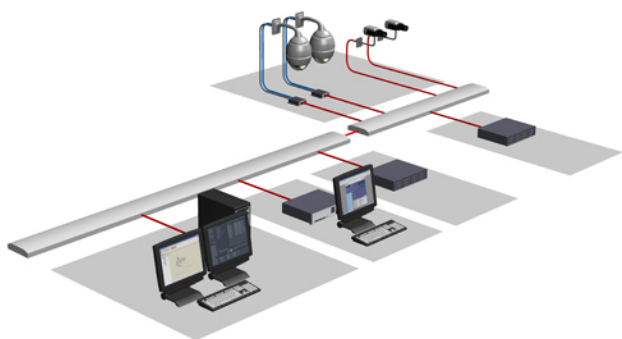




MVM-BVRM Video Recording Manager v1.0



- ▶ **Manages RAID storage in the Bosch Direct-to-iSCSI CCTV system**
- ▶ **Distributed storage provides optimum utilization of system resources**
- ▶ **iSCSI disk array failover for extra reliability**
- ▶ **Used with all VIP X series encoders and all Bosch Video over IP cameras**

Bosch Video Recording Manager (VRM) provides a Distributed Network Video Recorder solution, eliminating the need for dedicated NVRs, and signaling the second generation of IP Network video recording. VRM supports iSCSI-based storage systems and the Bosch Video IP devices (IP cameras and IP video servers).

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 a single “virtual” common pool of storage, which is intelligently allocated as needed. VRM eliminates the need for Network Video Recorders (NVRs) and their associated server hardware, operating systems, anti-virus software, as well as the ongoing software patches and updates these systems require. This new technology makes installation, operation, and maintenance much easier and reduces the total cost of ownership.

System Overview

The Video Recording Manager is comprised of

- the Recording Management Server (VRM server)
- the configuration client (VRM Configurator)
- the playback client (Archive Player)

The central Recording Management Server runs as a service on Microsoft® Windows platforms. Bosch recommends running VRM Server on a dedicated server/hardware platform.

VRM offers system-wide recording, monitoring, and management of Bosch iSCSI storage, video servers, and cameras.

VRM software supports Bosch MPEG-4 IP video devices including VIP X series encoders, Dinion and FlexiDome IP cameras, and IP versions of the VG4 Series AutoDome Modular Camera System. Supported storage subsystems include the Bosch iSCSI-based DVA Series disk array systems. The iSCSI disk arrays can be attached anywhere on a standard IP network.

Optimal Performance

The Video Recording Manager offers a high-performance, flexible, scalable, and a highly reliable Direct-to-iSCSI storage management solution.

Performance is optimized by the use of intelligent addressing on a block level, which also allows for load balancing of the video recording to all available storage blocks located on any storage array in the system.

Logical Virtualization

The VRM virtualization layer allows for the scalability of storage beyond the physical limits of a single storage subsystem. This logical abstraction layer means that each camera can use any storage space it actually needs, rather than being allocated an arbitrary, discrete chunk ahead of time. Retention times of video data may be adjusted as required.

Fast Recording and Retrieval

The VRM provides fast and flexible retrieval via a search database of recordings and metadata. Metadata is a form of data that describes other data such as events, ATM/POS information, and video content analysis data. The metadata is recorded with the video data and provides a fast and efficient way for the search engine in the playback client to quickly locate specified video clips. The database also keeps track of the location of recording blocks. If this database is lost, the VRM can recreate the database by reading the stored metadata, providing a self-healing capability.

Distributed Storage

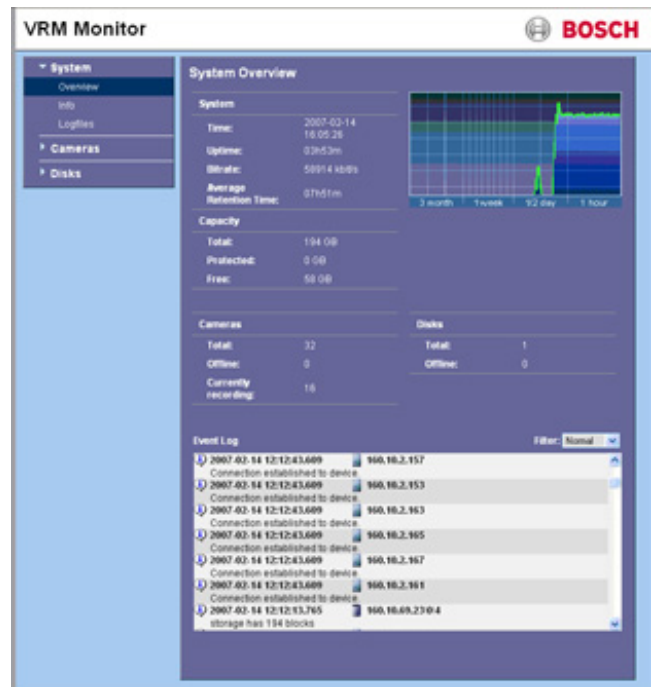
The VRM not only provides for redundant management of metadata it also introduces a significant enhancement of overall reliability and availability. By providing redundancy for storage provisioning and a failover design for the central recording management service, there is no single point of failure. And unlike NVR systems, the VRM scales without requiring additional PCs which greatly reduces the risk of system failures.

Functions

VRM Server

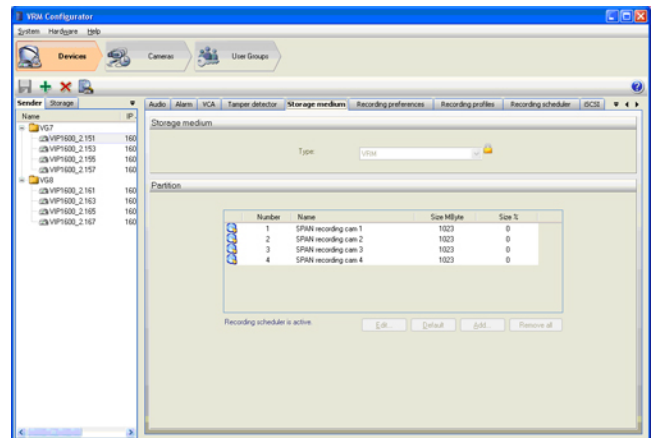
VRM Server with the central Recording Management Service provides a time- and an event-based scheduler for changing recording properties and includes a Web-based user interface for status monitoring.

The central scheduler maintains a database containing the recording source information and a list of associated iSCSI drives. The central monitoring allows for system status overview, recording status information as well as for live view and recording preview for single cameras.



Configuration Client

The configuration client allows for central configuration of the network storage subsystems, the recording including schedules, data rate, frame rate, stream, and privileges as well as for managing user accounts.

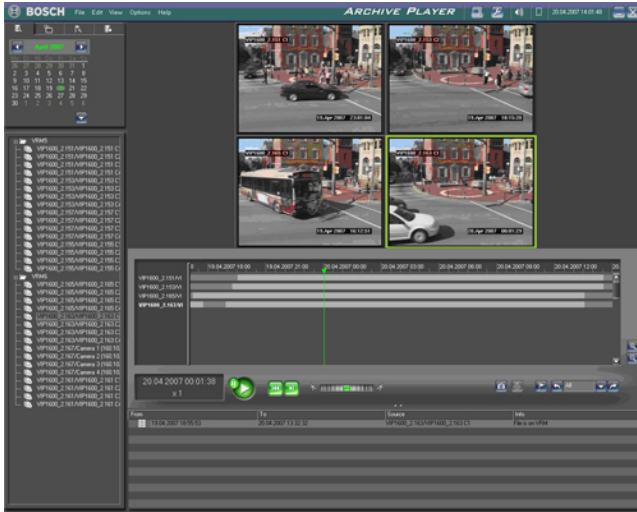


Playback Client

The playback client takes advantage of Bosch's powerful and flexible VideoSDK. Advanced playback capabilities include trick replay with variable-speed forward/reverse play, video export to file, replay of video from file, as well as playback from VideoJet video servers and the VIDOS-NVR. Each VRM server delivers up to 64 simultaneous camera replay sessions. In addition, the playback client supports synchronized replay of up to four camera streams.

The playback client also provides fast and flexible image retrieval based on block-based motion detection, metadata search, and forensic Video Content Analysis (VCA).

Note: Video export and VCA forensic search require a separate license.



Installation/Configuration Notes

VRM Components

The Video Recording Manager consists of the following three server and client components which may be installed on separate systems.

- VRM Server (central Recording Management Service) with Web-interface for the VRM Monitor
- VRM Configurator
- Archive Player (Playback Client)

VRM Monitor

- Displays overall system status information, including: uptime, bit rate, and retention times.
- Provides status information on recordings and storage.
- Displays live view and recording previews for a single camera.

VRM Configurator

- Allows configuration of the iSCSI storage subsystems.
- Allows configuration of recording parameters, including: schedules, data rates, frame rates, streams, and privileges.
- Manage users and groups with privileges and roles.

Archive Player

- Provides replay and search functionality.

Technical Specifications

Interoperability

VRM Server (running as a service)

- Windows 2000 Professional
- Windows XP Professional SP1, SP2
- Windows XP Home SP1, SP2
- Windows XP Professional x64
- Windows 2000 Server
- Windows 2003 Server

Browser

- Replay only with Microsoft® Internet Explorer, v6.0 or 7.0
- All other functions allowed with a wide range of browsers

Configuration and Playback

- Windows 2000 Professional
- Windows XP Professional SP1 and SP2
- Windows XP Professional x64
- Windows Vista: future support for Ultimate, Business, and Enterprise editions planned. Note: Within a single VRM environment with support for up to 2048 cameras.

Ordering Information

MVM-BVRM-016 Base Package Single package with a 16-camera license	MVM-BVRM-016
MVM-BVRMC-016 Base Package Five packages with a 16-camera license	MVM-BVRMC-016
MVM-BVRMD-016 Base Package Ten packages with a 16-camera license	MVM-BVRMD-016
MVM-SVRM-BAK Single-package secondary server	MVM-SVRM-BAK
MVM-SVRMC-BAK Five-package secondary server	MVM-SVRMC-BAK
MVM-SVRMD-BAK Ten-package secondary server	MVM-SVRMD-BAK
MVM-XVRM-016 16-camera upgrade license	MVM-XVRM-016
MVM-XVRM-032 32-camera upgrade license	MVM-XVRM-032
MVM-XVRM-064 64-camera upgrade license	MVM-XVRM-064
MVM-XVRM-128 128-camera upgrade license	MVM-XVRM-128
MVM-XVRM-256 256-camera upgrade license	MVM-XVRM-256
MVM-XVRM-512 512-camera upgrade license	MVM-XVRM-512
MVM-XVRM-1024 1024-camera upgrade license	MVM-XVRM-1024
MVM-XVRM-2048 2048-camera upgrade license	MVM-XVRM-2048

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