ahua TECHNOLOGY

DHI-DSS-J9100-PRO
Traffic Platform

System Overview

This traffic platform helps improve the efficiency of intelligent transportation system and takes Dahua video cloud as its core support platform. Dahua video cloud is a video-centric cloud architecture platform for intelligent IoT scenarios, and it represents the core technical route, product and ecological development concepts of Dahua in intelligent IoT era.

Operating System

· **OS for Server:**
· CentOS 6.9 64-bit
· **OS for Control Client:**
· Windows 7

Hardware

· **Hardware for Server**
 Recommended
 CPU: 8 Core * 2
 Memory: 64 GB
 System Disk: 2 TB * 2 HDDs, 240G*2 SSDs
 Ethernet port: 4 Ports @1000Mbps
 Minimum
 CPU: 8 Core
 Memory: 32 GB
 System Disk: 2 TB * 2
 Ethernet port: 4 Ports@1000Mbps

· **Hardware for Control Client**
 Recommended
 CPU: Intel Core i5, 64 bits 4 Core Processor
 Memory: 8GB
 Graphics Card: NVIDIA® GeForce®GT 730
 Hard Drive Capacity: 1T free for DSS Control Client
 Ethernet port: 1000Mbps
 Minimum
 CPU: Intel Core i3, 64 bits 4 Core Processor
 Memory: 4GB
 Graphics Card: Intel® HD Graphics 4400
 Hard Drive Capacity: 100G free for DSS Control Client

· Based on distributed cluster architecture, the platform provides a service cluster system that offer access, storage, forwarding, intelligent analysis, and metadata storage for video surveillance devices, ANPR device, and IoT devices.

· Integrates services such as device access, video wall, storage, forwarding, intelligence, and database. It provides functions of user management, permission control, device and channel management, real-time monitoring, playback and download, record plan, video wall, alarm management, and more.

· Capabilities include access management of massive devices, highly-reliable data storage, flexible streaming media, data forwarding, open intelligent analysis, and data analysis. Can be flexibly customized to suit for different business scenarios.

· Gigabit network binding to realize separation of business network and storage network, and make full use of network port resources.

· Support the unified cloud account access on the web manager and the client. On the web manager, you can manage devices, users, organizations, and storage, and no plug-ins are required. On the client, a number of intelligent functions are available.

· Passenger flow statistics, and related behavior analysis and detection on public event detection server (PB8000) after configuring detection channels, detection rules and event tasks.

· Traffic analysis on traffic incident detection server (TB8000) after configuring detection channels, detection rules, and event tasks.

· Supports acquiring information of passing vehicles in real-time, and searching for records of passing vehicles.

· Supports adding, deleting, and editing vehicle arming database, linking ANPR channel and person to the database, acquiring real-time vehicle arming alarms, and searching for history arming alarms.

· Supports acquiring passenger flow information sent from various devices, and making statistics of and displaying the data.

Scene

The platform is applicable to cover high-definition monitoring needs for locations with complex lighting conditions, including airports, expressways, subways, rails, and more.

ONVIF

Ethernet port: 1000Mbps

· Browser Version
· Chrome: 52 or later

· Virtual Machine
· Operating system: CentOS 6.9 (core 2.6.32-754.14.2.el6.x86_64 and later, and the Dahua program supporting system is preferred)
· For hardware performance, refer to the standard server hardware. Performance: 32vCPU 2.0G and above, 64G memory, 4 Gigabit NIC bandwidth, and 2T and above of drive

Hardware for Node Server (for distributed system)

CPU: 4 Core
Memory: 16 GB
System Disk: 1 TB
Ethernet port: 4 Ports @1000Mbps

Languages

English, Simplified Chinese

DSS-Traffic Web Manager

· Organization Management
· Achieves device group management via organization

· Device Management
· Add devices through auto search, IP, Domain, IP Segment
· Manages Dahua's devices such as network camera, network speed dome, NVR, DVR, MDVR, and more
· Add 3rd-party devices through standard ONVIF protocol
· Change IP address of Dahua devices
· Change password of added Dahua devices
· Batch import devices according to templates
· Batch export selected channels into a file to make local storage or other usage
· Supports filtering by device type and its organization for added devices
· Supports quick view to their web interface for some online channels

· Role and User Management
· Manages the user's permission via role(device permission, control permissions)
· User can be assigned with the roles to obtain the corresponding permissions

· Event Management
· Alarm type: device, video channel, alarm input, IVS alarm, access control channel and abnormal event detections such as traffic arming
· Alarm Scheme: All period template, Business day template, Weekend template and custom template
· Alarm Priority: Low, Medium, High

· Storage Scheme
· Supports record plan , picture plan and backup plan
· Creates record plan by time template: All-period template, Business day template, Weekend template and custom template
· Record stream optional and customize life cycle

· Map
· Google online map, Google offline map, raster map
· Up to 8-level submap
· Config the relative devices (camera, alarm input, intelligent channel) and sub maps on the main map

· Video Wall
· Supports screens combination
· Binds the decode channel with the corresponding screen

· Log
· System, admin, client log
· Search and export log

· Passenger Flow Statistics
· Configure flow control area on the web manager. Up to 20 areas can be configured, and a maximum of 30 people flow control devices can be added for a single area

· Vehicle Management
· Configure vehicle arming database
· Flexible to select arming time, arming channel, and arming linkage person
· Search arming database by name, and filter arming status
· Intelligent configuration
· Add tasks of traffic event detection or public event detection
· Manually or auto enable or disable intelligent analysis tasks

DSS-Traffic Control Client

· Live View
· Displays devices list
· Displays the device IP address or device name on the device tree
· View real-time video
· Common layout (1,4,6,8,9,13,16,20,25,36,64) and customized layout
· PTZ control
· Manual recording(store on PC or central storage)
· Snapshot
· Instant playback
· Sets alarm window
· Turn on/off the audio in live view
· Region of interest: Divide one window into 4 or 6 parts, one shows whole image, others show the detail
· Displays map in Live View
· Up to 4 Live View tabs
· Supports adding channel to favorite
· Video tour by device, Org, Favorite, View
· Quickly switch to playback
· Adjusts the video image
· Adjusts the display mode(full screen and original)
· Share the live view to other users

· Playback
· Search for video recordings saved on devices and platform, and supports searching for these recordings of more than one day
· Easy to known whether there are recordings on a specific day through the blue dots on the calendar
· Pause, start, and stop video playback
· Play forward and backward by single frame of video
· Supports rewinding recordings for video saved on platform
· Fast play by x2, x4, x8, x16, x32, x64, and slow play by 1/2, 1/4, 1/8, 1/16, 1/32, and 1/64
· Video download: Supports downloading video of up to 5 channels at the same time
· Pause video download task, and delete the task
· Supports downloading video clip, and adjusting the period. Video can be saved in dav, avi, mp4, flv, afs, and ts formats
· Lock the video recordings saved on platform by start time and end time

· Select start time and end time, then you can play back the video by different numbers of screens
· Select the time with video recording, and tag the recording
· **Download Center**
· Downloads record from central storage or device, supports avi, dav, flv, mp4, asf, ts
· Downloads record by timeline
· Supports multi-tasking download
· **Event Center**
· Displays event alarm info including alarm time, alarm type, alarm source, priority etc.
· View the live video or pictures from related camera.
· Acknowledge the alarm
· Arming control for alarm source
· Search alarm by alarm source, alarm time, alarm type
· Search alarm events and export the alarm list.
· **Map**
· View the live video and playback on the map
· Zoom in and zoom out the map
· Decodes the video to Video Wall quickly
· Supports to calculate the area or length for GIS map
· Supports make video track in map according direction or distance, which up to 10 Km
· Customized your area to make quick positioning.
· Filter by device type or self-drawn area
· Quick search and view alarm info
· **Video Wall**
· Decodes the real-time video to wall
· Decodes the playback video to the Video Wall by decoder or matrix
· Manually/automatically decode to wall
· Controls the Video Wall split
· Change the stream type of video channel
· Adding box, on/off screen and back display
· Tour the video channel
· Schedule plan: Set the running task on timeline
· Tour plan: Loop different task, support setting loop time
· **Passenger Flow Control**
· Enter and Exit
· Make statistics of people enter and exit, and display the data by bar chart, line chart, list, and details
· Search for and display the people counting report by day, week, month, or year
· Export search results
· Make statistics of people counting results of up to 30 channels at the same time When statistics of multiple channels are made, the sum can be calculated
· In Area
· Make statistics of people in an area, and display the data by bar chart, line chart, list, and details
· Search for and display the people counting report by day, week, month, or year
· Export search results
· Make statistics of people counting results of up to 30 channels at the same time When statistics of multiple channels are made, the sum can be calculated
· Stay Number
· Make statistics of people stay in an area, and display the data by bar

chart, line chart, list, and details
· Search for and display the people counting report by day, week, month, or year
· Export search results
· Area Statistics
· Make statistics of people in a customized area, and display the data by bar chart, line chart, list, and details
· Search for and display the people counting report by day, week, month, or year
· Export search results
· Supports searching for data of multiple areas, and the sum of search results can be displayed
· **Vehicle Management**
· Real-time display of passing vehicle records, and you can view images and details of passing vehicles
· Supports searching for history records of passing vehicles, and you can view images, details, and videos of passing vehicles
· Export of passing vehicle records· Real-time display of vehicle arming alarms, and you can view alarm images and other details
· Supports searching for history records of vehicle arming alarms, and you can view images, details, and videos of alarms

Client Configuration

· Configuration of rule lines of intelligent tasks

Traffic Event Detection

· Detection of wrong-way driving, overspeed, underspeed, illegal lane change, crossing yellow solid line, illegal parking, pedestrian on motorway, littering, smoke, fire, and intrusion
· Alarm scheme configuration, and live view and video linkage
· Overlay intelligent stream on live view
Public Event Detection
· Early warning of wandering, intrusion, and abandoned object; detection and alarm of people counting, crowd density, escalator anomaly, person of an opposite direction, and fast moving
· Alarm scheme configuration, and live view and video linkage
· Overlay intelligent stream on live view

Public Event Detection

· Early warning of wandering, intrusion, and abandoned object; detection and alarm of people counting, crowd density, escalator anomaly, person of an opposite direction, and fast moving
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Unified Operation and Maintenance

· Visualized configuration of microservices with guidance wizard
· Customization on service configuration interface
· One-click deployment of products
· Overall upgrade of a single service, cluster or application
· Supports starting, stopping, and restarting services, and more
· Display and monitoring of service CPU and memory usage
· Custom collection of important service indicators, display and alarm linkage after collection
· Visualization of service key data. Services include access service, message queue, storage service, forwarding service, and more
· Supports modifying IP addresses of the entire cluster, including hardware resource IP and virtual IP

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· Service data clearing in PaaS cluster
· Display of cluster services, including relevant information of specific services
· Supports displaying applications from the perspective of SaaS and PaaS
· One-button shutdown of devices involved in the product

Technical Specification

Organization, User and Role

Roles	500
Users	2000
Online Users	500
Concurrent Users	50
Organizations	10 levels

Device and Channel

Channels	5000
ONVIF	1000

Transmission

Playback Bandwidth per Server	800 Mbps
Video Storage Bandwidth per Server	800 Mbps
Multi-task Download	5

Event Tolerance

Playback Delay	≤ 1 sec
Live View Delay	≤ 1 sec
Alarm Delay	≤ 1 sec
Retrieval Delay from Database	≤ 1 sec

Alarm

Alarms	Supports a maximum of 50 concurrent alarms, including 1 set of TB8000 (that is, 1 operator supports 16 channels), and 34 channels of IPC Limitation: 1 report per second for a channel, and a maximum of 50 channels concurrently

Single Point Performance

Device Forwarding	200 channels Condition: 4Mbps stream
Device Storage	200 channels Condition: 4Mbps stream
Storage Capacity	200T, supports a maximum of 2 IPSAN
Vehicle ANPR	200 channels of ANPR devices, 200 pictures/sec, 860,000 pictures/day, and 512kb/picture
Vehicle ANPR	200 channels of ANPR devices, 200 pictures/sec, 860,000 pictures/day, and 512kb/picture
Total Passing Vehicles	150 million pieces of passing vehicle data, with data saving period more than half a year
Passing Vehicle Arming Alarm	200 channels of device access, and 30 alarms per hour

Distributed Performance

Single Node	Channel: 5000 channels ONVIF: 1000 channels
Clustered Deployment Maximum Capacity	Channel: 100,000 channels ONVIF: 20,000 channels
Nodes in Clustered Deployment	50

Platform Functions

Menu Permissions	Submenu permissions control

Passenger Flow Control

Data Saving Period	The original data from device can be stored for 3 days, and the accumulated node data can be stored for 1 year
People Counting Device	Stability: Supports 256 people counting devices, and reports passenger flow data every 2 sec Pressure value: Supports 256 people counting devices to report passenger flow data every 1 sec
Data Search Time	≤ 2 sec
Stream Capability	3 streams
Resolution	4096 × 1800; 3840 × 1680; 2880 × 1264; 1024 × 452; 1920 × 832; 1280 × 560
Bit Rate Control	CBR/VBR

Traffic Event Detection

Detected Event	Wrong-way driving, overspeed, underspeed, illegal lane change, cross yellow solid line, illegal parking, pedestrian on motorway, littering, smoke, fire, and intrusion
Alarm Linkage Video and Record	Alarm scheme, and live video and record linkage
Live View and Record Acquisition Duration	≤ 2 sec
Alarm Report Duration	≤ 1 sec

Vehicle Management

Armed Vehicles	1000
Armed Linkage Channels	Not limited
Armed Person	≤ 100
Passing Vehicle Record Report	≤ 2 sec
History Passing Vehicle Record Search	≤ 5 sec
Arming Alarm Report	≤ 2 sec
History Arming Alarm Record Search	≤ 2 sec
Total Arming Alarms	1 million
Arming Alarm Saving Period	1 year

Ordering Information

Type	Model	Description
Traffic Platform	DHI-DSS-J9100-PRO	A video-centric cloud architecture platform that combines intelligent traffic applications