSON_HddFormatList***
Response	***JSON_ResponseStatus***

15.2.64 /ISAPI/ContentMgmt/Storage/quota

Get parameters of all HDD quotas.

Request URL Definition

Table 15-86 GET /ISAPI/ContentMgmt/Storage/quota

Method	GET
Description	Get parameters of all HDD quotas.
Query	None.
Request	None.
Response	Succeeded: ***XML_diskQuota*** Failed: ***XML_ResponseStatus***

15.3 /ISAPI/Event

15.3.1 /ISAPI/Event/capabilities

Get the device event capability set.

Request URL Definition

Table 15-87 GET /ISAPI/Event/capabilities

Method	GET
Description	Get the device event capability set.
Query	None.

Request	None.
Response	Succeeded: ***XML_EventCap*** Failed: ***XML_ResponseStatus***

15.3.2 /ISAPI/Event/channels/<ID>/capabilities

Get event capabilities supported by the channel.

Request URL Definition

Table 15-88 GET /ISAPI/Event/channels/<ID>/capabilities

Method	GET
Description	Get event capabilities supported by the channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_ChannelEventCap*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the URL refers to the channel ID.

15.3.3 /ISAPI/Event/IOT/channels/<ID>/capabilities?format=json

Get the event capabilities supported by IoT device channel.

Request URL Definition

Table 15-89 GET /ISAPI/Event/IOT/channels/<ID>/capabilities?format=json

Method	GET
Description	Get the event capabilities supported by IoT device channel.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_IOTChannelEventCap*** Filed: ***JSON_ResponseStatus***

15.3.4 /ISAPI/Event/notification/alertStream

Get the uploaded heartbeat or alarm/event information.

Request URL Definition

Table 15-90 GET /ISAPI/Event/notification/alertStream

Method	GET
Description	Get the heartbeat or uploaded alarm/event information.
Query	None.
Request	None.
Response	Option 1: ***XML_EventNotificationAlert_AlarmEventInfo*** or ***XML_EventNotificationAlert_HeartbeatInfo*** Option 2: ***JSON_EventNotificationAlert_Alarm/EventInfo*** **Note** The messages here only show the format of alarm/event information to be uploaded. For details, refer to the corresponding alarm/event configuration chapters.

Remarks

- After calling this URL, a persistent connection is set up between the device and the platform, and the alarm or event information will be uploaded from device continuously once the alarm is triggered or event occurred.
- You can check if the XML response message is the heartbeat information according to the nodes <**eventType**> and <**eventState**>. If the values of these two node are "videoloss" and "inactive", respectively, the returned message is the heartbeat information.

15.3.5 /ISAPI/Event/notification/httpHosts

Get or set parameters of all listening servers, add a listening server, and delete all listening servers.

Request URL Definition

Table 15-91 GET /ISAPI/Event/notification/httpHosts

Method	GET
Description	Get parameters of all listening servers.

Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode.
Request	None.
Response	Succeeded: ***XML_HttpHostNotificationList*** Failed: ***XML_ResponseStatus***

Table 15-92 PUT /ISAPI/Event/notification/httpHosts

Method	PUT
Description	Set parameters of all listening servers.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode.
Request	***XML_HttpHostNotificationList***
Response	***XML_ResponseStatus***

Table 15-93 POST /ISAPI/Event/notification/httpHosts

Method	POST
Description	Add a listening server.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode.
Request	***XML_HttpHostNotification***
Response	***XML_ResponseStatus***

Table 15-94 DELETE /ISAPI/Event/notification/httpHosts

Method	DELETE
Description	Delete all listening servers.

Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.3.6 /ISAPI/Event/notification/httpHosts/<ID>/test

Check if the listening server is working normally.

Request URL Definition

Table 15-95 POST /ISAPI/Event/notification/httpHosts/<ID>/test

Method	POST
Description	Check if the listening server is working normally.
Query	None.
Request	***XML_HttpHostNotification***
Response	Succeeded: ***XML_HttpHostTestResult*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the listening server ID.

15.3.7 /ISAPI/Event/notification/httpHosts/capabilities

Get the configuration capabilities of all listening servers.

Request URL Definition

Table 15-96 GET /ISAPI/Event/notification/httpHosts/capabilities

Method	GET
Description	Get the configuration capabilities of all listening servers.
Query	None.
Request	None.
Response	Succeeded: ***XML_HttpHostNotificationCap*** Failed: ***XML_ResponseStatus***

15.3.8 /ISAPI/Event/notification/subscribeEvent

Subscribe events/alarms in arming mode.

Request URL Definition

Table 15-97 POST /ISAPI/Event/notification/subscribeEvent

Method	POST
Description	Subscribe events/alarms in arming mode.
Query	None.
Request	***XML_SubscribeEvent***
Response	Succeeded: ***XML_SubscribeEventResponse*** or ***XML_EventNotificationAlert_SubscriptionHeartbeat*** or *Alarm/Event Details Message* Failed: ***XML_ResponseStatus***

Remarks

The ***XML_EventNotificationAlert_SubscriptionHeartbeat*** and *Alarm/Event Details Message* is uploaded repeatedly, and the default time interval of uploading heartbeat information is 30s.

15.3.9 /ISAPI/Event/notification/subscribeEvent/<ID>

Operations about configuring alarm/event subscription parameters.

Request URL Definition

Table 15-98 GET /ISAPI/Event/notification/subscribeEvent/<ID>

Method	GET
Description	Get alarm/event subscription parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_SubscribeEvent*** Failed: ***XML_ResponseStatus***

Table 15-99 PUT /ISAPI/Event/notification/subscribeEvent/<ID>

Method	PUT
Description	Set alarm/event subscription parameters.

Query	None.
Request	***XML_SubscribeEvent***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the subscription No. which is returned by the device. After the persistent connection for receiving events or alarms in arming mode is closed, the device will release the resource used by the <**ID**>.

15.3.10 /ISAPI/Event/notification/subscribeEventCap

Get event/alarm subscription capability.

Request URL Definition

Table 15-100 GET /ISAPI/Event/notification/subscribeEventCap

Method	GET
Description	Get event/alarm subscription capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_SubscribeEventCap*** Failed: ***XML_ResponseStatus***

15.3.11 /ISAPI/Event/notification/unSubscribeEvent

Cancel subscribing alarm/event.

Request URL Definition

Table 15-101 PUT /ISAPI/Event/notification/unSubscribeEvent

Method	PUT
Description	Cancel subscribing alarm/event.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.3.12 /ISAPI/Event/schedules/<EventType>/<ID>

Operations about arming schedule of specified event type.

Request URL Definition

Table 15-102 GET /ISAPI/Event/schedules/<EventType>/<ID>

Method	GET
Description	Get the arming schedule of specified event type.
Query	None.
Request	None.
Response	Succeeded: ***XML_Schedule*** Failed: ***XML_ResponseStatus***

Table 15-103 PUT /ISAPI/Event/schedules/<EventType>/<ID>

Method	PUT
Description	Set the arming schedule of specified event type.
Query	None.
Request	***XML_Schedule***
Response	***XML_ResponseStatus***

Remarks

The <EventType> in the URL is defined as the specified event type.
The <ID> in the URL is defined as the ID of channel, which is triggered by alarm.

15.3.13 /ISAPI/Event/triggers/hdBadBlock

Operations about the linkage configuration of the HDD bad sector detection.

Request URL Definition

Table 15-104 GET /ISAPI/Event/triggers/hdBadBlock

Method	GET
Description	Get the linkage parameters of the HDD bad sector detection.
Query	None.

Request	None.
Response	Succeeded: ***XML_EventTrigger*** Failed: ***XML_ResponseStatus***

Table 15-105 PUT /ISAPI/Event/triggers/hdBadBlock

Method	PUT
Description	Set the linkage parameters of the HDD bad sector detection.
Query	None.
Request	***XML_EventTrigger***
Response	***XML_ResponseStatus***

15.3.14 /ISAPI/Event/triggers/hdImpact

Operations about the linkage configuration of the HDD impact detection.

Request URL Definition

Table 15-106 GET /ISAPI/Event/triggers/hdImpact

Method	GET
Description	Get the linkage parameters of the HDD impact detection.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventTrigger*** Failed: ***XML_ResponseStatus***

Table 15-107 PUT /ISAPI/Event/triggers/hdImpact

Method	PUT
Description	Set the linkage parameters of the HDD impact detection.
Query	None.
Request	***XML_EventTrigger***
Response	***XML_ResponseStatus***

15.3.15 /ISAPI/Event/triggers/highHDTemperature

Operations about the linkage configuration of the HDD high temperature detection.

Request URL Definition

Table 15-108 GET /ISAPI/Event/triggers/highHDTemperature

Method	GET
Description	Get the linkage parameters of the HDD high temperature detection.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventTrigger*** Failed: ***XML_ResponseStatus***

Table 15-109 PUT /ISAPI/Event/triggers/highHDTemperature

Method	PUT
Description	Set the linkage parameters of the HDD high temperature detection.
Query	None.
Request	***XML_EventTrigger***
Response	***XML_ResponseStatus***

15.3.16 /ISAPI/Event/triggers/lowHDTemperature

Operations about the linkage configuration of the HDD low temperature detection.

Request URL Definition

Table 15-110 GET /ISAPI/Event/triggers/lowHDTemperature

Method	GET
Description	Get the linkage parameters of the HDD low temperature detection.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventTrigger*** Failed: ***XML_ResponseStatus***

Table 15-111 PUT /ISAPI/Event/triggers/lowHDTemperature

Method	PUT
Description	Set the linkage parameters of the HDD low temperature detection.
Query	None.

Request	***XML_EventTrigger***
Response	***XML_ResponseStatus***

15.3.17 /ISAPI/Event/triggers/severeHDFailure

Operations about the linkage configuration of the HDD severe fault detection.

Request URL Definition

Table 15-112 GET /ISAPI/Event/triggers/severeHDFailure

Method	GET
Description	Get the linkage parameters of the HDD severe fault detection.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventTrigger*** Failed: ***XML_ResponseStatus***

Table 15-113 PUT /ISAPI/Event/triggers/severeHDFailure

Method	PUT
Description	Set the linkage parameters of the HDD severe fault detection.
Query	None.
Request	***XML_EventTrigger***
Response	***XML_ResponseStatus***

15.3.18 /ISAPI/Event/triggers/<ID>

Operations about linkage action configuration of an alarm.

Request URL Definition

Table 15-114 GET /ISAPI/Event/triggers/<ID>

Method	GET
Description	Get the linkage actions of an alarm.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventTrigger***

	Failed: ***XML_ResponseStatus***

Table 15-115 PUT /ISAPI/Event/triggers/<ID>

Method	PUT
Description	Set the linkage actions for an alarm.
Query	None.
Request	***XML_EventTrigger***
Response	***XML_ResponseStatus***

Table 15-116 DELETE /ISAPI/Event/triggers/<ID>

Method	DELETE
Description	Delete the linkage actions of an alarm.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL is defined as the No. of the alarm triggered channel. For example, if the No. of the video input channel triggered by face capture alarm is 1, the <**ID**> is "faceSnap-1".

15.3.19 /ISAPI/Event/triggers/<ID>/notifications

Operations about configurations of alarm/event linkage actions.

Request URL Definition

Table 15-117 GET /ISAPI/Event/triggers/<ID>/notifications

Method	GET
Description	Get the configuration parameters of alarm/event linkage actions.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventTriggerNotificationList*** Failed: ***XML_ResponseStatus***

Table 15-118 PUT /ISAPI/Event/triggers/<ID>/notifications

Method	PUT
Description	Set the configuration parameters for alarm/event linkage actions.
Query	None.
Request	***XML_EventTriggerNotificationList***
Response	***XML_ResponseStatus***

Table 15-119 DELETE /ISAPI/Event/triggers/<ID>/notifications

Method	DELETE
Description	Delete the configuration parameters of alarm/event linkage actions.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to No. of alarm triggered channel.

15.3.20 /ISAPI/Event/triggersCap/IOT

Get the alarm linkage configuration capability of IoT device.

Request URL Definition

Table 15-120 GET /ISAPI/Event/triggersCap/IOT

Method	GET
Description	Get the alarm linkage configuration capability of IoT device.
Query	None.
Request	None.
Response	***XML_IOTTriggersCap***

15.3.21 /ISAPI/Event/triggers/notifications/AudioAlarm?format=json

Operations about audible warning configuration.

Request URL Definition

Table 15-121 GET /ISAPI/Event/triggers/notifications/AudioAlarm?format=json

Method	GET
Description	Get parameters of audible warning.
Query	**format**: determine the format of request or response message. **alarmType**: alarm type, including "behavior"-behavior analysis, "thermometry"-thermometry, "dynamicFire"-fire detection, "smokingMode"-smoke detection.
Request	None.
Response	***JSON_AudioAlarm***

Note

For example, if you want to get the audible warning parameters of thermometry, the request URL is: GET /ISAPI/Event/triggers/notifications/AudioAlarm?format=json&alarmType=thermometry

Table 15-122 PUT /ISAPI/Event/triggers/notifications/AudioAlarm?format=json

Method	PUT
Description	Set parameters of audible warning.
Query	**format**: determine the format of request or response message.
Request	***JSON_AudioAlarm***
Response	***JSON_ResponseStatus***

15.3.22 /ISAPI/Event/triggers/notifications/AudioAlarm/capabilities?format=json

Get audible warning configuration capability.

Request URL Definition

Table 15-123 GET /ISAPI/Event/triggers/notifications/AudioAlarm/capabilities?format=json

Method	GET
Description	Get audible warning configuration capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_AudioAlarmCap***

15.3.23 /ISAPI/Event/triggers/notifications/whiteLightAlarm?format=json

Operations about configuration of supplement light alarm linkage.

Request URL Definition

Table 15-124 GET /ISAPI/Event/triggers/notifications/whiteLightAlarm?format=json

Method	GET
Description	Get parameters of supplement light alarm linkage.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_WhiteLightAlarm***

Table 15-125 PUT /ISAPI/Event/triggers/notifications/whiteLightAlarm?format=json

Method	PUT
Description	Set parameters of supplement light alarm linkage.
Query	**format**: determine the format of request or response message.
Request	***JSON_WhiteLightAlarm***
Response	

15.3.24 /ISAPI/Event/triggers/notifications/whiteLightAlarm/capabilities?format=json

Get the configuration capability of supplement light alarm linkage.

Request URL Definition

Table 15-126 GET /ISAPI/Event/triggers/notifications/whiteLightAlarm/capabilities?format=json

Method	GET
Description	Get the configuration capability of supplement light alarm linkage.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_WhiteLightAlarmCap***

15.3.25 /ISAPI/Event/triggersCap

Get configuration capability of alarm linkage actions.

Request URL Definition

Table 15-127 GET /ISAPI/Event/triggersCap

Method	GET
Description	Get configuration capability of alarm linkage actions.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventTriggersCap*** Failed: ***XML_ResponseStatus***

15.3.26 http://ipAddress:portNo/url

Listening sever sends alarm information to alarm center.

Request URL Definition

Table 15-128 POST http://ipAddress:portNo/url

Method	POST
Description	Listening sever sends alarm information to alarm center.
Query	None.
Request	None.
Response	Succeeded: ***XML_EventNotificationAlert_AlarmEventInfo*** or ***JSON_EventNotificationAlert_Alarm/EventInfo*** Failed: ***XML_ResponseStatus***

Remarks

The default port number in the URL is 80, so the URL without port No. is also valid.

15.4 /ISAPI/Image

15.4.1 /ISAPI/Image/channels

Operations about image configuration of all channels.

Request URL Definition

Table 15-129 GET /ISAPI/Image/channels

Method	GET
Description	Get image parameters of all channels.
Query	None.
Request	None.
Response	Succeeded: ***XML_ImageChannellist*** Failed: ***XML_ResponseStatus***

Table 15-130 PUT /ISAPI/Image/channels

Method	GET
Description	Set image parameters of all channels.
Query	None.
Request	***XML_ImageChannellist***
Response	***XML_ResponseStatus***

15.4.2 /ISAPI/Image/channels/<ID>

Operations about image configuration of a specific channel.

Request URL Definition

Table 15-131 GET /ISAPI/Image/channels/<ID>

Method	GET
Description	Get image parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_ImageChannel***

	Failed: ***XML_ResponseStatus***

Table 15-132 PUT /ISAPI/Image/channels/<ID>

Method	PUT
Description	Set image parameters of a specific channel.
Query	None.
Request	***XML_ImageChannel***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.3 /ISAPI/Image/channels/<ID>/BLC

Operations about BLC (Blacklist Compensation) configuration of a specific channel.

Request URL Definition

Table 15-133 GET /ISAPI/Image/channels/<ID>/BLC

Method	GET
Description	Get BLC (Blacklist Compensation) parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_BLC*** Failed: ***XML_ResponseStatus***

Table 15-134 PUT /ISAPI/Image/channels/<ID>/BLC

Method	PUT
Description	Set BLC (Blacklist Compensation) parameters of a specific channel.
Query	None.
Request	***XML_BLC***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.4 /ISAPI/Image/channels/<ID>/capabilities

Get image configuration capability of a specific channel.

Request URL Definition

Table 15-135 GET /ISAPI/Image/channels/<ID>/capabilities

Method	GET
Description	Get image configuration capability of a specific channel.
Query	None.
Request	None.
Response	***XML_Cap_ImageChannel***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.5 /ISAPI/Image/channels/<ID>/capturemode

Operations about video input mode configuration of a specific channel.

Request URL Definition

Table 15-136 GET /ISAPI/Image/channels/<ID>/capturemode

Method	GET
Description	Get video input modes of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_CaptureMode*** Failed: ***XML_ResponseStatus***

Table 15-137 PUT /ISAPI/Image/channels/<ID>/capturemode

Method	PUT
Description	Set video input mode of a specific channel.
Query	None.
Request	***XML_CaptureMode***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.6 /ISAPI/Image/channels/<ID>/color

Operations about the image adjustment parameters of a specific channel.

Request URL Definition

Table 15-138 GET /ISAPI/Image/channels/<ID>/color

Method	GET
Description	Get the image adjustment parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Color*** Failed: ***XML_ResponseStatus***

Table 15-139 PUT /ISAPI/Image/channels/<ID>/color

Method	PUT
Description	Set the image adjustment parameters of a specific channel.
Query	None.
Request	***XML_Color***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.7 /ISAPI/Image/channels/<ID>/color/capabilities

Get the image adjustment capability of a specified channel.

Request URL Definition

Table 15-140 GET /ISAPI/Image/channels/<ID>/color/capabilities

Method	GET
Description	Get the image adjustment capability of a specified channel.
Query	None.

Request	None.
Response	***XML_Cap_Color***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.8 /ISAPI/Image/channels/<ID>/corridor

Operations about image rotate mode configuration of a specific channel.

Request URL Definition

Table 15-141 GET /ISAPI/Image/channels/<ID>/corridor

Method	GET
Description	Get image rotate mode of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_corridor*** Failed: ***XML_ResponseStatus***

Table 15-142 PUT /ISAPI/Image/channels/<ID>/corridor

Method	PUT
Description	Get image rotate mode of a specific channel.
Query	None.
Request	***XML_corridor***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.9 /ISAPI/Image/channels/<ID>/dehaze

Operations about defog mode configuration of a specific channel.

Request URL Definition

Table 15-143 GET /ISAPI/Image/channels/<ID>/dehaze

Method	GET
Description	Get defog mode parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Dehaze*** Failed: ***XML_ResponseStatus***

Table 15-144 PUT /ISAPI/Image/channels/<ID>/dehaze

Method	PUT
Description	Set defog mode parameters of a specific channel.
Query	None.
Request	***XML_Dehaze***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.10 /ISAPI/Image/channels/<ID>/EPTZ

Get or set the e-PTZ configuration.

Request URL Definition

Table 15-145 GET /ISAPI/Image/channels/<ID>/EPTZ

Method	GET
Description	Get the e-PTZ parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_EPTZ*** Failed: ***XML_ResponseStatus***

Table 15-146 PUT /ISAPI/Image/channels/<ID>/EPTZ

Method	PUT
Description	Set the e-PTZ parameters.
Query	None.
Request	***XML_EPTZ***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.11 /ISAPI/Image/channels/<ID>/EPTZ/mode/capabilities?format=json

Get the capability of switching e-PTZ mode.

Request URL Definition

Table 15-147 GET /ISAPI/Image/channels/<ID>/EPTZ/mode/capabilities?format=json

Method	GET
Description	Get the capability of switching e-PTZ mode.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_EPTZModeCap*** Failed: ***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.12 /ISAPI/Image/channels/<ID>/EPTZ/mode?format=json

Get or set the configuration for switching e-PTZ mode.

Request URL Definition

Table 15-148 GET /ISAPI/Image/channels/<ID>/EPTZ/mode?format=json

Method	GET
Description	Get the parameters of switching e-PTZ mode.
Query	**format**: determine the format of request or response message.

Request	None.
Response	Succeeded: ***JSON_EPTZMode*** Failed: ***JSON_ResponseStatus***

Table 15-149 PUT /ISAPI/Image/channels/<ID>/EPTZ/mode?format=json

Method	PUT
Description	Set the parameters for switching e-PTZ mode.
Query	**format**: determine the format of request or response message.
Request	***JSON_EPTZMode***
Response	***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.13 /ISAPI/Image/channels/<ID>/exposure

Operations about exposure mode configuration of a specific channel.

Request URL Definition

Table 15-150 GET /ISAPI/Image/channels/<ID>/exposure

Method	GET
Description	Get the exposure mode of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Exposure*** Failed: ***XML_ResponseStatus***

Table 15-151 PUT /ISAPI/Image/channels/<ID>/exposure

Method	PUT
Description	Set the exposure mode of a specific channel.
Query	None.
Request	***XML_Exposure***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.14 /ISAPI/Image/channels/<ID>/focusConfiguration

Get or set the focus parameters of a specified channel.

Request URL Definition

Table 15-152 GET /ISAPI/Image/channels/<ID>/focusConfiguration

Method	GET
Description	Get the focus parameters of a specified channel.
Query	None.
Request	None.
Response	***XML_FocusConfiguration***

Table 15-153 PUT /ISAPI/Image/channels/<ID>/focusConfiguration

Method	PUT
Description	Set the focus parameters of a specified channel.
Query	None.
Request	***XML_FocusConfiguration***
Response	***XML_ResponseStatus***

15.4.15 /ISAPI/Image/channels/<ID>/focusConfiguration/capabilities

Get the focus configuration capability.

Request URL Definition

Table 15-154 GET /ISAPI/Image/channels/<ID>/focusConfiguration/capabilities

Method	GET
Description	Get the focus configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_FocusConfiguration*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.16 /ISAPI/Image/channels/<ID>/gain

Operations about gain configuration in exposure of a specific channel.

Request URL Definition

Table 15-155 GET /ISAPI/Image/channels/<ID>/gain

Method	GET
Description	Get gain parameters in exposure of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Gain*** Failed: ***XML_ResponseStatus***

Table 15-156 PUT /ISAPI/Image/channels/<ID>/gain

Method	PUT
Description	Set gain parameters in exposure of a specific channel.
Query	None.
Request	***XML_Gain***
Response	***XML_ResponseStatus***

Remarks

- The <**ID**> in the request URL refers to the channel ID.
- PUT method is only valid when the node <**ExposureType**> in the message ***XML_Exposure*** is set to "GainFirst".

15.4.17 /ISAPI/Image/channels/<ID>/imageCap

Get the image capability of a specific channel.

Request URL Definition

Table 15-157 GET /ISAPI/Image/channels/<ID>/imageCap

Method	GET
Description	Get the image capability of a specific channel.
Query	None.
Request	NULL.
Response	***XML_ImageCap***

15.4.18 /ISAPI/Image/channels/<ID>/ImageFlip

Operations about the image flipping status of a specific channel.

Request URL Definition

Table 15-158 GET /ISAPI/Image/channels/<ID>/ImageFlip

Method	GET
Description	Get the image flipping status of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_ImageFlip*** Failed: ***XML_ResponseStatus***

Table 15-159 PUT /ISAPI/Image/channels/<ID>/ImageFlip

Method	PUT
Description	Update the image flipping status of a specific channel.
Query	None.
Request	***XML_ImageFlip***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.19 /ISAPI/Image/channels/<ID>/imageMode/<ID>

Get the default configuration parameters of a specific image mode of a specific channel.

Request URL Definition

Table 15-160 GET /ISAPI/Image/channels/<ID>/imageMode/<ID>

Method	GET
Description	Get the default configuration parameters of a specific image mode of a specific channel.
Query	None.
Request	None.
Response	***XML_ImageMode***

Remarks

This function is not supported by the traffic camera.

15.4.20 /ISAPI/Image/channels/<ID>/imageModes

Get the default image mode parameters of a specific channel.

Request URL Definition

Table 15-161 GET /ISAPI/Image/channels/<ID>/imageModes

Method	GET
Description	Get the default image mode parameters of a specific channel.
Query	None.
Request	None.
Response	***XML_ImageModeList***

Remarks

- This API is used to get default image mode configuration parameters. For different scenes, you are recommended to set different image mode parameters for the device.
- The image mode is not supported by the traffic camera.

15.4.21 /ISAPI/Image/channels/<ID>/IrcutFilter

Operations about day/night auto switch configuration of a specific channel.

Request URL Definition

Table 15-162 GET /ISAPI/Image/channels/<ID>/IrcutFilter

Method	GET
Description	Get day/night auto switch parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_IrcutFilter*** Failed: ***XML_ResponseStatus***

Table 15-163 PUT /ISAPI/Image/channels/<ID>/IrcutFilter

Method	PUT
Description	Set day/night auto switch parameters of a specific channel.
Query	None.
Request	***XML_IrcutFilter***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.22 /ISAPI/Image/channels/<ID>/ISPMode

Operations about the day/night mode configuration of a specific channel.

Request URL Definition

Table 15-164 GET /ISAPI/Image/channels/<ID>/ISPMode

Method	GET
Description	Get the day/night mode parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_ISPMode*** Failed: ***XML_ResponseStatus***

Table 15-165 PUT /ISAPI/Image/channels/<ID>/ISPMode

Method	PUT
Description	Set the day/night mode parameters of a specific channel.
Query	None.
Request	***XML_ISPMode***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.23 /ISAPI/Image/channels/<ID>/lensDistortionCorrection

Get or set parameters of image distortion correction.

Request URL Definition

Table 15-166 GET /ISAPI/Image/channels/<ID>/lensDistortionCorrection

Method	GET
Description	Get parameters of image distortion correction.
Query	None.
Request	None.
Response	Succeeded: ***XML_LensDistortionCorrection*** Failed: ***XML_ResponseStatus***

Table 15-167 PUT /ISAPI/Image/channels/<ID>/lensDistortionCorrection

Method	PUT
Description	Set parameters of image distortion correction.
Query	None.
Request	***XML_LensDistortionCorrection***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel ID.

15.4.24 /ISAPI/Image/channels/<ID>/lensDistortionCorrection/capabilities

Get capability of image distortion correction.

Request URL Definition

Table 15-168 GET /ISAPI/Image/channels/<ID>/lensDistortionCorrection/capabilities

Method	GET
Description	Get capability of image distortion correction.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_LensDistortionCorrection*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel ID.

15.4.25 /ISAPI/Image/channels/<ID>/noiseReduce

Operations about 3D DNR (Digital Noise Reduction) configuration in auto mode of a specific channel.

Request URL Definition

Table 15-169 GET /ISAPI/Image/channels/<ID>/noiseReduce

Method	GET
Description	Get 3D DNR (Digital Noise Reduction) parameters in auto mode of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_NoiseReduce*** Failed: ***XML_ResponseStatus***

Table 15-170 PUT /ISAPI/Image/channels/<ID>/noiseReduce

Method	PUT
Description	Set 3D DNR (Digital Noise Reduction) parameters in auto mode of a specific channel.

Query	None.
Request	***XML_NoiseReduce***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.26 /ISAPI/Image/channels/<ID>/Palettes

Get or set the palettes parameters.

Request URL Definition

Table 15-171 GET /ISAPI/Image/channels/<ID>/Palettes

Method	GET
Description	Get the palettes configuration parameters.
Query	None.
Request	None.
Response	***XML_Palettes***

Table 15-172 PUT /ISAPI/Image/channels/<ID>/Palettes

Method	PUT
Description	Set the palettes parameters.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.4.27 /ISAPI/Image/channels/<ID>/powerLineFrequency

Operations about image standard configuration of a specific channel.

Request URL Definition

Table 15-173 GET /ISAPI/Image/channels/<ID>/powerLineFrequency

Method	GET
Description	Get image standard parameters of a specific channel.

Query	None.
Request	None.
Response	Succeeded: ***XML_powerLineFrequency*** Failed: ***XML_ResponseStatus***

Table 15-174 PUT /ISAPI/Image/channels/<ID>/powerLineFrequency

Method	PUT
Description	Set image standard parameters of a specific channel.
Query	None.
Request	***XML_powerLineFrequency***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.28 /ISAPI/Image/channels/<ID>/regionalFocus

Focus on a specific region during live view.

Request URL Definition

Table 15-175 GET /ISAPI/Image/channels/<ID>/regionalFocus

Method	PUT
Description	Focus on a specific region during live view.
Query	None.
Request	***XML_RegionalFocus***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the URL is the channel ID.

15.4.29 /ISAPI/Image/channels/<ID>/reset

Reset the image parameters of a specific channel.

Request URL Definition

Table 15-176 PUT /ISAPI/Image/channels/<ID>/reset

Method	PUT
Description	Reset the image parameters of a specific channel.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.30 /ISAPI/Image/channels/<ID>/restore

Restore the image parameters of a specific channel to default settings.

Request URL Definition

Table 15-177 PUT /ISAPI/Image/channels/<ID>/restore

Method	PUT
Description	Restore the image parameters of a specific channel to default settings.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.31 /ISAPI/Image/channels/<ID>/sharpness

Operations about the sharpness parameters of s specific channel.

Request URL Definition

Table 15-178 GET /ISAPI/Image/channels/<ID>/sharpness

Method	GET
Description	Get the sharpness parameters of s specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Sharpness*** Failed: ***XML_ResponseStatus***

Table 15-179 PUT /ISAPI/Image/channels/<ID>/sharpness

Method	PUT
Description	Set the sharpness parameters of s specific channel.
Query	None.
Request	***XML_Sharpness***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.32 /ISAPI/Image/channels/<ID>/shutter

Operations about shutter configuration in exposure of a specific channel.

Request URL Definition

Table 15-180 GET /ISAPI/Image/channels/<ID>/shutter

Method	GET
Description	Get shutter parameters in exposure of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Shutter*** Failed: ***XML_ResponseStatus***

Table 15-181 PUT /ISAPI/Image/channels/<ID>/shutter

Method	PUT
Description	Set shutter parameters in exposure of a specific channel.
Query	None.
Request	***XML_Shutter***
Response	***XML_ResponseStatus***

Remarks

- The <**ID**> in the request URL refers to the channel ID.
- PUT method is only valid when the node <**ExposureType**> in the message ***XML_Exposure*** is set to "ShutterFirst".

15.4.33 /ISAPI/Image/channels/<ID>/SupplementLight

Get or set supplement light parameters by channel.

Request URL Definition

Table 15-182 GET /ISAPI/Image/channels/<ID>/SupplementLight

Method	GET
Description	Get supplement light parameters by channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_SupplementLight*** Failed: ***XML_ResponseStatus***

Table 15-183 PUT /ISAPI/Image/channels/<ID>/SupplementLight

Method	PUT
Description	Set supplement light parameters by channel.
Query	None.
Request	***XML_SupplementLight***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.34 /ISAPI/Image/channels/<ID>/SupplementLight/capabilities

Get supplement light configuration capability by channel.

Request URL Definition

Table 15-184 GET /ISAPI/Image/channels/<ID>/SupplementLight/capabilities

Method	GET
Description	Get supplement light configuration capability by channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_SupplementLight*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.35 /ISAPI/Image/channels/<ID>/targetEnhancement

Get or set the target enhancement parameters.

Request URL Definition

Table 15-185 GET /ISAPI/Image/channels/<ID>/targetEnhancement

Method	GET
Description	Get the target enhancement parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_TargetEnhancement*** Failed: ***XML_ResponseStatus***

Table 15-186 PUT /ISAPI/Image/channels/<ID>/targetEnhancement

Method	PUT
Description	Set the target enhancement parameters.
Query	None.

Request	***XML_TargetEnhancement***
Response	***XML_ResponseStatus***

Remarks

- This URL is used in combination with URL ***/ISAPI/Image/channels/<ID>*** .
- The <ID> in the request URL refers to the channel No.

15.4.36 /ISAPI/Image/channels/<ID>/targetEnhancement/capabilities

Get the target enhancement capability.

Request URL Definition

Table 15-187 GET /ISAPI/Image/channels/<ID>/targetEnhancement/capabilities

Method	GET
Description	Get the target enhancement capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_TargetEnhancementCap*** Failed: ***XML_ResponseStatus***

Remarks

The <ID> in the request URL refers to the channel No.

15.4.37 /ISAPI/Image/channels/<ID>/tempRange

Operation about temperature range parameters of the specified channel.

Request URL Definition

Table 15-188 GET /ISAPI/Image/channels/<ID>/tempRange

Method	GET
Description	Get the temperature range parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_tempRange*** Failed: ***XML_ResponseStatus***

Table 15-189 PUT /ISAPI/Image/channels/<ID>/tempRange

Method	PUT
Description	Set the temperature range parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_tempRange*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.38 /ISAPI/Image/channels/<ID>/tempRange/capabilities

Get the temperature range configuration capability of a specified channel.

Request URL Definition

Table 15-190 GET

Method	GET
Description	Get the temperature range configuration capability of a specified channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_tempRange*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.4.39 /ISAPI/Image/channels/<ID>/WDR

Operations about the WRD (Wide Dynamic Range) configuration of a specific channel.

Request URL Definition

Table 15-191 GET /ISAPI/Image/channels/<ID>/WDR

Method	GET
Description	Get WRD (Wide Dynamic Range) parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_WDR*** Failed: ***XML_ResponseStatus***

Table 15-192 PUT /ISAPI/Image/channels/<ID>/WDR

Method	GET
Description	Set WRD (Wide Dynamic Range) parameters of a specific channel.
Query	None.
Request	***XML_WDR***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel ID.

15.4.40 /ISAPI/Image/channels/<ID>/whiteBalance

Operations about the white balance parameters of s specific channel.

Request URL Definition

Table 15-193 GET /ISAPI/Image/channels/<ID>/whiteBalance

Method	GET
Description	Get the white balance parameters of s specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_WhiteBalance*** Failed: ***XML_ResponseStatus***

Table 15-194 PUT /ISAPI/Image/channels/<ID>/whiteBalance

Method	PUT
Description	Set the white balance parameters of s specific channel.
Query	None.
Request	***XML_WhiteBalance***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.5 /ISAPI/SDT

15.5.1 /ISAPI/SDT/Management/capabilities?format=json

Get the intelligent management capability of the device.

Request URL Definition

Table 15-195 GET /ISAPI/SDT/Management/capabilities?format=json

Method	GET
Description	Get the intelligent management capability of the device to check the intelligent functions supported by the device.
Query	None.
Request	None.
Response	***JSON_Cap_IntelliManagement***

15.5.2 /ISAPI/SDT/Management/EventSearch?format=json

Search for event.

Request URL Definition

Table 15-196 POST /ISAPI/SDT/Management/EventSearch?format=json

Method	POST
Description	Search for event.
Query	**format**: determine the format of request or response message.

Request	***JSON_EventSearchCond***
Response	Succeeded: ***JSON_EventSearchResult*** Failed: ***JSON_ResponseStatus***

15.5.3 /ISAPI/SDT/Management/EventSearch/capabilities?format=json

Get the event search capability.

Request URL Definition

Table 15-197 GET /ISAPI/SDT/Management/EventSearch/capabilities?format=json

Method	GET
Description	Get the event search capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_EventSearchCap***

15.5.4 /ISAPI/SDT/Management/IntelligentSearch/export/stop?format=json

Stop exporting the VCA search result.

Request URL Definition

Table 15-198 PUT /ISAPI/SDT/Management/IntelligentSearch/export/stop?format=json

Method	PUT
Description	Stop exporting the VCA search result.
Query	**format**: determine the format of request or response message.
Request	***JSON_StopTaskCond***
Response	***JSON_ResponseStatus***

15.5.5 /ISAPI/SDT/Management/IntelligentSearch/export?format=json

Export the VCA search result.

Request URL Definition

Table 15-199 POST /ISAPI/SDT/Management/IntelligentSearch/export?format=json

Method	POST
Description	Export the VCA search result.
Query	**format**: determine the format of request or response message.
Request	***JSON_VCASearchExportCond***
Response	***JSON_VCASearchExportTaskInfo***

15.5.6 /ISAPI/SDT/Management/IntelligentSearch/export/progress?format=json&taskID=

Get the progress of exporting VCA search result.

Request URL Definition

Table 15-200 GET /ISAPI/SDT/Management/IntelligentSearch/export/progress?format=json&taskID=

Method	GET
Description	Get the progress of exporting VCA search result.
Query	**format**: determine the format of request or response message. **taskID**: the task ID of exporting intelligent search result, it is returned in ***JSON_VCASearchExportTaskInfo*** .
Request	None.
Response	***JSON_VCASearchExportProgress***

15.5.7 /ISAPI/SDT/Management/IntelligentSearch/capabilities?format=json

Get the VCA search capabilities.

Request URL Definition

Table 15-201 GET /ISAPI/SDT/Management/IntelligentSearch/capabilities?format=json

Method	GET
Description	Get VCA search capabilities.
Query	**format**: determine the format of request or response message.

Request	None.
Response	Succeeded: ***JSON_IntelligentSearchCap*** Failed: ***JSON_ResponseStatus***

15.5.8 /ISAPI/SDT/Management/IntelligentSearch?format=json

Start VCA search.

Request URL Definition

Table 15-202 POST /ISAPI/SDT/Management/IntelligentSearch?format=json

Method	POST
Description	Start VCA search.
Query	**format**: determine the format of request or response message.
Request	***JSON_IntelligentSearchCondition***
Response	Succeeded: ***JSON_IntelligentSearchResult*** Failed: ***JSON_ResponseStatus***

15.6 /ISAPI/PTZCtrl

15.6.1 /ISAPI/PTZCtrl/channels/<ID>

Get or set the single PTZ control parameters.

Request URL Definition

Table 15-203 GET /ISAPI/PTZCtrl/channels/<ID>

Method	GET
Description	Get the single PTZ control parameters.
Query	None
Request	None
Response	Succeeded: ***XML_PTZChannel*** Failed: ***XML_ResponseStatus***

Table 15-204 PUT /ISAPI/PTZCtrl/channels/<ID>

Method	PUT
Description	Set the single PTZ control parameters.
Query	None
Request	***XML_PTZChannel***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the URL refers to the channel No.

15.6.2 /ISAPI/PTZCtrl/channels/<ID>/auxcontrols

Get or set all PTZ auxiliaries status.

Request URL Definition

Table 15-205 GET /ISAPI/PTZCtrl/channels/<ID>/auxcontrols

Method	GET
Description	Get all PTZ auxiliaries status.
Query	None.
Request	None.
Response	Succeeded: ***XML_PTZAuxList*** Failed: ***XML_ResponseStatus***

Table 15-206 PUT /ISAPI/PTZCtrl/channels/<ID>/auxcontrols

Method	PUT
Description	Set all PTZ auxiliaries status.
Query	None.
Request	***XML_PTZAuxList***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the URL refers to the channel No.

15.6.3 /ISAPI/PTZCtrl/channels/<ID>/auxcontrols/<ID>

Get or set the specified PTZ auxiliary status.

Request URL Definition

Table 15-207 GET /ISAPI/PTZCtrl/channels/<ID>/auxcontrols/<ID>

Method	GET
Description	Get the specified PTZ auxiliary status.
Query	None.
Request	None.
Response	Succeeded: ***XML_PTZAux*** Failed: ***XML_ResponseStatus***

Table 15-208 PUT /ISAPI/PTZCtrl/channels/<ID>/auxcontrols/<ID>

Method	PUT
Description	Set the specified PTZ auxiliary status.
Query	None.
Request	***XML_PTZAux***
Response	***XML_ResponseStatus***

Remarks

- The first <ID> in the URL refers to the channel number.
- The second <ID> in refers to the auxiliary number, e.g., when there is only one wiper, the second <ID> is "1", when there are multiple wipers, the second <ID> varies according to the requirement.

15.6.4 /ISAPI/PTZCtrl/channels/<ID>/capabilities

Get the PTZ control capabilities.

Request URL Definition

Table 15-209 GET /ISAPI/PTZCtrl/channels/ID/capabilities

Method	GET
Description	Get the PTZ control capabilities.
Query	None

Request	None.
Response	Succeeded: ***XML_PTZChanelCap*** Failed: ***XML_ResponseStatus***

15.6.5 /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/auto/capabilities?format=json

Get the capability of rapid focus automatic calibration.

Request URL Definition

Table 15-210 GET /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/auto/capabilities?format=json

Method	GET
Description	Get the capability of rapid focus automatic calibration.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_AutoEagleFocusingCap*** Failed: ***JSON_ResponseStatus***

Remarks

The <ID> in the URL refers to the channel ID.

15.6.6 /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/auto?format=json

Automatically calibrate for rapid focus.

Request URL Definition

Table 15-211 GET /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/auto?format=json

Method	GET
Description	Automatically calibrate for rapid focus.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_AutoEagleFocusing*** Failed: ***JSON_ResponseStatus***

Remarks

The <ID> in the URL refers to the channel ID.

15.6.7 /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/capabilities

Get the rapid focus capability.

Request URL Definition

Table 15-212 GET /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/capabilities

Method	GET
Description	Get the rapid focus capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_EagleFocusing*** Failed: ***XML_ResponseStatus***

Remarks

The <ID> in the URL refers to the channel ID.

15.6.8 /ISAPI/PTZCtrl/channels/<ID>/lensCorrection/capabilities?format=json

Get the lens correction capability.

Request URL Definition

Table 15-213 GET /ISAPI/PTZCtrl/channels/<ID>/lensCorrection/capabilities?format=json

Method	GET
Description	Get the lens correction capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_LensCorrectionCap***

15.6.9 /ISAPI/PTZCtrl/channels/<ID>/lensCorrection?format=json

Get or set the configuration parameters of lens correction.

Request URL Definition

Table 15-214 GET /ISAPI/PTZCtrl/channels/<ID>/lensCorrection?format=json

Method	GET
Description	Get the configuration parameters of lens correction.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_LensCorrection*** Failed: ***XML_ResponseStatus***

Table 15-215 PUT /ISAPI/PTZCtrl/channels/<ID>/lensCorrection?format=json

Method	PUT
Description	Set the lens correction parameters.
Query	**format**: determine the format of request or response message.
Request	***JSON_LensCorrection***
Response	***XML_ResponseStatus***

15.6.10 /ISAPI/PTZCtrl/channels/<ID>/lockPTZ

Operations about locking PTZ of a specific channel.

Request URL Definition

Table 15-216 GET /ISAPI/PTZCtrl/channels/<ID>/lockPTZ

Method	GET
Description	Get the remaining time before unlocking PTZ of a specific channel.
Query	None.
Request	None.
Response	***XML_LockPTZ***

Table 15-217 PUT /ISAPI/PTZCtrl/channels/<ID>/lockPTZ

Method	PUT
Description	Lock PTZ of a specific channel.
Query	None.

Request	***XML_LockPTZ***
Response	***XML_ResponseStatus***

15.6.11 /ISAPI/PTZCtrl/channels/<ID>/maxelevation

Get or set the max. tilt-angle parameters.

Request URL Definition

Table 15-218 GET /ISAPI/PTZCtrl/channels/<ID>/maxelevation

Method	GET
Description	Get the max. tilt-angle configuration parameters
Query	None.
Request	None.
Response	***XML_MaxElevation***

Table 15-219 PUT /ISAPI/PTZCtrl/channels/<ID>/maxelevation

Method	PUT
Description	Set the max. tilt-angle
Query	None.
Request	***XML_MaxElevation***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the URL indicates the channel ID.

15.6.12 /ISAPI/PTZCtrl/channels/<ID>/maxelevation/capabilities

Get the max. tilt-angle capability.

Request URL Definition

Table 15-220 GET /ISAPI/PTZCtrl/channels/<ID>/maxelevation/capabilities

Method	GET
Description	Get the max. tilt-angle capability.
Query	None.

Request	None.
Response	***XML_Cap_MaxElevation***

Remarks

The <ID> in the URL indicates the channel ID.

15.6.13 /ISAPI/PTZCtrl/channels/<ID>/onepushfoucs/reset

Initialize the lens.

Request URL Definition

Table 15-221 PUT /ISAPI/PTZCtrl/channels/<ID>/onepushfoucs/reset

Method	PUT
Description	Initialize the lens.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.6.14 /ISAPI/PTZCtrl/channels/<ID>/PTZOSDDisplay

Get or set the on-screen display parameters of the PTZ status.

Request URL Definition

Table 15-222 GET /ISAPI/PTZCtrl/channels/<ID>/PTZOSDDisplay

Method	GET
Description	Get the on-screen display parameters of the PTZ status.
Query	None.
Request	None.
Response	Succeeded: ***XML_PTZOSDDisplay*** Failed: ***XML_ResponseStatus***

Table 15-223 PUT /ISAPI/PTZCtrl/channels/<ID>/PTZOSDDisplay

Method	PUT
Description	Set the on-screen display parameters of the PTZ status.
Query	None.
Request	***XML_PTZOSDDisplay***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the request URL refers to the PTZ channel No.

15.6.15 /ISAPI/PTZCtrl/channels/<ID>/save

Get and save the PTZ position information of the current channel.

Request URL Definition

Table 15-224 GET /ISAPI/PTZCtrl/channels/<ID>/save

Method	GET
Description	Get and save the PTZ position information (including panning, tilting, and zooming parameters) of the current channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_PTZStatus*** Failed: ***XML_ResponseStatus***

15.6.16 /ISAPI/PTZCtrl/channels/<ID>/save?format=json

Save the PTZ position information of the current channel.

Request URL Definition

Table 15-225 PUT /ISAPI/PTZCtrl/channels/<ID>/save?format=json

Method	PUT
Description	Save the PTZ position information, including panning, tilting, and zooming parameters, of the current channel.
Query	**format**: determine the format of request or response message.

Request	None.
Response	***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the PTZ channel No.

15.6.17 /ISAPI/PTZCtrl/channels/<ID>/status

Get the PTZ status of a specific channel of the device.

Request URL Definition

Table 15-226 GET /ISAPI/PTZCtrl/channels/<ID>/status

Method	GET
Description	Get the PTZ status of a specific channel of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_PTZStatus*** Failed: ***XML_ResponseStatus***

15.6.18 /ISAPI/PTZCtrl/channels/<ID>/zoomFocus

Operations about zoom and focus coordinates configuration for zoom camera module.

Request URL Definition

Table 15-227 GET /ISAPI/PTZCtrl/channels/<ID>/zoomFocus

Method	GET
Description	Get parameters of zoom and focus coordinates of zoom camera module.
Query	None.
Request	None.
Response	***XML_ZoomFocus***

Table 15-228 PUT /ISAPI/PTZCtrl/channels/<ID>/zoomFocus

Method	PUT
Description	Set parameters of zoom and focus coordinates of zoom camera module.
Query	None.
Request	***XML_ZoomFocus***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the request URL refers to the channel ID.

15.7 /ISAPI/Security

15.7.1 /ISAPI/Security/adminAccesses

Get or set parameters of all protocols supported by device.

Request URL Definition

Table 15-229 GET /ISAPI/Security/adminAccesses

Method	GET
Description	Get parameters of all protocols supported by device.
Query	None.
Request	None.
Response	Succeeded: ***XML_AdminAccessProtocolList*** Failed: ***XML_ResponseStatus***

Table 15-230 PUT /ISAPI/Security/adminAccesses

Method	PUT
Description	Set parameters of all protocols supported by device.
Query	None.
Request	***XML_AdminAccessProtocolList***
Response	***XML_ResponseStatus***

15.7.2 /ISAPI/Security/adminAccesses/<ID>

Get or set the parameters of a specific protocol that supported by device.

Request URL Definition

Table 15-231 GET /ISAPI/Security/adminAccesses/<ID>

Method	GET
Description	Get the parameters of a specific protocol that supported by device.
Query	None.
Request	None.
Response	Succeeded: ***XML_AdminAccessProtocol*** Failed: ***XML_ResponseStatus***

Table 15-232 PUT /ISAPI/Security/adminAccesses/<ID>

Method	PUT
Description	Set the parameters of a specific protocol that supported by device.
Query	None.
Request	***XML_AdminAccessProtocol***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the protocol ID.

15.7.3 /ISAPI/Security/adminAccesses/capabilities

Get device protocol capability.

Request URL Definition

Table 15-233 GET /ISAPI/Security/adminAccesses/capabilities

Method	GET
Description	Get device protocol capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_AdminAccessProtocolList***

	Failed: ***XML_ResponseStatus***

15.7.4 /ISAPI/Security/advanced?format=json

Get or set advacned parameters of security.

Request URL Definition

Table 15-234 GET /ISAPI/Security/advanced?format=json

Method	GET
Description	Get advanced configuration parameters of security.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_SecurityAdvanced*** Failed: ***JSON_ResponseStatus***

Table 15-235 PUT /ISAPI/Security/advanced?format=json

Method	PUT
Description	Set advanced parameters of security.
Query	**format**: determine the format of request or response message.
Request	***JSON_SecurityAdvanced***
Response	***JSON_ResponseStatus***

15.7.5 /ISAPI/Security/capabilities

Get the security capability of the device.

Request URL Definition

Table 15-236 GET /ISAPI/Security/capabilities

Method	GET
Description	Get the security capability of the device.
Query	**username**: user name, string, it should be encrypted.
Request	None.
Response	Succeeded: ***XML_SecurityCap*** Failed: ***XML_ResponseStatus***

15.7.6 /ISAPI/Security/certificate/select/<functinName>?format=json

Get or set the parameters of selecting the certificate.

Request URL Definition

Table 15-237 GET /ISAPI/Security/certificate/select/<functinName>?format=json

Method	GET
Description	Get the parameters of selecting the certificate.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_CertificateSelect*** Failed: ***JSON_ResponseStatus***

Table 15-238 PUT /ISAPI/Security/certificate/select/<functinName>?format=json

Method	PUT
Description	Set the parameters of selecting the certificate.
Query	**format**: determine the format of request or response message.
Request	***JSON_CertificateSelect***
Response	***JSON_ResponseStatus***

Remarks

The <**functinName**> in the request URL refers to the function name.

15.7.7 /ISAPI/Security/certificate/select/capabilities?format=json

Get the capability of selecting the certificate.

Request URL Definition

Table 15-239 GET /ISAPI/Security/certificate/select/capabilities?format=json

Method	GET
Description	Get the capability of selecting the certificate.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_Cap_CertificateSelect***

	Failed: ***JSON_ResponseStatus***

15.7.8 /ISAPI/Security/challenge

Get the random challenge strings.

Request URL Definition

Table 15-240 POST /ISAPI/Security/challenge

Method	POST
Description	Get the random challenge strings.
Query	None.
Request	***XML_PublicKey***
Response	***XML_Challenge***

15.7.9 /ISAPI/Security/CommuMode/capabilities?format=json

Get the configuration capability of the security mode level of the private protocol.

Request URL Definition

Table 15-241 GET /ISAPI/Security/CommuMode/capabilities?format=json

Method	GET
Description	Get the configuration capability of the security mode level of the private protocol.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_Cap_CommuMode*** Failed: ***JSON_ResponseStatus***

15.7.10 /ISAPI/Security/CommuMode?format=json

Operations about the configuration of the security mode level of the private protocol.

Request URL Definition

Table 15-242 GET /ISAPI/Security/CommuMode?format=json

Method	GET
Description	Get the parameters of the security mode level of the private protocol.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_CommuMode*** Failed: ***JSON_ResponseStatus***

Table 15-243 PUT /ISAPI/Security/CommuMode?format=json

Method	PUT
Description	Set the parameters of the security mode level of the private protocol.
Query	**format**: determine the format of request or response message.
Request	***JSON_CommuMode***
Response	***JSON_ResponseStatus***

15.7.11 /ISAPI/Security/deviceCertificate

Import network certificate to device.

Request URL Definition

Table 15-244 PUT /ISAPI/Security/deviceCertificate

Method	PUT
Description	Import network certificate to device.
Query	None.
Request	Certificate data (in binary format)
Response	***XML_ResponseStatus***

Remarks

- The imported certificate function is determined by "type" in binary certificate data, which contains "wpa" (default) and "ieee802.1x". If no value is assigned to this parameter, it indicates that the WPA certificate will be imported.
- The imported certificate type is determined by "Content-type" in binary certificate data, which contains "x-x509-ca-cert", "x-x509-client-cert", and "x-x509-client-key".

15.7.12 /ISAPI/Security/deviceCertificate/capabilities?format=json

Get the CA (Certificate Authority) certificate capability.

Request URL Definition

Table 15-245 GET /ISAPI/Security/deviceCertificate/capabilities?format=json

Method	GET
Description	Get the CA (Certificate Authority) certificate capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DeviceCertificateCap*** Failed: ***JSON_ResponseStatus***

15.7.13 /ISAPI/Security/deviceCertificate/certificateRevocation/capabilities?format=json

Get the configuration capability of the certificate expiry alarm.

Request URL Definition

Table 15-246 GET /ISAPI/Security/deviceCertificate/certificateRevocation/capabilities?format=json

Method	GET
Description	Get the configuration capability of the certificate expiry alarm.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_CertificateRevocationCap*** Failed: ***JSON_ResponseStatus***

15.7.14 /ISAPI/Security/deviceCertificate/certificateRevocation?format=json

Get or set the configuration of certificate expiry alarm.

Request URL Definition

Table 15-247 GET /ISAPI/Security/deviceCertificate/certificateRevocation?format=json

Method	GET
Description	Get the parameters of certificate expiry alarm.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_CertificateRevocation*** Failed: ***JSON_ResponseStatus***

Table 15-248 PUT /ISAPI/Security/deviceCertificate/certificateRevocation?format=json

Method	PUT
Description	Set the parameters of certificate expiry alarm.
Query	**format**: determine the format of request or response message.
Request	***JSON_CertificateRevocation***
Response	***JSON_ResponseStatus***

15.7.15 /ISAPI/Security/deviceCertificate/certificates/<customID>?format=json

Get or delete the information of a specific device certificate.

Request URL Definition

Table 15-249 GET /ISAPI/Security/deviceCertificate/certificates/<customID>?format=json

Method	GET
Description	Get the information of a specific device certificate.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DeviceCertificate*** Failed: ***JSON_ResponseStatus***

Table 15-250 DELETE /ISAPI/Security/deviceCertificate/certificates/<customID>?format=json

Method	DELETE
Description	Delete the information of a specific device certificate.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

The <**customID**> in the request URL refers to the custom certificate ID.

15.7.16 /ISAPI/Security/deviceCertificate/certificates/<ID>

Delete the certificate of a specific device.

Request URL Definition

Table 15-251 DELETE /ISAPI/Security/deviceCertificate/certificates/<ID>

Method	DELETE
Description	Delete the certificate of a specific device.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL is the device ID returned when searching certificate information.

15.7.17 /ISAPI/Security/deviceCertificate/certificates/<ID>/recreate?format=json

Regenerate a specific abnormal certificate.

Request URL Definition

Table 15-252 PUT /ISAPI/Security/deviceCertificate/certificates/<ID>/recreate?format=json

Method	PUT
Description	Regenerate a specific certificate for authentication client.
Query	**format**: determine the format of request or response message.

Request	None.
Response	***JSON_ResponseStatus***

Remarks

- The <**ID**> in the request URL refers to the certificate ID.
- This URL is only supported by HTTPS certificate, and it is available when the certificate exception is detected.

15.7.18 /ISAPI/Security/deviceCertificate/certificates/<ID>/status?format=json

Get the status of a specific certificate.

Request URL Definition

Table 15-253 GET /ISAPI/Security/deviceCertificate/certificates/<ID>/status?format=json

Method	GET
Description	Get the status of a specific certificate.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DeviceCertificateStatus*** Failed: ***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL is the certificate ID, which is generated and returned by device.

15.7.19 /ISAPI/Security/deviceCertificate/certificates/capabilities?format=json

Get certificate search capability.

Request URL Definition

Table 15-254 GET /ISAPI/Security/deviceCertificate/certificates/capabilities?format=json

Method	GET
Description	Get certificate search capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DeviceCertificatesCap***

	Failed: ***JSON_ResponseStatus***

15.7.20 /ISAPI/Security/deviceCertificate/certificates/recreate?format=json

Regenerate all abnormal certificates.

Request URL Definition

Table 15-255 PUT /ISAPI/Security/deviceCertificate/certificates/recreate?format=json

Method	PUT
Description	Regenerate all abnormal certificates.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

This URL is only supported by HTTPS certificate, and it is available when the certificate exception is detected.

15.7.21 /ISAPI/Security/deviceCertificate/certificates/status?format=json

Get status of all certificates.

Request URL Definition

Table 15-256 GET /ISAPI/Security/deviceCertificate/certificates/status?format=json

Method	GET
Description	Get status of all certificates.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DeviceCertificateStatusList*** Failed: ***JSON_ResponseStatus***

15.7.22 /ISAPI/Security/deviceCertificate/certificates?format=json

Get device certificate information in a batch.

Request URL Definition

Table 15-257 GET /ISAPI/Security/deviceCertificate/certificates?format=json

Method	GET
Description	Get device certificate information in a batch.
Query	**format**: determine the format of request or response message. **type**: certificate type, it can be set to "wpa" (get all WPA certificates), "ieee802.1x" (get all ieee802.1x certificates), and "securityLog" (get all CA certificates of security logs); if no value is assigned to **type**, all CA certificates will be searched and obtained.
Request	None.
Response	Succeeded: ***JSON_DeviceCertificates*** Failed: ***JSON_ResponseStatus***

15.7.23 /ISAPI/Security/deviceCertificate?customID=

Import a CA (Certificate Authority) certificate to the device.

Request URL Definition

Table 15-258 PUT /ISAPI/Security/deviceCertificate?customID=

Method	PUT
Description	Import a CA (Certificate Authority) certificate to the device. The CA certificate is used for 802.1x (radius) with various authentication mechanism.
Query	**customID**: custom certificate ID, string, it consists of digits and characters.
Request	Certificate data (its format depends on the device).
Response	***XML_ResponseStatus***

Remarks

- When importing CA certificate by calling this URL, the function of CA certificate will not be distinguished. The CA certificate and its function will be bound together afterward.
- The imported certificate type is determined by "Content-type" in the certificate data, which contains "x-x509-ca-cert" (CA certificate (root certificate)), "x-x509-client-cert" (client certificate), and "x-x509-client-key" (client password).

15.7.24 /ISAPI/Security/doubleVerification/users/<ID>?format=json

Operations about a specified double verification user.

Request URL Definition

Table 15-259 GET /ISAPI/Security/doubleVerification/users/<ID>?format=json

Method	GET
Description	Get a double verification user.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_User***

Table 15-260 PUT /ISAPI/Security/doubleVerification/users/<ID>?format=json

Method	PUT
Description	Set a double verification user.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***JSON_User***
Response	***JSON_ResponseStatus***

Table 15-261 DELETE /ISAPI/Security/doubleVerification/users/<ID>?format=json

Method	DELETE
Description	Delete a double verification user.

Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

The <ID> in the URL indicates the user ID.

15.7.25 /ISAPI/Security/doubleVerification/users/capabilities?format=json

Get the double verification configuration capability.

Request URL Definition

Table 15-262 GET /ISAPI/Security/doubleVerification/users/capabilities?format=json

Method	GET
Description	Get the double verification configuration capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_UserCap***

15.7.26 /ISAPI/Security/doubleVerification/users?format=json

Get all double verification users and add a double verification user.

Request URL Definition

Table 15-263 GET /ISAPI/Security/doubleVerification/users?format=json

Method	GET
Description	Get all double verification users.
Query	**format**: determine the format of request or response message.

	security: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_UserList***

Table 15-264 POST /ISAPI/Security/doubleVerification/users?format=json

Method	POST
Description	Add a double verification user.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***JSON_User***
Response	Succeeded: ***JSON_ResponseStatus*** and ***JSON_id*** Failed: ***JSON_ResponseStatus***

15.7.27 /ISAPI/Security/doubleVerification/UsersPermission/<ID>?format=json

Get and set the permission of double verification user.

Request URL Definition

Table 15-265 GET /ISAPI/Security/doubleVerification/UsersPermission/<ID>?format=json

Method	GET
Description	Get the configuration parameters of double verification user permission.
Query	**format**: determine the format of request or response message.

Request	None.
Response	Succeeded: ***JSON_UserPermission*** Failed: ***JSON_ResponseStatus***

Table 15-266 PUT /ISAPI/Security/doubleVerification/UsersPermission/<ID>?format=json

Method	PUT
Description	Set the double verification user permission.
Query	**format**: determine the format of request or response message.
Request	***JSON_UserPermission***
Response	***JSON_ResponseStatus***

Remarks

The <ID> in the URL indicates the user ID.

15.7.28 /ISAPI/Security/doubleVerification/UsersPermission/capabilities?format=json

Get the capability of permission configuration for double verification user.

Request URL Definition

Table 15-267 GET /ISAPI/Security/doubleVerification/UsersPermission/capabilities?format=json

Method	GET
Description	Get the capability of permission configuration for double verification user.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_UserPermissionCap*** Failed: ***JSON_ResponseStatus***

15.7.29 /ISAPI/Security/doubleVerification?format=json

Get the capability of double verification enabling configuration.

Request URL Definition

Table 15-268 GET /ISAPI/Security/doubleVerification?format=json

Method	GET
Description	Get the capability of double verification enabling configuration.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_DoubleVerification***

Table 15-269 PUT /ISAPI/Security/doubleVerification?format=json

Method	PUT
Description	Enable or disable the double verification.
Query	**format**: determine the format of request or response message.
Request	***JSON_DoubleVerification***
Response	***JSON_ResponseStatus***

15.7.30 /ISAPI/Security/email/parameter/capabilities?format=json

Get recovery email configuration capability (only available in LAN and for admin user).

Request URL Definition

Table 15-270 GET /ISAPI/Security/email/parameter/capabilities?format=json

Method	GET
Description	Get recovery email configuration capability.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_SecurityEmailCap***

15.7.31 /ISAPI/Security/email/parameter?format=json

Operations about recovery email configuration (only available for LAN and for admin user).

Request URL Definition

Table 15-271 GET /ISAPI/Security/email/parameter?format=json

Method	GET
Description	Get recovery email parameters.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_SecurityEmail***

Table 15-272 PUT /ISAPI/Security/email/parameter?format=json

Method	PUT
Description	Set recovery email parameters.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***JSON_SecurityEmail***
Response	***JSON_ResponseStatus***

15.7.32 /ISAPI/Security/email/qrCode?format=json

Get the QR code of the configured recovery email (only available for LAN and for admin user).

Request URL Definition

Table 15-273 GET /ISAPI/Security/email/qrCode?format=json

Method	GET
Description	Get the QR code of the configured recovery email.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_SecurityEmailQrCode***

15.7.33 /ISAPI/Security/emailCertification?format=json

Reset password by the verification code via recovery email (only available for LAN and for admin user).

Request URL Definition

Table 15-274 PUT /ISAPI/Security/emailCertification?format=json

Method	PUT
Description	Reset password by the verification code via recovery email.
Query	**format**: determine the format of request or response message.
Request	***JSON_EmailCertification***
Response	***JSON_ResponseStatus***

Remarks

For the encryption of passwords and security answers, first transform them by UTF8, and then transcode them by BASE64, finally, encrypt them by AES128CB.

15.7.34 /ISAPI/Security/extern/capabilities

Get capability of other security configuration.

Request URL Definition

Table 15-275 GET /ISAPI/Security/extern/capabilities

Method	GET
Description	Get capability of other security configuration.
Query	None.
Request	None.
Response	***XML_externSecurityCap***

15.7.35 /ISAPI/Security/illegalLoginLock

Get or set locking parameters of illegal login.

Request URL Definition

Table 15-276 GET /ISAPI/Security/illegalLoginLock

Method	GET
Description	Get locking parameters of illegal login.
Query	None.
Request	None.
Response	Succeeded: ***XML_IllegalLoginLock*** Failed: ***XML_ResponseStatus***

Table 15-277 PUT /ISAPI/Security/illegalLoginLock

Method	PUT
Description	Set locking parameters of illegal login.
Query	None.
Request	***XML_IllegalLoginLock***
Response	***XML_ResponseStatus***

15.7.36 /ISAPI/Security/loginLinkNum?format=json

Get or set maximum number of logged in accounts.

Request URL Definition

Table 15-278 GET /ISAPI/Security/loginLinkNum?format=json

Method	GET
Description	Get maximum number of logged in accounts.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_LoginLinkNum*** Failed: ***JSON_ResponseStatus***

Table 15-279 PUT /ISAPI/Security/loginLinkNum?format=json

Method	PUT
Description	Set maximum number of logged in accounts.
Query	**format**: determine the format of request or response message.
Request	***JSON_LoginLinkNum***
Response	***JSON_ResponseStatus***

15.7.37 /ISAPI/Security/questionConfiguration

Get or set device security questions.

Request URL Definition

Table 15-280 GET /ISAPI/Security/questionConfiguration

Method	GET
Description	Get device security questions.
Query	None.
Request	None.
Response	Succeeded: ***XML_SecurityQuestion*** Failed: ***XML_ResponseStatus***

Table 15-281 PUT /ISAPI/Security/questionConfiguration

Method	PUT
Description	Set device security questions.

Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_SecurityQuestion***
Response	***XML_ResponseStatus***

15.7.38 /ISAPI/Security/serverCertificate/capabilities?format=json

Get the client/server certificate capability.

Request URL Definition

Table 15-282 GET /ISAPI/Security/serverCertificate/capabilities?format=json

Method	GET
Description	Get the client/server certificate capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_ServerCertificateCap*** Failed: ***JSON_ResponseStatus***

15.7.39 /ISAPI/Security/serverCertificate/certificate

Get, upload, and delete device certificate information.

Request URL Definition

Table 15-283 GET /ISAPI/Security/serverCertificate/certificate

Method	GET
Description	Get device certificate information.
Query	**type**: certificate type, it can be set to "CCClentCertificate" (client certificate for CC authentication); if no value is assigned to **type**, it represents the HTTPS certificate.

Request	None.
Response	Succeeded: ***XML_CertificateInfo*** ***XML_ResponseStatus***

Table 15-284 PUT /ISAPI/Security/serverCertificate/certificate

Method	PUT
Description	Upload certificate to device.
Query	**type**: certificate type, it can be set to "CCClentCertificate" (client certificate for CC authentication); if no value is assigned to **type**, it represents the HTTPS certificate.
Request	Certificate data (binary)
Response	***XML_ResponseStatus***

Table 15-285 DELETE /ISAPI/Security/serverCertificate/certificate

Method	DELETE
Description	Delete the installed certificate of device.
Query	**type**: certificate type, it can be set to "CCClentCertificate" (client certificate for CC authentication); if no value is assigned to **type**, it represents the HTTPS certificate.
Request	None.
Response	***XML_ResponseStatus***

15.7.40 /ISAPI/Security/serverCertificate/certificate?customID=

Import the client/server certificate to the device.

Request URL Definition

Table 15-286 POST /ISAPI/Security/serverCertificate/certificate?customID=

Method	POST
Description	Import the client/server certificate to the device.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode.

	iv: the initialization vector, and it is required when **security** is 1 or 2. **customID**: custom certificate ID, string, it consists of digits and characters.
Request	***XML_CertificateReq_ImportCert*** +certificate data.
Response	***XML_ResponseStatus***

Remarks

- When the node <**certificateMode**> in the request message ***XML_CertificateReq_ImportCert*** is set to "signingRequest", it means importing a self-signed certificate to the device.
- When the node <**certificateMode**> in the request message ***XML_CertificateReq_ImportCert*** is set to "privateKey", it means importing the certificate along with the private key by the following two steps.
  1. Import the message ***XML_CertificateReq_ImportCert*** and the certificate file.

     Note

     The node <**dataType**> in the message ***XML_CertificateReq_ImportCert*** should be set to "certificate".
  2. Import the message ***XML_CertificateReq_ImportCert*** and the private key.

     Note

     - The node <**dataType**> in the message ***XML_CertificateReq_ImportCert*** should be set to "privateKey".
     - This step depends on the first step. If exception occurs, the device will return error.

15.7.41 /ISAPI/Security/serverCertificate/certificates?format=json

Get the information of multiple client/server certificates in a batch.

Request URL Definition

Table 15-287 GET /ISAPI/Security/serverCertificate/certificates?format=json

Method	GET
Description	Get the information of multiple client/server certificates in a batch.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_ServerCertificates*** Failed: ***JSON_ResponseStatus***

15.7.42 /ISAPI/Security/serverCertificate/certificates/<customID>?format=json

Get or delete the information of a specific client/server certificate.

Request URL Definition

Table 15-288 GET /ISAPI/Security/serverCertificate/certificates/<customID>?format=json

Method	GET
Description	Get the information of a specific client/server certificate.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DeviceCertificate*** Failed: ***JSON_ResponseStatus***

Table 15-289 DELETE /ISAPI/Security/serverCertificate/certificates/<customID>?format=json

Method	DELETE
Description	Delete the information of a specific client/server certificate.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

The <**customID**> in the request URL refers to the custom certificate ID.

15.7.43 /ISAPI/Security/serverCertificate/certSignReq

Get signature request information, generate, and delete signature request of device certificate.

Request URL Definition

Table 15-290 GET /ISAPI/Security/serverCertificate/certSignReq

Method	GET
Description	Get signature request information of device certificate.
Query	**type**: certificate type, it can be set to "CCClentCertificate" (client certificate for CC authentication); if no value is assigned to **type**, it represents the HTTPS certificate.

Request	None.
Response	Succeeded: ***XML_CertificateReqInfo*** Failed: ***XML_ResponseStatus***

Table 15-291 PUT /ISAPI/Security/serverCertificate/certSignReq

Method	PUT
Description	Generate signature request information of device certificate.
Query	**type**: certificate type, it can be set to "CCClentCertificate" (client certificate for CC authentication); if no value is assigned to **type**, it represents the HTTPS certificate.
Request	***XML_CertificateReq***
Response	***XML_ResponseStatus***

Table 15-292 DELETE /ISAPI/Security/serverCertificate/certSignReq

Method	DELETE
Description	Delete signature request of device certificate.
Query	**type**: certificate type, it can be set to "CCClentCertificate" (client certificate for CC authentication); if no value is assigned to **type**, it represents the HTTPS certificate.
Request	None.
Response	***XML_ResponseStatus***

15.7.44 /ISAPI/Security/serverCertificate/certSignReq?customID=

Create a PKCS#10 signature request of the client/server certificate.

Request URL Defintion

Table 15-293 POST /ISAPI/Security/serverCertificate/certSignReq?customID=

Method	POST
Description	Create a PKCS#10 signature request of the client/server certificate.
Query	**customID**: custom certificate ID, string, it consists of digits and characters.
Request	***XML_CertificateReq***
Response	Succeeded: ***XML_CertificateResult*** Failed: ***XML_ResponseStatus***

15.7.45 /ISAPI/Security/serverCertificate/downloadCertSignReq

Download the certificate of authentication client.

Request URL Definition

Table 15-294 GET /ISAPI/Security/serverCertificate/downloadCertSignReq

Method	GET
Description	Download the certificate of authenticated client.
Query	**type**: certificate type, it can be set to "CCClentCertificate" (client certificate for CC authentication); if no value is assigned to **type**, it represents the HTTPS certificate.
Request	None.
Response	Certificate data (binary)

15.7.46 /ISAPI/Security/serverCertificate/downloadCertSignReq?customID=

Export the client/server certificate.

Request URL Definition

Table 15-295 GET /ISAPI/Security/serverCertificate/downloadCertSignReq?customID=

Method	GET
Description	Export the client/server certificate.
Query	**customID**: custom certificate ID, string, it consists of digits and characters.
Request	None.
Response	Certificate data.

Remarks

The returned certificate data should be either formatted exactly according to PKCS#10 standard or a PKCS#10 file encoded in PEM format.

15.7.47 /ISAPI/Security/serverCertificate/selfSignCert?customID=

Get or generate the PKCS#10 signature request of the client/server self-signed certificate.

Request URL Definition

Table 15-296 GET /ISAPI/Security/serverCertificate/selfSignCert?customID=

Method	GET
Description	Get the PKCS#10 signature request of the client/server self-signed certificate.
Query	**customID**: custom certificate ID, string, it consists of digits and characters.
Request	None.
Response	Succeeded: ***XML_CertificateReq*** Failed: ***XML_ResponseStatus***

Table 15-297 PUT /ISAPI/Security/serverCertificate/selfSignCert?customID=

Method	PUT
Description	Generate the PKCS#10 signature request of the client/server self-signed certificate.
Query	**customID**: custom certificate ID, string, it consists of digits and characters.
Request	***XML_CertificateReq***
Response	***XML_ResponseStatus***

15.7.48 /ISAPI/Security/userCheck

Log in to the device by digest.

Request URL Definition

Table 15-298 GET /ISAPI/Security/userCheck

Method	GET
Description	Log in to the device by digest. This URL is used to check whether the user name matches with the password.
Query	None.
Request	None.
Response	Succeeded: ***XML_userCheck*** Failed: ***XML_ResponseStatus***

15.7.49 /ISAPI/Security/UserPermission

Operations about the user permission of the device.

Request URL Definition

Table 15-299 GET /ISAPI/Security/UserPermission

Method	GET
Description	Get the user permission of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_UserPermissionList*** Failed: ***XML_ResponseStatus***

Table 15-300 PUT /ISAPI/Security/UserPermission

Method	PUT
Description	Set the user permission of the device.
Query	None.
Request	***XML_UserPermissionList***
Response	***XML_ResponseStatus***

15.7.50 /ISAPI/Security/UserPermission/<ID>

Operations about a specific user's permission.

Request URL Definition

Table 15-301 GET /ISAPI/Security/UserPermission/<ID>

Method	GET
Description	Get a specific user's permission.
Query	None.
Request	None.
Response	Succeeded: ***XML_UserPermission*** Failed: ***XML_ResponseStatus***

Table 15-302 PUT /ISAPI/Security/UserPermission/<ID>

Method	PUT
Description	Set a specific user's permission.
Query	None.
Request	***XML_UserPermission***
Response	***XML_ResponseStatus***

15.7.51 /ISAPI/Security/UserPermission/<ID>/localPermission

Get and set the local permission of a specified user.

Request URL Definition

Table 15-303 GET /ISAPI/Security/UserPermission/<ID>/localPermission

Method	GET
Description	Get the local permission of a specified user.
Query	None.
Request	None.
Response	***XML_localPermission***

Table 15-304 PUT /ISAPI/Security/UserPermission/<ID>/localPermission

Method	PUT
Description	Set the local permission of a specified user.
Query	None.
Request	***XML_localPermission***
Response	***XML_ResponseStatus***

15.7.52 /ISAPI/Security/UserPermission/<ID>/remotePermission

Get and set the remote permission of a specified user.

Request URL Definition

Table 15-305 GET /ISAPI/Security/UserPermission/<ID>/remotePermission

Method	GET
Description	Get the remote permission of a specified user.
Query	None.
Request	None.
Response	***XML_remotePermission***

Table 15-306 PUT /ISAPI/Security/UserPermission/<ID>/remotePermission

Method	PUT
Description	Set the remote permission of a specified user.
Query	None.
Request	***XML_remotePermission***
Response	***XML_ResponseStatus***

15.7.53 /ISAPI/Security/UserPermission/adminCap

Get the user permission capability of the administrator.

Request URL Definiton

Table 15-307 GET /ISAPI/Security/UserPermission/adminCap

Method	GET
Description	Get the user permission capability of the administrator.
Query	None.
Request	None.
Response	Succeeded: ***XML_UserPermissionCap*** Failed: ***XML_ResponseStatus***

Remarks

Only permissions that can be configured by the admin user should be returned.

15.7.54 /ISAPI/Security/UserPermission/operatorCap

Get the user permission capability of the operator.

Request URL Definition

Table 15-308 GET /ISAPI/Security/UserPermission/operatorCap

Method	GET
Description	Get the user permission capability of the operator.
Query	None.
Request	None.
Response	Succeeded: ***XML_UserPermissionCap*** Failed: ***XML_ResponseStatus***

Remarks

Only permissions that can be configured by the operator should be returned.

15.7.55 /ISAPI/Security/UserPermission/viewerCap

Get the user permission capability of the viewer.

Request URL Definition

Table 15-309 GET /ISAPI/Security/UserPermission/viewerCap

Method	GET
Description	Get the user permission capability of the viewer.
Query	None.
Request	None.
Response	***XML_UserPermissionCap***

15.7.56 /ISAPI/Security/users

Operations about the user list of the device.

Request URL Definition

Table 15-310 GET /ISAPI/Security/users

Method	GET
Description	Get the user list of the device.

Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: ***XML_UserList*** Failed: ***XML_ResponseStatus***

Table 15-311 PUT /ISAPI/Security/users

Method	PUT
Description	Update the user list of the device.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_UserList***
Response	***XML_ResponseStatus***

Table 15-312 POST /ISAPI/Security/users

Method	POST
Description	Add a user to the user list of the device.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_User***
Response	***XML_ResponseStatus***

Table 15-313 DELETE /ISAPI/Security/users

Method	DELETE
Description	Delete the user list of the device.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **loginPassword**: encrypted administrator password.
Request	None.
Response	***XML_ResponseStatus***

Remarks

- A default account "admin" must be provided with the administrator permission and it cannot be deleted.
- Passwords can only be uploaded and cannot be displayed when getting the user list of the device.
- The user ID should be returned when adding users to the user list.

Example

Sample Code for Adding User

```
POST /ISAPI/Security/users HTTP/1.1
Host: 10.17.132.49
Content-Length: 335
Connection: Keep-Alive
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e6a4d774d6a63304f544936593255335a474d334f54673d",
uri="/ISAPI/Security/users",
cnonce="178e14d4977c835db891b5392b5d0a67",
nc=00000015,
response="d92518fb00cd2772cf212f5326b251be",
qop="auth"

<?xml version="1.0" encoding="UTF-8"?>
<User>
 <id>0</id>
 <userName>test</userName>
 <password>1qaz2wsx</password>
 <bondIpList>
  <bondIp>
   <id>1</id>
```

```
    <ipAddress>0.0.0.0</ipAddress>
    <ipv6Address>::</ipv6Address>
   </bondIp>
  </bondIpList>
  <macAddress></macAddress>
  <userLevel>Operator</userLevel>
  <attribute>
   <inherent>false</inherent>
  </attribute>
</User>

HTTP/1.1 200 OK
Date: Tue, 14 Mar 2017 20:24:31 GMT
Server: App-webs/
Connection: close
Content-Length: 288
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<ResponseStatus version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <requestURL>/ISAPI/Security/users</requestURL>
  <statusCode>1</statusCode>
  <statusString>OK</statusString>
  <id>2</id>
  <subStatusCode>ok</subStatusCode>
</ResponseStatus>
```

Example

Sample Code for Setting User Permission

```
PUT /ISAPI/Security/UserPermission/2 HTTP/1.1
Host: 10.17.132.49
Content-Length: 891
Connection: Keep-Alive
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e6a4d774d6a63304f544936593255335a474d334f54673d",
uri="/ISAPI/Security/UserPermission/2",
cnonce="178e14d4977c835db891b5392b5d0a67",
nc=00000016,
response="f69a20db00b36e9bb46c26c06e9bae80",
qop="auth"

<?xml version="1.0" encoding="utf-8"?>
<UserPermission>
  <id>2</id>
  <userID>2</userID>
  <userType>operator</userType>
  <remotePermission>
   <parameterConfig>false</parameterConfig>
   <logOrStateCheck>true</logOrStateCheck>
   <upgrade>false</upgrade>
```

```
   <voiceTalk>true</voiceTalk>
   <restartOrShutdown>false</restartOrShutdown>
   <alarmOutOrUpload>false</alarmOutOrUpload>
   <contorlLocalOut>false</contorlLocalOut>
   <transParentChannel>false</transParentChannel>
   <preview>true</preview>
   <record>true</record>
   <ptzControl>true</ptzControl>
   <playBack>true</playBack>
   <videoChannelPermissionList>
    <videoChannelPermission>
     <id>1</id>
     <preview>true</preview>
     <record>true</record>
     <playBack>true</playBack>
    </videoChannelPermission>
   </videoChannelPermissionList>
   <ptzChannelPermissionList>
    <ptzChannelPermission>
     <id>1</id>
     <ptzControl>true</ptzControl>
    </ptzChannelPermission>
   </ptzChannelPermissionList>
  </remotePermission>
</UserPermission>

HTTP/1.1 200 OK
Date: Tue, 14 Mar 2017 20:24:31 GMT
Server: App-webs/
Connection: close
Content-Length: 288
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<ResponseStatus version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <requestURL>/ISAPI/Security/UserPermission/2</requestURL>
 <statusCode>1</statusCode>
 <statusString>OK</statusString>
 <subStatusCode>ok</subStatusCode>
</ResponseStatus>
```

15.7.57 /ISAPI/Security/users/<ID>

Operations about the user's configuration of the device.

Request URL Definition

Table 15-314 GET /ISAPI/Security/users/<ID>

Method	GET
Description	Get a specific user's configuration of the device.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: ***XML_User*** Failed: ***XML_ResponseStatus***

Table 15-315 PUT /ISAPI/Security/users/<ID>

Method	PUT
Description	Set a specific user's configuration of the device.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_User***
Response	***XML_ResponseStatus***

Table 15-316 DELETE /ISAPI/Security/users/<ID>

Method	DELETE
Description	Delete a specific user's configuration of the device.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates

	that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **loginPassword**: encrypted administrator password.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The administrator account cannot be deleted.

15.7.58 /ISAPI/SecurityCP/ReportCenterCfg/capabilities?format=json

Get the configuration capability of the report uploading method.

Request URL Definition

Table 15-317 GET /ISAPI/SecurityCP/ReportCenterCfg/capabilities?format=json

Method	GET
Description	Get the configuration capability of the report uploading method.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_Cap_ReportCenterCfg*** Failed: ***JSON_ResponseStatus***

15.7.59 /ISAPI/SecurityCP/ReportCenterCfg/<ID>?format=json

Operations about the configuration of the report uploading method.

Request URL Definition

Table 15-318 GET /ISAPI/SecurityCP/ReportCenterCfg/<ID>?format=json

Method	GET
Description	Get the parameters of the report uploading method.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_ReportCenterCfg***

	Failed: ***JSON_ResponseStatus***

Table 15-319 PUT /ISAPI/SecurityCP/ReportCenterCfg/<ID>?format=json

Method	PUT
Description	Set the parameters of the report uploading method.
Query	**format**: determine the format of request or response message.
Request	***JSON_ReportCenterCfg***
Response	***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the center group No.

15.8 /ISAPI/Smart

15.8.1 /ISAPI/Smart/capabilities

Get the capability set of intelligent devices.

Request URL Definition

Table 15-320 GET /ISAPI/Smart/capabilities

Method	GET
Description	Get the capability set of intelligent devices.
Query	None.
Request	None.
Response	Succeeded: ***XML_SmartCap*** Failed: ***XML_ResponseStatus***

15.9 /ISAPI/Streaming

15.9.1 /ISAPI/Streaming/channels

Operations about the encoding configuration of multiple channels.

Request URL Definition

Table 15-321 GET /ISAPI/Streaming/channels

Method	GET
Description	Get the encoding parameters of multiple channels.
Query	None.
Request	None.
Response	***XML_StreamingChannelList***

Table 15-322 PUT /ISAPI/Streaming/channels

Method	PUT
Description	Set the encoding parameters of multiple channels.
Query	None.
Request	***XML_StreamingChannelList***
Response	***XML_ResponseStatus***

15.9.2 /ISAPI/Streaming/channels/<ID>

Operations about the encoding configurations of a specific channel.

Request URL Definition

Table 15-323 GET /ISAPI/Streaming/channels/<ID>

Method	GET
Description	Get the encoding parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_StreamingChannel*** Failed: ***XML_ResponseStatus***

Table 15-324 PUT /ISAPI/Streaming/channels/<ID>

Method	PUT
Description	Set the encoding parameters of a specific channel.
Query	None.

Request	***XML_StreamingChannel***
Response	***XML_ResponseStatus***

Table 15-325 DELETE /ISAPI/Streaming/channels/<ID>

Method	DELETE
Description	Delete the encoding parameters of a specific channel.
Query	None
Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the URL refers to the channel ID.

Example

Interaction Example of Getting Encoding Parameters of A Specific Channel

```
GET /ISAPI/Streaming/channels/444 HTTP/1.1
…
HTTP/1.1 200 OK
Content-Type: application/xml; charset="UTF-8"
Content-Length: ISAPI

<?xml version="1.0" encoding="UTF-8"?>
<StreamingChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>444</id>
 <channelName>Input 1 MPEG-4 ASP</channelName>
 <enabled>true</enabled>
 <Transport>
  <rtspPortNo>554</rtspPortNo>
  <maxPacketSize>1446</maxPacketSize>
  <ControlProtocolList>
   <ControlProtocol>
    <streamingTransport>RTSP</streamingTransport>
   </ControlProtocol>
   <ControlProtocol>
    <streamingTransport>HTTP</streamingTransport>
   </ControlProtocol>
  </ControlProtocolList>
 </Transport>
 <Video>
  <enabled>true</enabled>
  <videoInputChannelID>2</videoInputChannelID>
  <videoCodecType>MPEG4</videoCodecType>
  <videoScanType>progressive</videoScanType>
  <videoResolutionWidth> 640</videoResolutionWidth>
  <videoResolutionHeight>480</videoResolutionHeight>
  <videoPositionX>0</videoPositionX>
```

```
  <videoPositionY>0</videoPositionY>
  <videoQualityControlType>CBR</videoQualityControlType>
  <constantBitRate>2000</constantBitRate>
  <maxFrameRate>2500</maxFrameRate>
  <keyFrameInterval>1000</keyFrameInterval>
  <rotationDegree>0</rotationDegree>
  <mirrorEnabled>false</mirrorEnabled>
  <snapShotImageType>JPEG</snapShotImageType>
 </Video>
 <Audio>
  <enabled>false</enabled>
  <audioInputChannelID>2</audioInputChannelID>
  <audioCompressionType> G.726</audioCompressionType>
  <audioBitRate>24</audioBitRate>
  <audioSamplingRate>8</audioSamplingRate>
 </Audio>
</StreamingChannel>
```

15.9.3 /ISAPI/Streaming/channels/<ID>/capabilities

Get encoding capability of a specific channel.

Request URL Definition

Table 15-326 GET /ISAPI/Streaming/channels/<ID>/capabilities

Method	GET
Description	Get the encoding capability of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_StreamingChannel*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the URL refers to the channel ID.

Example

Interaction Example of Getting Encoding Capability of A Specific Channel

```
GET /ISAPI/Streaming/channels/444/capabilities HTTP/1.1
...
HTTP/1.1 200 OK
Content-Type: application/xml; charset="UTF-8"
Content-Length: ISAPI

<?xml version="1.0" encoding="UTF-8"?>
<StreamingChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
```

```
<id opt="111,222,333,444">444</id>
<channelName min="0" max="64">Input 1 MPEG-4 ASP</channelName>
<enabled opt="true,false" def="true">true</enabled>
<Transport>
 <rtspPortNo min="0" max="65535" def="554">554</rtspPortNo>
 <maxPacketSize min="0" max="1500">1446</maxPacketSize>
 <audioPacketLength min="0" max="5000"/>
 <audioInboundPacketLength min="0" max="5000"/>
 <audioInboundPortNo min="0" max="65535"/>
 <videoSourcePortNo min="0" max="65535"/>
 <audioSourcePortNo min="0" max="65535"/>
 <ControlProtocolList>
  <ControlProtocol>
   <streamingTransport opt="RTSP/RTP,HTTP">RTSP</streamingTransport>
  </ControlProtocol>
  <ControlProtocol>
   <streamingTransport opt="RTSP/RTP,HTTP">HTTP</streamingTransport>
  </ControlProtocol>
 </ControlProtocolList>
 <Unicast>
  <enabled opt="true,false" def="false"/>
  <rtpTransportType opt="RTP/UDP,RTP/TCP"/>
 </Unicast>
 <Multicast>
  <enabled opt="true,false" def="false"/>
  <userTriggerThreshold/>
  <videoDestPortNo min="0" max="65535"/>
  <audioDestPortNo min="0" max="65535"/>
  <destIPAddress min="8" max="16"/>
  <destIPv6Address min="15" max="39"/>
  <ttl min="0" max="127" def="1"/>
 </Multicast>
 <Security>
  <enabled opt="true,false" def="false"/>
 </Security>
</Transport>
<Video>
 <enabled opt="true,false">true</enabled>
 <videoInputChannelID opt="1,2,3,4">2</videoInputChannelID>
 <videoCodecType opt="MJPEG,MPEG4">MPEG4</videoCodecType>
 <videoScanType opt="interlaced,progressive">progressive</videoScanType>
 <videoResolutionWidth min="0" max="640">640</videoResolutionWidth>
 <videoResolutionHeight min="0" max="480">480</videoResolutionHeight>
 <videoPositionX min="0" max="640">0</videoPositionX>
 <videoPositionY min="0" max="480">0</videoPositionY>
 <videoQualityControlType opt="CBR,VBR">CBR</videoQualityControlType>
 <constantBitRate min="50" max="4000" dynamic="true">2000</constantBitRate>
 <maxFrameRate opt="2500,1250,625,312,156,78,  830" dynamic="true">2500</maxFrameRate>
 <keyFrameInterval min="0", max="10000">1000</keyFrameInterval>
 <rotationDegree opt="0,90,180,270" def="0">0</rotationDegree>
 <mirrorEnabled opt="true,false" def="false">false</mirrorEnabled>
 <snapShotImageType opt="JPEG" def="JPEG">JPEG</snapShotImageType>
```

```
 </Video>
 <Audio>
  <enabled opt="true,false" def="false">false</enabled>
  <audioInputChannelID opt="1,2,3,4">2</audioInputChannelID>
  <audioCompressionType opt="G.726,G.711ulaw" def="G.726">G.726</audioCompressionType>
  <audioBitRate opt="16,24,32,40" def="32" dynamic="true">24</audioBitRate>
  <audioSamplingRate opt="8" dynamic="true">8</audioSamplingRate>
  <audioResolution opt="3,4,5,6" dynamic="true"/>
 </Audio>
</StreamingChannel>
```

15.9.4 /ISAPI/Streaming/channels/<ID>/dynamicCap

Get the dynamic encoding capability of a specific channel.

Request URL Definition

Table 15-327 GET /ISAPI/Streaming/channels/<ID>/dynamicCap

Method	GET
Description	Get the dynamic encoding capability of a specific channel.
Query	None.
Request	None.
Response	***XML_DynamicCap***

Remarks

The <**ID**> in the URL refers to the channel ID.

15.9.5 /ISAPI/Streaming/channels/<ID>/picture

Manually capture picture in the video stream of a specific channel.

Request URL Definition

Table 15-328 GET /ISAPI/Streaming/channels/<ID>/picture

Method	GET
Description	Manually capture picture in the video stream of a specific channel.
Query	(Optional) **videoResolutionWidth**: width of captured picture resolution. (Optional) **videoResolutionHeight**: height of captured picture resolution.

	(Optional) **snapShotImageType**: captured picture format, only the JPEG format is supported.
Request	None.
Response	Picture data, which is transmitted on HTTP.

Remarks

- The <**ID**> in the request URL refers to the streaming channel ID, which is equal to (channel No. × 100 + 1). For example, if a camera only has one channel, its ID is 101.
- This URL only supports capturing picture in main stream, and only JPEG format is supported.

Example

Sample Code for Manually Capturing Picture

```
GET /ISAPI/Streaming/channels/1/picture HTTP/1.1
Host: 10.17.132.49
Connection: Keep-Alive
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4d305134517a55344d6a55365a4445324f544130597a453d",
uri="/ISAPI/Streaming/channels/1/picture",
cnonce="481bb1afa48b24e512778b084bfe4977",
nc=00000001,
response="e5670d5d9d40c522afabb11b5fa35268",
qop="auth"

HTTP/1.1 200 OK
Content-Type: image/jpeg; charset="UTF-8"
Content-Length:19991

.....JFIF.....C.
.
...
.. .....'... .)10.)-,3:J>36F7,- (Binary picture data)
```

15.9.6 /ISAPI/Streaming/channels/<ID>/regionClip

Get or set target cropping parameters by streaming channel.

Request URL Definition

Table 15-329 GET /ISAPI/Streaming/channels/<ID>/regionClip

Method	GET
Description	Get target cropping parameters by streaming channel.
Query	None.

Request	None.
Response	Succeeded: ***XML_RegionClip*** Failed: ***XML_ResponseStatus***

Table 15-330 PUT /ISAPI/Streaming/channels/<ID>/regionClip

Method	PUT
Description	Set target cropping parameters by streaming channel.
Query	None.
Request	***XML_RegionClip***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to streaming channel ID.

15.9.7 /ISAPI/Streaming/channels/<ID>/regionClip/capabilities

Get configuration capability of target cropping by streaming channel.

Request URL Definition

Table 15-331 GET /ISAPI/Streaming/channels/<ID>/regionClip/capabilities

Method	GET
Description	Get configuration capability of target cropping by streaming channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_RegionClip*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to streaming channel ID.

15.9.8 /ISAPI/Streaming/channels/<ID>/smartOverlap/capabilities?format=json

Get the capability of configuring the stream for displaying VCA rules of smart events.

Request URL Definition

Table 15-332 GET /ISAPI/Streaming/channels/<ID>/smartOverlap/capabilities?format=json

Method	GET
Description	Get the capability of configuring the stream for displaying VCA rules of smart events.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_SmartOverlapCap*** Failed: ***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.9.9 /ISAPI/Streaming/channels/<ID>/smartOverlap?format=json

Get or set the stream parameters for displaying VCA rules of smart events.

Request URL Definition

Table 15-333 GET /ISAPI/Streaming/channels/<ID>/smartOverlap?format=json

Method	GET
Description	Get the stream parameters for displaying VCA rules of smart events.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_SmartOverlap*** Failed: ***JSON_ResponseStatus***

Table 15-334 PUT /ISAPI/Streaming/channels/<ID>/smartOverlap?format=json

Method	PUT
Description	Set the stream parameters for displaying VCA rules of smart events.
Query	**format**: determine the format of request or response message.
Request	***JSON_SmartOverlap***
Response	***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.9.10 /ISAPI/Streaming/channels/<ID>/status

Get the streaming or encoding status of a specific channel.

Request URL Definition

Table 15-335 GET /ISAPI/Streaming/channels/<ID>/status

Method	GET
Description	Get the streaming or encoding status of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_StreamingSessionStatusList*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the streaming channel ID.

15.9.11 /ISAPI/Streaming/encryption/capabilities?format=json

Get stream encryption capability.

Request URL Definition

Table 15-336 GET /ISAPI/Streaming/encryption/capabilities?format=json

Method	GET
Description	Get stream encryption capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_EncryptionCap***

15.9.12 /ISAPI/Streaming/encryption/secretKey?format=json

Operations about the configuration of stream encryption key.

Request URL Definition

Table 15-337 GET /ISAPI/Streaming/encryption/secretKey?format=json

Method	GET
Description	Get the configuration parameters of stream encryption key.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_secretKey***

Table 15-338 PUT /ISAPI/Streaming/encryption/secretKey?format=json

Method	GET
Description	Set stream encryption key.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***JSON_secretKey***
Response	***JSON_ResponseStatus***

15.9.13 /ISAPI/Streaming/encryption?format=json

Operations about the configuration of stream encryption.

Request URL Definition

Table 15-339 GET /ISAPI/Streaming/encryption?format=json

Method	GET
Description	Get the configuration parameters of stream encryption.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_EnableEncryption***

Table 15-340 PUT /ISAPI/Streaming/encryption?format=json

Method	GET
Description	Enable stream encryption.
Query	**format**: determine the format of request or response message.
Request	***JSON_EnableEncryption***
Response	***JSON_ResponseStatus***

15.9.14 /ISAPI/Streaming/status

Get the streaming or encoding status of all channels.

Request URL Definition

Table 15-341 GET /ISAPI/Streaming/status

Method	GET
Description	Get the streaming or encoding status of all channels.
Query	None.
Request	None.
Response	Succeeded: ***XML_StreamingStatus*** Failed: ***XML_ResponseStatus***

15.9.15 rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>

Operations about live view of a specific channel.

Request URL Definition

Table 15-342 DESCRIBE rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>

Method	DESCRIBE
Description	Get basic parameters for live view.
Query	None.
Request	None.
Response	None.

Table 15-343 SETUP rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>

Method	SETUP
Description	Get session information for live view.
Query	None.
Request	None.
Response	None.

Table 15-344 PLAY rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>

Method	PLAY
Description	Start live view.
Query	None.
Request	None.
Response	None.

Table 15-345 TEARDOW rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>

Method	TEARDOW
Description	Stop live view.
Query	None.
Request	None.
Response	None.

Remarks

The <**ID**> in the URL is defined as (channel No.)*100+(stream type value).

channel No.

For analog channel, the No. starts from 1, and for digital channel, the No. starts from the last analog channel No.

E.g., if the device has 16 analog channels and 16 digital channels, the analog channel No. is between 1 and 16, and the digital channel No. is between 17 and 32.

stream type value

The stream type values contain 1, 2, and 3. 1-main stream, 2-sub-stream, 3-third stream.

E.g., if ID is 101, it indicates the main stream of channel No.1; if ID is 102, it indicates the sub-stream of channel No. 2; if ID is 1601, it indicates the main stream of channel 16;...

15.9.16 rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=

Operations about multicast based on network protocol quality (NPQ).

Request URL Definition

Table 15-346 DESCRIBE rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=

Method	DESCRIBE
Description	Request for getting basic parameters for multicast based on NPQ.
Query	**npq**: Network Protocol Quality (NPQ), this query parameter is used to enable streaming according to NPQ and by FEC (Forward Error Correction) method if its value is set to "fec".
Request	None.
Response	None.

Table 15-347 SETUP rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=

Method	SETUP
Description	Request for getting session information for multicast based on NPQ.
Query	**npq**: Network Protocol Quality (NPQ), this query parameter is used to enable streaming according to NPQ and by FEC (Forward Error Correction) method if its value is set to "fec".
Request	None.
Response	None.

Table 15-348 PLAY rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=

Method	PLAY
Description	Start multicast based on NPQ.

Query	**npq**: Network Protocol Quality (NPQ), this query parameter is used to enable streaming according to NPQ and by FEC (Forward Error Correction) method if its value is set to "fec".
Request	None.
Response	None.

Table 15-349 TEARDOW rtsp://<host>[:port]/ISAPI/Streaming/channels/<ID>?npq=

Method	TEARDOW
Description	Stop multicast based on NPQ.
Query	**npq**: Network Protocol Quality (NPQ), this query parameter is used to enable streaming according to NPQ and by FEC (Forward Error Correction) method if its value is set to "fec".
Request	None.
Response	None.

Remarks

The <**ID**> in the request URL is the value of (channel No. × 100 + stream type value), e.g., if the channel No. is 1, and the stream type value is 1, the ID equals to 101.

- For channel No., if the device contains analog and digital channels, the analog channel No. starts from 1, and the digital channel No. starts from the next No. of the end analog channel. For example, if the device contains 16 analog channels and 16 digital channels, the analog channel No. is between 1 and 16, while the digital channel No. is between 17 and 32.
- For stream type, only two values are available, that is, 1 (main stream) and 2 (sub-stream).

15.9.17 rtsp://<host>[:port]/ISAPI/Streaming/tracks/<ID>?starttime=&endtime=

Operations about playback of a specific channel.

Request URL Definition

Table 15-350 DESCRIBE rtsp://<host>[:port]/ISAPI/Streaming/tracks/<ID>?starttime=&endtime=

Method	DESCRIBE
Description	Request for getting basic parameters for playback.
Query	**starttime**: start time of the target stream, whose format is based on the ISO 8601 standard. (Optional) **endtime**: end time of the target stream, whose format is based on the ISO 8601 standard. If this field is empty, the stream will

	be continuously obtained until the session is terminated or paused manually.
Request	None.
Response	None.

Table 15-351 SETUP rtsp://<host>[:port]/ISAPI/Streaming/tracks/<ID>?starttime=&endtime=

Method	SETUP
Description	Request for getting session information for playback.
Query	**starttime**: start time of the target stream, whose format is based on the ISO 8601 standard. (Optional) **endtime**: end time of the target stream, whose format is based on the ISO 8601 standard. If this field is empty, the stream will be continuously obtained until the session is terminated or paused manually.
Request	None.
Response	None.

Table 15-352 PLAY rtsp://<host>[:port]/ISAPI/Streaming/tracks/<ID>?starttime=&endtime=

Method	PLAY
Description	Start playback.
Query	**starttime**: start time of the target stream, whose format is based on the ISO 8601 standard. (Optional) **endtime**: end time of the target stream, whose format is based on the ISO 8601 standard. If this field is empty, the stream will be continuously obtained until the session is terminated or paused manually.
Request	None.
Response	None.

Table 15-353 TEARDOW rtsp://<host>[:port]/ISAPI/Streaming/tracks/<ID>?starttime=&endtime=

Method	TEARDOW
Description	Stop playback.
Query	**starttime**: start time of the target stream, whose format is based on the ISO 8601 standard. (Optional) **endtime**: end time of the target stream, whose format is based on the ISO 8601 standard. If this field is empty, the stream will

	be continuously obtained until the session is terminated or paused manually.
Request	None.
Response	None.

Remarks

The <**ID**> in the URL is defined as (channel No.)*100+(stream type value).

channel No.

For analog channel, the No. starts from 1, and for digital channel, the No. starts from the last analog channel No.

E.g., if the device has 16 analog channels and 16 digital channels, the analog channel No. is between 1 and 16, and the digital channel No. is between 17 and 32.

stream type value

The stream type values contain 1, 2, and 3. 1-main stream, 2-sub-stream, 3-third stream.

E.g., if **ID** is 101, it indicates the main stream of channel No.1; if **ID** is 102, it indicates the sub-stream of channel No. 2; if **ID** is 1601, it indicates the main stream of channel 16;...

15.10 /ISAPI/System

15.10.1 /ISAPI/System/accessDevice/associatedChannel?format=json

Get the linked channel informaiton of added IoT device.

Request URL Definition

Table 15-354 GET /ISAPI/System/accessDevice/associatedChannel?format=json

Method	GET
Description	Get the linked channel informaiton of added IoT device.
Query	**format**: determine the format of request or response message.
Request	***JSON_IOT_ChannelInfoList***
Response	***JSON_AssociatedChannelList***

15.10.2 /ISAPI/System/AcsUpdate/capabilities

Get the capability of upgrading device (slave access control device, peripheral module, etc.).

Request URL Definition

Table 15-355 GET /ISAPI/System/AcsUpdate/capabilities

Method	GET
Description	Get the capability of upgrading device (slave access control device, peripheral module, etc.).
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_AcsUpdate*** Failed: ***XML_ResponseStatus***

15.10.3 /ISAPI/System/activate

Device activation.

Request URL Definition

Table 15-356 PUT /ISAPI/System/activate

Method	PUT
Description	Send activation password to activate the device.
Query	None.
Request	***XML_ActivateInfo***
Response	***XML_ResponseStatus***

15.10.4 /ISAPI/System/algorithmsVersion

Get the version information of algorithm library.

Request URL Definition

Table 15-357 GET /ISAPI/System/algorithmsVersion

Method	GET
Description	Get the version information of algorithm library.
Query	None.
Request	None.
Response	***XML_AlgorithmsVersion***

15.10.5 /ISAPI/System/Audio/AudioIn/channels/<ID>

Get or set audio input parameters of a specific channel.

Request URL Definition

Table 15-358 GET /ISAPI/System/Audio/AudioIn/channels/<ID>

Method	GET
Description	Get audio input parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_AudioIn*** Failed: ***XML_ResponseStatus***

Table 15-359 PUT /ISAPI/System/Audio/AudioIn/channels/<ID>

Method	PUT
Description	Set audio input parameters of a specific channel.
Query	None.
Request	***XML_AudioIn***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.10.6 /ISAPI/System/Audio/AudioIn/channels/<ID>/capabilities

Get the audio input capability of a specific channel.

Request URL Definition

Table 15-360 GET /ISAPI/System/Audio/AudioIn/channels/<ID>/capabilities

Method	GET
Description	Get the audio input capability of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_AudioInCap***

	Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.10.7 /ISAPI/System/Audio/AudioOut/channels/<ID>

Get or set audio output parameters of a specific channel.

Request URL Definition

Table 15-361 GET /ISAPI/System/Audio/AudioOut/channels/<ID>

Method	GET
Description	Get audio output parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_AudioOut*** Failed: ***XML_ResponseStatus***

Table 15-362 PUT /ISAPI/System/Audio/AudioOut/channels/<ID>

Method	PUT
Description	Set audio output parameters of a specific channel.
Query	None.
Request	***XML_AudioOut***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.10.8 /ISAPI/System/Audio/AudioOut/channels/<ID>/capabilities

Get the audio output capability of a specific channel.

Request URL Definition

Table 15-363 GET /ISAPI/System/Audio/AudioOut/channels/<ID>/capabilities

Method	GET
Description	Get the audio output capability of a specific channel.

Query	None.
Request	None.
Response	Succeeded: ***XML_AudioOutCap*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.10.9 /ISAPI/System/Audio/capabilities

Get the audio capability.

Request URL Definition

Table 15-364 GET /ISAPI/System/Audio/capabilities

Method	GET
Description	Get the audio capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_AudioCap*** Failed: ***XML_ResponseStatus***

15.10.10 /ISAPI/System/Audio/channels

Get the configuration of all audio channels of the device.

Request URL Definition

Table 15-365 GET /ISAPI/System/Audio/channels

Method	GET
Description	Get the configuration of all audio channels of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_AudioChannelList*** Failed: ***XML_ResponseStatus***

15.10.11 /ISAPI/System/Audio/channels/<ID>

Get the configuration of a specific audio channel of the device.

Request URL Definition

Table 15-366 GET /ISAPI/System/Audio/channels/<ID>

Method	GET
Description	Get the configuration of a specific audio channel of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_AudioChannel*** Failed: ***XML_ResponseStatus***

15.10.12 /ISAPI/System/Audio/channels/<ID>/dynamicCap

Get dynamic audio capability by channel.

Request URL Definition

Table 15-367 GET /ISAPI/System/Audio/channels/<ID>/dynamicCap

Method	GET
Description	Get dynamic audio capability by channel.
Query	None.
Request	***XML_AudioDscriptor***
Response	Succeeded: ***XML_DynamicCap*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the audio input channel ID.

15.10.13 /ISAPI/System/autoMaintenance/capabilities?format=json

Get the capability of automatic maintenance configuration.

Request URL Definition

Table 15-368 GET /ISAPI/System/autoMaintenance/capabilities?format=json

Method	GET
Description	Get the capability of automatic maintenance configuration.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_AutoMaintenanceCap***

15.10.14 /ISAPI/System/autoMaintenance?format=json

Get automatic maintenance configuration parameters.

Request URL Definition

Table 15-369 GET /ISAPI/System/autoMaintenance?format=json

Method	GET
Description	Get automatic maintenance configuration parameters.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_AutoMaintenance***

Table 15-370 PUT /ISAPI/System/autoMaintenance?format=json

Method	PUT
Description	Set automatic maintenance parameters.
Query	**format**: determine the format of request or response message.
Request	***JSON_AutoMaintenance***
Response	***JSON_ResponseStatus***

15.10.15 /ISAPI/System/Bluetooth/capabilities

Get the bluetooth configuration capability.

Request URL Definition

Table 15-371 GET /ISAPI/System/Bluetooth/capabilities

Method	GET
Description	Get the bluetooth configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_BluetoothCap*** Failed: ***XML_ResponseStatus***

15.10.16 /ISAPI/System/Bluetooth/ibeaconParam

Operations about the ibeacon bluetooth configuration.

Request URL Definition

Table 15-372 GET /ISAPI/System/Bluetooth/ibeaconParam

Method	GET
Description	Get the ibeacon bluetooth parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_IbeaconParam*** Failed: ***XML_ResponseStatus***

Table 15-373 PUT /ISAPI/System/Bluetooth/ibeaconParam

Method	PUT
Description	Set the ibeacon bluetooth parameters.
Query	None.
Request	***XML_IbeaconParam***
Response	***XML_ResponseStatus***

15.10.17 /ISAPI/System/Bluetooth/ibeaconParam/capabilities

Get the ibeacon bluetooth configuration capability.

Request URL Definition

Table 15-374 GET /ISAPI/System/Bluetooth/ibeaconParam/capabilities

Method	GET
Description	Get the ibeacon bluetooth configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_IbeaconParam*** Failed: ***XML_ResponseStatus***

15.10.18 /ISAPI/System/capabilities

Get device capability.

Request URL Definition

Table 15-375 GET /ISAPI/System/capabilities

Method	GET
Description	Get device capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_DeviceCap*** Failed: ***XML_ResponseStatus***

15.10.19 /ISAPI/System/configurationData?secretkey=

Import or export configuration files securely.

Request URL Definition

Table 15-376 GET /ISAPI/System/configurationData?secretkey=

Method	GET
Description	Export the configuration files securely.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message

	are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **secretkey**: the verification key, it is provided by the upper-layer and should be encrypted for exporting.
Request	None.
Response	Opaque data (binary data).

Table 15-377 PUT or POST /ISAPI/System/configurationData?secretkey=

Method	PUT, POST
Description	Import the configuration files securely.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **secretkey**: the verification key, it is provided by the upper-layer and should be encrypted for importing.
Request	Opaque data (binary data for PUT method, data in form format for POST method).
Response	***XML_ResponseStatus***

Remarks

The device may reboot after importing the configuration file.

15.10.20 /ISAPI/System/configurationData?type=

Import or export device configuration files safely.

Request URL Definition

Table 15-378 GET /ISAPI/System/configurationData?type=

Method	GET
Description	Export device configuration files safely.

Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **secretkey**: the verification key, which is provided by the upper-layer and should be encrypted for importing. **type**: the type of configuration parameters to be exported or imported, which contains "OSD", "MODE", "IMAGE" and "IOOUT" types. For "OSD" type, the OSD (On Screen Display) parameters will be imported or exported; for "MODE" type, the application mode parameters will be imported or exported; for "IMAGE" type, the image parameters will be imported or exported; for "IOOUT" type, the IO output parameters will be imported or exported. Multiple types can be selected and they should be separated by commas, e.g., /ISAPI/System/configurationData?type=OSD,MODE,IMAGE,IOOUT. If no type is selected, it is recommended to return failure response message or set **type** to NULL.
Request	None.
Response	Succeeded: Opaque data. Failed: ***XML_ResponseStatus***

Table 15-379 PUT or POST /ISAPI/System/configurationData?type=

Method	PUT, POST
Description	Import device configuration files safely.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **secretkey**: the verification key, which is provided by the upper-layer and should be encrypted for importing. **type**: the type of configuration parameters to be exported or imported, which contains "OSD", "MODE", "IMAGE" and "IOOUT"

	types. For "OSD" type, the OSD (On Screen Display) parameters will be imported or exported; for "MODE" type, the application mode parameters will be imported or exported; for "IMAGE" type, the image parameters will be imported or exported; for "IOOUT" type, the IO output parameters will be imported or exported. Multiple types can be selected and they should be separated by commas, e.g., /ISAPI/System/configurationData?type=OSD,MODE,IMAGE,IOOUT. If no type is selected, it is recommended to return failure response message or set **type** to NULL.
Request	Opaque data.
Response	***XML_ResponseStatus***

Remarks

- This URL will import or export all configuration parameters by default.
- The device needs to reboot for the imported parameters to take effect.

15.10.21 /ISAPI/System/deviceInfo

Operations about the device information.

Request URL Definition

Table 15-380 GET /ISAPI/System/deviceInfo

Method	GET
Description	Get the device information.
Query	None
Request	None.
Response	Succeeded: ***XML_DeviceInfo*** Failed: ***XML_ResponseStatus***

Table 15-381 PUT /ISAPI/System/deviceInfo

Method	PUT
Description	Set the device information.
Query	None
Request	***XML_DeviceInfo***
Response	***XML_ResponseStatus***

15.10.22 /ISAPI/System/deviceInfo/capabilities

Get the device information configuration capability.

Request URL Definition

Table 15-382 GET /ISAPI/System/deviceInfo/capabilities

Method	GET
Description	Get the device information configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_DeviceInfo*** Failed: ***XML_ResponseStatus***

15.10.23 /ISAPI/System/diagnosedData

Get device diagnosis information.

Request URL Definition

Table 15-383 GET /ISAPI/System/diagnosedData

Method	GET
Description	Get device diagnosis information.
Query	None.
Request	None.
Response	Non-transparent data

Remarks

Before getting the device diagnosis information, you should get the information export status via URL GET ***/ISAPI/System/diagnosedData/exportStatus*** , only when the node <**status**> in ***XML_ExportStatus*** is "unexport", you can call this URL to get the device diagnosis information.

15.10.24 /ISAPI/System/diagnosedData/exportStatus

Get the export status of device diagnosis information.

Request URL Definition

Table 15-384 GET /ISAPI/System/diagnosedData/exportStatus

Method	GET
Description	Get the export status of device diagnosis information.
Query	None.
Request	None.
Response	***XML_ExportStatus***

15.10.25 /ISAPI/System/diagnosis/capabilities?format=json

Get the device diagnosis capability.

Request URL Definition

Table 15-385 GET /ISAPI/System/diagnosis/capabilities?format=json

Method	GET
Description	Get the device diagnosis capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DiagnosisCondCap*** Failed: ***JSON_ResponseStatus***

15.10.26 /ISAPI/System/diagnosis?format=json

Diagnose the device.

Request URL Definition

Table 15-386 POST /ISAPI/System/diagnosis?format=json

Method	POST
Description	Diagnose the device.
Query	**format**: determine the format of request or response message.
Request	***JSON_DiagnosisCond***
Response	***JSON_DiagnosisResult***

15.10.27 /ISAPI/System/doubleLensParking/capabilities

Get the capability of dual-lens parking space camera.

Request URL Definition

Table 15-387 GET /ISAPI/System/doubleLensParking/capabilities

Method	GET
Description	Get the capability of dual-lens parking space camera.
Query	None.
Request	None.
Response	Succeeded: ***XML_DoubleLensParkingCap*** Failed: ***XML_ResponseStatus***

15.10.28 /ISAPI/System/dumpData

Get the dump file data of the device.

Request URL Definition

Table 15-388 GET /ISAPI/System/dumpData

Method	GET
Description	Get the dump file data of the device.
Query	None.
Request	None.
Response	Opaque data.

Remarks

The dump file data of the device may be in binary format or other format.

15.10.29 /ISAPI/System/factoryReset?mode=

Restore the device to default settings.

Request URL Definition

Table 15-389 PUT /ISAPI/System/factoryReset?mode=

Method	PUT
Description	Restore the device to default settings.
Query	**mode**: The recovery mode, which contains "full", "basic", and "part" mode. The default mode is "full", and all the device parameters will be restored to default settings; for "basic" mode, the device parameters, except network and user parameters, will be restored to default settings; for "part" mode, only a part of default settings will be restored.
Request	None.
Response	***XML_ResponseStatus***

Remarks

- For access control devices, this URL is only supported by facial recognition terminal, and the "full" and "basic" recovery modes are not supported by passthrough method.
- For facial recognition terminal, if the recovery mode is set to "part", i.e., /ISAPI/System/factoryReset?mode=part, the settings of card, face, event, fingerprint, schedule template, network, user name, and password will be reserved without being restored.

15.10.30 /ISAPI/System/fileExport/capabilities?format=json

Get the capability of exporting files from the device.

Request URL Definition

Table 15-390 GET /ISAPI/System/fileExport/capabilities?format=json

Method	GET
Description	Get the capability of exporting files from the device.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_FileExportCap*** Failed: ***JSON_ResponseStatus***

15.10.31 /ISAPI/System/fileExport?format=json

Export files from the device.

Request URL Definition

Table 15-391 POST /ISAPI/System/fileExport?format=json

Method	POST
Description	Export files from the device.
Query	**format**: determine the format of request or response message.
Request	***JSON_FileExport***
Response	***JSON_FileExportResult***

15.10.32 /ISAPI/System/guardAgainstTheft

Get or set device anti-theft parameters.

Request URL Definition

Table 15-392 GET /ISAPI/System/guardAgainstTheft

Method	GET
Description	Get the device anti-theft parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_GuardAgainstTheft*** Failed: ***XML_ResponseStatus***

Table 15-393 PUT /ISAPI/System/guardAgainstTheft

Method	PUT
Description	Set the device anti-theft parameters.
Query	None.
Request	***XML_GuardAgainstTheft***
Response	***XML_ResponseStatus***

15.10.33 /ISAPI/System/guardAgainstTheft/capabilities

Get the device anti-theft configuration capability.

Request URL Definition

Table 15-394 GET /ISAPI/System/guardAgainstTheft/capabilities

Method	GET
Description	Get the device anti-theft configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_GuardAgainstTheft*** Failed: ***XML_ResponseStatus***

15.10.34 /ISAPI/System/guideConfig/<guideEvent>/capabilities?format=json

Get the capability of quick setup instruction for specified event.

Request URL Definition

Table 15-395 GET /ISAPI/System/guideConfig/<guideEvent>/capabilities?format=json

Method	GET
Description	Get the capability of quick setup instruction for specified event.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_GuideConfigCap*** Failed: ***JSON_ResponseStatus***

Remarks

The <guideEvent> in the URL refers to the event, which supports quick setup, and now only "linkageCapture" (capture by linkage) is supported, i.e., the URL is: /ISAPI/System/guideConfig/linkageCapture/capabilities?format=json

15.10.35 /ISAPI/System/guideConfig/<guideEvent>?format=json

Get the parameters of quick setup instruction for specified event.

Request URL Definition

Table 15-396 GET /ISAPI/System/guideConfig/<guideEvent>?format=json

Method	GET
Description	Get the parameters of quick setup instruction for specified event.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_GuideConfig*** Failed: ***JSON_ResponseStatus***

Remarks

The <guideEvent> in the URL refers to the event, which supports quick setup, and now only "linkageCapture" (capture by linkage) is supported, i.e., the URL is: /ISAPI/System/guideConfig/linkageCapture?format=json

15.10.36 /ISAPI/System/Hardware

Operations about the device hardware configuration.

Request URL Definition

Table 15-397 GET /ISAPI/System/Hardware

Method	GET
Description	Get the device hardware configuration parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_HardwareService*** Failed: ***XML_ResponseStatus***

Table 15-398 PUT /ISAPI/System/Hardware

Method	PUT
Description	Set the device hardware parameters.
Query	None.
Request	***XML_HardwareService***
Response	***XML_ResponseStatus***

15.10.37 /ISAPI/System/Hardware/defog

Operations about the defogging control configuration.

Request URL Definition

Table 15-399 GET /ISAPI/System/Hardware/defog

Method	GET
Description	Get the defogging control configuration parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_Defog*** Failed: ***XML_ResponseStatus***

Table 15-400 PUT /ISAPI/System/Hardware/defog

Method	PUT
Description	Set the defogging control parameters.
Query	None.
Request	***XML_Defog***
Response	***XML_ResponseStatus***

15.10.38 /ISAPI/System/installationAngleCalibration/channels/<ID>/capabilities?format=json

Get the capability of installation angle calibration.

Request URL Definition

Table 15-401 GET /ISAPI/System/installationAngleCalibration/channels/<ID>/capabilities?format=json

Method	GET
Description	Get the capability of installation angle calibration.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_Cap_CalibrationStatus*** Failed: ***JSON_ResponseStatus***

Remarks

The <ID> in the request URL refers to the channel No.

15.10.39 /ISAPI/System/installationAngleCalibration/channels/<ID>?format=json

Get the installation angle calibration status or calibrate the installation angle.

Request URL Definition

Table 15-402 GET /ISAPI/System/installationAngleCalibration/channels/<ID>?format=json

Method	GET
Description	Get the installation angle calibration status.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_CalibrationStatus*** Failed: ***JSON_ResponseStatus***

Table 15-403 PUT /ISAPI/System/installationAngleCalibration/channels/<ID>?format=json

Method	PUT
Description	Calibrate the installation angle.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

The <ID> in the request URL refers to the channel No.

15.10.40 /ISAPI/System/IO/capabilities

Get alarm input and output configuration capability.

Request URL Definition

Table 15-404 GET /ISAPI/System/IO/capabilities

Method	GET
Description	Get alarm input and output configuration capability.
Query	None.

Request	None.
Response	***XML_IOCap***

15.10.41 /ISAPI/System/IO/inputs

Get the information of all alarm input ports.

Request URL Definition

Table 15-405 Get the information of all alarm input ports.

Method	GET
Description	Get the information of all alarm input ports.
Query	None.
Request	None.
Response	***XML_IOInputPortList***

15.10.42 /ISAPI/System/IO/inputs/<ID>

Get or set an alarm input port.

Request URL Definition

Table 15-406 GET /ISAPI/System/IO/inputs/<ID>

Method	GET
Description	Get an alarm input's information.
Query	None.
Request	None.
Response	***XML_IOInputPort***

Table 15-407 PUT /ISAPI/System/IO/inputs/<ID>

Method	PUT
Description	Set an alarm input's information.
Query	None.
Request	***XML_IOInputPort***
Response	***XML_ResponseStatus***

15.10.43 /ISAPI/System/IO/inputs/<ID>/status

Get the status of a specific alarm input.

Request URL Definition

Table 15-408 GET /ISAPI/System/IO/inputs/<ID>/status

Method	GET
Description	Get the status of a specific alarm input.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOPortStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the alarm input ID.

15.10.44 /ISAPI/System/IO/inputs/capabilities

Get alarm input configuration capability.

Request URL Definition

Table 15-409 GET /ISAPI/System/IO/inputs/capabilities

Method	GET
Description	Get the alarm input configuration capability.
Query	None.
Request	None.
Response	***XML_Cap_IOInputPortList***

15.10.45 /ISAPI/System/IO/outputs

Get the information of all I/O output ports.

Request URL Definition

Table 15-410 GET /ISAPI/System/IO/outputs

Method	GET
Description	Get the information of all I/O output ports.
Query	None.
Request	None.
Response	***XML_IOOutputPortList***

15.10.46 /ISAPI/System/IO/outputs/capabilities

Get the I/O output capability.

Request URL Definition

Table 15-411 GET /ISAPI/System/IO/outputs/capabilities

Method	GET
Description	Get the I/O output capability.
Query	None.
Request	None.
Response	***XML_Cap_IOOutputPortList***

15.10.47 /ISAPI/System/IO/outputs/<ID>

Get or set the information of specified I/O output port.

Table 15-412 GET /ISAPI/System/IO/outputs/<ID>

Method	GET
Description	Get the information of specified I/O output port.
Query	None.
Request	None.
Response	***XML_IOOutputPort***

Table 15-413 PUT /ISAPI/System/IO/outputs/<ID>

Method	PUT
Description	Set the information of specified alarm output port.
Query	***XML_IOOutputPort***
Request	None.
Response	***XML_ResponseStatus***

15.10.48 /ISAPI/System/IO/outputs/<ID>/status

Get status of a specific alarm output.

Request URL Definition

Table 15-414 GET /ISAPI/System/IO/outputs/<ID>/status

Method	GET
Description	Get status of a specific alarm output.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOPortStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the alarm output ID.

15.10.49 /ISAPI/System/IO/outputs/<ID>/trigger

Manually trigger a specific alarm output.

Request URL Definition

Table 15-415 PUT /ISAPI/System/IO/outputs/<ID>/trigger

Method	PUT
Description	Manually trigger a specific alarm output.
Query	none.
Request	***XML_IOPortData***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the alarm output ID.

15.10.50 /ISAPI/System/IO/status

Get alarm input and output status.

Request URL Definition

Table 15-416 GET /ISAPI/System/IO/status

Method	GET
Description	Get alarm input and output status.
Query	None.
Request	None.
Response	Succeeded: ***XML_IOPortStatusList*** Failed: ***XML_ResponseStatus***

15.10.51 /ISAPI/System/IOT/channelConfig?format=json

Import or export the list of added IoT devices.

Request URL Definition

Table 15-417 GET /ISAPI/System/IOT/channelConfig?format=json

Method	GET
Description	Export the list of added IoT devices.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: Opaque Data Failed: ***JSON_ResponseStatus***

Table 15-418 PUT /ISAPI/System/IOT/channelConfig?format=json

Method	PUT
Description	Import the list of added IoT devices.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	Opaque Data
Response	***JSON_ResponseStatus*** ***JSON_IOT_ErrorList***

Remarks

The Opaque Data should be encrypted.

15.10.52 /ISAPI/System/IOT/channels/<ID>/<EventType>/capabilities?format=json

Get the event configuration capability of IoT device.

Request URL Definition

Table 15-419 GET /ISAPI/System/IOT/channels/<ID>/<EventType>/capabilities?format=json

Method	GET
Description	Get the event configuration capability of IoT device.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_XXCap*** Failed: ***JSON_ResponseStatus***

15.10.53 /ISAPI/System/IOT/channels/<ID>/<EventType>?format=json

Get or set the event/alarm parameters.

Request URL Definition

Table 15-420 GET /ISAPI/System/IOT/channels/<ID>/<EventType>?format=json

Method	GET
Description	Get the event/alarm parameters.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_XX*** Failed: ***JSON_ResponseStatus***

Table 15-421 PUT /ISAPI/System/IOT/channels/<ID>/<EventType>?format=json

Method	PUT
Description	Set the event/alarm parameters.
Query	**format**: determine the format of request or response message.
Request	***JSON_XX***
Response	***JSON_ResponseStatus***

15.10.54 /ISAPI/System/IOT/channels/<ID>/alarmStatistics?format=json

Get the alarm statistics of added IoT device according to channel ID.

Request URL Definition

Table 15-422 GET /ISAPI/System/IOT/channels/<ID>/alarmStatistics?format=json

Method	GET
Description	Get the alarm statistics of added IoT device according to channel ID.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_AlarmStatistics*** Failed: ***JSON_ResponseStatus***

15.10.55 /ISAPI/System/IOT/channels/<ID>/all?format=json

Delete all channels (video channel and IoT channel) of added IoT device

Request URL Definition

Table 15-423 DELETE /ISAPI/System/IOT/channels/<ID>/all?format=json

Method	DELETE
Description	Delete all channels (video channel and IoT channel) of added IoT device
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

15.10.56 /ISAPI/System/IOT/channels/<ID>/basicParam?format=json

Set the basic parameters of added IoT device according to channel ID.

Request URL Definition

Table 15-424 PUT /ISAPI/System/IOT/channels/<ID>/basicParam?format=json

Method	PUT
Description	Set the basic parameters of added IoT device according to channel ID.
Query	**format**: determine the format of request or response message.
Request	***JSON_BasicParam***
Response	***JSON_ResponseStatus***

15.10.57 /ISAPI/System/IOT/channels/<ID>/OSD/capabilities?format=json

Get the OSD configuration capability of specified IoT device channel.

Request URL Definition

Table 15-425 GET /ISAPI/System/IOT/channels/<ID>/OSD/capabilities?format=json

Method	GET
Description	Get the OSD configuration capability of specified IoT device channel.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_OSDCap***

Failed: ***JSON_ResponseStatus***

15.10.58 /ISAPI/System/IOT/channels/<ID>/OSD?format=json

Get or set the OSD parameters.

Request URL Definition

Table 15-426 GET /ISAPI/System/IOT/channels/<ID>/OSD?format=json

Method	GET
Description	Get the OSD parameters.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_OSD*** Failed: ***JSON_ResponseStatus***

Table 15-427 PUT /ISAPI/System/IOT/channels/<ID>/OSD?format=json

Method	PUT
Description	Set the OSD parameters.
Query	**format**: determine the format of request or response message.
Request	***JSON_OSD***
Response	***JSON_ResponseStatus***

Remarks

The <ID> in the URL is defied as the channel ID.

15.10.59 /ISAPI/System/IOT/channels/<ID>/status?format=json

Get the status of specified channel of added IoT device.

Request URL Definition

Table 15-428 GET /ISAPI/System/IOT/channels/<ID>/status?format=json

Method	GET
Description	Get the status of specified channel of added IoT device.
Query	**format**: determine the format of request or response message.

	security: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_IOTChannelStatus***

Remarks

The <ID> in the URL is defined as channel ID.

15.10.60 /ISAPI/System/IOT/channels/<ID>?format=json

Operations about specified added IoT device.

Request URL Definition

Table 15-429 GET /ISAPI/System/IOT/channels/<ID>?format=json

Method	GET
Description	Get the information of added IoT device according to channel ID.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: ***JSON_IOTChannel*** Failed: ***JSON_ResponseStatus***

Table 15-430 PUT /ISAPI/System/IOT/channels/<ID>?format=json

Method	PUT
Description	Set the added IoT device according to channel ID.
Query	**format**: determine the format of request or response message.

	security: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***JSON_IOTChannel***
Response	***JSON_ResponseStatus***

Table 15-431 DELETE /ISAPI/System/IOT/channels/<ID>?format=json

Method	DELETE
Description	Delete the specified IoT device according to channel ID.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

The <ID> in the URL is defined as channel ID.

15.10.61 /ISAPI/System/IOT/channels/status?format=json

Get the status of added IoT device.

Request URL Definition

Table 15-432 GET /ISAPI/System/IOT/channels/status?format=json

Method	GET
Description	Get the status of added IoT device.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.

Request	None.
Response	Succeeded: ***JSON_IOTChannelStatusList*** Failed: ***JSON_ResponseStatus***

15.10.62 /ISAPI/System/IOT/channels/status?format=json&deviceInductiveType=

Get the status of added IoT device according to inductive type.

Request URL Definition

Table 15-433 GET /ISAPI/System/IOT/channels/status?format=json&deviceInductiveType=

Method	GET
Description	Get the status of added IoT device according to inductive type.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **deviceInductiveType**: device inductive type, its value can be obtained by URL: GET ***/ISAPI/System/IOT/sourceSupport/capabilities?format=json*** , now there are two available values: "inductiveType1" and "inductiveType2"
Request	None.
Response	***JSON_IOTChannelStatusList***

15.10.63 /ISAPI/System/IOT/channels?format=json

Operations about IoT devices.

Request URL Definition

Table 15-434 GET /ISAPI/System/IOT/channels?format=json

Method	GET
Description	Get the information of added IoT devices.
Query	**format**: determine the format of request or response message.

	security: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_IOTChannelList***

Table 15-435 POST /ISAPI/System/IOT/channels?format=json

Method	POST
Description	Add the IoT devices to NVR/DVR.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***JSON_IOTChannel***
Response	Succeeded: ***JSON_IOT_ChannelInfo*** Failed: ***JSON_ResponseStatus***

15.10.64 /ISAPI/System/IOT/channels?format=json&deviceInductiveType=

Get the informaiton of added IoT devices according to device inductive type.

Request URL Definition

Table 15-436 GET /ISAPI/System/IOT/channels?format=json&deviceInductiveType=

Method	GET
Description	Get the added IoT devices according to device inductive type.
Query	**format**: determine the format of request or response message. **deviceInductiveType**: device inductive type, its value can be obtained by URL: GET ***/ISAPI/System/IOT/sourceSupport/***

	capabilities?format=json , now there are two available values: "inductiveType1" and "inductiveType2" **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_IOTChannelList***

15.10.65 /ISAPI/System/IOT/linkageChannels?format=json

Get the linked channel of searched event.

Request URL Definition

Table 15-437 POST /ISAPI/System/IOT/linkageChannels?format=json

Method	POST
Description	Get the linked channel of searched event.
Query	**format**: determine the format of request or response message.
Request	***JSON_LinkageChansCond***
Response	Succeeded: ***JSON_Result*** Failed: ***JSON_ResponseStatus***

15.10.66 /ISAPI/System/IOT/search?format=json

Get the IoT devices which can be added.

Request URL Definition

Table 15-438 GET /ISAPI/System/IOT/search?format=json

Method	GET
Description	Get the IoT devices which can be added.
Query	**format**: determine the format of request or response message.

	security: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***JSON_IOTSourceList***

15.10.67 /ISAPI/System/IOT/sourceCapabilities?format=json

Get the number of IoT device channels.

Request URL Definition

Table 15-439 GET /ISAPI/System/IOT/sourceCapabilities?format=json

Method	GET
Description	Get the number of IoT device channels.
Query	**format**: determine the format of request or response message. **security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***JSON_IOTSourceDescription***
Response	***JSON_SourceCapabilities***

15.10.68 /ISAPI/System/IOT/sourceSupport/capabilities?format=json

Get supported protocol type of IoT devices.

Request URL Definition

Table 15-440 GET /ISAPI/System/IOT/sourceSupport/capabilities?format=json

Method	GET
Description	Get supported protocol type of IoT devices.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_IOTSourceSupport***

15.10.69 /ISAPI/System/logServer

Get or set log server parameters.

Request URL Definition

Table 15-441 GET /ISAPI/System/logServer

Method	GET
Description	Get log server parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_LogServer*** Failed: ***XML_ResponseStatus***

Table 15-442 PUT /ISAPI/System/logServer

Method	PUT
Description	Set log server parameters.
Query	None.
Request	***XML_LogServer***
Response	***XML_ResponseStatus***

15.10.70 /ISAPI/System/logServer/capabilities

Get log server configuration capability.

Request URL Definition

Table 15-443 GET /ISAPI/System/logServer/capabilities

Method	GET
Description	Get log server configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_LogServerCap*** Failed: ***XML_ResponseStatus***

15.10.71 /ISAPI/System/logServer/test

Perform security log server test.

Request URL Definition

Table 15-444 POST /ISAPI/System/logServer/test

Method	POST
Description	Perform security log server test.
Query	None.
Request	***XML_LogServerTestDescription***
Response	***XML_ResponseStatus***

15.10.72 /ISAPI/System/Network/adaption/capabilities?format=json

Get network self-adaptive configuration capability.

Request URL Definition

Table 15-445 GET /ISAPI/System/Network/adaption/capabilities?format=json

Method	GET
Description	Get network self-adaptive configuration capability.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_AdaptionCap***

	Failed: ***JSON_ResponseStatus***

15.10.73 /ISAPI/System/Network/adaption?format=json&streamType=

Operations about network self-adaptive configuration.

Request URL Definition

Table 15-446 GET /ISAPI/System/Network/adaption?format=json&streamType=

Method	GET
Description	Get network self-adaptive parameters.
Query	**format**: determine the format of request or response message. **streamType**: stream types, integer, the following values are available: 0-main stream, 1-sub-stream, 2-third stream, 3-virtual stream, 4-stream 5, 5-stream 6, 7-stream 7, 8-stream 8, …, and so on.
Request	None.
Response	Succeeded: ***JSON_Adaption*** Failed: ***JSON_ResponseStatus***

Table 15-447 PUT /ISAPI/System/Network/adaption?format=json&streamType=

Method	GET
Description	Set network self-adaptive parameters.
Query	**format**: determine the format of request or response message. **streamType**: stream types, integer, the following values are available: 0-main stream, 1-sub-stream, 2-third stream, 3-virtual stream, 4-stream 5, 5-stream 6, 7-stream 7, 8-stream 8, …, and so on.
Request	***JSON_Adaption***
Response	***XML_ResponseStatus***

15.10.74 /ISAPI/System/Network/Bond

Get all network bonding configuration parameters.

Request URL Definition

Table 15-448 GET /ISAPI/System/Network/Bond

Method	GET
Description	Get all network bonding configuration parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_BondList*** Failed: ***XML_ResponseStatus***

15.10.75 /ISAPI/System/Network/Bond/<ID>

Operations about the bonding configuration of a specific network interface.

Request URL Definition

Table 15-449 GET /ISAPI/System/Network/Bond/<ID>

Method	GET
Description	Get the bonding parameters of a specific network interface.
Query	None.
Request	None.
Response	Succeeded: ***XML_Bond*** Failed: ***XML_ResponseStatus***

Table 15-450 PUT /ISAPI/System/Network/Bond/<ID>

Method	PUT
Description	Set the bonding parameters of a specific network interface.
Query	None.
Request	***XML_Bond***
Response	***XML_ResponseStatus***

15.10.76 /ISAPI/System/Network/capabilities

Get the network capability.

Request URL Definition

Table 15-451 GET /ISAPI/System/Network/capabilities

Method	GET
Description	Get the network capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_NetworkCap*** Failed: ***XML_ResponseStatus***

15.10.77 /ISAPI/System/Network/channels/<ID>/buletooth/status

Operations about the bluetooth status configuration of a specific channel.

Request URL Definition

Table 15-452 GET /ISAPI/System/Network/channels/<ID>/buletooth/status

Method	GET
Description	Get the bluetooth status parameters of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_BluetoothStatus*** Failed: ***XML_ResponseStatus***

Table 15-453 PUT /ISAPI/System/Network/channels/<ID>/buletooth/status

Method	PUT
Description	Set the bluetooth status parameters of a specific channel.
Query	None.
Request	***XML_BluetoothStatus***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.10.78 /ISAPI/System/Network/DDNS

Operations about all DDNS configuration parameters.

Request URL Definition

Table 15-454 GET /ISAPI/System/Network/DDNS

Method	GET
Description	Get all DDNS configuration parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_DDNSList*** Failed: ***XML_ResponseStatus***

Table 15-455 PUT /ISAPI/System/Network/DDNS

Method	PUT
Description	Set all DDNS configuration parameters.
Query	None.
Request	***XML_DDNSList***
Response	***XML_ResponseStatus***

15.10.79 /ISAPI/System/Network/DDNS/capabilities

Get DDNS (Dynamic Domain Name Server) configuration capability.

Request URL Definition

Table 15-456 GET /ISAPI/System/Network/DDNS/capabilities

Method	GET
Description	Get DDNS (Dynamic Domain Name Server) configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_DDNSList*** Failed: ***XML_ResponseStatus***

15.10.80 /ISAPI/System/Network/DDNS/<ID>

Operations about the configuration of a specific DDNS.

Request URL Definition

Table 15-457 GET /ISAPI/System/Network/DDNS/<ID>

Method	GET
Description	Get the configuration parameters of a specific DDNS.
Query	None.
Request	None.
Response	Succeeded: ***XML_DDNS*** Failed: ***XML_ResponseStatus***

Table 15-458 PUT /ISAPI/System/Network/DDNS/<ID>

Method	PUT
Description	Set the parameters of a specific DDNS.
Query	None.
Request	***XML_DDNS***
Response	***XML_ResponseStatus***

15.10.81 /ISAPI/System/Network/DDNS/<ID>/capabilities

Get the configuration capability of a specific DDNS.

Request URL Definition

Table 15-459 GET /ISAPI/System/Network/DDNS/<ID>/capabilities

Method	GET
Description	Get the configuration capability of a specific DDNS.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_DDNS*** Failed: ***XML_ResponseStatus***

15.10.82 /ISAPI/System/Network/Ehome

Operations about the EHome server access configuration.

Request URL Definition

Table 15-460 GET /ISAPI/System/Network/Ehome

Method	GET
Description	Get the EHome server access parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_Ehome*** Failed: ***XML_ResponseStatus***

Table 15-461 PUT /ISAPI/System/Network/Ehome

Method	PUT
Description	Set the EHome server access parameters.
Query	None.
Request	***XML_Ehome***
Response	***XML_ResponseStatus***

15.10.83 /ISAPI/System/Network/Ehome/capabilities

Get the configuration capability of EHome server access.

Request URL Definition

Table 15-462 GET /ISAPI/System/Network/Ehome/capabilities

Method	GET
Description	Get the configuration capability of EHome server access.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_EHome*** Failed: ***XML_ResponseStatus***

15.10.84 /ISAPI/System/Network/Ehome?centerID=

Operations about the EHome server access configuration.

Request URL Definition

Table 15-463 GET /ISAPI/System/Network/Ehome?centerID=

Method	GET
Description	Get the EHome server access parameters.
Query	**centerID**: EHome center ID, and if there is only one center, **centerID** is 1.
Request	None.
Response	Succeeded: ***XML_Ehome*** Failed: ***XML_ResponseStatus***

Table 15-464 PUT /ISAPI/System/Network/Ehome?centerID=

Method	PUT
Description	Set the EHome server access parameters.
Query	**centerID**: EHome center ID, and if there is only one center, **centerID** is 1.
Request	***XML_Ehome***
Response	***XML_ResponseStatus***

15.10.85 /ISAPI/System/Network/EZVIZ

Operations about Hik-Connect access configurations.

Request URL Definition

Table 15-465 GET /ISAPI/System/Network/EZVIZ

Method	GET
Description	Get Hik-Connect parameters.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates

	that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	***XML_EZVIZ***

PUT /ISAPI/System/Network/EZVIZ

Method	PUT
Description	Set Hik-Connect parameters.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_EZVIZ***
Response	***XML_ResponseStatus***

15.10.86 /ISAPI/System/Network/EZVIZ/secretKey?format=json

Edit the verification code for Hik-Connect.

Request URL Definition

Table 15-466 PUT /ISAPI/System/Network/EZVIZ/secretKey?format=json

Method	PUT
Description	Edit the verification code for Hik-Connect.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2. **format**: determine the format of request or response message.

Request	***JSON_EZVIZSecretKey***
Response	***JSON_ResponseStatus***

15.10.87 /ISAPI/System/Network/ftp

Operations about all FTP configurations.

Request URL Definition

Table 15-467 GET /ISAPI/System/Network/ftp

Method	GET
Description	Get all FTP parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_FTPNotificationList*** Failed: ***XML_ResponseStatus***

Table 15-468 PUT /ISAPI/System/Network/ftp

Method	PUT
Description	Set all FTP parameters.
Query	None.
Request	***XML_FTPNotificationList***
Response	***XML_ResponseStatus***

15.10.88 /ISAPI/System/Network/ftp/<ID>

Operations about the configuration of a specific FTP.

Request URL Definition

Table 15-469 GET /ISAPI/System/Network/ftp/<ID>

Method	GET
Description	Get the parameters of a specific FTP.
Query	None.
Request	None.
Response	Succeeded: ***XML_FTPNotification***

	Failed: ***XML_ResponseStatus***

Table 15-470 PUT /ISAPI/System/Network/ftp/<ID>

Method	PUT
Description	Set the parameters of a specific FTP.
Query	None.
Request	***XML_FTPNotification***
Response	***XML_ResponseStatus***

15.10.89 /ISAPI/System/Network/ftp/capabilities

Get the FTP capability.

Request URL Definition

Table 15-471 GET /ISAPI/System/Network/ftp/capabilities

Method	GET
Description	Get the FTP capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_FTPNotificationList*** Failed: ***XML_ResponseStatus***

15.10.90 /ISAPI/System/Network/ftp/test

Perform test to check if the FTP server is available.

Request URL Definition

Table 15-472 POST /ISAPI/System/Network/ftp/test

Method	POST
Description	Perform test to check if the FTP server is available.
Query	None.
Request	***XML_FTPTestDescription***
Response	Succeeded: ***XML_FTPTestResult*** Failed: ***XML_ResponseStatus***

15.10.91 /ISAPI/System/Network/interfaces

Get the information of multiple network interfaces.

Request URL Definition

Table 15-473 GET /ISAPI/System/Network/interfaces

Method	GET
Description	Get the information of multiple network interfaces.
Query	None.
Request	None.
Response	Succeeded: ***XML_NetworkInterfaceList*** Failed: ***XML_ResponseStatus***

Example

Sample Code of Getting Information of Multiple Network Interfaces

```
GET /ISAPI/System/Network/interfaces HTTP/1.1
...
HTTP/1.1 200 OK
Content-Type: application/xml; charset="UTF-8"
Content-Length: xxx

<?xml version="1.0" encoding="UTF-8"?>
<NetworkInterfaceList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <NetworkInterface>
  <id>1</id>
  <IPAddress>
   <ipVersion>v4</ipVersion>
   <addressingType>static</addressingType>
   <ipAddress>172.6.64.7</ipAddress>
   <subnetMask>255.255.255.0</subnetMask>
   <DefaultGateway>
    <ipAddress>172.6.64.1</ipAddress>
   </DefaultGateway>
   <PrimaryDNS>
    <ipAddress>192.0.0.200</ipAddress>
   </PrimaryDNS>
  </IPAddress>
  <Discovery>
   <UPnP>
    <enabled>true</enabled>
   </UPnP>
   <Zeroconf>
    <enabled>true</enabled>
   </Zeroconf>
  </Discovery>
```

```
  <Link>
   <MACAddress> 00:40:48:4C:7F:F2</MACAddress>
   <autoNegotiation>true</autoNegotiation>
   <speed>1000<speed>
   <duplex>full</duplex>
   <MTU>1500</MTU>
  </Link>
 </NetworkInterface>
</NetworkInterfaceList>
```

15.10.92 /ISAPI/System/Network/interfaces/<ID>

Operations about the configuration of a specific network interface.

Request URL Definitions

Table 15-474 GET /ISAPI/System/Network/interfaces/<ID>

Method	GET
Description	Get the information of a specific network interface.
Query	None.
Request	None.
Response	Succeeded: ***XML_NetworkInterface*** Failed: ***XML_ResponseStatus***

PUT /ISAPI/System/Network/interfaces/<ID>

Method	PUT
Description	Set a specific network interface.
Query	None.
Request	***XML_NetworkInterface***
Response	***XML_ResponseStatus***

15.10.93 /ISAPI/System/Network/interfaces/<ID>/capabilities

Get the capability of a specific network interface.

Request URL Definition

Table 15-475 GET /ISAPI/System/Network/interfaces/<ID>/capabilities

Method	GET
Description	Get the capability of a specific network interface.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_NetworkInterface*** Failed: ***XML_ResponseStatus***

15.10.94 /ISAPI/System/Network/interfaces/<ID>/discovery

Operations about the network discovery configuration.

Request URL Definition

Table 15-476 GET /ISAPI/System/Network/interfaces/<ID>/discovery

Method	GET
Description	Get the network discovery configuration parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_Discovery*** Failed: ***XML_ResponseStatus***

Table 15-477 PUT /ISAPI/System/Network/interfaces/<ID>/discovery

Method	PUT
Description	Set the network discovery configuration parameters.
Query	None.
Request	***XML_Discovery***
Response	***XML_ResponseStatus***

15.10.95 /ISAPI/System/Network/interfaces/<ID>/discovery/capabilities

Get the configuration capability of network discovery.

Request URL Definition

Table 15-478 GET /ISAPI/System/Network/interfaces/<ID>/discovery/capabilities

Method	GET
Description	Get the configuration capability of network discovery.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_Discovery*** Failed: ***XML_ResponseStatus***

15.10.96 /ISAPI/System/Network/interfaces/<ID>/dynamicHostName?format=json

Get or set dynamic domain name.

Request URL Definition

Table 15-479 GET /ISAPI/System/Network/interfaces/<ID>/dynamicHostName?format=json

Method	GET
Description	Get dynamic domain name.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DynamicHostName*** Failed: ***JSON_ResponseStatus***

Table 15-480 PUT /ISAPI/System/Network/interfaces/<ID>/dynamicHostName?format=json

Method	PUT
Description	Set dynamic domain name.
Query	**format**: determine the format of request or response message.
Request	***JSON_DynamicHostName***
Response	***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.97 /ISAPI/System/Network/interfaces/<ID>/dynamicHostName/capabilities?format=json

Get configuration capability of dynamic domain name.

Request URL Definition

Table 15-481 GET /ISAPI/System/Network/interfaces/<ID>/dynamicHostName/capabilities?format=json

Method	GET
Description	Get configuration capability of dynamic domain name.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DynamicHostNameCap*** Failed: ***JSON_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.98 /ISAPI/System/Network/interfaces/<ID>/ieee802.1x

Operations about configuration of IEEE 802.1x protocol access.

Request URL Definition

Table 15-482 GET /ISAPI/System/Network/interfaces/<ID>/ieee802.1x

Method	GET
Description	Get parameters of IEEE 802.1x protocol access.
Query	None.
Request	None.
Response	Succeeded: ***XML_IEEE802_1x*** Failed: ***XML_ResponseStatus***

Table 15-483 PUT /ISAPI/System/Network/interfaces/<ID>/ieee802.1x

Method	PUT
Description	Set parameters of IEEE 802.1x protocol access.
Query	None.

Request	***XML_IEEE802_1x***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.99 /ISAPI/System/Network/interfaces/<ID>/ieee802.1x/capabilities

Get configuration capability of IEEE802.1x protocol access.

Request URL Definition

Table 15-484 GET /ISAPI/System/Network/interfaces/<ID>/ieee802.1x/capabilities

Method	GET
Description	Get configuration capability of IEEE802.1x protocol access.
Query	None.
Request	None.
Response	***XML_Cap_IEEE802_1x***

15.10.100 /ISAPI/System/Network/interfaces/<ID>/ipAddress

Operations about IP address configuration of a specific network interface.

Request URL Definition

Table 15-485 GET /ISAPI/System/Network/interfaces/<ID>/ipAddress

Method	GET
Description	Get the IP address of a specific network interface.
Query	None.
Request	None.
Response	Succeeded: ***XML_IPAddress*** Failed: ***XML_ResponseStatus***

Table 15-486 PUT /ISAPI/System/Network/interfaces/<ID>/ipAddress

Method	PUT
Description	Set IP address of a specific network interface.
Query	None.

Request	***XML_IPAddress***
Response	***XML_ResponseStatus***

Example

Sample Code of Setting IP Address of A Specific Network Interface

```
PUT /ISAPI/System/Network/interfaces/1/ipAddress HTTP/1.1
…
Content-Type: application/xml; charset="UTF-8"
Content-Length: xxx

<?xml version="1.0" encoding="UTF-8"?>
<IPAddress version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ipVersion>v4</ipVersion>
 <addressingType>static</addressingType>
 <ipAddress>172.6.64.16</ipAddress>
 <subnetMask>255.255.255.0</subnetMask>
 <DefaultGateway>
  <ipAddress>172.6.64.1</ipAddress>
 </DefaultGateway>
 <PrimaryDNS>
  <ipAddress>192.0.0.200</ipAddress>
 </PrimaryDNS>
</IPAddress>

HTTP/1.1 200 OK
…
Content-Type: application/xml; charset="UTF-8"
Content-Length:xxx

<?xml version="1.0" encoding="UTF-8"?>
<ResponseStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <requestURL>/Network/interfaces/1/ipAddress</requestURL>
 <statusCode>1</statusCode>
 <statusString>OK</statusString>
</ResponseStatus>
```

15.10.101 /ISAPI/System/Network/interfaces/<ID>/ipAddress/capabilities

Get the IP address configuration capability of a specific network interface.

Request URL Definition

Table 15-487 GET /ISAPI/System/Network/interfaces/<ID>/ipAddress/capabilities

Method	GET
Description	Get the IP address configuration capability of a specific network interface.

Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_IpAddress*** Failed: ***XML_ResponseStatus***

15.10.102 /ISAPI/System/Network/interfaces/<ID>/link

Operations about the connection configuration of a specific network interface.

Request URL Definition

Table 15-488 GET /ISAPI/System/Network/interfaces/<ID>/link

Method	GET
Description	Get the connection parameters of a specific network interface.
Query	None.
Request	None.
Response	Succeeded: ***XML_Link*** Failed: ***XML_ResponseStatus***

Table 15-489 PUT /ISAPI/System/Network/interfaces/<ID>/link

Method	PUT
Description	Set the connection parameters of a specific network interface.
Query	None.
Request	***XML_Link***
Response	***XML_ResponseStatus***

15.10.103 /ISAPI/System/Network/interfaces/<ID>/link/capabilities

Get the connection configuration capability of a specific network interface.

Request URL Definition

Table 15-490 GET /ISAPI/System/Network/interfaces/<ID>/link/capabilities

Method	GET
Description	Get the connection configuration capability of a specific network interface.

Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_Link*** Failed: ***XML_ResponseStatus***

15.10.104 /ISAPI/System/Network/interfaces/<ID>/NetworkMode

Operations about the working mode configuration of the network connection.

Request URL Definition

Table 15-491 GET /ISAPI/System/Network/interfaces/<ID>/NetworkMode

Method	GET
Description	Get the working mode parameters of the network connection.
Query	None.
Request	None.
Response	Succeeded: ***XML_NetWorkMode*** Failed: ***XML_ResponseStatus***

Table 15-492 PUT /ISAPI/System/Network/interfaces/<ID>/NetworkMode

Method	PUT
Description	Set the working mode parameters of the network connection.
Query	None.
Request	***XML_NetWorkMode***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.105 /ISAPI/System/Network/interfaces/<ID>/wireless

Operations about Wi-Fi configuration of a specific network interface.

Request URL Definition

Table 15-493 GET /ISAPI/System/Network/interfaces/<ID>/wireless

Method	GET
Description	Get the Wi-Fi parameters of a specific network interface.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: ***XML_Wireless*** Failed: ***XML_ResponseStatus***

Table 15-494 PUT /ISAPI/System/Network/interfaces/<ID>/wireless

Method	PUT
Description	Set Wi-Fi parameters of a specific network interface.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_Wireless***
Response	***XML_ResponseStatus***

15.10.106 /ISAPI/System/Network/interfaces/<ID>/wireless/accessDeviceList/<ID>

Get the information of a specific device connected to the hotspot.

Request URL Definition

Table 15-495 GET /ISAPI/System/Network/interfaces/<ID>/wireless/accessDeviceList/<ID>

Method	GET
Description	Get the information of a specific device connected to the hotspot.
Query	None.
Request	None.
Response	Succeeded: ***XML_accessDevice*** Failed: ***XML_ResponseStatus***

Remarks

The first <**ID**> in the URL refers to the network interface ID, and the second <**ID**> refers to the device ID.

15.10.107 /ISAPI/System/Network/interfaces/<ID>/wireless/accessDeviceList/capabilities

Get the capability set of the device connected to the hotspot.

Request URL Definition

Table 15-496 GET /ISAPI/System/Network/interfaces/<ID>/wireless/accessDeviceList/capabilities

Method	GET
Description	Get the capability set of the device connected to the hotspot.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_accessDeviceList*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the URL refers to the network interface ID.

15.10.108 /ISAPI/System/Network/interfaces/<ID>/wireless/accessPointList

Get Wi-Fi hotspot list.

Request URL Definition

Table 15-497 GET /ISAPI/System/Network/interfaces/<ID>/wireless/accessPointList

Method	GET
Description	Get Wi-Fi hotspot list.
Query	None.
Request	None.
Response	Succeeded: ***XML_accessPointList*** Failed: ***XML_ResponseStatus***

15.10.109 /ISAPI/System/Network/interfaces/<ID>/wireless/accessPointList/<ID>

Get a specific Wi-Fi hotspot.

Request URL Definition

Table 15-498 GET /ISAPI/System/Network/interfaces/<ID>/wireless/accessPointList/<ID>

Method	GET
Description	Get a specific Wi-Fi hotspot.
Query	None.
Request	None.
Response	Succeeded: ***XML_accessPoint*** Failed: ***XML_ResponseStatus***

15.10.110 /ISAPI/System/Network/interfaces/<ID>/wireless/capabilities

Get the Wi-Fi configuration capability.

Request URL Definition

Method	GET
Description	Get the Wi-Fi configuration capability.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates

	that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: ***XML_Cap_Wireless*** Failed: ***XML_ResponseStatus***

15.10.111 /ISAPI/System/Network/interfaces/<ID>/wirelessServer

Operations about wireless hotspot configuration.

Request URL Definitions

Table 15-499 GET /ISAPI/System/Network/interfaces/<ID>/wirelessServer

Method	GET
Description	Get wireless hotspot parameters.
Query	None.
Request	None.
Response	***XML_WirelessServer***

Table 15-500 PUT /ISAPI/System/Network/interfaces/<ID>/wirelessServer

Method	PUT
Description	Set wireless hotspot parameters.
Query	None.
Request	***XML_WirelessServer***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the URL refers to the network interface ID.

15.10.112 /ISAPI/System/Network/interfaces/ID/wirelessServer/accessDeviceList

Get list of devices that are connected to the hotspot.

Request URL Definition

Table 15-501 GET /ISAPI/System/Network/interfaces/<ID>/wirelessServer/accessDeviceList

Method	GET
Description	Get list of devices that are connected to the hotspot.
Query	None.
Request	None.
Response	Succeeded: ***XML_accessDeviceList*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the URL refers to the network interface ID.

15.10.113 /ISAPI/System/Network/interfaces/<ID>/wirelessServer/capabilities

Get configuration capability of wireless hotspot.

Request URL Definition

Table 15-502 GET /ISAPI/System/Network/interfaces/<ID>/wirelessServer/capabilities

Method	GET
Description	Get configuration capability of wireless hotspot.
Query	None.
Request	None.
Response	***XML_Cap_WirelessServer***

15.10.114 /ISAPI/System/Network/interfaces/<ID>/wirelessServerStatus

Operations about the wireless hotspot status configuration.

Request URL Definition

Table 15-503 GET /ISAPI/System/Network/interfaces/<ID>/wirelessServerStatus

Method	GET
Description	Get the wireless hotspot status parameters.
Query	None.

Request	None.
Response	Succeeded: ***XML_WirelessServerStatus*** Failed: ***XML_ResponseStatus***

Table 15-504 PUT /ISAPI/System/Network/interfaces/<ID>/wirelessServerStatus

Method	PUT
Description	Set the wireless hotspot status parameters.
Query	None.
Request	***XML_WirelessServerStatus***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.115 /ISAPI/System/Network/interfaces/<ID>/wirelessServerStatus/capabilities

Get the wireless hotspot status capability.

Request URL Definition

Table 15-505 GET /ISAPI/System/Network/interfaces/<ID>/wirelessServerStatus/capabilities

Method	GET
Description	Get the wireless hotspot status capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_WirelessServerStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.116 /ISAPI/System/Network/interfaces/<ID>/wirelessStatus

Operations about the configuration of wireless network connection status.

Request URL Definition

Table 15-506 GET /ISAPI/System/Network/interfaces/<ID>/wirelessStatus

Method	GET
Description	Get the parameters of wireless network connection status.
Query	None.
Request	None.
Response	Succeeded: ***XML_WirelessStatus*** Failed: ***XML_ResponseStatus***

Table 15-507 PUT /ISAPI/System/Network/interfaces/<ID>/wirelessStatus

Method	PUT
Description	Set the parameters of wireless network connection status.
Query	None.
Request	***XML_WirelessStatus***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.117 /ISAPI/System/Network/interfaces/<ID>/wirelessStatus/capabilities

Get the configuration capability of wireless network connection status.

Request URL Definition

Table 15-508 GET /ISAPI/System/Network/interfaces/<ID>/wirelessStatus/capabilities

Method	GET
Description	Get the configuration capability of wireless network connection status.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_WirelessStatus*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.118 /ISAPI/System/Network/ipFilter

Operations about IP address filter configuration.

Request URL Definition

Table 15-509 GET /ISAPI/System/Network/ipFilter

Method	GET
Description	Get the IP filter configuration parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_IPFilter*** Failed: ***XML_ResponseStatus***

Table 15-510 PUT /ISAPI/System/Network/ipFilter

Method	PUT
Description	Set the IP address filter.
Query	None.
Request	***XML_IPFilter***
Response	***XML_ResponseStatus***

15.10.119 /ISAPI/System/Network/ipFilter/capabilities

Get IP address filter configuration capability.

Request URL Definition

Table 15-511 GET /ISAPI/System/Network/ipFilter/capabilities

Method	GET
Description	Get the IP address configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_IPFilter***

	Failed: ***XML_ResponseStatus***

15.10.120 /ISAPI/System/Network/MACFilter

Operations about MAC address filter configuration.

Request URL Definition

Table 15-512 GET /ISAPI/System/Network/MACFilter

Method	GET
Description	Get the MAC address filter configuration parameters.
Query	None.
Request	None.
Response	***XML_MACFilter***

Table 15-513 PUT /ISAPI/System/Network/MACFilter

Method	PUT
Description	Set the MAC address filter.
Query	None.
Request	***XML_MACFilter***
Response	***XML_ResponseStatus***

15.10.121 /ISAPI/System/Network/MACFilter/capabilities

Get the MAC address filter configuration capability.

Request URL Definition

Table 15-514 GET /ISAPI/System/Network/MACFilter/capabilities

Method	GET
Description	Get the MAC address filter configuration capability.
Query	None.
Request	None.
Response	***XML_Cap_MACFilter***

15.10.122 /ISAPI/System/Network/mailing

Operations about email configuration.

Request URL Definition

Table 15-515 GET /ISAPI/System/Network/mailing

Method	GET
Description	Get email configuration parameters.
Query	None.
Request	None.
Response	***XML_mailingList***

Table 15-516 PUT /ISAPI/System/Network/mailing

Method	PUT
Description	Set email parameters.
Query	None.
Request	***XML_mailingList***
Response	***XML_ResponseStatus***

15.10.123 /ISAPI/System/Network/mailing/<ID>

Operations about the configuration of a specific email.

Request URL Definition

Table 15-517 GET /ISAPI/System/Network/mailing/<ID>

Method	GET
Description	Get the configuration parameters of a specific email.
Query	None.
Request	None.
Response	***XML_mailing***

Table 15-518 PUT /ISAPI/System/Network/mailing/<ID>

Method	PUT
Description	Set the parameters of a specific email.

Query	None.
Request	***XML_mailing***
Response	***XML_ResponseStatus***

Remarks

The <ID> in the URL refers to the email ID.

15.10.124 /ISAPI/System/Network/mailing/capabilities

Get email configuration capability.

Request URL Definition

Table 15-519 GET /ISAPI/System/Network/mailing/capabilities

Method	GET
Description	Get email configuration capability.
Query	None.
Request	None.
Response	***XML_Cap_mailingList***

15.10.125 /ISAPI/System/Network/mailing/test

Execute the email test to check if the email server and address are available.

Request URL Definition

Table 15-520 POST /ISAPI/System/Network/mailing/test

Method	POST
Description	Execute the email test to check if the email server and address are available.
Query	None.
Request	***XML_mailingTestDescription***
Response	***XML_mailingTestResult***

15.10.126 /ISAPI/System/Network/POE/capabilities?format=json

Get capability of PoE port parameters configuration.

Request URL Definition

Table 15-521 GET /ISAPI/System/Network/POE/capabilities?format=json

Method	GET
Description	Get the capability of PoE port parameters configuration.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_Cap_POE***

15.10.127 /ISAPI/System/Network/POE?format=json

Get or set the PoE port configuration parameters.

Request URL Definition

Table 15-522 GET /ISAPI/System/Network/POE?format=json

Method	GET
Description	Get PoE port configuration parameters.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_POE***

Table 15-523 PUT /ISAPI/System/Network/POE?format=json

Method	PUT
Description	Set PoE port configuration parameters.
Query	**format**: determine the format of request or response message.
Request	***JSON_POE***
Response	***JSON_ResponseStatus***

15.10.128 /ISAPI/System/Network/resourceStatistics?format=json

Get the information of network resource statistics.

Request URL Definition

Table 15-524 GET /ISAPI/System/Network/resourceStatistics?format=json

Method	GET
Description	Get the information of network resource statistics.
Query	None.
Request	None.
Response	Succeeded: ***JSON_resourceStatistics*** Failed: ***JSON_ResponseStatus***

15.10.129 /ISAPI/System/Network/SIP

Operations about the configuration of a specific SIP (Session Initiation Protocol) server.

Request URL Definition

Table 15-525 GET /ISAPI/System/Network/SIP

Method	GET
Description	Get the parameters of a specific SIP (Session Initiation Protocol) server.
Query	None.
Request	None.
Response	Succeeded: ***XML_SIPServerList*** Failed: ***XML_ResponseStatus***

Table 15-526 PUT /ISAPI/System/Network/SIP

Method	PUT
Description	Set the parameters of a specific SIP (Session Initiation Protocol) server.
Query	None.
Request	***XML_SIPServerList***
Response	***XML_ResponseStatus***

15.10.130 /ISAPI/System/Network/SIP/<ID>

Operations about the configuration of a specific SIP (Session Initiation Protocol) server.

Request URL Definition

Table 15-527 GET /ISAPI/System/Network/SIP/<ID>

Method	GET
Description	Get the parameters of a specific SIP (Session Initiation Protocol) server.
Query	None.
Request	None.
Response	Succeeded: ***XML_SIPServer*** Failed: ***XML_ResponseStatus***

Table 15-528 PUT /ISAPI/System/Network/SIP/<ID>

Method	PUT
Description	Set the parameters of a specific SIP (Session Initiation Protocol) server.
Query	None.
Request	***XML_SIPServer***
Response	***XML_ResponseStatus***

15.10.131 /ISAPI/System/Network/SIP/<ID>/capabilities

Get the configuration capability of a specific SIP (Session Initiation Protocol) server.

Request URL Definition

Table 15-529 GET /ISAPI/System/Network/SIP/<ID>/capabilities

Method	GET
Description	Get the configuration capability of a specific SIP (Session Initiation Protocol) server.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_SIPServer***

	Failed: ***XML_ResponseStatus***

15.10.132 /ISAPI/System/Network/SIP/<ID>/SIPInfo

Operations about the configuration of a piece of SIP (Session Initiation Protocol) information.

Request URL Definition

Table 15-530 GET /ISAPI/System/Network/SIP/<ID>/SIPInfo

Method	GET
Description	Get the parameters of a piece of SIP (Session Initiation Protocol) information.
Query	None.
Request	None.
Response	Succeeded: ***XML_SIPInfo*** Failed: ***XML_ResponseStatus***

Table 15-531 PUT /ISAPI/System/Network/SIP/<ID>/SIPInfo

Method	PUT
Description	Set the parameters of a piece of SIP (Session Initiation Protocol) information.
Query	None.
Request	***XML_SIPInfo***
Response	***XML_ResponseStatus***

15.10.133 /ISAPI/System/Network/SIP/<ID>/SIPInfo/capabilities

Get the configuration capability of a specific piece of SIP (Session Initiation Protocol) information.

Request URL Definition

Table 15-532 GET /ISAPI/System/Network/SIP/<ID>/SIPInfo/capabilities

Method	GET
Description	Get the configuration capability of a specific piece of SIP (Session Initiation Protocol) information.
Query	None.

Request	None.
Response	Succeeded: ***XML_Cap_SIPInfo*** Failed: ***XML_ResponseStatus***

15.10.134 /ISAPI/System/Network/SIP/<ID>/SIPInfo/multiInfo

Get or set the information list of SIP servers.

Request URL Definition

Table 15-533 GET /ISAPI/System/Network/SIP/<ID>/SIPInfo/multiInfo

Method	GET
Description	Get the information list of SIP servers.
Query	None.
Request	None.
Response	Succeeded: ***XML_SIPInfoList*** Failed: ***XML_ResponseStatus***

Table 15-534 PUT /ISAPI/System/Network/SIP/<ID>/SIPInfo/multiInfo

Method	PUT
Description	Set the information list of SIP servers.
Query	None.
Request	***XML_SIPInfoList***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the SIP server ID.

15.10.135 /ISAPI/System/Network/socketIP

Get the socket IP of current connection.

Request URL Definition

Table 15-535 GET /ISAPI/System/Network/socketIP

Method	GET
Description	Get the socket IP of current connection.

Query	None.
Request	None.
Response	***XML_SocketIP***

15.10.136 /ISAPI/System/Network/ssh

Operations about SSH server configurations.

Request URL Definition

Table 15-536 GET /ISAPI/System/Network/ssh

Method	GET
Description	Get SSH server parameters.
Query	None.
Request	None.
Response	***XML_SSH***

Table 15-537 PUT /ISAPI/System/Network/ssh

Method	PUT
Description	Set SSH server parameters.
Query	None.
Request	***XML_SSH***
Response	***XML_ResponseStatus***

15.10.137 /ISAPI/System/Network/StaticRoute

Get, set, or delete the parameters of static route.

Request URL Definition

Table 15-538 GET /ISAPI/System/Network/StaticRoute

Method	GET
Description	Get the parameters of static route.
Query	None.

Request	None.
Response	Succeeded: ***XML_staticRouteList*** Failed: ***XML_ResponseStatus***

Table 15-539 PUT /ISAPI/System/Network/StaticRoute

Method	PUT
Description	Set the parameters of static route.
Query	None.
Request	***XML_staticRouteList***
Response	***XML_ResponseStatus***

Table 15-540 DELETE /ISAPI/System/Network/StaticRoute

Method	DELETE
Description	Delete the parameters of static route.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.10.138 /ISAPI/System/Network/telnetd

Operations about the telnetd service configuration.

Request URL Definition

Table 15-541 GET /ISAPI/System/Network/telnetd

Method	GET
Description	Get the telnetd service parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_Telnetd*** Failed: ***XML_ResponseStatus***

Table 15-542 PUT /ISAPI/System/Network/telnetd

Method	PUT
Description	Set the telnetd service parameters.

Query	None.
Request	***XML_Telnetd***
Response	***XML_ResponseStatus***

15.10.139 /ISAPI/System/Network/telnetd/capabilities

Get the telnetd service capability.

Request URL Definition

Table 15-543 GET /ISAPI/System/Network/telnetd/capabilities

Method	GET
Description	Get the telnetd service capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_Telnetd*** Failed: ***XML_ResponseStatus***

15.10.140 /ISAPI/System/Network/UPnP

Operations about UPnP configuration.

Request URL Definition

Table 15-544 GET /ISAPI/System/Network/UPnP

Method	GET
Description	Get UPnP parameters.
Query	None.
Request	None.
Response	***XML_UPnP***

Table 15-545 PUT /ISAPI/System/Network/UPnP

Method	PUT
Description	Set UPnP parameters.
Query	None.

Request	***XML_UPnP***
Response	***XML_ResponseStatus***

15.10.141 /ISAPI/System/Network/UPnP/ports

Operations about configuration of all UPnP ports.

Request URL Definition

Table 15-546 GET /ISAPI/System/Network/UPnP/ports

Method	GET
Description	Get the parameters of all UPnP ports.
Query	None.
Request	None.
Response	***XML_ports***

Table 15-547 PUT /ISAPI/System/Network/UPnP/ports

Method	PUT
Description	Set the parameters of all UPnP ports.
Query	None.
Request	***XML_ports***
Response	***XML_ResponseStatus***

15.10.142 /ISAPI/System/Network/UPnP/ports/status

Get the mapping statuses of all UPnP ports.

Request URL Definition

Table 15-548 GET /ISAPI/System/Network/UPnP/ports/status

Method	GET
Description	Get the mapping statuses of all UPnP ports.
Query	None.
Request	None.
Response	***XML_portsStatus***

15.10.143 /ISAPI/System/Network/UPnP/ports/<ID>

Operations about configuration of a specific UPnP port.

Request URL Definition

Table 15-549 GET /ISAPI/System/Network/UPnP/ports/<ID>

Method	GET
Description	Get the parameters of a specific UPnP port.
Query	None.
Request	None.
Response	Succeeded: ***XML_port*** Failed: ***XML_ResponseStatus***

Table 15-550 PUT /ISAPI/System/Network/UPnP/ports/<ID>

Method	PUT
Description	Set the parameters of a specific UPnP port.
Query	None.
Request	***XML_port***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to UPnP port ID.

15.10.144 /ISAPI/System/Network/UPnP/ports/<ID>/status

Get mapping status of a specific UPnP port.

Request URL Definition

Table 15-551 GET /ISAPI/System/Network/UPnP/ports/<ID>/status

Method	GET
Description	Get mapping status of a specific UPnP port.
Query	None.
Request	None.
Response	Succeeded: ***XML_portStatus***

	Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to UPnP port ID.

15.10.145 /ISAPI/System/Network/verificationCodeCheck

Verify the encryption key or verification code.

Request URL Definition

Table 15-552 POST /ISAPI/System/Network/verificationCodeCheck

Method	POST
Description	Verify the encryption key or verification code.
Query	None.
Request	***XML_CheckInfo***
Response	***XML_ResponseStatus***

15.10.146 /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dial

Operations about the wireless dial-up configuration.

Request URL Definition

Table 15-553 GET /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dial

Method	GET
Description	Get the configuration parameters of wireless dial-up.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: ***XML_Dial*** Failed: ***XML_ResponseStatus***

Table 15-554 PUT /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dial

Method	PUT
Description	Set the wireless dial-up parameters.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	***XML_Dial***
Response	***XML_ResponseStatus***

15.10.147 /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dial/capabilities

Get the wireless dial-up capability.

Request URL Definition

Table 15-555 GET /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dial/capabilities

Method	GET
Description	Get the wireless dial-up capability.
Query	**security**: the version No. of encryption scheme. When **security** does not exist, it indicates that the data is not encrypted; when **security** is 1, it indicates that the nodes of sensitive information in the message are encrypted in AES128 CBC mode; when **security** is 2, it indicates that the nodes of sensitive information in the message are encrypted in AES256 CBC mode. **iv**: the initialization vector, and it is required when **security** is 1 or 2.
Request	None.
Response	Succeeded: ***XML_Cap_Dial*** Failed: ***XML_ResponseStatus***

15.10.148 /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dialstatus

Operations about the configuration of wireless dial-up connection status.

Request URL Definition

Table 15-556 GET /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dialstatus

Method	GET
Description	Get the parameters of wireless dial-up connection status.
Query	None.
Request	None.
Response	Succeeded: ***XML_Dialstatus*** Failed: ***XML_ResponseStatus***

Table 15-557 PUT /ISAPI/System/Network/WirelessDial/Interfaces/<ID>/dialstatus

Method	PUT
Description	Set the parameters of wireless dial-up connection status.
Query	None.
Request	***XML_Dialstatus***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the network interface ID.

15.10.149 /ISAPI/System/onlineUpgrade/capabilities

Get the device online upgrade capability.

Request URL Definition

Table 15-558 GET /ISAPI/System/onlineUpgrade/capabilities

Method	GET
Description	Get the device online upgrade capability.
Query	None.
Request	None.
Response	***XML_OnlineUpgradeCap***

15.10.150 /ISAPI/System/onlineUpgrade/deviceParameter?format=json

Get and set the device online upgrade parameters.

Request URL Definition

Table 15-559 GET /ISAPI/System/onlineUpgrade/deviceParameter?format=json

Method	GET
Description	Get the device online upgrade parameters.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_OnlineUpgradeParameter*** Failed: ***JSON_ResponseStatus***

Table 15-560 PUT /ISAPI/System/onlineUpgrade/deviceParameter?format=json

Method	PUT
Description	Set the device online upgrade parameters.
Query	**format**: determine the format of request or response message.
Request	***JSON_OnlineUpgradeParameter***
Response	***JSON_ResponseStatus***

15.10.151 /ISAPI/System/onlineUpgrade/downloadPackage/pause?format=json

Pause the upgrade package download.

Request URL Definition

Table 15-561 PUT /ISAPI/System/onlineUpgrade/downloadPackage/pause?format=json

Method	PUT
Description	Pause upgrade package download.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

15.10.152 /ISAPI/System/onlineUpgrade/downloadPackage/resume?format=json

Resume the upgrade package download.

Request URL Definition

Table 15-562 PUT /ISAPI/System/onlineUpgrade/downloadPackage/resume?format=json

Method	PUT
Description	Resume the upgrade package download.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

15.10.153 /ISAPI/System/onlineUpgrade/downloadPackage/status?format=json

Get the upgrade package download progress.

Request URL Definition

Table 15-563 GET /ISAPI/System/onlineUpgrade/downloadPackage/status?format=json

Method	GET
Description	Get the upgrade package download progress.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_DownloadPackageStatus*** Failed: ***JSON_ResponseStatus***

15.10.154 /ISAPI/System/onlineUpgrade/downloadPackage?format=json

Start or cancel downloading upgrade package to device.

Request URL Definition

Table 15-564 PUT /ISAPI/System/onlineUpgrade/downloadPackage?format=json

Method	PUT
Description	Start to download upgrade package to device.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Table 15-565 DELETE /ISAPI/System/onlineUpgrade/downloadPackage?format=json

Method	DELETE
Description	Cancel the upgrade package download.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

15.10.155 /ISAPI/System/onlineUpgrade/ignoreCurrentVersion?format=json

Ignore the current upgrade package version.

Request URL Definition

Table 15-566 PUT /ISAPI/System/onlineUpgrade/ignoreCurrentVersion?format=json

Method	PUT
Description	Ignore the current upgrade package version.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

If the current upgrade package version is ignored, it will not be found in further detection.

15.10.156 /ISAPI/System/onlineUpgrade/server

Get the online upgrade server status.

Request URL Definition

Table 15-567 GET /ISAPI/System/onlineUpgrade/server

Method	GET
Description	Get the online upgrade server status.
Query	None.
Request	None.
Response	***XML_OnlineUpgradeServer***

15.10.157 /ISAPI/System/onlineUpgrade/status

Get the online upgrade progress of device.

Request URL Definition

Table 15-568 GET /ISAPI/System/onlineUpgrade/status

Method	GET
Description	Get the online upgrade progress of device.
Query	None.
Request	None.
Response	***XML_OnlineUpgradeStatus***

15.10.158 /ISAPI/System/onlineUpgrade/upgradeWithoutDownload?format=json

Start device upgrade with existed upgrade package.

Request URL Definition

Table 15-569 PUT /ISAPI/System/onlineUpgrade/upgradeWithoutDownload?format=json

Method	PUT
Description	Start upgrade with existed upgrade package.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

15.10.159 /ISAPI/System/onlineUpgrade/version

Get the information of new upgrade package.

Request URL Definition

Table 15-570 GET /ISAPI/System/onlineUpgrade/version

Method	GET
Description	
Query	check

Request	None.
Response	***XML_OnlineUpgradeVersion***

15.10.160 /ISAPI/System/reboot

Reboot device.

Request URL Definition

Table 15-571 PUT /ISAPI/System/reboot

Method	PUT
Description	Reboot device.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.10.161 /ISAPI/System/Serial/capabilities

Get the serial port capability of the device.

Request URL Definition

Table 15-572 GET /ISAPI/System/Serial/capabilities

Method	GET
Description	Get the serial port capability of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_SerialCap*** Failed: ***XML_ResponseStatus***

15.10.162 /ISAPI/System/Serial/ports

Get the list of serial ports supported by the device.

Request URL Definition

Table 15-573 GET /ISAPI/System/Serial/ports

Method	GET
Description	Get the list of serial ports supported by the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_SerialPorList*** Failed: ***XML_ResponseStatus***

15.10.163 /ISAPI/System/Serial/ports/<ID>

Operations about the configuration of a specific serial port supported by the device.

Request URL Definition

Table 15-574 GET /ISAPI/System/Serial/ports/<ID>

Method	GET
Description	Get the parameters of a specific port supported by the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_SerialPort*** Failed: ***XML_ResponseStatus***

Table 15-575 PUT /ISAPI/System/Serial/ports/<ID>

Method	PUT
Description	Set the parameters of a specific serial port supported by the device.
Query	None.
Request	***XML_SerialPort***
Response	***XML_ResponseStatus***

15.10.164 /ISAPI/System/Serial/ports/<ID>/capabilities

Get the capability of a specific serial port.

Request URL Definition

Table 15-576 GET /ISAPI/System/Serial/ports/<ID>/capabilities

Method	GET
Description	Get the capability of a specific serial port.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_SerialPort*** Failed: ***XML_ResponseStatus***

15.10.165 /ISAPI/System/Serial/ports/command

Send a command to a serial port.

Request URL Definition

Table 15-577 PUT /ISAPI/System/Serial/ports/command

Method	PUT
Description	Send a command to a serial port.
Query	None.
Request	***XML_SerialCommand*** or query string with raw command in binary format
Response	***XML_ResponseStatus***

Remarks

- If the device is an encoder that converts analog signals to digital signals and it is connected to analog cameras with PTZ enabled, the encoder will forward the command to the appropriate serial port according to the <**chainNo**> node of the XML message or the query string of the HTTP request.
- If the device is a digital camera with PTZ enabled, the camera will forward the PTZ command to the corresponding serial port.
- The serial port command can be encapsulated in the <**command**> node of the XML message, and the command should be encoded in hexadecimal notation; or the serial port command can be directly uploaded as payload of the HTTP request, and in this case the **Content-Type** should be set to "application/octet-stream", and the query string **chainNo** should be set.

Example

Sample Code of Command in XML Format

```
PUT /ISAPI/System/Serial/ports/999/command HTTP/1.1
Content-Type: application/xml; charset="UTF-8"
Content-Length: xxx

<?xml version="1.0" encoding="UTF-8"?>
<SerialCommand>
  <chainNo>0</chainNo>
  <command>ab45be8778cd</command>
</SerialCommand>
```

Example

Sample Code of Command Using Query String

```
/ISAPI/System/Serial/ports/999/command?chainNo=1 HTTP/1.1
Content-Type: application/octet-stream
Content-Length: xxx
(...Raw data of the command should be inserted here...)
```

15.10.166 /ISAPI/System/Serial/ports/command/capabilities

Get the serial port command capability.

Request URL Definition

Table 15-578 GET /ISAPI/System/Serial/ports/command/capabilities

Method	GET
Description	Get the serial port command capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_SerialCommand*** Failed: ***XML_ResponseStatus***

15.10.167 /ISAPI/System/serialLogCfg/capabilities?format=json

Get the configuration capability of serial port log redirection.

Request URL Definition

Table 15-579 GET /ISAPI/System/serialLogCfg/capabilities?format=json

Method	GET
Description	Get the configuration capability of serial port log redirection.

Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_SerialLogCfgCap*** Failed: ***JSON_ResponseStatus***

15.10.168 /ISAPI/System/serialLogCfg?format=json

Operations about the redirection configuration of serial port log.

Request URL Definition

Table 15-580 GET /ISAPI/System/serialLogCfg?format=json

Method	GET
Description	Get the redirection parameters of serial port log.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_SerialLogCfg*** Failed: ***JSON_ResponseStatus***

Table 15-581 PUT /ISAPI/System/serialLogCfg?format=json

Method	PUT
Description	Set the redirection parameters of serial port log.
Query	**format**: determine the format of request or response message.
Request	***JSON_SerialLogCfg***
Response	***JSON_ResponseStatus***

15.10.169 /ISAPI/System/shutdown?format=json

Shut down the device.

Request URL Definition

Table 15-582 PUT /ISAPI/System/shutdown?format=json

Method	PUT
Description	Shut down the device.
Query	**format**: determine the format of request or response message.

Request	None.
Response	***JSON_ResponseStatus***

15.10.170 /ISAPI/System/Software/channels/<ID>

Operation about software service configuration.

Request URL Definition

Table 15-583 GET /ISAPI/System/Software/channels/<ID>

Method	GET
Description	Get software service parameters.
Query	None.
Request	None.
Response	***XML_SoftwareService***

Table 15-584 PUT /ISAPI/System/Software/channels/<ID>

Method	PUT
Description	Set software service parameters.
Query	None.
Request	***XML_SoftwareService***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.10.171 /ISAPI/System/Software/channels/<ID>/capabilities

Get the configuration capability of software service.

Request URL Definition

Table 15-585 GET /ISAPI/System/Software/channels/<ID>/capabilities

Method	GET
Description	Get the configuration capability of software service.
Query	None.

Request	None.
Response	***XML_Cap_SoftwareService***

Remarks

The <**ID**> in the request URL refers to the channel No.

15.10.172 /ISAPI/System/status

Get device status, e.g., CPU, memory, and so on.

Request URL Definition

Table 15-586 GET /ISAPI/System/status

Method	GET
Description	Get device status, e.g., CPU, memory, and so on.
Query	None.
Request	None.
Response	Succeeded: ***XML_DeviceStatus*** Failed: ***XML_ResponseStatus***

15.10.173 /ISAPI/System/syncSignalOutput/<ID>

Operations about the configuration of synchronous signal output.

Request URL Definition

Table 15-587 GET /ISAPI/System/syncSignalOutput/<ID>

Method	GET
Description	Get the parameters of synchronous signal output.
Query	None.
Request	None.
Response	Succeeded: ***XML_SyncSignalOutputList*** Failed: ***XML_ResponseStatus***

Table 15-588 PUT /ISAPI/System/syncSignalOutput/<ID>

Method	PUT
Description	Set the parameters of synchronous signal output.

Query	None.
Request	***XML_SyncSignalOutputList***
Response	***XML_ResponseStatus***

15.10.174 /ISAPI/System/syncSignalOutput/<ID>/capabilities

Get the configuration capability of synchronous signal output.

Request URL Definition

Table 15-589 GET /ISAPI/System/syncSignalOutput/<ID>/capabilities

Method	GET
Description	Get the configuration capability of synchronous signal output.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_SyncSignalOutputList*** Failed: ***XML_ResponseStatus***

15.10.175 /ISAPI/System/time

Operations about the device time configuration.

Request URL Definition

Table 15-590 GET /ISAPI/System/time

Method	GET
Description	Get the device time parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_Time*** Failed: ***XML_ResponseStatus***

Table 15-591 PUT /ISAPI/System/time

Method	PUT
Description	Set the device time parameters.
Query	None.

Request	***XML_Time***
Response	***XML_ResponseStatus***

15.10.176 /ISAPI/System/time/capabilities

Get the time capability of the device.

Request URL Definition

Table 15-592 GET /ISAPI/System/time/capabilities

Method	GET
Description	Get the time capability of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_Time*** Failed: ***XML_ResponseStatus***

15.10.177 /ISAPI/System/time/localTime

Operations about the configuration of device local time.

Request URL Definition

Table 15-593 GET /ISAPI/System/time/localTime

Method	GET
Description	Get the configuration parameters of device local time.
Query	None.
Request	None.
Response	String with date and time information (ISO8601 format, e.g., 2018-02-10T17:30:08)

Table 15-594 PUT /ISAPI/System/time/localTime

Method	PUT
Description	Set device local time.
Query	None.

Request	String with date and time information (ISO8601 format, e.g., 2018-02-10T17:30:08)
Response	***XML_ResponseStatus***

15.10.178 /ISAPI/System/time/ntpServers

Operations about the configurations of multiple NTP servers.

Request URL Definition

Table 15-595 GET /ISAPI/System/time/ntpServers

Method	GET
Description	Get the parameters of multiple NTP servers.
Query	None.
Request	None.
Response	Succeeded: ***XML_NTPServerList*** Failed: ***XML_ResponseStatus***

Table 15-596 PUT /ISAPI/System/time/ntpServers

Method	PUT
Description	Set the parameters of multiple NTP servers.
Query	None.
Request	***XML_NTPServerList***
Response	***XML_ResponseStatus***

Table 15-597 POST /ISAPI/System/time/ntpServers

Method	POST
Description	Add a NTP server.
Query	None.
Request	***XML_NTPServer***
Response	***XML_ResponseStatus***

Table 15-598 DELETE /ISAPI/System/time/ntpServers

Method	DELETE
Description	Delete multiple NTP servers.

Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.10.179 /ISAPI/System/time/ntpServers/<ID>

Operations about the configurations of a NTP server.

Request URL Definition

Table 15-599 GET /ISAPI/System/time/ntpServers/<ID>

Method	GET
Description	Get the parameters of a NTP server.
Query	None.
Request	None.
Response	Succeeded: ***XML_NTPServer*** Failed: ***XML_ResponseStatus***

Table 15-600 PUT /ISAPI/System/time/ntpServers/<ID>

Method	PUT
Description	Set the parameters of a NTP server.
Query	None.
Request	***XML_NTPServer***
Response	***XML_ResponseStatus***

Table 15-601 DELETE /ISAPI/System/time/ntpServers/<ID>

Method	DELETE
Description	Delete the configuration parameters of a NTP server.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.10.180 /ISAPI/System/time/ntpServers/<ID>/capabilities

Get the configuration capability of a specific NTP server.

Request URL Definition

Table 15-602 GET /ISAPI/System/time/ntpServers/<ID>/capabilities

Method	GET
Description	Get the configuration capability of a specific NTP server.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_NTPServer*** Failed: ***XML_ResponseStatus***

15.10.181 /ISAPI/System/time/ntpServers/capabilities

Get the NTP service capability.

Request URL Definition

Table 15-603 GET /ISAPI/System/time/ntpServers/capabilities

Method	GET
Description	Get the NTP service capability.
Query	None.
Request	None.
Response	Succeeded: Failed: ***XML_ResponseStatus***

15.10.182 /ISAPI/System/time/ntpServers/test

Execute a test to check if the NTP server is available.

Request URL Definition

Table 15-604 POST /ISAPI/System/time/ntpServers/test

Method	POST
Description	Execute a test to check if the NTP server is available.
Query	None.

Request	***XML_NTPTestDescription***
Response	***XML_NTPTestResult***

15.10.183 /ISAPI/System/time/timeType?format=json

Operations about device time type configuration.

Request URL Definition

Table 15-605 GET /ISAPI/System/time/timeType?format=json

Method	GET
Description	Get the device time type.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_TimeType***

Table 15-606 PUT /ISAPI/System/time/timeType?format=json

Method	PUT
Description	Set the device time type.
Query	**format**: determine the format of request or response message.
Request	***JSON_TimeType***
Response	***JSON_ResponseStatus***

15.10.184 /ISAPI/System/time/timeZone

Operations about the configuration of device time zone.

Request URL Definition

Table 15-607 GET /ISAPI/System/time/timeZone

Method	GET
Description	Get the device time zone parameters.
Query	None.
Request	None.
Response	String containing time zone information

Table 15-608 PUT /ISAPI/System/time/timeZone

Method	PUT
Description	Set the device time zone parameters.
Query	None.
Request	String containing time zone information
Response	***XML_ResponseStatus***

15.10.185 /ISAPI/System/TwoWayAudio/channels

Get audio parameters of all two-way audio channels.

Request URL Definition

Table 15-609 GET /ISAPI/System/TwoWayAudio/channels

Method	GET
Description	Get parameters of all two-way audio channels.
Query	None.
Request	None.
Response	Succeeded: ***XML_TwoWayAudioChannelList*** Failed: ***XML_ResponseStatus***

Example

Sample Code for Getting Parameters of All Two-Way Audio Channels

```
GET /ISAPI/System/TwoWayAudio/channels HTTP/1.1
Host: 10.17.132.49
Connection: Keep-Alive
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e4446464e6a6333516a63365a4445304f47526a4e32553d",
uri="/ISAPI/System/TwoWayAudio/channels",
cnonce="145ef1bc3ab456be09918d39b77e78ae",
nc=00000021,
response="d10bab23689c60e95241230fff3181b0",
qop="auth"

HTTP/1.1 200 OK
Date: Wed, 15 Mar 2017 09:25:29 GMT
Server: App-webs/
Connection: close
Content-Length: 467
Content-Type: application/xml
```

```
<?xml version="1.0" encoding="UTF-8"?>
<TwoWayAudioChannelList version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <TwoWayAudioChannel version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <id>1</id>
  <enabled>false</enabled>
  <audioCompressionType>G.711ulaw</audioCompressionType>
  <audioInputType>MicIn</audioInputType>
  <speakerVolume>50</speakerVolume>
  <noisereduce>false</noisereduce>
 </TwoWayAudioChannel>
</TwoWayAudioChannelList>
```

15.10.186 /ISAPI/System/TwoWayAudio/channels/<ID>

Operations about the configuration of a specific two-way audio channel.

Request URL Definition

Table 15-610 GET /ISAPI/System/TwoWayAudio/channels/<ID>

Method	GET
Description	Get the parameters of a specific two-way audio channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_TwoWayAudioChannel*** Failed: ***XML_ResponseStatus***

Table 15-611 PUT /ISAPI/System/TwoWayAudio/channels/<ID>

Method	PUT
Description	Set the parameters of a specific two-way audio channel.
Query	None.
Request	***XML_TwoWayAudioChannel***
Response	***XML_ResponseStatus***

15.10.187 /ISAPI/System/TwoWayAudio/channels/<ID>/audioData

Receive or send audio data from or to a specific two-way audio channel.

Request URL Definition

Table 15-612 GET /ISAPI/System/TwoWayAudio/channels/<ID>/audioData

Method	GET
Description	Receive audio data from a specific two-way audio channel.
Query	**sessionId**: communication session ID, which is required when the two-way audio is started between multiple channels and a channel; otherwise, the session ID is not required.
Request	None.
Response	Succeeded: audio data Failed: ***XML_ResponseStatus***

Table 15-613 PUT /ISAPI/System/TwoWayAudio/channels/<ID>/audioData

Method	GET
Description	Send audio data to a specific two-way audio channel.
Query	**sessionId**: communication session ID, which is required when the two-way audio is started between multiple channels and a channel; otherwise, the session ID is not required.
Request	Audio data.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the two-way audio channel ID.

Example

Sample Code for Sending Audio Data to Device

```
PUT /ISAPI/System/TwoWayAudio/channels/1/audioData HTTP/1.1
HOST: 10.17.132.49
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e3055314e6a64434e7a59365a4445304f545668596a6b3d",
uri="/ISAPI/System/TwoWayAudio/channels/1/audioData",
response="6a03c7e85c17a35bae9ee6f3cfcd254b"
Connection: keep-alive
Content-Length: 0
Content-Type: application/octet-stream

HTTP/1.1 200 OK

..U....U.............U...........U..... (Binary audio data)
```

Example

Sample Code for Receiving Audio Data from Device

```
GET /ISAPI/System/TwoWayAudio/channels/1/audioData HTTP/1.1
HOST: 10.17.132.49
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e3055314e6a64434e7a59365a4445304f5456685a44673d",
uri="/ISAPI/System/TwoWayAudio/channels/1/audioData",
response="7ea0ec7bd102b3c4cb225cbf33adb8f8"
Connection: keep-alive

HTTP/1.1 200 OK
Content-Type: audio/basic

Q.....U..dzR..\.FfN...q[....z..q.....`. (Binary audio data)
```

15.10.188 /ISAPI/System/TwoWayAudio/channels/<ID>/capabilities

Get the capability of a specific two-way audio channel.

Request URL Definition

Table 15-614 GET /ISAPI/System/TwoWayAudio/channels/<ID>/capabilities

Method	GET
Description	Get the capability of a specific two-way audio channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_TwoWayAudioChannelCap*** Failed: ***XML_ResponseStatus***

15.10.189 /ISAPI/System/TwoWayAudio/channels/<ID>/close

Stop two-way audio of a specific channel.

Request URL Definition

Table 15-615 PUT /ISAPI/System/TwoWayAudio/channels/<ID>/close

Method	PUT
Description	Stop two-way audio of a specific channel.
Query	None.

Request	None.
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the two-way audio channel ID.

Example

Sample Code for Stopping Two-Way Audio

```
PUT /ISAPI/System/TwoWayAudio/channels/1/close HTTP/1.1
HOST: 10.17.132.49
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e54457a4d7a67354d6a6b365a4445304f5463794d32553d",
uri="/ISAPI/System/TwoWayAudio/channels/1/close",
response="7d5acdc3ccf7c080400802800d7471e3"
Content-Length: 0

HTTP/1.1 200 OK
Date: Wed, 15 Mar 2017 09:25:35 GMT
Server: App-webs/
Connection: close
Content-Length: 298
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<ResponseStatus version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <requestURL>/ISAPI/System/TwoWayAudio/channels/1/close</requestURL>
  <statusCode>1</statusCode>
  <statusString>OK</statusString>
  <subStatusCode>ok</subStatusCode>
</ResponseStatus>
```

15.10.190 /ISAPI/System/TwoWayAudio/channels/<ID>/open

Start two-way audio of a specific channel.

Request URL Definition

Table 15-616 PUT /ISAPI/System/TwoWayAudio/channels/<ID>/open

Method	PUT
Description	Start two-way audio of a specific channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_TwoWayAudioSession***

	Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the two-way audio channel ID.

Example

Sample Code for Start Two-Way Audio

```
PUT /ISAPI/System/TwoWayAudio/channels/1/open HTTP/1.1
HOST: 10.17.132.49
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4e3055314e6a64434e7a59365a4445304f5456685957453d",
uri="/ISAPI/System/TwoWayAudio/channels/1/open",
response="368dda22535b9783bdccafc3b2ded29a"
Content-Length: 0

HTTP/1.1 200 OK
Date: Wed, 15 Mar 2017 09:25:29 GMT
Server: App-webs/
Connection: close
Content-Length: 183
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<TwoWayAudioSession version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <sessionId>2093716360</sessionId>
</TwoWayAudioSession>
```

15.10.191 /ISAPI/System/unitConfig/capabilities?format=json

Get the capability of unit unified configuration.

Request URL Definition

Table 15-617 GET /ISAPI/System/unitConfig/capabilities?format=json

Method	GET
Description	Get the capability of unit unified configuration.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_unitConfigCap*** Failed: ***JSON_ResponseStatus***

15.10.192 /ISAPI/System/unitConfig?format=json

Get and set the unit unified configuration parameters.

Request URL Definition

Table 15-618 GET /ISAPI/System/unitConfig?format=json

Method	GET
Description	Get the unit unified configuration parameters.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_unitConfig*** Failed: ***JSON_ResponseStatus***

Table 15-619 PUT /ISAPI/System/unitConfig?format=json

Method	PUT
Description	Set the unit unified configuration parameters.
Query	**format**: determine the format of request or response message.
Request	***JSON_unitConfig***
Response	***JSON_ResponseStatus***

15.10.193 /ISAPI/System/updateFirmware

Upgrade the device firmware.

Request URL Definition

Table 15-620 PUT or POST /ISAPI/System/updateFirmware

Method	PUT, POST
Description	Upgrade the device firmware.
Query	None.
Request	Opaque data (binary data for PUT method, data in form format for POST method).
Response	***XML_ResponseStatus***

Remarks

After upgrading the device firmware, the device will automatically reboot according to the response message. If upgrading failed, the following reasons may be returned: "upgrading"-the device is upgrading, "badFlash"-flash error, "badLanguage"-language mismatches.

Example

The URL Interaction in Form Format

```
/ISAPI/System/updateFirmware
Accept: text/html, application/xhtml+xml,
Accept-Language: zh-CN
Content-Type: multipart/form-data; boundary=----------------------------7e13971310878
User-Agent: Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0)
Accept-Encoding: gzip, deflate
Host: 10.10.36.29:8080
Content-Length: 9907
Connection: Keep-Alive
Cache-Control: no-cache

------------------------------7e13971310878
Content-Disposition: form-data; name="updateFile";
Content-Type: File/ Opaque Data
Content-Length: 9907

.....`.`.....C.....     .
..
..... $.' ",#..(7),01444.'9=82<.342...C.          ....
------------------------------7e13971310878--
```

15.10.194 /ISAPI/System/updateFirmware?type=&id=

Upgrade the slave device's firmware.

Request URL Definition

Table 15-621 PUT or POST /ISAPI/System/updateFirmware?type=&id=

Method	PUT, POST
Description	Upgrade the slave device's firmware.
Query	**type**: device or module type, string type, it can be set to one of the following values: "cardReader"-card reader, "FPModule"-fingerprint module, "securityModule"-secure door control unit, "extendModule"- (IO) extension module, "channelController"-lane controller, "IRModule"-IR module, "lampModule"-indicator module, "elevatorController"-slave elevator controller, and

	"FPAlgorithmProgram"-fingerprint algorithm program of the card reader, "uboot". **id**: slave device No., e.g., /ISAPI/System/updateFirmware?type=cardReader&id=1 refers to upgrading firmware of card reader 1.
Request	Opaque data (binary data for PUT method, data in form format for POST method).
Response	***XML_ResponseStatus***

Remarks

After upgrading the slave device's firmware, the device will automatically reboot according to the response message. If upgrading failed, the following reasons may be returned: "upgrading"-the device is upgrading, "badFlash"-flash error, "badLanguage"-language mismatches.

15.10.195 /ISAPI/System/updateFirmware?type=&moduleAddress=

Upgrade the peripheral module's firmware.

Request URL Definition

Table 15-622 PUT or POST /ISAPI/System/updateFirmware?type=&moduleAddress=

Method	PUT, POST
Description	Upgrade the peripheral module's firmware.
Query	**type**: device or module type, string type, it can be set to one of the following values: "keypad", "wirelessRecv"-wireless receiving module, "wiredZone"-wired zone module. **moduleAddress**: module address, e.g., /ISAPI/System/updateFirmware?type=wirelessRecv&moduleAddress=1 refers to upgrading firmware of the wireless receiving module with the module address 1.
Request	Opaque data (binary data for PUT method, data in form format for POST method).
Response	***XML_ResponseStatus***

Remarks

After upgrading the peripheral module's firmware, the device will automatically reboot according to the response message. If upgrading failed, the following reasons may be returned: "upgrading"-the device is upgrading, "badFlash"-flash error, "badLanguage"-language mismatches.

15.10.196 /ISAPI/System/upgradeStatus

Get the device upgrading status and progress.

Request URL Definition

Table 15-623 GET /ISAPI/System/upgradeStatus

Method	GET
Description	Get the device upgrading status and progress.
Query	None.
Request	None.
Response	Succeeded: ***XML_upgradeStatus*** Failed: ***XML_ResponseStatus***

15.10.197 /ISAPI/System/userLock/config/capabilities?format=json

Get the configuration capability of locking IP address.

Request URL Definition

Table 15-624 GET /ISAPI/System/userLock/config/capabilities?format=json

Method	GET
Description	Get the configuration capability of locking IP address.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_LockCfgCap*** Failed: ***JSON_ResponseStatus***

15.10.198 /ISAPI/System/userLock/config?format=json

Operations about IP address locking configuration.

Request URL Definition

Table 15-625 GET /ISAPI/System/userLock/config?format=json

Method	GET
Description	Get the parameters of IP address locking.

Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_LockCfg*** Failed: ***JSON_ResponseStatus***

PUT /ISAPI/System/userLock/config?format=json

Method	PUT
Description	Set the parameters of IP address locking.
Query	**format**: determine the format of request or response message.
Request	***JSON_LockCfg***
Response	***JSON_ResponseStatus***

15.10.199 /ISAPI/System/userLock/lockedUsers?format=json

Get all locked IP addresses.

Request URL Definition

Table 15-626 GET /ISAPI/System/userLock/lockedUsers?format=json

Method	GET
Description	Get all locked IP addresses.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_List_IPAddress*** Failed: ***JSON_ResponseStatus***

15.10.200 /ISAPI/System/userLock/unlockUser?format=json

Unlock the IP address.

Request URL Definition

Table 15-627 PUT /ISAPI/System/userLock/unlockUser?format=json

Method	PUT
Description	Unlock the IP address.

Query	**format**: determine the format of request or response message.
Request	***JSON_operType***
Response	***JSON_ResponseStatus***

15.10.201 /ISAPI/System/Video/capabilities

Get video channel capability.

Request URL Definition

Table 15-628 GET /ISAPI/System/Video/capabilities

Method	GET
Description	Get video channel capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoCap*** Failed: ***XML_ResponseStatus***

15.10.202 /ISAPI/System/Video/inputs

Get the video input configuration of the device.

Request URL Definition

Table 15-629 GET /ISAPI/System/Video/inputs

Method	GET
Description	Get the video input configuration parameters of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoInput*** Failed: ***XML_ResponseStatus***

15.10.203 /ISAPI/System/Video/inputs/channels

Get the configuration of all video input channels of the device.

Request URL Definition

Table 15-630 GET /ISAPI/System/Video/inputs/channels

Method	GET
Description	Get the configuration parameters of all video input channels of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoInputChannelList*** Failed: ***XML_ResponseStatus***

15.10.204 /ISAPI/System/Video/inputs/channels/<ID>

Operations about the configuration of a specific video input channel of the device.

Request URL Definition

Table 15-631 GET /ISAPI/System/Video/inputs/channels/<ID>

Method	GET
Description	Get the parameters of a specific video input channel of the device.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoInputChannel*** Failed: ***XML_ResponseStatus***

Table 15-632 PUT /ISAPI/System/Video/inputs/channels/<ID>

Method	PUT
Description	Set the parameters of a specific video input channel of the device.
Query	None.
Request	***XML_VideoInputChannel***
Response	***XML_ResponseStatus***

See Also

The <**ID**> in the request URL refers to the channel No.

15.10.205 /ISAPI/System/Video/inputs/channels?format=json

Get the information of all channels according to the request message.

Request URL Definition

Table 15-633 POST /ISAPI/System/Video/inputs/channels?format=json

Method	POST
Description	Get the information of all channels according to the request message.
Query	**format**: determine the format of request or response message.
Request	***JSON_InputParam***
Response	Succeeded: ***JSON_ChannelInfoList*** Failed: ***JSON_ResponseStatus***

15.10.206 /ISAPI/System/Video/inputs/channels/<ID>/focus

Perform manual focus on a specific channel.

Request URL Definition

Table 15-634 PUT /ISAPI/System/Video/inputs/channels/<ID>/focus

Method	PUT
Description	Perform manual focus on a specific channel.
Query	None.
Request	***XML_FocusData***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to video input channel ID.

15.10.207 /ISAPI/System/Video/inputs/channels/<ID>?format=json

Get the information of a channel according to the request message.

Request URL Definition

Table 15-635 POST /ISAPI/System/Video/inputs/channels/<ID>?format=json

Method	POST
Description	Get the information of a channel according to the request message.
Query	**format**: determine the format of request or response message.
Request	***JSON_InputParam***
Response	Succeeded: ***JSON_ChannelInfo*** Failed: ***JSON_ResponseStatus***

Remarks

The <ID> in the request URL refers to the channel No.

15.10.208 /ISAPI/System/Video/inputs/channels/<ID>/capabilities

Get the configuration capability of a video input channel.

Request URL Definition

Table 15-636 GET /ISAPI/System/Video/inputs/channels/<ID>/capabilities

Method	GET
Description	Get the configuration capability of a video input channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_VideoInputChannel*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to video input channel ID.

15.10.209 /ISAPI/System/Video/inputs/channels/<ID>/iris

Manually adjust the iris of a specific video input channel.

Request URL Definition

Table 15-637 PUT /ISAPI/System/Video/inputs/channels/<ID>/iris

Method	PUT
Description	Manually adjust the iris of a specific video input channel.
Query	None.
Request	***XML_IrisData***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to video input channel ID.

15.10.210 /ISAPI/System/Video/inputs/channels/<ID>/overlays

Operations about OSD configuration of a specific video input channel.

Request URL Definition

Table 15-638 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays

Method	GET
Description	Get OSD configuration parameters of a specific video input channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoOverlay*** Failed: ***XML_ResponseStatus***

Table 15-639 PUT /ISAPI/System/Video/inputs/channels/<ID>/overlays

Method	PUT
Description	Set OSD parameters of a specific video input channel.
Query	None.
Request	***XML_VideoOverlay***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel ID.

Example

Sample Code for Getting OSD Parameters

```
GET /ISAPI/System/Video/inputs/channels/1/overlays HTTP/1.1
Host: 10.17.132.49
Connection: Keep-Alive
Authorization: Digest username="admin",
realm="DS-2CD2F12FWD-IWS",
nonce="4d3046464f454e4252546336593255345957497 84f546b3d",
uri="/ISAPI/System/Video/inputs/channels/1/overlays",
cnonce="03e455047789a833deaae75e44381653",
nc=00000017,
response="ae141a01b415c1b9ab50ddea7ff467c3",
qop="auth"

HTTP/1.1 200 OK
Date: Tue, 14 Mar 2017 20:38:40 GMT
Server: App-webs/
Connection: close
Content-Length: 1087
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<VideoOverlay version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <normalizedScreenSize>
  <normalizedScreenWidth>704</normalizedScreenWidth>
  <normalizedScreenHeight>576</normalizedScreenHeight>
 </normalizedScreenSize>
 <attribute>
  <transparent>false</transparent>
  <flashing>false</flashing>
 </attribute>
 <fontSize>64*64</fontSize>
 <TextOverlayList size="1">
  <TextOverlay>
   <id>1</id>
   <enabled>true</enabled>
   <positionX>0</positionX>
   <positionY>576</positionY>
   <displayText>222</displayText>
  </TextOverlay>
 </TextOverlayList>
 <DateTimeOverlay>
  <enabled>true</enabled>
  <positionX>0</positionX>
  <positionY>544</positionY>
  <dateStyle>MM-DD-YYYY</dateStyle>
  <timeStyle>24hour</timeStyle>
  <displayWeek>true</displayWeek>
 </DateTimeOverlay>
 <channelNameOverlay version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <enabled>true</enabled>
```

```
  <positionX>512</positionX>
  <positionY>64</positionY>
 </channelNameOverlay>
 <frontColorMode>auto</frontColorMode>
 <frontColor>000000</frontColor>
</VideoOverlay>
```

15.10.211 /ISAPI/System/Video/inputs/channels/<ID>/overlays/BatteryPowerOverlay

Operations about the battery overlay configuration of a specific video input channel.

Request URL Definition

Table 15-640 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/BatteryPowerOverlay

Method	GET
Description	Get the battery overlay parameters of a specific video input channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_BatteryPowerOverlay*** Failed: ***XML_ResponseStatus***

Table 15-641 PUT /ISAPI/System/Video/inputs/channels/<ID>/overlays/BatteryPowerOverlay

Method	PUT
Description	Set the battery overlay parameters of a specific video input channel.
Query	None.
Request	***XML_BatteryPowerOverlay***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel No.

15.10.212 /ISAPI/System/Video/inputs/channels/<ID>/overlays/BatteryPowerOverlay/capabilities

Get the configuration capability of battery overlay of a specific video input channel.

Request URL Definition

Table 15-642 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/BatteryPowerOverlay/capabilities

Method	GET
Description	Get the configuration capability of battery overlay of a specific video input channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_BatteryPowerOverlay*** Failed: ***XML_ResponseStatus***

15.10.213 /ISAPI/System/Video/inputs/channels/<ID>/overlays/capabilities

Get the OSD capability of a specific video input channel.

Request URL Definition

Table 15-643 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/capabilities

Method	GET
Description	Get the OSD capability of a specific video input channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_VideoOverlay*** Failed: ***XML_ResponseStatus***

15.10.214 /ISAPI/System/Video/inputs/channels/<ID>/overlays/channelNameOverlay

Operations about the configuration of channel name overlay of a specific video input channel.

Request URL Definition

Table 15-644 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/channelNameOverlay

Method	GET
Description	Get the parameters of channel name overlay of a specific video input channel.

Query	None.
Request	None.
Response	Succeeded: ***XML_channelNameOverlay*** Failed: ***XML_ResponseStatus***

Table 15-645 PUT /ISAPI/System/Video/inputs/channels/<ID>/overlays/channelNameOverlay

Method	PUT
Description	Set the parameters of channel name overlay of a specific video input channel.
Query	None.
Request	***XML_channelNameOverlay***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel No.

15.10.215 /ISAPI/System/Video/inputs/channels/<ID>/overlays/dateTimeOverlay

Operations about the configuration of date and time information overlay of a specific video input channel.

Request URL Definition

Table 15-646 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/dateTimeOverlay

Method	GET
Description	Get the parameters of date and time information overlay of a specific video input channel.
Query	None.
Request	None.
Response	Succeeded: Failed: ***XML_ResponseStatus***

Table 15-647 PUT /ISAPI/System/Video/inputs/channels/<ID>/overlays/dateTimeOverlay

Method	PUT
Description	Set the parameters of date and time information overlay of a specific video input channel.
Query	None.

Request	
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel No.

15.10.216 /ISAPI/System/Video/inputs/channels/<ID>/overlays/dateTimeOverlay/capabilities

Get the capability of date and time information overlay of a specific video input channel.

Request URL Definition

Table 15-648 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/dateTimeOverlay/capabilities

Method	GET
Description	Get the capability of date and time information overlay of a specific video input channel.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_DatetimeOverlay*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel No.

15.10.217 /ISAPI/System/Video/inputs/channels/<ID>/overlays/text

Operations about the text overlay configuration of a specific video input channel.

Request URL Definition

Table 15-649 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/text

Method	GET
Description	Get the text overlay parameters of a specific video input channel.
Query	None.

Request	None.
Response	Succeeded: ***XML_TextOverlayList*** Failed: ***XML_ResponseStatus***

Table 15-650 PUT /ISAPI/System/Video/inputs/channels/<ID>/overlays/text

Method	PUT
Description	Set the text overlay parameters of a specific video input channel.
Query	None.
Request	***XML_TextOverlayList***
Response	***XML_ResponseStatus***

Table 15-651 POST /ISAPI/System/Video/inputs/channels/<ID>/overlays/text

Method	POST
Description	Add a text to overlay on the video for a specific video input channel.
Query	None.
Request	***XML_TextOverlay***
Response	***XML_ResponseStatus***

Table 15-652 DELETE /ISAPI/System/Video/inputs/channels/<ID>/overlays/text

Method	DELETE
Description	Delete the text overlay parameters of a specific video input channel.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.10.218 /ISAPI/System/Video/inputs/channels/<ID>/overlays/text/<ID>

Operations about the configuration of a specific piece of text overlay information of a specific video input channel.

Request URL Definition

Table 15-653 GET /ISAPI/System/Video/inputs/channels/<ID>/overlays/text/<ID>

Method	GET
Description	Get the parameters of a specific piece of text overlay information of a specific video input channel.

Query	None.
Request	None.
Response	Succeeded: ***XML_TextOverlay*** Failed: ***XML_ResponseStatus***

Table 15-654 PUT /ISAPI/System/Video/inputs/channels/<ID>/overlays/text/<ID>

Method	PUT
Description	Set the parameters of a specific piece of text overlay information of a specific video input channel.
Query	None.
Request	***XML_TextOverlay***
Response	***XML_ResponseStatus***

Table 15-655 DELETE /ISAPI/System/Video/inputs/channels/<ID>/overlays/text/<ID>

Method	DELETE
Description	Delete the parameters of a specific piece of text overlay information of a specific video input channel.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

15.10.219 /ISAPI/System/Video/inputs/channels/<ID>/privacyMask

Get or set privacy mask parameters.

Request URL Definition

Table 15-656 GET /ISAPI/System/Video/inputs/channels/<ID>/privacyMask

Method	GET
Description	Get or set privacy mask parameters.
Query	None.
Request	None.
Response	Succeeded: ***XML_PrivacyMask*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel ID.

15.10.220 /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/privacyMaskCap

Get configuration capability of privacy mask.

Request URL Definition

Table 15-657 GET /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/privacyMaskCap

Method	GET
Description	Get configuration capability of privacy mask.
Query	None.
Request	None.
Response	Succeeded: ***XML_PrivacyMaskCap*** Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel ID.

15.10.221 /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions

Get, set, or delete parameters of privacy mask regions, and add a region.

Request URL Definition

Table 15-658 GET /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions

Method	GET
Description	Get parameters of privacy mask regions.
Query	None.
Request	None.
Response	Succeeded: ***XML_PrivacyMaskRegionList*** Failed: ***XML_ResponseStatus***

Table 15-659 PUT /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions

Method	PUT
Description	Set parameters of privacy mask regions.
Query	None.
Request	***XML_PrivacyMaskRegionList***
Response	***XML_ResponseStatus***

Table 15-660 DELETE /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions

Method	DELETE
Description	Delete parameters of privacy mask regions.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Table 15-661 POST /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions

Method	POST
Description	Add a privacy mask region.
Query	None.
Request	***XML_PrivacyMaskRegion***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video input channel ID.

15.10.222 /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions/<ID>

Get, set, or delete parameters of a privacy mask region.

Request URL Definition

Table 15-662 GET /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions/<ID>

Method	GET
Description	Get parameters of a privacy mask region.
Query	None.

Request	None.
Response	Succeeded: ***XML_PrivacyMaskRegion*** Failed: ***XML_ResponseStatus***

Table 15-663 PUT /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions/<ID>

Method	PUT
Description	Set parameters of a privacy mask region.
Query	None.
Request	***XML_PrivacyMaskRegion***
Response	***XML_ResponseStatus***

Table 15-664 DELETE /ISAPI/System/Video/inputs/channels/<ID>/privacyMask/regions/<ID>

Method	DELETE
Description	Delete parameters of a privacy mask region.
Query	None.
Request	None.
Response	***XML_ResponseStatus***

Remarks

The first <**ID**> in the request URL refers to the video input channel ID; and second <**ID**> is the privacy mask region ID.

15.10.223 /ISAPI/System/Video/inputs/channels/<ID>/VCAResource

Operation about configuration of intelligent resources switch.

Request URL Definition

Table 15-665 GET /ISAPI/System/Video/inputs/channels/<ID>/VCAResource

Method	GET
Description	Get parameters of intelligent resources switch.
Query	None.
Request	None.
Response	Succeeded: ***XML_VCAResource*** Failed: ***XML_ResponseStatus***

Table 15-666 PUT /ISAPI/System/Video/inputs/channels/<ID>/VCAResource

Method	PUT
Description	Set parameters of intelligent resources switch.
Query	None.
Request	***XML_VCAResource***
Response	***XML_ResponseStatus***

Remarks

- The <**ID**> in the request URL refers to the video input channel ID.
- The intelligent resources switch supports three capture mode, i.e., target capture, face capture, and perimeter capture.
  - For target capture mode, the panoramic camera captures the human body and vehicle pictures, the speed dome tracks and capture the human body for human body or face recognition and comparison. If matched, the thumbnails and original pictures of human body and face will be uploaded; otherwise, only the thumbnail and original picture of face will be uploaded.
  - For face capture mode, the panoramic camera transmits the videos without any intelligent analysis, the speed dome captures face picture in up to 4 scenes.
  - For perimeter capture, the panoramic camera captures vehicle pictures and performs HMS +DGS detection, and it supports detecting and tracking the small target within 40 m; while the speed dome tracks and captures the detected target, and outputs thumbnails and original pictures of human body and face.

15.10.224 /ISAPI/System/Video/inputs/channels/<ID>/VCAResource/capabilities

Get capability of intelligent resources switch.

Request URL Definition

Table 15-667 GET /ISAPI/System/Video/inputs/channels/<ID>/VCAResource/capabilities

Method	GET
Description	Get capability of intelligent resources switch.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_VCAResource*** Failed: ***XML_ResponseStatus***

15.10.225 /ISAPI/System/Video/inputs/channels/counting/collection/capabilities?format=json

Get the capability of people counting data replenishment.

Request URL Definition

Table 15-668 GET /ISAPI/System/Video/inputs/channels/counting/collection/capabilities?format=json

Method	GET
Description	Get the capability of people counting data replenishment.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_PeopleCounting_CollectionDescriptionCap***

15.10.226 /ISAPI/System/Video/inputs/channels/counting/collection?format=json

Perform people counting replenishment.

Request URL Definition

Table 15-669 POST /ISAPI/System/Video/inputs/channels/counting/collection?format=json

Method	POST
Description	Perform people counting replenishment.
Query	**format**: determine the format of request or response message.
Request	***JSON_PeopleCounting_CollectionDescription***
Response	***JSON_PeopleCounting_CollectionResult***

15.10.227 /ISAPI/System/Video/inputs/channels/heatMap/collection/capabilities?format=json

Get the capability of heat map data replenishment.

Request URL Definition

Table 15-670 GET /ISAPI/System/Video/inputs/channels/heatMap/collection/capabilities?format=json

Method	GET
Description	Get the capability of heat map data replenishment.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_HeatMap_CollectionDescriptionCap***

15.10.228 /ISAPI/System/Video/inputs/channels/heatMap/collection?format=json

Perform heat map data replenishment.

Request URL Definition

Table 15-671 POST /ISAPI/System/Video/inputs/channels/heatMap/collection?format=json

Method	POST
Description	Perform heat map data replenishment.
Query	**format**: determine the format of request or response message.
Request	***JSON_HeatMap_CollectionDescription***
Response	***JSON_HeatMap_CollectionResult***

15.10.229 /ISAPI/System/Video/inputs/OSDLanguage

Operations about OSD language configuration.

Request URL Definition

Table 15-672 GET /ISAPI/System/Video/inputs/OSDLanguag

Method	GET
Description	Get OSD language parameters.
Query	None.
Request	None.
Response	***XML_Language***

Table 15-673 PUT /ISAPI/System/Video/inputs/OSDLanguag

Method	PUT
Description	Set OSD language parameters.
Query	None.
Request	***XML_Language***
Response	***XML_ResponseStatus***

15.10.230 /ISAPI/System/Video/outputs

Get configuration parameters of video outputs.

Request URL Definition

Table 15-674 GET /ISAPI/System/Video/outputs

Method	GET
Description	Get configuration parameters of all video outputs.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoOutput*** Failed: ***XML_ResponseStatus***

15.10.231 /ISAPI/System/Video/outputs/channels

Get configuration parameters of multiple video outputs.

Request URL Definition

Table 15-675 GET /ISAPI/System/Video/outputs/channels

Method	GET
Description	Get configuration parameters of multiple video outputs.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoOutputChannelList*** Failed: ***XML_ResponseStatus***

15.10.232 /ISAPI/System/Video/outputs/channels/<ID>

Get or set parameters of a video output.

Request URL Definition

Table 15-676 GET /ISAPI/System/Video/outputs/channels/<ID>

Method	GET
Description	Get parameters of a video output.
Query	None.
Request	None.
Response	Succeeded: ***XML_VideoOutputChannel*** Failed: ***XML_ResponseStatus***

Table 15-677 PUT /ISAPI/System/Video/outputs/channels/<ID>

Method	PUT
Description	Set parameters of a video output.
Query	None.
Request	***XML_VideoOutputChannel***
Response	***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video output ID.

15.10.233 /ISAPI/System/Video/outputs/channels/<ID>/capabilities

Get video output configuration capability.

Request URL Definition

Table 15-678 GET /ISAPI/System/Video/outputs/channels/<ID>/capabilities

Method	GET
Description	Get video output configuration capability.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_VideoOutputChannel***

	Failed: ***XML_ResponseStatus***

Remarks

The <**ID**> in the request URL refers to the video output ID.

15.10.234 /ISAPI/System/Video/outputs/PreviewSwitch/capabilities

Get capability of auto-switch configuration during live view.

Request URL Definition

Table 15-679 GET /ISAPI/System/Video/outputs/PreviewSwitch/capabilities

Method	GET
Description	Get capability of auto-switch configuration during live view.
Query	None.
Request	None.
Response	Succeeded: ***XML_Cap_PreviewSwitch*** Failed: ***XML_ResponseStatus***

15.10.235 /ISAPI/System/Video/outputs/PreviewSwitch/capabilities?videoOutType=

Get capability of auto-switch configuration during live view by video output.

Request URL Definition

Table 15-680 GET /ISAPI/System/Video/outputs/PreviewSwitch/capabilities?videoOutType=

Method	GET
Description	Get capability of auto-switch configuration during live view by video output.
Query	**videoOutType**: video output type, string type, it can be the following values: CVBS, HDMI, VGA, AUXOutput1, AUXOutput2, AUXOutput3, AUXOutput4, extendHDMI1, extendHDMI2, extendHDMI3, extendHDMI4, noSameSourceVGA1, noSameSourceVGA2, noSameSourceVGA3, noSameSourceVGA4, sameSourceVGA, mainLCD, AUX-VGA, AUX-LCD, and zeroChannel. If there are more than two outputs are homologous, you can combine these outputs by "/", e.g., if HDM1 and VGA1 are homologous outputs, the value of videoOutType equals to HDM1/VGA1.

Request	None.
Response	Succeeded: ***XML_PreviewSwitchVideoOutCap*** Failed: ***XML_ResponseStatus***

15.10.236 /ISAPI/System/Video/outputs/PreviewSwitch?groupID=&videoOutType=

Operations about auto-switch configuration in live view.

Request URL Definition

Table 15-681 GET /ISAPI/System/Video/outputs/PreviewSwitch?groupID=&videoOutType=

Method	GET
Description	Get configuration parameters of auto-switch in live view.
Query	**groupNo**: group No., integer type, which is used to group the windows for configuration, and up to 64 windows can be added to a group. **videoOutType**: video output type, string type, it can be the following values: CVBS, HDMI, VGA, AUXOutput1, AUXOutput2, AUXOutput3, AUXOutput4, extendHDMI1, extendHDMI2, extendHDMI3, extendHDMI4, noSameSourceVGA1, noSameSourceVGA2, noSameSourceVGA3, noSameSourceVGA4, sameSourceVGA, mainLCD, AUX-VGA, AUX-LCD, and zeroChannel. If there are more than two outputs are homologous, you can combine these outputs by "/", e.g., if HDM1 and VGA1 are homologous outputs, the value of videoOutType equals to HDM1/VGA1.
Request	None.
Response	Succeeded: ***XML_PreviewSwitch*** Failed: ***XML_ResponseStatus***

Table 15-682 PUT /ISAPI/System/Video/outputs/PreviewSwitch?groupID=&videoOutType=

Method	PUT
Description	Set parameters for auto-switch in live view.
Query	**groupNo**: group No., integer type, which is used to group the windows for configuration, and up to 64 windows can be added to a group. **videoOutType**: video output type, string type, it can be the following values: CVBS, HDMI, VGA, AUXOutput1, AUXOutput2, AUXOutput3,

	AUXOutput4, extendHDMI1, extendHDMI2, extendHDMI3, extendHDMI4, noSameSourceVGA1, noSameSourceVGA2, noSameSourceVGA3, noSameSourceVGA4, sameSourceVGA, mainLCD, AUX-VGA, AUX-LCD, and zeroChannel. If there are more than two outputs are homologous, you can combine these outputs by "/", e.g., if HDM1 and VGA1 are homologous outputs, the value of videoOutType equals to HDM1/VGA1.
Request	***XML_PreviewSwitch***
Response	***XML_ResponseStatus***

15.10.237 /ISAPI/System/Video/outputs/PreviewSwitch?groupID=&videoOutType=&previewFrameNo=

Get configuration parameters of auto-switch in live view.

Request URL Definition

Table 15-683 GET /ISAPI/System/Video/outputs/PreviewSwitch?groupID=&videoOutType=&previewFrameNo=

Method	GET
Description	Get configuration parameters of auto-switch in live view.
Query	**groupNo**: group No., integer type, which is used to group the windows for configuration, and up to 64 windows can be added to a group. **videoOutType**: video output type, string type, it can be the following values: CVBS, HDMI, VGA, AUXOutput1, AUXOutput2, AUXOutput3, AUXOutput4, extendHDMI1, extendHDMI2, extendHDMI3, extendHDMI4, noSameSourceVGA1, noSameSourceVGA2, noSameSourceVGA3, noSameSourceVGA4, sameSourceVGA, mainLCD, AUX-VGA, AUX-LCD, and zeroChannel. If there are more than two outputs are homologous, you can combine these outputs by "/", e.g., if HDM1 and VGA1 are homologous outputs, the value of videoOutType equals to HDM1/VGA1. (Optional) **previewFrameNo**: number of live view windows, integer string type, and it can be the following values: 1, 4, 6, 8, 9, 25, 32, 36, auto1 (custom window division 1), auto2 (custom window division 2), auto3 (custom window division 3), and auto4 (custom window division 4).

Request	None.
Response	Succeeded: ***XML_PreviewSwitch*** Failed: ***XML_ResponseStatus***

15.10.238 /ISAPI/System/workingstatus/hdStatus?format=json

Get HDD status.

Request URL Definition

Table 15-684 GET /ISAPI/System/workingstatus/hdStatus?format=json

Method	GET
Description	Get all HDDs' status.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_HDStatus*** Failed: ***JSON_ResponseStatus***

Table 15-685 POST /ISAPI/System/workingstatus/hdStatus?format=json

Method	POST
Description	Get a specified HDD's status.
Query	**format**: determine the format of request or response message.
Request	***JSON_HDCond***
Response	Succeeded: ***JSON_HDStatus*** Failed: ***JSON_ResponseStatus***

15.10.239 /ISAPI/System/workingstatus/chanStatus?format=json

Get channel status.

Request URL Definition

Table 15-686 GET /ISAPI/System/workingstatus/chanStatus?format=json

Method	GET
Description	Get all channels' status.
Query	**format**: determine the format of request or response message.

Request	None.
Response	Succeeded: ***JSON_ChanStatus*** Failed: ***JSON_ResponseStatus***

Table 15-687 POST /ISAPI/System/workingstatus/chanStatus?format=json

Method	POST
Description	Get a specified channel's status.
Query	**format**: determine the format of request or response message.
Request	***JSON_ChanCond***
Response	Succeeded: ***JSON_ChanStatus*** Failed: ***JSON_ResponseStatus***

15.10.240 /ISAPI/System/workingstatus/capabilities?format=json

Get capability of getting all statuses of device.

Request URL Definition

Table 15-688 GET /ISAPI/System/workingstatus/capabilities?format=json

Method	GET
Description	Get capability of getting all statuses of device.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_Cap_WorkingStatus*** Failed: ***JSON_ResponseStatus***

15.10.241 /ISAPI/System/workingstatus?format=json

Get device working status.

Request URL Definition

Table 15-689 GET /ISAPI/System/workingstatus?format=json

Method	GET
Description	Get device working status.
Query	**format**: determine the format of request or response message.

Request	None.
Response	Succeeded: ***JSON_WorkingStatus*** Failed: ***JSON_ResponseStatus***

Remarks

Up to 20 bytes are allowed for a device's working status; up to 100 bytes are allowed for a channel's status, a HDD's status, and an IO's status; up to 30 bytes are allowed for a two-way audio channel's status.

15.10.242 /ISAPI/System/workingstatus/IOStatus?format=json

Get device IO status.

Request URL Definition

Table 15-690 GET /ISAPI/System/workingstatus/IOStatus?format=json

Method	GET
Description	Get device IO status.
Query	**format**: determine the format of request or response message.
Request	None.
Response	Succeeded: ***JSON_IOStatus*** Failed: ***JSON_ResponseStatus***

15.10.243 /ISAPI/System/zeroBiasCalibration/channels/<ID>?format=json

Calibrate the accelerometer bias.

Request URL Definition

Table 15-691 PUT /ISAPI/System/zeroBiasCalibration/channels/<ID>?format=json

Method	PUT
Description	Calibrate the accelerometer bias.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_ResponseStatus***

Remarks

The <ID> in the request URL refers to the channel No.

15.11 /ISAPI/Thermal

15.11.1 /ISAPI/Thermal/capabilities

Get thermal capability.

Request URL Definition

Table 15-692 GET /ISAPI/Thermal/capabilities

Method	GET
Description	Get the thermal capability.
Query	None.
Request	None.
Response	***XML_ThermalCap***

15.11.2 /ISAPI/Thermal/temperature/collection/capabilities?format=json

Get the capability of temperature data replenishment.

Request URL Definition

Table 15-693 GET /ISAPI/Thermal/temperature/collection/capabilities?format=json

Method	GET
Description	Get the capability of temperature data replenishment.
Query	**format**: determine the format of request or response message.
Request	None.
Response	***JSON_Temperature_CollectionDescriptionCap***

15.11.3 /ISAPI/Thermal/temperature/collection?format=json

Perform the temperature data replenishment.

Request URL Definition

Table 15-694 GET /ISAPI/Thermal/temperature/collection?format=json

Method	POST
Description	Perform the temperature data replenishment.
Query	**format**: determine the format of request or response message.
Request	***JSON_CollectionDescription***
Response	***JSON_CollectionResult***

Chapter 16 Request and Response Message

The request and response messages in XML or JSON format of each request URL are listed here for reference. You can search for the parameters by the message name.

16.1 JSON Messages

16.1.1 JSON_Adaption

Adaption message in JSON format

```
{
  "Adaption": {
    "enable": ,
/*required, boolean type, whether to enable network self-adaptive function: true-no, false-yes; this function is bound with IntraRefresh encoding strategy*/
    "policy": ,
/*required,self-adaptive strategy, 0-self-adaptive (adjust the resolution and bit rate, the resolution value should be smaller than or equal to the configured value, but the frame rate is constant), 1-resolution in priority (adjust bit rate, resolution and frame rate are constant), 2-error correction and retransmission (resolution and frame rate are constant)*/
    "percentage":
/*this node is required when policy is "2", error correction percentage, unit: %, which is between 0 and 100; lager percentage represents more corrected data, more higher requirement for bandwidth, and better effect*/
  }
}
```

16.1.2 JSON_AdaptionCap

AdaptionCap message in JSON format

```
{
  "AdaptionCap": {
    "enable": "true,false",
/*required, boolean type, whether to enable network self-adaptive function: true-no, false-yes; this function is bound with IntraRefresh encoding strategy*/
    "policy": {
/*required,self-adaptive strategy, 0-self-adaptive (adjust the resolution and bit rate, the resolution value should be smaller than or equal to the configured value, but the frame rate is constant), 1-resolution in priority (adjust bit rate, resolution and frame rate are constant), 2-error correction and retransmission (resolution and frame rate are constant)*/
      "@opt":  "0,1,2"
    },
    "percentage": {
/*this node is required when policy is "2", error correction percentage, unit: %, which is between 0 and 100; lager
```

```
percentage represents more corrected data, more higher requirement for bandwidth, and better effect*/
      "@min": 0,
      "@max": 100,
    }
  }
}
```

16.1.3 JSON_AlarmStatistics

AlarmStatistics message in JSON format

```
{
  "AlarmStatistics":{
/*optional, alarm statistics of added IoT devices*/
    "totalNumber": "",
/*required, the total number of alarms, integer*/
    "time": "",
/*required, statistic time, integer, unit: second*/
  }
}
```

16.1.4 JSON_AssociatedChannelList

AssociatedChannelList message in JSON format

```
{
  "AssociatedChannelList": [{
/*optional, list of linked channels*/
    "channel": "",
/*required, channel No., integer*/
    "type": "",
/*required, channel type: "video"-video channel, "IOT"-IoT channel, string*/
    "associatedVideoChannels": "",
/*optional, linked video channel No., array, and the unit is integer*/
    "associatedIOTChannels": ""
/*optional, linked IoT channel No., array, and the unit is integer*/
  }]
}
```

16.1.5 JSON_AudioAlarm

AudioAlarm message in JSON format

```
{
  "AudioAlarm":{
    "audioID": ,
/*required, alarm sound types, 1-siren, 2-"Warning, this is a restricted area", 3-"Waring, this is a restricted area,
```

```
please keep away", 4-"Warning, this is a no-parking zone", 5-"Warning, this is a no-parking zone, please keep away",
6-"Attention please. The area is under surveillance", 7-"Welcome，Please notice that the area is under surveillance",
8-"Welcome", 9-"Danger! Please keep away", 10-siren + "Danger, please keep away", 11-Audio Warning, 12-Beep
Sound, 13-"Temperature abnormality, please deal with it as soon as possible", 14-"Smoking is prohibited in this area",
15-"Fire detected, please deal with it as soon as possible"*/
   "audioVolume": ,
/*required, integer type, volume, which is between 1 ad 100*/
   "alarmTimes": ,
/*required, integer type, times of alarm, which is between 1 and 50*/
   "TimeRangeList":[{
/*optional, alarm output schedule list*/
     "week": ,
     "TimeRange":[{
      "id": ,
/*required, integer type, ID of time period for each day*/
       "beginTime":"",
/*required, string type, start time in ISO8601 format*/
       "endTime":""
/*required, string type, end time in ISO8601 format*/
     }]
   }]
   "alarmType": "",
/*optional, string type, alarm type: "behavior"-behavior analysis, "thermometry"-thermometry, "dynamicFire"-fire
detection, "smokingMode"-smoke detection*/
  }
}
```

16.1.6 JSON_AudioAlarmCap

AudioAlarmCap message in JSON format

```
{
  "AudioAlarmCap":{
   "audioTypeListCap":[{
/*required, alarm sound types, 1-siren, 2-"Warning, this is a restricted area", 3-"Waring, this is a restricted area,
please keep away", 4-"Warning, this is a no-parking zone", 5-"Warning, this is a no-parking zone, please keep away",
6-"Attention please. The area is under surveillance", 7-"Welcome，Please notice that the area is under surveillance",
8-"Welcome", 9-"Danger! Please keep away", 10-siren + "Danger, please keep away", 11-Audio Warning, 12-Beep
Sound, 13-"Temperature abnormality, please deal with it as soon as possible", 14-"Smoking is prohibited in this area",
15-"Fire detected, please deal with it as soon as possible"*/
     "audioID": ,
     "audioDescription":""
   },
   {
     "audioID": ,
     "audioDescription":""
   },
   {
     "audioID": ,
     "audioDescription":""
   }],
```

```
   "audioVolume":{
/*required, integer type, volume, which is between 1 ad 100*/
     "@min": ,
     "@max": ,
     "@def":
   },
   "alarmTimes":{
/*required, integer type, times of alarm, which is between 1 and 50*/
     "@min": ,
     "@max": ,
     "@def":
   },
   "TimeRangeCap":{
/*optional, alarm output schedule list capability*/
     "week":{
/*required, integer type, days of the week: 1-Monday, 2-Tuesday, 3-Wednesday, 4-Thursday, 5-Friday,6-Saturday, 7-
Sunday*/
      "@opt":""
     },
     "id":{
/*required, integer type, ID of time period for each day*/
      "@maxSize":
     },
     "beginTime":{
/*required, string type, start time in ISO8601 format*/
      "@min":"",
      "@max":""
     },
     "endTime":{
/*required, string type, end time in ISO8601 format*/
      "@min":"",
      "@max":""
     }
   }
   "alarmType":{
/*optional, string type, alarm type: "behavior"-behavior analysis, "thermometry"-thermometry, "dynamicFire"-fire
detection, "smokingMode"-smoke detection*/
     "@opt":"behavior,thermometry,dynamicFire,smokingMode",
     "@def":"thermometry"
   }
   "AlarmBindAudioList":[{
/*optional, alarm type and the list of audio related to alarm type*/
     "alarmType":"behavior",
/*optional, string, alarm type: "behavior"-behavior analysis, "thermometry"-thermometry, "dynamicFire"-fire
detection, "smokingMode"-smoke detection*/
     "audioID":{
/*optional, string, the audible warning type ID corresponding to alarm type, behavior analysis corresponds to 1-12,
thermometry corresponds to 13，fire detection corresponds to 14，smoke detection corresponds to 15*/
      "@opt":"1,2,3,4,5,6,7,8,9,10,11,12,13,14,15"
     }
   }]
```

```
  }
}
```

16.1.7 JSON_AutoEagleFocusing

AutoEagleFocusing message in JSON format

```
{
  "AutoEagleFocusing": {
/*required, auto calibration of rapid focus*/
    "EagleFocusingRegion": [{
/*optional, string, rapid focus region*/
      "sid": "",
/*optional, string, scene ID*/
      "spotNum": ,
/*optional, integer, the number of calibration points*/
      "type": "",
/*optional, string, region type now only supports "line"*/
      "Region": [{
/*optional, region list*/
        "x": ,
        "y":
      }],
      "AbsoluteHigh": {
/*optional, PTZ position*/
        "elevation": ,
/*optional, xs:integer, tilt angle, range: [-900,2700]*/
        "azimuth": ,
/*optional, xs:integer, azimuth, range: [0,3600]*/
        "absoluteZoom": 33
/*optional, xs:integer, zoom, range: [1,1000]*/
      }
    }]
  }
}
```

16.1.8 JSON_AutoEagleFocusingCap

AutoEagleFocusingCap message in JSON format

```
{
  "AutoEagleFocusingCap": {
/*required, auto calibration capability of rapid focus*/
    "EagleFocusingRegion": {
      "sid": {
/*optional, string, scene ID*/
        "@min": 1,
        "@max": 2
      },
```

```
    "spotNum": {
/*optional, integer, the number of calibration points*/
      "@min": 1,
      "@max": 64
    },
    "type": {
/*optional, string, region type now only supports "line"*/
      "@opt": "line"
    },
    "RegionCap": {
      "minSize": 3,
/*required, integer, the minimum number of region edges*/
      "maxSize": 10,
/*required, integer, the maximum number of region edges*/
      "x": {
/*required, float, X-coordinate, value range: 0.000 to 1*/
        "@min": 0.000,
        "@max": 1.000,
        "#text": 0.120
      },
      "y": {
/*required, float, Y-coordinate, value range: 0.000 to 1*/
        "@min": 0.000,
        "@max": 1.000,
        "#text": 0.120
      }
    },
    "AbsoluteHighCap": {
      "elevation": {
/*optional, xs:integer, tilt angle, range: [-900,2700]*/
        "@min": -900,
        "@max": 2700
      },
      "azimuth": {
/*optional, xs:integer, azimuth, range: [0,3600]*/
        "@min": 0,
        "@max": 3600
      },
      "absoluteZoom": {
/*optional, xs:integer, zoom, range: [1,1000]*/
        "@min": 1,
        "@max": 1000
      }
    }
  }
 }
}
```

16.1.9 JSON_AutoGotoCfg

AutoGotoCfg message in JSON format

```
{
  "AutoGotoCfg":{
    "enable": ,
/*optional, boolean type, whether to enable*/
    "autoRecoveryTime":
/*optional, integer type, automatically restored time after the PTZ control is disabled, unit: second*/
  }
}
```

16.1.10 JSON_AutoGotoCfgCap

AutoGotoCfgCap message in JSON format

```
{
  "AutoGotoCfgCap":{
    "enable":"true,false",
/*optional, whether to enable*/
    "autoRecoveryTime":{
/*optional, automatically restored time after the PTZ control is disabled, unit: second*/
      "@min": ,
      "@max":
    }
  }
}
```

16.1.11 JSON_AutoMaintenance

AutoMaintenance message in JSON format

```
{
  "AutoMaintenance":{
    "enabled": true,
/*required, boolean, enable or not*/
    "dayOfWeek": "",
/*required, integer, day of the week, ranges from 1 to 7, 1-Monday, 2-Tuesday, and so on*/
    "rebootTime": "",
/*required, reboot time, corrects to minute, it is 0 by default, ISO8601 format, string*/
    }
}
```

16.1.12 JSON_AutoMaintenanceCap

AutoMaintenanceCap message in JSON format

```
{
  "AutoMaintenanceCap":{
    "enabled": "true,false",
/*required, boolean, enable or not*/
    "dayOfWeek":{
/*required, integer, day of the week, ranges from 1 to 7, 1-Monday, 2-Tuesday, and so on*/
      "@min": 1,
      "@max": 7,
      "#text": 1
    },
  }
}
```

16.1.13 JSON_BasicParam

BasicParam message in JSON format

```
{
  "BasicParam":{
/*required, basic parameters of added IoT device*/
    "channelName": ""
/*required, channel name, string, the max. length is 32*/
  }
}
```

16.1.14 JSON_CalibrationStatus

CalibrationStatus message in JSON format

```
{
  "CalibrationStatus":{
/*required, string type, installation angle calibration status: "Calibrated"-calibrated, "Uncalibrated"-uncalibrated*/
  }
}
```

16.1.15 JSON_Cap_CalibrationStatus

CalibrationStatus message in JSON format

```
{
  "CalibrationStatus":{
/*required, string type, installation angle calibration status: "Calibrated"-calibrated, "Uncalibrated"-uncalibrated*/
```

```
    "@opt":"Calibrated,Uncalibrated"
   }
}
```

16.1.16 JSON_Cap_CertificateSelect

CertificateSelect capability message in JSON format

```
{
  "CertificateSelect":{
    "Function":[{
/*required, function list*/
      "functionName":"HTTPS",
/*required, function name, it should be set to one of the following values:
"HTTPS","WebSocketS","SDK_OVER_TLS","SRTP","securityLog","ieee802.1x"*/
      "certificateType":["client", "server", "CA"]
/*required, certificate type required by this function, it should be set to one or multiple values of the following
options: "client","server","CA"*/
    }],
    "clientCertificate":{
/*optional, optional client certificate types*/
      "@opt":["name1"]
    },
    "serverCertificate":{
/*optional, optional server certificate types*/
      "@opt":["name2"]
    },
    "CACertificate":{
/*optional, optional CA certificate types*/
      "@opt":["name3"]
    },
    "SRTPSecurityAlgorithm":{
/*optional, string, optional encryption algorithms*/
      "@opt":["AES128", "AES256"]
    }
   }
}
```

16.1.17 JSON_Cap_CommuMode

CommuMode capability message in JSON format

```
{
  "CommuMode":{
    "mode":{
/*required, string type, security mode level of the private protocol: "compatibilityMode"-compatibility mode,
"safeMode"-security mode*/
      "@opt":"compatibilityMode,safeMode"
    }
```

```
  }
}
```

16.1.18 JSON_Cap_ExportInfo

ExportInfo capability message in JSON format

```
{
  "ExportInfo":{
    "mediaType":{
/*required, string, exported data type: "video", "audio", "metadata", "text", "mixed", "other". It should be the same as the search type. For pictures, this node should be set to "metadata"*/
      "@opt":["video", "audio", "metadata", "text", "mixed", "other"]
    },
    "playbackURIList":{
/*required, array, file path*/
      "@size":1
/*supported list size to be exported*/
    }
  }
}
```

16.1.19 JSON_Cap_IntelliManagement

IntelliManagement capability message in JSON format

```
{
  "requestURL":"",
  "statusCode": ,
  "statusString":"",
  "subStatusCode":"",
  "errorCode": ,
  "errorMsg":"",
/*see the description of this node and the above nodes in the message of JSON_ResponseStatus*/
  "isSuportTask": ,
/*optional, boolean type, whether to support task: "true"-yes, "false"-no*/
  "isSupportCtrlCenter": ,
/*optional, boolean type, whether to support control center: "true"-yes, "false"-no*/
  "isSuportIntelligentSearch": ,
/*optional, boolean type, whether to support intelligent search: "true"-yes, "false"-no*/
  "isSuportExecuteControl": ,
/*optional, boolean type, whether to support arming: "true"-yes, "false"-no*/
  "isSuportDataStatistics": ,
/*optional, boolean type, whether to support statistics: "true"-yes, "false"-no*/
  "isSupportIntelligentStorage": ,
/*optional, boolean type, whether to support intelligent storage: "true"-yes, "false"-no*/
  "isSupportServer": ,
/*optional, boolean type, whether to support service configuration: "true"-yes, "false"-no*/
  "isSuportAlgorithmModel": ,
```

```
/*optional, boolean type, whether to support algorithm model configuration: "true"-yes, "false"-no*/
  "isSupportCluster": ,
/*optional, boolean type, whether to support cluster: "true"-yes, "false"-no*/
  "isSupportSearchResultDisplay": ,
/*optional, boolean type, whether to support display configuration: "true"-yes, "false"-no*/
  "isSuportTranscodeAnalysisUnit": ,
/*optional, boolean type, whether to support transcoding analysis unit: "true"-yes, "false"-no*/
  "isSuportFactoryReset": ,
/*optional, boolean type, whether to support restoring to factory settings: "true"-yes, "false"-no*/
  "isSupportUPS": ,
/*optional, boolean type, whether to support UPS: "true"-yes, "false"-no*/
  "isSuportCity": ,
/*optional, boolean type, whether to support city: "true"-yes, "false"-no*/
  "isSuportClusterEnableStatus": ,
/*optional, boolean type, whether to support enabling cluster status: "true"-yes, "false"-no*/
  "isSupportSensitivity": ,
/*optional, boolean type, whether to support sensitivity configuration: "true"-yes, "false"-no*/
  "isSupportConfidence": ,
/*optional, boolean type, whether to support confidence configuration: "true"-yes, "false"-no*/
  "isSupportAudioFileUpload": ,
/*optional, boolean type, whether to support importing audio file: "true"-yes, "false"-no*/
  "isSupportIntelligentMode":
/*optional, boolean type, whether to support intelligent mode configuration: "true"-yes, "false"-no*/
}
```

See Also

JSON_ResponseStatus

16.1.20 JSON_Cap_POE

POE capability message in JSON format

```
{
  "POE": {
    "ipVersion": {
/*optional, supported IP address type, string type*/
      "@opt": "ipV4,ipV6",
      "#text": "ipV4"
    }
  }
}
```

16.1.21 JSON_Cap_ReportCenterCfg

ReportCenterCfg capability message in JSON format

```
{
  "ReportCenterCfg":{
    "CenterID":{
```

```
/*center group No.*/
     "@min": ,
     "@max":
   },
   "enable":"true,false",
/*optional, boolean type, whether to enable uploading report*/
   "ChanAlarmMode":{
/*alarm channel of the center group*/
     "maxSize":1,
     "id":{
/*optional, integer type, channel ID: 1-main channel, 2-backup channel 1, 3-backup channel 2, 4-backup channel 3*/
       "@min":1,
       "@max":2
     },
     "chanAlarmMode":{
/*optional, string type, alarm channel mode: "T1"-T1 channel, "T2"-T2 channel, "N1"-N1 channel, "N2"-N2 channel,
"G1"-G1 channel, "G2"-G2 channel, "N3"-N3 channel, "N4"-N4 channel*/
       "@opt":"T1,T2,N1,N2,G1,G2,N3,N4"
     }
   }
  }
}
```

16.1.22 JSON_Cap_WorkingStatus

WorkingStatus capability message in JSON format

```
{
  "WorkingStatusCap":{
   "devStatus":{
     "@opt": "0,1,2"
/*required, integer type, value of device status: 0-normal, 1-CPU usage, higher than 85%, 2-hardware error (e.g., serial
port exception)*/
   },
   "ChanStatus":{
     "chanNo": "",
/*required, integer type, channel No., which starts from 1*/
     "enable": "",
/*integer type, it is valid for analog channel only, 0-disable, 1-enable*/
     "online": "",
/*required, integer type, online status: 0-offline, 1-online*/
     "record":{
       "@opt": "0,1,2",
/*integer type, recording status: 0-recording, 1-recording exception (HDD exception), 2-recording exception (network
camera offline), 3-recording exception (other reason)*/
     },
     "signal": "",
/*required, integer type, signal status: 0-normal, 1-signal loss*/
     "linkNum": "",
/*required, integer type, number of software clients connected to this channel*/
     "bitRate": ""
```

```
/*required, integer type, channel bit rate, unit: Kpbs*/
   },
   "HDStatus":{
    "hdNo": "",
/*required, integer type, HDD No., which starts from 1*/
    "enable": "",
    "status":{
     "@opt": "0,1,2",
/*required, integer type, HDD status: 0-activate, 1-sleep, 2-exception, 3-sleepy HDD error, 4-unformated, 5-
disconnected (for network HDD), 6-formatting*/
    },
    "volume": "",
/*required, integer type, HDD capacity, unit: MB*/
    "linkNum": "",
/*integer type, *number of connections*/
    "freeSpace": "1"
/*required, integer type, free space, unit: MD*/
   }
  }
}
```

16.1.23 JSON_CertificateRevocation

CertificateRevocation message in JSON format

```
{
  "CertificateRevocation":{
   "enabled": ,
/*required, boolean, whether to enable certificate expiry alarm*/
   "expireAlarmTime": ,
/*required, integer, number of days to prompt in advance before the certificate is expired*/
   "detecteTime":"",
/*required, time, detection time of certificate expiry alarm*/
   "intervalTime":
/*required, integer, alarm interval, unit: day*/
  }
}
```

16.1.24 JSON_CertificateRevocationCap

CertificateRevocationCap capability message in JSON format

```
{
  "CertificateRevocationCap":{
   "enabled":{
/*required, boolean, whether to enable certificate expiry alarm*/
    "@opt":[true, false]
   },
   "expireAlarmTime":{
```

```
/*required, integer, number of days to prompt in advance before the certificate is expired*/
     "@min":1,
     "@max":30,
     "@def":7
    },
    "detecteTime":{
/*required, time, detection time of certificate expiry alarm*/
     "@min":"00:00",
     "@max":"24:00",
     "@def":"10:00"
    },
    "intervalTime":{
/*required, integer, alarm interval, unit: day*/
     "@min":1,
     "@max":30,
     "@def":1
    }
  }
}
```

16.1.25 JSON_CertificateSelect

CertificateSelect message in JSON format

```
{
  "CertificateSelect":{
/*you can choose one field among clientCertificate, serverCertificate, and CACertificate to configure as needed*/
    "clientCertificate":"",
/*optional, string, client certificate type*/
    "serverCertificate":"",
/*optional, string, server certificate type*/
    "CACertificate":"",
/*optional, string, CA certificate type*/
    "SRTPSecurityAlgorithm":""
/*optional, string, encryption algorithm*/
  }
}
```

16.1.26 JSON_ChanCond

ChanCond message in JSON format

```
{
  "ChanCond":{
    "chanNo": […,…]
/*specify channel No. to get the status*/
  }
}
```

16.1.27 JSON_ChanStatus

ChanStatus message in JSON format

```
{
  "ChanStatus":[{
    "chanNo": ,
/*required, integer type, channel No., which starts from 1*/
    "enable": ,
/*integer type, it is valid for analog channel only, 0-disable, 1-enable*/
    "online": ,
/*required, integer type, online status: 0-offline, 1-online*/
    "record": ,
/*required, whether the device is recording, 0-no, 1-yes*/
    "recordStatus ": ,
/*integer type, recording status: 0-recording, 1-recording exception (HDD exception), 2-recording exception (network camera offline), 3-recording exception (other reason)*/
    "signal": ,
/*required, integer type, signal status: 0-normal, 1-signal loss*/
    "linkNum": ,
/*required, integer type, number of software clients connected to this channel*/
    "bitRate":
/*required, integer type, channel bit rate, unit: Kpbs*/
  },
  {
    "chanNo": ,
/*required, integer type, channel No., which starts from 1*/
    "enable": ,
/*integer type, it is valid for analog channel only, 0-disable, 1-enable*/
    "online": ,
/*required, integer type, online status: 0-offline, 1-online*/
    "record": ,
/*required, whether the device is recording, 0-no, 1-yes*/
    "recordStatus ": ,
/*integer type, recording status: 0-recording, 1-recording exception (HDD exception), 2-recording exception (network camera offline), 3-recording exception (other reason)*/
    "signal": ,
/*required, integer type, signal status: 0-normal, 1-signal loss*/
    "linkNum": ,
/*required, integer type, number of software clients connected to this channel*/
    "bitRate":
/*required, integer type, channel bit rate, unit: Kpbs*/
  }]
}
```

16.1.28 JSON_ChannelInfoList

ChannelInfoList message in JSON format

```
{
  "ChannelInfoList":{
    "ChannelInfo":[{
      "chanNo": ,
/*required, integer type, channel No.*/
      "enable": ,
/*integer type, it is valid for analog channel only, 0-disable, 1-enable*/
      "name":"",
/*string type, channel name*/
      "online": ,
/*integer type, online status: 0-offline, 1-online*/
      "linknum":
    }]
  }
}
```

16.1.29 JSON_ChannelInfo

ChannelInfo message in JSON format

```
{
  "ChannelInfo": [{
    "chanNo": ,
/*required, integer type, channel No.*/
    "enable": ,
/*integer type, it is valid for analog channel only, 0-disable, 1-enable*/
    "name": "",
/*string type, channel name*/
    "online": ,
/*integer type, online status: 0-offline, 1-online*/
    "linknum": ,
/*number of live view channels*/
  }]
}
```

16.1.30 JSON_ChangedStatus

ChangedStatus message in JSON format

```
{
  ChangedStatus: {
    "seq": ,
/*32-byte integer type, alarm No., for alarm acknowladge*/
    "devStatus":  ,
/*integer type, value of device status: 0-normal, 1-CPU usage, higher than 85%, 2-hardware error (e.g., serial port exception)*/
    "devCapHash":  "";
/*global Hash value of device capability, which is generated by MD5, and encrypted by Base64; for NVR, the Hash
```

```
value of network camera should be the calculation source*
   "zeroChanEnable": ,
/*boolean type, whether the channel-zero is enabled: true-yes, false-no*/
   "cycleRecordEnable": true,
/*boolean type, whether to enable recoridng, true-yes, false-no*/
   "chanChanged": […,…,…]
/*integer type, channel status changes, e.g., delete, edit, add, the Hash value of this channel changed*/
   "hdChanged": […,…,…]
/*integer type, HDD status changes, e.g., delete, edit, add*/
   "ChanStatus": [{
     "chanNo": ,
/*integer type, channel No., read-only*/
     "enable": 1,
/*integer type, it is valid for analog channel only, 0-disable, 1-enable*/
     "online": ,
/*required, integer type, online status: 0-offline, 1-online*/
     "recordStatus ": ,
/*integer type, recording status: 0-recording, 1-recording exception (HDD exception), 2-recording exception (network
camera offline), 3-recording exception (other reason)*/
     "signal": ,
/*required, integer type, signal status: 0-normal, 1-signal loss*/
     "arming": ,
/*integer type, network camera arming status: 0-armed, 1-arming failed*/
   }],
   "HDStatus":[{
     "hdNo": ,
/*required, integer type, HDD No., which starts from 1*/
     "status": ,
/*required, integer type, HDD status: 0-activate, 1-sleep, 2-exception, 3-sleepy HDD error, 4-unformated, 5-
disconnected (for network HDD), 6-formatting*/
   }],
   "CapChanged": [{
     "name": "",
/*required, root node of changed capability set*/
     "chan":  ,
/*channel No., it is required when transmitting channel capability; it is optional when transmitting device capability*/
     "url": "/ISAPI/Thermal/channels/1/fireDetection/capabilities",
/*capability set URL, it is required for capability set based on ISAPI protocol*/
   },
   {
     "name": "",
/*required, capability set name, which is usually the root node*/
     "chan":  1,
/*channel No., it is required when transmitting channel capability; it is optional when transmitting device capability*/
     "abilityType": 0x700,
/*capability type, it is required if the capability is not based on ISAPI protocol*/
   }]
  }
}
```

16.1.31 JSON_CommuMode

CommuMode message in JSON format

```
{
  "CommuMode":{
    "mode":""
/*required, string type, security mode level of the private protocol: "compatibilityMode"-compatibility mode,
"safeMode"-security mode*/
  }
}
```

16.1.32 JSON_DeviceCertificate

DeviceCertificate message in JSON format

```
{
  "DeviceCertificate":{
    "CertificateInfo":{
      "issuerDN":"",
/*required, string, read-only, name of the authority that issued the certificate*/
      "subjectDN":"",
/*required, string, read-only, certificate holder name*/
      "startDate":"",
/*required, date, read-only, start date of the certificate validity period, it is accurate to day*/
      "endDate":"",
/*required, date, read-only, end date of the certificate validity period, it is accurate to day*/
      "type":"",
/*optional, string, read-only, certificate type: "https", "websockets", "SDKoverTLS", "SRTP", "securityLog",
"ieee802.1x". Multiple types should be separated by commas*/
      "status":"",
/*optional, string, read-only, certificate status: "normal", "expired", "exceptional"*/
      "customID":""
/*optional, string, read-only, custom certificate ID, it is created when the user imports the certificate and it consists of
digits and characters*/
    }
  }
}
```

16.1.33 JSON_DeviceCertificateCap

DeviceCertificateCap capability message in JSON format

```
{
  "DeviceCertificateCap":{
    "customID":{
/*required, string, custom certificate ID, it is created when the user imports the certificate and it consists of digits and
characters*/
```

```
    "@min":1,
    "@max":64,
    "status":{
/*optional, string, certificate status: "normal", "expired", "exceptional"*/
      "@opt":["normal", "expired", "exceptional"]
    }
   }
  }
}
```

16.1.34 JSON_DeviceCertificates

DeviceCertificates message in JSON format

```
{
 "DeviceCertificates":{
  "CertificateInfoList":{
   "CertificateInfo": [{
  "id": ,
/*required, integer32, read-only, certificate ID, which starts from 1*/
      "issuerDN": "",
/*required, string, read-only, name of the authority that issued the certificate*/
  "subjectDN": "",
/*required, string, read-only, certificate holder name*/
  "startDate": "",
/*required, read-only, start date of certificate expiry period, it is accurate to day*/
  "endDate": "",
/*required, read-only, end date of certificate expiry period, it is accurate to day*/
      "type": "",
/*optional, read-only, certificate type: "wpa", "securityLog", "ieee802.1x", "HTTPS", "WebSocketS", "SDK_OVER_TLS",
"SRTP". Multiple types can be separated by commas*/
      "status": "",
/*optional, string, read-only, certificate status: "normal", "expired", "exceptional"*/
      "customID": ""
/*optional, string, read-only, custom certificate ID, it is created when the user imports the certificate and it consists of
digits and characters*/
    }]
  }
 }
}
```

16.1.35 JSON_DeviceCertificatesCap

DeviceCertificatesCap message in JSON format

```
{
 "DeviceCertificatesCap":{
  "CertificateInfoList":{
   "@size": 64,
```

```
/*required, integer32 type, read-only*/
     "CertificateInfo": [{
      "id": {
/*required, integer32 type, read-only, certificate ID, which starts from 1*/
     "@min":1,
     "@max":64,
     "#text":
      }
      "issuerDN": "",
/*required, string type, read-only, certificate issue*/
      "subjectDN": "",
/*required, string type, read-only, certificate holder name*/
      "startDate": "",
/*required, read-only, start date of certificate expiry period, it accurate to day*/
      "endDate": ""
/*required, read-only, end date of certificate expiry period, it accurate to day*/
      "type": {
/*optional, read-only, certificate type*/
        "@opt":"wpa, securityLog, ieee802.1x"
      }
     }]
   }
  }
}
```

16.1.36 JSON_DeviceCertificateStatus

DeviceCertificateStatus message in JSON format

```
{
  "DeviceCertificateStatus": {
/*required, status of device certificate*/
    "id": "",
/*required, read-only, string type, certificate ID, which is generated and returned by device*/
    "status": ""
/*required, string type, certificate status: normal, abnormal*/
  }
}
```

16.1.37 JSON_DeviceCertificateStatusList

DeviceCertificateStatusList message in JSON format

```
{
  "DeviceCertificateStatusList": [{
    "DeviceCertificateStatus": {
/*required, status of device certificate*/
     "id": "",
/*required, read-only, string type, certificate ID, which is generated and returned by device*/
```

```
    "status": ""
/*required, string type, certificate status: normal, abnormal*/
   }
  }]
}
```

16.1.38 JSON_DiagnosisCond

DiagnosisCond message in JSON format

```
{
  "DiagnosisCond":{
    "command":"",
/*required, string type, diagnosis command*/
    "selfdefineCmd":""
/*string type, custom diagnosis command, it is valid when command is set to "selfdefine"*/
  }
}
```

16.1.39 JSON_DiagnosisCondCap

DiagnosisCondCap capability message in JSON format

```
{
  "DiagnosisCondCap":{
/*diagnosis condition capability*/
    "command":{
/*required, supported diagnosis command*/
      "@opt":[
        "system",
/*diagnose system*/
        "alarm",
/*diagnose alarm*/
        "peripheral",
/*diagnose peripheral*/
        "wifi",
/*diagnose Wi-Fi network*/
        "cloud",
/*diagnose cloud*/
        "GPRS/3G/4G",
/*diagnose mobile network*/
        "IPC",
/*diagnose network camera*/
        "ARC",
/*diagnose alarm center*/
        "selfdefine"
/*custom diagnosis command*/
      ]
    },
```

```
   "selfdefineCmd":{
/*length range of the custom diagnosis command, it is valid when "selfdefine" is included in command*/
     "@min": ,
/*required, integer type, the minimum length of the custom diagnosis command*/
     "@max":
/*required, integer type, the maximum length of the custom diagnosis command*/
   }
  }
}
```

16.1.40 JSON_DiagnosisResult

DiagnosisResult message in JSON format

```
{
  "DiagnosisResult":{
    "result":""
/*required, string type, diagnosis result*/
  }
}
```

16.1.41 JSON_DoubleVerification

DoubleVerification message in JSON format

```
{
  "DoubleVerification":{
    "enable": ""
/*optional, whether enables double verification, boolean*/
  }
}
```

16.1.42 JSON_DownloadPackageStatus

DownloadPackageStatus message in JSON format

```
{
  "DownloadPackageStatus":{
/*required, upgrade package download status*/
    "status": "notDownload,downloading,pause,finish,incorrectPackage,hdOperationFailed",
/*required, string, download status: "notDownload"-not download, "downloading"-downloading, "pause"-paused,
"finish"-completed, "incorrectPackage"-incorrect upgrade package format, "hdOperationFailed"-HD operation failed*/
    "total": "",
/*optional, float, upgrade package total size, unit: MB, corrects to one decimal place*/
    "remain": "",
/*optional, float, remaining space, unit: MB, corrects to one decimal place*/
    "speed": ""
```

```
/*optional, float, download speed, unit: KB/s, corrects to two decimal places*/
   "remainTime": "",
/*optional, integer, estimated remaining time, unit: s*/
   "progress": 0,
/*required, integer, progress, ranges from 0 to 100*/
  }
}
```

16.1.43 JSON_DynamicHostName

DynamicHostName message in JSON format

```
{
  "DynamicHostName": {
/*required, configuration parameters of dynamic domain name*/
   "enabled": ,
/*required, boolean type, whether to enable dynamic domain name*/
   "hostName": ""
/*required, string type, domain name*/
  }
}
```

16.1.44 JSON_DynamicHostNameCap

DynamicHostNameCap message in JSON format

```
{
  "DynamicHostNameCap": {
/*required, configuration capability of dynamic domain name*/
   "enabled": "true,false",
/*required, boolean type, whether to enable dynamic domain name*/
   "hostName": {
/*required, string type, domain name*/
     "@min": 0,
     "@max": 64
   }
  }
}
```

16.1.45 JSON_EmailCertification

Enter a short description of your reference here (optional).

Enter the syntax information of your reference here (optional).
Enter the actual information in this section (optional).

Example
Enter an example to illustrate your reference here (optional).

16.1.46 JSON_EnableEncryption

EnableEncryption message in JSON format

```
{
  "enable": true,
/*required, boolean type, whether to enable stream encryption, true-yes, false-no*/
}
```

16.1.47 JSON_EncryptFormat

EncryptFormat message in JSON format

```
{
  "EncryptFormat":{
    "password":"",
/*required, string, password, it will be encrypted according to the encryption vector*/
    "encryptFormatType":""
/*optional, string, HDD formatting type: "FAT32", "EXT4"*/
  }
}
```

16.1.48 JSON_EncryptionCap

Stream encryption capability in JSON format.

```
{
  "enable": "true,false",
/*required, boolean type, whether to enable stream encryption, true-yes, false-no*/*/
  "secretKey":{
/*required, string type, encryption key*/
    "@min": 6,
    "@max": 12,
    "#text": "user"
  }
}
```

16.1.49 JSON_EncryptVerfy

EncryptVerfy message in JSON format

```
{
  "EncryptVerfy":{
```

```
   "password":""
/*required, string, password, it will be encrypted according to the encryption vector*/
  }
}
```

16.1.50 JSON_EPTZMode

EPTZMode message in JSON format

```
{
  "EPTZMode":{
    "mode":"",
/*required, modes supported by e-PTZ: "cruise"-patrol (PTZ supports preset, patrol, zoom, and eight directions),
"autoTrack"-automatic tracking*/
    "AutoTrack":{
/*dependency, auto-tracking mode configuration*/
      "sensitivity": ,
/*optional, integer, sensitivity*/
      "detectionTarget":["human", "vehicle"],
/*detection target*/
      "ReginonList":[{
        "id": ,
/*required, rule ID*/
        "Region":[{
/*required, rule area, the number of edges is between 3 and 10*/
          "x": ,
/*required, float, X-coordinate, range: [0.000,1]*/
          "y":
/*required, float, Y-coordinate, range: [0.000,1]*/
        }]
      }],
      "FilterSize":{
/*optional, size filter of rectangle*/
        "MaxTargetRect":{
          "height": ,
/*required, float, height, range: [0.000,1.000], the value is accurate to three decimal places*/
          "width": ,
/*required, float, width, range: [0.000,1.000], the value is accurate to three decimal places*/
          "x": ,
/*required, float, X-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left
corner is the origin*/
          "y":
/*required, float, Y-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left
corner is the origin*/
        },
        "MinTargetRect":{
          "height": ,
/*required, float, height, range: [0.000,1.000], the value is accurate to three decimal places*/
          "width": ,
/*required, float, width, range: [0.000,1.000], the value is accurate to three decimal places*/
          "x": ,
```

```
/*required, float, X-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left corner is the origin*/
        "y":
/*required, float, Y-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left corner is the origin*/
       }
     }
   }
  }
}
```

16.1.51 JSON_EPTZModeCap

EPTZModeCap capability message in JSON format

```
{
  "EPTZModeCap":{
    "mode":{
/*required, modes supported by e-PTZ: "cruise"-patrol (PTZ supports preset, patrol, zoom, and eight directions), "autoTrack"-automatic tracking*/
      "@opt":["cruise", "autoTrack"]
    },
    "AutoTrackCap":{
/*optional, this node is returned when mode contains "autoTrack"*/
      "sensitivity":{
/*optional, integer, sensitivity*/
        "@min":0,
        "@max":100
      },
      "detectionTarget":{
/*detection target*/
        "@opt":["human", "vehicle", "all"]
      },
      "ReginonList":{
        "id":{
/*required, rule ID*/
          "@min":1,
          "@max":4
        },
        "Region":{
/*required, rule area, the number of edges is between 3 and 10*/
          "number":{
/*required, supported number of edges*/
            "@min":3,
            "@max":10
          },
          "x":{
/*required, float, X-coordinate, range: [0.000,1]*/
            "@min":0,
            "@max":1
          },
```

```
        "y":{
/*required, float, Y-coordinate, range: [0.000,1]*/
          "@min":0,
          "@max":1
        }
       }
      },
      "FilterSize":{
/*optional, size filter of rectangle*/
       "MaxTargetRect":{
        "height":{
/*required, float, height, range: [0.000,1.000], the value is accurate to three decimal places*/
          "@min":0,
          "@max":1
        },
        "width":{
/*required, float, width, range: [0.000,1.000], the value is accurate to three decimal places*/
          "@min":0,
          "@max":1
        },
        "x":{
/*required, float, X-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left corner is the origin*/
          "@min":0,
          "@max":1
        },
        "y":{
/*required, float, Y-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left corner is the origin*/
          "@min":0,
          "@max":1
        }
       },
       "MinTargetRect":{
        "height":{
/*required, float, height, range: [0.000,1.000], the value is accurate to three decimal places*/
          "@min":0,
          "@max":1
        },
        "width":{
/*required, float, width, range: [0.000,1.000], the value is accurate to three decimal places*/
          "@min":0,
          "@max":1
        },
        "x":{
/*required, float, X-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left corner is the origin*/
          "@min":0,
          "@max":1
        },
        "y":{
/*required, float, Y-coordinate, range: [0.000,1.000], the value is accurate to three decimal places. The upper-left
```

```
corner is the origin*/
          "@min":0,
          "@max":1
        }
       }
     }
   }
  }
}
```

16.1.52 JSON_EventNotificationAlert_Alarm/EventInfo

EventNotificationAlert message with alarm or event information in JSON format.

```
{
  "ipAddress": "",
/*required, device IPv4 address , string, the maximum size is 32 bytes*/
  "ipv6Address": "",
/*optional, device IPv6 address, string, the maximum size is 128 bytes*/
  "portNo": ,
/*optional, device port No., integer32*/
  "protocol": "",
/*optional, protocol type, "HTTP, HTTPS", string, the maximum size is 32 bytes*/
  "macAddress": "",
/*optional, MAC address, string, the maximum size is 32 bytes, e.g., 01:17:24:45:D9:F4*/
  "channelID": "",
/*optional, device channel No., integer32*/
  "dateTime": "",
/*optional, string, alarm/event triggered or occurred time based on ISO8601, the maximum size is 32 bytes, e.g.,
2009-11-14T15:27Z*/
  "activePostCount": "",
/*required, alarm/event frequency, integer32*/
  "eventType": "",
/*required, alarm/event type, "captureResult, faceCapture,...", string, the maximum size is 128 bytes*/
  "eventState": "",
/*required, string, the maximum size is 32 bytes, durative alarm/event status: "active"-valid, "inactive"-invalid*/
  "eventDescription": "",
/*required, event description, string, the maximum size is 128 bytes*/
  "deviceID":"",
/*string type, device ID*/
  "uuid":"",
/*string type, event UUID, which is used to uniquely identify an event, the standard UUID format is xxxxxxxx-xxxx-xxxx-
xxxx-xxxxxxxxxxxx*/
  ...
/*optional, for different alarm/event types, the nodes are different, see the message examples in different
applications*/
}
```

16.1.53 JSON_EventNotificationAlert_CertificateExpiryAlarmMsg

The certificate expiry alarm details are uploaded in JSON format of EventNotificationAlert message, here shows an example.

```
Content-Type: multipart/form-data; boundary=MIME_boundary
--MIME_boundary
Content-Type: application/json
Content-Length:

{
  "ipAddress":172.6.64.7,
  "ipv6Address":"",
  "portNo":80,
  "protocol":"HTTP",
  "macAddress":"01:17:24:45:D9:F4",
  "channelID":1,
  "dateTime":"2018-11-29T15:32:55+08:00",
  "activePostCount":1,
  "eventType":"certificateRevocation",
  "eventState":"active",
  "eventDescription":"Certificate Revocation Detection",
/*refer to the message JSON_EventNotificationAlert_Alarm/EventInfo for description details of the above nodes*/
  "channelName":"ABC",
/*required, channel name (camera name)*/
  "deviceID":"test0123",
/*optional, device ID, it is also the PUID and it must be returned when passing through ISAPI event by ISUP*/
  "Result":[{
    "customID":"",
/*required, string, custom certificate ID*/
    "certificateType":"CA",
/*required, string, certificate type: "CA"-CA certificate, "client/server"-client or server certificate*/
    "type":["securityLog"],
/*optional, function type: "HTTPS", "WebSocketS", "SDK_OVER_TLS", "SRTP", "securityLog", "ieee802.1x"*/
    "status":"expiring",
/*optional, certificate status: "expiring"-expiring, "expired"-expired, "exceptional"-exceptional*/
    "startDate":"2010-04-17",
/*required, date, start date of the certificate expiry date, it is accurate to day*/
    "endDate":"2010-04-17"
/*required, date, end date of the certificate expiry date, it is accurate to day*/
  }]
}
--MIME_boundary--
```

See Also

JSON_EventNotificationAlert_Alarm/EventInfo

16.1.54 JSON_EventNotificationAlert_HDDBadSectorEventMsg

The event details of the HDD bad sector detection are uploaded in JSON format of EventNotificationAlert message, here shows an example.

```
{
  "ipAddress":"",
/*required, string type, IPv4 address of the alarm device, the maximum length is 32 bytes*/
  "ipv6Address":"",
/*optional, string type, IPv6 address of the alarm device, the maximum length is 128 bytes*/
  "portNo": ,
/*optional, integer32 type, port No. of the alarm device*/
  "protocolType":"",
/*optional, string type, protocol type: "HTTP", "HTTPS", the maximum length is 32 bytes*/
  "macAddress":"",
/*optional, string type, MAC address, the maximum length is 32 bytes*/
  "channelID": ,
/*optional, integer32 type, device channel No. that triggers alarms*/
  "dateTime":"",
/*required, string type, alarm triggering time in ISO8601 time format, e.g., 2018-03-13T19:42:27+08:00, the maximum length is 32 bytes*/
  "activePostCount": ,
/*required, integer32 type, times that the same alarm has been uploaded*/
  "eventType":"",
/*required, triggered event type: "hdBadBlock"-HDD bad sector detection event*/
  "eventState":"",
/*required, string type, event triggering status: "active"-triggered, "inactive"-not triggered (heartbeat data), the maximum length is 32 bytes*/
  "eventDescription":"",
/*required, string type, event description: "HDD bad sector detection event", the maximum length is 128 bytes*/
  "deviceID":"",
/*optional, device ID, which is the PUID and should be returned for ISUP alarms, e.g., "test0123"*/
  "HDBadBlock":{
    "diskNo":
/*required, integer32 type, HDD No.*/
  }
}
```

16.1.55 JSON_EventNotificationAlert_HDDHighTemperatureEventMsg

The event details of the HDD high temperature detection are uploaded in JSON format of EventNotificationAlert message, here shows an example.

```
{
  "ipAddress":"",
/*required, string type, IPv4 address of the alarm device, the maximum length is 32 bytes*/
  "ipv6Address":"",
/*optional, string type, IPv6 address of the alarm device, the maximum length is 128 bytes*/
  "portNo": ,
```

```
/*optional, integer32 type, port No. of the alarm device*/
  "protocolType":"",
/*optional, string type, protocol type: "HTTP", "HTTPS", the maximum length is 32 bytes*/
  "macAddress":"",
/*optional, string type, MAC address, the maximum length is 32 bytes*/
  "channelID": ,
/*optional, integer32 type, device channel No. that triggers alarms*/
  "dateTime":"",
/*required, string type, alarm triggering time in ISO8601 time format, e.g., 2018-03-13T19:42:27+08:00, the maximum length is 32 bytes*/
  "activePostCount": ,
/*required, integer32 type, times that the same alarm has been uploaded*/
  "eventType":"",
/*required, triggered event type: "highHDTemperature"-HDD high temperature detection event*/
  "eventState":"",
/*required, string type, event triggering status: "active"-triggered, "inactive"-not triggered (heartbeat data), the maximum length is 32 bytes*/
  "eventDescription":"",
/*required, string type, event description: "HDD high temperature detection event", the maximum length is 128 bytes*/
  "deviceID":"",
/*optional, device ID, which is the PUID and should be returned for ISUP alarms, e.g., "test0123"*/
  "HighHDTemperature":{
    "diskNo":
/*required, integer32 type, HDD No.*/
  }
}
```

16.1.56 JSON_EventNotificationAlert_HDDImpactEventMsg

The event details of the HDD impact detection are uploaded in JSON format of EventNotificationAlert message, here shows an example.

```
{
  "ipAddress":"",
/*required, string type, IPv4 address of the alarm device, the maximum length is 32 bytes*/
  "ipv6Address":"",
/*optional, string type, IPv6 address of the alarm device, the maximum length is 128 bytes*/
  "portNo": ,
/*optional, integer32 type, port No. of the alarm device*/
  "protocolType":"",
/*optional, string type, protocol type: "HTTP", "HTTPS", the maximum length is 32 bytes*/
  "macAddress":"",
/*optional, string type, MAC address, the maximum length is 32 bytes*/
  "channelID": ,
/*optional, integer32 type, device channel No. that triggers alarms*/
  "dateTime":"",
/*required, string type, alarm triggering time in ISO8601 time format, e.g., 2018-03-13T19:42:27+08:00, the maximum length is 32 bytes*/
  "activePostCount": ,
```

```
/*required, integer32 type, times that the same alarm has been uploaded*/
  "eventType":"",
/*required, triggered event type: "hdImpact"-HDD impact detection event*/
  "eventState":"",
/*required, string type, event triggering status: "active"-triggered, "inactive"-not triggered (heartbeat data), the
maximum length is 32 bytes*/
  "eventDescription":"",
/*required, string type, event description: "HDD impact detection event", the maximum length is 128 bytes*/
  "deviceID":"",
/*optional, device ID, which is the PUID and should be returned for ISUP alarms, e.g., "test0123"*/
  "HDImpact":{
    "diskNo":
/*required, integer32 type, HDD No.*/
  }
}
```

16.1.57 JSON_EventNotificationAlert_HDDLowTemperatureEventMsg

The event details of the HDD low temperature detection are uploaded in JSON format of EventNotificationAlert message, here shows an example.

```
{
  "ipAddress":"",
/*required, string type, IPv4 address of the alarm device, the maximum length is 32 bytes*/
  "ipv6Address":"",
/*optional, string type, IPv6 address of the alarm device, the maximum length is 128 bytes*/
  "portNo": ,
/*optional, integer32 type, port No. of the alarm device*/
  "protocolType":"",
/*optional, string type, protocol type: "HTTP", "HTTPS", the maximum length is 32 bytes*/
  "macAddress":"",
/*optional, string type, MAC address, the maximum length is 32 bytes*/
  "channelID": ,
/*optional, integer32 type, device channel No. that triggers alarms*/
  "dateTime":"",
/*required, string type, alarm triggering time in ISO8601 time format, e.g., 2018-03-13T19:42:27+08:00, the maximum
length is 32 bytes*/
  "activePostCount": ,
/*required, integer32 type, times that the same alarm has been uploaded*/
  "eventType":"",
/*required, triggered event type: "lowHDTemperature"-HDD low temperature detection event*/
  "eventState":"",
/*required, string type, event triggering status: "active"-triggered, "inactive"-not triggered (heartbeat data), the
maximum length is 32 bytes*/
  "eventDescription":"",
/*required, string type, event description: "HDD low temperature detection event", the maximum length is 128
bytes*/
  "deviceID":"",
/*optional, device ID, which is the PUID and should be returned for ISUP alarms, e.g., "test0123"*/
  "LowHDTemperature":{
```

```
   "diskNo":
/*required, integer32 type, HDD No.*/
  }
}
```

16.1.58 JSON_EventNotificationAlert_HDDSevereFaultEventMsg

The event details of the HDD severe fault detection are uploaded in JSON format of EventNotificationAlert message, here shows an example.

```
{
  "ipAddress":"",
/*required, string type, IPv4 address of the alarm device, the maximum length is 32 bytes*/
  "ipv6Address":"",
/*optional, string type, IPv6 address of the alarm device, the maximum length is 128 bytes*/
  "portNo": ,
/*optional, integer32 type, port No. of the alarm device*/
  "protocolType":"",
/*optional, string type, protocol type: "HTTP", "HTTPS", the maximum length is 32 bytes*/
  "macAddress":"",
/*optional, string type, MAC address, the maximum length is 32 bytes*/
  "channelID": ,
/*optional, integer32 type, device channel No. that triggers alarms*/
  "dateTime":"",
/*required, string type, alarm triggering time in ISO8601 time format, e.g., 2018-03-13T19:42:27+08:00, the maximum length is 32 bytes*/
  "activePostCount": ,
/*required, integer32 type, times that the same alarm has been uploaded*/
  "eventType":"",
/*required, triggered event type: "severeHDFailure"-HDD severe fault detection event*/
  "eventState":"",
/*required, string type, event triggering status: "active"-triggered, "inactive"-not triggered (heartbeat data), the maximum length is 32 bytes*/
  "eventDescription":"",
/*required, string type, event description: "HDD severe fault detection event", the maximum length is 128 bytes*/
  "deviceID":"",
/*optional, device ID, which is the PUID and should be returned for ISUP alarms, e.g., "test0123"*/
  "SevereHDFailure":{
    "diskNo":
/*required, integer32 type, HDD No.*/
  }
}
```

16.1.59 JSON_EventNotificationAlert_voltageinstable

The supply voltage exception alarm is uploaded in the JSON format of EventNotificationAlert message.

```
{
  "ipAddress": "",
/*required, device IPv4 address , string, the maximum size is 32 bytes*/
  "ipv6Address": "",
/*optional, device IPv6 address, string, the maximum size is 128 bytes*/
  "portNo":,
/*optional, device port No., integer32*/
  "protocol": "",
/*optional, protocol type, "HTTP, HTTPS", string, the maximum size is 32 bytes*/
  "macAddress": "",
/*optional, MAC address, string, the maximum size is 32 bytes, e.g., 01:17:24:45:D9:F4*/
  "channelID": "",
/*optional, device channel No., integer32*/
  "dateTime": "",
/optional, string, alarm/event triggered or occurred time based on ISO8601, the maximum size is 32 bytes, e.g.,
2009-11-14T15:27Z*/
  "activePostCount":,
/*required, alarm/event frequency, integer32*/
  "eventType": "voltageinstable",
/*required, alarm/event type, string, the maximum size is 128 bytes*/
  "eventState": "",
/*required, string, the maximum size is 32 bytes, durative alarm/event status: "active"-valid, "inactive"-invalid*/
  "eventDescription": "",
/*required, event description, string, the maximum size is 128 bytes, "overvoltage"-high supply voltage,
"undervoltage"-low supply voltage*/
  "voltageValue": ""
/*optional, supply voltage value, float type, unit: V, corrects to one decimal place*/
}
```

16.1.60 JSON_EventSearchCap

EventSearchCap message in JSON format

```
{
  "startTime": "2004-05-03T17:30:08Z",
/*required, start time, ISO8601_time, string*/
  "endTime": "2004-05-03T17:30:08Z",
/*required, end time, ISO8601_time, string*/
  "resultMaxNum": 100,
/*required, supported maximum number of searching, int*/
  "channelIDLen":{
/*optional, channel ID length*/
    "@min": ,
    "@max":
  },
  "eventType":{
/*event type: studentStoodUp-student stands up, accessController-access controller, videoIntercom-video intercom,
OPTEX-OPTEX security control panel, Luminite-Luminite security control panel, GJD-GJD security control panel,
cameraDetector-detector, securityControlPanel-security control panel, multiple selections are separated by comma,
string*/
```

```
    "@opt": "studentStoodUp, accessController,videoIntercom, OPTEX,Luminite,GJD, cameraDetector,
securityControlPanel",
    "#text": "studentStoodUp"
   },
   "type":{
/*optional, channel type: video-video channel, IOT-IOT channel, if this node does not exist, it indicates video channel,
string*/
    "@opt": "video,IOT",
    "#text": "video"
   },
   "AccessController":{
/*optional*/
    "eventType":{
/*optional, event type, if this node does not exist, it indicates searching all supported events, string*/
     "@opt": "",
     "#text": ""
    },
    "nameLen":{
/*optional, name length*/
     "@min": ,
     "@max":
    },
    "cardNoLen":{
/*optional, card No. length*/
     "@min": ,
     "@max":
    },
   },
   "VideoIntercom":{
/*optional*/
    "eventType":{
/*optional, optional, event type, if this node does not exist, it indicates searching all supported events, string*/
     "@opt": "",
     "#text": ""
    },
    "nameLen":{
/*optional, name length*/
     "@min": ,
     "@max":
    },
    "cardNoLen":{
/*optional, card No. length*/
     "@min": ,
     "@max":
    },
   },
   "OPTEX":{
/*optional*/
    "eventType":{
/*optional, optional, event type, if this node does not exist, it indicates searching all supported events, string*/
     "@opt": "",
     "#text": ""
```

```
    },
   },
   "Luminite":{
/*optional*/
    "eventType":{
/*optional, optional, event type, if this node does not exist, it indicates searching all supported events, string*/
     "@opt": "",
     "#text": ""
    },
   },
   "GJD":{
/*optional*/
    "eventType":{
/*optional, optional, event type, if this node does not exist, it indicates searching all supported events, string*/
     "@opt": "",
     "#text": ""
    },
   },
   "CameraDetector":{
/*optional*/
    "eventType":{
/*optional, optional, event type, if this node does not exist, it indicates searching all supported events, string*/
     "@opt": "",
     "#text": ""
    },
   },
   "SecurityControlPanel":{
/*optional, security control panel event*/
    "eventType":{
/*optional, optional, event type, if this node does not exist, it indicates searching all supported events, string*/
     "@opt": ""
    },
    "zoneNo":{
/*required, zone No., integer*/
     "size": 1,
/*required, the maximum number of items, integer*/
     "@min": 1,
     "@max": 16,
     "#text": 1
    },
   }
}
```

16.1.61 JSON_EventSearchCond

EventSearchCond message in JSON format

```
{
  "searchID": "",
/*required, string, unique record search ID.*/
  "searchResultPosition": "",
```

```
/*required, initial position of search result in the list, integer, When there are multiple records, and cannot get all records in one time searching, you can search the records followed specified position for next search*/
  "maxResults": "",
/*required, the max. number of results for current search, int*/
  "startTime": "",
/*required, start time, ISO8601_time, string*/
  "endTime": "",
/*required, end time, ISO8601_time, string*/
  "choiceChannel": [{
/*optional*/
    "channelID": "",
/*optional, channel ID,string*/
  }],
  "eventType": "",
/*required, event type: studentStoodUp-student stands up, accessController-access controller, videoIntercom-video intercom, OPTEX-OPTEX security control panel, Luminite-Luminite security control panel, GJD-GJD security control panel, cameraDetector-detector, securityControlPanel-security control panel, multiple selections are separated by comma,  string*/
  "type": "video,IOT",
/*optional, channel type: video-video channel, IOT-IOT channel, if this node does not exist, it indicates video channel, string*/
  "AccessController":{
    "eventType": "",
/*optional, IoT event type, if this node does not exist, it indicates searching all supported events, string*/
    "name": "",
/*optional, name*/
    "cardNo": "",
/*optional, card No.*/
  },
  "VideoIntercom":{
    "eventType": "",
/*optional, IoT event type, if this node does not exist, it indicates searching all supported events, string*/
    "name": "",
/*optional, name*/
    "cardNo": "",
/*optional, card No.*/
  },
  "OPTEX":{
    "eventType": "",
/*optional, IoT event type, if this node does not exist, it indicates searching all supported events, string*/
  },
  "Luminite":{
    "eventType": "",
/*optional, IoT event type, if this node does not exist, it indicates searching all supported events, string*/
  },
  "GJD":{
    "eventType": "",
/*optional, IoT event type, if this node does not exist, it indicates searching all supported events, string*/
  },
  "CameraDetector":{
    "eventType": "",
/*optional, IoT event type, if this node does not exist, it indicates searching all supported events, string*/
```

```
  }
  "SecurityControlPanel":{
    "eventType": "",
/*optional, IoT event type, if this node does not exist, it indicates searching all supported events, string*/
    "zoneNo": [1,2]
/*optional, zone No., it is valid when eventType values "zone", array, the sub type is integer*/
  }
}
```

16.1.62 JSON_EventSearchResult

EventSearchResult message in JSON format

```
{
  "responseStatusStrg": "",
/*optional, searching status: OK- Searching ended, NO MATCHES-No matched data found,  MORE-Search again for more results, string, the max. length is 32, {dep if errcode == 1 && errMsg == ok}*/
  "numOfMatches": "",
/*optional, returned number of results for current search, integer32, {dep if errcode == 1 && errMsg == ok}*/
  "totalMatches": "",
/*optional,  total number of matched results, integer32, {dep if errcode == 1 && errMsg == ok}*/
  "eventInfo": [{
    "captureTime": "",
/*required, capture time, ISO8601_time, string*/
    "channelID": "",
/*optional, camera ID, string*/
    "channelName": "",
/*optional, camera name*/
    "picUrl": "",
/*optional, picture URL, string*/
    "subPicUrl": "",
/*optional, thumbnail URL, string */
    "eventType": "",
/*required, event type: studentStoodU-student stands up, videoIntercom-video intercom, string*/
    "studentStoodUp":{
/*optional, student stand up event information*/
      "studentsStoodUp_number": ""
/* optional, xs:integer, the number of students, who are standing up*/
    },
    "AccessController":{
      "eventType ": "",
/*required, event type, string*/
      "name": "",
/*optional, name*/
      "cardNo": "",
/*optional, card No.*/
      "cardType": "",
/*optional, card type: invalid-invalid, ordinary-normal card, disabled-card for the disabled,blacklist-card in blacklist, patrol-patrol card, super-super card, guest-visitor card, remove-removed card*/
      "videoChannelInfo": [{
/*optional, video channel information*/
```

```
      "videoChannel": "",
/*required, video channel No., integer*/
      "picUrl": "",
/*optional, picture URL, string*/
     }]
   },
   "VideoIntercom":{
     "eventType ": "",
/*required, event type, string*/
     "name": "",
/*optional, name*/
     "cardNo": "",
/*optional, card No.*/
     "cardType": "invalid,ordinary,disabled,blacklist,patrol,super,guest,remove",
/*optional, card type: invalid-invalid, ordinary-normal card, disabled-card for the disabled,blacklist-card in blacklist,
patrol-patrol card, super-super card, guest-visitor card, remove-removed card*/
     "videoChannelInfo": [{
/*optional, video channel information*/
       "videoChannel": "",
/*required, video channel No., integer*/
       "picUrl": "",
/*optional, picture URL, string*/
     }]
   },
   "OPTEX":{
     "eventType ": "",
/*required, event type, string*/
     "videoChannelInfo": [{
/*optional, video channel information*/
       "videoChannel": "",
/*required, video channel No., integer*/
       "picUrl": "",
/*optional, picture URL, string*/
     }]
   },
   "Luminite":{
     "eventType ": "",
/*required, event type, string*/
     "videoChannelInfo": [{
/*optional, video channel information*/
       "videoChannel": "",
/*required, video channel No., integer*/
       "picUrl": "",
/*optional, picture URL, string*/
     }]
   },
   "GJD":{
     "eventType ": "",
/*required, event type, string*/
     "videoChannelInfo": [{
/*optional, video channel information*/
       "videoChannel": "",
```

```
/*required, video channel No., integer*/
       "picUrl": "",
/*optional, picture URL, string*/
      }]
    },
    "CameraDetector":{
     "eventType ": "",
/*required, event type, string*/
     "videoChannelInfo": [{
/*optional, video channel information*/
       "videoChannel": "",
/*required, video channel No., integer*/
       "picUrl": "",
/*optional, picture URL, string*/
      }]
    },
    "SecurityControlPanel":{
     "eventType ": "",
/*required, event type, string*/
     "videoChannelInfo": [{
/*optional, video channel information*/
       "videoChannel": "",
/*required, video channel No., integer*/
       "picUrl": "",
/*optional, picture URL, string*/
      }]
     "zoneNo": "",
/*optional, zone No., it is valid when eventType values "zone", integer*/
     "code":1103,
/*optional, CID event No., it is valid when eventType values "zone", integer*/
     "zoneName": ""
/*optional, zone name, string*/
    }
  }]
}
```

16.1.63 JSON_ExportInfo

ExportInfo message in JSON format

```
{
  "ExportInfo":{
    "mediaType":"",
/*required, string, exported data type: "video", "audio", "metadata", "text", "mixed", "other". It should be the same as the search type. For pictures, this node should be set to "metadata"*/
    "playbackURIList":
/*required, array, file path*/
  }
}
```

16.1.64 JSON_ExporttoUSB_TaskInfo

TaskInfo message in JSON format

```
{
  "TaskInfo":{
    "taskId":""
/*required, string, task ID*/
  }
}
```

16.1.65 JSON_EZVIZSecretKey

EZVIZSecretKey message in JSON format

```
{
  "EZVIZSecretKey":{
/*required, verificaiton code for Hik-Connect, string, sensitive information should be encrypted, the string length ranges from 0 to 64. E.g., 34020000002000000001*/
    "secretKey": ""
  }
}
```

16.1.66 JSON_FileExport

FileExport message in JSON format

```
{
  "FileExport":{
    "fileType":"",
/*required, string type, file type*/
    "selfDefineCmd":""
/*string type, custom file type to be exported, it is valid when fileType is set to "selfDefine"*/
  }
}
```

16.1.67 JSON_FileExportCap

FileExportCap capability message in JSON format

```
{
  "FileExportCap":{
    "fileType":{
      "@opt":["serialLog","coreDump","debug","selfDefine"]
/*required, string type, file type: "serialLog"-serial port log, "coreDump"-core dump log, "debug"-debug log, "selfDefine"-custom file type to be exported*/
```

```
    },
    "selfDefineCmd":{
/*string type, custom file type to be exported, it is valid when fileType is set to "selfDefine"*/
      "@min": ,
/*required, integer type, the minimum length of the custom file type to be exported*/
      "@max":
/*required, integer type, the maximum length of the custom file type to be exported*/
    }
  }
}
```

16.1.68 JSON_FileExportResult

FileExportResult message in JSON format

```
{
  "FileExportResult":{
    "url":""
/*required, string type, file URL, e.g., "http://ip:port//ISAPI/ContentMgmt/logSearch/dataPackage/data?identifier"*/
  }
}
```

16.1.69 JSON_GuideConfig

GuideConfig message in JSON format

```
{
  "GuideConfig": {
    "GuideStep": [{
/*required, configuration steps of quick setup instruction*/
      "stepIndex": ,
/*required, integer, the maximum supported index*/
      "StepFunction": {
/*required, string, instruction functions*/
        "channelID": ,
/*optional, integer, channel number*/
        "type": ""
/*required, "masterSlaveTracking" (linkage calibration, corresponding URL: /ISAPI/MasterSlaveTracking/channels/<ID>/slaveCameraCalibrating/capabilities), "mixedTargetDetection" (multi-target type detection, corresponding URL : /ISAPI/Intelligent/channels/<ID>/mixedTargetDetection/capabilities?format=json), eagleFocusing (rapid focus, corresponding URL: /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/capabilities)*/
      },
      "status": "unfinished"
/*required, string, instruction status, whether the single configuration has completed*/
    }],
    "guideStatus": "unfinished"
/*required, string, instruction overall status, whether all configurations have completed*/
```

```
  }
}
```

16.1.70 JSON_GuideConfigCap

GuideConfigCap message in JSON format

```
{
  "GuideConfigCap": {
    "GuideStep": {
/*required, configuration steps of quick setup instruction*/
      "stepIndexNum": ,
/*required, integer, the maximum supported index*/
      "StepFunction": {
/*required, string, instruction functions*/
        "channels": ,
/*optional, integer, channel number*/
        "type": {
          "@opt": ["masterSlaveTracking", "mixedTargetDetection", "eagleFocusing"]
/*required, "masterSlaveTracking" (linkage calibration, corresponding URL: /ISAPI/MasterSlaveTracking/channels/<ID>/slaveCameraCalibrating/capabilities), "mixedTargetDetection" (multi-target type detection, corresponding URL : /ISAPI/Intelligent/channels/<ID>/mixedTargetDetection/capabilities?format=json), eagleFocusing (rapid focus, corresponding URL: /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/capabilities)*/
        },
        "guideStatus": {
/*required, string, instruction status, whether the instruction configuration has completed*/
          "@opt": ["finished", "unfinished"]
        }
      },
      "MasterSlaveTrackingCap": {
/*optional, dep:StepFunction, linkage calibration capability*/
        "enabled": {
/*required, boolean, whether to enable, the default value is "true"*/
          "@opt": "true,false",
          "@def": "true"
        },
        "CalibratingMode": {
/*required, string, calibration mode*/
          "@opt": "auto",
          "@def": "auto"
        }
      },
      "MixedTargetDetectionCap": {
/*optional, dep:StepFunction, capability of multi-target type detection*/
        "enabled": {
/*required, boolean, whether to enable, the default value is "true"*/
          "@opt": "true,false",
          "@def": "true"
        },
        "RuleInfoCap": {
/*required, rule information*/
```

```
        "maxSize": 1,
/*required, integer, number of supported rules*/
        "ruleID": {
/*required, integer, rule ID*/
          "@min": 1,
          "@max": 1
        },
        "RegionCap": {
/*required, rule region capability*/
          "minSize": 3,
/*required, integer, the minimum region edges*/
          "maxSize": 10,
/*required, integer, the maximum region edges*/
          "x": {
/*required, float, X-coordinate, range: from 0.000 to 1*/
            "@min": 0.000,
            "@max": 1.000,
            "#text": 0.120
          },
          "y": {
/*required, float, Y-coordinate, range: from 0.000 to 1*/
            "@min": 0.000,
            "@max": 1.000,
            "#text": 0.120
          }
        }
      }
    },
    "EagleFocusingCap": {
/*optional, dep:StepFunction, rapid focus capability*/
      "focusMode": {
/*required, string, focus mode*/
        "@opt": "auto",
        "@def": "auto"
      },
      "controlEnabled":  {
/*required, boolean, whether to enable rapid focus, corresponding URL: /ISAPI/PTZCtrl/channels/<ID>/EagleFocusing/
control/capabilities*/
        "@opt": "true,false",
        "@def": "true"
      }
    }
  }
 }
}
```

16.1.71 JSON_HeatMap_CollectionDescription

CollectionDescription message in JSON format

```
{
  "CollectionDescription":{
    "searchID": "",
/*required,  string,  unique search ID, the content of searchID remains unchanged when search condition remains unchanged.*/
    "searchResultPosition": "",
/*required, initial position of search result list, integer type. When there are multiple records, and cannot get all records in one time searching, you can search the records followed specified position for next search*/
    "maxResults": "",
/*required, number of matched records per search, integer type*/
    "timeSpanList": [{
/*required, time interval list*/
      "startTime": "",
/*required, start time, ISO8601_time, string*/
      "endTime": "",
/*required, end time, ISO8601_time, string*/
    }],
    "channels": "",
/*optional, sub type, array, integer32, related channel No., array. If the channel information is not specified, it indicates searching all channels*/
    "statisticsType": "PDC",
/*required, string, statistic type: OLD-heat map, PDC-people counting, DURATION-people dwell time, INTERSECTION-people counting of intersection*/
  }
}
```

16.1.72 JSON_HeatMap_CollectionDescriptionCap

CollectionDescriptionCap message in JSON format

```
{
  "CollectionDescriptionCap":{
    "timeRange": "",
/*required, supported time range for replenishment, unit: day, integer*/
    "timeSpanMaxNum": "",
/*required, the maximum number of time buckets supported for one time searching, integer*/
    "resultMaxNum": "",
/*required, the maximum number of items can be searched, integer*/
    "channelMaxNum": "",
/*required, the maximum number of channels supported for one time search, integer*/
    "statisticsType":{
/*required, string,  statistics type: OLD-heat map, PDC-people counting statistics, DURATION-people staying time duration, INTERSECTION-people counting of intersection*/
      "@opt": "OLD,PDC,DURATION,INTERSECTION"
    }
  }
}
```

16.1.73 JSON_HeatMap_CollectionResult

CollectionResult message in JSON format

```
{
"CollectionResult":{
  "responseStatusStrg": "",
/*required, searching status: OK- Searching ended, NO MATCHES-No matched data found,  MORE-Search again for more results, string, the max. length is 32, {dep if errcode == 1 && errMsg == ok}*/
  "numOfMatches": "",
/*required, returned number of results for current search, integer32, {dep if errcode == 1 && errMsg == ok}*/
  "totalMatches": "",
/*required, total number of matched results, integer32, {dep if errcode == 1 && errMsg == ok}*/
  "targets": [{
/*optional, people gathering result*/
    "startTime": "",
/*required, start time*/
    "endTime": "",
/*required, end time*/
    "channel": "",
/*required, integer, channel No.*/
    "statisticsType": "",
/*required, string, statistic type: OLD-heat map, PDC-people counting, DURATION-people staying time, INTERSECTION-people counting of intersection*/
    "HeatMapValue": [{
     "heatmapDataType": "",
/*optional, string,  heat map data type, it is valid only when statisticsType values "PDC". "PDC_stayNum"-the number of people dwell in the image, "PDC_leaveNum"-the number of exiting people in the image*/
     "maxHeatMapValue": ,
/*required, integer, the max. heat value, 4-byte*/
     "minHeatMapValue": ,
/*required, integer,  the min. heat value, 4-byte*/
     "timeHeatMapValue": ,
/*required, integer,  the average heat value, 4-byte*/
     "lineValue": ,
/*required, integer,  row value, 4-byte*/
     "columnValue": ,
/*required, integer,  column value, 4-byte*/
     "curNumber": ,
/*optional, integer,  the number of current people, it is valid only when statisticsType values "PDC"*/
     "leaveNumber": ,
/*optional, integer,  the number of exiting people, it is valid only when statisticsType values "PDC"*/
     "totalTime": ,
/*optional, integer,  total dwell time, it is valid only when statisticsType values "DURATION"*/
    }],
    "heatmapURL": "",
/*optional, string,  URL of pixel data for heat map image, it is valid when statisticsType values "OLD", "DURATION" or "INTERSECTION"*/
    "PDC_stayURL": "",
/*optional, string,  URL of pixel data for dwell people in heat map image, it is valid when statisticsType values "PDC"*/
    "PDC_leaveURL": "",
```

```
/*optional, string,  URL of pixel data for exiting people, it is valid when statisticsType values "PDC"*/
     "arrayUnitType": ""
/*optional, string,  matrix unit data type (each pixel data type of matrix information): "byte"-a byte, "short"-2 bytes,
"int"–four bytes*/
   }]
  }
}
```

16.1.74 JSON_HDCond

HDCond message in JSON format

```
{
  "HDCond":{
    "hdNo": […,…]
/*specify the channel No. to get the corresponding HDD status*/
  }
}
```

16.1.75 JSON_HddFormatList

HddFormatList message in JSON format

```
{
  "HddFormatList": [{
/*required, HDD list to be formatted*/
    "HddFormat": {
/*required, initialization parameter of a HDD*/
      "id":  ,
/*required, string type, ID of HDDs that specified to be formatted*/
      "formatType": ""
/*optional, string type, formatting type: FAT32, EXT4; this node is only available for SD card; if this node does not exist,
the formatting type is the default type "FAT32"*/
    }
  }]
}
```

16.1.76 JSON_HDStatus

HDStatus message in JSON format

```
{
  "HDStatus": [{
    "hdNo": ,
/*required, integer type, HDD No., which starts from 1*/
    "status": ,
/*required, integer type, HDD status: 0-activate, 1-sleep, 2-exception, 3-sleepy HDD error, 4-unformated, 5-
```

```
disconnected (for network HDD), 6-formatting*/
   "volume": ,
/*required, integer type, HDD capacity, unit: MB*/
   "freeSpace":
/*required, integer type, free space, unit: MD*/
  }]
}
```

16.1.77 JSON_id

id message in JSON format

```
{
  "id": "",
/*optional, integer, user ID, it returns when double verification user is added*/
}
```

16.1.78 JSON_InputParam

InputParam message in JSON format

```
{
  "InputParam":{
    "condType": ["name", "enable", "online", "linknum"]
/*enter channel name, enable or disable channel, online status, and number of connections*/
  }
}
```

16.1.79 JSON_IntelligentSearchCondition

IntelligentSearchCondition message in JSON format

```
{
  "searchID":"",
/*required, string type, search ID. The content of searchID remains unchanged if the search conditions remain
unchanged. This node is used to check the same search. When the device performance is limited, you can search
asynchronously by applying conditions with the same searchID several times and getting the search progress*/
  "searchResultPosition": ,
/*required, int type, the start position of the search result in the result list. When there are multiple records and you
cannot get all search results at a time, you can search for the records after the specified position next time*/
  "maxResults": ,
/*required, int type, maximum number of search results obtained this time*/
  "startTime":"",
/*required, string type, start time in ISO8601 time format*/
  "endTime":"",
/*required, string type, end time in ISO8601 time format*/
  "choiceChannel":[{
```

```
/*optional*/
   "channelID":"",
/*optional, string type, camera No.*/
   "plateRecogRegionID":
/*optional, integer type, license plate recognition area No. If this node is not configured, it refers to all areas*/
  }],
  "targetType":"",
/*optional, string type, search object type. If this node is not returned, it indicates no limit*/
  "vehicleInfo ":{
/*this node is valid when targetType is "vehicle"*/
   "license":"",
/*optional, string type, license plate number*/
   "plateType":"",
/*optional, string type, license plate type: license plate type: "unknown", "92TypeCivil"-92-style civil vehicle, "arm"-police vehicle, "upDownMilitay"-military vehicle (top-bottom type), "92TypeArm"-92-style police vehicle, "leftRightMilitay"-military vehicle (left-right type), "02TypePersonalized"-02-style customized vehicle, "yellowTwoLine"-yellow two-line rear license plate, "04NewMilitay"-04-style new military vehicle, "embassy"-embassy vehicle, "oneLineArm"-new armed police vehicle (one-line), "twoLineArm"-new armed police vehicle (two-line), "yellow1225FarmVehicle"-yellow agricultural vehicle with 1225 structure, "green1325FarmVehicle"-green agricultural vehicle with 1325 structure, "yellow1325FarmVehicle"-yellow agricultural vehicle with 1325 structure, "motorola"-motorcycle, "coach"-driver-training vehicle, "tempTravl"-vehicle with temporary license plate, "trailer"-trailer, "consulate"-consular vehicle, "hongKongMacao"-vehicle entering and leaving Hong Kong/Macao, "tempEntry"-temporary entry vehicle, "civilAviation"-civil aviation license plate, "newEnergy"-new energy license plate. If this node is not returned, it indicates no limit*/
   "vehicleColor":"",
/*optional, string type, vehicle color: "unknown", "white", "silver"-silvery, "gray", "black", "red", "deepBlue"-dark blue, "blue", "yellow", "green", "brown", "pink", "purple", "deepGray"-dark gray, "cyan", "orange". Multiple colors should be separated by commas. If this node is not returned, it indicates no limit*/
   "vehicleType":"",
/*optional, string type, vehicle type: "largeBus"-large-sized bus, "truck"-truck, "vehicle"-salon car, "van"-minivan, "buggy"-light truck, "pedestrian", "twoWheelVehicle"-two wheeler, "threeWheelVehicle"-tricycle, "SUVMPV"-SUV/MPV, "mediumBus"-middle-sized bus, "unknown". If this node is not returned, it indicates no limit*/
   "vehicleLogo": ,
/*optional, int type, vehicle parent brand. If this node is not returned, it indicates no limit*/
   "vehicleSubLogo": ,
/*optional, int type, vehicle sub brand. If this node is not returned, it indicates no limit*/
   "vehicleModel": ,
/*optional, int type, vehicle model year. If this node is not returned, it indicates no limit*/
   "plateColor":"",
/*optional, string type, license plate color: "white", "yellow", "blue", "black", "green", "civilAviationBlack"-civil aviation black, "civilAviationGreen"-civil aviation green, "0xff" or "other"-other color. If this node is not returned, it indicates no limit*/
   "pilotSafebelt":"",
/*optional, string type, whether the driver buckled up. If this node is not returned, it indicates no limit*/
   "pilotSunvisor":"",
/*optional, string type, whether the driver's sun visor is pulled down. If this node is not returned, it indicates no limit*/
   "vicePilotSafebelt":"",
/*optional, string type, whether the front passenger buckled up*/
   "vicePilotSunvisor":"",
/*optional, string type, whether the front passenger's sun visor is pulled down*/
   "uphone":""
/*optional, string type, whether the person is making a call*/
```

```
  }
}
```

16.1.80 JSON_IOStatus

IOStatus message in JSON format

```
{
  "IOStatus": {
    "IOInTrig": […,…,…,…],
/*integer type, triggered alarm input No., two places and below: analog alarm input No., two places and above: digital alarm input No.; and the low 2-bit is the alarm input No., the 3-bit or above is the digital channel No., e.g., 3201-alarm input No.1 of digital channel No.32*/
       "IOOutTrig": […,…,…,…]
/*integer type, triggered alarm output No., two places and below: analog alarm output No., two places and above: digital alarm output No.; and the lower 2 bits are the alarm output No., the 3-bit or above is the digital channel No., e.g., 3201-alarm output No.1 of digital channel No.32*/
  }
}
```

16.1.81 JSON_IOT_ChannelInfo

ChannelInfo message in JSON format

```
{
  "ChannelInfo":{
    "channel": "",
/*required, channel No., it should be returned when the channel is added, integer*/
  }
}
```

16.1.82 JSON_IOT_ChannelInfoList

ChannelInfoList message in JSON format

```
{
  "ChannelInfoList": [{
/*optional, channel information, if this node does not exist, it indicates all channels, array*/
    "channel": "",
/*required, channel No., integer*/
    "type": ""
/*required, channel type: "video"-video channel, "IOT"-IoT channel, string*/
  }]
}
```

16.1.83 JSON_IOT_ErrorList

ErrorList message in JSON format

```
{
  "ErrorList": [{
/*dep, detailed error information, it is valid when subStatusCode values "badParameters"*/
    "errorRowNo": "",
/*required, error row No., integer*/
    "errorType": "",
/*required, error type, string, channelNoInvalid-invalid channel No., channelNoConflict-conflicted channel No., channel IP/Domain invalid-invalid channel IP or domain name, channel IP/Domain conflict-conflicted channel IP or domain name, "channel IP conflict with local IP"-channel IP is conflicted with local IP, protocolError-incorrect protocol, adminPortError-incorrect admin port, channelError-incorrect channel No., UserNameInvalid-invalid user name, passwordInvalid-invalid password, transProtocalError-incorrect transmission protocol, inductiveTypeInvalid-invalid inductive type*/
  }]
}
```

16.1.84 JSON_IOTChannel

IOTChannel message in JSON format

```
{
  "IOTChannel":{
/*optional, added IoT devices information*/
    "channel": "",
/*optional, channel No., if this node does not exist, it indicates any free channel, integer*/
    "IOTProtocolType": "",
/*required, IOT protocol type: "HIKVISION"-Hikvision device, "OPTEX"-OPTEX security control panel, "Luminite"-Luminite security control panel, "GJD"-GJD security control panel, "SIA-CID"-SIA-CID protocol, string, the max. length is 32*/
    "addressingFormatType": "",
/*optional, address type, "ipaddress"-ip address, "hostname"-host name, string, the max. length is 32*/
    "hostName": "",
/*optional, host name, it is required when addressingFormatType values "hostname", string, the max. length is 64*/
    "ipAddress": "",
/*optional, device IPV4 address, it is required when addressingFormatType values "ipaddress", string, the max. length is 32*/
    "ipv6Address": "",
/*optional, device IPV6 address, it is required when addressingFormatType values "ipaddress", string, the max. length is 128*/
    "protocol": "",
/*optional, ptotocol type: "tcp"-TCP protocol, "ud"-UDP protocol, "muticast"-Multicast protocol, string, the max. length is 32*/
    "portNo": "",
/*optional, device port No., integer*/
    "userName": "",
/*optional, user name, string, the sensitive information is encrypted, the max. length is 32*/
```

```
   "password": "",
/*read-only，password, string, the sensitive information is encrypted, the max. length is 16. It will be applied only
when configuring, and it is not returned when getting information*/
   "deviceChannel": "",
/*required, added IoT channel No., integer*/
   "videoChannels": [1, 2],
/*optional, added video channel No., including the cameras and IoT devices, array, and the array unit is integer*/
   "addAll": "",
/*optional, whether adds all channels (including video and IoT channel) of device, boolean*/
   "inductiveDeviceType": "",
/*optional, inductive device type，"inductiveType1"-inductive type 1, "inductiveType2"-inductive type 2. When getting
 added channel information according inductive type, if this node does not exist, all added device channels will be
returned, string*/
   "zoneNum": ""
/*optional, the number of added zones, it is valid when IOTProtocolType values "SIA-CID", integer*/
  }
}
```

Remarks

Note

For different IoT devices, the inputted parameters in IOTChannel message are different.

Example

IOTChannel Message of IoT Devices via Private Protocol

```
"IOTChannel":{
 "IOTProtocolType": "HIKVISION",
 "addressingFormatType": "ipaddress",
 "ipAddress": "10.11.12.13",
 "protocol": "tcp",
 "portNo": 80,
 "userName": "admin",
 "password": "12345",
 "deviceChannel": 1,
 "videoChannels": [1, 2]
}
```

Example

IOTChannel Message of IoT Devices via SIA-CID Protocol

```
"IOTChannel":{
 "IOTProtocolType": "HIKVISION",
 "addressingFormatType": "ipaddress",
 "ipAddress": "10.11.12.13",
 "protocol": "tcp",
 "portNo": 80,
 "userName": "admin",
 "password": "12345",
 "deviceChannel": 1,
 "videoChannels": [1, 2],
```

```
  "zoneNum": 1
}
```

Example

IOTChannel Message of OPTEX IoT Devices

```
"IOTChannel":{
  "IOTProtocolType": "OPTEX",
  "addressingFormatType": "ipaddress",
  "ipAddress": "10.11.12.13",
  "protocol": "tcp",
  "deviceChannel": 1
}
```

Example

IOTChannel Message of Luminite IoT Devices

```
"IOTChannel":{
  "IOTProtocolType": "Luminite",
  "addressingFormatType": "ipaddress",
  "ipAddress": "10.11.12.13",
  "protocol": "tcp",
  "portNo": 80,
  "password": "12345",
  "deviceChannel": 1
}
```

Example

IOTChannel Message of GJD IoT Devices

```
"IOTChannel":{
  "IOTProtocolType": "GJD",
  "addressingFormatType": "ipaddress",
  "ipAddress": "10.11.12.13",
  "deviceChannel": 1
}
```

16.1.85 JSON_IOTChannelEventCap

IOTChannelEventCap message in JSON format

```
{
  "IOTChannelEventCap":{
/*required, event capability*/
  "AccessController":{
/*optional, access controller event*/
    "eventType":{
/*required, event type, array,  the sub type is string*/
      "@opt": ["authenticated", "openingDoor"]
    },
  },
```

```
  "VideoIntercom":{
/*optional, video intercom event*/
    "eventType":{
/*required, event type, string*/
      "@opt": ["tampering", "duressAlarm"]
    },
  },
  "GJD":{
/*optional, GJD security control panel event*/
    "eventType":{
/*required, event type, string*/
      "@opt": ["pirDetection", "tampering"]
    },
  },
  "Luminite":{
/*optional, Luminite security control panel*/
    "eventType":{
/*required, event type, string*/
      "@opt": ["pirDetection", "pirTamper"]
    },
  },
  "OPTEX":{
/*optional, OPTEX security control panel*/
    "eventType":{
/*required, event type, string*/
      "@opt": ["pcFn", "pcFr"]
    },
  },
  "cameraDetector":{
/*optional, detector evnet*/
    "eventType":{
/*required, event type, string*/
      "@opt": ["wirelessTemperature", "wirelessPIR"]
    },
  },
  "SecurityControlPanel":{
/*optional, security control panel*/
    "eventType":{
/*required, event type, string*/
      "@opt": ["zone","host"]
    },
    "zoneNum":{
/*required, the number of zones, integer*/
      "@min": 1,
      "@max": 16,
      "#text": 1
    },
  }
}
```

16.1.86 JSON_IOTChannelList

IOTChannelList message in JSON format

```
{
  "IOTChannelList": [{
    "IOTChannel"
/*optional, added IoT devices information, see details in
                                  JSON_IOTChannel
                                */
  }]
}
```

See Also

JSON_IOTChannel

16.1.87 JSON_IOTChannelStatus

IOTChannelStatus message in JSON format

```
{
  "IOTChannelStatus":{
/*optional, added IoT device status*/
    "IOTChannel":{
/*optional, added IoT device information, see details in
                                  JSON_IOTChannel
                                */
    },
    "channelName": "",
/*required, channel name, string, type, the max. length is 32*/
    "onlineStatus": "",
/*required, online stauts, boolean*/
    "channelDetectResult": "connecting,networkUnreachable,accessAbnormal,normal,guardFailed",
/*optional, channel detection status: "connecting"-connecting, "networkUnreachable"-unreachable network,
"accessAbnormal"-abnormal access, "normal"-normal, "guardFailed"-arming failed, string*/
    "SecurityStatus":{
/*optional, security status*/
      "passwordStatus": ""
/*optional, password status: notActivated-device is inactivated, risk-risky password, weak-weak password, medium-
medium password, strong-strong password, invalid-invalid status, string*/
    },
    "DeviceInfo":{
/*optional, device information*/
      "deviceName": "",
/*optional, device name, string, the max. length is 32*/
      "deviceType": "",
/*required, device type: "accessController"-access controller, "videoIntercom"-video intercom, "OPTEX"-OPTEX
security control panel, Luminite-Luminite security control panel, GJD-GJD security control panel, securityControlPanel-
security control panel,   string*/
```

```
    "model": "",
/*optional, device model, string, the max. length is 128*/
    "firmwareVersion": "",
/*optional, firmware version, string, the max. length is 128*/
    "firmwareReleasedDate": ""
/*optional, firmware compiled date, string, the max. length is 128*/
   }
  }
}
```

16.1.88 JSON_IOTChannelStatusList

IOTChannelStatusList message in JSON format

```
{
  "IOTChannelStatusList": [{
    "IOTChannelStatus":
/*optional, added IoT device status, see details in JSON_IOTChannelStatus*/
  }]
}
```

See Also

JSON_IOTChannelStatus

16.1.89 JSON_IOTSourceDescription

IOTSourceDescription message in JSON format

```
{
  "IOTSourceDescription":{
/*optional, protocol information*/
    "IOTProtocolType": "",
/*required, IOT protocol type: "HIKVISION"-Hikvision device, "OPTEX"-OPTEX security control panel, "Luminite"-Luminite security control panel, "GJD"-GJD security control panel, "SIA-CID"-SIA-CID protocol, string, the max. length is 32*/
    "addressingFormatType": "",
/*optional, address type, "ipaddress"-ip address, "hostname"-host name, string, the max. length is 32*/
    "hostName": "",
/*optional, host name, it is required when addressingFormatType values "hostname", string, the max. length is 64*/
    "ipAddress": "",
/*optional, device IPV4 address, it is required when addressingFormatType values "ipaddress", string, the max. length is 32*/
    "ipv6Address": "",
/*optional, device IPV6 address, it is required when addressingFormatType values "ipaddress", string, the max. length is 128*/
    "protocol": "",
/*optional, ptotocol type: "tcp"-TCP protocol, "ud"-UDP protocol, "muticast"-Multicast protocol, string, the max. length is 32*/
    "portNo": "",
```

```
/*optional, device port No., integer*/
   "userName": "",
/*optional, user name, string, the sensitive information is encrypted, the max. length is 32*/
   "password": ""
/*optional, password, string, the sensitive information is encrypted, the max. length is 16*/
  }
}
```

16.1.90 JSON_IOTSourceList

IOTSourceList message in JSON format

```
{
  "IOTSourceList": [{
/*optional, source informaiton, array*/
   "IOTProtocolType": "",
/*required, IOT protocol type: "HIKVISION"-Hikvision device, "OPTEX"-OPTEX security control panel, "Luminite"-Luminite security control panel, "GJD"-GJD security control panel, "SIA-CID"-SIA-CID protocol, string, the max. length is 32*/
   "addressingFormatType": "",
/*optional, address type, "ipaddress"-ip address, "hostname"-host name, string, the max. length is 32*/
   "hostName": "",
/*optional, host name, it is required when addressingFormatType values "hostname", string, the max. length is 64*/
   "ipAddress": "",
/*optional, device IPV4 address, it is required when addressingFormatType values "ipaddress", string, the max. length is 32*/
   "ipv6Address": "",
/*optional, device IPV6 address, it is required when addressingFormatType values "ipaddress", string, the max. length is 128*/
   "portNo": "",
/*optional, device port No., integer*/
   "userName": "",
/*optional, user name, string, sensitive information will be encrypted, the max. length is 32*/
   "password": "",
/*optional, password, string, sensitive information will be encrypted, the max. length is 16*/
   "activeStatus": "",
/*required, active or not, boolean*/
   "deviceType": "",
/*optional, string, devive type:  accessController-access controller, videoIntercom-video intercom, OPTEX-OPTEX security control panel, Luminite-Luminite security control panel, GJD-GJD security control panel, securityControlPanel-security control panel*/
   "macAddress": "",
/*optional, device MAC address, string, the max. length is 48*/
   "serialNumber": "",
/*optional, device serial No., string, the max. length is 48*/
   "firmwareVersion": "",
/*optional, firmware version (including compiled date), string, the max. length is 128*/
  }]
}
```

16.1.91 JSON_IOTSourceSupport

IOTSourceSupport message in JSON format

```
{
  "IOTSourceSupport":{
/*required, supported source information*/
    "sourceNum": "",
/*required, the number of protocols, integer*/
    "IOTSourceDescriptions": [{
/*optional, protocol informaiton, array*/
      "IOTProtocolType": "",
/*required, IOT protocol type: "HIKVISION"-Hikvision device, "OPTEX"-OPTEX security control panel, "Luminite"-Luminite security control panel, "GJD"-GJD security control panel, "SIA-CID"-SIA-CID protocol, string, the max. length is 32*/
      "addressingFormatType":{
/*optional, address type, "ipaddress"-ip address, "hostname"-host name, string, the max. length is 32*/
        "@opt": "ipaddress,hostname",
        "#text": "ipaddress"
      },
      "protocol":{
/*optional, protocol type, "tcp, udp, muticast", string, the max. length is 32*/
        "@opt": "tcp,udp,muticast",
        "#text": "tcp"
      },
      "portNo":{
/*optional, device port No., integer*/
        "@min": 0,
        "@max": 65535,
        "#text": 80
      },
      "userName ":{
/*optional, user name, string, the max. length is 32*/
        "@min": 0,
        "@max": 32,
        "#text": "admin"
      },
      "password":{
/*optional, password, string, the max. length is 16*/
        "@min": 0,
        "@max": 16,
        "#text": "12345"
      },
      "maxVideoChannelNum": "",
/*optional, the max. number of supported video channel, integer*/
      "zoneNum":{
/*optional, number of connected zones, integer, it is valid when the IOTProtocolType values "SIA-CID"*/
        "@min": 1,
        "@max": 256,
        "#text": 1
      },
```

```
    }],
    "DeviceInductiveType":{
/*optional, device inductive type*/
      "inductiveType1": ["accessController", "videoIntercom"],
/*optional, array, inductive type 1: accessController-access controller, videoIntercom-video intercom, OPTEX-OPTEX security control panel, Luminite-Luminite security control panel, GJD-GJD security control panel, securityControlPanel-security control panel, the sub type is string*/
      "inductiveType2": ["OPTEX", "Luminite", "GJD", "securityControlPanel"]
/*optional, array, inductive type 2: accessController-access controller, videoIntercom-video intercom, OPTEX-OPTEX security control panel, Luminite-Luminite security control panel, GJD-GJD security control panel,securityControlPanel-security control panel, the sub type is string*/
    }
  }
}
```

16.1.92 JSON_LensCorrection

LensCorrection in JSON format

```
{
  "LensCorrection":{
    "enabled": "",
/*required, enable or not*/
    "TimeTaskList": [{
      "TimeTaskBlock":{
        "dayOfWeek": "",
/*required, integer32,  ISO8601 weekday number, 1=Monday*/
        "TimeTaskRange": [{
          "taskID": "",
/*required, integer32, task ID, starts from 1*/
          "beginTime": "",
/*required, begin time, accurate to second, string type*/
          "endTime": ""
/*required, end time, accurate to second, string type*/
        }]
      }
    }]
  }
}
```

16.1.93 JSON_LensCorrectionCap

LensCorrectionCap message in JSON format

```
{
  "LensCorrectionCap":{
    "enabled": "true,false",
/*required, enable or not*/
    "TimeTaskList":{
```

```
    "maxSize":  ,
    "TimeTaskBlock":{
     "dayOfWeek": {
/*required, integer32,  ISO8601 weekday number, 1=Monday*/
       "@min": "",
       "@max": "",
      },
      "TimeTaskRange": {
       "maxSize":  ,
       "taskID":  {
/*required, integer32,  task ID, starts from 1*/
        "@min": ,
        "@max": ,
       },
       "beginTime": "01:00:00",
/*required, begin time, corrects to second, string*/
       "endTime": "02:00:00"
/*required, end time, corrects to second, string*/
      }
    }
   }
  }
}
```

16.1.94 JSON_LinkageChansCond

LinkageChansCond message in JSON format

```
{
 "LinkageChansCond":{
 "eventType": "",
/*required, string, for access controller or video intercom, the EventType == AcsEvent_major_minor, for security control panel, the EventType ==  AlarmHost_zoneNo*/
 "monitorId": "",
/*dep, string,  camera ID, strlen=[32,64]. For access controller or video intercom, the format is: device serial No._DOOR_door No., for security control panel, the format is: device serial No._ALARM_security control panel No.*/
 "unlockType": ""
/optional, unlock type, string,  password-unlock by password, hijcking-hijacking unlock, card-unlock by swiping card, householder-unlock by householder, centerplatform-unlock by center platform, bluetooth-bluetooth unlock, qrcode-unlock by QR code, face-unlock by face, fingerprint-unlock by fingerprint*/
 }
}
```

16.1.95 JSON_List_IPAddress

List_IPAddress message in JSON format

```
{
 "List":[{
```

```
   "IPAddress":{
     "ipVersion":"",
/*required, string type, version information of IP address: "v4"-IPv4, "v6"-IPv6*/
     "ipAddress":""
/*required, string type, IP address*/
   }
  }]
}
```

16.1.96 JSON_LockCfg

LockCfg message in JSON format

```
{
  "LockCfg":{
    "maxTryTimes": ,
/*optional, integer, the maximum attempts of logging in by the IP address*/
    "lockedTime":
/*optional, integer, time range of locking the IP address, unit: second*/
  }
}
```

16.1.97 JSON_LockCfgCap

LockCfgCap capability message in JSON format

```
{
"LockCfgCap":{
   "maxTryTimes":{
/*optional, the maximum attempts of logging in by the IP address*/
     "@opt":"5,..."
   },
   "lockedTime":{
/*optional, time range of locking the IP address, unit: second*/
     "@min": ,
     "@max":
   }
  }
}
```

16.1.98 JSON_LoginLinkNum

LoginLinkNum message in JSON format

```
{
  "LoginLinkNum": {
  "maxLinkNum": ,
```

```
/*required, integer type, maximum number of logged in accounts*/
  "adminPassword":""
/*required, string type, confirm the password of admin user, this node is valid only when setting maximum number
(PUT), otherwise, this node does not exits*/
    }
}
```

16.1.99 JSON_OnlineUpgradeParameter

OnlineUpgradeParameter message in JSON format

```
{
  "OnlineUpgradeParameter":{
/*required, online upgrade parameters*/
    "autoDownloadPackage": "",
/*required, whether enables automatic download of upgrade package, boolean, it values "false" by default*/
    "timingUpgrade": "",
/*optional, whether enable scheduled upgrade, boolean, it values "false" by default*/
    "upgradeTime": "",
/*optional, upgrade time, corrects to minute, and second is 0 by default, ISO8601 format, string type, it is valid when
timingUpgrade values "true"*/
  }
}
```

16.1.100 JSON_operType

operType message in JSON format

```
{
  "operType":"",
/*required, string type, operation type: "unlock"-unlock one or multiple IP addresses, "unlockAll"-unlock all IP
addresses*/
  "List":[{
    "IPAddress":{
      "ipVersion":"",
/*required, string, IP address version information: "v4"-IPv4, "v6"-IPv6. This node is valid only when openType is
"unlock"*/
      "ipAddress":""
/*required, string, IP address, this node is valid only when openType is "unlock"*/
    }
  }]
}
```

16.1.101 JSON_OSD

OSD message in JSON format

```
{
  "OSD":{
/*required, OSD information*/
    "overlayItem": "",
/*required, string, overlaid item, supports multiple items, each item is separated by comma; deviceName-device name, cardNo-card number, eventName-event name, name-name, identityCard-ID card, privacyInfo-private information*/
    "characterEncoding":"",
/*required, character encoding, string*/
    "fontSize": "",
/*required, string, font size: big-large, medium-medium, small-small*/
    "fontColor": "",
/*required, font color, hexBinary*/
    "overlayType": "",
/*required, overlay type: "flip, scroll", string*/
    "displayTime": "",
/*required, display time, unit; second, integer*/
    "PrivacyInfo": [{
/*optional, private information list, it is required when the value of overlayItem contains "privacyInfo", array*/
      "content": "",
 /*required, private information, string, the max. length is 16*/
    }],
    "normalizedScreenSize":{
 /*required, read-only, normalized coordinates*/
      "normalizedScreenWidth": "",
/*required, normalized width, integer*/
      "normalizedScreenHeight": ""
/*required, normalized height, integer*/
    },
    "Rect":{
/*required, OSD position*/
      "height": "",
/*required, height, float*/
      "width": "",
/*required, width, float*/
      "x": "",
/*required, X-coordinate, float*/
      "y": "",
/*required, Y-coordinate, float*/
    }
  }
}
```

16.1.102 JSON_OSDCap

OSDCap message in JSON format

```
{
  "OSDCap":{
/*required, OSD information*/
```

```
   "overlayItem":{
/*required, string, overlaid item, supports multiple items, each item is separated by comma; deviceName-device
name, cardNo-card number, eventName-event name, name-name, identityCard-ID card, privacyInfo-private
information*/
     "@opt": "deviceName,cardNo,eventName,name,identityCard,privacyInfo",
     "#text": "deviceName"
   },
   "characterEncoding":{
/*required, character encoding, string*/
     "@opt": "GB2312,Latin-1",
     "#text": "GB2312"
   },
   "fontSize":{
/*required, string, font size: big-large, medium-medium, small-small*/
     "@opt": "big,medium,small",
     "#text": "big"
   },
   "fontColor":{
/*required, font color, hexBinary*/
     "@opt": "FFFFFF",
   },
   "overlayType":{
/*required, overlay type: "flip, scroll", string*/
     "@opt": "flip,scroll",
     "#text": "flip"
   },
   "displayTime":{
/*required, display time, unit; second, integer*/
     "@min": 1,
     "@max": 120,
     "#text": 15
   },
   "PrivacyInfo": [{
/*optional, private information list, it is required when the value of overlayItem contains "privacyInfo", array*/
     "size": 3,
/*required, the max. number of items, integer*/
     "content":{
 /*required, private information, string, the max. length is 16*/
       "@min": 1,
       "@max": 16,
       "#text": "12345"
     },
   }],
   "Rect":{
/*required, OSD position*/
     "height":{
/*required, height, float*/
       "@min": 0.000,
       "@max": 1.000,
       "#text": 0.311
     },
     "width":{
```

```
/*required, width, float*/
       "@min": 0.000,
       "@max": 1.000,
       "#text": 0.311
      },
      "x":{
/*required, X-coordinate, float*/
       "@min": 0.000,
       "@max": 1.000,
       "#text": 0.311
      },
      "y":{
/*required, Y-coordinate, float*/
       "@min": 0.000,
       "@max": 1.000,
       "#text": 0.311
      },
    }
  }
}
```

16.1.103 JSON_PeopleCounting_CollectionDescription

CollectionDescription message in JSON format

```
{
  "CollectionDescription":{
    "searchID": "",
/*required，string，unique search ID, the content of searchID remains unchanged when search condition remains unchanged.*/
    "searchResultPosition": "",
/*required, initial position of search result list, integer type. When there are multiple records, and cannot get all records in one time searching, you can search the records followed specified position for next search*/
    "maxResults": "",
/*required, number of matched records per search, integer type*/
    "timeSpanList": [{
/*required, time interval list*/
      "startTime": "",
/*required, start time, ISO8601_time, string*/
      "endTime": "",
/*required, end time, ISO8601_time, string*/
    }],
    "channels": "",
/*optional, sub type, array, integer32, related channel No., array. If the channel information is not specified, it indicates searching all channels*/
  }
}
```

16.1.104 JSON_PeopleCounting_CollectionDescriptionCap

CollectionDescriptionCap message in JSON format.

```
{
  "CollectionDescriptionCap":{
    "timeRange": "",
/*required, supported time range for people counting replenishment, unit: day, integer*/
    "timeSpanMaxNum": "",
/*required, the maximum number of time buckets supported for one time search integer*/
    "resultMaxNum": "",
/*required, the maximum number of items can be searched, integer*/
    "channelMaxNum": ""
/*required, the maximum number of channels supported for one time search, integer*/
  }
}
```

16.1.105 JSON_PeopleCounting_CollectionResult

CollectionResult message in JSON format

```
{
  "CollectionResult":{
    "responseStatusStrg": "",
/*required, searching status: OK- Searching ended, NO MATCHES-No matched data found,  MORE-Search again for more results, string, the max. length is 32, {dep if errcode == 1 && errMsg == ok}*/
    "numOfMatches": "",
/*required, returned number of results for current search, integer32, {dep if errcode == 1 && errMsg == ok}*/
    "totalMatches": "",
/*required, total number of matched results, integer32, {dep if errcode == 1 && errMsg == ok}*/
    "targets": [{
/*optional, people gathering result*/
      "startTime": "",
/*required, start time of people gathering*/
      "endTime": "",
/*required, end time of people gathering*/
      "channel": "",
/*required, integer, channel No.*/
      "enter": "",
/*required, integer,  the number of people entered*/
      "exit": "",
/*required, integer,  the number of people exited*/
      "pass": "",
/*required, integer,  the number of people passed by*/
    }]
  }
}
```

16.1.106 JSON_POE

POE message in JSON format

```
{
  "POE": {
     "@opt": "ipV4,ipV6",
/*optional, IPv4 address, string type, the max. length is 32 bytes*/
     "#text": "ipV4"
/*optional, IPv6 address, string type, the max. length is 128*/
    }
  }
}
```

16.1.107 JSON_ProgressInfo

ProgressInfo message in JSON format

```
{
  "ProgressInfo":{
/*required, progress information*/
    "status":"",
/*required, string, exporting status: "exporting", "failed", "success"*/
    "progress":""
/*required, string, exporting progress, format example: 2/101 (there are 101 files in total to be exported, and 2 files have been exported)*/
  }
}
```

16.1.108 JSON_ReportCenterCfg

ReportCenterCfg message in JSON format

```
{
  "ReportCenterCfg":{
    "enable": ,
/*optional, boolean type, whether to enable uploading report*/
    "ChanAlarmMode":[{
/*alarm channel of the center group*/
      "id": ,
/*optional, integer type, channel ID: 1-main channel, 2-backup channel 1, 3-backup channel 2, 4-backup channel 3*/
      "chanAlarmMode":""
/*optional, string type, alarm channel mode: "T1"-T1 channel, "T2"-T2 channel, "N1"-N1 channel, "N2"-N2 channel, "G1"-G1 channel, "G2"-G2 channel, "N3"-N3 channel, "N4"-N4 channel*/
    }]
  }
}
```

16.1.109 JSON_ResponseStatus

ResponseStatus message in JSON format.

```
{
  "requestURL":"",
/*optional, string type, request URL*/
  "statusCode": ,
/*required, integer type, status code*/
  "statusString":"",
/*required, string type, status description*/
  "subStatusCode":"",
/*required, string type, sub status code*/
  "errorCode": ,
/*optional, integer type, error code, which corresponds to subStatusCode, this field is required when statusCode is not 1. The returned value is the transformed decimal number*/
  "errorMsg":"",
/*optional, string type, error details, this field is required when statusCode is not 1*/
  "id": ,
/*optional, integer type, unique device ID generally returned when adding the device*/
  "AdditionalErr":{
/*additional error status, which is valid when statusCode is set to 9 (Additional Error). When setting or deleting in a batch failed, if the error status of a specific device needs to be returned, statusCode should be set to 9 (Additional Error) and the node <AdditionalError> should be returned*/
    "StatusList":[{
/*required, status information list*/
      "Status":{
        "id": ,
/*optional, integer type, unique device ID*/
        "statusCode": ,
/*optional, integer type, status code*/
        "statusString":"",
/*optional, string type, status description*/
        "subStatusCode":"",
/*optional, string type, sub status code*/
        "errorCode": ,
/*required, integer type, error code, which corresponds to subStatusCode, this field is required when statusCode is not 1*/
        "errorMsg":"",
/*required, string type, error details, this field is required when statusCode is not 1*/
      }
    }]
  }
}
```

Note

See ***Error Codes in ResponseStatus*** for details about the status codes, sub status codes, error codes, and error descriptions.

16.1.110 JSON_resourceStatistics

resourceStatistics message in JSON format

```
{
  "inputBandwidth": ,
/*required, input bandwidth, unit: kbps, float type, corrects to one decimal*/
  "outputBandwidth": ,
/*required, output bandwidth, unit: kbps, float type, corrects to one decimal*/
  "StreamingInformation": [{
/*optional, stream information, array*/
    "moduleType": "",
/*required, module type: "remoteStreaming"-remote streaming, "remotePlayBack"-remote playback, string type, the maximum length is 32 bits*/
    "ipAddress": "",
/*required, device IPv4 address, string type, the maximum length is 32 bits*/
    "ipv6Address": "",
/*optional, device IPv6 address, string type, the maximum length is 128 bits*/
    "bandwidth":
/*required, bandwidth, unit: kbps, float type, corrects to one decimal*/
  }],
  "inputPictureBandwidth": ,
/*optional, picture input bandwidth (including all interfaces of inputting binary picture data), unit: kbps, float type, corrects to one decimal*/
  "outputPictureBandwidth": ,
/*optional, picture output bandwidth (including all interfaces of returning binary picture data), unit: kbps, float type, corrects to one decimal*/
}
```

16.1.111 JSON_Result

Result message in JSON format

```
{
  "Result":{
    "channels": [1, 2],
/*optional, integer, linked video channel No.*/
    "IoTChannels": [1, 2]
/*optional, integer, linked IoT channel NO.*/
  }
}
```

16.1.112 JSON_secretKey

secretKey message in JSON format

```
{
  "secretKey":"",
```

```
/*required, string type, encryption key*/
}
```

16.1.113 JSON_SecurityAdvanced

SecurityAdvanced message in JSON format

```
{
  "SecurityAdvanced ": {
    "securityEnhanced": ,
/*optional, boolean type, whether to enable security reinforcement: true*/
    "noOperationEnabled": ,
/*optional, boolean type, whether to enable control timeout: true*/
    "noOperationTime": ,
/*optional, integer type, control timeout, value range: [1,60], default value: 15, unit: minute*/
    "digestStatus":"SHA256"
/*read-only, string type, digest algorithm: SHA256, MD5*/
  }
}
```

16.1.114 JSON_SecurityEmail

SecurityEmail message in JSON format

```
{
  "SecurityEmail":{
    "SecurityInformation": [{
/*required, recovery email information*/
      "emailAddress": "",
/*required, string type, email address, the sensitive information should be encrypted*/
    }],
  },
}
```

16.1.115 JSON_SecurityEmailCap

SecurityEmailCap message in JSON format

```
{
  "SecurityEmailCap":
/*required, recovery email configuration capability*/
  {
    "emailAddressNum":  ,
/*required, number of recovery emails*/
    "emailAddress":
/*required, string type, recovery email information*/
    {
```

```
    "@min": 1,
    "@max": 128,
   },
  }
}
```

16.1.116 JSON_SecurityEmailQrCode

SecurityEmailQrCode message in JSON format

```
{
  "SecurityEmailQrCode":
/*optional, QR code of recovery email*/
  {
    "SecurityInformation": [{
/*required, security information, the sensitive information should be encrypted*/
     "emailAddress": "",
/*required, string type, email address, the sensitive information should be encrypted*/
     "qrCode": "",
/*required, string type, QR code, the maximum size is 1024 bytes, the sensitive information should be encrypted*/
    }],
    "serverEmailAddress": "",
/*optional, string type, manufacturer service email address, the sensitive information should be encrypted*
    "isDisclaimerDisplay":
/*optional, boolean type, whether to display disclaimer*/
  },
}
```

16.1.117 JSON_SerialLogCfg

SerialLogCfg message in JSON format

```
{
  "SerialLogCfg":{
    "enabled":
/*required, boolean type, whether to enable serial port log redirection: "true"-yes, "false"-no*/
  }
}
```

16.1.118 JSON_SerialLogCfgCap

SerialLogCfgCap capability message in JSON format

```
{
  "SerialLogCfgCap":{
    "enabled":"true, false"
/*required, boolean type, whether to enable serial port log redirection: "true"-yes, "false"-no*/
```

```
  }
}
```

16.1.119 JSON_ServerCertificateCap

ServerCertificateCap capability message in JSON format

```
{
  "ServerCertificateCap":{
    "customID":{
/*required, string, custom certificate ID, it is created when the user imports the certificate and it consists of digits and characters*/
      "@min":1,
      "@max":64
    },
    "status":{
/*optional, string, certificate status: "normal", "expired", "exceptional"*/
      "@opt":["normal", "expired", "exceptional"]
    },
    "RSAKeyLength":{
/*optional, integer, RSA key length*/
      "@opt":[1024, 2048]
    },
    "countryName":{
/*optional, string, country*/
      "@min":1,
      "@max":32
    },
    "commonName":{
/*optional, string, domain name or IP address*/
      "@min":1,
      "@max":32
    },
    "validity":{
/*optional, integer, valid days*/
      "@min":1
    },
    "passwd":{
/*optional, string, password*/
      "@min":1,
      "@max":64
    },
    "stateOrProvinceName":{
/*optional, string, province or state*/
      "@min":1,
      "@max":32
    },
    "localityName":{
/*optional, string, region*/
      "@min":1,
      "@max":32
```

```
    },
    "organizationName":{
/*optional, string, organization*/
      "@min":1,
      "@max":32
    },
    "organizationUnitName":{
/*optional, string, organization unit*/
      "@min":1,
      "@max":32
    },
    "email":{
/*optional, string, email*/
      "@min":1,
      "@max":32
    }
  }
}
```

16.1.120 JSON_ServerCertificates

ServerCertificates message in JSON format

```
{
  "ServerCertificates":{
    "CertificateInfo":[{
      "issuerDN":"",
/*required, string, read-only, name of the authority that issued the certificate*/
      "subjectDN":"",
/*required, string, read-only, certificate holder name*/
      "startDate":"",
/*required, date, read-only, start date of the certificate validity period, it is accurate to day*/
      "endDate":"",
/*required, date, read-only, end date of the certificate validity period, it is accurate to day*/
      "type":"",
/*optional, string, read-only, certificate type: "HTTPS", "WebSocketS", "SDK_OVER_TLS", "SRTP", "securityLog",
"ieee802.1x". Multiple types should be separated by commas*/
      "status":"",
/*optional, string, read-only, certificate status: "normal", "expired", "exceptional"*/
      "customID":""
/*optional, string, read-only, custom certificate ID, it is created when the user imports the certificate and it consists of
digits and characters*/
    }]
  }
}
```

16.1.121 JSON_SmartOverlap

SmartOverlap message in JSON format

```
{
  "SmartOverlap":{
    "enabled": ,
/*required, boolean, whether to enable the stream*/
    "streamType": ,
/*required, integer, stream type: 1-main stream, 2-sub-stream, 3-third stream*/
    "bkgImageOverlapEnabled":
/*required, boolean, whether to overlay rule frame and target frame on the background picture*/
  }
}
```

16.1.122 JSON_SmartOverlapCap

SmartOverlapCap capability message in JSON format

```
{
  "SmartOverlapCap":{
    "enabled":{
/*required, boolean, whether to enable the stream*/
      "@opt":[ true, false]
    },
    "streamType":{
/*required, integer, stream type: 0-disable, 1-main stream, 2-sub-stream, 3-third stream*/
      "@opt":[2]
    },
    "bkgImageOverlapEnabled":{
/*required, boolean, whether to overlay rule frame and target frame on the background picture*/
      "@opt":[true, false]
    },
    "supportEventType":{
/*required, string, supported event type: "fieldDetection"-intrusion, "attendedBaggage"-object removal,
"unattendedBaggage"-unattended baggage, "regionExiting"-region exiting, "regionEntrance"-region entrance,
"lineDetection"-line crossing*/
      "@opt":["fieldDetection", "attendedBaggage", "unattendedBaggage", "regionExiting", "regionEntrance",
"lineDetection"]
    }
  }
}
```

16.1.123 JSON_SourceCapabilities

SourceCapabilities message in JSON format

```
{
  "SourceCapabilities":{
/*required, the supported source capabilities*/
    "IOTChannelNum": "",
/*required, the number of IoT channels,integer*/
    "videoChannelNum": """,
/*optional, the number of video channels, integer*/
    "accessChannels": [{
/*optional, array, added channel No.*/
      "channel": "",
/*required, channel No., integer*/
      "type": "",
/*required, channel type: "video"-video channel, "IOT"-IoT channel, string*/
    }]
  }
}
```

16.1.124 JSON_StopTaskCond

StopTaskCond message in JSON format

```
{
  "taskID":
/*required, task ID, string*/
}
```

16.1.125 JSON_CollectionDescription

CollectionDescription message in JSON format

```
{
  "CollectionDescription":{
    "searchID": "",
/*required, string, unique search ID, the content of searchID remains unchanged when search condition remains
unchanged.*/
    "searchResultPosition": "",
/*required, initial position of search result list, integer type. When there are multiple records, and cannot get all
records in one time searching, you can search the records followed specified position for next search*/
    "maxResults": "",
/*required, number of matched records per search, integer type*/
    "timeSpanList": [{
/*required, time interval list*/
      "startTime": "",
/*required, start time, ISO8601_time, string*/
      "endTime": "",
/*required, end time, ISO8601_time, string*/
    }],
    "channels": "",
```

```
/*optional, sub type, array, integer32, related channel No., array. If the channel information is not specified, it indicates searching all channels*/
  "alarmLevel": "TMA",
/*required, string, alarm level: TMA–thermometry alarm, TMPA-thermometry pre-alarm*/
  }
}
```

16.1.126 JSON_Temperature_CollectionDescriptionCap

CollectionDescriptionCap message in JSON format

```
{
  "CollectionDescriptionCap":{
    "timeRange": 15,
/*required, supported time range for replenishment, unit: day, integer */
    "timeSpanMaxNum": 1,
/*required, the maximum number of time buckets supported for one time search, integer*/
    "resultMaxNum": 100,
/*required, the maximum number of items can be searched, integer*/
    "channelMaxNum": 1,
/*required, the maximum number of channels supported for one time search, integer*/
    "alarmLevel":{
/*required, string, alarm level: TMA–thermometry alarm, TMPA-thermometry pre-alarm*/
      "@opt": "TMA,TMPA"
    }
  }
}
```

16.1.127 JSON_CollectionResult

CollectionResult message in JSON format

```
{
  "CollectionResult":{
    "responseStatusStrg": "",
/*required, searching status: OK- Searching ended, NO MATCHES-No matched data found,  MORE-Search again for more results, string, the max. length is 32, {dep if errcode == 1 && errMsg == ok}*/
    "numOfMatches": "",
/*required, returned number of results for current search, integer32, {dep if errcode == 1 && errMsg == ok}*/
    "totalMatches": "",
/*required, total number of matched results, integer32, {dep if errcode == 1 && errMsg == ok}*/
    "targets": [{
/*optional, statistics result*/
      "time": "2017-08-25T11:34:59+08:00",
/*required, statistic time*/
      "channel": "",
/*required, integer,  channel No.*/
      "Region": [{
/*required, float, X-coordinate, ranges from 0.000 to 1*/
```

```
      "x": "",
/*required, float, Y-coordinate, ranges from 0.000 to 1*/
      "y": ""
     }],
     "thermometryUnit": "",
/*required, string, temperature unit: celsius, fahrenheit, kelvin*/
     "ruleTemperature": ,
/*required, float, themometry rule*/
     "currTemperature": ,
/*required, float, current temperature*/
     "ruleCalibType": "",
/*required, string, rule calibration type: point,line,region*/
     "ruleType": "",
/*required, string, rule: "highest temp is higher than"-the maximum temperature is higher than, "lowest temp is higher than"-the minimum temperature is higher than, "average temp is higher than"-the average temperature is higher than, "temp diff is higher than"-temperature difference is higher than, "highest temp is lower than"-the maximum temperature is lower than, "lowest temp is lower than"-the minimum temperature is lower than, "average temp is lower than"-the average temperature is lower than, "temp diff is lower than"-temperature difference is lower than*/
     "MaximumTemperaturePoint":{
/*optional, the maximum temperature point*/
      "x": "",
/*required, float, X-coordinate, ranges from 0.000 to 1*/
      "y": ""
/*required, float, Y-coordinate, ranges from 0.000 to 1*/
     },
     "AbsoluteHigh":{
/*optional, absolute height*/
      "elevation": "",
/*required, float, elevation*/
      "azimuth": "",
/*required, float, azimuth*/
      "absoluteZoom": ""
/*required, float, absolute zoom*/
     },
     "ruleID": "",
/*required, integer, rule ID*/
     "presetNo": "",
/*required, integer, preset ID*/
     "visibleLightURL": "",
/*optional, string, visible light picture URL*/
     "thermalURL": "",
/*optional, string, thermal picture URL*/
     "thermalInfoURL": "",
/*optional, string, thermal additional information URL*/
   }]
  }
}
```

16.1.128 JSON_TimeType

TimeType message in JSON format

```
{
  "TimeType":{
    "type": ""
/*required, value: local, UTC*/
  }
}
```

16.1.129 JSON_unitConfig

unitConfig message in JSON format

```
{
  "enabled": "",
/*required, enable unit unifying configuration or not, boolean type*/
  "temperatureRange": "",
/*optional, string type, temperature unit: degreeCentigrade-Centigrade (°C), degreeFahrenheit-Fahrenheit (°F） , degreeKelvin-Kelvin (K), the default value is "degreeCentigrade"*/
  "distanceUnit": ""
/*optional, string type, distance unit: centimeter, meter, feet,  the default value is "centimeter"*/
}
```

Remarks

- When the **enabled** values "false", it indicates the unit unifying function is disabled, the unit can be configured in thermomery basic settings, and the configured unit has no influence on the unit in system settings.
- When the **enabled** values "false", the thermomery unit configuration in applied URL remains unchanged and takes effect; while when the **enabled** values "true" and the thermometry unit is different with the system unit, the thermometry unit configuration in applied URL takes no effect and the error code will be returned.

16.1.130 JSON_unitConfigCap

unitConfigCap message in JSON format

```
{
  "enabled":"true,false",
/*required, enable unit unified configuration or not, boolean type*/
  "temperatureRange":{
/*optional, string type, temperature unit: degreeCentigrade-Centigrade (°C), degreeFahrenheit-Fahrenheit (°F） , degreeKelvin-Kelvin (K), the default value is "degreeCentigrade"*/
    "@opt":"degreeCentigrade,degreeFahrenheit,degreeKelvin"
  },
```

```
  "distanceUnit":{
/*optional, string type, distance unit: centimeter, meter, feet,   the default value is "centimeter"*/
    "@opt":"centimeter,meter,feet"
  }
}
```

16.1.131 JSON_User

User message in JSON format

```
{
  "User":{
    "userName": "",
/*required, string, double verification user name*/
    "password": ""
/*required, string, double verification password*/
  }
}
```

16.1.132 JSON_UserCap

UserCap message in JSON format

```
{
  "UserCap":{
    "userMaxNumber": "",
/*required, the maximum number of supported double verification users*/
    "userNameLen":{
/*required, the length of double verification user name*/
      "@min": "",
      "@max": "",
       },
    "passwordLen":{
/*required, the length of double verification user password*/
      "@min": 5,
      "@max": 16,
    }
  }
}
```

16.1.133 JSON_UserList

UserList message in JSON format

```
{
  "UserList": [{
    "id": ,
```

```
/*required, integer, user ID*/
   "userName":"",
/*required, string, double verification user name*/
  }]
}
```

16.1.134 JSON_UserPermission

UserPermission message in JSON format

```
{
  "UserPermission":{
    "localPlayback":{
/*optional, local playback permission*/
      "enable": "",
/*required, enables permission or not, boolean*/
      "channelPermission": [{
/*optional, channel permission*/
        "channelID": ,
/*required, channel ID, integer*/
        "enable": ""
/*required, enables permission or not, boolean*/
      }]
    },
    "localBackup":{
/*optional, local backup permission*/
      "enable": "",
/*required, enables permission or not, boolean*/
      "channelPermission": [{
/*optional, channel permission*/
        "channelID": ,
/*required, channel ID, integer*/
        "enable": ""
/*required, enables permission or not, boolean*/
      }]
    },
    "remotePlayback":{
/*optional, remote playback and download permission*/
      "enable": "",
/*required, enables permission or not, boolean*/
      "channelPermission": [{
/*optional, channel permission*/
        "channelID": ,
/*required, channel ID, integer*/
        "enable": ""
/*required, enables permission or not, boolean*/
      }]
    }
  }
}
```

16.1.135 JSON_UserPermissionCap

UserPermissionCap message in JSON format

```
{
  "UserPermissionCap":{
    "localPlayback":{
/*required, local playback permission*/
      "channelID":{
/*required, the channel which supports configuring local playback permission*/
        "@min": "",
        "@max": ,
      },
      "enable": "true,false"
/*required, enables permission or not, boolean*/
    },
    "localBackup":{
/*required, local backup permission*/
      "channelID":{
/*required, the channel which supports configuring local backup permission*/
        "@min": "",
        "@max": ,
      },
      "enable": "true,false"
/*required, enables permission or not, boolean*/
    },
    "remotePlayback":{
/*required, remote playback permission*/
      "channelID":{
/*required, the channel which supports configuring remote playback permission*/
        "@min": "",
        "@max": "",
        "#text": ""
      },
      "enable": "true,false"
/*required, enables permission or not, boolean*/
    }
  }
}
```

16.1.136 JSON_IntelligentSearchCap

IntelligentSearchCap capability message in JSON format

```
{
  "requestURL":"",
/*optional, string type, request URL*/
  "statusCode":1,
/*required, int type, status code*/
```

```
  "statusString":"",
/*required, string type, status description*/
  "subStatusCode":"",
/*required, string type, sub status code*/
  "errorCode":1,
/*optional, int type, error code, this node is required when statusCode is not 1 and it corresponds to subStatusCode*/
  "errorMsg":"ok",
/*optional, string type, error details, this node is required, when statusCode is not 1 and it can be error details about a specific parameter*/
  "startTime":"2004-05-03T17:30:08+08:00",
/*required, string type, start time in ISO8601 time format. This node only indicates that the device supports this field*/
  "endTime":"2004-05-03T17:30:08+08:00",
/*required, string type, end time in ISO8601 time format. This node only indicates that the device supports this field*/
  "resultMaxNum":100,
/*required, int type, supported maximum number of results that can be searched*/
  "channelIDLen":{
/*optional, camera ID length*/
    "min":1,
    "max":32
  },
  "channelNameLen":{
/*optional, camera name length*/
    "min":1,
    "max":32
  },
  "targetRect":{
/*required, target frame*/
    "height":{
      "min":1,
      "max":100
    },
    "width":{
      "min":1,
      "max":100
    },
    "x":{
      "min":1,
      "max":100
    },
    "y":{
      "min":1,
      "max":100
    }
  },
  "picUrlLen":{
/*required, URL length of the large picture*/
    "min":1,
    "max":128
  },
  "targetType":"vehicle",
/*string type, search object type*/
  "isSupportLicense":true,
```

```
/*required, boolean type, whether it supports license plate number*/
  "plateType":"unknown,92TypeCivil,arm,upDownMilitay,92TypeArm,leftRightMilitay,
02TypePersonalized,yellowTwoLine,
04NewMilitay,embassy,oneLineArm,twoLineArm,yellow1225FarmVehicle,green1325FarmVehicle,yellow1325FarmVehi
cle,motorola,coach,tempTravl,trailer,consulate,hongKongMacao,tempEntry,civilAviation,newEnergy",
/*optional, string type, license plate type: license plate type: "unknown", "92TypeCivil"-92-style civil vehicle, "arm"-
police vehicle, "upDownMilitay"-military vehicle (top-bottom type), "92TypeArm"-92-style police vehicle,
"leftRightMilitay"-military vehicle (left-right type), "02TypePersonalized"-02-style customized vehicle, "yellowTwoLine"-
yellow two-line rear license plate, "04NewMilitay"-04-style new military vehicle, "embassy"-embassy vehicle,
"oneLineArm"-new armed police vehicle (one-line), "twoLineArm"-new armed police vehicle (two-line),
"yellow1225FarmVehicle"-yellow agricultural vehicle with 1225 structure, "green1325FarmVehicle"-green agricultural
vehicle with 1325 structure, "yellow1325FarmVehicle"-yellow agricultural vehicle with 1325 structure, "motorola"-
motorcycle, "coach"-driver-training vehicle, "tempTravl"-vehicle with temporary license plate, "trailer"-trailer,
"consulate"-consular vehicle, "hongKongMacao"-vehicle entering and leaving Hong Kong/Macao, "tempEntry"-
temporary entry vehicle, "civilAviation"-civil aviation license plate, "newEnergy"-new energy license plate. Multiple
types should be separated by commas*/

"vehicleColor":"white,silver,gray,black,red,deepBlue,blue,yellow,green,brown,pink,purple,deepGray,cyan,orange,unkn
own",
/*optional, string type, vehicle color: "unknown", "white", "silver"-silvery, "gray", "black", "red", "deepBlue"-dark
blue, "blue", "yellow", "green", "brown", "pink", "purple", "deepGray"-dark gray, "cyan", "orange". Multiple colors
should be separated by commas*/
  "plateColor":"white,yellow,blue,black,green,civilAviationBlack,civilAviationGreen,other",
/*optional, string type, license plate color: "white", "yellow", "blue", "black", "green", "civilAviationBlack"-civil
aviation black, "civilAviationGreen"-civil aviation green, "0xff" or "other"-other color, "unknown"-unrecognized.
Multiple colors should be separated by commas*/

"vehicleType":"largeBus,truck,vehicle,van,buggy,pedestrian,twoWheelVehicle,threeWheelVehicle,SUVMPV,mediumBus
,motorVehicle,nonmotorVehicle,smallCar,miniCar,pickupTruck,unknown",
/*optional, string type, vehicle type: "largeBus"-large-sized bus, "truck"-truck, "vehicle"-salon car, "van"-minivan,
"buggy"-light truck, "pedestrian", "twoWheelVehicle"-two wheeler, "threeWheelVehicle"-tricycle, "SUVMPV"-SUV/
MPV, "mediumBus"-middle-sized bus, "motorVehicle"-motor vehicle (it will be transformed to "vehicle" (salon car) in
the platform), "nonmotorVehicle"-non-motor vehicle (it will be transformed to "threeWheelVehicle" (tricycle) in the
platform), "smallCar"-small sedan (it will be transformed to "vehicle" (salon car) in the platform), "miniCar"-mini
sedan (it will be transformed to "vehicle" (salon car) in the platform), "pickupTruck"-pick-up truck, "unknown".
Multiple types should be separated by commas*/
  "isSupportVehicleLogo":true,
/*optional, boolean type, whether it supports vehicle parent brand*/
  "isSupportvehicleSubLogo":true,
/*optional, boolean type, whether it supports vehicle sub brand*/
  "isSupportVehicleModel":true,
/*optional, boolean type, whether it supports vehicle model year*/
  "channelMaxNum":1,
/*required, integer type, maximum number of channels that support simultaneous search*/
  "supportSearchByUTC":true
/*optional, boolean type, whether it supports searching by UTC*/
}
```

16.1.137 JSON_VCASearchExportCond

VCASearchExportCond in JSON format

```
{
  "searchID":"",
/*required, string type, search ID. The content of searchID remains unchanged if the search conditions remain unchanged. This node is used to check the same search. When the device performance is limited, you can search asynchronously by applying conditions with the same searchID several times and getting the search progress*/
  "searchResultPosition": ,
/*required, int type, the start position of the search result in the result list. When there are multiple records and you cannot get all search results at a time, you can search for the records after the specified position next time*/
  "maxResults": ,
/*required, int type, maximum number of search results obtained this time*/
  "startTime":"",
/*required, string type, start time in ISO8601 time format*/
  "endTime":"",
/*required, string type, end time in ISO8601 time format*/
  "choiceChannel":[{
/*optional*/
    "channelID":""
/*optional, string type, camera No.*/
  }],
  "targetType":"",
/*optional, string type, search object type: "human,vehicle,twoWheelVehicle,threeWheelVehicle". If this node is not returned, it indicates no limit*/
  "targetSize":"",
/*optional, string type, target size. If this node is not returned, it indicates no limit*/
  "direction":"",
/*optional, string type, target direction. If this node is not returned, it indicates no limit*/
  "speed":"",
/*optional, string type, target speed. If this node is not returned, it indicates no limit*/
  "humanInfo":{
/*this node is valid when targetType is "human"*/
    "ageGroup":"",
/*optional, string type, age group. If this node is not returned, it indicates no limit*/
    "gender":"",
/*optional, string type, gender. If this node is not returned, it indicates no limit*/
    "glass":"",
/*optional, string type, whether the person wears glasses. If this node is not returned, it indicates no limit*/
    "bag":"",
/*optional, string type, whether the person is with backpack. If this node is not returned, it indicates no limit*/
    "hat":"",
/*optional, string type, whether the person wears glasses. If this node is not returned, it indicates no limit*/
    "mask":"",
/*optional, string type, whether the person wears mask. If this node is not returned, it indicates no limit*/
    "jacketType":"",
/*optional, string type, tops type. If this node is not returned, it indicates no limit*/
    "trousersType":"",
/*optional, string type, bottoms type. If this node is not returned, it indicates no limit*/
    "hairStyle":"",
```

```
/*optional, string type, hairstyle. If this node is not returned, it indicates no limit*/
   "jacketColor":"",
/*optional, string type, tops color. If this node is not returned, it indicates no limit*/
   "trousersColor":"",
/*optional, string type, bottoms color. If this node is not returned, it indicates no limit*/
   "ride":"",
/*optional, string type, whether the person is riding bicycle. If this node is not returned, it indicates no limit*/
   "things":"",
/*optional, string type, whether the person is carrying goods. If this node is not returned, it indicates no limit*/
   "cyclingType":"",
/*optional, string type, riding type*/
   "cyclingPersonNumber":""
/*optional, string type, number of riders*/
  },
  "vehicleInfo":{
/*this node is valid when targetType is "vehicle"*/
   "license":"",
/*optioinal, string type, license plate number*/
   "plateType":"",
/*optional, string type, license plate type: license plate type: "unknown", "92TypeCivil"-92-style civil vehicle, "arm"-police vehicle, "upDownMilitay"-military vehicle (top-bottom type), "92TypeArm"-92-style police vehicle, "leftRightMilitay"-military vehicle (left-right type), "02TypePersonalized"-02-style customized vehicle, "yellowTwoLine"-yellow two-line rear license plate, "04NewMilitay"-04-style new military vehicle, "embassy"-embassy vehicle, "oneLineArm"-new armed police vehicle (one-line), "twoLineArm"-new armed police vehicle (two-line), "yellow1225FarmVehicle"-yellow agricultural vehicle with 1225 structure, "green1325FarmVehicle"-green agricultural vehicle with 1325 structure, "yellow1325FarmVehicle"-yellow agricultural vehicle with 1325 structure, "motorola"-motorcycle, "coach"-driver-training vehicle, "tempTravl"-vehicle with temporary license plate, "trailer"-trailer, "consulate"-consular vehicle, "hongKongMacao"-vehicle entering and leaving Hong Kong/Macao, "tempEntry"-temporary entry vehicle, "civilAviation"-civil aviation license plate, "newEnergy"-new energy license plate. If this node is not returned, it indicates no limit*/
   "vehicleColor":"",
/*optional, string type, vehicle color: "unknown", "white", "silver"-silvery, "gray", "black", "red", "deepBlue"-dark blue, "blue", "yellow", "green", "brown", "pink", "purple", "deepGray"-dark gray, "cyan", "orange". Multiple colors should be separated by commas. If this node is not returned, it indicates no limit*/
   "vehicleType":"",
/*optional, string type, vehicle type: "largeBus"-large-sized bus, "truck"-truck, "vehicle"-salon car, "van"-minivan, "buggy"-light truck, "pedestrian", "twoWheelVehicle"-two wheeler, "threeWheelVehicle"-tricycle, "SUVMPV"-SUV/MPV, "mediumBus"-middle-sized bus, "unknown". If this node is not returned, it indicates no limit*/
   "vehicleLogo": ,
/*optional, int type, vehicle parent brand. If this node is not returned, it indicates no limit*/
   "vehicleSubLogo": ,
/*optional, int type, vehicle sub brand. If this node is not returned, it indicates no limit*/
   "vehicleModel": ,
/*optional, int type, vehicle model year. If this node is not returned, it indicates no limit*/
   "plateColor":"",
/*optional, string type, license plate color: "white", "yellow", "blue", "black", "green", "civilAviationBlack"-civil aviation black, "civilAviationGreen"-civil aviation green, "0xff" or "other"-other color. If this node is not returned, it indicates no limit*/
   "pilotSafebelt":"",
/*optional, string type, whether the driver buckled up. If this node is not returned, it indicates no limit*/
   "pilotSunvisor":"",
/*optional, string type, whether the driver's sun visor is pulled down. If this node is not returned, it indicates no limit*/
```

```
   "vicePilotSafebelt":"",
/*optional, string type, whether the front passenger buckled up*/
   "vicePilotSunvisor":"",
/*optional, string type, whether the front passenger's sun visor is pulled down*/
   "uphone":"",
/*optional, string type, whether the person is making a call*/
   "dangmark":"",
/*optional, string type, whether the vehicle is with hazardous material sign*/
   "envprosign":"",
/*optional, string type, whether it is a yellow-label vehicle*/
   "vehicleState":"",
/*optional, string type, license plate status*/
   "pdvs":"",
/*optional, string type, whether the passenger is standing out of sunroof*/
   "vehicleHead":"",
/*optional, string type, license plate recognition direction*/
   "pendant":"",
/*optional, string type, whether there is pendant*/
   "temporaryLicense":"",
/*optional, string type, whether the vehicle is with temporary license plate*/
   "tricycleCanopy":"",
/*optional, string type, whether the tricycle is with canopy*/
   "decoration":"",
/*optional, string type, whether there is ornament*/
   "tissueBox":"",
/*optional, string type, whether there is tissue box*/
   "card":"",
/*optional, string type, whether there are cards*/
   "cardType":"",
/*optional, string type, card type*/
   "copilot":"",
/*optional, string type, whether the front passenger is seated*/
   "frontChild":"",
/*optional, string type, whether the front passenger holds a baby or the child sits in front passenger's seat alone*/
   "muckTruck":"",
/*optional, string type, whether it is a dump truck*/
   "sunroof":"",
/*optional, string type, whether there is sunroof*/
   "luggageRack":"",
/*optional, string type, whether there is roof rack*/
   "vehicleSprayPainted":"",
/*optional, string type, whether there are characters painted on vehicle*/
   "spareTire":"",
/*optional, string type, whether there is spare tire*/
   "coverPlate":"",
/*optional, string type, whether there is cover on dump truck*/
   "label":""
/*optional, string type, whether the vehicle is with label*/
  },
  "twoWheelVehicle":{
/*this node is valid when targetType is "twoWheelVehicle"*/
   "ageGroup":"",
```

```
/*optional, string type, age group. If this node is not returned, it indicates no limit*/
   "gender":"",
/*optional, string type, gender. If this node is not returned, it indicates no limit*/
   "glass":"",
/*optional, string type, whether the person wears glasses. If this node is not returned, it indicates no limit*/
   "bag":"",
/*optional, string type, whether the person is with backpack. If this node is not returned, it indicates no limit*/
   "hat":"",
/*optional, string type, whether the person wears hat. If this node is not returned, it indicates no limit*/
   "mask":"",
/*optional, string type, whether the person wears mask. If this node is not returned, it indicates no limit*/
   "jacketType":"",
/*optional, string type, tops type. If this node is not returned, it indicates no limit*/
   "hairStyle":"",
/*optional, string type, hairstyle. If this node is not returned, it indicates no limit*/
   "jacketColor":"",
/*optional, string type, tops color. If this node is not returned, it indicates no limit*/
   "cyclingType":"",
/*optional, string type, riding type*/
   "cyclingPersonNumber":""
/*optional, string type, number of riders*/
  },
  "threeWheelVehicle":{
/*this node is valid when targetType is "threeWheelVehicle"*/
   "ageGroup":"",
/*optional, string type, age group. If this node is not returned, it indicates no limit*/
   "gender":"",
/*optional, string type, gender. If this node is not returned, it indicates no limit*/
   "glass":"",
/*optional, string type, whether the person wears glasses. If this node is not returned, it indicates no limit*/
   "bag":"",
/*optional, string type, whether the person is with backpack. If this node is not returned, it indicates no limit*/
   "hat":"",
/*optional, string type, whether the person wears hat. If this node is not returned, it indicates no limit*/
   "mask":"",
/*optional, string type, whether the person wears mask. If this node is not returned, it indicates no limit*/
   "jacketType":"",
/*optional, string type, tops type. If this node is not returned, it indicates no limit*/
   "hairStyle":"",
/*optional, string type, hairstyle. If this node is not returned, it indicates no limit*/
   "jacketColor":"",
/*optional, string type, tops color. If this node is not returned, it indicates no limit*/
   "cyclingPersonNumber":""
/*optional, string type, number of riders*/
  }
}
```

16.1.138 JSON_VCASearchExportProgress

VCASearchExportProgress message in JSON format

```
{
  "requestURL":"",
  "statusCode": ,
  "statusString":"",
  "subStatusCode":"",
  "errorCode": ,
  "errorMsg":"",
/*see the description of this node and the above nodes in the message of JSON_ResponseStatus*/
  "progress": ,
/*dep, it is valid when errcode values "1" and errMsg values "ok". Export progress, ranges from 0 to 100, int*/
  "URL": ""
/*dep, it is valid when progress values "100", the URL address of packaged result, string*/
}
```

See Also

JSON_ResponseStatus

16.1.139 JSON_VCASearchExportTaskInfo

VCASearchExportTaskInfo message in JSON format

```
{
  "requestURL":"",
  "statusCode": ,
  "statusString":"",
  "subStatusCode":"",
  "errorCode": ,
  "errorMsg":"",
/*see the description of this node and the above nodes in the message of JSON_ResponseStatus*/
  "taskID":
/*required, string type, task ID*/
}
```

See Also

JSON_ResponseStatus

16.1.140 JSON_IntelligentSearchResult

IntelligentSearchResult message in JSON format

```
{
  "requestURL":"",
/*required, string type, request URL*/
  "statusCode": ,
/*required, int type, status code*/
  "statusString":"",
/*required, string type,status description*/
  "subStatusCode":"",
```

```
/*required, string type, sub status code*/
  "errorCode": ,
/*optional, int type, error code, this node is required when statusCode is not 1 and it corresponds to subStatusCode*/
  "errorMsg":"",
/*optional, string type, error details, this node is required, when statusCode is not 1 and it can be error details about a specific parameter*/
  "responseStatusStrg":"",
/*required, string type, searching status: "OK"-searching completed, "NO MATCH"-no matched results, "MORE"-searching for more results. The maximum length is 32 bytes. This node is valid when errorCode is 1 and errorMsg is "ok"*/
  "numOfMatches": ,
/*required, integer32, number of results returned this time. This node is valid when errorCode is 1 and errorMsg is "ok"*/
  "totalMatches": ,
/*required, integer32, total number of matched results. This node is valid when errorCode is 1 and errorMsg is "ok"*/
  "progress": ,
/*optional, integer32 type, VCA search progress*/
  "targetInfo":[{
/*this node is valid when progress is 100*/
    "captureTime":"",
/*required, string type, capture time in ISO8601 time format*/
    "channelID":"",
/*optional, string type, camera No.*/
    "channelName":"",
/*optioanl, string type, camera name*/
    "streamType":"",
/*optional, string type, streaming type: "realtime,historyvideo,localvideo"*/
    "targetRect":{
/*required, target frame*/
      "height": ,
      "width": ,
      "x": ,
      "y":
    },
    "picUrl":"",
/*optional, string type, large picture URL*/
    "targetType ":"",
/*optional, string type, search object type*/
    "vehicleInfo ":{
/*this node is valid when targetType is "vehicle"*/
      "license":"",
/*optional, string type, license plate number*/
      "plateType":"",
/*optional, string type, license plate type: license plate type: "unknown", "92TypeCivil"-92-style civil vehicle, "arm"-police vehicle, "upDownMilitay"-military vehicle (top-bottom type), "92TypeArm"-92-style police vehicle, "leftRightMilitay"-military vehicle (left-right type), "02TypePersonalized"-02-style customized vehicle, "yellowTwoLine"-yellow two-line rear license plate, "04NewMilitay"-04-style new military vehicle, "embassy"-embassy vehicle, "oneLineArm"-new armed police vehicle (one-line), "twoLineArm"-new armed police vehicle (two-line), "yellow1225FarmVehicle"-yellow agricultural vehicle with 1225 structure, "green1325FarmVehicle"-green agricultural vehicle with 1325 structure, "yellow1325FarmVehicle"-yellow agricultural vehicle with 1325 structure, "motorola"-motorcycle, "coach"-driver-training vehicle, "tempTravl"-vehicle with temporary license plate, "trailer"-trailer, "consulate"-consular vehicle, "hongKongMacao"-vehicle entering and leaving Hong Kong/Macao, "tempEntry"-
```

```
temporary entry vehicle, "civilAviation"-civil aviation license plate, "newEnergy"-new energy license plate*/
    "vehicleColor":"",
/*optional, string type, vehicle color: "unknown", "white", "silver"-silvery, "gray", "black", "red", "deepBlue"-dark blue, "blue", "yellow", "green", "brown", "pink", "purple", "deepGray"-dark gray, "cyan", "orange". Multiple colors should be separated by commas*/
    "vehicleType":"",
/*optional, string type, vehicle type: "largeBus"-large-sized bus, "truck"-truck, "vehicle"-salon car, "van"-minivan, "buggy"-light truck, "pedestrian", "twoWheelVehicle"-two wheeler, "threeWheelVehicle"-tricycle, "SUVMPV"-SUV/MPV, "mediumBus"-middle-sized bus, "unknown"*/
    "vehicleLogo": ,
/*optional, int type, vehicle parent brand*/
    "vehicleSubLogo": ,
/*optional, int type, vehicle sub brand*/
    "vehicleModel": ,
/*optional, int type, vehicle model year*/
    "plateColor":"",
/*optional, string type, license plate color: "white", "yellow", "blue", "black", "green", "civilAviationBlack"-civil aviation black, "civilAviationGreen"-civil aviation green, "0xff" or "other"-other color.*/
    "pilotSafebelt":"",
/*optional, string type, whether the driver buckled up*/
    "pilotSunvisor":"",
/*optional, string type, whether the driver's sun visor is pulled down*/
    "vicePilotSafebelt":"",
/*optional, string type, whether the front passenger buckled up*/
    "vicePilotSunvisor":"",
/*optional, string type, whether the front passenger's sun visor is pulled down*/
    "uphone":"",
/*optional, string type, whether the person is making a call*/
    "region":"",
/*optional, string type, region that the license plate belongs to: "EU"-Europe, "ER"-Russian region, "EUandCIS"-Europe and Russia, "ME"-the Middle East, "All"-all regions, "other"*/
    "country":""
/*optional, string type, country that the license plate belongs to: "EU"-Europe, "ER"-Russian region, "EUandCIS"-Europe and Russia, "ME"-the Middle East, "All"-all regions, "other"*/
   }
  }]
}
```

16.1.141 JSON_WhiteLightAlarm

WhiteLightAlarm message in JSON format

```
{
  "WhiteLightAlarm":{
    "durationTime": ,
/*required, integer type, flashing duration of supplement light, which is between 1 and 60 s*/
    "frequency":"",
/*required, string type, flashing frequency of supplement light: "high"-flashing 0.5s per second, "medium"-flashing 0.8s per 1.6s, "low"-flashing 1s per 2s*/
    "brightness": ,
/*optional, integer type, supplement light brightness, which is between 1 and 100*/
```

```
   "TimeRangeList":[{
/*optional, alarm output schedule list*/
     "week": ,
/*required, integer type, days of the week: 1-Monday, 2-Tuesday, 3-Wednesday, 4-Thursday, 5-Friday,6-Saturday, 7-Sunday*/
     "TimeRange":[{
      "id": ,
/*required, integer type, ID of time period for each day*/
      "beginTime":"",
/*required, string type, start time in ISO8601 format*/
      "endTime":""
/*required, string type, end time in ISO8601 format*/
     }]
   }]
  }
}
```

16.1.142 JSON_WhiteLightAlarmCap

WhiteLightAlarmCap message in JSON format

```
{
  "WhiteLightAlarmCap":{
   "durationTime":{
/*required, integer type, flashing duration of supplement light, which is between 1 and 60 s*/
     "@min": ,
     "@max": ,
     "@def":
   },
   "frequency":{
/*required, string type, flashing frequency of supplement light: "high"-flashing 0.5s per second, "medium"-flashing 0.8s per 1.6s, "low"-flashing 1s per 2s*/
     "@opt":"",
     "@def":""
   },
   "brightness":{
/*optional, integer type, supplement light brightness, which is between 1 and 100*/
     "@min": ,
     "@max": ,
     "@def":
   },
   "TimeRangeCap":{
/*optional, alarm output schedule capability*/
     "week":{
/*required, integer type, days of the week: 1-Monday, 2-Tuesday, 3-Wednesday, 4-Thursday, 5-Friday,6-Saturday, 7-Sunday*/
      "@opt":""
     },
     "id":{
/*required, integer type, ID of time period for each day*/
      "@maxSize":
```

```
    },
    "beginTime":{
/*required, string type, start time in ISO8601 format*/
      "@min":"",
      "@max":""
    },
    "endTime":{
/*required, string type, end time in ISO8601 format*/
      "@min":"",
      "@max":""
    }
   },
   "whiteLightMode":{
/*optional, string type, supplement light mode: "keepOn"-always on, "flashing"-flashing*/
    "@opt":"keepOn,flashing",
    "@def":"keepOn"
   }
  }
}
```

16.1.143 JSON_WorkingStatus

WorkingStatus message in JSON format

```
{
  "WorkingStatus":{
   "devStatus": ,
/*required, integer type, value of device status: 0-normal, 1-CPU usage, higher than 85%, 2-hardware error (e.g., serial port exception)*/
   "ChanStatus":[{
    "chanNo": ,
/*required, integer type, channel No., which starts from 1*/
    "enable": ,
/*integer type, it is valid for analog channel only, 0-disable, 1-enable*/
    "online": ,
/*required, integer type, online status: 0-offline, 1-online*/
    "record": ,
/*required, whether the device is recording, 0-no, 1-yes*/
    "recordStatus ": ,
/*integer type, recording status: 0-recording, 1-recording exception (HDD exception), 2-recording exception (network camera offline), 3-recording exception (other reason)*/
    "signal": ,
/*required, integer type, signal status: 0-normal, 1-signal loss*/
    "linkNum": ,
/*required, integer type, number of software clients connected to this channel*/
    "bitRate":
/*required, integer type, channel bit rate, unit: Kpbs*/
   }],
   "HDStatus":[{
    "hdNo": ,
/*required, integer type, HDD No., which starts from 1*/
```

```
     "status": ,
/*required, integer type, HDD status: 0-activate, 1-sleep, 2-exception, 3-sleepy HDD error, 4-unformated, 5-disconnected (for network HDD), 6-formatting*/
     "volume": ,
/*required, integer type, HDD capacity, unit: MB*/
     "freeSpace":
/*required, integer type, free space, unit: MD*/
   }],
   "IOStatus":{
     "IOInTrig":[…,…,…,…],
/*integer type, triggered alarm input No., two places and below: analog alarm input No., two places and above: digital alarm input No.; and the low 2-bit is the alarm input No., the 3-bit or above is the digital channel No., e.g., 3201-alarm input No.1 of digital channel No.32*/
     "IOOutTrig":[…,…,…,…]
/*integer type, triggered alarm output No., two places and below: analog alarm output No., two places and above: digital alarm output No.; and the lower 2 bits are the alarm output No., the 3-bit or above is the digital channel No., e.g., 3201-alarm output No.1 of digital channel No.32*/
   }
  }
}
```

16.1.144 JSON_XX

XX message in JSON format

```
{
  "XX":{
/*required, event/alarm configuration information*/
    "enabled": "",
/*required, enable or not, boolean*/
    "zoneName": ""
/*optional, zone name, it is valid only when event type is zone, string*/
  }
}
```

Remarks

The XX in the parameter "**XX**" corresponds to detailed event type. E.g., if the event type is humanRecognition, then the returned node is "HumanRecognition".

16.1.145 JSON_XXCap

XXCap message in JSON format

```
{
  "XXCap":{
/*required, event configuration information*/
    "enabled": "true,false",
/*required, enable or not, boolean*/
```

```
   "zoneName":{
/*optional, zone name, it is valid only when event type is zone, string*/
     "@min": 1,
     "@max": 64,
   },
  }
}
```

Remarks

The XX in the parameter "**XXCap**" corresponds to detailed event type. E.g., if the event type is humanRecognition, then the returned node is "HumanRecognitionCap".

16.2 XML Messages

16.2.1 XML_accessDevice

accessDevice message in XML format

```
<accessDevice version="2.0"  xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:integer--></id>
 <MACAddress><!--opt, xs:string--></MACAddress>
 <ipV4Address><!--dep, xs:string--></ipV4Address>
 <accessTime><!--req, xs:time, ISO8601 data--></accessTime>
</accessDevice>
```

16.2.2 XML_accessDeviceList

accessDeviceList message in XML format

```
<accessDeviceList version="2.0"  xmlns="http://www.isapi.org/ver20/XMLSchema">
 <accessDevice/><!--see details in the message of XML_accessDevice-->
</accessDeviceList>
```

See Also

XML_accessDevice

16.2.3 XML_accessPoint

accessPoint message in XML format

```
<accessPoint version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:integer--></id>
 <networkMode>
  <!--opt, xs:string, "infrastructure, adhoc"-->
 </networkMode>
```

```
 <channel><!--opt, xs:string, "1 to 14, auto"--></channel>
 <ssid><!--req, xs:string--></ssid>
 <speed><!--opt, xs:integer, unit: Mbps--></speed>
 <signalStrength><!--opt, xs:integer, signal strength, which is between 0 and 100--></signalStrength>
 <securityMode>
  <!--req, xs:string, "disable,WEP,WPA-personal,WPA2-personal,WPA-RADIUS,WPA-enterprise,WPA2-enterprise"-->
 </securityMode>
 <connected><!--opt, xs:boolean--></connected>
 <connecting><!--opt, xs:boolean, whether the device is connecting to the Wi-Fi--></connecting>
</accessPoint>
```

16.2.4 XML_accessPointList

accessPointList message in XML format

```
<accessPointList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <accessPoint/><!--see details in the message of XML_accessPoint>
</accessPointList>
```

See Also

XML_accessPoint

16.2.5 XML_ActivateInfo

ActivateInfo message in XML format.

```
<ActivateInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <password><!--req, xs:string--></password>
</ActivateInfo>
```

16.2.6 XML_AdminAccessProtocol

AdminAccessProtocol message in XML format

```
<AdminAccessProtocol version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--required, xs:string, ID--></id>
 <enabled><!--optional, xs:boolean, "true,false"--></enabled>
 <protocol><!--required, xs:string, protocol name:
"HTTP,HTTPS,RTSP,DEV_MANAGE,IOT,WebSocket,WebSocketS,SDK_OVER_TLS,TLS1_1Enable,TLS1_2Enable,SRTP"--></
protocol>
 <portNo><!--required, xs:integer--></portNo>
 <redirectToHttps>
  <!--opt, xs: boolean, whether to automatically go to HTTPS when connecting to HTTP port and HTTPS is enabled-->
 </redirectToHttps>
 <streamOverTls>
  <!--opt, xs: boolean, whether to enable TLS link encryption when the streaming mode is SDK_OVER_TLS, true-yes,
false-no-->
```

```
  </streamOverTls>
</AdminAccessProtocol>
```

Remarks

"TLS1_1Enable" and "TLS1_2Enable" are not available for port configuration.

16.2.7 XML_AdminAccessProtocolList

AdminAccessProtocolList message in XML format

```
<AdminAccessProtocolList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <AdminAccessProtocol/><!--see details in the message of XML_AdminAccessProtocol-->
</AdminAccessProtocolList>
```

See Also

XML_AdminAccessProtocol

16.2.8 XML_AlgorithmsVersion

AlgorithmsVersion message in XML format

```
<AlgorithmsVersion version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <AlgorithmsVersionInfoList><!--opt-->
    <AlgorithmsVersionInfo>
      <majorVersion><!--req,xs:integer, major version No.--></majorVersion>
      <minorVersion><!--req,xs: integer, minor version No.--></minorVersion>
      <revisionNumber><!--req,xs: integer, revision No.--></revisionNumber>
      <buildNumber><!--req,xs: integer, build No.--></buildNumber>
      <versionYear><!--req,xs: integer, date: year--></versionYear>
      <versionMonth><!--req,xs: integer, date: month--></versionMonth>
      <versionDay><!--req,xs: integer, date: day--></versionDay>
      <name>
        <!--req, xs:string, algorithm library name, "faceProperties"-face attributes, "behaviorAnalysis"-behavior analysis,
"humanAttribute"-human body attributes, "faceSnap"-face capture, "faceRecognition", "faceContrast"-face picture
comparison, "peopleCounting", "faceScore"-face picture score, "personQueueDetection"-queue management,
"depthMap"-->
      <name>
    </AlgorithmsVersionInfo>
  </AlgorithmsVersionInfoList>
</AlgorithmsVersion>
```

Example

AlgorithmsVersion Message Example

```
<AlgorithmsVersion version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <AlgorithmsVersionInfoList>
    <AlgorithmsVersionInfo>
      <majorVersion>1</majorVersion>
```

```
    <minorVersion>0</minorVersion>
    <revisionNumber>1</revisionNumber>
    <versionYear>17</versionYear>
    <versionMonth>12</versionMonth>
    <versionDay>12</versionDay>
    <name>faceSnap</name>
   </AlgorithmsVersionInfo>
   <AlgorithmsVersionInfo>
    <majorVersion>1</majorVersion>
    <minorVersion>0</minorVersion>
    <revisionNumber>0</revisionNumber>
    <versionYear>17</versionYear>
    <versionMonth>10</versionMonth>
    <versionDay>31</versionDay>
    <name>faceScore</name>
   </AlgorithmsVersionInfo>
   <AlgorithmsVersionInfo>
    <majorVersion>3</majorVersion>
    <minorVersion>4</minorVersion>
    <revisionNumber>1</revisionNumber>
    <versionYear>17</versionYear>
    <versionMonth>12</versionMonth>
    <versionDay>25</versionDay>
    <name>faceContrast</name>
   </AlgorithmsVersionInfo>
  </AlgorithmsVersionInfoList>
</AlgorithmsVersion>
```

16.2.9 XML_AudioCap

AudioCap capability message in XML format

```
<AudioCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <audioInputNums><!--req, xs:integer--></audioInputNums>
  <audioOutputNums><!--req, xs:integer--></audioOutputNums>
</AudioCap>
```

16.2.10 XML_AudioChannel

AudioChannel message in XML format

```
<AudioChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:string--></id>
  <enabled><!--req, xs:boolean--></enabled>
</AudioChannel>
```

16.2.11 XML_AudioChannelList

AudioChannelList message in XML format

```
<AudioChannelList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <AudioChannel/><!--opt, see details in the message of XML_AudioChannel-->
</AudioChannelList>
```

See Also

XML_AudioChannel

16.2.12 XML_AudioDscriptor

AudioDscriptor message in XML format

```
<AudioDscriptor version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <audioCompressionType>
  <!--opt, xs: string,audio encoding type: "G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.
729b,PCM,MP3,AC3,AAC,ADPCM,MP2L2"-->
 </audioCompressionType>
 <audioSamplingRate><!--opt, xs: float, kHz--></audioSamplingRate>
</AudioDscriptor>
```

16.2.13 XML_AudioIn

AudioIn message in XML format

```
<AudioIn version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs:string-->
 </id>
 <MixAudioIn>
  <!--req, ro-->
  <enabled>
   <!--req, xs:Boolean-->
  </enabled>
  <audioInputType>
   <!--opt, xs:string-->
  </audioInputType>
  <highPassFilter>
   <!--req, xs:integer, unit: Hz-->
  </highPassFilter>
  <noiseMargin>
   <!--req, xs:integer, unit: dB-->
  </noiseMargin>
  <AutoLimitWave>
   <!--dep-->
```

```
    <FBCEnable>
      <!--req, xs:Boolean-->
    </FBCEnable>
    <mode>
      <!--req, xs:string-->
    </mode>
    <filterQValue>
      <!--req, xs:string-->
    </filterQValue>
    <staticFilterNum>
      <!--req, xs:integer-->
    </staticFilterNum>
   </AutoLimitWave>
  </MixAudioIn>
  <AudioInVolumelist>
   <AudioInVlome>
    <type>
     <!--req, xs:string, "audioInput,audioEncode"-->
    </type>
    <volume>
     <!--req, xs:integer-->
    </volume>
   </AudioInVlome>
  </AudioInVolumelist>
</AudioIn>
```

16.2.14 XML_AudioInCap

AudioInCap capability message in XML format

```
<AudioInCap version="2.0" xmlns="http://wwwisapiorg/ver20/XMLSchema">
 <id>
  <!--req, xs:string-->
 </id>
 <MixAudioIn>
  <!--req, ro-->
  <enabled opt="true,false">
   <!--req, xs:Boolean-->
  </enabled>
  <audioInputType opt="micIn, lineIn">
   <!--opt, xs:string-->
  </audioInputType>
  <highPassFilter
opt="0,8,16,24,31,39,47,55,63,71,79,87,94,102,110,118,126,134,142,150,157,165,173,181,189,197,205,213,220,228,
236,244,252,260,268,276,283,291,299,307,315,323,331,339,346,354,362,370,378,386,394,402,409,417,425,433,441,
449,457,465,472,480,488,496,504,512,520,528,535,543,551,559,567,575,583,591,598,606,614,622,630,638,646,654,
661,669,677,685,693,701,709,717,724,732,740,748,756,764,772,780,787,795,803,811,819,827,835,843,850,858,866,
874,882,890,898,906,913,921,929,937,945,953,961,969,976,984,992,1000" default="30">
   <!--req, xs:integer, unit: Hz-->
  </highPassFilter>
  <noiseMargin
```

```
opt="1000,660,657,653,650,647,643,640,637,633,-630,627,623,620,617,613,610,607,603,600,597,593,590,587,583,5
80,577,573,570,567,563,560,557,553,550,547,543,540,537,533,530,527,523,520,517,513,510,507,503,500,497,493,4
90,487,483,480,477,473,470,467,463,460,457,453,450,447,443,440,437,433,430,427,423,420,417,413,410,407,403,4
00,397,393,390,387,383,380,377,373,370,367,363,360,357,353,350,347,343,340,337,333,330,327,323,320,317,313,3
10,307,303,300,297,293,290,287,283,280,277,273,270,267,263,260,257,253,250,247,243,240" default="30">
      <!--req, xs:integer, unit: dB-->
    </noiseMargin>
    <AutoLimitWave>
      <!--dep, audioInputType-->
      <FBCEnable opt="true,false">
        <!--req, xs:Boolean-->
      </FBCEnable>
      <mode opt="fast,general,slow" default="general">
        <!--req, xs:string-->
      </mode>
      <filterQValue opt="40,10" default="40">
        <!--req, xs:integer-->
      </filterQValue>
      <staticFilterNum min="0" max="12" default="0">
        <!--req, xs:integer-->
      </staticFilterNum>
    </AutoLimitWave>
  </MixAudioIn>
  <AudioInVolumelist>
    <AudioInVlome>
      <type>
        <!--req, xs:string, "audioOutput,audioEncode"-->
      </type>
      <volume min="0" max="127" defalut="50">
        <!--req, xs:integer-->
      </volume>
    </AudioInVlome>
  </AudioInVolumelist>
</AudioInCap>
```

16.2.15 XML_AudioOut

AudioOut message in XML format

```
<AudioOut version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:string--></id>
  <MixAudioOut>
    <enabled><!--req, xs:Boolean--></enabled>
    <modulatorEnbale><!--req, xs:Boolean--></modulatorEnbale>
    <postFilter><!--req, xs:Boolean--></postFilter>
    <limitPressure><!--req, xs:Boolean--></limitPressure>
    <modulatorValue><!--req, xs:integer--></modulatorValue>
    <triggerTime><!--req, xs:integer, unit: ms--></triggerTime>
    <freeTime><!--req, xs:integer, unit: ms--></freeTime>
    <compressThreshold><!--req, xs:integer--></compressThreshold>
    <compressMode><!--req, xs:string--></compressMode>
```

```
   <compressRate><!--req, xs:integer--></compressRate>
   <recoveryGain><!--req, xs:integer--></recoveryGain>
   <outputGain><!--req, xs:integer --></outputGain>
  </MixAudioOut>
  <AudioOutVolumelist>
   <AudioOutVlome>
    <type><!--req, xs:string, "audioOutput,audioDecode"--></type>
    <volume><!--req, xs:integer--></volume>
   </AudioOutVlome>
  </AudioOutVolumelist>
</AudioOut>
```

16.2.16 XML_AudioOutCap

AudioOutCap capability message in XML format

```
<AudioOutCap xmlns="http://wwwisapiorg/ver20/XMLSchema" version="2.0" >
 <id>
  <!--req, xs:string-->
 </id>
 <MixAudioOut>
  <enabled opt="true,false" >
   <!--req, xs:Boolean-->
  </enabled>
  <modulatorEnbale opt="true,false" >
   <!--req, xs:Boolean-->
  </modulatorEnbale>
  <postFilter opt="false,true" default="true" >
   <!--req, xs:Boolean-->
  </postFilter>
  <limitPressure opt="false,true" default="true" >
   <!--req, xs:Boolean-->
  </limitPressure>
  <modulatorValue min="0" max="127" default="10" >
   <!--req, xs:integer-->
  </modulatorValue>
  <triggerTime
opt="1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,2,2,2,2,2,2,2,2,2,2,2,2,3,3,3,3,3,3,3,3,4,4,4,4,4,4,5,5,5,5,6,6,6,7,7,7,8,8,8,9,9,10,
10,11,11,12,12,13,14,15,15,16,17,18,19,20,21,23,24,25,27,29,30,32,34,36,38,41,43,46,49,52,55,59,63,67,72,76,82,87,
93,10,17,114,123,132,141,152,163,175,188,23,218,235,254,274,296,320,347,375,47,441,479,520,566,616,671,731,79
8,872" default="4" >
   <!--req, xs:integer, unit: ms-->
  </triggerTime>
  <freeTime
opt="98,11,15,18,112,116,120,124,129,133,138,143,148,154,159,165,171,177,184,191,198,26,213,222,230,239,248,2
58,268,278,289,31,313,325,338,352,366,381,397,413,430,448,467,486,57,528,551,575,60,626,653,682,712,743,776,8
11,848,887,927,970,1014,1062,1111,1163,1218,1276,1337,142,1470,1541,1617,1697,1781,1870,1964,2063,2168,227
9,2397,2521,2653,2792,2940,3097,3263,3439,3626,3825,4035,4259,4497,4750,5020,536,5611,5936,6282,6651,7045,
7465,7914,8393,895,9452,10037,10664,11335,12053,12824,13650,14537,15489,16511,17610,18793,20065,21435,22
911,2452,26219,28073,30075,32239,34580,37114,39859,42834,46062" default="42" >
   <!--req, xs:integer, unit: ms-->
```

```
   </freeTime>
   <compressThreshold opt="1,2,4,8" defalut="2" >
    <!--req, xs:integer-->
   </compressThreshold>
   <compressMode opt="soft,hard" default="soft" >
    <!--req, xs:string-->
   </compressMode>
   <compressRate min="0" max="127" >
    <!--req, xs:integer-->
   </compressRate>
   <recoveryGain opt="1,2,4,8" defalut="2" >
    <!--req, xs:integer-->
   </recoveryGain>
   <outputGain
opt="100,421,361,325,30,281,265,252,240,230,221,212,25,198,192,186,180,175,170,165,161,156,152,148,145,141,1
38,134,131,128,125,122,120,117,114,112,110,17,15,13,10,98,96,94,92,90,88,86,85,83,81,79,78,76,74,73,71,70,68,67,
65,64,62,61,60,58,57,56,54,53,52,51,49,48,47,46,45,43,42,41,40,39,38,37,36,35,34,33,32,31,30,29,28,27,26,25,24,23,
23,22,21,20,19,18,17,17,16,15,14,13,12,12,11,10,9,9,8,7,6,6,5,4,3,3,2,1,1,0" >
    <!--req, xs:integer-->
   </outputGain>
  </MixAudioOut>
  <AudioOutVolumelist>
   <AudioOutVlome>
    <type>
     <!--req, xs:string, "audioOutput,audioEncode"-->
    </type>
    <volume min="0" max="127" defalut="50" >
     <!--req, xs:integer-->
    </volume>
   </AudioOutVlome>
  </AudioOutVolumelist>
</AudioOutCap>
```

16.2.17 XML_BadSectorsTest

BadSectorsTest message in XML format

```
<BadSectorsTest version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <testType><!--opt, xs: string, "full,metadata"--></testType>
</BadSectorsTest>
```

16.2.18 XML_BadSectorsTestStatus

BadSectorsTestStatus message in XML format

```
<BadSectorsTestStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <diskID><!--req, xs: string--></diskID>
 <MaskAreaList><!--req-->
  <MaskArea><!--list-->
```

```
    <maskAreaID><!--req, xs: integer--></maskAreaID>
    <startLBA><!--opt,xs:integer--></startLBA>
    <endLBA><!--opt, xs: integer--></endLBA>
   </MaskArea>
  </MaskAreaList>
  <BlockAreaTestStatus><!--opt-->
   <testType><!--opt, xs: string, "full,metadata"--></testType>
   <testStatus><!--req, xs: string, "none,running,pause,complete,exceed,abort"--></testStatus>
   <fistBlock><!--opt, xs: integer--></fistBlock>
   <lastBlock><!--opt, xs: integer--></lastBlock>
   <currentBlock><!--opt, xs: integer--></currentBlock>
   <BadSectorsList><!--opt-->
    <BadSectors><!--list-->
     <id><!--req, xs: integer--></id>
     <block><!--opt, xs: integer--></block>
    </BadSectors>
   </BadSectorsList>
  </BlockAreaTestStatus>
</BadSectorsTestStatus>
```

16.2.19 XML_BatteryPowerOverlay

BatteryPowerOverlay message in XML format

```
<BatteryPowerOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
 <positionX><!--req, xs:integer, X-coordinate--></positionX>
 <positionY><!--req, xs:integer, Y-coordinate--></positionY>
</BatteryPowerOverlay>
```

16.2.20 XML_BLC

BLC message in XML format

```
<BLC version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <enabled/><!--req, xs: boolean-->
 <BLCMode/><!--opt, xs: string, BLC mode: "UP, DOWN, LEFT, RIGHT, CENTER, MULTI-AREA, Region"-->
 <BLCLevel><!--opt, xs: integer--></BLCLevel>
 <BLCRegionList><!--dep-->
  <BLCRegion>
   <id><!--req, xs: integer--></id>
   <RegionCoordinatesList/>
  </BLCRegion>
 </BLCRegionList>
</BLC>
```

16.2.21 XML_BluetoothCap

BluetoothCap capability message in XML format

```
<BluetoothCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <isSupportIbeacon>
  <!--opt, xs:boolean, whether to support configuring ibeacon bluetooth parameters-->
 </isSupportIbeacon>
</BluetoothCap>
```

16.2.22 XML_BluetoothStatus

BluetoothStatus message in XML format

```
<BluetoothStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <connectStatus><!--opt, xs:boolean--></connectStatus>
 <connectDeviceName><!--opt, xs:string--></connectDeviceName>
</BluetoothStatus>
```

16.2.23 XML_Bond

Bond message in XML format

```
<Bond version="2.0" xmlns="urn:selfextension:ISAPIext-ver10-xsd">
 <id>
  <!--req, xs:integer-->
 </id>
 <enabled>
  <!--req, xs:boolean-->
 </enabled>
 <workMode>
  <!--req, xs:string, working mode: "balance-rr"-round-robin, "active-backup"-->
 </workMode>
 <primaryIf>
  <!--req, xs:string, default route ID-->
 </primaryIf>
 <slaveIfList>
  <!--req-->
  <ethernetIfId>
   <!--req, xs:string, ID-->
  </ethernetIfId>
 </slaveIfList>
 <IPAddress>
  <ipVersion>
   <!--req, xs:string, "v4,v6,dual"-->
  </ipVersion>
  <addressingType>
   <!--req, xs:string, "static,dynamic,apipa"-->
```

```
  </addressingType>
  <ipAddress>
   <!--dep, xs:string-->
  </ipAddress>
  <subnetMask>
   <!--dep, xs:string, subnet mask for IPv4 address-->
  </subnetMask>
  <ipv6Address>
   <!--dep, xs:string-->
  </ipv6Address>
  <bitMask>
   <!--dep, xs:integer, bitmask for IPv6 address-->
  </bitMask>
  <DefaultGateway>
   <!--dep-->
   <ipAddress>
    <!--dep, xs:string-->
   </ipAddress>
   <ipv6Address>
    <!--dep, xs:string-->
   </ipv6Address>
  </DefaultGateway>
  <PrimaryDNS>
   <!--dep-->
   <ipAddress>
    <!--dep, xs:string-->
   </ipAddress>
   <ipv6Address>
    <!--dep, xs:string-->
   </ipv6Address>
  </PrimaryDNS>
  <SecondaryDNS>
   <!--dep-->
   <ipAddress>
    <!--dep, xs:string-->
   </ipAddress>
   <ipv6Address>
    <!--dep, xs:string-->
   </ipv6Address>
  </SecondaryDNS>
 </IPAddress>
</Bond>
```

16.2.24 XML_BondList

BondList message in XML format

```
<BondList version="2.0" xmlns="urn:selfextension:ISAPIext-ver10-xsd">
 <Bond/><!--see details in the message of XML_Bond-->
</BondList>
```

See Also

XML_Bond

16.2.25 XML_BurningPreventionCap

BurningPreventionCap message in XML format

```
<BurningPreventionCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled opt="rue,false"><!--req, xs:boolean--></enabled>
 <mode opt="manual,automatic"><!--opt, xs:string, mode: manual, automatic--></mode>
 <closedDuration min="5" max="60" default="10">
  <!--opt, xs:integer, closed status duration, unit: second-->
 </closedDuration>
 <shutterStatus opt="closed,open"><!--opt, xs:string, shutter status: closed, open--></shutterStatus>
 <protectionMode opt="lensMovement,shutterClose">
  <!--opt, xs:string, protection mode: lensMovement-lens movement, shutterClose-close shutter-->
 </protectionMode>
 <burningRecoveryEnabled opt="true,false">
  <!--opt, xs:boolean, enable burning recovery or not-->
 </burningRecoveryEnabled>
 <movementDuration min="" max="" default="">
  <!-- opt, xs:integer, duration of lens movement for burning protection, unit: minute-->
 </movementDuration>
</ BurningPreventionCap>
```

Remarks

- When **protectionMode** is "lensMovement", the node **movementDuration** is valid.
- When **protectionMode** is "shutterClose", the node **closedDuration**, **shutterStatus**, and **burningRecoveryEnabled** are valid.
- When **mode** is "automatic", the shutter is open, and cannot be configured.

16.2.26 XML_Cap_accessDeviceList

accessDeviceList capability message in XML format

```
<accessDeviceList version="2.0"  xmlns="http://www.isapi.org/ver20/XMLSchema">
 <accessDevice size="4">
  <id><!--req, xs:integer--></id>
  <MACAddress><!--opt, xs:string--></MACAddress>
  <ipV4Address><!--opt, xs:string--></ipV4Address>
  <accessTime><!--req, xs:time, ISO8601 data--></accessTime>
 </accessDevice>
</accessDeviceList>
```

16.2.27 XML_Cap_AcsUpdate

AcsUpdate capability message in XML format

```
<AcsUpdate version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <type
opt="cardReader,FPModule,securityModule,extendModule,channelController,IRModule,lampModule,elevatorControll
er,FPAlgorithmProgram,uboot,keypad,wirelessRecv,wiredZone">
    <!--opt, upgrading type: "cardReader"-card reader, "FPModule"-fingerprint module, "securityModule"-secure door
control unit, "extendModule"-(IO) extension module, "channelController"-lane controller, "IRModule"-IR module,
"lampModule"-indicator module, "elevatorController"-slave elevator controller, "FPAlgorithmProgram"-fingerprint
algorithm program of the card reader, "uboot", "keypad", "wirelessRecv"-wireless receiving module, "wiredZone"-
wired zone module-->
  </type>
  <cardReaderNo min="" max="">
    <!--opt, range of No. of the card reader, this node is valid only when <type> contains "cardReader"-->
  </cardReaderNo>
  <FPModuleNo min="" max="">
    <!--opt, range of No. of the fingerprint module, this node is valid only when <type> contains "FPModule"-->
  </FPModuleNo>
  <securityModuleNo min="" max="">
    <!--opt, range of No. of the secure door control module, this node is valid only when <type> contains
"securityModule"-->
  </securityModuleNo>
  <extendModuleNo min="" max="">
    <!--opt, range of No. of the (IO) extension module, this node is valid only when <type> contains "extendModule"-->
  </extendModuleNo>
  <channelControllerNo min="" max="">
    <!--opt, range of No. of the lane controller, this node is valid only when <type> contains "channelController"-->
  </channelControllerNo>
  <IRModuleNo min="" max="">
    <!--opt, range of No. of the IR module, this node is valid only when <type> contains "IRModule"-->
  </IRModuleNo>
  <lampModuleNo min="" max="">
    <!--opt, range of No. of the indicator module, this node is valid only when <type> contains "lampModule"-->
  </lampModuleNo>
  <elevatorControllerNo min="" max="">
    <!--opt,range of No. of the slave elevator controller, this node is valid only when <type> contains
"elevatorController"-->
  </elevatorControllerNo>
  <FPAlgorithmProgramNo min="" max="">
    <!--opt, range of No. of the fingerprint algorithm program of the card reader, this node is valid only when <type>
contains "FPAlgorithmProgram"-->
  </FPAlgorithmProgramNo>
  <keypadAddress opt="1,3,5">
    <!--opt, range of keypad module address, this node is valid when <type> contains "keypad"-->
  </keypadAddress>
  <wirelessRecvAddress opt="1,3,5">
    <!--opt, range of wireless receiving module address, this node is valid when <type> contains "wirelessRecv"-->
  </wirelessRecvAddress>
  <wiredZoneAddress opt="1,3,5">
```

```
   <!--opt, range of wired zone module address, this node is valid when <type> contains "wiredZone"-->
  </wiredZoneAddress>
</AcsUpdate>
```

16.2.28 XML_Cap_AdminAccessProtocolList

AdminAccessProtocol capability message in XML format

```
<AdminAccessProtocolList version="1.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <AdminAccessProtocol><!--multiple <AdminAccessProtocol> nodes are allowed-->
    <id><!--req, xs: string, ID--></id>
    <enabled opt="true,false"><!--opt, xs: boolean--></enabled>
    <protocol opt="HTTP,HTTPS,SDK,RTSP,DEV_MANAGE,WebSocket,WebSocketS,SDK_OVER_TLS,SRTP">
      <!--req, xs: string-->
    </protocol>
    <portNo min="2000" max="65535" default="8443"><!--req, xs:integer --></portNo>
    <redirectToHttps opt="true,false">
      <!--opt, xs: boolean, whether to automatically go to HTTPS when connecting to HTTP port and HTTPS is enabled-->
    </redirectToHttps>
    <streamOverTls opt="true,false">
      <!--opt, xs: boolean, whether to enable TLS link encryption when the streaming mode is SDK_OVER_TLS, true-yes,
false-no-->
    </streamOverTls>
  </AdminAccessProtocol>
  <TLS1_0Enable opt="true,false">
    <!--dep, xs: boolean, whether to enable TLS version 1.0, it is valid when protocol is "HTTPS", "true"-yes, "false"-no-->
  </TLS1_0Enable>
  <TLS1_1Enable opt="true,false">
    <!--dep, xs: boolean, whether to enable TLS version 1.1, it is valid when protocol is "HTTPS", "true"-yes, "false"-no-->
  </TLS1_1Enable>
  <TLS1_2Enable opt="true,false">
    <!--dep, xs: boolean, whether to enable TLS version 1.2, it is valid when protocol is "HTTPS", "true"-yes, "false"-no-->
  </TLS1_2Enable>
</AdminAccessProtocolList>
```

16.2.29 XML_Cap_BatteryPowerOverlay

BatteryPowerOverlay capability message in XML format

```
<BatteryPowerOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled>
    <!--req, xs:boolean-->
  </enabled>
  <positionX>
    <!--req, xs:integer, X-coordinate-->
  </positionX>
  <positionY>
    <!--req, xs:integer, Y-coordinate-->
```

```
  </positionY>
</BatteryPowerOverlay>
```

16.2.30 XML_Cap_Color

Color capability message in XML format

```
<?xml version="1.0" encoding="utf-8"?>
<Color version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <brightnessLevel min="" max=""><!--opt,xs:integer, brightness--></brightnessLevel>
  <contrastLevel min="" max=""><!--opt,xs:integer, contrast--></contrastLevel>
  <saturationLevel min="" max=""><!--opt,xs:integer, saturation--></saturationLevel>
  <hueLevel min="" max=""><!--opt, xs:integer, hue--></hueLevel>
  <grayScale><!--opt, gray scale-->
    <grayScaleMode><!--opt,xs:string, gray scale mode: "indoor,outdoor"--></grayScaleMode>
  </grayScale>
  <nightMode opt="true,false">
    <!--opt, xs:boolean, enable night mode, when its value is "true", the saturation can be adjusted, otherwise, the
saturation cannot be adjusted-->
  </nightMode>
</Color>
```

16.2.31 XML_Cap_DatetimeOverlay

DatetimeOverlay capability message in XML format

```
<DateTimeOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled>
    <!--req, xs:boolean, whether to enable date and time overlay-->
  </enabled>
  <positionX min="0" max="1000">
    <!--req, xs:integer, X-coordinate-->
  </positionX>
  <positionY min="0" max="1000">
    <!--req, xs:integer, Y-coordinate-->
  </positionY>
  <dateStyle>
    <!--opt, xs:string, date format: "YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY, CHR-YYYY-MM-DD, CHR-MM-DD-YYYY,
CHR-DD-MM-YYYY"-->
  </dateStyle>
  <timeStyle>
    <!--opt, xs:string, "12hour, 24hour"-->
  </timeStyle>
  <displayWeek>
    <!--opt, xs:boolean, whether to display week information-->
  </displayWeek>
  <displayMilliSecond>
    <!--opt, xs:boolean, whether to display millisecond-->
```

```
  </displayMilliSecond>
</DateTimeOverlay>
```

16.2.32 XML_Cap_DDNS

DDNS capability message in XML format

```
<DDNS version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs: string-->
 </id>
 <enabled>
  <!--req, xs:boolean, "true,false"-->
 </enabled>
 <ethernetIfId opt="1,2,3…">
  <!--opt, xs:string, ID-->
 </ethernetIfId>
 <provider opt="IPServer,DynDNS,PeanutHall,NO-IP, HiDDNS">
  <!--req, xs:string-->
 </provider>
 <serverAddress>
  <addressingFormatType opt="ipaddress,hostname">
   <!--req, xs:string-->
  </addressingFormatType>
  <hostname min="0" max="260">
   <!--dep, xs:string-->
  </hostName>
  <ipAddress min="0" max="64">
   <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address min="0" max="64">
   <!--dep, xs:string-->
  </ipv6Address>
 </serverAddress>
 <portNo min="0" max="65535">
  <!--opt, xs:integer-->
 </portNo>
 <deviceDomainName min="0" max="64">
  <!--dep, xs:string-->
 </deviceDomainName>
 <username min="0" max="32">
  <!--dep, xs:string-->
 </userName>
 <password min="0" max="16">
  <!--wo, dep, xs:string-->
 </password>
</DDNS>
```

16.2.33 XML_Cap_DeviceInfo

DeviceInfo capability message in XML format

```
<DeviceInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <deviceName min="" max="">
  <!--req, xs:string, device name-->
 </deviceName>
 <languageType opt="chinese,english,spanish,portuguese,italian,french,russian,german,polish"/><!--opt, xs:string-->
 <deviceID min="0" max="128">
  <!--ro, req, xs:string, uuid-->
 </deviceID>
 <deviceDescription min="0" max="16">
  <!--opt, xs:string-->
 </deviceDescription>
 <deviceLocation opt="STD-CGI, hangzhou">
  <!--opt, xs:string-->
 </deviceLocation>
 <systemContact opt="STD-CGI, Hikvision.China">
  <!--opt, req, xs:string-->
 </systemContact>
 <model min="0" max="64">
  <!--ro, req, xs:string-->
 </model>
 <serialNumber min="0" max="48">
  <!--ro, req, xs:string-->
 </serialNumber>
 <macAddress min="0" max="64">
  <!--ro, req, xs:string-->
 </macAddress>
 <firmwareVersion min="0" max="64">
  <!--ro, req, xs:string-->
 </firmwareVersion>
 <firmwareReleasedDate min="0" max="64">
  <!--ro, opt, xs:string-->
 </firmwareReleasedDate>
 <bootVersion min="0" max="16">
  <!--ro, opt, xs:string-->
 </bootVersion>
 <bootReleasedDate min="0" max="16">
  <!--ro, opt, xs:string-->
 </bootReleasedDate>
 <hardwareVersion min="0" max="16">
  <!--ro, opt, xs:string-->
 </hardwareVersion>
 <encoderVersion min="0" max="64">
  <!--ro, opt, xs:string-->
 </encoderVersion>
 <encoderReleasedDate min="0" max="64">
  <!--ro, opt, xs:stirng-->
 </encoderReleasedDate>
```

```
<decoderVersion min="0" max="64">
  <!--ro, opt, xs:string-->
 </decoderVersion>
 <decoderReleasedDate min="0" max="64">
  <!--ro, opt, xs:stirng-->
 </decoderReleasedDate>
 <deviceType opt="IPCamera, IPDome, DVR, HybirdNVR, NVR, DVS, IPZoom">
  <!--ro, req, xs:string-->
 </deviceType>
 <telecontrolID min="1" max="255">
  <!--opt, xs:integer, "1-255"-->
 </telecontrolID>
 <supportBeep>
  <!--opt, xs:boolean: "true,false"-->
 </supportBeep>
 <firmwareVersionInfo>
  <!--ro, opt, xs:stirng-->
 </firmwareVersionInfo>
 <subChannelEnabled>
  <!--opt, xs:boolean: "true,false"-->
 </subChannelEnabled>
 <thrChannelEnabled>
  <!--opt, xs:boolean: "true,false"-->
 </thrChannelEnabled>
 <actualFloorNum>
  <!--req, xs:integer, "1-128"-->
 </actualFloorNum>
 <radarVersion>
  <!--opt, xs:string, radar version-->
 </radarVersion>
 <powerOnMode opt="button,adapter" def="button">
  <!--optional, xs:string, device startup mode: "button"-press button to power on (default), "adapter"-connect
adapter to power on-->
 </powerOnMode>
</DeviceInfo>
```

16.2.34 XML_Cap_DefaultParam

DefaultParam capability message in XML format

```
<DefaultParam version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <DialNum min="1" max="32"><!--opt, xs:string--></DialNum>
 <Username min="1" max="32"><!--opt, xs:string--></Username>
 <Password min="1" max="32"><!--opt, xs:string--></Password>
 <APNname min="1" max="32"><!--opt, xs:string--></APNname>
 <VerifyProto opt="auto,CHAP,PAP"><!--req, xs:string, verification protocol: "auto, CHAP, PAP"--></VerifyProto>
</DefaultParam>
```

16.2.35 XML_Cap_Dial

Dial capability message in XML format

```
<Dial version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled opt="true,false" def="false"><!--req, xs:boolean--></enabled>
 <DialMethod opt="auto,manual"><!--req, xs:string, "auto, manual"--></DialMethod>
 <SwitchMethod opt="auto,4GFirst,3GFirst,manualto2G,manualto3G,manualto4G,cableFirst">
  <!--req, xs:string, "auto,4GFirst,3GFirst, manualto2G, manualto3G,manualto4G,cableFirst"-->
 </SwitchMethod>
 <OfflineTime min="30" max="65535"><!--opt, xs:integer, unit: second--></OfflineTime>
 <UIMCardNum min="1" max="32"><!--opt, xs:string--></UIMCardNum>
 <DialNum min="1" max="32"><!--opt, xs:string--></DialNum>
 <Username min="1" max="32"><!--opt, xs:string--></Username>
 <Password min="1" max="32"><!--opt, xs:string--></Password>
 <APNname min="1" max="32"><!--opt, xs:string--></APNname>
 <SIMNum min="" max=""><!--opt, xs:string, SIM card No. (mobile phone number)--></SIMNum>
 <MTU min="100" max="1500"><!--opt, xs: integer--></MTU>
 <VerifyProto opt="auto,CHAP,PAP"><!--req, xs:string, verification protocol: "auto, CHAP, PAP"--></VerifyProto>
 <DefaultParam/><!--opt, default parameters, see details in the message of XML_Cap_DefaultParam-->
 <netAPN min="" max=""/><!--opt, xs:string, APN configuration for the private network-->
 <Flow><!--opt, flow configuration-->
  <limitEnabled opt="true,false"><!--opt, xs:boolean, whether to enable flow limitation--></limitEnabled>
  <consumeFlow opt="true,false"><!--opt, xs:boolean, whether supports displaying flow usage, unit: MB--></
consumeFlow>
  <threshold min="" max=""><!--opt, threshold of flow, unit: MB--></threshold>
 </Flow>
</Dial>
```

See Also

XML_Cap_DefaultParam

16.2.36 XML_Cap_Discovery

Discovery capability message in XML format

```
<Discovery version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <UPnP><!--req-->
  <enabled><!--req, xs:boolean, "true, false"--></enalbed>
 </UPnP>
 <ZeroConf><!--opt, channel-zero configuration-->
  <enabled><!--req, xs:boolean, "true, false"--></enabled>
 </ZeroConf>
</Discovery>
```

16.2.37 XML_Cap_EagleFocusing

EagleFocusing capability message in XML format

```
<?xml version="1.0" encoding="utf-8"?>
<EagleFocusing version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req,xs:string--></id>
 <enabled opt="true,false"><!--req, xs:boolean, "true"-start calibration, "false"-stop calibration--></enabled>
 <normalizedScreenSize><!--req,ro-->
  <normalizedScreenWidth><!--req,ro,xs:integer--></normalizedScreenWidth>
  <normalizedScreenHeight><!--req,ro,xs:integer--></normalizedScreenHeight>
 </normalizedScreenSize>
 <EagleFocusingRegionList><!--opt-->
  <EagleFocusingRegion><!--list-->
   <id><!--req, xs:string--></id>
   <sid><!--opt,xs:string, scene ID--></sid>
   <rate><!--opt,xs:integer, rate--></rate>
   <spotNum><!--opt,xs:integer, the number of calibration points--></spotNum>
   <type><!--req,xs:string,"line", region type, now only supports "line"--></type>
   <Region><!--dep, depends on type-->
    <RegionCoordinatesList size="4"><!--opt-->
     <RegionCoordinates><!--list-->
      <positionX><!--req,xs:integer,coordinate--></positionX>
      <positionY><!--req,xs:integer,coordinate--></positionY>
     </RegionCoordinates>
    </RegionCoordinatesList>
   </Region>
  </EagleFocusingRegion>
 </EagleFocusingRegionList>
 <sceneNum min="" max=""><!--opt,xs:integer, the maximum number of supported scenes--></sceneNum>
 <isSupportSceneGoto opt="true,false"><!--opt,xs:boolean, whether device supports turning to specified scene--></
isSupportSceneGoto>
 <rate min="" max=""><!--opt,xs:integer, rate--></rate>
 <spotNum min="" max=""><!--opt,xs:integer, the number of calibration points on line--></spotNum>
 <onlyReadParam opt="rate,spotNum"><!--opt,xs:string,"rate,spotNum"--></onlyReadParam>
 <isSupportAuto opt="true,false"><!--req,xs:boolean, whether device supports automatic calibration of rapid focus--
></isSupportAuto>
</EagleFocusing>
```

16.2.38 XML_Cap_EHome

EHome capability message in XML format

```
<Ehome version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id min="1" max="1"><!--opt, xs:string, EHome center ID--></id>
 <GPRSAddressingFormatType opt="ipaddress"><!--opt, xs:string, GPRS address type. If this node is not returned, the
address type will be determined by addressingFormatType which indicates that the address types configured by
different networks do not need to be distinguished--></GPRSAddressingFormatType>
 <addressingFormatType opt="ipaddress,hostname"><!--req, xs:string--></addressingFormatType>
```

```
 <hostName min="" max=""><!--dep, xs:string, domain name--></hostName>
 <ipAddress min="" max=""><!--dep, xs:string--></ipAddress>
 <ipv6Address min="" max=""><!--dep, xs:string--></ipv6Address>
 <portNo min="" max=""><!--opt, xs:integer--></portNo>
 <deviceID min="" max=""><!--req, xs:string--></deviceID>
 <registerStatus min="" max=""><!--ro, xs:boolean--></registerStatus>
 <key min="" max=""><!--opt, xs:string, EHome encryption key--></key>
 <version min="" max=""><!--ro, xs:string--></version>
 <netWork opt="0,1,2,3,4"/><!--opt,xs:integer, 0-make no sense, 1-automatic, 2-wired network preferred, 3-wired network, 4-3G/4G/GPRS-->
 <voiceDeviceType opt="bluetooth,client"><!--opt, xs:string, two-way audio device type: "bluetooth", "client"--></voiceDeviceType>
 <protocolVersion opt="v2.0,v2.6,v4.0,v5.0"><!--opt, xs:string, protocol type. If this node is set to "v2.0", the device can only use protocol v2.0 to register; if this node is set to "v2.6", "v4.0" or "v5.0", the device will firstly use this protocol to register. If this node is not returned, the protocol version will be determined by <version>--></protocolVersion>
</Ehome>
```

16.2.39 XML_Cap_ExtraInfo

ExtraInfo capability message in XML format

```
<ExtraInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <diskMode opt="singleDisk,RAID"><!--req, xs:string, disk mode: "singleDisk"-single disk, "RAID". The device needs to reboot after changing the disk mode--></diskMode>
</ExtraInfo>
```

16.2.40 XML_Cap_FocusConfiguration

FocusConfiguration capability message in XML format

```
<FocusConfiguration>
 <focusStyle opt="AUTO,MANUAL,SEMIAUTOMATIC"><!--req, xs:string--></focusStyle>
 <focusLimited opt="50,100,300,600,1000,2000,5000,10000,15000" def="1000"><!--opt, xs:integer--></focusLimited>
 <focusPosition/><!--dep, xs:integer, depends on FocusStyle-->
 <focusSpeed><!--opt, xs:intger--></focusSpeed>
 <focusSensitivity min="0" max="2" def="1"><!--opt, xs:intger, sensitivity of focus, ranging from 0 to 2. It is valid when the focus mode is automatic or semi-automatic--></focusSensitivity>
 <temperatureChangeAdaptEnabled opt="true,false"--><!--opt, xs:boolean--></temperatureChangeAdaptEnabled>
 <relativeFocusPos min="0" max="4000" def=""><!--opt, xs:intger--></relativeFocusPos>
 <highTemperaturePriority opt="true,false"><!--opt, xs:boolean, enable high temperature priority mode--></highTemperaturePriority>
</FocusConfiguration>
```

16.2.41 XML_Cap_FTPNotification

FTPNotification capability message in XML format

```
<FTPNotification version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs:string, FTP ID-->
 </id>
 <enabled>
  <!--req, xs:boolean, whether to enable the FTP server-->
 </enabled>
 <useSSL>
  <!--opt, xs:boolean-->
 </useSSL>
 <addressingFormatType opt="ipaddress,hostname">
  <!--req, xs:string, this node can only be set to "ipaddress"-->
 </addressingFormatType>
 <hostName>
  <!--dep, xs:string-->
 </hostName>
 <ipAddress>
  <!--dep, xs:string-->
 </ipAddress>
 <ipv6Address>
  <!--dep, xs:string-->
 </ipv6Address>
 <portNo>
  <!--opt, xs:integer, FTP port No.-->
 </portNo>
 <userName>
  <!--req, xs:string, user name-->
 </userName>
 <password>
  <!--wo, xs:string, password-->
 </password>
 <passiveModeEnabled>
  <!--opt, xs:boolean-->
 </passiveModeEnabled>
 <annoyftp>
  <!--opt, xs:boolean-->
 </annoyftp>
 <uploadPicture>
  <!--opt, xs:boolean-->
 </uploadPicture>
 <uploadVideoClip>
  <!--opt, xs:boolean-->
 </uploadVideoClip>
 <uploadPath>
  <!--req-->
  <pathDepth>
   <!--req, xs:integer, directory levels, up to 16 levels can be supported-->
  </pathDepth>
  <topDirNameRule opt="none, devName, devId, devIp, positionInfo, time_month, time_date, illegalType, direction,
site, chanName, chanId, laneId, customize ,time, buildUnitNo">
   <!--dep, xs:string, parent directory name: "none", "devName"-device name, "devId"-device ID, "devIp"-device IP
address, "positionInfo"-camera 1, "time_month"-usage date (YYYY-MM), "time_date"-usage date (YYYY-MM-DD),
```

"illegalType"-violation type, "direction"-direction, "site"-place, "chanName"-channel name, "chanId"-channel No., "laneId"-lane No., "customize"-custom, "time", "buildUnitNo"-building No. and unit No. This node is set to NULL by default-->
</topDirNameRule>
<topDirName min="" max="">
<!--dep, xs:string, custom string for parent directory, the maximum string length is 32 bytes. This node is valid when <**topDirNameRule**> is "customize". If attributes of "min" and "max" are not obtained after parsing, the default value will be returned without error message-->
<topDirName/><!--dep, xs:string, custom string for parent directory, the maximum string length is 32 bytes. This node is valid when <**topDirNameRule**> is "customize"-->
<subDirNameRule opt="none, devName, devId, devIp, positionInfo, time_month, time_date, illegalType, direction, site, chanName, chanId, laneId, customize ,time, buildUnitNo">
<!--dep, xs:string, child directory name-->
</subDirNameRule>
<subDirName min="" max="">
<!--dep, xs:string, custom string for child directory, the maximum string length is 32 bytes. This node is valid when <**subDirNameRule**> is "customize". If attributes of "min" and "max" are not obtained after parsing, the default value will be returned without error message-->
<subDirName/><!--dep, xs:string, custom string for child directory, the maximum string length is 32 bytes. This node is valid when <**subDirNameRule**> is "customize"-->
<threeDirNameRule opt="none, devName, devId, devIp, positionInfo, time_month, time_date, illegalType, direction, site, chanName, chanId, laneId, customize ,time, buildUnitNo">
<!--dep, xs:string, the third directory name-->
</threeDirNameRule>
<threeDirName/><!--req, xs:string, custom string for the third directory, the maximum string length is 32 bytes. This node is valid when <**threeDirNameRule**> is "customize"-->
<fourDirNameRule opt="none, devName, devId, devIp, positionInfo, time_month, time_date, illegalType, direction, site, chanName, chanId, laneId, customize ,time, buildUnitNo">
<!--dep, xs:string, the fourth directory name-->
</fourDirNameRule>
<fourDirName/><!--req, xs:string, custom string for the fourth directory, the maximum string length is 32 bytes. This node is valid when <**fourDirNameRule**> is "customize"-->
</uploadPath>
<picArchivingInterval min="" max="">
<!--opt, xs:integer, the value is between 1 and 30, 0-close-->
</picArchivingInterval>
<picNameRuleType opt="default,prefix">
<!--opt, xs:string-->
</picNameRuleType>
<picNamePrefix min="0" max="32">
<!--dep, xs:string-->
</picNamePrefix>
<ftpPicNameRuleType opt="videoIntercom,ITC">
<!--req, xs:string, type of FTP picture name rule: "videoIntercom"-rule used by video intercom products, "ITC"-rule used by traffic cameras-->
</ftpPicNameRuleType>
<FTPPicNameRule>
<!--dep, picture name rule of a specific FTP-->
<ItemList/><!--req, see details in the message of XML_Cap_ItemList-->
<delimiter>
<!--req, xs:string, delimiter, which is a single character and the default value is "_"-->
</delimiter>

```
  <customStr min="1" max="128">
   <!--req, xs:string, custom string-->
  </customStr>
 </FTPPicNameRule>
 <upDataType opt="0,1,2">
  <!-- opt, xs:integer, picture uploading type: 0-all, 1-checkpoint, 2-violation. When only one FTP server is enabled, this node can only be set to 0. When two FTP servers are both enabled, you should set 1 for one FTP server and set 2 for another FTP server, which means that two FTP servers cannot be set to the same type-->
 </upDataType>
 <uploadPlateEnable>
  <!--opt, xs:boolean, whether to enable uploading license plate thumbnail-->
 </uploadPlateEnable>
 <site min="1" max="128">
  <!--req, xs:string, place, the maximum string length is 128 bytes-->
 </site>
 <roadNum min="1" max="32">
  <!--req, xs:string, intersection No., the maximum string length is 32 bytes-->
 </roadNum>
 <instrumentNum min="1" max="32">
  <!--req, xs:string, device No., the maximum string length is 32 bytes-->
 </instrumentNum>
 <direction min="1" max="32">
  <!--req, xs:string, direction No., the maximum string length is 32 bytes-->
 </direction>
 <directionDesc min="1" max="32">
  <!--req, xs:string, direction description, the maximum string length is 32 bytes-->
 </directionDesc>
 <monitoringInfo1 min="1" max="44">
  <!--req, xs:string, camera 1 information, the maximum string length is 44 bytes-->
 </monitoringInfo1>
 <uploadAttachedInfomation>
  <!--req, xs:boolean, whether to upload additional information-->
 </uploadAttachedInfomation>
 <BrokenNetHttp><!--opt, whether it supports ANR (automatic network replenishment)-->
  <enabled opt="true,false"><!--opt, xs:boolean, whether to enable ANR (automatic network replenishment)--></enabled>
  <supportEventType opt="personQueueCounting"/><!--opt, xs:string, event types supporting FTP ANR: "personQueueCounting"-person queue counting detection, "personQueueTime"-person queue time detection, "personQueueRealTimeData"-upload real-time data of person queue counting detection, "faceCapture"-face capture and recognition, "fieldDetection"-intrusion, "attendedBaggage"-object removal, "unattendedBaggage"-unattended baggage, "regionExiting"-region exiting, "regionEntrance"-region entrance, "lineDetection"-line crossing detection-->
 </BrokenNetHttp>
</FTPNotification>
```

See Also

XML_Cap_ItemList

16.2.42 XML_Cap_FTPNotificationList

FTPNotificationList capability message in XML format

```
<FTPNotificationList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <FTPNotification/><!--opt, see details in the message of XML_Cap_FTPNotification-->
</FTPNotificationList>
```

See Also

XML_Cap_FTPNotification

16.2.43 XML_Cap_GuardAgainstTheft

GuardAgainstTheft capability message in XML format

```
<GuardAgainstTheft version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled opt="true,false"><!--required, xs:boolean, whether it supports enabling device anti-theft--></enabled>
 <SMSEnabled opt="true,false"><!--required, xs:boolean, whether it supports enabling SMS--></SMSEnabled>
 <phoneNum min="0" max="32"><!--dependency, xs:string, phone No.--></phoneNum>
 <longitudeLatitudeEnabled opt="true,false"><!--dependency, xs:boolean, whether it supports enabling longitude and
latitude--></longitudeLatitudeEnabled>
 <siteLocationEnabled opt="true,false"><!--dependency, xs:boolean, whether it supports enabling site location--></
siteLocationEnabled>
 <siteLocationInfo min="0" max="128"><!--dependency, xs:string, site location information--></siteLocationInfo>
 <timeEnabled opt="true,false"><!--dependency, xs:boolean, whether it supports enabling time--></timeEnabled>
 <customInfo min="0" max="128"><!--dependency, xs:string, custom information--></customInfo>
</GuardAgainstTheft>
```

16.2.44 XML_Cap_HardwareService

HardwareService capability message in XML format

```
<HardwareService version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IrLightSwitch><!--opt-->
  <mode opt="open,close"><!--req, xs:string --></mode>
 </IrLightSwitch>
 <ABF><!--opt-->
  <enabled><!--req, xs:boolean --></enabled>
 </ABF>
 <LED><!--opt-->
  <enabled><!--req, xs:boolean --></enabled>
 </LED>
 <Defog><!--opt-->
  <enabled><!--req, xs:boolean --></enabled>
 </Defog>
 <SupplementLight><!--opt-->
  <enabled><!--req, xs:boolean --></enabled>
  <isSupportFireLaserLight opt="true,false"><!--opt,xs:boolen--></isSupportFireLaserLight>
  <isSupportSupplementLightWord opt="true,false"><!--opt,xs:boolen--></isSupportSupplementLightWord>
  <captureWithSupplimentLightEnabled opt="true,false">
   <!--opt, xs:boolean, enable snapshot supplement light or not-->
  </captureWithSupplimentLightEnabled>
```

```
  </SupplementLight>
  <Deicing><!--opt-->
    <enabled><!--req, xs:boolean --></enabled>
  </Deicing>
  <ManualDeicing><!--opt-->
    <enabled><!--req, xs:boolean --></enabled>
  </ManualDeicing>
  <mutexAbility opt="laserLight, deicing">
    <!--req, mutual exclusion ability, the laser light and deicing (including manual deicing and automatic deicing) are
mutual exclusive-->
  </mutexAbility>
  <HighTemperatureProtection><!--opt-->
    <enabled><!--req, xs:boolean --></enabled>
    <temperatureType opt="90,100,110" def="90"><!--dep, xs:string,unit:℃ --></temperatureType>
  </HighTemperatureProtection>
</HardwareService>
```

16.2.45 XML_Cap_hddList

hddList capability message in XML format

```
<hddList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema" size="">
  <hdd><!--list-->
    <id><!--ro, req, xs: string; ID--></id>
    <hddName><!--ro, req, xs: string--></hddName>
    <hddPath><!--ro, opt, xs: string--></hddPath>
    <hddType opt="IDE,SATA,eSATA,NFS,iSCSI,Virtual Disk"><!--ro, req, xs: string--></hddType>
    <status
opt="ok,unformatted,error,idle,mismatch,offline,smartFailed,reparing,formating,notexist,unRecordHostFormatted">
      <!--ro, req, xs: string, unRecordHostFormatted--unformatted in education sharing system-->
    </status>
    <capacity><!--ro, req, xs: float, unit: MB--></capacity>
    <freeSpace><!--ro, req, xs: float, unit: MB--></freeSpace>
    <property opt="RW,RO,Redund"><!--req, xs: string, HDD properties--></property>
    <group><!--opt, xs: string; HDD group ID--></group>
    <DataModeList><!--opt, ro, current HDD allocation mode-->
      <DataMode>
        <type opt="recordStorage,pictureCloudStorage,fileStorage">
          <!--req, xs: string, storage application type, recordStorage-video storage, pictureCloudStorage-picture to be
saved in cloud storage, fileStorage-file-storage->
        </type>
        <occupancyRate><!--req, xs: integer, HDD usage, range: [0,100]--></occupancyRate>
      </DataMode>
    </DataModeList>
    <formatType opt="FAT32,EXT4" def="FAT32">
      <!--ro, opt, xs: string, formatting type, this node is only available for SD card; if this node does not exist, the default
formatting type is FAT32-->
    </formatType>
    <Encryption>
      <passwordLen min="6" max="64"/>
      <encryptionStatus opt="unencrypted,encrypted,verfyFailed"><!--ro, opt, xs:string, encryption status:
```

```
"unencrypted", "encrypted", "verfyFailed"-verification failed--></encryptionStatus>
     <encryptFormatType opt="FAT32,EXT4"><!--ro, opt, xs:string--></encryptFormatType>
   </Encryption>
  </hdd>
</hddList>
```

16.2.46 XML_Cap_IbeaconParam

IbeaconParam capability message in XML format

```
<IbeaconParam version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <UUID min="" max="">
    <!--req, xs:string, parking lot ID, which supports using digits, letters and hyphen as the tag-->
  </UUID>
  <major min="" max="">
    <!--req, xs:integer, number of floors in the parking lot, which cannot be 0x00 for all-->
  </major>
  <minor min="" max="">
    <!--req, xs:integer, number of parking spaces on each floor, which cannot be 0x00 for all-->
  </minor>
  <sendPower min="" max="">
    <!--req, xs:integer, transmitted power: 01-0 dbm, 02- -6 dbm, 03- -23 dbm-->
  </sendPower>
  <frequency min="" max="">
    <!--req, xs:integer, transmitted frequency, which is the broadcast time interval, unit: 625 μs. The broadcast time interval is between 32 (20 ms) to 8000 (5s), and the default value is 160 (100 ms)-->
  </frequency>
  <measurePower min="" max="">
    <!--req, xs:integer, rated power, which is the RSSI (Received Signal Strength Indication) in the position of 1 meter away, unit: dbm-->
  </measurePower>
</IbeaconParam>
```

16.2.47 XML_Cap_IEEE802_1x

IEEE802_1x capability message in XML format

```
<IEEE802_1x version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled><!--req, xs: boolean--></enabled>
  <authenticationProtocolType opt="EAP-TLS,EAP-TTLS,EAP-PEAP,EAP-LEAP,EAP-FAST,EAP-MD5">
   <!--req, xs: string-->
  </authenticationProtocolType>
  <innerTTLSAuthenticationMethod opt="MS-CHAP,MS-CHAPv2,PAP,EAP-MD5">
    <!--dep, xs: string, this node is required when <authenticationProtocolType> is "EAP-TLS"-->
  </innerTTLSAuthenticationMethod>
  <innerEAPProtocolType opt= "EAP-POTP,MS-CHAPv2">
    <!--dep, xs: string, this node is required when <authenticationProtocolType> is "EAP-PEAP" or "EAP-FAST"-->
  </innerEAPProtocolType>
  <validateServerEnabled><!--dep, xs: boolean--></validateServerEnabled>
```

```
 <userName><!--dep, xs: string--></userName>
 <password><!--dep, xs: string--></password>
 <anonymousID><!--opt, xs: string--></anonymousID>
 <autoPACProvisioningEnabled>
  <!--dep, xs: boolean, this node is required when <authenticationProtocolType> is "EAP-FAST"-->
 </autoPACProvisioningEnabled>
 <Extensions><!--opt-->
  <EAPOLVersion><!--opt, xs: string, "1, 2"--></EAPOLVersion>
 </Extensions>
</IEEE802_1x>
```

16.2.48 XML_Cap_ImageChannel

ImageChannel capability message in XML format

```
<ImageChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:integer--></id>
 <enabled><!--req, xs:boolean--></enabled>
 <videoInputID><!--req, xs:integer--></videoInputID>
 <Focusconfiguration/><!--opt-->
 <LensInitialization/><!--opt-->
 <ImageFlip/><!--opt-->
 <ImageFreeze/><!--opt-->
 <proportionalpan/><!--opt-->
 <WDR/><!--opt-->
 <BLC/><!--opt-->
 <NoiseReduce/><!--opt-->
 <ImageEnhancement/><!--opt-->
 <SlowShutter/><!--opt-->
 <DSS/><!--opt-->
 <WhiteBlance/><!--opt-->
 <Exposure/><!--opt, exposure configuration parameters, refer to the message XML_Exposure for details-->
 <DayNightGate/><!--opt-->
 <BrightEnhance/><!--opt-->
 <Sharpness/><!--opt-->
 <gammaCorrection/><!--opt-->
 <powerLineFrequency/><!--opt-->
 <Color/><!--opt, image adjustment capability, refer to the message XML_Cap_Color for details-->
 <IrcutFilter/><!--opt, configuration parameters of day/night auto-switch, refer to the message XML_IrcutFilter for
details-->
 <Scene/><!--opt-->
 <EPTZ/ ><!--opt-->
 <EIS/><!--opt-->
 <HLC/> <!--opt-->
 <ZoomLimit/> <!--opt-->
 <corridor/><!--opt-->
 <Dehaze/><!--opt-->
 <ImageMode opt="standard, indoor, outdoor, dimLight"/><!--opt, xs:string-->
 <enableImageLossDetection><!--opt, boolean--></enableImageLossDetection>
 <CaptureMode/><!--opt-->
 <IrLight/><!--opt-->
```

```
 <LensDistortionCorrection/><!--opt-->
 <SupplementLight/><!--opt, supplement light configuration capability, refer to the message
XML_Cap_SupplementLight for details-->
 <OpticalDehaze/><!--opt-->
 <ManualRanging/><!--opt-->
 <OIS/><!--opt-->
 <isSupportlaserSpotManual><!--opt, boolean--></isSupportlaserSpotManual>
 <isSupportLaserSpotAdjustment><!--opt, boolean--></isSupportLaserSpotAdjustment>
 <DigitalZoom>
  <ZoomRatio opt="1x,2x,4x,8x,16x,32x"><!--req, xs:string--></ZoomRatio>
 </DigitalZoom>
 <Palettes/><!--opt-->
 <ExposureSync opt="true,false" def="false">
  <enabled><!--req, xs:boolean--></enabled>
 </ExposureSync>
 <BrightnessSuddenChangeSuppressionCap/><!--opt-->
 <isSupportIcr><!--opt, boolean--></isSupportIcr>
 <isSupportMultishut><!--opt, boolean--></isSupportMultishut>
 <isSupportPlateBright><!--opt, boolean--></isSupportPlateBright>
 <isSupportJPEGParam><!--opt, boolean--></isSupportJPEGParam>
 <isSupportDarkEnhance><!--opt, boolean--></isSupportDarkEnhance>
 <isSupportHdr><!--opt, boolean--></isSupportHdr>
 <isSupportLse><!--opt, boolean--></isSupportLse>
 <isSupportMce><!--opt, boolean--></isSupportMce>
 <isSupportScve><!--opt, boolean--></isSupportScve>
 <isSupportSectionCtrl><!--opt, boolean--></isSupportSectionCtrl>
 <isSupportAutoContrast><!--opt, boolean--></isSupportAutoContrast>
 <isSupportGrayRange><!--opt, boolean--></isSupportGrayRange>
 <isSupportLSEDetail><!--opt, boolean--></isSupportLSEDetail>
 <isSupportCapture><!--opt, boolean--></isSupportCapture>
 <isSupportBrightEnhance><!--opt, boolean--></isSupportBrightEnhance>
 <isSupportRecord><!--opt, xs:boolean--></isSupportRecord>
 <isSupportDefog><!--opt, xs:boolean--></isSupportDefog>
 <isSupportGeneral><!--opt, xs:boolean, whether to display general configuration page on the interface--></
isSupportGeneral>
 <isSupportIa><!--opt, xs:boolean, whether to display video configuration page on the interface--></isSupportIa>
 <NoiseReduce2D>
  <noiseReduce2DEnable><!--req, xs:boolean--></noiseReduce2DEnable>
  <noiseReduce2DLevel min="0" max="100"><!--dep,xs:integer--></noiseReduce2DLevel>
 </NoiseReduce2D>
 <Shutter>
  <ShutterLevel min="100" max="40000"><!--req, xs:integer--></ShutterLevel>
 </Shutter>
 <Gain>
  <GainLevel min="0" max="100"><!--req, xs:integer--></GainLevel>
 </Gain>
 <TempRange/><!--opt, temperature range capability, see XML_Cap_tempRange for details-->
</ImageChannel>
```

Remarks

The nodes <**DigitalZoom**> and <**ExposureSync**> are not supported by thermographic automation thermal camera (DS-2TA03-15SVI, DS2TA06-25SVI).

16.2.49 XML_Cap_InputProxyChannel

InputProxyChannel capability message in XML format

```
<InputProxyChannel version="1.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <id min="" max=""></id>
 <name min="" max=""></name>
 <sourceInputPortDescriptor>
  <adminProtocol opt="HIKVISION,SONY,ISAPI,ONVIF"></adminProtocol>
  <addressingFormatType opt="ipaddress,hostname"></addressingFormatType>
  <hostName min="" max=""></hostName>
  <ipAddress></ipAddress>
  <ipv6Address></ipv6Address>
  <adminPortNo min="2000" max="65535"></adminPortNo>
  <srcInputPort min="" max=""></srcInputPort>
  <userName min="" max=""><!--user name, which should be encrypted--></userName>
  <password min="" max=""><!--password, which should be encrypted--></password>
  <streamType opt="auto,tcp,udp"></streamType>
  <deviceID min="" max=""></deviceID>
 </sourceInputPortDescriptor>
 <enableAnr opt="true,false"></enableAnr>
 <NVRInfo>
  <ipAddressNVR>
   <!--opt, xs:string, IP address of NVR-->
  </ipAddressNVR>
  <portNVR min="2000" max="65535">
   <!--opt, xs:integer, port No. of NVR-->
  </portNVR>
  <ipcChannelNo min="" max="">
   <!--opt, xs:integer, channel No. of the network camera in NVR-->
  </ipcChannelNo>
 </NVRInfo>
</InputProxyChannel>
```

16.2.50 XML_Cap_IOInputPortList

IOInputPortList capability message in XML format

```
<IOInputPortList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IOInputPort><!--req-->
  <id><!--req, xs:string--></id>
  <triggeringType opt="high,low"><!--req, xs:string--></triggeringType>
  <name min="", max=""><!--req, xs:string--></name>
  <inputType opt="switch,semaphore">
```

```
    <!--opt, xs:string, switch, semaphore-->
   </inputType>
   <CombinationAlarmCap><!--opt, composite alarm capability-->
    <channel min="" max="">
     <!--req, xs:integer,  channel No. range-->
    </channel>
    <EventTypeList size=""><!--req, event type list, the "size" indicates the max. number of supported events for
composition-->
     <eventType>
      <!--req, xs:string, event type-->
     </eventType>
    </EventTypeList>
   </CombinationAlarmCap>
  </IOInputPort>
</IOInputPortList>
```

16.2.51 XML_Cap_IOOutputPortList

IOOutputPortList capability message in XML format

```
<IOOutputPortList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <IOOutputPort>
   <id min="" max=""><!-- req, xs:integer, "2" --></id>
   <PowerOnState><!--req, output port configuration parameters when the device is powered on>
    <defaultState opt="high,low">
     <!--ro, req, xs:string,default output port signal when it is not triggered-->
    </defaultState>
    <outputState opt="high,low,pulse">
     <!--ro, req, xs:string, output port signal when it is being triggered-->
    </outputState>
    <pulseDuration min="" max="">
     <!--dep, xs:integer, duration of a output port signal when it is being triggered, it is valid when outputState is
"pulse", unit: milliseconds-->
    </pulseDuration>
   </PowerOnState>
   <name><!--opt, xs:string--></name>
   <IOUseType opt="disable,electricLock,custom"><!--opt, xs:string--></IOUseType>
   <normalStatus opt="open, close"><!--opt, xs:string,normal status: open-remain open, close-remain closed--></
normalStatus>
  </IOOutputPort>
</IOOutputPortList>
```

16.2.52 XML_Cap_IpAddress

IpAddress capability message in XML format

```
<IpAddress version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <ipVersion opt="IPv4,IPv6,dual">
   <!--req, xs:string-->
```

```
</ipVersion>
<addressingType opt="static,dynamic,apipa">
  <!--req, xs:string-->
</addressingType>
<ipAddress min="0" max="40">
  <!--dep, xs:string-->
</ipAddress>
<subnetMask min="0" max="15">
  <!--dep, xs:string-->
</subnetMask>
<ipv6Address min="0" max="40">
  <!--dep, xs:string-->
</ipv6Address>
<bitMask ask min="0" max="128">
  <!--dep, xs:integer-->
</bitMask>
<DefaultGateway>
  <!--dep-->
  <ipAddress min="0" max="40">
    <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address min="0" max="40">
    <!--dep, xs:string-->
  </ipv6Address>
</DefaultGateway>
<PrimaryDNS>
  <!--dep-->
  <ipAddress min="0" max="40">
    <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address min="0" max="40">
    <!--dep, xs:string-->
  </ipv6Address>
</PrimaryDNS>
<SecondaryDNS>
  <!--dep-->
  <ipAddress min="0" max="40">
    <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address min="0" max="40">
    <!--dep, xs:string-->
  </ipv6Address>
</SecondaryDNS>
<Ipv6Mode><!--opt-->
  <ipV6AddressingType opt="router,ra,manual,dhcp">
    <!--dep, xs:string-->
  </ipV6AddressingType>
  <ipv6AddressList>
    <v6Address>
      <id min="0" max="255">
        <!--dep, xs:string-->
      </id>
```

```
      <type opt="router,ra,manual,dhcp">
       <!--dep, xs:string-->
      </type>
      <address min="0" max="40">
       <!--dep, xs:string-->
      </address>
      <bitmask min="0" max="255">
       <!--dep, xs:integer-->
      </bitMask>
     </v6Address>
   </ipv6AddressList>
  </Ipv6Mode>
</IpAddress>
```

16.2.53 XML_Cap_IPFilter

IPFilter capability message in XML format

```
<IPFilter version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled opt="true, false"><!--req, xs:boolean--></enabled>
 <permissionType opt="deny, allow">
  <!--req, xs:string, IP address filter status: "deny, allow". If this node is configured, it will overwrite value of all
<permissionType> in <IPFilterAddres>-->
 </permissionType>
 <IPFilterAddressList size="32"><!--opt, the attribute "size" refers to the maximum number of IP addresses supported
by the device. If the attribute "size" is not returned, the default supported number of IP addresses is 48-->
  <IPFilterAddress>
   <id min="" max=""><!--req, xs:string, ID--></id>
   <permissionType opt="deny, allow"><!--dep, ro, xs:string--></permissionType>
   <addressFilterType opt="mask,range">
    <!--dep, ro, xs:string, filter type: "mask"-single address, "range"-address range-->
   </addressFilterType>
   <AddressRange><!--dep, this node is valid when <addressFilterType> contains "range"-->
    <startIPAddress min="" max=""><!--dep, xs:string--></startIPAddress>
    <endIPAddress min="" max=""><!--dep, xs:string--></endIPAddress>
    <startIPv6Address min="" max=""><!--dep, xs:string--></startIPv6Address>
    <endIPv6Address min="" max=""><!--dep, xs:string--></endIPv6Address>
   </AddressRange>
   <AddressMask><!--dep, it is valid when <addressFilterType> contains "mask"-->
    <ipAddress min="" max=""><!--dep, xs:string--></ipAddress>
    <ipv6Address min="" max=""><!--dep, xs:string--></ipv6Address>
    <bitMask min="" max=""><!--opt, xs:string--></bitMask>
    <bitMaskIPV6 min="" max=""> <!--req, xs:string, IPv6 prefix length--></bitMaskIPV6>
   </AddressMask>
   <describeMsg min="" max=""><!--opt, xs:string--></describeMsg>
  </IPFilterAddress>
 </IPFilterAddressList>
</IPFilter>
```

16.2.54 XML_Cap_ItemList

ItemList capability message in XML format

```
<ItemList size="15">
 <Item>
  <itemID min="1" max="15">
   <!--req, xs:string, item ID, which is between 1 and 15-->
  </itemID>
  <itemOrder
opt="none,devIp,time,buildUnitNo,outDoorDevNo,unlockType,devName,deviceNo,channelName,channelNo,
plateNo,plateColor,laneNo,carSpeed,
positionInfo1,pictureNo,CarNo,speedLimit,illegalCode,siteNo,directionNo,carColor,platePosition,carType,illegalType,cu
stom">
    <!--req, xs:string, name element: "none", "devIp"-device IP address, "time", "buildUnitNo"-building No. and unit
No., "outDoorDevNo"-door station, "unlockType"-unlocking type, "devName"-device name, "deviceNo"-device No.,
"channelName"-channel name, "channelNo"-channel No., "plateNo"-license plate number, "plateColor"-license plate
color, "laneNo"-lane No., "carSpeed"-vehicle speed, "positionInfo1"-camera 1, "pictureNo"-picture No., "CarNo"-
vehicle No., "speedLimit"-speed limit, "illegalCode"-violation code, "siteNo"-intersection No., "directionNo"-direction
No., "carColor"-vehicle color, "platePosition"-license plate coordinates, "carType"-vehicle type, "illegalType"-violation
type, "custom"-->
  </itemOrder>
  <itemCustomStr min="1" max="32">
   <!--req, xs:string, element custom string, which is between 1 and 32, unit: bytes. This node is valid only when
<itemOrder> is "custom". Currently traffic cameras only support one custom name-->
  </itemCustomStr>
 </Item>
</ItemList>
```

16.2.55 XML_Cap_LensDistortionCorrection

LensDistortionCorrection capability message in XML format

```
<LensDistortionCorrection version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs: boolean--></enabled>
 <level opt="level1,level2,level3,custom">
  <!--opt, xs: string, distortion correction level: level 1, level 2, level 3, custom-->
 </level>
 <accurateLevel min="0" max="100">
  <!--opt, xs: integer, correction strength, value range: [0,100]-->
 </accurateLevel>
 <zoomedInDistantViewLevel min="0" max="100">
  <!--opt, xs: integer, zooming in range, value range: [0-100], this node is valid when distortion correction is enabled-->
 </zoomedInDistantViewLevel>
 <horizontalFOV min="0" max="100"><!--opt, xs: integer, horizontal FOV, value range: [0,100]--></horizontalFOV>
 <verticalFOV min="0" max="100"><!--opt, xs: integer, vertical FOV, value range: [0,100]--></verticalFOV>
</LensDistortionCorrection>
```

16.2.56 XML_Cap_Link

Link capability message in XML format.

```
<Link version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <MACAddress><!--req, xs:string--></MACAddress>
 <autoNegotiation><!--req, xs:boolean, "true, false"--> </autoNegotiation>
 <speed><!--req, xs:integer, "10.100, 1000"--></speed>
 <duplex><!--req, xs:string, "half, full"--></enalbed>
 <MTU><!--req, xs:integer, "500-1500"--></MTU>
</Link>
```

16.2.57 XML_Cap_LogConfig

LogConfig capability message in XML format.

```
<LogConfig version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--required, boolean type, whether to enable log--></enabled>
 <level opt="none,debug,info,error,fault,all">
  <!--required, string type, log types, multiple type can be selected, and each type should be separated by comma-->
 </level>
</LogConfig>
```

16.2.58 XML_Cap_MACFilter

MACFilter capability message in XML format

```
<MACFilter version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled opt="true,false"><!--req, xs:boolean--></enabled>
 <permissionType opt="deny, allow"><!-- req, xs:string,"deny, allow"--></permissionType>
 <MACFilterAddressList size="">
  <MACFilterAddress>
   <id> <!--req, xs:string;id--></id>
   <MACAddress max=""><!--req, xs:string--></MACAddress>
  </MACFilterAddress>
 </MACFilterAddressList>
</MACFilter>
```

16.2.59 XML_Cap_mailingList

mailingList capability message in XML format.

```
<mailingList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mailing><!--opt,xs:string--></mailing>
</mailingList>
```

16.2.60 XML_Cap_MaxElevation

MaxElevation capability message in XML format

```
<MaxElevation version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mElevation min="-20" max="0"><!--req, xs:integer, the lower limit of max. tilt-angle--> </mElevation>
 <mVerElevation><!--req, xs:integer, the upper limit of max. tilt-angle, normally it is 90°--></mVerElevation>
</MaxElevation>
```

16.2.61 XML_Cap_NetworkInterface

NetworkInterface capability message in XML format

```
<NetworkInterface version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string--></id>
 <IPAddress/><!--req-->
 <Wireless/><!--opt-->
 <Discovery/><!--opt-->
 <Link/><!--opt-->
 <defaultConnection><!--opt, xs:boolean--></defaultConnection>
 <macAddress min="" max=""><!--opt, xs:string--></macAddress>
 <EthernetPortList size="4"><!--opt, network interface information-->
  <EthernetPort><!--opt -->
   <id min="1",max="4"><!--req, xs: integer--></id>
   <MACAddress><!--req, xs:string--></MACAddress>
   <status opt="connected, disconnect"><!--opt, xs:string--></status>
   <speed><!--req, xs:integer, "10, 100, 1000, 10000"--></speed>
  </EthernetPort>
 </EthernetPortList>
</NetworkInterface>
```

16.2.62 XML_Cap_NTPServer

NTPServer capability message in XML format

```
<NTPServer version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id min="1" max=""><!--req, xs:string, ID--></id>
 <addressingFormatType opt="ipaddress,hostname"><!--req, xs:string, which field will be used to locate the NTP
server: "ipaddress, hostname"--></addressingFormatType>
 <hostname min="0" max="64"><!--dep, xs:string--></hostName>
 <ipAddress min="0" max="64"><!--dep, xs:string--></ipAddress>
 <ipv6Address min="0" max="64"><!--dep, xs:string--></ipv6Address>
 <portNo min="1" max="65535"><!--opt, xs:integer--></portNo>
 <synchronizeInterval min="0" max="65535"><!--opt, xs:integer, NTP time synchronization interval, unit: minute--></
synchronizeInterval>
</NTPServer>
```

16.2.63 XML_Cap_PreviewSwitch

PreviewSwitch message in XML format

```
<PreviewSwitch version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <groupNo min="0" max="15"><!--opt, xs: integer, group No.--></groupNo>
 <videoOutType
opt="CVBS,HDMI,VGA,AUXOutput1,AUXOutput2,AUXOutput3,AUXOutput4,extendHDMI1,extendHDMI2,extendHDMI3
,extendHDMI4,noSameSourceVGA1,noSameSourceVGA2,noSameSourceVGA3,noSameSourceVGA4,sameSourceVGA,m
ainLCD,AUX-VGA,AUX-LCD,zeroChannel">
  <!--opt, xs: string, video output types, if there are more than two outputs are homologous, you can combine these
outputs by "/" to be returned, e.g., if HDM1 and VGA1 are homologous outputs, "HDM1/VGA1" will be returned-->
 </videoOutType>
 <DisplayWindowList size="64">
  <DisplayWindow>
   <id><!--req, xs: string, window No., which equals to id × groupNo--></id>
   <displayChannelNo min="0" max="64"><!--req, xs: string, 0-not display, 1 to 64-displayed channel No.--></
displayChannelNo>
  </DisplayWindow>
 </DisplayWindowList>
 <previewFrameNo opt="1,4,6,8,9,25,32,36,auto1,auto2,auto3,auto4">
  <!--req, xs: string, number of live view windows, auto1-custom window division 1, auto2-custome window division
2, auto3-custome window division 3, auto4-custome window division 4-->
 </previewFrameNo>
 <sound><!--req, xs: boolean, whether to turn on audio during live view, true-yes--></sound>
 <switchTime opt="0,5,10,20,30,60,120,300"><!--req, xs: string, switching interval, unit: s--></switchTime>
 <sameSource>
  <!--dep, xs: boolean, whether the output is homologous, true-yes, this node is valid only when VideoOutType is
"noSameSourceVGA1", "noSameSourceVGA2", "noSameSourceVGA3", and "noSameSourceVGA4"-->
 </sameSource>
 <supportGetByPreviewNum>
  <!--opt, whether supports setting number of live view windows in the URL, true-yes-->
 </supportGetByPreviewNum>
 <supportGetByVideoOutType>
  <!--opt, xs: boolean, whether supports getting capability by output-->
 </supportGetByVideoOutType>
</PreviewSwitch>
```

16.2.64 XML_Cap_RegionClip

RegionClip capability message in XML format

```
<RegionClip version="2.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
 <id><!--req, xs: string--></id>
 <enabled><!--req, xs: boolean--></enabled>
 <normalizedScreenSize><!--req, read-only-->
  <normalizedScreenWidth><!--req, read-only, xs: integer--></normalizedScreenWidth>
  <normalizedScreenHeight><!--req, read-only, xs: integer--></normalizedScreenHeight>
 </normalizedScreenSize>
```

```
 <regionType opt="rectangle,convexPolygon,concavePolygon"><!--req, ro, xs:string--></regionType>
 <videoResolutionWidth opt="704"></videoResolutionWidth>
 <videoResolutionHeight opt="576"></videoResolutionHeight>
 <ClipRegionList>
  <ClipRegion>
   <RegionCoordinatesList size="1">
    <RegionCoordinates><!--req-->
     <positionX><!--req, xs: integer; x-coordinate--></positionX>
     <positionY><!--req, xs: integer; y-coordinate--></positionY>
    </RegionCoordinates>
   </RegionCoordinatesList>
  </ClipRegion>
 </ClipRegionList>
</RegionClip>
```

16.2.65 XML_Cap_RuleInfo

RuleInfo capability message in XML format.

```
<RuleInfo version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <ruleId opt="1,2,3,4,5,6,7,8"><!—req, xs:string-></ruleId>
 <ruleName min="" max=""> <!—req, xs:string-> </ruleName>
 <combinedRuleId opt="15,16"><!—req, xs:string-></combinedRuleId>
 <enabled opt="true,false"><!—req, xs:boolean-></enabled>
 <ruleType opt="region,line"><!—req, xs:string->/ruleType>
 <LineDetectionParam>
  <detectionTarget opt="all,human,vehicle, human_vehicle "/>
   <!—detection target, node with underline indicates that it supports multiple selections, e.g., human_vehicle
indicates human and vehicle-->
  <directionSensitivity opt="left-right,right-left,any" def="any"><!—req, xs:string-></directionSensitivity>
  <isSupportHumanMisinfoFilter>
   <!--opt, xs:boolean, whether supports false alarm filter of human: true-supports, false or no return-not support-->
  </isSupportHumanMisinfoFilter>
  <isSupportVehicleMisinfoFilter>
   <!--opt, xs:boolean, whether supports false alarm filter of vehicle: true-supports, false or no return-not support-->
  </isSupportVehicleMisinfoFilter>
  <sensitivity min="1" max="100" default="50"><!--req, xs:integer, sensitivity, from 1 to 100--></sensitivity>
 </LineDetectionParam>
 <FieldDetectionParam>
  <durationTime min="1" max="100" def="5"><!--req,xs:integer--> </durationTime>
  <sensitivityLevel min="1" max="100"><!—req, xs:integer, sensitivity from 0 to 100--> </sensitivityLevel>
  <detectionTarget opt="all,human,vehicle, human_vehicle "/>
   <!—detection target, node with underline indicates that it supports multiple selections, e.g., human_vehicle
indicates human and vehicle-->
  <isSupportHumanMisinfoFilter>
   <!--opt, xs:boolean, whether supports false alarm filter of human: true-supports, false or no return-not support-->
  </isSupportHumanMisinfoFilter>
  <isSupportVehicleMisinfoFilter>
   <!--opt, xs:boolean, whether supports false alarm filter of vehicle: true-supports, false or no return-not support-->
  </isSupportVehicleMisinfoFilter>
 </FieldDetectionParam>
```

```
<RegionEntranceParam>
  <detectionTarget opt="all,human,vehicle, human_vehicle "/>
    <!—detection target, node with underline indicates that it supports multiple selections, e.g., human_vehicle indicates human and vehicle-->
  <isSupportHumanMisinfoFilter>
    <!--opt, xs:boolean, whether supports false alarm filter of human: true-supports, false or no return-not support-->
  </isSupportHumanMisinfoFilter>
  <isSupportVehicleMisinfoFilter>
    <!--opt, xs:boolean, whether supports false alarm filter of vehicle: true-supports, false or no return-not support-->
  </isSupportVehicleMisinfoFilter>
 </RegionEntranceParam>
 <RegionExitingParam>
  <detectionTarget opt="all,human,vehicle, human_vehicle "/><!—detection target, node with underline indicates that it supports multiple selections, e.g., human_vehicle indicates human and vehicle-->
  <isSupportHumanMisinfoFilter>
    <!--opt, xs:boolean, whether supports false alarm filter of human, true-supports, false or no return-not support-->
  </isSupportHumanMisinfoFilter>
  <isSupportVehicleMisinfoFilter>
    <!--opt, xs:boolean, whether supports false alarm filter of vehicle, true-supports, false or no return-not support-->
  </isSupportVehicleMisinfoFilter>
 </RegionExitingParam>
 <PeopleNumChangeParam>
  <peopleNumThreshold min="" max="" default=""><!--opt,xs:integer--></peopleNumThreshold>
  <detectMode opt="greaterthan,lessThan,equal,notEqual"><!-- opt,xs:string--></detectMode>
  <noneStateEffectiveEnabled><!--opt,xs:boolean--></noneStateEffectiveEnabled>
  <durationTime min="" max="" default=""><!--opt,xs:integer--></durationTime>
 </PeopleNumChangeParam>
 <SpacingChangeParam>
  <spacingThreshold min="" max="" default=""><!--opt,xs: integer--></spacingThreshold>
  <detectMode><!--opt,xs:string,"greaterthan,lessThan"--></detectMode>
  <durationTime min="" max="" default=""><!--opt,xs:integer--></durationTime>
 </SpacingChangeParam>
 <ViolentMotionParam>
  <sensitivity min="" max="" default=""> <!--opt,xs:integer--> </sensitivity>
 </ViolentMotionParam>
 <LeavePositionParam>
  <leaveDelay min="" max="" default=""><!--opt,xs:integer--></leaveDelay>
  <onPosition min="" max="" default=""><!--opt,xs:integer--></onPosition>
 </LeavePositionParam>
 <FailDownParam>
  <durationTime min="" max="" default=""><!--opt,xs:integer--></durationTime>
  <heightThreshold min="" max="" default=""><!--opt,xs:integer--></heightThreshold>
 </FailDownParam>
 <RunningParam>
  <speed min="" max="" default=""><!--opt,xs:integer--></speed>
 </RunningParam>
 <RetentionParam><!--dep-->
  <durationTime min="" max="" default="">
    <!--req, xs:integer, duration time, from 60 seconds to 3600 seconds, default value: 1800 seconds-->
 </RetentionParam>
 <ParkingParam>
  <durationTime min="5" max="100"><!-- req,xs:integer--> </durationTime>
```

```
 </ParkingParam>
 <eventType
opt="none,lineDetection,fieldDetection,regionEntrance,regionExiting,parking,peopleNumChange,spacingChange,violentMotion,leavePosition,failDown,running,retentionParam">
  <!—req, xs:string-->
 </eventType>
 <SizeFilter>
  <enabled opt="true,false"><!—req, xs:boolean--></enabled>
  <mode opt="pixels,actualSize"><!—req, xs:string, filter mode: "pixels"-filter according to pixel, "actualSize"-filter according to actual size--></mode>
  <ObjectSizeList size="4">
   <ObjectSize><!--only return the default value of supported detection type-->
    <detectionTarget><!--opt,xs:string, detection target, "all"-all, "human"-human, "vehicle"-vehicle, "human_vehicle"-human and vehicle--></detectionTarget>
    <MaxObjectSize><!--maximum size:float-->
     <positionX><!--req,xs:integer;coordinate--></positionX>
     <positionY><!--req,xs:integer;coordinate--></positionY>
     <width><!--req,xs:integer, default width value: when detectionTarget values "all", it is 500, "human"-200, "vehicle"-500, "human_vehicle"-500, unit: cm--></width>
     <height><!--req,xs:integer, default height value: when detectionTarget values "all", it is 100,  "human"-300, "vehicle"-100, "human_vehicle"-100, unit: cm --></height>
    </MaxObjectSize>
    <MinObjectSize><!--minimum size:float-->
     <positionX><!--req,xs:integer;coordinate--></positionX>
     <positionY><!--req,xs:integer;coordinate--></positionY>
     <width><!--req,xs:integer, default width value: when detectionTarget values "all", it is 60, "human"-60, "vehicle"-180, "human_vehicle"-60, unit: cm--></width>
     <height><!--req,xs:integer, default height value: when detectionTarget values "all", it is 10, "human"-10, "vehicle"-140, "human_vehicle"-10, unit: cm--></height>
    </MinObjectSize>
   </ObjectSize>
  </ObjectSizeList>
 </SizeFilter>
 <RuleRegion>
  <RegionCoordinatesList size="4">
   <RegionCoordinates>
    <positionX min="" max=""><!--req, xs:integer--></positionX>
    <positionY min="" max=""><!--req, xs:integer--></positionY>
   </RegionCoordinates>
  </RegionCoordinatesList>
 </RuleRegion>
 <backgroundSuppression opt="open,close,selfAdapt"><!--opt, xs:string, background suppression--></backgroundSuppression>
</RuleInfo>
```

Remarks

When the **mode** values "actualSize", the input value of **positionX** and **positionY** is 0.

16.2.66 XML_Cap_SerialCommand

SerialCommand capability message in XML format

```
<SerialCommand version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <chainNo min="1" max="16">
  <!--opt, xs:integer-->
 </chainNo>
 <command>
  <!--req, xs:hexBinary-->
 </command>
</SerialCommand>
```

16.2.67 XML_Cap_SerialPort

SerialPort capability message in XML format

```
<SerialPort version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id min="0" max="255">
  <!--req, xs:string, serial port ID-->
 </id>
 <enabled>
  <!--req, xs:boolean, whether to enable the serial port: "true, false"-->
 </enabled>
 <serialNumber opt="1,2,3,4,5">
  <!--opt, xs:integer, serial port No., which is between 1 and 5-->
 </serialNumber>
 <serialPortType opt="RS485,RS422,RS232">
  <!--req, xs:string, serial port type: "RS485", "RS422", "RS232"-->
 </serialPortType>
 <duplexMode opt="half,full">
  <!--req, xs:string, duplex mode of the serial port: "half", "full"-->
 </duplexMode>
 <direction opt="monodirectional,bdirectional">
  <!--req, xs:string-->
 </direction>
 <baudRate range="600,1200,2400,4800,9600,19200,38400,57600,76800,115200">
  <!--req, xs:integer-->
 </baudRate>
 <dataBits min="5" max="8">
  <!--req, xs:integer-->
 </dataBits>
 <parityType opt="none,even,odd,mark,space">
  <!--req, xs:string-->
 </parityType>
 <stopBits range="1,2">
  <!--req, xs:string, stop bit: "1,1.5,2"-->
 </stopBits>
 <workMode opt="console,transparent,narrowband,audiomixer,stairsControl,cardReader,disabled,custom">
```

```
  <!--dep, xs:string, working mode: "console","transparent","narrowband","audiomixer","stairsControl"-elevator control,"cardReader"-card reader,"disabled","custom". This node is required only when <serialPortType> is set to "RS232"-->
 </workMode>
 <flowCtrl opt="none,software,hardware">
  <!--req, xs:string-->
 </flowCtrl>
 <rs485WorkMode opt="Led, CaptureTrigger">
  <!--opt, xs:string, working mode of RS-485 serial port, which is used for LED display or triggering transmission of captured pictures. This node is valid only when <serialPortType> is "RS485"-->
 </rs485WorkMode>
 <audiomixerProtocolType opt="HIKVISION">
  <!--opt, xs:string, "HIKVISION"-->
 </audiomixerProtocolType>
</SerialPort>
```

16.2.68 XML_Cap_SIPInfo

SIPInfo capability message in XML format

```
<SIPInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <videoID opt="1,2,3">
  <!--req, xs:string-->
 </videoID>
 <AlarmInList>
  <AlarmIn>
   <id min="0" max="8">
    <!--req, xs:integer-->
   </id>
   <alarmInID min="0" max="64">
    <!--req, xs:string-->
   </alarmInID>
  </AlarmIn>
 </AlarmInList>
</SIPInfo>
```

16.2.69 XML_Cap_SIPServer

SIPServer capability message in XML format

```
<SIPServer version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id min="1" max="">
  <!--req, xs:interger, the maximum ID depends on the number of channels-->
 </id>
 <localPort min="0" max="65535">
  <!--req, xs:integer-->
 </localPort>
 <streamID min="1" max="255">
  <!--req, xs:integer, stream type: 1-main stream, 2-sub-stream, 3-third stream-->
```

```
</streamID>
<Standard>
 <!--opt-->
 <registerStatus>
  <!--ro, req, xs:boolean, registration status: "false"-unregistered, "true"-registered-->
 </registerStatus>
 <enabled >
  <!--req, xs:string, "true"-log in, "false"-log out-->
 </enabled>
 <registrar min="0" max="128">
  <!--req, xs:string-->
 </registrar>
 <registrarPort min="1024" max="65535">
  <!--req, xs:integer-->
 </registrarPort>
 <proxy min="0" max="128">
  <!--req, xs:string-->
 </proxy>
 <proxyPort min="0" max="65535">
  <!--req, xs:integer-->
 </proxyPort>
 <displayName min="0" max="64">
  <!--req, xs:string-->
 </displayName>
 <username min="0" max="64">
  <!--req, xs:string-->
 </userName>
 <authID min="0" max="64">
  <!--req, xs:string-->
 </authID>
 <password min="0" max="32">
  <!--wo, req, xs:string-->
 </password>
 <expires min="0" max="100000">
  <!--req, xs:integer-->
 </expires>
</Standard>
<GB28181>
 <!--opt-->
 <registerStatus>
  <!--req, xs:boolean, "true,false"-->
 </registerStatus>
 <enabled>
  <!--req, xs:boolean, "true,false"-->
 </enabled>
 <registrar min="0" max="128">
  <!--req, xs:string-->
 </registrar>
 <registrarPort min="1024" max="65535">
  <!--req, xs:integer-->
 </registrarPort>
 <serverId min="0" max="64">
```

```
    <!--req, xs:string-->
   </serverId>
   <serverDomain min="0" max="128">
    <!--req, xs:string-->
   </serverDomain>
   <username min="0" max="64">
    <!--req, xs:string-->
   </userName>
   <authID min="0" max="64">
    <!--req, xs:string-->
   </authID>
   <password min="0" max="32">
    <!--wo, req, xs:string-->
   </password>
   <expires min="30" max="100000">
    <!--req, xs:integer-->
   </expires>
   <liveTime min="30" max="100000">
    <!--req, xs:integer-->
   </liveTime>
   <heartbeatTime min="0" max="255">
    <!--req, xs:integer-->
   </heartbeatTime>
   <heartbeatCount min="3" max="255">
    <!--req, xs:integer-->
   </heartbeatCount>
  </GB28181>
</SIPServer>
```

16.2.70 XML_Cap_SmartSearchDescription

SmartSearchDescription capability message in XML format

```
<SmartSearchDescription version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <searchID>
  <!--req, xs:string, search ID, which is used to confirm the upper-level platform or system. If the platform or system
are same during two times of search, the search history will be recorded in the memory for next fast search-->
 </searchID>
 <searchResultPosition><!--req, xs: integer--></searchResultPosition>
 <maxResults><!--req, xs: integer--></maxResults>
 <trackID><!--req, xs: integer, channel ID, e.g., 101-main stream if first channel--></trackID>
 <startTime><!--req, xs: datetime, start time of validity period, e.g., 2013-06-10T 12:00:00Z--></startTime>
 <endTime><!--req, xs: datetime, end time of validity period, e.g., 2013-06-10T 13:00:00Z--></endTime>
 <type opt="motionDetection, traversePlaneDetection,FieldDetection, faceDetection">
  <!--req, xs: string; VCA event type-->
 </type>
 <MotionDetection><!--dep, it is valid when type is "motionDetection"-->
  <Grid>
   <rowGranularity></rowGranularity>
   <columnGranularity></columnGranularity>
  </Grid>
```

```
  <MotionDetectionLayout>
   <layout>
    <gridMap></gridMap>
   </layout>
  </MotionDetectionLayout>
  <sensitivity min="1", max="100"><!--opt, xs: integer--></sensitivity>
 </MotionDetection>
 <TraversePlane><!--dep, it is valid when type is "traversePlaneDetection"-->
  <TraversePlaneParam>
   <LineList>
    <Line>
     <StartPoint>
      <x><!--req, xs: float--></x>
      <y><!--req, xs: float--></y>
     </StartPoint>
     <EndPoint>
      <x><!--req, xs: float--></x>
      <y><!--req, xs: float--></y>
     </EndPoint>
    </Line>
   </LineList>
   <crossDirection opt="bothDirection, leftToRight, rightToLeft><!--opt, xs: string, crossing direction--
><crossDirection>
   <sensitivity min="1", max="100"><!-- opt, xs: integer--></sensitivity>
   <planeHeight><!--opt, xs: integer--></planeHeight>
   <detectionTarget opt="all, human, vehicle><!--req, xs: string--><detectionTarget>
  </TraversePlaneParam>
  <dwPreTime><!--opt, xs: integer, pre-recording time--></dwPreTime>
  <dwDelayTime><!--opt, xs: integer,post-recording time--></dwDelayTime>
  <PTZPos>
   <P><!--opt, xs: integer--></P>
   <T><!--opt, xs: integer--></T>
   <Z><!--opt, xs: integer--></Z>
  </PTZPos>
  <advancedType opt="humanFeature, objectFeature"><!--opt, xs: string--></advancedType>
  <advance><!--dep, it is valid when type is "motionDetection"-->
   <HumanFeature>
    <age min="0" max="100"><!--opt, xs: integer--></age>
    <sex opt="male,female"><!--opt, xs: string--></sex>
    <eyeGlass><!--opt, xs: boolean--></eyeGlass>
   </HumanFeature><!--dep, it is valid when type is "humanFeature"-->
   <ObjectFeature>
    <colorRatel><!--opt, xs: integer--></colorRatel>
    <R><!--opt, xs: integer--></R>
    <G><!--opt, xs: integer--></G>
    <B><!--opt, xs: integer--></B>
   </ObjectFeature><!--dep, it is valid when type is "objectFeature"-->
  </advance>
 </TraversePlane>
 <FieldDetection><!--dep, it is valid when type is "FieldDetection"-->
  <normalizedScreenSize>
   <normalizedScreenWidth><!--opt, xs: integer--></normalizedScreenWidth>
```

```
  <normalizedScreenHeight><!--opt, xs: integer--></normalizedScreenHeight>
 </normalizedScreenSize>
 <param>
  <region>
   <pointList>
    <point>
     <x><!--opt, xs: integer--></x>
     <y><!--opt, xs: integer--></y>
    </point>
   </pointList>
  </region>
 </param>
 <duration min="1", max="100"><!--opt, xs: integer--></duration>
  <sensitivity min="1", max="100"><!--opt, xs: integer--></sensitivity>
  <rate min="1", max="100"><!--opt, xs: integer--></rate>
  <detectionTarget opt="all, human, vehicle><!--req, xs: string--><detectionTarget>
  <dwPreTime><!--opt, xs: integer, pre-recording time--></dwPreTime>
  <dwDelayTime><!--opt, xs: integer, post-recording time--></dwDelayTime>
  <PTZPos>
   <P><!--opt, xs: integer--></P>
   <T><!--opt, xs: integer--></T>
   <Z><!--opt, xs: integer--></Z>
  </PTZPos>
  <advancedType opt="humanFeature, objectFeature"><!--opt, xs: string--></advancedType>
  <advance><!--dep, it is valid when type is "motionDetection"-->
   <HumanFeature>
    <age min="0" max="100"><!--opt, xs: integer--></age>
    <sex opt="male,female"><!--opt, xs: string--></sex>
    <eyeGlass><!--opt, xs: boolean--></eyeGlass>
   </HumanFeature><!--dep, it is valid when type is "humanFeature"-->
   <ObjectFeature>
    <colorRatel><!--opt, xs: integer--></colorRatel>
    <R></R>
    <G></G>
    <B></B>
   </ObjectFeature><!--dep, it is valid when type is "objectFeature"-->
  </advance>
 </FieldDetection>
 <FaceDetection><!--dep, it is valid when type is "faceDetection"-->
  <param>
   <region>
    <pointList>
     <point>
      <x/>
      <y/>
     </point>
    </pointList>
   </region>
  </param>
  <duration min="1", max="100"><!--opt, xs: integer--></duration>
  <sensitivity min="1", max="100"><!--opt, xs: integer--></sensitivity>
  <rate min="1", max="100"><!--opt, xs: integer--></rate>
```

```
    <detectionTarget opt="all, human, vehicle"><!--req, xs: string--><detectionTarget>
    <dwPreTime><!--opt, xs: integer, pre-recording time--></dwPreTime>
    <dwDelayTime><!--opt, xs: integer, post-recording time--></dwDelayTime>
    <PTZPos>
     <P><!--opt, xs: integer--></P>
     <T><!--opt, xs: integer--></T>
     <Z><!--opt, xs: integer--></Z>
    </PTZPos>
    <advancedType opt="humanFeature, objectFeature"><!--opt, xs: string--></advancedType>
    <advance><!--dep, it is valid when type is "motionDetection"-->
    <HumanFeature>
     <colorRatel><!--opt, xs: integer--></colorRatel>
     <age min="0" max="100"><!--opt, xs: integer--></age>
     <sex opt="male,female"><!--opt, xs: string--></sex>
     <eyeGlass><!--opt, xs: boolean--></eyeGlass>
    </HumanFeature> <!--dep, it is valid when type is "humanFeature"-->
    <ObjectFeature>
     <colorRatel><!--opt, xs: integer--></colorRatel>
     <R></R>
     <G></G>
     <B></B>
    </ObjectFeature><!--dep, it is valid when type is "objectFeature"-->
   </advance>
  </FaceDetection>
</SmartSearchDescription>
```

16.2.71 XML_Cap_SoftwareService

SoftwareService capability message in XML format

```
<SoftwareService  version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ThirdStream><!--opt, third stream configuration-->
  <enabled opt="true,false"><!--req, xs: boolean, whether to enable third stream configuration--></enabled>
  <thirdStreamPrompt opt="prompt5">
   <!--req, xs: string, set audible prompt for third stream, prompt5-"When third stream is enabled, functions such as intrusion detection, line crossing detection, region entrance detection, region exiting detection, face detection, HDMI, H.264+ and H265+, are not supported. New settings will take effect after a reboot."-->
  </thirdStreamPrompt>
 </ThirdStream>
 <PanoramaDisplay><!--opt, display the image range on panorama view-->
  <enabled opt="true,false" default="false">
   <!--req, xs: boolean, whether to enable image range display on panorama view-->
  </enabled>
 </PanoramaDisplay>
 <MotionDetect>
  <enabled opt="true,false"><!--whether to enable motion detetion--></enabled>
  <MotionDetectPrompt opt="prompt1">
   <!--req, xs: string, motion detection audible prompt, prompt1-"When motion detection is enabled, functions such as intrusion detection, line crossing detection, region entrance detection, and region exiting detection, are not supported. New settings will take effect after a reboot."-->
  </MotionDetectPrompt>
```

```
 </MotionDetect>
</SoftwareService>
```

16.2.72 XML_Cap_StreamingChannel

StreamingChannel capability message in XML format

```
<StreamingChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id opt="111,222,333,444"><!--req, xs:string, ID--></id>
 <channelName min="0" max="64"><!--req, xs:string, channel name--></channelName>
 <enabled opt="true,false" def="true"><!--req, xs:boolean--></enabled>
 <Transport><!--req-->
  <rtspPortNo min="0" max="65535" def="554">554</rtspPortNo>
  <maxPacketSize min="0" max="1500"><!--opt, xs:integer--></maxPacketSize>
  <audioPacketLength min="0" max="5000"/>
  <audioInboundPacketLength min="0" max="5000"/><!--opt, xs:integer-->
  <audioInboundPortNo min="0" max="65535"/><!--opt, xs:integer-->
  <videoSourcePortNo min="0" max="65535"/><!--opt, xs:integer-->
  <audioSourcePortNo min="0" max="65535"/><!--opt, xs:integer-->
  <ControlProtocolList><!--req-->
   <ControlProtocol><!--list-->
    <streamingTransport opt="RTSP/RTP,HTTP"><!--req, xs:string, "HTTP,RTSP,SHTTP,SRTP"--></streamingTransport>
   </ControlProtocol>
  </ControlProtocolList>
  <Unicast><!--opt-->
   <enabled opt="true,false" def="false"/><!--req, xs:boolean-->
   <rtpTransportType opt="RTP/UDP,RTP/TCP"/><!--opt, xs:string, "RTP/UDP,RTP/TCP"-->
  </Unicast>
  <Multicast><!--opt-->
   <enabled opt="true,false" def="false"/><!--req, xs:boolean-->
   <userTriggerThreshold/><!--opt, xs:integer-->
   <videoDestPortNo min="1" max="65535" def="8860"/><!--opt, xs:integer-->
   <audioDestPortNo min="1" max="65535" def="8860/><!--opt, xs:integer-->
   <destIPAddress min="8" max="16"/><!--dep, xs:string-->
   <destIPv6Address min="15" max="39"/><!--dep, xs:string-->
   <ttl min="0" max="127" def="1"/><!--opt, xs:integer-->
   <activeMulticastEnabled>
    <!--opt, xs: boolean, "true, false", whether to enable active multicast, which is mutually exclusive with passive
multicast-->
   </activeMulticastEnabled>
   <packagingFormat opt="RTP,TS,ES,PS"><!--opt, xs: string, encapsulation format--></packagingFormat>
   <FecInfo><!--opt-->
    <fecRatio min="0" max="100">
     <!--req, read-only, xs: integer, extra bandwidth occupation ratio of forward error correction (FEC) data, the value
is between 0 and 100, the default value is 0-->
    </fecRatio>
    <fecDestPortNo>
     <!--opt, xs: integer, port No. of FEC multicast, the default port No. is specified by device-->
    </fecDestPortNo>
   </FecInfo>
  </Multicast>
```

```
   <Security><!--opt-->
    <enabled opt="true,false" def="false"/><!--req, xs:boolean-->
    <certificateType opt="digest,digest/baisc" def="digest"><!--req, xs:string--></certificateType>
   </Security>
   <SRTPMulticast><!--opt-->
    <SRTPVideoDestPortNo min="" max=""><!--opt, xs:integer--></SRTPVideoDestPortNo>
    <SRTPAudioDestPortNo min="" max=""><!--opt, xs:integer--></SRTPAudioDestPortNo>
   </SRTPMulticast>
  </Transport>
  <Video>
   <enabled opt="true,false">true</enabled>
   <videoInputChannelID opt="1,2,3,4">2</videoInputChannelID>
   <videoCodecType opt="MJPEG,MPEG4">MPEG4</videoCodecType>
   <videoScanType opt="interlaced,progressive">progressive</videoScanType>
   <videoResolutionWidth min="0" max="640">640</videoResolutionWidth>
   <videoResolutionHeight min="0" max="480">480</videoResolutionHeight>
   <videoDiffResolutionList><!--opt, list, if this node exists, it indicates that the resolution depends on the node <videoCodecType>, and <videoResolutionWidth> and <videoResolutionHeight> are invalid. For forward compatibility, the maximum set of <videoCodecType>, <videoResolutionWidth>, and <videoResolutionHeight>-->
    <videoDiffResolution>
     <videoCodecType>
      <!--req, xs:string, "MPEG4,MJPEG,3GP,H.264,HK.264,MPNG,SVAC"-->
     </videoCodecType>
     <videoResolutionWidth><!--req, xs:integer--></videoResolutionWidth>
     <videoResolutionHeight><!--req, xs:integer--></videoResolutionHeight>
    </videoDiffResolution>
   </videoDiffResolutionList>
   <videoPositionX min="0" max="640">0</videoPositionX>
   <videoPositionY min="0" max="480">0</videoPositionY>
   <videoQualityControlType opt="CBR,VBR">CBR</videoQualityControlType>
   <constantBitRate min="50" max="4000" dynamic="true">2000</constantBitRate>
   <maxFrameRate opt="2500,1250,625,312,156,78,   830" >2500</maxFrameRate>
   <keyFrameInterval min="0", max="10000">1000</keyFrameInterval>
   <rotationDegree opt="0,90,180,270" def="0">0</rotationDegree>
   <mirrorEnabled opt="true,false" def="false">false</mirrorEnabled>
   <snapShotImageType opt="JPEG" def="JPEG">JPEG</snapShotImageType>
   <IntelligentInfoDisplayMethod opt="player,non-player"><!--opt, xs:string, method of displaying intelligent information: "player", "non-player"--></IntelligentInfoDisplayMethod>
   <minimumResolutionSupportedBySmartCode>
    <!--opt, xs:string, the minimum resolution supported by smart coding (smart264 and smart265), e.g., "640*512". If this node is returned, it indicates the smart code of current device (H7, H5) is limited by the minimum resolution, and the upper layer can get the supported minimum resolution for smart coding of current device. For the resolution lower than the minimum resolution does not support smart coding. If this node is not returned, it indicates the smart coding of current device (H3) is not limited by minimum resolution-->
   </minimumResolutionSupportedBySmartCode>
  </Video>
  <Audio>
   <enabled opt="true,false" def="false">false</enabled>
   <audioInputChannelID opt="1,2,3,4">2</audioInputChannelID>
   <audioCompressionType opt="G.726,G.711ulaw" def="G.726">G.726</audioCompressionType>
   <audioBitRate opt="16,24,32,40" def="32" dynamic="true">24</audioBitRate>
   <audioSamplingRate opt="8" dynamic="true">8</audioSamplingRate>
```

```
   <audioResolution opt="3,4,5,6" dynamic="true"/>
  </Audio>
  <isSpportDynamicCapWithCondition><!--opt, xs:boolean, whether to support dynamic capability with conditions--></
isSpportDynamicCapWithCondition>
  <enableCABAC><!--opt, xs:boolean, whether it supports compressing stream to improve performance--></
enableCABAC>
  <subStreamRecStatus><!--opt, xs:boolean--></subStreamRecStatus>
  <isSupportRefreshFrame><!--opt, xs:boolean, whether it supports refreshing frames when Smart264 is enabled--></
isSupportRefreshFrame>
  <isSupportBareDataOverlay><!--opt, xs:boolen--></isSupportBareDataOverlay>
  <isSupportRTCPCfg><!--opt, xs:boolean--></isSupportRTCPCfg>
  <customStreamEnable><!--opt, xs:boolean, whether the stream is custom stream: "true"-yes, this node is not
returned-no--></customStreamEnable>
</StreamingChannel>
```

16.2.73 XML_Cap_SupplementLight

SupplementLight capability message in XML format

```
<SupplementLight><!--opt-->
  <mode opt="schedule,off,on,auto"><!--opt, xs: string, adjustment mode of supplement light--></mode>
  <Schedule>
    <TimeRange><!--req-->
      <beginTime><!--req, xs: time, ISO8601 time--></beginTime>
      <endTime><!-- req, xs: time, ISO8601 time--></endTime>
    </TimeRange>
  </Schedule>
  <brightnessLimit min="0" max="100">
    <!--dep, xs: integer, brightness of supplement light, which is between 0 and 100; the brightness can be adjust when
<mode> is set to "on"-->
  </brightnessLimit>
  <supplementLightMode opt="mixed,whiteLight,close">
    <!--opt, xs: string, illumination mode: "mixed"-hybrid, "whitelight"-white light, "close"-disabled-->
  </supplementLightMode>
  <irLightBrightness min="0" max="100">
    <!--dep, xs: integer, brightness of IR supplement light, which is between 0 and 100; this node is valid only when
<supplementLightMode> is set to "mixed" and <mixedLightBrightnessRegulatMode> is set to "manual"-->
  </irLightBrightness>
  <mixedLightBrightnessRegulatMode opt="manual,auto">
    <!--dep, xs: string, brightness adjustment mode of hybrid supplement light; this node is valid only when
<supplementLightMode> is set to "mixed"-->
  </mixedLightBrightnessRegulatMode>
  <mixedModeSupportType opt="irLight,whiteLight">
    <!--dep, xs: string, light type of hybrid illumination mode, "irLight"-IR light, "whiteLight"-white light-->
  </mixedModeSupportType>
  <highIrLightBrightness min="0" max="100">
    <!--dep, xs: integer, brightness of far IR light, which is between 0 and 100; this node cannot be configured together
with node <irLightBrightness>-->
  </highIrLightBrightness>
  <highWhiteLightBrightness min="0" max="100">
    <!--dep, xs: integer, brightness of far white light, which is between 0 and 100; this node cannot be configured
```

```
together with node <brightnessLimit>-->
  </highWhiteLightBrightness>
  <lowIrLightBrightness min="0" max="100">
    <!--dep, xs: integer, brightness of near IR light, which is between 0 and 100; this node cannot be configured together with node <irLightBrightness>-->
  </lowIrLightBrightness>
  <lowWhiteLightBrightness min="0" max="100">
    <!--dep, xs: integer, brightness of near white light, which is between 0 and 100; this node cannot be configured together with node <brightnessLimit>-->
  </lowWhiteLightBrightness>
  <whiteLightBrightness min="0" max="100"><!--dep, xs: integer, white light brightness, which is between 0 and 100--></whiteLightBrightness>
</SupplementLight>
```

16.2.74 XML_Cap_SyncSignalOutputList

SyncSignalOutputList capability message in XML format

```
<SyncSignalOutputList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <IOOutNum min="3" max="8">
    <!--req, xs:string, number of IO outputs-->
  </IOOutNum>
  <SyncSignalOutput>
    <id min="1" max="8">
      <!--req, xs:integer, ID, which is between 1 and 8-->
    </id>
    <IOWorkMode opt="flashLight,polarizer,continuousLight,flashLightSwitch">
      <!--req, xs:string, IO output mode: "flashLight"-strobe light control mode, "polarizer"-polarizer control mode, "continuousLight"-solid light control mode, "flashLightSwitch"-strobe light switching mode (used to switch between the strobe supplement light mode and IR mode). When this node is set to "polarizer", only <outputStatus>, <detectBrightnessEnable>, <brightnessThreshold>, <flashEnabled>, <startHour>, <startMinute>, <endHour>, and <endMinute> are valid, and the <outputStatus> can only be set to "high" or "low". When this node is set to "continuousLight", only <detectBrightnessEnable>, <brightnessThreshold>, <flashEnabled>, <startHour>, <startMinute>, <endHour>, and <endMinute> are valid-->
    </IOWorkMode>
    <defaultStatus opt="hige,low">
      <!--req, xs:string, effective status-->
    </defaultStatus>
    <outputStatus opt="high,low,pulse">
      <!--req, xs:string, default status-->
    </outputStatus>
    <aheadTime min="" max="">
      <!--req, xs:integer, pre-output time-->
    </aheadTime>
    <timeDelay min="" max="">
      <!--req, xs:integer, output duration-->
    </timeDelay>
    <freqMultiplyulti min="1" max="15">
      <!--req, xs:integer, frequency multiplication, which is between 1 and 15-->
    </freqMultiplyulti>
    <dutyRate min="0" max="40">
```

```
    <!--req, xs:integer, duty ratio, which is between 0 and 40-->
   </dutyRate>
   <postFlashEnable>
    <!--req, xs:boolean-->
   </postFlashEnable>
   <illegalFlashEnable>
    <!--req, xs:boolean-->
   </illegalFlashEnable>
   <videoFlashEnable>
    <!--req, xs:boolean-->
   </videoFlashEnable>
   <detectBrightnessEnable>
    <!--req, xs:boolean-->
   </detectBrightnessEnable>
   <brightnessThreshold min="0" max="100">
    <!--dep, xs:integer, brightness threshold, which is between 0 and 100-->
   </brightnessThreshold>
   <flashEnabled>
    <!--req, xs:boolean-->
   </flashEnabled>
   <startHour min="" max="">
    <!--dep, xs:integer-->
   </startHour>
   <startMinute min="" max="">
    <!--dep, xs:integer-->
   </startMinute>
   <endHour min="" max="">
    <!--dep, xs:integer-->
   </endHour>
   <endMinute min="" max="">
    <!--dep, xs:integer-->
   </endMinute>
   <plateBrightness>
    <!--req, xs:boolean-->
   </plateBrightness>
   <incrBrightEnable>
    <!--opt, xs:boolean, whether to enable brightness enhancement mode (for solid light mode)-->
   </incrBrightEnable>
   <incrBrightTime min="0" max="10000">
    <!--req, xs:integer, brightness enhancement duration, which is between 0 and 10000, unit: millisecond. This node is
valid only when <incrBrightEnable> is "true"-->
   </incrBrightTime>
   <incrBrightPercent min="0" max="100">
    <!--req, xs:integer, percentage of brightness enhancement, which is between 0 and 100. This node is valid only
when <incrBrightEnable> is "true"-->
   </incrBrightPercent>
   <brightness min="0" max="100">
    <!--dep, xs:integer, solid light brightness (for solid light mode), which is between 0 and 100-->
   </brightness>
   <delayCaptureTime min="1" max="1000">
    <!--dep, xs:integer, delayed capture time, which is between 1 and 1000, unit: millisecond. This node is valid only
when <incrBrightEnable> is "true"-->
```

```
    </delayCaptureTime>
    <manualBrightnessEnable>
      <!--req, xs:boolean, whether to enable adjusting brightness manually-->
    </manualBrightnessEnable>
    <manualBrightness>
      <!--dep, xs:integer, brightness adjusted manually, which is between 0 and 100-->
    </manualBrightness>
  </SyncSignalOutput>
</SyncSignalOutputList>
```

16.2.75 XML_Cap_Telnetd

Telnetd capability message in XML format

```
<Telnetd version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled>
    <!--req, xs:boolean, whether to enable telnet: "true, false"-->
  </enabled>
  <radarMsgEnabled>
    <!--req, xs:boolean, whether to enable uploading radar debugging information: "true, false"-->
  </radarMsgEnabled>
  <illeagalLoginLock>
    <!--req, xs:boolean, "true, false"-->
  </illeagalLoginLock>
</Telnetd>
```

16.2.76 XML_Cap_tempRange

tempRange capability message in XML format

```
<?xml version="1.0" encoding="utf-8"?>
<TempRange version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <mode opt="automatic,manual">
    <!--req, xs:string, temperature range mode: "automatic"-automatic mode, "manual"-manual mode-->
  </mode>
  <temperatureUpperLimit min="-20" max="550" def="150">
    <!--dep, xs:float, maximum temperature, corrects to one decimal, the minimum value is "-20", the maximum value
is "550", unit: Celsius degree; its value should be larger than temperatureLowerLimit; it is valid when the value of
mode is "manual"-->
  </temperatureUpperLimit>
  <temperatureLowerLimit min="-20" max="550" def="0">
    <!--dep, xs:float, minimum temperature, corrects to one decimal, the minimum value is "-20", the maximum value is
"550", unit: Celsius degree; its value should be smaller than temperatureUpperLimit; it is valid when the value of
mode is "manual"-->
  </temperatureLowerLimit>
</TempRange>
```

16.2.77 XML_Cap_Time

Time capability message in XML format

```
<Time version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <timeMode opt="NTP,manual, local,satellite,timecorrect" def="satellite"><!--req, xs:string--></timeMode>
 <localTime min="0" max="256">
  <!--dep, xs:datetime, this node is required when <timemode> is "manual" or "local"-->
 </localTime>
 <timeZone min="0" max="256">
  <!--dep, xs:string, POSIX time zone string, this node is required when <timemode> is "manual", "local" or "NTP"-->
 </timeZone>
 <satelliteInterval min="" max="">
  <!--dep, xs:integer, minutes, time synchronization interval of locating by satellite, this node is valid only when
<timemode> is "satellite"-->
 </satelliteInterval>
 <timeType opt="local, UTC">
  <!--opt, xs: string, time type, it can be local, or UTC, or local and UTC. If this node is not returned, it indicates that
device does not support getting or setting time type-->
 </timeType>
</Time>
```

16.2.78 XML_Cap_Track

Track capability message in XML format

```
<Track version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--xs:integer, the value of <id> and <Channel> is the same. For example, 201 refers to the main stream of
channel 1, 202 refers to the sub-stream of channel 2, and so on--></id>
 <Channel><!--req, xs:integer--></Channel>
 <Enable><!--req, xs:boolean--></Enable>
 <Description><!--req, xs:string, e.g., trackType=standard,sourceTag=AXIS210a,contentType=video,codecType=MPEG4-
SP,resolution=640x480,frameRate=20 fps,bitrate=6000 kbps--></Description>
 <TrackGUID><!--req, xs:string, GUID generated by the client, e.g., A01AAAAA-BBBB-CCCC-DDDD-033595353625--></
TrackGUID>
 <Size><!--opt, xs:integer--></Size>
 <Duration min="0" max="750"><!--opt, xs:string, video expiry date, e.g., P10DT15H indicates that the video will
expire after 10 days and 15 hours--></Duration>
 <DefaultRecordingMode opt="CMR,MOTION,ALARM,EDR,ALARMANDMOTION,AllEvent,POS"><!--req, xs:string,
default video type--></DefaultRecordingMode>
 <LoopEnable><!--opt, xs:boolean, whether to support recurrently overwriting--></LoopEnable>
 <SrcDescriptor><!--video source description-->
  <SrcGUID><!--req, xs:string, GUID generated by the device, e.g., E800A543-9D53-4520-8BB8-9509062C692D--></
SrcGUID>
  <SrcChannel><!--req, xs:integer, source channel--></SrcChannel>
  <StreamHint><!--req, xs:string, e.g., "video, mp4, 640x480, 20 fps, 6000 kbps"--></StreamHint>
  <SrcDriver><!--req, xs:string, stream executable driver name, e.g., RTP/RTSP--></SrcDriver>
  <SrcType><!--opt, xs:string, source type, e.g., "mp4", "video"--></SrcType>
  <SrcUrl opt="rtsp://localhost/PSIA/Streaming/channels/101,rtsp://localhost/PSIA/Streaming/channels/102,rtsp://
```

```
localhost/PSIA/Streaming/channels/103,,rtsp://localhost/PSIA/Streaming/channels/107"><!--req, xs:string, e.g.,
rtsp://10.3.2.26/mpeg4/media.amp--></SrcUrl>
   <SrcUrlMethods><!--req, xs:string, methods supported by the source: "DESCRIBE,SETUP,PLAY,TEARDOWN"--></
SrcUrlMethods>
   <SrcLogin><!--req, xs:string, login source password--></SrcLogin>
  </SrcDescriptor>
  <TrackSchedule><!--recording schedule-->
   <ScheduleBlockList>
    <ScheduleBlock><!--list, recording schedule list-->
     <ScheduleBlockGUID><!--xs:string, schedule GUID, e.g., ABC12345-CDEF-4520-8BB8-7135789C8790--></
ScheduleBlockGUID>
     <ScheduleBlockType><!--req, xs:string--></ScheduleBlockType>
     <ScheduleAction><!--list-->
      <id><!--req, xs:integer--></id>
      <ScheduleActionStartTime><!--start time of the schedule-->
       <DayOfWeek><!--req, xs:string, "Monday,Tuesday,Wednesday,Thursday,Friday,Saturday,Sunday"--></
DayOfWeek><!--inclusive-->
       <TimeOfDay><!--xs:time, 00:00:00--></TimeOfDay>
      </ScheduleActionStartTime>
      <ScheduleActionEndTime><!--end time of the schedule-->
       <DayOfWeek><!--req, xs:string, "Monday,Tuesday,Wednesday,Thursday,Friday,Saturday,Sunday"--></
DayOfWeek><!--exclusive-->
       <TimeOfDay><!--xs:time, 08:00:00--></TimeOfDay>
      </ScheduleActionEndTime>
      <ScheduleDSTEnable><!--req, xs:boolean, whether to enable DST (daylight saving time)--></ScheduleDSTEnable>
      <Description><!--req, xs:string, PreMorning (midnight to 8 a.m., local time)--></Description>
      <Actions><!--alarm or motion detection that triggers recording-->
       <Record><!--opt, xs:boolean--></Record>
       <Log><!--opt, xs:boolean--></Log>
       <SaveImg><!--opt, xs:boolean--></SaveImg>
       <ActionRecordingMode><!--req, xs:string, recording schedule type:
"CMR,EDR,ALARM,MOTION,ALARMANDMOTION,COMMAND,SMART"--></ActionRecordingMode>
       <PreRecordTimeSeconds><!--opt, xs:integer, pre-record time, it is between 0 and 10 and the default value is 5,
unit: second--></PreRecordTimeSeconds>
       <PostRecordTimeSeconds><!--opt, xs:integer, post-record time, it is between 0 and 20 and the default value is
5, unit: second--></PostRecordTimeSeconds>
      </Actions>
     </ScheduleAction>
    </ScheduleBlock>
   </ScheduleBlockList>
  </TrackSchedule>
  <CustomExtensionList>
   <CustomExtension>
    <CustomExtensionName><!--opt, xs:string, example: www.isapi.com/RaCM/trackExt/ver10--></
CustomExtensionName>
    <enableSchedule><!--opt, xs:boolean, whether to enable recording schedule configuration--></enableSchedule>
    <SaveAudio><!--opt, xs:boolean, whether to enable recording audio--></SaveAudio>
    <PreRecordTimeSeconds><!--opt, xs:integer, pre-record time, unit: second--></PreRecordTimeSeconds>
    <PostRecordTimeSeconds><!--opt, xs:integer, post-record time, unit: second--></PostRecordTimeSeconds>
    <HolidaySchedule>
     <ScheduleBlock>
      <ScheduleBlockGUID><!--req, xs:string, example: 00000000-0000-0000-0000-000000000000--></
```

```
ScheduleBlockGUID>
        <ScheduleBlockType><!--opt, xs:string, e.g., www.isapi.com/racm/schedule/ver10--></ScheduleBlockType>
       </ScheduleBlock>
     </HolidaySchedule>
   </CustomExtension>
  </CustomExtensionList>
  <IntelligentRecord><!--opt, xs:boolean, whether to enable VCA recording function: 0-no, 1-yes--></IntelligentRecord>
  <delayTime opt="0,3,4,5,10,30,60,120,300"><!--opt, xs:integer, capture delay time, unit: second--></delayTime>
  <durationEnabled opt="true,false"><!--opt, xs:boolean, whether to enable video expiry time. If this function is not
supported, this node will not be returned. If this function is supported, the video expiry date will be set by the node
<Duration>--></durationEnabled>
</Track>
```

16.2.79 XML_Cap_VCAResource

VCAResource message in XML format

```
<VCAResource version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <type
opt="basicBehavior,fullBehavior,facesnapBehavior,facesnap,TFS,smartVehicleDetection,smartHVTDetection,smart,judic
ial,smart264AndRoadDetection,smart264AndFaceDetection,smart264AndHeatMap,smartVehicleIllegalParkingDetectio
n,smartIntelligentMonitor,smartTrafficDataCollection, roadDetection,humanRecognition, perimeterCapture,
vehicleDetection,HVTDetection,mixedTargetDetection,trackingCaptureMode,nonTrackingCaptureMode,close,faceHum
anModelingContrast,cityManagement,teacherBehavior,
12MPLiveView,personQueueDetection,verticalPeopleCounting,safetyHelmet">
    <!--req, xs: string, intelligent resource types, "trackingCaptureMode"-panoramic capture mode,
"nonTrackingCaptureMode"-single target capture mode, "faceHumanModelingContrast"-resources of face/human
body+face modeling+face picture comparison, "verticalPeopleCounting"-vertical people counting, "safetyHelmet"-
hard hat detection-->
  </type>
  <PromptList><!--opt, prompt for switching  intelligent resources-->
    <Prompt><!--list-->
      <resourceType opt="roadDetection">
        <!--opt, xs: string, intelligent resource to prompt, currently, only "roadDetection" is supported-->
      </resourceType>
      <resourcePrompt opt="smartCode">
        <!--opt, xs: string, prompt contents-->
      </resourcePrompt>
    </Prompt>
  </PromptList>
</VCAResource>
```

16.2.80 XML_Cap_VideoInputChannel

VideoInputChannel capability message in XML format

```
<VideoInputChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs: string--></id>
  <inputPort><!--req, xs: string--></inputPort>
```

```
 <videoInputEnabled><!--opt, xs: boolean--></videoInputEnabled>
 <name><!--opt, xs: string--></name>
 <videoFormat opt="PAL,NTSC"><!--opt, xs: string, video standards--></videoFormat>
 <portType opt="SDI,OPT,VGA,HDMI,YPbPr"><!--opt, xs: string, port type--></portType>
 <resDesc><!--opt, xs: string--></resDesc>
</VideoInputChannel>
```

16.2.81 XML_Cap_VideoOutputChannel

VideoOutputChannel capability message in XML format

```
<VideoOutputChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: string; ID--></id>
 <type opt="VGA,CVBS,HDMI,Spot,SDI,LCD"><!--req, xs: string, video output type--></type>
 <menu><!--dep, read-only-->
  <mirrorMenu><!--req, xs: boolean--></mirrorMenu>
 </menu>
 <mode opt="close,clip,scale,open,SDI_1080P25,…,HDMI_1080P,HDMI_720P,HDMI_ 2160P">
  <!--opt, xs: string, video output mode-->
 </mode>
 <resolution opt="1920*1080/60HZ,1280*720/50HZ,…"><!--opt, xs: string, video resolution--></resolution>
</VideoOutputChannel>
```

16.2.82 XML_Cap_VideoOverlay

VideoOverlay capability message in XML format

```
<VideoOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <normalizedScreenSize>
  <!--req-->
  <normalizedScreenWidth>
   <!--ro, req, xs:integer-->
  </normalizedScreenWidth>
  <normalizedScreenHeight>
   <!--ro, req, xs:integer-->
  </normalizedScreenHeight>
 </normalizedScreenSize>
 <attribute>
  <!--opt-->
  <transparent>
   <!--req, xs:boolean-->
  </transparent>
  <flashing>
   <!--req, xs:boolean-->
  </flashing>
 </attribute>
 <TextOverlayList/><!--opt, see details in the message of XML_TextOverlayList-->
 <DateTimeOverlay/><!--opt, see details in the message of XML_DateTimeOverlay-->
 <channelNameOverlay/><!--opt, see details in the message of XML_channelNameOverlay-->
```

```
 <fontSize>
  <!--opt, xs:string, "adaptive,16*16,32*32,48*48,64*64,80*80,96*96,112*112,128*128"-->
 </fontSize>
 <frontColorMode>
  <!--opt, string, "auto,customize"-->
 </frontColorMode>
 <frontColor>
  <!--dep, xs:hexBinary;color-->
 </frontColor>
 <BatteryPowerOverlay/><!--opt, see details in the message of XML_BatteryPowerOverlay-->
 <alignment opt="customize,alignRight,alignLeft">
  <!--opt, xs:string, "customize,alignRight,alignLeft"-->
 </alignment>
 <publicSecurity>
  <!--req, xs:boolean-->
 </publicSecurity>
 <DeviceStatusDisplay><!--opt-->
  <batteryCapacityDisplay>
   <!--opt, xs:boolean-->
  </batteryCapacityDisplay>
  <chargingStatusDisplay>
   <!--opt, xs:boolean-->
  </chargingStatusDisplay>
  <bluetoothStatusDisplay>
   <!--opt, xs:boolean-->
  </bluetoothStatusDisplay>
  <dialStatusDisplay>
   <!--opt, xs:boolean-->
  </dialStatusDisplay>
 </DeviceStatusDisplay>
 <boundary>
  <!--opt, xs:integer-->
 </boundary>
</VideoOverlay>
```

See Also

XML_TextOverlayList
XML_DateTimeOverlay
XML_channelNameOverlay
XML_BatteryPowerOverlay

16.2.83 XML_Cap_Wireless

Wireless capability message in XML format

```
<Wireless version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
 <wirelessNetworkMode opt="infrastructure,adhoc"><!--opt, xs:string--></wirelessNetworkMode>
 <channel opt="1,2,3,4,5,6,7,8,9,10,11,12,13,14,auto"><!--opt, xs:string--></channel>
 <ssid min="" max=""><!--opt, xs:string--></ssid>
```

```
<wmmEnabled><!--opt, xs:boolean--></wmmEnabled>
<WirelessSecurity><!--opt-->
 <securityMode opt ="disable,WEP,WPA-personal,WPA2-personal,WPA-RADIUS,WPA-enterprise,WPA2-enterprise">
  <!--opt, xs:string-->
 </securityMode>
 <WEP><!--dep, this node depends on <securityMode>-->
  <authenticationType opt = "open,sharedkey,auto"><!--req, xs:string--></authenticationType>
  <defaultTransmitKeyIndex min="" max=""><!--req, xs:integer--></defaultTransmitKeyIndex>
  <wepKeyLength opt="64,128"><!--opt, xs:integer--></wepKeyLength>
  <EncryptionKeyList>
   <encryptionKey>
    <!--req, xs:hexBinary, WEP encryption key in hexadecimal format-->
   </encryptionKey>
  </EncryptionKeyList>
 </WEP>
 <WPA><!--dep, depends on <securityMode>-->
  <algorithmType opt="TKIP,AES,TKIP/AES"><!--req, xs:string--></algorithmType>
  <sharedKey><!-- req, xs:string, pre-shared key used in WPA--></sharedKey>
  <wpaKeyLength min="8" max="64"><!--req, xs: integer--></wpaKeyLength>
 </WPA>
 <support64bitKey opt="WPA-personal, WPA2-personal"/><!--opt, xs:string--></support64bitKey>
</WirelessSecurity>
<AccessPointList>
 <InterfaceDisplay><!--opt-->
  <TableElementList>
   <TableElement>
    <!--opt,xs:string,opt="SSID,workingMode,securityMode,channel,signalStrength, speed,connectionStatus"-->
   </TableElement>
  </TableElementList>
 </InterfaceDisplay>
</AccessPointList>
<isSupportConnectStatus>
 <!-- opt, xs:boolean, whether supports Wi-Fi connection status-->
</isSupportConnectStatus>
<workScene opt="computerRoom,monitorTerminal"><!--opt, xs:string,  working scenario--></workScene>
<protocol opt="802.11ac"><!--req,xs:string, protocol mode--></protocol>
<hideSsid><!--opt, xs:boolean--></hideSsid>
<ChannelConfig><!--opt-->
 <transmitPower opt="9,12,15,18,21,24,27"><!--opt, xs:integer, unit: dBm--><transmitPower>
 <ChannelCountryList><!--opt>
  <Country>
   <countryID><!--req, xs:integer, country code--></countryID>
   <ChannelList>
    <Node>
     <width opt="auto,20,40,80"><!--req, xs:string, bandwidth, unit: MHz--></width>
     <channel><!--req,dep, xs:string, unit: MHz></channel>
    </Node>
   </ChannelList>
  </Country>
 </ChannelCountryList>
</ChannelConfig>
<isSupportNullSsid>
```

```
  <!--opt, xs: boolean, whether supports setting SSID to null, if supports, return "true", otherwise, this node will not be returned. If the SSID is empty, the device will filter the SSID configuration when configuring Wi-Fi-->-->
 </isSupportNullSsid>
</Wireless>
```

16.2.84 XML_Cap_WirelessServer

WirelessServer capability message in XML format

```
<WirelessServer version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <wifiApEnabled opt="true,false"><!--opt,xs: boolean,--></wifiApEnabled>
 <broadcastEnabled opt="true,false"><!--opt,xs: boolean--></broadcastEnabled>
 <wlanShareEnabled opt="true,false"><!--opt,xs: boolean--></wlanShareEnabled>
 <ssid min="" max=""><!--opt, xs: string--></ssid>
 <WirelessSecurity><!--req-->
  <securityMode opt="disable,WEP,WPA-personal,WPA2-personal,WPA-RADIUS,WPA-enterprise,WPA2-enterprise">
   <!--opt, xs: string-->
  </securityMode>
  <WEP><!--dep, depends on <securityMode>-->
   <authenticationType opt="open,sharedkey,auto">
    <!--req, xs: string-->
   </authenticationType>
   <defaultTransmitKeyIndex min="" max="">
    <!--req, xs: integer-->
   </defaultTransmitKeyIndex>
   <wepKeyLength opt="64,128"><!--opt, xs: integer--></wepKeyLength>
   <EncryptionKeyList size="">
    <encryptionKey>
     <!--req, xs: hexBinary, WEP encryption key in hexadecimal format-->
    </encryptionKey>
   </EncryptionKeyList>
  </WEP>
  <WPA><!--dep, depends on <securityMode>-->
   <algorithmType opt="TKIP,AES,TKIP/AES">
    <!--req, xs: string, "TKIP,AES,TKIP/AES"-->
   </algorithmType>
   <sharedKey><!--opt, xs: string, shared key used in WPA--></sharedKey>
   <wpaKeyLength min="" max=""><!-- opt, xs: integer, the ley length is between 8 and 63--></wpaKeyLength>
   <defaultPassword><!--opt, xs: boolean--></defaultPassword>
  </WPA>
 </WirelessSecurity>
 <DHCPEnabled opt="true,false"><!--opt, xs: boolean--></DHCPEnabled>
 <ipVersion opt="v4,v6"><!--opt, xs:string--></ipVersion>
 <HostIpAddress><!--opt-->
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 </HostIpAddress>
 <IPMask><!--opt-->
  <subnetMask><!--dep, xs:string, subnet mask for IPv4 address--></subnetMask>
  <bitMask><!--dep, xs:integer, bitmask IPv6 address--></bitMask>
 </IPMask>
```

```
 <AddressPool><!--opt-->
  <startIPV4Address><!--dep, xs:string--></startIPV4Address>
  <endIPV4Address><!--dep, xs:string--></endIPV4Address>
  <startIPV6Address><!-- dep, xs:string--></startIPV6Address>
  <endIPV6Address><!--dep, xs:string--></endIPV6Address>
 <AddressPool>
 <DNSAddressList size="2"><!--opt-->
  <DNSAddress><!--opt>
   <id><!--opt,xs:string,start from 1--></id>
   <ipAddress><!--dep, xs: string--></ipAddress>
   <ipv6Address><!--dep, xs: string--></ipv6Address>
  </DNSAddress>
 </DNSAddressList>
 <GatewayAddress>
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 <GatewayAddress>
 <wifiApModeType opt="true,false,auto">
  <!--opt, xs: string, current wireless access point (AP) mode, if this node is returned, it indicates that the device
supports auto mode-->
 </wifiApModeType>
</WirelessServer>
```

Remarks

For Client supports auto AP, the node <<**wifiApModeType**> is valid; for Client does not supports auto AP, the node <**wifiApEnabled**> is valid; the values of these two nodes will effect each other, and when <**wifiApModeType**> equals to "auto", the value of <**wifiApEnabled**> is "true".

16.2.85 XML_Cap_WirelessServerStatus

WirelessServerStatus capability message in XML format

```
<WirelessServerStatus version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <wifiApEnabled>
  <!--dep, xs:boolean-->
 </wifiApEnabled>
 <linkDevices min="0" max="20">
  <!--dep, xs:integer, maximum number of linked devices-->
 </linkDevices>
 <DeviceInfoList size="20">
  <!--opt-->
  <DeviceInfo>
   <!--opt-->
   <IpAddress>
    <!--req-->
    <ipAddress>
     <!--dep, xs:string-->
    </ipAddress>
    <ipv6Address>
     <!--dep, xs:string-->
```

```
      </ipv6Address>
     </IpAddress>
     <hostName>
      <!--opt, xs:string-->
     </hostName>
     <macAddress>
      <!--opt, xs:string-->
     </macAddress>
    </DeviceInfo>
  </DeviceInfoList>
</WirelessServerStatus>
```

16.2.86 XML_Cap_WirelessStatus

WirelessStatus capability message in XML format

```
<WirelessStatus version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled>
  <!--dep, xs:boolean-->
 </enabled>
 <connectionEnabled>
  <!--dep, xs:boolean-->
 </connectionEnabled>
 <IpAddress>
  <!--req-->
  <ipAddress>
   <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address>
   <!--dep, xs:string-->
  </ipv6Address>
 </IpAddress>
 <SubnetMask>
  <!--req-->
  <ipAddress>
   <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address>
   <!--dep, xs:string-->
  </ipv6Address>
 </SubnetMask>
 <RouterAddress>
  <!--req-->
  <ipAddress>
   <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address>
   <!--dep, xs:string-->
  </ipv6Address>
 </RouterAddress>
 <DNSAddressList size="2">
```

```
   <!--opt-->
   <DNSAddress>
    <!--opt-->
    <id>
     <!--opt, xs:string, DNS address ID, which starts from 1-->
    </id>
    <ipAddress>
     <!--dep, xs:string-->
    </ipAddress>
    <ipv6Address>
     <!--dep, xs:string-->
    </ipv6Address>
   </DNSAddress>
  </DNSAddressList>
</WirelessStatus>
```

16.2.87 XML_CaptureMode

CaptureMode message in XML format

```
<CaptureMode version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mode>
  <!--req, xs: string, video input mode: 1-640×480@30fps, 2-4CIF@30fps, 3-720P@25fps, 4-720P@30fps,
5-720P@60fps, 6-1280×960@15fps, 7-1280×960@25fps, 8-1280×960@30fps, 9-1280×1024@30fps,
10-1600×900@15fps, 11-1600×1200@15fps, 12-1080P@15fps, 13-1080P@25fps, 14-1080P@30fps,
15-1080P@50fps, 16-1080P@60fps, 17-2048×1536@15fps, 18-2048×1536@20fps, 19-2048×1536@24fps,
20-2048×1536@25fps, 21-2048×1536@30fps, 22-2560×2048@25fps, 23-2560×2048@30fps, 24-2560×1920@7.5fps,
25-3072×2048@30fps, 26-1944×1212@24fps, 27-1944×1212@25fps-->
 </mode>
</CaptureMode>
```

16.2.88 XML_CertificateInfo

CertificateInfo message in XML format

```
<CertificateInfo version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: string--></id>
 <version><!--opt, xs: string--></version>
 <IssuerDN><!--req, isapi:DN-->
  <countryName><!--req, xs: string--></countryName>
  <stateOrProvinceName><!--opt, xs: string--></stateOrProvinceName>
  <localityName><!--opt, xs: string--></localityName>
  <organizationName><!--opt, xs: string--></organizationName>
  <organizationUnitName><!--opt, xs: string--></organizationUnitName>
  <commonName><!--req, xs: string--></commonName>
  <email><!--opt, xs: string--></email>
 </IssuerDN>
 <SubjectDN><!--req,isapi:DN-->
  <countryName><!--req, xs: string--></countryName>
```

```
  <stateOrProvinceName><!--opt, xs: string--></stateOrProvinceName>
  <localityName><!--opt, xs: string--></localityName>
  <organizationName><!--opt, xs: string--></organizationName>
  <organizationUnitName><!--opt, xs: string--></organizationUnitName>
  <commonName><!--req, xs: string--></commonName>
  <email><!--opt, xs: string--></email>
 </SubjectDN>
 <signatureAlgorithm><!--req, xs: string, signature algorithm: RSA_3, RSA_F4--></signatureAlgorithm>
 <keyAlgorithm><!--opt, xs: string--></keyAlgorithm>
 <startDate><!--req, xs: time, in ISO8601 time format--></startDate>
 <endDate> !--req, xs: time, in ISO8601 time format--></endDate>
 <serialNumber><!--req, xs: string, uuid--></serialNumber>
</CertificateInfo>
```

16.2.89 XML_CertificateReq

CertificateReq message in XML format

```
<CertificateReq version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: string--></id>
 <SubjectDN><!--req, isapi:DN-->
  <countryName><!--req, xs: string--></countryName>
  <stateOrProvinceName><!--opt, xs: string--></stateOrProvinceName>
  <localityName><!--opt, xs: string--></localityName>
  <organizationName><!--opt, xs: string--></organizationName>
  <organizationUnitName><!--opt, xs: string--></organizationUnitName>
  <commonName><!--req, xs: string --></commonName>
  <email><!--opt, xs: string--></email>
 </SubjectDN>
 <validity><!--opt, xs: integer, expiry date, which is between 1 and 5000--></validity>
 <passwd><!--opt, xs: string, password to protect private key--></passwd>
 <RSAKeyLength><!--opt, xs: integer--></RSAKeyLength>
</CertificateReq>
```

16.2.90 XML_CertificateReq_ImportCert

CertificateReq message in XML format

```
<CertificateReq version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <certificateMode><!--opt, xs:string, importing method: "signingRequest"-signature request (import self-signed
certificate),  "privateKey"-private key--></certificateMode>
 <privateKeyMode><!--dep, xs:string, private key mode: "seperateKey", "PKCS#12"--></privateKeyMode>
 <seperateKeyPassword><!--dep, xs:string, password in seperateKey mode, it should be encrypted--></
seperateKeyPassword>
 <PKCSPassword><!--dep, xs:string, password in PKCS#12 mode, it should be encrypted--></PKCSPassword>
 <dataType><!--dep, xs:string, data type: "certificate", "privateKey"-private key--><dataType>
</CertificateReq>
```

16.2.91 XML_CertificateReqInfo

CertificateReqInfo message in XML format

```
<CertificateReqInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: string--></id>
 <SubjectDN><!--req, isapi:DN-->
  <countryName><!--req, xs: string--></countryName>
  <stateOrProvinceName><!--opt, xs: string--></stateOrProvinceName>
  <localityName><!--opt, xs: string--></localityName>
  <organizationName><!--opt, xs: string--></organizationName>
  <organizationUnitName><!--opt, xs: string--></organizationUnitName>
  <commonName><!--req, xs: string --></commonName>
  <email><!--opt, xs: string--></email>
 </SubjectDN>
 <version><!--opt, xs: string--></version>
 <validity><!--opt, xs:int, expiry date, which is between 1 and 5000--></validity>
 <keyAlgorithm><!--opt, xs: string--></keyAlgorithm>
 <passwd><!--opt, xs: string, password to protect private key--></passwd>
 <RSAKeyLength><!--opt, xs: integer--></RSAKeyLength>
</CertificateReqInfo>
```

16.2.92 XML_CertificateResult

CertificateResult message in XML format

```
<CertificateResult version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <formatType><!--req, xs:string, certificate format, e.g., "PEM"--><formatType>
 <detailInfo><!--req, xs:string, certificate details--></detailInfo>
</CertificateResult>
```

16.2.93 XML_Challenge

Challenge message in XML format.

```
<Challenge version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <key><!--req, xs:string--></key>
</Challenge>
```

16.2.94 XML_ChanCtrl

ChanCtrl message (for traffic) in XML format

```
<ChanCtrl version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <streamGetType><!--streaming mode: 0-live view mode (default), 1-data receiving mode--></streamGetType>
</ChanCtrl>
```

16.2.95 XML_ChannelEventCap

ChannelEventCap message in XML format

```
<ChannelEventCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <eventType opt="VMD,motionDetection,shelteralarm,
tamperDetection,videoLoss,ROI,facedetection,faceDetection,intelliTrace,fielddetection,fieldDetection,defocus,defocus
Detection,audioexception,audioDetection,scenechangedetection,sceneChangeDetection,linedetection,lineDetection,r
egionEntrance,regionExiting,loitering,group,rapidMove,parking,unattendedBaggage,attendedBaggage,peopleDetectio
n,storageDetection,behavior,faceCapture,faceSnap,ANPR,vehicleDetection,fireDetection,shipsDetection,PIR,targetCapt
ure,humanRecognition,alarmResult,faceContrast,framesPeopleCounting,hide,audioLoss,cameraAngleAnormaly,violent
Motion,trial,humanEnter,operateOverTime,stickUp,installScanner,faceDetect,temperature,temperatureDetection,peop
leCounting,personQueueDetection,heatmap,mixedTargetDetection,MTD_face,MTD_human,MTD_vehicle,MTD_nonM
otor,faceSnapModeling,HVTVehicleDetection,PictureCaptureComparision,IO,smokeDetection,smokeAndFireDetection,
diskfull,diskerror,nicbroken,ipconflict,illaccess,personDensityDetection,AID,vehicleControl,vehicleRcogResult,cardMatc
h,overSpeed,highTempAlarm,abnormalAcceleration,failDown,leavePosition,peopleNumChange,retention,running,ther
mometry,heatmapPDC,heatmapDuration,intersectionAnalysis,AID_abandonedObject,AID_pedestrian,AID_congestion,
AID_roadBlock,AID_construction,AID_trafficAccident,AID_fogDetection,TFS_illegalParking,TFS_wrongDirection,TFS_cro
ssLane,TFS_laneChange,TFS_vehicleExist,TFS_turnRound,TFS_parallelParking,TPS,luma,chroma,snow,streak,freeze,sigLo
se,clarity,jitter,block,flowers,noise,ghost,purple,ICR,protectiveFilm"/>
    <!--req, xs:string, event types supported by the channel-->
  <shieldEventType opt="behavior,faceSnap,humanRecognition,faceCapture,targetCapture"/>
    <!--req, xs:string, event types that support area shield-->
  <channelID><!--opt, xs:integer, current device channel No.--></channelID>
  <id><!--req, xs:integer--></id>
</ChannelEventCap>
```

Remarks

The node <**eventType**> can be set to the following values: VMD, motionDetection, shelteralarm, tamperDetection, videoLoss, ROI, facedetection, faceDetection, intelliTrace, fielddetection, fieldDetection, defocus, defocusDetection, audioexception, audioDetection, scenechangedetection, sceneChangeDetection, linedetection, lineDetection, regionEntrance, regionExiting, loitering, group, rapidMove, parking, unattendedBaggage, attendedBaggage, peopleDetection, storageDetection, behavior, faceCapture, faceSnap, ANPR, vehicleDetection, fireDetection, shipsDetection, PIR, targetCapture, humanRecognition, alarmResult, faceContrast, framesPeopleCounting, hide, audioLoss, cameraAngleAnormaly, violentMotion, trial, humanEnter, operateOverTime, stickUp, installScanner, faceDetect, temperature, temperatureDetection, peopleCounting, personQueueDetection, heatmap, mixedTargetDetection, MTD_face, MTD_human, MTD_vehicle, MTD_nonMotor, faceSnapModeling, HVTVehicleDetection, PictureCaptureComparision, IO, smokeDetection, smokeAndFireDetection, diskfull, diskerror, nicbroken, ipconflict, illaccess, personDensityDetection, AID, vehicleControl, vehicleRcogResult, cardMatch, overSpeed, highTempAlarm, abnormalAcceleration, failDown, leavePosition, peopleNumChange, retention, running, thermometry, heatmapPDC, heatmapDuration, intersectionAnalysis, AID_abandonedObject, AID_pedestrian, AID_congestion, AID_roadBlock, AID_construction, AID_trafficAccident, AID_fogDetection, TFS_illegalParking, TFS_wrongDirection, TFS_crossLane, TFS_laneChange, TFS_vehicleExist, TFS_turnRound, TFS_parallelParking, TPS, luma,

chroma, snow, streak, freeze, sigLose, clarity, jitter, block, flowers, noise, ghost, purple, ICR, protectiveFilm, certificateRevocation.

Event Type	Description
VMD (motionDetection)	Motion detection
Shelteralarm (tamperDetection)	Video tampering alarm
videoLoss	Video loss
ROI	Region of interest
facedetection (faceDetection)	Face detection
intelliTrace	Auto-track
fielddetection (fieldDetection)	Intrusion detection
defocus (defocusDetection)	Defocus detection
audioexception (audioDetection)	Audio exception detection
scenechangedetection (sceneChangeDetection)	Sudden scene change detection
linedetection (lineDetection)	Line-crossing detection
regionEntrance	Region entrance detection
regionExiting	Region exiting detection
loitering	Loitering detection
group	People gathering detection
rapidMove	Fast moving detection
parking	Parking detection
unattendedBaggage	Unattended baggage
attendedBaggage	Object removal detection
peopleDetection	Human detection
storageDetection	HDD health detection
behavior	Behavior analysis
faceCapture(faceSnap)	Face capture
ANPR(vehicleDetection)	Vehicle detection
fireDetection	Fire detection
shipsDetection	Ship detection

Event Type	Description
PIR	PIR alarm
targetCapture (humanRecognition)	Target capture
alarmResult (faceContrast)	Face comparison
framesPeopleCounting	People counting in single frame
hide	Tampering detection
audioLoss	Audio loss
cameraAngleAnormaly	Image exception
violentMotion	Violent motion
trial	Tailing
humanEnter	Human entrance
operateOverTime	Operation timed out
stickUp	Sticking scrip
installScanner	Installing scanner
faceDetect	ATM face detection
temperature (temperatureDetection)	Temperature difference detection
PeopleCounting	People counting
personQueueDetection	People queuing-up detection
heatmap	Heat map
mixedTargetDetection	Multi-target-type detection
MTD_face	Supported face attributes of multi-target-type detection (MTD)
MTD_human	Supported human attributes of multi-target-type detection (MTD)
MTD_vehicle	Supported motor vehicle attributes of multi-target-type detection (MTD)
MTD_nonMotor	Supported non-motor vehicle attributes of multi-target-type detection (MTD)
faceSnapModeling	Face capture modeling
HVTVehicleDetection	Mixed-traffic detection
PictureCaptureComparision	N:1 face comparison

Event Type	Description
IO	Sensor alarm
smokeDetection	Smoke detection
smokeAndFireDetection	Smoke and fire detection
diskfull	HDD is full
diskerror	HDD error
nicbroken	Network disconnected
ipconflict	IP address conflicted
illaccess	Illegal access
personDensityDetection	People density detection
vehicleControl	Upload alarm of vehicle in whitelist and blacklist
vehicleRcogResult	Vehicle secondary recognition
cardMatch	Authentication
overSpeed	Overspeed alarm
highTempAlarm	High temperature alarm
abnormalAcceleration	Abnormal accelerated speed alarm
failDown	People falling down
leavePosition	Absence detection
peopleNumChange	The number of people changed
retention	Overstay detection
running	Running
thermometry	Temperature measurement
heatmapPDC	Heat map people counting
heatmapDuration	Heat map people staying duration
intersectionAnalysis	Intersection analysis
AID_abandonedObject	Thrown object in traffic events
AID_pedestrian	Pedestrian detection in traffic events
AID_congestion	Congestion detection in traffic events
AID_roadBlock	Roadblock detection in traffic events
AID_construction	Construction detection in traffic events

Event Type	Description
AID_trafficAccident	Traffic accident detection in traffic events
AID_fogDetection	Fog detection in traffic events
TFS_illegalParking	Illegal parking of enforcement events
TFS_wrongDirection	Wrong-way driving of enforcement events
TFS_crossLane	Driving on lane line of enforcement events
TFS_laneChange	Lane change of enforcement events
TFS_vehicleExist	Vehicle existing of enforcement events
TFS_turnRound	Turning round of enforcement events
TFS_parallelParking	Parallel parking of enforcement events
TPS	Traffic data collection configuration
luma	Brightness exception
chroma	Color cast detection
snow	Snow noise
streak	Stripe noise
freeze	Image freeze
sigLose	Signal loss
clarity	Clarity exception
jitter	Image flutter
block	Video tampering
flowers	Blurred screen detection
noise	Image noise
ghost	Abnormal light spot detection
purple	Image purple edge detection
ICR	ICR exception detection
protectiveFilm	Protective film unremoved
certificateRevocation	Certificate is expired

Note

The following event type values are updated to new version: VMD (motionDetection), Shelteralarm (tamperDetection), facedetection (faceDetection), fielddetection (fieldDetection), defocus (defocusDetection), audioexception (audioDetection), scenechangedetection (sceneChangeDetection), linedetection (lineDetection), faceCapture (faceSnap), ANPR (vehicleDetection), targetCapture (humanRecognition), alarmResult (faceContrast), and temperature (temperatureDetection). The value in the bracket is the old version, and considering the compatibility, both new and old value should be returned.

16.2.96 XML_ChannelInfo

ChannelInfo message in XML format.

```
<ChannelInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:integer, channel number--></id>
 <EagleEye>
  <!--opt, the channel supports the functions of PanoVu series camera-->
  <StreamFusion>
   <!--opt, "panoramic + PTZ camera streaming channel, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </StreamFusion>
  <PanoramicMetaData>
   <!--opt, panoramic camera streaming channel, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </PanoramicMetaData>
 </EagleEye>
 <FishEye>
  <!--opt, the channel supports the functions of fisheye camera-->
   <FishEyeStream>
    <!--opt, fisheye camera stream, it is used for software decoding of play library, it is not returned when not
support-->
  <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
   </FishEyeStream>
 </FishEye>
 <Thermal>
  <!--opt, the channel supports the functions of thermal products-->
  <TemperatureMetaData>
   <!--opt, thermometry metadata, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </TemperatureMetaData>
  <ThermometryDetection>
   <!--opt, thermometry detection, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </ThermometryDetection>
  <ThermometryDiffDetection>
   <!--opt, temperature difference detection, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </ThermometryDiffDetection>
```

```
  <FireDetection>
   <!--opt, fire detection, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </FireDetection>
  <SmokeDetection>
   <!--opt,smoke detection, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </SmokeDetection>
  <ShipsDetection>
   <!--opt, ship detection,it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </ShipsDetection>
  <IntelligentRuleDisplay>
   <!--opt, intelligent rule display parameters of thermal application, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </IntelligentRuleDisplay>
  <IntelligentBehaviorRule>
   <!--opt, intelligent behavior rule configureation, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </IntelligentBehaviorRule>
  <DPC>
   <!--opt, defective pixel correction, it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </DPC>
  <Metadata>
   <!--opt, metadata extraction,it is not returned when not support-->
   <InsertChanNo><!--opt, xs:integer, connected channel number--></InsertChanNo>
  </Metadata>
  <ThermometryShieldMask>
   <!--opt, thermometry shielded area,it is not returned when not support-->
   <InsertChanNo><!--opt,xs:integer, connected channel number--></InsertChanNo>
  </ThermometryShieldMask>
  <LensCorrection>
   <!--opt, lens correction, when this node is not returned, it indicates not support-->
   <InsertChanNo><!--opt, xs:integer, access channel number--></InsertChanNo>
  </LensCorrection>
  <BurningPrevention>
   <!--opt, burning prevention, when this node is not returned, it indicates not support-->
   <InsertChanNo><!--opt, xs:integer, access channel number--></InsertChanNo>
  </BurningPrevention>
 </Thermal>
 <isSupportChangedUpload/><!--opt, xs: boolean, whether supports uploading status changes-->
 <PanoramaCamera><!--opt, PTZ camera channel-->
  <PTZCtrl>
   <InsertChanNo><!--opt, xs:integer, access channel number--></InsertChanNo>
  </PTZCtrl>
 </PanoramaCamera>
 <GlobalCamera><!--opt, Panoramic camera channe-->
  <InsertChanNo><!--opt,xs:integer, access channel number--></InsertChanNo>
 </GlobalCamera>
</ChannelInfo>
```

16.2.97 XML_ChannelInfoList

ChannelInfoList message in XML format

```
<ChannelInfoList>version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <ChannelInfo/><!--see details in the message of XML_ChannelInfo-->
</ChannelInfoList>
```

See Also

XML_ChannelInfo

16.2.98 XML_channelNameOverlay

channelNameOverlay message in XML format

```
<channelNameOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled>
    <!--req, xs:boolean, whether to enable channel name overlay-->
  </enabled>
  <name>
    <!--req, xs:string, channel name-->
  </name>
  <positionX>
    <!--req, xs:integer, X-coordinate-->
  </positionX>
  <positionY>
    <!--req, xs:integer, Y-coordinate-->
  </positionY>
</channelNameOverlay>
```

16.2.99 XML_CheckInfo

CheckInfo message in XML format

```
<CheckInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <randomString><!--req, xs: string, random string--></randomString>
  <verificationCode>
    <!--opt, xs: string, verification code to be sent, which will be encrypted by sha256, and then convert the
hexadecimal code to a string, finally it will be encoded by Base64. The format is first 32-byte of randomString + actual
verification code-->
  </verificationCode>
</CheckInfo>
```

16.2.100 XML_CMSearchDataPackage

CMSearchDataPackage message in XML format.

```
<CMSearchDataPackage version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <metaId>
  <!--required, string type, metadata ID, its format is log.std-cgi.com+/major type+/minor type-->
 </metaId>
 <timeSpanList>
  <timeSpan>
   <startTime><!--required, start time with ISO8601 time format, e.g., 2017-08-02T00:00:00Z--></startTime>
   <endTime><!--required, end time with ISO8601 time format, e.g., 2017-08-02T00:00:00Z--></endTime>
  </timeSpan>
 </timeSpanList>
</CMSearchDataPackage>
```

16.2.101 XML_CMSearchDataPackageResult

CMSearchDataPackageResult message in XML format.

```
<CMSearchDataPackageResult version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <url>
  <!--required, string type, file URL, e.g., http://ip:port//ISAPI/ContentMgmt/logSearch/dataPackage/data?xx-->
 </url>
</CMSearchDataPackageResult>
```

16.2.102 XML_CMSearchDescription

CMSearchDescription message in XML format

```
<CMSearchDescription version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <searchID>
  <!--req, xs:string, search ID, e.g., {812F04E0-4089-11A3-9A0C-0305E82C2906}-->
 </searchID>
 <trackIDList>
  <trackID>
   <!--req, xs:integer, ID, XX01-search for the main stream video of channel XX, XX03-search for the pictures of
channel XX-->
  </trackID>
 </trackIDList>
 <timeSpanList>
  <timeSpan>
   <startTime><!--req, xs:time, ISO8601 time, start time of search, e.g.: 2017-08-02T00:00:00Z--></startTime>
   <endTIme><!--req, xs:time, ISO8601 time, end time of search, e.g.: 2017-08-02T23:59:59Z--></endTime>
  <timeSpan>
 </timeSpanList>
 <metaID><!--req, xs:string, metadata ID, e.g., log.std-cgi.com/Infomation/visAlarm--></metaID>
 <searchResultPostion><!--req, xs:integer, position of search result--></searchResultPostion>
```

```
 <maxResults><!--req, xs:integer, maximum number of search results--></maxResults>
 <contentTypeList>
  <contentType></contentType>
 </contentTypeList>
 <maxResults></maxResults>
 <metadataList>
  <metadataDescriptor>
   <!--searching conditions:
"evidence,illegalParking,crosslane,vehicleexist,lanechange,wrongdirection,congestion,turnround,pedestrian,construction,roadBlock,abandonedObject,trafficAccident,fogDetection,dredgerDetection,safetyHelmet"-->
  </metadataDescriptor>
  <SearchProperity>
   <plateSearchMask>
    <!--opt, xs:string, ranges from 1 to 31-->
   </plateSearchMask>
   <stateOrProvince>
    <!--opt, xs:integer-->
   </stateOrProvince>
   <country>
    <!--opt, xs:string, country or region ID: 0-the algorithm library does not support the country or region ID,1-(CZ-Czech Republic),2-(FRA-France),3-(DE-Germany),4-(E-Spain),5-(IT-Italy),6-(NL-Netherlands),7-(PL-Poland),8-(SVK-Slovakia), 9-(BY-Belorussia), 10-(MDA-Moldova),11-(RU-Russia),12-(UA-Ukraine), 0xff-(All)-->
   </country>
  </SearchProperity>
 </metadataList>
</CMSearchDescription>
```

16.2.103 XML_CMSearchProfile

CMSearchProfile message in XML format

```
<CMSearchProfile version="1.0" xmlns="ISAPIllianxce.org:resourcedescription">
 <searchProfile><!--req, xs: string, video search conditions--></searchProfile>
 <textSearch>
  <!--req, xs: string, text type to be searched, such as recording information text and metadata text-->
 </textSearch>
 <maxSearchTimespans>
  <!--req, xs: integer, maximum time period of results returned in each search-->
 </maxSearchTimespans>
 <maxSearchTracks><!--req, xs: integer, maximum tracks can be searched--></maxSearchtracks>
 <maxSearchSources>
  <!--req, xs: integer, maximum recording channels can be searched-->
 </maxSearchSources>
 <maxSearchMetadatas>
  <!--req, xs: integer, maximum number of metadata can be searched-->
 </maxSearchMetadatas>
 <maxSearchMatchResults>
  <!--req, xs: integer, maximum search results can be returned-->
 </maxSearchMatchResults>
 <maxSearchTimeout><!--req, xs: integer, maximum search timeout--></maxSearchTimeout>
 <maxConcurrentSearches>
```

```
   <!--req, xs: integer, maximum concurrent search operations-->
  </maxConcurrentSearches>
</CMSearchProfile>
```

16.2.104 XML_CMSearchResult

CMSearchResult message in XML format

```
<CMSearchResult version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <searchID><!--req, xs:string, search ID--></searchID>
 <responseStatus><!--req, xs:string--></responseStatus>
 <responseStatusStrg><!--req, xs:string--></responseStatusStrg>
 <numOfMatches><!--opt, xs:integer--></numOfMatches>
 <matchList>
  <searchMatchItem>
   <logDescriptor>
    <metaId><!--req, xs:string--></metaId>
    <StartDateTime><!--req, xs:time, ISO8601 time--></StartDateTime>
    <paraType><!--opt, xs:string--></paraType>
    <userName><!--opt, xs:string--></userName>
    <logInfo><!--dep, log details-->
     <OpenDoorRecord>
      <type><!—req, xs: string, unlocking type: password, hijack (unlock under duress), card, resident, center--></
type>
     </OpenDoorRecord>
     <VisAlarmRecord>
      <type>
       <!—req, xs: string, alarm category: zone (zone alarm), dismantle (tampering alarm), hijack (duress alarm),
passwordErr (wrong password alarm), doorNotOpen-(door closed alarm), doorNotClose (door open alarm), SOS,
callReq (call request alarm), smartLockHijackFingerPrint (fingerprint duress alarm), smartLockHijackPassword
(password duress alarm), smartLockBreaking (forced-open door alarm), smartLockBeLocked (door locked alarm),
smartLockLowBattery (low battery alarm)-->
      </type>
     </VisAlarmRecord>
    </logInfo>
    <ipAddress><!--opt, xs:string--></ipAddress>
    <object><!--opt, xs:string, "network", "keypad", "remoteCtrl"-keyfob, "card"--></object>
    <params><!--opt, xs:string, parameters, such as zone No. and so on--></params>
    <seq><!--opt, xs:string, serial No.--></seq>
    <additionInformation><!--opt, xs:string, additional information--></additionInformation>
   </logDescriptor>
  </searchMatchItem>
  <matchElement>
   <sourceID></sourceID>
   <trackID></trackID>
   <timeSpan>
    <startTime></startTime>
    <endTime></endTime>
   </timeSpan>
   <mediaSegmentDescriptor>
    <contenType></contenType>
```

```
      <codecType></codecType>
      <rateType></rateType>
      <playbackURI></playbackURI>
     </mediaSegmentDescriptor>
     <metadataMatches>
      <metadataDescriptor><!--searching conditions:
"evidence,illegalParking,crosslane,vehicleexist,lanechange,wrongdirection,congestion,turnround,pedestrian,constructi
on,roadBlock,abandonedObject,trafficAccident,fogDetection"--></metadataDescriptor>
     </metadataMatches>
    </matchElement>
  </matchList>
</CMSearchResult>
```

16.2.105 XML_CMSRecordProfile

CMSRecordProfile message in XML format

```
<CMRecordProfile version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <trackType><!--opt, xs: string, video track type--></trackType>
</CMRecordProfile>
```

16.2.106 XML_Color

Color message in XML format

```
<Color version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <brightnessLevel><!--opt, xs:integer, brightness--></brightnessLevel>
  <contrastLevel><!--opt,xs:integer, contrast--></contrastLevel>
  <saturationLevel><!--opt,xs:integer, saturation--></saturationLevel>
  <hueLevel><!--opt, xs:integer, hue--></hueLevel>
  <grayScale>
    <grayScaleMode><!--opt,xs:string, gray scale mode: "indoor,outdoor"--></grayScaleMode>
  </grayScale>
  <nightMode>
    <!--opt, xs:boolean, enable night mode, when its value is "true", the saturation can be adjusted, otherwise, the
saturation cannot be adjusted-->
  </nightMode>
</Color>
```

16.2.107 XML_corridor

corridor message in XML format

```
<corridor version="2.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
  <enabled><!--req, xs: boolean, whether to enable rotate mode--></enabled>
  <mirror><!--opt, xs: string, mirror mode: "on,off"--></mirror>
</corridor>
```

16.2.108 XML_DateTimeOverlay

DateTimeOverlay message in XML format

```
<DateTimeOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled>
  <!--req, xs:boolean, whether to enable date and time overlay-->
 </enabled>
 <positionX>
  <!--req, xs:integer, X-coordinate-->
 </positionX>
 <positionY>
  <!--req, xs:integer, Y-coordinate-->
 </positionY>
 <dateStyle>
  <!--opt, xs:string, date format: "YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY, CHR-YYYY-MM-DD, CHR-MM-DD-YYYY,
CHR-DD-MM-YYYY"-->
 </dateStyle>
 <timeStyle>
  <!--opt, xs:string, "12hour, 24hour"-->
 </timeStyle>
 <displayWeek>
  <!--opt, xs:boolean, whether to display week information-->
 </displayWeek>
 <displayMilliSecond>
  <!--opt, xs:boolean, whether to display millisecond-->
 </displayMilliSecond>
</DateTimeOverlay>
```

16.2.109 XML_DDNS

DDNS message in XML format

```
<DDNS version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs: string-->
 </id>
 <enabled>
  <!--req, xs:boolean, "true,false"-->
 </enabled>
 <ethernetIfId>
  <!--opt, xs:string, ID. This node is used to link the DDNS to a network interface which is used by the DDNS client to
register-->
 </ethernetIfId>
 <provider>
  <!--req, xs:string, "IPServer, DynDNS, PeanutHall, NO-IP, HiDDNS..."-->
 </provider>
 <serverAddress><!--DDNS address. This node is required when <provider> is "IPServer"-->
  <addressingFormatType>
```

```
    <!--req, xs:string, method used to locate the NTP server: "ipaddress, hostname"-->
   </addressingFormatType>
   <hostname>
    <!--dep, xs:string-->
   </hostName>
   <ipAddress>
    <!--dep, xs:string-->
   </ipAddress>
   <ipv6Address>
    <!--dep, xs:string-->
   </ipv6Address>
  </serverAddress>
  <portNo>
   <!--opt, xs:integer, port No-->
  </portNo>
  <deviceDomainName>
   <!--dep, xs:string, domain name of the device-->
  </deviceDomainName>
  <username>
   <!--dep, xs:string-->
  </userName>
  <password>
   <!--wo, dep, xs:string-->
  </password>
</DDNS>
```

16.2.110 XML_DDNSList

DDNSList message in XML format

```
<DDNSList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <DDNS/><!--req, see details in the message of XML_DDNS-->
</DDNSList>
```

See Also

XML_DDNS

16.2.111 XML_DefaultParam

DefaultParam message in XML format

```
<DefaultParam version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <DialNum><!--opt, xs:string--></DialNum>
 <Username><!--opt, xs:string--></Username>
 <Password><!--opt, xs:string--></Password>
 <APNname><!--opt, xs:string--></APNname>
 <VerifyProto><!--req, xs:string, "auto, CHAP, PAP"--></VerifyProto>
</DefaultParam>
```

16.2.112 XML_Defog

Defog message in XML format

```
<Defog version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled>
  <!--req, xs:boolean-->
 </enabled>
</Defog>
```

16.2.113 XML_Dehaze

Dehaze message in XML format

```
<Dehaze version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <DehazeMode/><!--opt, xs: string, "open,close,auto"-->
 <DehazeLevel> <!--opt, xs: integer--></DehazeLevel>
</Dehaze>
```

16.2.114 XML_DeviceCap

DeviceCap capability message in XML format

```
<DeviceCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <SysCap><!--optional-->
  <isSupportDst><!--optional, xs: boolean, whether it supports daylight saving time--></isSupportDst>
  <NetworkCap/><!--optional, xs: boolean, network capability-->
  <IOCap/><!--optional, IO capability-->
  <SerialCap/><!--optional, serial port capability-->
  <VideoCap/><!--optional, video capability, see details in the message of XML_VideoCap-->
  <AudioCap/><!--optional, audio capability-->
  <isSupportHolidy><!--opt, xs:boolean--></isSupportHolidy>
  <RebootConfigurationCap>
   <Genetec><!--opt, xs:boolean--></Genetec>
   <ONVIF><!--opt, xs:boolean--></ONVIF>
   <RTSP><!--opt, xs:boolean--></RTSP>
   <HTTP><!--opt, xs:boolean--></HTTP>
   <SADP>
    <ISDiscoveryMode><!--opt, xs:boolean--></ISDiscoveryMode>
    <PcapMode><!--opt, xs:boolean--></PcapMode>
   </SADP>
   <IPCAddStatus><!--opt, xs:boolean--></IPCAddStatus>
  </RebootConfigurationCap>
  <isSupportExternalDevice><!--optional, xs:boolean--></isSupportExternalDevice>
  <isSupportChangedUpload>
   <!--opt, xs: boolean, whether it supports uploading status changes-->
  </isSupportChangedUpload>
  <isSupportGettingWorkingStatus>
```

```
    <!--opt, xs:boolean, whether it supports getting device status-->
   </isSupportGettingWorkingStatus>
   <isSupportGettingChannelInfoByCondition>
    <!--opt, xs:boolean-->
   </isSupportGettingChannelInfoByCondition>
   <isSupportDiagnosedDataParameter>
    <!--opt, xs:boolean-->
   </isSupportDiagnosedDataParameter>
   <isSupportSimpleDevStatus>
    <!--opt, xs: boolean, whether it supports getting device working status-->
   </isSupportSimpleDevStatus>
   <isSupportFlexible>
    <!--opt, xs: boolean, whether it supports getting channel status by condition-->
   </isSupportFlexible>
   <isSupportPTZChannels>
    <!--opt, xs:boolean, whether it supports returning PTZ channel (which is different from the video channel)-->
   </isSupportPTZChannels>
   <isSupportSubscribeEvent>
    <!--optional, xs:boolean, whether it supports alarm or event subscription: "true,false"-->
   </isSupportSubscribeEvent>
   <isSupportDiagnosedData>
    <!--optional, xs:boolean, "true,false", whether it supports diagnosis data-->
   </isSupportDiagnosedData>
   <isSupportTimeCap>
    <!--opt, xs:boolean, whether it supports time capability, which corresponds to URL: /ISAPI/System/time/
capabilities-->
   </isSupportTimeCap>
   <isSupportThermalStreamData>
    <!--opt, xs:boolean, whether it supports uploading thermal stream data in real-time. If it is supported, the returned
value is "true"; otherwise, this node will not be returned-->
   </isSupportThermalStreamData>
   <isSupportPostUpdateFirmware>
    <!--optional,xs:boolean,"true,false", whether it supports upgrading the firmware-->
   </isSupportPostUpdateFirmware>
   <isSupportPostConfigData>
    <!--optional, xs:boolean,"true,false", whether it supports importing or exporting the configuration file-->
   </isSupportPostConfigData>
   <isSupportUserLock>
    <!--optional, xs:boolean,"true,false", whether it supports locking user-->
   </isSupportUserLock>
   <isSupportModuleLock><!--opt, xs:boolean, whether it supports locking the module: "true,false"--></
isSupportModuleLock>
   <isSupportSoundCfg><!--optional, xs:boolean--></isSupportSoundCfg>
   <isSupportMetadata>
    <!--optional, xs:boolean, if it is supported, return "true", otherwise, this node will not be returned-->
   </isSupportMetadata>
   <isSupportShutdown><!--opt, xs:boolean, whether it supports shutdown configuration--></isSupportShutdown>
   <supportSmartOverlapChannles opt="1"/><!--opt, xs:boolean, whether it supports stream configuration of smart
events. If this function is supported, this node and the corresponding channel ID will be returned; otherwise, this node
will not be returned-->
  </SysCap>
  <voicetalkNums><!--optional, xs:integer, the number of two-way audio channels--></voicetalkNums>
```

```
<isSupportSnapshot><!--optional, xs:boolean, whether it supports capture: "true, false"--></isSupportSnapshot>
<SecurityCap/><!--optional, security capability-->
<EventCap/><!--optional, event capability-->
<ITCCap><!--opt--></ITCCap>
<ImageCap/><!--optional, image capability-->
<RacmCap/><!--optional, storage capability-->
<PTZCtrlCap>
  <isSupportPatrols><!--opt, xs:boolean--></isSupportPatrols>
</PTZCtrlCap>
<SmartCap/><!--optional, intelligent capability-->
<isSupportEhome><!--opt, xs:boolean--></isSupportEhome>
<isSupportStreamingEncrypt><!--opt, xs:boolean--></isSupportStreamingEncrypt>
<TestCap>
  <isSupportEmailTest><!--opt, xs:boolean--></isSupportEmailTest>
</TestCap>
<ThermalCap/><!--optional, thermometry capability-->
<WLAlarmCap/><!--opt, wireless alarm capability-->
<SecurityCPCapabilities/><!--opt, security control panel capability-->
<isSupportGIS>
  <!--opt, xs:boolean, whether it supports GIS capability-->
</isSupportGIS>
<isSupportCompass>
  <!--opt, xs:boolean-->
</isSupportCompass>
<isSupportRoadInfoOverlays>
  <!--opt, xs:boolean-->
</isSupportRoadInfoOverlays>
<isSupportFaceCaptureStatistics>
  <!--opt, xs:boolean-->
</isSupportFaceCaptureStatistics>
<isSupportExternalDevice>
  <!--opt, xs:boolean-->
</isSupportExternalDevice>
<isSupportElectronicsEnlarge>
  <!--opt, xs:boolean, whether it supports digital zoom-->
</isSupportElectronicsEnlarge>
<isSupportRemoveStorage>
  <!--opt, xs:boolean-->
</isSupportRemoveStorage>
<isSupportCloud>
  <!--opt, xs:boolean-->
</isSupportCloud>
<isSupportRecordHost>
  <!--opt, xs:boolean-->
</isSupportRecordHost>
<isSupportEagleEye>
  <!--opt, xs:boolean, whether it supports PanoVu series camera-->
</isSupportEagleEye>
<isSupportPanorama>
  <!--opt, xs:boolean, whether it supports panorama-->
</isSupportPanorama>
<isSupportFirmwareVersionInfo>
```

```
  <!--opt, xs:boolean, whether it supports displaying firmware version information-->
</isSupportFirmwareVersionInfo>
<isSupportExternalWirelessServer>
  <!--opt, xs: boolean-->
</isSupportExternalWirelessServer>
<isSupportSetupCalibration>
  <!--opt, xs:boolean, whether it supports setting calibration-->
</isSupportSetupCalibration>
<isSupportGetmutexFuncErrMsg>
  <!--opt, xs:boolean, whether it supports getting mutex information-->
</isSupportGetmutexFuncErrMsg>
<isSupportTokenAuthenticate><!--opt, xs:boolean--></isSupportTokenAuthenticate>
<isSupportStreamDualVCA><!--opt, xs:boolean--></isSupportStreamDualVCA>
<isSupportlaserSpotManual>
  <!--opt, boolean, whether it supports laser spot configuration-->
</isSupportlaserSpotManual>
<isSupportRTMP><!--opt, xs:boolean--></isSupportRTMP>
<isSupportTraffic><!--opt, xs:boolean--></isSupportTraffic>
<isSupportLaserSpotAdjustment>
  <!--opt, boolean, whether it supports adjusting laser spot size-->
</isSupportLaserSpotAdjustment>
<VideoIntercomCap/><!--optional, video intercom capability-->
<isSupportSafetyCabin>
  <!--opt, xs:boolean-->
</isSupportSafetyCabin>
<isSupportPEA>
  <!--opt, xs:boolean, whether it supports one-touch security control panel capability-->
</isSupportPEA>
<isSupportCurrentLock>
  <!--opt, xs:boolean, whether it supports locking current configuration-->
</isSupportCurrentLock>
<isSupportGuardAgainstTheft>
  <!--opt, xs:boolean, whether it supports device anti-theft configuration-->
</isSupportGuardAgainstTheft>
<isSupportPicInfoOverlap>
  <!--optional, xs:boolean, whether it supports picture information overlay-->
</isSupportPicInfoOverlap>
<isSupportPlay>
  <!--opt, xs: boolean, whether it supports live view: "true,false"-->
</isSupportPlay>
<isSupportPlayback>
  <!--opt, xs: boolean, whether it supports playback: "true,false"-->
</isSupportPlayback>
<UHFRFIDReader>
  <!--opt, supported capability of UHF RFID card reader-->
  <isSupportBasicInformation>
    <!--opt, xs:boolean, whether it supports basic parameters of UHF RFID card reader-->
  </isSupportBasicInformation>
  <isSupportHardDiskStorageTest>
    <!--opt, xs:boolean, whether it supports hard disk storage test of UHF RFID card reader-->
  </isSupportHardDiskStorageTest>
</UHFRFIDReader>
```

```
<isSupportIntelligentStructureAnalysis>
  <!--opt, xs:boolean, whether it supports structured VCA-->
</isSupportIntelligentStructureAnalysis>
<isSupportIntelligentAnalysisEngines>
  <!--opt, xs:boolean, whether it supports VCA engine configuration-->
</isSupportIntelligentAnalysisEngines>
<PreviewDisplayNum>
  <!--opt, xs:integer, the number of live view windows, which is the number of simultaneous live view windows controlled by the device. Limited by the performance of DeepinMind series network video recorder, currently only live view of a network camera is supported, and playback is not supported-->
</PreviewDisplayNum>
<isSupportBoard opt="true,false">
  <!--opt, xs:boolean, whether it supports protocol related to sub-board-->
</isSupportBoard>
<ResourceSwitch>
  <workMode opt="4KPreview,educationRecord">
    <!--req, xs:string, device working mode : "4KPreview"-4K live view mode, "educationRecord"-education recording mode-->
  </workMode>
</ResourceSwitch>
<isSupportCustomStream><!--opt, xs:boolean--></isSupportCustomStream>
<isSupportTriggerCapCheck>
  <!--opt, xs:boolean, whether it supports verifying capability of alarm linkage actions-->
</isSupportTriggerCapCheck>
<isSupportActiveMulticast>
  <!--opt, xs: boolean, whether it supports active multicast-->
</isSupportActiveMulticast>
<isSupportChannelEventCap>
  <!--opt, xs:boolean, whether it supports getting event capability by channel-->
</isSupportChannelEventCap>
<isSupportSensorCalibrating>
  <!--opt, xs:boolean, whether it supports double sensor calibration-->
</isSupportSensorCalibrating>
<isSupportChannelEventListCap>
  <!--opt, xs:boolean, whether it supports getting event capability of all channels-->
</isSupportChannelEventListCap>
<VCAResourceChannelsCap>
  <!--opt, whether it supports independently switching to another VCA resource by channel-->
  <ChannelsList>
    <channelsID>
      <!--req, xs:integer, channel No. supported by the device-->
    </channelsID>
  </ChannelsList>
</VCAResourceChannelsCap>
<SensorCap/><!--optional, intelligent cabinet capability-->
<isSupportSecurityCP/>
  <!--optional, xs:boolean, whether it supports the applications of security control panel: "true, false"-->
</isSupportSecurityCP>
<isSupportClientProxyWEB>
  <!--optional, xs:boolean, whether it supports the function that the client proxy passes through the remote web configuration: "true"-->
</isSupportClientProxyWEB>
```

```
<WEBLocation>
  <!--opt, string type, web page location: "local"-local device, "remote"-remote location. If this node is not returned, the web page will be in the local device by default-->
 </WEBLocation>
 <isSupportTime/>
  <!--optional, xs:boolean, "true, false", whether it supports time configuration-->
 </isSupportTime>
 <isSupportTimeZone/>
  <!--optional, xs:boolean, "true, false", whether it supports daylight saving time (DST) configuration-->
 </isSupportTimeZone>
 <isSupportMixedTargetDetection>
  <!--opt, xs:boolean, "true, false", whether it supports multi-target-type detection-->
 </isSupportMixedTargetDetection>
 <isSupportFaceContrastMode>
  <!--opt, xs:boolean, whether it supports face picture comparison mode-->
 </isSupportFaceContrastMode>
 <isSupportPictureCaptureComparision>
  <!--opt, xs:boolean, whether it supports face picture N:1 comparison between face pictures captured by the camera and imported face pictures-->
 </isSupportPictureCaptureComparision>
 <isSupportChannelFullEventListCap>
  <!--opt, xs:boolean, whether it supports getting event list capability of all channels-->
 </isSupportChannelFullEventListCap>
 <isSupportAUXInfoCap>
  <!--opt, xs:boolean, whether it supports getting property capability of all channels-->
 </isSupportAUXInfoCap>
 <isSupportCalibrationFile>
  <!--opt, xs:boolean, whether it supports importing calibration file-->
 </isSupportCalibrationFile>
 <isSupportDisplayTrajectory>
  <!--opt, xs:boolean, whether it supports displaying trajectory-->
 </isSupportDisplayTrajectory>
 <maximumSuperPositionTime opt="5,10,20,30">
  <!--dep,xs:integer, the maximum time of trajectory displaying,  unit: second, it is valid only when displaying trajectory is supported-->
 </maximumSuperPositionTime>
 <isSupportUnitConfig>
  <!--opt, xs:boolean, whether it supports unit configuration-->
 </isSupportUnitConfig>
 <isSupportAutoMaintenance>
  <!--opt, xs:boolean, whether it supports automatic maintenance. When this node exists and values "true", it indicates support-->
 </isSupportAutoMaintenance>
 <isSupportGetLinkSocketIP>
  <!--opt, xs: boolean, "true,false", whether it supports getting the SoketIP of current connection-->
 </isSupportGetLinkSocketIP>
 <isSupportIntelligentSearch>
  <!--opt, xs:boolean, whether it supports intelligent search-->
 </isSupportIntelligentSearch>
 <IOTCap><!--opt, xs:boolean, IoT device access capability-->
  <supportChannelNum>
   <!--req, xs:integer, number of supported channels of IoT device-->
```

```
   </supportChannelNum>
   <startChannelNo>
    <!--opt, xs:integer, initial channel ID, if this node is not inputted, it indicates that the initial channel ID is 1-->
   </startChannelNo>
   <isSupportlinkageChannelsSearch>
    <!--opt, boolean, returns "true" if support, returns "false" if not support. Corresponds to URL (POST /ISAPI/
System/IOT/linkageChannels?format=json)-->
   </isSupportlinkageChannelsSearch>
  </IOTCap>
  <isSupportEncryption>
   <!--opt, xs: boolean, stream encryption capability-->
  </isSupportEncryption>
  <AIDEventSupport opt="abandonedObject,
pedestrian,congestion,roadBlock,construction,trafficAccident,fogDetection">
   <!--opt, xs:string, supported traffic incident type-->
  </AIDEventSupport>
  <TFSEventSupport opt="illegalParking ,wrongDirection,crossLane,laneChange,vehicleExist,turnRound,
parallelParking">
   <!--opt, xs:string, supported enforcement event type-->
  </TFSEventSupport>
  <isVehicleStatisticsSupport>
   <!--opt, xs: boolean, whether it supports setting parameters for traffic data collection-->
  </isVehicleStatisticsSupport>
  <isSupportIntersectionAnalysis>
   <!--opt, xs: boolean, whether it supports intersection analysis-->
  </isSupportIntersectionAnalysis>
  <isSptDiagnosis>
   <!--opt, xs:boolean, whether it supports device diagnosis: "true", "false"-->
  </isSptDiagnosis>
  <isSptSerialLogCfg>
   <!--opt, xs:boolean, whether it supports configuring serial port log redirection: "true", "false"-->
  </isSptSerialLogCfg>
  <isSptFileExport>
   <!--opt, xs:boolean, whether it supports exporting files from the device: "true", "false"-->
  </isSptFileExport>
  <isSptCertificationStandard>
   <!--opt, xs:boolean, whether it supports configuring authentication standard for security control panel: "true",
"false"-->
  </isSptCertificationStandard>
  <isSptKeypadLock>
   <!--opt, xs:boolean, whether it supports locking keypad: "true", "false"-->
  </isSptKeypadLock>
  <isSupportDiscoveryMode><!--opt, xs:boolean--></isSupportDiscoveryMode>
  <streamEncryptionType>
   <!--dep, xs:string, stream encryption type: "RTP/TLS", "SRTP/UDP", "SRTP/MULTICAST". This node is valid when
<isSupportEncryption> is "true", and the device can support one or more stream encryption types-->
  </streamEncryptionType>
  <isSupportLms><!--opt, xs:boolean, whether it supports laser--></isSupportLms>
  <isSupportLCDScreen><!--opt, xs:boolean, whether it supports LCD screen--></isSupportLCDScreen>
  <isSupportBluetooth><!--opt, xs:boolean, whether it supports bluetooth--></isSupportBluetooth>
  <isSupportAcsUpdate>
   <!--opt, whether it supports upgrading slave access control devices or peripheral modules: "true"-yes, this node is
```

```
not returned-no-->
  </isSupportAcsUpdate>
  <isSupportAccessControlCap>
    <!--opt, whether it supports access control capability: "true"-yes, this node is not returned-no-->
  </isSupportAccessControlCap>
  <isSupportIDCardInfoEvent><!--opt, whether it supports ID card swiping event: "true"-yes. This node will not be returned if this function is not supported--></isSupportIDCardInfoEvent>
  <OpenPlatformCap><!--opt, embedded open platform capability, refer to the message XML_OpenPlatformCap for details-->
  <isSupportInstallationAngleCalibration>
    <!--opt, xs:boolean, whether it supports installation angle calibration-->
  </isSupportInstallationAngleCalibration>
  <isSupportZeroBiasCalibration>
    <!--opt, xs:boolean, whether it supports zero bias calibration-->
  </isSupportZeroBiasCalibration>
  <isSupportDevStatus><!--opt, xs:boolean, whether device supports getting device status, corresponding URL: /ISAPI/System/status--></isSupportDevStatus>
  <isSupportRadar><!--opt, xs:boolean, whether it supports security radar--></isSupportRadar>
  <SHMCap><!--opt-->
    <isSupportHighHDTemperature><!--opt, xs:boolean, whether it supports HDD high temperature detection--></isSupportHighHDTemperature>
    <isSupportLowHDTemperature><!--opt, xs:boolean, whether it supports HDD low temperature detection--></isSupportLowHDTemperature>
    <isSupportHDImpact><!--opt, xs:boolean, whether it supports HDD impact detection--></isSupportHDImpact>
    <isSupportHDBadBlock><!--opt, xs:boolean, whether it supports HDD bad sector detection--></isSupportHDBadBlock>
    <isSupportSevereHDFailure><!--opt, xs:boolean, whether it supports HDD severe fault detection--></isSupportSevereHDFailure>
  </SHMCap>
  <isSupportBVCorrect><!--opt, xs:boolean, whether it supports configuring camera correction parameters--></isSupportBVCorrect>
  <guideEventSupport opt="linkageCapture">
    <!--opt,xs:string, events which support quick setup by instruction, "linkageCapture"-capture by linkage-->
  </guideEventSupport>
</DeviceCap>
```

16.2.115 XML_DeviceInfo

DeviceInfo message in XML format

```
<DeviceInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <deviceName><!--req, xs:string--></deviceName>
  <deviceID><!--ro, req, xs:string, uuid--></deviceID>
  <deviceDescription>
    <!--opt, xs:string, description about the device defined in RFC1213. For network camera, this node is set to "IPCamera"; for network speed dome, this node is set to "IPDome"; for DVR or DVS, this node is set to "DVR" or "DVS"-->
  </deviceDescription>
  <deviceLocation><!--opt, xs:string, actual location of the device--></deviceLocation>
  <deviceStatus><!--ro, opt, xs:string, device status: "normal", "abnormal"-->
  <DetailAbnormalStatus>
```

```
  <!--dep, error status details, it is valid only when deviceStatus is "abnormal"-->
  <hardDiskFull>
   <!--ro, opt, xs: boolean, whether the error of "HDD full" occurred: "true"-yes,"false"-no-->
  </hardDiskFull>
  <hardDiskError>
   <!--ro, opt, xs:boolean, whether the error of "HDD error" occurred: "true"-yes,"false"-no-->
  </hardDiskError>
  <ethernetBroken>
   <!--ro, opt, xs: boolean, whether the error of "network disconnected" occurred: "true"-yes,"false"-no-->
  </ethernetBroken>
  <ipaddrConflict>
   <!--ro, opt, xs: boolean, whether the error of "IP address conflicted" occurred: "true"-yes,"false"-no-->
  </ipaddrConflict>
  <illegalAccess>
   <!--ro, opt, xs: boolean, whether the error of "illegal login" occurred: "true"-yes,"false"-no-->
  </illegalAccess>
  <recordError>
   <!--ro, opt, xs: boolean, whether the error of "recording exception" occurred: "true"-yes,"false"-no-->
  </recordError>
  <raidLogicDiskError>
   <!--ro, opt, xs: boolean, whether the error of "RAID exception" occurred: "true"-yes,"false"-no-->
  </raidLogicDiskError>
  <spareWorkDeviceError>
   <!--ro, opt, xs: boolean, whether the error of "working device exception" occurred: "true"-yes,"false"-no-->
  </spareWorkDeviceError>
 </DetailAbnormalStatus>
 <systemContact><!--opt, req, xs:string, contact information of the device--></systemContact>
 <model><!--ro, req, xs:string--></model>
 <serialNumber><!--ro, req, xs:string--></serialNumber>
 <macAddress><!--ro, req, xs:string--></macAddress>
 <firmwareVersion><!--ro, req, xs:string--></firmwareVersion>
 <firmwareReleasedDate><!--ro, opt, xs:string--></firmwareReleasedDate>
 <bootVersion><!--ro, opt, xs:string--></bootVersion>
 <bootReleasedDate><!--ro, opt, xs:string--></bootReleasedDate>
 <hardwareVersion><!--ro, opt, xs:string--></hardwareVersion>
 <encoderVersion><!--ro, opt, xs:string--></encoderVersion>
 <encoderReleasedDate><!--ro, opt, xs:stirng--></encoderReleasedDate>
 <decoderVersion><!--ro, opt, xs:string--></decoderVersion>
 <decoderReleasedDate><!--ro, opt, xs:stirng--></decoderReleasedDate>
 <softwareVersion><!--ro, opt, xs:string, software version--></softwareVersion>
 <capacity><!--ro, opt, xs:integer, unit: MB, device capacity--></capacity>
 <usedCapacity><!--ro, opt, xs:integer, unit: MB, capacity usage--></usedCapacity>
 <deviceType>
  <!--ro, req, xs:string,device type: "IPCamera", "IPDome", "DVR", "HybirdNVR", "NVR", "DVS", "IPZoom", "CVR",
"Radar", "PerimeterRadar"-perimeter radar, "ACS", "PHA"-Axiom hybrid security control panel-->
 <deviceType>
 <telecontrolID><!--opt, xs:integer, keyfob control ID, the value is between 1 and 255--></telecontrolID>
 <supportBeep><!--opt, xs:boolean--></supportBeep>
 <firmwareVersionInfo><!--ro, opt, xs:string, firmware version information--></firmwareVersionInfo>
 <actualFloorNum>
  <!--req, xs: integer, actual number of floors, which is between 1 and 128-->
 </actualFloorNum>
```

```
 <subChannelEnabled><!--opt, xs:boolean, whether to support sub-stream live view: "true"-yes, "false"-no--></
subChannelEnabled>
 <thrChannelEnabled><!--opt, xs:boolean, whether to support third stream live view: "true"-yes, "false"-no--></
thrChannelEnabled>
 <radarVersion><!--opt, xs:string, radar version--></radarVersion>
 <localZoneNum><!--opt, xs:integer, number of local zones--></localZoneNum>
 <alarmOutNum><!--opt, xs:integer, number of alarm outputs--></alarmOutNum>
 <distanceResolution><!--opt, xs:float, resolution of distance, unit: meter--></distanceResolution>
 <angleResolution><!--opt, xs:float, resolution of angle, unit: degree--></angleResolution>
 <speedResolution><!--opt, xs:float, resolution of speed, unit: m/s--></speedResolution>
 <detectDistance><!--opt, xs:float, detection distance, unit: meter--></detectDistance>
 <languageType opt="chinese,english,spanish,portuguese,italian,french,russian,german,polish"><!--opt, xs:string--></
languageType>
 <relayNum><!--opt, xs:integer, number of local relays--></relayNum>
 <electroLockNum><!--opt, xs:integer, number of local electronic locks--></electroLockNum>
 <RS485Num><!--opt, xs:integer, number of local RS-485--></RS485Num>
 <powerOnMode><!--optional, xs:string, device startup mode: "button"-press button to power on (default), "adapter"-
connect adapter to power on--></powerOnMode>
</DeviceInfo>
```

16.2.116 XML_DeviceStatus

DeviceStatus message in XML format

```
<DeviceStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <currentDeviceTime><!--opt, xs: datetime--></currentDeviceTime>
 <deviceUpTime><!--opt, xs: integer, seconds--></deviceUpTime>
 <TemperatureList><!--opt-->
  <Temperature>
   <tempSensorDescription><!--req, xs: string--></tempSensorDescription>
   <temperature><!--req, xs: float--></temperature>
  </Temperature>
 </TemperatureList>
 <FanList><!--opt-->
  <Fan>
   <fanDescription><!--req, xs: string--></fanDescription>
   <speed><!--req, xs: integer--></speed>
  </Fan>
 </FanList>
 <PressureList><!--opt-->
  <Pressure>
   <pressureSensorDescription><!--req, xs: string--></pressureSensorDescription>
   <pressure><!--req, xs: integer--></pressure>
  </Pressure>
 </PressureList>
 <TamperList><!--opt-->
  <Tamper><tamperSensorDescription><!--req, xs: string--></tamperSensorDescription>
   <tamper><!--req, xs: boolean--> </tamper>
  </Tamper>
 </TamperList>
 <CPUList><!--opt-->
```

```
  <CPU>
   <cpuDescription><!--req, xs: string--></cpuDescription>
   <cpuUtilization><!--req, xs: integer, percentage, which is between 0 and 100--></cpuUtilization>
  </CPU>
</CPUList>
<MemoryList><!--opt-->
  <Memory>
   <memoryDescription><!--req, xs: string--></memoryDescription>
   <memoryUsage><!--req, xs: float, unit: MB--></memoryUsage>
   <memoryAvailable><!--req, xs: float, unit: MB--></memoryAvailable>
  </Memory>
</MemoryList>
<openFileHandles><!--opt, xs: integer--></openFileHandles>
<CameraList><!--opt-->
  <Camera>
   <zoomReverseTimes><!--req, xs: integer--></zoomReverseTimes>
   <zoomTotalSteps><!--req, xs: integer--></zoomTotalSteps>
   <focusReverseTimes><!--req, xs: integer--></focusReverseTimes>
   <focusTotalSteps><!--req, xs: integer--></focusTotalSteps>
   <irisShiftTimes><!--req, xs: integer--></irisShiftTimes>
   <irisTotalSteps><!--req, xs: integer--></irisTotalSteps>
   <icrShiftTimes><!--req, xs: integer--></icrShiftTimes>
   <icrTotalSteps><!--req, xs: integer--></icrTotalSteps>
   <lensIntirTimes><!--req, xs: integer--></lensIntirTimes>
   <cameraRunTotalTime><!--req, xs: integer--></cameraRunTotalTime>
  </Camera>
</CameraList>
<DomeInfoList><!--opt-->
  <DomeInfo>
   <domeRunTotalTime><!--opt, xs: integer--></domeRunTotalTime >
   <runTimeUnderNegativetwenty><!--opt, xs: integer--></runTimeUnderNegativetwenty>
   <runTimeBetweenNtwentyPforty><!--opt, xs: integer--></runTimeBetweenNtwentyPforty>
   <runtimeOverPositiveforty><!--opt, xs: integer--></runtimeOverPositiveforty>
   <panTotalRounds><!--opt, xs: integer--></panTotalRounds>
   <tiltTotalRounds><!--opt, xs: integer--></tiltTotalRounds>
   <heatState><!--opt, xs: integer--></heatState>
   <fanState><!--opt, xs: integer--></fanState>
  </DomeInfo>
</DomeInfoList>
<deviceStatus><!--req, xs: string, device working status: "normal, abnormal "--></deviceStatus>
<dialSignalStrength>
  <!--optional, xs:integer, 4G signal strength, it is between 1 and 3-->
</dialSignalStrength>
<USBStatusList>
  <USBStatus>
   <!--list-->
   <id>
    <!--required, xs:integer-->
   </id>
   <state>
    <!--optional, xs:string, USB status: "connected", "fullCapacity", "deviceException", "disconnected"-->
   </state>
```

```
   </USBStatus>
  </USBStatusList>
  <WifiStatusList>
   <WifiStatus>
    <!--list-->
    <id>
     <!--required, xs:integer-->
    </id>
    <state>
     <!--optional, xs:string, Wi-Fi status: "disabled"-Wi-Fi is disabled, "enable"-Wi-Fi is enabled, "disconnected"-Wi-Fi
is disconnected, "enableHotspot"-Wi-Fi hot spot is enabled-->
    </state>
   </WifiStatus>
  </WifiStatusList>
  <AlertStreamServerList><!--opt, user of arming device-->
   <AlertStreamServer><!--list-->
    <id><!--opt, xs:integer--></id>
    <protocolType><!--opt, xs:string, "SDK,ISAPI", arming protocol type--></protocolType>
    <ipAddress><!--dep, xs:string, IP address of platform, server, NVR/CVR, and so on--></ipAddress>
   </AlertStreamServer>
  </AlertStreamServerList>
</DeviceStatus>
```

16.2.117 XML_Dial

Dial message in XML format

```
<Dial version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
 <DialMethod><!--req, xs:string, "auto, manual"--></DialMethod>
 <SwitchMethod>
  <!--req, xs:string, "auto,4GFirst,3GFirst, manualto2G, manualto3G, manualto4G"-->
 </SwitchMethod>
 <OfflineTime><!--opt, xs:integer--></OfflineTime>
 <UIMCardNum><!--opt, xs:string--></UIMCardNum>
 <DialNum><!--opt, xs:string--></DialNum>
 <Username><!--opt, xs:string--></Username>
 <Password><!--opt, xs:string--></Password>
 <APNname><!--opt, xs:string--></APNname>
 <SIMNum><!--opt, xs:string, SIM card No. (mobile phone number)--></SIMNum>
 <MTU><!--opt, xs: integer--></MTU>
 <VerifyProto><!--req, xs:string, "auto, CHAP, PAP"--></VerifyProto>
 <DefaultParam/><!--opt, default parameters, see details in the message of XML_DefaultParam-->
 <netAPN><!--opt, xs:string, APN configuration of the private network--></netAPN>
 <Flow><!--opt, network traffic flow configuration-->
  <limitEnabled><!--opt, xs:boolean, whether to enable traffic flow limitation--></limitEnabled>
  <consumeFlow><!--opt, xs:float, unit: MB--></consumeFlow>
  <threshold><!--opt, xs:integer, unit: MB--></threshold>
 </Flow>
```

```
  <pinCode><!--opt, wo, xs:string--></pinCode>
</Dial>
```

See Also

XML_DefaultParam

16.2.118 XML_Dialstatus

Dialstatus message in XML format

```
<Dialstatus version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <RealtimeMode>
    <!--ro, xs:string, "CDMA 1x,EVDO,HYBRID,GSM,GPRS,EDGE,WCDMA,HSDPA,HSUPA,HSPA,TDSCDMA,TD-LTE,FDD-
LTE,LTE,UNKNOWN"-->
  </RealtimeMode>
  <UIMInfo>
    <!--ro, xs:string, "UNKNOWN,VALID,NOVALID,ROAM,NOEXIST"-->
  </UIMInfo>
  <SignalStrength>
    <!--ro, xs:integer-->
  </SignalStrength>
  <Dialstat>
    <!--ro, xs:string-->
  </Dialstat>
  <IpAddress>
    <!--req-->
    <ipAddress>
      <!--dep, xs:string-->
    </ipAddress>
    <ipv6Address>
      <!--dep, xs:string-->
    </ipv6Address>
  </IpAddress>
  <SubnetMask>
    <!--req-->
    <ipAddress>
      <!--dep, xs:string-->
    </ipAddress>
    <ipv6Address>
      <!--dep, xs:string-->
    </ipv6Address>
  </SubnetMask>
  <Gateway>
    <!--req-->
    <ipAddress>
      <!--dep, xs:string-->
    </ipAddress>
    <ipv6Address>
      <!--dep, xs:string-->
    </ipv6Address>
```

```
  </Gateway>
  <DNSAddress>
    <!--req-->
    <ipAddress>
      <!--dep, xs:string-->
    </ipAddress>
    <ipv6Address>
      <!--dep, xs:string-->
    </ipv6Address>
  </DNSAddress>
</Dialstatus>
```

16.2.119 XML_Discovery

Discovery message in XML format

```
<Discovery version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <UPnP><!--req-->
    <enabled><!--req, xs:boolean, "true, false"--></enalbed>
  </UPnP>
  <ZeroConf><!--opt, channel-zero configuration-->
    <enabled><!--req, xs:boolean, "true, false"--></enabled>
  </ZeroConf>
</Discovery>
```

16.2.120 XML_diskQuota

diskQuota message in XML format

```
<diskQuota version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs: integer, channel ID--></id>
  <useVideoQuota><!--read-only, xs: integer, quota for video files, unit: MB--></useVideoQuota>
  <usePictureQuota><!--read-only, xs: integer, quota for picture files, unit: MB--></usePictureQuota>
  <totalDiskVolume><!--read-only, xs: integer, total disk capacity, unit: MB--></totalDiskVolume>
  <videoQuota><!--req, xs: integer, unit: MB--></videoQuota>
  <pictureQuota><!--opt, xs: integer, unit: MB--></pictureQuota>
  <type><!--opt, xs: string, "volume,ratio,absent-ratio,otherwise-volume"--></type>
  <videoQuotaRatio><!--dep, xs: integer, video quota ratio (%): [0,100]--></videoQuotaRatio>
  <pictureQuotaRatio><!--dep, xs: integer, picture quota ratio (%): [0,100]--></pictureQuotaRatio>
  <totalVideoVolume><!--read-only, xs: integer, unit: MB--></totalVideoVolume>
  <totalPictureVolume><!--ro, xs: integer, unit: MB--></totalPictureVolume>
  <freeVideoQuota><!--ro, xs: integer, free space for video files, unit: MB--></freeVideoQuota>
  <freePictureQuota><!--ro, xs: integer, free space for picture files, unit: MB--></freePictureQuota>
</diskQuota>
```

16.2.121 XML_DoubleLensParkingCap

DoubleLensParkingCap capability message in XML format

```
<DoubleLensParkingCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <cameraType opt = "masterCamera, slaveCamera">
  <!--req, xs:string, dual-lens camera type: "masterCamera"-fixed dual-lens camera, "slaveCamera"-PTZ dual-lens camera-->
 </cameraType>
</DoubleLensParkingCap>
```

16.2.122 XML_DownloadAbility

DownloadAbility message in XML format

```
<DownloadAbility version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <isSupportDownloadbyTime>
  <!--opt, xs:boolean, whether it supports download by time-->
 </isSupportDownloadbyTime>
 <isSupportDownloadbyFileName>
  <!--opt, xs:boolean, whether it supports download by file name -->
 </isSupportDownloadbyFileName>
 <isSupportDownloadToUSB>
  <!--opt, xs:boolean, whether it supports exporting files to devices via USB-->
 </isSupportDownloadToUSB>
</DownloadAbility>
```

16.2.123 XML_downloadRequest

downloadRequest message in XML format

```
<downloadRequest version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <playbackURI>
  <!--req, xs:string, playback URL, returned by the search service. It contains the information of file name and size, e.g., <playbackURI>rtsp://IpAddress/Streaming/tracks/101?starttime=2016-07-18 00:00:00&endtime=2016-07-18 00:25:04Z&name=00000000721000000&size=1065437356</playbackURI>-->
 </playbackURI>
 <userName><!--opt, xs:string,  double verification user name--></userName>
 <password><!--opt, xs:string,  double verification password--></password>
</downloadRequest>
```

Remarks

When download file by name, the **playbackURI** inputs the file start time, end time, file name, and size; when download file by time, the **playbackURI** inputs the start time and end time.

16.2.124 XML_DynamicCap

DynamicCap capability message in XML format.

```
<DynamicCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ResolutionAvailableDscriptorList><!--req-->
  <ResolutionAvailableDscriptor><!--req-->
   <videoResolutionWidth>
    <!--req, xs:integer-->
   </videoResolutionWidth>
   <videoResolutionHeight>
    <!--req, xs:integer-->
   </videoResolutionHeight>
   <supportedFrameRate>
    <!--req, xs:string, frame rate supported by this resolution, and its value is multiplied by 100 to be returned, e.g., if the returned values are "2000, 2200, 2500", the actual frame rates are "20, 22, 25"-->
   </supportedFrameRate>
   <supportedBitRate min="" max=""/>
   <!--opt, xs:integer,in kbps-->
  </ResolutionAvailableDscriptor>
 </ResolutionAvailableDscriptorList>
 <CodecParamDscriptorList>
  <CodecParamDscriptor>
   <videoCodecType><!-- req, xs: string, "MPEG4,MJPEG,3GP,H.264,HK.264"--></videoCodecType>
   <isSupportProfile><!--dep, xs: boolean--></isSupportProfile>
   <CBRCap><!--constant bit rate-->
    <isSupportSmooth><!--dep, xs: boolean--></isSupportSmooth>
   </CBRCap>
   <VBRCap><!--variable bit rate-->
    <isSupportSmooth><!--dep, xs: boolean--></isSupportSmooth>
   </VBRCap>
   <isSupportSVC><!--opt, xs: boolean--></isSupportSVC>
   <isSupportCABAC><!--opt, xs: boolean--></isSupportCABAC>
   <SmartCodecCap><--opt-->
    <readOnlyParams opt="keyFrameInterval,Profile,SVC,fixedQuality">
     <!--opt, ro, xs: string, read-only options: I frame interval, encoding complexity, SVC, picture quality-->
    </readOnlyParams>
  <BitrateType>
      <Constant><!--opt, constant bit rate-->
    <support opt="videoBitrate">
        <!--opt, xs: string, "averageVideoBitrate"-average bit rate, "videoBitrate"-upper-limit of bit rate-->
       </support>
    <hiddenAbility opt="averageVideoBitrate">
        <!--opt, xs:string, "averageVideoBitrate"-average bit rate, "videoBitrate"-upper-limit of bit rate-->
       </hiddenAbility>
      </Constant>
   <Variable><!--opt, variable bit rate-->
    <support opt="averageVideoBitrate">
        <!--opt, xs: string, "averageVideoBitrate"-average bit rate, "videoBitrate"-upper-limit of bit rate-->
       </support>
    <readOnlyAbility opt="videoBitrate">
```

```
          <!--opt, xs: string, "averageVideoBitrate"-average bit rate, "videoBitrate"-upper-limit of bit rate-->
        </readOnlyAbility>
    </Variable>
   </BitrateType>
     <vbrAverageDefault><!--dep, xs: integer, recommended average bit rate, unit: Kbps--></vbrAverageDefault>
     <smart264EnabledPrompt opt="prompt1,prompt2,prompt3, prompt6, prompt25">
      <!--opt, wo, xs: string, audible prompt for Smart264 enabled-->
     </smart264EnabledPrompt>
     <smart265EnabledPrompt opt="prompt1,prompt2, prompt3, prompt25">
      <!--opt, wo, xs: string, audible prompt for Smart265 enabled-->
     </smart265EnabledPrompt>
    </SmartCodecCap>
   </CodecParamDscriptor>
  </CodecParamDscriptorList>
  <AudioDscriptorList>
   <AudioDscriptor>
    <audioCompressionType>
     <!--req, xs: string, audio encoding type: "G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.
729b,PCM,MP3,AC3,AAC,ADPCM,MP2L2"-->
    </audioCompressionType>
    <audioItemList>
     <audioItem>
    <audioSamplingRate default=""><!--opt,xs: string--></audioSamplingRate>
    <audioBitRate opt=""> <!--dep, xs: integer--></audioBitRate>
    <noiseReduce opt="true,false"><!--req, xs: string--></noiseReduce>
   <audioItem>
    </audioItemList>
   </AudioDscriptor>
  </AudioDscriptorList>
</DynamicCap>
```

16.2.125 XML_Ehome

Ehome message in XML format

```
<Ehome version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled><!--opt, xs: boolean--></enabled>
  <addressingFormatType>
    <!--req, xs: string, address format type: "ipaddress"-IP address, "hostname"-host name-->
  </addressingFormatType>
  <hostName><!--dep, xs: string, host name, this node is valid only when <addressingFormatType> is "hostname"--></
hostName>
  <ipAddress><!--dep, xs: string, IP address, this node is valid only when <addressingFormatType> is "ipaddress"--></
ipAddress>
  <ipv6Address><!--dep, xs: string, IPv6 address, this node is valid only when <addressingFormatType> is "ipaddress"--
></ipv6Address>
  <portNo><!--opt, xs: integer, port No.--></portNo>
  <deviceID><!--req, xs: string, device ID--></deviceID>
  <registerStatus><!--ro, xs: boolean, registration status--></registerStatus>
  <key><!--opt, xs: string, EHome encryption key--></key>
  <version><!--ro, xs: string, version No.--></version>
```

```
 <netWork><!--opt, xs:integer, 0-make no sense, 1-automatic, 2-wired network preferred, 3-wired network, 4-3G/4G/GPRS--></netWork>
 <voiceDeviceType opt="bluetooth,client"><!--opt, xs:string, two-way audio device type: "bluetooth", "client"--></voiceDeviceType>
 <protocolVersion><!--opt, xs:string, protocol type: "v2.0,v2.6,v4.0,v5.0". If this node is set to "v2.0", the device can only use protocol v2.0 to register; if this node is set to "v2.6", "v4.0" or "v5.0", the device will firstly use this protocol to register. If this node is not returned, the protocol version will be determined by <version>--></protocolVersion>
</Ehome>
```

16.2.126 XML_EPTZ

EPTZ message in XML format

```
<EPTZ version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:string, whether to enable e-PTZ: "true"-yes, "false"-no--></enabled>
 <streamType><!--opt, xs:integer, stream type: 1-main stream, 2-sub-stream, 3-third stream, 4-fourth stream--></streamType>
</EPTZ>
```

16.2.127 XML_EventCap

EventCap capability message in XML format

```
<EventCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <isSupportHDFull><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportHDFull>
 <isSupportHDError><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportHDError>
 <isSupportNicBroken><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportNicBroken>
 <isSupportIpConflict><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportIpConflict>
 <isSupportIllAccess><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportIllAccess>
 <isSupportViException><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportViException>
 <isSupportViMismatch><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportViMismatch>
 <isSupportRecordException><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportRecordException>
 <isSupportTriggerFocus><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportTriggerFocus>
 <isSupportMotionDetection><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportMotionDetection>
 <isSupportVideoLoss><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportVideoLoss>
 <isSupportTamperDetection><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportTamperDetection>
 <isSupportStudentsStoodUp><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportStudentsStoodUp>
 <isSupportFramesPeopleCounting><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportFramesPeopleCounting>
 <isSupportRaidException><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportRaidException>
 <isSupportSpareException><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportSpareException>
 <isSupportPoePowerException><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportPoePowerException>
 <isSupportRegionEntrance><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportRegionEntrance>
 <isSupportRegionExiting><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportRegionExiting>
 <isSupportLoitering><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportLoitering>
 <isSupportGroup><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportGroup>
 <isSupportRapidMove><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportRapidMove>
```

<isSupportFireDetection><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportFireDetection>
<isSupportillegalParking><!--opt, xs:boolean, whether it supports illegal parking detection: "true"-support, "false"-not support--></isSupportillegalParking>
<isSupportUnattendedBaggage><!--opt, xs:boolean --></isSupportUnattendedBaggage>
<isSupportAttendedBaggage><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportAttendedBaggage>
<isSupportHumanAttribute><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportHumanAttribute>
<isSupportFaceContrast><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportFaceContrast>
<isSupportFaceLib><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportFaceLib>
<isSupportWhiteListFaceContrast><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportWhiteListFaceContrast>
<isSupportBlackListFaceContrast><!--opt, xs:boolean, whether it supports blacklist face comparison: "true"-support, "false"-not support--></isSupportBlackListFaceContrast>
<isSupportHumanRecognition>><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportHumanRecognition>
<isSupportFaceSnap><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportFaceSnap>
<isSupportPersonDensityDetection><!--opt, xs:boolean, "true"-support, "false"-not support--></isSupportPersonDensityDetection>
<isSupportMixedTargetDetection><!--opt, xs:boolean, whether it supports multi-target-type detection alarm: "true"-support, "false"-not support--></isSupportMixedTargetDetection>
<isSupportPedestrian><!--opt, xs:boolean, whether it supports pedestrian detection: "true"-support, "false"-not support--></isSupportPedestrian>
<isSupportTrafficAccident><!--opt, xs:boolean, whether it supports traffic accident detection: "true"-support, "false"-not support--></isSupportTrafficAccident>
<isSupportConstruction><!--opt, xs:boolean, whether it supports construction detection: "true"-support, "false"-not support--></isSupportConstruction>
<isSupportRoadBlock><!--opt, xs:boolean, whether it supports roadblock detection: "true"-support, "false"-not support--></isSupportRoadBlock>
<isSupportAbandonedObject><!--opt, xs:boolean, whether it supports thrown object detection: "true"-support, "false"-not support--></isSupportAbandonedObject>
<isSupportParallelParking><!--opt, xs:boolean, whether it supports parallel parking detection: "true"-support, "false"-not support--></isSupportParallelParking>
<isSupportParkingState><!--opt, xs:boolean, whether it supports parking space status detection: "true"-support, "false"-not support, currently this node is not supported--></isSupportParkingState>
<isSupportCongestion><!--opt, xs:boolean, whether it supports congestion detection: "true"-support, "false"-not support--></isSupportCongestion>
<isSupportVehicleStatistics><!--opt, xs:boolean, whether it supports data collection: "true"-support, "false"-not support--></isSupportVehicleStatistics>
<isSupportWrongDirection><!--opt, xs:boolean, whether it supports wrong-way driving detection: "true"-support, "false"-not support--></isSupportWrongDirection>
<isSupportTrunRound><!--opt, xs:boolean, whether it supports U-turning detection: "true"-support, "false"-not support--></isSupportTrunRound>
<isSupportCrossLane><!--opt, xs:boolean, whether it supports driving on the lane line detection: "true"-support, "false"-not support--></isSupportCrossLane>
<isSupportLaneChange><!--opt, xs:boolean, whether it supports illegal lane change detection: "true"-support, "false"-not support--></isSupportLaneChange>
<isSupportVehicleExist><!--opt, xs:boolean, whether it supports motor vehicle on non-motor vehicle lane detection: "true"-support, "false"-not support--></isSupportVehicleExist>
<isSupporFogDetection><!--opt, xs:boolean, whether it supports fog detection: "true"-support, "false"-not support--></isSupporFogDetection>
<isSupportIntersectionAnalysis><!--opt, xs: boolean, whether it supports configuring intersection analysis alarm: "true"-support, "false"-not support--></isSupportIntersectionAnalysis>

```
  <isSupportVoltageInstable><!--opt,xs:boolean, whether it supports supply voltage exception alarm: "true"-support,
"false"-not support--></isSupportVoltageInstable>
  <isSupportSafetyHelmetDetection><!--opt, xs:boolean, whether it supports hard hat detection: "true"-support,
"false"-not support--></isSupportSafetyHelmetDetection>
  <isSupportCertificateRevocation><!--opt, xs:boolean, whether it supports certificate expiry alarm--></
isSupportCertificateRevocation>
</EventCap>
```

16.2.128 XML_EventNotificationAlert_AlarmEventInfo

EventNotificationAlert message with alarm/event information in XML format.

```
<EventNotificationAlert version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <ipAddress><!--dep, xs:string, device IPv4 address--></ipAddress>
  <ipv6Address><!--dep, xs:string, device IPv6 address--></ipv6Address>
  <portNo><!--opt, xs:integer, device port number--></portNo>
  <protocol><!--opt, xs:string, protocol type for uploading alarm/event information, "HTTP,HTTPS"--></protocol>
  <macAddress><!--opt, xs:string, MAC address--></macAddress>
  <channelID><!--dep, xs:string, device channel No., starts from 1--></channelID>
  <dateTime><!--req, alarm/event triggered or occurred time, format: 2017-07-19T10:06:41+08:00--></dateTime>
  <activePostCount><!--req, xs:integer, alarm/event frequency, starts from 1--></activePostCount>
  <eventType><!--req, xs:string, alarm/event type, "peopleCounting, ANPR,..."--></eventType>
  <eventState>
    <!--req, xs:string, durative alarm/event status: "active"-valid, "inactive"-invalid, e.g., when a moving target is
detected,
     the alarm/event information will be uploaded continuously unit the status is set to "inactive"-->
  </eventState>
  <eventDescription><!--req, xs:string, alarm/event description--></eventDescription>
  <...><!--opt, for different alarm/event types, the nodes are different, see the message examples in different
applications--></...>
</EventNotificationAlert>
```

16.2.129 XML_EventNotificationAlert_HeartbeatInfo

EventNotificationAlert message with heartbeat information (when there is no alarm is triggered) in XML format

```
<EventNotificationAlert version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <ipv6Address><!--dep, xs:string, device IPv6 address--></ipv6Address>
  <portNo><!--opt, xs:integer, device port number--></portNo>
  <protocol><!--opt, xs:string, protocol type for uploading alarm/event information, "HTTP,HTTPS"--></protocol>
  <macAddress><!--opt, xs:string, MAC address--></macAddress>
  <channelID><!--dep, xs:string, device channel No., starts from 1--></channelID>
  <dateTime><!--req, heartbeat uploaded time, format: 2017-07-19T10:06:41+08:00--></dateTime>
  <activePostCount><!--req, xs:integer, heartbeat frequency, starts from 1--></activePostCount>
  <eventType><!--req, xs:string, for heartbeat, it is "videoloss"--></eventType>
  <eventState>
    <!--req, xs:string, for heartbeat, it is "inactive"-->
  </eventState>
```

```
 <eventDescription><!--req, xs: string, description--></eventDescription>
</EventNotificationAlert>
```

Remarks

- For network camera or network speed dome with the version 5.5.0 and lower, the heartbeat frequency is 300 ms per heartbeat.
- For network camera or network speed dome with the version 5.5.0 and higher, the heartbeat frequency is 10 s per heartbeat. If no heartbeat received for continuous 30 s, it indicates that the heartbeat is timed out.

Example

Message Example of Heartbeat

```
<EventNotificationAlert version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <ipAddress>10.17.133.46</ipAddress>
 <portNo>80</portNo>
 <protocol>HTTP</protocol>
 <macAddress>44:19:b6:6d:24:85</macAddress>
 <channelID>1</channelID>
 <dateTime>2017-05-04T11:20:02+08:00</dateTime>
 <activePostCount>0</activePostCount>
 <eventType>videoloss</eventType>
 <eventState>inactive</eventState>
 <eventDescription>videoloss alarm</eventDescription>
</EventNotificationAlert>
```

16.2.130 XML_EventNotificationAlert_IOSensorAlarmMsg

The I/O sensor alarms are uploaded in the XML format of EventNotificationAlert message.

```
<EventNotificationAlert version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ipAddress><!--dep, xs:string--></ipAddress>
 <ipv6Address><!--dep, xs:string--></ipv6Address>
 <portNo><!--opt, xs:integer--></portNo>
 <protocolType><!--opt, xs:string, "HTTP,HTTPS"--></protocolType>
 <macAddress><!--opt, xs:string, MAC address--></macAddress>
 <dynChannelID><!--opt, xs:string, digital channel No.--></dynChannelID>
 <channelID><!--dep, xs:string--></channelID>
 <dateTime><!--req, xs:datetime, ISO8601 time format, e.g., 2017-04-22T15:39:01+08:00--></dateTime>
 <activePostCount><!--req, xs:integer--></activePostCount>
 <eventType><!--req, xs:string, event type: "IO"--></eventType>
 <eventState><!--req, xs:string, "active,inactive"--></eventState>
 <eventDescription><!--req, xs:string--></eventDescription>
 <inputIOPortID><!--opt, xs:integer, local input port ID--></inputIOPortID>
 <dynInputIOPortID><!--opt, xs:integer, channel input port ID--></dynInputIOPortID>
 <channelName><!--opt, xs:string--></channelName>
 <deviceID><!--opt, xs:string, device ID--></deviceID>
 <Extensions>
  <serialNumber><!--req, xs:string--></serialNumber>
```

```
   <eventPush><!--req, xs:string--></eventPush>
  </Extensions>
</EventNotificationAlert>
```

16.2.131 XML_EventNotificationAlert_SubscriptionHeartbeat

Heartbeat information message returned when subscribing alarm/event, and it is in XML format.

```
<EventNotificationAlert version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
  <ipAddress>10.17.133.46</ipAddress>
  <portNo>80</portNo>
  <protocol>HTTP</protocol>
  <macAddress>44:19:b6:6d:24:85</macAddress>
  <channelID>1</channelID>
  <dateTime>2017-05-04T11:20:02+08:00</dateTime>
  <activePostCount>0</activePostCount>
  <eventType>heartBeat</eventType>
  <eventState>active</eventState>
  <eventDescription>heartBeat</eventDescription>
</EventNotificationAlert>
```

See Also

XML_EventNotificationAlert_AlarmEventInfo

16.2.132 XML_EventTrigger

EventTrigger message in XML format

```
<EventTrigger version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:string, ID--></id>
  <eventType>
    <!--req, xs:string, see details in the "Remarks" below-->
  </eventType>
  <eventDescription><!--opt, xs:string--></eventDescription>
  <inputIOPortID><!--dep, xs:string, alarm input ID--></inputIOPortID>
  <dynInputIOPortID><!--dep, xs:string, dynamic alarm input ID--></dynInputPortID>
  <videoInputChannelID>
    <!--dep, xs:string, video input channel ID, it is valid when <eventType> is "VMD, videoloss, tamperdetection,
regionEntrance, regionExiting, loitering, group, rapidMove, parking, unattendedBaggage, attendedBaggage"-->
  </videoInputChannelID>
  <dynVideoInputChannelID><!--dep, xs:string, dynamic video input channel ID--></dynVideoInputChannelID>
  <intervalBetweenEvents><!--opt, xs:integer, event time interval, unit: second--></intervalBetweenEvents>
  <WLSensorID><!--dep, xs:string, ID--></WLSensorID>
  <EventTriggerNotificationList/><!--opt, alarm/event linkage actions, see details in the message of
XML_EventTriggerNotificationList-->
</EventTrigger>
```

Remarks

The node <**eventType**> can be the following values: IO, VMD, videoloss, raidfailure, recordingfailure, badvideo, POS, analytics, fanfailure, overheat, tamperdetection, diskfull, diskerror, nicbroken, ipconflict, illaccess, videomismatch, resolutionmismatch, radifailure, PIR, WLSensor, spareException, poePowerException, heatmap, counting, linedetection, fielddetection, regionEntrance, regionExiting, loitering, group,rapidMove, parking, unattendedBaggage, attendedBaggage, HUMANATTRIBUTE, blackList, whitelist, peopleDetection, allVehicleList, otherVehicleList, vehicledetection, storageDetection, shipsDetection, humanAttribute, faceContrast, blackListFaceContrast, whiteListFaceContrast, faceSnap, faceLib, personDensityDetection, personQueueDetecton, mixedTargetDetection, HVTVehicleDetection, illegalParking, pedestrian, trafficAccident, construction, roadblock, abandonedObject, parallelParking, parkingState, congestion, intersectionAnalysis, heatMap, thermometry, shipsFlowDetection, dredgerDetection, reverseEntrance, luma, highHDTemperature, lowHDTemperature, hdImpact, hdBadBlock, SevereHDFailure, safetyHelmetDetection.

See Also

XML_EventTriggerNotificationList

16.2.133 XML_EventTriggerCapType

EventTriggerCapType message in XML format

```
<EventTriggerCapType version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <isSupportCenter><!--opt, xs:boolean--></isSupportCenter>
 <isSupportRecord><!--opt, xs:boolean--></isSupportRecord>
 <isSupportMonitorAlarm><!--opt, xs:boolean--></isSupportMonitorAlarm>
 <isSupportBeep><!--opt, xs: boolean, whether it supports audible warning--></isSupportBeep>
 <isSupportIO><!--opt, xs:boolean--></isSupportIO>
 <isSupportFTP><!--opt, xs:boolean--></isSupportFTP>
 <isSupportEmail><!--opt, xs:boolean--></isSupEmail>
 <isSupportLightAudioAlarm><!--opt, xs:boolean--></isSupportLightAudioAlarm>
 <isSupportFocus><!--opt, xs:boolean--></isSupportFocus>
 <isSupportPTZ><!--opt, xs:boolean--></isSupportPTZ>
 <maxPresetActionNum>
  <!--dep, xs:integer, it is valid only when <isSupportPTZ> is "true"-->
 </maxPresetActionNum>
 <maxPatrolActionNum>
  <!--dep, xs:integer, it is valid only when <isSupportPTZ> is "true"-->
 </maxPatrolActionNum>
 <maxPatternActionNum>
  <!--dep, xs:integer, it is valid only when <isSupportPTZ> is "true"-->
 </maxPatternActionNum>
 <isSupportTrack><!--opt, xs:boolean, whether it supports PTZ linked tracking--></isSupportTrack>
 <isSupportWhiteLight>
  <!--opt, xs: boolean, whether it supports supplement light alarm linkage-->
 </isSupportWhiteLight>
 <isSupportCloud><!--opt, xs:boolean, whether it supports upload to the cloud--></isSupportCloud>
```

```
 <targetNotificationInterval max="1000" min="0" default="30"><!--xs:integer, range: [0, 1000], the default value is 30, unit: seconds, this node is valid for <MotionDetectionTriggerCap> and <TamperDetectionTriggerCap> and this node is valid when <isSupportPTZ> is "true"--></targetNotificationInterval>
 <direction opt="both,forward,reverse"><!--xs:string, triggering direction, this node is valid for the node <BlackListTriggerCap>, <WhiteListTriggerCap>, and <VehicleDetectionTriggerCap>--></direction>
 <presetDurationTime min="" max=""><!--dep, xs:integer--></presetDurationTime>
 <isSupportSMS><!--opt, xs:boolean, whether it supports SMS (Short Message Service)--></isSupportSMS>
 <maxCellphoneNum><!--dep, xs:integer, this node is valid when <isSupportSMS> is "true"--></maxCellphoneNum>
 <isSupportOSD><!--opt, xs:boolean--></isSupportOSD>
 <isSupportAudio><!--opt, xs:boolean, whether it supports setting audio alarm independently. If this node is set to "true", audio alarm and buzzer alarm can be linked separately, and the linage method is audio--></isSupportAudio>
 <AudioAction><!--dep, this node is valid when <isSupportBeep> is "true" or <isSupportAudio> is "true"-->
  <audioTypeList>
   <audioType><!--list-->
    <audioID><!--req, xs:integer, alarm sound type--></audioID>
    <audioDescription><!--req, xs:string, alarm sound description, it should correspond to the alarm sound type--></audioDescription>
   </audioType>
  </audioTypeList>
  <alarmTimes opt="0,1,2,3,4,5,6,7,8,9,255"><!--req, xs:integer, alarm times, it is between 0 and 9, 255-continuous alarm, unit: time--></alarmTimes>
 </AudioAction>
 <isNotSupportCenterModify><!--opt, xs:boolean, whether editing configuration parameters of the surveillance center is not supported: "true"-yes (configuration parameters of the surveillance center cannot be edited), "false" or this node is not returned-no (configuration parameters of the surveillance center can be edited)--></isNotSupportCenterModify>
</EventTriggerCapType>
```

16.2.134 XML_EventTriggerNotification

EventTriggerNotification message in XML format

```
<EventTriggerNotification><!--opt-->
 <id><!--req, xs:string, device ID--></id>
 <notificationMethod>
  <!--req, xs:string, linkage actions, opt="email,IM,IO,syslog,HTTP,FTP,beep,ptz,record, monitorAlarm, center, LightAudioAlarm,focus,trace,cloud,SMS,whiteLight,audio..."-->
 </notificationMethod>
 <notificationRecurrence>
  <!--opt, xs:string, "beginning,beginningandend,recurring"-->
 </notificationRecurrence>
 <notificationInterval><!--dep, xs:integer, unit: millisecond--></notificationInterval>
 <outputIOPortID><!--dep, xs:string, video output No., it is required only when notificationMethod is "IO"--></outputIOPortID>
 <dynOutputIOPortID><!--dep, xs:string, dynamic video output No., it is required only when notificationMethod is "IO"--></dynOutputIOPortID>
 <videoInputID><!--dep, xs:string, video input No., it is required only when notificationMethod is "record"--></videoInputID>
 <dynVideoInputID><!--dep, xs:string, dynamic video input No., it is required only when notificationMethod is "record"--></dynVideoInputID>
 <ptzAction><!--dep, it is required only when notificationMethod is "ptz"-->
```

```
   <ptzChannelID><!--req, xs:string, PTZ channel ID--></ptzChannelID>
   <actionName><!--req, xs:string, PTZ control type: "preset", "pattern", "patrol"--></actionName>
   <actionNum><!--dep, xs:integer></actionNum>
  </ptzAction>
</EventTriggerNotification>
```

16.2.135 XML_EventTriggerNotificationList

EventTriggerNotificationList message in XML format

```
<EventTriggerNotificationList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <EventTriggerNotification/><!--opt, see details in the message of XML_EventTriggerNotification-->
</EventTriggerNotificationList>
```

See Also

XML_EventTriggerNotification

16.2.136 XML_EventTriggersCap

EventTriggersCap capability message in XML format

```
<EventTriggersCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <DiskfullTriggerCap><!--opt, xs: EventTriggerCapType--></DiskfullTriggerCap>
  <DiskerrorTriggerCap><!--opt, xs: EventTriggerCapType--></DiskerrorTriggerCap>
  <NicbrokenTriggerCap><!--opt, xs: EventTriggerCapType--></NicbrokenTriggerCap>
  <IpconflictTriggerCap><!--opt, xs: EventTriggerCapType--></IpconflictTriggerCap>
  <IllaccesTriggerCap><!--opt, xs: EventTriggerCapType--></IllaccesTriggerCap>
  <BadvideoTriggerCap><!--opt, xs: EventTriggerCapType--></BadvideoTriggerCap>
  <VideomismatchTriggerCap><!--opt, xs: EventTriggerCapType--></VideomismatchTriggerCap>
  <IOTriggerCap><!--opt, xs: EventTriggerCapType--></IOTriggerCap>
  <LineDetectTriggerCap><!--opt, xs: EventTriggerCapType--></LineDetectTriggerCap>
  <RegionEntranceTriggerCap><!--opt, xs: EventTriggerCapType--></RegionEntranceTriggerCap>
  <RegionExitingTriggerCap><!--opt, xs: EventTriggerCapType--></RegionExitingTriggerCap>
  <LoiteringTriggerCap><!--opt, xs: EventTriggerCapType--></LoiteringTriggerCap>
  <GroupDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></GroupDetectionTriggerCap>
  <RapidMoveTriggerCap><!--opt, xs: EventTriggerCapType--></RapidMoveTriggerCap>
  <ParkingTriggerCap><!--opt, xs: EventTriggerCapType--></ParkingTriggerCap>
  <UnattendedBaggageTriggerCap><!--opt, xs: EventTriggerCapType--></UnattendedBaggageTriggerCap>
  <AttendedBaggageTriggerCap><!--opt, xs: EventTriggerCapType--></AttendedBaggageTriggerCap>
  <FireDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></FireDetectionTriggerCap>
  <FireDetectionCap><!--opt, xs: EventTriggerCapType--></FireDetectionCap>
  <StorageDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></StorageDetectionTriggerCap>
  <ShipsDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></ShipsDetectionTriggerCap>
  <ThermometryCap><!--opt, xs: EventTriggerCapType--></ThermometryCap>
  <VandalProofTriggerCap><!--opt, xs: EventTriggerCapType--></VandalProofTriggerCap>
  <BlackListTriggerCap><!--opt, xs: EventTriggerCapType, configuration capability of blacklist arming linkage--></
BlackListTriggerCap>
  <WhiteListTriggerCap><!--opt, xs: EventTriggerCapType, configuration capability of whitelist arming linkage--></
WhiteListTriggerCap>
```

```
<AllVehicleListTriggerCap><!--opt,xs:EventTriggerCapType, configuration capability of other list arming linkage--></
AllVehicleListTriggerCap>
<OtherVehicleListTriggerCap><!--opt,xs:EventTriggerCapType--></OtherVehicleListTriggerCap>
<PeopleDetectionTriggerCap><!--opt,xs:EventTriggerCapType--></PeopleDetectionTriggerCap>
<PIRAlarmCap><!--opt, xs: EventTriggerCapType--></PIRAlarmCap>
<TamperDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></TamperDetectionTriggerCap>
<DefocusDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></DefocusDetectionTriggerCap>
<FaceDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></FaceDetectionTriggerCap>
<SceneChangeDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></SceneChangeDetectionTriggerCap>
<VandalProofAlarmCap><!--opt, xs: EventTriggerCapType--></VandalProofAlarmCap>
<JudgmentTriggerCap><!--opt, xs: EventTriggerCapType--></JudgmentTriggerCap>
<FightingTriggerCap><!--opt, xs: EventTriggerCapType--></FightingTriggerCap>
<RisingTriggerCap><!--opt, xs: EventTriggerCapType--></RisingTriggerCap>
<DozingTriggerCap><!--opt, xs: EventTriggerCapType--></DozingTriggerCap>
<CountingTriggerCap><!--opt, xs: EventTriggerCapType--></CountingTriggerCap>
<VideoLossTriggerCap><!--opt, xs: EventTriggerCapType--></VideoLossTriggerCap>
<HideTriggerCap><!--opt, xs:EventTriggerCapType--></HideTriggerCap>
<AlarmInTriggerCap><!--opt, xs: EventTriggerCapType--></AlarmInTriggerCap>
<VehicleDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></VehicleDetectionTriggerCap>
<AudioExceptionCap><!--opt, xs: EventTriggerCapType--></AudioExceptionCap>
<FiledDetectTriggerCap><!--opt, xs: EventTriggerCapType--></FiledDetectTriggerCap>
<MotionDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></MotionDetectionTriggerCap>
<TemperatureCap><!--opt, xs: EventTriggerCapType--></TemperatureCap>
<IntelligentTriggerCap><!--opt, xs: EventTriggerCapType--></IntelligentTriggerCap>
<FaceContrastTriggerCap><!--opt, xs: EventTriggerCapType, face picture comparison alarm linkage--></
FaceContrastTriggerCap>
<PersonDensityDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></PersonDensityDetectionTriggerCap>
<PersonQueueDetectionTriggerCap><!--opt, xs: EventTriggerCapType, queue management alarm linkage--></
PersonQueueDetectionTriggerCap>
<WhiteListFaceContrastTriggerCap><!--opt, xs: EventTriggerCapType--></WhiteListFaceContrastTriggerCap>
<HumanRecognitionTriggerCap><!--opt,xs: EventTriggerCapType--></HumanRecognitionTriggerCap>
<FaceSnapTriggerCap><!--opt, xs: EventTriggerCapType--></FaceSnapTriggerCap>
<isSupportWhiteLightAction>
  <!--dep, xs: boolean, see details in EventTriggerCapType, it is valid when isSupportWhiteLight is "true"-->
</isSupportWhiteLightAction>
<isSupportAudioAction>
  <!--dep, xs: boolean, see details in EventTriggerCapType, it is valid when isSupportBeep is "true"-->
</isSupportAudioAction>
<HFPDTriggerCap><!--opt, xs: EventTriggerCapType--></HFPDTriggerCap>
<MixedTargetDetectionCap><!--opt, xs: EventTriggerCapType--></MixedTargetDetectionCap>
<HVTVehicleDetectionTriggerCap><!--opt, xs: EventTriggerCapType--></HVTVehicleDetectionTriggerCap>
<VCATriggerCap><!--opt, xs: EventTriggerCapType--></VCATriggerCap>
<PIRCap><!--opt, xs: EventTriggerCapType--></PIRCap>
<IllegalParkingTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports illegal parking detection--></
IllegalParkingTriggerCap>
<PedestrianTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports pedestrian detection--></
PedestrianTriggerCap>
<TrafficAccidentTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports traffic accident detection--></
TrafficAccidentTriggerCap>
<ConstructionTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports construction detection--></
ConstructionTriggerCap>
<RoadBlockTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports roadblock detection--></
```

```
RoadBlockTriggerCap>
  <AbandonedObjectTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports thrown object detection--></
AbandonedObjectTriggerCap>
  <ParallelParkingTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports parallel parking detection--></
ParallelParkingTriggerCap>
  <ParkingStateTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports parking space status detection,
currently this node is not supported--></ParkingStateTriggerCap>
  <CongestionTriggerCap><!--opt, xs: EventTriggerCapType, whether it supports congestion detection--></
CongestionTriggerCap>
  <IntersectionAnalysisCap><!--opt, xs: EventTriggerCapType, whether it supports intersection analysis--></
IntersectionAnalysisCap>
  <ShipsFlowDetectionTriggerCap><!--opt,xs:EventTriggerCapType, ship flow detection--></
ShipsFlowDetectionTriggerCap>
  <dredgerDetectionTriggerCap><!--opt,xs:EventTriggerCapType, dredger detection--></dredgerDetectionTriggerCap>
  <voltageInstableTriggerCap><!--opt,xs:EventTriggerCapType, supply voltage exception--></voltageInstableTriggerCap>
  <HighHDTemperatureTriggerCap><!--opt, xs:EventTriggerCapType, HDD high temperature detection--></
HighHDTemperatureTriggerCap>
  <LowHDTemperatureTriggerCap><!--opt, xs:EventTriggerCapType, HDD low temperature detection--></
LowHDTemperatureTriggerCap>
  <HDImpactTriggerCap><!--opt, xs:EventTriggerCapType, HDD impact detection--></HDImpactTriggerCap>
  <HDBadBlockTriggerCap><!--opt, xs:EventTriggerCapType, HDD bad sector detection--></HDBadBlockTriggerCap>
  <SevereHDFailureTriggerCap><!--opt, xs:EventTriggerCapType, HDD severe fault detection--></
SevereHDFailureTriggerCap>
  <HUMANATTRIBUTECap><!--opt, xs:EventTriggerCapType--></HUMANATTRIBUTECap>
  <HumanAttributeTriggerCap><!--opt, xs:EventTriggerCapType, human body attribute--></HumanAttributeTriggerCap>
  <BlackListFaceContrastTriggerCap><!--opt, xs:EventTriggerCapType, alarm linkage capability of blacklist face
comparison--></BlackListFaceContrastTriggerCap>
  <FaceLibTriggerCap><!--opt, xs:EventTriggerCapType--></FaceLibTriggerCap>
  <SafetyHelmetDetectionTriggerCap><!--opt, xs:EventTriggerCapType, alarm linkage capability of hard hat detection--
></SafetyHelmetDetectionTriggerCap>
</EventTriggersCap>
```

See Also

XML_EventTriggerCapType

16.2.137 XML_ExportStatus

ExportStatus message in XML format

```
<ExportStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <status><!--opt, xs:string, export status: "export"-exporting, "unexport"-not export--></status>
  <message><!--dep, xs:string, it is valid when status is "export"--></message>
</ExportStatus>
```

16.2.138 XML_Exposure

Exposure message in XML format

```
<Exposure version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ExposureType/><!--req, xs:string, "auto, IrisFirst, ShutterFirst, gainFirst, manual, pIris, T5280-PQ1, T5289-PQ1,
T1140-PQ1, T2712-PQ1, HV1250P-MPIR, pIris-General"-->
 <autoIrisLevel>
  <!--dep, xs:integer-->
 </autoIrisLevel>
 <OverexposeSuppress><!--opt-->
  <enabled>
   <!--req, xs:boolean-->
  </enabled>
  <Type>
   <!--dep, xs:string, this node depends on <enabled>, "AUTO,MANUAL"-->
  </Type>
  <DistanceLevel>
   <!--dep, xs: integer, this node depends on  <Type>-->
  </DistanceLevel>
  <shortIRDistanceLevel>
   <!--dep, xs: integer, this node depends on  <Type>-->
  </shortIRDistanceLevel>
  <longIRDistanceLevel>
   <!--dep, xs: integer, this node depends on  <Type>-->
  </longIRDistanceLevel>
 </OverexposeSuppress>
 <pIris><!--opt-->
  <pIrisType/><!--dep, xs:string, this node depends on <ExposureType>, "AUTO,MANUAL"-->
  <IrisLevel>
   <!--dep, xs:integer, this node depends on <pIrisType>-->
  </IrisLevel>
 </pIris>
 <PIrisGeneral><!--dep, it is available when <ExposureType> is set to "pIris-General"-->
  <irisLevel>
   <!--opt, iris level of general lens, which is between 1 and 100, the default level is 50-->
  </irisLevel>
 </PIrisGeneral>
 <exposureLevel>
  <!--opt, xs:integer , this node depends on <ExposureType>-->
 </exposureLevel>
 <faceExposure><!--opt, face exposure-->
  <enabled opt="true,false">
   <!--opt, xs:boolean, whether to enable face exposure-->
  </enabled>
  <sensitivity min="0" max="100">
   <!--opt, xs:integer, sensitivity-->
  </sensitivity>
 </faceExposure>
</Exposure>
```

16.2.139 XML_externSecurityCap

externSecurityCap message in XML format

```
<externSecurityCap>
 <RestAdminPassWord>
  <isSupportWithSecurityQuestion>
   <!--opt, xs: boolean, whether supports resetting password by answering security questions, "true,false" -->
  </isSupportWithSecurityQuestion>
  <isSupportWithGUIDFileData>
   <!-- opt, xs: boolean, whether supports resetting password by importing GUID file, "true,false" -->
  </isSupportWithGUIDFileData>
  <isSupportWithSecurityEmail>
   <!-- opt, xs: boolean, whether supports resetting password by setting recovery email, "true,false" -->
  </isSupportWithSecurityEmail>
 </RestAdminPassWord>
 <SecurityLimits><!--opt-->
  <LoginPasswordLenLimit  min="1" max="16">
   <!--opt, minimum and maximum lengths of login password-->
  </LoginPasswordLenLimit>
  <SecurityAnswerLenLimit  min="1" max="128">
   <!--opt, minimum and maximum answer length of security questions-->
  </SecurityAnswerLenLimit>
 </SecurityLimits>
</externSecurityCap>
```

16.2.140 XML_ExtraInfo

ExtraInfo message in XML format

```
<ExtraInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <diskMode><!--req, xs:string, disk mode: "singleDisk"-single disk, "RAID". The device needs to reboot after changing the disk mode--></diskMode>
</ExtraInfo>
```

16.2.141 XML_EZVIZ

EZVIZ message in XML format.

```
<EZVIZ version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
 <registerStatus><!--ro, opt, xs:boolean--></registerStatus>
 <redirect><!--opt, xs:boolean, whether to allow the device to redirect the server address--></redirect>
 <serverAddress><!--opt-->
  <addressingFormatType>
   <!--req, xs:string, "ipaddress,hostname"-->
  </addressingFormatType>
  <hostName><!--dep, xs:string--></hostName>
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 <serverAddress>
 <verificationCode>
```

```
  <!--opt, xs:string, verification code. Only the "admin" user can edit the verification code using the control. The verification code will be displayed for other users. If this node is returned, setting verification code is supported-->
 </verificationCode>
 <offlineStatus>
  <!--ro,dep,xs:string, it is valid when registerStatus values "false", device offline status, opt="secretKeyInvalid"-invalid verification code-->
 </offlineStatus>
 <operateCode><!--opt, xs:string, operation code for binding device--></operateCode>
 <netWork>
  <!--opt, xs:integer, 0-null ; 1-automatic ; 2-wired network priority ; 3-wired network(by default), 4-3G/4G/GPRS-->
 </netWork>
</EZVIZ>
```

16.2.142 XML_FocusConfiguration

FocusConfiguration message in XML format

```
<FocusConfiguration version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <focusStyle/><!--req, xs:string, focus type, "AUTO, MANUAL, SEMIAUTOMATIC"-->
 <focusLimited/><!--opt, xs:integer, the minimum focus length, unit: cm-->
 <focusPosition/><!--dep, depends on "FocusStyle", xs:integer-->
 <focusSpeed><!--opt, xs:intger--></focusSpeed>
 <focusSensitivity>
  <!--opt, xs:intger, focus sensitivity, ranges from 0 to 2, it is valid when "focusStyle" is "MANUAL" or "SEMIAUTOMATIC"-->
 </focusSensitivity>
 <temperatureChangeAdaptEnabled><!--opt, xs:boolean, "true,false"--></temperatureChangeAdaptEnabled>
 <relativeFocusPos>
  <!--opt, xs:intger, relative focus value, it is valid when "focusStyle" is "MANUAL" or "SEMIAUTOMATIC"-->
 </relativeFocusPos>
 <highTemperaturePriority><!--opt,xs:boolean, whether to enable high temperature priority mode--></highTemperaturePriority>
</FocusConfiguration>
```

16.2.143 XML_FocusData

FocusData message in XML format

```
<FocusData version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <focus>
  <!--req, xs: integer, a vector, whose value is the percentage of maximum focus speed: negative value-focus near; positive value-focus far-->
 </focus>
</FocusData>
```

16.2.144 XML_formatStatus

formatStatus message in XML format

```
<formatStatus version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <formating><!--ro, req, xs: boolean--></formating>
 <percent><!--ro, req, xs: integer, formatting progress percentage, which is between 0 and 100--></percent>
</formatStatus>
```

16.2.145 XML_FTPNotification

FTPNotification message in XML format

```
<FTPNotification version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs:string, FTP ID-->
 </id>
 <enabled>
  <!--req, xs:boolean, whether to enable the FTP server-->
 </enabled>
 <useSSL>
  <!--opt, xs:boolean-->
 </useSSL>
 <addressingFormatType opt="ipaddress,hostname">
  <!--req, xs:string, this node can only be set to "ipaddress"-->
 </addressingFormatType>
 <hostName>
  <!--dep, xs:string-->
 </hostName>
 <ipAddress>
  <!--dep, xs:string-->
 </ipAddress>
 <ipv6Address>
  <!--dep, xs:string-->
 </ipv6Address>
 <portNo>
  <!--opt, xs:integer, FTP port No.-->
 </portNo>
 <userName>
  <!--req, xs:string, user name-->
 </userName>
 <password>
  <!--wo, xs:string, password-->
 </password>
 <passiveModeEnabled>
  <!--opt, xs:boolean-->
 </passiveModeEnabled>
 <annoyftp>
  <!--opt, xs:boolean-->
```

```
 </annoyftp>
 <uploadPicture>
  <!--opt, xs:boolean-->
 </uploadPicture>
 <uploadVideoClip>
  <!--opt, xs:boolean-->
 </uploadVideoClip>
 <uploadPath>
  <!--req-->
  <pathDepth>
   <!--req, xs:integer, directory levels, up to 16 levels can be supported-->
  </pathDepth>
  <topDirNameRule>
   <!--dep, xs:string, parent directory name: "none", "devName"-device name, "devId"-device ID, "devIp"-device IP address, "positionInfo"-camera 1, "time_month"-usage date (YYYY-MM), "time_date"-usage date (YYYY-MM-DD), "illegalType"-violation type, "direction"-direction, "site"-place, "chanName"-channel name, "chanId"-channel No., "laneId"-lane No., "customize"-custom, "time", "buildUnitNo"-building No. and unit No. This node is set to NULL by default-->
  </topDirNameRule>
  <topDirName/><!--dep, xs:string, custom string for parent directory, the maximum string length is 32 bytes. This node is valid when <topDirNameRule> is "customize"-->
  <subDirNameRule>
   <!--dep, xs:string, child directory name: "none", "devName"-device name, "devId"-device ID, "devIp"-device IP address, "positionInfo"-camera 1, "time_month"-usage date (YYYY-MM), "time_date"-usage date (YYYY-MM-DD), "illegalType"-violation type, "direction"-direction, "site"-place, "chanName"-channel name, "chanId"-channel No., "laneId"-lane No., "customize"-custom, "time", "buildUnitNo"-building No. and unit No. This node is set to NULL by default-->
  </subDirNameRule>
  <subDirName/><!--dep, xs:string, custom string for child directory, the maximum string length is 32 bytes. This node is valid when <subDirNameRule> is "customize"-->
  <threeDirNameRule>
   <!--dep, xs:string, the third directory name: "none", "devName"-device name, "devId"-device ID, "devIp"-device IP address, "positionInfo"-camera 1, "time_month"-usage date (YYYY-MM), "time_date"-usage date (YYYY-MM-DD), "illegalType"-violation type, "direction"-direction, "site"-place, "chanName"-channel name, "chanId"-channel No., "laneId"-lane No., "customize"-custom, "time", "buildUnitNo"-building No. and unit No. This node is set to NULL by default-->
  </threeDirNameRule>
  <threeDirName/><!--req, xs:string, custom string for the third directory, the maximum string length is 32 bytes. This node is valid when <threeDirNameRule> is "customize"-->
  <fourDirNameRule>
   <!--dep, xs:string, the fourth directory name: "none", "devName"-device name, "devId"-device ID, "devIp"-device IP address, "positionInfo"-camera 1, "time_month"-usage date (YYYY-MM), "time_date"-usage date (YYYY-MM-DD), "illegalType"-violation type, "direction"-direction, "site"-place, "chanName"-channel name, "chanId"-channel No., "laneId"-lane No., "customize"-custom, "time", "buildUnitNo"-building No. and unit No. This node is set to NULL by default-->
  </fourDirNameRule>
  <fourDirName/><!--req, xs:string, custom string for the fourth directory, the maximum string length is 32 bytes. This node is valid when <fourDirNameRule> is "customize"-->
 </uploadPath>
 <picArchivingInterval>
  <!--opt, xs:integer, the value is between 1 and 30, 0-close-->
 </picArchivingInterval>
```

```
 <picNameRuleType>
  <!--opt, xs:string, picture name rule type: "default, prefix"-->
 </picNameRuleType>
 <picNamePrefix>
  <!--dep, xs:string, prefix length of the picture name, which is between 0 and 32-->
 </picNamePrefix>
 <ftpPicNameRuleType>
  <!--req, xs:string, type of FTP picture name rule: "videoIntercom"-rule used by video intercom products, "ITC"-rule
used by traffic cameras-->
 </ftpPicNameRuleType>
 <FTPPicNameRule>
  <!--dep, picture name rule of a specific FTP-->
  <ItemList/><!--req, see details in the message of XML_ItemList-->
  <delimiter>
   <!--req, xs:string, delimiter, which is a single character and the default value is "_"-->
  </delimiter>
  <customStr>
   <!--req, xs:string, custom string, its length is between 1 and 128-->
  </customStr>
 </FTPPicNameRule>
 <upDataType>
  <!-- opt, xs:integer, picture uploading type: 0-all, 1-checkpoint, 2-violation. When only one FTP server is enabled,
this node can only be set to 0. When two FTP servers are both enabled, you should set 1 for one FTP server and set 2
for another FTP server, which means that two FTP servers cannot be set to the same type-->
 </upDataType>
 <uploadPlateEnable>
  <!--opt, xs:boolean, whether to enable uploading license plate thumbnail-->
 </uploadPlateEnable>
 <site>
  <!--req, xs:string, place, the maximum string length is 128 bytes-->
 </site>
 <roadNum>
  <!--req, xs:string, intersection No., the maximum string length is 32 bytes-->
 </roadNum>
 <instrumentNum>
  <!--req, xs:string, device No., the maximum string length is 32 bytes-->
 </instrumentNum>
 <direction>
  <!--req, xs:string, direction No., the maximum string length is 32 bytes-->
 </direction>
 <directionDesc>
  <!--req, xs:string, direction description, the maximum string length is 32 bytes-->
 </directionDesc>
 <monitoringInfo1>
  <!--req, xs:string, camera 1 information, the maximum string length is 44 bytes-->
 </monitoringInfo1>
 <uploadAttachedInfomation>
  <!--req, xs:boolean, whether to upload additional information-->
 </uploadAttachedInfomation>
 <brokenNetHttp><!--opt, xs:boolean, whether to enable ANR (automatic network replenishment)--></
brokenNetHttp>
</FTPNotification>
```

See Also

XML_ItemList

16.2.146 XML_FTPNotificationList

FTPNotificationList message in XML format

```
<FTPNotificationList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <FTPNotification/><!--opt, see details in the message of XML_FTPNotification-->
</FTPNotificationList>
```

See Also

XML_FTPNotification

16.2.147 XML_FTPTestDescription

FTPTestDescription message in XML format

```
<FTPTestDescription version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <useSSL><!--opt, xs: boolean></useSSL>
 <addressingFormatType>
  <!--req, xs: string, "ipaddress,hostname" -->
 </addressingFormatType>
 <hostName><!--dep, xs: string--></hostName>
 <ipAddress><!--dep, xs: string--></ipAddress>
 <ipv6Address><!--dep, xs: string--></ipv6Address>
 <portNo><!--opt, xs: integer--></portNo>
 <userName><!--req, xs: string--></userName>
 <password><!--wo, xs: string--></password>
 <passiveModeEnabled><!--opt, xs: boolean--></passiveModeEnabled>
 <annoyftp><!--opt, xs: boolean--></annoyftp>
 <uploadPath><!--req-->
  <pathDepth><!--req, xs: integer, the value is from 0 to 2--></pathDepth>
  <topDirNameRule>
   <!--dep, xs: string, "devName, devId, devIp, customize"-->
  </topDirNameRule>
  <topDirName/><!--dep, xs: string-->
  <subDirNameRule>
   <!--dep, xs: string, "chanName, chanId, customize"-->
  </subDirNameRule>
  <subDirName/><!--dep, xs: string-->
 </uploadPath>
</FTPTestDescription>
```

16.2.148 XML_FTPTestResult

FTPTestResult message in XML format

```
<FTPTestResult version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <errorDescription><!--req, xs: string--></errorDescription>
</FTPTestResult>
```

16.2.149 XML_Gain

Gain message in XML format

```
<Gain version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <GainLevel/><!--dep, xs:integer, this node is valid when <ExposureType> in the message XML_Exposure is
"GainFisrt"-->
  <GainWindow><!--opt-->
    <RegionCoordinatesList><!--opt-->
      <RegionCoordinates><!--opt-->
        <positionX><!--req, xs: integer; x-coordinate--></positionX>
        <positionY><!--req, xs: integer; y-coordinate--></positionY>
      </RegionCoordinates>
    </RegionCoordinatesList>
  </GainWindow>
</Gain>
```

See Also

XML_Exposure

16.2.150 XML_GuardAgainstTheft

GuardAgainstTheft message in XML format

```
<GuardAgainstTheft version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled><!--required, xs:boolean, whether to support enabling device anti-theft--></enabled>
  <SMSEnabled><!--required, xs:boolean, whether to support enabling SMS--></SMSEnabled>
  <phoneNum><!--dependency, xs:string, phone No.--></phoneNum>
  <longitudeLatitudeEnabled><!--dependency, xs:boolean, whether to support enabling longitude and latitude--></
longitudeLatitudeEnabled>
  <siteLocationEnabled><!--optional, xs:boolean, whether to support enabling site location--></siteLocationEnabled>
  <siteLocationInfo><!--dependency, xs:string, site location information--></siteLocationInfo>
  <timeEnabled><!--optional, xs:boolean, whether to support enabling time--></timeEnabled>
  <customInfo><!--optional, xs:string, custom information--></customInfo>
</GuardAgainstTheft>
```

16.2.151 XML_HardwareService

HardwareService message in XML format

```
<HardwareService version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IrLightSwitch><!--opt-->
  <mode><!--req, xs:string, "open,close"--></mode>
 </IrLightSwitch>
 <ABF><!--opt-->
  <enabled><!--req, xs:boolean--></enabled>
 </ABF>
 <LED><!--opt-->
  <enabled><!--req, xs:boolean--></enabled>
 </LED>
 <Defog>
  <!--opt -->
  <enabled>
   <!--req, xs:boolean-->
  </enabled>
 </Defog>
 <SupplementLight>
  <!--opt-->
  <enabled>
   <!--req, xs:boolean-->
  </enabled>
  <isSupportFireLaserLight>
   <!--opt, xs:boolean, "true, false"-->
  </isSupportFireLaserLight>
  <isSupportSupplementLightWord>
   <!--opt, xs:boolean, "true, false", whether to support displaying supplement light prompt-->
  </isSupportSupplementLightWord>
  <captureWithSupplimentLightEnabled>
   <!--opt, xs:boolean, "true,false", enable snapshot supplement light or not-->
  </captureWithSupplimentLightEnabled>
 </SupplementLight>
 <Deicing><!--opt-->
  <enabled><!--req, xs:boolean--></enabled>
 </Deicing>
 <ManualDeicing><!--opt-->
  <enabled><!--req, xs:boolean--></enabled>
 </ManualDeicing>
 <mutexAbility>
  <!--req, "laserLight,deicing", mutual exclusion ability, the laser light and deicing (including manual deicing and
automatic deicing) are mutual exclusive-->
 </mutexAbility>
 <VisibleMovementPower><!--opt-->
  <enabled><!--req, xs:boolean--></enabled>
 </VisibleMovementPower>
 <ThermalMovementPower><!--opt-->
  <enabled><!--req, xs:boolean--></enabled>
 </ThermalMovementPower>
```

```
 <PtzPower><!--opt-->
  <enabled><!--req, xs:boolean--></enabled>
 </PtzPower>
 <powerSavingControl><!--opt, xs:string, power saving strategy: "sleepMode"-sleeping mode, lowConsumptionMode-低功耗模式 --></powerSavingControl>
 <HighTemperatureProtection><!--opt-->
  <enabled><!--req, xs:boolean --></enabled>
  <temperatureType><!--dep, xs:string,unit:℃, "90,100,110" --></temperatureType>
 </HighTemperatureProtection>
</HardwareService>
```

16.2.152 XML_hdd

XML Message about HDD Parameters

```
<hdd version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--ro, req, xs: string; ID--></id>
 <hddName><!--ro, req, xs: string--></hddName>
 <hddPath><!--ro, opt, xs: string--></hddPath>
 <hddType><!--ro, req, xs: string, "IDE, SATA, eSATA, NFS, iSCSI, Virtual Disk"--></hddType>
 <status>
  <!--ro, req, xs: string, "ok,unformatted,error,idle,mismatch,offline,smartFailed,reparing,formating,notexist,unRecordHostFormatted",unRecordHostFormatted--unformatted in education sharing system-->
 </status>
 <capacity><!--ro, req, xs: float, unit: MB--></capacity>
 <freeSpace><!--ro, req, xs: float, unit: MB--></freeSpace>
 <property><!--req, xs: string, HDD properties, "RW,RO,Redund"--></property>
 <group><!--opt, xs: string; HDD group ID--></group>
 <DataModeList><!--opt, ro, current HDD allocation mode-->
  <DataMode>
   <type><!--req, xs: string, storage application type: recordStorage-video storage, pictureCloudStorage-picture to be saved in cloud storage, fileStorage-file-storage--></type>
   <occupancyRate><!--req, xs: integer, HDD usage, range: [0,100]--></occupancyRate>
  </DataMode>
 </DataModeList>
 <formatType>
  <!--ro, opt, xs: string, formatting type: FAT32 (default) and EXT4, this node is only available for SD card; if this node does not exist, the default formatting type is FAT32-->
 </formatType>
 <encryptionStatus><!--ro, opt, xs:string, encryption status: "unencrypted", "encrypted", "verfyFailed"-verification failed--></encryptionStatus>
</hdd>
```

16.2.153 XML_hddList

hddList message in XML format

```
<hddList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <hdd/><!--opt, refer to the message XML_hdd for details-->
</hddList>
```

See Also

XML_hdd

16.2.154 XML_HDDSMARTTest

HDDSMARTTest message in XML format

```
<HDDSMARTTest version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <testType><!--opt, xs: string, checking type: short,expanded,conveyance--></testType>
</HDDSMARTTest>
```

16.2.155 XML_Hello

Hello message in XML format

```
<?xml version="1.0" encoding="UTF-8"?>
<Hello>
  <Types>hello</Types>
  <!--device type value-->
  <DeviceType>1234</DeviceType>
  <!--device type description-->
  <DeviceDescription>DS-2CD4024F</DeviceDescription>
  <!--device serial No.-->
  <DeviceSN>DS-2CD4024F20130925CCCH435107838</DeviceSN>
  <!--command port number of private protocol-->
  <CommandPort>8000</CommandPort>
  <!--http port number-->
  <HttpPort>80</HttpPort>
  <!--MAC address-->
  <MAC>44-19-b7-10-98-32</MAC>
  <!--IPv4 address-->
  <IPv4Address>172.9.3.106</IPv4Address>
  <!--IPv4 subnet mask-->
  <IPv4SubnetMask>255.255.255.0</IPv4SubnetMask>
  <!--IPv4 gateway-->
  <IPv4Gateway>172.9.3.1</IPv4Gateway>
  <!--IPv6 address-->
  <IPv6Address>2000:1:2:3:4619:b6ff:fe01:dd9d</IPv6Address>
  <!--IPv6 gateway-->
  <IPv6Gateway>2000:1:2:3:4619:b6ff:fe01:1</IPv6Gateway>
  <!--size of IPv6 subnet mask-->
  <IPv6MaskLen>64</IPv6MaskLen>
  <!--enable/disable DHCP, true: enable, false: disable-->
  <DHCP>false</DHCP>
```

```
<!--total number of analog channels-->
<AnalogChannelNum>32</AnalogChannelNum>
<!--total number of digital channels-->
<DigitalChannelNum>32</DigitalChannelNum>
<!--device software version information, not encrypt-->
<SoftwareVersion>V4.1.0 build130126</SoftwareVersion>
<!--DSP version information, not encrypt-->
<DSPVersion>V4.0 build130111</DSPVersion>
<!--device started time-->
<BootTime>2014-01-06 11:39:00</BootTime>
<!--true: OEM device, false: baseline device-->
<OEMCode>true</OEMCode>
<!--OEM manufacturer information, optional.-->
<OEMInfo>Axis</OEMInfo>
<!--device software version information, it is encrypted in AES128/AES256 CBC mode with fixed key-->
<SoftwareVersionEncrypt>V4.1.0 build130126</SoftwareVersionEncrypt>
<!--DSP version, it is encrypted in AES128/AES256 CBC mode with fixed key-->
<DSPVersionEncrypt>V4.0 build130111</DSPVersionEncrypt>
<!--OEM manufacturer information, it is encrypted in AES128/AES256 CBC mode with fixed key, optional-->
<OEMInfoEncrypt >Axis</OEMInfoEncrypt>
<!--true: encrypted device, false: normal device>
<Encrypt>true</ Encrypt >
<!--security code generated by specific algorithm (reserved), which is to prevent piracy-->
<SafeCode>123456</SafeCode>
<!--support upgrading reset password or not, true: yes, false: no>
<ResetAbility>true</ResetAbility>
<!--number of HDDs>
<DiskNumber>1</ DiskNumber >
<!--true: activated, false: inactivated>
<Activated>true</Activated>
<!--support resetting password or not, true: yes, false: no>
<PasswordResetAbility>true</PasswordResetAbility>
<!--support synchronizing password of network camera or not, true: yes, false: no>
<SyncIPCPassword>true</SyncIPCPassword>
<!--support password reset mode 2 or not, true: yes, false: no>
<PasswordResetModeSecond>true</PasswordResetModeSecond>
<!--OEMCode details-->
<DetailOEMCode>10101</DetailOEMCode>
<!--true: EZVIZ device, false: baseline device-->
<EZVIZCode>true</EZVIZCode>
<!--support locking device or not, true: yes, false: no-->
<DeviceLock>true</DeviceLock>
</Hello>
```

16.2.156 XML_HttpHostNotification

HttpHostNotification message in XML format

```
<HttpHostNotification version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
<id><!--req, xs:string, ID--></id>
<url><!--req, xs:string, the absolute path, e.g., http://<ipAddress>:<portNo>/<uri>--></url>
```

```
 <protocolType><!--req, xs:string, "HTTP,HTTPS,EHome"--></protocolType>
 <parameterFormatType><!--req, xs:string, alarm/event information format, "XML,JSON"--></parameterFormatType>
 <addressingFormatType><!--req, xs:string, "ipaddress,hostname"--></addressingFormatType>
 <hostName><!--dep, xs:string--></hostName>
 <ipAddress><!--dep, xs:string--></ipAddress>
 <ipv6Address><!--dep, xs:string--></ipv6Address>
 <portNo><!--opt, xs:integer--></portNo>
 <userName><!--dep, xs:string--></userName>
 <password><!--dep, xs:string--></password>
 <httpAuthenticationMethod><!--req, xs:string, "MD5digest,none"--></httpAuthenticationMethod>
 <eventType opt="AID,TFS,TPS"><!--req, xs:string--></eventType>
 <uploadImagesDataType>
  <!--opt, xs:string, "URL", "binary" (default), for cloud storage, only "URL" is supported-->
 </uploadImagesDataType>
 <eventMode><!--opt, xs:string, "all,list"--></eventMode>
 <EventList><!--dep, it is valid only when eventMode is "list"-->
  <Event><!--req-->
   <type><!--req, xs:string--></type>
  </Event>
 </EventList>
 <channels><!--opt, xs:string, "1,2,3,4..."--></channels>
 <SubscribeEvent/><!--opt, event subscription parameters, see details in the message of XML_SubscribeEvent-->
</HttpHostNotification>
```

Example

Message Example of HttpHostNotification

```
<HttpHostNotification version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <id>1</id>
 <url></url>
 <protocolType>HTTP</protocolType>
 <parameterFormatType>XML</parameterFormatType>
 <addressingFormatType>ipaddress</addressingFormatType>
 <ipAddress>0.0.0.0</ipAddress>
 <portNo>80</portNo>
 <userName></userName>
 <httpAuthenticationMethod>none</httpAuthenticationMethod>
</HttpHostNotification>
```

16.2.157 XML_HttpHostNotificationCap

HttpHostNotificationCap capability message in XML format

```
<HttpHostNotificationCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <hostNumber><!--Listening host No.--></hostNumber>
 <urlLen max=""/>
 <protocolType opt="HTTP,HTTPS,EHome"/>
 <parameterFormatType opt="XML,querystring,JSON"/>
 <addressingFormatType opt="ipaddress,hostname"/>
 <ipAddress opt="ipv4,ipv6"/>
 <portNo min="" max=""/>
```

```
 <userNameLen min="" max=""/>
 <passwordLen min="" max=""/>
 <httpAuthenticationMethod opt="MD5digest,none"/>
  <!--req, if the digest authentication is supported, configuring user name and password should be supported-->
 <uploadImagesDataType opt="URL,binary"/>
</HttpHostNotificationCap>
```

Example

HttpHostNotificationCap Message Example

```
<HttpHostNotificationCap version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <hostNumber>3</hostNumber>
 <urlLen max="64" />
 <protocolType opt="HTTP" />
 <parameterFormatType opt="XML" />
 <addressingFormatType opt="ipaddress,hostname" />
 <ipAddress opt="ipv4,ipv6" />
 <portNo min="1" max="65535" />
 <userNameLen min="5" max="32" />
 <passwordLen min="5" max="32" />
 <httpAuthenticationMethod opt="none" />
 <uploadImagesDataType opt="URL,binary" />
</HttpHostNotificationCap>
```

16.2.158 XML_HttpHostNotificationList

HttpHostNotificationList message in XML format

```
<HttpHostNotificationList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <HttpHostNotification>
  <id><!--req, xs:string, ID--></id>
  <url><!--req, xs:string--></url>
  <protocolType><!--req, xs:string, "HTTP,HTTPS"--></protocolType>
  <parameterFormatType><!--req, xs:string, alarm/event information format, "XML,JSON"--></parameterFormatType>
  <addressingFormatType><!--req, xs:string, "ipaddress,hostname"--></addressingFormatType>
  <hostName><!--dep, xs:string--></hostName>
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
  <portNo><!--opt, xs:integer--></portNo>
  <userName><!--dep, xs:string--></userName>
  <password><!--dep, xs:string--></password>
  <httpAuthenticationMethod><!--req, xs:string, "MD5digest,none"--></httpAuthenticationMethod>
  <uploadImagesDataType>
   <!--opt, xs:string, "URL", "binary" (default), for cloud storage, only "URL" is supported-->
  </uploadImagesDataType>
  <eventMode><!--opt, xs:string, "all,list"--></eventMode>
  <EventList><!--dep, it is valid only when eventMode is "list"-->
   <Event><!--req-->
    <type><!--req, xs:string--></type>
   </Event>
  </EventList>
```

```
    <channels><!--opt, xs:string, "1,2,3,4..."--></channels>
  </HttpHostNotification>
</HttpHostNotificationList>
```

Example

HttpHostNotificationList Message Example

```
<HttpHostNotificationList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <HttpHostNotification>
    <id>1</id>
    <url></url>
    <protocolType>HTTP</protocolType>
    <parameterFormatType>XML</parameterFormatType>
    <addressingFormatType>ipaddress</addressingFormatType>
    <ipAddress>0.0.0.0</ipAddress>
    <portNo>80</portNo>
    <userName></userName>
    <httpAuthenticationMethod>none</httpAuthenticationMethod>
  </HttpHostNotification>
</HttpHostNotificationList>
```

16.2.159 XML_HttpHostTestResult

HttpHostTestResult message in XML format.

```
<HttpHostTestResult version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <errorDescription>
    <!--req, xs:string-->
  </errorDescription>
</HttpHostTestResult>
```

16.2.160 XML_IbeaconParam

IbeaconParam message in XML format

```
<IbeaconParam xmlns="http://www.isapi.org/ver20/XMLSchema" version="2.0">
  <UUID min="" max="">
    <!--req, xs:string, parking lot ID, which supports using digits, letters and hyphen as the tag-->
  </UUID>
  <major min="" max="">
    <!--req, xs:integer, number of floors in the parking lot, which cannot be 0x00 for all-->
  </major>
  <minor min="" max="">
    <!--req, xs:integer, number of parking spaces in each floor, which cannot be 0x00 for all-->
  </minor>
  <sendPower min="" max="">
    <!--req, xs:integer, transmitted power: 01-0 dbm, 02- -6 dbm, 03- -23 dbm-->
  </sendPower>
  <frequency min="" max="">
```

```
  <!--req, xs:integer, transmitted frequency, which is the broadcast time interval, unit: 625 μs. The broadcast time interval is between 32 (20 ms) to 8000 (5s), and the default value is 160 (100 ms)-->
 </frequency>
 <measurePower min="" max="">
  <!--req, xs:integer, rated power, which is the RSSI (Received Signal Strength Indication) in the position of one meter away, unit: dbm-->
 </measurePower>
</IbeaconParam>
```

16.2.161 XML_IEEE802_1x

IEEE802_1x message in XML format

```
<IEEE802_1x version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs: boolean--></enabled>
 <authenticationProtocolType>
  <!--req, xs: string, "EAP-TLS,EAP-TTLS,EAP-PEAP,EAP-LEAP,EAP-FAST,EAP-MD5"-->
 </authenticationProtocolType>
 <innerTTLSAuthenticationMethod>
  <!--dep, xs: string, "MS-CHAP,MS-CHAPv2,PAP,EAP-MD5", this node is required when <authenticationProtocolType> is "EAP-TLS"-->
 </innerTTLSAuthenticationMethod>
 <innerEAPProtocolType>
  <!--dep, xs: string, "EAP-POTP,MS-CHAPv2", this node is required when <authenticationProtocolType> is "EAP-PEAP" or "EAP-FAST"-->
 </innerEAPProtocolType>
 <validateServerEnabled><!--dep, xs: boolean--></validateServerEnabled>
 <userName><!--dep, xs: string--></userName>
 <password><!--dep, xs: string--></password>
 <anonymousID><!--opt, xs: string--></anonymousID>
 <autoPACProvisioningEnabled>
  <!--dep, xs: boolean, this node is required when <authenticationProtocolType> is "EAP-FAST"-->
 </autoPACProvisioningEnabled>
 <Extensions><!--opt-->
  <EAPOLVersion><!--opt, xs:string, "1, 2"--></EAPOLVersion>
 </Extensions>
</IEEE802_1x>
```

Remarks

- For EAP-LEAP or EAP-MD5, the parameters **userName**, **password**, and **Extensions** can be configured.
- For EAP-TLS, the parameters **userName**, **password**, and **Extensions** can be configured, and the certificates with different types (i.e., CA, user certificate, key) can be uploaded.

16.2.162 XML_IllegalLoginLock

IllegalLoginLock message in XML format

```
<IllegalLoginLock version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled>true</enabled>
 <maxIllegalLoginTimes>
  <!--opt, xs: integer, maximum illegal login attempts, whose value is between 3 and 20, and the default value is 5-->
 </maxIllegalLoginTimes>
</IllegalLoginLock>
```

16.2.163 XML_ImageCap

ImageCap message in XML format

```
<ImageCap version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <isSupportRegionalExposure><!--opt, xs:boolean--></isSupportRegionalExposure>
 <isSupportRegionalFocus><!--opt, xs:boolean--></isSupportRegionalFocus>
</ImageCap>
```

16.2.164 XML_ImageChannel

ImageChannel message in XML format

```
<ImageChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: integer--></id>
 <enabled><!--req, xs: boolean--></enabled>
 <videoInputID><!--req, xs: integer--></videoInputID>
 <Defog/><!--opt, electronic defogging parameters, see details in the message of XML_Defog-->
 <NoiseReduce2D/><!--opt, 2D noise reduction parameters, see details in the message of XML_NoiseReduce2D-->
 <Focusconfiguration/><!--opt-->
 <LensInitialization/><!--opt-->
 <ImageFlip/><!--opt, image automatic flipping parameters, see details in the message of XML_ImageFlip-->
 <ImageFreeze/><!--opt-->
 <proportionalpan/><!--opt-->
 <WDR/><!--opt, WDR parameters, refer to the message XML_WDR for details-->
 <BLC/><!--opt, BLC parameters, refer to the message XML_BLC for details-->
 <NoiseReduce/><!--opt, 3D DNR parameters, see details in the message of XML_NoiseReduce-->
 <ImageEnhancement/><!--opt, image enhancement parameters, see details in the message of
XML_ImageEnhancement-->
 <DSS/><!--opt, low illumination electronic shutter parameters in exposure, see details in the message of XML_DSS-->
 <WhiteBlance/><!--opt, WB parameters, see details in the message of XML_WhiteBlance-->
 <Exposure/><!--opt, exposure parameters, see details in the message of XML_Exposure-->
 <Sharpness/><!--opt, sharpness parameters, see details in the message of XML_Sharpness-->
 <gammaCorrection/><!--opt, gamma correction parameters, see details in the message of XML_gammaCorrection-->
 <powerLineFrequency/><!--opt, image standard parameters, refer to the message XML_powerLineFrequency for
details-->
 <Color/><!--opt, image color parameters, see details in the message of XML_Color-->
 <IrcutFilter/><!--opt, day/night auto switch parameters, see details in the message of XML_IrxutFilter-->
 <ImageModeList/><!--opt, default image mode parameters, see details in the message of XML_ImageModeList-->
 <BrightEnhance/><!--opt, brightness enhancement parameters, see details in the message of XML_BrightEnhance-->
 <ISPMode/><!--opt, day/night mode parameters, see details in the message of XML_ISPMode-->
```

```
 <Shutter/><!--opt, shutter parameters in exposure, see details in the message of XML_Shutter-->
 <Gain/><!--opt, gain parameters, see details in the message of XML_Gain-->
 <ImageIcrE/><!--opt, IR-cut filter parameters, see details in the message of XML_ImageIcrE-->
 <ImageMultishut/><!--opt, multi-shutter parameters, see details in the message of XML_ImageMultishut-->
 <PlateBright/><!--opt, license plate brightness compensation parameters, see details in the message of
XML_PlateBright-->
 <JPEGParam/><!--opt, JPEG picture size parameters, see details in the message of XML_JPEGParam-->
 <DarkEnhance/><!--opt, dark space enhancement parameters, see details in the message of XML_DarkEnhance-->
 <Hdr/><!--opt, WDR (Wide Dynamic Range) parameters, see details in the message of XML_Hdr-->
 <LSE/><!--opt, contrast enhancement parameters, see details in the message of XML_LSE-->
 <MCE/><!--opt, memory color enhancement parameters, see details in the message of XML_MCE-->
 <Svce/><!--opt, part contrast parameters, see details in the message of XML_Svce-->
 <SectionCtrl/><!--opt, configuration parameters of picture exposure control by video segment, see details in the
message of XML_SectionCtrl-->
 <AutoContrast/><!--opt, automatic contrast parameters, see details in the message of XML_AutoContrast-->
 <GrayRange/><!--opt, grayscale range parameters, see details in the message of XML_GrayRange-->
 <LSEDetail/><!--opt, contrast enhancement parameters, see details in the message of XML_LSE-->
 <ITCImageSnap/><!--opt, captured picture parameters, see details in the message of XML_ITCImageSnap-->
 <ImageRecord/><!--opt, image parameters in the recorded video, see details in the message of XML_ImageRecord-->
 <Scene/><!--opt-->
 <EPTZ/><!--opt-->
 <EIS/><!--opt-->
 <HLC/><!--opt-->
 <ZoomLimit/><!--opt-->
 <corridor/><!--opt, image rotate mode parameters, refer to the message XML_corridor for details-->
 <Dehaze/><!--opt, defog mode parameters, refer to the message XML_Dehaze for details-->
 <ImageMode/><!--opt, xs: string, image mode: "standard, indoor, outdoor, dimLight"-->
 <enableImageLossDetection><!--opt, xs: boolean--></enableImageLossDetection>
 <CaptureMode/><!--opt, video input mode parameters, refer to the message XML_CaptureMode for details-->
 <IrLight/><!--opt-->
 <LensDistortionCorrection/><!--opt-->
 <ExposureSync/><!--opt-->
 <BrightnessSuddenChangeSuppression/><!--opt-->
 <TempRange/><!--opt, temperature range, refer to the message XML_tempRange for details-->
</ImageChannel>
```

16.2.165 XML_ImageChannellist

ImageChannellist message in XML format

```
<ImageChannellist version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ImageChannel/><!--opt-->
</ImageChannellist>
```

See Also

XML_ImageChannel

16.2.166 XML_ImageFlip

ImageFlip message in XML format

```
<ImageFlip version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled/><!--req, xs:boolean-->
 <ImageFlipStyle/><!--opt, xs:string, "LEFTRIGHT, UPDOWN, CENTER, AUTO", it can be enabled only when the value is "true"-->
 <flipAngle><!--opt, xs:string, "90, 180, 270"--></flipAngle>
</ImageFlip>
```

16.2.167 XML_ImageMode

ImageMode message in XML format

```
<ImageMode version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <type><!--req, xs:string, "standard, indoor, outdoor, dimLight"--></type>
 <recommendation><!--req, ro-->
  <brightnessLevel><!--opt, xs:integer, ranging from 0 to 100--></brightnessLevel>
  <contrastLevel><!--opt, xs:integer, ranging from 0 to 100--></contrastLevel>
  <sharpnessLevel><!--opt, xs:integer, ranging from 0 to 100--> </sharpnessLevel>
  <saturationLevel><!--opt, xs:integer, ranging from 0 to 100--></saturationLevel>
  <hueLevel><!--opt, xs:integer, ranging from 0 to 100--></hueLevel>
  <deNoiseLevel><!--opt, xs:integer, ranging from 0 to 100--></deNoiseLevel>
 </recommendation>
</ImageMode>
```

16.2.168 XML_ImageModeList

ImageModeList message in XML format

```
<ImageModeList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ImageMode/><!--opt, see details in the message of XML_ImageMode-->
</ImageModeList>
```

See Also

XML_ImageMode

16.2.169 XML_InputProxyChannel

InputProxyChannel message in XML format

```
<InputProxyChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string, starts from 1--></id>
 <name><!--opt, xs:string--></name>
 <sourceInputPortDescriptor><!--req-->
```

```
  <adminProtocol><!--req, xs:string, "HIKVISION,SONY,ISAPI,ONVIF,..."--></adminProtocol>
  <addressingFormatType><!--req, xs:string, "ipaddress,hostname"--></addressingFormatType>
  <hostName><!--dep, xs:string, domain name--></hostName>
  <ipAddress><!--dep, xs:string, IP address--></ipAddress>
  <ipv6Address><!--dep, xs:string, IPv6 address--></ipv6Address>
  <managePortNo><!--req, xs:integer--></managePortNo>
  <srcInputPort><!--req, xs:string, channel No.--></srcInputPort>
  <userName><!--req, xs:string, user name, which should be encrypted--></userName>
  <password><!--req, wo, xs:string, password, which should be encrypted--></password>
  <streamType><!--opt, xs:string, opt="auto,tcp,udp"--></streamType>
  <deviceID><!--dep, xs:string--></deviceID>
  <deviceTypeName><!--ro, opt, xs:string, device type name--></deviceTypeName>
  <serialNumber><!--ro, opt, xs:string, device serial No.--></serialNumber>
  <firmwareVersion><!--ro, opt, xs:string, firmware version--></firmwareVersion>
  <firmwareCode><!--ro, opt, xs:string, firmware code--></firmwareCode>
 </sourceInputPortDescriptor>
 <enableAnr>
  <!--opt, xs:boolean, whether enables ANR funtion-->
 </enableAnr>
 <NVRInfo>
  <ipAddressNVR>
   <!--opt, xs:string, IP address of NVR-->
  </ipAddressNVR>
  <portNVR>
   <!--opt, xs:integer, port No. of NVR-->
  </portNVR>
  <ipcChannelNo>
   <!--opt, xs:integer, channel No. of the network camera in NVR-->
  </ipcChannelNo>
 </NVRInfo>
</InputProxyChannel>
```

16.2.170 XML_InputProxyChannelList

InputProxyChannelList message in XML format

```
<InputProxyChannelList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <InputProxyChannel/><!--opt, see details in
                        XML_InputProxyChannel
                       -->
</InputProxyChannelList>
```

16.2.171 XML_Cap_InputProxyChannelListCap

InputProxyChannelListCap capability message in XML format

```
<InputProxyChannelListCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <InputProxyChannel>
  <id min="" max=""/><!--req,xs:string,starts from 1-->
```

```
   <name min="" max=""/><!--opt,xs:string-->
   <sourceInputPortDescriptor><!--req-->
    <adminProtocol opt="HIKVISION,SONY,ISAPI,ONVIF,..."/><!--req,xs:string-->
    <addressingFormatType opt="ipaddress,hostname"/><!--req,xs:string-->
    <hostName min="" max=""/><!--dep, xs:string, domain name-->
    <ipAddress min="" max=""/><!--dep, xs:string, IP address-->
    <ipv6Address min="" max=""/><!--dep, xs:string, IPv6 address-->
    <managePortNo min="" max=""/><!--req, xs:integer, port number-->
    <srcInputPort min="" max=""/><!--req, xs:string, channel No.-->
    <userName min="" max=""/><!--req, xs:string-->
    <password min="" max=""/><!--req, wo, xs:string-->
    <streamType opt="auto,tcp,udp"/><!--opt, xs:string-->
    <deviceID min="" max=""/><!--dep, xs:string-->
   </sourceInputPortDescriptor>
  </InputProxyChannel>
</InputProxyChannelListCap>
```

16.2.172 XML_InputProxyChannelStatus

InputProxyChannelStatus message in XML format

```
<InputProxyChannelStatus version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:string--></id>
  <sourceInputPortDescriptor/><!--req-->
  <online><!--req, xs:boolean, whether the camera is online--></online>
  <streamingProxyChannelIdList><!--req-->
    <streamingProxyChannelId>
      <!--req, xs:string, stream channel No., e.g., 101-main stream of channel 1, 102-sub-stream of channel 1-->
    </streamingProxyChannelId>
  </streamingProxyChannelIdList>
  <chanDetectResult>
    <!--opt, xs:string, network camera status: "connect"-connected, "overSysBandwidth"-insufficient bandwidth,
"domainError"-incorrect domain name, "ipcStreamFail"-getting stream failed, "connecting", "chacnNoError"-incorrect
channel No., "cipAddrConflictWithDev": IP address is conflicted with device address, "ipAddrConflicWithIpc"-IP
address conflicted, "errorUserNameOrPasswd"-incorrect user name or password, "netUnreachable"-invalid network
address, "unknownError"-unknown error, "notExist"-does not exist, "ipcStreamTypeNotSupport"-the stream
transmission mode is not supported, "ipcResolutionNotSupport"-the resolution of network camera is not supported-->
  </chanDetectResult>
</InputProxyChannelStatus>
```

16.2.173 XML_InputProxyChannelStatusList

InputProxyChannelStatusList message in XML format

```
<InputProxyChannelStatusList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <InputProxyChannelStatus/><!--opt, see details in XML_InputProxyChannelStatus-->
</InputProxyChannelStatusList>
```

See Also

XML_InputProxyChannelStatus

16.2.174 XML_IntelliCap

IntelliCap capability message in XML format

```
<IntelliCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <isFaceSupport><!--opt, xs:boolean, whether it supports face detection--></isFaceSupport>
 <isBehaviorSupport><!--opt, xs:boolean, whether it supports behavior analysis--></isBehaviorSupport>
 <isLineDetectionSupport><!--opt, xs:boolean, whether it supports line crossing detection--></
isLineDetectionSupport>
 <isFieldDetectionSupport><!--opt, xs:boolean, whether it supports intrusion detection--></isFieldDetectionSupport>
 <isRegionEntranceSupport><!--opt, xs:boolean, whether it supports region entrance detection--></
isRegionEntranceSupport>
 <isRegionExitingSupport><!--opt, xs:boolean, whether it supports region exiting detection--></
isRegionExitingSupport>
 <isLoiteringSupport><!--opt, xs:boolean, whether it supports loitering detection--></isLoiteringSupport>
 <isGroupSupport><!--opt, xs:boolean, whether it supports people gathering detection--></isGroupSupport>
 <isRapidMoveSupport><!--opt, xs:boolean, whether it supports fast moving detection--></isRapidMoveSupport>
 <isParkingSupport><!--opt, xs:boolean, whether it supports parking detection--></isParkingSupport>
 <isUnattendedBaggageSupport><!--opt, xs:boolean, whether it supports unattended baggage detection--></
isUnattendedBaggageSupport>
 <isAttendedBaggageSupport><!--opt, xs:boolean, whether it supports object removal detection--></
isAttendedBaggageSupport>
 <isTeacherSupport><!--opt, xs:boolean, whether it supports teacher's behavior detection--></isTeacherSupport>
 <isStudentSupport><!--opt, xs:boolean, whether it supports student's behavior detection--></isStudentSupport>
 <isCombinedSupport><!--opt, xs:boolean, whether it supports combined detection--></isCombinedSupport>
 <isTrafficSupport><!--opt, xs:boolean, whether it supports traffic detection--></isTrafficSupport>
 <RestoreLib>
  <libName opt="studentsStoodUp,peopleCounting,shipDetection"><!--opt,xs:string,--></libName>
 </RestoreLib>
 <RestoreDefParamForbid>
  <!--opt, xs:boolean "true, false", forbid restoring algorithm library to default. When the node does not exist, it
indicates restoring to default is not supported. When the node exists and its value is "ture", it indicates support, when
the value is "false", it indicates not support-->
 </RestoreDefParamForbid>
 <RestoreAlgLibParam>
 <!--opt, the capabilities of restoring algorithm library parameters according to algorithm library name-->
  <libName opt="faceSnap,HMS,behaviorAnalysis"><!--opt, xs:string--></libName>
 </RestoreAlgLibParam>
 <isFaceCaptureStatisticsSupport><!--whether it supports face picture statistics--></isFaceCaptureStatisticsSupport>
 <isSupportPersonQueueDetection><!--whether it supports queue management--></
isSupportPersonQueueDetection>
 <isSupportIntersectionAnalysis>
  <!--opt, xs: boolean, whether it supports intersection analysis-->
 </isSupportIntersectionAnalysis>
 <mixedTargetDetectionWithoutAttribute><!--opt, xs: boolean--></mixedTargetDetectionWithoutAttribute>
 <isSupportUploadFacePictureByForm><!--opt, xs:boolean, whether it supports uploading face pictures by form--></
isSupportUploadFacePictureByForm>
```

```
 <isSupportUploadFacePictureByUrl><!--opt, xs: boolean, whether it supports uploading face pictures by URL--></
isSupportUploadFacePictureByUrl>
 <isSupportUploadHumanPictureByForm><!--opt, xs:boolean, whether it supports uploading human pictures in form--
></isSupportUploadHumanPictureByForm>
 <isSupportFaceScore><!--opt,xs:boolean, whether it supports face grading configuration (camera)--></
isSupportFaceScore>
 <HumanRecognitionModeSearchCap>
  <searchTargetsNumMax><!--opt, xs:integer, maximum number of sample pictures that can be imported for
searching by picture--></searchTargetsNumMax>
  <HumanMode>
   <searchCond opt="age_group,gender,jacet_color,glass,bag,ride,unlimit"/><!--setting multiple search conditions is
supported-->
   <similarity min="0.0" max="100.0"/><!--opt, xs:float, similarity, range: [0.0,100.0]-->
  </HumanMode>
  <positive opt="true,false"/><!--opt, xs:boolean, whether it is false human body recognition alarm: "true"-yes,
"false"-no-->
  <eventType opt="unlimit,humanRecognition">
   <!--opt, xs:string, event type: "unlimit"-no limit, "humanRecognition"-human body detection alarm-->
  </eventType>
  <isSupportMultiChannelSearch>
   <!--opt, xs:boolean, whether it supports multi-channel search-->
  </isSupportMultiChannelSearch>
  <isSupportTotalSearchResult>
   <!--opt, xs:boolean, whether it supports limiting number of results that can be obtained after a single search-->
  </isSupportTotalSearchResult>
 </HumanRecognitionModeSearchCap>
 <VehicleRecognitionModeSearchCap>
  <searchTargetsNumMax><!--opt, xs:integer, maximum number of sample pictures that can be imported for
searching by picture--></searchTargetsNumMax>
  <eventType opt="unlimit,vehicleBlackList,vehicleWhiteList"/><!--xs:string, event type: "unlimit"-no limit,
"vehicleBlackList"-vehicle blacklist, "vehicleWhiteList"-vehicle whitelist-->
  <VehicleMode>
   <searchCond opt="licensePlate,vehicleLogo,vehicleSubLogoRecog,vehicleType,vehicleColor,unlimit"/>
   <similarity min="0.0" max="100.0"/><!--opt, xs:float, similarity, range: [0.0,100.0]-->
  </VehicleMode>
  <isSupportMultiChannelSearch>
   <!--opt, xs:boolean, whether it supports multi-channel search-->
  </isSupportMultiChannelSearch>
  <isSupportTotalSearchResult>
   <!--opt, xs:boolean, whether it supports limiting number of results that can be obtained after a single search-->
  </isSupportTotalSearchResult>
 </VehicleRecognitionModeSearchCap>
 <FaceContrastPersonInfoExtend><!--configuration capability of face comparison tag-->
  <personInfoCap>
   <maxPersonInfo min="0" max="4">
    <!--opt, xs:integer, maximum number of person tags-->
   </maxPersonInfo>
  </personInfoCap>
  <personInfoFDlibCap>
   <maxPersonInfo min="0" max="4">
    <!--opt, xs:integer, maximum number of person tags-->
   </maxPersonInfo>
```

```
    </personInfoFDlibCap>
  </FaceContrastPersonInfoExtend>
  <isSupportSafetyHelmetDetection>
    <!-- opt, xs:boolean, whether it supports hard hat detection-->
  </isSupportSafetyHelmetDetection>
</IntelliCap>
```

16.2.175 XML_IOCap

IOCap capability message in XML format

```
<IOCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <IOInputPortNums>
    <!--opt, xs:integer-->
  </IOInputPortNums>
  <IOOutputPortNums>
    <!--opt, xs:integer-->
  </IOOutputPortNums>
  <isSupportStrobeLamp>
    <!--opt, xs:integer-->
  </isSupportStrobeLamp>
  <SoftIOInputPortNums>
    <!--opt, xs:integer-->
  </SoftIOInputPortNums>
  <isSupportIOOutputAdvanceParameter>
    <!--opt, xs:boolean, whether supports configuration of alarm input advanced parameters-->
  </isSupportIOOutputAdvanceParameter>
  <isSupportCombinationAlarm>
    <!--opt, xs:boolean, whether supports composite alarm-->
  </isSupportCombinationAlarm>
</IOCap>
```

16.2.176 XML_IOInputPort

IOInputPort message in XML format

```
<IOInputPort version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:integer--></id>
  <enabled><!--req,Boolean,"true,false"--></enabled>
  <IODescriptor><!--opt, I/O port description-->
    <proxyProtocol>
      <!--req, string, access protocol, "HIKVISION, AXIS, PANASONIC, BOSCH, PELCO, SONY..."-->
    </proxyProtocol>
    <userName><!--req, string, user name--></userName>
    <addressingFormatType>
      <!--req, string, address type: "ipaddress,hostname"-->
    </addressingFormatType>
    <hostName><!--dep, xs:string--></hostName>
    <ipAddress><!--dep, xs:string--></ipAddress>
```

```
   <ipv6Address><!--dep, xs:string--></ipv6Address>
   <managePortNo><!--req, integer, manage port--></managePortNo>
   <innerIOPortID><!--req, integer, I/O port--></innerIOPortID>
  </IODescriptor>
  <triggering><!-- req, xs:string, "high,low"--></triggering>
  <name><!--opt,xs:string--></name>
  <IOUseType>
   <!-- opt, xs:string, "disable,openDoor,doorStatus,custom"  -->
  </IOUseType>
  <inputType>
   <!--opt, xs:string, opt="switch,semaphore"-->
  </inputType>
  <CombinationAlarm><!--opt, composite alarm list-->
   <channel><!--req, xs:integer，channel No.--></channel>
   <EventTypeList><!--req, event type list-->
    <eventType><!--req, xs:string, event type--></eventType>
   </EventTypeList>
  </CombinationAlarm>
</IOInputPort>
```

16.2.177 XML_IOInputPortList

IOInputPortList message in XML format

```
<IOInputPortList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <IOInputPort/><!--opt, alarm input, see details in XML_IOInputPort-->
</IOInputPortList>
```

See Also

XML_IOInputPort

16.2.178 XML_IOOutputPort

IOOutputPort message in XML format

```
<IOOutputPort version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!-- req, xs:integer, "2"--></id>
  <PowerOnState>
   <!--req, output port configuration parameters when the device is powered on-->
   <defaultState>
    <!--ro, req, xs:string, default output port signal when it is not triggered, "high,low"-->
   </defaultState>
   <outputState>
    <!--ro, req, output port signal when it is being triggered, xs:string, "high,low,pulse"-->
   </outputState>
   <pulseDuration>
    <!--dep, xs:integer, duration of a output port signal when it is being triggered, it is valid when outputState is
"pulse", unit: milliseconds -->
   </pulseDuration>
```

```
 </PowerOnState>
 <name><!--opt, xs:string--></name>
 <IOUseType><!--opt, xs:string, "disable,electricLock,custom"--></IOUseType>
 <normalStatus><!--opt, xs:string, normal status: open-remain open, close-remain closed--></normalStatus>
</IOOutputPort>
```

16.2.179 XML_IOOutputPortList

IOOutputPortList message in XML format

```
<IOOutputPortList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IOOutputPort/><!--opt, see details in XML_IOOutputPort-->
</IOOutputPort>
```

See Also

XML_IOOutputPort

16.2.180 XML_IOPortData

IOPortData message in XML format

```
<IOPortData xmlns="http://www.isapi.org/ver20/XMLSchema">
 <outputState><!--req, xs:string, output level: "high, low"--></outputState>
</IOPortData>
```

16.2.181 XML_IOPortStatus

IOPortStatus message in XML format

```
<IOPortStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <!--req-->
 <ioPortID><!--req, xs: integer, I/O No.: 1, 2--></ioPortID>
 <ioPortType><!--req, xs: string, I/O type: "input", "output"--></ioPortType>
 <ioState><!--req, xs: string, I/O status: "active", "inactive"--></ioState>
</IOPortStatus>
```

16.2.182 XML_IOPortStatusList

IOPortStatusList message in XML format

```
<IOPortStatusList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IOPortStatus><!--req-->
  <ioPortID><!--req, xs: integer, I/O No.: 1, 2--></ioPortID>
  <ioPortType><!--req, xs: string, I/O type: input, output--></ioPortType>
  <ioState><!-- req, xs: string, I/O status: active, inactive--></ioState>
```

```
  </IOPortStatus>
</IOPortStatusList>
```

16.2.183 XML_IOProxyInputPort

IOProxyInputPort message in XML format

```
<IOProxyInputPort version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:string--></id>
  <enabled><!--req, xs:boolean--></enabled>
  <IODescriptor><!--req, xs:string, description about the IO port connected to the front-end device-->
    <proxyProtocol><!--req, xs:string, "HIKVISION, AXIS, PANASONIC, BOSCH, PELCO, SONY, …"--></proxyProtocol>
    <userName><!--req, wo, xs:string --></userName>
    <password><!--req, wo, xs:string --></password>
    <addressingFormatType><!--dep, req, xs:enumeration, "ipaddress, hostname, …"--></addressingFormatType>
    <hostName><!--dep, xs:string--></hostName>
    <ipAddress><!--dep, xs:string--></ipAddress>
    <ipv6Address><!--dep, xs:string--></ipv6Address>
    <managePortNo><!--req, xs:integer--></managePortNo>
    <innerIOPortID><!--req, xs:string, ID--></innerIOPortID>
  </IODescriptor>
  <triggering><!--req, xs:string, "high, low, rising, falling"--></triggering>
  <name><!--opt, xs:string--></name>
  <CombinationAlarm><!--opt, information list of the combined alarm-->
    <channel><!--req, xs:integer, channel No.--></channel>
    <EventTypeList><!--req, event type list-->
      <eventType>
        <!--list, xs:string, event type-->
      </eventType>
    </EventTypeList>
  </CombinationAlarm>
</IOProxyInputPort>
```

16.2.184 XML_IOProxyInputPortList

IOProxyInputPortList message in XML format

```
<IOProxyInputPortList  version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <IOProxyInputPort/><!--opt, input configuration of one digital channel, see details in the message of
XML_IOProxyInputPort-->
</IOProxyInputPortList>
```

See Also

XML_IOProxyInputPort

16.2.185 XML_IOProxyOutputPort

IOProxyOutputPort message in XML format

```
<IOProxyOutputPort version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string--></id>
 <IODescriptor/><!--req-->
 <PowerOnState><!--req-->
  <defaultState><!--req, xs:string, "high, low"--></defaultState>
  <outputState><!--req, xs:string, "high, low, pulse"--></outputState>
  <pulseDuration><!--dep, xs:integer, unit: milliseconds--></pulseDuration>
 </PowerOnState>
 <name><!--opt, xs:string--></name>
</IOProxyOutputPort>
```

16.2.186 XML_IOProxyOutputPortList

IOProxyOutputPortList message in XML format

```
<IOProxyOutputPortList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IOProxyOutputPort/><!--opt, output configuration of one digital channel, see details in the message of
XML_IOProxyOutputPort-->
</IOProxyOutputPortList>
```

See Also

XML_IOProxyOutputPort

16.2.187 XML_IOTTriggersCap

IOTTriggersCap message in XML format

```
<?xml version="1.0" encoding="utf-8"?>
<IOTTriggersCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <AccessController><!--opt, security control panel-->
  <XXTriggerCap><!--opt,xs: EventTriggerCapType--></XXTriggerCap>
 </AccessController>
 <VideoIntercom><!--opt, video intercom-->
  <XXTriggerCap><!--opt,xs: EventTriggerCapType --></XXTriggerCap>
 </VideoIntercom>
 <GJD><!--opt, GJD security control panel-->
  <XXTriggerCap><!--opt,xs: EventTriggerCapType--></XXTriggerCap>
 </GJD>
 <Luminite><!--opt, Luminite security control panel-->
  <XXTriggerCap><!--opt,xs: EventTriggerCapType--></XXTriggerCap>
 </Luminite>
 <OPTEX><!--opt, OPTEX security control panel-->
  <XXTriggerCap><!--opt,xs: EventTriggerCapType--></XXTriggerCap>
```

```
 </OPTEX>
 <CameraDetector><!--opt, detector-->
  <XXTriggerCap><!--opt,xs: EventTriggerCapType--></XXTriggerCap>
 </CameraDetector>
</IOTTriggersCap>
```

Remarks

The XX in the node <**XXTriggerCap**> corresponds to detailed event type. E.g., if the event type is humanRecognition, then the returned node is <HumanRecognitionTriggerCap>.

See Also

XML_EventTriggerCapType

16.2.188 XML_IPAddress

IPAddress message in XML format

```
<IPAddress version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ipVersion><!--req, xs:string, "v4,v6,dual"--></ipVersion>
 <addressingType><!--req, xs:string, "static,dynamic,apipa--></addressingType>
 <ipAddress><!--dep, xs:string, ipv4 address--></ipAddress>
 <subnetMask><!--dep, xs:string, subnet mask for IPv4 address--></subnetMask>
 <ipv6Address><!--dep, xs:string--></ipv6Address>
 <bitMask><!--dep, xs:integer, bitmask IPv6 address--></bitMask>
 <DefaultGateway><!--dep-->
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 </DefaultGateway>
 <PrimaryDNS><!--dep-->
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 </PrimaryDNS>
 <SecondaryDNS><!--dep-->
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 </SecondaryDNS>
 <Ipv6Mode><!--opt-->
  <ipV6AddressingType><!--dep, xs:string, "router,ra,manual,dhcp"--></ipV6AddressingType>
  <ipv6AddressList>
   <v6Address>
    <id><!--dep, xs:string; id--></id>
  <type><--dep, xs:string, "router,ra,manual,dhcp"--></type>
  <address><!--dep, xs:string--></address>
  <bitMask><!--dep, xs:integer--></bitMask>
   </v6Address>
  </ipv6AddressList>
 </Ipv6Mode>
</IPAddress>
```

16.2.189 XML_IPFilter

IPFilter message in XML format

```
<IPFilter version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
 <permissionType><!--opt, xs:string, "deny,allow"--></permissionType>
 <IPFilterAddressList size = "32"/><!--opt, the character size indicates the max. number of supported IP address. See XML_IPFilterAddressList for details-->
</IPFilter>
```

See Also

XML_IPFilterAddressList

16.2.190 XML_IPFilterAddress

IPFilterAddress message in XML format

```
<IPFilterAddress version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string;id--></id>
 <permissionType><!--dep, xs:string, "deny,allow" --></permissionType>
 <addressFilterType><!--ro, xs:string, "mask, range"--></addressFilterType>
 <AddressRange><!--dep, it is valid when <addressFilterType> is "range"-->
  <startIPAddress><!--dep, xs:string--></startIPAddress>
  <endIPAddress><!--dep, xs:string--></endIPAddress>
  <startIPv6Address><!--dep, xs:string--></startIPv6Address>
  <endIPv6Address><!--dep, xs:string--></endIPv6Address>
 </AddressRange>
 <AddressMask><!--dep, it is valid when <addressFilterType> is "mask"-->
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
  <bitMask><!--opt, xs:string--></bitMask>
 </AddressMask>
</IPFilterAddress>
```

16.2.191 XML_IPFilterAddressList

IPFilterAddressList message in XML format

```
<IPFilterAddressList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IPFilterAddress/><!--opt, see XML_IPFilterAddress for details-->
</IPFilterAddressList>
```

See Also

XML_IPFilterAddress

16.2.192 XML_IrcutFilter

IrcutFilter message in XML format

```
<IrcutFilter version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <IrcutFilterType>
  <!--opt, xs: string, day/night auto switch mode: "auto, day, night, schedule, eventTrigger, darkFighterX,
darkFighterXAuto, darkFighterXSchedule"-->
 </IrcutFilterType>
 <dayToNightFilterLevel>
  <!--opt, xs: string, level of switching day to night: "low, normal, high"-->
 </dayToNightFilterLevel>
 <dayToNightFilterTime>
  <!--opt, xs: integer, time interval of switching day to night-->
 </dayToNightFilterTime>
 <nightToDayFilterLevel>
  <!--opt, xs: string, level of switching night to day: "low, normal, high"-->
 </nightToDayFilterLevel>
 <nightToDayFilterTime>
  <!--opt, xs: integer, time interval of switching night to day-->
 </nightToDayFilterTime>
 <Schedule><!--dep-->
  <scheduleType><!--req, xs: string, schedule type: "day,night"></scheduleType>
  <TimeRange><!--req, time period on schedule-->
   <beginTime><!--req, xs: time, which is in ISO8601 time format--></beginTime>
   <endTime><!--req, xs:time, which is in ISO8601 time format--></endTime>
  </TimeRange>
 </Schedule>
 <EventTrigger><!--dep-->
  <eventType><!--req, xs: string, event type: "IO,VMD"></eventType>
  <IrcutFilterAction><!--req, xs:string, "day,night"></IrcutFilterAction >
 </EventTrigger>
</IrcutFilter>
```

16.2.193 XML_IrisData

IrisData message in XML format

```
<IrisData version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <iris>
  <!--req, xs: integer, a vector, whose value is the percentage of the maximum iris adjusting speed: negative value-
close iris; positive value-open iris-->
 </iris>
</IrisData>
```

16.2.194 XML_ISPMode

ISPMode message in XML format

```
<ISPMode version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mode><!--opt, xs:string, "auto,schedule"--></mode>
 <Schedule><!--dep-->
  <scheduleType><!--req, xs:string, "day,night"--></scheduleType>
  <TimeRange><!--req-->
   <beginTime><!--req, xs:time, ISO8601 time--></beginTime>
   <endTime><!--req, xs:time, ISO8601 time--></endTime>
  </TimeRange>
 </Schedule>
</ISPMode>
```

16.2.195 XML_ItemList

ItemList message in XML format

```
<ItemList>
 <Item>
  <itemID>
   <!--req, xs:string, item ID, which is between 1 and 15-->
  </itemID>
  <itemOrder>
   <!--req, xs:string, name element: "none", "devIp"-device IP address, "time", "buildUnitNo"-building No. and unit No., "outDoorDevNo"-door station, "unlockType"-unlocking type, "devName"-device name, "deviceNo"-device No., "channelName"-channel name, "channelNo"-channel No., "plateNo"-license plate number, "plateColor"-license plate color, "laneNo"-lane No., "carSpeed"-vehicle speed, "positionInfo1"-camera 1, "pictureNo"-picture No., "CarNo"-vehicle No., "speedLimit"-speed limit, "illegalCode"-violation code, "siteNo"-intersection No., "directionNo"-direction No., "carColor"-vehicle color, "platePosition"-license plate coordinates, "carType"-vehicle type, "illegalType"-violation type, "custom"-->
  </itemOrder>
  <itemCustomStr>
   <!--req, xs:string, element custom string, which is between 1 and 32, unit: bytes. This node is valid only when <itemOrder> is "custom". Currently traffic cameras only support one custom name-->
  </itemCustomStr>
 </Item>
</ItemList>
```

16.2.196 XML_Language

Language message in XML format

```
<Language version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <type><!--req, xs: string, "GBK,EUC-KR", def="GBK"--></type>
</Language>
```

16.2.197 XML_LensDistortionCorrection

LensDistortionCorrection message in XML format

```
<PrivacyMaskRegion version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: integer--></id>
 <enabled><!--req, xs: boolean--></enabled>
 <RegionCoordinatesList><!--req-->
  <RegionCoordinates><!--list-->
   <positionX><!--req, xs: integer; coordinate--></positionX>
   <positionY><!--req, xs: integer; coordinate--></positionY>
  </RegionCoordinates>
 </RegionCoordinatesList>
 <privacymaskName><!--opt, xs: string--></privacymaskName>
 <maskType>
  <!--opt, xs: string, "gray,red,yellow,blue,orange,green,transparent,half-transparent,mosaic"-->
 </maskType>
 <zoomdoorlimit><!--opt, xs: integer, the value is between 10 and 1000--></zoomdoorlimit>
</PrivacyMaskRegion>
```

16.2.198 XML_Link

Link message in XML format

```
<Link version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <MACAddress><!--req, xs:string--></MACAddress>
 <autoNegotiation><!--req, xs:boolean--></autoNegotiation>
 <speed><!--req, xs:integer, "10, 100, 1000"--></speed>
 <duplex><!--req, xs:string, "half, full"--></duplex>
 <MTU><!--req, xs:integer--></MTU>
</Link>
```

16.2.199 XML_localPermission

localPermission message in XML format

```
<localPermission version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <backup><!—opt, xs:boolean—></backup>
 <record><!—opt, xs:boolean—></record>
 <playBack><!—opt, xs:boolean—></playBack>
 <preview><!—opt, xs:boolean—></preview>
 <videoChannelPermissionList><!—opt—>
  <videoChannelPermission><!—opt—>
   <id><!—req, corresponds to the video input channel ID—></id>
   <playBack><!—opt, xs:boolean—></playBack>
   <preview><!—opt, xs:boolean—></preview>
   <record><!—opt, xs:boolean—></record>
   <backup><!—opt, xs:boolean—></backup>
```

```
    <playBackDoubleVerification>
      <!—opt, xs:boolean, whether supports secondary authentication for playback—>
    </playBackDoubleVerification>
    <backupDoubleVerification>
      <!—opt, xs:boolean, whether supports secondary authentication for backup—>
    </backupDoubleVerification>
   </videoChannelPermission>
  </videoChannelPermissionList>
  <ptzControl>
   <!—req, xs:boolean—>
  </ptzControl>
  <ptzChannelPermissionList><!—opt—>
   <ptzChannelPermission><!—req—>
    <id><!—req, corresponds to PTZ channel ID—></id>
    <ptzControl><!—opt, xs: boolean—></ptzControl>
   </ptzChannelPermission>
  </ptzChannelPermissionList>
  <logOrStateCheck><!—opt, xs: boolean—></logOrStateCheck>
  <parameterConfig><!—opt, xs: boolean—></parameterConfig>
  <restartOrShutdown><!—opt, xs: boolean—></restartOrShutdown>
  <upgrade><!—opt, xs: boolean—></upgrade>
</localPermission>
```

16.2.200 XML_LockPTZ

LockPTZ message in XML format

```
<LockPTZ version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <lockTime>
    <!--req, xs:integer, PTZ is unlocked when this node is set to 0, unit: second-->
  </lockTime>
</LockPTZ>
```

16.2.201 XML_LogConfig

LogConfig message in XML format.

```
<LogConfig version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled><!--required, boolean type, whether to enable log--></enabled>
  <level>
    <!--required, string type, log types: "none,debug,info,error,fault,all", multiple type can be selected, and each type
should be separated by comma-->
  </level>
</LogConfig>
```

16.2.202 XML_LogServer

LogServer message in XML format

```
<LogServer version="2.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
 <enabled><!--req, xs: boolean, opt="true,false"--></enabled>
 <addressingFormatType>
  <!--req, xs: string, "ipaddress,hostname"-->
 </addressingFormatType>
 <hostName><!--dep, xs: string--></hostName>
 <ipAddress><!--dep, xs: string--></ipAddress>
 <ipv6Address><!--dep, xs: string--></ipv6Address>
 <portNo><!--opt, xs: integer--></portNo>
 <transmissionEncryption>
  <!--opt, xs:boolean, whether to enable transmission encryption: "true"-yes, "false"-no (default). If this field is not supported, the default encryption method is TLS-->
 </transmissionEncryption>
</LogServer>
```

16.2.203 XML_LogServerCap

LogServerCap message in XML format

```
<LogServerCap version="2.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
 <enabled opt="true,false"></enabled>
 <addressingFormatType opt="ipaddress,hostname">
  <!--req,xs:string,"ipaddress,hostname"-->
 </addressingFormatType>
 <hostName min="" max="">
  <!--dep, xs:string-->
 </hostName>
 <ipAddress min="" max=""><!--dep, xs:string--></ipAddress>
 <ipv6Address min="" max=""><!--dep, xs:string--></ipv6Address>
 <portNo min="" max=""><!--opt, xs:integer--></portNo>
 <transmissionEncryption opt="true,false">
  <!--opt, xs:boolean, whether to enable transmission encryption: "true"-yes, "false"-no (default). If this field is not supported, the default encryption method is TLS-->
 </transmissionEncryption>
</LogServerCap>
```

16.2.204 XML_LogServerTestDescription

LogServerTestDescription message in XML format

```
<LogServerTestDescription>
 <addressingFormatType>
  <!--req, xs:string, "ipaddress,hostname"-->
 </addressingFormatType>
```

```
 <hostName><!--dep, xs:string--></hostName>
 <ipAddress><!--dep, xs:string--></ipAddress>
 <ipv6Address><!--dep, xs:string--></ipv6Address>
 <portNo><!--opt, xs:integer--></portNo>
 <transmissionEncryption><!--opt, xs:boolean, whether to enable transmission encryption, and it is disabled by
default. If this field is not supported, the default encryption method used by the device is TLS--></
transmissionEncryption>
</LogServerTestDescription>
```

16.2.205 XML_MACFilter

MACFilter message in XML format

```
<MACFilter version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
 <permissionType><!--req, xs:string,"deny, allow"--></permissionType>
 <MACFilterAddressList>
  <MACFilterAddress>
   <id><!--req, xs:string, id--></id>
   <MACAddress><!--req, xs:string--></MACAddress>
  </MACFilterAddress>
 </MACFilterAddressList>
</MACFilter>
```

16.2.206 XML_mailing

mailing message in XML format.

```
<mailing version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string--></id>
 <enabled><!--opt, xs:boolean--></enabled>
 <sender><!--req-->
  <name><!--req, xs:string--></name>
  <emailAddress><!--req, xs:string--></emailAddress>
  <smtp><!--req-->
   <enableAuthorization><!--req, xs:boolean--></enableAuthorization>
   <enableSSL><!--opt, xs:boolean--></enableSSL>
   <addressingFormatType>
    <!--req, xs:string,"ipaddress,hostname"-->
   </addressingFormatType>
   <hostName><!--dep, xs:string--></hostName>
   <ipAddress><!--dep, xs:string--></ipAddress>
   <ipv6Address><!--dep, xs:string--></ipv6Address>
   <portNo><!--opt, xs:integer--></portNo>
   <accountName><!--dep, xs:string--></accountName>
   <password><!--dep, xs:string--></password>
   <enableTLS><!--opt, xs:boolean--></enableTLS>
   <startTLS><!--dep, xs:boolean--></startTLS>
  </smtp>
```

```
 </sender>
 <receiverList><!--req-->
  <receiver><!--req-->
   <id><!--req, xs:string--></id>
   <name><!--req, xs:string--></name>
   <emailAddress><!--req,xs:string--></emailAddress>
  </receiver>
 </receiverList>
 <attachment><!--opt-->
  <snapshot><!--opt-->
   <enabled><!--req, xs:boolean--></enabled>
   <interval><!--req, xs:integer, unit: second--></interval>
  </snapshot>
 </attachment>
</mailing>
```

16.2.207 XML_mailingList

mailingList message in XML format

```
<mailingList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mailing><!--opt,xs:string--></mailing>
</mailingList>
```

16.2.208 XML_mailingTestResult

mailingTestResult message in XML format

```
<mailingTestResult version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <errorDescription><!--req, xs:string--></errorDescription>
</mailingTestResult>
```

16.2.209 XML_mailingTestDescription

mailingTestDescription message in XML format.

```
<mailingTestDescription version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <sendName><!--opt, xs:string--></sendName>
 <sendEmailAddress><!--req, xs:string--></sendEmailAddress>
 <addressingFormatType>
  <!--req, xs:string,"ipaddress,hostname"-->
 </addressingFormatType>
 <hostName><!--dep, xs:string--></hostName>
 <ipAddress><!--dep, xs:string--></ipAddress>
 <ipv6Address><!--dep, xs:string--></ipv6Address>
 <portNo><!--req, xs:integer--></portNo>
 <enableSSL><!--opt, xs:boolean--></enableSSL>
```

```
 <enableAuthorization><!--req, xs:boolean--></enableAuthorization>
 <accountName><!--dep, xs:string--></accountName>
 <password><!--dep, xs:string--></password>
 <receiverList><!--req-->
  <receiver><!--req-->
   <id><!--req, xs:string--></id>
   <name><!--req, xs:string--></name>
   <emailAddress><!--req, xs:string--></emailAddress>
  </receiver>
 </receiverList>
</mailingTestDescription>
```

16.2.210 XML_MaxElevation

MaxElevation message in XML format

```
<MaxElevation version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mElevation><!--req, xs:integer, the lower limit of max. tilt-angle--></mElevation>
</MaxElevation>
```

16.2.211 XML_MountList

MountList message in XML format

```
<MountList version="1.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <Mount>
  <id><!--req, xs: integer, storage node ID--></id>
  <path><!--req, xs: string, saving path--></path>
  <dir><!--req, xs: string--></dir>
  <size><!--req, xs: string,, storage size--></size>
  <descr><!--req, xs: string, storage description--></descr>
 </Mount>
</MountList>
```

16.2.212 XML_NetworkCap

NetworkCap capability message in XML format

```
<NetworkCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <isSupportWireless>
  <!--req, xs:boolean, whether to support accessing via wireless network, "true"-yes, "false"-no-->
 <isSupportWireless>
 <isSupportPPPoE>
  <!--req, xs:boolean, whether to support PPPoE, "true"-yes, "false"-no-->
 <isSupportPPPoE>
 <isSupportBond>
  <!--req, xs:boolean, whether to support NIC bonding, "true"-yes, "false"-no-->
```

```
<isSupportBond>
<isSupport802_1x>
  <!--req, xs:boolean, whether to support 802_1x-->
</isSupport802_1x>
<isSupportNtp>
  <!--opt, xs:boolean, whether to support NTP-->
</ isSupportNtp>
<isSupportFtp>
  <!--opt, xs:boolean, whether to support FTP-->
</isSupportFtp>
<isSupportUpnp>
  <!--opt, xs:boolean, whether to support UPnP-->
</isSupportUpnp>
<isSupportPNP>
  <!--opt, xs:boolean, whether to support PnP-->
</isSupportPNP>
<isSupportDdns>
  <!--opt, xs:boolean, whether to support DNS-->
</isSupportDdns>
<isSupportHttps>
  <!--opt, xs:boolean, whether to support HTTPS-->
</isSupportHttps>
<SnmpCap><!--opt, whether to support SNMP-->
 <isSupport><!--req, xs:boolean--></isSupport>
</SnmpCap>
<isSupportExtNetCfg>
  <!--opt, xs:boolean, whether to support configuring extended network parameters-->
</isSupportExtNetCfg>
<isSupportIPFilter>
  <!--opt, xs:boolean, whether to support filtering IP address-->
</isSupportIPFilter>
<isSupportSSH opt="true"><!--opt, xs:boolean, whether to support SSH--></isSupportSSH>
<isSupportEZVIZ>
  <!--opt, xs:boolean, whether to support Hik-Connect-->
</isSupportEZVIZ>
<isSupportEhome>
  <!--opt, xs:boolean, whether to support EHome-->
</isSupportEhome>
<isSupportWirelessServer>
  <!--opt, xs:boolean, whether to support Wi-Fi hotspot-->
</isSupportWirelessServer>
<isSupportWirelessDial>
  <!--opt, xs:boolean, whether to support wireless dial configuration-->
</isSupportWirelessDial>
<WPS><!--opt, Wi-Fi Protected Setup configuration-->
  <NetworkInterfaceList size="2">
    <NetworkInterface>
      <id><!--req, xs:string, NIC ID--></id>
      <enabled><!--req, xs:boolean, whether the NIC is enabled--></enabled>
      <isSupportAutoConnect><!--opt, xs:boolean--></isSupportAutoConnect>
      <isSupportDevicePinCode>
        <!--opt, xs:boolean, whether to support device PIN code-->
```

```
      </isSupportDevicePinCode>
      <isSupportDevicePinCodeUpdate>
       <!--opt, xs:boolean, whether to support updating device PIN code-->
      </isSupportDevicePinCodeUpdate>
      <ApPinCode><!--opt-->
       <ssid min="" max="">
        <!--opt, xs:string, maximum and minimum SSID length that can be returned by device-->
       </ssid>
       <pinCode min="" max="">
        <!--opt, xs:string, maximum and minimum PIN code length that can be returned by device-->
       </pinCode>
      </ApPinCode>
     </NetworkInterface>
    </NetworkInterfaceList>
   </WPS>
   <isSupportMACFilter>
    <!--opt, xs:boolean, whether to support filtering MAC address-->
   </isSupportMACFilter>
   <verificationCode max="">
    <!--opt, xs:string, the maximum length of verificationCode that can be returned by device-->
   </verificationCode>
   <WPSCap><!--opt-->
    <isSupport><!--req, xs: boolean--></isSupport>
    <isSupportAutoConnect><!--req, xs: boolean--></isSupportAutoConnect>
   </WPSCap>
   <NetWorkMode>
    <workMode><!--opt, xs:string, network mode: "close,wifi,wifiAp"--></workMode>
   </NetWorkMode>
   <VerificationCodeModification><!--opt, xs:string, whether the verification code can be edited by the admin user-->
    <verificationCodeType opt="normal,empty"></verificationCodeType>
    <isSupportDeclarationURL><!--opt, xs:boolean, whether to support URL declared by the service--></
isSupportDeclarationURL>
    <isSupportPrivacyPolicyURL><!--opt, xs:boolean, whether to support the privacy policy URL--></
isSupportPrivacyPolicyURL>
    <verificationCodeModify opt="true,false">
     <!--opt, whether the verification code is edited: "true"-yes, "false"-no, no return-not support-->
    </verificationCodeModify>
    <Hyperlinks><!--opt-->
     <declarationURL><!--opt,xs:string--></declarationURL>
     <privacyPolicyURL><!--opt,xs:string--></privacyPolicyURL>
    </Hyperlinks>
    <isSupportVerificationCodeCheck>
     <!--opt, xs: boolean, whether to support verifying and configuring the verification code, true-yes, if this node is not
returned or the value of the returned node is false, it indicates that not support-->
    </isSupportVerificationCodeCheck>
    <isSupportOldVerificationCode><!--opt, xs:boolean, whether to support old EZVIZ password configuration. The old
password contains six uppercase letters--></isSupportOldVerificationCode>
   </VerificationCodeModification>
   <EZVIZSecretKey>
    <!--opt, whether to support capability of editing verification code for Hik-Connect-->
    <offlineStatus>
     <!--ro,dep,xs:string; it is valid when registerStatus values "false", device offline status, opt="secretKeyInvalid"-
```

```
invalid verification code-->
    </offlineStatus>
    <secretKey min="0" max="64"><!--opt, xs:string, verification code for Hik-Connect--></secretKey>
  </EZVIZSecretKey>
  <isSupportplatformAccess><!--opt, xs:boolean, capability of accessing the platform, whether to support filtering IP
addresses that access to the platform--></isSupportplatformAccess>
  <isSupportIntegrate><!--opt, xs:boolean--></isSupportIntegrate>
  <isSupportIntelligentBoost><!--opt, xs:boolean, whether to support bandwidth adaption--></
isSupportIntelligentBoost>
  <isSupportWebSocket><!--opt, xs:boolean--></isSupportWebSocket>
  <isSupportWebSocketS><!--opt, xs:boolean--></isSupportWebSocketS>
  <isSupportResourceStatistics><!--opt, xs:boolean, whether supports network resource information--></
isSupportResourceStatistics>
  <isSupportBandwidthLimit><!--opt, xs:boolean--></isSupportBandwidthLimit>
  <isSupportPOEPortsDisableServer><!--opt, xs:boolean--></isSupportPOEPortsDisableServer>
  <isSupportPOEConfiguration><!--opt, xs:boolean--></isSupportPOEConfiguration>
  <Adaption>
    <streamType opt="0,1,2,3,4,5,7,8,9,10">
      <!--stream types that support network self-adaptive during live view: 0-main stream, 1-sub-stream, 2-third stream,
3-virtual stream, 4-stream 5, 5-stream 6, 7-stream 7, 8-stream 8, ..., and so on-->
    </streamType>
    <isSupportPlayback><!--opt, xs: boolean, whether to support self-adaptive during playback--></isSupportPlayback>
  </Adaption>
  <isSupportWifiProbe><!--opt, xs:boolean, whether to support Wi-Fi probe configuration--></isSupportWifiProbe>
  <isSupportRFIDData><!--opt, xs:boolean, whether to support configuration of RFID data collection--></
isSupportRFIDData>
  <isSupportwifiProbeSSID><!--opt, xs:boolean, whether to support SSID configuration of Wi-Fi probe--></
isSupportwifiProbeSSID>
  <isSupportPOEPortsDisableAdaptiveServer><!--opt, xs:boolean--></isSupportPOEPortsDisableAdaptiveServer>
</NetworkCap>
```

16.2.213 XML_NetworkInterface

NetworkInterface message in XML format

```
<NetworkInterface version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:string--></id>
  <IPAddress/><!--req-->
  <Wireless/><!--opt-->
  <Discovery/><!--opt-->
  <Link/><!--opt-->
  <defaultConnection><!--opt, xs:boolean, default network connection, this node is required when the device has
multiple network interfaces--></defaultConnection>
  <ActiveMulticast>
    <enabled><!--req, xs:boolean--></enabled>
    <streamID opt="main"><!--req, xs:string--></streamID>
    <ipV4Address><!--opt, xs:string--></ipV4Address>
    <ipV6Address><!--opt, xs:string--></ipV6Address>
    <port min="" max=""><!--opt, xs:integer--></port>
  </ActiveMulticast>
  <macAddress min="" max=""><!--opt, xs:string--></macAddress>
```

```
 <EthernetPortList size="4"><!--opt, network interface information-->
  <EthernetPort><!--opt-->
   <id><!--req, xs: integer, min="1",max="4"--></id>
   <MACAddress><!--req, xs:string--></MACAddress>
   <status><!--opt, xs:string; opt="connected, disconnect"--></status>
   <speed><!--req, xs:integer, "10, 100, 1000,10000"--></speed>
  </EthernetPort>
 </EthernetPortList>
</NetworkInterface>
```

16.2.214 XML_NetworkInterfaceList

NetworkInterfaceList message in XML format

```
<NetworkInterfaceList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <NetworkInterface/><!--opt, see details in the message of XML_NetworkInterface-->
</NetworkInterfaceList>
```

See Also

XML_NetworkInterface

16.2.215 XML_NetWorkMode

NetWorkMode message in XML format

```
<NetWorkMode version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <workMode><!--opt, xs:string, working mode: "close", "wifi"-Wi-Fi configuration, "wifiAp"-Wi-Fi access point (Wi-Fi
server) configuration--></workMode>
</NetWorkModeParam>
```

16.2.216 XML_NoiseReduce

NoiseReduce message in XML format

```
<NoiseReduce version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mode><!--req, xs: string, 3D DNR mode: "close, general, advanced"--></mode>
 <GeneralMode><!--dep, this node is valid only when <mode> is "general"-->
  <generalLevel><!--req, xs: integer--></generalLevel>
 </GeneralMode>
 <AdvancedMode><!--dep, this node is valid only when <mode> is "advanced"-->
  <FrameNoiseReduceLevel><!--req, xs: integer--></FrameNoiseReduceLevel>
  <InterFrameNoiseReduceLevel><!--req, xs: integer--></InterFrameNoiseReduceLevel>
 </AdvancedMode>
</NoiseReduce>
```

16.2.217 XML_NTPServer

NTPServer message in XML format

```
<NTPServer version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string, NTP server ID--></id>
 <addressingFormatType>
  <!--req, xs:string, which field will be used to locate the NTP server: "ipaddress, hostname"-->
 </addressingFormatType>
 <hostName><!--dep, xs:string--></hostName>
 <ipAddress><!--dep, xs:string--></ipAddress>
 <ipv6Address><!--dep, xs:string--></ipv6Address>
 <portNo><!--opt, xs:integer--></portNo>
 <synchronizeInterval>
  <!--opt, xs:integer, NTP time synchronization interval, unit: minute-->
 </synchronizeInterval>
</NTPServer>
```

16.2.218 XML_NTPServerList

NTPServerList message in XML format

```
<NTPServerList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <NTPServer/><!--opt, see details in the message of XML_NTPServer-->
</NTPServerList>
```

See Also

XML_NTPServer

16.2.219 XML_NTPTestDescription

NTPTestDescription message in XML format

```
<NTPTestDescription version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <addressingFormatType>
  <!--req, xs:string, "ipaddress,hostname"-->
 </addressingFormatType>
 <hostName><!--dep, xs:string--></hostName>
 <ipAddress><!--dep, xs:string--></ipAddress>
 <ipv6Address><!--dep, xs:string--></ipv6Address>
 <portNo><!--req, xs:integer--></portNo>
</NTPTestDescription>
```

16.2.220 XML_NTPTestResult

NTPTestResult message in XML format

```
<NTPTestResult version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <errorDescription><!--req, xs:string--></errorDescription>
</NTPTestResult>
```

16.2.221 XML_OnlineUpgradeCap

OnlineUpgradeCap message in XML format

```
<OnlineUpgradeCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <firmwareNum max="" />
  <!--req, the number of online upgrade packages, including full package and incremental package. Full package is
used for upgrading whole firmware, while incremental package is used for upgrade certain unit, such as openssl
library-->
 <firmwareCode max="" />
  <!--req, the maximum length of firmware code-->
 <firmwareVersion max="" />
  <!--req, the maximum length of version-->
 <firmwareCodeNumOnce max="" />
  <!--req, the maximum number of firmware codes can be obtained each time-->
 <upgradePercent min="" max="" />
  <!--req-->
 <Version>
  <!--req, upgrade package version information-->
  <newVersion max="" />
   <!--req-->
  <changeLog max="" />
   <!--req-->
 </Version>
 <DeviceParameter>
  <!--opt, online upgrade parameters-->
  <isSupportAutoDownloadPackage>
   <!--opt,xs:boolean,"true,false", whether supports automatic download of upgrade package-->
  </isSupportAutoDownloadPackage>
  <notSupportAutoUpgrade>
   <!--opt,xs:boolean,"true,false", whether not support automatic download of upgrade package and automatic
upgrade-->
  </notSupportAutoUpgrade>
  <isSupportTimingUpgrade>
   <!--opt,xs:boolean,"true,false", whether supports scheduled upgrade-->
  </isSupportTimingUpgrade>
 </DeviceParameter>
 <ManualDownloadPackage>
  <!--opt, manually download upgrade package-->
  <supportOperation opt="start,cancel,pause,resume" />
   <!--opt, supported operations: "start,cancel,pause,resume"-->
```

```
  </ManualDownloadPackage>
  <isSupportIgnoreCurrentVersion>
    <!--opt, xs:boolean, "true,false", whether supports ignoring current version-->
  </isSupportIgnoreCurrentVersion>
</OnlineUpgradeCap>
```

16.2.222 XML_OnlineUpgradeStatus

OnlineUpgradeStatus message in XML format

```
<OnlineUpgradeStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <status>
    <!--ro, req, xs:string,
"notUpgrade,upgrading,successful,languageMismatch,writeFlashError,packageTypeMismatch,packageVersionMismatc
h,netUnreachable,unknownError"-->
  </status>
  <percent><!-- ro, req, xs:integer “0-100” --></percent>
</OnlineUpgradeStatus>
```

16.2.223 XML_OnlineUpgradeVersion

OnlineUpgradeVersion message in XML format

```
<OnlineUpgradeVersion version="2.0" xmlns=“http://www.isapi.org/ver20/XMLSchema”>
  <newVersionAvailable><!--ro,req,xs:boolean, whether there is new verion of upgrade package--></
newVersionAvailable>
  <newVersion><!--ro, dep,xs:string, new version No.--></newVersion>
  <changeLog><!--ro, dep,xs:string, update content of new version--></changeLog>
</OnlineUpgradeVersion>
```

16.2.224 XML_OnlineUpgradeServer

OnlineUpgradeServer message in XML format

```
<OnlineUpgradeServer version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <connectStatus><!--ro, req xs:boolean, online upgrade server connection status--></connectStatus>
</OnlineUpgradeServer>
```

16.2.225 XML_Palettes

Palettes message in XML format

```
<Palettes version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <mode><!--opt, xs:string,
"WhiteHot,BlackHot,Fusion1,Rainbow,Fusion2,Ironbow1,Ironbow2,Sepia,Color1,Color2,IceFire,Rain,RedHot,GreenHot,
DeepBlue,Color3"--></mode>
```

```
 <ColorateTarget><!--dep, colorate target, it is valid when mode is "WhiteHot"-->
  <ColorateTargetModeList>
   <ColorateTargetMode>
    <id><!--req, xs:integer, serial number, starts from 1--></id>
    <mode>
     <!--req, xs:string, colorate target mode; colorateHotAreae-colorate area with temperature high than configured threshold, colorateIntervalArea-colorate area with temperature between the configured threshold, colorateColdArea-colorate area with temperature lower than the configured threshold-->
    </mode>
    <enabled><!--req, xs:bool, "true,false"--></enabled>
    <TemperatureLimit><!--req, temperature limit-->
     <minTemperature><!--dep, it is valid when mode is "colorateHotAreae"/"colorateIntervalArea", xs: float--></minTemperature>
     <maxTemperature><!--dep, it is valid when mode is "colorateColdArea"/"colorateIntervalArea", xs: float--></maxTemperature>
    </TemperatureLimit>
    <Color><!--req, area color-->
     <R><!--req, xs:integer--></R>
     <G><!--req, xs:integer--></G>
     <B><!--req, xs:integer--></B>
    </Color>
   </ColorateTargetMode>
  </ColorateTargetModeList>
 </ColorateTarget>
</Palettes>
```

16.2.226 XML_ParkAction

ParkAction message in XML format

```
<ParkAction version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs: boolean--></enabled>
 <Parktime min="" max=""><!--req, xs: integer, seconds--></Parktime>
 <Action>
  <ActionType opt="autoscan,framescan,randomscan,panoramascan,patrol,pattern,preset">
   <!--req, xs: string-->
  </ActionType>
  <ActionNum min="" max=""><!--req, xs: integer, from 0 to 255--></ActionNum>
 </Action>
</ParkAction>
```

16.2.227 XML_ParkingParam

ParkingParam message in XML format

```
<ParkingParam><!--dep-->
 <durationTime>
  <!—req, xs:integer, duration time, from 5 seconds to 100 seconds, default value: 5s-->
```

```
  </durationTime>
</ParkingParam>
```

16.2.228 XML_Probe

Probe message in XML format.

```
<?xml version="1.0" encoding="UTF-8"?>
<Probe>
  <!--the UUID will be returned in the device response message for matching, if not matched, it will not be handled.-->
  <Uuid>8d2091bc-1dd2-11b2-807b-8ce748cf9334</Uuid>
  <Types>inquiry</Types>
</Probe>
```

16.2.229 XML_port

port message in XML format

```
<port version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id/><!--req, xs: string, ID-->
  <enabled/><!—req, xs: boolean-->
  <internalPort/><!--req, xs: string, "http,admin,rtsp,https,WebSocket,WebSocket,SDK_OVER_TLS,SRTP..."-->
  <externalPort/><!—req, xs:integer-->
</port>
```

16.2.230 XML_portStatus

portStatus message in XML format

```
<portStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id/><!--req, xs: string, ID-->
  <enabled/><!--req-->
  <internalPort/><!--req, xs: string, "http,admin,rtsp,https,WebSocket,WebSocket,SDK_OVER_TLS,SRTP..."-->
  <externalPort/><!--req, xs: integer-->
  <status/><!--req, xs: string, "inactive, active, conflict, ..."-->
</portStatus>
```

16.2.231 XML_ports

ports message in XML format

```
<ports version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled/><!--req-->
  <mapmode><!--req, xs: string, "auto,manual"--></mapmode>
  <natRouterLanAddr><!--opt-->
    <ipVersion><!--req, xs: string, "v4,v6,dual"--></ipVersion>
```

```
   <ipAddress><!--dep, xs: string--></ipAddress>
   <ipv6Address><!--dep, xs: string--></ipv6Address>
  </natRouterLanAddr>
  <portList><!--req-->
   <port/><!--see details in the message XML_port-->
  </portList>
  <natType><!--req, xs: string, "manual, auto"--></natType>
</ports>
```

See Also

XML_port

16.2.232 XML_PortMapParam

PortMapParam message in XML format

```
<PortMapParam version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <userip><!--IP address of user terminal, or IP address of PoE0 or Eth0--></userip>
</PortMapParam>
```

16.2.233 XML_PortMapParamRet

PortMapParamRet message in XML format

```
<PortMapParamRet version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <mapResult><!--whether port mapping is required: 0-no, 1-yes, 2-unknown--></mapResult>
  <MapPortGop>
    <MapPort>
      <mapPortIdx><!--index No. of mapping ports--></mapPortIdx>
      <mapPortName><!--mapping port name--></mapPortName>
      <mapPortValue><!--mapping port number--></mapPortValue>
    <MapPort>
  </MapPortGop>
</PortMapParamRet>
```

16.2.234 XML_portsStatus

portsStatus message in XML format.

```
<portsStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled/><!--req-->
  <natRouterLanAddr><!--req-->
    <ipVersion><!--req, xs: string, "v4,v6,dual"--></ipVersion>
    <ipAddress><!--dep, xs: string--></ipAddress>
    <ipv6Address><!--dep, xs: string--></ipv6Address>
  </natRouterLanAddr>
  <natRouterWanAddr><!--req-->
```

```
   <ipVersion><!--req, xs: string, "v4,v6,dual"--></ipVersion>
   <ipAddress><!--dep, xs: string--></ipAddress>
   <ipv6Address><!--dep, xs: string--></ipv6Address>
  </natRouterWanAddr>
  <portStatusList><!--req-->
   <portStatus/><!--req, see details in the message XML_portStatus-->
  </portStatusList>
</portsStatus>
```

See Also

XML_portStatus

16.2.235 XML_powerLineFrequency

powerLineFrequency message in XML format

```
<powerLineFrequency version="2.0" mlns="http://www.isapi.org/ver20/XMLSchema">
  <powerLineFrequencyMode/><!--opt, xs: string, standard mode: "50hz, 60hz"-->
</powerLineFrequency>
```

16.2.236 XML_PreviewSwitch

PreviewSwitch message in XML format

```
<PreviewSwitch version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <DisplayWindowList size="64">
  <!--req, if the number of channels is larger or equal to 64, 64 channels should be applied by a group for one time;
otherwise, apply the maximum number of channels-->
    <DisplayWindow>
      <id><!--req, xs: string, actual window No., which equals to  id × groupNo--></id>
      <displayChannelNo><!--req, xs: string, 0-not display, 1 to 64-displayed channel No., min="0" max="64"--></
displayChannelNo>
    </DisplayWindow>
  </DisplayWindowList>
  <previewFrameNo>
    <!--req, xs: string, number of live view windows: 1, 4, 6, 8, 9, 25, 32, 36, auto1-custom window division 1, auto2-
custome window division 2, auto3-custome window division 3, auto4-custome window division 4-->
  </previewFrameNo>
  <sound><!--req, xs: boolean, whether to turn on audio during live view: true-yes, false-no--></sound>
  <switchTime><!--req, xs: string, switching interval: 0, 5, 10, 20, 30, 60, 120, and 300, unit:s--></switchTime>
  <sameSource>
    <!--dep, xs: boolean, whether the output is homologous: true-yes, false-no, this node is valid only when
VideoOutType is "noSameSourceVGA1", "noSameSourceVGA2", "noSameSourceVGA3", and "noSameSourceVGA4"-->
  </sameSource>
</PreviewSwitch>
```

16.2.237 XML_PreviewSwitchVideoOutCap

PreviewSwitchVideoOutCap message in XML format

```
<PreviewSwitchVideoOutCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <DisplayWindowList size="64">
  <DisplayWindow>
   <id><!--req, xs: string, window No., which equals to id × groupNo--></id>
   <displayChannelNo min="0" max="64"><!--req, xs: string, 0-not display, 1 to 64-displayed channel No.--></
displayChannelNo>
  </DisplayWindow>
 </DisplayWindowList>
 <previewFrameNo opt="1,4,6,8,9,25,32,36,auto1,auto2,auto3,auto4">
  <!--req, xs: string, number of live view windows, auto1-custom window division 1, auto2-custome window division
2, auto3-custome window division 3, auto4-custome window division 4-->
 </previewFrameNo>
 <sound><!--req, xs: boolean, whether to turn on audio during live view: true-yes, false-no--></sound>
 <switchTime opt="0,5,10,20,30,60,120,300"><!--req, xs: string, switching interval, unit: s--></switchTime>
 <sameSource>
  <!--dep, xs: boolean, whether the output is homologous: true-yes, false-no, this node is valid only when
VideoOutType is "noSameSourceVGA1", "noSameSourceVGA2", "noSameSourceVGA3", and "noSameSourceVGA4"-->
 </sameSource>
 <supportGetByPreviewNum>
  <!--opt, whether supports setting number of live view windows in the URL, true-yes-->
 </supportGetByPreviewNum>
</PreviewSwitchVideoOutCap>
```

16.2.238 XML_PrivacyMask

PrivacyMask message in XML format

```
<PrivacyMask version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs: boolean--></enabled>
 <normalizedScreenSize><!--opt-->
  <normalizedScreenWidth><!--req, xs: integer--></normalizedScreenWidth>
  <normalizedScreenHeight><!--req, xs: integer--></normalizedScreenHeight>
 </normalizedScreenSize>
 <PrivacyMaskRegionList size=8/><!--opt-->
 <regionType><!--opt, xs: string, "quadrilateral"--></regionType>
</PrivacyMask>
```

16.2.239 XML_PrivacyMaskCap

PrivacyMaskCap message in XML format

```
<PrivacyMaskCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <maskTypeDscriptor>
  <!--opt, xs: string, privacy mask type: "gray,red,yellow,blue,orange,green,transparent,half-transparent,mosaic"-->
```

```
 </maskTypeDscriptor>
 <minZoomdoorlimit><!--opt, xs: integer></minZoomdoorlimit>
 <maxZoomdoorlimit><!--opt, xs: integer></maxZoomdoorlimit>
 <videoPrivacyType opt="privacyMask,privacyCover">
  <!--opt, xs: string, "privacyMask"-video tampering, "privacyCover"-privacy mask-->
 </videoPrivacyType>
</PrivacyMaskCap>
```

16.2.240 XML_PrivacyMaskRegion

PrivacyMaskRegion message in XML format

```
<PrivacyMaskRegion version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: integer--></id>
 <enabled><!--req, xs: boolean--></enabled>
 <RegionCoordinatesList><!--req-->
  <RegionCoordinates><!--req-->
   <positionX><!--req, xs: integer; coordinate--></positionX>
   <positionY><!--req, xs: integer; coordinate--></positionY>
  </RegionCoordinates>
 </RegionCoordinatesList>
 <privacymaskName><!--opt, xs: string--></privacymaskName>
 <maskType>
  <!--opt, xs:string "gray,red,yellow,blue,orange,green,transparent,half-transparent,mosaic,black"-->
 </maskType>
 <zoomdoorlimit><!--opt, xs: integer, the value is between 10 and 1000--></zoomdoorlimit>
</PrivacyMaskRegion>
```

16.2.241 XML_PrivacyMaskRegionList

PrivacyMaskRegionList message in XML format

```
<PrivacyMaskRegionList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <PrivacyMaskRegion/><!--opt, refer to the message XML_PrivacyMaskRegion for details-->
</PrivacyMaskRegionList>
```

See Also

XML_PrivacyMaskRegion

16.2.242 XML_PTZAux

PTZAux message in XML format

```
<?xml version="1.0" encoding="utf-8"?>
<PTZAux version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req,xs:string,id--></id>
 <type><!--req, ro, xs:string,"LIGHT,WIPER,FAN,HEATER",auxiliary type: light, wiper, fan, heater--></type>
```

```
  <status><!--req, xs:string,"on,off", auxiliary status: turned on, turned off--></status>
</PTZAux>
```

16.2.243 XML_PTZAuxList

PTZAuxList message in XML format

```
<?xml version="1.0" encoding="utf-8"?>
<PTZAuxList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <PTZAux><!--list-->
    <id><!--req,xs:string,id--></id>
    <type><!--req, ro, xs:string,"LIGHT,WIPER,FAN,HEATER",auxiliary type: light, wiper, fan, heater--></type>
    <status><!--req, xs:string,"on,off", auxiliary status: turned on, turned off--></status>
  </PTZAux>
</PTZAuxList>
```

16.2.244 XML_PTZChannel

PTZChannel message in XML format

```
<PTZChanel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req, xs:integer--></id>
  <enabled><!--ro, req, xs:boolean--></enabled>
  <serialNumber><!--req,xs:integer--></serialNumber>
  <videoInputID><!--req, xs:integer--></videoInputID>
  <panMaxSpeed><!--ro, opt, xs:integer, degrees/sec--></panMaxSpeed>
  <tiltMaxSpeed><!--ro, opt, xs:integer, degrees/sec--></tiltMaxSpeed>
  <presetSpeed><!--opt, xs:integer, 1..8--></presetSpeed>
  <autoPatrolSpeed><!--opt, xs:integer, 0..100--></autoPatrolSpeed>
  <keyBoardControlSpeed><!--opt, xs:integer, 0..100--></keyBoardControlSpeed>
  <controlProtocol><!--opt, xs:string, "pelco-d,modbus-RTU,modbus-ASCII"--></controlProtocol>
  <controlAddress><!--opt-->
    <enabled><!--req, xs:boolean--></enabled>
    <Address><!--opt, xs:string, 1-255--></Address>
  </controlAddress>
  <defaultPresetID><!--opt, xs:string, id--></defaultPresetID>
  <PTZRs485Para><!--opt-->
    <baudRate><!--req, xs:integer--></baudRate>
    <dataBits><!--req, xs:integer--></dataBits>
    <parityType><!--req, xs:string, "none, even, odd, mark, space"--></parityType>
    <stopBits><!--req, xs:string, "1, 1.5, 2"--></stopBits>
    <flowCtrl><!--req, xs:string, "none, software, hardware"--></flowCtrl>
  </PTZRs485Para>
  <manualControlSpeed>
    <!--opt, xs:string, "pedestrian, nonMotorVehicle, motorVehicle, selfadaptive, compatible"-->
  </manualControlSpeed>
</PTZChannel>
```

16.2.245 XML_PTZChanelCap

PTZChanelCap capability message in XML format

```
<PTZChanelCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <AbsolutePanTiltPositionSpace><!--opt-->
  <XRange/><!--req-->
  <YRange/><!--req-->
 </AbsolutePanTiltPositionSpace>
 <AbsoluteZoomPositionSpace><!--opt-->
  <ZRange/><!--req-->
 </AbsoluteZoomPositionSpace>
 <RelativePanTiltSpace><!--opt-->
  <XRange/><!--req-->
  <YRange/><!--req-->
 </RelativePanTiltSpace>
 <RelativeZoomSpace><!--opt-->
  <ZRange/><!--req-->
 </RelativeZoomSpace>
 <ContinuousPanTiltSpace><!--opt-->
  <XRange/><!--req-->
  <YRange/><!--req-->
 </ContinuousPanTiltSpace>
 <ContinuousZoomSpace><!--opt-->
  <ZRange/><!--req-->
 </ContinuousZoomSpace>
 <MomentaryPanTiltSpace><!--opt-->
  <XRange/><!--req-->
  <YRange/><!--req-->
 </MomentaryPanTiltSpace>
 <MomentaryZoomSpace><!--opt-->
  <ZRange/><!--req-->
 </MomentaryZoomSpace>
 <homePostionSupport><!--req, xs:boolean--></homePostionSupport>
 <maxPresetNum>
  <!--req, xs:integer, max. supported preset number-->
 </maxPresetNum>
 <maxPatrolNum>
  <!--req,xs:integer, max. supported patrol number-->
 </maxPatrolNum>
 <maxPatternNum>
  <!--req,xs:integer, max. supported pattern number-->
 </maxPatternNum>
 <maxLimitesNum>
  <!--req,xs:integer, max. supported limit number-->
 </maxLimitesNum>
 <maxTimeTaskNum>
  <!--req,xs:integer, max. supported timing task number-->
 </maxTimeTaskNum>
 <serialNumber min="1" max="4">
  <!--configuration capability of RS-485 serial port supported by current channel-->
```

```
 </serialNumber>
 <controlProtocol>
  <!--opt, xs:string,"pelco-d,modbus-RTU,modbus-ASCII", supported PTZ control protocol-->
 </controlProtocol>
 <controlAddress>
  <!--opt, xs:string, 0-255, address-->
 </controlAddress>
 <PTZRs485Para>
  <!--opt, PTZ RS485 parameters capability-->
  <baudRate>
   <!--req, xs:integer, baud rate-->
  </baudRate>
  <dataBits>
   <!--req, xs:integer, data bit-->
  </dataBits>
  <parityType>
   <!--req, xs:string, "none,even,odd,mark,space", verification type-->
  </parityType>
  <stopBits>
   <!--req, xs:string, "1,1.5,2" , stop bit-->
  </stopBits>
  <flowCtrl>
   <!--req, xs:string, "none, software, hardware", stream control type-->
  </flowCtrl>
 </PTZRs485Para>
 <PresetNameCap>
  <!--opt, preset name capability-->
  <presetNameSupport>
   <!--opt,xs:boolean, whether to support preset name?-->
  </presetNameSupport>
  <maxPresetNameLen>
   <!--dep,xs:integer, preset name length-->
  </maxPresetNameLen>
  <specialNo/>
  <!--dep, special preset-->
 </PresetNameCap>
 <isSupportPosition3D>
  <!--opt, xs:boolean, whether to support 3D position-->
 </isSupportPosition3D>
 <isSupportManualTrack>
  <!--opt,xs:boolean, whether to support manual tracking position(NET_DVR_PTZ_MANUALTRACE)?-->
 </isSupportManualTrack>
 <manualControlSpeed opt="compatible,pedestrian,nonMotorVehicle,motorVehicle,selfadaptive">
  <!--opt,xs:string, manual control speed: "compatible"-compatible mode, "pedestrian"-pedestrian,
"nonMotorVehicle"-non-motor vehicle, "motorVehicle"-motor vehicle, "selfadaptive"-self adaptive-->
 </manualControlSpeed>
 <isSpportPtzlimiteds>
  <!--opt,xs:boolean, whether to support PTZ limitation-->
 </isSpportPtzlimiteds>
 <ParkAction/><!--see details in the message XML_ParkAction-->
 <TimeTaskList/><!--see details in the message XML_TimeTaskList-->
 <Thermometry>
```

```
   <maxThermometryPresetNum>
    <!--opt, xs:integer-->
   </maxThermometryPresetNum>
  </Thermometry>
  <isSpportPtzEagleFocusing>
   <!--opt, xs:boolean-->
  </isSpportPtzEagleFocusing>
  <TrackingRatio/>
   <!--opt, tracking zoom ratio-->
   <coefficient min="1" max="10" default="5">
    <!--opt, xs:integer, zoom ratio-->
   </coefficient>
  </TrackingRatio>
  <TrackInitPosition>
   <!--opt, tracking initial position-->
   <slaveCameraID>
    <!--opt, xs:integer, slave camera ID, 1..4 -->
   </slaveCameraID>
  </TrackInitPosition>
  <isSupportAbsoluteEx><!--opt,xs:boolean, whether to support extended capability for PTZ absolute position--></
isSupportAbsoluteEx>
  <isSupportCruise><!--opt,xs:boolean, whether to support auto-switch mode--></isSupportCruise>
  <isSupportAreaScan><!--opt,xs:boolean, whether to support area scan--></isSupportAreaScan>
  <isSupportFaceSnap3D><!--opt, xs: boolean--></isSupportFaceSnap3D>
  <isSupportOnepushSynchronizeFOV>
   <!--opt, xs:boolean, whether supports one-touch synchronize FOV, return true for supports, and no return indicates
not support-->
  </isSupportOnepushSynchronizeFOV>
  <isSupportLensCorrection>
   <!--opt, xs:boolean, whether supports lens correction, return true for supports, and no return indicates not support--
>
  </isSupportLensCorrection>
  <isSupportPTZTrackStatus>
   <!--opt, xs:boolean, whether to support getting PTZ tracking linkage status-->
  </isSupportPTZTrackStatus>
  <pqrsZoom min="" max=""/><!--opt, xs: integer, zooming coordinates of Sony zoom camera module-->
  <mnstFocus min="" max=""/><!--opt, xs: integer, focus coordinates of Sony zoom camera module-->
  <isSupportPTZSave>
   <!--opt, xs: boolean, whether supports saving the current PTZ position information-->
  </isSupportPTZSave>
  <isSupportPTZSaveGet>
   <!--opt, xs:boolean, whether to support saving the PTZ position information of the current channel by GET method--
>
  </isSupportPTZSaveGet>
  <isSupportAutoGotoCfg>
   <!--opt, xs: boolean, whether supports automatically restoring to saved PTZ position: "true"-yes, this node is not
returned-no-->
  <isSupportAutoGotoCfg>
  <lockTime><!--opt, xs:integer, PTZ locking time, unit: second--></lockTime>
</PTZChanelCap>
```

See Also

XML_ParkAction
XML_TimeTaskList

16.2.246 XML_PTZOSDDisplay

PTZOSDDisplay message in XML format

```
<PTZOSDDisplay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <zoomlable><!--req, xs:string, "2sec, 5sec, 10sec, alwaysclose, alwaysopen"--></zoomlable>
 <azimuth><!--req, xs:string, "2sec, 5sec, 10sec, alwaysclose, alwaysopen"--></azimuth>
 <presetlable><!--req, xs:string, "2sec, 5sec, 10sec, alwaysclose, alwaysopen"--></presetlable>
 <actionStatusDisplayEnabled><!--opt, xs:boolean, display status or not--></actionStatusDisplayEnabled>
</PTZOSDDisplay>
```

16.2.247 XML_PTZStatus

PTZStatus message in XML format

```
<PTZStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <AbsoluteHigh><!--high-accuracy positioning which is accurate to one decimal place-->
  <elevation>
   <!--opt, xs:integer, tilting parameter, the value is between -900 and 2700, which corresponds to the range from
-90.0 degree to 270.0 degree vertically-->
  </elevation>
  <azimuth>
   <!--opt, xs:integer, panning parameter, the value is between 0 and 3600, which corresponds to the range from 0.0
degree to 360.0 degree horizontally-->
  </azimuth>
  <absoluteZoom>
   <!--opt, xs:integer, zooming parameter, the value is between 0 and 1000, which corresponds to the focus range
from 0.0 to 100.0-->
  </absoluteZoom>
 </AbsoluteHigh>
</PTZStatus>
```

16.2.248 XML_PublicKey

PublicKey message in XML format.

```
<PublicKey version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <key><!--req, xs:string--></key>
</PublicKey>
```

16.2.249 XML_RacmCap

RacmCap capability message in XML format

```
<RacmCap version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <isSupportZeroChan>
  <!--opt, xs:boolean, whether supports channel-zero, "true"-yes, "false"-no-->
 </isSupportZeroChan>
 <inputProxyNums><!--opt, xs:integer, number of supported digital channels--></inputProxyNums>
 <eSATANums><!--opt, xs:integer, number of supported eSATAs--></eSATANums>
 <miniSASNums><!--opt, xs:integer, number of supported miniSATAs--></miniSASNums>
 <nasNums><!--opt, xs:integer, number of supported NASs--></nasNums>
 <ipSanNums><!--opt, xs:integer, number of supported IPSANs--></ipSanNums>
 <isSupportRaid>
  <!--opt, xs:boolean, whether supports RAID, "true"-yes, "false"-no-->
 </isSupportRaid>
 <isSupportExtHdCfg>
  <!--opt, xs:boolean, whether supports HDD advanced management, "true"-yes, "false"-no-->
 </isSupportExtHdCfg>
 <isSupportTransCode><!--opt, xs:boolean, whether supports auto-switch, "true"-yes, "false"-no--></
isSupportTransCode>
 <isSupportIpcImport>
  <!--opt, xs:boolean, whether supports importing configuration files to network camera, "true"-yes, "false"-no-->
 </isSupportIpcImport>
 <NasMountType><!--opt-->
  <isNFSSupportAuthentication/><!--opt, xs:boolean, whether supports NFS authentication, "true"-yes, "false"-no-->
  <isCIFSSupportAuthentication/><!--opt, xs:boolean, whether supports CIFS authentication, "true"-yes, "false"-no-->
 </NasMountType>
 <isSupportIpcStreamType/><!--opt, xs:boolean-->
 <isSupportIOInputProxy/><!--opt, xs:boolean, whether supports dynamic alarm input channel: "true"-yes, "false"-no--
>
 <isSupportIOOutputProxy/><!--opt, xs:boolean, whether supports dynamic alarm output channel: "true"-yes, "false"-
no-->
 <isSupportPTZRs485Proxy/><!--opt, xs:boolean, whether supports dynamic PTZ485 channel, "true"-yes, "false"-no-->
 <isSupportSrcIDSearch/><!--opt, xs:boolean, whether supports search by stream ID, "true"-yes, "false"-no-->
 <isSupportReversePlayback/><!--opt, xs:boolean, whether supports reverse playback, "true"-yes, "false"-no-->
 <isSupportSMARTTest/><!--opt, xs:boolean, whether supports HDD checking, "true"-yes, "false"-no-->
 <isSupportDownloadByTime/><!--opt, xs:boolean, whether supports downloading by time, "true"-yes, "false"-no-->
 <pictureSearchType
opt="AllEvent,CMR,MOTION,ALARM,EDR,ALARMANDMOTION,Command,pir,wlsensor,callhelp,facedetection,FieldDete
ction,scenechangedetection,LineDetection,regionEntrance,regionExiting,loitering,group,rapidMove,parking,unattende
dBaggage,attendedBaggage,vehicleDetection,manual,manualSnapShot,playSnapShot,allPic,evidence,illegalParking,cro
sslane,vehicleexist,lanechange,wrongdirection,congestion,turnround, parallelParking, pedestrian, construction,
roadblock, abandonedObject, trafficAccident, fogDetection, personQueueCounting,personQueueTime,
mixedTargetDetection, safetyHelmet"/>
  <!--opt, xs:string, picture search conditions-->
 <recordSearchType
opt="AllEvent,CMR,MOTION,ALARM,EDR,ALARMANDMOTION,Command,pir,wlsensor,callhelp,facedetection,FieldDete
ction,scenechangedetection,LineDetection,regionEntrance,regionExiting,loitering,group,rapidMove,parking,unattende
dBaggage,attendedBaggage,vehicleDetection,manual,manualSnapShot,playSnapShot,AudioDetection"/>
  <!--opt, xs:string, video file type to be searched-->
```

```
<isSupportActivateIpc/><!--opt, xs:boolean, whether supports activating network camera, "true"-yes, "false"-no-->
<isSupportCheckIpcSecurity><!--opt-->
<isSupportCheckPassword/><!--opt, xs:boolean, whether supports password verification, "true"-yes, "false"-no-->
</isSupportCheckIpcSecurity>
<isSupportMainAndSubRecord/>
<!--opt, xs:boolean, whether supports recording in main stream or sub-stream, "true"-yes, "false"-no-->
<isSupportSyncIPCPassword>
<!--opt, xs:boolean, whether supports synchronizing network camera's password, "true"-yes, "false"-no-->
</isSupportSyncIPCPassword>
<isSupportTransferIPC>
<!--opt, xs:boolean, whether supports network camera passthrough function, "true"-yes, "false"-no-->
</isSupportTransferIPC>
<isSupportPOS><!--opt, xs:boolean, whether supports POS, "true"-yes, "false"-no--></isSupportPOS>
<isSupportPassBackBasicCfg>
<!--opt, xs:boolean, whether supports the ANR basic function of CVR, "true"-yes, "false"-no-->
</isSupportPassBackBasicCfg>
<PassBackTaskConfig><!--opt, task management function of ANR-->
<isSupportAddTask><!--opt, xs:boolean, whether supports adding task, "true"-yes, "false"-no--></isSupportAddTask>
<isSupportSearchTask><!--opt, xs:boolean, whether supports task search, "true"-yes, "false"-no--></
isSupportSearchTask>
<isSupportControlTask><!--opt, xs:boolean, whether supports task control, "true"-yes, "false"-no--></
isSupportControlTask>
<isSupportDeleteTask><!--opt, xs:boolean, whether supports deleting task, "true"-yes, "false"-no--></
isSupportDeleteTask>
</PassBackTaskConfig>
<PassBackPlanConfig><!--opt, task plan of ANR-->
<isSupportAddPlan><!--opt, xs:boolean, whether supports adding plan, "true"-yes, "false"-no--></
isSupportAddPlan>
<isSupportSearchPlan><!--opt, xs:boolean, whether supports plan search, "true"-yes, "false"-no--></
isSupportSearchPlan>
<isSupportDeletePlan><!--opt, xs:boolean, whether supports deleting plan, "true"-yes, "false"-no--></
isSupportDeletePlan>
</PassBackTaskConfig>
<IRAIDCap/><!--opt, network RAID-->
<isSupportStorageExtraInfo>
<!--opt, xs:boolean, whether supports configuring storage additional information, "true"-yes, "false"-no-->
</isSupportStorageExtraInfo>
<isSupportRecordStatus><!--opt, xs:boolean--></isSupportRecordStatus>
<supportAIDTFSType opt="illegalParking,wrongdirection crosslane,vehicleexist,lanechange, turnround, evidence"/>
<!--opt, xs:string, event picture search conditions supported by both AID and TFS-->
<isSupportRacmChannelsCap><!--opt, xs:boolen--></isSupportRacmChannelsCap>
<LockCap/><!--opt, lock or unlock video-->
<isSupportForamtAll><!--opt, xs:boolean, "true,false"--></isSupportForamtAll>
<isSupportExtendCabinetCfg>
<!--opt, xs:boolean, whether supports enclosure configuration-->
</isSupportExtendCabinetCfg>
<diskGroupNums><!--opt, xs:integer, number of supported HDD groups--></diskGroupNums>
<isSupportCountingSearchByUTC><!--opt, xs:boolean, whether supports searching people counting results by UTC
time--></isSupportCountingSearchByUTC>
<isSupportPlaybackReverseByUTC><!--opt, xs:boolean, whether supports reverse playback by UTC time--></
isSupportPlaybackReverseByUTC>
<isSupportWebPrivatePlaybackByUTC>
```

```
  <!--opt, xs: boolean, whether supports playback based on Web private protocol-->
 </isSupportWebPrivatePlaybackByUTC >
 <isSupportFindCommonFileByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for searching files-->
 </isSupportFindCommonFileByUTC>
  <isSupportFindEventFileByUTC><!--opt, xs: boolean, whether supports extending the time zone for searching files
by event-->
 </isSupportFindEventFileByUTC >
 <isSupportSmartSearchRecordByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for VCA search-->
 </isSupportSmartSearchRecordByUTC>
 <isSupportMRDSearchByTimeZone>
  <!--opt, xs: boolean, whether supports extending the time zone for searching files by calendar-->
 </isSupportMRDSearchByTimeZone>
 <isSupportSearchRecordLabelByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for searching video tags-->
 </isSupportSearchRecordLabelByUTC>
 <isSupportSearchPictureByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for searching pictures-->
 </isSupportSearchPictureByUTC>
 <isSupportSmartSearchPictureByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for searching pictures with smart information-->
 </isSupportSmartSearchPictureByUTC>
 <isSupportFindLogByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for searching log-->
 </isSupportFindLogByUTC>
 <isSupportUploadRecordByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for uploading files to cloud storage-->
 </isSupportUploadRecordByUTC>
 <isSupportPlaybackByUTC>
  <!--opt, xs: boolean, whether supports extending the time zone for playback by time and locating by time-->
 </isSupportPlaybackByUTC>
 <SecurityLog>
  <isSupportSecurityLog><!--opt, boolean, whether supports security log--></isSupportSecurityLog>
  <isSupportLogServer><!--opt, boolean, whether supports log server configuration--></isSupportLogServer>
  <isSupportLogServerTest><!--opt, xs: boolean, whether supports log server test--></isSupportLogServerTest>
  <SecurityLogTypeList><!--req, xs: list, supported log type list-->
   <SecurityLogType>
    <primaryType><!--req, xs: string, major type--></primaryType>
    <secondaryType opt=""><!--req, xs: string, minor type--></secondaryType>
   </SecurityLogType>
  </SecurityLogTypeList>
 </SecurityLog>
 <iSptInputProxyChanCap>
  <!--opt, xs:boolean, whether to support getting the capability of the digital channel-->
 </iSptInputProxyChanCap>
 <isSupportLogDataPackage>
  <!--opt, xs:boolean, whether to support exporting logs: "true, false"-->
 </isSupportLogDataPackage>
 <logSearchTimeSpanNums>
  <!--opt, xs:integer, supported number of time periods for log search-->
```

```
  </logSearchTimeSpanNums>
</RacmCap>
```

16.2.250 XML_RegionalFocus

RegionalFocus message in XML format

```
<RegionalFocus version="2.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <StartPoint><!--0-1000-->
  <positionX><!--req, xs:integer--></positionX>
  <positionY><!--req, xs:integer--></positionY>
 </StartPoint>
 <EndPoint><!--0-1000-->
  <positionX><!--req, xs:integer--></positionX>
  <positionY><!--req, xs:integer--></positionY>
 </EndPoint>
</RegionalFocus>
```

16.2.251 XML_RegionClip

RegionClip message in XML format

```
<RegionClip version="2.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
 <id><!--req, xs: string--></id>
 <enabled><!--req, xs: boolean--></enabled>
 <normalizedScreenSize><!--req, read-only-->
  <normalizedScreenWidth><!--req, read-only, xs: integer--></normalizedScreenWidth>
  <normalizedScreenHeight><!--req, read-only, xs: integer--></normalizedScreenHeight>
 </normalizedScreenSize>
 <regionType><!--req, ro, xs:string, opt="rectangle,convexPolygon,concavePolygon"--></regionType>
 <videoResolutionWidth><!--opt="704"--></videoResolutionWidth>
 <videoResolutionHeight><!--opt="576"--></videoResolutionHeight>
 <ClipRegionList>
  <ClipRegion>
   <RegionCoordinatesList>
    <RegionCoordinates><!--req, size=4-->
     <positionX><!--req, xs: integer; x-coordinate--></positionX>
     <positionY><!--req, xs: integer; y-coordinate--></positionY>
    </RegionCoordinates>
   </RegionCoordinatesList>
  </ClipRegion>
 </ClipRegionList>
</RegionClip>
```

16.2.252 XML_remotePermission

remotePermission message in XML format

```
<remotePermission version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <record><!—opt, xs: boolean—></record>
 <booleant><!—opt, xs: boolean—></booleant>
 <preview><!—opt, xs: boolean—></preview>
 <videoChannelPermissionList><!—opt—>
  <videoChannelPermission><!—opt—>
   <id><!—req, corresponds to the video input channel ID—></id>
   <preview><!—opt, xs: boolean—></preview>
   <palyBack><!—opt, xs: boolean—></palyBack>
   <record><!—opt, xs:boolean—></record>
   <playBackDoubleVerification>
    <!—opt, xs:boolean, whether supports secondary authentication for playback and download—>
   </playBackDoubleVerification>
  </videoChannelPermission>
 </videoChannelPermissionList>
 <ptzControl><!—opt, xs: boolean—></ptzControl>
 <ptzChannelPermissionList><!—opt—>
  <ptzChannelPermission><!—opt—>
   <id><!—req, corresponds to PTZ channel ID—></id>
   <ptzControl><!—opt, xs: boolean—></ptzControl>
  </ptzChannelPermission>
 </ptzChannelPermissionList>
 <logOrStateCheck><!—opt, xs: boolean, permission to view log and status—></logOrStateCheck>
 <parameterConfig><!—opt, xs: boolean, parameter configuration permission—></parameterConfig>
 <restartOrShutdown><!—opt, xs: boolean, permission to reboot and shutdown—></restartOrShutdown>
 <upgrade><!—opt, xs: boolean, permission to upgrade—></upgrade>
 <voiceTalk><!—opt, xs: boolean—></voiceTalk>
 <transParentChannel><!—opt, xs: boolean—></transParentChannel>
 <contorlLocalOut><!—opt, xs: boolean—></contorlLocalOut>
 <alarmOutOrUpload><!—opt, xs: boolean, permission to upload and output alarm—></alarmOutOrUpload>
 <factoryReset><!--opt, xs:boolean, restore default parameters--></factoryReset>
 <arm><!--opt, xs:boolean, arm--></arm>
 <disarm><!--opt, xs:boolean, disarm--></disarm>
 <accessControl><!--opt, xs:boolean, access control--></accessControl>
 <subSysOrZoneArm><!--opt, xs:boolean, partition or zone arming permission--></subSysOrZoneArm>
 <subSysOrZoneDisarm><!--opt, xs:boolean, partition or zone disarming permission--></subSysOrZoneDisarm>
 <subSysOrZoneClearArm><!--opt, xs:boolean, permission to clear partition or zone alarms--></
subSysOrZoneClearArm>
 <zoneBypass><!--opt, xs:boolean, permission to bypass zone--></zoneBypass>
 <zoneBypassRecover><!--opt, xs:boolean, permission to recover bypassing zone--></zoneBypassRecover>
 <IRAID>
  <rapidConfiguration><!--opt, xs:boolean--></rapidConfiguration>
  <reset><!--opt, xs:boolean--></reset>
 </IRAID>
 <subSystemList><!--opt, partitions that can be linked to operator when adding operator or setting operator
parameters-->
  <subSystem><!--opt, xs:integer, partition that can be linked to operator. When adding operator or setting operator
parameters, one or more partitions can be linked to an operator. An operator should be linked to at least one partition
and up to four partitions--></subSystem>
 </subSystemList>
</remotePermission>
```

16.2.253 XML_ResponseStatus

ResponseStatus message in XML format

```
<ResponseStatus version="2.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
 <requestURL>
  <!--req, ro, xs:string, request URL-->
 </requestURL>
 <statusCode>
  <!--req, ro, xs:integer, status code: 0,1-OK, 2-Device Busy, 3-Device Error, 4-Invalid Operation, 5-Invalid XML Format, 6-Invalid XML Content, 7-Reboot Required, 9-Additional Error-->
 </statusCode>
 <statusString>
  <!--req, ro, xs:string, status description: OK, Device Busy, Device Error, Invalid Operation, Invalid XML Format, Invalid XML Content, Reboot, Additional Error-->
 </statusString>
 <id>
  <!--opt, xs:integer, unique device ID created in POST operation-->
 </id>
 <subStatusCode>
  <!--req, ro, xs:string, describe the error reason in detail-->
 </subStatusCode>
 <errorCode>
  <!--opt, ro, xs:integer, error code, the returned value is the transformed decimal number-->
 </errorCode>
 <errorMsg>
  <!--opt, ro, xs:string, error message-->
 </errorMsg>
 <AdditionalErr>
  <!--dep, it is valid when statusCode is set to 9 (Additional Error). When setting or deleting in a batch failed, if the error status of a specific device needs to be returned, statusCode should be set to 9 (Additional Error) and the node <AdditionalError> should be returned-->
  <StatusList>
   <!--req-->
   <Status>
    <!--req-->
    <id>
     <!--opt, xs:string, device ID created in POST operation-->
    </id>
    <statusCode>
     <!--req, ro, xs:integer, status code: 0,1-OK, 2-Device Busy, 3-Device Error, 4-Invalid Operation, 5-Invalid XML Format, 6-Invalid XML Content, 7-Reboot Required-->
    </statusCode>
    <statusString>
     <!--req, ro, xs:string, status description: OK, Device Busy, Device Error, Invalid Operation, Invalid XML Format, Invalid XML Content, Reboot-->
    </statusString>
    <subStatusCode>
     <!--req, ro, xs:string, describe the error reason in detail-->
    </subStatusCode>
   </Status>
```

```
   </StatusList>
  </AdditionalErr>
</ResponseStatus>
```

Note

See ***Error Codes in ResponseStatus*** for details about sub status codes and corresponding error codes.

16.2.254 XML_ResponseStatus_AuthenticationFailed

ResponseStatus message in XML format for failed authentication.

```
<ResponseStatus version="1.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
 <requestURL><!-- req, ro,xs:string --></requestURL>
 <statusCode><!-- req, ro,xs:integer --></statusCode>
 <statusString><!-- req, ro,xs:string --></statusString>
 <subStatusCode><!-- req, ro,xs:string --></subStatusCode>
 <lockStatus><!-- opt, ro,xs:string ,"unlock,locked", locking status--></lockStatus>
 <retryTimes><!-- opt, ro,xs:integer, remaining authentication attempts--></retryTimes>
 <resLockTime><!-- opt, ro,xs:integer, remaining locking time, unit: second--></resLockTime>
</ResponseStatus>
```

16.2.255 XML_Schedule

Schedule message in XML format

```
<Schedule version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string, ID--></id>
 <eventType>
  <!--opt, xs:string, alarm/event types, see details in the "Remarks" below-->
 </eventType>
 <inputIOPortID><!--ro, dep, xs:string, alarm input No.--></inputIOPortID>
 <outputIOPortID><!--ro, dep, xs:string, alarm output No.--></inputIOPortID>
 <videoInputChannelID><!--ro, dep, xs:string, video input channel ID--></videoInputChannelID>
 <TimeBlockList size="8"><!--req-->
  <TimeBlock><!--list-->
   <dayOfWeek>
    <!--opt, xs:integer, day of the week based on ISO8601, "1"=Monday, ...-->
   </dayOfWeek>
   <TimeRange><!--req-->
    <beginTime><!--req, xs:time, ISO8601 time--></beginTime>
    <endTime><!--req, xs:time, ISO8601 time--></endTime>
   </TimeRange>
   <CustomExtension>
    <vehicleDetectSceneID>
     <!--req, xs:interger-->
    </vehicleDetectSceneID>
   </CustomExtension>
```

```
   </TimeBlock>
  </TimeBlockList>
  <HolidayBlockList><!--opt-->
   <TimeBlock><!--list-->
    <TimeRange><!--req-->
     <beginTime><!--req, xs:time, ISO8601 time--></beginTime>
     <endTime><!--req, xs:time, ISO8601 time--></endTime>
    </TimeRange>
   </TimeBlock>
  </HolidayBlockList>
</Schedule>
```

Remarks

The node <**eventType**> can be set to the following values: IO, VMD,videoloss, PIR,linedetection, fielddetection, audioexception, facedetection, regionEntrance, regionExiting, loitering, group, rapidMove, parking, unattendedBaggage,attendedBaggage, storageDetection, shipsDetection, HUMANATTRIBUTE, humanAttribute, faceContrast, faceSnap, faceLib, whiteListFaceContrast, personDensityDetection, personQueueDetection, mixedTargetDetection, fireDetection, illegalParking, pedestrian, trafficAccident,construction, roadblock, abandonedObject, parallelParking, parkingState, congestion, intersectionAnalysis, heatMap, reverseEntrance, vehicledetect, safetyHelmetDetection.

16.2.256 XML_SecurityCap

SecurityCap capability message in XML format

```
<SecurityCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <supportUserNums><!--opt, xs:integer, number of supported users--></supportUserNums>
 <userBondIpNums><!--opt, xs:integer, number of bound IP addresses supported by the user--></userBondIpNums>
 <userBondMacNums><!--opt, xs:integer, number of bound MAC addresses supported by the user--></
userBondMacNums>
 <issupIllegalLoginLock><!--opt, xs: boolean, whether it supports locking illegal login: "true,false"--
><issupIllegalLoginLock>
 <isSupportOnlineUser><!--opt, xs: boolean, "true,false"--><isSupportOnlineUser>
 <isSupportAnonymous><!--opt, xs: boolean, "true,false"--><isSupportAnonymous>
 <securityVersion opt="1,2"/><!--opt, xs:interger, encryption capability, each version contains encryption algorithm
and node range to be encrypted. "1"-encrypt by AES128, "2"-encrypt by AES256-->
 <keyIterateNum>
  <!--dep, xs:integer, iteration times, this node depends on securityVersion, and the value is usually between 100 and
1000-->
 </keyIterateNum>
 <isSupportUserCheck>
  <!--dep, opt, xs:boolean, whether it supports verifying password when editing/adding/deleting user parameters,
this node depends on securityVersion-->
 </isSupportUserCheck>
 <isSupportGUIDFileDataExport><!--opt, xs:boolean, "true,false"--></isSupportGUIDFileDataExport>
 <isSupportSecurityQuestionConfig><!--opt, xs:boolean, "true,false"--></isSupportSecurityQuestionConfig>
 <isSupportGetOnlineUserListSC><!--opt, xs:boolean, "true,false"--></isSupportGetOnlineUserListSC>
 <SecurityLimits><!--opt-->
```

```
   <LoginPasswordLenLimit  min="1" max="16"><!--opt--></LoginPasswordLenLimit>
   <SecurityAnswerLenLimit  min="1" max="128"><!--opt--></SecurityAnswerLenLimit>
  </SecurityLimits>
  <RSAKeyLength opt="512,1024,2048" def=2048/>
  <isSupportONVIFUserManagement><!--opt, xs: boolean, "true, false"--><isSupportONVIFUserManagement>
  <WebCertificateCap><!--opt-->
   <CertificateType opt="basic, digest, digest/basic"><!--req, xs:string--></CertificateType>
  </WebCertificateCap>
  <isSupportConfigFileImport>
   <!--opt, xs: boolean, whether it supports importing configuration files securely: "true"-yes. If it is not supported, this
node will not be returned-->
  </isSupportConfigFileImport>
  <isSupportConfigFileExport>
   <!-- opt, xs:boolean, whether it supports exporting configuration files securely: "true"-yes. If it is not supported, this
node will not be returned-->
  </isSupportConfigFileExport>
  <cfgFileSecretKeyLenLimit min="0" max="16">
   <!--opt, length limit of the configuration files' encryption key-->
  </cfgFileSecretKeyLenLimit>
  <isSupportDeviceCertificatesManagement>
   <!--opt, xs: boolean, whether it supports device certificate management: true-yes, if not support, this node will not
be returned-->
  </isSupportDeviceCertificatesManagement>
  <isIrreversible>
   <!--dep, opt, xs:boolean, whether it supports irreversible password storage. If this node does not exist, irreversible
password storage is not supported-->
  </isIrreversible>
  <salt>salt of username</salt>
  <keypadPassword min="1" max=""/><!--opt, xs:string, keypad password length. If different types of users have
different keypad password length, this node only indicates the administrator's keypad password length, otherwise this
node indicates that all types of users have the same keypad password length-->
  <installerKeypadPassword min="1" max=""/><!--opt, xs:string, installer's keypad password length-->
  <operatorKeypadPassword min="1" max=""/><!--opt, xs:string, operator's keypad password length-->
  <userOperateType opt="1,2,3">
   <!--opt, xs:string, user operation type: "1"-network user, "2"-keypad user, "3"-network user and keypad user-->
  </userOperateType>
  <isSptUserEnabled><!--opt, xs:boolean, whether it supports configuration of enabling user: "true"-yes, "false"-no--
></isSptUserEnabled>
  <isSptAdminCap><!--opt, xs:boolean, whether it supports getting administrator permission capability: "true"-yes,
"false"-no--></isSptAdminCap>
  <DoubleVerificationCap><!--opt, double verification capability-->
   <isSupportUsersConfig>
    <!--opt, xs: boolean, "true,false", whether it supports configuring double verification user-->
   </isSupportUsersConfig>
   <isSupportUsersPermissionConfig>
    <!--opt, xs: boolean, "true,false", whether it supports configuring the permission of double verification user-->
   </isSupportUsersPermissionConfig>
  </DoubleVerificationCap>
  <isSupportCertificateCustomID><!--opt, xs:Boolean, whether it supports certificate configuration with custom ID--></
isSupportCertificateCustomID>
</SecurityCap>
```

16.2.257 XML_SecurityQuestion

SecurityQuestion message in XML format

```
<SecurityQuestion version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <QuestionList>
  <Question><!--the number of security question must be 3-->
   <id><!--required, xs: integer, question ID, which corresponds to that of device--></id>
   <answer>
    <!--write-only, xs: string, answer of the security question, it will not be returned when getting question; when setting question, this node will be encrypted (BASE64-->AES128CBE) for transmission-->
   </answer>
   <mark>
    <!—required, read-only, xs: boolean, whether the configured security question is marked-->
   </mark>
  </Question>
 </QuestionList>
 <password>
  <!--write-only, xs: string, password that encrypted by CBC, this node will not be returned when getting question; but it is required when setting question-->
 </password>
</SecurityQuestion>
```

See Also

16.2.258 XML_SerialCap

SerialCap capability message in XML format

```
<SerialCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <rs485PortNums min="1" max="5" def="1">
  <!--opt, xs: integer-->
 </rs485PortNums>
 <supportRS23Cconfig>
  <!--opt, xs: boolean-->
 </supportRS23Cconfig>
 <rs422PortNums opt="0">
  <!--opt, xs: integer-->
 </rs422PortNums>
 <rs232PortNums opt="1">
  <!--opt, xs: integer, range of RS-232 serial port No. supported by the device-->
 </rs232PortNums>
 <rs485WorkMode opt="Led, CaptureTrigger">
  <!--opt, xs: string, range of RS-485 serial port No. supported by the device-->
 </rs485WorkMode>
</SerialCap>
```

16.2.259 XML_SerialCommand

SerialCommand message in XML format

```
<SerialCommand version="1.0" xmlns="urn:psialliance-org">
 <chainNo>
  <!--opt, xs:string-->
 </chainNo>
 <command>
  <!--req, xs:hexBinary-->
 </command>
</SerialCommand>
```

16.2.260 XML_SerialPorList

SerialPorList message in XML format

```
<SerialPortList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <SerialPort/><!--opt, see details in the message of XML_SerialPort-->
</SerialPortList>
```

See Also

XML_SerialPort

16.2.261 XML_SerialPort

SerialPort message in XML format

```
<SerialPort version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs:string, serial port ID-->
 </id>
 <enabled>
  <!--req, xs:boolean, whether to enable the serial port: "true, false"-->
 </enabled>
 <serialPortType>
  <!--req, xs:string, serial port type: "RS485", "RS422", "RS232"-->
 </serialPortType>
 <duplexMode>
  <!--req, xs:string, duplex mode of the serial port: "half", "full"-->
 </duplexMode>
 <direction>
  <!--req, xs:string, "monodirectional, bdirectional"-->
 </direction>
 <baudRate>
  <!--req, xs:integer-->
 </baudRate>
```

```
<dataBits>
  <!--req, xs:integer-->
</dataBits>
<parityType>
  <!--req, xs:string, parity type: "none,even,odd,mark,space"-->
</parityType>
<stopBits>
  <!--req, xs:string, stop bit: "1,1.5,2"-->
</stopBits>
<workMode>
  <!--dep, xs:string, working mode: "console","transparent","audiomixer","stairsControl"-elevator control,"cardReader"-card reader,"disabled","custom". This node is required only when <serialPortType> is set to "RS232"-->
</workMode>
<flowCtrl>
  <!--req, xs:string, "none, software, hardware"-->
</flowCtrl>
<rs485WorkMode>
  <!--opt, xs:string, working mode of RS-485 serial port, which is used for LED display or triggering transmission of captured pictures: "Led, CaptureTrigger". This node is valid only when <serialPortType> is "RS485"-->
</rs485WorkMode>
<audiomixerProtocolType>
  <!--opt, xs:string, "HIKVISION". This node is required only when <workMode> is "audiomixer"-->
</audiomixerProtocolType>
<deviceName><!--deq, xs:string, device name, the maximum length is 32 bytes, this node is valid only when <serialPortType> is "RS485"--></deviceName>
<deviceType><!--deq, xs,integer, device type, this node is valid only when <serialPortType> is "RS485"--></deviceType>
<deviceProtocol><!--deq, xs,integer, device protocol, this node is valid only when <serialPortType> is "RS485"--></deviceProtocol>
<mode><!--deq, xs:string, working mode: "readerMode,clientMode,externMode,accessControlHost,disabled", this node is valid only when <serialPortType> is "RS485"--></mode>
<outputDataType><!--dep, xs:string, output data type: "cardNo,employeeNo", this node is valid when <mode>is "accessControlHost"--></outputDataType>
</SerialPort>
```

16.2.262 XML_SIPInfo

SIPInfo message in XML format

```
<SIPInfo version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
<videoID>
  <!--req, xs:string-->
</videoID>
<AlarmInList>
  <AlarmIn>
    <id>
      <!--req, xs:string-->
    </id>
    <alarmInID>
      <!--req, xs:string-->
```

```
    </alarmInID>
   </AlarmIn>
  </AlarmInList>
</SIPInfo>
```

16.2.263 XML_SIPInfoList

SIPInfoList message in XML format

```
<SIPInfoList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <SIPInfo>
  <videoID><!--req, xs: string--><videoID>
  <AlarmInList>
   <AlarmIn>
    <id><!--req, xs: string--></id>
  <alarmInID><!--req, xs: string--><alarmInID>
   </AlarmIn>
  </AlarmInList>
  <VideoInputList><!--opt-->
   <VideoInput>
  <id><!--req, xs: string--></id>
  <videoInputID><!--req, xs: string></videoInputID>
   </VideoInput>
  </VideoInputList>
  <AudioOutputList><!--opt,ID list of audio outputs-->
   <AudioOutput>
  <id><!--req, xs: string--></id>
  <audioOutputID><!--req, xs: string--></audioOutputID>
   </AudioOutput>
  </AudioOutputList>
  <platformNo><!-- opt, xs:integer--></platformNo>
 </SIPInfo>
<SIPInfoList>
```

16.2.264 XML_SIPServer

SIPServer message in XML format

```
<SIPServer version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs:interger, the maximum ID depends on the number of channels-->
 </id>
 <localPort>
  <!--req, xs:integer, local port No., which is between 1 and 65535-->
 </localPort>
 <streamID>
  <!--req, xs:integer, stream type: 1-main stream, 2-sub-stream, 3-third stream-->
 </streamID>
 <Standard>
```

```
  <!--opt-->
  <registerStatus>
   <!--ro, req, xs:boolean, registration status: "false"-unregistered, "true"-registered-->
  </registerStatus>
  <enabled >
   <!--req, xs:string, "true"-log in, "false"-log out-->
  </enabled>
  <registrar>
   <!--req, xs:string-->
  </registrar>
  <registrarPort>
   <!--req, xs:integer-->
  </registrarPort>
  <proxy>
   <!--req, xs:string-->
  </proxy>
  <proxyPort>
   <!--req, xs:integer-->
  </proxyPort>
  <displayName>
   <!--req, xs:string-->
  </displayName>
  <username>
   <!--req, xs:string-->
  </userName>
  <authID>
   <!--req, xs:string-->
  </authID>
  <password>
   <!--wo, req, xs:string-->
  </password>
  <expires>
   <!--req, xs:integer-->
  </expires>
 </Standard>
 <GB28181>
  <!--opt-->
  <registerStatus>
   <!--req, xs:boolean, "true,false"-->
  </registerStatus>
  <enabled>
   <!--req, xs:boolean, "true,false"-->
  </enabled>
  <registrar>
   <!--req, xs:string-->
  </registrar>
  <registrarPort>
   <!--req, xs:integer-->
  </registrarPort>
  <serverId>
   <!--req, xs:string-->
  </serverId>
```

```
   <serverDomain>
    <!--req, xs:string-->
   </serverDomain>
   <username>
    <!--req, xs:string-->
   </userName>
   <authID>
    <!--req, xs:string-->
   </authID>
   <password>
    <!--wo, req, xs:string-->
   </password>
   <expires>
    <!--req, xs:integer-->
   </expires>
   <liveTime>
    <!--req, xs:integer-->
   </liveTime>
   <heartbeatTime>
    <!--req, xs:integer-->
   </heartbeatTime>
   <heartbeatCount>
    <!--req, xs:integer-->
   </heartbeatCount>
  </GB28181>
</SIPServer>
```

16.2.265 XML_SIPServerList

SIPServerList message in XML format

```
<SIPServerList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <SIPServer/><!--opt, see details in the message of XML_SIPServer-->
</SIPServerList>
```

See Also

XML_SIPServer

16.2.266 XML_Sharpness

Sharpness message in XML format

```
<Sharpness version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <SharpnessMode><!--opt, xs:string, "manual", "auto"--></SharpnessMode>
 <SharpnessLevel><!--req, xs:integer--></SharpnessLevel>
</Sharpness>
```

16.2.267 XML_Shutter

Shutter message in XML format

```
<Shutter version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <ShutterLevel>
    <!--dep, xs: string, shutter level: "1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/125, 1/150, 1/175, 1/215, 1/225, 1/300, 1/400, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000", this node is valid when <ExposureType> in the message XML_Exposure is "ShutterFisrt"-->
  <ShutterLevel>
</Shutter>
```

See Also

XML_Exposure

16.2.268 XML_SmartCap

SmartCap capability message in XML format

```
<SmartCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <isSupportROI><!--opt, xs:boolean, whether to support ROI (Region of Interest)--></isSupportROI>
  <isSupportFaceDetect><!--opt, xs:boolean, whether to support face detection--></isSupportFaceDetect>
  <isSupportIntelliTrace><!--opt, xs:boolean--></isSupportIntelliTrace>
  <isSupportFieldDetection><!--opt, xs:boolean, whether to support region detection--></isSupportFieldDetection>
  <isSupportDefocusDetection><!--opt, xs:boolean--></isSupportDefocusDetection>
  <isSupportAudioDetection><!--opt, xs:boolean--></isSupportAudioDetection>
  <isSupportSceneChangeDetection><!--opt, xs:boolean, whether to support scene change detection--></
isSupportSceneChangeDetection>
  <isSupportLineDetection><!--opt, xs:boolean--></isSupportLineDetection>
  <isSupportRegionEntrance><!--opt, xs:boolean--></isSupportRegionEntrance>
  <isSupportRegionExiting><!--opt, xs:boolean--></isSupportRegionExiting>
  <isSupportLoitering><!--opt, xs:boolean--></isSupportLoitering>
  <isSupportGroup><!--opt, xs:boolean--></isSupportGroup>
  <isSupportRapidMove><!--opt, xs:boolean--></isSupportRapidMove>
  <isSupportParking><!--opt, xs:boolean--></isSupportParking>
  <isSupportUnattendedBaggage><!--opt, xs:boolean--></isSupportUnattendedBaggage>
  <isSupportAttendedBaggage><!--opt, xs:boolean--></isSupportAttendedBaggage>
  <isSupportPeopleDetection><!--opt, xs:boolean--></isSupportPeopleDetection>
  <isSupportStorageDetection><!--opt, xs:boolean--></isSupportStorageDetection>
  <isSupportShipsDetection><!--opt, xs:boolean--></isSupportShipsDetection>
  <isSupportSmartCalibration><!--opt, xs:boolean--></isSupportSmartCalibration>
  <isSupportShield><!--opt, xs:boolean, whether to support shielded area--></isSupportShield>
  <isSupportAlgVersion><!--opt, xs:boolean, whether to support algorithm library version--></isSupportAlgVersion>
  <isSupportVideoOverlap><!--opt, xs:boolean, whether to support text overlay--></isSupportVideoOverlap>
  <isSupportParkingState><!--opt, xs:boolean, whether to support parking space status detection--></
isSupportParkingState>
  <isSupportChannelResource><!--opt, xs:boolean--></ isSupportChannelResource>
  <isSupportAnalysisUnitSwitch opt="true,false"><!--opt, xs:boolean, whether to support analysis unit switch--></
isSupportAnalysisUnitSwitch>
```

```
 <isSupportHFPD><!--opt, xs:boolean, whether to support frequently appeared person detection--></isSupportHFPD>
 <isSupportImageROI<!--opt, xs:boolean, whether to support smartJpeg (image ROI (Region of Interest))--></
isSupportImageROI>
</SmartCap>
```

16.2.269 XML_SmartSearchDescription

SmartSearchDescription message in XML format

```
<SmartSearchDescription version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <searchID>
  <!--req, xs:string, search ID, which is used to confirm the upper-level platform or system. If the platform or system
are same during two times of search, the search history will be recorded in the memory for next fast search-->
 </searchID>
 <searchResultPosition><!--req, xs: integer--></searchResultPosition>
 <maxResults><!--req, xs: integer--></maxResults>
 <trackID><!--req, xs: integer, channel ID, e.g., 101-main stream if first channel--></trackID>
 <startTime><!--req, xs: datetime, start time of validity period, e.g., 2013-06-10T 12:00:00Z--></startTime>
 <endTime><!--req, xs: datetime, end time of validity period, e.g., 2013-06-10T 13:00:00Z--></endTime>
 <type>
  <!--req, xs: string; VCA event type: "motionDetection, traversePlaneDetection,FieldDetection, faceDetection"-->
 </type>
 <MotionDetection><!--dep, it is valid when type is "motionDetection"-->
  <Grid>
   <rowGranularity></rowGranularity>
   <columnGranularity></columnGranularity>
  </Grid>
  <MotionDetectionLayout>
   <layout>
    <gridMap></gridMap>
   </layout>
  </MotionDetectionLayout>
  <sensitivity><!--opt, xs: integer, value range: [1,100]--></sensitivity>
 </MotionDetection>
 <TraversePlane><!--dep, it is valid when type is "traversePlaneDetection"-->
  <TraversePlaneParam>
   <LineList>
    <Line>
     <StartPoint>
      <x><!--req, xs: float--></x>
      <y><!--req, xs: float--></y>
     </StartPoint>
     <EndPoint>
      <x><!--req, xs: float--></x>
      <y><!--req, xs: float--></y>
     </EndPoint>
    </Line>
   </LineList>
   <crossDirection><!--opt, xs: string, crossing direction: "bothDirection, leftToRight, rightToLeft"--><crossDirection>
   <sensitivity><!-- opt, xs: integer, value range: [1,100]--></sensitivity>
   <planeHeight><!--opt, xs: integer--></planeHeight>
```

```
    <detectionTarget><!--req, xs: string, detection target type: "all, human, vehicle--><detectionTarget>
   </TraversePlaneParam>
   <dwPreTime><!--opt, xs: integer, pre-recording time--></dwPreTime>
   <dwDelayTime><!--opt, xs: integer,post-recording time--></dwDelayTime>
   <PTZPos>
    <P><!--opt, xs: integer--></P>
    <T><!--opt, xs: integer--></T>
    <Z><!--opt, xs: integer--></Z>
   </PTZPos>
   <advancedType><!--opt, xs: string, target sub type: "humanFeature, objectFeature"--></advancedType>
   <advance><!--dep, it is valid when type is "motionDetection"-->
    <HumanFeature>
     <age><!--opt, xs: integer, value range: [0,100]--></age>
     <sex><!--opt, xs: string, gender: "male,female"--></sex>
     <eyeGlass><!--opt, xs: boolean--></eyeGlass>
    </HumanFeature><!--dep, it is valid when advancedType is "humanFeature"-->
    <ObjectFeature>
     <colorRatel><!--opt, xs: integer--></colorRatel>
     <R><!--opt, xs: integer--></R>
     <G><!--opt, xs: integer--></G>
     <B><!--opt, xs: integer--></B>
    </ObjectFeature><!--dep, it is valid when advancedType is "objectFeature"-->
   </advance>
  </TraversePlane>
  <FieldDetection><!--dep, it is valid when type is "FieldDetection"-->
   <normalizedScreenSize>
    <normalizedScreenWidth><!--opt, xs: integer--></normalizedScreenWidth>
    <normalizedScreenHeight><!--opt, xs: integer--></normalizedScreenHeight>
   </normalizedScreenSize>
   <param>
    <region>
     <pointList>
      <point>
       <x><!--opt, xs: integer--></x>
       <y><!--opt, xs: integer--></y>
      </point>
     </pointList>
    </region>
   </param>
   <duration><!--opt, xs: integer, value range: [1,100]--></duration>
    <sensitivity><!--opt, xs: integer, value range: [1,100]--></sensitivity>
    <rate><!--opt, xs: integer, value range: [1,100]--></rate>
    <detectionTarget><!--req, xs: string, detection target type: "all, human, vehicle"--><detectionTarget>
    <dwPreTime><!--opt, xs: integer, pre-recording time--></dwPreTime>
    <dwDelayTime><!--opt, xs: integer, post-recording time--></dwDelayTime>
    <PTZPos>
     <P><!--opt, xs: integer--></P>
     <T><!--opt, xs: integer--></T>
     <Z><!--opt, xs: integer--></Z>
    </PTZPos>
    <advancedType><!--opt, xs: string, target sub type: "humanFeature, objectFeature"--></advancedType>
    <advance><!--dep, it is valid when type is "motionDetection"-->
```

```
    <HumanFeature>
     <age><!--opt, xs: integer, value range: [0,100]--></age>
     <sex><!--opt, xs: string, gender: "male,female"--></sex>
     <eyeGlass><!--opt, xs: boolean--></eyeGlass>
    </HumanFeature><!--dep, it is valid when advancedType is "humanFeature"-->
    <ObjectFeature>
     <colorRatel><!--opt, xs: integer--></colorRatel>
     <R><!--opt, xs: integer--></R>
     <G><!--opt, xs: integer--></G>
     <B><!--opt, xs: integer--></B>
    </ObjectFeature><!--dep, it is valid when advancedType is "objectFeature"-->
   </advance>
   </FieldDetection>
   <FaceDetection><!--dep, it is valid when type is "faceDetection"-->
    <param>
     <region>
      <pointList>
       <point>
        <x/>
        <y/>
       </point>
      </pointList>
     </region>
    </param>
    <duration><!--opt, xs: integer, value range: [1,100]--></duration>
    <sensitivity><!--opt, xs: integer, value range: [1,100]--></sensitivity>
    <rate><!--opt, xs: integer, value range: [1,100]--></rate>
    <detectionTarget><!--req, xs: string, detection target type: "all, human, vehicle"--><detectionTarget>
    <dwPreTime><!--opt, xs: integer, pre-recording time--></dwPreTime>
    <dwDelayTime><!--opt, xs: integer, post-recording time--></dwDelayTime>
    <PTZPos>
     <P><!--opt, xs: integer--></P>
     <T><!--opt, xs: integer--></T>
     <Z><!--opt, xs: integer--></Z>
    </PTZPos>
    <advancedType><!--opt, xs: string, target sub type: "humanFeature, objectFeature"--></advancedType>
    <advance><!--dep, it is valid when type is "motionDetection"-->
     <HumanFeature>
      <age><!--opt, xs: integer, value range: [0,100]--></age>
      <sex><!--opt, xs: string, gender: "male,female"--></sex>
      <eyeGlass><!--opt, xs: boolean--></eyeGlass>
     </HumanFeature><!--dep, it is valid when advancedType is "humanFeature"-->
     <ObjectFeature>
      <colorRatel><!--opt, xs: integer--></colorRatel>
      <R><!--opt, xs: integer--></R>
      <G><!--opt, xs: integer--></G>
      <B><!--opt, xs: integer--></B>
     </ObjectFeature><!--dep, it is valid when advancedType is "objectFeature"-->
    </advance>
   </FaceDetection>
</SmartSearchDescription>
```

16.2.270 XML_SmartSearchResult

SmartSearchResult message in XML format

```
<SmartSearchResult version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <searchID>
  <!--req, xs:string, search ID, which is used to confirm the upper-level platform or system. If the platform or system are same during two times of search, the search history will be recorded in the memory for next fast search-->
 </searchID>
 <responseStatus><!--req, xs: string, "true,false"--></responseStatus>
 <responseStatusStrg><!--req, xs: string, "OK,NO MATCHES,MORE"--></responseStatusStrg>
 <numOfMatches><!--req, xs: integer--></numOfMatches>
 <totalMatches><!--req, xs: integer--></totalMatches>
 <matchList>
  <searchMatchItem><!--list-->
   <id><!--req, xs: integer--></id>
   <timeSpan>
    <startTime><!--req, xs: string, start time of validity period, e.g., 2013-06-10T 12:00:00Z--></startTime>
    <endTime><!--req,xs:string, end time of validity period, e.g., 2013-06-10T 12:00:00Z--></endTime>
   </timeSpan>
  </searchMatchItem>
 </matchList>
</SmartSearchResult>
```

16.2.271 XML_SMARTTestConfig

SMARTTestConfig message in XML format

```
<SMARTTestConfig version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enable opt="true,false"><!--req, xs:string, whether to continue using the HDD when the HDD SMART detection failed--></enable>
</SMARTTestConfig>
```

16.2.272 XML_SMARTTestStatus

SMARTTestStatus message in XML format

```
<SMARTTestStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: string--></id>
 <temprature><!--req, xs: integer, unit: °C--></temprature>
 <powerOnDay><!--req, xs: integer, unit: day--></powerOnDay>
 <selfEvaluaingStatus><!--req, xs: string, "ok, error"--></selfEvaluaingStatus>
 <allEvaluaingStatus><!--req, xs: string, "unctional,badsectors,fault"--></allEvaluaingStatus>
 <selfTestPercent><!--req, xs: integer--></selfTestPercent>
 <selfTestStatus>
  <!--req, xs: string, "ok,aborted,interrupted,failed,unkown,electronic_element_error,servo_error,read_failed,progress,not_tested,not_recognized"-->
```

```
 </selfTestStatus>
 <testType><!--req, xs: string, "short,expanded,conveyance"--></testType>
 <TestResultList><!--req, list, the maximum size is 30 bytes-->
  <TestResult><!--list-->
   <attributeID><!--req, xs: string--></attributeID>
   <attributeName><!--opt, xs: string--></attributeName>
   <status><!--req, xs: string, "ok,illegal"--></status>
   <flags><!--req, xs: integer--></flags>
   <thresholds><!--req, xs: integer--></thresholds>
   <value><!--req, xs: string--></value>
   <worst><!--req, xs: integer--></worst>
   <rawValue><!--req, xs: integer--></rawValue>
  </TestResult>
 </TestResultList>
</SMARTTestStatus>
```

16.2.273 XML_SoftwareService

SoftwareService message in XML format

```
<SoftwareService  version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ThirdStream><!--opt, third stream configuration-->
  <enabled><!--req, xs: boolean, "true,false", whether to enable third stream configuration--></enabled>
 </ThirdStream>
 <PanoramaDisplay><!--opt, display the image range on panorama view-->
  <enabled>
   <!--req, xs: boolean, "true,false", whether to enable image range display on panorama view-->
  </enabled>
 </PanoramaDisplay>
 <MotionDetect>
  <enabled><!--whether to enable motion detetion--></enabled>
 </MotionDetect>
</SoftwareService>
```

16.2.274 XML_SocketIP

SocketIP message in XML format

```
<SocketIP version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ipAddress>
  <!--opt, xs: string-->
 </ipAddress>
 <ipv6Address>
  <!--opt, xs: string-->
 </ipv6Address>
</SocketIP>
```

16.2.275 XML_sourceCapability

sourceCapability message in XML format

```
<sourceCapability version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <videoInputNums><!--req, xs:integer--></videoInputNums>
 <audioInputNums><!--opt, xs:integer--></audioInputNums>
</sourceCapability>
```

16.2.276 XML_sourceDescriptor

sourceDescriptor message in XML format

```
<sourceDescriptor version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <adminProtocol><!--req, xs:string, "HIKVISION,SONY,ISAPI,ONVIF,..."--></adminProtocol>
 <addressingFormatType><!--req,xs:string, opt="ipaddress,hostname"--></addressingFormatType>
 <hostName><!--dep,xs:string, domain name--></hostName>
 <ipAddress><!--dep,xs:string, IP address--></ipAddress>
 <ipv6Address><!--dep,xs:string, IPv6 address--></ipv6Address>
 <managePortNo><!--req,xs:integer, port number--></managePortNo>
 <userName><!--req,xs:string--></userName>
 <password><!--req,wo,xs:string--></password>
</sourceDescriptor>
```

16.2.277 XML_SSH

SSH message in XML format

```
<SSH version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
</SSH>
```

16.2.278 XML_staticRouteList

staticRouteList message in XML format

```
<staticRouteList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <staticRoute><!--opt-->
  <id>
   <!--req, xs: integer, this node must be configured when deleting-->
  </id>
  <enabled><!--req, xs: boolean--></enabled>
  <dstIpAddr><!--req, xs: string--></dstIpAddr>
  <dstNetmask><!--req, xs: string--></dstNetmask>
  <dstGateway><!--req, xs: string--></dstGateway>
  <ifName><!--req, xs: string,    0: G1, 1: G2--></ifName>
```

```
  </staticRoute>
</staticRouteList>
```

16.2.279 XML_StreamingChannel

StreamingChannel message in XML format

```
<StreamingChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id><!--req,xs:string;id--></id>
  <channelName><!--req,xs:string--></channelName>
  <enabled><!--req,xs:boolean--></enabled>
  <Transport><!--req-->
    <maxPacketSize><!--opt, xs: integer--></maxPacketSize>
    <audioPacketLength><!--opt, xs: integer--></audioPacketLength>
    <audioInboundPacketLength><!--opt, xs: integer--></audioInboundPacketLength>
    <audioInboundPortNo><!--opt, xs: integer--></audioInboundPortNo>
    <videoSourcePortNo><!--opt, xs: integer--></videoSourcePortNo>
    <audioSourcePortNo><!--opt, xs: integer--></audioSourcePortNo>
    <ControlProtocolList><!--req, protocol types for streaming-->
      <ControlProtocol><!--req-->
        <streamingTransport>
          <!--req,xs:string,"HTTP,RTSP,SHTTP,SRTP"-->
        </streamingTransport>
      </ControlProtocol>
    </ControlProtocolList>
    <Unicast><!--opt-->
      <enabled><!--req, xs: boolean--></enabled>
      <interfaceID><!--opt, xs: string--></interfaceID>
      <rtpTransportType
        <!--opt, xs: string, "RTP/UDP, RTP/TCP"-->
      </rtpTransportType>
    </Unicast>
    <Multicast><!--opt-->
      <enabled><!--req, xs: boolean--></enabled>
      <userTriggerThreshold><!--opt, xs: integer--></userTriggerThreshold>
      <destIPAddress><!--dep, xs: string--></destIPAddress>
      <videoDestPortNo><!--opt, xs: integer--></videoDestPortNo>
      <audioDestPortNo><!--opt, xs: integer--></audioDestPortNo>
      <destIPv6Address><!--dep, xs: string--></destIPv6Address>
      <ttl><!--opt, xs:integer--></ttl>
      <activeMulticastEnabled>
        <!--opt, xs: boolean, "true,false", whether to enable active multicast, which is mutual exclusion with passive
multicast-->
      </activeMulticastEnabled>
      <packagingFormat><!--opt, xs: string, container format--></packagingFormat>
      <FecInfo><!--opt-->
        <fecRatio>
          <!--req, read-only, xs: integer, extra bandwidth occupation ratio of forward error correction (FEC) data, the value
is between 0 and 100, the default value is 0-->
        </fecRatio>
        <fecDestPortNo>
```

```
      <!--opt, xs: integer, Port No. of FEC multicast, the default port No. is specified by device-->
     </fecDestPortNo>
    </FecInfo>
   </Multicast>
   <Security><!--opt-->
    <enabled><!--req, xs: boolean--></enabled>
    <certificateType><!--req, xs: string, opt="digest,digest/baisc" def="digest"--></certificateType>
   </Security>
   <SRTPMulticast><!--opt-->
    <SRTPVideoDestPortNo><!--opt, xs:integer--></SRTPVideoDestPortNo>
    <SRTPAudioDestPortNo><!--opt, xs:integer--></SRTPAudioDestPortNo>
   </SRTPMulticast>
  </Transport>
  <Video><!--opt-->
   <enabled><!--req,xs:boolean--></enabled>
   <videoInputChannelID>
    <!--req,xs:string;id-->
   </videoInputChannelID>
   <videoCodecType>
    <!--req,xs:string,"MPEG4,MJPEG,3GP,H.264,HK.264,MPNG,SVAC,H.265"-->
   </videoCodecType>
   <videoResolutionWidth>
    <!--req,xs:integer-->
   </videoResolutionWidth>
   <videoResolutionHeight>
    <!--req,xs:integer-->
   </videoResolutionHeight>
   <videoQualityControlType>
    <!--opt,xs:string,"CBR,VBR"-->
   </videoQualityControlType>
   <constantBitRate>
    <!--dep, xs:integer, constant bit rate, unit: kbps-->
   </constantBitRate>
   <vbrUpperCap>
    <!--dep, xs:integer, upper limit of variable bit rate, unit: kbps-->
   </vbrUpperCap>
   <vbrLowerCap>
    <!--dep, xs:integer, lower limit of variable bit rate, unit: kbps-->
   </vbrLowerCap>
   <maxFrameRate>
    <!--req, xs:integer, maximum frame rate, the value is multiplied by 100 to be returned-->
   </maxFrameRate>
   <keyFrameInterval><!--opt, xs:integer, milliseconds--></keyFrameInterval>
   <rotationDegree><!--opt, xs:integer, degrees, 0..360--></rotationDegree>
   <mirrorEnabled><!--opt, xs:boolean--></mirrorEnabled>
   <snapShotImageType><!--opt, xs:string, "JPEG,GIF,PNG"--></snapShotImageType>
   <Mpeg4Profile> <!--dep, xs:string, "SP,ASP"--></Mpeg4Profile>
   <H264Profile><!--dep, xs:string, "Baseline,Main,High, Extended"--></H264Profile>
   <SVACProfile><!--dep, xs:string, "Baseline,Main,High,Extended"--></SVACProfile>
   <GovLength> <!--opt, xs:integer--></GovLength>
   <SVC>
    <enabled><!--req, xs:boolean--></enabled>
```

```
    <SVCMode><!--dep, xs:string, "manual,auto"--></SVCMode>
   </SVC>
   <smoothing><!--opt, xs:integer--></smoothing>
   <SmartCodec><!--dep, -->
    <enabled><!--req, xs:boolean--></enabled>
   </SmartCodec>
   <vbrAverageCap><!--dep, xs:integer, in kbps--></vbrAverageCap>
   <IntelligentInfoDisplayMethod>
    <!--opt, intelligent information displaying method, xs:string, "player,non-player"-->
   </IntelligentInfoDisplayMethod>
  </Video>
  <Audio><!--opt-->
   <enabled><!--req, xs:boolean--></enabled>
   <audioInputChannelID><!--req, xs:string;id--></audioInputChannelID>
   <audioCompressionType>
    <!--req, xs:string,"G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.729b,PCM,MP3,AC3,AAC,ADPCM，MP2L2"-->
   </audioCompressionType>
   <audioInboundCompressionType>
    <!--opt, xs:string,"G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.729b,PCM,MP3,AC3,AAC,ADPCM,MP2L2"-->
   </audioInboundCompressionType>
   <audioBitRate><!--opt, xs:integer, in kbps--></audioBitRate>
   <audioSamplingRate><!--opt, xs:float, in kHz--></audioSamplingRate>
   <audioResolution><!--opt, xs:integer, in bits--></audioResolution>
   <VoiceChanger><!--opt, xs:integer, -12..0..12-->
    <enabled><!--req, xs:boolean--></enabled>
    <level><!--req, xs:integer, "-12..12"--></level>
   </VoiceChanger>
  </Audio>
  <enableCABAC><!--opt, xs: boolean--></enableCABAC>
  <subStreamRecStatus><!--opt, xs: boolean--></subStreamRecStatus>
  <customStreamEnable><!—opt, xs: boolean, whether the stream is custom stream: "true"-yes, this node is not
returned-no--></customStreamEnable>
</StreamingChannel>
```

16.2.280 XML_StreamingChannelList

StreamingChannelList message in XML format

```
<StreamingChannelList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <StreamingChannel/><!--opt, see details in XML_StreamingChannel-->
</StreamingChannelList>
```

See Also

XML_StreamingChannel

16.2.281 XML_StreamingStatus

StreamingStatus message in XML format

```
<StreamingStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <totalStreamingSessions><!--req, xs: integer, number of streaming sessions--></totalStreamingSessions>
 <StreamingSessionStatusList/><!--dep, this node is valid only when the number of sessions is larger than 0, refer to
XML_StreamingSessionStatusList for details-->
</StreamingStatus>
```

See Also

XML_StreamingSessionStatusList

16.2.282 XML_StreamingSessionStatusList

StreamingSessionStatusList message in XML format

```
<StreamingSessionStatusList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <StreamingSessionStatus>
  <clientAddress><!--req-->
   <ipAddress><!--dep, xs: string--></ipAddress>
   <ipv6Address><!--dep, xs: string--></ipv6Address>
  </clientAddress>
 </StreamingSessionStatus>
</StreamingSessionStatusList>
```

16.2.283 XML_SubscribeEvent

SubscribeEvent message in XML format

```
<SubscribeEvent version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema" >
 <heartbeat>
  <!--optional, xs:integer, heartbeat interval, unit: second, the default value is 30s-->
 </heartbeat>
 <eventMode>
  <!--required, xs:string, "all"-upload all alarms/events, "list"-upload specified alarm/event-->
 </eventMode>
 <EventList>
  <Event><!--uploading mode of specified alarm/event, this node exists only when eventMode is "list"-->
   <type>
    <!--required, xs:string, alarm/event types, which are obtained from the capability, refer to Alarm/Event Types for
Subscription for its values-->
   </type>
   <minorAlarm>
    <!--opt, xs:string, minor alarm type: "0x400,0x401,0x402,0x403", see details in Access Control Event Type. This
node is required when type is "AccessControllerEvent"-->
   </minorAlarm>
   <minorException>
    <!--opt, xs:string, minor exception type: "0x400,0x401,0x402,0x403", see details in Access Control Event Type.
This node is required when type is "AccessControllerEvent"-->
   </minorException>
   <minorOperation>
```

```
      <!--opt, xs:string, minor operation type: "0x400,0x401,0x402,0x403", see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
     </minorOperation>
     <minorEvent>
      <!--opt, xs:string, minor event type: "0x01,0x02,0x03,0x04", see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
     </minorEvent>
     <pictureURLType>
      <!--opt, xs:string, alarm picture format: "binary"-binary, "localURL"-device local URL, "cloudStorageURL"-cloud storage URL-->
     </pictureURLType>
    </Event>
  </EventList>
  <channels>
      <!--optional, xs:string, event linked channel information, and multiple channels can be linked, each channel is separated by comma, e.g., "1,2,3,4..."-->
     </channels>
  <channels>
    <!--optional, xs:string, specify channels (each channel is separated by comma, e.g., "1,2,3,4...") to be armed, this node does not exist if you want to arm all channels, and if this node exists, the sub node <channels> in the node <Event> is invalid-->
  </channels>
  <identityKey max="64"/>
  <!--opt, xs: string, interaction command of subscription, supports subscribing comparison results of face picture library (importing with this command), the maximum length is 64-->
</SubscribeEvent>
```

16.2.284 XML_SubscribeEventCap

SubscribeEventCap capability message in XML format

```
<SubscribeEventCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <heartbeat min="" max="" />
    <!--optional, heartbeat time interval, unit: second-->
  <format opt="xml,json"/><!--req, supported message format-->
  <channelMode opt="all,list" />
    <!--required, channel subscription mode: "all"-subscribe events/alarms of all channels, "list"-subscribe events/alarms of specific channels-->
  <eventMode opt="all,list" />
    <!--required, event subscription mode: "all"-subscribe all event types (must be supported), "list"-subscribe specific event types, if "list" is returned, "all" will also be returned-->
    <!--if both the channelMode and eventMode returns "all", it indicates that the device does not support subscribing event/alarm by event type or channel-->
  <EventList><!--required, dependent, upload mode of specified alarms/events, it is valid only when eventMode is "list"-->
    <Event><!--required-->
      <type><!--required, xs:string, refer to Supported Alarm/Event Types for details--></type>
      <minorAlarm opt="0x400,0x401,0x402,0x403">
       <!--opt, xs:string, minor alarm type, see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
      </minorAlarm>
```

```
    <minorException opt="0x400,0x401,0x402,0x403">
     <!--opt, xs:string, minor exception type, see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
    </minorException>
    <minorOperation opt="0x400,0x401,0x402,0x403">
     <!--opt, xs:string, minor operation type, see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
    </minorOperation>
    <minorEvent opt="0x01,0x02,0x03,0x04">
     <!--opt, xs:string, minor event type, see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
    </minorEvent>
    <pictureURLType opt="binary,localURL,cloudStorageURL" def=""/>
    <!--opt, xs:string, alarm picture format: "binary"-binary, "localURL"-device local URL, "cloudStorageURL"-cloud storage URL, and the def is followed by the default format-->
   </Event>
  </EventList>
  <pictureURLType opt="binary,localURL,cloudStorageURL" def=""/>
   <!--opt, xs:string, alarm picture format: "binary"-binary picture, "localURL"-device local URL, "cloudStorageURL"-cloud storage URL. This node is the method of uploading all pictures related to the event. If this node is applied, <pictureURLType> in <Event> is invalid; otherwise, pictures will be uploaded using the default method returned by the device capability. For front-end devices, the default method is uploading binary pictures; for back-end devices, the default method is by device local URL-->
  <ChangedUploadSub><!--message subscription-->
   <interval/><!--opt, xs:integer, lifecycle of arming GUID, the default value is 5 minutes, unit: second. The device will generate new GUID for the arming connection after it is disconnected for the set lifecycle-->
   <StatusSub>
    <all/><!-- opt, xs:boolean, whether to subscribe all events-->
    <channel/><!--opt, xs:boolean, whether to subscribe channel status. This node is not required when <all> is "true"-->
    <hd/><!--opt, xs:boolean, whether to subscribe disk status. This node is not required when <all> is "true"-->
    <capability/><!--opt, xs:boolean, whether to subscribe capability change status. This node is not required when <all> is "true"-->
   </StatusSub>
  </ChangedUploadSub>
  <identityKey max="64"/>
  <!--opt, xs: string, interaction command of subscription, supports subscribing comparison results of face picture library (importing with this command), the maximum length is 64-->
</SubscribeEventCap>
```

16.2.285 XML_SubscribeEventResponse

SubscribeEventResponse message in XML format

```
<SubscribeEventResponse>
  <id><!--req, xs:integer, subscription ID--></id>
  <FailedEventList>
  <!--opt, list of subscription failed events. When subscription failed, it should be returned, and the upper layer can check whether all event/alarm subscriptions are succeeded via the existence of node FailedEventList-->
   <Event>
    <type>
```

```
      <!--req, xs:string, refer to Supported Alarm/Event Types for details-->
     </type>
     <minorAlarm>
      <!--opt, xs:string, minor alarm type: "0x400,0x401,0x402,0x403", see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
     </minorAlarm>
     <minorException>
      <!--opt, xs:string, minor exception type: "0x400,0x401,0x402,0x403", see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
     </minorException>
     <minorOperation>
      <!--opt, xs:string, minor operation type: "0x400,0x401,0x402,0x403", see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
     </minorOperation>
     <minorEvent>
      <!--opt, xs:string, minor event type: "0x01,0x02,0x03,0x04", see details in Access Control Event Type. This node is required when type is "AccessControllerEvent"-->
     </minorEvent>
     <pictureURLType>
      <!--opt,xs:string, opt="binary,localURL,cloudStorageURL", alarm picture transmission mode: "binary"-binary, "localURL"-device local URL, "cloudStorageURL"-cloud storage URL-->
     </pictureURLType>
     <channels>
      <!--opt, xs:string, "1,2,3,4...", event related channel ID, supports multiple channels, and the channel ID is separated by commas-->
     </channels>
     <subStatusCode>
      <!--req, string, subscription failure error code-->
     </subStatusCode>
    </Event>
  </FailedEventList>
</SubscribeEventResponse>
```

16.2.286 XML_SupplementLight

SupplementLight message in XML format

```
<SupplementLight><!--opt-->
 <mode><!--opt, xs: string, adjustment mode of supplement light, opt="schedule,off,on,auto"--></mode>
 <Schedule>
  <TimeRange><!--req-->
   <beginTime><!--req, xs: time, ISO8601 time--></beginTime>
   <endTime><!-- req, xs: time, ISO8601 time--></endTime>
  </TimeRange>
 </Schedule>
 <brightnessLimit>
  <!--dep, xs: integer, brightness of supplement light, which is between 0 and 100; the brightness can be adjust when <mode> is set to "on"-->
 </brightnessLimit>
 <supplementLightMode>
  <!--opt, xs: string, illumination mode: "mixed"-hybrid, "whitelight"-white light, "close"-disabled-->
```

```
  </supplementLightMode>
  <irLightBrightness>
    <!--dep, xs: integer, brightness of IR supplement light, which is between 0 and 100; this node is valid only when <supplementLightMode> is set to "mixed" and <mixedLightBrightnessRegulatMode> is set to "manual"-->
  </irLightBrightness>
  <mixedLightBrightnessRegulatMode>
    <!--dep, xs: string, brightness adjustment mode of hybrid supplement light, opt="manual,auto"; this node is valid only when <supplementLightMode> is set to "mixed"-->
  </mixedLightBrightnessRegulatMode>
  <highIrLightBrightness>
    <!--dep, xs: integer, brightness of far IR light, which is between 0 and 100; this node cannot be configured together with node <irLightBrightness>-->
  </highIrLightBrightness>
  <highWhiteLightBrightness>
    <!--dep, xs: integer, brightness of far white light, which is between 0 and 100; this node cannot be configured together with node <brightnessLimit>-->
  </highWhiteLightBrightness>
  <lowIrLightBrightness>
    <!--dep, xs: integer, brightness of near IR light, which is between 0 and 100; this node cannot be configured together with node <irLightBrightness>-->
  </lowIrLightBrightness>
  <lowWhiteLightBrightness>
    <!--dep, xs: integer, brightness of near white light, which is between 0 and 100; this node cannot be configured together with node <brightnessLimit>-->
  </lowWhiteLightBrightness>
  <whiteLightBrightness><!--dep, xs: integer, white light brightness, which is between 0 and 100--></whiteLightBrightness>
</SupplementLight>
```

16.2.287 XML_SyncSignalOutputList

SyncSignalOutputList message in XML format

```
<SyncSignalOutputList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <SyncSignalOutput>
    <IOWorkMode>
      <!--req, xs:string, IO output mode: "flashLight"-strobe light control mode, "polarizer"-polarizer control mode, "continuousLight"-solid light control mode, "flashLightSwitch"-strobe light switching mode (used to switch between the strobe supplement light mode and IR mode). When this node is set to "polarizer", only <outputStatus>, <detectBrightnessEnable>, <brightnessThreshold>, <flashEnabled>, <startHour>, <startMinute>, <endHour>, and <endMinute> are valid, and the <outputStatus> can only be set to "high" or "low". When this node is set to "continuousLight", only <detectBrightnessEnable>, <brightnessThreshold>, <flashEnabled>, <startHour>, <startMinute>, <endHour>, and <endMinute> are valid-->
    </IOWorkMode>
    <id>
      <!--req, xs:integer, number of IO outputs, which is between 1 and 8-->
    </id>
    <defaultStatus>
      <!--req, xs:string, IO default status: "high, low"-->
    </defaultStatus>
    <outputStatus>
```

```
    <!--req,xs:string, IO effective status: "high, low, pulse"-->
   </outputStatus>
   <aheadTime>
    <!--req, xs:integer, IO pre-output time, unit: microsecond-->
   </aheadTime>
   <timeDelay>
    <!--req, xs:integer, IO effective duration, unit: microsecond-->
   </timeDelay>
   <freqMultiplyulti>
    <!--req, xs:integer, frequency multiplication, which is between 1 and 15-->
   </freqMultiplyulti>
   <dutyRate>
    <!--req, xs:integer, duty ratio, which is between 0 and 40, unit: %-->
   </dutyRate>
   <postFlashEnable>
    <!--req, xs:boolean, checkpoint output: 0-enable, 1-disable-->
   </postFlashEnable>
   <illegalFlashEnable>
    <!--req, xs:boolean, violation output: 0/"true"-enable, 1/"false"-disable-->
   </illegalFlashEnable>
   <videoFlashEnable>
    <!--req, xs:boolean, video output: 0/"true"-enable, 1/"false"-disable-->
   </videoFlashEnable>
   <detectBrightnessEnable>
    <!--req, xs:boolean, whether to enable flash light for automatic brightness detection-->
   </detectBrightnessEnable>
   <brightnessThreshold>
    <!--dep, xs:integer, brightness threshold of the enabled flash light, which is between 0 and 100-->
   </brightnessThreshold>
   <flashEnabled>
    <!--req, xs:boolean, whether to enable flash light-->
   </flashEnabled>
   <startHour>
    <!--dep, xs:integer, start time in hour-->
   </startHour>
   <startMinute>
    <!--dep, xs:integer, start time in minute-->
   </startMinute>
   <endHour>
    <!--dep, xs:integer, end time in hour-->
   </endHour>
   <endMinute>
    <!--dep, xs:integer, end time in minute-->
   </endMinute>
   <plateBrightness>
    <!--req, xs:boolean, whether to enable flash light by license plate brightness: 0-disable, 1-enable. Only one node
among <detectBrightness>, <flashEnabled>, <manualBrightnessEnable> and <plateBrightness> can be enabled-->
   </plateBrightness>
   <incrBrightEnable>
    <!--opt, xs:boolean, whether to enable brightness enhancement mode (for solid light mode)-->
   </incrBrightEnable>
   <incrBrightTime>
```

```
    <!--req, xs:integer, brightness enhancement duration. This node is valid only when <incrBrightEnable> is "true"-->
   </incrBrightTime>
   <incrBrightPercent>
    <!--req, xs:integer, percentage of brightness enhancement, which is between 0 and 100. This node is valid only
when <incrBrightEnable> is "true"-->
   </incrBrightPercent>
   <brightness>
    <!--dep, xs:integer, solid light brightness (for solid light mode), which is between 0 and 100-->
   </brightness>
   <delayCaptureTime>
    <!--dep, xs:integer, delayed capture time, which is between 1 and 1000, unit: millisecond. This node is valid only
when <incrBrightEnable> is "true"-->
   </delayCaptureTime>
   <manualBrightnessEnable>
    <!--req, xs:boolean, whether to enable adjusting brightness manually-->
   </manualBrightnessEnable>
   <manualBrightness>
    <!--dep, xs:integer, brightness adjusted manually, which is between 0 and 100-->
   </manualBrightness>
  </SyncSignalOutput>
</SyncSignalOutputList>
```

16.2.288 XML_TargetEnhancement

TargetEnhancement message in XML format

```
<TargetEnhancement version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req,xs:boolean--></enabled>
</TargetEnhancement>
```

16.2.289 XML_TargetEnhancementCap

TargetEnhancementCap message in XML format

```
<TargetEnhancementCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled opt="true,false"><!--req, xs:boolean--></enabled>
</TargetEnhancementCap>
```

16.2.290 XML_Telnetd

Telnetd message in XML format

```
<Telnetd version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled>
  <!--req, xs:boolean, whether to enable telnet: "true, false"-->
 </enabled>
 <radarMsgEnabled>
```

```
  <!--req, xs:boolean, whether to enable uploading radar debugging information: "true, false"-->
 </radarMsgEnabled>
 <illeagalLoginLock>
  <!--req, xs:boolean, "true, false"-->
 </illeagalLoginLock>
</Telnetd>
```

16.2.291 XML_tempRange

tempRange message in XML format

```
<?xml version="1.0" encoding="utf-8"?>
<TempRange version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mode>
  <!--req, xs:string, temperature range mode: "automatic"-automatic mode, "manual"-manual mode-->
 </mode>
 <temperatureUpperLimit>
  <!--dep, xs:float, maximum temperature, corrects to one decimal, the minimum value is "-20", the maximum value is "550", unit: Celsius degree; its value should be larger than temperatureLowerLimit; it is valid when the value of mode is "manual"-->
 </temperatureUpperLimit>
 <temperatureLowerLimit>
  <!--dep, xs:float, minimum temperature, corrects to one decimal, the minimum value is "-20", the maximum value is "550", unit: Celsius degree; its value should be smaller than temperatureUpperLimit; it is valid when the value of mode is "manual"-->
 </temperatureLowerLimit>
</TempRange>
```

16.2.292 XML_TextOverlay

TextOverlay message in XML format

```
<TextOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string, ID--></id>
 <enabled><!--req, xs:boolean--></enabled>
 <positionX><!--req, xs:float--></positionX>
 <positionY><!--req, xs:float--></positionY>
 <displayText><!--req, xs:string--></displayText>
</TextOverlay>
```

16.2.293 XML_TextOverlayList

TextOverlayList message in XML format

```
<TextOverlayList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <TextOverlay/><!--opt, see details in the message of XML_TextOverlay-->
</TextOverlayList>
```

See Also

XML_TextOverlay

16.2.294 XML_ThermalCap

ThermalCap message in XML format.

```
<ThermalCap version="2.0" xmlns="http://www.std-cgi.org/ver20/XMLSchema">
 <isSupportFireDetection><!--opt, xs:boolean, whether supports fire detection--></isSupportFireDetection>
 <isSupportThermometry><!--opt, xs:boolean, whether supports thermometry--></isSupportThermometry>
 <isSupportRealtimeThermometry><!--opt, xs:boolean, whether supports uploading real-time thermometry data--></
isSupportRealtimeThermometry>
 <isFireFocusZoomSupport><!--opt, xs:boolean, whether supports visible light lens zooming--></
isFireFocusZoomSupport>
 <isSupportManualRanging>
  <!--opt, xs:boolean, this node will be returned if one or more channels of device supports this function, see detailed
channel capability in the response information"-->
 </isSupportManualRanging>
 <isSupportPower><!--opt, xs:boolean, whether supports power on/off capability--></isSupportPower>
 <isSupportRealtimeTempHumi><!--opt, xs:boolean, whether supports real-time detection of temperature and
humidity--></isSupportRealtimeTempHumi>
 <ManualThermCap>
  <manualThermRuleNum>
   <!--opt, xs:integer, the max. number of supported rules for manual thermometry. If this node is not returned, it
indicates manual thermometry is not supported-->
  </manualThermRuleNum>
 </ManualThermCap>
 <isSupportManualThermBasic>
  <!--opt, xs:boolean, whether supports basic configuration of manual thermometry-->
 </isSupportManualThermBasic>
 <isSupportFireShieldMask><!--opt, xs:boolean--></isSupportFireShieldMask>
 <isSupportsmokeShieldMask><!--opt, xs:boolean--></isSupportsmokeShieldMask>
 <isSupportThermometryMode>
  <!--opt, xs:boolean, whether supports the configuration of temperature measurement mode-->
 </isSupportThermometryMode>
 <isSupportThermalPip>
  <!--opt, xs:boolean, whether supports the PIP configuration-->
 </isSupportThermalPip>
 <isSupportThermalIntelRuleDisplay><!--opt, xs:boolean, whether supports VCA rule configuration--></
isSupportThermaIntelRuleDisplay>
 <AlgVersionInfo><!-opt, whether supports getting the version information of thermal algorithms library-->
  <thermometryAlgName min = "1" max = "128">
   <!--ro, xs:string, version information of temperature measurement algorithms library-->
  </thermometryAlgName>
  <shipsAlgName min = "1" max = "128"><!--ro, xs:string, version name of ship detection algorithms library--></
shipsAlgName>
 </AlgVersionInfo>
 <isSupportFaceThermometry><!--opt, xs:boolean, whether supports body thermometry configuration--></
isSupportFaceThermometry>
 <isSupportThermalBlackBody><!--opt, xs:boolean, whether supports black body configuration--></
```

```
isSupportThermalBlackBody>
  <isSupportThermalStreamParam><!--opt, xs:boolean, whether supports stream configuration--></
isSupportThermalStreamParam>
  <isSupportBodyTemperatureCompensation>
    <!--opt, xs:boolean, whether supports temperature compensation configuration-->
  </isSupportBodyTemperatureCompensation>
  <isSupportTemperatureCorrection><!--opt, xs:boolean, whether device supports thermometry correction--></
isSupportTemperatureCorrection>
  <isSupportClickToThermometry><!--opt, xs:boolean, whether device supports clicking for thermometry--></
isSupportClickToThermometry>
  <isSupportThermometryHistorySearch><!--opt, xs:boolean--></isSupportThermometryHistorySearch>
  <isSupportBurningPrevention><!--opt, xs:boolean, whether device supports burning prevention--></
isSupportBurningPrevention>
  <isSupportTemperatureCollection><!--opt, xs:boolean, whether device supports temperature ANR--></
isSupportTemperatureCollection>
  <isSupportJpegPicWithAppendData>
    <!--opt, xs:boolean, whether device supports getting JPEG picture with pixel-to-pixel thermometry data. If supports,
it is returned and values true, if not support, it is not returned-->
  </isSupportJpegPicWithAppendData>
  <isSupportRealTimethermometryForHTTP>
    <!--opt, xs:boolean, whether device supports real-time thermometry. If supports, it is returned and its value is true,
if not support, it is not returned-->
  </isSupportRealTimethermometryForHTTP>
  <isSupportShipsDetectionWithScene>
    <!--opt, xs:boolean, whether device supports ship detection by scene, this node and isSupportShipsDetection in
XML_SmartCap are mutually exclusive-->
  </isSupportShipsDetectionWithScene>
  <isSupportthermometryOffLineCapture>
    <!--opt, xs:boolean, whether device supports offline capture. If supports, this node returned and its value is true; if
not, it is not returned-->
  </isSupportthermometryOffLineCapture>
</ThermalCap>
```

Remarks

When getting thermal product capabilities, **isSupportShipsDetectionWithScene** has a higher priority than **isSupportShipsDetection**. That is, firstly check if the node **isSupportShipsDetectionWithScene** exists and its value is "true", that indicates ship detection according to scene is supported, otherwise, check the if the node **isSupportShipsDetection** exists.

16.2.295 XML_Time

Time message in XML format

```
<Time version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <timeMode><!--req, xs:string, "manual, NTP, local, satellite, timecorrect"--></timeMode>
  <localTime>
    <!--req, xs:datetime, ISO 8601 time format, device time set manually, e.g.: 2018-02-01T19:54:04. This node is
required when <timemode> is "manual" or "local"-->
  </localTime>
  <timeZone>
```

```
   <!-- req, xs:string, POSIX time zone string, device time synchronized with NTP, this node is required when
<timemode> is "manual", "local" or "NTP"-->
  </timeZone>
  <satelliteInterval><!--dep, xs:integer, unit: minute--></satelliteInterval>
</Time>
```

16.2.296 XML_TimeTaskList

TimeTaskList message in XML format

```
<TimeTaskList size="">
  <enabled><!--req, xs: boolean--></enabled>
  <Parktime min="" max=""><!--req, xs:integer, seconds--></Parktime>
  <TimeTaskBlock>
    <dayOfWeek><!--req, xs: integer, day of the week based on ISO8601, "1"-Monday, ...--></dayOfWeek>
    <TimeTaskRange>
      <TaskID min="" max=""><!--req, xs: string; ID--></TaskID>
      <beginTime><!--req, xs: time, ISO8601 time--></beginTime>
      <endTime> <!--req, xs: time, ISO8601 time--></endTime>
      <Task>
        <TaskType
opt="disable,autoscan,framescan,randomscan,panoramascan,patrol,pattern,preset,tiltscan,periodreboot,periodadjust,
auxoutput">
      <!--req, xs: strings-->
    </TaskType>
    <patrolTaskNum min="" max=""><!--dep, xs: integer, from 0 to 8--></patrolTaskNum>
    <patternTaskNum min="" max=""><!--dep, xs: integer, from 0 to 8--></patternTaskNum>
    <presetTaskNum min="" max=""><!--dep, xs: integer, from 0 to 8--></presetTaskNum>
    <auxoutputTaskNum min="" max=""><!--dep, xs: integer, from 0 to 8--></
auxoutputTaskNum>
      </Task>
    </TimeTaskRange>
  </TimeTaskBlock>
  <isSupportTimeTaskCopy><!--req, xs: boolean--></isSupportTimeTaskCopy>
</TimeTaskList>
```

16.2.297 XML_trackDailyParam

trackDailyParam message in XML format

```
<trackDailyParam version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <year><!--req, xs: integer, year--></year>
  <monthOfYear><!--req, xs: integer, month of the year--></monthOfYear>
</trackDailyParam>
```

16.2.298 XML_trackDailyDistribution

trackDailyDistribution message in XML format

```
<trackDailyDistribution version="1.0" xmlns="http://www.isapi.com/ver20/XMLSchema">
 <dayList>
  <day>
   <id><!--req, xs: integer, ID--></id>
   <dayOfMonth><!--req, xs: integer, day of the month, starts from 1st--></dayOfMonth>
   <record><!--req, xs: boolean, true-with video, false-no video--></record>
   <recordType>
    <!--req, xs: string, record type: time-continuous recording; event-record based on event-->
   </recordType>
  </day>
 </dayList>
</trackDailyDistribution>
```

16.2.299 XML_TrackList

TrackList message in XML format

```
<TrackList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <Track/><!--opt, recording schedule list, refer to the message XML_Track for details-->
</TrackList>
```

See Also

XML_Track

16.2.300 XML_Track

Track message in XML format

```
<Track version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: integer--></id>
 <Channel><!--req, xs: integer--></Channel>
 <Enable><!--req, xs: boolean--></Enable>
 <Description><!--req, xs: string--></Description>
 <TrackGUID><!--req, xs: string--></TrackGUID>
 <Size><!--opt, xs: integer--></Size>
 <Duration min="" max=""><!--opt, xs: string--></Duration>
 <DefaultRecordingMode><!--req, xs: string--></DefaultRecordingMode>
 <LoopEnable><!--opt, xs: string--></LoopEnable>
 <SrcDescriptor>
  <SrcGUID><!--req, xs: string--></SrcGUID>
  <SrcChannel><!--req, xs: integer--></SrcChannel>
  <StreamHint><!--req, xs: string--></StreamHint>
  <SrcDriver><!--req, xs: string--></SrcDriver>
```

```
  <SrcType><!--req, xs: string--></SrcType>
  <SrcUrl><!--req, xs: string--></SrcUrl>
  <SrcUrlMethods><!--req, xs: string--></SrcUrlMethods>
  <SrcLogin><!--req, xs: string--></SrcLogin>
 </SrcDescriptor>
 <TrackSchedule>
  <ScheduleBlockList>
   <ScheduleBlock>
    <ScheduleBlockGUID><!--req, xs: string--></ScheduleBlockGUID>
    <ScheduleBlockType><!--req, xs: string--></ScheduleBlockType>
    <ScheduleAction>
     <id><!--req, xs: integer--></id>
     <ScheduleActionStartTime>
      <DayOfWeek><!--req, xs: string--></DayOfWeek>
      <TimeOfDay><!--req, xs: string--></TimeOfDay>
     </ScheduleActionStartTime>
     <ScheduleActionEndTime>
      <DayOfWeek><!--req, xs: string--></DayOfWeek>
      <TimeOfDay><!--req, xs: string--></TimeOfDay>
     </ScheduleActionEndTime>
     <ScheduleDSTEnable><!--req, xs: boolean--></ScheduleDSTEnable>
     <Description><!--req, xs: string--></Description>
     <Actions>
      <Record><!--req, xs: boolean--></Record>
      <Log><!--req, xs: boolean--></Log>
      <SaveImg><!--req, xs: boolean--></SaveImg>
      <ActionRecordingMode><!--req, xs: string--></ActionRecordingMode>
     </Actions>
    </ScheduleAction>
   </ScheduleBlock>
  </ScheduleBlockList>
 </TrackSchedule>
 <CustomExtensionList>
  <CustomExtension>
   <CustomExtensionName><!--req, xs: string--></CustomExtensionName>
   <enableSchedule><!--req, xs: boolean--></enableSchedule>
   <SaveAudio><!--req, xs: boolean--></SaveAudio>
   <PreRecordTimeSeconds><!--req, xs: integer--></PreRecordTimeSeconds>
   <PostRecordTimeSeconds><!--req, xs: integer--></PostRecordTimeSeconds>
   <HolidaySchedule>
    <ScheduleBlock>
     <ScheduleBlockGUID><!--req, xs: string--></ScheduleBlockGUID>
     <ScheduleBlockType><!--req, xs: string--></ScheduleBlockType>
    </ScheduleBlock>
   </HolidaySchedule>
  </CustomExtension>
 </CustomExtensionList>
 <IntelligentRecord><!--opt, xs:boolean, whether to enable VCA recording function: 0-no, 1-yes--></IntelligentRecord>
 <delayTime><!--opt, xs:integer, capture delay time, unit: second--></delayTime>
 <durationEnabled><!--opt, xs:boolean, whether to enable video expiry time. If this function is not supported, this
node will not be returned. If this function is supported, the video expiry date will be set by the node <Duration>--></
```

```
durationEnabled>
</Track>
```

16.2.301 XML_TwoWayAudioChannel

TwoWayAudioChannel message in XML format

```
<TwoWayAudioChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs:string, two-way audio channel ID-->
 </id>
 <enabled>
  <!--req, xs:boolean, whether to enable two-way audio: "true"-yes, "false"-no-->
 </enabled>
 <audioCompressionType>
  <!--req, xs:string, audio output encoding type: "G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.
729b,PCM,MP3,AC3,AAC,ADPCM,MP2L2"-->
 </audioCompressionType>
 <audioInboundCompressionType>
  <!--opt, xs:string, audio input encoding type: "G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.
729b,PCM,MP3,AC3,AAC,ADPCM"-->
 </audioInboundCompressionType>
 <speakerVolume>
  <!--opt, xs:integer, input volume-->
 </speakerVolume>
 <microphoneVolume>
  <!--opt, xs:integer, output volume-->
 </microphoneVolume>
 <noisereduce>
  <!--opt, xs:boolean, whether to enable noise reduction: "true, false"-->
 </noisereduce>
 <audioBitRate>
  <!--opt, xs:integer, audio frame rate, unit: kbs-->
 </audioBitRate>
 <audioInputType>
  <!--opt, xs:string, audio input type: "MicIn, LineIn"-->
 </audioInputType>
 <associateVideoInputs><!--opt-->
  <enabled>
   <!--req, xs:boolean-->
  </enabled>
  <videoInputChannelList>
   <!--req-->
   <videoInputChannelID>
    <!--opt, xs:string, ID-->
   </videoInputChannelID>
  </videoInputChannelList>
 </associateVideoInputs>
 <lineOutForbidden>
  <!--read-only, xs:boolean, whether the audio output is not supported, if this node is not returned or the value is
"false", it represents that audio output is supported; if the value is "true", it represents that audio output is not
```

```
supported-->
  </lineOutForbidden>
  <micInForbidden>
    <!--read-only, xs: boolean, whether the audio input is not supported, if this node is not returned or the value is
"false", it represents that audio input is supported; if the value is "true", it represents that audio input is not
supported-->
  </micInForbidden>
</TwoWayAudioChannel>
```

16.2.302 XML_TwoWayAudioChannelCap

TwoWayAudioChannelCap capability message in XML format

```
<TwoWayAudioChannelCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <id opt="1">
    <!--req, xs:string, two-way audio channel ID-->
  </id>
  <enabled opt="true,false">
    <!--req, xs:boolean, whether to enable two-way audio: "true"-yes, "false"-no-->
  </enabled>
  <audioCompressionType opt="G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.
729b,PCM,MP3,AC3,AAC,ADPCM,MP2L2">
    <!--req, xs:string, audio output encoding type-->
  </audioCompressionType>
  <audioInboundCompressionType opt=" G.711alaw,G.711ulaw,G.726,G.729,G.729a,G.
729b,PCM,MP3,AC3,AAC,ADPCM">
    <!--opt, xs:string, audio input encoding type-->
  </audioInboundCompressionType>
  <speakerVolume opt="0-100">
    <!--opt, xs:integer, input volume, which is between 0 and 100-->
  </speakerVolume>
  <microphoneVolume opt="0-100">
    <!--opt, xs:integer, output volume, which is between 0 and 100-->
  </microphoneVolume>
  <noisereduce opt="true,false">
    <!--opt, xs:boolean, whether to enable noise reduction: "true, false"-->
  </noisereduce>
  <audioBitRate opt="32,64,128">
    <!--opt, xs:integer, audio frame rate, unit: kbs-->
  </audioBitRate>
  <audioInputType opt="MicIn,LineIn">
    <!--opt, xs:string, audio input type-->
  </audioInputType>
  <associateVideoInputs>
    <!--opt-->
    <enabled opt="true,false">
      <!--req, xs:boolean-->
    </enabled>
    <videoInputChannelList>
      <!--req-->
      <videoInputChannelID opt="1">
```

```
      <!--opt, xs:string, ID-->
     </videoInputChannelID>
    </videoInputChannelList>
  </associateVideoInputs>
</TwoWayAudioChannelCap>
```

16.2.303 XML_TwoWayAudioChannelList

TwoWayAudioChannelList message in XML format

```
<TwoWayAudioChannelList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <TwoWayAudioChannel/><!--opt, see details in the message of XML_TwoWayAudioChannel-->
</TwoWayAudioChannelList>
```

See Also

XML_TwoWayAudioChannel

16.2.304 XML_TwoWayAudioSession

TwoWayAudioSession message in XML format

```
<TwoWayAudioSession version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <sessionId><!--req, xs: string, communication session ID--></sessionId>
</TwoWayAudioSession>
```

16.2.305 XML_upgradeStatus

upgradeStatus message in XML format

```
<upgradeStatus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <upgrading><!--ro, req, xs:boolean--></upgrading>
  <percent><!--ro, req, xs:integer, upgrading progress, the value is between 0 and 100--></percent>
</upgradeStatus>
```

16.2.306 XML_UPnP

UPnP message in XML format

```
<UPnP version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <enabled/><!--req-->
  <ports/><!--opt-->
</UPnP>
```

16.2.307 XML_User

User message in XML format

```
<User version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:integer, the value is between 1 and 16, the ID of the administrator account is 1 and the administrator account cannot be deleted--></id>
 <enabled><!--opt, xs:boolean, whether to enable the user: "true"-yes, "false"-no--></enabled>
 <userName><!--req, xs:string, the sensitive information should be encrypted--></userName>
 <password><!--wo, opt, xs:string, the sensitive information should be encrypted--></password>
 <keypadPassword><!--wo, opt, xs:string, keypad password, the sensitive information should be encrypted--></keypadPassword>
 <loginPassword><!--wo, dep, xs:string, this node depends on security in the URL and it is required when security exists. The sensitive information should be encrypted, and the password is the administrator password--></loginPassword>
 <userOperateType><!--opt, xs:integer, user operation type: "1"-network user, "2"-keypad user, "3"-network user and keypad user. When this node is set to 1 or NULL, password is valid, and password is required when the method is POST, otherwise it is optional. When this node is set to 2, keypadPassword is valid, and keypadPassword is required when the method is POST, otherwise it is optional. When this node is set to 3, both password and keypadPassword are valid, and they are required when the method is POST, otherwise they are optional--></userOperateType>
 <bondIpAddressList><!--opt-->
  <bondIpAddress><!--opt-->
   <id><!--req, xs:integer--></id>
   <ipAddress><!--dep, xs:string--></ipAddress>
   <ipv6Address><!--dep, xs:string--></ipv6Address>
  </bondIpAddress>
 </bondIpAddressList>
 <bondMacAddressList><!--opt-->
  <bondMacAddress><!--opt-->
   <id><!--req, xs:integer--></id>
   <macAddress><!--opt, xs:string--></macAddress>
  </bondMacAddress>
 </bondMacAddressList>
 <userLevel><!--opt, xs:string, "Administrator,Operator,Viewer,installer,manufacturer"--></userLevel>
 <attribute><!--opt-->
  <inherent><!--xs:boolean--></inherent>
 </attribute>
</User>
```

16.2.308 XML_userCheck

userCheck message in XML format

```
<userCheck version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <statusValue><!--req, xs:integer, status code: "200"-succeeded, "401"-failed--></statusValue>
 <statusString><!--opt, xs:string, status: "OK", "Unauthorized"--></statusString>
 <isDefaultPassword><!--opt, xs:boolean--></isDefaultPassword>
 <isRiskPassword><!--opt, xs:boolean></isRiskPassword>
 <isActivated><!--opt, xs:boolean></isActivated>
```

```
 <lockStatus><!--opt, xs:string, locking status: "unlock","locked"--></lockStatus>
 <unlockTime><!--opt, xs:integer, unlocking remaining time, unit: second--></ unlockTime>
 <retryLoginTime><!--opt, xs:integer, remaining login attempts--></retryLoginTime>
</userCheck>
```

16.2.309 XML_UserList

UserList message in XML format

```
<UserList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <User/><!--opt, see details in the message of XML_User-->
</UserList>
```

See Also

XML_User

16.2.310 XML_UserPermission

UserPermission message in XML format

```
<UserPermission version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs:string--></id>
 <userID><!--req, xs:string, user ID--></userID>
 <userType>
  <!--req, xs:string, user type: "admin"-administrator, which has all permissions and can review and edit user's
permission, "operator"-operator, which has default permissions, "viewer"-viewer, which has default permissions,
"installer", "manufacturer"-->
 </userType>
 <localPermission/>
  <!--opt, local permission, see details in the message of XML_localPermission -->
 <remotePermission/>
  <!--opt, remote permission, see details in the message of XML_remotePermission -->
</UserPermission>
```

See Also

XML_localPermission
XML_remotePermission

16.2.311 XML_UserPermissionCap

UserPermissionCap capability message in XML format

```
<UserPermissionCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <userType><!--req, xs:string, "admin"-administrator, "operator", "viewer", "installer", "manufacturer"--></userType>
 <localPermissionCap><!--opt, see details in the message of
                        XML_localPermission
```

```
                    --></localPermissionCap>
 <remotePermissionCap><!--opt, see details in the message of
                      XML_remotePermission
                    --></remotePermissionCap>
</UserPermissionCap>
```

16.2.312 XML_UserPermissionList

UserPermissionList message in XML format

```
<UserPermissionList version="2.0" xmlns=" http://www.isapi.org/ver20/XMLSchema">
 <UserPermission/>
  <!--opt, user permission, see details in the message of XML_UserPermission-->
</UserPermissionList>
```

See Also

XML_UserPermission

16.2.313 XML_WDR

WDR message in XML format

```
<WDR version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <mode><!--req, xs: string, WDR mode: "open,close,auto"--></mode>
 <WDRLevel><!--opt, xs: integer--></WDRLevel>
 <WDRContrastLevel><!--opt, xs: integer--></WDRContrastLevel>
 <WDRLevel1><!--opt, xs: integer--></WDRLevel1>
</WDR>
```

16.2.314 XML_WhiteBalance

WhiteBalance message in XML format

```
<WhiteBalance version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <WhiteBalanceStyle/><!--req, xs:string, "auto, manual, indoor, outdoor, autotrace, onece, sodiumlight,
mercurylight,auto0, atuo1, fluorescent, natural, warm, incandescent"-->
 <WhiteBalanceRed/><!--dep,xs:integer, this node depends on <WhiteBalanceStyle>-->
 <WhiteBalanceBlue/><!--dep,xs:integer, this node depends on <WhiteBalanceStyle>-->
</WhiteBalance>
```

Remarks

Setting **WhiteBalanceRed** and **WhiteBalanceBlue** is available only when **WhiteBalanceStyle** is set to "manual".

16.2.315 XML_WirelessServer

WirelessServer message in XML format

```
<WirelessServer version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <wifiApEnabled><!--opt,xs:boolean,"true,false"--></wifiApEnabled>
 <broadcastEnabled><!--opt,xs:boolean,"true,false"--></broadcastEnabled>
 <wlanShareEnabled><!--opt,xs:boolean,"true,false"--></wlanShareEnabled>
 <ssid><!--opt, xs:string--></ssid>
 <WirelessSecurity><!--req-->
  <securityMode>
   <!--opt, xs: string, security mode: "disable,WEP,WPA-personal,WPA2-personal,WPA-RADIUS,WPA-enterprise,WPA2-
enterprise"-->
  </securityMode>
  <WEP><!--dep, depends on <securityMode>-->
   <authenticationType>
    <!--req, xs: string, authentication type: "open,sharedkey,auto"-->
   </authenticationType>
   <defaultTransmitKeyIndex>
    <!--req, xs: integer-->
   </defaultTransmitKeyIndex>
   <wepKeyLength><!--opt, xs: integer, the key length should be 64 and 128--></wepKeyLength>
   <EncryptionKeyList>
    <encryptionKey>
     <!--req, xs: hexBinary, WEP encryption key in hexadecimal format-->
    </encryptionKey>
   </EncryptionKeyList>
  </WEP>
  <WPA><!--dep, depends on <securityMode>-->
   <algorithmType>
    <!--req, xs: string, algorithm type: "TKIP,AES,TKIP/AES"-->
   </algorithmType>
   <sharedKey><!--opt, xs: string, shared key used in WPA--></sharedKey>
   <wpaKeyLength><!-- opt, xs: integer, the key length is between 8 and 63--></wpaKeyLength>
   <defaultPassword><!--opt, xs: boolean--></defaultPassword>
  </WPA>
 </WirelessSecurity>
 <DHCPEnabled><!--opt,xs:boolean,"true,false"--></DHCPEnabled>
 <ipVersion><!--opt, xs:string, opt="v4,v6"--></ipVersion>
 <HostIpAddress><!--opt-->
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 </HostIpAddress>
 <IPMask><!--opt-->
  <subnetMask><!--dep, xs:string, subnet mask for IPv4 address--></subnetMask>
  <bitMask><!--dep, xs:integer, bitmask IPv6 address--></bitMask>
 </IPMask>
 <AddressPool><!--opt-->
  <startIPV4Address><!--dep, xs:string--></startIPV4Address>
  <endIPV4Address><!--dep, xs:string--></endIPV4Address>
  <startIPV6Address><!-- dep, xs:string--></startIPV6Address>
```

```
  <endIPV6Address><!--dep, xs:string--></endIPV6Address>
 <AddressPool>
 <DNSAddressList><!--opt-->
  <DNSAddress><!--opt>
   <id><!--opt,xs:string,start from 1--></id>
   <ipAddress><!--dep, xs:string--></ipAddress>
   <ipv6Address><!--dep, xs:string--></ipv6Address>
  </DNSAddress>
 </DNSAddressList>
 <GatewayAddress>
  <ipAddress><!--dep, xs:string--></ipAddress>
  <ipv6Address><!--dep, xs:string--></ipv6Address>
 <GatewayAddress>
 <wifiApModeType>
  <!--opt, xs: string, current wireless Access Point (AP) mode: "true,false,auto", if this node is returned, it indicates
that the device supports auto mode-->
 </wifiApModeType>
</WirelessServer>
```

Remarks

For Client supports auto AP, the node <<**wifiApModeType**> is valid; for Client does not supports auto AP, the node <**wifiApEnabled**> is valid; the values of these two nodes will effect each other, and when <**wifiApModeType**> equals to "auto", the value of <**wifiApEnabled**> is "true".

16.2.316 XML_WirelessServerStatus

WirelessServerStatus message in XML format

```
<WirelessServerStatus version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <wifiApEnabled>
  <!--dep, xs:boolean-->
 </wifiApEnabled>
 <linkDevices>
  <!--dep, xs:integer, maximum number of linked devices-->
 </linkDevices>
 <DeviceInfoList>
  <!--opt-->
  <DeviceInfo>
   <!--opt-->
   <IpAddress>
    <!--req-->
    <ipAddress>
     <!--dep, xs:string-->
    </ipAddress>
    <ipv6Address>
     <!--dep, xs:string-->
    </ipv6Address>
   </IpAddress>
   <hostName>
    <!--opt, xs:string-->
```

```
    </hostName>
    <macAddress>
     <!--opt, xs:string-->
    </macAddress>
   </DeviceInfo>
  </DeviceInfoList>
</WirelessServerStatus>
```

16.2.317 XML_WirelessStatus

WirelessStatus message in XML format

```
<WirelessStatus version="1.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled>
  <!--dep, xs:boolean-->
 </enabled>
 <connectionEnabled>
  <!--dep, xs:boolean-->
 </connectionEnabled>
 <IpAddress>
  <!--req-->
  <ipAddress>
   <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address>
   <!--dep, xs:string-->
  </ipv6Address>
 </IpAddress>
 <SubnetMask>
  <!--req-->
  <ipAddress>
   <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address>
   <!--dep, xs:string-->
  </ipv6Address>
 </SubnetMask>
 <RouterAddress>
  <!--req-->
  <ipAddress>
   <!--dep, xs:string-->
  </ipAddress>
  <ipv6Address>
   <!--dep, xs:string-->
  </ipv6Address>
 </RouterAddress>
 <DNSAddressList>
  <!--opt-->
  <DNSAddress>
   <!--opt-->
   <id>
```

```
      <!--opt, xs:string, DNS address ID, which starts from 1-->
     </id>
     <ipAddress>
      <!--dep, xs:string-->
     </ipAddress>
     <ipv6Address>
      <!--dep, xs:string-->
     </ipv6Address>
    </DNSAddress>
  </DNSAddressList>
</WirelessStatus>
```

16.2.318 XML_Wireless

Wireless message in XML format

```
<Wireless version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <enabled><!--req, xs:boolean--></enabled>
 <wirelessNetworkMode>
  <!--opt, xs:string, "infrastructure,adhoc"-->
 </wirelessNetworkMode>
 <channel><!--opt, xs:string, "1 to 14,auto"--></channel>
 <ssid><!--opt, xs:string--></ssid>
 <wmmEnabled><!--opt, xs:boolean--></wmmEnabled>
 <WirelessSecurity><!--opt-->
  <securityMode>
   <!--opt, xs:string, "disable,WEP,WPA-personal,WPA2-personal,WPA-RADIUS, WPA-enterprise,WPA2-enterprise"-->
  </securityMode>
  <WEP><!--dep, depends on <securityMode>-->
   <authenticationType>
    <!--req, xs:string, "open,sharedkey,auto"-->
   </authenticationType>
   <defaultTransmitKeyIndex><!--req, xs:integer--></defaultTransmitKeyIndex>
   <wepKeyLength><!--opt, xs:integer "64,128"--></wepKeyLength>
   <EncryptionKeyList>
    <encryptionKey>
     <!--req, xs:hexBinary, WEP encryption key in hexadecimal format-->
    </encryptionKey>
   </EncryptionKeyList>
  </WEP>
  <WPA><!--dep, depends on <securityMode>-->
   <algorithmType><!--req, xs:string, "TKIP,AES,TKIP/AES"--></algorithmType>
   <sharedKey><!--req, xs:string, pre-shared key used in WPA--></sharedKey>
   <wpaKeyLength><!--req, xs: integer, "8-63"--></wpaKeyLength>
  </WPA>
 </WirelessSecurity>
 <workScene><!--opt, xs:string, "computerRoom,monitorTerminal"--></workScene>
 <protocol><!--req,xs:string, "802.11ac"--></protocol>
 <protocolRealTime><!--req,xs:string, real-time mode--></protocolRealTime>
 <hideSsid><!--opt, xs:boolean--></hideSsid>
 <ChannelConfig><!--opt-->
```

```
  <width><!--opt, xs:string, "auto,20,40,80", bandwidth, unit: MHz--></width>
  <autoWidth>
   <!--dep,ro, xs:string, it is valid only when width is "auto"-->
  </autoWidth>
  <channel><!--opt, dep, xs:string, channel frequency, unit: MHz--></channel>
  <autoChannel><!--dep,ro,xs:string, it is valid only when channel is "auto"--></autoChannel>
  <transmitPower> <!--opt, xs:integer, "9,12,15,18,21,24,27", power, unit: dBm--><transmitPower>
  <transmitPowerRealTime> <!--opt, xs:integer, real-time power, unit: dBm--><transmitPowerRealTime>
  <countryID><!--opt,xs:integer，country code--></countryID>
 </ChannelConfig>
</Wireless>
```

16.2.319 XML_VCAResource

VCAResource message in XML format

```
<VCAResource version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <type>
  <!--req, xs:string,
"basicBehavior,fullBehavior,facesnapBehavior,facesnap,TFS,smartVehicleDetection,smartHVTDetection,smart,judicial,smart264AndRoadDetection,smart264AndFaceDetection,smart264AndHeatMap,smartIntelligentMonitor,smartTrafficDataCollection,roadDetection,humanRecognition,perimeterCapture,vehicleDetection,HVTDetection,mixedTargetDetection,trackingCaptureMode,nonTrackingCaptureMode,close,faceHumanModelingContrast,cityManagement,teacherBehavior,12MPLiveView,personQueueDetection,verticalPeopleCounting,safetyHelmet"-->
 </type>
</VCAResource>
```

16.2.320 XML_VideoCap

VideoCap message in XML format

```
<VideoCap version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <videoInputPortNums><!--opt, xs: integer--><videoInputPortNums>
 <videoOutputPortNums><!--opt, xs: integer--><videoOutputPortNums>
 <isSupportHeatmap><!--opt, xs: boolean, whether to support heat map function--></isSupportHeatmap>
 <isSupportCounting><!--opt, xs: boolean--></isSupportCounting>
 <countingType><!--dep, xs: string, "human,object"--></countingType>
 <isSupportPreviewSwitch><!--opt, xs: boolean, whether to support live view switch--></isSupportPreviewSwitch>
 <isSupportRecodStatus>
  <!--opt, xs: boolean, whether supports getting recording status-->
 </isSupportRecodStatus>
 <isSupportPrivacyMask>
  <!--opt, xs: boolean, whether supports priavte mask function-->
 </isSupportPrivacyMask>
 <isSupportBinocularPreviewSwitch>
    <!--opt, xs: boolean, whether supports auto-switch during the live view of dual lens camera-->
 </isSupportBinocularPreviewSwitch>
 <isSupportCalibCheck>
  <!--opt, xs: boolean, whether supports calibration verification-->
```

```
 </isSupportCalibCheck>
 <isSupportPIP><!--opt, xs: boolean, "true, false"--></isSupportPIP>
 <channelFlexible opt ="name,enable,online,linknum">
  <!--capability of getting channel status by condition-->
 </channelFlexible >
 <isSupportFocusVideoMode>
  <!--opt, xs: boolean, video focus mode for installation and debug-->
 </isSupportFocusVideoMode>
 <isSupportExternalChannel>
  <!--opt, xs: boolean, whether supports extending analog channel-->
 </isSupportExternalChannel>
 <isSupportMultiChannelCounting>
  <!--opt, xs: boolean, whether supports people counting of multiple channels-->
 </isSupportMultiChannelCounting>
 <isSupportCountingCollection>
  <!--opt, xs:boolean, whether supports people counting data replenishment-->
 </isSupportCountingCollection>
 <isSupportHeatmapCollection>
  <!--opt, xs:boolean, whether supports heat map data replenishment-->
 </isSupportHeatmapCollection>
 <OSDLanguage opt="GBK,EUC-KR" def="GBK"/>
 <isSupportInitLens><!--req, xs:boolean, whether to support initializing lens--><isSupportInitLens>
 <isSupportOneFocus><!--req, xs:boolean, whether to support one-touch focusing--><isSupportOneFoucs>
 <notSupportFocus><!--req, xs:boolean, the focus capability is not supported--><notSupportFoucs>
 <notSupportIris><!--req, xs:boolean, the iris capability is not supported--><notSupportIris>
 <isSupportCapturePicOverlays><!--opt, xs:boolean, whether to support text overlay on the captured picture--></
isSupportCapturePicOverlays>
 <isSupportMergePicOverlays><!--opt, xs:boolean, whether to support text overlay on the composite picture--></
isSupportMergePicOverlays>
</VideoCap>
```

16.2.321 XML_VideoInput

VideoInput message in XML format

```
<VideoInput version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <VideoInputChannelList/><!--op, see details in the message of XML_VideoInputChannelList-->
</VideoInput>
```

See Also

XML_VideoInputChannelList

16.2.322 XML_VideoInputChannel

VideoInputChannel message in XML format

```
<VideoInputChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id>
  <!--req, xs:string-->
```

```
 </id>
 <inputPort>
  <!--req, xs:string-->
 </inputPort>
 <videoInputEnabled>
  <!--opt, xs:boolean-->
 </videoInputEnabled>
 <name>
  <!--opt, xs:string-->
 </name>
 <videoFormat>
  <!--opt, xs:string, "PAL, NTSC"-->
 </videoFormat>
 <portType>
  <!--opt, xs:string, "SDI, OPT, VGA, HDMI, YPbPr"-->
 </portType>
 <resDesc>
  <!--opt, xs:string-->
 </resDesc>
</VideoInputChannel>
```

16.2.323 XML_VideoInputChannelList

VideoInputChannelList message in XML format

```
<VideoInputChannelList version="2.0"
 xmlns="http://www.isapi.org/ver20/XMLSchema">
  <VideoInputChannel/><!--opt, see details in the message of XML_VideoInputChannel-->
</VideoInputChannelList>
```

See Also

XML_VideoInputChannel

16.2.324 XML_VideoOutput

VideoOutput message in XML format

```
<VideoOutput version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <VideoOutputChannelList/><!--opt, refer to the message XML_VideoOutputChannelList for details-->
</VideoOutput>
```

See Also

XML_VideoOutputChannelList

16.2.325 XML_VideoOutputChannel

VideoOutputChannel message in XML format

```
<VideoOutputChannel version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <id><!--req, xs: string; ID--></id>
 <type><!--req, xs: string, video output type: "VGA,CVBS,HDMI,Spot,SDI"--></type>
 <menu><!--dep, read-only-->
  <mirrorMenu><!--req, xs: boolean--></mirrorMenu>
 </menu>
 <mode><!--opt,xs:string, video output mode: "close,clip,scale,open,SDI_1080P25,
…,HDMI_1080P,HDMI_720P,HDMI_2160P"--></mode>
 <resolution><!--opt, xs: string; video solution: "1920*1080/60HZ,1280*720/50HZ,…"--></resolution>
</VideoOutputChannel>
```

16.2.326 XML_VideoOutputChannelList

VideoOutputChannelList message in XML format

```
<VideoOutputChannelList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <VideoOutputChannel/><!--opt, refer to the message XML_VideoOutputChannel for details-->
</VideoOutputChannelList>
```

See Also

XML_VideoOutputChannel

16.2.327 XML_VideoOverlay

VideoOverlay message in XML format

```
<VideoOverlay version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <normalizedScreenSize><!--req, reference value of the region coordinates, which is 704*576 for PAL and 704*480 for
NTSC-->
  <normalizedScreenWidth><!--ro, req, xs: integer--></normalizedScreenWidth>
  <normalizedScreenHeight><!--ro, req, xs: integer--></normalizedScreenHeight>
 </normalizedScreenSize>
 <attribute><!--opt, OSD properties-->
  <transparent><!--req, xs: boolean--></transparent>
  <flashing><!--req, xs: boolean--><flashing>
 </attribute>
 <TextOverlayList>
  <TextOverlay><!--text overlay parameter-->
   <id><!-- req, xs: string; text ID--></id>
   <enabled><!--req, xs: boolean, whether to enable text overlay--></enabled>
   <positionX><!--req, xs: float, x-coordinate--></positionX>
   <positionY><!-- req, xs: float, y-coordinate--></positionY>
   <displayText><!-- req, xs: string, displayed text contents--></displayText>
```

```
   </TextOverlay>
  </TextOverlayList>
  <DateTimeOverlay>
   <enabled><!--req, xs: boolean, whether to enable date and time overlay--></enabled>
   <positionX><!--req, xs: integer; x-coordinate--></positionX>
   <positionY><!--req, xs: integer; y-coordinate--></positionY>
   <dateStyle>
    <!--opt, xs: string, date display format: YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY, CHR-YYYY-MM-DD, CHR-MM-DD-YYYY, CHR-DD-MM-YYYY, CHR-YYYY/MM/DD, CHR-MM/DD/YYYY, CHR-DD/MM/YYYY-->
   </dateStyle>
   <timeStyle><!--opt, xs: string, time format: 12hour, 24hour--></timeStyle>
   <displayWeek><!--opt, xs: boolean, wehther to display day of the week--></displayWeek>
  </DateTimeOverlay
  <channelNameOverlay>
   <enabled><!--req, xs: boolean, whether to enable channel name overlay--></enabled>
   <positionX><!--req, xs: integer; x-coordinate--></positionX>
   <positionY><!--req, xs: integer; y-coordinate--></positionY>
  </channelNameOverlay>
  <fontSize opt="adaptive,16*16,32*32,48*48,64*64,80*80,96*96,112*112,128*128"><!--opt, xs: string, font size of video OSD: "adaptive,16*16,32*32,48*48,64*64,80*80,96*96,112*112,128*128", unit: pixel. Currently only 16*16 and 32*32 are supported--></fontSize>
  <frontColorMode opt="auto,customize"><!--opt, string, front color mode: "auto,customize"--></frontColorMode>
  <frontColor><!--dep, xs: hexBinary, front color--></frontColor>
  <alignment><!--opt, xs:string, "customize,alignRight,alignLeft"--></alignment>
  <BatteryPowerOverlay/><!--opt-->
  <DeviceStatusDisplay>
   <!--opt, display control of the device status on the video of portable speed dome-->
   <batteryCapacityDisplay>
    <!--opt, xs:boolean, whether to display battery capacity-->
   </batteryCapacityDisplay>
   <chargingStatusDisplay>
    <!--opt, xs:boolean, whether to display charging status-->
   </chargingStatusDisplay>
   <bluetoothStatusDisplay>
    <!--opt, xs:boolean, whether to display bluetooth status-->
   </bluetoothStatusDisplay>
   <dialStatusDisplay>
    <!--opt, xs:boolean, whether to display dial-up status-->
   </dialStatusDisplay>
  </DeviceStatusDisplay>
  <boundary><!--opt, xs:integer--></boundary>
  <alignment><!--opt, xs: string, alignment mode: "customize, alignRight, alignLeft"--></alignment>
  <publicSecurity><!--req, xs: boolean--></publicSecurity>
</VideoOverlay>
```

16.2.328 XML_VideoSourceActivation

XML Message about Parameters of Activating Network Device

```
<?xml version="1.0" encoding="utf-8"?>
<VideoSourceActivation version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
```

```
 <ramerat><!--required, xs:string--></ramerat>
 <passwordType>
  <!--required, xs:string, password types: "default"-NVR password, "selfDefine", "IPCActivatePasswd"-activation
password-->
 </passwordType>
 <password><!--depend, xs:string--></password>
 <ActivationDevice>
  <mode><!--required, xs:string, "channel, descriptor"--></mode>
  <channel><!--depend-->
   <dynVideoInputChannelID><!--required, xs:integer--></dynVideoInputChannelID>
  </channel>
  <descriptor><!--depend-->
   <macAddress><!--required, xs:string--></macAddress>
   <addressingFormatType><!--required, xs:string, "ipaddress, hostname"--></addressingFormatType>
   <ramerat><!--depend, xs:string--></ramerat>
   <ipAddress><!--depend, xs:string--></ipAddress>
   <ipv6Address><!--depend, xs:string--></ipv6Address>
   <portNo><!--required, xs:integer--></portNo>
   <proxyProtocol><!--required, xs:string, "HIKVISION, SONY, ISAPI, ONVIF, ..."--></proxyProtocol>
  </descriptor>
 </ActivationDevice>
</VideoSourceActivation>
```

16.2.329 XML_VideoSourceActivationCapability

XML Message about Capability of Activating Network Device

```
<?xml version="1.0" encoding="utf-8"?>
<VideoSourceActivationCapability version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <ActivateByChannel>
  <proxyProtocol opt="HIKVISION"/>
 </ActivateByChannel>
 <ActivateByAddress>
  <proxyProtocol opt="HIKVISION"/>
 </ActivateByAddress>
</VideoSourceActivationCapability>
```

16.2.330 XML_VideoSourceList

XML Message about Searched Network Devices

```
<VideoSourceList version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
 <VideoSourceDescriptor><!--list-->
  <id><!--req, xs: string;id--></id>
  <proxyProtocol><!--req, xs: string, "HIKVISION, SONY, ISAPI, ONVIF"--></proxyProtocol>
  <addressingFormatType><!--req, xs: string, address type: "ipaddress, hostname"--></addressingFormatType>
  <hostName><!--dep, xs: string--></hostName>
  <ipAddress><!--dep, xs: string--></ipAddress>
  <subnetMask><!--opt, xs: string, subnet mask for IPv4 address--></subnetMask>
```

```
   <ipv6Address><!--dep, xs: string--></ipv6Address>
   <bitMask><!--opt, xs: integer, bitmask IPv6 address--></bitMask>
   <serialNumber><!--opt, xs: string--></serialNumber>
   <macAddress><!--opt, xs: string--></macAddress>
   <firmwareVersion><!--opt, req, xs: string--></firmwareVersion>
   <managePortNo><!--opt, xs: integer--></managePortNo>
   <userName><!--opt, xs: string--></userName>
   <password><!--opt, xs: string--></password>
   <srcInputPortNums><!--req, xs: integer--></srcInputPortNums>
   <deviceID><!--dep, xs: string--></deviceID>
   <deviceModel><!-- opt, xs: string, device model--></deviceModel>
  </VideoSourceDescriptor>
</VideoSourceList>
```

16.2.331 XML_ZoomFocus

ZoomFocus message in XML format

```
<ZoomFocus version="2.0" xmlns="http://www.isapi.org/ver20/XMLSchema">
  <pqrsZoom/><!--opt, xs: integer, zoom coordinates of Sony zoom camera module-->
  <mnstFocus/><!--opt, xs: integer, focus coordinates of Sony zoom camera module-->
</ZoomFocus>
```

Appendix A. Appendixes

A.1 Log Types for ISAPI

There are four major log types, i.e., alarm log, exception log, operation log, and event log. And each major type contains multiple minor types, see details in the following contents.

Alarm Logs

Log Type	Description
shortCircuit	Short Circuit Alarm
brokenCircuit	Open Circuit Alarm
alarmReset	Alarm Reset
alarmNormal	Return to Normal
passwordError	Incorrect Password (3 Tmes in a Row)
idCardIllegally	Invalid Card ID
keyPADRemove	Keypad Tampered
keyPADRemoveRestore	Keypad Restored
devRemove	Device Tampered
devRemoveRestore	Device Restored
belowAlarmLimit1	Sensor Value is Lower than Alarm Limit Value 1
belowAlarmLimit2	Sensor Value is Lower than Alarm Limit Value 2
belowAlarmLimit3	Sensor Value is Lower than Alarm Limit Value 3
belowAlarmLimit4	Sensor Value is Lower than Alarm Limit Value 4
aboveAlarmLimit1	Sensor Value is Higher than Alarm Limit Value 1
aboveAlarmLimit2	Sensor Value is Higher than Alarm Limit Value 2
aboveAlarmLimit3	Sensor Value is Higher than Alarm Limit Value 3
aboveAlarmLimit4	Sensor Value is Higher than Alarm Limit Value 4
UrgencyBtnON	Panic Button Triggered
UrgencyBtnOFF	Panic Button Restored
virtualDefenceBandit	Virtual Zone Burglary Alarm
virtualDefenceFire	Virtual Zone Fire Alarm

Log Type	Description
virtualDefenceUrgent	Virtual Zone Panic Alarm
motDetStart	Motion Detection Alarm Started
motDetStop	Motion Detection Alarm Stopped
hideAlarmStart	Device Blocked
hideAlarmStop	Device Blocking Alarm Restored
UPSAlarm	UPS Alarm
electricityMeterAlarm	Coulombmeter Alarm
switchPowerAlarm	Switch Power Supply Alarm
GasDetectSys	Gas Detection Alarm
transformerTempAlarm	Transformer Temperature Alarm
tempHumiAlarm	Temperature and Humidity Sensor Alarm
UPSAlarmRestore	UPS Alarm Restored
electricityMeterAlarmRestore	Coulombmeter Alarm Restored
switchPowerAlarmRestore	Switch Power Supply Alarm Restored
GasDetectSysRestore	Gas Detection Alarm Restored
transformerTempAlarmRestor e	Transformer Temperature Alarm Restored
tempHumiAlarmRestore	Temperature-Humidity Sensor Alarm Restored
waterLevelSensorAlarm	Temperature-Humidity Sensor Alarm Restored
waterLevelSensorAlarmRestore	Flood Sensor Restored
dustNoiseAlarm	Dust and Noise Sensor Alarm
dustNoiseAlarmRestore	Dust and Noise Sensor Alarm Restored
environmentalLogger	Environmental Data Collector Alarm
environmentalLoggerAlarm	Environmental Data Collector Restored
triggerTemper	Detector Tampered
triggerTemperRestore	Detector Restored
emergencyCallHelp	Panic Alarm
emergencyCallHelpRestore	Panic Alarm Restored
consult	Consultation Alarm

Log Type	Description
consultRestore	Consultation Alarm Restored
deviceMoveAlarm	Device Motion Alarm
deviceMoveAlarmRestore	Device Motion Alarm Restored
earlyWarningAlarm	Early Warning Zone Alarm
earlyWarningAlarmRestore	Early Warning Zone Restored
warningAlarm	Warning Zone Alarm
warningAlarmRestore	Warning Zone Restored
wirelessOutputModTamperEvident	Wireless Output Expander Tampered
wirelessOutputModTamperEvidentReset	Wireless Output Expander tamper Restored
wirelessRepeaterTamperEvident	Wireless Repeater Tampered
wirelessRepeaterTamperEvidentReset	Wireless Repeater tamper Restored
wirelessSirenTamperEvident	Wireless Siren Tampered
wirelessSirenTamperEvidentReset	Wireless Siren Tamper Restored
wirelessKeypadTamperEvident	Wireless Keypad Tampered
wirelessKeypadTamperEvidentReset	Wireless Keypad Tamper Restored
wirelessCardReaderTamperEvident	Wireless Card Reader Tampered
wirelessCardReaderTamperEvidentReset	Wireless Card Reader Tamper Restored
softZoneMedicalAlarm	Virtual Zone Medical Alarm
accessControllerEvent	Access Controller Event
videoIntercomEvent	Video Intercom Event
GJDEvent	GJD Security Control Panel Event
LuminateEvent	LUMINITE Security Control Panel Event
OPTEXEvent	OPTEX Security Control Panel Event
cameraDetectorEvent	Detector Event
securityControlPanelEvent	Security Control Panel Event
RS-485AlarmInputModuleEvident	RS-485 Zone Module Tampered
RS-485AlarmInputModuleTamperReset	RS-485 Zone Module Tampering Reset
RS-485WirelessReceiverTamperEvident	RS-485 Wireless Receiver Module Tampered
RS-485WirelessReceiverTamperEvidentReset	RS-485 Wireless Receiver Module Tampering Reset

Log Type	Description
dredgerDetectionAlarm	Dredger Detection Alarm
crossLineAlarm	Line Crossing Alarm
crossLineAlarmRestore	Line Crossing Alarm Restored
HFPDAlarmStart	High Frequently Appeared Person Alarm Started
HFPDAlarmStop	High Frequently Appeared Person Alarm Stopped
LFPDAlarmStart	Low Frequency Person Alarm Started
LFPDAlarmStop	Low Frequency Person Alarm Stopped

Exception Logs

Log Type	Description
powerOn	Power on
powerOff	Power off
WDTReset	WDT Reset
lowBatteryVoltage	Low Battery Voltage
ACLoss	AC Power Disconnected
ACRestore	AC Power Restored
RTCException	RTC Real-time Clock Exception
netFailure	Network Disconnected
netRestore	Network Connected
telLineBroken	Telephone Line Disconnected
telLineRestore	Telephone Line Connected
expanderBusLoss	Bus Expander Disconnected
expanderBusRestore	Bus Expander Connected
keypadBusLoss	Keypad Expander Disconnected
keypadBusRestore	Keypad Expander Connected
sensorFailure	Analog Sensor Fault
sensorRestore	Analog Sensor Restored
RS485DisConnect	RS-485 Channel Disconnected
RS485Connect	RS-486 Channel Connected

Log Type	Description
batteryVoltageRestore	Battery Voltage Restored
wiredNetAbnormal	Wired Network Exception
wiredNetRestore	Wired Network Restored
GPRSAbnormal	GPRS Exception
GPRSRestore	GPRS Restored
3GAbnormal	3G Network Exception
3GRestore	3G Network Restored
SIMCardAbnormal	SIM Card Exception
SIMCardRestore	SIM Card Restored
VILost	Video Loss
illegalAccess	Illegal Login
HDFull	HDD Full
HDError	HDD Error
DCDLost	MODEM Disconnected
IPConflict	IP Address Conflicted
netbroken	Network Disconnected
recError	Recording Error
VIError	Video Input Exception(Only for Analog Channel)
formatHDDError	Remote HDD Formatting Failed
USBError	USB Communication Error
USBRestore	USB Communication Error Restored
printError	Printer Error
printRestore	Printer Error Restored
subsystemCommunicationError	Sub-board Communication Error
IPCIPconflict	Network Camera IP Address Conflicted
VIMisMatch	Video Standard Mismatches
MCURestart	MCU Restarted
GprsMouleFault	GPRS Module Fault

Log Type	Description
telephoneFault	Telephone Module Fault
wifiAbnormal	Wi-Fi Exception
wifiRestore	Wi-Fi Restored
RFAbornal	RF Exception
RFRestore	RF Restored
detectorOnline	Detector Connected
detectorOffline	Detector Disconnected
detectorBatteryNormal	Detector Battery Restored
detectorBatteryLow	Detector Battery Low
dataTrafficOverflow	Cellular Network Data Exceeded
radarSignalFault	Radar Transmitter Fault
radarSignalFaultRestore	Radar Transmitter Restored
wirelessOutputModOffline	Wireless Output Expander Disconnected
wirelessOutputModOnline	Wireless Output Expander Connected
wirelessRepeaterOffline	Wireless Repeater Disconnected
wirelessRepeaterOnline	Wireless Repeater Connected
triggerOffline	Trigger Disconnected
triggerOnline	Trigger Connected
wirelessSirenOffline	Wireless Siren Disconnected
wirelessSirenOnline	Wireless Siren Connected
sirenLowPower	Siren Battery Low
sirenPowerRecovery	Siren Battery Restored
ipcDisconnect	Network Camera Disconnected
ipcConnectRecovery	Network Camera Connected
sendMailFailed	Sending Email Failed
eventUploadException	Uploading Event Failed or Uploaded Event Lost
keyfobLowPower	Low Keyfob Battery
keyfobPowerRecovery	Normal Keyfob Battery
detectorOvertime	Detector Heartbeat Timed Out

Log Type	Description
detectorOvertimeRecovery	Detector Heartbeat Timeout Restored
wSirenOvertime	Wireless Siren Heartbeat Timed Out
wSirenOvertimeRecovery	Wireless Siren Heartbeat Timeout Restored
wOutputOvertime	Wireless Output Module Heartbeat Timed Out
wOutputOvertimeRecovery	Wireless Output Module Heartbeat Timeout Restored
wRepeaterOvertime	Wireless Repeater Heartbeat Timed Out
wRepeaterOvertimeRecovery	Wireless Repeater Heartbeat Timeout Restored
rfJamming	RF Wireless Communication Blocked
rfJammingRecovery	RF Wireless Communication Blocking Restored
batteryMiss	Storage Battery Loss
batteryMissRecovery	Storage Battery Restored
ARCUploadFailed	ARC Uploading Failed
ARCUploadRecovery	ARC Uploading Restored
wirelessKeypadOffline	Wireless Keypad Disconnected
wirelessKeypadOnline	Wireless Keypad Connected
wirelessCardReaderOffline	Wireless Card Reader Disconnected
wirelessCardReaderOnline	Wireless Card Reader Connected
keypadLowPower	Low Keypad Battery
keypadLowPowerRecovery	Low Keypad Battery Recovered
cardReaderLowPower	Low Card Reader Battery
cardReaderLowPowerRecovery	Low Card Reader Battery Recovered
wKeypadOvertime	Wireless Keypad Heartbeat Timed Out
wKeypadOvertimeRecovery	Wireless Keypad Heartbeat Timeout Recovered
wCardReaderOvertime	Wireless Card Reader Heartbeat Timed Out

Log Type	Description
wCardReaderOvertimeRecovery	Wireless Card Reader Heartbeat Timeout Recovered
RS-485AlarmInputModuleDisconnected	RS-485 Zone Module Offline
RS-485AlarmInputModuleConnected	RS-485 Zone Module Online
RS-485WirelessReceiverDisconnected	RS-485 Wireless Receiver Module Offline
RS-485WirelessReceiverConnected	RS-485 Wireless Receiver Module Online
keypadDisconnected	Keypad Offline
keypadConnected	Keypad Online
overvoltage	High Supply Voltage
undervoltage	Low Supply Voltage
highHDTemperature	HDD High Temperature
lowHDTemperature	HDD Low Temperature
hdImpact	HDD Impact
hdBadBlock	HDD Bad Sector
severeHDFailure	HDD Severe Fault

Operation Logs

Log Type	Description
guard	Normal Arming
unguard	Normal Disarming
bypass	Bypass
duressAccess	Duress
localReboot	Local Reboot
remoteReboot	Remote Reboot

Log Type	Description
localUpgrade	Local Upgrade
remoteUpgrade	Remote Upgrade
recoveryDefultParam	Restore Default Settings
outpulAlarm	Remote Alarm Output Control
accessOpen	Access Control: Open
accessClose	Access Control : Closed
sirenOpen	Siren: On
sirenClose	Siren: Off
modZoneConfig	Zone Settings
modAlarmoutConfig	Alarm Output Settings
modAnalogConfig	Sensor Settings
RS485Config	RS-485 Channel Settings
phoneConfig	Dialing Settings
addAdmin	Added Administrator
modAdminParam	Edited Administrator
delAdmin	Deleted Administrator
addNetUser	Added DVR/NVR Operator
modNetUserParam	Edited DVR/NVR Operator
delNetUser	Deleted DVR/NVR Operator
addOperator	Added Camera Operator
modOperatorPw	Edited Camera Operator Password
delOperator	Deleted Camera Operator Password
addKeyPadUser	Added Keypad/Card Reader User
delKeyPadUser	Deleted Keyboard/Card Reader User
remoteUserLogin	Remote Login
remoteUserLogout	Remote Logout
remoteGuard	Remote Arming
remoteUnguard	Remote Disarming
modHostConfig	Edited Control Panel Settings

Log Type	Description
restoreBypass	Bypass Restored
alarmOutOpen	Turned on Output
alarmOutClose	Turned off Output
modSubsystemParam	Edited Subsystem Parameters
groupBypass	Group Bypass
groupBypassRestore	Group Bypass Restored
modGprsParam	Edited GPRS Parameters
modNetReportParam	Edited Network Report Settings
modReportMode	Edited Uploading Mode
modGatewayParam	Edited Access Control Settings
remoteStartRec	Remote: Started Recording
remoteStopRec	Remote: Stopped Recording
transChanStart	Transparent Transmission Started
transChanStop	Transparent Transmission Stopped
startVoiceTalk	Two-way Audio Started
stopVoiceTalk	Two-way Audio Terminated
remotePlayByFile	Remote: Playback or Downloaded by File
remotePlayByTime	Remote: Playback by Time
remotePTZCtrl	Remote: PTZ Control
remoteLockFile	Remote: Locked File
remoteUnlockFile	Remote: Unlocked File
remoteFormatHd	Remote: Formatted HDD
remoteDownloadCfgFile	Remote: Exported Configuration Files
remoteUploadCfgFile	Remote: Imported Configuration Files
remoteDownloadRecFile	Remote: Exported File
stayArm	Stay Arming
quickArm	Instant Arming
keyswitchArm	Key Zone Arming
keyswitckDisarm	Key Zone Disarming

Log Type	Description
clearAlarm	Alarm Cleared
modFaultConfig	Edited System Fault Settings
modAlarmOutConfig	Edited Event Alarm Output Settings
searchExternalModule	Searched for External Module
registerExternalModule	Re-registered External Module
closeKeypadAlarm	Disabled Keypad Beep
mod3GConfig	Edited Mobile Parameters
modPrintConfig	Edited Printer Parameters
SDCardFormat	Formatted SD Card
upgradeSubsystem	Upgraded Sub-board
planArmConfig	Arming/Disarming Schedule Configuration
phoneArm	SMS Arming
phoneStayArm	SMS Stay Arming
phoneQuickArm	SMS Instant Arming
phoneDisarm	SMS Disarming
phoneClearAlarm	SMS Alarm Cleared
whiteConfig	Whitelist Settings
timeTriggerConfig	Enabled/Disabled Trigger Configuration by Schedule
pictureConfig	Capture Settings
tamperConfig	Zone Tamper-Proof Settings
remoteKeypadUpgrade	Remote: Upgraded Keypad
singlePartionArmORDisarm	Single-Zone Arming/Disarming
cardConfiguration	Card Settings
cardAramORDisarm	Arming/Disarming by Card
expendNetCenterConfig	Extension Network Center Settings
netCardConfig	NIC Settings
DDNSConfig	DDNS Settings
RS485BusConfig	RS-485 Bus Settings

Log Type	Description
RS485BusReRegistration	RS-485 Bus Re-registration
remoteOpenElectricLock	Remote: Unlocked
remoteCloseElectricLock	Remote: Locked
localOpenElectricLock	Local: Unlocked
localCloseElectricLock	Local: Locked
openAlarmLamp	Remote: Turned On Alarm Lamp
closeAlarmLamp	Remote: Turned Off Strobe
temporaryPassword	Operation Record of Temporary Password
oneKeyAwayArm	One-Push Away Arming
oneKeyStayArm	One-Push Stay Arming
singleZoneArm	Single-Zone Arming
singleZoneDisarm	Single-Zone Disarming
HIDDNSConfig	HiDDNS Settings
remoteKeypadUpdata	Remote: Upgraded Keypad
zoneAddDetector	Added Detector
zoneDelDetector	Deleted Detector
qureyDetectorSignal	Checked Detector Signal Strength on Security Control Panel
qureyDetectorBattery	Checked Detector Remaining Battery on Security Control Panel
setDetectorGuard	Detector Arming
setDetectorUnguard	Detector Disarming
setWifiParm	Wi-Fi Settings
voiceOpen	Audio On
voiceClose	Mute
functionKeyEnable	Enabled Function Key
functionKeyDisable	Disabled Panel Function Button
readCard	Swiped Patrol Card
localDeviceActive	Activated Device Remotely
localFactoryDefault	Restored Factory Settings Locally
remoteFactoryDefault	Restored Factory Settings Remotely

Log Type	Description
addWirelessOutputMod	Added Wireless Output Module
delWirelessOutputMod	Deleted Wireless Output Module
addWirelessRepeater	Added Wireless Repeater
delWirelessRepeater	Deleted Wireless Repeater
telListConfig	Mobile Phone Number Settings
searchRFSignal	Checked RF Signal
addWirelessSiren	Added Wireless Siren
delWirelessSiren	Deleted Wireless Siren
flowConfig	Cellular Data Limit Settings
addRemoter	Added Keyfob
delRemoter	Deleted Keyfob
addCard	Added Card
delCard	Deleted Card
remoteAddIpc	Added Network Camera
remoteDelIpc	Deleted Network Camera
remoteSetIpc	Edited Network Camera
localAddressFilterConfig/ remoteAddressFilterConfig	Local/Remote Address Filter Configuration
enterProgramMode	Programming Mode Enabled for Keypad
existProgramMode	Programming Mode Disabled for Keypad
localIOTCfgFileInput	Local operation: import IoT configuration file
localIOTCfgFileOutput	Local operation: export IoT configuration file
remoteIOTCfgFileInput	Remote operation: import IoT configuration file
remoteIOTCfgFileOutput	Remote operation: export IoT configuration file
localIOTAdd	Local operation: add IoT channel
remoteIOTAdd	Remote operation: add IoT channel
localIOTDelete	Local operation: delete IoT channel
remoteIOTDelete	Remote operation: delete IoT channel
localIOTSet	Local operation: configure IoT channel

Log Type	Description
remoteIOTSet	Remote operation: configure IoT channel
armWithFault	Armed with Fault
entryDelay	Entering and Exiting Delay
modArmConfig	Edit Arming Parameters
modCertificateStandard	Edit Authentication Standard
entryPaceTest	Pacing Mode Entered
exitPaceTest	Pacing Mode Exited
addNetOperator	Add Operator
modNetOperator	Edit Operator Information
delNetOperator	Delete Operator
addNetInstaller	Add Installer
modNetInstaller	Edit Installer Information
delNetInstaller	Delete Installer
addManufacturer	Add Manufacturer
modManufacturer	Edit Manufacturer Information
delManufacturer	Delete Manufacturer
upgradeSuccessed	Upgraded
upgradeFailed	Upgrading Failed
zoneDisabled	Zone Shielded
localCfgSecurity	Security Parameter Configured Locally
remoteCfgSecurity	Security Parameter Configured Remotely
remoteGetParaSecurity	Security Parameters Obtained Remotely
delRS-485InputModule	RS-485 Zone Module Deleted
delRS-485OutputModule	RS-485 Output Module Deleted
delRS-485WirelessReceiver	RS-485 Wireless Receiver Module Deleted
enrollRS-485InputModule	RS-485 Zone Module Registered
enrollRS-485OutputModule	RS-485 Output Module Registered

Log Type	Description
delRS-485OutputModule	RS-485 Output Module Deleted
enrollRS-485WirelessReceiver	RS-485 Wireless Receiver Module Registered
enrollKeypad	Keypad Registered
delKeypad	Keypad Deleted
scheduledAngleCalibration	Scheduled Angle Calibration
addZone	Added Zone
modZone	Edited Zone
delZone	Deleted Zone
addAlarmLine	Added Trigger Line
modAlarmLine	Edited Trigger Line
delAlarmLine	Deleted Trigger Line
remoteHFPDconfig/ localHFPDconfig	Remote/Local Configuration of Frequently Appeared Person Detection
remoteLFPDconfig	Remote Configuration of Low Frequency Person Detection

Event Logs

Log Type	Description
SDKSchool	SDK Synchronization
selfTimeSchool	Time Synchronization by Schedule
insertSubsystem	Plugged in Sub-board
pullOutSubsystem	Pulled out Sub-board
autoArm	Auto Arming
autoDisarm	Auto Disarming
triggerOn	Activated Trigger by Schedule
triggerOff	Deactivated Trigger by Schedule
autoArmFailed	Auto Arming Failed
autoDisarmFailed	Auto Disarming Failed
triggerOnFailed	Activating Trigger Failed
triggerOffFailed	Deactivating Trigger Failed

Log Type	Description
mandatoryAlarm	Forced Arming
keyPADlocked	Keypad Locked
keyPADunlocked	Keypad Unlocked
insetUSB	Plugged in USB Flash Drive
pulloutUSB	Removed USB Flash Drive
lateRemind	Late to Disarm
keypadUnlocked	Unlocked Keypad
timeSynchronization	Time Synchronization
armFailed	Arming Failed
ARCStart	ARC Connected

Additional Logs

Log Type	Description
doubleVerificationPass	Double Verification Completed
hdFormatStart	Formatting HDD Started
hdFormatStop	Formatting HDD Stopped

A.2 Supported Alarm/Event Types

This part lists the alarm or event types that can be received or subscribed via Intelligent Security API and the corresponding values to be set for getting the details.

Alarm/Event Type	Value of <type>	Alarm/Event Details
Intrusion Detection	fielddetection	Refer to *Intelligent Security API (Behavior Analysis) _Developer Guide* for details.
Line Crossing Detection	linedetection	
Region Entrance Detection	regionEntrance	
Region Exiting Detection	regionExiting	
Loitering Detection	loitering	
People Gathering Detection	group	

Alarm/Event Type	Value of <type>	Alarm/Event Details
Fast Moving Detection	rapidMove	
Parking Detection	parking	
Unattended Baggage Detection	unattendedBaggage	
Object Removal Detection	attendedBaggage	
Absence Alarm	leavePosition	
People Number Changed Alarm	peopleNumChange	
Fast Moving Alarm	running	
Violent Motion Alarm	violentMotion	
People Falling Down Alarm	failDown	
Overstay Alarm	retention	
People Counting Alarm	PeopleCounting	Refer to *Intelligent Security API (People Counting) _ Developer Guide* for details
Temperature Alarm	thermometry	Refer to *Intelligent Security API (Thermal) _ Developer Guide* for details
Temperature Difference Alarm	temperature	
Fire Source Detection	fireDetection	
Smoke Detection	smokeDetection	
Fire and Smoke Detection	smokeAndFireDetection	
Ship Detection	shipsDetection	
Face Detection Alarm	facedetection	Refer to *Intelligent Security API (Facial) _Developer Guide* for details.
Face Capture Alarm	faceCapture	
Face Picture Comparison Result	alarmResult	
Stranger Detection Alarm	whiteFaceContrast	
High Frequently Person Detection	HFPD	

Alarm/Event Type	Value of <type>	Alarm/Event Details
Low Frequency Person Detection	LFPD	
Waiting Time Detection Alarm	personQueueTime	Refer to *Intelligent Security API (Queue Management) _Developer Guide* for details
People Queuing-Up Alarm	personQueueCounting	
Multi-Target-Type Detection Alarm	mixedTargetDetection	Refer to *Intelligent Security API (Multi-Target-Type Detection) _Developer Guide* for details
Traffic Incident Alarm	AID	Refer to *Intelligent Security API (Traffic Enforcement) _Developer Guide* for details
Traffic Violation Enforcement Alarm	TFS	
Traffic Data Collection Alarm	TPS	
ANPR Alarm	ANPR	Refer to *Intelligent Security API (Traffic Capture and Analysis) _Developer Guide* for details
Blacklist and Whitelist ANPR Alarm	vehicleMatchResult	
Vehicle Feature Recognition Alarm	vehicleRcogResult	
Radar Measurement Data	radarMeasurement	
Heat Map Alarm	heatmap	Refer to *Intelligent Security API (Heat Map) _ Developer Guide* for details
Face and ID Card Recognition Alarm	cardMatch	Refer to *Intelligent Security API (Access Control on Person) _Developer Guide* for details
Hot Spare Exception Alarm	hotSpare	The alarm or event details will be provided in the further versions.
Overspeed Alarm	overSpeed	The alarm or event details will be provided in the further versions.
Temperature Too Hight Alarm	highTempAlarm	The alarm or event details will be provided in the further versions.
Acceleration Exception Alarm	abnormalAcceleration	The alarm or event details will be provided in the further versions.

Alarm/Event Type	Value of <type>	Alarm/Event Details
Collision Alarm	collision	The alarm or event details will be provided in the further versions.
Rollover Detection	rollover	The alarm or event details will be provided in the further versions.
Abnormal Driving Behavior Detection	abnormalDriving	The alarm or event details will be provided in the further versions.
GPS Information Uploaded	GPSUpload	The alarm or event details will be provided in the further versions.
Video Standard Mismatched	PALMismatch	The alarm or event details will be provided in the further versions.
Sensor Alarm	IO	The alarm or event details will be provided in the further versions.
Motion Detection Alarm	VMD	The alarm or event details will be provided in the further versions.
Video Loss Alarm	videoloss	The alarm or event details will be provided in the further versions.
Tampering Alarm	shelteralarm	The alarm or event details will be provided in the further versions.
Defocus Alarm	defocus	The alarm or event details will be provided in the further versions.
Audio Exception Alarm	audioexception	The alarm or event details will be provided in the further versions.
Scene Changed Alarm	scenechangedetection	The alarm or event details will be provided in the further versions.
PIR Alarm	PIR	The alarm or event details will be provided in the further versions.
HDD Full	diskfull	The alarm or event details will be provided in the further versions.
HDD Error	diskerror	The alarm or event details will be provided in the further versions.
Network Disconnected	nicbroken	The alarm or event details will be provided in the further versions.
IP Address Conflicted	ipconflict	The alarm or event details will be provided in the further versions.

Alarm/Event Type	Value of <type>	Alarm/Event Details
Illegal Login Alarm	illaccess	The alarm or event details will be provided in the further versions.
PoE Power Exception Alarm	poe	The alarm or event details will be provided in the further versions.
Video Exception Alarm	videoException	The alarm or event details will be provided in the further versions.
Recording Exception Alarm	recordException	The alarm or event details will be provided in the further versions.
HDD Unformatted Alarm	diskUnformat	The alarm or event details will be provided in the further versions.
Supply Voltage Exception Alarm	voltageinstable	Refer to ***JSON_EventNotificationAlert_voltageinstable*** for alarm/event details
HDD High Temperature	highHDTemperature	Refer to ***JSON_EventNotificationAlert_HDDHighTemperatureEventMsg*** for alarm/event details
HDD Low Temperature	lowHDTemperature	Refer to ***JSON_EventNotificationAlert_HDDLowTemperatureEventMsg*** for alarm/event details
HDD Impact	hdImpact	Refer to ***JSON_EventNotificationAlert_HDDImpactEventMsg*** for alarm/event details
HDD Bad Sector	hdBadBlock	Refer to ***JSON_EventNotificationAlert_HDDBadSectorEventMsg*** for alarm/event details
HDD Severe Fault	severeHDFailure	Refer to ***JSON_EventNotificationAlert_HDDSevereFaultEventMsg*** for alarm/event details
Certificate Expiry Alarm	certificateRevocation	Refer to ***JSON_EventNotificationAlert_CertificateExpiryAlarmMsg*** for alarm/event details

A.3 Error Codes in ResponseStatus

The error classification returned by the ResponseStatus message is based on the status codes of HTTP protocol. 7 kinds of status codes are predefined, including 1 (OK), 2 (Device Busy), 3 (Device Error), 4 (Invalid Operation), 5 (Invalid Message Format), 6 (Invalid Message Content), and 7 (Reboot Required). Each kind of status code contains multiple sub status codes, and the error codes are in a one-to-one correspondence with the sub status codes.

StatusCode=1

SubStatusCode	Error Code	Description
ok	0x1	Operation completed.
riskPassword	0x10000002	Risky password.
armProcess	0x10000005	Arming process.

StatusCode=2

Sub Status Code	Error Code	Description
noMemory	0x20000001	Insufficient memory.
serviceUnavailable	0x20000002	The service is not available.
upgrading	0x20000003	Upgrading.
deviceBusy	0x20000004	The device is busy or no response.
reConnectIpc	0x20000005	The video server is reconnected.
transferUpgradePackageFailed	0x20000006	Transmitting device upgrade data failed.
startUpgradeFailed	0x20000007	Starting upgrading device failed.
getUpgradeProcessfailed.	0x20000008	Getting upgrade status failed.
certificateExist	0x2000000B	The Authentication certificate already exists.

StatusCode=3

Sub Status Code	Error Code	Description
deviceError	0x30000001	Hardware error.
badFlash	0x30000002	Flash operation error.
28181Uninitialized	0x30000003	The 28181 configuration is not initialized.
socketConnectError	0x30000005	Connecting to socket failed.
receiveError	0x30000007	Receive response message failed.
deletePictureError	0x3000000A	Deleting picture failed.
pictureSizeExceedLimit	0x3000000C	Too large picture size.
clearCacheError	0x3000000D	Clearing cache failed.
updateDatabasError	0x3000000F	Updating database failed.
searchDatabaseError	0x30000010	Searching in the database failed.
writeDatabaseError	0x30000011	Writing to database failed.
deleteDatabaseError	0x30000012	Deleting database element failed.
searchDatabaseElementError	0x30000013	Getting number of database elements failed.
cloudAutoUpgradeException	0x30000016	Downloading upgrade packet from cloud and upgrading failed.
HBPException	0x30001000	HBP exception.
UDEPException	0x30001001	UDEP exception
elasticSearchException	0x30001002	Elastic exception.
kafkaException	0x30001003	Kafka exception.
HBaseException	0x30001004	Hbase exception.
sparkException	0x30001005	Spark exception.
yarnException	0x30001006	Yarn exception.
cacheException	0x30001007	Cache exception.

Sub Status Code	Error Code	Description
trafficException	0x30001008	Monitoring point big data server exception.
faceException	0x30001009	Human face big data server exception.
SSDFileSystemIsError	0x30001013	SSD file system error (Error occurs when it is non-Ext4 file system)
insufficientSSDCapacityForFPD	0x30001014	Insufficient SSD space for person frequency detection
wifiException	0x3000100A	Wi-Fi big data server exception.
structException	0x3000100D	Video parameters structure server exception.
captureTimeout	0x30006000	Data collection timed out.
lowScore	0x30006001	Low quality of collected data.

StatusCode=4

Sub Status Code	Error Code	Description
notSupport	0x40000001	Not supported.
lowPrivilege	0x40000002	No permission.
badAuthorization	0x40000003	Authentication failed.
methodNotAllowed	0x40000004	Invalid HTTP method.
notSetHdiskRedund	0x40000005	Setting spare HDD failed.
invalidOperation	0x40000006	Invalid operation.
hdFormatFail	\	Formatting HDD failed.
notActivated	0x40000007	Inactivated.
hasActivated	0x40000008	Activated.
certificateAlreadyExist	0x40000009	The certificate already exists.
fileError	0x4000000F	Upgrading file error.
USBNotExist	0x40000010	USB device is not connected.
upgradePackageMoreth han2GB	0x40001000	Up to 2GB upgrade package is allowed to be uploaded.

Sub Status Code	Error Code	Description
IDNotexist	0x40001001	The ID does not exist.
synchronizationError	0x40001003	Synchronization failed.
synchronizing	0x40001004	Synchronizing.
importError	0x40001005	Importing failed.
importing	0x40001006	Importing.
fileAlreadyExists	0x40001007	The file already exists.
invalidID	0x40001008	Invalid ID.
backupnodeNotAlloweLog	0x40001009	Accessing to backup node is not allowed.
exportingError	0x4000100A	Exporting failed.
exporting	0x4000100B	Exporting.
exportEnded	0x4000100C	Exporting stopped.
exported	0x4000100D	Exported.
IPOccupied	0x4000100E	The IP address is already occupied.
IDAlreadyExists	0x4000100F	The ID already exists.
exportItemsExceedLimit	0x40001010	No more items can be exported.
noFiles	0x40001011	The file does not exist.
beingExportedByAnotherUser	0x40001012	Being exported by others.
needReAuthentication	0x40001013	Authentication is needed after upgrade.
unitAddNotOnline	0x40001015	The added data analysis server is offline.
unitControl	0x40001016	The data analysis server is already added.
analysis unitFull	0x40001017	No more data analysis server can be added.
unitIDError	0x40001018	The data analysis server ID does not exist.
unitExit	0x40001019	The data analysis server already exists in the list.
unitSearch	0x4000101A	Searching data analysis server in the list failed.
unitNotOnline	0x4000101B	The data analysis server is offline.
unitInfoEror	0x4000101C	Getting data analysis server information failed.

Sub Status Code	Error Code	Description
unitGetNodeInfoError	0x4000101D	Getting node information failed.
unitGetNetworkInfoError	0x4000101E	Getting the network information of data analysis server failed
unitSetNetworkInfoError	0x4000101F	Setting the network information of data analysis server failed
setSmartNodeInfoError	0x40001020	Setting node information failed.
setUnitNetworkInfoError	0x40001021	Setting data analysis server network information failed.
unitRestartCloseError	0x40001022	Rebooting or shutting down data analysis server failed.
virtualIPnotAllowed	0x40001023	Adding virtual IP address is not allowed.
unitInstalled	0x40001024	The data analysis server is already installed.
badSubnetMask	0x40001025	Invalid subnet mask.
uintVersionMismatched	0x40001026	Data analysis server version mismatches.
deviceMOdelMismatched	0x40001027	Adding failed. Device model mismatches.
unitAddNotSelf	0x40001028	Adding peripherals is not allowed.
noValidUnit	0x40001029	No valid data analysis server.
unitNameDuplicate	0x4000102A	Duplicated data analysis server name.
deleteUnitFirst	0x4000102B	Delete the added data analysis server of the node first.
getLocalInfoFailed	0x4000102C	Getting the server information failed.
getClientAddedNodeFailed	0x4000102D	Getting the added node information of data analysis server failed.
taskExit	0x4000102E	The task already exists.
taskInitError	0x4000102F	Initializing task failed.
taskSubmitError	0x40001030	Submiting task failed.
taskDelError	0x40001031	Deleting task failed.
taskPauseError	0x40001032	Pausing task failed.
taskContinueError	0x40001033	Starting task failed.

Sub Status Code	Error Code	Description
taskSeverNoCfg	0x40001035	Full-text search server is not configured.
taskPicSeverNoCfg	0x40001036	The picture server is not configured.
taskStreamError	0x40001037	Streaming information exception.
taskRecSDK	0x40001038	History recording is not supported.
taskCasaError	0x4000103A	Cascading is not supported.
taskVCARuleError	0x4000103B	Invalid VCA rule.
taskNoRun	0x4000103C	The task is not executed.
unitLinksNoStorageNode	0x4000103D	No node is linked with the data analysis server. Configure the node first.
searchFailed	0x4000103E	Searching video files failed.
searchNull	0x4000103F	No video clip.
userScheOffline	0x40001040	The task scheduler service is offline.
updateTypeUnmatched	0x40001041	The upgrade package type mismatches.
userExist	0x40001043	The user already exists.
userCannotDelAdmin	0x40001044	The administrator cannot be deleted.
userInexistence	0x40001045	The user name does not exist.
userCannotCreatAdmin	0x40001046	The administrator cannot be created.
monitorCamExceed	0x40001048	Up to 3000 cameras can be added.
monitorCunitOverLimit	0x40001049	Adding failed. Up to 5 lower-levels are supported by the control center.
monitorReginOverLimit	0x4000104A	Adding failed. Up to 5 lower-levels are supported by the area.
monitorArming	0x4000104B	The camera is already armed. Disarm the camera and try again.
monitorSyncCfgNotSet	0x4000104C	The system parameters are not configured.
monitorFdSyncing	0x4000104E	Synchronizing. Try again after completing the synchronization.
monitorParseFailed	0x4000104F	Parsing camera information failed.

Sub Status Code	Error Code	Description
monitorCreatRootFailed	0x40001050	Creating resource node failed.
deleteArmingInfo	0x40001051	The camera is already . Disarm the camera and try again.
cannotModify	0x40001052	Editing is not allowed. Select again.
cannotDel	0x40001053	Deletion is not allowed. Select again.
deviceExist	0x40001054	The device already exists.
IPErrorConnectFailed	0x40001056	Connection failed. Check the network port.
cannotAdd	0x40001057	Only the capture cameras can be added.
serverExist	0x40001058	The server already exists.
fullTextParamError	0x40001059	Incorrect full-text search parameters.
storParamError	0x4000105A	Incorrect storage server parameters.
picServerFull	0x4000105B	The storage space of picture storage server is full.
NTPUnconnect	0x4000105C	Connecting to NTP server failed. Check the parameters.
storSerConnectFailed	0x4000105D	Connecting to storage server failed. Check the network port.
storSerLoginFailed	0x4000105E	Logging in to storage server failed. Check the user name and password.
searchSerConnectFailed	0x4000105F	Connecting to full-text search server failed. Check the network port.
searchSerLoginFailed	0x40001060	Logging in to full-text search server failed. Check the user name and password.
kafkaConnectFailed	0x40001061	Connecting to Kafka failed. Check the network port.
mgmtConnectFailed	0x40001062	Connecting to system failed. Check the network port.
mgmtLoginFailed	0x40001063	Logging in to system failed. Check the user name and password.
TDAConnectFailed	0x40001064	Connecting to traffic data access server failed. Checking the server status.

Sub Status Code	Error Code	Description
86sdkConnectFailed	0x40001065	Connecting to listening port of iVMS-8600 System failed. Check the parameters.
nameExist	0x40001066	Duplicated server name.
batchProcessFailed	0x40001067	Processing in batch failed.
IDNotExist	0x40001068	The server ID does not exist.
serviceNumberReachesLimit	0x40001069	No more service can be added.
invalidServiceType.	0x4000106A	Invalid service type.
clusterGetInfo	0x4000106B	Getting cluster group information failed.
clusterDelNode	0x4000106C	Deletion node failed.
clusterAddNode	0x4000106D	Adding node failed.
clusterInstalling	0x4000106E	Creating cluster…Do not operate.
clusterUninstall	0x4000106F	Reseting cluster…Do not operate.
clusterInstall	0x40001070	Creating cluster failed.
clusterIpError	0x40001071	Invalid IP address of task scheduler server.
clusterNotSameSeg	0x40001072	The master node and slave node must be in the same network segment.
clusterVirIpError	0x40001073	Automatically getting virtual IP address failed. Enter manually.
clusterNodeUnadd	0x40001074	The specified master(slave) node is not added.
clusterNodeOffline	0x40001075	The task scheduler server is offline.
nodeNotCurrentIP	0x40001076	The analysis node of the current IP address is required when adding master and slave nodes.
addNodeNetFailed	0x40001077	Adding node failed. The network disconnected.
needTwoMgmtNode	0x40001078	Two management nodes are required when adding master and slave nodes.
ipConflict	0x40001079	The virtual IP address and data analysis server's IP address conflicted.
ipUsed	0x4000107A	The virtual IP address has been occupied.
cloudAlalyseOnline	0x4000107B	The cloud analytic server is online.

Sub Status Code	Error Code	Description
virIP&mainIPnotSameNetSegment	0x4000107C	The virtual IP address is not in the same network segment with the IP address of master/slave node.
getNodeDispatchInfoFailed	0x4000107D	Getting node scheduler information failed.
unableModifyManagementNetworkIP	0x4000107E	Editing management network interface failed. The analysis board is in the cluster.
notSpecifyVirtualIP	0x4000107F	Virtual IP address should be specified for master and slave cluster.
armingFull	0x40001080	No more device can be armed.
armingNoFind	0x40001081	The arming information does not exist.
disArming	0x40001082	Disarming failed.
getArmingError	0x40001084	Getting arming information failed.
refreshArmingError	0x40001085	Refreshing arming information failed.
ArmingPlateSame	0x40001086	The license plate number is repeatedly armed.
ArmingParseXLSError	0x40001087	Parsing arming information file failed.
ArmingTimeError	0x40001088	Invalid arming time period.
ArmingSearchTimeError	0x40001089	Invalid search time period.
armingRelationshipReachesLimit	0x4000108A	No more relation can be created.
duplicateAarmingName	0x4000108B	The relation name already exists.
noMoreArmingListAdded	0x4000108C	No more blacklist library can be armed.
noMoreCamerasAdded	0x4000108D	No more camera can be armed.
noMoreArmingListAddedWithCamera	0x4000108E	No more library can be linked to the camera.
noMoreArmingPeriodAdded	0x4000108F	No more time period can be added to the arming schedule.
armingPeriodsOverlapped	0x40001090	The time periods in the arming schedule are overlapped.

Sub Status Code	Error Code	Description
noArmingAlarmInfo	0x40001091	The alarm information does not exist.
armingAlarmUnRead	0x40001092	Getting number of unread alarms failed.
getArmingAlarmError	0x40001093	Getting alarm information failed.
searchByPictureTimedOut	0x40001094	Searching picture by picture timeout. Search again.
comparisonTimeRangeError	0x40001095	Comparison time period error.
selectMonitorNumberUpperLimit	0x40001096	No more monitoring point ID can be filtered.
noMoreComparisonTasksAdded	0x40001097	No more comparison task can be executed at the same time.
GetComparisonResultFailed	0x40001098	Getting comparison result failed.
comparisonTypeError	0x40001099	Comparison type error.
comparisonUnfinished	0x4000109A	The comparison is not completed.
facePictureModelInvalid	0x4000109B	Invalid face model.
duplicateLibraryName.	0x4000109C	The library name already exists.
noRecord	0x4000109D	No record found.
countingRecordsFailed.	0x4000109E	Calculate the number of records failed.
getHumanFaceFrameFailed	0x4000109F	Getting face thumbnail from the picture failed.
modelingFailed.	0x400010A0	Modeling face according to picture URL failed.
1V1FacePictureComparisonFailed	0x400010A1	Comparison 1 VS 1 face picture failed.
libraryArmed	0x400010A2	The blacklist library is armed.
licenseExeedLimit	0x400010A3	Dongle limited.
licenseExpired	0x400010A4	Dongle expired.
licenseDisabled	0x400010A5	Unavailable dongle.
licenseNotExist	0x400010A6	The dongle does not exist.
SessionExpired	0x400010A7	Session expired .

Sub Status Code	Error Code	Description
beyondConcurrentLimit	0x400010A8	Out of concurrent limit.
stopSync	0x400010A9	Synchronization stopped.
getProgressFaild	0x400010AA	Getting progress failed.
uploadExtraCaps	0x400010AB	No more files can be uploaded.
timeRangeError	0x400010AC	Time period error.
dataPortNotConnected	0x400010AD	The data port is not connected.
addClusterNodeFailed	0x400010AE	Adding to the cluster failed. The device is already added to other cluster.
taskNotExist	0x400010AF	The task does not exist.
taskQueryFailed	0x400010B0	Searching task failed.
modifyTimeRuleFailed	0x400010B2	The task already exists. Editing time rule is not allowed.
modifySmartRuleFailed	0x400010B3	The task already exists. Editing VAC rule is not allowed.
queryHistoryVideoFaile d	0x400010B4	Searching history video failed.
addDeviceFailed	0x400010B5	Adding device failed.
addVideoFailed	0x400010B6	Adding video files failed.
deleteAllVideoFailed	0x400010B7	Deleting all video files failed.
createVideoIndexFailed	0x400010B8	Indexing video files failed.
videoCheckTypeFailed	0x400010B9	Verifying video files types failed.
configStructuredAddressFailed	0x400010BA	Configuring IP address of structured server failed.
configPictureServerAddressFailed	0x400010BB	Configuring IP address of picture storaged server failed.
storageServiceIPNotExist	0x400010BD	The storage server IP address does not exist.
syncBackupDatabaseFailed	0x400010BE	Synchronizing slave database failed. Try again.
syncBackupNTPTimeFailed	0x400010BF	Synchronizing NTP time of slave server failed.

Sub Status Code	Error Code	Description
clusterNotSelectLoopbackAddress	0x400010C0	Loopbacl address is not supported by the master or slave cluster.
addFaceRecordFailed	0x400010C1	Adding face record failed.
deleteFaceRecordFailed	0x400010C2	Deleting face record failed.
modifyFaceRecordFailed	0x400010C3	Editing face record failed.
queryFaceRecordFailed	0x400010C4	Searching face record failed.
faceDetectFailed	0x400010C5	Detecting face failed.
libraryNotExist	0x400010C6	The library does not exist.
blackListQueryExporting	0x400010C7	Exporting matched blacklists.
blackListQueryExported	0x400010C8	The matched blacklists are exported.
blackListQueryStopExporting	0x400010C9	Exporting matched blacklists is stopped.
blackListAlarmQueryExporting	0x400010CA	Exporting matched blacklist alarms.
blackListAlarmQueryExported	0x400010CB	The matched blacklists alarms are exported.
blackListAlarmQueryStopExporting	0x400010CC	Exporting matched blacklist alarms is stopped.
getBigDataCloudAnalysisFailed	0x400010CD	Getting big data cloud analytic information failed.
setBigDataCloudAnalysisFailed	0x400010CE	Configuring big data cloud analytic failed.
submitMapSearchFailed	0x400010CF	Submitting search by picture task failed.
controlRelationshipNotExist	0x400010D0	The relation does not exist.
getHistoryAlarmInfoFailed	0x400010D1	Getting history alarm information failed.
getFlowReportFailed	0x400010D2	Getting people counting report failed.

Sub Status Code	Error Code	Description
addGuardFailed	0x400010D3	Adding arming configuration failed.
deleteGuardFailed	0x400010D4	Deleting arming configuration failed.
modifyGuardFailed	0x400010D5	Editing arming configuration failed.
queryGuardFailed	0x400010D6	Searching arming configurations failed.
uploadUserSuperCaps	0x400010D7	No more user information can be uploaded.
bigDataServerConnectFailed	0x400010D8	Connecting to big data server failed.
microVideoCloudRequestInfoBuildFailed	0x400010D9	Adding response information of micro video cloud failed.
microVideoCloudResponseInfoBuildFailed	0x400010DA	Parsing response information of micro video cloud failed.
transcodingServerRequestInfoBuildFailed	0x400010DB	Adding response information of transcoding server failed.
transcodingServerResponseInfoParseFailed	0x400010DC	Parsing response information of transcoding server failed.
transcodingServerOffline	0x400010DD	Transcoding server is offline.
microVideoCloudOffline	0x400010DE	Micro video cloud is offline.
UPSServerOffline	0x400010DF	UPS monitor server is offline.
statisticReportRequestInfoBuildFailed	0x400010E0	Adding response information of statistics report failed.
statisticReportResponseInfoParseFailed	0x400010E1	Parsing response information of statistics report failed.
DisplayConfigInfoBuildFailed	0x400010E2	Adding display configuration information failed.
DisplayConfigInfoParseFailed	0x400010E3	Parsing display configuration information failed.
DisplayConfigInfoSaveFailed	0x400010E4	Saving display configuration information failed.
notSupportDisplayConfigType	0x400010E5	The display configuration type is not supported.
passError	0x400010E7	Incorrect password.

Sub Status Code	Error Code	Description
upgradePackageLarge	0x400010EB	Too large upgrade package.
sesssionUserReachesLimit	0x400010EC	No more user can log in via session.
ISO 8601TimeFormatError	0x400010ED	Invalid ISO8601 time format.
clusterDissolutionFailed	0x400010EE	Deleting cluster failed.
getServiceNodeInfoFailed	0x400010EF	Getting service node information failed.
getUPSInfoFailed	0x400010F0	Getting UPS configuration information failed.
getDataStatisticsReportFailed	0x400010F1	Getting data statistic report failed.
getDisplayConfigInfoFailed	0x400010F2	Getting display configuration failed.
namingAnalysisBoardNotAllowed	0x400010F3	Renaming analysis board is not allowed.
onlyDrawRegionsOfConvexPolygon	0x400010F4	Only drawing convex polygon area is supported.
bigDataServerResponseInfoParseFailed	0x400010F5	Parsing response message of big data service failed.
bigDataServerReturnFailed	0x400010F6	No response is returned by big data service.
microVideoReturnFailed	0x400010F7	No response is returned by micro video cloud service.
transcodingServerReturnFailed	0x400010F8	No response is returned by transcoding service.
UPSServerReturnFailed	0x400010F9	No response is returned by UPS monitoring service.
forwardingServer ReturnFailed	0x400010FA	No response is returned by forwarding service.
storageServer ReturnFailed	0x400010FB	No response is returned by storage service.

Sub Status Code	Error Code	Description
cloudAnalysisServerReturnFailed	0x400010FC	No response is returned by cloud analytic service.
modelEmpty	0x400010FD	No model is obtained.
mainAndBackupNodeCannotModifyManagementNetworkInterfaceIP	0x400010FE	Editing the management interface IP address of master node and backup node is not allowed.
IDTooLong	0x400010FF	The ID is too long.
pictureCheckFailed	0x40001100	Detecting picture failed.
pictureModelingFailed	0x40001101	Modeling picture failed.
setCloudAnalsisDefaultProvinceFailed	0x40001102	Setting default province of cloud analytic service failed.
InspectionAreasNumberExceedLimit	0x40001103	No more detection regions can be added.
picturePixelsTooLarge	0x40001105	The picture resolution is too high.
picturePixelsTooSmall	0x40001106	The picture resolution is too low.
storageServiceIPEmpty	0x40001107	The storage server IP address is required.
bigDataServerRequestInfoBuildFail	0x40001108	Creating request message of big data service failed.
analysiTimedOut	0x40001109	Analysis time out.
high-performanceModeDisabled.	0x4000110A	Please enable high-performance mode.
configuringUPSMonitoringServerTimedOut	0x4000110B	Configurating the UPS monitoring server time out. Check IP address.
cloudAnalysisRequestInformationBuildFailed	0x4000110C	Creating request message of cloud analytic service failed.
cloudAnalysisResponseInformationParseFailed	0x4000110D	Parsing response message of cloud analytic service failed.
allCloudAnalysisInterfaceFailed	0x4000110E	Calling API for cloud analytic service failed.
cloudAnalysisModelCompareFailed	0x4000110F	Model comparison of cloud analytic service failed.

Sub Status Code	Error Code	Description
cloudAnalysisFacePictureQualityRatingFailed	0x40001110	Getting face quality grading of cloud analytic service failed.
cloudAnalysisExtractFeaturePointsFailed	0x40001111	Extracting feature of cloud analytic service failed.
cloudAnalysisExtractPropertyFailed	0x40001112	Extracting property of cloud analytic service failed.
getAddedNodeInformationFailed	0x40001113	Getting the added nodes information of data analysis server failed.
noMoreAnalysisUnitsAdded	0x40001114	No more data analysis servers can be added.
detectionAreaInvalid	0x40001115	Invalid detection region.
shieldAreaInvalid	0x40001116	Invalid shield region.
noMoreShieldAreasAdded	0x40001117	No more shield region can be drawn.
onlyAreaOfRectangleShapeAllowed	0x40001118	Only drawing rectangle is allowed in detection area.
numberReachedLlimit	0x40001119	Number reached the limit.
wait1~3MinutesGetIPAfterSetupDHCP	0x4000111A	Wait 1 to 3 minutes to get IP address after configuring DHCP.
plannedTimeMustbeHalfAnHour	0x4000111B	Schedule must be half an hour.
oneDeviceCannotBuildCluster	0x4000111C	Creating master and backup cluster requires at least two devices.
updatePackageFileNotUploaded	0x4000111E	Upgrade package is not uploaded.
highPerformanceTasksNotSupportDrawingDetectionRegions	0x4000111F	Drawing detection area is not allowed under high-performance mode.
controlCenterIDDoesNotExist	0x40001120	The control center ID does not exist.
regionIDDoesNotExist	0x40001121	The area ID does not exist.
licensePlateFormatError	0x40001122	Invalid license plate format.

Sub Status Code	Error Code	Description
managementNodeDoesNotSupportThisOperation	0x40001123	The operation is not supported.
searchByPictureResourceNotConfiged	0x40001124	The conditions for searching picture by picture are not configured.
videoFileEncapsulationFormatNotSupported	0x40001125	The video container format is not supported.
videoPackageFailure	0x40001126	Converting video container format failed.
videoCodingFormatNotSupported	0x40001127	Video coding format is not supported.
monitorOfDeviceArmingdeleteArmingInfo	0x40001129	The camera is armed. Disarm it and try again.
getVideoSourceTypeFailed	0x4000112A	Getting video source type failed.
smartRulesBuildFailed	0x4000112B	Creating VAC rule failed.
smartRulesParseFailed	0x4000112C	Parsing VAC rule failed.
timeRulesBuildFailed	0x4000112D	Creating time rule failed.
timeRulesParseFailed	0x4000112E	Parsing time rule failed.
monitoInfoInvalid	0x4000112F	Invalid camera information.
addingFailedVersionMismatches	0x40001130	Adding failed. The device version mismatches.
theInformationReturnedAfterCloudAnalysisIsEmpty	0x40001131	No response is returned by the cloud analytic service.
selectingIpAddressOfHostAndSpareNodeFailedCheckTheStatus	0x40001132	Setting IP address for master node and backup node failed. Check the node status.
theSearchIdDoesNotExist	0x40001133	The search ID does not exist.
theSynchronizationIdDoesNotExist	0x40001134	The synchronization ID does not exist.
theUserIdDoesNotExist	0x40001136	The user ID does not exist.

Sub Status Code	Error Code	Description
theIndexCodeDoesNotExist	0x40001138	The index code does not exist.
theControlCenterIdDoesNotExist	0x40001139	The control center ID does not exist.
theAreaIdDoesNotExist	0x4000113A	The area ID does not exist.
theArmingLinkageIdDoesNotExist	0x4000113C	The arming relationship ID does not exist.
theListLibraryIdDoesNotExist	0x4000113D	The list library ID does not exist.
invalidCityCode	0x4000113E	Invalid city code.
synchronizingThePasswordOfSpareServerFailed	0x4000113F	Synchronizing backup system password failed.
editingStreamingTypeIsNotSupported	0x40001140	Editing streaming type is not supported.
switchingScheduledTaskToTemporaryTaskIsNotSupported	0x40001141	Switching scheduled task to temporary task is not supported.
switchingTemporaryTaskToScheduledTaskIsNotSupported	0x40001142	Switching temporary task to scheduled task is not supported.
theTaskIsNotDispatchedOrItIsUpdating	0x40001143	The task is not dispatched or is updating.
thisTaskDoesNotExist	0x40001144	This task does not exist in the cloud analytic serice.
duplicatedSchedule	0x40001145	Schedule period cannot be overlapped.
continuousScheduleWithSameAlgorithmTypeShouldBeMerged	0x40001146	The continuous schedule periods with same algorithm type should be merged.
invalidStreamingTimeRange	0x40001147	Invalid streaming time period.
invalidListLibraryType	0x40001148	Invalid list library type.

Sub Status Code	Error Code	Description
theNumberOfMatchedResultsShouldBeLargerThan0	0x40001149	The number of search results should be larger than 0.
invalidValueRangeOfSimilarity	0x4000114A	Invalid similarity range.
invalidSortingType	0x4000114B	Invalid sorting type.
noMoreListLibraryCanBeLinkedToTheDevice	0x4000114C	No more lists can be added to one device.
InvalidRecipientAddressFormat	0x4000114D	Invalid address format of result receiver.
creatingClusterFailedTheDongleIsNotPluggedIn	0x4000114E	Insert the dongle before creating cluster.
theURLIsTooLong	0x4000114F	No schedule configured for the task.
noScheduleIsConfiguredForTheTask	0x40001150	No schedule configured for the task.
theDongleIsExpiried	0x40001151	Dongle has expired.
dongleException	0x40001152	Dongle exception.
invalidKey	0x40001153	Invalid authorization service key.
decryptionFailed	0x40001154	Decrypting authorization service failed.
encryptionFailed	0x40001155	Encrypting authorization service failed.
AuthorizeServiceResponseError	0x40001156	Authorization service response exception.
incorrectParameter	0x40001157	Authorization service parameters error.
operationFailed	0x40001158	Operating authorization service error.
noAnalysisResourceOrNoDataInTheListLibrary	0x40001159	No cloud analytic resources or no data in the list library.
calculationException	0x4000115A	Calculation exception.
allocatingList	0x4000115B	Allocating list.
thisOperationIsNotSupportedByTheCloudAnalytics	0x4000115C	This operation is not supported by the cloud analytic serice.

Sub Status Code	Error Code	Description
theCloudAnalyticsIsInterrupted	0x4000115D	The operation of cloud analytic serice is interrupted.
theServiceIsNotReady	0x4000115E	The service is not ready.
searchingForExternalApiFailed	0x4000115F	Searching external interfaces failed.
noOnlineNode	0x40001160	No node is online.
noNodeAllocated	0x40001161	No allocated node.
noMatchedList	0x40001162	No matched list.
allocatingFailedTooManyFacePictureLists	0x40001163	Allocation failed. Too many lists of big data service.
searchIsNotCompletedSearchAgain	0x40001164	Current searching is not completed. Search again.
allocatingListIsNotCompleted	0x40001165	Allocating list is not completed.
searchingForCloudAnalyticsResultsFailed	0x40001166	Searching cloud analytic serice overtime.
noDataOfTheCurrentLibraryFound	0x40001167	No data in the current library. Make sure there is data in the Hbase.
noFacePictureLibraryIsArmed	0x40001168	No face picture library is armed for big data service.
noAvailableDataSlicingVersionInformationArmFirstAndSliceTheData	0x40001169	Invalid standard version information.
duplicatedOperationDataSlicingIsExecuting	0x4000116A	Slicing failed. Duplicated operation.
slicinDataFailedNoArmedFacePictureLibrary	0x4000116B	Slicing failed. No arming information in the face big data.
GenerateBenchmarkFileFailedSlicingAgain	0x4000116C	Generating sliced file failed. Slice again.
NonprimaryNodeIsProhibitedFromSlcingData	0x4000116D	Slicing is not allowed by the backup node.
NoReadyNodeToClusterServers	0x4000116E	Creating the cluster failed. No ready node.

Sub Status Code	Error Code	Description
NodeManagementServiceIsOffline	0x4000116F	The node management server is offline.
theCamera(s)OfTheControlCenterAreAlreadyArmed.DisarmThemFirst	0x40001170	Some cameras in control center are already armed. Disarm them and try again.
theCamera(s)OfTheAreaAreAlreadyArmed.DisarmThemFirst	0x40001171	Some cameras in this area are already armed. Disarm them and try again.
configuringHigh-frequencyPeopleDetectionFailed	0x40001172	Configuring high frequency people detection failed.
searchingForHigh-frequencyPeopleDetectionLogsFailed.	0x40001173	Searching detection event logs of high-frequency people detection failed.
gettingDetailsOfSearchedHigh-frequencyPeopleDetectionLogsFailed.	0x40001174	Getting the search result details of high frequency alarms failed.
theArmedCamerasAlreadyExistInTheControlCenter	0x40001175	Some cameras in control center are already armed.
disarmingFailedTheCameraIsNotArmed	0x40001177	Disarming failed. The camera is not armed.
noDataReturned	0x40001178	No response is returned by the big data service.
preallocFailure	0x40001179	Pre-allocating algorithm resource failed.
overDogLimit	0x4000117A	Configuration failed. No more resources can be pre-allocated.
analysisServicesDoNotSupport	0x4000117B	Not supported.
commandAndDispatchServiceError	0x4000117C	Scheduling service of cloud analytic serice error.
engineModuleError	0x4000117D	Engine module of cloud analytic serice error.
streamingServiceError	0x4000117E	Streaming component of cloud analytic serice error.

Sub Status Code	Error Code	Description
faceAnalysisModuleError	0x4000117F	Face analysis module of cloud analytic serice error.
vehicleAnalysisModuleError	0x40001180	Vehicle pictures analytic module of cloud analytic serice error.
videoStructuralAnalysisModuleError	0x40001181	Video structuring module of cloud analytic serice error.
postprocessingModuleError	0x40001182	Post-processing module of cloud analytic serice error.
frequentlyAppearedPersonAlarmIsAlreadyConfiguredForListLibrary	0x40001183	High frequency alarm is already armed for blacklist library.
creatingListLibraryFailed	0x40001184	Creating list library failed.
invalidIdentiryKeyOfListLibrary	0x40001185	Invalid identity key of list library.
noMoreDevicesCanBeArmed	0x40001186	No more camera can be added.
settingAlgorithmTypeForDeviceFailed	0x40001187	Allocating task resource failed.
gettingHighFrequencyPersonDetectionAlarmInformationFailed	0x40001188	Setting high frequency alarm failed.
invalidSearchConfition	0x40001189	Invalid result.
theTaskIsNotCompleted	0x4000118B	The task is not completed.
resourceOverRemainLimit	0x4000118C	No more resource can be pre-allocated.
frequentlyAppearedPersonAlarmIsAlreadyConfiguredForTheCameraDisarmFirstAndTryAgain	0x4000118D	The high frequency alarm of this camera is configured. Delete the arming information and try again.
noClientCertificate	0x40002036	The client certificate is not installed.
noCACertificate	0x40002037	The CA certificate is not installed.

Sub Status Code	Error Code	Description
authenticationFailed	0x40002038	Authenticating certificate failed. Check the certificate.
clientCertificateExpired	0x40002039	The client certificate is expired.
clientCertificateRevocation	0x4000203A	The client certificate is revoked.
CACertificateExpired	0x4000203B	The CA certificate is expired.
CACertificateRevocation	0x4000203C	The CA certificate is revoked.
connectFail	0x4000203D	Connection failed.
loginNumExceedLimit	0x4000203F	No more user can log in.
formattingFailed	0x40002056	Formatting HDD failed.
encryptedFormattingFailed	0x40002057	Formatting encrypted HDD failed.
wrongPassword	0x40002058	Verifying password of SD card failed. Incorrect password.
armingFailed	0x40008000	Arming failed.
disarmingFailed	0x40008001	Disarming failed.
clearAlarmFailed	0x40008002	Clearing alarm failed.
bypassFailed	0x40008003	Bypass failed.
bypassRecoverFailed	0x40008004	Bypass recovery failed.
outputsOpenFailed	0x40008005	Opening relay failed.
outputsCloseFailed	0x40008006	Closing relay failed.
registerTimeOut	0x40008007	Registering timed out.
registerFailed	0x40008008	Registering failed.
addedByOtherHost	0x40008009	The peripheral is already added by other security control panel.
alreadyAdded	0x4000800A	The peripheral is already added.
armedStatus	0x4000800B	The partition is armed.
bypassStatus	0x4000800C	Bypassed.
zoneNotSupport	0x4000800D	This operation is not supported by the zone.

Sub Status Code	Error Code	Description
zoneFault	0x4000800E	The zone is in fault status.
pwdConflict	0x4000800F	Password conflicted.
audioTestEntryFailed	0x40008010	Enabling audio test mode failed.
audioTestRecoveryFailed	0x40008011	Disabling audio test mode failed.
addCardMode	0x40008012	Adding card mode.
searchMode	0x40008013	Search mode.
addRemoterMode	0x40008014	Adding keyfob mode.
registerMode	0x40008015	Registration mode.
exDevNotExist	0x40008016	The peripheral does not exist.
theNumberOfExDevLimited	0x40008017	No peripheral can be added.
sirenConfigFailed	0x40008018	Setting siren failed.
chanCannotRepeatedBinded	0x40008019	This channel is already linked by the zone.
masterSlaveIsEnable	0x4000802c	The master-slave relationship has taken effect, the slave radar does not support this operation.
forceTrackNotEnabled	0x4000802d	Mandatory tracking is disabled.
isNotSupportZoneConfigByLocalArea	0x4000802e	This area does not support the zone type.
alarmLineCross	0x4000802f	Trigger lines are overlapped.
zoneDrawingOutOfRange	0x40008030	The drawn zone is out of detection range.
alarmLineDrawingOutOfRange	0x40008031	The drawn alarm trigger line is out of detection range.
hasTargetInWarningArea	0x40008032	The warning zone already contains targets. Whether to enable mandatory arming?
inProgramMode	0x4000801B	The keypad is in programming mode.
inPaceTest	0x4000801C	Pacing mode.
arming	0x4000801D	Armed.

Sub Status Code	Error Code	Description
HDMIResolutionIllegal	/	The HDMI video resolution cannot be larger than that of main and sub stream.
startAppFail	/	Starting running application program failed.
yuvconflict	/	The raw video stream conflicted.
overMaxAppNum	/	No more application program can be uploaded.
alreadyExist	/	The application program already exists.
noFlash	/	Insufficient flash.
noFlash	/	The platform mismatches.
alreadyRunning	/	The application program is running.
notRunning	/	The application program is stopped.
packNotFound	/	The software packet does not exist.
noMemory	/	Insufficient memory.
invalLicense	/	Invalid Licnese.

StatusCode=5

Sub Status Code	Error Code	Description
badXmlFormat	0x50000001	Invalid XML format.

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Sub Status Code	Error Code	Description
badParameters	0x60000001	Invalid parameter.
badHostAddress	0x60000002	Invalid host IP address.
badXmlContent	0x60000003	Invalid XML content.
badIPv4Address	0x60000004	Invalid IPv4 address.
badIPv6Address	0x60000005	Invalid IPv6 address.
conflictIPv4Address	0x60000006	IPv4 address conflicted.
conflictIPv6Address	0x60000007	IPv6 address conflicted.
badDomainName	0x60000008	Invalid domain name.
connectSreverFail	0x60000009	Connecting to server failed.
conflictDomainName	0x6000000A	Domain name conflicted.

Sub Status Code	Error Code	Description
badPort	0x6000000B	Port number conflicted.
portError	0x6000000C	Port error.
exportErrorData	0x6000000D	Importing data failed.
badNetMask	0x6000000E	Invalid sub-net mask.
badVersion	0x6000000F	Version mismatches.
badDevType	0x600000010	Device type mismatches.
badLanguage	0x600000011	Language mismatches.
incorrentUserNameOrPassword	0x600000012	Incorrect user name or password.
invalidStoragePoolOfCloudServer	0x600000013	Invalid storage pool. The storage pool is not configured or incorrect ID.
noFreeSpaceOfStoragePool	0x600000014	Storage pool is full.
riskPassword	0x600000015	Risky password.
UnSupportCapture	0x600000016	Capturing in 4096*2160 or 3072*2048 resolution is not supported when H.264+ is enabled.
userPwdLenUnder8	0x60000023	At least two kinds of characters, including digits, letters, and symbols, should be contained in the password.
userPwdNameSame	0x60000025	Duplicated password.
userPwdNameMirror	0x60000026	The password cannot be the reverse order of user name.
beyondARGSRangeLimit	0x60000027	The parameter value is out of limit.
DetectionLineOutofDetectionRegion	0x60000085	The rule line is out of region.
DetectionRegionError	0x60000086	Rule region error. Make sure the rule region is convex polygon.

Sub Status Code	Error Code	Description
DetectionRegionOutOfCountingRegion	0x60000087	The rule region must be marked as red frame.
PedalAreaError	0x60000088	The pedal area must be in the rule region.
DetectionAreaABError	0x60000089	The detection region A and B must be in the a rule frame.
ABRegionCannotIntersect	0x6000008a	Region A and B cannot be overlapped.
analysisEnginesNoResourceError	0x60001000	No analysis engine.
analysisEnginesUsageExcced	0x60001001	The engine usage is overloaded.
PicAnalysisNoResourceError	0x60001002	No analysis engine provided for picture secondary recognition.
analysisEnginesLoadingError	0x60001003	Initializing analysis engine.
analysisEnginesAbnormaError	0x60001004	Analysis engine exception.
analysisEnginesFacelibImporting	0x60001005	Importing pictures to face picture library. Failed to edit analysis engine parameters.
analysisEnginesAssociatedChannel	0x60001006	The analysis engine is linked to channel.
smdEncodingNoResource	0x60001007	Insufficient motion detection encoding resources.
smdDecodingNoResource	0x60001008	Insufficient motion detection decoding resources.
diskError	0x60001009	HDD error.
diskFull	0x6000100a	HDD full.
facelibDataProcessing	0x6000100b	Handling face picture library data.
capturePackageFailed	0x6000100c	Capturing packet failed.
capturePackageProcessing	0x6000100d	Capturing packet.

Sub Status Code	Error Code	Description
noSupportWithPlaybackAbstract	0x6000100e	This function is not supported. Playback by video synopsis is enabled.
insufficientNetworkBandwidth	0x6000100f	Insufficient network bandwidth.
tapeLibNeedStopArchive	0x60001010	Stop the filing operation of tape library first.
identityKeyError	0x60001011	Incorrect interaction command.
identityKeyMissing	0x60001012	The interaction command is lost.
noSupportWithPersonDensityDetect	0x60001013	This function is not supported. The people density detection is enabled.
ipcResolutionOverflow	0x60001014	The configured resolution of network camera is invalid.
ipcBitrateOverflow	0x60001015	The configured bit rate of network camera is invalid.
tooGreatTimeDifference	0x60001016	Too large time difference between device and server.
noSupportWithPlayback	0x60001017	This function is not supported. Playback is enabled.
channelNoSupportWithSMD	0x60001018	This function is not supported. Motion detection is enabled.
channelNoSupportWithFD	0x60001019	This function is not supported. Face capture is enabled.
illegalPhoneNumber	0x6000101a	Invalid phone number.
illegalCertificateNumber	0x6000101b	Invalid certificate No.
linkedCameraOutLimit	0x6000101c	Connecting camera timed out.
achieveMaxChannelLimit	0x6000101e	No more channels are allowed.
humanMisInfoFilterEnabledChanNumError	0x6000101f	No more channels are allowed to enable preventing false alarm.

Sub Status Code	Error Code	Description
humanEnginesNoResource	0x60001020	Insufficient human body analysis engine resources.
taskNumberOverflow	0x60001021	No more tasks can be added.
collisionTimeOverflow	0x60001022	No more comparison duration can be configured.
invalidTaskID	0x60001023	Invalid task ID.
eventNotSupport	0x60001024	Event subscription is not supported.
invalidEZVIZSecretKey	0x60001034	Invalid verification code for Hik-Connect.
needDoubleVerification	0x60001042	Double verification required
noDoubleVerificationUser	0x60001043	No double verification user
timeSpanNumOverLimit	0x60001044	Max. number of time buckets reached
channelNumOverLimit	0x60001045	Max. number of channels reached
noSearchIDResource	0x60001046	Insufficient searchID resources
noSupportDeleteStrangerLib	0x60001051	Deleting stranger library is not supported
noSupportCreateStrangerLib	0x60001052	Creating stranger library is not supported
TransitionUseEmmc	0x60002000	Starting device failed. The EMMC is overused.
AdaptiveStreamNotEnabled	0x60002001	The stream self-adaptive function is not enabled .
AdaptiveStreamAndVariableBitrateEnabled	0x60002002	Stream self-adptive and variable bitrate function cannot be enabled at the same time.
detectorTypeMismatch	0x60008000	The detector type mismatched.
nameExist	0x60008001	The name already exists.
laneAndRegionOverlap	None.	The lanes are overlapped.
unitConfigurationNotInEffect	/	Invalid unit parameter.

StatusCode=7

SubStatusCode	Error Code	Description
rebootRequired	0x70000001	Reboot to take effect.

See Far, Go Further