

Innovative Thinking in Security

HD NVR & SW-E2200-CW03
Software Quick Start Guide



Revision History

Release date	Description
July 2018	▶ The initial release

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HD NVR

Component	Requirements
CPU	Intel® Core™ i5, recommended i7
RAM	4GB at least
Operating System	Microsoft® Windows® 7, 8.x or 10 (64 Bit) (Home Premium, Professional, Ultimate), Microsoft® Windows® Server 2008/2012 (64 Bit)
Display	<ul style="list-style-type: none">▶ Min. 2048 MB graphic memory (GeForce GTX graphics cards of at least 1050 Ti are recommended for our GPU)▶ 1280 x 1024 for the minimum resolution and 1680x1050 for the recommended resolution)
HDD & storage	<p>At least two hard disk drives. (One for the OS running and the other for data storage.) Recommended are GVD certified HDDs. For a list of them, visit GVD website (http://www.gvdigital.com) Support & Learning HDD Recommend List.</p> <p>* GVD does not guarantee the system performance if you use an HDD that isn't certified by GVD.</p> <p>* GVD recommends that you always use enterprise-class SATA hard drives for HD NVR because they support TLER (Time Limited Error Recovery), higher MTBF, higher Duty Cycles and typically include a sensor for rotation and vibration.</p>
LAN	Gigabit Ethernet
Inputs	USB keyboard; wheeled USB mouse
Windows® Component	Microsoft® Message Queue (MSMQ) (Ignore if your software version is v2.13.2 or up.)

* See page 4 ~ 8 to know how to configure the operating system.

Hardware & software requirements

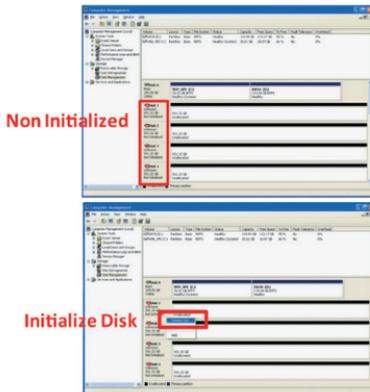
SW-E2200-CW03

Component	Requirements
CPU	Intel® Core™ i5, recommended i7
RAM	4GB at least
Operating System	Microsoft® Windows® 7, 8.x or 10 (64 Bit) (Home Premium, Professional, Ultimate), Microsoft® Windows® Server 2008/2012 (64 Bit)
Display	<ul style="list-style-type: none">▶ Min. 2048 MB graphic memory (GeForce GTX graphics cards of at least 1050 Ti are recommended for our GPU)▶ 1280 x 1024 for the minimum resolution and 1680x1050 for the recommended resolution)▶ Triple-display support
LAN	Gigabit Ethernet
Inputs	USB keyboard; wheeled USB mouse

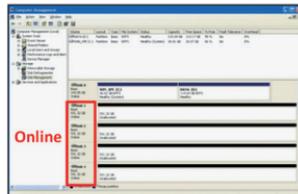
* See page [4](#) ~ [8](#) to know how to configure the operating system.

After installing hard disk drives in your NVR, follow the guide below to initialize them, so the follow-up creation of storage volumes is possible.

- 1 Log on to **Windows**[®].
- 2 Right-click the **Computer** icon on the desktop.
- 3 Click **Manage**.
- 4 Click the **Storage** plus sign (+) to drop down the list. Then click **Disk Management** from the drop-downs.
- 5 Right-click on a “Non Initialized” HDDs and then click **Initialize Disk**.
- 6 From the **Initialize Disk** dialog box that opens, select the HDD(s) to initialize. Then click the **OK** button.



- 7 When the initialization is through, the selected HDDs will display “Online” status.

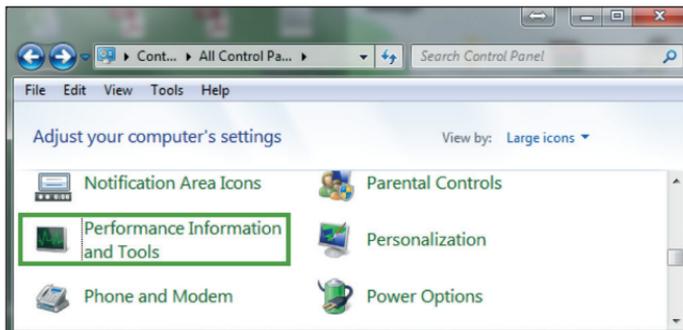


* For HDD size more than 2TB, select GPT instead of MBR for initialization.

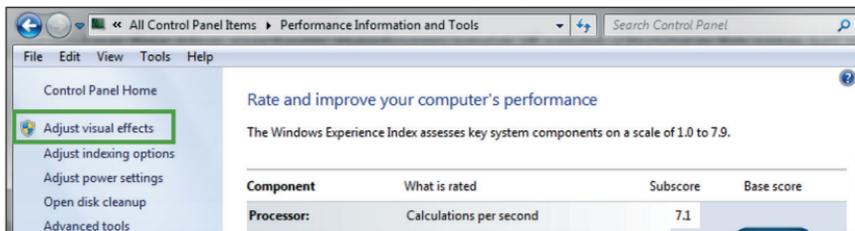
Manage visual effects & AutoPlay

Before you install the software, disable **AutoPlay** and adjust the visual effects of the operating system: (Hereinafter demonstrated with **Windows® 7** only.)

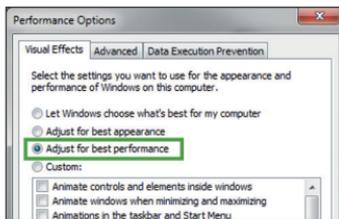
- 1 On **Windows®**, open the **Control Panel** or **System Settings**. Then open the **Performance Information and Tools** settings.



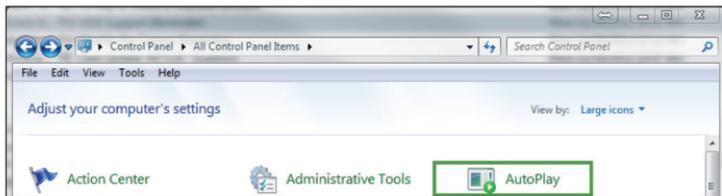
- 2 Click **Adjust visual effects**.



- 3 Select **Adjust for best performance**. Then click the **OK** button.



- 4 Open the **AutoPlay** settings.



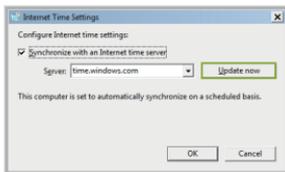
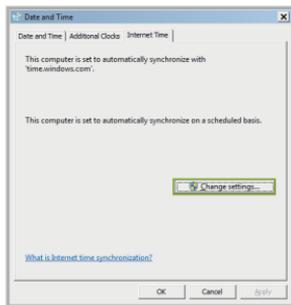
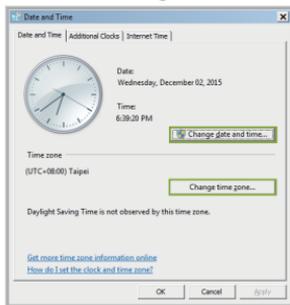
- 5 Deselect **Use AutoPlay for all media and devices**. Then click the **Save** button.



Set date, time & time zone

Set the date, time and time zone for your system as guided below (hereby demonstrated with **Windows® 7** only):

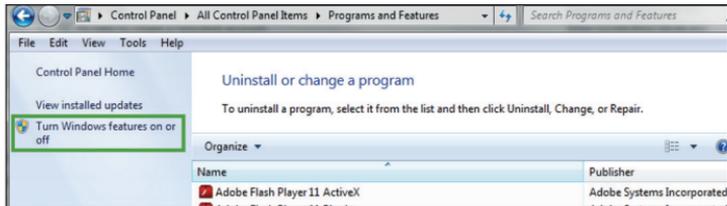
- 1 On **Windows®**, open the system **Settings** or **Control Panel**. Then open **Clock, Language, and Region | Date & Time** settings.
- 2 Click the **Change time zone...** button and set your time zone.
- 3 Click the **Change date and time...** button and set the date and time of your locale.



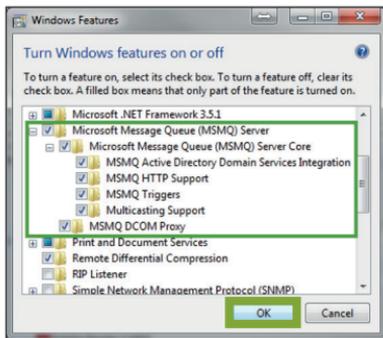
- 4 Click the **Internet Time** tab to open the **Internet Time** tabbed page. Click the **Change settings...** button on the page.
- 5 From the **Internet Time Settings** dialog box that opens, select an Internet time server and then click the **Update now** button. The system will proceed to synchronize the time with the server you have designated.
- 6 Click the **OK** button to finish and quit the setting.

Unless you are going to install a software version of at least v2.13.2; otherwise follow the guide below to enable MSMQ on your system.

- 1 On **Windows**[®], open the system **Settings** or **Control Panel**. Then open **Programs and Features** | **Turn Windows features on or off**.

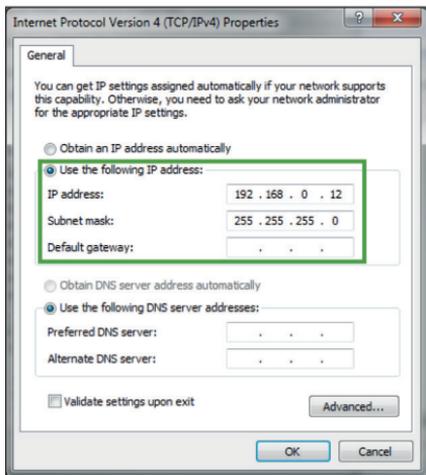


- 2 Select all **MSMQ** features. Then click the **OK** button to finish and quit the setting.



Manage network parameters

- 1 On **Windows**[®], opens the system system **Settings** or **Control Panel**. Then open **Network and Sharing Center | Change adapter settings**.
- 2 Right-click over the active connection to use and click **Properties** from the context menu that opens.
- 3 Click **Internet Protocol Version 4 (TCP/IPv4)**. Then click the **Properties** button.
- 4 On the **General** tabbed page, configure the IP address and the subnet mask. Then click the **OK** button.



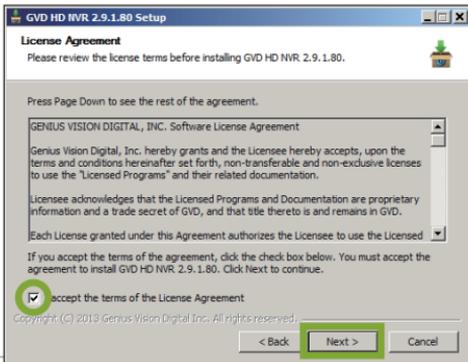
- Before configure network parameters, make sure the network environment is ready. If the network is not available, contact your network administrator for further help.

Follow the guide below to install the software:
(Here demonstrated with HD NVR only.)

- 1 On the product CD, find the install program, which is an executable file.
Double-click the install program.
The install wizard then opens onscreen.



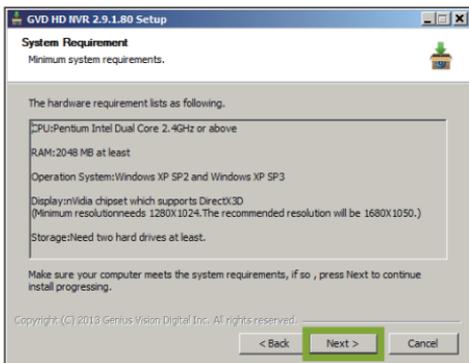
- 2 Click the **Next** button to proceed.
A license agreement window then opens.



Install the software

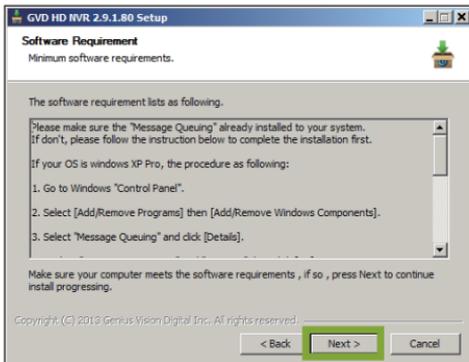
- 3 Select **I accept the terms in the License Agreement** and click the **Next** button to proceed.

The install wizard then prompts the minimum hardware requirements.



- 4 Click the **Next** button to proceed when all hardware requirements are met.

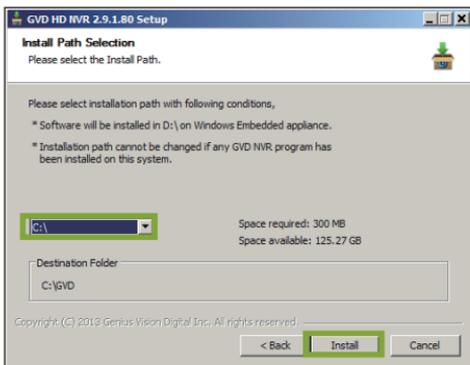
The install wizard then prompts the minimum software requirements.



*See page 7 to know how to turn on MSMQ features. Without MSMQ, the system cannot normally run.

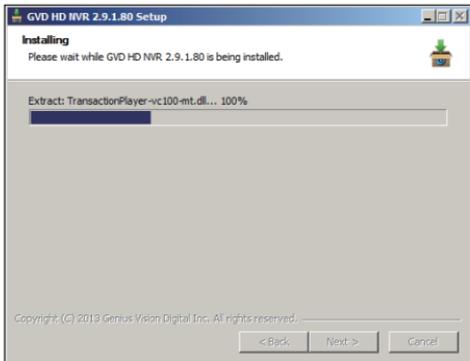
- 5 Click the **Next** button to proceed.

The install wizard then prompts **Install Path Selection**.

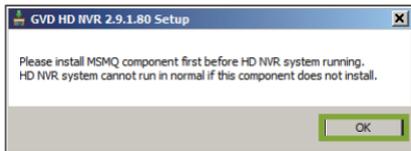


- 6 Select the drive to install the software to. Then click the **Install** button.

The wizard then auto-creates a “GVD” folder to the selected drive. The software also requires DirectX runtime, Windows Installer 3.1, Virtual C++ (VC100), and .NET Framework to run. The wizard will auto-install them if they are not installed yet. It takes a while to install the software.

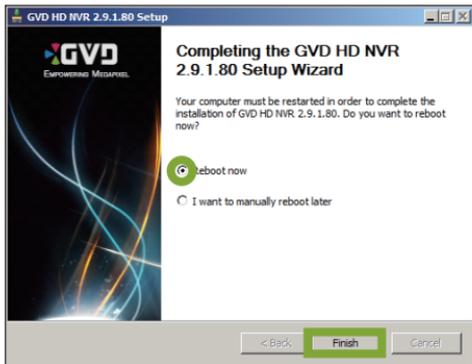


Install the software



During the installation, the install wizard will prompt you to install **MSMQ** if it isn't installed in the system yet. Click the **OK** button to close the prompt. Remember to install the component as described on page [7](#).

Once the installation is through, the install wizard prompts to restart the system to finish the installation.



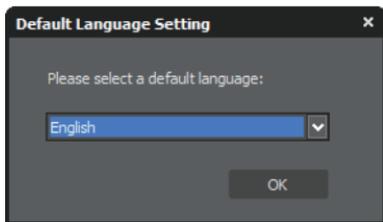
- 7 Select **Reboot** now and click the **Finish** button.

The system then auto-restarts to apply the changes.

- 8 Proceed to launch and activate the software as described in [1st launch & select language](#) on page [13](#) and [Activate](#) on page [14](#).

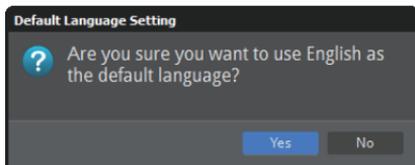
After the software is installed, proceed to launch the software for the first time:

- 1 On the desktop, double-click the software icon .
- 2 When the **Default Language Setting** window shows, select a display language and click the **OK** button.



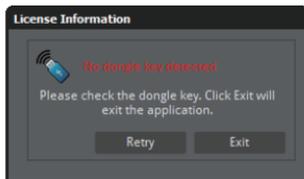
The **Default Language Setting** window only shows when the software launches for the 1st time. However language selection is available in the software's **Configuration Mode** for your need to change the display language of the software thereafter.

- 3 Click **Yes** to confirm.

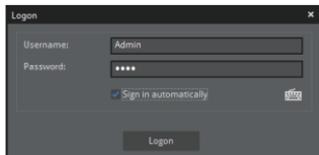


Activate

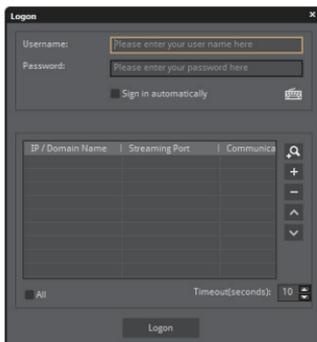
When the software launches for the 1st time, the system auto-detects the authentication. If the authentication fails, a **License Information** window shows and prompts that a dongle key is needed. The dongle key is a hardware key with a USB 2.0 adapter. To activate the software:



- 1 Plug the dongle key to one of the USB ports of your system.
It takes a while for the system to prepare the dongle key for use.
- 2 Click the **Retry** button on the **License Information** window to try again.
The software will open a **Logon** window once the authentication passes.



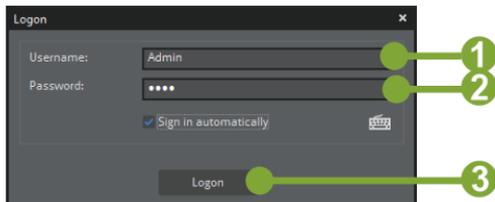
Log on window - HD NVR



Log on window - SW-E2200-CW03

- 3 Proceed to log in to the software as described on page [15](#) or page [16](#).

When the **Logon** window shows onscreen, follow the guide below to log in to the **HD NVR Manager** as an administrator. If you want to log in to the **SW-E2200-CW03**, see page [16](#) instead.



- 1 In the **Username** field, enter the username. (The default is *Admin*, case-sensitive.)
- 2 In the **Password** field, enter the password. (The default is *6001*.)
- 3 Click the **Logon** button. If the username and the password are correct, the software auto-launches promptly.

Log in to SW-E2200-CW03

Note: If you want to log in to the **HD NVR Manager**, see page [15](#) instead.

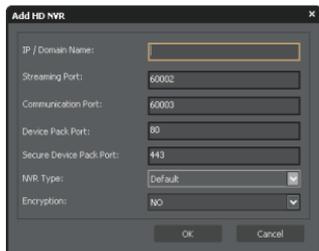
When the **Logon** window shows onscreen, follow the guide below to log in to the **SW-E2200-CW03** as an administrator. There are two way to log in:

- ▶ [Manually add NVRs](#)
- ▶ [Auto search for NVRs](#)

Manually add NVRs

1. Click the **+** button.

The software will open an **Add NVR** dialog box.

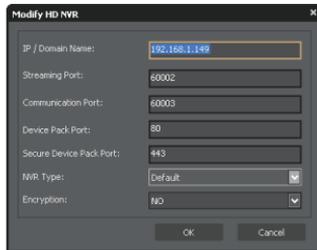


The 'Add HD NVR' dialog box contains the following fields and options:

IP / Domain Name:	<input type="text"/>
Streaming Port:	<input type="text" value="60002"/>
Communication Port:	<input type="text" value="60003"/>
Device Pack Port:	<input type="text" value="80"/>
Secure Device Pack Port:	<input type="text" value="443"/>
NVR Type:	<input type="text" value="Default"/>
Encryption:	<input type="text" value="NO"/>

Buttons: OK, Cancel

A **Modify HD NVR** dialog box then opens.

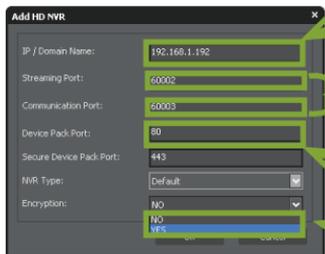


The 'Modify HD NVR' dialog box contains the following fields and options:

IP / Domain Name:	<input type="text" value="192.168.1.149"/>
Streaming Port:	<input type="text" value="60002"/>
Communication Port:	<input type="text" value="60003"/>
Device Pack Port:	<input type="text" value="80"/>
Secure Device Pack Port:	<input type="text" value="443"/>
NVR Type:	<input type="text" value="Default"/>
Encryption:	<input type="text" value="NO"/>

Buttons: OK, Cancel

2. On the **Add HD NVR** dialog box, set the following parameters:



The screenshot shows the 'Add HD NVR' dialog box with the following fields and values:

Field	Value
IP / Domain Name:	192.168.1.192
Streaming Port:	60002
Communication Port:	60003
Device Pack Port:	80
Secure Device Pack Port:	443
NVR Type:	Default
Encryption:	NO

Annotations with arrows point to the following fields:

- IP / Domain Name: Enter the IP address of the NVR you want to add.
- Streaming Port: Enter each an alternate number if you want to access an NVR by the Internet.
- Communication Port: Enter each an alternate number if you want to access an NVR by the Internet.
- Device Pack Port: Enter **Device Pack** port (Apache HTTP) number. The default is 80.
- Encryption: If you want to use 128-bit AES data encryption to protect the video flow from the NVR to the **SW-E2200-CW03** computer, select **Yes**; otherwise leave it as **NO**.

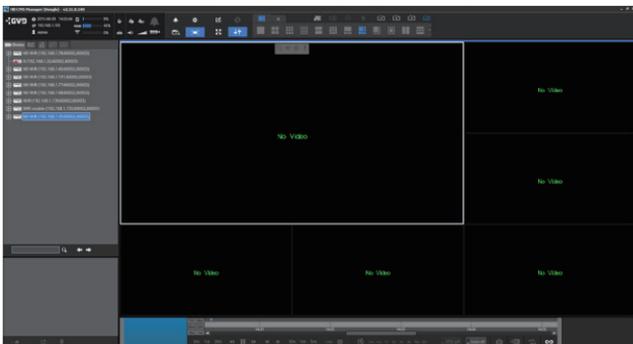
- 1). In the **IP / Domain Name** field, enter the IP address of the NVR to add.
 - 2). In the **Streaming Port and Communication Port** field, enter each an alternate number if you want to access the NVR by the Internet; otherwise simply leave the defaults.
 - 3). In the **Device Pack Port** field, enter the number of **Device Pack** port (Apache HTTP) you want to use. (The default is 80.)
 - 4). At the **Encryption** setting, click **YES** from the drop-downs if you want to enable 128-bit AES data encryption for the video flow from the NVR to the **SW-E2200-CW03** computer; otherwise simply leave it as **NO**.
3. Click the **OK** button to close the dialog box.

Log in to SW-E2200-CW03

4. Enter *Admin* (the default) in the **Username** field. And enter *6001* (the default) in the **Password** field. Then hit the **Logon** button. (If a physical keyboard isn't available, click the keyboard icon  to open an onscreen keyboard for text input.)



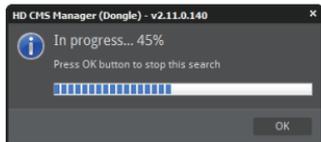
The software then opens in **Display Mode** (the default mode).



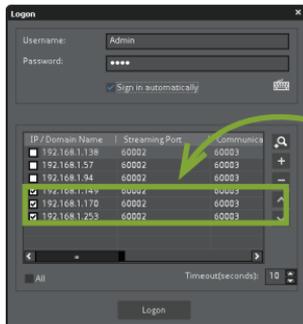
Auto search for NVRs

1. Click the  button

The software then starts to search and shows the progress.

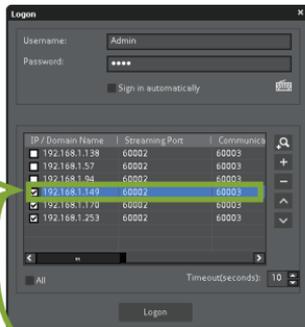


When the search is through, the search results are displayed on the **Logon** window. Select the NVR(s) to add.



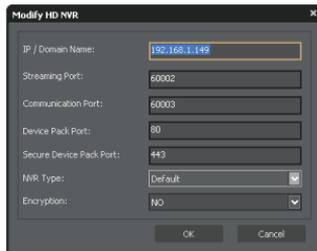
Select the NVR(s) to add.

Note: If you want to customize the network parameters of the NVR that you are adding, double-click the entry of that NVR.



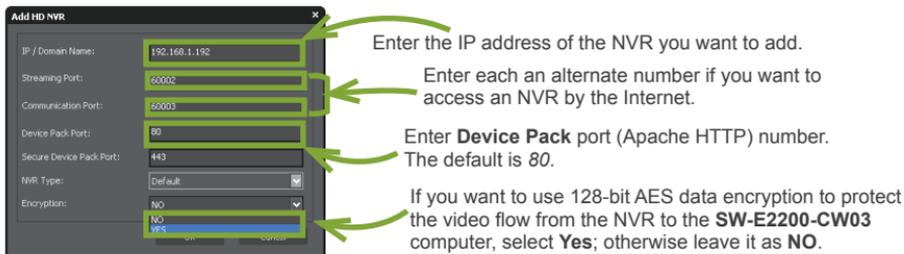
Double-click.

A **Modify HD NVR** dialog box then opens.



Log in to SW-E2200-CW03

2. On the **Add HD NVR** dialog box, set the following parameters:



The screenshot shows the 'Add HD NVR' dialog box with the following fields and values:

Field	Value
IP / Domain Name:	192.168.1.192
Streaming Port:	60002
Communication Port:	60003
Device Pack Port:	80
Secure Device Pack Port:	443
NVR Type:	Default
Encryption:	NO

Annotations with arrows point to the following fields:

- IP / Domain Name: Enter the IP address of the NVR you want to add.
- Streaming Port: Enter each an alternate number if you want to access an NVR by the Internet.
- Communication Port: Enter each an alternate number if you want to access an NVR by the Internet.
- Device Pack Port: Enter **Device Pack** port (Apache HTTP) number. The default is 80.
- Encryption: If you want to use 128-bit AES data encryption to protect the video flow from the NVR to the **SW-E2200-CW03** computer, select **Yes**; otherwise leave it as **NO**.

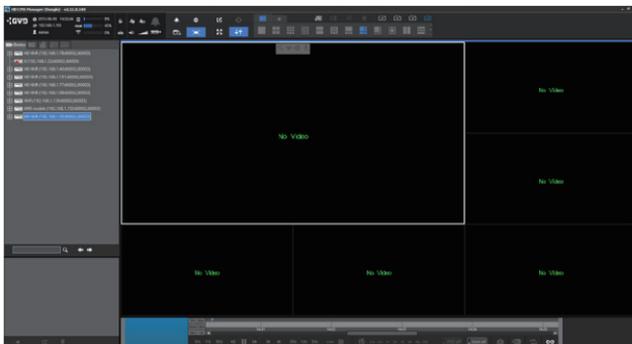
- 1). In the **IP / Domain Name** field, enter the IP address of the NVR to add.
 - 2). In the **Streaming Port** and **Communication Port** field, enter each an alternate number if you want to access the NVR by the Internet; otherwise simply leave the defaults.
 - 3). In the **Device Pack Port** field, enter the number of **Device Pack** port (Apache HTTP) you want to use. (The default is 80.)
 - 4). At the **Encryption** setting, click **YES** from the drop-downs if you want to enable 128-bit AES data encryption for the video flow from the NVR to the **SW-E2200-CW03** computer; otherwise simply leave it as **NO**.
3. Click the **OK** button to close the dialog box.

4. Enter *Admin* (the default) in the **Username** field. And enter *6001* (the default) in the **Password** field. Then hit the **Logon** button. (If a physical keyboard isn't available, click the keyboard icon  to open an onscreen keyboard for text input.)



Enter *Admin* (the default) in the **Username** field. And enter *6001* (the default) in the **Password** field. Then hit the **Logon** button.

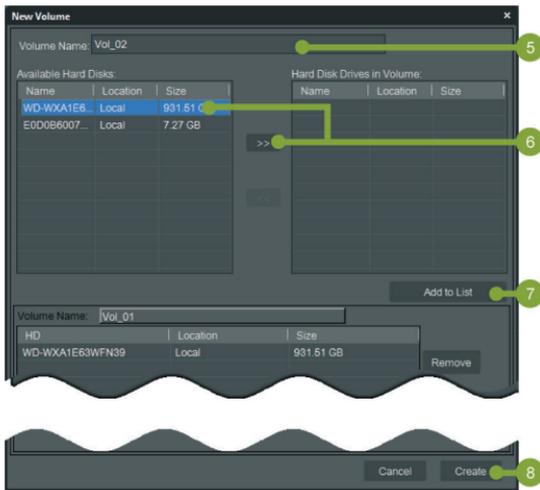
The software then opens in **Display Mode** (the default mode).



Create storage volume

Follow the guide below to create storage volumes for recording data:

- 1 On Windows® desktop, double-click the **Storage Configuration Manager** icon. 
- 2 Enter the default username **Admin** and the default password **6001** to login.
- 3 In the SCM that opens, click the plus sign (+) button  in the left pane.
- 4 Click **Using HD**.
- 5 Enter the name of the volume in the **Volume Name** field.
- 6 From the **Available Hard Disks** box, click the hard disk(s) to add. Then click the doubled right-arrow button  to add the selected hard disk(s) to the **Hard Disk Drives in Volume** box.
- 7 Click the **Add to List** button to add the selected hard disks to queue for formatting.
- 8 Click the **Create** button. A prompt then shows and asks for your confirmation"
- 9 Click **Yes** to continue.

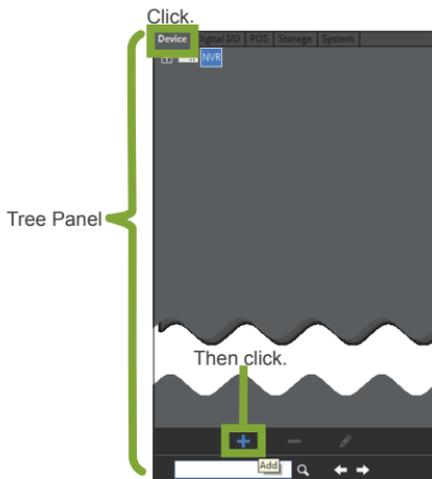


To "auto-add" a camera means to auto-search for a camera and add it to the NVR system. Follow the guide below to "auto-add" a camera to the **HD NVR**:

- 1 Launch and log in to the **HD NVR Manager**.
- 2 From the mode buttons, click the  button to open the **Configuration Mode**.



- 3 From the **Tree Panel**, click the **Device** tab. Then click the plus sign button. 

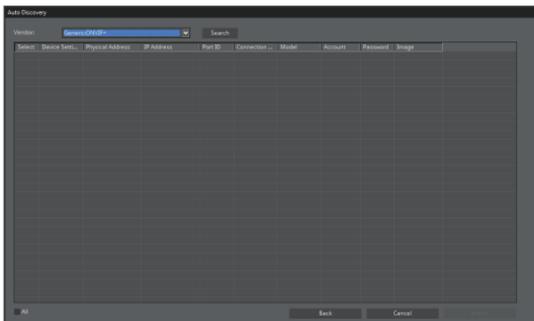


A window then opens and asks you how to install a camera.



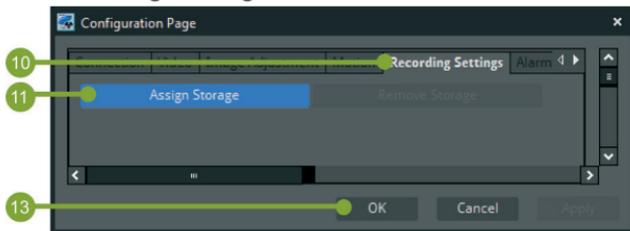
Create storage volume

- 4 Click **Auto Discovery** and a dialog opens as shown below.

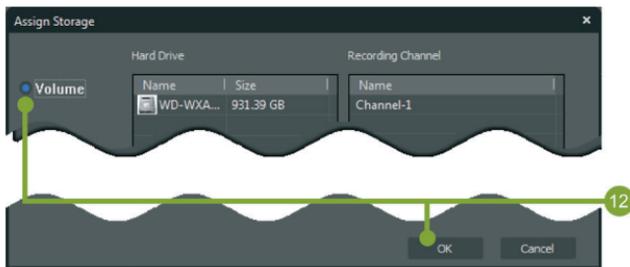


- 5 Click the **Vendor** drop box and select the vendor name of the camera to add from the drop-downs and then click the **Search** button to continue.
- 6 Enter the username and the password to add the camera.
- 7 The system auto-searches for all the IP cameras of the selected vendor in the network and then shows the search result.
- 8 Select the camera(s) to install and click the **Import** button.
- 9 The selected camera(s) will be imported to the system. When the importation is through, a **Configuration Page** shows to facilitate your change to the camera settings.

- To enable the camera to record videos, click the **Recording Settings** tab on the **Configuration Page**.
- Click the **Assign Storage** button.



- From the **Assign Storage** window that opens, select which volume to save the recorded videos to and click **OK**.



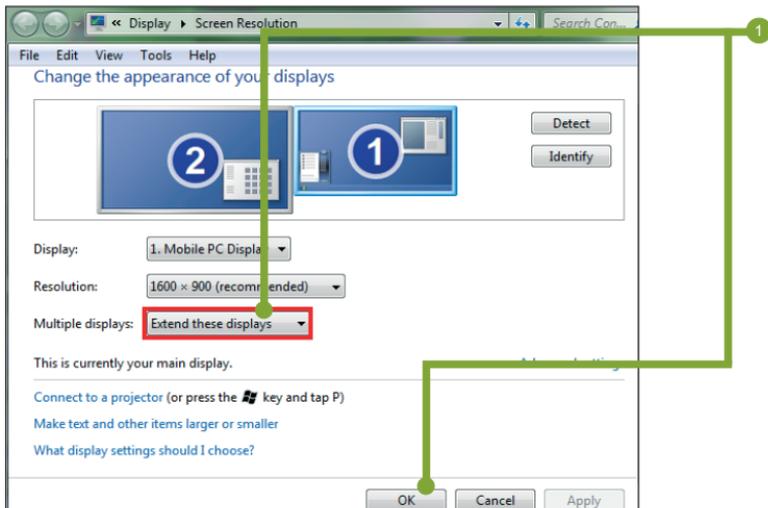
- Click the **OK** button on the **Configuration Page** to exit.

- * Some cameras may not support **Auto-Add**. See user's manual to know how to manually add a camera.
- * To set up the schedule recording, see user's manual for more details.

Auto-add a camera

The software supports two monitors for display. To use two monitors on the NVR system:

- 1 Connect two monitors to the system. Make sure they can be detected by **Windows®** and the display can be extended.



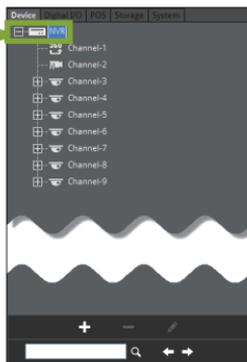
- 2 Launch and log in to the **HD NVR Manager**. Open the **Configuration Mode**.



Click.

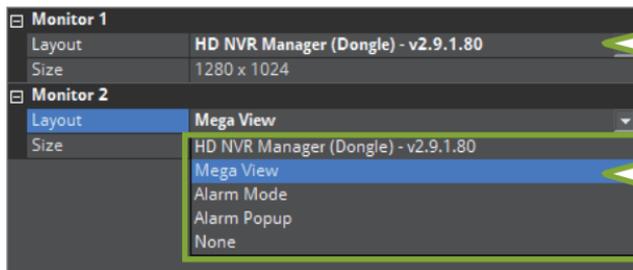
- 3 From the **Tree Panel**, double-click the icon of the NVR.

Double-click the icon of the NVR.



- 4 On the **Configuration Page** that opens, click the **Multiple Monitor** tab.

- 5 On the **Multiple Monitor** tabbed page that opens, select a desired display feature for each of the monitors.



The selected feature for the main display.

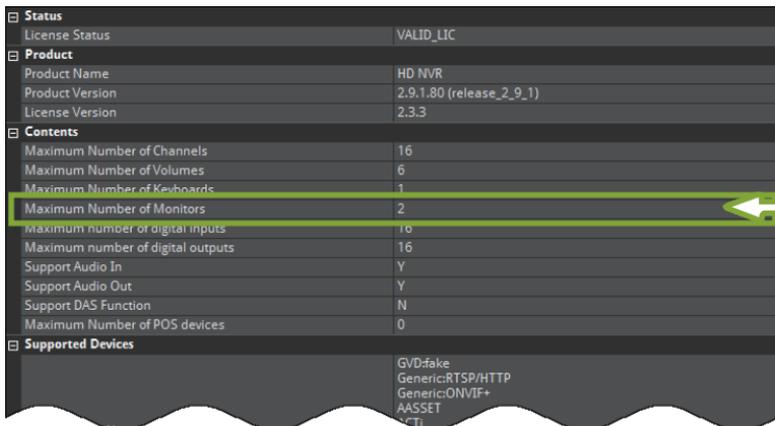
Select the desired display feature for the extended display.

Enable dual monitors

The available display features are:

Display Feature	Description
HD NVR Manager - [version]	Opens the software in Display Mode .
MegaView	Opens the software in “maximized” Display Mode .
Alarm Mode	Opens the software in “maximized” Alarm Mode .
Alarm Popup	Opens the whole pattern when an alarm is triggered.
None	Shows nothing onscreen.

- * If you have problem using two monitors on the NVR system, open the **License Control** tabbed page and check the licenced number of monitor.



[-] Status	
License Status	VALID_LIC
[-] Product	
Product Name	HD NVR
Product Version	2.9.1.80 (release_2_9_1)
License Version	2.3.3
[-] Contents	
Maximum Number of Channels	16
Maximum Number of Volumes	6
Maximum Number of Keyboards	1
Maximum Number of Monitors	2
Maximum number of digital inputs	16
Maximum number of digital outputs	16
Support Audio In	Y
Support Audio Out	Y
Support DAS Function	N
Maximum Number of POS devices	0
[-] Supported Devices	
	GVD#fake Generic:RTSP/HTTP Generic:ONVIF+ AASSET *CTI

Motion Recording means to trigger the recording once the camera detects moving images.

Follow the guide below to enable a camera to **Motion Recording** (with simple alarm):

- 1 Launch and log in to the **HD NVR Manager**. Open the **Configuration Mode**.

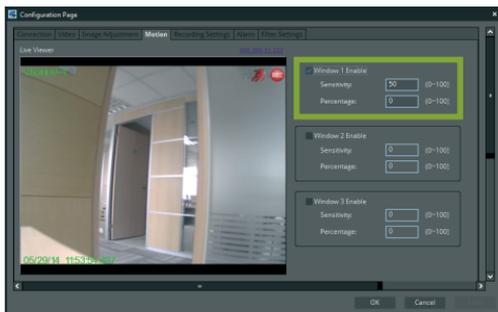


- 2 Click the camera that you want to enable motion recording to. Then click the pencil graphic button.



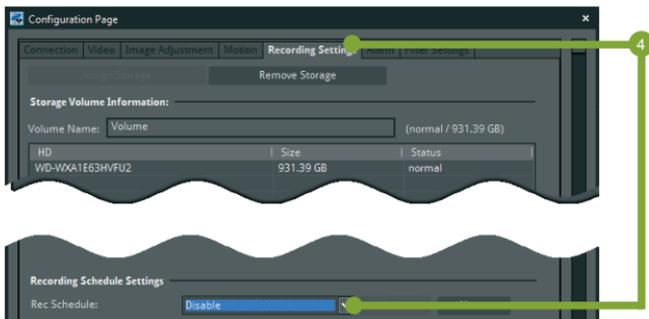
- 3 On the camera's **Configuration Page**, click the **Motion** tab and enable the camera for motion detection. Then adjust the detection sensitivity to a desired level.

Enable dual monitors



*Different cameras might have different ways to set up motion detection.

- 4 Click the **Recording Settings** tab and disable the camera's recording.



- 5 Click the **Alarm** tab to enable recording only when motion is detected.



- 6 Click the **OK** button to finish setup.

Enable motion recording

I cannot successfully install HD NVR. Why?

- ▶ It is likely a newer version of the software is installed or some version of the software isn't completely removed.
- ▶ It is likely that you are not running the install program as (Windows®) administrator.

I cannot find any hard disk drive from the available hard disk list when creating a storage volume. Why?

- ▶ Besides the OS-running hard disk drive, the NVR system needs an additional hard disk drive for data storage, which the SCM (Storage Configuration Manager) only recognizes.

I cannot successfully format a hard disk drive when creating a storage volume. Why?

- ▶ The hard disk drive might be broken. Please replace it with a new one and try to create the volume again.
- ▶ When the file system of the OS is FAT32 and **HD NVR** is installed in the hard disk drive where the OS is installed, storage volume creation will always fail. Please change the file system of the OS to NTFS or install the **HD NVR** in a separate partition from the OS partition. Then try to create the storage volume again.

The HD NVR Manager cannot find any camera by Auto Discovery. Why?

- ▶ The camera's IP address and the NVR system (the Ethernet card) do not have the same subnet mask setting.
- ▶ It is likely the camera doesn't support **HD NVR**. Please find the supported cameras

list by the path below:

Go to **GVD website** (<http://www.gvdigital.com>) | **Support** | **Camera Support List**

The HD NVR Manager shows "0.0.0.0" for the system's IP address. Why?

- ▶ There are two Ethernet adapter cards in the system and the NVR always uses the newly added one by default. Disable one of the cards and change the IP setting if necessary. Then restart the system and the **HD NVR Manager**.
- ▶ The system's Ethernet adapter card isn't connected to the network switch. Connect the Ethernet cable to the network switch and then restart the system and **HD NVR Manager**.

I saw "D3D not supported" message. Why not?

- ▶ The system's graphic card does not support 3D.
- ▶ The system's graphic card's 3D capability isn't powerful enough.
- ▶ You are using a remote control software without 3D support, ex. **Windows Remote Desktop**, to access the NVR system. Please use a remote control software that supports 3D, ex. **WinVNC**.

Init GVNP client fails at system startup? Why?

- ▶ It means something is wrong with the network. Check whether your network interface card is configured correctly and the network cable is connected.

I can't get any video after the camera is added. Why?

- ▶ The possible root causes:

Update software

The latest release of **HD NVR** features modular design to allow two approaches to update the software:

- 1 To update the entire **HD NVR**, download the install program of the latest release on GVD website and run the install program as described in [Install the software](#) on page 9.
- 2 To only get the new camera support, simply download and install the latest **Device Pack** as described below.

Note: 1. **Device Packs** are supported by **HD NVR v2.11** and later versions only.
2. **Device Packs** are issued independently from the releases of **HD NVR**. For the supported cameras brands/models, see the release note also on GVD website.)

To install the **Device Pack**:

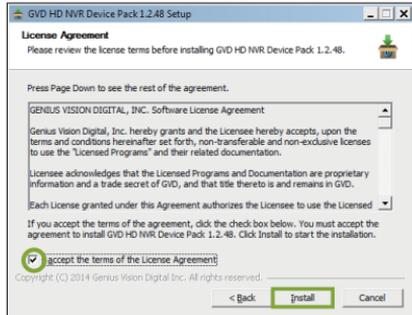
1. Visit GVD website. Download a copy of the latest **Device Pack**, usually an executable file named "GVD_DevicePack_x.x.xx".
2. On the NVR system, quit any of the **HD NVR** utilities that are running at the moment if any.
3. Run the executable file that you have downloaded as mentioned above. The install wizard then opens.

4. Click the **Next** button to proceed.

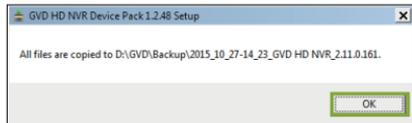


The install wizard then shows a **License Agreement**.

5. Select **I accept the terms of the License Agreement**. Then click the **Install** button.

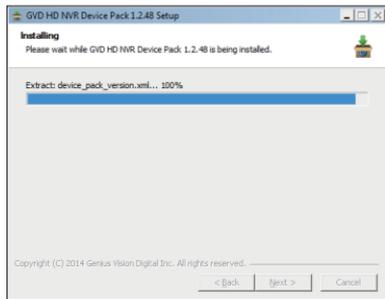


The wizard then prompts to back up a copy of the currently configuration.



6. Click the **OK** button to proceed.

The installation then starts and progresses.



When the installation is through, the install wizard prompts to complete the installation.



7. Click the **Finish** button to finish and quit the installation.

Troubleshooting

- 1 Wrong username and password
- 2 Wrong IP address
- 3 Firewall or anti-virus software blocks the communication port required on the camera (ex: 554 for Axis)
- 4 The network wire or power cable is disconnected.
- 5 The total camera bandwidth exceeds network bandwidth.

How do I install anti-virus software in NVR system?

- ▶ Since the **HD NVR** writes enormous amount of data to the hard disk drives that store recording data, system performance will substantially decrease and even system crash and video loss can happen when the antivirus software scans these hard drives. Therefore the antivirus software must be disabled from scanning the storage hard disk drives to prevent spoiling system performance.

Besides, anti-virus software also scans port 80, which the system and the cameras use for data transmission. So the anti-virus software has to be disabled from scanning this port or the HTTP checking feature has to be disabled to keep the anti-virus software from creating enormous data files.

July 2018

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