



**HikCentral Professional V2.0
System Requirements & Performance**

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Chapter 1 System Requirements

OS for Server*	<p>Microsoft® Windows 7 SP1 64-bit Microsoft® Windows 8.1 64-bit Microsoft® Windows 10 64-bit Microsoft® Windows Server 2008 R2 SP1 64-bit Microsoft® Windows Server 2012 64-bit Microsoft® Windows Server 2012 R2 64-bit Microsoft® Windows Server 2016 64-bit Microsoft® Windows Server 2019 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>
OS for Control Client	<p>Microsoft® Windows 7 SP1 32-bit/64-bit Microsoft® Windows 8.1 32-bit/64-bit Microsoft® Windows 10 64-bit Microsoft® Windows Server 2008 R2 SP1 64-bit Microsoft® Windows Server 2012 64-bit Microsoft® Windows Server 2012 R2 64-bit Microsoft® Windows Server 2016 64-bit Microsoft® Windows Server 2019 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>
OS for Mobile Client	<p>iOS 10.0 and later Android 5.0 and later</p>
OS for Visitor Terminal	<p>Android 7.1 and later</p>
Database	<p>PostgreSQL V11.8</p>
Browsers	<p>Internet Explorer 10/11 and above Chrome 61 and above Firefox 57 and above Safari 11 and above (running on Mac OS X 10.3/10.4)</p>
Virtual Machine	<p>VMware® ESXi™ 6.x Microsoft® Hyper-V with Windows Server 2012/2012 R2/2016 (64-bit)</p> <p>Note: 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>
Failover Cluster	<p>Microsoft® Windows Server 2008 R2 SP1 64-bit Microsoft® Windows Server 2012 64-bit RoseReplicatorPlus_5.1.0_175-x64</p>

*Server refers to SYS server.

Chapter 2 Server Performance

2.1 SYS Server (without RSM)

SYS Configurations			
Feature	Low-End	High-End	
CPU	Intel® Core™ i5-4590 @ 3.30 GHz	Intel® Xeon® E3-1220 V5 @ 3.00 GHz	Intel® Xeon® E5-2620 V4 @ 2.40 GHz
RAM	8 GB	16 GB	16 GB
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	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.
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	Microsoft® Windows Server 2012 (R2) 64-bit
Maximum Performance			
Feature		Low-End	High-End
Manageable Resources	Managed Device IP Addresses <i>*Including Encoding Devices, Access Control Devices, Elevator Control Devices, Security Control Devices, and Digital Signage Terminals</i>	128	E3: 1,024 E5: 2,048
	Encoding Devices	128	E3: 1,024 E5: 2,048
	Cameras	512	E3: 3,000 E5: 10,000
	Alarm Inputs	512	3,000

	<i>*Including Alarm Inputs of Security Control Devices</i>		
	Alarm Outputs	512	3,000
	Recording Servers	64	
	Streaming Servers	64	
	ANPR Cameras	512	3,000
	People Counting Cameras	60 (recommended max. value)	300 (recommended max. value)
	Facial Recognition Server	16	64
	Heat Map Cameras	-	70 (recommended max. value)
	Thermal Cameras	5 (recommended max. value)	20 (recommended max. value)
	Queue Management Cameras	60 (recommended max. value)	300 (recommended max. value)
	Access Control Devices	128	1,024
	Elevator Control Devices	128	1,024
	Digital Signage Terminals	-	1,024
	Access Points (Doors + Floors)	128	1,024
	Doors	128	1,024
	Floors	128	1,024
	Enrollment Station	8	
	Video Intercom Device	1024	
	DS-5600 Series Face Recognition Terminals <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.	
	Radars and Radar PTZ Cameras	30	
	Alarm Inputs of Security Control Devices	512	2,048
	DeepinMind Servers	64	
	Security Audit Servers	8	

	Dock Stations	16	1,500
	Resources in One Resource Group	64	
	Partitions (Areas) in One Resource Group	256	
Area	Areas	512	3,000
	Area Hierarchies	5	
	Cameras in Each Area	256	
	Alarm Inputs in Each Area	256	
	Alarm Outputs in Each Area	256	
Event & Alarm	Alarm Priorities	255	
	Alarm Categories	25	
	Event and Alarm Rules	1,500	E3: 3,000 E5: 10,000
	User-Defined Event Rules	1,0000	
	Arming Schedule Templates	200	
	Events or Alarms Storage	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 100 events or alarms without picture per second. ● 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	<ul style="list-style-type: none"> ● 30 events or alarms/s ● 30 Clients/s (Mobile Clients and Control Clients) 	<ul style="list-style-type: none"> ● 120 events or alarms/s ● 100 Clients/s (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.
	Alarm Triggered Actions (Excluding Recording)		152 actions (excluding recording) can be triggered concurrently by alarms per second.	512 actions (excluding recording) can be triggered concurrently by alarms per second.
	Combined Alarms		-	10 alarms per second
	Optimus Alarms		-	100 alarms per second
Recording	Recording Schedules		512	E3: 3,000 E5: 10,000
	Recording Schedule Templates		200	
Map	Map	Maps Linked to Each Area	64	
		Resolution	8192x8192	
		Size for Each Map	10 MB	
		Total Size for Maps	2 GB	15 GB
		Maps	128	1,024
		Cameras on Each Map	16	128
		Alarm Inputs on Each Map	16	128
		Alarm Outputs on Each Map	16	128
		Labels on Each Map	16	128
		UVSS on Each Map	4	4
		Access Points on Each Map	16	128
		Hot Regions on Each Map	8	64
		Cameras on Maps in Total	512	E3: 3,000 E5: 10,000
		Alarm Inputs on Maps in Total	512	3,000
		Alarm Outputs on Maps in Total	512	3,000
		Labels on Maps in Total	128	3,000
		UVSS on Maps in Total	4	4
Access Points on Maps in Total	32	128		

		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	E3: 3,000 E5: 10,000
			Alarm Inputs in Total	512	3,000
			Alarm Outputs in Total	512	3,000
			UVSS in Total	4	4
			Access Points in Total	32	128
			Labels in Total	512	3,000
User & Role	Roles		400	3,000	
	Users		1,250	3,000	
	Roles Assigned to One User		<ul style="list-style-type: none"> ● 100 roles can be assigned to one user (Resources linked to one role < 170); ● 50 roles can be assigned to one user (Resources linked to one role < 514). 	<ul style="list-style-type: none"> ● 100 roles can be assigned to one user (Resources linked to one role < 1,000); ● 50 roles can be assigned to one user (Resources linked to one role < 3,000). 	
	Concurrent Accesses via Client		<ul style="list-style-type: none"> ● 30 Control Clients, Web Clients, or OpenAPI Clients access the system concurrently; ● 30 Mobile Clients or OpenAPI Clients access the system concurrently. 	<ul style="list-style-type: none"> ● 100 Control Clients, Web Clients, or OpenAPI Clients access the system concurrently; ● 100 Mobile Clients or OpenAPI Clients access the system concurrently 	
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		
	Heat Map		0.25 million		
	ANPR		60 million		
	Events		60 million		
	Alarms		60 million		
	Access Records		1.4 billion		

	Attendance Records	55 million	
	Visitor Records	10 million	
	Operation Logs	5 million	
	Service Information Logs	5 million	
	Service Error Logs	5 million	
	Recording Tags	60 million	
Person	Persons	2,000	1,000,000
	Person Groups	3,000	
	Person Group Hierarchies	10	
	Profile Pictures	2,000	1,000,000
	Cards	10,000	250,000
	Fingerprints	8,000	100,000
	Credentials (Cards + Fingerprints)	10,000	250,000
	Size of Each Profile Picture	Recommended: 300 KB	
	Total Size of Profile Pictures	500 MB	300 GB
	Persons to Be Reviewed	10,000	
Access Control	Persons for Access Control	2,000	50,000
	Resource Groups for Access Control	1,000	
	Visitors	10,000	
	Anti-Passback Rules	32	128
	Access Points in One Anti-Passback Rule	16	
	Access Levels	32	512
	Access Points in One Access Level	32	512
	Access Levels Assigned to One Access Group	8	
	Access Schedules	32	
	Speed of Applying Persons' Access Level Settings to Device	<ul style="list-style-type: none"> ● Card: 4.2 cards per second ● Fingerprint: 1.7 fingerprints per second ● Face credential: 1.7 face pictures per second 	
Time and	Persons for Time and Attendance	2,000	10,000

Attendance	Shifts	32	128
	Major Leave Type	64	
	Minor Leave Type in One Major Type	128	
	Holidays	16	
Intelligent Recognition	Persons for Intelligent Recognition	2,000	1,000,000
	Resource Groups for Intelligent Recognition	1,000	
	Face Comparison Groups	16	64
	Storage of Face Matched/Mismatched Events	<ul style="list-style-type: none"> ● 120/s without pictures ● 20/s with pictures (each picture 500 KB, stored in Recording Server) 	<ul style="list-style-type: none"> ● 400/s without pictures ● 100/s with pictures (each picture 500 KB, stored in Recording Server)
Vehicle (ANPR)	UVSS (Under Vehicle Surveillance Systems)	2	4
	Vehicle Lists	13	100
	Vehicles	60,000	500,000
	Undercarriage Pictures (Each 10 MB)	512	3,000
	Storage of License Plate Matched/Mismatched Events	<ul style="list-style-type: none"> ● 5/s with pictures (each picture 500 KB, stored in SYS server) ● 20/s with pictures (each picture 500 KB, stored in Recording Server) 	<ul style="list-style-type: none"> ● 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)
Entrance & Exit	Lanes	8	
	Vehicle Lists	100	
	Vehicles	500,000	
	Vehicles' Cards	250,000	
	Passing Frequency of Lanes	1 vehicle/1s for single lane	
Report	Regular Report Rules	100	
	Event or Alarm Rules in One Event/Alarm Report	32	
	Records in One Sent Report	10,000 or 10 MB	
	Resources Selected for One Report	<ul style="list-style-type: none"> ● 20 people counting cameras searched for one people counting report ● 20 ANPR cameras searched for one vehicle analysis report 	

		<ul style="list-style-type: none"> ● 20 queues searched for one queue analysis report ● 20 presets searched for one temperature report <p>*With this limitation, you can generate a neat and clear report via the Control Client and it costs less time.</p>		
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		
	Views Auto-Switched Simultaneously	1,000		
	Concurrent Accesses via Control Client	5 Control Clients access the system concurrently.		
	Operation Logs Storage	500,000		
	Alarms Displayed on Smart Wall as Actions	5 alarms per second (each alarm has 16 related cameras).		
Digital Signage	Contents Release	Materials	-	10,000
		Material Size	-	4 GB
		Programs	-	2,000
		Schedules	-	1,000
		Release Records	-	1,000
	Concurrent Operation	Materials Uploading	-	1,024
		Schedules Applying	-	100
		Programs Applying	-	100
		Combined Operations (material uploading, schedule applying, and program applying)	-	100
	Program	Pictures in Each Program	-	200
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	

2.2 SYS Server (with RSM)

SYS Configurations				
Feature	Low-End		High-End	
CPU	Intel® Xeon® E3-1220 V5 @ 3.00 GHz		Intel® Xeon® E5-2620 V4 @ 2.1GHZ Intel® Xeon® Silver 4110	
RAM	16 GB		16 GB	
NIC	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	
HDD for Picture Storage	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.	
HDD Capacity	At least 650 GB		At least 650 GB	
OS	Microsoft® Windows Server 2012 (R2) 64-bit		Microsoft® Windows Server 2012 (R2) 64-bit	
Maximum Performance				
Feature		Low-End	High-End	
Manageable Resources	Current Site	Cameras	512	100,000
		Encoding Devices	128	2,048
		Alarm Inputs <i>*Including Alarm Inputs of Security Control Devices</i>	512	3,000
		Alarm Outputs	512	3,000
		Recording Servers	64	
		Streaming Servers	64	
		ANPR Cameras	512	3,000
		People Counting Cameras	60 (recommended max. value)	300 (recommended max. value)
		Facial Recognition Server	16	64

		Heat Map Cameras	-	70 (recommended max. value)
		Thermal Cameras	5 (recommended max. value)	20 (recommended max. value)
		Queue Management Cameras	60 (recommended max. value)	300 (recommended max. value)
		Access Control Devices	128	1,024
		Elevator Control Devices	128	1,024
		Digital Signage Terminals	-	1,024
		Access Points (Doors + Floors)	128	1,024
		Doors	128	1,024
		Floors	128	1,024
		Enrollment Station	8	
		Video Intercom Device	1024	
		DS-5600 Series Face Recognition Terminals <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.	
		Radars and Radar PTZ Cameras	30	
		Alarm Inputs of Security Control Devices	512	2,048
		DeepinMind Servers	64	
		Security Audit Servers	8	
		Dock Stations	16	128
		Resources in One Resource Group	64	
		Partitions (Areas) in One Resource Group	256	
	Central System	Managed Device IP Addresses <i>*Including Encoding Devices, Access Control Devices, Elevator</i>	128	2048

		<i>Control Devices, Security Control Devices, Digital Signage Terminals, and Remote Sites</i>		
		Cameras	18,000	100,000
Area	Current Site	Areas	512	3,000
		Area Hierarchies	5	
		Cameras in Each Area	256	
		Alarm Inputs in Each Area	256	
		Alarm Outputs in Each Area	256	
	Central System	Areas from Remote Sites	18,000	100,000
Event & Alarm	Alarm Priorities		255	
	Alarm Categories		25	
	Event or Alarm Rules		<ul style="list-style-type: none"> ● 1,500 (Current Site) ● 5,000 (Current Site and Remote Sites) 	<ul style="list-style-type: none"> ● 3,000 (Current Site) ● 10,000 (Current Site and Remote Sites)
	User-Defined Event Rules		10,000	
	Arming Schedule Templates		200	
	Events or Alarms Storage		<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 1,000 events or alarms without picture per second. ● 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	<ul style="list-style-type: none"> ● 30 events or alarms/s ● 30 Clients/s (Mobile Clients and Control Clients) 	<ul style="list-style-type: none"> ● 120 events or alarms/s ● 100 Clients/s (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.	
	Alarm Triggered Actions (Excluding Recording)	152 actions (excluding recording) can be triggered concurrently by alarms per second.	512 actions (excluding recording) can be triggered concurrently by alarms per second.	
	Combined Alarms	-	10 alarms per second	
	Optimus Alarms	-	500 alarms per second	
Recording	Recording Schedules	21,000	30,000	
	Recording Schedule Templates	200		
Map	Map	Maps Linked to Each Area	64	
		Resolution	8192×8192	
		Size for Each Map	10 MB	
		Total Size for Maps	2 GB	15 GB
		Maps	128	1,024
		Cameras on Each Map	16	128
		Alarm Inputs on Each Map	16	128
		Alarm Outputs on Each Map	16	128
		Labels on Each Map	16	128
		UVSS on Each Map	4	4
		Access Points on Each Map	16	128
		Hot Regions on Each Map	8	64
		Cameras on Maps in Total	512	10,000
		Alarm Inputs on Maps in Total	512	3,000
		Alarm Outputs on Maps in Total	512	3,000

		Labels on Maps in Total	128	3,000
		UVSS on Maps in Total	4	4
		Access Points on Maps in Total	32	128
		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	10,000
		Alarm Inputs in Total	512	3,000
		Alarm Outputs in Total	512	3,000
		UVSS in Total	4	4
Access Points in Total		32	1024	
	Labels	512	3,000	
User & Role	Roles	400	3,000	
	Users	1,250	3,000	
	Roles Assigned to One User	<ul style="list-style-type: none"> ● 100 roles can be assigned to one user (Resources linked to one role < 170); ● 50 roles can be assigned to one user (Resources linked to one role < 514). 	<ul style="list-style-type: none"> ● 100 roles can be assigned to one user (Resources linked to one role < 1,000); ● 50 roles can be assigned to one user (Resources linked to one role < 3,000). 	
	Concurrent Accesses via Client	<ul style="list-style-type: none"> ● 30 Control Clients, Web Clients, or OpenAPI Clients access the system concurrently; ● 30 Mobile Clients or OpenAPI Clients access the system concurrently. 	<ul style="list-style-type: none"> ● 100 Control Clients, Web Clients, or OpenAPI Clients access the system concurrently; ● 100 Mobile Clients or OpenAPI Clients access the system concurrently 	
Data Storage (BI Data and Data Recorded)	Data Retention Period	Stored for 3 Years		
	People Counting	5 million		
	Heat Map	0.25 million		

in System)	ANPR	60 million	
	Events	60 million	
	Alarms	60 million	
	Access Records	1.4 billion	
	Attendance Records	55 million	
	Visitor Records	10 million	
	Operation Logs	5 million	
	Service Information Logs	5 million	
	Service Error Logs	5 million	
	Recording Tags	60 million	
Person	Persons	2,000	1,000,000
	Person Groups	3,000	
	Person Group Hierarchies	10	
	Profile Pictures	2,000	1,000,000
	Cards	10,000	250,000
	Fingerprints	8,000	100,000
	Credentials (Cards + Fingerprints)	10,000	250,000
	Size of Each Profile Picture	Recommended: 300 KB	
	Total Size of Profile Pictures	500 MB	300 GB
	Persons to Be Reviewed	10,000	
Access Control	Persons for Access Control	2,000	50,000
	Resource Groups for Access Control	1,000	
	Visitors	10,000	
	Anti-Passback Rules	32	128
	Access Points in One Anti-Passback Rule	16	
	Access Levels	32	512
	Access Points in One Access Level	128	1024
	Access Levels Assigned to One Access Group	8	
	Access Schedules	32	

	Speed of Applying Persons' Access Level Settings to Device	<ul style="list-style-type: none"> ● Card: 4.2 cards per second ● Fingerprint: 1.7 fingerprints per second ● Face credential: 1.7 face pictures per second 	
Time and Attendance	Persons for Time and Attendance	2,000	10,000
	Shifts	32	128
	Holidays	16	
	Major Leave Type	64	
	Minor Leave Type in One Major Type	128	
Intelligent Recognition	Persons for Intelligent Recognition	2,000	10,000
	Resource Groups for Intelligent Recognition	1,000	
	Face Comparison Groups	16	64
	Storage of Face Matched/Mismatched Events	<ul style="list-style-type: none"> ● 120/s without pictures ● 20/s with pictures (each picture 500 KB, stored in Recording Server) 	<ul style="list-style-type: none"> ● 1,000/s without pictures ● 100/s with pictures (each picture 500 KB, stored in Recording Server)
Vehicle (ANPR)	UVSS (Under Vehicle Surveillance Systems)	2	4
	Vehicle Lists	13	100
	Vehicles	60,000	500,000
	Undercarriage Pictures (Each 10 MB)	512	3,000
	Storage of License Plate Matched/Mismatched Events	<ul style="list-style-type: none"> ● 5/s with pictures (each picture 500 KB, stored in SYS server) ● 20/s with pictures (each picture 500 KB, stored in Recording Server) 	<ul style="list-style-type: none"> ● 1000/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)
Entrance & Exit	Lanes	8	
	Vehicle Lists	100	
	Vehicles	500,000	
	Vehicles' Cards	250,000	
	Passing Frequency of Lanes	1 vehicle/1s for single lane	
Report	Regular Report Rules	100	

	Event or Alarm Rules in One Event/Alarm Report	32		
	Records in One Sent Report	10,000 or 10 MB		
	Resources Selected for One Report	<ul style="list-style-type: none"> ● 20 people counting cameras searched for one people counting 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	100		
	Cameras in One View	256		
	View Groups	100		
	Views in One View Group	10		
	Views Auto-Switched Simultaneously	1,000		
	Concurrent Accesses via Control Client	5 Control Clients access the system concurrently.		
	Operation Logs Storage	500,000		
	Alarms Displayed on Smart Wall as Actions	5 alarms per second (each alarm has 16 related cameras).		
Digital Signage	Contents Release	Materials	-	10,000
		Material Size	-	4 GB
		Programs	-	2,000
		Schedules	-	1,000
		Release Records	-	1,000
	Concurrent Operations	Material Uploading	-	1,024
		Schedule Applying	-	100
		Program Applying	-	100
		Combined Operations (material uploading, schedule applying,	-	100

		program apply)		
	Program	Pictures in Each Program	-	256
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

2.3 Streaming Server

Configurations		
Feature	Low-End	High-End
CPU	Intel® Core™ i5-4590 @ 3.30 GHz	Intel® Xeon® E3-1220 V5 @ 3.00 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 Control 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 in **System -> Image**. 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™ i3-8100k @ 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

	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
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
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 Format	Frame Rate (fps)	Bit Rate (Mbps)	Resolution	Maximum Live View Channels		
				Configuration 1	Configuration 2	Configuration 3
H.264	30	0.5	CIF	102	57	94

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	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
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
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 Other Performance

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

Control Client Configuration		
CPU	Intel® Core™ i5-4590 @ 3.30 GHz 3.30 GHz	
RAM	8 GB	
NIC	GbE Network Interface Card	
OS	Microsoft® Windows 8.1 64-bit	
Graphics Card	NVIDIA® GeForce GTX 970	
Maximum Performance		
Resource	Areas	3,000
	Resources in Each Area	256
	Cameras Cached in Total	5,000
	Cameras When Login in Small Scale Display Mode	Less than 512
	Cameras Supported in Small Scale Display Mode	10,000
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 Displayed on Smart Wall (Decoding Wall and Graphic Wall)	5 alarms per second
	Alarms in One Window on Smart Wall	64 Alarms
	Alarms in One Window on Smart Wall	64 Alarms
View	Public Views	100
	Private Views	100 for each user.
	Public View Groups	100
	Private View Groups	100 for each user.
	Cameras in One View	64
Monitoring	Events Displayed in Event List	500
	Events in User-Defined Event List	500
	Radar PTZ Cameras and Radars on Map	Less than 20 radar PTZ cameras and 30 radars recommended.
	Face Comparison Groups Subscribed	10
	Channels in Live View	256
	Channels in People Density Live View	8
	Windows of Zooming Area in Live View	5

	Channels in Two-Way Audio	1
	Channels in Playback	16
	Channels in Reverse Playback	9
	Windows of Zooming Area in Playback	5
	Channels in Synchronous Playback	16
	Channels in Visual Tracking	1
Door and Elevator	Doors or Elevators Controlled in a Batch	512
	Events Displayed in Event List	200 with pictures.
Video Intercom	Channels for Video Intercom	1
Entrance and Exit	Lanes	8
	Live View of One Lane	1
	Events Displayed in Event List	200 with pictures.
Health Monitoring	Nodes in Topology	512
Download Center	Tasks Waiting for Downloading	500
	Tasks Waiting for Uploading	500
	Tasks in Downloading Simultaneously	5
	Tasks in Uploading Simultaneously	5



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