

Quick Start Guide



The Vision of Security GV-Storage System



This guide is designed to assist the new user in getting immediate results from the GV-Storage System. For advanced information on how to use the GV-Storage System, please refer to GV-Storage System User's Manual.

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Working with GV Products

GV-Storage System can work in conjunction with these GV products to save data: GV-System version 8.2, GV-Video Server version 1.4, GV-Compact DVR and GV-NVR.



Note:

- GV-System version 8.2 and GV-NVR provides Backup Server and Backup Viewer functions. Backup Server allows you to back up recorded data to GV-Storage System automatically, while Backup Viewer allows you to access the data from any computer. For details see *Surveillance System User's Manual.*
- For the connection with GV-Video Server and GV-Compact DVR, see their own user's manuals.

Package List

- GV-Storage System
- AC Power Cord x 2
- Lock Key x 2
- Self-Stick Rubber Pad x 4
- GV-Storage System User's Manual on software CD
- GV-Storage System Quick Start Guide on software CD

Before You Begin

Before starting, prepare the following items:

- Check Certification List in Appendix to confirm the hardware setting is fully supported
- A DVR server of **GV-System version 8.2** with a network interface card (NIC)
- CAT 5e or CAT 6 LAN cables for one management port and two iSCSI data ports

(CAT 6 cable is recommended for best performance)

- Prepare storage system configuration plan
- Network information of management and iSCSI data ports, including static IP addresses, subnet mask, and default gateway
- A Gigabit Layer 2 or Layer 3 managed stackable switch
- CHAP security information, including CHAP username and secret (Optional)

Usage Notice

Please pay attention to the following notice when you use the storage system.

Recommended Hard Drive

To avoid compatibility issues between the storage system and hard drives, we strongly suggest you use **Seagate Barracuda ES series drives**. For details on drive models, see Certification List in GV-Storage System User's Manual.

Replacing Hard Drives

Don't turn off the power of the drive bay when replacing the hard dive, otherwise RAID failure could occur.

• Before Power Off

It is better to execute "Shutdown" through LCD panel menu to flush the data from cache to physical disks before power off.

UDV (User Data Volume) Restriction

Don't assign the same UDV to more than one DVR host for recording usage; otherwise you may suffer data lost or corrupt.

Initiator Node Name Restriction

The Initiator node name only accepts lower-case letters. Use lower-case letters for **Host** name in the storage system, otherwise you cannot establish the connection between the storage system and DVR.

Order of Hard Drive Slots

Remember the order of hard drive slots on the storage system. When you see the warning message "Error: Disk, <slot> is failed", remove the failed hard drive in the correct slot. If you remove the hard drive in the wrong slot, you could suffer data loss.





Step 1 Install on a Network

- Connect the unit's management port to the network on which you will manage the storage system. The default IP address of the management port is http://192.168.0.200
- 2. Using LAN cables, connect the unit's iSCSI data ports to a Gigabit switch.
- 3. Install hard drives.
- 4. Using the two provided power cords, connect the unit's two power supplies to a different power source/circuit.



For details see 3.3 Installing on the Network in GV-Storage System User's Manual.



- 1. Turn on the two power switches on the rear panel.
- 2. Turn on the main power switch on the front panel.
- 3. Check status of powering on to ensure that everything is running smoothly.
 - **Power Supply LED**: The two LEDs on the rear panel should turn green.
 - **GigaLAN Detect LED**: The two LEDs on the front panel should turn green.
 - **Drive Bay LED**: Power LEDs for all drive bays containing hard drives should light up.

Rear Panel



Front Panel





On the management server, open the browser and enter the default IP:

http://192.168.0.200

Click any function on the left side of window; enter the default login name **admin** and password **admin**.



There are two methods to create a RAID volume.

- 1. If only one host connects to the storage system, you may use the Quick Install function to create a volume quickly. For this, follow the instructions in Part I.
- If more than one host connects to the storage system, you need to create an independent volume for each host for data storage. For this, follow the instructions in Part II.

Before creating a volume, please make sure all hard disks are installed in the system properly by selecting / **Volume config / Physical disk**. The status of hard disks should show "Good".

					Free	disks e	Global spares	• De	dicated spare:
		Slot	WWN	Size	VG	Status	1	2	Speed
plume config		1	2084001378a4a04d	372	ndame	Good	0 FR		1.5Gb/s
Volume group	8	2	2041001378a4003d	372		Good	Ø FR		1.5Gb/s
User data volume Cache volume	13	3	2029001378a4a04d	372		Good	10 FR		1.5Gb/s
Logical unit		4	208a001378a4a04d	372		Good	10 FR		1.5Gb/s
closure management		5	208b001378a4a04d	372		Good	10 FR		1.5Gb/s
	13	6	20040013780000a4	372		Good	C FR		1.5Gb/s
		7	203300137800006c	372		Good	13 FR		1.5Gb/s
	83	8	208d001378a4a04d	372		Good	10 FR		1.5Gb/s
		Auto spindowi	n: Disabled						
		Auto spindowi	n: <u>Unsabled</u>						

(Figure: Eight physical disks are inserted to slot 1 to slot 8. The size of each disk is 372GB. The status of the disks is good.)

Part I: Use "Quick Install"

1. Select **Quick install**, and choose **RAID level** from the drop-down list. Click **Next**.

RAID level :	- RAID 0 (2978 GB) - 🔻
	- RAID 0 (2978 GB) -
	- RAID 1 (372 GB) -
	- RAID 5 (2606 GB) -
	- RAID 6 (2234 GB) -

2. Type **Volume size** and select a **LUN** number. By default, the maximum volume size is shown. Click **Next**.

/ Quick install / Step2			5	8	
Volume size (GB) :	2606				
LUN :	- 0 - 🔹				
		<< Back	0	Next >>	0

(Figure: the maximum volume size is 2606GB, and 1 LUN (No. 0) is attached.)

Note: If using OS such as Windows XP, Windows 2000 or Windows Vista 32 bits, click **Cancel** when this warning message pops up "*LBA 64 Support?* Choose Cancel. It will change the sector size to 4K. The maximum capacity is up to 16 TB. This volume can not be Dynamic Disk."

3. Click **Confirm** if all setups are correct. Then a page with the "User data volume" is created.

ne config /	User data volume									≣ ↓	8	
						AI	tach		Create	•	Delete	
No.	Name	Size	Status	1	2	3	R %	RAID	#LUN	N na	r G	CV (MB)
1	QUICK13217	2606	Online	0 WB	HI B	• 1	0%	RAID 5	1	QUIC	(14613	383

(Figure: a RAID 5 user data volume with the UDV name "QUICK13217", named by the system itself, with the total available volume size 2606GB, and attached with 1 LUN.)

Note: The UDV (user data volume) created by "Quick Install" is accessible by every host. Access control of host would show as a wildcard "*". To see and modify the volume, select \ **Volume config** \ **Logical unit**.

Part II: Create an independent volume for each host

In this example, three UDVs (user data volume) are created in one VG, and assigned for three different hosts DVR system, Video Server and Compact DVR for data storage.

1. Create VG (Volume Group).

Volume config / Volur	ie group / Create		5	8	
Name :	Storage				
RAID level :	RAID 5 👻				
RAID PD slot :	1 2 3 4 5 6 7 8	Select PD	0		
		<< Back		Next >>	

- a. Select / Volume config / Volume group.
- b. Click Create.
- Type a VG Name, select a RAID level, press Select PD to choose the RAID PD slot(s), and then press Next.
- d. Check the outcome. Press Confirm if all setups are correct.
- e. A VG has been created.

/ Volum	e config / Volur	ne group	_			_	_			100	6 B	
								Create	2	0	Delete	0
	No.	Name	Total (GB)	Free (GB)	#PD	#UDV	Status	1	2	3	RAID	
	1	Storage	2606	2606	8	0	Online				RAID 5	
								Create	2	•	Delete	0

(Figure: Create a RAID 5 with 8 physical disks, named "Storage". The total size is 2606GB. Because of no related UDV there, free size still remains 2606GB.)

2. Create UDV (User Data Volume).

Name :	UDV-1			
VG name :	Storage 👻			
CV No. :	Global (383 MB) 💌			
Capacity (GB) :	1000			
Stripe height (KB) :	64 -			
Block size (B) :	512 👻			
Read/Write :	O Write-through cache Write-back cache			
Priority :	High priority Middle priority Low priority			

- a. Select / Volume config / User data volume.
- b. Click Create.
- c. Type a UDV name, choose a VG Name and enter a size to the UDV. Decide the stripe height, block size, read/write mode and set priority. Finally click **Confirm**.
- d. A UDV has been created.
- e. Do one more time to create another UDV.

							Att	ach	• (ireate o	Dele	te
	No.	Name	Size (GB)	Status	1	2	3	R %	RAID	#LUN	VG	CV (MB)
	1	UDV-1	1000	Online	0 WB	HI B	0 1	2%	RAID 5	0	Storage	383
•	2	UDV-2	800 o	Online	0 WB	HI 0	D I	0%	RAID 5	0	Storage	383
	3	UDV-3	806	Online	Ø WB	HI I	01	0%	RAID 5	0	Storage	383

(Figure: Create three UDVs named "UDV-1", "UDV-2" and "UDV-3", related to "Storage" VG. The size of "UDV-1" is 1000GB, the size of "UDV-2" is 800GB and the size of "UDV-3" is 806GB. The status of these UDVs are online, write back, high priority with cache volume 383MB. "UDV-1" is initialing about 2%. There is no LUN attached.)

3. Attach LUN to UDV.

Volume config / Logical unit / Attach	1	=	B	
UDV :	UDV-1 (1000GB) 🔻			
Host (iSCSI node name) :	dvrsystem			
LUN :	- 0 - 🔹			
Permission :	© Read-only Read-write			

- a. In / Volume config / User data volume, select a UDV and press Attach.
- Enter Host, which is an initiator node name for access control. Choose
 Permission to Read-write for data storage, and then click Confirm.
- c. A LUN and host have been created.
- d. Do one more time to create another LUN and host.

						-
				Atta	ch e	Detach •
	Host	LUN	Permission	UDV name		Session
cor	npactdvr	1	Read write	UDV-2		0
🔄 dv	rsystem	0	Read write	UDV-1		0
🗐 vid	eoserver	2	Read write	UDV-3		0

(Figure: UDV-1 is attached to LUN 0 which only initiator node named "dvrsystem" can access. UDV-2 is attached to LUN 1 which only initiator node named "compactdvr" can access. UDV-3 is attached to LUN 2 which only initiator node named "videoserver" can access.)

4. Done. The RAID volumns have been created.

Step 5 Configure Initiator on DVR Host

The DVR host needs to run and set up the iSCSI Initiator to request access for storage. The Microsoft iSCSI Software Initiator is available as a free download from Microsoft Download Center.

1. Run Microsoft iSCSI Initiator.



2. To add target portals, click the **Discovery** tab and click **Add**.



3. Type the IP address of GV-Storage System, and click **OK**. By default, the IP address of iSCSI data port 1 is **192.168.1.1**, and iSCSI data port 2 is **192.168.2.1**. If both data ports are used for connection to the DVR host, add two data port IPs respectively.



(Figure: In this example, we added iSCSI data port 1 of 192.168.0.170 and iSCSI data port 2 of 192.168.0.171 as target portals.)

4. Click the Targets tab and click Log On.



5. Select Automatically restore this connection when the system boots and click Advanced.

Target name	
an.2007-01	tw.com.geovision.storage.system-000a4a04d.default-tar
Automati	ally jestore this connection when the system boots
A Only se on your	ect this option if iSCSI multi-path software is already inst computer.

 Select Local Adaptor to Microsoft iSCSI Initiator, select Source IP to the host IP and select Target Portal to iSCSI data port 1. If the CHAP authentication is enabled at the storage system, select CHAP logon information and type a valid username and target secret (password). Click OK.

	PSec	
Connect	by usin	a
Local gd	lapter:	Microsoft iSCSI Initiator
Source	P.	192.168.0.150
Iarget P	ortal:	192 168.0.170 / 3260
CRC / Ch	ecksun	0
Data	digest	Header direct
- ghat	logon	Information
CHAP he betweet use it sp the torge	P logon Hos ens to targe ecity th it for th	information sure data security by providing authentication et and an inhibitor trying to establish a connection. To se same target CHAP secret that was configured on is inhibitor.
CHAP he betweer use it sp the torget User nor	logon to sens to targ eoity th t for th	Information et and an initiator trying to establish a connection. To as same target CHAP accret that was configured on a fablicor. I shattor.
CHAP he betweer use it sp the torge User her Target p	P logon Nos ens no targ eoity th t for th no: eoret	Internation Use data security by providing subwritication et and an inhibitor trying to estitutish a convection. To a which trying CHAP secret that was configured on a status; [alwrsystem]
CHAP he betweer use it sp the torgi User nor Target g	Plogon los ens i e targ ecity th t for th ne: ecret irm mub	Internation

(Figure: In this example, the DVR IP address is 192.168.0.150. The iSCSI data port 1 is 192.168.0.170)

 When the connection with the storage system is established, the status changes into "Connected". At this step, you can already use the iSCSI disk by the operation similar to the case to increase a local disk. Refer to step 13.
 If the iSCSI data port 2 is used for connection to the DVR host, click **Details** and

If the ISCSI data port 2 is used for connection to the DVR host, click **Details** and keep on the following steps.



8. Click Connections.



9. Click Add.



10. Click Advanced.



11. Select **Target Portal** to iSCSI data port 2, set up the CHAP authentication if necessary and click **OK**.

Connect by usin	a		
Local gdapter:	Microsoft ISCSI Initiator		
Source IP:	192.168.0.150		
Iarget Portat	192.168.0.171 / 3260		
CRC / Checksun			
Data digest	Header digest		
CHAP logon	information		
CHAP helps end between a targ use it specify th the target for th	ure data security by providing authentication et and an initiator trying to establish a connection. T e same target CHAP secret that was configured or is initiator.		
CHAP helps and between a targ use it specify th the target for th User name:	ure data security by providing authentication et and in inflater trying to establish a connection. T e same target CHAP secret that was configured or is inflator. divroystem		
CHAP helps end between a targ use it specify the the target for th User name: Target georet	ure data security by providing authentication et and an initiator trying to establish a connection. To exerce target CHAP secret that was configured or is initiator. diversystem		
CHAP helps end between a targ use it specify if the target for th User name: Target gecret Perform mut	uro dela security by providing authentication et end an instautor trying to establish a correction. The instant of the security of the security of the providence of the security of the security of the gloresystem 		

(Figure: In this example, the iSCSI data port 2 is 192.168.0.171.)

12. Now you can see the status of both Source Portals displays "Connected". Click **Apply**.



13. When connecting to the iSCSI disk at the first time, it is necessary to format it as well as a local disk. Run Windows **Disk Management** to configure a disk. Note the settings of the formatted partition should be **Basic disk storage** and **NTFS file system**.

⊨→ ◙ ₪ ₫ ⊉ ₫ ₽				
Computer Management (Local) South Terms Management (Local) South Terms Management (Local) Device Management Device Manag	GPDisk 0 Basic 74.52 GB Online	(C:) 29.29 GB NTPS Healthy (System)	Emb (D:) 22.46 GB NTP5 Healthy	NEW VOLUME (E:) 22.77 GB FAT32 Healthy
	CPDisk 1 Basic 1000.12 GB Online	1000.12 GB		ten
	CD-ROM 0 DVD (Ft)		Help	

For details see Chapter 7 About iSCSI Initiator in GV-Storage System User's Manual.



After formatting the iSCSI disk, you can add it to the recording path and use it for recording.

1. Click the Windows **Start** button, point to **Programs**, click **GV folder** and select **Hot Swap HDD Tool**.

Triver - MediaManTools						
Ext Stem Eods Driver (C) Preserve (S) Preserve (S) Color (S)	Driver: DA Prec Space: 114.08 Total Space: 119.20 08 Status: Unused Deplay actuals	Driver : E \ Pres Space : E 35: 08 Teld Space : IF 20 08 Sebut : Unused Deploy adults				

- 2. Right-click the iSCSI drive, and select Add for recording.
- 3. Select a storage group from **Add to** drop-down list. Click **OK** to automatically configure the iSCSI drive to the recording path.

Select a storage group to the recording path						
Recording Path :	E:IData-EI					
Add to :	Storage 1 👻					
- Storage Information	1					
C:19¥1480i	Cannera 1 Cannera 2 Cannera 3 Cannera 4 Cannera 6 Cannera 6 Cannera 7 Cannera 7 Cannera 9 Cannera 10 Cannera 11 Cannera 12 Cannera 13					
	ок	Cancel				

4. To verify the iSCSI drive is added successfully, check if the status of the drive displays "Standby". Or in GV-System, click the Configure button, point to General Setting, select System Configure, click the Set Location button, and then select Storage Group Folder to confirm the new recording path.

To automatically back up recorded files to the storage system, and to access the files from any computer, see Backup Server and Backup Viewer respectively in Surveillance System User's Manual.