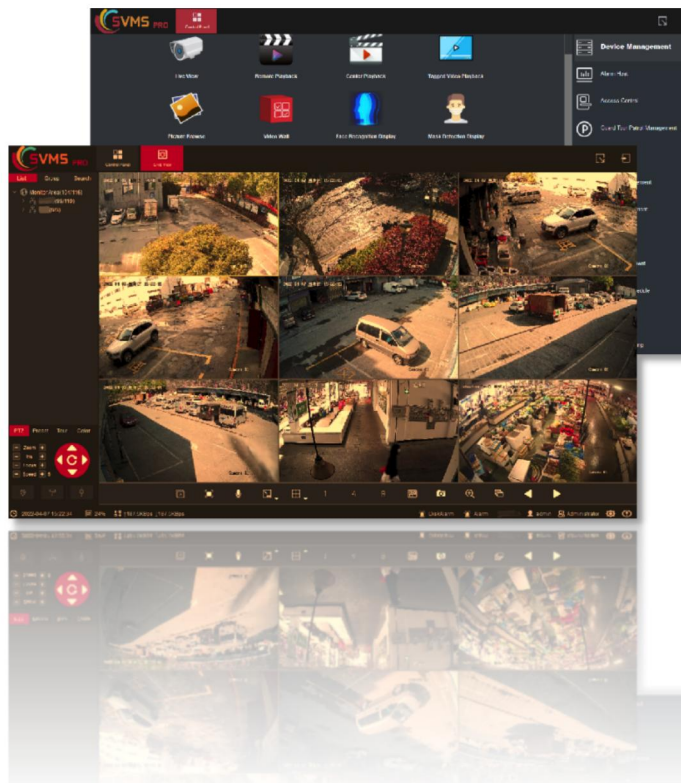


# SVMS Professional

Distributed and Comprehensive Hangzhou Daxun Video Surveillance Management System

SVMS Professional is a centralized management software platform provided by Hangzhou DaXun Digital Technology Co.,Ltd for integrating and managing security systems. It captures, gathers and manages the video data from front-end on-site third-party security devices of different brands, protocols, and types, provides centralized video monitoring, alarm detection, alarm host, access control, e-map, video wall, IoT system, face recognition, license plate, AI alarm, network voice intercom and more.

The SVMS Pro can also be used as a middleware to aggregate and transmit the videos from different brands of surveillance equipment or monitoring systems at the front-end to the third-party platform. Besides security application, SVMS Professional has also been exploring possibilities in different industries, such as chain stores, farmers' markets,



## Key Benefit

### Scales as business grows

By virtue of a flexible and scalable architecture, the platform can be scaled as your business needs evolve. You can expand it from a small 100-channel system to an ultra-large-scale system that links up to 1000,000 channels of equipment.

### Light and Efficient

Lightweight architecture features reduced consumption of system resources. Capable of managing multiple systems of varying sizes with consistent efficiency.

### Unified and Flexible

Supports combining various application plug-ins under a unified, on-demand architecture for collaboration across business segments. New plug-ins can be continuously developed to meet new business needs.

### Simplifies deployment and maintenance

There is no need to dismantle the original network security system, without changing the original monitoring layout, the independent network video surveillance systems in various places can be easily managed together with powerful SVMS Pro platform through cascading. Moreover, maintenance of the whole system is much easier with visualized health monitoring in real time.



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## Integrated and open

Allows integration of other systems and device via API, SDK, Onvif, EHOME/ISUP, GA/T1400,GB/T28181 etc;  
Offers RTSP,RTMP, HTTP-FLV,HLS, REST API,Web Socket etc for the third-party development.

## Customizable

Meet customers' personalized needs and assists them in formulating their market competitive advantage.

## Key Components

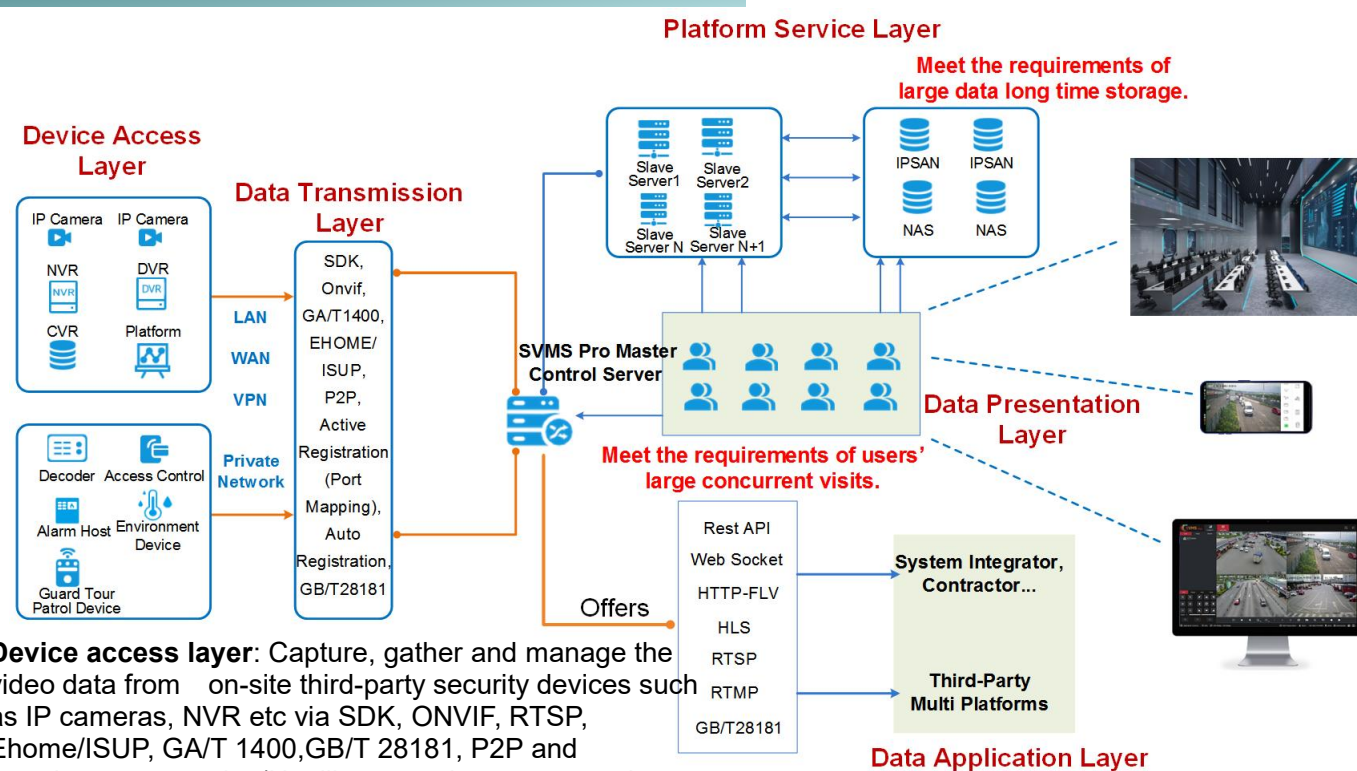
### Server

- SVMS Pro Master Control Server
- SVMS Pro Slave Servers (Sub Servers)

### Client

Windows PC Client  
SVMS Pro Mobile Client (IOS/Android)  
SVMS Pro Web

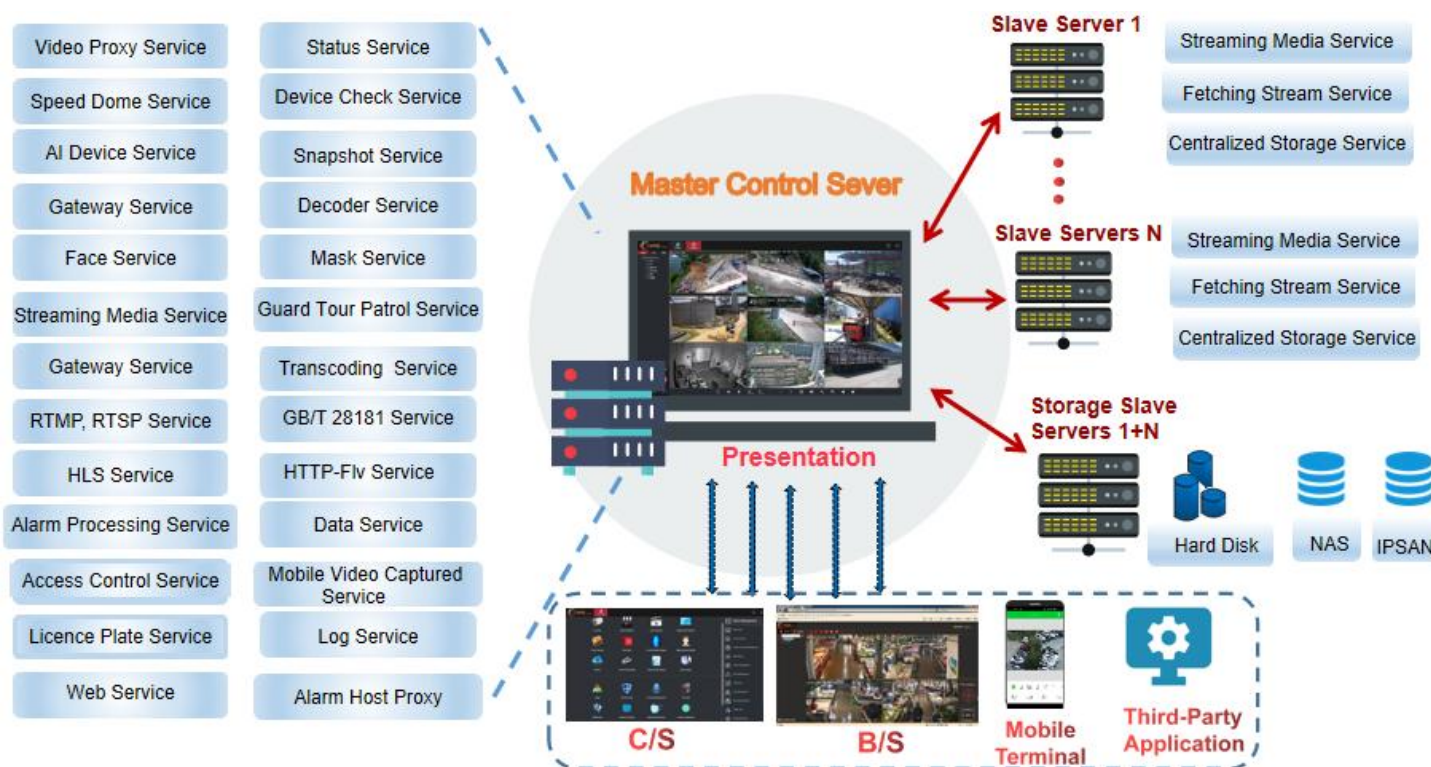
## SVMS Pro Application



**Device access layer:** Capture, gather and manage the video data from on-site third-party security devices such as IP cameras, NVR etc via SDK, ONVIF, RTSP, Ehome/ISUP, GA/T 1400,GB/T 28181, P2P and proprietary protocols. (Up till now we have managed more than 50 brands of security devices, such as Hikvision, Dahua,Sony, AXIS,SAMSNG,Honeywell etc.)



**Platform Service Layer** includes SVMS Pro master control server and its slave servers. One master control server can work with multiple slave servers (known as master-slave architecture), which bring the services below:



**Data Presentation Layer:** The whole SVMS Pro platform will present itself by its client, web, mobile phone or the video wall.

**Data Application Layer:** SVMS Pro also offers Rest API, Web Socket, HTTP-FLV, HLS, RTSP, RTMP,GB/T28181 for the third-party development.

## SVMS Pro Architecture

The SVMS Pro platform adopts component-based, modular design and master-slave open flexible architecture, which brings technical features below.





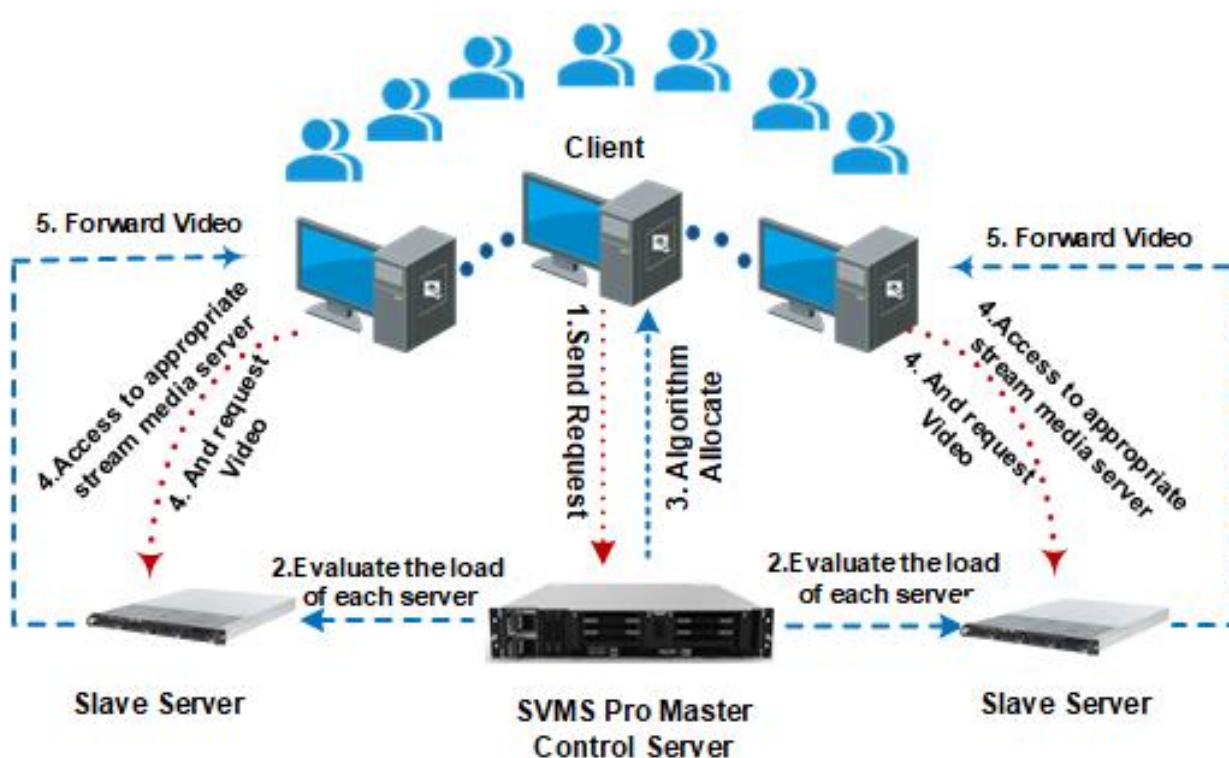
## SVMS Pro Technical Features

### Unified & flexible modular plugins

Component-based modular design enable platform to combine various modular application plug-ins under a unified on-demand architecture for collaboration across business segments. What's more, new plug-ins can be continually developed to meet new business needs.

### Meet the requirements of users' large concurrent access.

Master-slave architecture allows one master control server can be equipped with any number of slave streaming media servers. When the clients request video, the algorithm of master server will evaluate the load capacity of each server, then allocate appropriate access to the streaming media servers, so as to achieve the optimal stream distribution for the clients. The clients can obtain real-time video or video playback directly from streaming media server. In this way it greatly reduces the pressure of the master control server, avoids the impact of heavy media streams on control and management information. Thus with the increasing number of requesting video at the same time, users only need to increase the number of streaming media servers.



### Meet the requirements of large data long time storage.

Master-slave architecture allows one master control server can be equipped with any number of slave storage servers. One slave storage server can be installed many disk groups ( including IPSAN, NAS etc ). Therefore when the bandwidth is enough, users only need to increase the number of storage server, so as to meet the requirements of long-time recording and provide higher storage performance.



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## Strong hybrid management capability of multi brands surveillance devices and security Systems

SVMS Professional platform can capture, gather and manage the video data from on-site third-party surveillance devices (such as IP cameras, NVR etc) and integrate security systems (such as alarm host system, access control system etc) of different bands, protocols, and types via SDK, ONVIF, RTSP, EHOME/ISUP, GAT1400, GB/T 28181 and proprietary protocols, so as to provide reliable, effective and stable input sources for system applications.

### A variety of applications cover a broad range of business needs

All major security needs are covered through a variety of core security modules, including video, video wall, access control, alarm host, alarm detection, mobile monitoring, face recognition display, license plate display, intelligent analysis and so on. Whatever your situation, you will find what you need right here. And all applications connect in an interactive way to build a truly unified architecture, enhancing your operational efficiency.

### Flexible deployment

- Master-slave open architecture can flexible choose centralized or distributed deployment according to the networking scale.
- Support LAN and WAN deployment.
- You can build SVMS Pro platform directly on the cloud or in your own company's computer room.
- By increasing the number of corresponding slave servers (sub servers), the platform can be scaled without affecting the current existing platform system.
- You can expand it from a small 100-channel system to an ultra-large-scale system that links up to hundreds of thousands channels of equipment, and can be continuously scalable according to the subsequent networking and business development.

### Efficient video transmission technology

- Unique video transmission technology to meet low bandwidth network adaptability. Smooth Streaming automatically adjusts bit-rate and resolution between SVMS Pro clients and front-end devices according to real-time network conditions.
- The efficient transcoding service can convert a variety of different private code streams of the front-end devices into standard code streams , so as to meet the needs of different network environments.

The video with high bitstream can be converted to low bitstream.

8K,4K,3M, 1080P... —> D1,CIF,VGA...

Transcoding video in different encoding formats to the unified encoding formats.

H.265, MPEG4 —> H.264

- When many people watch one video at the same time, it only occupies the uplink bandwidth of one video.



## Offers multiple protocols for third-party development and integration .

- Push streaming service: GB/T28181, RTSP,RTMP, HTTP-FLV,HLS, REST API,Web Socket etc are provided to push to the upper application platform.
- Offers GB/T28181, RTSP,RTMP, HTTP-FLV,HLS, REST API,Web Socket etc for the third-party development.
- Provide HLS, HTTP-FLV, WebSocket service which enable user to preview videos across browsers without plug-ins. What's more, they can be used for live broadcasting with strong real-time performance.
- WebSocket: More than 6 channels can be previewed at the same time under Chrome browser.
- GB/T28181: Support GB/T 28181-2016 (UDP/TCP),GB/T 28181-2001 protocol (UDP/TCP). Support pushing GB/T 28181 of a single device to multiple upper platforms at the same time.
- Support GA/T1400 protocol. Support face and license plate information transmitted through GA/T1400 protocol.

## Support cascading of multiple platforms

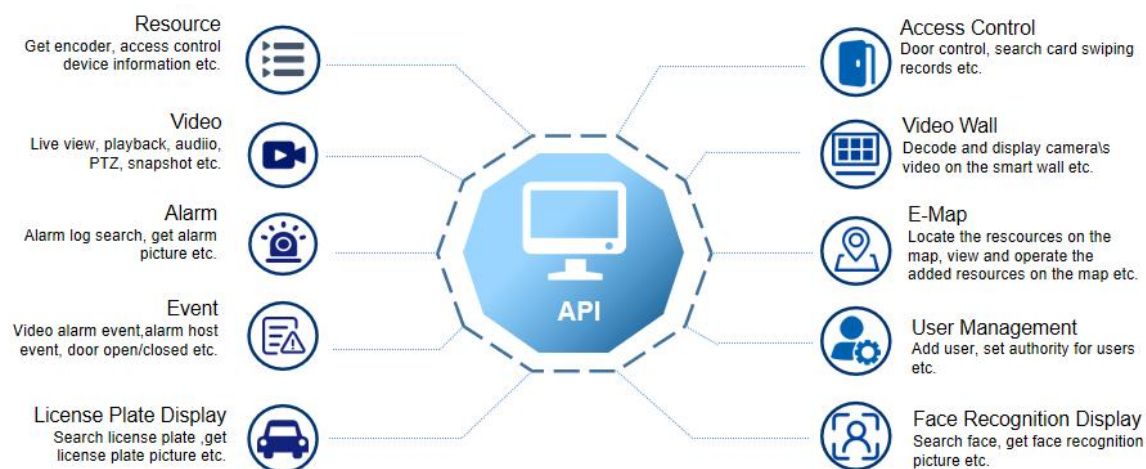
- Support Hikvision (ISC,9800,8200,7600,7200) Platforms;
- Support Dahua (DSSPro, 7016) Platforms;
- Support Uniview VMS Platform;Tiandy Platform;CSVision Platform;NetPosa Platform;
- Support IMOU Cloud Platform; EZVIZ Cloud Platform.

## Support all kinds of cloud.

- Support Aliyun Cloud, Tencent Cloud, Baidu AI Cloud, JingDong Cloud, Huawei Cloud, Amazon Cloud, Kingsoft etc. You can build SVMS Professional platform directly on the cloud.
- Support virtual host of VMware, Virtual box.
- Support cloud storage S3 protocol to realize recording management on cloud.

## Open system architecture allows easy & convenient integration

Collaborative, goal-oriented development creates the most useful and customizable applications.Hangzhou Daxun has created an open software development kit for innovated systems to meet any particularized demand.



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## SVMS Pro Functional Characteristics

### **Device Management (Accessing and management of surveillance resources)**

- Support center management of IP Camera, DVR, NVR, CVR of various domestic & overseas Brands;
- Support IP video coding device protocol or SDK access of mainstream manufacturers;
- Easy multi-site management through cascading: support Hikvision (ISC,9800,8200,7600,7200) platforms;Dahua (DSSPro, 7016) platforms;Uniview VMS platform;Tiandy platform;CSVision platform; NetPosa platform;IMOU Cloud platform and EZVIZ Cloud platform etc;
- Add third-party IP video encoding devices via ONVIF,EHOME/ISUP,DHOME,GB/T28181,GA/T1400 protocols;
- Add devices via auto search, IP, Domain, IP segment, auto register;
- Support device management via the internet (support Hikvision, Dahua and Tiandy full series video surveillance devices which all can be auto registered; support Hikvision devices under EHOME/ISUP protocols; support Huawei IP cameras which can be auto registered; support XM,Topsee P2P devices; support all other third-part IP devices via GB/T28181.)
- Manage multi-brands alarm host devices (support Hikvision,Honeywell,Bosch, and Inanter brands), access control devices (support Reformer and Max brands), decoders (support Hikvision, Honeywell,Bosch and Inanter brands), face recognition devices, license plate devices, video captured mobile phones and AI servers.
- Easy operation to import device and export device list including channels' latitude and longitude information.
- Set device list by adding area and device.
- Set groups by adding group and device.

### **Role and User Management**

- Manage the user's permission by role ( device permission, control permissions etc).
- User can be assigned with the roles to obtain the corresponding permissions.
- Set basic information for user.

### **Video Management Features**

#### **Live view**

- Support multi-screen auxiliary display. Users can display different monitoring window on multiple display screens at the same time according to the needs. For example, user can display live-view image on screen 1, at the same time operate playback on screen 2 and view e-map on screen 3.
- Support automatic/manual switching of video definition.
- Display device tree; show or hide offline device.
- Display the device IP address or device name on the device tree.
- Display the group tree.
- View real-time video.
- Digital zoom
- Support picture in picture mode.
- Common layout (1,4,6,8,9,16,25,36) and customized layout.
- Save the current live view as a view.
- Support adding channel to favorites.
- Adjust the display mode (full screen and original).



- Video tour by device, favorites, view.
- Adjust front-end device's time.
- Quickly switch to playback.
- PTZ control
- Manual recording
- Snapshot
- Instant playback
- Turn on/off the audio in live view.
- Export URL address
- Watermark characters can be superimposed on the video. You can verify the watermark characters to check whether the video has been tempered or not.

## **Recording storage, playback and download.**

- Support central storage management.
- Central storage: Extend storage via iSCSI
- Add network disk by user mode
- Storage server disk settings for recording, pictures etc.
- Support disk failure detection
- Create record plan by time template: All day template, weekday template, weekend template and custom template
- Support alarm recording, normal recording and manual recording. When an alarm occurs, the video recording can be triggered. Or you can manually send a command to trigger the video recording.
- Play video from the devices or central storage or cloud.
- Support tagged video playback
- Sync play
- Search video by time (accurate to second)
- Digital zoom
- Slow and fast forward
- Playback frame by frame
- Tag the important record.
- Turn on/off the audio.
- Snapshot
- Adjust the display mode (full screen and original)
- Set the layout (1,4,6,9,16,36).
- Download record from central storage or device, supporting the conversion of downloaded video into the standard format: avi, mp4.
- Download record by time.
- Support multi-task download.

## **Snapshot and Picture Browse**

- Snapshot during preview or playback
- Set scheduled snapshot
- Search the captured pictures by time, device and keywords
- Export pictures in batch

## **Event**

- Real-time and history alarm information.
- Alarm details: Live video, record from related camera, alarm source location on the map.
- Acknowledge the alarm.
- Arming control for alarm source.
- Send alarm email or SMS to relevant person





- Set alarm handled plan
- Handle alarms and fill out the handling comments

### Event Management

- Alarm source: Device, video channel, alarm input, alarm host, access control, guard tour patrol, alarm center
- Alarm events: Alarm decoder alarm, blind alarm, motion detection alarm, video loss detection alarm, device offline, video standard mismatch, manual alarm, perimeter alarm, sensor alarm, sudden change of sound intensity alarm, region entrance detection alarm, region exiting detection alarm, face detection alarm, people falling down detection, regional people density alarm, object left alarm, wear mask, no mask detection, object removal alarm, area crossing detection, strenuous exercise detection.
- Alarm linkage action: snapshot, record, preset, email, SMS, audible warning, alarm output trigger relay on alarm host, alarm output trigger siren on alarm host, link access control, pop-up window on video wall, and alarm output.

### Video Wall

- Create different video wall view scheme.
- View the real-time video.
- Decode the real-time video to wall.
- Manage the video wall split.
- Support screens combination.
- Bind the decoding channel to the corresponding screen.
- Change the stream type of video channel.
- Add and manage decoder host.
- Tour the video channels in one screen.
- Display the playback on the video wall.
- Support remote restart video wall.

### E-Map

- Zoom in or out the map
- Multiple levels of submaps
- Locate the resources (such as camera, alarm input, access control channels, hot zone etc) on the map
- View the live video on the map
- Configure the resources (such as camera, alarm input, access control channels, hot spots) and submaps on the map.
- One camera point on the map can link with up to four different camera videos.
- Alarm source turns red and flickers on the map when alarm occurs
- Support alarm linked pop-up video
- Remote door opening and closing
- Arm and disarm, bypass and bypass recovery the resources.
- Support Baidu map and Google map.

### IoT System Management

- Add IoT security cameras, sensors and IOT software platform into SVMS Pro platform;
- Support the overlay display of IoT data on the real-time video;
- Support real-time display of various IoT device data: list, chart;
- Support historical data query of various IoT devices and displays them in lists and charts. Users can export relevant historical data by themselves;
- Support IoT-based alarm system;
- Support the display of IoT device data and its linked video on Baidu GIS map.



### **Access Control Management**

- Support Reformer and Max brands access control system. Other brands of access control devices also can be integrated according to the requirements of customers.
- Door status and door events monitoring
- Real-time display of access control status: swiping the card to open the door; card swiping abnormally etc.
- Remote operation of opening or closing doors.
- Keep doors open or close in emergencies when the alarm system triggers roll calls of stranded personnel, contributing to safety of personnel.
- Support linkage control with video monitoring: alarm, opening and closing door linked pop-up video
- The door can be marked on the e-map and its real-time status can be displayed.

### **Network Voice Intercom**

- It can two-way communicate with all IP cameras under GB/T28181 protocol, Hikvision IP cameras under the EHOME protocol and all Dahua active registered devices through the internet.
- It also support two-way communication with all Hikvision, Dahua, Tiandy, Uniview IP cameras in a Local Area Network (LAN) or Private network environment.

### **Alarm Host Controller Management**

- Support Hikvision, Honeywell, Bosch, and Inanter brands alarm host controllers. Other brands of alarm host devices also can be integrated according to the requirements of customers.
- Support arming, disarming, bypass, bypass recovery, siren output, alarm information display etc.
- Display the real-time status of subsystems and defense areas.
- Support alarm linkage with pop-up video.
- Subsystem and defense area can be marked on the e-map and their real-time status can be displayed.
- Cancel alarms.

### **Face Recognition Display**

- Support face information transmitted through GA/T1400 protocol.
- Save and display face recognition results reported by front-end recognition device.
- Support to view the original face image.
- Search for face by time, device or keywords
- Support uploading face image to the upper-layer third-party platform.

### **License Plate Recognition Display**

- Support the license plate information transmitted through GA/T1400 protocol
- Search for license plate by time, device and license plate number.
- Support to view the original license plate image.
- Support uploading license plate image to the upper-layer third-party platform.
- Support Hikvision, Dahua, Huawei GA/T1400 IP cameras, and other GA/T1400 devices.

### **AI Alarm**

- Display analysis results from AI analysis device.



- Search the historical records of intelligent analysis alarm.
- Support uploading intelligent analysis alarm information to the upper-layer third-party platform.

### **Protocols Configuration for third-party development and integration.**

- Auto generate video channel's HLS, HTTP-FLV, WebSocket, RTSP URL.
- Scan code and watch live broadcast (HLS) of video channel.
- Export HLS, HTTP-FLV, WebSocket, RTSP URL address.

### **HLS**

- Push HLS stream to the upper application platform.
- Add video channel which needs HLS service.
- Export video channels' HLS URL.
- Restart HLS server.

### **RTMP**

- Push RTMP stream to the upper application platform
- Add device for RTMP service to the private cloud.
- Add device to the cloud platform suppliers such as Aliyun cloud, Baidu AI cloud etc.
- Export RTMP URL address.
- Restart RTMP server.

### **GB/T28181**

- Access to front-end video surveillance devices under the protocol of GB/T 28181.
- Set GB/T28181 node for video channel, device, cascading platforms.
- Support automatic generation of device's GB/T28181 ID.
- Support device ID checking to avoid device ID conflicts.
- Import or export 28181 ID information.
- Provide GB/T28181 platform center management.
- Add upper-level platform to GB/T 28181 center management.
- Push GB/T 28181 stream of corresponding channel or device to upper level platform
- Support pushing a single device to multiple upper platforms at the same time.

## **System Maintenance**

### **Backup and Restore**

- Automatically back up system database (daily, week, month).
- Manually back up system primary database and log database.
- Restore system database from server or local file.

### **System Dashboard**

- Overview and detail system information.
- Running status: CPU, storage, RAM, bandwidth
- Service, device and user online information, device health report.
- Display software registration information: authorized registration channels, functional modules etc.

### **Log**

- System, device, alarm host, guard tour patrol, access control event, access control status log.
- Search and export log.

### **System Configuration**

- Set server interval time
- Time synchronization: synchronizing the time between server and accessed encoder.
- Set web, media stream, control, RTSP port.
- Configure stream media server



- Configure storage server
- Disk information display.
- Set third-party URL
- Configure the data retention duration of logs and primary database.
- Email server configuration.
- SMS configuration

### Service Management

- Delete the slave server (also called sub server)
- Enable and disable slave server (also called sub server)
- Automatically assign devices to different servers to balance the server load.
- Display loading time, active time and status of every service module.
- Restart each functional service module.
- Export server log.

### Cascading Management

- Add subordinate site for cascading .
- Superior level can view the live video and video record of subordinate site.

### Assets Management

- Display name, model, brand, supplier, purchase data, warranty, maintenance related information of vide device,alarm host device, access control host of the whole system.
- Add or edit asset number,name,type, model, brand, supplier. Purchase date, warranty and remark for video device, alarm host device and access control host device.
- Support form and chart mode.
- Search for detailed assets information by purchase date, device type, and keyword.
- Export assets information.

### Add-ons

- Support multiple language: English, Traditional Chinese, Simplified Chinese
- Support PTZ keyboard
- Support remote management. Multiple clients can monitor at the same time.
- Support mobile monitoring. Provide mobile phone monitoring applications for IOS/Android.
- Support RTSP, HLS, HTTP-FLV, WebSocket protocols, users can directly watch live broadcasting video on browser without installing any monitoring application software on PC or on mobile phone.
- Support customization. Flexibly customize the functional features to meet customers' personalized needs and assists them in formulating their market competitive advantage.

## SVMS Pro System Performance

- Support up to 1 million video channel management
- Video input bandwidth per streaming server : 200x4Mbps
- Video output bandwidth per streaming server: 200x4Mbps

## SVMS Pro Device Management List



Device Management	Function /Device Brand	Supported Brand /Access to device via protocols
Device management in LAN	Support device import and export in LAN	
	Support export channel latitude and Longitude information	
	Support device searching	Hikvision, Dahua, Uniview, Huawei, Onvif...
	Supported device list	<a href="http://www.midvision.cn/support.html">http://www.midvision.cn/support.html</a>
Device management in WAN (including NAT device management)	Hikvision	Ehome/ISUP, GB/T28181, GA/T1400
	Dahua	Auto-Register, GB/T28181, GA/T 1400
	Uniview	P2P GB28181
	HUAWEI	Active-Register, GB/T28181,GA/T 1400
	TIANDY	Auto-Register,GB/T 28181
	XM	P2P, GB/T28181
	TOPSEE	P2P, GB/T28181
	TVT	Active-Register, GB/T 28181
	EZVIZ Cloud Platform	APP KEY, Secret
	IMOU Cloud Platform	APP KEY, Secret
	RTMP	RTMP
	RTSP	RTSP
	HLS	HLS
	HTTP-FLV	HTTP-FLV
	ONVIF	ONVIF
	Hikvision Platform Software	ISC,9600,8200,8250,7600,7000,6600 etc
Dahua Platform Software	DSS,DSS Pro, 7600 etc	
Other Cascading Platforms	Managed under protocol GB/T28181	
Other devices (IPC/NVR/CVR...)	Managed under protocol GB/T28181	
Active-Register (Port Mapping)	Support device management under DDNS mode.	Hikvision, Dahua, XM
Face Recognition Device Management	Support face device management under GA/T1400 protocols.	Hikvision, Dahua, HUAWEI
Face Recognition Server	ArcSoft	
License Plate Device	Access to license plate device under protocol GA/T1400	Hikvision, Dahua, HUAWEI
Video Captured Mobile Phone	Video captured by mobile phone	Hangzhou Daxun own video APP
AI Server	No restrictions.	Needs to integrate first.
Access Control Device	Add access control host and doors; Operate doors etc	Hikvision, Reformer, MAX
Alarm Host Device	Support arming,disarming, bypass, bypass recovery,siren output, alarm information display etc.	Hikvision,Honeywell,Bosch, and Inanter
Decoder	Decode the real-time video to the video wall etc.	Hikvision, Tiandy and Hangzhou Daxun



## SVMS Pro System Requirements

### Operating System

- OS for Server:  
Win7-64bit /Win10-64bit / Windows Server 2008 / Windows Server 2012 / Windows Server 2016 / Windows Server 2019.
- OS for Windows Control Client:  
Win 7-32 bit / Win7-64bit / Win10-64bit / Windows Server 2008 / Windows Server 2012/ Windows Server 2016 / Windows Server 2019
- OS for SVMS Pro Mobile Client:  
IOS: IOS9.0 and above  
Android: Android 4.4 and above

### Hardware

- Hardware for Server

#### Recommended

CPU	4-Core, 8-Thread+
Memory	16G+
System Disk	128G+
Ethernet Port	2 Ports@1000Mbps

#### Minimum

CPU	Dual-Core,4-Thread
Memory	4G
System Disk	64G
Ethernet Port	1 Port@1000Mbps

- Hardware for Control Client

#### Recommended

CPU	4-Core, 8-Thread+
Memory	16G
System Disk	128G+
Graphics Card	Integrated Graphics Card,2G Cache
Hard Drive Capacity	100GB free for SVMS Pro Client
Ethernet Port	1 Port@1000Mbps

#### Minimum

CPU	Dual-Core,4-Thread
Memory	4G
System Disk	64G
Graphics Card	Integrated Graphics Card
Hard Drive Capacity	20GB free for SVMS Pro Client
Ethernet Port	1 Port@1000Mbps

- Hardware for Mobile Client



iPhone	iPhone5S and above
Android	Resolution: 1280X720 and above RAM: 16GB and above

## Browser Version

- Internet Explorer: 11
- Chrome:67 and above

## Virtual Machine

- VMware ESXi 6.0 ( Win7-64bit /Win10-64bit / Windows Server 2008 / Windows Server 2012 / Windows Server 2016 / Windows Server 2019. )
- Virtual Box ( Win7-64bit /Win10-64bit / Windows Server 2008 / Windows Server 2012 / Windows Server 2016 / Windows Server 2019. )

