

Storage Calculator User Guide

Version 2.3
(Aug. 20, 2020)

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1 Introduction

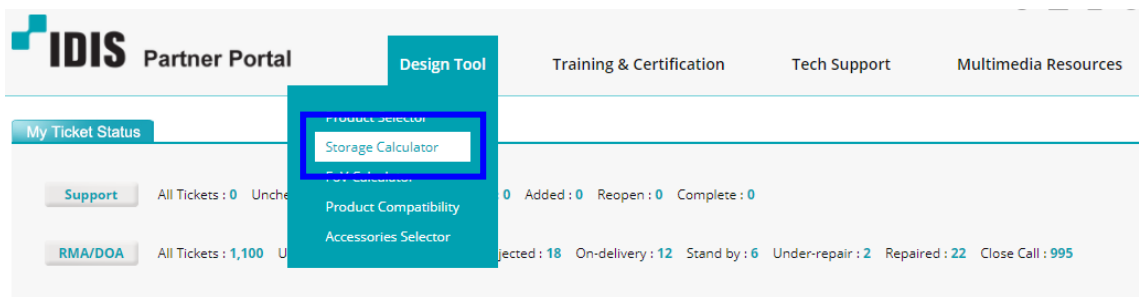
Storage Calculator shows estimated network bandwidth according to network camera. Bandwidth is depending on camera codec, resolution, frame rate and quality.

2 Connection

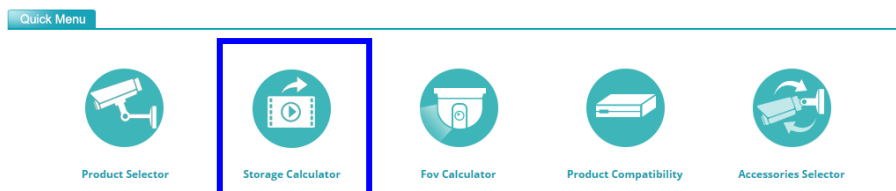
2.1 Visit IDIS Partner Portal. (<https://partner.idisglobal.com>)

2.2 The way to connect to storage calculator.

2.2.1 Design Tool Menu

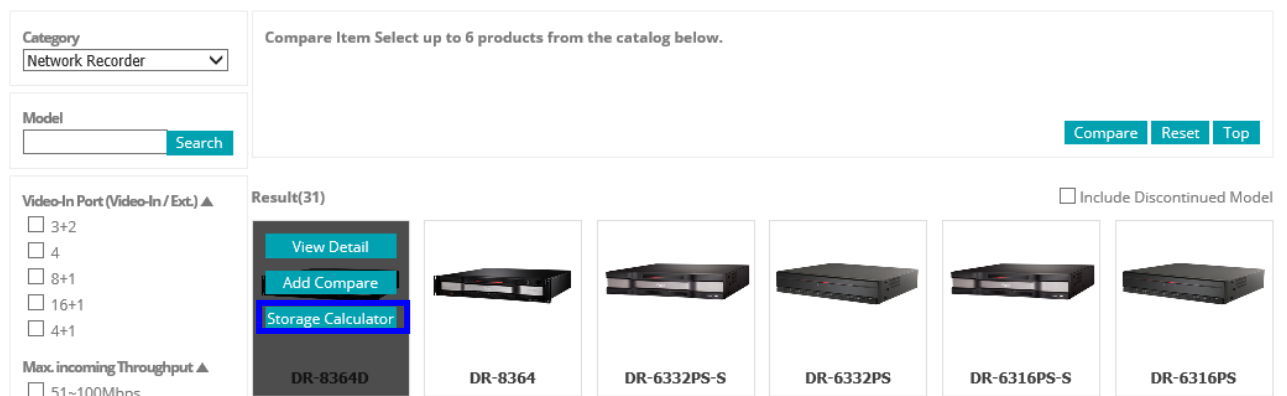


2.2.2 Quick Menu



2.2.3 Product Selector

Product Selector



3 Storage Calculator Main Page

3.1 Note

This Storage Calculator provides you with a quick overview of how much storage is required for your designed surveillance system. Actual results may vary based on the actual bitrate. Also additional factors may influence a storage capacity as well as the number of recording days

3.2 Configuration Items

Storage Calculator NOTE

Project 1 +
Ver 1.00

Bandwidth Unit : Mbps v

Recorder

Recorder Model : DR-1104P v Channel Allocation Optimization

Camera

Camera Model : DC-B1001 v Number of Cameras : 1 Open Detail Setting Insert Camera

Selected Cameras

Camera Model	Number of Cameras	Bandwidth				Menu
		Recording	Live	Remote	Total	
DC-B1001	1	4.1 Mbps	0.77 Mbps	0.5 Mbps	5.37 Mbps	Edit Del Copy

Recordable Time Length

Storage Capacity	Hour(s)	Day(s)	Week(s)	Month(s)
1 TB v	568.89	23.70	3.39	0.79

Required Disk Capacity

Record Duration	Storage Capacity
10 Hour(s) v	0.02 TB v

Calculator Download
Project Save
Report

3.2.1 Recorder

- Select the product from list. They could be DR, TR, IR or ISS.
- Check “Channel Allocation Optimization” for DirectIP 2.0 bitrate allocation.

3.2.2 Camera

- Select the product from list. They could be IP camera, HD-TVI camera or Encoder.
- Input number of cameras. There is camera number limitation depending on Recorder.
- Open Detail Setting: Record Video Profile, Intelligent Codec, Recording Setting and Stream can be pre-defined before inserting camera.
- Insert Camera: Calculated Bandwidth result is shown by pressing button.

3.2.3 Selected cameras

- Camera Model: The camera which is selected from the list is displayed.
- Number of Cameras: Entered camera numbers are displayed.
- Bandwidth: Recording, Live, Remote and Total bitrate values are displayed as set.
- Menu (Edit/Del/Copy): Editing the detailed setting, deleting or copying entered camera can be proceeded by pressing each button.

3.2.4 Recordable Time Length

- It shows recordable time according to storage capacity.
- It is available to change the capacity unit such as GB, TB or PB.

3.2.5 Required disk capacity

- It shows required capacity according to recording period.
- It is available to change the time unit such as Hour(s), Day(s), Week(s) or Month(s).

3.2.6 Calculator Download

- Current Storage Calculator can be download for using locally. This downloaded calculator consists of html and JavaScript files.

3.2.7 Project Save

- This project can be saved to My Page.

The screenshot shows the IDIS Partner Portal interface. The top navigation bar includes the IDIS logo, 'Partner Portal', and links for 'Design Tool', 'Training & Certification', 'Tech Support', and 'Multimedia Resources'. The user is logged in as 'IDIS : RAY_SUN'. The 'My Page' section is active, showing a sidebar with links for '- Logout', '- My Information', and '- My Storage Calculation' (highlighted with a red box). The main content area displays a table titled 'My Storage Calculation' with the following data:

No.	Project	Date	View
2	Project 2	2018-04-19	View
1	Project 1	2018-04-19	View

A 'Delete Check' button is located below the table.

3.2.8 Report

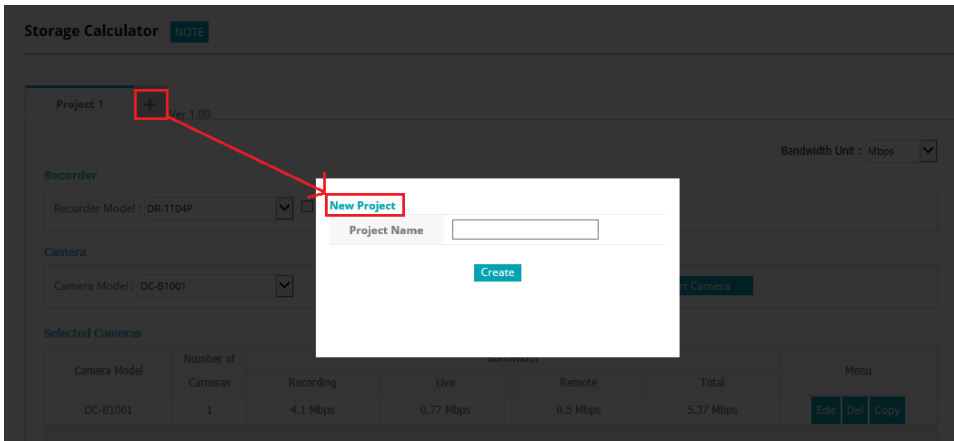
- You can get the report as printed paper, PDF file or Excel file.

3.2.9 Bandwidth Unit

- It is available to change the bandwidth unit such as bps, Kbps, Mbps, Bps, KBps or MBps.

3.2.10 New Project

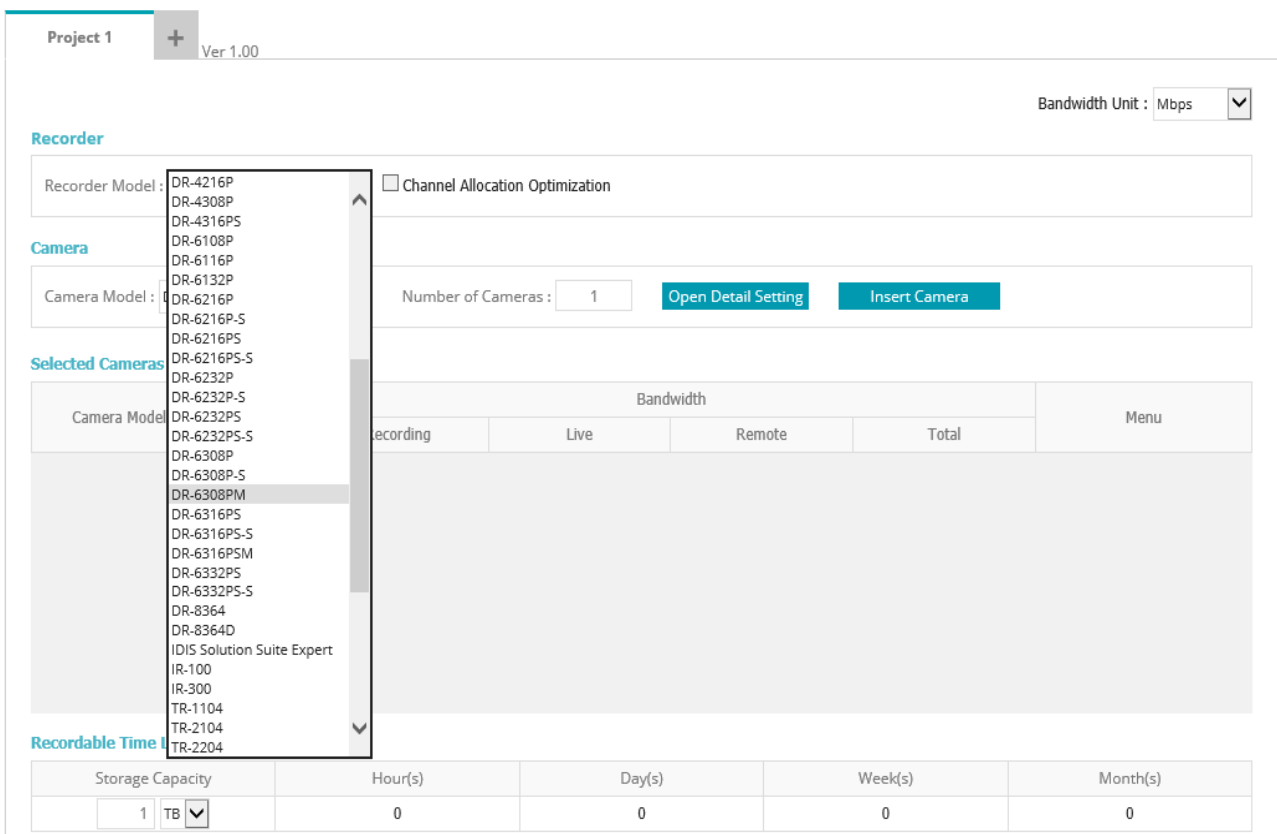
- It is available to make a new project by pressing “+” on tab.



4 How to use

4.1 Select Recorder

Select recorder from the list.



4.1.1 Channel Allocation Optimization

→ When selected NVR that supports Channel Allocation, Channel Allocation Optimization button will be checked.

Recorder

Recorder Model : Channel Allocation Optimization

4.1.2 Max. Total Allocation Throughput

→ When Channel Allocation Optimization button is checked, Max. Total Allocation Throughput will show as below.

Selected Cameras Max. Total Allocation Throughput : 0 / 180

4.2 Select Camera

Select camera from list.

Storage Calculator [DISCLAIMER](#)

[User Guide](#)

Project 1 Ver 1.6

Bandwidth Unit : Mbps

Recorder

Recorder Model : Channel Allocation Optimization

Camera

Camera Model : Number of Cameras : [Open Detail Setting](#) [Insert Camera](#)

Selected Camera bughput : 0 / 180

Camera Model	Bandwidth				Menu
	Stream1	Stream2	Stream3	Total	

RAID Option

RAID Type :

Recordable Time Length

Storage Capacity	Hour(s)	Day(s)	Week(s)	Month(s)
1 TB	Infinity	Infinity	Infinity	Infinity

Required Disk Capacity

Record Duration	Storage Capacity
10 Hour(s)	0.00 TB

4.3 Camera Edit

4.3.1 Insert camera

→ Choose camera model from the list and click 'Insert Camera' button.

Recorder

Recorder Model : Channel Allocation Optimization

Camera

Camera Model : Number of Cameras : [Open Detail Setting](#) [Insert Camera](#)

Selected Cameras

Camera Model	Number of Cameras	Bandwidth				Menu		
		Recording	Live	Remote	Total	Edit	Del	Copy
DC-B3303X	1	6.66 Mbps	1.02 Mbps	0.5 Mbps	8.18 Mbps	Edit	Del	Copy
DC-D3533HRX	2	11.47 Mbps	3.21 Mbps	2.05 Mbps	16.73 Mbps	Edit	Del	Copy

→ Number of Camera Limitation: There is a limitation on the number of camera that can be inserted depending on the Recorder Channel.

4.3.2 Edit camera

→ Intelligent Codec: You can select the "Use Intelligent Codec" to apply a bit rate reduction effect.

This feature can be selected on specific cameras that support Intelligent Codec.

→ Record Video Profile/Live/Remote Profile: A user can set Codec, Resolution, Frame Rate and Video quality of each video profile.

- For DR-83/84xx, DR-63xx(except DR-6308PM, 6316PSM), DR-43xx, DR-23/24xx and DR-13xx Series, the Video quality comes in with two options which depends on Channel Allocation Optimization.

Channel Allocation Optimization	
On	Off
<p>Video quality</p> <p>7 (Very High) <input type="checkbox"/></p> <p>1 (Basic) <input type="checkbox"/></p> <p>2 <input type="checkbox"/></p> <p>3 (Standard) <input type="checkbox"/></p> <p>4 <input type="checkbox"/></p> <p>5 (High) <input type="checkbox"/></p> <p>6 <input type="checkbox"/></p> <p>7 (Very High) <input checked="" type="checkbox"/></p>	<p>Video quality</p> <p>Very High <input type="checkbox"/></p> <p>Basic <input type="checkbox"/></p> <p>Standard <input type="checkbox"/></p> <p>High <input type="checkbox"/></p> <p>Very High <input checked="" type="checkbox"/></p>

→ Set Recording: A user can set Event Ratio (from 0% to 100%), MAT Ratio (from 0% to 100%) and Recording Period (Total 24hrs).

Record Video Profile Use Intelligent Codec Use WDR Use SSL

	Encode	Resolution	Frame Rate	Video quality	Bandwidth
Time Lapse	H265 ▼	1920x1080 ▼	30 ▼	Very High ▼	5.12 Mbps
Events	H265 ▼	1920x1080 ▼	30 ▼	Very High ▼	5.12 Mbps
MAT	H265 ▼	1920x1080 ▼	1 ▼	Very High ▼	0.1 Mbps

Set Recording

Event Ratio (Frequency)	0 % (Enter the probability that events will occur within the set Event time)
MAT Ratio (Frequency)	0 % (Enter the probability that motion will occur within the set Time Lapse time)
Recording Period (Hours per Day)	Time Lapse & Event : 0 Hours + Time Lapse : 24 Hours + Event : 0 Hours + No Record : 0 Hours = 24 Hours

Bandwidth Result

Time Lapse	5.12 Mbps	Events	0 Mbps	Total	5.12 Mbps
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Live/Remote Video Profile

	Encode	Resolution	Frame Rate	Video quality	Bandwidth
Stream1	H265 ▼	1920x1080 ▼	30 ▼	Very High ▼	5.12 Mbps
Stream2	H265 ▼	640x360 ▼	30 ▼	Very High ▼	1.54 Mbps
Stream3	H265 ▼	640x360 ▼	5 ▼	Very High ▼	0.73 Mbps

4.4 RAID Option

→ Selecting RAID type is available when the selected NVR supports RAID feature.

→ Default RAID type is "NONE".

→ When RAID type is selected, "Minimum Required HDD Quantity" is shown and calculated Recordable Time Length and Required Disk Capacity values. (these values are re-calculated from the original calculated values by RAID formula)

RAID Option

RAID Type : RAID1 ▼	Minimum Required HDD Quantity : 2
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4.5 Edit Recordable Time Length

→ Displays the recording time corresponding to the storage capacity in hours, days, weeks and months.

Recordable Time Length

Storage Capacity	Hour(s)	Day(s)	Week(s)	Month(s)
1 TB ▼	145.64	6.07	0.87	0.20

4.6 Edit Required Disk Capacity

→ Displays storage capacity according to record duration.

Required Disk Capacity

Record Duration	Storage Capacity
10 Hour(s) ▼	0.07 TB ▼

5 Channel Allocation Optimization

5.1 Applied NVR Product

→ Channel Allocation Optimization feature is applied for DR-83/84xx series, DR-63xx series, DR-43xx series, DR-23/24xx series and DR-13xx series so far.

5.2 Background

→ When a high-resolution camera was registered to NVR, it occupied multiple channels on NVR. So, it is unavailable to register the high-resolution camera as many as the channel number of the NVR. However, if using the Channel Allocation Optimization feature, it becomes to be available to register as many cameras as the channel number of the NVR.

5.3 Bitrate Allocation

→ When bitrate is assigned to each channel, the bitrate calculation value of each stream cannot exceed the assigned bitrate value.

→ The bitrate allocation can be changed and the sum of all channel allocation values cannot exceed the overall performance of NVR.

→ If the initial stream configuration bitrate of camera is greater than the bitrate assigned to the channel, quality, ips and resolution values of the stream will be sequentially changed to a smaller value. (Priority: Quality → ips → Resolution)

→ All settings including stream1 and stream2 can be changed, but no stream can be set beyond the allocated bitrate.

→ Max. Total Allocation Throughput = $\frac{\text{Current Inserted Cameras' Total Allocation Bitrate}}{\text{Max. Allocation Bitrate on each NVR}}$

Recorder

Recorder Model : Channel Allocation Optimization

Camera

Camera Model : Number of Cameras :

Selected Cameras

Max. Total Allocation Throughput: 39 / 230

Camera Model	Number of Cameras	Bandwidth				Menu
		Stream1	Stream2	Stream3	Total	
DC-D4223RX	1	5.12 Mbps	1.54 Mbps	0.73 Mbps	7.39 Mbps	<input type="button" value="Edit"/> <input type="button" value="Del"/> <input type="button" value="Copy"/>
DC-T4233WRX	2	10.24 Mbps	3.07 Mbps	1.46 Mbps	14.77 Mbps	<input type="button" value="Edit"/> <input type="button" value="Del"/> <input type="button" value="Copy"/>
DC-Y8C13WRX	3	20.15 Mbps	6.28 Mbps	5.3 Mbps	31.73 Mbps	<input type="button" value="Edit"/> <input type="button" value="Del"/> <input type="button" value="Copy"/>

→ This is same as below Total Bitrate (yellow box) on the Camera Registration mode of NVR.

Bitrate Allocation

1. 5 Mbps	2. 6 Mbps	3. 15 Mbps	4. 10 Mbps
5. 5 Mbps	6. 7 Mbps	7. 7 Mbps	8. 7 Mbps
9. 7 Mbps	10. 7 Mbps	11. 7 Mbps	12. 7 Mbps
13. 7 Mbps	14. 7 Mbps	15. 7 Mbps	16. 7 Mbps
17. 7 Mbps	18. 7 Mbps	19. 7 Mbps	20. 7 Mbps
21. 7 Mbps	22. 7 Mbps	23. 7 Mbps	24. 7 Mbps
25. 7 Mbps	26. 7 Mbps	27. 7 Mbps	28. 7 Mbps
29. 7 Mbps	30. 7 Mbps	31. 7 Mbps	32. 7 Mbps
Total Bitrate :		230M (Max 230M)	

Default Apply **Cancel**

→ Since the performance differs depending on the product, the default value of channel allocation bitrate according to each product different.

- 4CH product: upto **70Mbps**
- 8CH product: upto **130Mbps**
- 16CH product: upto **180Mbps**
- 32CH product: upto **230Mbps**
- 64CH product: upto **400Mbps**

Version History

Version	Writer	Revision Date	Remarks
2.3	David Namgoung	Aug. 20, 2020	Added additional Video quality option Removed WDR and SSL feature option
2.2	Ray Sun	Aug. 30, 2019	Added WDR and SSL feature option Improvement for calculating with MAT
2.1	Ray Sun	May. 08, 2019	Update explanations regarding Channel Allocation and others
2.0	Ray Sun	Apr. 20, 2018	Add Intelligent Codec feature Improvement for Channel Allocation Optimization
1.0	Brandon Jo	Sep. 22, 2017	Initial Release