

## HikCentral-VSS-Base/HW/300Ch

HikCentral is a flexible, scalable, reliable and powerful central video system. It can be delivered after pre-installed on Dell server. HikCentral provides central management, information sharing, convenient connection and multi-service cooperation. It is capable of adding devices for management, live view, storage and playback of video files, alarm linkage, and so on.



### System Requirements

Feature	Description
OS for Control Client	Microsoft® Windows 7 (32/64-bit) Microsoft® Windows 8 (32/64-bit) Microsoft® Windows 8.1 (32/64-bit) Microsoft® Windows Server 2008 R2 (64-bit) Microsoft® Windows Server 2012 (64-bit) Microsoft® Windows 10 (64-bit) Microsoft® Windows Server 2016 (64-bit)
Browser Version	Internet Explorer 10/11 and above (32-bit) Chrome 35 and above (32-bit) Firefox 32 and above (32-bit)
OS for Smartphone	iOS 8.0 and later Android phone OS version 4.0 or later, and dual-core CPU with 1.5 GHz or above, and at least 2G RAM
OS for Tablet	iOS 8.0 and later Android tablet with Android OS version 4.1 or later

### Function Features

#### VSM Server

- Provides normal and hot spare installation mode
- Provides unified authentication service for clients & servers
- Provides centralized management for users, roles, permissions, surveillance devices, and servers
- Provides log management
- Scalable for medium and large-sized projects



Service manager for system health monitoring

Streaming gateway: a VSM component that forwards and distributes audio and video data as well as forwards signaling

## **Streaming Service**

Forwards and distributes audio and video data

## **Web Client**

Access the VSM service via IP address or domain name

License management

- Online or offline activation
- Online or offline update
- Online or offline deactivation

Startup wizard guides you through basic operations including

- Adding encoding devices
- Configuring event parameters
- Managing system users

Supports standard ONVIF™ protocol

Encoding device management

- Multiple devices can be added: network cameras, network speed domes, video encoders, NVRs, etc.
- Create password for inactive encoding device(s)
- The password strength of the added encoding device can be checked by the system for security purpose
- Six adding modes for encoding devices available:
  - By detecting the online devices in the same subnet with the VSM server or current PC
  - By specifying the device IP address or domain name
  - By adding the devices added to a Hik-Connect account
  - By specifying an IP segment
  - By specifying a port segment
  - By importing in a batch

Restore or reset passwords for detected online devices

Recording Server manageable

- Add Hybrid Storage Area Network (Hybrid SAN) or Cloud Storage Server as a Recording Server
- Add Hybrid SAN or Cloud Storage Server by IP address
- Provides WAN access
- Provides searching the video files stored in Cloud Storage Server via the HikCentral Mobile Client.
- Remotely configure the added Hybrid SAN or Cloud Storage Server via a web browser
- One-touch configuration for setting the Hybrid SAN storage
- Hybrid SAN N+1 hot spare
- Provide ANR function

### Streaming Server manageable

- Add Streaming Server by IP address
- Provides WAN and LAN access

### Manage resources (cameras, alarm inputs, and alarm outputs) by areas

### Recording

- Two storage methods for storing the video files:
  - Encoding Device: DVR/NVR/ network camera (SD card);
  - Recording Server: Hybrid SAN or Cloud Storage Server
- Continuous recording, event triggered recording, and command triggered recording.
- Set uploading schedule to upload the specific type of video files stored in one storage medium to the selected storage location
- Set recording schedule: All-Day Time-Based Template, All-Day Event-Based Template, and Custom Template
- Auxiliary storage

### Picture storage

- Store the images uploaded from the devices, such as alarm triggered pictures, on the HDD of VSM server, Hybrid SAN, or Cloud Storage Server.
- Store the pictures imported by the users, such as static map pictures, on the HDD of VSM server.

### Events & alarms

- Set system-monitored events for the resources in the system
  - Camera events: motion, video loss, line crossing, etc.
  - Device alarm input events
  - Device exceptions: device offline, HDD full, HDD read/write error, etc.
  - Server exceptions: high mainboard temperature, bad disk, disk loss, etc. (including Streaming Servers, Recording Servers, and HikCentral Server)
  - User events: user login or logout
  - User-defined events
  - Generic events
- Set event linkage actions such as recording, creating tag, capturing pictures, linking alarm outputs, PTZ actions, sending emails, and triggering user-defined events
- Send emails to notify users of triggered event information with email template configurable
- Create a generic event rule to analyze the received TCP and/or UDP data packages, and trigger events
- Customize a user-defined event to define the event which is not in the provided system-related event list. You can trigger it manually on the Control Client
- Trigger the events as alarms and set alarm linkage actions including related cameras, related maps, pop-up window, audible warning, and triggering user-defined event
- Save event as alarm when editing event
- Set arming schedule for the events: all-day template, weekday template, weekend template, and custom template
- Set arming schedule for the alarms: all-day template, weekday template, weekend template, custom template, or the alarms can be armed or disarmed when an event starts or ends
- Set alarm priority: high, medium, low, and custom

- Set alarm category: true, false, to be acknowledged, and to be verified

#### Map management

- Link e-map to area
- Search locations on GIS map
- Set the current site's location to the GIS map
- Add/edit/delete the hot region on the map
- Add/edit/delete hot spots (camera / alarm input / alarm output) on the map
- Add labels with description on the map

#### Role & user management

- The default password of the admin user must be changed at first-time login.
- Support changing the password of the admin user
- The admin user can reset other users' password
- The user account will be frozen for 30 minutes after 5 failed password attempts
- Add / edit / delete roles and users
- Roles can be assigned with different permissions, including area display rule, resource access, and user permissions
- Two default roles are supported: administrators and operators
- The role name, expiry date, and text description can be set for the roles
- The users can be assigned with the roles to obtain the corresponding permissions
- The user name, expiry date, and text description can be set for the users
- Two types of user status are supported: active and inactive
- Set an email address for the added user so that he/she can reset the password via email if he/she forgot the password
- PTZ control permission level (1~100) can be set
- Domain users can be imported in batches
- The user can be forced to logout by the admin user

#### Security settings

- Lock IP address for configurable duration when reaching the configured failed password attempts
- Set the minimum password strength
- Set the maximum password age
- Lock the Control Client after a time period of inactivity

#### System configuration & maintenance

- Create a name for the current site
- Enable GIS map function, configure the map API URL, and customize the icons of hot region and hot spot
- Set the threshold for the VSM server's CPU usage and RAM usage
- NTP settings
- Active directory settings
- Allow the system to receive the configured generic events
- Register to Central System as a Remote Site

- A static IP address can be set for the WAN access
- Set the network timeout (default waiting time) for the configurations on the Web Client
- Set device access mode as automatically judge or proxy mode
- VSM server NIC settings
- Set the retention period for storing the data recorded in system
- Pre-define schedule templates including recording schedule and arming schedule
- Pre-define email templates
- Set transfer protocol as HTTP or HTTPS
- System hot spare settings
- Reset network information of added devices
- Export service component certificate from VSM server
- Backup and restore database

#### Live view

- View real-time video from the cameras
- PTZ control
- Manual recording
- Capture
- Instant playback
- Digital zoom
- Two-way audio
- Switch between main stream or sub-stream
- Display live view parameters.
- Turn on/off the audio in live view; adjust the volume
- Set the window division
- POS Live View
  - Display transaction data alongside corresponding video
  - Transaction information video overlay / separate display

#### Playback

- Play the recorded video of the cameras
- Playback by timeline
- Playback for up to 16 cameras
- Download the recordings for backup
- Reverse playback
- Playback frame-by-frame
- Single-frame backward
- Slow forward/fast forward
- Turn on/off the audio in playback; adjust the volume

- Video clipping and capture
- Set the window division
- Digital zoom
- Display video parameters
- Customize playback speed
- Select storage location and stream type for playback

#### Local configuration

- Set the network transmission settings
  - GPU hardware decoding
  - Stream type for global usage: main stream, sub-stream, and smooth stream
  - Set the window proportion threshold for switching between main stream or sub-stream
  - Network timeout: default waiting time for the operations in Applications on the Web Client
  - Video caching: small (1 frame)/medium (6 frames)/large (15 frame)
  - Captured picture format: JPEG/BMP
  - Device access mode: restore default/automatically judge/directly access/proxy
- View local saving path of videos or pictures

### **Control Client**

GPU hardware decoding

Receive alarm

Access to VSM via IP address and domain name

Log in with the domain user

The user account will be frozen after 5 failed password attempts

The window division is self-adaptive according to the number of cameras under live view or playback

Live view

- View real-time video from the cameras
- PTZ control
- PTZ control lock/unlock
- Public view and private view
- Camera auto-switch/View auto-switch
- Manual recording
- Capture
- Instant playback
- Auxiliary screen preview
- Digital zoom
- Two-way audio
- Turn on/off the audio in live view; adjust the volume

- Camera status detection
- Arming control
- Switch the live view stream to main stream, sub-stream, or smooth stream
- View fisheye camera's live view in fisheye dewarping modes
- View detected events in live view

#### Playback

- Normal playback for continuous recordings
- VCA playback based on motion analysis /intrusion / line crossing events
- Async/Sync playback for up to 16 cameras
- Playback in fisheye dewarping mode
- Add default, customized tag to mark the important video footage
- Play the tagged video footage
- Play by files/timeline
- Lock / unlock the video file for file protection
- Download the video files
- Reverse playback
- Single-frame backward
- Playback frame-by-frame
- Slow forward/fast forward
- Customize high speed playback settings
- Turn on/off the audio in playback; adjust the volume
- Provide video thumbnails on the timeline
- Accurate positioning for playback
- Digital zoom
- Video clipping
- Capture
- Camera status detection
- Arming control
- Switch the video stream to main stream, sub-stream, or smooth stream
- Transcoding playback
- Extract frames to play the images one by one

Manage captured pictures and recorded/clipped video files during live view and playback which are stored in local PC

#### Map control

- View the geographic locations of resources on the map
- Get the live view and playback of the cameras on the map
- Arming control: arm and disarm the cameras, and alarm inputs on the map
- Search and view history alarms of the cameras and alarm inputs on the map

- Get a notification message on the map when alarm is triggered
- Jump to the hot region map
- Zoom in/out on the map
- Select resource(s) on the map
- Add labels with description on the map
- Capture
- Print map
- Locate resource on the map
- View the live video or playback of the resources on the map

#### Alarm center

- Display alarm info including alarm time, alarm name, alarm status, etc
- Display system alarm info including time and description
- Play the video from the alarm time
- View the live video from the related camera
- Add a tag to the alarm information
- Acknowledge the alarm with a text description
- Arming control for alarms
- Sort alarms by the selected property
- Clear alarms manually
- Enable/disable the alarm audio
- Enable/disable alarm triggered pop-up window
- Search event log files and alarm log files
- Manually trigger user-defined event

#### Video search

- Search video files stored on local devices or Recording Server
- Search the video clip by tag, lock, segment, or interval
- Search in storage location in Main Storage or Auxiliary Storage
- Search the transaction event by entering the keywords in POS information
- Search the ATM event by inputting the card number that is contained in the ATM information
- Set VCA rules to search the video where a VCA event occurs
- Play the searched video clips
- Download the searched video clips

#### Health monitoring

- Status overview including camera status, encoding device status, VSM status, Recording Server status, and Streaming Server status
- Detailed status page of cameras, encoding devices, Recording Servers, and Streaming Servers
- Set stream type for the resources to main stream, sub-stream, smooth stream, or restore to global stream.

#### Tools



- VSPlayer
- Broadcast
- Alarm Output
- Two-Way Audio

#### Download center

- Check the downloading tasks and status
- Continuous transmission on the breakpoint
- Download the player for playing back the video files

#### Log search

- Search log files of VSM server and cameras that are connected to the system
- Back up log files

#### System settings

- Configure the general parameters
  - Global Stream: main stream, sub-stream, smooth stream for global usage
  - Set the window proportion threshold for switching between main stream or sub-stream
  - Network timeout: the default waiting time for the Control Client
  - Picture format: JPEG/BMP
  - Maximum mode: Maximize/Full Screen
  - Auto-login
  - Resume last interface
  - Display the number of each window
- Configure the image parameters
  - View scale: full screen or original resolution
  - Window scale: 4:3 or 16:9
  - Video caching: Small (1 Frame), Medium (6 Frames), or Large (15 Frames)
  - Continuous Decoding
  - Enable/disable highlight for motion
  - Enable/disable VCA rule
  - Enable/disable GPU hardware decoding
  - Enable/disable display the transaction information on the live view and playback image
  - Enable/disable display the temperature information on the live view and playback image
- Configuring file saving path
  - Set local saving path of videos/pictures/packages
- Configuring keyboard and joystick parameters
- Configuring live view and playback settings
  - Configure icons on live view and playback toolbar
  - Enable/disable Screen Toolbar Display

- Set alarm sounds by local audio files or voice engine (require support of the OS)

## **Mobile Client**

Access to the VSM via IP address

Log in with normal user or domain user

Log in with HTTP or HTTPS transfer protocol

The user account will be frozen after 5 failed password attempts

Add/remove cameras to/from My Favorites

Live view

- View real-time video from the cameras
- Set 1/4/9 window division
- PTZ control
- Turn on/off the audio in live view
- Set the video quality
- Manual recording
- Capture
- Two-way audio
- Digital zoom
- Slide on the image to realize fisheye dewarping
- Trigger user-defined event manually

Playback

- Search by date/storage mode
- Provide three storage modes: encoding devices, Hybrid SAN, and Cloud Storage Server
- Play back the recorded video files
- Turn on/off the audio in playback
- Video clipping
- Capture
- Synchronous playback
- Digital zoom
- Switch the video stream to main stream or sub-stream
- Slide on the image to realize fisheye dewarping
- Transcoding playback
- Scale up or scale down the playback timeline bar

Receive alarms

- Receive and display the alarm notification and view the alarm related live video or recording
- Filter alarms by alarm priority, alarm status, alarm category
- View alarm sources on related maps

- Acknowledge alarms

Display the camera details including online status, PTZ control, etc.

Map control (only for tablet)

- View the geographic locations of resources on the map
- Get the live view and playback of the cameras on the map
- Get a notification message on the map when alarm is triggered
- Jump to the hot region map
- Zoom in/out on the map
- Select resource(s) on the map
- Add labels with description on the map
- Locate resource on the map

Search (only for tablet)

- Search video: search tagged video and VCA event related video

View/delete/share the captured images and video clips

Provide traffic flow statistics of Current Day/Current Month/History

Set device access mode as Restore Default/Automatically Judge/Directly Access/Proxy Mode to define the accessing device mode when performing live view or playback

Provide hardware decoding

## Software Specification

The following table shows the maximum performance of the VSM service. For other detailed data and performance, refer to *Software Requirements & Hardware Performance*.

	Feature	Performance
<b>General</b>	Cameras	300 <sup>①</sup>
	Alarm Inputs	300
	Alarm Outputs	300
	Recording Servers	64
	Streaming Servers	64
	Areas	300
	Area Hierarchies	5
	Cameras per Area	64
	Alarm Inputs per Area	64
	Alarm Outputs per Area	64
	Email Templates	Unlimited
<b>Recording</b>	Recording Schedules	3,000
	Recording Schedule Templates	200
<b>Event &amp; Alarm</b>	Event and Alarm Rules	3,000
	Storage of Events or Alarms without Pictures	100/s
	Storage of Events or Alarms with Pictures	20/s (Each Picture 500 KB, Stored in VSM Server) 80/s (Each Picture 500 KB, Stored in Recording Server)
	Events or Alarms Sent to Clients	120/s 100 Clients/s <i>*The clients include Control Clients and Mobile Clients.</i>
	Arming Schedule Templates	200
	Alarm Categories	25
	Alarm Priorities	255
<b>Data Storage</b>	Data Recorded in System	Stored for 3 Years <i>*Including event logs, recording tags, video analysis data, service error logs, service warning logs, and service information logs.</i>
	Alarm Logs	60 Million
<b>Users and Roles</b>	Concurrent Accesses via Web Clients, Control Clients, and OpenSDK Clients	100
	Concurrent Accesses via Mobile Clients and OpenSDK Clients	100
	Users	3,000
	Roles	3,000
<b>Map</b>	E-maps	1,024
	Map Resolution	8192 × 8192

Feature		Performance
	Hot Regions per Map	64
	Camera Hot Spots per Map	128
	Alarm Input Hot Spots per Map	128
	Alarm Output Hot Spots per Map	128
	Labels per Map	128
	Hot Regions in Total	1,024
	Labels in Total	3,000
Streaming Server's Maximum Performance		
Video Input Bandwidth per Streaming Server		300 × 2 Mbps
Video Output Bandwidth per Streaming Server		300 × 2 Mbps
Supported Language		
English, Spanish, Russian, French, Italian, Polish, Turkish, Dutch, Portuguese, German, Czech, Bulgarian, Hungarian, Thai, Danish, Japanese, Simplified Chinese, Traditional Chinese		

\*

①: If the number of the manageable cameras (including the cameras directly added to the VSM and the cameras connected to these added devices) exceeds 300, the exceeded cameras cannot be imported to the areas.

## Hardware Specification

Hikvision bought 3-year platinum service from Dell. You can get assistance from your regional Dell support center if you encounter any problems on the Dell server.

For details, refer to *Maintenance Guide of Dell All-In-One Server*.

Feature	Description
Processor	E3-1220 V5 (4-Core, 3.0 GHz)
Operating System	Microsoft® Windows Server 2012 R2
Memory	16G DDR4, 2400MT/s UDIMMS
Storage	1T SATA × 2, 3.5" Enterprise SATA 7.2k HDDs; 120GB SATA SSD x1
RAID	H330 RAID Controller with RAID 1
NIC	1GbE × 2
Chassis	1U, Rack Mount
Battery	CR-2032 Coin Cell/Lithium/0.0032kg
Power Supply	250W Cabled PSU
Dimensions (W × D × H)	482.38 mm × 567.92 mm × 42.8 mm (18.99" × 22.36" × 1.69")
Weight	9.5 kg
Dimensions with Package (W × D × H)	750 mm × 614 mm × 259 mm (29.53" × 24.17" × 10.2")
Weight with Package	15.8 kg (34.8 lb)



See Far, Go Further