

HikCentral V1.3.1 Software Requirements & Hardware Performance

Contents

Chapter 1 Software Requirements	2
Chapter 2 Control Client Playing Performance	3
Chapter 3 Server Performance	6
3.1 VSM Server (without RSM)	6
3.2 VSM Server (with RSM)	
3.3 Streaming Server	

Chapter 1 Software Requirements

	Microsoft® Windows 7 64-bit		
	Microsoft® Windows 8 64-bit		
	Microsoft® Windows 8.1 64-bit		
OS for Server	Microsoft® Windows 10 64-bit		
	Microsoft [®] Windows Server 2008 R2 64-bit		
	Microsoft® Windows Server 2012 64-bit		
	Microsoft [®] Windows Server 2016 64-bit		
	Microsoft [®] Windows 7 32-bit/64-bit		
	Microsoft® Windows 8 32-bit/64-bit		
	Microsoft [®] Windows 8.1 32-bit/64-bit		
OS for Control	Microsoft® Windows 10 64-bit		
Client	Microsoft [®] Windows Server 2008 R2 64-bit		
	Microsoft [®] Windows Server 2012 64-bit		
	Microsoft [®] Windows Server 2016 64-bit		
OS for Mobile	iOS 8.0 and later		
Client	Android 4.0 and later		
Database	PostgreSQL V 9.6.2		
	Internet Explorer 10/11 and above (32-bit)		
Browsers	Chrome 35 and above (32-bit)		
	Firefox 32 and above (32-bit)		
	VMware [®] ESXi™ 6.x		
Virtual Machine	Microsoft [®] Hyper-V with Windows Server 2012 R2		
(VSM)	Note: The Streaming Server and Control Client cannot runn on the		
	virtual machine.		
	Microsoft [®] Windows Server 2008 R2 64-bit		
Failover Cluster	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 Interfac	ce Card		GbE Network Interface Card	
Graphics Card	NVIDIA [®] GeForce G	TX 970		NVIDIA GeForce GTX 1070	
HDD Type	SATA II Hard Drive o	r 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)	
		Per	formance in Softw	vare Decoding	
Encoding Format	Frama Data (fra)	Bit Rate	Desclution	Maximum Live	e View Channels
Encoding Format	Frame Rate (fps)	(Mbps)	Resolution	Low-End	High-End
	30	0.5	CIF	132	164
11264	30	1	4CIF	53	78
H.264	30	3	720p	21	34
	30	6	1080p	10	16

	30	8	3 MP	7	12
	30	1	720p	25	50
H.264+	30	3	1080p	14	22
	30	4	3 MP	9	18
	30	1	720p	19	32
H.265	30	3	1080p	7	15
	30	4	3 MP	4	8
	30	0.5	720p	22	36
H.265+	30	1	1080p	9	16
	30	2	3 MP	5	12
		Per	formance in Hard	ware Decoding	
	France Data (fra)	Bit Rate	Desclution	Maximum Live	e View Channels
Encoding Format	Frame Rate (fps)	(Mbps)	Resolution	Low-End	High-End
	30	0.5	CIF	80	94
	30	1	4CIF	64	68
11264	30	3	720p	30	36
H.264	30	6	1080p	14	22
	30	8	3 MP	12	13
	30	12	8 MP	3	4

	30	1	720p	30	36
H.264+	30	3	1080p	14	18
	30	4	3 MP	11	15
	30	1	720p		36
	30	31080pThis graphics card doe43 MPsupport H.265.	This graphics card doesn't	18	
H.265	30		support H.265.	15	
	30	6	8 MP		4
	30	0.5	720p	-	36
H.265+	30	1	1080p	This graphics card doesn't	18
	30	30 2 3 MP	support H.265+.	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	5 @ 3.00 GHz 3.00 GHz	
RAM	8 GB		16 GB		
NIC	GbE Network Interface Card		GbE Network Interface C	ard	
HDD for OS	SATA-II 7200 RPM Enterprise Class HDD		SATA-II 7200 RPM Enter	orise Class HDD	
HDD for Picture	Surveillance-class HDD or high performance netwo	rk HDD.	Enterprise-class HDD or	high performance network HDD.	
Storage	It should support 10 MB/s writing and 10 MB/s read			's writing and 20 MB/s reading.	
HDD Capacity	At least 650 GB for the HDD where VSM service is in	nstalled	At least 650 GB for the ⊢	DD where VSM service is installed	
OS	Microsoft [®] Windows 8.1 64-bit		Microsoft [®] Windows Serv	Server 2012 (R2) 64-bit	
	Max	kimum Performa	nce		
	Feature		Low-End	High-End	
	Encoding Devices	128		1,024	
	Cameras	512		3,000	
	Alarm Inputs (Including Alarm Inputs of Security Control Devices)	y 512		3,000	
Manageable	Alarm Outputs	512		3,000	
Resources	Recording Servers	64			
	Streaming Servers	64			
	ANPR Cameras	512		3,000	
	People Counting Cameras	60 (recommen	ded 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
	Areas	512	3,000
	Area Hierarchies	5	
Area	Cameras in Each Area	64	
	Alarm Inputs in Each Area	64	
	Alarm Outputs in Each Area	64	
	Alarm Priorities	255	
	Alarm Categories	25	
Event & Alarm	Event or Alarm Rules	1,500	3,000
	User-Defined Event Rules	400	
	Arming Schedule Templates	200	

	Events or Al	arms 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 p	ictures 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.
D !!	Recording S	ichedules	512	3,000
Recording		chedule Templates	200	
		Maps Linked to Each Area	64	
	Resolution		8192×8192	
		Size for Each Map	10 MB	
Мар	Мар	Total Size for Maps	2 GB	15 GB
ινιαμ	Iviap	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
		Elements in Total	3,000	
		Hot Regions	128	1,024
		Cameras	512	3,000
	GIS Map	Alarm Inputs	512	3,000
		Alarm Outputs	512	3,000
		UVSS	2	4
		Access Points	32	128
		Tags	512	3,000
	Roles		400	3,000
	Users		1,250	3,000
User & Role Roles Assig		ned 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;	concurrently;	
		• 30 Mobile Clients or OpenSDK Clients	● 100 Mobile Clients or OpenSDK	
		access the system concurrently.	Clients access the system concurrently	
		Stored for 3 Years		
	Data Recorded in System	a b b c	ce comparison data, card swiping records,	
			o analysis data, service error logs, service	
Data Storage		warning logs, and service information logs	S	
Data Storage	Alarm Logs	60 million		
		Stored for 3 Years		
	BI Report Data		ehicle records, people counting records,	
		temperature records, and queue analysis		
	Persons	2,000	10,000	
	Cards	10,000	50,000	
Person	Fingerprints	8,000	40,000	
r erson	Credentials (Card + Fingerprint)	10,000	50,000	
	Size of Each Profile	300 KB		
	Total Size of Profiles	500 MB	3 GB	
	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 Control	Access Levels	32	128	
Access Control	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 Pictures	2,000	10,000	
	Face Comparison Groups	16	64	
Face Comparison	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) 	
	UVSS (Under Vehicle Surveillance Systems)	2	4	
	Vehicle Lists	13	100	
	Vehicles	60,000	500,000	
Vehicle	Undercarriage Pictures (Each 10 MB)	512	3,000	
(ANPR)	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) 	
	Regular Report Rules	100		
	Event or Alarm Rules in One Event/Alarm Report	32		
	Records in One Sent Report	10,000 or 10 MB		
Report	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.		
	Decoding Devices	32		
	Smart Walls	32		
	Views	1,000		
Smart Wall	View Groups	100		
Smart wall	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	Enterprise-class HDD or high performance network HDD	Enterprise-class HDD or high performance network HDD		
Storage	It should support 20 MB/s writing and 20 MB/s reading.	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	
		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)
	Current Site	Heat Map Cameras	-	70 (recommended max. value)
	Current Site	Thermal Cameras	5 (recommended max. value)	20 (recommended max. value)
Manageable		Queue Management Cameras	60 (recommended max. value)	300 (recommended max. value)
Resources		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 +	Encoding Devices + Access Control Devices + Security Control Devices + Remote Sites	128	1,024
	Remote Sites)	Cameras	18,000	100,000

	Current Site	Areas	512	3,000	
		Area Hierarchies	5		
		Cameras in Each Area	64		
Area		Alarm Inputs in Each Area	64		
		Alarm Outputs in Each Area	64		
	Central System	Areas from Remote Sites	18,000	100,000	
	Alarm Priorities		255		
	Alarm Categorie	S	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		
Event & Alarm	Events or Alarms	s 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	s 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 p	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.
			152 actions (excluding recording) can be	512 actions (excluding recording) can be
	Alarm Triggered Actions (Excluding Recording)		triggered concurrently by alarms per	triggered concurrently by alarms per
			second.	second.
	Recording S	chadulas	• 512 (Current Site)	• 3,000 (Current Site)
Recording	Recording 5	criedules	• 21,000 (Current Site and Remote Sites)	• 30,000 (Current Site and Remote Sites)
	Recording S	chedule Templates	200	
		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
	Мар	Alarm Outputs on Each Map	16	128
		Labels on Each Map	16	128
Man		UVSS on Each Map	2	4
Мар		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	
	Roles		400	3,000	
	Users		1,250	3,000	
User & Role	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). 30 Control Clients, Web Clients, or OpenSDK Clients access the system 	 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). 100 Control Clients, Web Clients, or OpenSDK Clients access the system 	
	Concurrent Accesses via Client		 concurrently; 30 Mobile Clients or OpenSDK Clients access the system concurrently. 	 concurrently; ● 100 Mobile Clients or OpenSDK Clients access the system concurrently 	
Data Stars	Data Recorded in System		attendance records, ANPR records, vide	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.	
Data Storage	Alarm Logs		60 million	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
	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 Control	Access Schedules	32	
		● Card: 50ms for one card	
	Speed of Applying Person's Credentials to Device	• 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 Pictures	2,000	10,000
	Face Comparison Groups	16	64
Face Comparison	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)

	UVSS (Under Vehicle Surveillance Systems)	2	4	
	Vehicle Lists	13	100	
	Vehicles	60,000	500,000	
Vehicle	Undercarriage Pictures (Each 10 MB)	512	3,000	
(ANPR)	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) 	
	Regular Report Rules	100		
	Event or Alarm Rules in One Event/Alarm Report	32		
	Records in One Sent Report	10,000 or 10 MB		
Report	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. 		
	Decoding Devices	32		
	Smart Walls	32		
	Views	1,000		
Smart Wall	View Groups	100		
Smart wai	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 \times 2 Mbps input and 200 streams \times 2 Mbps output	300 streams \times 2 Mbps input and 300 streams \times 2 Mbps output			

