



# **HikCentral Professional System Requirements & Performance**

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## Chapter 1 System Requirements

<b>OS for Server*</b>	<p>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</p> <p><i>*For Windows 8.1 and Windows Server 2012 R2, make sure it is installed with the rollup (KB2919355) updated in April, 2014.</i></p>
<b>OS for Control Client</b>	<p>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</p> <p><i>*For Windows 8.1 and Windows Server 2012 R2, make sure it is installed with the rollup (KB2919355) updated in April, 2014.</i></p>
<b>OS for Mobile Client</b>	<p>iOS 10.0 and above                  Android 6.0 and above</p>
<b>Database</b>	<p>PostgreSQL V11.8</p>
<b>Browser</b>	<p>Google Chrome® 84 and above                  Firefox® 84 and above                  Safari® 11 and above                  Microsoft® Edge 89 and above                  Internet Explorer® 11 and above</p>
<b>Virtual Machine</b>	<p>VMware® ESXi™ 6.x                  Microsoft® Hyper-V with Windows Server 2012/2012 R2/2016 (64-bit)</p> <p><b>Note:</b> The Streaming Server and 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.</p>
<b>Failover Cluster</b>	<p>Microsoft® Windows Server 2012 64-bit                  Microsoft® Windows Server 2008 R2 SP1 64-bit                  RoseReplicatorPlus_5.1.0_175-x64</p>

\*Server refers to SYS (System Management Server).

## Chapter 2 Server Performance

### 2.1 System Management Server (SYS)

SYS Configurations			
Feature	Low-End	High-End	
<b>CPU</b>	Intel® Core™ i5-8500 @ 3.00 GHz	Intel® Xeon® E-2124 @ 3.30 GHz	Intel® Xeon® Silver 4110 @ 2.10 GHz
<b>RAM</b>	8 GB	16 GB	16 GB
<b>NIC</b>	GbE Network Interface Card	GbE Network Interface Card	GbE Network Interface Card
<b>HDD for OS</b>	SATA-II 7200 RPM Enterprise Class HDD	SATA-II 7200 RPM Enterprise Class HDD	SATA-II 7200 RPM Enterprise Class HDD
<b>HDD for Picture Storage</b>	Surveillance-class HDD or high performance network HDD. It should support 10 MB/s writing and 10 MB/s reading.	Enterprise-class HDD or high performance network HDD. It should support 20 MB/s writing and 20 MB/s reading.	Enterprise-class HDD or high performance network HDD It should support 20 MB/s writing and 20 MB/s reading.
<b>HDD Capacity</b>	At least 650 GB	At least 650 GB	At least 650 GB
<b>OS</b>	Microsoft® Windows 8.1 64-bit	Microsoft® Windows Server 2012 (R2) 64-bit	Microsoft® Windows Server 2012 (R2) 64-bit
<b>Virtual Machine</b>	<b>Amazon AWS EC2</b> Instance: c5.xlarge CPU: Intel® Xeon® Cascade Lake @3.60 GHz vCPU Count: 4 RAM: 8 GB Storage: EBS NIC: 10 Gbps	<b>Amazon AWS EC2</b> Instance: m5.xlarge CPU: Intel® Xeon® Platinum 8175M @3.10 GHz vCPU Count: 4 RAM: 16 GB Storage: EBS NIC: 10 Gbps	<b>Amazon AWS EC2</b> Instance: c5.2xlarge CPU: Intel® Xeon® Platinum 800 @3.40 GHz vCPU Count: 8 RAM: 16 GB Storage: HDD NIC: 10 Gbps
	<b>Microsoft Azure</b> Instance: B4MS CPU: Intel Xeon® E5-2673 v4 @ 2.30 GHz vCPU Count: 4		-

	RAM: 16 GB NIC: 10 Gbps		
<b>Maximum Performance</b>			
	<b>Feature</b>	<b>Low-End</b>	<b>High-End</b>
<b>Manageable Resources</b>	<b>Encoding Devices</b>	256 (Total in Sharing Mode: 256)	E-2124: 1,024 (Total in Sharing Mode: 1,024) Silver 4110: 2,048 (Total in Sharing Mode: 2,048)
	<b>Access Control Devices</b>	256 (Total in Sharing Mode: 256)	E-2124: 1,024 (Total in Sharing Mode: 1,024) Silver 4110: 2,048 (Total in Sharing Mode: 2,048)
	<b>Elevator Control Devices</b>	128 (Total in Sharing Mode: 256)	E-2124: 1,024 (Total in Sharing Mode: 1,024) Silver 4110: 2,048 (Total in Sharing Mode: 2,048)
	<b>Security Control Devices</b>	256 (Total in Sharing Mode: 256)	E-2124: 1,024 (Total in Sharing Mode: 1,024) Silver 4110: 2,048 (Total in Sharing Mode: 2,048)
	<b>IP Speakers</b>	-	E-2124: 128 (Total in Sharing Mode: 1,024) Silver 4110: 128 (Total in Sharing Mode: 2,048)
	<b>Guidance Terminals</b>	-	E-2124: 1,024 (Total in Sharing Mode: 1,024) Silver 4110: 2,048 (Total in Sharing Mode: 2,048)
	<b>Guidance Screens</b>	-	512

<b>Video Intercom Devices</b>	32	5000
<b>Indoor Stations</b>	32	5000
<b>Visitor Terminals</b>	8	32
<b>DS-5600 Series Face Recognition Terminals</b> <i>*Applied with Hikvision Turnstiles</i>	32 *If DS-5600 series devices are applied with third-party turnstiles, they are regarded as access control devices.	
<b>Radars and Radar PTZ Cameras</b>	30	
<b>Digital Signage Terminals</b>	128	1,024
<b>Interactive Flat Panels</b>	128	1,024
<b>Network Transmission Devices</b>	-	128
<b>Under Vehicle Surveillance Systems (UVSS)</b>	2	4
<b>Mobile Devices</b>	300	E-2124: 500 Silver 4110: 1000
<b>Entrance/Exit Stations</b>	40	40
<b>Query Terminals</b>	16	16
<b>Cameras (Expanded)</b>	512	E-2124: 3,000 Silver 4110: 10,000
<b>Alarm Inputs</b> <i>*Including Alarm Inputs of Security Control Devices</i>	512	5,000
<b>Alarm Inputs of Security Control Devices</b>	512	2,048
<b>Alarm Outputs</b>	512	3,000
<b>ANPR Cameras</b>	512	3,000
<b>People Counting Cameras</b>	60 (recommended max. value)	300 (recommended max. value)
<b>Facial Recognition Servers</b>	16	64
<b>Heat Map Cameras</b>	-	70 (recommended max. value)
<b>Thermal Cameras</b>	5 (recommended max. value)	20 (recommended max. value)

	<b>Queue Management Cameras</b>	60 (recommended max. value)	300 (recommended max. value)
	<b>Access Points (Doors + Floors)</b>	128	1,024
	<b>Doors</b>	128	1,024
	<b>Floors</b>	128	1,024
	<b>Enrollment Station</b>	8	
	<b>Recording Servers</b> <i>*Including pStor, Hybrid SAN, NVR, and cloud storage</i>	64	
	<b>Streaming Servers</b>	64	
	<b>DeepinMind Servers</b>	64	
	<b>Security Audit Servers</b>	8	
	<b>Dock Stations</b>	-	1,500
	<b>Resources in One Analysis Group</b>	64	
	<b>Partitions (Areas)</b>	64	256
	<b>Remote Sites</b>	-	1,024
	<b>Resources on Remote Sites</b>	-	100,000
<b>Area</b>	<b>Areas</b>	512	3,000
	<b>Area Hierarchies</b>	5	
	<b>Cameras in One Area</b>	256	
	<b>Alarm Inputs in One Area</b>	256	
	<b>Alarm Outputs in One Area</b>	256	
<b>Event &amp; Alarm</b>	<b>Alarm Priorities</b>	255	
	<b>Alarm Categories</b>	25	
	<b>Event and Alarm Rules</b>	1,500	E-2124: 3,000 Silver 4110: 10,000
	<b>User-Defined Event Rules</b>	1,0000	



	<b>Arming Schedule Templates</b>	200	
	<b>Events or Alarms Storage</b>	<ul style="list-style-type: none"> <li>● 30 events or alarms without picture per second.</li> <li>● 5 events or alarms with pictures (500 KB each, stored in SYS server) per second.</li> <li>● 20 events or alarms with pictures (500 KB each, stored in Recording Server) per second.</li> </ul>	<ul style="list-style-type: none"> <li>● 100 (E-2124) or 1,000 (Silver 4110) events or alarms without picture per second (for up to 3 minutes).</li> <li>● 20 events or alarms with pictures (500 KB each, stored in SYS server) per second.</li> <li>● 80 events or alarms with pictures (500 KB each, stored in Recording Server) per second.</li> </ul>
	<b>Events or Alarms Sent to Clients</b>	<ul style="list-style-type: none"> <li>● 38 events or alarms/s</li> <li>● 30 Clients/s (Mobile Clients and Control Clients)</li> </ul>	<ul style="list-style-type: none"> <li>● 120 events or alarms/s</li> <li>● 100 Clients/s (Mobile Clients and Control Clients)</li> </ul>
	<b>Event Triggered Capturing</b>	20 cameras can be triggered to capture pictures concurrently per second.	
	<b>Alarm Triggered Recording</b>	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.
	<b>Alarm Triggered Actions (Excluding Recording)</b>	152 actions (excluding recording) can be triggered concurrently by alarms per second.	512 actions (excluding recording) can be triggered concurrently by alarms per second.
	<b>Combined Alarms</b>	10 alarms per second	
	<b>Optimus Alarms</b>	30 alarms per second (for up to 1 minute)	E-2124: 100 alarms per second (for up to 1 minute) Silver 4110: 500 alarms per second (for up to 1 minute)
<b>Recording</b>	<b>Recording Schedules</b>	512	E-2124: 3,000 Silver 4110: 30,000

	<b>Recording Schedule Templates</b>	200		
<b>Map</b>	<b>Map</b>	<b>Maps Linked to One Area</b>	64	
		<b>Resolution</b>	8192×8192	
		<b>Size for One Map</b>	10 MB	
		<b>Total Size for Maps</b>	2 GB	15 GB
		<b>Maps</b>	128	1,024
		<b>Cameras on One Map</b>	16	128
		<b>Alarm Inputs on One Map</b>	16	128
		<b>Alarm Outputs on One Map</b>	16	128
		<b>Labels on One Map</b>	16	128
		<b>UVSS on One Map</b>	4	4
		<b>Access Points on One Map</b>	16	128
		<b>Hot Regions on One Map</b>	8	64
		<b>Cameras on Maps in Total</b>	512	E-2124: 3,000 Silver 4110: 10,000
		<b>Alarm Inputs on Maps in Total</b>	32	3,000
		<b>Alarm Outputs on Maps in Total</b>	32	3,000
		<b>Labels on Maps in Total</b>	128	3,000
		<b>UVSS on Maps in Total</b>	4	4
		<b>Access Points on Maps in Total</b>	32	E-2124: 128 Silver 4110: 512
		<b>Hot Regions on Maps in Total</b>	128	1,024
	<b>GIS Map</b>	<b>Elements in Total</b>	3,000	
		<b>Hot Regions in Total</b>	128	1,024
		<b>Cameras in Total</b>	512	E-2124: 3,000 Silver 4110: 10,000
		<b>Alarm Inputs in Total</b>	512	3,000
<b>Alarm Outputs in Total</b>		512	3,000	
<b>UVSS in Total</b>		4	4	

		<b>Access Points in Total</b>	32	E-2124: 128 Silver 4110: 1024
		<b>Labels in Total</b>	512	3,000
<b>User &amp; Role</b>	<b>Roles</b>		400	3,000
	<b>Users</b>		100	3,000
	<b>Roles Assigned to One User</b>		<ul style="list-style-type: none"> <li>● 100 roles can be assigned to one user (Resources linked to one role &lt; 170);</li> <li>● 50 roles can be assigned to one user (Resources linked to one role &lt; 514).</li> </ul>	<ul style="list-style-type: none"> <li>● 100 roles can be assigned to one user (Resources linked to one role &lt; 1,000);</li> <li>● 50 roles can be assigned to one user (Resources linked to one role &lt; 3,000).</li> </ul>
	<b>Concurrent Accesses via Client</b>		<ul style="list-style-type: none"> <li>● 30 Control Clients and Web Clients access the system concurrently;</li> <li>● 30 Mobile Clients access the system concurrently.</li> </ul>	<ul style="list-style-type: none"> <li>● 100 Control Clients and Web Clients access the system concurrently;</li> <li>● 100 Mobile Clients access the system concurrently</li> </ul>
	<b>Double Authentications</b>		32 users	50 users
<b>Data Storage (BI Data and Data Recorded in System)</b>	<b>Data Retention Period</b>		5,000,000 per Month and Stored for 3 Years	
	<b>People Counting</b>		5 million	
	<b>Heat Map</b>		0.25 million	
	<b>ANPR</b>		60 million	
	<b>Events</b>		60 million	
	<b>Alarms</b>		60 million	
	<b>Access Records</b>		1.4 billion	
	<b>Attendance Records</b>		55 million	
	<b>Visitor Records</b>		10 million	
	<b>Operation Logs</b>		5 million	
	<b>Service Information Logs</b>		5 million	
	<b>Service Error Logs</b>		5 million	
<b>Recording Tags</b>		60 million		
<b>Person</b>	<b>Persons</b>		2,000	1,000,000

	<b>Person Groups</b>	3,000	
	<b>Person Group Hierarchies</b>	10	
	<b>Profile Pictures</b>	2,000	1,000,000
	<b>Cards</b>	10,000	250,000
	<b>Fingerprints</b>	8,000	100,000
	<b>Credentials (Cards + Fingerprints)</b>	10,000	250,000
	<b>Size of One Profile Picture</b>	Recommended: 300 KB	
	<b>Total Size of Profile Pictures</b>	500 MB	300 GB
	<b>Persons to Be Reviewed</b>	10,000	
<b>Access Control</b>	<b>Persons for Access Control</b>	2,000	50,000
	<b>Anti-Passback Rules</b>	32	128
	<b>Access Points in One Anti-Passback Rule</b>	16	
	<b>Access Levels</b>	32	512
	<b>Access Points in One Access Level</b>	32	1024
	<b>Access Schedules</b>	32	
	<b>Card Templates</b>	32	
	<b>Device Polling Rate</b>	3 minutes	
	<b>Speed of Applying Persons' Access Level Settings to Device</b>	<ul style="list-style-type: none"> <li>● Card: 4.2 cards per second</li> <li>● Fingerprint: 1.7 fingerprints per second</li> <li>● Face credential: 1.7 face pictures per second</li> </ul>	
	<b>Speed of Reporting Access Records</b>	10 records per second	E-2124: 100 records per second Silver 4110: 1,000 records per second
<b>Visitor</b>	<b>Visitors</b>	5,000	20,000
	<b>Visitors to Be Approved</b>	5,000	10,000
	<b>Visitor Registration/Reservation Records</b>	100,000	
	<b>Visitor Reservation Records to Be Approved</b>	5,000	10,000
	<b>Visitor Email Templates</b>	20	
	<b>Visit Purposes</b>	20	
	<b>Persons in Blocklist</b>	5,000	10,000

	<b>Entities in Watch List</b>	5,000	10,000
	<b>Hosts to Be Applied</b>	10,000	50,000
<b>Time and Attendance</b>	<b>Persons for Time and Attendance</b>	5,000	10,000
	<b>Shifts</b>	32	128
	<b>Break Timetables</b>	128	
	<b>Break Timetables in One Timetable</b>	4	
	<b>Custom Reports</b>	128	
	<b>Major Leave Type</b>	64	
	<b>Minor Leave Type in One Major Type</b>	128	
	<b>Holidays</b>	32	
<b>Intelligent Analysis</b>	<b>Persons for Intelligent Analysis</b>	2,000	1,000,000
	<b>Intelligent Analysis Groups</b>	32	1,000
	<b>Face Comparison Groups</b>	16	64
	<b>Storage of Face Matched/Mismatched Events</b>	<ul style="list-style-type: none"> <li>● 120/s without pictures</li> <li>● 20/s with pictures (each picture 500 KB, stored in Recording Server)</li> </ul>	<ul style="list-style-type: none"> <li>● 400/s without pictures</li> <li>● 100/s with pictures (each picture 500 KB, stored in Recording Server)</li> </ul>
<b>Vehicle and Parking Management</b>	<b>Vehicle Lists</b>	13	100
	<b>Vehicles</b>	60,000	500,000
	<b>Undercarriage Pictures (Each 10 MB)</b>	512	3,000
	<b>Storage of License Plate Matched/Mismatched Events</b>	<ul style="list-style-type: none"> <li>● 5/s with pictures (each picture 500 KB, stored in SYS server)</li> <li>● 20/s with pictures (each picture 500 KB, stored in Recording Server)</li> </ul>	<ul style="list-style-type: none"> <li>● 400/s without pictures</li> <li>● 20/s with pictures (each picture 500 KB, stored in SYS server)</li> <li>● 100/s with pictures (each picture 500 KB, stored in Recording Server)</li> </ul>
	<b>Parking Lots</b>	-	10
	<b>Total Lanes</b>	-	40
	<b>Lanes in One Parking Lot</b>	-	32
	<b>Vehicle Lists</b>	-	100
	<b>Vehicles in One List</b>	-	5,000

	<b>Vehicles in Blocklist</b>	-	5,000
	<b>Total Floors of Parking Lot</b>	-	128
	<b>Parking Spaces on One Floor</b>	-	1,024
	<b>Customized Vehicle Types</b>	-	10
	<b>Vehicles</b>	-	500,000
	<b>Vehicles' Cards</b>	-	250,000
	<b>Temporary Cards of One Parking Lot</b>	-	10,000
	<b>Passing Frequency of Lanes</b>	-	1 vehicle per second for single lane
<b>Report</b>	<b>Regular Report Rules</b>	100	
	<b>Event or Alarm Rules in One Event/Alarm Report</b>	32	
	<b>Records in One Sent Report</b>	10,000 or 10 MB	
	<b>Resources Selected for One Report</b>	<ul style="list-style-type: none"> <li>● 20 people counting cameras searched for one people counting report</li> <li>● 20 ANPR cameras searched for one vehicle analysis report</li> <li>● 20 queues searched for one queue analysis report</li> <li>● 20 presets searched for one temperature report</li> </ul> *With this limitation, you can generate a neat and clear report via the Control Client and it costs less time.	
<b>Smart Wall</b>	<b>Decoding Devices</b>	32	
	<b>Smart Walls</b>	32	
	<b>Views</b>	1,000	
	<b>Cameras in One View</b>	256	
	<b>View Groups</b>	100	
	<b>Views in One View Group</b>	10	
	<b>Concurrent Accesses via Control Client</b>	5	
	<b>Operation Logs Storage</b>	500,000	
	<b>Alarms Displayed on Smart Wall as Actions</b>	5 alarms per second (each alarm has 16 related cameras).	
	<b>LED Smart Walls Linked to a Decoder</b>	69 decoder: 1 C10ST: 1	
<b>LCD Smart Walls Linked to a Decoder</b>	69 decoder: 3		

		C10ST: 3	
	<b>Maximum Output Ports Linked to a LCD Smart Wall</b>	6 × 10	
	<b>Maximum Output Ports Linked to a LED Smart Wall</b>	16 × 20	
<b>Digital Signage</b>	<b>Contents Release</b>	<b>Materials</b>	10,000
		<b>Material Size</b>	4 GB
		<b>Programs</b>	2,000
		<b>Schedules</b>	1,000
		<b>Release Records</b>	1,000
		<b>Video Walls</b>	512
	<b>Concurrent Operation</b>	<b>Materials Uploading</b>	1,024
		<b>Schedules Applying</b>	100
		<b>Programs Applying</b>	100
		<b>Combined Operations (material uploading, schedule applying, and program applying)</b>	100
<b>Program</b>	<b>Linked Windows of One Page</b>	16	
	<b>Media Files in Each Window</b>	256	
<b>Interactive Flat Panel</b>	<b>Applications</b>	1,000	
	<b>Applications Uploaded for One Time</b>	100	
<b>Broadcast</b>	<b>Broadcast Groups</b>	128	
	<b>Broadcast Terminals in One Broadcast Group</b>	128	
	<b>Media Libraries</b>	100	
	<b>Audio Files in One Media Library</b>	100	
	<b>Broadcast Schedules</b>	100	
<b>Security Inspection</b>	<b>Security Analyzers</b>	E-2124: 8 Silver 4110: 8	
	<b>Walk-Through Metal Detectors</b>	E-2124: 64 Silver 4110: 64	
	<b>Security Inspection Channels</b>	E-2124: 500	

			Silver 4110: 1,000
<b>Mobile Monitoring</b>	<b>Fence Rules for One Vehicle</b>	4	
	<b>Vehicles Can Be Located in One Client</b>	50	64
	<b>Retention Period of GPS Data</b>	6 Months	
	<b>Retention Period of Statistics Data</b>	3 Years	
	<b>Driving Event Storage</b>	Store 5,000,000 Events per Month Retention Period: 3 Years	
	<b>Speed of Handling Driving Events</b>	300 events per second (last 1 minute)	E-2124: 500 events per second (last 1 minute) Silver 4110: 1000 events per second (last 1 minute)
<b>Evidence Management</b>	<b>Evidences</b>	100,000	
	<b>Evidence Files</b>	5,000,000	
<b>Others</b>	<b>Streaming Gateway</b>	50 cameras×2 Mbps input and 50 cameras×2 Mbps output	200 cameras×2 Mbps input and 200 cameras×2 Mbps output
	<b>Time Consumed to Export Devices and Sites</b>	10 seconds	E-2124: 10 seconds Silver 4110: 19 seconds



## 2.3 Streaming Server

Configurations		
Feature	Low-End	High-End
<b>CPU</b>	Intel® Core™ i5-4590 @ 3.30 GHz	Intel® Xeon® E-2124 @ 3.30 GHz
<b>RAM</b>	8 GB	16 GB
<b>NIC</b>	GbE Network Interface Card	GbE Network Interface Card
<b>HDD Type</b>	SATA-II 7200 RPM Enterprise Class Hard Drives	SATA-II 7200 RPM Enterprise Class Hard Drives
<b>HDD Capacity</b>	10 GB for Streaming Server Log Files	10 GB for Streaming Server Log Files
Maximum Performance		
<b>Input and Output</b>	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	
<b>CPU</b>	Intel® Core™ i5-9400/F		Intel® Core™ i3-8100 @ 3.60 GHz		Intel® Core™ i7-8700k @ 3.70 GHz	
<b>RAM</b>	8 GB		8 GB		16 GB	
<b>NIC</b>	GbE Network Interface Card		GbE Network Interface Card		GbE Network Interface Card	
<b>Graphics Card</b>	NVIDIA® GeForce GTX 1050Ti		Intel® UHD Graphics 630+GT1030		NVIDIA® GeForce RTX 2080	
<b>OS</b>	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
<b>H.264</b>	30	0.5	CIF	163	97	193
	30	1	4CIF	81	38	80

	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
<b>H.264+</b>	30	1	720p	40	21	38
	30	3	1080p	16	8	25
	30	4	3 MP	13	6	14
<b>H.265</b>	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
<b>H.265+</b>	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
<b>Performance in Hardware Decoding</b>						
<b>Encoding</b>	<b>Frame</b>	<b>Bit Rate</b>	<b>Resolution</b>	<b>Maximum Live View Channels</b>		

Format	Rate (fps)	(Mbps)		Configuration 1	Configuration 2	Configuration 3
<b>H.264</b>	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
<b>H.264+</b>	30	1	720p	38	14	41
	30	3	1080p	18	7	20
	30	4	3 MP	12	5	14
<b>H.265</b>	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
<b>H.265+</b>	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		
<b>CPU</b>	Intel® Core™ i7-9700k @ 3.60 GHz	
<b>RAM</b>	16 GB	
<b>NIC</b>	GbE Network Interface Card	
<b>OS</b>	Microsoft® Windows 10 64-bit	
<b>Graphics Card</b>	NVIDIA® GeForce GTX 970	
Maximum Performance		
<b>Control Panel</b>	<b>Control Panels Can Be Configured</b>	5
	<b>Windows on One Control Panel</b>	12
	<b>Displayed Alarms</b>	20
	<b>Displayed Face Recognition Records</b>	200
	<b>Displayed Face Comparison Records</b>	20
	<b>Displayed Access Records</b>	20
	<b>Displayed Vehicle Passing Records</b>	20
<b>Resource</b>	<b>Resources in One Area</b>	256
<b>View</b>	<b>Public Views</b>	100
	<b>Private Views</b>	100 views can be added for one user
	<b>Public View Groups</b>	100
	<b>Private View Groups</b>	100 views per user
	<b>Cameras in One View</b>	64
	<b>View Hierarchies</b>	5
<b>Favorites</b>	<b>Favorites</b>	100 Favorites can be added for one user (the number of users cannot be larger than 100)
	<b>Resources in One Favorites</b>	64
	<b>Favorites Hierarchies</b>	5
<b>Live View and Playback</b>	<b>Channels in Live View</b>	256
	<b>Windows of Zooming Area in Fisheye Dewarping Live View</b>	8
	<b>Windows of Zooming Area in Live View</b>	5
	<b>Channels in Playback</b>	16
	<b>Channels in Synchronous Playback</b>	16
	<b>Channels in Visual Tracking</b>	9
	<b>Channels in Reverse Playback</b>	16
	<b>Auto-Switch Windows on One Auxiliary Screen</b>	64 (four auxiliary screens are supported)
<b>Event and Alarm</b>	<b>Max. Frequency of Alarm and Event Receiving (Face, Access Control, and Entrance &amp; Exit)</b>	100 alarms per second (last for 12 seconds), including 20 alarms with pictures (500 KB)

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

<b>Center</b>	<b>Tasks Waiting for Downloading</b>	500
	<b>Tasks Waiting for Uploading</b>	500
	<b>Tasks in Downloading Simultaneously</b>	5
	<b>Tasks in Uploading Simultaneously</b>	5
<b>Smart Wall (Graphic Card)</b>	<b>Times for One Alarm to Be Displayed on Smart Wall</b>	1
	<b>Windows on One Smart Wall</b>	64
<b>Smart Wall (Decoding Device)</b>	<b>Views</b>	1,000
	<b>View Groups</b>	100
	<b>Auto-Switch Cameras in One Window</b>	20
	<b>Auto-Switch Windows on One Smart Wall</b>	16
	<b>Auto-Switch Cameras in Multiple Windows</b>	256
<b>Vehicle Monitoring</b>	<b>Driving Events in One Export</b>	100
<b>Login and Logout</b>	<b>Login Time Consumed</b>	15 seconds
	<b>Logout Time Consumed</b>	10 Seconds
	<b>User Switch Time Consumed</b>	22 Seconds
<b>Others</b>	<b>Image Cache</b>	2 GB



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