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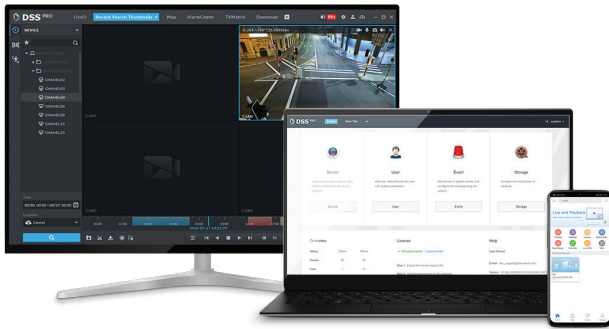
# Digital Surveillance System
DSS Pro Video Management System



- Integrates All Management Functions into One Client
- Allows Device Initialization and Management
- Live Video Playback from Edge Device
- Supports Access Control and Video Intercom Integration
- Configure Video Wall Layout and Scheme
- Offers Fisheye Camera Dewarping on Live View
- Offers Facial Recognition and Search on Live View

## System Overview

DSS Pro is a comprehensive and expandable Dahua VMS for flexible, scalable, reliable and powerful central management. With client-server architecture, DSS Pro provides central management, information sharing, convenient connections, and multi-service cooperation. The software provides basic functions such as user permission management, device management, alarm management, central storage, video wall and map configuration, access control features (such as personnel management), video intercom, attendance, and access control, and analytic functions such as face recognition, people counting, and object detection. It also integrates add-ons such as business intelligence and traffic. DSS Pro can be applied to many security surveillance solutions.

## Functions

### Compatibility
DSS Pro is compatible with all Dahua IP-enabled devices: network cameras, NVRs, DVRs, video intercom devices, and access control devices. The server is also compatible with the ONVIF protocol, so it can connect to ONVIF-enabled third-party devices.

### Fisheye Camera Support
The software features full support for Dahua Fisheye cameras. The software supports options for the Fisheye camera installation and offers dewarp modes. Dewarping solves the problem of distortion in the circular panoramic view in both live or playback modes.

### Real-time Face Recognition
The Pro performs real-time facial recognition on up to 100 channels simultaneously. The software captures and analyzes facial features to determine gender, age, expression, glasses, moustache, and mask, and then can record the faces and store the associated structured data. The server also filters incoming video to display faces that match target features.

### Access Control and Video Intercom
DSS Pro offers full support and integration for access control and video intercom products to support a complete security and surveillance system. The server monitors door status and events, manages access rights, and support advanced rules management. In addition to access controls, the server supports two-way communication between intercom and control center.

### Video Wall
Offers settings to configure all aspects of a video wall application. The application supports video wall layout, live preview, scheme configuration, and tour setup. In addition, the application supports video wall splicing and roaming.

### Management Operations
The software manages the devices and the user accounts for an entire organization. Operators can assign different camera ranges, active use periods, and business roles for each user. The server also supports different schemes for various events, including IVS, to record and view all event history information.

**Onvif**

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## System Features

### Business Configuration

#### Device Management
- Initialize Dahua devices
- Add devices via auto search, IP, IP Segment, Domain, Auto-register (for 3G, 4G, DHCP)
- Manage Dahua devices
- Add third-party devices via ONVIF
- Modify Dahua device IP address and password
- Import Intercom Devices
- Bind cameras for alarm configuration and POS transactions

#### Role and User Management
- Manage user permissions and roles for devices and control
- Assign user to defined roles
- Assign appropriate permissions to specific users
- Restrict user access by MAC and expiration dates
- Set user PTZ permissions
- Lock users
- Import domain user and assign roles to the user

#### Event Management
- Set alarm type: device, video channel, alarm input, IVS alarm, thermal, vehicle blacklist, face arming
- Set alarm scheme: all day, weekday, weekend, or custom template
- Set alarm priority: Low, Medium, High
- Link recordings, snapshots, live video, alarm output, PTZ actions, or e-mail

#### Storage
- Set edge storage and central storage
- Extend central storage via iSCSI
- Create recording plan by time template: all day template, weekday template, weekend template, and custom template
- Backup video from edge storage devices (EVS, NVR, DVR, etc.) by schedule
- Backup video from MDVR, NVR, EVS, DVR via Wi-Fi
- Allocate disks and cameras to different groups to main disk quotas

#### Map
- Use Google online or offline maps, or raster maps
- Supports 8-level sub-map
- Configure camera, alarm input, and intelligent channel, and sub-map hot spots.

#### Video Wall
- Display/Hide the screen ID
- Supports screen combinations
- Bind the decode channel with the corresponding screen

#### Face Database
- Manage face libraries
- Add faces one by one or import faces in batches to the library
- Send face library to a facial recognition device and configure similarities

#### Vehicle Blacklist
- Manage vehicle blacklists
- Arm and disarm vehicle blacklists
- Import and export vehicle blacklists

#### Video Intercom
- Manage communication between intercom devices via SIP protocol or command center.
- Release text information to VTH, release address book to VTO
- View, delete, and freeze DSS Mobile users

### System Maintenance

#### Backup and Restore
- Automatically backup system database (daily, weekly monthly)
- Manually backup system database
- Restore system database from a server or a local file

#### System Dashboard
- View overview and detailed system information
- Check CPU, storage, and bandwidth running status
- View device health report for service, device, and user online information
- View event information statistics: total and processed events
- View video and alarm channel source information

#### Logs
- View system, administrator, and client logs
- Search and export logs

#### Other Functions
- Supports HTTPS
- Set device time calibration
- Set log, alarm information, POS data, and Heat Map storage time

#### Service Management
- Delete the slave server
- Enable/Disable the slaver server
- Balance server load

## Control Client

### Live View
- Display device tree; show/hide offline devices.
- Display device IP address or device name on the device tree
- View real-time video
- Apply a common layout (1, 4,6, 8, 9, 13, 16, 20, 25, 36, 64 ) or a customized layout
- Control PTZ cameras
- Electric focus
- Set manual recording (PC or central storage)
- Take Snapshots
- Perform instant playback and digital zoom
- Apply Fisheye dewarping
- Control smart tracking for fisheye, speed dome, and panoramic cameras
- Audio talk
- Decode to a video wall
- Turn on/off the audio in live view
- Set Region of Interest: divide one window into 4 or 6 parts, one shows whole image and others show details
- Display map in Live View and save current split as a view
- Switch to Playback mode
- Supports NKB1000 keyboard to control cameras in the Live View
- Overlay POS transaction data and set POS overlay style
- Adjust the video image and the display mode (full screen or original)

### Playback
- Playback recording from front-end devices or from central storage
- Apply video filters: normal, motion, alarm, video loss,video tampering
- Sync play
- Reverse playback
- Supports up to 64x fast play and 1/64x slow play
- Playback frame-by-frame
- Lock or mark important recording segments for central storage
- Supports .avi, .dav, .flv, ,mp4, and .asf video output
- Decode to a video wall
- Apply Fisheye dewarping
- Take a snapshot
- Switch to the Live View
- Apply a common layout (1, 4,6, 8, 9, 13, 16, 20, 25, 36) or a customized layout
- Adjust the video image and the display mode (full screen or original)

### Event
- View real-time and historical alarm information
- View detailed alarm information (live video, record and pictures from related camera, alarm source location on the map)
- Acknowledge alarms
- Arm control for alarm source
- Forward alarms to relevant users
- Manually send alarm email to a relevant user
- Search by alarm source, alarm time, status, handle user, and priority
- Search alarm events and export the alarm list

### Video Wall
- Manually/Automatically decode real-time video to a video wall
- Manage video wall split
- Change the video channel stream type
- Add box, turn screen on/off, and deliver video stream to control client
- Tour the video channel in one screen
- Set running task on the timeline for schedule plan
- Loop different tasks and set duration time for tour plan
- Supports NKB1000 keyboard to control the video wall.

### Map
- View live video or playback video on the map
- Calculate area or length of a GIS map
- Supports visible range and initial angle (for PTZ cameras only)
- Displays visible alarm trigger on the map

### People Counting
- Generate daily, weekly, monthly, and yearly reports
- Generate a Heat Map based on the people counting statistics
- Export people counting and Heat Map data

### Face Recognition
- Automatically captures faces in the camera's field of view
- Extracts face attribute information from captured face
- Real-time face comparison
- Registers face to face library
- Search for a face via face attribute, via uploading a face image, via records comparison
- Generate the track for the specific face
- Generate daily, weekly, monthly attribute report based on gender and age

### Other Functions
- Decode GPU
- Connect NKB via USB

## Personnel Management
- Add, edit, and delete personnel and departments
- Program card or fingerprint via USB or other readers
- Authorize access by door or by door group
- Set private passwords and face authentication
- Manage guest, VIP, and employee access

## Access Control
- Monitor door status and events
- Set door groups and door levels
- Manage access rights
- Use one key to lock/unlock doors
- Link to fire control system
- Set advanced door rules (passback, first card unlock, for example)

## Video Intercom
- Manage communication between intercom devices via SIP protocol or command center.
- Release text information to VTH, release address book to VTO

## Attendance
- Set access control devices as attendance stations
- Manage attendance time periods
- Manage and arrange shift time periods
- Generate attendance reports, including attendance record, abnormality, card-swipe

## Flow Analysis
- Generate daily, weekly, monthly, and yearly people counting reports
- Generate heatmaps
- Export people counting and heatmap data
- Generate dwell time reports

## Object Detection
- Take real-time snapshots and record information about human, motorized, and non-motorized vehicles.
- Extract attributes from snapshots
- Search targets in database by criteria searching
- Generate daily, weekly, or monthly attribute reports

## Thermal
- Supports monocular and binocular thermal imaging devices
- Reads temperature values from video frame
- Acquire timed heatmap
- Supports box selection, circle selection, and linear analysis, temperature curve on heatmap.
- Save, import, and analyze heatmap

## Vehicle Entry
- Edit parking lot information, including total and available spaces and parking lot name
- Manage vehicles, owners, and cards
- Bind LED screen with ITC or spot detector device
- Open barriers via VTO with card or remotely
- Force vehicles to leave parking lot
- Search historical pass records and export data
- Generate daily, weekly, monthly, and annual vehicle entry statistics

## Business Intelligence
- Provide daily, weekly, and monthly reports
- Track customer flow, entrance/exit monitoring
- Create custom demographics based on customer age, gender, attributes

## Traffic
- Search violations by time, license plate number, violation type.
- Supports daily, weekly, monthly, and annual traffic flow statistics
- Query data for vehicle data based on location, time period, license plate number, color, average speed.

## Alarm Controller
- Use custom alarm types and update alarm status
- Globally arm/disarm specific zones or subsystems
- Control zone status
- Cancel alarms

## System Features

### Mobile Client

#### History Record
- Show recently viewed channels, open live video or playback via history recordings
- Saves up to 20 history recordings before replacing the oldest recording

#### Live View
- Open more than one channel at the same time, up to 16 channels
- Supports high-definition (HD), standard-definition (SD), and Fluency (FL)stream types
- Supports PTZ control
- Supports horizontal screen play
- One-key switch to playback
- Take snapshots, record locally, and talk

#### Playback
- Replay device recordings and center recordings (up to 8x and as slow as 1/8x)
- Marks the calendar to indicate whether there is a video on a particular day
- Supports snapshot
- Manually record to local device
- Supports 1x, 2x, 3x, 4x, 1/2x, 1/4x, and 1/8x playback speeds

#### Alarm Center
- Subscribe to an alarm
- Process alarms
- View alarm video and picture
- Search alarms

#### Map
- Supports Google Maps
- Displays the video channel on the map
- View video and perform playback

#### Other Functions
- View video from a channel and add channel as a favorite
- View picture and video via a local file.

# DSS | DSS Pro

## Technical Specification

### Hardware- Server

| Operating System | | Windows 10, 64-bit; Windows Server 2008; Windows Server 2012; Windows Server 2016; Windows Server 2019 |
|---|---|---|
| CPU | Recommended | Intel® Xeon® Silver 4114 @ 2.2 GHz 10 Core Processor |
| | Minimum | E3-1220 v 5 @ 3.00 GHz,  3.00 GHz 4 Core |
| Memory | | 16 GB |
| Storage | | 1 TB, 500 GB free for DSS |
| Network Connection | Recommended | Four (4) 1000 Mbps Ethernet Ports |
| | Minimum | Two (2) 1000 Mbps Ethernet Ports |

### Hardware- Control Client

| Operating System | Windows | Windows 7, 32-bit; Windows 7, 64-bit; Windows 10, 64-bit; Windows Server 2008; Windows Server 2012; Windows Server 2016 Windows Server 2019 |
|---|---|---|
| | Macintosh | Mac OS 10.13.4 and higher |
| CPU | Recommended | Intel® Core™ i5 64-bit 4 Core Processor |
| | Minimum | Intel® Core™ i3 64-bit 4 Core Processor |
| Memory | Recommended | 8 GB |
| | Minimum | 4 GB |
| Graphics Card | Recommended | NVIDIA® GeForce®GT 730 |
| | Minimum | Intel® HD Graphics 4400 |
| Storage | Recommended | 200 GB free space |
| | Minimum | 100 GB free space |
| Network Connection | | One (1) 1000 Mbps Ethernet Port |

## Management Functions

| Organization and User | Organization | 10 Hierarchies, 999 organizations per hierarchy |
|---|---|---|
| | Roles | 100 Users |
| | Users | 200 Online Users 2500 Total Users |
| | Video Intercom Mobile App | 500 Online Users 5,000 Total Users |
| Devices (single point performance) | Total Devices | 2000 |
| | Video[1] | 1000 Devices 2000 Channels |
| | Auto-Register | 500 Devices 2000 Channels |
| | ONVIF | 200 Devices 800 Channels |
| | Face Recognition | 100 Channels |
| | Object Detection | 20 Channels |
| | Heatmap | 64 Channels |
| | People Counting | 100 Channels |
| | Thermal | 20 Channels |
| | POS | 100 POS Channels (20 POS data per second) |
| Access Control and Intercom | Access Control | 200 Devices 1000 Doors |
| | Video Intercom | 1000 Devices (including no more than 64 VTO devices) |
| Alarm Controller | | 50 Devices 500 Channels |
| Media Transmission Server | Video Input, per server | 600 Mbps |
| | Video Output, per sever | 600 Mbps |
| Event | Alarm without Pictures | 300/s |
| | Alarm with Pictures | 50/s |
| | Alarm Controller | 50/s |
| | Access Control | 20/s |
| | Face Capture | 150/s |
| | Object Detection | 50/s |
| Map | Hierarchies | Eight (8) |
| | Submaps | 32 per Hierarchy |
| | Spots per Map | 300 (GIS and Raster) |
| | Raster Map Size | 14.7 MB |
| Face Recognition | Database | 50, 300,000 total faces |
| | Import per Time | 10,000 |
| Personnel Management | Persons | 50,000 |
| | Cards | 50,000 |
| | Faces | 50,000 |
| | Fingerprints | 80,000 |
| Total Records | | 5,000,000 (dependant on disk capacity) |

## Distributed System

### Management Functions

| | | |
|---|---|---|
| Total Slave Servers | | 20 |
| Devices (single point performance) | Total Devices | 5000 |
| | Video[1] | 5000 Devices<br>20,000 Channels |
| | Auto-Register | 1000 Devices<br>4000 Channels |
| | ONVIF | 500 Devices<br>2000 Channels |
| | Face Recognition | 500 Channels |
| | Object Detection | 100 Channels |
| | Heatmap | 320 Channels |
| | People Counting | 500 Channels |
| | Thermal | 100 Channels |
| | POS | 500 POS Channels (100 POS data per second) |
| Access Control | | 600 Devices<br>3000 Doors |
| Alarm Controller | | 50 Devices<br>500 Channels |
| Event[2] | Total Events | 600/s |
| | Alarm without Pictures | 600/s |
| | Alarm with Pictures | 150/s |
| | Alarm Controller | 50/s |
| | Access Control | 120/s |
| | Face Capture | 350/s |
| | Object Detection | 100/s |

2. The sum of events of each type cannot exceed the total number of events. One piece of access controller event is equivalent to three general alarms without pictures; one piece of alarm controller event is equivalent to a general alarm without picture; one piece of alarm with picture or one object detection is equivalent to three face detection events.

## Cascade System

### Management Functions

| | |
|---|---|
| Number of Cascade Levels | 3 |
| Number of Cascade Servers | 20 |
| Total Devices and Channels | 5000 Devices<br>20,000 Channels |
| Auto-Register | 1000 Devices<br>4000 Channels |
| ONVIF | 500 Devices<br>2000 Channels |