

Digital Surveillance System Express

DSS Express V8 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

System Overview

DSS Express is a flexible Dahua VMS for scalable, reliable and powerful central management. DSS Express provides central management, information sharing, convenient connections, and multi-service cooperation. The software supports up to 256 cameras with a license. DSS Express integrates with access control devices, video intercom terminals and offers analytic functions such as object detection.

Functions

Compatibility

DSS Express V8 is compatible with all Dahua IP-enabled devices: network cameras, NVRs, DVRs, video intercom devices, and access control 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.

Access Control and Video Intercom

DSS Express V8 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.

System Features

Business Configuration

Device Management

- Bind cameras for alarm configuration
- 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

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 block list
- 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

NOTE: Video and image recordings cannot be on the same physical hard drive. Separate physical drives are required for video and image storage. System hard drives are only for DSS software installation.

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

Vehicle Block List

- Manage vehicle block lists
- Arm and disarm vehicle block lists
- Import and export vehicle block lists

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

Service Management

- Delete the sub server
- Enable/Disable the sub 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
- 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
- Adjust the video image and the display mode (full screen or original)
- Electronic focus

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

* A remote client login to a DSS server is supported only via an IP address. DSS does not support remote login via DDNS.

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

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

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

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.

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.

Technical Specification

Hardware – Server

Operating System		Windows 7 (32-bit) Windows 7 (64-bit) Windows 10 20H2 (64-bit) Windows 10 20H2 (32-bit)
CPU	Recommended	Intel® Core™ I7-9700K CPU@3.60 GHZ
	Minimum	Intel® Core™ I5-9400 CPU@2.90 GHZ
Memory		8 GB
System Disk	Recommended	7200 RPM Enterprise Class HDD 1 TB 500 GB free for DSS
	Minimum	7200 RPM Enterprise Class HDD 1 TB 200 GB free for DSS
Storage Disk		7200 RPM Enterprise Class HDD
Network Connection		One (1) 1000 Mbps Ethernet Port

Hardware – PC Client

Operating System	Windows	Windows 7 (32-bit) Windows 7 (64-bit) Windows 10 1809 (64-bit) Windows 10 20H2 (32-bit) Windows 10 20H2 (64-bit) Windows Server 2008 (64-bit) Windows Server 2012 (64-bit) Windows Server 2016 (64-bit) Windows Server 2019 (64-bit)
CPU	Recommended	I5-6500@3.20 GHz
	Minimum	I3-2120@3.20 GHz
Memory	Recommended	8 GB
	Minimum	4 GB
Graphics Card	Recommended	Intel® HD Graphics 530
	Minimum	Intel® HD Sandbridge Desktop Graphics
Storage	Recommended	100 GB free space
	Minimum	50 GB free space
Network Connection		One (1) 1000 Mbps Ethernet Port

Hardware – DSS Mobile Client

iPhone	iPhone 5S or later
Android	Resolution: 1280 x 720 or higher RAM: 5 GB or more

Virtual Machine

Operating System	Windows 10 H2 64-bit
	VMware ESXi 6.7

Total System Management Functions

Organization, User, Roles*	Organization	10 Levels, 999 Total Organizations
	Roles	20 Users Permissions
	Users	10 Online Users 50 Total Users
	Video Intercom Mobile App	50 Online Users 500 Total Users
Record and Event Plan	Central Recording	Up to 256 video channels
	Event Rules	Up to 256 event sources
Map	Hierarchies	Eight (8)
	Raster Maps	Up to 32
	Submaps per Map	Up to 32
	Raster Map Size	15 MB
	Raster Map Resolution	8100 x 8100
	Resources per Raster Map	Up to 300
Personnel Management	People	5,000
	Cards	10,000
	Fingerprints	10,000
	Vehicles	5,000
Vehicle Watch List		8
Access Control	Total People	5,000
	Access Permission Groups	50
Entrance/Exit Management	Vehicles	5,000
	Vehicle Groups	8
	Parking Lots	1
	Entrance/Exit Points	4
	Total Entrances	2
	Total Exits	2
Data Records	Alarms	2,000,000
	Number Plates	2,000,000
	Access Control	2,000,000
	Video Intercom	2,000,000
	Visitors	2,000,000
	Entrances	2,000,000
	Exits	2,000,000
	Forced Exits	2,000,000
	Operator Logs	2,000,000
	Service Logs	2,000,000

Single Server

Management Functions

Total Devices ¹		512
Devices	Video ²	256 Devices 256 Channels
	P2P	32 Devices
	ANPR	8 Channels (4 for entrance)
Access Control		64 Doors
Video Intercom		256 Devices
Media Transmission Server	Total Incoming Bandwidth per Server	200 Mbps
	Incoming Video per Server	200 Mbps
	Incoming Picture per Server	50 Mbps
	Total Outgoing Bandwidth per Server	200 Mbps
	Outgoing Video per Server	200 Mbps
	Outgoing Picture per Server	50 Mbps
	Total Storage Bandwidth per Server	100 Mbps
	Video Storage per Server	100 Mbps
Playback, Storage, Download Capacity		200 GB
Events ³	Total Events ⁴	60/s
	Events without Pictures	60/s
	Access Control Events	60/s
	Total Events with Pictures ⁵	60/s (50 Mbps)
	ANPR Events	12/s (4 per 3 sec for entrance and exit) (500 KB per picture)
	Events with Pictures	12/s (500 KB per picture)
	Face Capture	12/s (500 KB per picture)
Object Detection		6/s (1024 KB per picture)

Thermal Temperature Monitoring Solution Functions

Thermal Cameras	Per Server	400
	In Total	2000
Images	Per Server	150 pictures per second
	In Total	350 pictures per second
Supported Functions		<ul style="list-style-type: none"> • Online License Activation • Picture Storage/Snapshot • Record/Playback

Ordering Information

License Name	Description
DSS8EXV	One (1) Video Channel License. Use for a network camera, NVR, or ANPR channel.
DSS8EXD	One (1) Door Channel License. Note: An access control device with video requires one (1) door channel license and one (1) video channel license.
DSS8EXVDP	One (1) Video Intercom Device License. Use for one (1) VTO or one (1) VTH device.
DSS8EXVEM	Vehicle Entrance Management Module License. This license also requires a video license.

1. The total number of devices must not exceed the total number of video devices, access control devices, video intercom devices, and other devices.
2. The total number of video devices and channels must not exceed the total number of network cameras, NVRs, ITCs, and other video devices and channels.
3. Event concurrency is peak concurrency: 20 minutes of peak concurrency test, 3 times a day, and 30% peak concurrency for the remaining time of the day. Event concurrency: Event concurrency is in accordance with database concurrent writes. Concurrency of event with pictures must take picture write capacity of the disk into account.
4. Total event concurrency: The ability to write all events to system records concurrently.
5. For concurrency of events with pictures, picture write concurrency should also be taken into consideration. The picture write concurrency of an individual server is up to 200 Mbps, so the concurrency of events with pictures is limited by picture write capacity.