Introduction

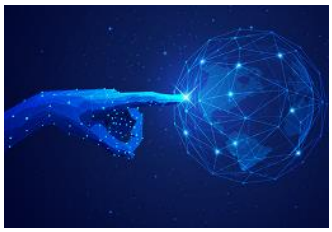
KBiVMS Pro 2.0 is designed for centralized security management. It enhances hardware performance and provides centralized video monitoring, access control, video intercom, alarm controller, POS, radar and AI features, such as face recognition, automatic number plate recognition, and video metadata.

Whether you are a small business with a few cameras, or a global business spread across the globe with over 20,000 cameras, KBiVMS Pro 2.0 is the right solution for you. Even if your needs change in the future, you can easily scale, upgrade or add functionalities to KBiVMS Pro 2.0 so that your needs are met. Build your security management system on a solid foundation with KBiVMS Pro 2.0.

Features

Scalable Design, Easy to Grow

With distributed deployment, you can easily expand the supported channels to 20,000 and central storage capacity to 4 PB. The multi-site function allows you to incorporate multiple KBIVMS PRO platforms into one, and conveniently show their information on one PC client. You can access live and recorded videos, real-time and historical events, and more.



AI-Powered Applications, Proactive Security

KBiVMS Pro 2.0 integrates various AI capabilities that devices have, such as face recognition, automatic number plate recognition, and video metadata. You will be notified immediately when the target you are interested in appears, allowing you or security personnel to take necessary security measures.

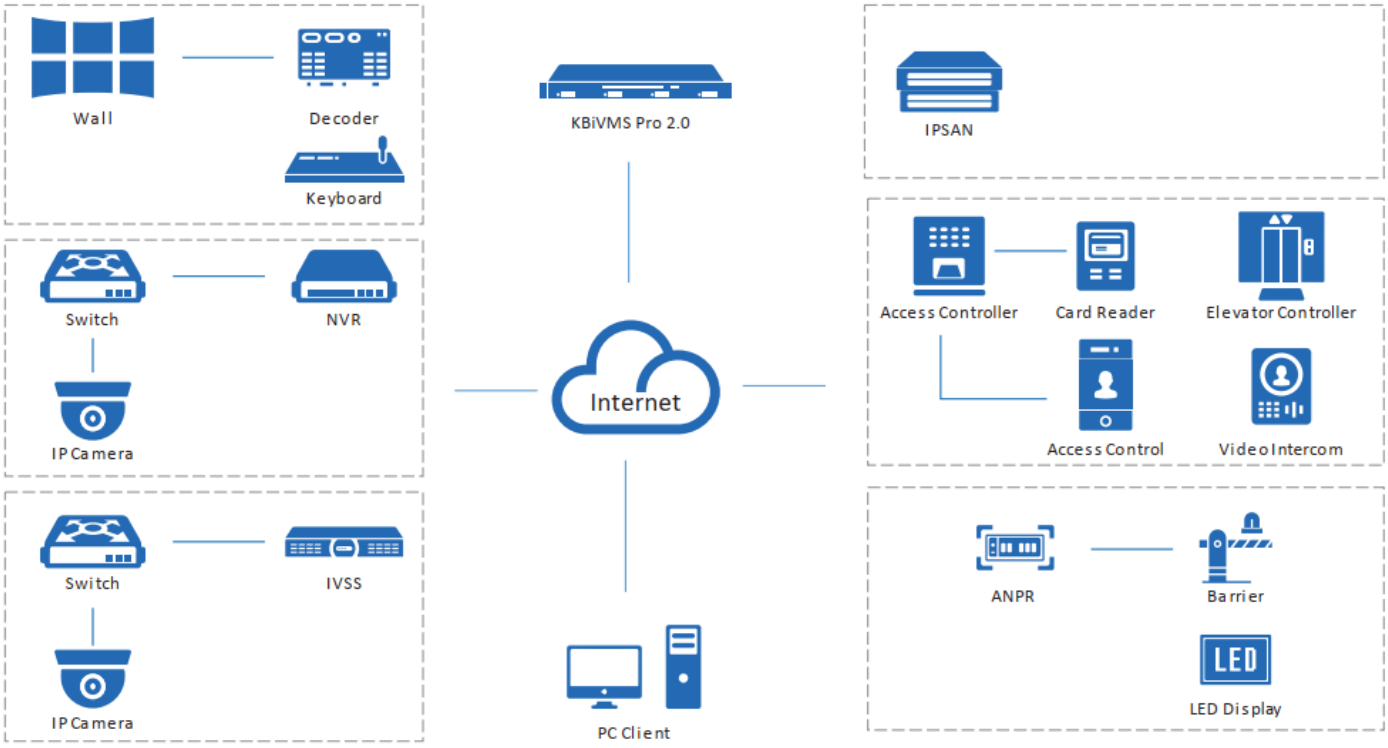
Highly Available Technology, More Stable

With hot standby and N+M redundancy, KBiVMS Pro 2.0 ensures that your business will not be interrupted by failed servers.

Customized Services, Enhanced Competitiveness

We offer services for you to build KBiVMS Pro 2.0 into your own platform, allowing it to fully suit your needs and give you a competitive edge in the market.

System Architecture



Main Functions

Monitoring Center

❖ Live View

With its easy to use live view, you can both customize and control how you view videos in real time. The layout can also be configured to display videos in different sizes, enabling you to give priority to important areas by placing then in larger windows. You can also remotely control certain devices to perform various actions such as talking to people through the camera, and unlocking the barrier of a turnstile to grant access to people. If an emergency occurs, manual recording is just a click away, so that you can quickly save that particular part of the video for evidence.

❖ Playback

The playback function allows you to play recorded videos stored on the server and devices in multiple windows. To help you efficiently wade through tons of videos, you can play them 64X faster than the normal speed, skipping parts that you are not interested in, or you can slow them down to 1/64X, to focus on important sections. To control the data in the videos, you can add tags to mark relevant content, and you can even lock them to prevent them from being overwritten when the disk space is full. The filter function can also be very helpful when you only need to deal with a specific type of video, or a type of target that appeared in one or more areas.

❖ Video Wall

Video wall is used to display videos on a large screen that consists of many smaller screens. Highly customizable, you can not only configure the layout of the video wall, but you can also display recorded videos and real-time videos to zero in on

important details in the video. With the task function, you can schedule videos from different channels to be displayed on the video wall at specified times or in a loop.

- **Map**

The map is a very useful function that allows you to keep track of devices and events through their location information. With it, you can mark a device and immediately know the location of an event when the device triggers an alarm and flashes red on the map. You can also add submaps to different areas. For example, a plan view of a public square can be added to a map to reveal the exact location of people who are inside the public square.

- **Group Talk**

The real-time location of MPT devices are shown on the map, making it easy for dispatchers to effectively send officers and resources to address issues such as a burglar or duress alarm going off in a building. Dispatchers can start a group talk and engage in a real-time conversation with the officers who were assigned the task to efficiently guide them through the process.

DeepXplore

Powered by AI technology, you can easily search for targets, look for records on them and even generate tracks on their movement to observe their whereabouts through setting simple search conditions. To gain an overview on the target, you can organize information on them into a case and generate a report.

Event Management

You can monitor and process over 200 types of alarms right from the event center, while it continuously generates statistics. To give you a clear picture of what is happening in your area, the alarm center also displays a variety of useful information such as the number of alarms that were processed, and the type of alarms that are triggered most frequently. Highly flexible, you also have a selection of predefined alarm types available to you, and the option to not only create your own alarm, but to also manually trigger it to take snapshots and send emails for important events.

Maintenance Center

On a single page, you can get to know the full status of channels, devices and servers, and information on faults to instantly recognize which channels are offline, whether the server has stopped working, and much more. Scheduled reports are also sent based on the information collected to give you a full picture of how your system is running. Updating is also a breeze, as you can easily update multiple devices on KBiVMS Pro 2.0 in batches when new versions are available.

Access Management

- **Access Control**

Through the integrated access control system, you can control access within any area directly from KBiVMS Pro 2.0 by utilizing the access control devices on the platform. You can use it to lock doors remotely, monitor the area around doors, set advanced authentication rules to protect classified areas, and more. To keep you up to date, the system also keeps complete records of all access control activities.

- **Video Intercom**

All video intercom devices can be managed directly through one easy-to-use interface that offers two-way communication and remote access control. Through the interface, you can secure access to your premises, and receive calls and emergency reports directly from people on-site. Building management is also very convenient, as you can send

group notices to all the indoor monitors, keeping people informed of important events, such as scheduled power outages.

- **Lift Control**

To create a safe building, access to elevators and floors must be controlled. With KBiVMS Pro 2.0, you can exercise this control, restricting movement to a select few persons for any floor of your choice. After access is granted, people can verify their identities at the door station or the lift control panel, and then the lift will go directly to the floor they are on. The platform also maintains records of all authentications for you to review at your convenience.

- **Attendance**

KBiVMS Pro 2.0 is your one-stop solution to keep track of the working hours of your employees and to manage absence and leave. Detailed reports can be generated for appraisal of employees and calculation of wages.

- **Visitor**

KBiVMS Pro 2.0 offers a complete process to manage visitors, including appointment, registration, access permission authorization, and ending visit with all permissions canceled. A complete, detailed record of all visits is available for your review at any time.

Intelligent Analysis

To help build your profits and strengthen your services, the platform provides invaluable information on people on your premises through performing a variety of intelligent analysis and generating heat maps. Through it, you can know the number of people in an area at any given time, where they frequent the most, and precisely when the highest peaks in numbers occurs.

Parking Lot Management

From just one platform, you can remotely manage all the devices in your parking lots, such as parking space detectors and ANPR devices, to guide vehicles in an orderly fashion. The visualization function makes it easier for you to drag and drop devices on the visual map of your parking lots. The platform also offers a vehicle search system for vehicle owners to use when they are leaving, to help them quickly locate their transport. Insightful information is also provided in the form of statistics on an easy-to-use dashboard, keeping you up to date on key activities taking place in your parking lots to help you effectively manage them.

Synthesis

KBiVMS Pro 2.0 is friendly with other systems in your infrastructure. By developing bridges, linkage actions can be flexibly configured on KBiVMS Pro 2.0 based on the events that are triggered on other platforms. What's more, KBiVMS Pro 2.0 can synchronize attendance data and access control records with the databases from other platforms.

System Requirements

	Server		PC Client	
	Recommended	**Minimum**	**Recommended**	**Minimum**
CPU	CPU Intel Xeon Silver 4114 @2.2 GHz 10 Core Processor	Intel Xeon E-2224 @3.4 GHz, 8M cache	Intel® Core i7-11700 @2.50 GHz	Intel® Core i5-9500 @3.00 GHz
Memory	16 GB	8 GB	16 GB	
System Disk	1TB 7200 RPM SATA 6 Gbps 512n 2.5 in Hot-plug Hard Drive	1 TB 7200 RPM SATA Entry 3.5 in Cabled Hard Drive	-	
Storage Disk	7200 RPM Enterprise Class HDD 1 TB, 500 GB free space for KBIVMS PRO		200 GB free space for KBIVMS PRO Client	100 GB free space for KBIVMS PRO Client
Graphics Card	-		NVIDIA® GeForce® RTX 3060	Intel® UHD Graphics 630
Ethernet Port	4 Ports@1000 Mbps	2 Ports@1000 Mbps	1000 Mbps	
Operating System	Microsoft® Windows Server 2019 Standard (64-bit) Microsoft® Windows 10 20H2 Pro (64-bit) Microsoft® Windows 11 21H2 Pro (64-bit)		Microsoft® Windows 10 20H2 Pro (32-bit) Microsoft® Windows 10 20H2 Pro (64-bit) Microsoft® Windows 11 21H2 Pro (64-bit) Microsoft® Windows Server 2019 Standard (64-bit)	
Languages	English (United States), Simplified Chinese.		Arabic, Bulgarian, Czech, Danish, English (United States), Finnish, French, German, Hebrew, Hungarian, Italian, Japanese, Korean, Macedonian, Polish, Brazilian Portuguese, Russian, Simplified Chinese, Spanish, Thai, Traditional Chinese, Turkish, Ukrainian, Vietnamese.	

Performance Specification

Organization, Role and User	
Organizations	10 levels; 999 organizations in total
Roles (User Permission)	500
Users	200 online users and 2,500 total users
Roles per User	32
Users for VDP Mobile App	500 online users and 5,000 total users

Recording Plan	
General Recording Plans	3,000
Motion Detection Recording Plans	3,000
Video Retrieval Plans	3,000
File Retrieval Plans	3,000

Event	
Event Rules	3,000
Combined Event Rules	100
Combined Events	1,000

Map	
Hierarchies	8
Size of Offline GIS Map Package	500 MB
Raster Maps	256
Submaps per Map	32
Maximum Size of Raster Map	15 MB
Raster Map Resolution	8,100 × 8,100
Resources on GIS Map	300
Resources per Raster Map	300

Person and Vehicle Management	
Person and Vehicle Groups	999
Sub Groups per Level (Main Group Included)	10
Persons	300,000
Cards	600,000

Faces	300,000
Fingerprints	600,000
Vehicles	50,000

Face and Vehicle Watch Lists①	
Face Watch Lists	50
Vehicle Watch Lists	32
Total Faces	300,000
Faces per Face Watch List	50,000
Vehicles per Vehicle Watch List	50,000

Intelligent Analysis	
People Counting Groups	30
People Counting Rules per Group	20

Parking Lot Management	
Vehicle Groups	32
Entrances and Exits	60
Parking Lots	16
Entrance and Exit Points	60
License Plates per Reserved Parking Space	10,000
Parking Space Detectors per Parking Lot	500
Parking Space per Parking Lot	1,500
Parking Available Displays per Parking Lot	30
Image Size per Layer	15 MB
Resolution per Layer	8,100 × 8,100
Total Layers	128
Layers per Parking Lot	16
Resources per Layer (parking spaces not included)	600
Parking Spaces per Layer	1,000
Number of Vehicle Search Rules	32

Access Control	
Access Permission Groups	500
Persons per Permission Group	30,000
Door Groups	500
Public Passwords	1,500

Video Intercom	
Rooms	5,000
Persons per Room	10
VDP Accounts	5

Attendance	
Attendance Terminals	64
Attendance Periods	64
Attendance Shifts	100

Synthesis	
Bridges	5
Incoming Trigger Events	100
Incoming Trigger Sources	500

Group Talk	
Groups	30
Users per Group	100

Notification Center	
Messages	1,000

Data Storage	
Event Records	20,000,000
Face Recognition Records	20,000,000
ANPR Records	5,000,000
Metadata Records	5,000,000
Access Control Records	5,000,000
Video Intercom Records	5,000,000
Visitor Records	5,000,000
Entrance Records	5,000,000
Exit Records	5,000,000
Parking Records	5,000,000
Attendance Records	5,000,000
Lift Control Records	5,000,000
Historical Count Records	5,000,000
In Area Statistical Records	5,000,000
Heat Map Records	5,000,000
MPT Records	5,000,000
Operator Logs	5,000,000
Service Logs	5,000,000
Independent Data Deployment-Event Records	30,000,000
Independent Data Deployment-Face Recognition Records	30,000,000
Independent Data Deployment-ANPR Records	30,000,000
Independent Data Deployment-Video Metadata Records	30,000,000

■ Server Specification

The following specifications are obtained in servers with recommended system requirements.

Parameter		Single Server	Multiple Servers
Number of sub servers per system	Sub Servers	-	10 servers
Total Devices	Devices②	2,000 devices	20,000 devices
Auto-Registered	Devices	1,000 devices	10,000 devices
Video Devices and Channels	Video Devices and Channels ③	1,000 devices; 2,000 channels	10,000 devices; 20,000 channels
	Devices Added by Hikvision Protocol	500 devices; 2,000 channels	5,000 devices; 20,000 channels
	P2P Devices	32 devices	
	Devices Added by ONVIF Protocol	1,000 devices; 2,000 channels	10,000 devices; 20,000 channels
Video Devices and Channels	ANPR Channels	500 channels	5,000 channels
	Face Recognition Devices and Channels	100 devices; 500 channels	1,000 devices; 5,000 channels
	Video Metadata Channels	500 channels	5,000 channels
	MPT Devices	100 devices	300 devices
	EEC Devices	64 devices	
	MDVR/MNVR	100 devices; 800 channels	1,000 devices; 8,000 channels
Access Control Devices	Access Control Devices and Lift Control Devices	500 devices; 1,000 channels	1,500 devices, 3,000 channels
	Access Control Devices	500 devices; 1,000 doors	1,500 devices, 3,000 doors
	Lift Control Devices	500 devices; 1,000 channels	1,500 devices, 3,000 channels
	VDP	2,000 devices	
Alarm Devices	Alarm Controllers	100 devices; 1,000 zones	500 devices; 5,000 zones
	Emergency Phone Towers	1,000 devices; 2,000 channels	10,000 devices; 20,000 channels
	EAS Alarm Channels	2,000 channels	20,000 channels
Security Screening Devices	Security Screening Machines	20 devices	200 devices
	Walk-through Metal Detectors	60 devices	600 devices
	Radars Radars	20 devices	
Parking Lot Devices	Parking Space Detectors	500 devices; 1,500 parking spaces	2,000 devices; 6,000 parking spaces
	Parking Space Available Displays	150 displays	600 displays
Intelligent Analysis	People Counting Channels	100 channels	300 channels

	Heat Map Channels	100 channels	300 channels
Multi-site	Sites	100 sites	
	Devices per Site	10,000 devices; 20,000 channels	
	Total Devices	10,000 devices; 20,000 channels	
	Others POS Channels	100 channels	300 channels
Media Transmission Server	Total Incoming Bandwidth	600 Mbps	6,000 Mbps
	Incoming Video Bandwidth	600 Mbps	6,000 Mbps
	Incoming Picture Bandwidth	200 Mbps	2,000 Mbps
	Total Outgoing Bandwidth	600 Mbps	6,000 Mbps
	Outgoing Video Bandwidth	600 Mbps	6,000 Mbps
	Outgoing Picture Bandwidth	200 Mbps	2,000 Mbps
	Total Storage Bandwidth	600 Mbps	6,000 Mbps
	Video Storage Bandwidth	600 Mbps	6,000 Mbps
	Picture Storage Bandwidth	200 Mbps	2,000 Mbps
Playback, Storage and Download	Prerecording Bandwidth for Alarm Recordings	400 Mbps	4,000 Mbps
	Maximum Capacity of Central Storage (IPSAN)	400 TB	4 PB
Event④	Total Events⑤	300 per second	600 per second
	Storage of Events or Alarms without Pictures⑥	300 per second	600 per second
	Alarms with Snapshots (Stored on Devices)	300 per second	600 per second
	Access Control Events	300 per second	600 per second
	Number of Combined Events	100 per second	

① All the devices together cannot contain more than 10 million faces when the number of faces in the watch lists are multiplied by the number of devices. For example, if a face watch list with 200,000 faces is sent to 40 devices, you can only send another face watch list with 100,000 faces to 20 devices. Or, you can send a list with 50,000 faces to 20 devices and another list with 100,000 faces to 10 devices.

② The maximum number of devices, including IPC, NVR, and ITC, cannot exceed 2,000 for a single server, and 20,000 for multiple servers.

③ When adding video channels and video devices, such as IPC, NVR and ITC, to the platform, you cannot add more than 1,000 devices, 2,000 channels for a single server, and 10,000 devices, 20,000 channels for multiple servers.

④ These values represent the maximum number of events that can be triggered at the same time. The numbers are measured based on the peak concurrency tests that were carried out 3 times a day. Each test lasted 20 minutes, with 30% of the peak concurrency being applied to the remaining day.

⑤ The maximum number of events that can be triggered at the same time largely depends on the concurrent write capability of the database.

⑥ For events with snapshots, you must take into account the ability for disks and servers to concurrently write images at the same time. For servers it is 200 Mbps.