New VMS Database and iGlance Server VMS Ai Solution and Integration

C5104-DBS2, C5104-IGS2, C6101-VLC

GVD VMS Database Server is the center of GVD VMS 4.0. It is designed for Cloud-and-Hybrid architecture. The new GVD Database Server and iGlance Server move GVD VMS platform to the next level with completed Ai function and integration. Such state-of-art architecture can quickly plug-in various third-party Ai Cameras, Ai Servers onto GVD VMS platform, becoming the best of best VMS for Ai surveillance applications.

- Ai LPR: license platform, driver information, vehicle model brand
- Ai Facial: face identification, age, emotion
- Ai Motion Detection
- Ai People Counting, People Detection
- Ai Upper/Lower Clothing Color Detection
- Ai Virtual Line, Directional Detection

Many other the best Ai cameras or Ai applications to enrich GVD VMS and your solutions in no time.

It allows the VMS to smartly manage large-scale projects that need to run a lot of Ai and integrates numerous sub-systems, including workstations, NVRs, video walls, and 3rd-party systems.

GVD VMS supports standard & open protocols for such quick Ai integration

- JSON: lightweight data-interchange format
- REST: HTTP based protocols allow stateless Client-Server communication
- Generic ONVIF: Ai camera integration interface using ONVIF protocols.
- Modbus: Simple and Reliable Master-Slave architecture protocols
- POS with Text: Using printing port and output with text for quick integration
- SNMP: the popular IT protocol for monitoring and managing devices on a network
- GVD Web Docker: a quick Add-on function to GVD VMS Platform via HTTP URL

Another highlight of this product is an application called "iGlance Dashboard", powered by Elasticsearch, a real-time big data search and analytics engine built on Apache Lucene.

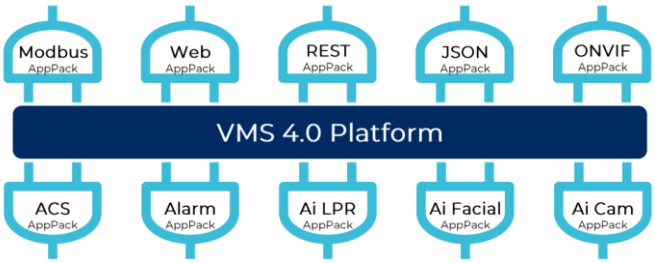
The iGlance Dashboard can visualize every system detail with graphics and put system information in a nutshell very quickly.

All system health, device status, device recording status, Ai LPR, Ai meta data, etc., can be quantified through pies and charts easily.

Product Features

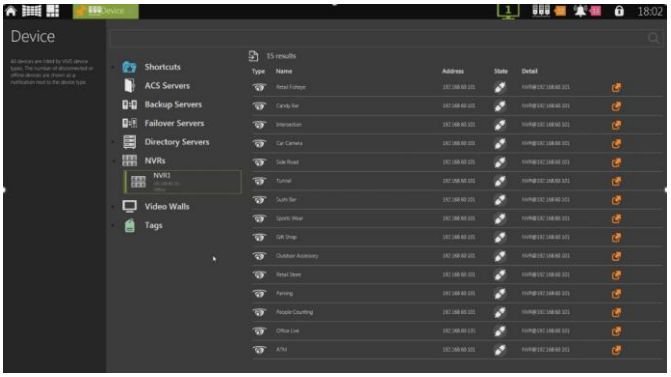
System Integration & Communication

With a new architecture allowed by GVD **VMS Database Servers**, GVD **VMS 4.0** is easy to grow, both vertically and horizontally. Vertically, the VMS can quickly swell with more workstations, video walls, NVRs, failover / archive servers, storage, IP cameras (up to 1000,000), and 3rd-party applications. Horizontally, more features can be plugged in, such as AI modules from GVD and 3rd-parties, including IBM, NEC, ITRI, SONY, etc.



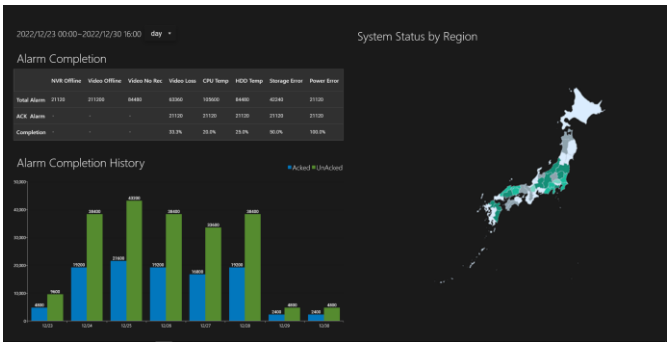
100,000 IP cameras support

Based on the cluster and redundant designs, GVD **VMS 4.0** can easily expand by stacking up **VMS Database Servers**. The more database servers are thrown in, the more NVRs and IP cameras can be accumulated. A set (3 pieces) of **VMS Database Servers** supports 10,000 IP cameras and 1,000 NVRs. A total of up to 100,000 IP cameras are allowed. System scale-up is easier than usual.



iGlance Dashboard powered by *Elasticsearch*

As the configuration of all devices and components are centralized in the **VMS Database Servers**, an "*iGlance Dashboard*" is allowed to visualize the big data of system health and device statuses with simple graphs. Pies and bars let you draw conclusions quickly and provide clues that words can't. When dealing with massive data, graphics particularly show trends, gaps, and clusters.



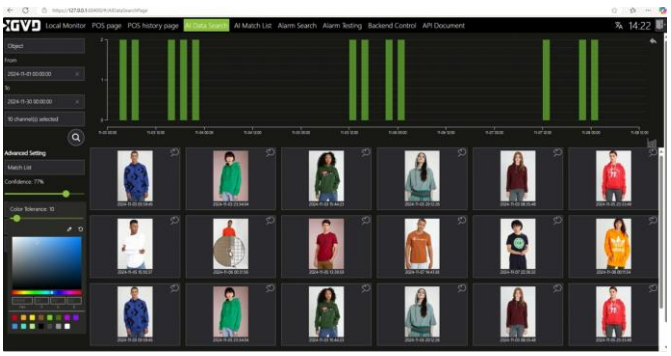
Product Features

Easy Ai and 3rd Party Integration

GVD **VMS** supports open protocols: **JSON**, **REST**, **Generic ONVIF**, **SNAMP** for plug-in integrations with Ai cameras, Ai Applications, e.g. Facial, LRP, Human Detection and many other Ai applications. New VMS also comes with new Web HTTP interface: **GVD Web Docker**, a URL plug-in to GVD VMS 4.0 in no time, working with 3rd party applications right on the same VMS monitors and machines, no need from technical eng or coding to integrate.

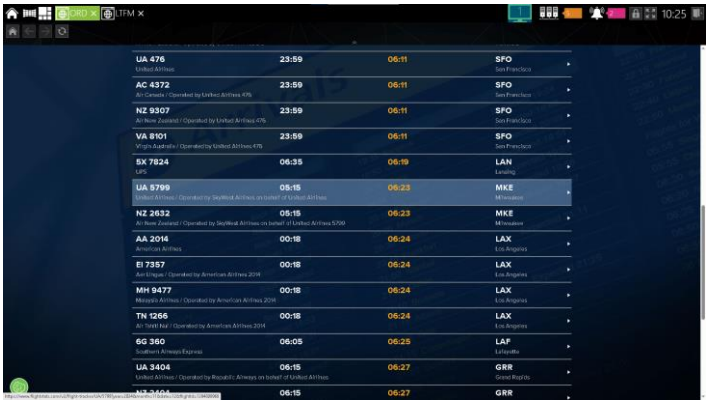
Redundant Designs

Unlike conventional **VMS**, GVD **VMS** has the **VMS Database Servers** based on “RAID-1 Redundant design for both Database and OS, which means the server is to deliver fault tolerance. When one HDD fails, its work is continuing with the other HDD either OS or Database. Such designs can effectively prevent system failure, so the system can be recovered before entire systems are down.

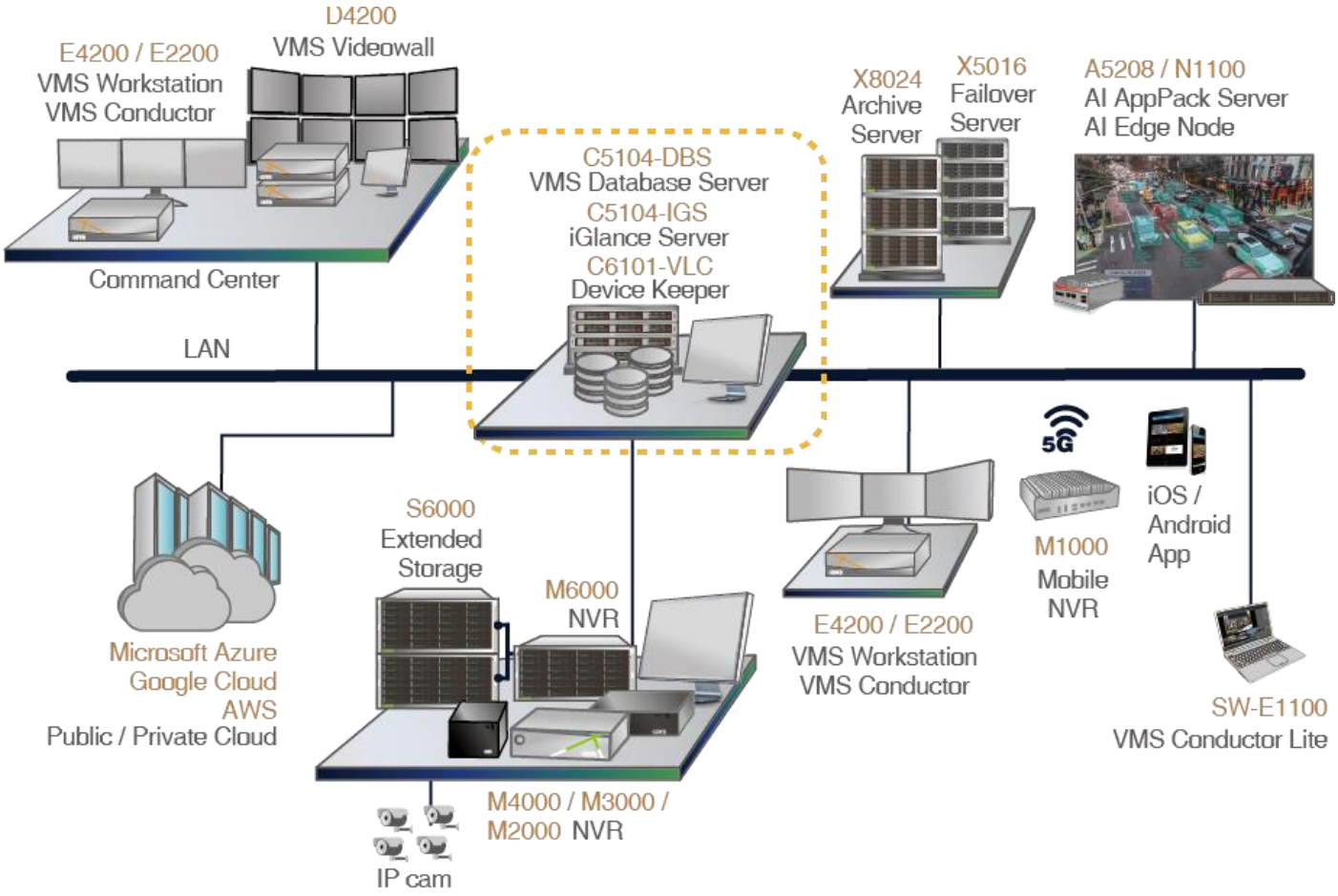


Secured Design to Protect Your DB

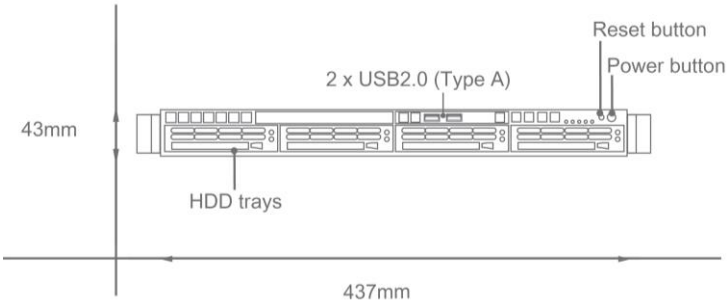
GVD **VMS Database Servers and all other GVD Servers** are with every 6x months vulnerability-scan to ensure your servers safety. With the antivirus pre-installed and encrypted data and communication constructing the best and safest systems for your projects.

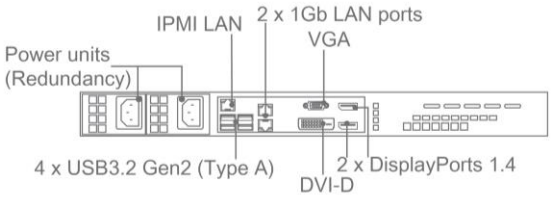


System Architecture



Hardware dimensions





Hardware Specifications

Product		C5104-DBS2	C5104-IGS2	C6101-VLC
Description		VMS Database Server	iGlance Server	Device Keeper
		Intel® 8 Core	Intel® 6 Core	Intel® Core™ i3, 4 Core
	Memory	32G		16G
	Operating System	Win Server 2019 on 2 x 240GB SSD (RAID1)	Windows® 10 IoT on 2 x 240GB SSD (RAID1)	
	Watchdog	Hardware & software watchdogs		
Storage	Interface	3.5" SATA		
	HDD trays (hot-swappable)	4 pcs		
	Pre-installed storage	2 x 1TB SSD		
	Capacity	4 x 10TB		
	RAID	RAID1		
Display	Output	1 x VGA, 1 x DVI-D, 2 x DisplayPort 1.4		
	Local display resolution	4096 x 2160 4K Monitor		
Interface	USB	Front: 2 x USB2.0; Rear: 4 x USB3.2 Gen2 (All Type A)		
	Audio outputs	N/A		
Network	LAN port	2 x 1Gb LAN		
Power	Voltage	100~240 Vac, 50-60Hz		
	Average consumption	190W		
	Power-supply redundancy	Yes, 1+1 400W redundant power supply		
Mechanic	Form factor	1U rackmount		
	Dimensions (W)x(H)x(D)	437 x 43 x 503 mm		
	Net weight (w/o storage)	12.65 kg		

Software Specifications

Software (VMS Manager)		C5104-DBS2
Management	No. of connected cameras per system	10,000
	No. of connected NVRs per system	1,024
	No. of users	No restriction
	No. of connected video wall screens	40
	No. of monitors	3
	NVR management	Yes, supported via SW-E2200-CW03
	Camera management	Yes, supported via SW-E2200-CW03
	Alarm management	Yes
	Device management and search	Yes
	Vehicle management	Yes
	Failover Server (X5016)	Supported
	Archive Server (X6024)	Supported
	Integration Gateway (C5001 Series)	Supported
	Video Wall Decoder (D4200 Series)	Supported
	LPR NVR (M4106-LPR)	Supported
	POS NVR (M-Series NVR)	Supported
	ATM NVR (M-Series NVR)	Supported
	Keyboard with joystick	Yes, GVD K1000 for PTZ controls
Video controls	Video codec	H.265, H.264+, H.264, MPEG4, M-JPEG, MxPEG
	Audio codec	G.711, G.726, AAC
	2-way audio	Yes
	Display resolution	CIF ~ 20 megapixels
	Display performance (AVS enabled)	1800@D1 (E4200); 1800 @D1 (D4200-CW02); 2100@D1 (D4200-CW04)
	Streaming type	Unicast
	Encryption	Yes, AES-128bits
	Metadata	Yes
	Adaptive Video Streams	Yes
	HW acceleration (GPU decoding)	Yes (Intel, nVIDIA)
	Video stream down sampling (resolution & FPS) option	Yes
	Maintenance of image aspect ratio	Yes
	Video buffering	Yes
	Sanpshot	Yes
	Digital zoom	Yes
	ROI	Yes
	VCA metadata overlays on-video	Yes
	Uninterrupted live video from NVR/Failover Server	Yes
	Uninterrupted video playback from cameras/NVRs/Failover/Archive Servers	Yes
	Fisheye video display	1P, 2P, 1x1, 2x2, and original view
	Display pattern	1, 4, 5, 6, 8, 9, 12, 13, 16, 18, 24, 25 (A 64-video pattern (max.) is supported via SW-E2200-CW03)
	View operation	ROI & ePTZ, software de-warp & ePTZ, digital zoom in/out, on-screen PTZ
	Playback control	General playback (forward/backward/pause), jump to the next / previous frame, go to a certain date, speed controls (0.25x, 0.5x, 1x, 2x, 4x, 8x, 16x, 32x)

Software Specifications

Software (VMS Manager)		C5104-DBS2
	Video export	Yes, Download Manager (*.MKV, *.AVI and *.AVA support)
Video wall controls	Remote video pattern manipulation	Yes
	User's remote video playback controls	Yes
	User's remote control of video digital zoom	Yes
	User's remote control of panoramic fish-eye de-warp	Yes
	User's remote control of pushing video	Yes
	User's remote control of pushing GIS/Facility map to video wall	Yes
	Synchronous video controls (E4200 vs. D4200)	Yes
	Adaptive Video Streams	Yes
	Video stream down sampling (resolution & FPS) option	Yes
	Video wall control panel	Yes (Dispatch single/multiple videos, video patterns, touring, change pattern layout, change screen settings)
	Uninterrupted live video from NVR/Failover Server	Yes
	Uninterrupted video playback from cameras/NVRs/Failover/Archive Servers	Yes
Alarm management	Alarm video popup	Yes
	Alarm message popup	Yes
	Active alarm list (on one full screen)	Yes
	Active alarm list (on map)	Yes
	Alarm video instant playback	Yes
	CaseBuilder	Yes (by media "*notes*")
Playback	Independent playback in playback mode	Yes
	Synchronous playback mode	Yes, up to 16 channels via SW-E2200-CW03
	Event/alert list in recording	Yes
	Graphical timeline	Yes
	Adjust playback speed	Yes
	Looping	Yes, via SW-E2200-CW03
	Digital Zoom	Yes
	ROI	Yes
	Fisheye video de-warp	Yes
	VCA metadata overlays on-video	Yes
	Smart search	Search for missing objects, foreign objects, ATM/POS transaction data via SW-E2200-CW03
Map	CaseBuilder	Yes (by media "*notes*")
	HTML map	Yes, via SW-E2200-CW03
	Facility map	Yes
	GIS map	Yes
	Standard graphical maps	Yes
	Number of linked map layers	Yes
	Video preview and instant playback	Yes
	Device status (alert, video lost, etc.)	Yes
	Quick-find of a device on map	Yes
	Quick-find of an alert device on map	Yes
	Integrated PTZ controls	Yes
	Map navigator	Yes

Software Specifications

Software (VMS Manager)		C5104-DBS2
PTZ	PTZ controls	Mouse & GVD K1000 (A keyboard with a joystick)
	PTZ operation	Direction controls, zoom in/out, preset, patrol, to center position, auxiliary commands
Language	Languages	SW-E2200-CW03 supports 20+ languages. TheVMS Manager` supports English, Simplified Chinese, Traditional Chinese, Korean, and Japanese.