HikCentral V1.3.2
Software Requirements & Hardware Performance

Contents

Chapter 1 Software Requirements

OS for Server	Microsoft® Windows 7 64-bit Microsoft® Windows 8 64-bit Microsoft® Windows 8.1 64-bit Microsoft® Windows 10 64-bit Microsoft® Windows Server 2008 R2 64-bit Microsoft® Windows Server 2012 64-bit Microsoft® Windows Server 2016 64-bit
OS for Control Client	Microsoft® Windows 7 32-bit/64-bit Microsoft® Windows 8 32-bit/64-bit Microsoft® Windows 8.1 32-bit/64-bit Microsoft® Windows 10 64-bit Microsoft® Windows Server 2008 R2 64-bit Microsoft® Windows Server 2012 64-bit Microsoft® Windows Server 2016 64-bit
OS for Mobile Client	iOS 8.0 and later Android 4.0 and later
Database	PostgreSQL V 9.6.2
Browsers	Internet Explorer 10/11 and above (32-bit) Chrome 35 and above (32-bit) Firefox 32 and above (32-bit)
Virtual Machine (VSM)	VMware® ESXi™ 6.x Microsoft® Hyper-V with Windows Server 2012 R2 *Note:* The Streaming Server and Control Client cannot runn on the virtual machine.
Failover Cluster	Microsoft® Windows Server 2008 R2 64-bit Microsoft® Windows Server 2012 64-bit RoseReplicatorPlus_5.1.0_175-x64

Chapter 2 Control Client Decoding Performance

Note: 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).

Configurations					
Feature	Low-End			High-End	
CPU	Intel® Core™ i5-4590 @ 3.3 GHz			Intel® Core™ i7-6700k @ 4 GHz	
RAM	8 GB			16 GB	
NIC	GbE Network Interface Card			GbE Network Interface Card	
Graphics Card	NVIDIA® GeForce GTX 970			NVIDIA GeForce GTX 1070	
HDD Type	SATA II Hard Drive or Better			SATA II Hard Drive or Better	
HDD Capacity	60 GB for OS and HikCentral Control Client			240 GB for OS and HikCentral Control Client	
OS	Microsoft® Windows 7 (64-bit)			Microsoft® Windows 7 (64-bit)	
Performance in Software Decoding					
Encoding Format	Frame Rate (fps)	Bit Rate (Mbps)	Resolution	Maximum Live View Channels	
				Low-End	High-End
H.264	30	0.5	CIF	132	164
	30	1	4CIF	53	78
	30	3	720p	21	34
	30	6	1080p	10	16

	30	8	3 MP	7	12
H.264+	30	1	720p	25	50
	30	3	1080p	14	22
	30	4	3 MP	9	18
H.265	30	1	720p	19	32
	30	3	1080p	7	15
	30	4	3 MP	4	8
H.265+	30	0.5	720p	22	36
	30	1	1080p	9	16
	30	2	3 MP	5	12
Performance in Hardware Decoding					
Encoding Format	Frame Rate (fps)	Bit Rate (Mbps)	Resolution	Maximum Live View Channels	
				Low-End	High-End
H.264	30	0.5	CIF	80	94
	30	1	4CIF	64	68
	30	3	720p	30	36
	30	6	1080p	14	22
	30	8	3 MP	12	13
	30	12	8 MP	3	4

H.264+	30	1	720p	30	36
	30	3	1080p	14	18
	30	4	3 MP	11	15
H.265	30	1	720p	This graphics card doesn't support H.265.	36
	30	3	1080p		18
	30	4	3 MP		15
	30	6	8 MP		4
H.265+	30	0.5	720p	This graphics card doesn't support H.265+.	36
	30	1	1080p		18
	30	2	3 MP		14

Chapter 3 Server Performance

3.1 VSM Server (without RSM)

Configurations			
Feature		Low-End	High-End
CPU		Intel® Core™ i5-4590 @ 3.30 GHz 3.30 GHz	Intel® Xeon® E3-1220 V5 @ 3.00 GHz 3.00 GHz
RAM		8 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		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.
HDD Capacity		At least 650 GB for the HDD where VSM service is installed	At least 650 GB for the HDD where VSM service is installed
OS		Microsoft® Windows 8.1 64-bit	Microsoft® Windows Server 2012 (R2) 64-bit
Maximum Performance			
Feature		Low-End	High-End
Manageable Resources	Encoding Devices	128	1,024
	Cameras	512	3,000
	Alarm Inputs (Including Alarm Inputs of Security Control Devices)	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)

	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	32	128
	Access Points	32	128
	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 and the maximum amount is 32.	32 *If DS-5600 series devices are applied with third-party turnstiles, they are regarded as access control devices and the maximum amount is 128.
	Security Control Devices	4	16
	Encoding Devices & Access Control Devices & Security Control Devices	128	1,024
Area	Areas	512	3,000
	Area Hierarchies	5	
	Cameras in Each Area	64	
	Alarm Inputs in Each Area	64	
	Alarm Outputs in Each Area	64	
Event & Alarm	Alarm Priorities	255	
	Alarm Categories	25	
	Event or Alarm Rules	1,500	3,000
	User-Defined Event Rules	400	
	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 VSM server) per second. ● 20 events or alarms with pictures (500 KB each, stored in Recording Server) per second.	● 100 events or alarms without picture per second. ● 20 events or alarms with pictures (500 KB each, stored in VSM server) per second. ● 80 events or alarms with pictures (500 KB each, stored in Recording Server) per second.
	Events or Alarms Sent to Clients		● 30 events or alarms/s ● 30 Clients/s (Mobile Clients and Control Clients)	● 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.
Recording	Recording Schedules		512	3,000
	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	2	4
		Access Points on Each Map	16	128
		Hot Regions on Each Map	8	64
		Cameras on Maps in Total	512	3,000
		Alarm Inputs on Maps in Total	512	3,000
		Alarm Outputs on Maps in Total	512	3,000
		Labels on Maps in Total	512	3,000
		UVSS on Maps in Total	2	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	128	1,024
		Cameras	512	3,000
		Alarm Inputs	512	3,000
		Alarm Outputs	512	3,000
		UVSS	2	4
		Access Points	32	128
		Tags	512	3,000
User & Role	Roles		400	3,000
	Users		1,250	3,000
	Roles Assigned to One User		● 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).	● 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		● 30 Control Clients, Web Clients, or OpenSDK Clients access the system	● 100 Control Clients, Web Clients, or OpenSDK Clients access the system

		concurrently; ● 30 Mobile Clients or OpenSDK Clients access the system concurrently.	concurrently; ● 100 Mobile Clients or OpenSDK Clients access the system concurrently
Data Storage	Data Recorded in System	Stored for 3 Years *Including event logs, recording tags, face comparison data, card swiping records, attendance records, ANPR records, video analysis data, service error logs, service warning logs, and service information logs.	
	Alarm Logs	60 million	
	BI Report Data	Stored for 3 Years *Including heat map records, passing vehicle records, people counting records, temperature records, and queue analysis records.	
Person	Persons	2,000	10,000
	Cards	10,000	50,000
	Fingerprints	8,000	40,000
	Credentials (Card + Fingerprint)	10,000	50,000
	Size of Each Profile	300 KB	
	Total Size of Profiles	500 MB	3 GB
Access Control	Anti-Passback Rules	32	128
	Access Points in One Anti-Passback Rule	16	
	Access Groups	16	64
	Persons in One Access Group	1,000	
	Access Levels	32	128
	Access Points in One Access Level	32	128
	Access Levels Assigned to One Access Group	8	
	Access Schedules	32	
	Speed of Applying Person's Credentials to Device	● Card: 50ms for one card ● Fingerprint: 1.5s for one fingerprint	

		● Face credential: 1s for one face picture	
	Attendance Groups	16	64
	Persons in One Attendance Group	1,000	
	Shift Schedules	32	128
	Holidays	16	
Face Comparison	Face Pictures	2,000	10,000
	Face Comparison Groups	16	64
	Storage of Face Matched/Mismatched Events	● 20/s without pictures ● 5/s with pictures (each picture 500 KB, stored in VSM server) ● 20/s with pictures (each picture 500 KB, stored in Recording Server)	● 120/s without pictures ● 20/s with pictures (each picture 500 KB, stored in VSM server) ● 120/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	● 5/s with pictures (each picture 500 KB, stored in VSM server) ● 20/s with pictures (each picture 500 KB, stored in Recording Server)	● 20/s with pictures (each picture 500 KB, stored in VSM server) ● 120/s with pictures (each picture 500 KB, stored in Recording Server)
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	● 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	1,000	
	View Groups	100	
	Views Auto-Switched Simultaneously	32	
	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).	
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

3.2 VSM Server (with RSM)

Configurations		
Feature	Low-End	High-End
CPU	Intel® Xeon® E3-1220 V5 @ 3.00 GHz 3.00 GHz	Intel® Xeon® E5-2620 V4 @ 2.40 GHz 2.40 GHz
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 for the HDD where VSM service is installed	At least 650 GB for the HDD where VSM service is installed
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	3,000
		Alarm Inputs (Including Alarm Inputs of Security Control Devices)	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)
		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	32	128
		Access Points	32	128
		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 and the maximum amount is 32.	32 *If DS-5600 series devices are applied with third-party turnstiles, they are regarded as access control devices and the maximum amount is 128.
		Security Control Devices	4	16
	Central System (Current Site + Remote Sites)	Encoding Devices + Access Control Devices + Security Control Devices + Remote Sites	128	1,024
		Cameras	18,000	100,000

Area	Current Site	Areas	512	3,000
		Area Hierarchies	5	
		Cameras in Each Area	64	
		Alarm Inputs in Each Area	64	
		Alarm Outputs in Each Area	64	
	Central System	Areas from Remote Sites	18,000	100,000
Event & Alarm	Alarm Priorities		255	
	Alarm Categories		25	
	Event or Alarm Rules		● 1,500 (Current Site) ● 5,000 (Current Site and Remote Sites)	● 3,000 (Current Site) ● 10,000 (Current Site and Remote Sites)
	User-Defined Event Rules		400	
	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 VSM server) per second. ● 20 events or alarms with pictures (500 KB each, stored in Recording Server) per second.	● 100 events or alarms without picture per second. ● 20 events or alarms with pictures (500 KB each, stored in VSM server) per second. ● 80 events or alarms with pictures (500 KB each, stored in Recording Server) per second.
	Events or Alarms Sent to Clients		● 30 events or alarms/s ● 30 Clients/s (Mobile Clients and Control Clients)	● 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	128 cameras can be triggered to record

			video concurrently per second.	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.
Recording	Recording Schedules		● 512 (Current Site) ● 21,000 (Current Site and Remote Sites)	● 3,000 (Current Site) ● 30,000 (Current Site and Remote Sites)
	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	2	4
		Access Points on Each Map	16	128
		Hot Regions on Each Map	8	64
		Cameras on Maps in Total	512	3,000
		Alarm Inputs on Maps in Total	512	3,000
		Alarm Outputs on Maps in Total	512	3,000
		Labels on Maps in Total	512	3,000
		UVSS on Maps in Total	2	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	128	1,024
		Cameras	512	3,000
		Alarm Inputs	512	3,000
		Alarm Outputs	512	3,000
		UVSS	2	4
		Access Points	32	128
		Tags	512	3,000
User & Role	Roles		400	3,000
	Users		1,250	3,000
	Roles Assigned to One User		● 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).	● 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		● 30 Control Clients, Web Clients, or OpenSDK Clients access the system concurrently; ● 30 Mobile Clients or OpenSDK Clients access the system concurrently.	● 100 Control Clients, Web Clients, or OpenSDK Clients access the system concurrently; ● 100 Mobile Clients or OpenSDK Clients access the system concurrently
Data Storage	Data Recorded in System		Stored for 3 Years *Including event logs, recording tags, face comparison data, card swiping records, attendance records, ANPR records, video analysis data, service error logs, service warning logs, and service information logs.	
	Alarm Logs		60 million	
	BI Report Data		Stored for 3 Years *Including heat map records, passing vehicle records, people counting records, temperature records, and queue analysis records.	
Person	Persons		2,000	10,000

	Cards	10,000	50,000
	Fingerprints	8,000	40,000
	Credentials (Card + Fingerprint)	10,000	50,000
	Size of Each Profile	300 KB	
	Total Size of Profiles	500 MB	3 GB
Access Control	Anti-Passback Rules	32	128
	Access Points in One Anti-Passback Rule	16	
	Access Groups	16	64
	Persons in One Access Group	1,000	
	Access Levels	32	128
	Access Points in One Access Level	32	128
	Access Levels Assigned to One Access Group	8	
	Access Schedules	32	
	Speed of Applying Person's Credentials to Device	● Card: 50ms for one card ● Fingerprint: 1.5s for one fingerprint ● Face credential: 1s for one face picture	
	Attendance Groups	16	64
	Persons in One Attendance Group	1,000	
	Shift Schedules	32	128
	Holidays	16	
Face Comparison	Face Pictures	2,000	10,000
	Face Comparison Groups	16	64
	Storage of Face Matched/Mismatched Events	● 20/s without pictures ● 5/s with pictures (each picture 500 KB, stored in VSM server) ● 20/s with pictures (each picture 500 KB, stored in Recording Server)	● 120/s without pictures ● 20/s with pictures (each picture 500 KB, stored in VSM server) ● 120/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	● 5/s with pictures (each picture 500 KB, stored in VSM server) ● 20/s with pictures (each picture 500 KB, stored in Recording Server)	● 20/s with pictures (each picture 500 KB, stored in VSM server) ● 120/s with pictures (each picture 500 KB, stored in Recording Server)
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	● 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	1,000	
	View Groups	100	
	Views Auto-Switched Simultaneously	32	
	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).	
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

3.3 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


See Far, Go Further