Face Detection+

The DSS Server performs real-time face detection on up to 16 channels simultaneously. Face Detection+ technology identifies, tracks, and captures a human face in a digital image and then selects the best image and outputs a snapshot of the face. This technology identifies key facial features and obtains the contours of detected faces.

Intelligent Business Analysis

The DSS supports people counting and heat map; advanced features that add business intelligence to your security system. Intelligent Analysis tracks and stores daily, weekly, monthly, and yearly people flow through a defined scene and stores the data. DSS retrieves this data and supports searching, displaying, and storing the data.

Video Wall

DSS 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 server 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**
- Initialize Dahua devices
- Add devices via auto search, IP, IP Segment, Auto-register (for 3G, 4G, Dynamic IP Address)
- Manage Dahua devices
- Modify Dahua device IP address and password
- Bind cameras for alarm configuration

**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
- Supports import domain user and assign roles to the user

**Event Management**
- Set alarm type: device, video channel, alarm input, IVS alarm, vehicle blocklist, 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 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/live the screen ID
- Supports screen combinations
- Bind the decode channel with the corresponding screen

**Vehicle Blocklist**
- Manage vehicle blocklists
- Arm and disarm vehicle blocklists
- Import and export vehicle blocklists

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

### 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 NK81000 keyboard to control cameras in the Live View
- 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, .dvd, .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, 64 ) 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 (decoder hardware is required to setup 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 NK81000 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 Detection+**
- Perform face detection
- Search for faces in live video using similar face or feature search
- Prepare structured reports of gender and age
- Set alarms and event linkage for face detection

### 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 and Heat Map storage time
- Delete the slave server
- Enable/Disable the slave server
### 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.

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### 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

### 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

### 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
# Technical Specification

## System
- **Main Processor**: Intel® i5 6600, 64-bit 4-Core Processor
- **Operating System**: Embedded Linux
- **Memory**: 8 GB
- **Motherboard**: Embedded
- **Hard Disk Compatibility**: Hot-swappable and online replacement SAS and SATA compatible

## Hardware – Control Client
- **Operating System**: Windows 7 (32-/64-bit), Windows 10 (64-bit)
- **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

## Hardware – Mobile Client
- **iPhone**: iPhone 5S and Later
- **Android**: Resolution: 1280 × 720 and above, RAM: 3 GB and above

## Interface
- **Network Ports**: Four (4) RJ-45 Ports (100/1000 Mbps)
- **RS232**: Reserved
- **RS485**: Reserved
- **USB**: Front Panel: Two (2) USB 3.0 Port, Rear Panel: Two (2) USB 3.0 Ports
- **VGA**: Output: One (1) Port

## Storage
- **HDD Installation**: Supports 15 HDD (3.5-in.) for video and picture storage
- **Storage**: 8 TB per HDD up to 200 TB per server
- **HDD Mode**: Single RAID 0/1/5/6/10
- **Video Storage Bandwidth, per Server**: 600 Mbps

# Performance Specification

## Organization, Users, Roles
- **Organization**: 10 Hierarchies, 999 Organizations per Hierarchy
- **Roles**: 100
- **Users**: 150 Online Users, 200 Total Users
- **Users, for VDP Mobile Application**: 500 Online Users, 5000 Total Users

## Video Devices
- **Total Devices**: 2000
- **Total Video Devices**: 500 Devices, 1000 Channels
- **Auto Register**: 500 Devices, 1000 Channels
- **ONVIF**: 200 Devices, 400 Channels
- **Face Detection+**: 100 Channels
- **License Plate Capture/Recognition**: 64 Channels (6 pairs for entrance and exit)
- **Object Detection**: 20 Channels
- **Heatmap**: 64 Channels
- **People Counting**: 100 Channels

## Access Control and Intercom
- **Access Control**: 200 IP Devices, 512 Doors
- **VDP**: 2000 IP Devices (up to 64 VTO units)
- **Alarms**
  - **Alarm Controller**: 10 IP Devices, 100 Channels
  - **Rules**: 200

## Media Transmission Server
- **Video Input Server**: 600 Mbps
- **Video Output Server**: 600 Mbps

## Playback and Download
- **Playback Bandwidth per Server**: 100 Mbps
- **Download Tasks**: 5
- **Maximum Record Plan**: 100

## Map
- **Hierarchies**: Eight (8)
- **Submaps**: 32 per Hierarchy
- **Raster Map Size**: 14.7 MB
- **Spots per Map**: up to 300 (GIS and Raster)
### License Plate Recognition

<table>
<thead>
<tr>
<th>Data Information¹</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Face Snapshot Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Number Plate Recognition Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Violation Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Average Speed Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>People Counting Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Heatmap Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Video Intercom Records</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Log</td>
<td>5,000,000</td>
</tr>
</tbody>
</table>

### Distributed System

<table>
<thead>
<tr>
<th>Devices and Channels</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub Server</td>
<td>up to Five (5)</td>
</tr>
<tr>
<td>Total Devices</td>
<td>5000</td>
</tr>
<tr>
<td>Total Video Devices</td>
<td>2500 Devices, 5000 Channels</td>
</tr>
<tr>
<td>Auto Register</td>
<td>2500 Devices, 5000 Channels</td>
</tr>
<tr>
<td>ONVIF</td>
<td>400 Devices, 800 Channels</td>
</tr>
<tr>
<td>Face Detection+</td>
<td>500 Channels</td>
</tr>
<tr>
<td>License Plate Capture/Recognition</td>
<td>320 Channels</td>
</tr>
<tr>
<td>Object Detection</td>
<td>100 Channels</td>
</tr>
<tr>
<td>Heatmap</td>
<td>320 Channels</td>
</tr>
<tr>
<td>People Counting</td>
<td>500 Channels</td>
</tr>
</tbody>
</table>

### Access Control and Intercom

| Access Control | 500 IP Devices, 2500 Doors |

### Personnel Management

<table>
<thead>
<tr>
<th>People Management</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>5000</td>
</tr>
<tr>
<td>Cards</td>
<td>5000</td>
</tr>
<tr>
<td>Faces</td>
<td>5000</td>
</tr>
<tr>
<td>Fingerprints</td>
<td>5000</td>
</tr>
</tbody>
</table>

### Events²

<table>
<thead>
<tr>
<th>Events²</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Events</td>
<td>480 per second</td>
</tr>
<tr>
<td>Event without Picture</td>
<td></td>
</tr>
<tr>
<td>Alarm</td>
<td>480 per second</td>
</tr>
<tr>
<td>Access Control</td>
<td>96 per second</td>
</tr>
<tr>
<td>LPC/LPR</td>
<td>120 per second</td>
</tr>
<tr>
<td>Alarm</td>
<td>120 per second</td>
</tr>
<tr>
<td>Face Capture</td>
<td>280 per second</td>
</tr>
<tr>
<td>Object Detection</td>
<td>80 per second</td>
</tr>
<tr>
<td>Event with Picture</td>
<td></td>
</tr>
<tr>
<td>LPC/LPR</td>
<td>12 per second</td>
</tr>
<tr>
<td>Alarm</td>
<td>40 per second</td>
</tr>
<tr>
<td>Face Capture</td>
<td>120 per second</td>
</tr>
<tr>
<td>Object Detection</td>
<td>40 per second</td>
</tr>
</tbody>
</table>

### Electrical

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>100 VAC to 240 VAC, 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption</td>
<td>315 W, maximum; 210 W stable power</td>
</tr>
</tbody>
</table>

### Environmental

<table>
<thead>
<tr>
<th>Operating Conditions</th>
<th>0° C to +40° C (+32° F to +104° F), 10% to 80% RH, non-condensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Conditions</td>
<td>−20° C to +70° C (−4 °F to +158° F), 5% to 90% RH, non-condensing</td>
</tr>
<tr>
<td>Operating Altitude</td>
<td>0 m to 5000.0 m (0 ft to 16404.20 ft)</td>
</tr>
</tbody>
</table>

### Construction

| Dimensions          | 3U, 444.80 mm x 522.40 mm x 133.20 mm (17.51 in. x 20.57 in. x 5.24 in.) |
| Net Weight          | 19.10 kg (42.11 lbs) |
| Front Cover         | 7-in. HD LCD Screen (1920 x 1080, 1280 x 1024, 1024 x 768) |
| Installation        | Standard 19-in. Rack Installation |

### Certifications

### Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Surveillance</td>
<td>DHI-DSS7016DR-S2</td>
<td>VMS Server, 16 HDD Bays</td>
</tr>
</tbody>
</table>

### Dimensions (mm/in.)

- **485.0 mm** (19.10 in.)
- **133.20** (5.24 in.)
- **522.40** (20.57 in.)
- **539.40** (21.24 in.)
- **444.80** (17.51 in.)

### Physical Interfaces

1. **Power Button**
2. **HDD Status**
3. **Alarm Status**
4. **Network Status**
5. **USB 2.0 Ports x 2**
6. **Lock**
7. **Gigabit Network Ports, 1 to 4**
8. **SAS HD1 and SAS HD2**
9. **Reset Button**
10. **N/A**
11. **N/A**
12. **VGA Out**
13. **N/A**