

# DHI-DSS7016DR-S2

All-in-One Security Management Platform for Enterprise



## Introduction

DSS7016DR-S2 is a high-performance security management platform based on Linux OS and pre-installed DSS software, offering outstanding performance and excellent reliability. It is ideal for medium and large scenes, such as residential areas and casinos.

## Running Environments

### Operating System

- OS for PC Client:
  - Windows 7 (32-bit)
  - Windows 7 (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)
- OS for DSS Mobile Client:
  - iOS: iOS 10.0 or later
  - Android: Android 5.0 or later

### Languages

- Arabic, Bulgarian, Czech, Danish, English (United States), Finnish, French, German, Hungarian, Italian, Japanese, Korean, Macedonian, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Thai, Traditional Chinese, Turkish, Ukrainian, Vietnamese.

### Hardware

- Hardware for PC Client

## Recommended

CPU	Intel Core i7, 64 bits 4 Core Processor
Memory	16 GB
Graphics Card	GeForce GTX 1060 3GB (Discrete Graphics Card)
Hard Drive Capacity	200 GB free space for Client
Ethernet Port	1,000 Mbps

### Minimum

CPU	Intel Core i3, 64 bits 4 Core Processor
Memory	4 GB
Graphics Card	Intel (R) HD Graphics 530 (Integrated Graphics)
Hard Drive Capacity	100 GB free space for DSS Client
Ethernet Port	1,000 Mbps

- Hardware for DSS Mobile Client

iPhone	iPhone 5S or later
Android	Resolution: 1280 × 720 or higher RAM: 2 GB and above

## Features

### Easy to Use

- All-in-One, Plug & Play.
- Performs unified management of video, access control, video intercoms, alarm controller, ANPR camera and face recognition camera through one DSS7016DR-S2.

### Powerful

- Up to 1,000 video channels per server.
- Up to 5,000 video channels via distributed deployment.
- Up to 2,000 video intercoms per server.

### High Storage Performance

- 15 built-in storage disk interface.
- Up to 200TB per server, maximum 1PB through distributed deployment.
- Up to 600Mbps storage bandwidth.

### Stable and Reliable

- Hot standby system design.
- Dahua's unique N+M redundancy mode.
- Redundant power design of DSS7016DR-S2 makes the system more stable.

## Main Functions

### System

- Supports hot standby for main server.
- Supports distributed deployment.
- Supports N + M redundancy.
- Supports LAN and WAN deployment.

## 1. PC Client

### 1.1 System Configuration

#### • System Parameters

- Configure the data storage duration of logs, alarms, face recognition and vehicle records, etc.
- Time synchronization: Timed synchronization and device connection synchronization.
- Email server configuration.
- Active directory configuration.
- Supports importing HTTPS certificate.
- Set device login mode.
- Record remote logs.

#### • Backup and Restore

- Automatically back up system database by day, week, or month.
- Manually back up system database.
- Restore system database from server or local files.

### 1.2 Basic Configuration

#### • Device Management

- Device initialization: Initialize Dahua devices.
- Add devices by auto search, IP, Domain, IP segment, auto registration (for 3G, 4G and DHCP devices), or P2P.
- Manage Dahua devices such as network camera, network PTZ camera, NVR, DVR, access controller, video intercom, alarm controller, and decoder.
- Add third-party devices via ONVIF protocol.
- Import devices in batches by template.
- Bind associated cameras: Link cameras for alarm video display.
- Configure encoder parameters including image, video, snapshot, OSD and audio.
- Configure intelligence settings for intelligent channels such as IVS, face detection, people counting, and heatmap.
- Configure door parameters, such as reader direction, door status, unlock length, and method.

#### • Role and User

- Three types of roles: Super administrator, administrator, common role.

- Manage the user's permissions by role (device permissions, control permissions, and menu permissions).
- User can be assigned with roles to obtain corresponding permissions.
- Supports importing domain user and assigning roles to the user.
- Log in to different clients with the same account at the same time.
- Set PTZ permissions, password expiry date, password validity and e-mail linkage for user.
- Forced password change at first login.
- User can be restricted by the MAC and expiry information.
- User can be locked.

#### • Storage Management

- Supports edge storage and central storage.
- Central storage: Extend storage via iSCSI.
- Disk quota: Group disks, and cameras can be allocated to different disk groups.

### 1.3 Application Configuration and Functions

#### • Record Plan

- Configure recording plans for channels
- Configure storage destination: Center, device (device recording supports only main stream).
- Configure recording stream type.
- Create recording plan by time template: All-day template, weekday template, weekend template and custom template.
- Configure center recording storage duration.
- Back up recorded videos from devices to the center .

#### • Person and Vehicle Information

##### Person List

- Add, edit and delete the personnel and the personnel list.
- Import personnel information (ID, card, fingerprint, face) from devices.
- Import personnel information by template.
- Issue the card, fingerprint via USB reader or devices.
- Card, password, fingerprint and face authentications.
- Add vehicle information.
- Grant door access by door group; arm persons by face comparison group; grant entrance and exit access by entrance and exit vehicle group.

##### Vehicle List

- Manage owners and vehicles.
- Add, edit, and delete vehicle information.
- Arm vehicles by vehicle arming group; grant entrance and

exit access by entrance and exit vehicle group.

- **Watch List**

**Face Watch List**

- Face watch list management.
- Add faces one by one.
- Import faces from personnel list in batches.
- Send face watch list to face recognition devices, and configure similarity.

**Vehicle Watch List**

- Vehicle watch list management.
- Set start time and end time for vehicles.

- **Monitoring Center**

**Live View**

- View real-time video.
- Common layout (1, 4, 6, 8, 9, 13, 16, 20, 25, 36, 64) and customized layout.
- PTZ control.
- Electric focus.
- Operate barrier remotely.
- Operate door channel: Open, close and recover.
- Call video intercom devices.
- Manual recording (store on PC or central storage).
- Digital zoom.
- Fisheye dewarping.
- Fisheye VR mode.
- Fisheye-PTZ smart track.
- Smart track for panoramic camera.
- Bullet-PTZ smart track.
- Audio talk.
- Supports selecting audio input: audio1, audio 2 and audio mix.
- Set alarm window.
- Turn on/off the IVS display in live view.
- Restore face image from face privacy masking.
- Region of interest: Divides one window into 4 or 6 parts, one for whole image, others for the details.
- Displays map in live view.
- Save the current monitoring image as a view.
- Up to 4 live view tabs.
- Video tour by device, organization, favorites, and view.
- Supports NKB1000 to control camera in live view.
- Adjust the video image.
- Live video quick positioning on map.
- Resource tree: Video channel, face recognition channel, metadata channel, ANPR channel, entrance device

channel, access control channel and map.

- Displays event snapshots over live video.
- Real-time monitoring of face recognition events, metadata events, ANPR events, entrance snapshot events, and access control events.
- Pause refresh, and clear event list.

**Playback**

- Play back video recordings from devices or central storage.
- Video filter: Normal, motion, alarm.
- Synchronous play.
- Reverse playback of central and device video.
- Digital zoom.
- Slow and fast forward (up to 64X and 1/64X).
- Play back video recordings frame by frame.
- Lock or mark important recordings for central storage.
- Download the video in avi, dav, mp4 and asf formats.
- Turn on/off the IVS display in playback.
- Decode the video to video wall.
- Fisheye dewarping.
- Fisheye VR mode.
- Adjust the video image.
- Common layout (1/4/6/8/9/13/16/20/25/36/64) and custom layout.
- Supports smart search.
- Supports thumbnail search.

**Video Wall**

- Create different video wall tasks.
- View the real-time video.
- Decode the real-time video to wall.
- Manually/automatically decode to wall.
- Manage the video wall split.
- Change the stream type of video channel.
- Turn on/off audio.
- Turn on/off screen and get the video stream to PC client.
- Tour the video channels in one screen.
- Schedule plan: Set the running task on timeline.
- Tour plan: Different tasks loop display, and each task has a duration time.
- Supports NKB1000 to control video wall.

**Map**

- Google online map, Google offline map and raster map.
- Up to 8-level sub map.
- Configure hot spots (camera, alarm input, access control channel) and sub maps on the map.

- View the live or recorded video on the map.
- Area or distance measurement on GIS map.
- Supports visible range and initial angle on GIS map (only available for some PTZ models).
- Alarm source turns red and flickers on the map when alarm occurs.
- Remote door opening and closing.

#### • **Event Management**

- Event type: Device, video channel, alarm input channel, access control channel, soft trigger event, audio detection, thermal, access control, and more.
- Event scheme: All-day template, weekday template, weekend template and custom template.
- Event Priority: Low, medium, high.
- Linkage: Record, snapshot, live video, alarm output, PTZ, audio and light, video wall, HTTP URL command, E-mail, door and user.
- Alarm protocol.
- Real-time and history event information.
- Acknowledge the event.
- Arming control for event sources.
- Forward the event to relevant user.

#### • **DeepXplore**

- Quickly retrieve historical records and locate targets.
- Search for face and human body by feature or image.
- Search for person and vehicle archives.
- Generate tracks based on person, vehicle and access control records.

#### • **Maintenance Center**

- Overview and system information details.
- Server running status: CPU, RAM, disk, network and service.
- Device online status: Encoder, ITC, access control, video intercom, alarm controller, emergency, video control and LED.
- Source information: Video channel and alarm channel.
- Storage information: Videos, images and files.
- Exception search.
- Export report.
- Send daily, weekly and monthly reports as scheduled.

#### • **Access Management**

##### **Access Control**

- Add, edit, and delete door groups, grant door access by associating access permission groups with door groups.
- Supports setting public passwords for access control

devices.

- Advanced door rules, such as anti-passback, first card unlock, inter-door lock, multiple card unlock, remote verification.
- Door status and door events monitoring.
- View related videos.
- Lock or unlock the doors with one key.
- Global operation of opening or closing doors.
- Log information and extract records from devices.

##### **Video Intercom**

- Call management: Configuration of device group, management group and group relation.
- Residence configuration: Set whether to enable Building No. and Unit No.
- Issue VTH contact list to VTO.
- Set VTH private password for unlocking VTO.
- View, delete and freeze users of DSS Agile VDP.
- Video intercom between VDP based on SIP protocol.
- Video intercom between VDP with command center.
- Release text information to VTH.
- Search for and export video intercom records.

##### **Visitor**

- Visit registration.
- Supports issuing access permissions by card or face recognition.
- Enable auto leave.
- Supports card-swiping records.
- Supports visitor records.
- Supports default visitor permissions configuration
- Supports Email template configuration.
- Supports visitor pass remarks configuration.

##### • **Entrance**

- Edit parking-lot, includes total and available spaces, parking name, and more.
- Supports configuration of barrier control rules.
- Bind parking space available display screen and information display screen.
- Overview of entrance and exit information: Number of parking spaces, parking spaces available, and more.
- View real-time license plate recognition.
- Open the barriers via VTO with cards or remotely.
- Force existing vehicles to leave.
- Supports searching for vehicle records, on-site vehicles, and ANPR details.
- Search for and export the vehicle records.

- **Intelligent Analysis**

- View real-time count.
- View historical count: provide daily, weekly, monthly and yearly reports.
- Heat maps
- Supports exporting in area people counting analysis report.

## 2. DSS Agile

- **History Records**

- Show recently viewed channels. You can open live video or playback via history records.
- Displays up to 20 latest history records.

- **Live View**

- Open more than one channel at the same time. Up to 16 channels are supported.
- Three stream types: HD (high definition), SD (standard definition) and FL (fluency).
- Supports PTZ control.
- Supports horizontal screen play.
- One-key switch to playback.
- Snapshot, local records, and audio talk.
- Supports fisheye dewarp.

- **Playback**

- Play back device records and center records (up to 8X and 1/8X).
- The calendar shows whether there is a video on that day.
- Supports snapshot.
- Manually start recording for local storage.
- Supports 1X, 2X, 3X, 4X, 1/2X, 1/4X, 1/8X playback.

- **Map**

- Supports Google map and raster map.
- Displays the video channels on the map.
- View live and recorded videos.

- **Access Control**

- Displays access control information: Device name, organization, and online/offline status.
- Open or close doors remotely.
- Always open and always closed.
- Recover to always open/closed.

- **Face Recognition**

- Supports searching the face database or snapshot records for target faces by uploading a face image.
- Supports face database management.

- **Video Metadata**

- Search for targets classified by people, vehicle and non-motor vehicle.

- **Video Intercom**

- Displays video intercom information: Device name, type, and number.
- Call VTS, VTH, and 2nd VTO.
- Offline call.
- Displays call history: Incoming call, outgoing call, answered, not answered, time and number.

- **Alarm Center**

- Alarm subscription.
- Offline notification push.
- Search for alarm messages by category.
- Claim and handle alarm messages.
- Search for history alarm message.

- **Favorite**

- Search for history alarm message.
- Quickly view video of channels added to favorites.

- **Files Management**

- View picture and video via local file.
- Export videos and pictures saved locally to mobile phone albums.
- Delete pictures and videos.

## 3. DSS Agile VDP

- **Call Records**

- View the incoming and outgoing call records.

- **Visitor**

- Supports visitor registration and generating visitor pass.
- Supports searching for visitor records.

- **Monitor**

- View live video of VTO.
- Supports remotely unlocking the door.
- Call management center.
- Receives and answers calls from intercoms (such as VTO) and the management center.

- **Messages**

- View the unlocking records and alarm messages.

- **Setting**

- View account information.
- Enable event subscription.
- Enable stream encryption.
- Set gesture password.

## Hardware Specification

### System

Main Processor	Intel i5-6600, 64 bits 4 Core Processor
Operating System	Embedded Linux
Memory	8 GB
System Disk	Seagate 7200 RPM Enterprise Class HDD 1 TB
Motherboard	Embedded board (7 × 24 operation)
Hard Disk Hot swap	Support hot swap and online replacement
Hard Disk Compatibility	SAS/SATA disk

### Interface

Number of Network Ports	4 Ethernet ports (100/1000 Mbps)
USB	2 × USB 2.0 on front panel; 2 × USB 3.0 on rear panel
HDMI	3 HDMI ports
VGA	1 VGA port

### Storage

HDD Installation	Support 15 HDDs (3.5") for video or picture storage (8 TB per HDD)
Storage	Up to 200 TB per server
HDD Mode	Single
Bandwidth of Video Storage per Server	600 Mbps

### Other

Power	Maximum power 315 W; stable power 210 W
Working Environment Temperature	0 °C to 40 °C (32 °F to +104 °F)
Working Environment Humidity	10%–80% (RH), non-condensing
Storage Environment Temperature	–20°C to +70°C (–4 °F to +158 °F)
Storage Environment Humidity	5%–90% (RH), non-condensing
Working Altitude	0 m–5000 m (0 ft–16,404.20 ft)
Weight (Without Package)	19.1 kg (42.11 lb)
Dimension	444.8 mm × 133.2 mm × 522.2 mm (17.51" × 5.24" × 20.56")
Installation Method	Standard 19-inch pallet mount
Secondary Development	Platform SDK provided

## Performance Specification

### Organization, User and Role

Organizations	10 levels; up to 999 organizations in total
Roles (User Permissions)	100
Users	50 online users and 200 total users

Users for VDP Mobile APP

500 online users and 5,000 total users

### Recording Plan and Event Plan

Central Recording	Up to 3,000 video channels
Event Rules	Up to 3,000 event sources

### Map

Hierarchies	8 hierarchies
Size of Offline GIS Map Package	500 MB
Number of Raster Maps	Up to 256
Number of Submaps per Map	Up to 32
Maximum Size of Raster Map	15 MB
Raster Map Resolution	8100 × 8100
Number of resources on GIS Map	Up to 300
Number of resources per Raster Map	Up to 300

### Personnel and Vehicle Management

Persons	100,000
Cards	200,000
Faces	100,000
Fingerprints	200,000
Vehicles	20,000

### Face and Vehicle Watch Lists

Face Watch Lists	50
Total Faces <sup>④</sup>	100,000
Faces per Face Watch List	50,000
Vehicle Watch Lists	16

### Access Control

Total Persons	100,000
Access Permission Groups	200

### Entrance and Exit

Vehicles	20,000
Vehicle Groups	16
Parking Lots	8
Entrance and Exit Points	16
Number of Entrances	8
Number of Exits	8

### Intelligent Analysis

People Counting Groups	8
People Counting Rules	20

### Data Info

Event Records	5,000,000
Face Recognition Records	5,000,000
Number Plate Recognition Records	5,000,000
Access Control Records	5,000,000
Video Intercom Records	5,000,000
Visitor Records	5,000,000
Entrance Records	5,000,000
Exit Records	5,000,000
Forced Exit Records	5,000,000
Historical Counting Records	5,000,000
In Area Statistical Records	5,000,000
Heat Map Records	5,000,000
Operator Logs	5,000,000
Service Logs	5,000,000

## Single Server

### Devices and Channels

#### Total Devices

Devices <sup>②</sup>	2,000
Auto-Registered Devices	1,000

#### Video Devices and Channels

Video Devices and Channels <sup>③</sup>	500 devices; 1,000 channels
P2P Devices	32
ANPR Channels	100 channels (16 channels for entrance)
Face Recognition Channels	100
Video Metadata Channels	100
People Counting Channels	32
Heat Map Channels	32

#### ACS Devices

Access Control	200 devices; 500 doors
VDP	2,000 devices

#### Alarm Devices

Alarm Controller	64 devices; 320 zones
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### Media Transmission Server

#### Incoming Bandwidth

Total Incoming Bandwidth per Server	600 Mbps
Incoming Video per Server	600 Mbps
Incoming Picture per Server	100 Mbps

#### Outgoing Bandwidth

Total Outgoing Bandwidth per Server	600 Mbps
Outgoing Video per Server	600 Mbps
Outgoing Picture per Server	100 Mbps

#### Storage Bandwidth

Total Storage Bandwidth per Server	600 Mbps
Video Storage per Server	600 Mbps
Picture Storage per Server	100 Mbps

#### Playback, Storage and Download

Maximum Capacity per Storage Server	200 TB
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#### Events<sup>④</sup>

Total Events <sup>⑤</sup>	240 per second
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#### Events without Pictures

Events without Pictures	240 per second
Access Control Events	240 per second

#### Events with Pictures<sup>⑥</sup>

<b>Total Events with Pictures</b>	240 per second (100 Mbps)
ANPR Events	24 per second (500 KB per picture)
Events with Pictures	24 per second (500 KB per picture)
Face Capture Events	24 per second (500 KB per picture)
Video Metadata Events	12 per second (1000 KB per picture)

## Multiple Servers

### Number of Sub Servers

Sub Servers	Up to 5
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### Devices and Channels

#### Total Devices

Total Devices	6,000
Auto-Registered Devices	5,000

#### Video Devices and Channels

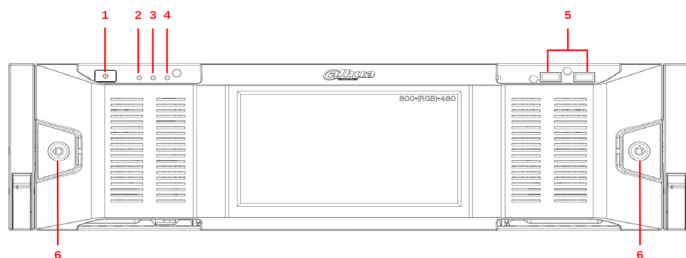
Total Video Devices and Channels <sup>③</sup>	2,500 devices; 5,000 channels
P2P Devices	32
ANPR Channels	500 channels (16 channels for entrance)
Face Recognition Channels	500
Video Metadata Channels	500
People Counting Channels	160
Heat Map Channels	160

ACS Devices	
Access Control	600 devices; 1,500 doors
VDP	2,000 devices
Alarm Devices	
Alarm Controller	320 devices
Events <sup>④</sup>	
Total Events <sup>⑤</sup>	480 per second
Events without Pictures	
Events without Pictures	480 per second
Access Control Events	480 per second
Events with Pictures <sup>⑥</sup>	
Total Events with Pictures	480 per second (500 Mbps)
ANPR Events	120 per second (500 KB per picture)
Events with Pictures	120 per second (500 KB per picture)
Face Capture Events	120 per second (500 KB per picture)
Video Metadata Events	60 per second (1024 KB per picture)

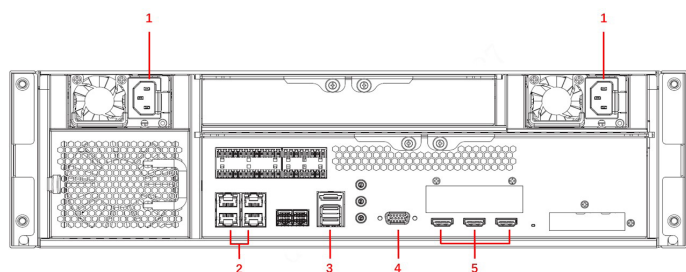
- ① Number of face watch lists and devices: Number of faces × number of devices < 10 million. For example, a face watch lists of 200 thousand faces can be sent to 50 face recognition devices including IVSS, NVR and face recognition cameras.
- ② The total number of devices must be larger than the total number of video devices, access control devices, video intercom devices and other devices.
- ③ The total number of video devices and channels must be larger than the total number of IPCs, NVRs, ITCs and other video devices and channels.
- ④ Event concurrency is peak concurrency: 20 minutes of peak concurrency test, 3 times a day, and 25% peak concurrency for the remaining time of the day.
- ④ 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.
- ⑤ Total event concurrency: The ability to write all events to system records concurrently.
- ⑥ 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.



## Panels



- 1- Power Button
- 2- Hard Device Indicator
- 3- Alarm Indicator
- 4- Network Indicator
- 5- USB 2.0
- 6- Lock



- 1- Power Interface
- 2- Gigabit LAN Port 1-4
- 3- USB 3.0
- 4- VGA
- 5- HDMI Port 1-3

## Dimensions (mm)

