# Technicians VRM Monitor Guide

Overview:
All versions of Bosch Video Recording Manager (VRM) are equipped with a Monitor Page. For the field technician, the VRM Monitor plays a critical role in installation monitoring, troubleshooting, and information gathering. This quick guide is specifically designed to assist trained technicians to navigate the menus of the VRM Monitor.

*Note: This guide does not pertain to the DIVAR IP 5000 Recording Appliances*

Connecting
There are several ways to connect to an installed VRM system, and some methods may vary based on the type of VRM installation being worked with.

- If working with Bosch Video Management System (BVMS) or Bosch Configuration Manager, right click the system's VRM icon and select "Show VRM Monitor". This will open the VRM Monitor in the system's default web browser

If connecting to the VRM Monitor utilizing the VRM's URL, the following considerations need to be taken:
- Pro VRM installations utilize HTTP port 80 and HTTPS port 443. No modification to the VRM URL needs to be made
- Secondary or Dual VRM instances utilize HTTP Port 81 and HTTPS port 444
- DIVAR IP 3000 and 7000 Recording Appliances utilize HTTP port 81 and HTTPS port 442

Note: If connecting from any remote machine you will be prompted to log in utilizing the systems VRM credentials

Once you have established connection, you will be presented with the VRM Monitor Dashboard, which is the default connection page. The top menu bar of the Monitor allows navigation to different sections of the VRM Monitor to include:
- Live and Playback Video
- Monitoring and Dashboard
- Utilities menus: Logout, Refresh, Print, and about

Navigating the Dashboard:

The Dashboard provides a wealth of system information at a glance. While this page can seem overwhelming at first, we will cover each portion of this page section by section:

- General Information
- Monitored Values
- Graphs and Logs

Several Hyperlinks exist in the page that allow quick access to specific menus in the "Monitoring" page. These Monitoring menus are covered in a later section.

Note: The VRM Monitor is a live webpage. Depending what is being tracked or tasks being performed, refreshing the page may be required on occasion.
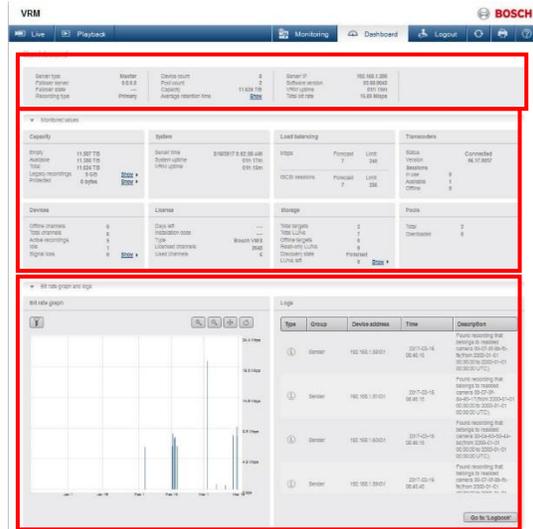
General Information: The general information portion of the "Dashboard" provides base system information:

- Server type and Failover information is applicable
- Device count, pool count, total system storage capacity, and average retention link
- The IP address of the VRM Server, software version, VRM uptime, and total system bit rate.

Monitored Values:

The "Monitored values" portion of the Monitor page provides a wealth of information on the health and status of the system

▼ Monitored values

Capacity			System			Load balancing			Transcoders	
Empty	11.506 TB		Server time	3/16/2017 9:05:56 AM		Mbps	Forecast	Limit	Status	Connected
Available	11.439 TB		System uptime	01h 21m			7	240	Version	06.17.0057
Total	11.624 TB		VRM uptime	01h 19m					**Sessions**	
Legacy recordings	9 GB	Show ▶				iSCSI sessions	Forecast	Limit	In use	0
Protected	0 bytes	Show ▶					7	256	Available	1
									Offline	0

Devices			License			Storage			Pools	
Offline channels	0		Days left	---		Total targets	2		Total	2
Total channels	6		Installation code	---		Total LUNs	7		Overloaded	0
Active recordings	5		Type	Bosch VMS		Offline targets	0			
Idle	1		Licensed channels	2048		Read-only LUNs	0			
Signal loss	0	Show ▶	Used channels	6		Discovery state	Finished			
						LUNs left	0	Show ▶		

The *Capacity* menu provides an overview of the system's storage and storage status. This includes Total, Available, and Empty storage space. This menu also provides information on Legacy and Protected recordings:

- *Legacy Recordings* belong to device(s) that are no longer in the system and the minimum retention time of the video has not been reached. If the original device is to be replaced, the original recordings will "re-associate" with the new device

Capacity		
Empty	11.506 TB	
Available	11.439 TB	
Total	11.624 TB	
Legacy recordings	9 GB	Show ▶
Protected	0 bytes	Show ▶

The *System* menu provides Time and Date information to include System and VRM uptime

System	
Server time	3/16/2017 9:05:56 AM
System uptime	01h 21m
VRM uptime	01h 19m

The *Load balancing* menu provides a "System Wide" overview of the total number of iSCSI sessions and network throughput of all storage devices as they have been configured. This menu also shows the current number of connections and bit rate in a "Forecast" fashion.

Load balancing		
Mbps	Forecast	Limit
	7	240
iSCSI sessions	Forecast	Limit
	7	256

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The *Transcoders* menu provides information and status of transcoders associated with a VRM system. This includes older VJ-XTC-XF external transcoders as well as internal transcoders supplied by recording appliances.

- Mark I recording appliances are equipped with one (1) internal transcoder capable of one (1) transcoding instance
- Mark II appliances are capable of four (4) simultaneous transcoding session

Transcoders	
Status	Connected
Version	06.17.0057
Sessions	
In use	0
Available	1
Offline	0

The *Devices* menu provides total number of video channels configured in the system to include:

- Offline devices
- Active recordings
- Idle (not recording)
- And Signal Loss devices

Devices		
Offline channels	0	
Total channels	6	
Active recordings	5	
Idle	1	
Signal loss	0	Show ▶

The *License* menu provides base license information. In the example, the VRM is licensed by the BVMS it is associated with.

License	
Days left	---
Installation code	---
Type	Bosch VMS
Licensed channels	2048
Used channels	6

The *Storage* menu provides a high level overview of iSCSI devices in the system. This includes the total number of targets in the system, and the number of LUNs configured system wide.

Storage		
Total targets	2	
Total LUNs	7	
Offline targets	0	
Read-only LUNs	0	
Discovery state	Finished	
LUNs left	0	Show ▶

The *Pool* menu provides the number of virtual storage pools that are configured in the system.

Pools	
Total	2
Overloaded	0

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Bit Rate Graph and Logs
This section of the Dashboard provides two useful tools. The *Bit Rate Graph* provides real time data of the system's network throughput to the storage devices. The graph provides filter options that allow the following: 1hour, 1 day, 1 week, or 1 month. There is also the option of filtering based on a date-to-date basis.

The *Logs* portion of this section displays the most recent logs, and also provides a shortcut "Go to Logbook". The Logbook menu allows log filtering and exports. That menu is covered later in this document.
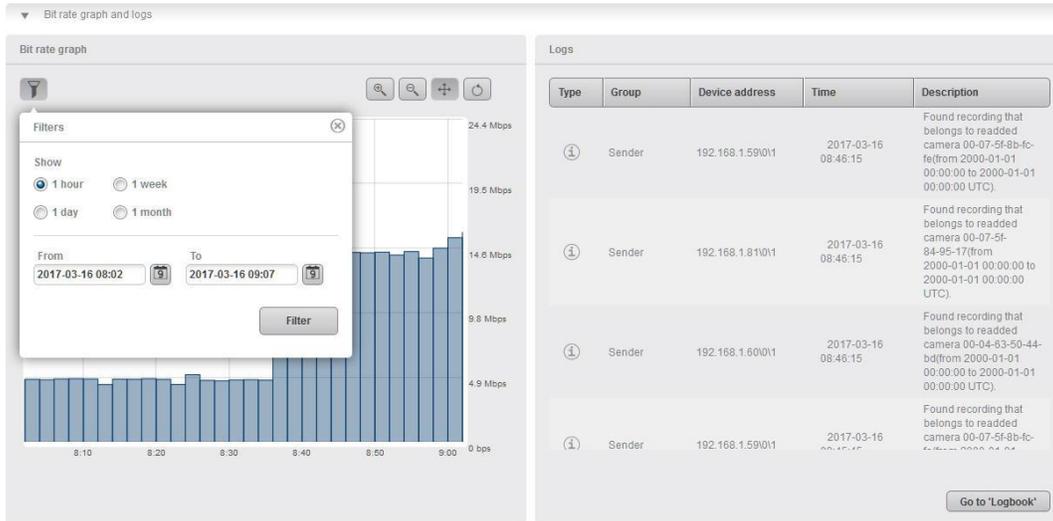
Monitoring
The Monitoring page of the VRM Monitor provides a granular look into different aspects of the system. This page can be accessed by selecting the "Monitoring" icon in the top menu bar

The Monitoring page is divided in to three primary sections:
- *Peripherals:* Devices, Cameras, Signal Loss, Port forwarding, Legacy Recordings, and Transcoders
- *Storage:* Overview, Targets, LUNS, Blocks, and Protected Blocks
- *System:* Logbook, Playbacks, Jobs, and Pools

The sub menus of each of these sections provide specific information on the topics listed. Typically all sub menus provide drop down menus that allow different methods of filtering information, as well as a "Preset" view that allows *Basic and Advanced* information.
- Custom information views can also be created on a per user basis
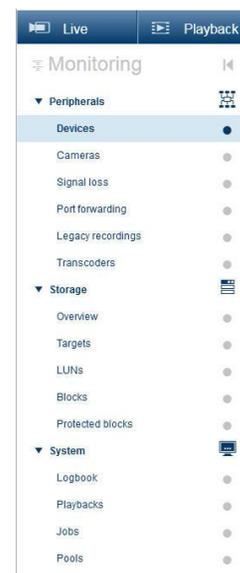
Peripherals Devices:

By default, all sub menus are displayed in "Basic" information mode. This mode provides basic information such as uptime, pool assignment, and connection time. This menu provides a primary filter that allows devices to be sorted by Pool or Target.

The preset option allows you to switch from *Basic* to *Advanced* mode, which provides the device's block count and primary target information.
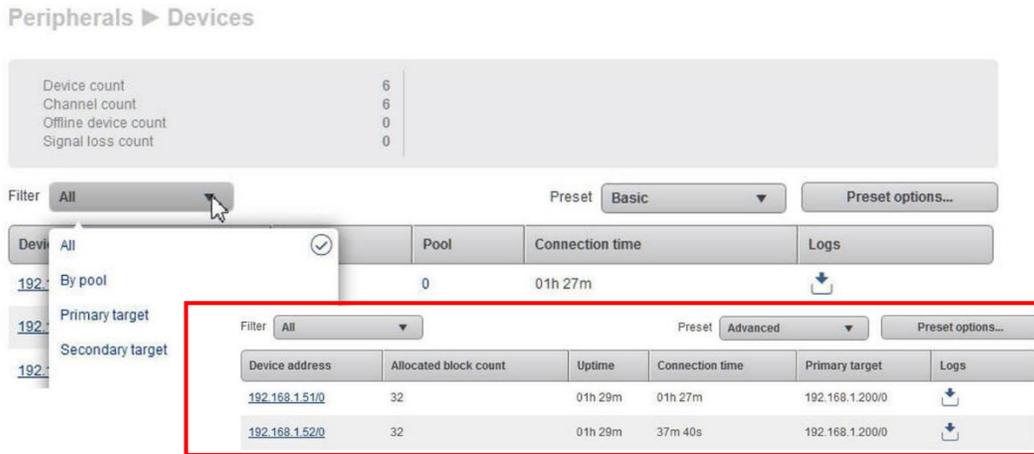
Preset Options:

Selecting the "Preset Options" will display all information modules that can be added as a preset view. The default presets, Basic and Advanced, cannot be modified.

To generate a new information preset, add an existing VRM user by selecting the "+" tab
- Place a check next to the user view to be modified
- Select the information topics to be included
- After saving the user information preset will not be available in the preset dropdown menu
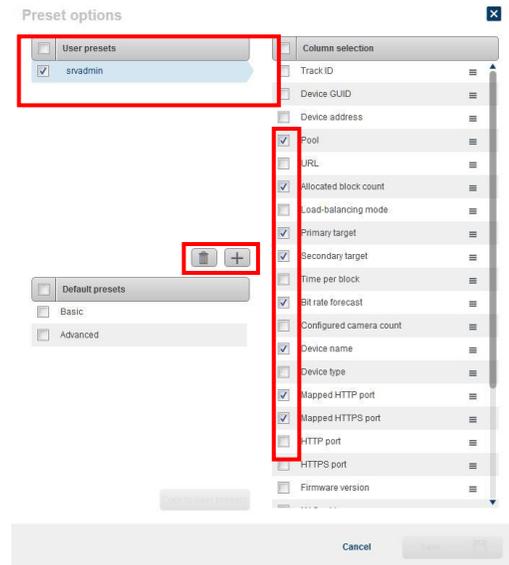
Peripherals Cameras:

Shown below are the Basic and Advanced information presets
- Basic shows the current status and bit rate
- Advanced shows current track ID, stored data, and retention settings

Camera name	Camera address	Status	Block mounted	Overall bit rate
Camera 1 (192.168.1.51)	192.168.1.51\0\1	Online	✓	4.9 Mbps

Camera name	Camera address	Track ID	Stored data	Retention time (min./max./current)
Camera 1 (192.168.1.51	192.168.1.51\0\1	4	26 GB	01d 00h / 30d 00h / 13d 19h

Camera Details

Once a camera has been selected in the cameras menu, the lower portion of the menu page contains a "Details" section that is available via a dropdown arrow.

This menu provides a camera preview as well as detailed information on current bit rates and recording block status. It also provides shortcuts to device event logs and individual bit rate graph

▼ Details

Camera ▶ Camera 1 (192.168.1.60)

| Overview | Event log | Graph |

General

Camera name	Camera 1 (192.168.1.60)
Group name	
Track ID	10
Pool	1

Connectivity

Camera address	192.168.1.60\0\1
Overall bit rate	723 kbps
Data bit rate	625 kbps
Video bit rate	559 kbps
Connection time	01h 07m
Signal time	01h 07m

Recording

Recording block	192.168.1.21/0/1/74
Next block	192.168.1.200/0/0/870
Stored data	22 GB
Retention time	
Min. retention time	01d 00h
Max. retention time	30d 00h
Current retention time	09d 21h

LUNs with recordings

192.168.1.200\0\0
192.168.1.200\0\1
192.168.1.200\0\2
192.168.1.21\0\1
192.168.1.21\0\2

Allocated LUNs

192.168.1.21\0\0
192.168.1.21\0\1
192.168.1.21\0\2

Open block list...

Peripherals Signal Loss

The *Signal loss* menu provides system wide information on any devices experiencing signal loss. This can be caused by either networking or power issues.

≡ Monitoring |◀

▼ Peripherals

Devices ●

Cameras ●

Signal loss ●

Port forwarding ●

Legacy recordings ●

Transcoders ●

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Peripherals Port Forwarding
The Port Forwarding menu provides VRM configuration information as it pertains to port forwarding. In a Typical BVMS system, port forwarding and remote connectivity is handled via the BVMS system. When dealing with DIVAR IP 2000 and 5000 systems, port forwarding is enabled by default. In DIVAR IP 6000 and Pro systems, port forwarding can be enabled.
- VRM port forwarding can support up to 32 cameras total
- VRM supplies each devices one HTTP port and one HTTPS port, and these are dynamically assigned to the first 32 devices in the system

Below is a comparison of a VRM system with and without port forwarding enabled.

Device address	Device name	Mapped HTTP port	Mapped HTTPS port	HTTP port	HTTPS port
192.168.1.51/0	192.168.1.51	0	0	80	443

Device address	Device name	Mapped HTTP port	Mapped HTTPS port	HTTP port	HTTPS port
192.168.1.51/0	192.168.1.51	9002	9003	80	443

Peripherals Legacy Recordings
The *Legacy Recordings* menu provides information on recordings that are stored in the system that are no longer associated with a device in the system. This typically occurs when a device is removed from the system configuration either permanently, or pending replacement.
- If a device is removed from a system, the associated video is kept until it is either manually deleted or the minimum retention time has expired

Channel count	1
Used storage	26 GB

MAC address	Cluster ID	Channel	Recording from	Recording to	Used storage space
00:00:00:00:00:00	0	1	2017-03-02 13:08:35	2017-03-16 09:50:27	26 GB

Peripherals Transcoders
The *Transcoders* menu provides an overview of the system's transcoder instances and their status, as well as the version of transcoder instances. This includes:
- Internal transcoder
- Legacy VJ-XTCXF external transcoders

Status		Number of sessions		Sessions in use		Sessions available	
Version	Connected 06.17.0057	Stand-alone transcoders	0	Stand-alone transcoders	0	Stand-alone transcoders	0
Sessions		Embedded transcoders	1	Embedded transcoders	0	Embedded transcoders	1
In use	0			Embedded transcoders			
Available	1			(other VRM)	0		
Offline	0						

URL	Type	Online
---	Embedded	✓

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Storage Overview

The *Storage Overview* menu provides system-wide information on all aspects of storage, Target and LUN information as well as capacity information.

This menu page provides access to the Bit Rate Graph as seen on the Monitor page, but also includes a reporting feature. The reporting feature provides the following options:
- Bit rate streamed per 2 minute interval
- Data stored per day
- Amount of recordings stored per day

All searches can be exported in CSV format for later analysis.
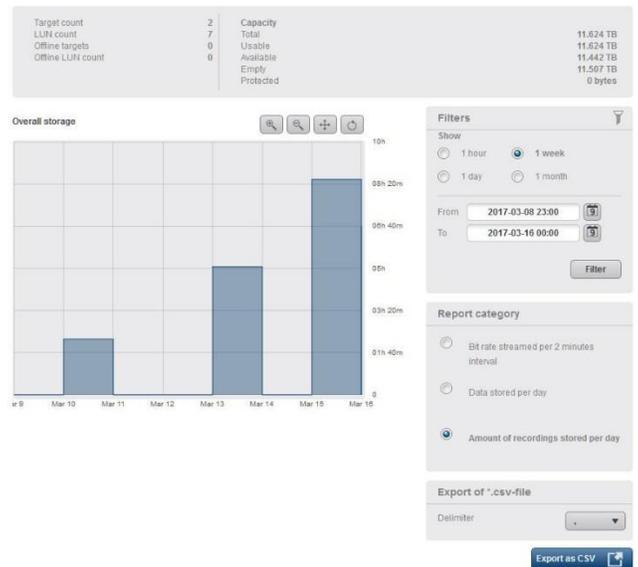
Storage Targets

The *Targets* menu provides detailed information about the system's iSCSI targets on an individual basis. This menu can be sorted as "All" or on a Pool basis

Target address	iSCSI session count	Total capacity	Available capacity	Empty capacity	Protected capacity	LUN count
192.168.1.200/0	5	6.267 TB	6.155 TB	6.206 TB	0 bytes	4
192.168.1.21/0	4	5.357 TB	5.233 TB	5.301 TB	0 bytes	3

Storage LUNS

The *LUNs* menu provides configuration and activity data on a LUN by LUN basis. This data can be filtered on an All or by Target basis
- LUN Addressing is as follows: *192.168.1.200= IP /0 = iSCSI Target or NIC   / 1 = LUN number*

LUN address	Current bit rate	Total capacity	Available capacity	Empty capacity	Protected capacity
192.168.1.200/0/0	1 Mbps	931 GB	907 GB	907 GB	0 bytes
192.168.1.200/0/1	0 bps	1.721 TB	1.685 TB	1.703 TB	0 bytes

Storage Blocks

The *Blocks* menu provides detailed storage information on a block by block basis. The information can be filtered on a Target and LUN basis. The information in this menu also includes if the block is currently mounted or if it is available to be allocated to a different device.

Target	192.168.1.200/0 (4) ▼	LUN	192.168.1.200/0/1 ▼

Block address	Recording camera name	Recording from	Recording...	Duration	Allocated device	Recording camera	Min. stora
0	Camera 1 (192.168.1.81)	2017-03-02 13:50.	2017-03-02 14.	13m 14s	0.0.0.0/0	192.168.1.81/0/1	2017-03-0:
1	Camera 1 (192.168.1.81)	2017-03-13 15:58.	2017-03-13 16.	02m 29s	0.0.0.0/0	192.168.1.81/0/1	2017-03-1;

Storage Protected Blocks

The *Protected Blocks* menu provides information on video that has been protected either automatically via alarm, or manually been protected. The "protect video" feature allows for the protection of incident video for an indefinite period. Protected video will remain in the system until it is manually "un-protected"

- Large amounts of automatically protected video from misconfiguration of alarm settings can inadvertently affect the system's retention capabilities.

Allocation status	
Protected blocks	1
Restrained blocks	11783
Available blocks	11732

Block address	Recording camera name	Recording from	Recording...	Duration	Allocated device	Recording camera	Min. stora
74	Camera 1 (192.168.1.60)	2017-03-16 08:37.	2017-03-16 09.	01h 21m ...	0.0.0.0/0	192.168.1.60/0/1	2017-03-1;

System Logbook

The *Logbook* menu provides current and past system log information. Logs can be filtered, viewed, and exported by date and type.

System ▶ Logbook

| Event log | Block history log | RCP+ log |

Time	Address	Group	Type	Description
15:49:47	192.168.1.60\0	Sender	Internal	Some blocks do not fit to record...
15:49:47	192.168.1.60\0	Sender	Internal	Found invalid blocks in list. The...
15:49:47	192.168.1.200\0\...	Storage	Internal	Could not allocate block with st...
15:49:47	192.168.1.200\0\...	Storage	Internal	Could not allocate block with st...
15:49:35	192.168.1.60\0	Sender	Internal	Some blocks do not fit to record...
15:49:35	192.168.1.60\0	Sender	Internal	Found invalid blocks in list. The...
15:49:35	192.168.1.200\0\...	Storage	Internal	Could not allocate block with st...
15:49:35	192.168.1.200\0\...	Storage	Internal	Could not allocate block with st...
15:49:35	192.168.1.200\0\...	Storage	Internal	Could not allocate block with st...
15:49:35	192.168.1.200\0\...	Storage	Internal	Could not allocate block with st...

1/101 ▶   Go to page [   ]

Filter

Show   2017-03-17.log ▼

Export

Select for export:

☑ Current configuration
☑ Event log
☑ Block history log
☐ RCP+ log
☐ Playback log
☐ Performance log

From   To
2017-03-15 9   2017-03-17 9

Export as ZIP

System Playback
The *Playback* menu provides information on the current number of video playbacks being conducted via the VRM service. Information provided includes the user information on who is performing the playback.
- Direct from storage playbacks are not tracked in this menu
- A pro VRM system is capable of 64 simultaneous tunneled playbacks
- There are VRM playback limitations on DIVAR Recording Appliances. These are based on model number and the generation of the appliance.

Playback count	1

Playback type	Started	User	Track ID	Playback session ID	Data type
Original (block-based)	2017-03-16 09:5.	srvadmin@..	10	0x8000a	0x1003

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System Jobs

The *Jobs* menu provides information on internal tasks being performed by the VRM service, to include formatting, export and reorganization jobs.

System ▶ Jobs

Number of jobs		Number of active jobs	
Total	9	Total	0
Formattings	0	Formattings	0
Exports	0	Exports	0
Reorganizations	9	Reorganizations	0

| Exports | Formattings | Reorganizations |

	Job ID	Camera address	Start time	End time	Account	Status	Progress	Error	Past execution

System Pools

The *Pools* menu provides base information on the virtual storage pools configured in the VRM System. VRM can support up to 120 virtual storage pools to provide either logical or physical segmentation of a system. The information provided is based on the entire contents of the pool.

▼ List

Preset [Advanced ▼]   [Preset options...]

Pool	Pool name	Load-balancing mode	Bit rate limit	iSCSI sessions limit	Bit rate forecast	iSCSI session forecast
0	Pool 0	Failover	120 Mbps	128	0 bps	3
1	Pool 1	Failover	120 Mbps	128	0 bps	4

Once a specific Pool has been highlighted in the above menu, a "Details" menu will be in the lower portion of the page. The details menu provides in depth information on the pool and can be filtered several ways, to include by devices and capacity (Active Chart).

Pool ▶ 0

Pool	0	Load balancing		Devices		Capacity	
Target count	1	Bit rate limit	120	Total	2	Total	6.267 TB
LUN count	4	iSCSI sessions limit	128	Licensed channels	2048	Protected	0 bytes
Offline target count	0	Cameras		Offline camera count	0	Available	6.162 TB
Offline LUN count	0	Recording	2	Signal loss count	0	Empty	6.205 TB
		Total	2				

| Storage | Devices | Capacity |

[Basic ▼]   [Preset options...]

Target address	Connection time	Total capacity	Available capacity	Empty capacity	Protected capacity
192.168.1.200/0	14m 6s	6.267 TB	6.162 TB	6.205 TB	0 bytes

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