Dahua TECHNOLOGY

Digital Surveillance System
DSS Pro Video Management System Server

- Embedded Linux Operating System with Pre-installed DSS Pro Software
- Redundant Power Supply and Hot Standby for Stable 24/7 Operation
- Supports 2000 IP Devices and 2000 Video Channels per Server
- 15 Hot-pluggable Hard Drives and Extended Storage via iSCSI
- Live Video Playback
- Configure Video Wall Layout and Scheme
- Configure NVR Recording
- Offers Fisheye Camera Dewarping on Live View and Playback Images
- Intelligent Video System with Face Recognition
- Five-year Warranty*

System Overview

The DHI-DSS7016DR-S2 Video Management System is a powerful, all-in-one video surveillance management system preloaded with Linux-optimized DSS Pro software for system scalability and reliability. The server supports up to 2000 network cameras and extends the distribution of these devices.

The server provides user rights management, device management, alarm management, center storage, TV wall output and, two-way audio. In addition to these VMS features, the server offers advanced features, including POS integration with data sync and the Intelligent System, features not found on many other VMS servers.

Functions

Flexibility and Scalability
The DSS7016DR-S2 VMS Server supports 2000 video channels per server, with support for 1000 connected network cameras. The server supports 15 hard disk drives for video and snapshot storage. The server also supports edge storage and extended storage via iSCSI.

Compatibility
The VMS server is compatible with all Dahua IP-enabled devices: network cameras, NVRs, DVRs, Mobile DVRs, and access control devices plus many more. The server is also compatible with the ONVIF protocol, so it can connect to ONVIF-enabled third-party devices. The server offers and SDK for further support of third-party platforms and mobile operating systems.

Fisheye Camera Support
DSS features full support for Dahua Fisheye cameras. The software supports options for the Fisheye camera installation and eight (8) dewarp modes. Dewarping solves the problem of distortion in the circular panoramic view in both live or playback modes.

Real-time Face Recognition
The DSS7016DR-S2 performs real-time facial recognition on up to 64 channels simultaneously. The server 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.

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.

Onvif

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 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
- Supports 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 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

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

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, 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
- 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

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

System

Main Processor	Intel® i5-6600, 64-bit 4-Core Processor
Operating System	Embedded Linux
Management Software	DSS Pro, pre-installed
Memory	8 GB
Motherboard	Embedded
Hard Disk	Hot-swappable and online replacement SAS and SATA compatible, intermixing allowed

Display

Mode	Live View, PTZ Control, Snapshot, Instant Playback, Customized Layout
Video Wall	Push Real-time, Alarm and Playback Video to Wall
Dewarping	Supported for Fisheye Video on Live View and Playback

Playback

Playback	36-channel Synchronized Playback
Playback Mode	Normal, Motion Detection, Alarm, IVS, POS
Search Mode	Smart Search, POS Transaction Data and Video

Storage

HDD Installation	Built-in 1 TB HDD (2.5-in.) for Operating System Supports 15 HDD (3.5-in.) for video and picture storage
Storage	8 TB per HDD
Total Storage Capacity	200 TB, including local, edge and external devices
HDD Mode	Single, RAID 0/1/5/6/10

Interface

USB	Front Panel: Two (2) USB 2.0 Ports Rear Panel: Two (2) USB 2.0 Ports
Display	Three (3) HDMI Ports One (1) VGA Port

Network

Network Port	Four (4) RJ-45 Ports (100/1000 Mbps)
Interoperability	ONVIF, DSS SDK for Integration
GIS Map	Supported; Google and RasterMap
Email	Supported; Yahoo, Gmail, HotMail

Certifications

Safety	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+ A2:2013
Electromagnetic Compatibility (EMC)	FCC 47 CFR Part 15 Subpart B EN 55032:2015 EN 55024:2010+A1:2015 EN 50130-4:2011+A1:2014 EN 61000-3-2:2014 EN 61000-3-3:2013

1. Maximum number when adding only IP video devices.
2. Maximum number when adding only POS devices.
3. Maximum number when adding only access control devices.
4. Maximum number when adding only VDP devices.

Video Management

Maximum Devices and Channels, per server		2000 IP Devices and 2000 Channels[1]
Maximum Connected Cameras, per server		1000 IP Devices and 2000 Channels
Auto Register		500 IP Devices and 2000 Channels
ONVIF		200 IP Devices and 200 Channels
Maximum Connections	Face Recognition Cameras	64 Channels
	LPC	64 Channels
	Object Detect	64 Channels
	POS Devices	64 Channels[2]
	Access Control	200 IP and 1024 Doors[3]
	VDP	2000 VTH and 200 VTO[4]
Clients per System		200 Simultaneous Users
Number of Users		2500
Number of Roles		100
Bandwidth, per Server	Video Input	700 Mbps
	Video Output	700 Mbps
	Video Storage	700 Mbps

Distribution

Connected Cameras, per server		6000 IP Devices and 10000 Channels[1]
Auto-Register		1000 IP Devices and 4000 Channels
ONVIF		1000 IP Devices and 4000 Channels
Maximum Connections	Face Recognition Cameras	200
	ANPR	200
	Object Detection	100
	POS	100 (20 POS data per second)[2]
	Access Control	500 IP Devices and 2500 Doors[3]
	VDP	5000 VTH, 500 VTO[4]

Electrical

Power Supply	100 VAC to 240 VAC, 50/60 Hz
Power Consumption	315 W, maximum; 210 W stable power

Environmental

Operating Conditions	0° C to +40° C (+32° F to +104° F), 10% to 80% RH, non-condensing
Storage Conditions	−20° C to +70° C (−4 °F to +158° F), 5% to 90% RH, non-condensing
Operating Altitude	0 m to 5000.0 m (0 ft to 16404.20 ft)

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)
Material	Hot-dipped galvanized sheet steel (1.2 mm), precise aluminum alloy slide, patented pull-out rack design
Front Cover	7-in. HD LCD Screen (1920 x 1080, 1280 x 1024, 1024 x 768)
Installation	Standard 19-in. Rack Installation

Ordering Information

Type	Part Number	Description
Digital Surveillance System	DHI-DSS7016DR-S2	Pro, 15 HDD, 2000 IP Devices and 2000 Video Channels

Dimensions (mm/in.)

485.0 mm
(19.10 in.)

133.20
(5.24 in.)

444.80
(17.51 in.)

539.40
(21.24 in.)

522.40
(20.57 in.)
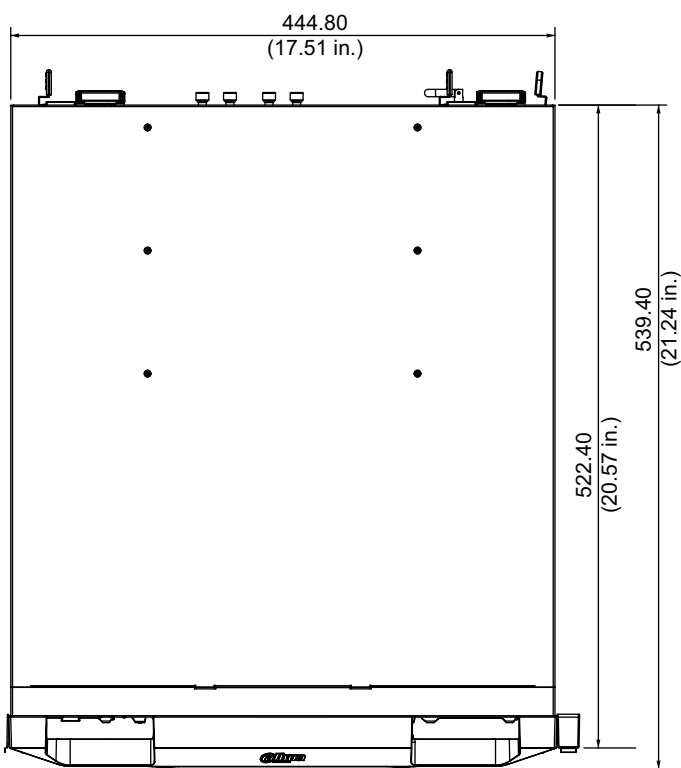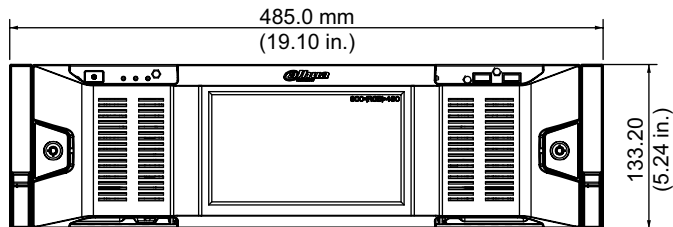
Physical Interfaces
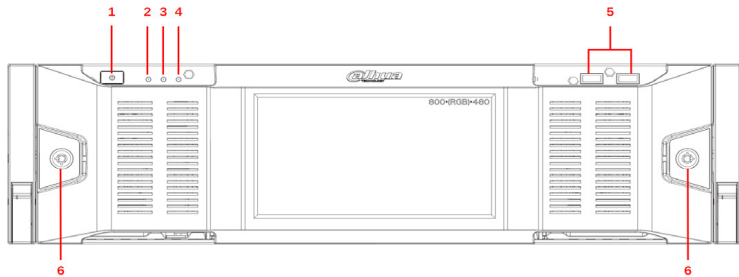
1	Power Button	4	Network Status
2	HDD Status	5	USB 2.0 Ports x 2
3	Alarm Status	6	Lock
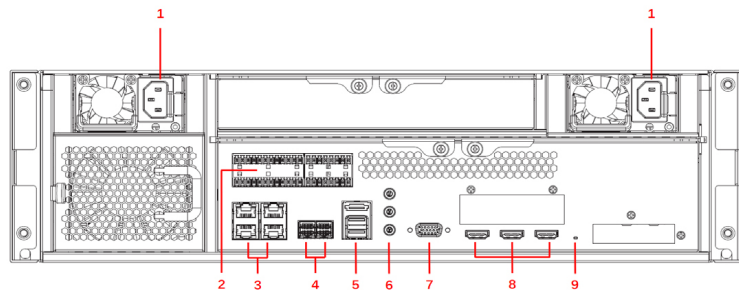
1	Power Connection	6	Audio IN and OUT
2	Alarm I/O	7	VGA OUT
3	Gigabit Network Ports, 1 to 4	8	HDMI 1, HDMI 2, HDMI 3 OUT
4	SAS HD1 and SAS HD2	9	Reset Button
5	eSATA and USB 2.0 Ports x 2		