HIKVISION

HikCentral Professional
System Requirements & Performance

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Chapter 1 System Requirements

OS for Server*	Microsoft® Windows 11 64-bit Microsoft® Windows 10 64-bit Microsoft® Windows 8.1 64-bit Microsoft® Windows 7 SP1 64-bit Microsoft® Windows Server 2019 64-bit Microsoft® Windows Server 2016 64-bit Microsoft® Windows Server 2012 R2 64-bit Microsoft® Windows Server 2012 64-bit Microsoft® Windows Server 2008 R2 SP1 64-bit Microsoft® Windows Server 2022 *For Windows 8.1 and Windows Server 2012 R2, make sure it is installed with the rollup (KB2919355) updated in April, 2014.*
OS for Control Client	Microsoft® Windows 11 64-bit Microsoft® Windows 10 64-bit Microsoft® Windows 8.1 64-bit Microsoft® Windows 7 SP1 64-bit Microsoft® Windows Server 2019 64-bit Microsoft® Windows Server 2016 64-bit Microsoft® Windows Server 2012 R2 64-bit Microsoft® Windows Server 2012 64-bit Microsoft® Windows Server 2008 R2 SP1 64-bit Microsoft® Windows Server 2022 *For Windows 8.1 and Windows Server 2012 R2, make sure it is installed with the rollup (KB2919355) updated in April, 2014.*
OS for Mobile Client	iOS 10.0 and above Android 6.0 and above
Database	PostgreSQL V11.8
Browser	Google Chrome® 100 and above Firefox® 100 and above Safari® 13 and above Microsoft® Edge 100 and above Internet Explorer® 11 and above
Virtual Machine	VMware® ESXi™ 6.x, ESXi™ 7.x Microsoft® Hyper-V with Windows Server 2012/2012 R2/2016 (64-bit) *Note:* The Control Client cannot run on the virtual machine. The Virtual machine in cluster mode is not supported. The migration of virtual machine will cause the failure of License verification.
Failover Cluster	Microsoft® Windows Server 2019 64-bit Microsoft® Windows Server 2016 64-bit Microsoft® Windows Server 2012 64-bit

	Microsoft® Windows Server 2008 R2 SP1 64-bit
	RoseReplicatorPlus_5.1.0_175-x64

*Server refers to SYS (System Management Server).

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Chapter 2 Server Performance

2.1 System Management Server (SYS)

SYS Configurations		
Feature	**Low-End**	**High-End**
CPU	Intel® Core™ i5-8500 @ 3.00 GHz	Intel® Xeon® E-2314 @ 2.80 GHz Intel® Xeon® E-2324G @ 3.10 GHz	Intel® Xeon® E-2378 @ 2.60 GHz ***Note***: *Intel® Xeon® Silver 4110 @ 2.10 GHz is also supported.*
RAM	8 GB	16 GB ***Note***: *For a smoother and faster running, 32 GB is recommended.*	
NIC	GbE Network Interface Card	GbE Network Interface Card	GbE Network Interface Card
HDD for OS	SATA-II 7200 RPM Enterprise Class HDD	SATA-II 7200 RPM Enterprise Class HDD	SATA-II 7200 RPM Enterprise Class HDD
HDD for Picture Storage	Video security-class HDD or high performance network HDD. It should support writing or reading of 10 MB/s.	Enterprise-class HDD or high performance network HDD. It should support writing or reading of 20 MB/s.	Enterprise-class HDD or high performance network HDD It should support writing or reading of 20 MB/s.
HDD Capacity	At least 650 GB	At least 650 GB	At least 650 GB
OS	Microsoft® Windows 8.1 64-bit	Microsoft® Windows Server 2012 (R2) 64-bit or above	Microsoft® Windows Server 2012 (R2) 64-bit or above
Virtual Machine	**Amazon AWS EC2** Instance: c5.xlarge CPU: Intel® Xeon® Cascade Lake @3.60 GHz vCPU Count: 4 RAM: 8 GB	**Amazon AWS EC2** Instance: m5.xlarge CPU: Intel® Xeon® Platinum 8175M @3.10 GHz vCPU Count: 4 RAM: 16 GB	**Amazon AWS EC2** Instance: c5.2xlarge CPU: Intel® Xeon® Platinum 8000 @3.40 GHz vCPU Count: 8 RAM: 16 GB Storage: HDD

	Storage: EBS NIC: 10 Gbps	Storage: EBS NIC: 10 Gbps	NIC: 10 Gbps
	Microsoft Azure Instance: B4MS CPU: Intel Xeon® E5-2673 v4 @ 2.30 GHz vCPU Count: 4 RAM: 16 GB NIC: 10 Gbps		**Microsoft Azure** Instance: F8s_v2 CPU: Intel Xeon® Platinum 8272CL CPU @2.60GHz vCPU Count: 8 RAM: 16 GB NIC: 10 Gbps
Maximum Performance			
	Feature	**Low-End**	**High-End**
Workbench	**Default Preset Workbenches**	3	
	Customized Preset Workbenches	32	128
	Preset Workbenches Allocated to Each User	4	8
	Personal Workbenches Created by Each User	4	8
Manageable Resources	**Encoding Devices**	256	For E-2314, totally up to 1,024 devices can be added. For E-2378, totally up to 2,048 devices can be added. *For scenarios only needing access control devices or elevator devices, up to 1,024 devices can be added.*
	Access Control Devices	256	
	Elevator Control Devices	128	
	Security Control Devices	256	
	Fire Protection Devices	256	
	Guidance Terminals	-	
	Guidance Screens	-	512
	Video Intercom Devices	32	5,000
	Indoor Stations	32	

Visitor Terminals	8	32
DS-5600 Series Face Recognition Terminals *Applied with Hikvision Turnstiles*	32 *If DS-5600 series devices are applied with third-party turnstiles, they are regarded as access control devices.	
Security Radars and Radar PTZ Cameras	30	
Digital Signage Terminals	128	1,024
Interactive Flat Panels	128	1,024
Network Transmission Devices	-	128
UVSS	2	4
On-Board Devices	300	E-2314: 500 E-2378: 1,000
Entrance/Exit Stations	40	40
Query Terminals	16	16
Cameras (After Capability Expanded)	512	E-2314: 3,000 E-2378: 10,000
Alarm Inputs * *Excluding security control panels and panic alarm devices*	512	10,000
Alarm Inputs of Security Control Devices	512	10,000
Alarm Outputs	512	3,000
ANPR Cameras	256	E-2314: 1,024 E-2378: 3,000
People Counting Cameras	256	E-2314: 1,024

			E-2378: 3,000
	Queue Management Cameras	256	E-2314: 1,024 E-2378: 3,000
	Heat Map Cameras	128	1,024 (recommended max. value)
	Facial Recognition Servers	16	64
	Thermal Cameras	5 (recommended max. value)	20 (recommended max. value)
	Access Points (Doors + Floors)	128	1,024 *For scenarios only needing doors or floors, 1,024 doors or floors can be added.*
	Doors	128	1,024
	Floors	128	1,024
	Enrollment Station	8	
	Recording Servers *Including pStor, Hybird SAN, NVR, and cloud storage*	64	
	Streaming Servers	64	
	DeepinMind Servers	64	
	Dock Stations	-	1,500
	Resources in One Analysis Group	64	
	Partitions (Areas)	64	2,048
	Remote Sites	-	1,024
	Resources on Remote Sites	-	100,000
Area	Areas	512	3,000
	Area Hierarchies	5	
	Cameras in One Area	256	

	Alarm Inputs in One Area	256	
	Alarm Outputs in One Area	256	
Event & Alarm	**Alarm Priorities**	255	
	Alarm Categories	25	
	Event and Alarm Rules	1,500	E-2314: 3,000 E-2378: 10,000
	User-Defined Event Rules	1,0000	
	Arming Schedule Templates	200	
	Events or Alarms Storage	● 30 events or alarms without picture per second. ● 5 events or alarms with pictures (500 KB each, stored in SYS server) per second. ● 20 events or alarms with pictures (500 KB each, stored in Recording Server) per second.	● 100 (E-2314) or 1,000 (E-2378) events or alarms without picture per second (for up to 1 minutes). ● 20 events or alarms with pictures (500 KB each, stored in SYS server) per second. ● 80 events or alarms with pictures (500 KB each, stored in Recording Server) per second.
	Events or Alarms Sent to Clients	● 38 events or alarm/s. ● 30 Clients/s (Web Client, Mobile Clients, and Control Clients)	● **Web Client**: 20 events or alarms with picture per second; 40 events or alarms without picture per second; 100 access events/s. ● **Control Client**: 120 events or alarm/s. ● 100 Clients/s (Web Client, Mobile Clients, and Control Clients)
	Event Triggered Capturing	20 cameras can be triggered to capture pictures concurrently per second.	
	Alarm Triggered Recording	30 cameras can be triggered to record video concurrently per second.	128 cameras can be triggered to record video concurrently per second. *If the recorded videos are stored in CVR, only 30 cameras can be triggered to record video concurrently per second.
	Alarm Triggered Actions (Excluding Recording)	152 actions (excluding recording) can be triggered concurrently by	512 actions (excluding recording) can be triggered concurrently by alarms per second.

			alarms per second.	
	Combined Alarms		10 alarms per second	
	Optimus Alarms		30 alarms per second (for up to 1 minute)	E-2314: 100 alarms per second (for up to 1 minute) E-2378: 500 alarms per second (for up to 1 minute)
Recording	Recording Schedules		512	E-2314: 3,000 E-2378: 30,000
	Recording Schedule Templates		200	
Map	Map	Maps Linked to One Area	64	
		Resolution	8192×8192	
		Size for One Map	64 MB	
		Total Size for Maps	2 GB	15 GB
		Maps	128	1,024
		Cameras on One Map	16	128
		Alarm Inputs on One Map	16	128
		Alarm Outputs on One Map	16	128
		Labels on One Map	16	128
		UVSS on One Map	4	4
		Access Points on One Map	16	128
		Hot Regions on One Map	8	64
		Cameras on Maps in Total	512	E-2314: 3,000 E-2378: 10,000
		Alarm Inputs on Maps in Total	32	3,000

		Alarm Outputs on Maps in Total	32	3,000
		Labels on Maps in Total	128	3,000
		UVSS on Maps in Total	4	4
		Access Points on Maps in Total	32	E-2314: 128 E-2378: 512
		Hot Regions on Maps in Total	128	1,024
	GIS Map	Elements in Total	3,000	
		Hot Regions in Total	128	1,024
		Cameras in Total	512	E-2314: 3,000 E-2378: 10,000
		Alarm Inputs in Total	512	3,000
		Alarm Outputs in Total	512	3,000
		UVSSs in Total	4	4
		Access Points in Total	32	E-2314: 128 E-2378: 1024
		Labels in Total	512	3,000
AR Monitoring	AR Map	AR Scenes	100	
		Plans	512	
			Note: Up to 100 scenes are allowed for each plan.	
		Tags for Each Scene	200	
		Tag Groups for Each Scene	100	
User & Role		Roles	400	3,000
		Users	100	3,000
		Roles Assigned to One User	● 100 roles can be assigned to	● 100 roles can be assigned to one user (Resources linked

		one user (Resources linked to one role < 170); ● 50 roles can be assigned to one user (Resources linked to one role < 514).	to one role < 1,000); ● 50 roles can be assigned to one user (Resources linked to one role < 3,000).
	Concurrent Accesses via Client	● 30 Control Clients and Web Clients access the system concurrently; ● 30 Mobile Clients access the system concurrently.	● 100 Control Clients and Web Clients access the system concurrently; ● 100 Mobile Clients access the system concurrently;
	Double Authentications	32 users	50 users
Data Storage (BI Data and Data Recorded in System)	**Data Retention Period**	5,000,000 per Month and Stored for 3 Years	
	People Counting	5 million each year	
	Heat Map	0.25 million each year	
	ANPR	60 million each year	
	Events		
	Alarms		
	Access Records	1.4 billion each year	
	Attendance Records	55 million each year	
	Visitor Records	10 million each year	
	Operation Logs	5 million each year	
	Service Information Logs		
	Service Error Logs		
	Recording Tags	60 million	
Person	**Persons**	2,000	1,000,000
	Departments	3,000	
	Department Hierarchies	10	
	Profile Pictures	2,000	1,000,000
	Size of One Profile Picture	Recommended: 300 KB	

	Total Size of Profile Pictures	500 MB	300 GB
	Persons to Be Reviewed	10,000	
	Resigned Persons	100,000	
	Resignation Types	100	
Access Control	**Persons for Access Control**	2,000	50,000
	Cards	10,000	250,000
	Fingerprints	8,000	200,000
	Credentials (Cards + Fingerprints)	10,000	250,000
	Irises	4,000	100,000
	Anti-Passback Rules	32	128
	Access Points in One Anti-Passback Rule	16	
	Access Levels	32	512
	Access Points in One Access Level	32	1024
	Access Schedules	32	
	Card Templates	32	
	Device Polling Rate	3 minutes	
	Speed of Applying Persons' Access Level Settings to Device	● Card: 4.2 cards per second ● Fingerprint: 1.7 fingerprints per second ● Face credential: 1.7 face pictures per second ● Iris: 100 irises per second	
	Speed of Reporting Access Records	10 records per second	E-2314: 100 records per second E-2378: 1,000 records per second
Visitor	**Visitors**	5,000	100,000
	Visitor Registration/Reservation Records	100,000	

	Visitor Reservation Records to Be Approved	5,000	10,000
	Visitor Email Templates	20	
	Visit Purposes	20	
	Visitors in Blocklist	5,000	10,000
	Entities in Watch List	5,000	10,000
	Hosts to Be Applied	10,000	50,000
	Card Templates	20	20
Time and Attendance	**Persons for Time and Attendance**	5,000	50,000
	Shifts	32	128
	Break Timetables	128	
	Break Timetables in One Timetable	4	
	Custom Reports	128	
	Holidays	32	
	Overtime Types of Pay Code	128	
	Leave Types of Pay Code		
	Application Roles	100	
	Application Flows	1,000	
	Nodes in One Application Flow	100	
	Persons Allowed in One Application Role	500	
	Persons Contained in All Application Roles in Each Nodes	500	
	Concurrent Login of Employees via Client	500	

Intelligent Analysis	**Persons for Intelligent Analysis**	2,000	1,000,000
	Intelligent Analysis Groups	32	1,000
	Face Comparison Groups	16	64
	Storage of Face Matched/Mismatched Events	● 120/s without pictures ● 20/s with pictures (each picture 500 KB, stored in Recording Server)	● 400/s without pictures ● 100/s with pictures (each picture 500 KB, stored in Recording Server)
BI (Retail/Supermarket Scenario)	**Total Stores**	64	E-2314: 200 E-2378: 1,000
	Total Floors		
	Total Entries and Exits		
	Total Analytic Areas		
	Total Cameras for People Counting	Subject to the specifications in **Manageable Resources**.	
	Total Cameras for Queue Analysis		
	Total Cameras for Heat Analysis		
	Promotion Days	Total Promotion Days: 100 Total Days of a Promotion Day: 30	
	Scheduled Reports	Total Scheduled Reports: 100 Total Data in One Scheduled Report: 32,000	
	Floors of One Store	10	
	Entries and Exits of One Store	64	100
	Cameras Installed at Entries and Exits	5	
BI (Public Scenario)	**Total Analysis Group**	64	E-2314: 200 E-2378: 1,000
	Cameras of Each Analysis	64	

	Group		
	Vehicle Lists	13	100
	Vehicles	60,000	500,000
	Undercarriage Pictures (Each 10 MB)	512	3,000
	Storage of License Plate Matched/Mismatched Events	• 5/s with pictures (each picture 500 KB, stored in SYS server) • 20/s with pictures (each picture 500 KB, stored in Recording Server)	• 400/s without pictures • 20/s with pictures (each picture 500 KB, stored in SYS server) • 100/s with pictures (each picture 500 KB, stored in Recording Server)
	Parking Lots	-	10
	Total Lanes	-	40
Vehicle and Parking Management	**Lanes in One Parking Lot**	-	32
	Vehicle Lists	-	100
	Vehicles in One List	-	5,000
	Vehicles in Blocklist	-	5,000
	Total Floors of Parking Lot	-	128
	Parking Spaces on One Floor	-	1,024
	Customized Vehicle Types	-	10
	Vehicles	-	500,000
	Vehicles' Cards	-	250,000
	Temporary Cards of One Parking Lot	-	10,000
	Passing Frequency of Lanes	-	1 vehicle per second for single lane
	Regular Report Rules	100	
Report	**Event or Alarm Rules in One Event/Alarm Report**	32	
	Records in One Sent Report	10,000 or 10 MB	
	Resources Selected for One	• 20 people counting cameras searched for one people counting report	

	Report	• 20 ANPR cameras searched for one vehicle analysis report • 20 queues searched for one queue analysis report • 20 presets searched for one temperature report *With this limitation, you can generate a neat and clear report via the Control Client and it costs less time.	
Smart Wall	**Decoding Devices**	32	
	Smart Walls	32	
	Views	1,000	
	Cameras in One View	256	
	View Groups	100	
	Views in One View Group	10	
	Cameras in One Window of Auto-Switch	20	
	Windows of an Auto-Switch	16	
	View Group of an Auto-Switch	1	
	Concurrent Accesses via Control Client	5	
	Operation Logs Storage	500,000	
	Alarms Displayed on Smart Wall as Actions	5 alarms per second (each alarm has 16 related cameras).	
	LED Smart Walls Linked to a Decoder	69 decoder: 1 C10ST: 1	
	LCD Smart Walls Linked to a Decoder	69 decoder: 3 C10ST: 3	
	Maximum Output Ports Linked to a LCD Smart Wall	6 × 10	
	Maximum Output Ports Linked to a LED Smart Wall	16 × 20	
Digital Signage	**Contents Release**	**Materials**	-	10,000
		Material Size	-	4 GB

		Programs	-	2,000
		Text Messages	10,000	
		Schedules	-	1,000
		Release Records	-	1,000
		Content Review Records	20,000	
		Video Walls	512	
	Concurrent Operation	**Materials Uploading**	-	32
		Schedules Applying	-	100
		Programs Applying	-	100
	Program	**Windows On One Page**	-	16
		Media Files in Each Window	-	256
Interactive Flat Panel	**Applications**		1,000	
	Applications Uploaded for One Time		100	
Audio Broadcast	**Speaker Unit**		128	
	Broadcast Groups			128
	IP Speakers in One Broadcast Group			
	Media Libraries		-	
	Audio Files in One Media Library			100
	Broadcast Schedules			
Security Inspection	**Security Analyzers**		-	E-2314: 8

			E-2378: 8
	Walk-Through Metal Detectors	-	E-2314: 64 E-2378: 64
On-Board Monitoring	**Fence Rules for One Vehicle**	4	
	Vehicles Can Be Located in One Client	50	64
	Retention Period of GPS Data	1 Year	
	Retention Period of Statistics Data	3 Years	
	Driving Event Storage	Store 5,000,000 Events per Month Retention Period: 3 Years	
	Speed of Handling Driving Events	300 events per second (last 1 minute)	E-2314: 500 events per second (last 1 minute) E-2378: 1000 events per second (last 1 minute)
	Maximum Number of Drivers	10,000	
Evidence Management	**Evidences**	100,000	
	Evidence Files	5,000,000	
Patrol	**Patrol Points**	1,024	

	Patrol Person Groups	300	
	Schedule Templates	1,000	
	Shifts of a Patrol Route	8	
Dock Management	**Docks**	-	500
	Dock Events	-	● 100 (E-2314) or 500 (E-2378) events without picture per second (for up to 1 minutes). ● 20 events with pictures (500 KB each, stored in SYS server) per second. ● 80 events with pictures (500 KB each, stored in Recording Server) per second.
	Dock Data Retention Period	-	2 Years
Parcel Tracking	**Check Points**	-	1000
	Scanning Devices (Accessed via CodePlatform or NVR)	-	50
	Scanning Devices (Accessed directly)	-	45
	Parcel Tracking Events	-	● 100 (E-2314) or 500 (E-2378) events without picture per second (for up to 1 minutes). ● 50 events with pictures (500 KB each, stored in Recording Server) per second.

	Retention Period of Scanning Records	-	3 Months
Canteen Consumption	**Canteen Payment Terminals**	-	100
	Number of Merchants	-	100
	Merchant Levels	-	5
	Payment Groups	-	512
	Payment Rules	-	128
	Meal Types	-	8
	Number of Payment Persons	-	50000
	Payment Response Time for 100 Payment Terminals Working Simultaneously	-	3 Seconds
	Consumption Events	-	● 100 (E-2314) or 200 (E-2378) events without pictures per second (for up to 1 minutes). ● 20 events with pictures (500 KB each, stored in SYS server) per second. ● 80 events with pictures (500 KB each, stored in recording server) per second.

	Speed of Applying Person Permissions	-	Card: 50 Milliseconds Per Card Profile Picture: 1 Second Per Profile Picture
Traffic	**Devices for Toll Verification**	-	10
	Devices for Traffic Event Detection	-	50
	Vehicle Passing Events	-	● 40 events without picture per second (for up to 1 minutes). ● 20 events with pictures (500 KB each, stored in SYS server) per second. ● 40 events with pictures (500 KB each, stored in Recording Server) per second.
	Traffic Events		● 100 (E-2314) or 200 (E-2378) events without picture per second (for up to 1 minutes). ● 20 events with pictures (500 KB each, stored in SYS server) per second. ● 80 events with pictures (500 KB each, stored in Recording Server) per second.
	Retention Period of Toll Verification Records	-	3 Years
	Retention Period of Traffic Data	-	3 Years
Public Order Management	**Municipal Enforcement PTZ Cameras**	-	500
	Water Level Detection PTZ Cameras	-	500

	Urban Management Incidents	-	• 20 events with pictures (500 KB each, stored in SYS server) per second. • 80 events with pictures (500 KB each, stored in Recording Server) per second.
	Water Level Events	-	• 100 (E-2314) or 200 (E-2378) events without picture per second (for up to 1 minutes).
	Retention Period of Urban Management Data	-	3 Years
	Retention Period of Water Level Data	-	3 Years
Others	**Streaming Gateway**	50 cameras×2 Mbps input and 50 cameras×2 Mbps output	200 cameras×2 Mbps input and 200 cameras×2 Mbps output
	Time Consumed to Export Devices and Sites	10 seconds	E-2314: 10 seconds E-2378: 19 seconds
	Number of Messages Sent from SYS to Mobile Clients on Different Smart Phone Systems	iOS/HUAWEI: 30 per second Firebase Cloud Messaging (FCM): 26 per second	
Store Audit	**Stores**	-	1,000
	Auditors of Each Store	-	1
	Rectification Personnel of Each Store	-	1

	Rating Items	-	3,000
	Max. Deducted Points of Each Rating Item	-	100
	Rating Categories	-	200
	Rating Templates	-	100
	Rating Items Linked to Each Rating Template	-	100
	Audit Schedules	-	150
	Audit Schedules Linked to Each Store	-	10
	Max. Validity Period of Each Audit Schedule	-	3 Years
	Stores Linked to Each Audit Schedule	-	1,000
	Pictures Uploaded During Each Audit	-	4
	Size of Each Picture Uploaded During an Audit	-	8 MB
	Pictures Uploaded for Each Rectification	-	4

	Size of Each Picture Uploaded for a Rectification	-	8 MB
	Retention Period of Task List	-	3 Years
	Retention Period of Deficiency List	-	3 Years
Industrial Inspection	**Device Types**	-	1,000
	Parts of Each Device Type	-	20
	Sub-Parts of Each Part	-	10
	Inspection Points of Each Device Type	-	50
	Production Equipment	-	2,000
	Inspection Schedules	-	150
	Inspection Schedules Linked to Each Area	-	10
	Max. Validity Period of Each Inspection Schedule	-	3 Years
	Task Execution Cycle	-	Supports performing an inspection task for one time by day/week/month.

	Areas Linked to Each Inspection Schedule	-	100
	Retention Period of Task & Issue List	-	3 Years
Education Management	**Classes**	-	120
	Sections in Each Course Schedule	-	84/week
	Retention Period of Course Records	-	3 Years
	Retention Period of Class Attendance Data	-	3 Years
	Retention Period of To-Be-Corrected Attendance Data	-	1 Month
	Time Range of Displayed To-Be-Corrected Attendance Data	-	7 Days
	Retention Period of School Arrival Records	-	3 Years
	Time Range for Searching School Arrival Records	-	31 Days
	Retention Period of Course Inspection Records	-	3 Years
	Time Range for Searching Completed Courses	-	7 Days

	Time Range for Searching Course Inspection Records	-	7 Days

2.3 Streaming Server

Configurations		
Feature	**Low-End**	**High-End**
CPU	Intel® Core™ i5-4590 @ 3.30 GHz	Intel Xeon® E-2124 @ 3.30 GHz
RAM	8 GB	16 GB
NIC	GbE Network Interface Card	GbE Network Interface Card
HDD Type	SATA-II 7200 RPM Enterprise Class Hard Drives	SATA-II 7200 RPM Enterprise Class Hard Drives
HDD Capacity	10 GB for Streaming Server Log Files	10 GB for Streaming Server Log Files
Maximum Performance		
Input and Output	200 streams × 2 Mbps input and 200 streams × 2 Mbps output	300 streams × 2 Mbps input and 300 streams × 2 Mbps output

Chapter 3 Client Performance

3.1 Decoding Performance

Notes:

- The performance refers to maximum live view channels within up to 80% of CPU consumption (software decoding) or up to 80% of video engine load/decoding value (hardware decoding).
- You can switch to hardware decoding on the System page. If the OS of your PC is Windows 7, make sure DirectX (D3DX9_43.dll and D3DCompiler_43.dll) have been installed, or the hardware decoding will fail and it will switch to software decoding. To realize hardware decoding and reach the following maximum decoding performance, click here to download and install DirectX.

Configurations			
Feature	**Configuration 1**	**Configuration 2**	**Configuration 3**
CPU	Intel® Core™ i5-9400/F	Intel® Core™ i3-8100 @ 3.60 GHz	Intel® Core™ i7-8700k @ 3.70 GHz
RAM	8 GB	8 GB	16 GB
NIC	GbE Network Interface Card	GbE Network Interface Card	GbE Network Interface Card
Graphics Card	NVIDIA® GeForce GTX 1050Ti	Intel® UHD Graphics 630+GT1030	NVIDIA® GeForce RTX 2080
OS	Microsoft® Windows 10 (64-bit)	Microsoft® Windows 10 (64-bit)	Microsoft® Windows 10 (64-bit)

Performance in Software Decoding						
Encoding Format	**Frame Rate (fps)**	**Bit Rate (Mbps)**	**Resolution**	**Maximum Live View Channels**		
				Configuration 1	**Configuration 2**	**Configuration 3**
H.264	30	0.5	CIF	163	97	193
	30	1	4CIF	81	38	80

Encoding	Frame	Bit Rate	Resolution			
	30	3	720p	33	14	43
	30	6	1080p	16	7	22
	30	8	3 MP	12	4	17
	30	12	8 MP	4	1	7
	25	16	32 MP	/	/	2
H.264+	30	1	720p	40	21	38
	30	3	1080p	16	8	25
	30	4	3 MP	13	6	14
H.265	30	1	720p	29	14	47
	30	3	1080p	12	5	20
	30	4	3 MP	8	3	13
	30	6	8 MP	2	1	4
	25	16	32 MP	/	/	1
H.265+	30	0.5	720p	40	16	56
	30	1	1080p	16	6	28
	30	2	3 MP	9	4	17
	30	3	8 MP	3	1	5
Performance in Hardware Decoding						
Encoding	**Frame**	**Bit Rate**	**Resolution**	**Maximum Live View Channels**		

Format	Rate (fps)	(Mbps)		Configuration 1	Configuration 2	Configuration 3
H.264	30	0.5	CIF	102	57	94
	30	1	4CIF	73	30	76
	30	3	720p	36	16	41
	30	6	1080p	17	8	20
	30	8	3 MP	12	5	14
	30	12	8 MP	5	2	6
	25	16	32 MP	/	/	2
H.264+	30	1	720p	38	14	41
	30	3	1080p	18	7	20
	30	4	3 MP	12	5	14
H.265	30	1	720p	33	16	45
	30	3	1080p	17	8	29
	30	4	3 MP	12	6	21
	30	6	8 MP	4	2	8
	25	16	32 MP	/	/	3
H.265+	30	0.5	720p	32	17	50
	30	1	1080p	17	9	28
	30	2	3 MP	11	6	22
	30	3	8 MP	4	2	8

3.2 Control Client Performance

Note: The performance refers to the maximum performance of the Control Client, running on the PC of the following configurations.

Control Client Configuration	
CPU	Intel® Core™ i7-9700k @ 3.60 GHz
RAM	16 GB
NIC	GbE Network Interface Card
OS	Microsoft® Windows 10 64-bit
Graphics Card	NVIDIA® GeForce GTX 970
Maximum Performance		
Control Panel	**Control Panels Can Be Configured**	5
	Windows on One Control Panel	12
	Displayed Alarms	20
	Displayed Face Recognition Records	200
	Displayed Face Comparison Records	20
	Displayed Access Records	20
	Displayed Vehicle Passing Records	20
Resource	**Resources in One Area**	256
View	**Public Views**	100
	Private Views	100 views can be added for one user
	Public View Groups	100
	Private View Groups	100 views per user
	Cameras in One View	64
	View Hierarchies	5
Favorites	**Favorites**	100 Favorites can be added for one user (the number of users cannot be larger than 100)
	Resources in One Favorites	64
	Favorites Hierarchies	5
Live View and Playback	**Channels in Live View**	256
	Windows of Zooming Area in Fisheye Dewarping Live View	8
	Windows of Zooming Area in Live View	5
	Channels in Playback	16
	Channels in Synchronous Playback	16
	Channels in Visual Tracking	9
	Channels in Reverse Playback	16
	Auto-Switch Windows on One Auxiliary Screen	64 (four auxiliary screens are supported)
Event and Alarm	**Max. Frequency of Alarm and Event Receiving (Face, Access Control, and Entrance & Exit)**	100 alarms per second (last for 12 seconds), including 20 alarms with pictures (500 KB

		each) and 80 without pictures.
	Average Frequency of Alarm and Receiving (Face, Access Control, and Entrance & Exit)	20 alarms with pictures (500 KB each) and 20 without pictures
	Alarms Displayed in Alarm Center	2,000
	Unacknowledged Alarms Displayed	5,00
	Alarms to Be Batch Acknowledged for Once	100
	Alarms in One Export	XLS/CSV: Unlimited PDF: 5,000
Monitoring	**Events Displayed in Event List**	500
	Displayed Face Comparison Records/Access Records/Vehicle Passing Records	200
	Face Comparison Groups Subscribed	10
	Comparison Records of One Person	20
	Displayed Person-Related Events	20
	Displayed Vehicle-Related Events	20
	Displayed Video Search Results	5,000
	Displayed VCA Search Results	5,000
	Face Capture Records	200
	Vehicle Capture Records	200
	Vehicle Matched Events	20
Face and Human Body Recognition	**Face Picture Matched Events**	20
	Search Results of Matched Face Pictures	Total: 10,000 (20 per page)
	Search Results of Frequently and Rarely Appeared Persons	100 per page
Evidence Management	**Files Linked to One Evidence**	100
Video Intercom	**Channels for Video Intercom**	1
Two-Way Audio	**Channels for Two-Way Audio**	1
Broadcast	**Devices in One Broadcast**	512
	IP Speakers in One Broadcast	128
Intelligent Analysis	**Records in One Export**	320,000
Vehicle and Parking	**Vehicle Passing Records in One Export**	PDF: 500
Health Monitoring	**Server Logs in One Export**	5,000
	Device Logs in One Export	2,000
	Online/Offline Logs and Recording Logs in One Export	10,000
Task Center	**Tasks Downloading Completed**	5,000

	Tasks Waiting for Downloading	500
	Tasks Waiting for Uploading	500
	Tasks in Downloading Simultaneously	5
	Tasks in Uploading Simultaneously	5
Smart Wall (Graphic Card)	**Times for One Alarm to Be Displayed on Smart Wall**	1
	Windows on One Smart Wall	64
Smart Wall (Decoding Device)	**Views**	1,000
	View Groups	100
	Auto-Switch Cameras in One Window	20
	Auto-Switch Windows on One Smart Wall	16
	Auto-Switch Cameras in Multiple Windows	256
	Maximum Number of Windows Displaying a Program	1
	Network Keyboard	8
	Maximum Resolution and Frame Rate of Displaying a Program	3840*2160, 30 fps
Dock Management	**Docks**	500
	Retention Period of Dock Records	2 Years
Parcel Tracking	**Check Points**	1000
	Scanning Devices (Accessed via CodePlatform)	50
	Scanning Devices (Accessed directly)	45
	Scanning Devices (Accessed via NVR)	1000
	Retention Period of Parking Tracking Records	3 Months
Vehicle Monitoring	**Driving Events in One Export**	100
Login and Logout	**Login Time Consumed**	15 Seconds
	Logout Time Consumed	10 Seconds
	User Switch Time Consumed	22 Seconds
Others	**Image Cache**	2 GB

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