Bosch Video Management System v.4.5

www.boschsecurity.com

BOSCH
Invented for life

▶ Enterprise-class Client/Server based video management system

▶ Superior alarm handling with alarm priorities and selectable user group distribution

▶ Mobile video client for live and playback

▶ Edge based intelligent Video Analytics (IVA) and forensic search

▶ Support of 3rd party cameras that are compliant to ONVIF Profile S

The Bosch Video Management System is a unique enterprise IP video security solution that provides seamless management of digital video, audio, and data across any IP network. It is designed to work with Bosch CCTV products as part of a total video security management system. You can integrate your existing components into one easy-to-manage system, or use our full-line capabilities and benefit from a complete security solution based on cutting-edge technology and years of experience.
The Bosch Video Management System allows a very flexible system design:

- Compact: Single Site System
  1 to 2000 cameras out of the box.
  Only this system supports BIS-BVMS connectivity.
- Enterprise: Multi Site-Single Customer
  Up to 10,000 cameras.
  Supporting multi-site requirements for Metro, Airport and other large industrial facilities.
  Consisting of individually configured servers.
  Combined monitoring in Operator Client.
- Enterprise: Multi Site-Multi Customer
  Up to 10 subsystems with a total of up to 10.000 cameras.
  Up to 30 subsystems for <100 cameras per subsystem.
  Enabled for legally different companies.

The Bosch Video Management System is installed on a Microsoft Windows Operating System.
We recommend using Bosch Workstations and Servers. They are fully tested and optimized for Bosch Video Management System.
In addition to the Bosch ST standard terms and conditions of sale, the Bosch Software Maintenance Agreement is a great option to keep your VMS always up-to date.
It can be found in your online CCTV product catalog.

System overview

Bosch VMS contains the following software components:

- Management Server software provides management, monitoring, and control of the entire system
- Enterprise Management Server provides access to multiple Management Servers
- Video Recording Manager (VRM) provides recording and playback management of video, audio, and data
- Configuration Client software provides the user interface for system configuration and management
- Configuration Wizard software provides easy and fast setup of a small recording system
- Operator Client software provides the user interface for system monitoring and operation

- Mobile Video Service provides a transcoding service. It transcodes the live and recorded video stream from a configured camera according to the available network bandwidth. This service enables video clients like an iPhone or a Web client to view high-quality images via low bandwidth.
- Mobile App: You can use the Mobile App on iPhone or iPad to access live and playback video.
- Web Client: You can access live and playback videos via Web browser.
- Bosch Video Streaming Gateway: Provides the integration of ONVIF cameras.
- Remote access via public networks

Bosch Video Recording Manager (VRM) provides a Distributed Network Video Recorder solution, eliminating the need for dedicated NVRs.
The VRM provides load balancing and failover for the iSCSI Storage System and makes it easy to add additional iSCSI Storage Systems later on. VRM introduces the concept of a storage virtualization layer. This abstraction layer enables VRM to manage all of the individual disk arrays in the entire system as various "virtual" pools of storage, which are intelligently allocated as needed.
The usage of multiple client workstations offers great scalability.
Bosch VMS manages 2,000 IP cameras / encoders per Management Server (up to 200,000 in Enterprise Systems). One Bosch VMS supports 100 workstations.

Functions

Cameras
- Supports Bosch MPEG4 & H.264 encoders, MPEG4 & H.264 IP cameras and IP AutoDome cameras in SD & HD format, decoders, DVRs, Allegiant, Bosch Recording Station (BRS)/DiBos, Bosch POS/ATM Bridge, and DiBos-compatible ATM Bridge
- Supported HD resolutions: 720p and 1080p, 5 Megapixel

Deployment
- Updates of Operator Client and Configuration Client automatically deployed from Management Server

Configuration
- Enterprise System: Operator Client can access up to 30 Management Servers (maximum 100 cameras per Management Server) simultaneously
- Remote access: The target of remote access in Bosch VMS is to connect different private networks to public networks.
- Support of 3rd party cameras that are compliant to ONVIF Profile S
- Intelligent Video Analysis (IVA) and Forensic Search without servers
- Connectivity to mobile clients (iPad and iPhone, App available in AppStore)
- Automatic scan of IP devices
- Automatic IP address assignment of IP devices
- Batch firmware updates of IP devices
- Configurable Logical Tree

- Pre-configured camera sequences with 25 cameras with each up to 100 steps with individual dwell times.
- "Automatic Sequences" created by multiple selection and drag and drop to Image panes
- 4 configurable user-events (can be triggered via menu command)

User Interface
- Web Client/iOS App for live and playback video
- Server Lookup: Access method for a user of Configuration Client or Operator Client to sequentially connect to multiple system access points. A system access point can be a Management Server or an Enterprise Management Server.
- Zoomable sitemaps with links, devices, sequences, and Command Scripts
- Automatic map positioning of a camera in a map when this camera is selected
- Sitemaps in DWF format are used. DWF format version 5.0 and 6.0 are supported.
- Up to 4 PC monitors supported per Workstation
- VideoTec DCZ keyboard supported, connected to Workstation via USB interface VideoTec DCZ keyboard supports Enterprise System (select the desired Management Server)
- Bosch IntuiKey keyboard supported, connected to either Workstation or IP decoder Bosch IntuiKey keyboard supports Enterprise System (select the desired Management Server)
- Flexible Image panes allow any combination of video window sizes and layouts
- Any live Image pane can be switched to instant playback (not valid for transcoded streams)
- Multiple instant playback Image panes
- Image windows can display live video, instant playback video, text documents, maps, or web pages
- Device states shown by icons, including network-connection loss, video loss, and camera de-adjustment
- Favorites tree can be individually configured per user
- Favorites tree can include complete views with Image pane layouts and camera assignments
- Bookmarks in Live and Playback Mode for easy investigation and export of recordings Selected clips can be exported to DVD, network drives, or USB sticks with a few mouse clicks
- Camera selection by double-click or drag and drop from site maps, Logical Tree, or Favorites Tree
- Decoders can be organized in Monitor Walls from within Operator Client
- Monitor Walls can be controlled without connection to Management Server
- Control of analog monitors connected to decoders via drag and drop
- Sophisticated multi-camera timeline allows easy, graphical searching of stored video
- Timeline colors indicate recording status – normal recording, alarm recording, motion recording, protected recording, and audio recording (not for cameras managed by a VRM)

- Operator Client can be located in another time zone than Management Server.
  Local time zone of Operator Client, UTC or time zone of the Management Server can be displayed.
- Easy clip selection by dragging hairlines in the timeline
- Post-recording motion search allows easy locating of changes in selected areas
- Forensic Search allows the usage of Intelligent Video Analysis (IVA) algorithms on the recorded video
- Two audio listening options – selected channel only, or multiple simultaneous channels
- Audio Intercom functionality
- 4:3 and 16:9 Image panes
- Continuous Operation for live, playback and export while Management Server disconnected
- Live and Playback of the following recording engines: Video Recording Manager, Local Storage, Direct-iSCSI-Recording, Bosch Recording Station (BRS), Video Streaming Gateway (VSG). For legacy purposes the following recording engines are supported: DVR, NVR, DiBos, VIDOS NVR
- Live and Playback via low bandwidth
- Enable TCP for reliable connection (Live Mode)

Scheduling
- Up to 10 Recording schedules with Holidays and Exception Days
- Task Schedules with Holidays, Exception Days, and recurring schedule support
- Per camera settings for minimum and maximum recording times
- Per camera, per recording schedule frame rate and quality settings for live, normal recording, motion recording, and alarm recording

Event Handling
- Compound events (combining events with Boolean logic)
- Event duplication allowing separate handling
- Event allocation to user groups
- Schedule dependent event logging
- Schedule dependent event-generated Command Script invocation

Alarm Handling
- Schedule dependent alarm generation
- Alarms can trigger alarm-mode recording for any cameras
- 100 alarm priorities
- Selective auto-popup on alarm
- Alarms displayed in separate alarm window
- Up to 5 Image panes per alarm with live or playback video, sitemaps, documents, or web pages displayed in an "alarm row", with highest priority alarms on top
- Audio file per alarm
- Workflow with user instructions and user comments, optionally forced before clearing
- Email or SMS notification on alarm
- Alarm display on Monitor Wall
- Alarm auto clear options either time or state dependent

User Management
- LDAP compatible for integration with user management systems such as Microsoft Active Directory
- Access to system resources individually controlled per user group
- Logical Tree customized per user group – users only see devices for which they have access
- User group rights for protecting, deleting, exporting, and printing video
- User group rights for Logbook access
- User group priority assignment for PTZ control and Allegiant camera access
- Individual per-camera privileges assignable per user group for live access, playback, audio, meta data display, dome control
- Dual-authorization logon – special privileges and priorities granted when two users log on together

System Monitoring
- System-wide health monitoring, including Bosch cameras, computers, software, and network equipment
- Network equipment and other third-party devices monitored with SNMP

Customization and Interfacing
- Server SDK controls and monitors Bosch VMS Management Server by scripts and external applications.
- Client SDK controls and monitors Bosch VMS Operator Client by external applications and scripts (part of the related server configuration).
- Client Enterprise SDK controls and monitors the behavior of Bosch VMS Operator Client of an Enterprise System by external applications.
- Cameo SDK easily embeds the content of the Bosch VMS Image pane into clients of 3rd party Physical Security Information Management (PSIM) and other management systems.
- Custom Command Scripts can control all system functionality
- Powerful built in Command Script editor supporting C# and Visual Basic .Net
- External software can trigger events and send metadata via "Virtual Inputs"
- Any .Net programming language (for example C#) can be used to interface Bosch VMS functionalities
- Other systems can control a virtual matrix with Allegiant CCL commands that can be sent via RS232
- Compatible with Advantech ADAM-6000 series Digital Input / Output modules
- Compatible with Bosch Building Integration System

Parts included

- The Base Box is delivered with DVD and Quick Start Manual.
- The DVD contains the following items:
  - Installation program that can selectively install all components (Management Server software, Video Recording Manager software, Configuration

Client software, Operator Client software, Video Streaming Gateway software, Mobile Video Services software) in all supported languages
   – Configuration Manual (PDF format) in all supported languages (except Arabic)
   – Operator's Manual (PDF format) in all supported languages (except Arabic)
 • Quick Start Manual in English, French, German, Simplified Chinese and Spanish

Licenses are provided as eLicenses via email.

Technical specifications

System Specifications

Maximum number of workstations simultaneously viewing the same camera	Multicast: 50 Unicast: 5
Supported GUI languages	English, German, Dutch, Italian, Portuguese, French, Spanish, Simplified Chinese, Traditional Chinese, Russian, Hungarian, Japanese, Czech, Danish, Finnish, Greek, Norwegian, Polish, Swedish, Thai, Turkish, Korean, and Arabic

Anti-Virus software must not perform a full-scan. Performance may decrease depending on configuration.

Event reaction time	<1 second, assuming sufficient network bandwidth
Alarm reaction time (incl. 1 live Image pane, 1 instant playback Image pane and 1 map Image pane):	Maximum 2 seconds, assuming sufficient network bandwidth
Bandwidth requirements for LAN	Min. 1 Gbps for connections between: Operator Client to Management Server Operator Client to VRM/DiBos Management Server to NVR/VRM/DiBos
Bandwidth requirements for remote access	>= 300kbps
Hardware transcoder	Hardware transcoder VIP-XTCXF-INT or VJT-XTCXF must be configured in VRM, refer to VRM documentation. Hardware transcoding only applicable for VRM connected BVIP cameras. For transcoding live streams it is not required that the respective camera is recording.

Required open ports

Connection to VRM
LAN: port 1756
WAN: port 80 or port 443 as per default

Connection to Video Streaming Gateway
TCP port 8756 (VSG instance 1)
TCP port 8757 (VSG instance 2)

TCP port 8758 (VSG instance 3)
TCP port 8759 (VSG instance 4)
TCP port 8760 (VSG instance 5)
TCP port 8761 (VSG instance 6)
TCP port 8762 (VSG instance 7)

Connection to (Enterprise**) Management Server:**
TCP ports 5390, 5392, 5393, 5395, 5396

Connection to Operator Client **Workstations by BVMS SDK:**
TCP port (default 5394)

Connection from Management Server **to SMTP (for email notifications):**
TCP port 25

Connection to Bosch encoders and decoders:
Control channel: TCP ports 80 and 1756 (port 443 for encoders using https)
Network scan: UDP ports 1757 and 1758
Multicast detection: one selectable UDP port (default 1800)
Multicast video transmission:
For each encoder audio or video stream, 1 selectable UDP port
Unicast UDP transmission: UDP ports dynamically assigned in the range from 1024 to 65000

Connection between Management Server **and DiBos (as of V.8.10, earlier versions need a patch for using Web service):**
TCP port 808

Connection between Operator Client and DiBos DVRs (uses DCOM):
TCP Port 135 plus four TCP ports and four UDP ports dynamically assigned in the range from 1025 to 65535
These ports are also used when Management Server and an old DiBos 8.9 or earlier without patch are connected.

Management Server Specifications

Maximum number of sustained events	For highest performance server: 500 events/s with Logbook 1000 events/s without Logbook 5000 events/s at peaks with Logbook
Logbook	Supported by SQL Server 2008 R2 (64-bit version) 4 GByte Logbook size
Management Server Redundancy	Available with VMware HA. Please contact Bosch Design Engineer for redundancy solutions.
Maximum number of Task Schedules	200

VRM Specifications

Version	3.0 Previous versions are not supported.
Maximum count of VRM servers per Management Server	40
Maximum data rate per iSCSI	Please contact Bosch Design Engineer for iSCSI storage solutions.
Max. number of playback sessions	64

Minimum Client Workstation PC Requirements

Operation System	Windows 7 Professional or Ultimate SP1 64 bit version (required for > 500 cameras) Windows XP Service Pack 3 for < 500 cameras
CPU	Intel Core 2 Duo
RAM	2 GB or greater 4 GB or greater for Enterprise Operator Clients
Free disk space	3 GB or more for Single Site Systems 5 GB or more for Enterprise Systems We recommend having minimum 15% free disk space.
Network card	1000Base-T
Display Resolution	Minimum per monitor 1024x768, 1280x1024 or greater recommended
Recommended Graphic Cards	MHW-AWGC-Q2000 MHW-AWGC-Q600 MHW-AWGC-Q4000 MHW-AWGC-Q5000 AMD Fire Pro V7900 (not available as separate graphic card)

Maximum Graphic Cards Specifications

Detailed information on the maximum number of Image panes and the CPU load for various workstations or servers and graphic cards in the Application Guide "Display performance indication".

Minimum Management Server PC Requirements

Operation System	Windows 2008 Server R2 SP1 (64-bit) required for > 500 cameras Windows 7 Professional or Ultimate SP1 (64-bit only) required for Management Server, Configuration Client and Operator Client on the same computer, and maximum 500 IP cameras/encoders Window 2003 Server R2 SP2 (32-bit only) for NVR only
CPU	Intel Core 2 Duo Intel Core 2 Quad for systems > 500 cameras
RAM	4 GB or greater 8 GB for systems > 500 cameras
Free disk space	15 GB or greater We recommend having minimum 15% free disk space.
Network card	1000Base-T
Display Resolution	1280 x 1024

Minimum VRM Server PC Requirements

Operation System	Windows 7 Ultimate SP1, Professional Edition SP1 64-bit versions Windows Server 2003 R2, Standard Edition, 64-bit versions Windows Server 2008 R2 SP1, Standard Edition 64-bit versions Windows Storage Server 2008 SP1, Standard Edition 64-bit versions
CPU	Dual-Core Intel Xeon Processor 5110 (1.60 GHz, 1066 FSB) to Quad-Core Intel Xeon Processor E5430 (2.66 GHz, 1,333 FSB)
RAM	Minimum 2 GB
Free disk space	500 MB We recommend having minimum 15% free disk space.
Network card	1000Base-T
Display Resolution	1024x768 or greater

Mobile / Web Client Requirements

Link to App Store	www.boschsecurity.com/ MobileVideoService
Maximum number of Mobile Video Service instances per Management Server	5
Number of simultaneous connections per Mobile Video Service (1 mobile device consumes 1 connection, each stream consumes another connection)	20
Server for Mobile Video Service	Windows Server 2008/R2 or Windows 7 SP1 Professional or Ultimate 64-bit versions
Supported cameras	IP cameras with H.264 or H.263 support that are controlled by Bosch VMS (not controlled by VIDOS) ONVIF cameras BRS/DiBos/DVR cameras
iOS Version for iPhone/iPad	6.1.2
Hardware version iPad	iPad, iPad 2, iPad 3rd generation
Hardware version iPhone	iPhone 4, iPhone 4S, iPhone 5
Browser (Web Client)	Internet Explorer 9.0

Minimum NVR Server PC Requirements

Operation System	Windows XP Professional, SP3 (32-bit only), Windows 2003 Server, R2 SP2 (32-bit only) Windows 7 and Windows Server 2008 not supported
CPU	Intel Core 2 Duo
RAM	2 GB or greater
Free disk space	500 MB + Video Storage We recommend having minimum 15% free disk space.
Hard disk drives	Minimum: separate partition for video storage Separate drive for video storage recommended
Network card	1000Base-T
Display Resolution	1024x768 or greater

Device Compatibility

Barco Monitor Wall	Barco RCPPlusAgent.exe 2.0.6.12 for Barco Monitor Wall
Analog Matrix Switch	Bosch Allegiant series, firmware 8.75 or later and Master Control Software version 2.92
CCTV Keyboard	VideoTec DCZ keyboard (USB keyboard) Bosch IntuiKey keyboard, firmware version 1.96
Digital I/O	Digital I/O Advantech ADAM-6050, ADAM-6052, ADAM-6060, ADAM-6066
Digital Video Recorder	DVR 431, 440, 451, 480, 630, 650, 670, 700 series (maximum 15 DVRs per Management Server) Bosch Recording Station 8.10, 8.11 DiBos, firmware version 8.7 Maximum 100 BRS/DiBos recorders per Management Server
USB to Serial adapter	Belkin serial adapter cable F5U103vea
Ethernet to Serial adapter	Comtrol DeviceMaster RTS 4-Port
BVIP Devices	VIP-X Series encoders and cameras H.264 Series encoders and cameras MPEG-4, H.264 Main Profile, H.264 Baseline Plus are supported (H.264 Baseline and MPEG-2 not supported)
Connectivity with Building Integration System	Version 2.5 TU1 and 3.0

Remote Access

Remote Access	Direct iSCSI and encoder replay is not supported.		
	Live	Playback	Control
VRM	x	x	x

VSG	x	x	x
ONVIF	x (via VSG)	x (via VSG)	x (via VSG)
Local Storage	x	-	x
Live Only	x	-	x
BRS/DiBos	-	-	-
NVR	x	-	-
DVR	x	x	x

Ordering information

Demoversion - Non Expandable
Supports 3 Cameras, 2 Workstations, 2 CCTV Keyboards, 2 DVR
1 Forensic Search license included.
Order number **MBV-BDEM-45**

Lite-32-Edition - Non Expandable
Supports 32 Cameras, 2 Workstations, 1 CCTV Keyboard, 0 DVRs – Non Expandable
1 Forensic Search license included.
Order number **MBV-BLIT32-45**

Lite-64-Edition - Non Expandable
Supports 64 cameras, 4 Workstations, 2 CCTV Keyboards, 0 DVRs – Non Expandable
2 Forensic Search licenses included.
Order number **MBV-BLIT64-45**

Professional Edition
Supports 8 Cameras, 2 Workstations, 1 CCTV Keyboard, 1 DVR
All MBV-X* and MBV-F* can only be combined with the Professional Edition.
1 Forensic Search license included.
Order number **MBV-BPRO-45**

Enterprise System
2 Workstations, 2 subsystems, 1 CCTV Keyboard
Supports 1 Enterprise Management Server, 2 subsystems (Management Servers)
Order number **MBV-BENT-45**

1 Channel Expansion
Expansion, order the exact number required.
For example, if you order 128 units you can use 128 cameras/decoders in your Bosch VMS. Only those cameras need to be counted which are shown in the Logical Tree.
Order number **MBV-XCHAN-45**

1 Workstation Expansion
Expansion, order the exact number required.
Order number **MBV-XWST-45**

1 DVR Expansion
Expansion, order the exact number required.
Order number **MBV-XDVR-45**

1 CCTV Keyboard Expansion
Expansion, order the exact number required.
Order number **MBV-XKBD-45**

1 Forensic Search Expansion
Expansion, order the exact number required. You need
one license per Workstation, not per camera or
encoder.
Order number **MBV-XFOREN-405**

Enterprise Subsystem Expansion
Supports 1 Management Server as member of an
Enterprise System
Order number **MBV-XSUB-45**

Mobile Video Service Expansion
Order number **MBV-XMVS-45**

Enterprise Upgrade for Pro
Supports 1 Management Server to be upgraded to an
Enterprise Management Server
Order number **MBV-FEUP-45**

Allegiant Matrix Connection
Order number **MBV-FALG-45**

ATM/POS Connection
Order number **MBV-FATM-45**

OPC Server Connection for BIS
Order number **MBV-FOPC-45**

Base Box
Hard cardboard box including DVD and Quick Start
Manual (in English, French, German, Simplified
Chinese, and Spanish)
Order number **MBV-BBOX**

Expansion Box
Paper box including Setup DVD
Order number **MBV-XBOX**

Services

Maintenance Demoversion
Order number **MBV-MDEM**

Maintenance Lite-32-Edition
Order number **MBV-MLIT32**

Maintenance Lite-64-Edition
Order number **MBV-MLIT64**

Maintenance Professional Edition
Order number **MBV-MPRO**

Maintenance Enterprise Edition
Order number **MBV-MENT**

Maintenance Enterprise Subsystem Expansion
Order number **MBV-MSUB**

Maintenance Mobile Video Service
Order number **MBV-MMVS**

Maintenance Enterprise Upgrade for Pro
Order number **MBV-MEUP**

Maintenance Channel Expansion
Order number **MBV-MCHAN**

Maintenance Workstation Expansion
Order number **MBV-MWST**

Maintenance DVR Expansion
Order number **MBV-MDVR**

Maintenance CCTV Keyboard Expansion
Order number **MBV-MKBD**

Maintenance Forensic Search Expansion
Order number **MBV-MFOREN**

Maintenance Allegiant Matrix Connection
Order number **MBV-MALG**

Maintenance ATM/POS Connection
Order number **MBV-MATM**

Maintenance OPC Server Connection
Order number **MBV-MOPC**