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Securing Your World.

## **USER MANUAL**

### RAID SETUP

#### RAID

The RAID function has a high requirement on hard disk performance. To ensure long-term stable operation and reliability of RAID, it is recommended that you use enterprise-class hard disks (including brand, model, and capacity) for RAID creation and other configurations. If surveillance-class or desktop-class hard disks are used, data security may be affected. The company shall not be liable for the data loss or data damage caused thereby. Currently, only the 8-bay and 16-bay models support the RAID function.

#### **Enabling RAID**

Choose **Main Menu > System > General** to open the general setting page. Select Enable Raid to enable the **RAID** function, and then save the configuration. The configuration will take effect after the system is restarted.

General	Date and Time DST	Output Configuration	Auxiliary Screen & D	ecoding I	Keyboard
	Device Name	N1064-8HDD			
	Device ID	000000			
	Language	ENGLISH		~	
	Video Format	NTSC		×	
	Menu Timeouts	OFF		~	
	Web Session Timeout (min)	1440		<b>P</b>	review Session Timeout
	✓ Show wizard				
	Enable Raid				

**Note:** After the RAID function is enabled, the NVR does not support ESATA and NAS.

#### **Creating RAID**

You can create **RAID** either in one click or manually. For one-click creation, **RAID5** is created by default. For manual creation, **RAID0**, **RAID1**, **RAID5**, **RAID6**, and **RAID10** are supported. You can create different types of **RAID** in accordance with the actual number of hard disks to be accessed.

RAID Type	Hard Disk Quantity
RAID0	≥ 2
RAID1	2
RAID5	≥ 3
RAID6	≥ 4
RAID10	4 or 8

Hard Disk Quantity	/ for	RAID	Creation
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-hstalled hard disk with a capacity less than 4 TB,

it cannot be selected for RAID creation.

Note: The capacity of a single hard disk used for I

#### (1)Automatic RAID Creation

Through one-click configuration, the device can quickly create RAID and virtual disks. RAID5 is created by default in one-click configuration, and at least four hard disks should be installed.

Disk	S.M.A.R.T	RAID					
No.	Slot No.	Serial No.	Model	Total Capacity	Array	Туре	
1	HDD1	TOSHIBA DT02ABA400V	X111S00ESNFH	3726G		Normal Disk	Add Hot Spare Disk
2	HDD2	WDC WD40EJRX-89AKWY0	WD-WX22DB078L86	3726G		Normal Disk	Add Hot Spare Disk
3	HDD3	ST10000VE001-38X101	WP00EJSV	9314G		Normal Disk	Add Hot Spare Disk
4	HDD4	WDC WD20PURX-64PFUY0	WD-WCC4M4RDAKSC	1863G		Normal Disk	
5	HDD5	ST8000VX004-2M1101	WKD2Y5BS	7452G		Normal Disk	Add Hot Spare Disk
6	HDD6	TOSHIBA DT02ABA400V	X111S01BSNFH	3726G		Normal Disk	Add Hot Spare Disk
7	HDD7	ST8000VX004-2M1101	WKD2N09C	7452G		Normal Disk	Add Hot Spare Disk
8	HDD8	TOSHIBA HDWN160	27A1K0ENFPAE	5589G		Normal Disk	Add Hot Spare Disk

Automatic	RAID Creation	Create RAID						
	RAID Name	Туре	Total Capacity	Status	Hot Spare Disk	Disk	Task	

#### (2)Creating RAID Manually

To create RAID manually, click **Create RAID** to open the **Create RAID** page. Set the RAID name, select the RAID type, select the hard disks, and click **OK** to create the RAID. After the RAID is created, format the RAID.



To enable the RAID for normal use, you need to format the RAID first. After RAID formatting is completed, open the disk group configuration page, select the disk group and recording channels, and ensure that camera recording is normal.

Disk Disk G	irou		8.M.)	R.T		AID											
Disk Group Type	R	ecore	Disk	Gro	φ												
Disk Group	Re	econ	Disk	Gro	up 1												
Record Channel																	
IP Camera	1	2	3	4	5	.6	7	8	9	10	11	12	13	14	15	16	
	17	18	19	50	21	22	23	24	25	26	27	28	29	30	31	32	
	33	34															
		50															
	65	66	67	68	69	70	71	72	78	74	75	76	$\pi$	78	79	80	
	81	82	83	84	85	88	87	88		90	91	92	33	H	35	10	
	87	10	202	100	101	102	103	104	105	105	107	108	109	110	111	112	
	173	1114	115	110	112	118	118	120	121	122	123	124	120	126	127	128	
	1.45	1.45	147	148	149	150	151	152	153	154	155	154	157	158	150	160	
	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	
	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	
	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	
	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	

#### **Setting Hot Spare Disks**

To ensure RAID security, when RAID is in degraded status, the system can automatically carry out RAID rebuilding. Therefore, it is recommended that hot spare disks be configured. On the RAID configuration page, select an idle hard disk, click the **Add HotDisk** button, and confirm the hot spare disk setting. (Hot spare disks are public disks and can be used by all created RAIDs.)

Disk	S.M.A.R.T	RAID					
No.	Slot No.	Model	Serial No.	TotalSize	Array	Туре	
1	HDD1	WDC WD64PURZ-85BWUY0	WD-WX42D5275N42	5589G		Normal Disk	Add HotDisk
2	HDD2	WDC WD64PURZ-85BWUY0	WD-WX42D5275F7Z	5589G		Normal Disk	Add HotDisk
3	HDD3	WDC WD64PURZ-85BWUY0	WD-WX42D5275YAE	5589G		Normal Disk	Add HotDisk
4	HDD4	WDC WD64PURZ-85BWUY0	WD-WX42D5275JLD	5589G		Normal Disk	Add HotDisk
5	HDD6	WDC WD40EJRX-89AKWY0	WD-WX22DB078L86	3726G		Normal Disk	Add HotDisk
6	HDD7	WDC WD64PURZ-85BWUY0	WD-WX42D5275XSK	5589G		Normal Disk	Add HotDisk
7	HDD8	WDC WD64PURZ-85BWUY0	WD-WX42D5275VRC	5589G		Normal Disk	Add HotDisk

#### **Rebuilding RAID**

The operational status of a RAID includes normal, degraded, and offline. To give full play to RAID advantages and ensure the security and reliability of data storage, you can maintain the disks in a timely manner by viewing RAID status. For a RAID, when there is no physical disk loss, the RAID is in normal status; when the number of physical disks lost exceeds the threshold for the RAID type, the RAID is in offline status; when the actual situation is between the two cases, the RAID is in degraded status. When a RAID is in degraded status, it can be restored to normal status through RAID rebuilding.

#### (1) Rebuilding RAID Automatically

Automatic RAID rebuilding requires that the device should be configured with hot spare disks in advance and the hot spare disk capacity

should be not less than the capacity of the smallest disk of the RAID. If the above conditions are met, when a hard disk in a RAID is lost or damaged, the hot spare disk is activated and considered as a candidate disk for the RAID, and then the automatic rebuilding task is started. For example, RAID5 consists of hard disks 1, 2, and 3, and hard disk 4 has been configured as a hot spare disk. Hard disk 2 fails in operation, and the system does not detect it. Therefore, RAID5 is in degraded status, and hard disk 4 is immediately activated and considered as a candidate disk. Then, the rebuilding process is started.

No.	RAID Name	Туре	TotalSize	Status	HotDisk	Disk	Task
1	raid5	RAID5	11177G	Degrade	0	134	Rebuilding.progress0%

**Note:1**.After rebuilding is completed, the RAID is restored to normal status. 2.After automatic rebuilding is completed, you need to insert a normal hard disk and set it as a hot spare disk to ensure that the automatic rebuilding process can be started normally the next time an exception occurs.

No.	RAID Name	Туре	TotalSize	Status	HotDisk	Disk	Task
1	raid5	RAID5	11177G	Normal	0	134	None

#### (2) Rebuilding RAID Manually

When a RAID is in degraded status, if it has no hot spare disk, automatically rebuilding cannot be implemented. You need to manually rebuild the RAID to restore it to normal status. On the RAID configuration page, select an idle disk, and click the **Rebuild RAID** button, verify the password, and then start RAID rebuilding. After the rebuilding is completed, the RAID is restored to normal status.

Disk	S.M.A.R.T	RAID								
No.	Slot No.	Model	Serial	No.	TotalSize	Array	Туре			
<b>v</b> 1	HDD2	WDC WD64PURZ-85BV	WUY0 WD-WX42D	5275VRC	5589G		Normal Disk	Add HotDisk		
	HDD3	WDC WD64PURZ-85BV	VUY0 WD-WX42D	5275JLD	5589G	raid5	Raid Disk			
3	HDD4	WDC WD64PURZ-85BV	VUY0 WD-WX42D	6275N42	5589G	raid5	Raid Disk			
OneClick	Create RAID	Create RAID								
	RAID Nan	ne Type	TotalSize	Status	HotDisk	Dis	k	Task		
1	raid5	RAID5	11177G	Degrade		34		None	Rebu	Id RAID
									ł	

#### **Deleting RAID**

Select the RAID to be deleted, click the **Delete RAID** button, enter the administrator password, and click **OK** to delete the RAID.

No.	RAID Name	Туре	TotalSize	Status	HotDisk	Disk	Task	
<b>v</b> 1	raid5	RAID5	11177G	Degrade		34	None	Rebuild RAID
Delete R	AID RAID Inf							



Applicable to the following NVRs:

CGSD-NVRFNC4K-32NP-N GSD-NVRFNC4K-64NP-N GSD-NVRFNC4K-256NP-NP

BRAND	HARD DISK Model	TYPE	STORAGE CAPACITY	STORAGE TECHNOLOGY	HARD DISK Formatting	VIDEO Playback	FACE LIBRARY Import data	LOG SEARCH
WESTERN	HUS726T6TALE6L4	ENTERPRISE	6T	CMR	¥	×	×	¥
DIGITAL	WUS721010ALE6L4	CLASS	10T	CMR	~	×	×	~
GOLD	WUS721010ALE6L4	(RAID)	22T	CMR	×	¥	×	¥
TUCHIBY	MG08ADA800E	ENTERPRISE	12T	CMR	×	¥	×	¥
IUSHIDA	MG07ACA12TE	CLASS (RAID)	14T	CMR	~	×	×	~
	ST6000NM019B		6T	CMR	<b>v</b>	×	×	×
SEAGATE	ST10000NM017B	ENTERPRISE	10T	CMR	×	¥	¥	¥
EXOS	ST14000NM000J		14T	CMR	×	×	×	×
	ST18000NM000J	(ITAID)	18T	CMR	¥	¥	×	¥

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