

NVS 4.1

User's Manual

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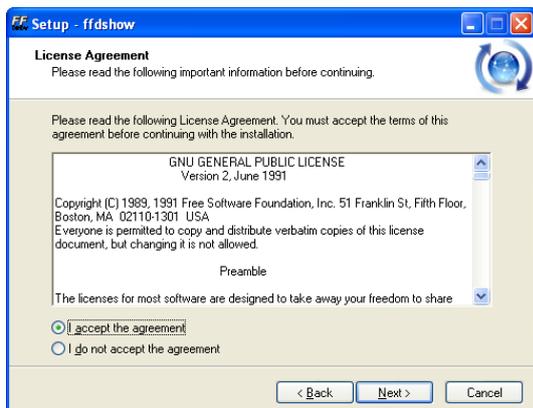
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1. NVS 4.1 Installation

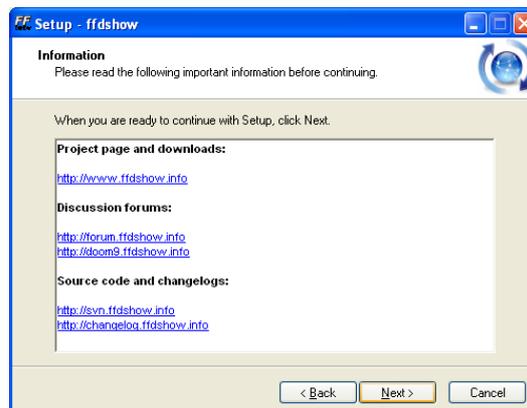
1-1. Installing

- Full Installation has 2 steps. (1) FFDSHOW installation for video decoding library, and (2) NVS4.1 program installation. If client PC already has FFDSHOW, user can pass the installation of FFDSHOW.
- Enter the “NVS 4.1” folder and execute “Setup.exe” for program installation.
- The following screens will show up sequentially.

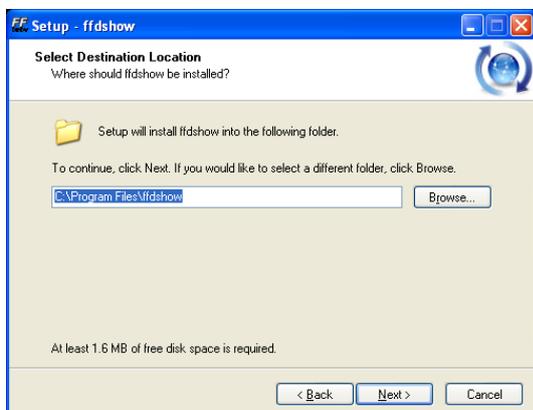
① FFDSHOW (Software Decoder) installation



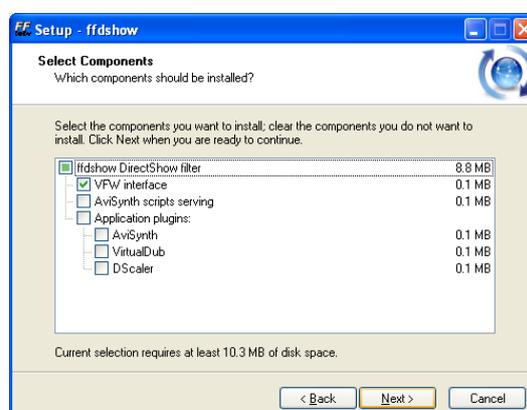
Accept the agreement and click “Next”.



Check the FFDSHOW information and click “Next”



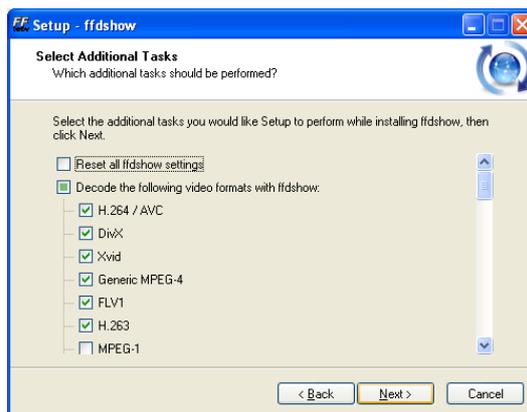
Check the installation path, and click “Next”



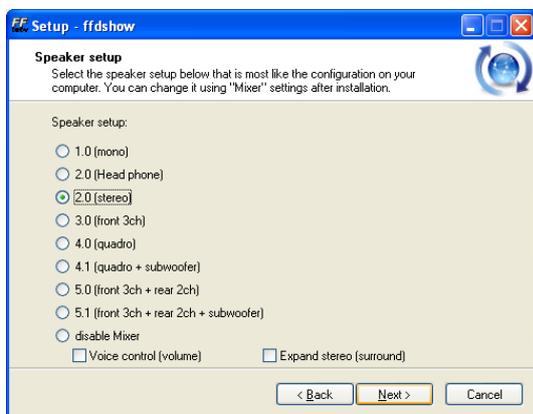
Keep the above default setting and click “Next”



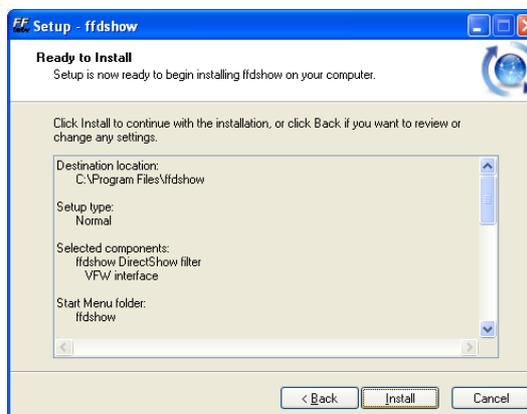
Shortcut will be created in Start Menu



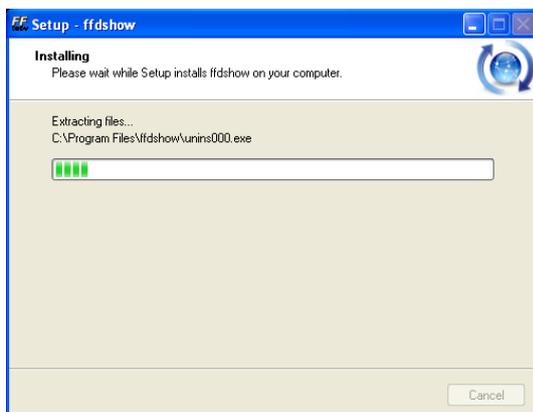
Click "Next" with above default setting



Click "Next" with above default setting



Click "Next" for installation



Installation will be started

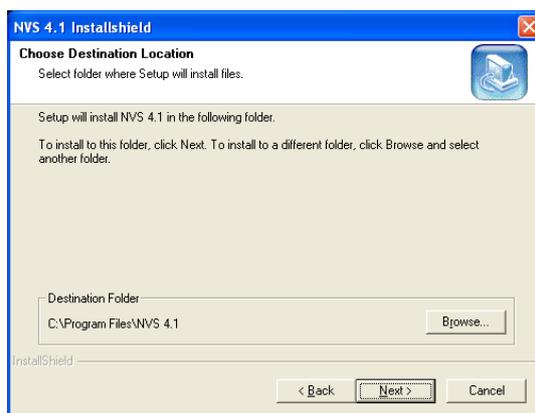


Click "Finish" to complete the installation

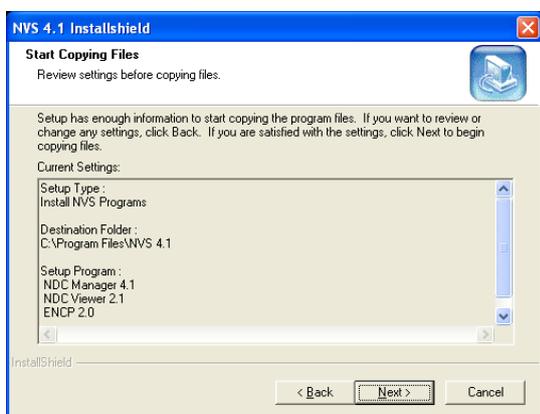
② NVS4.1 Installation



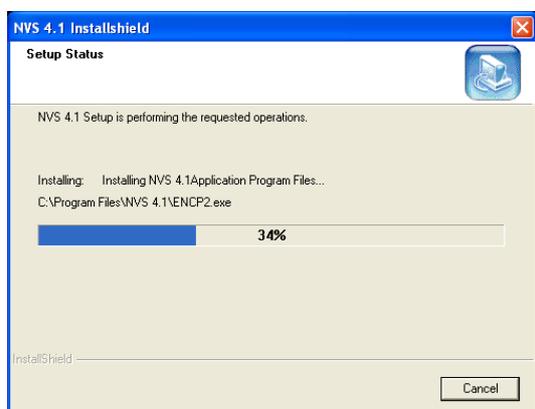
Click “Next” to start installation



Check the installation path



Check NVS4.1 Information



Installation will be started



Click “Finish” to complete the installation

Icon on desktop after NVS 4.0 installation

After proper installing of application, you could find following icons on your desktop.

(User can find ENCP from Start → All Program → NVS4.1 → ENCP 2.1)



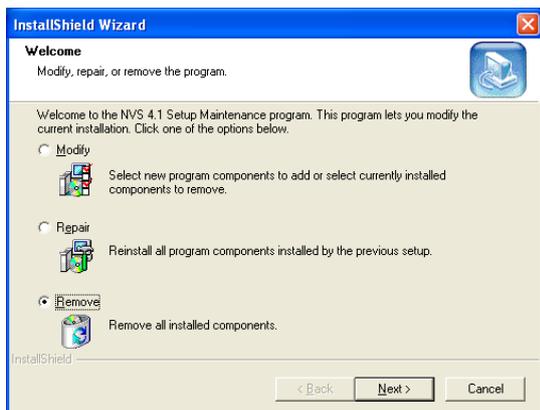
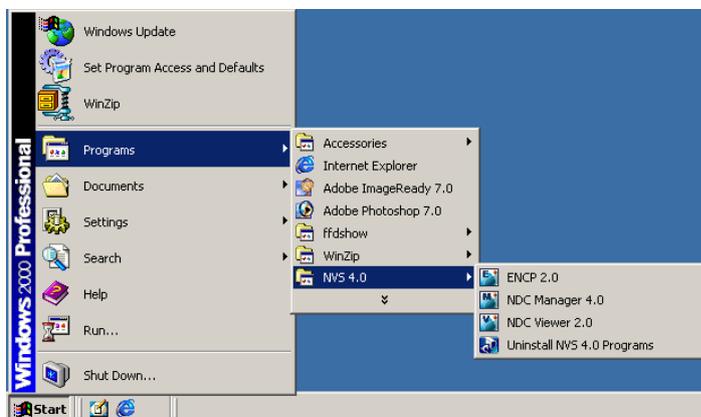
NDC Manager



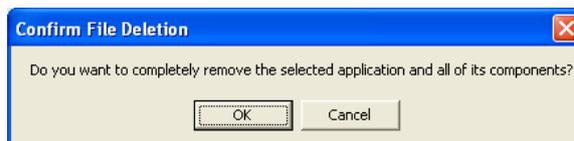
NDC Viewer

1-2. Uninstalling NVS4.1 Programs

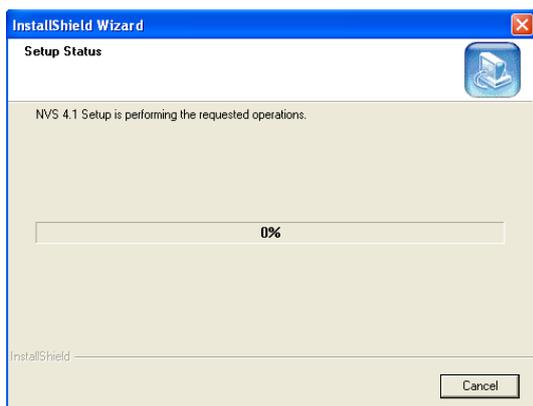
To uninstall application programs, click “Uninstall NVS 4.1 Programs” on Start → All Program → NVS 4.1 as below picture shows.



Select “Remove” and click “Next”



Click “Yes” to confirm the remove



Uninstallation will be started

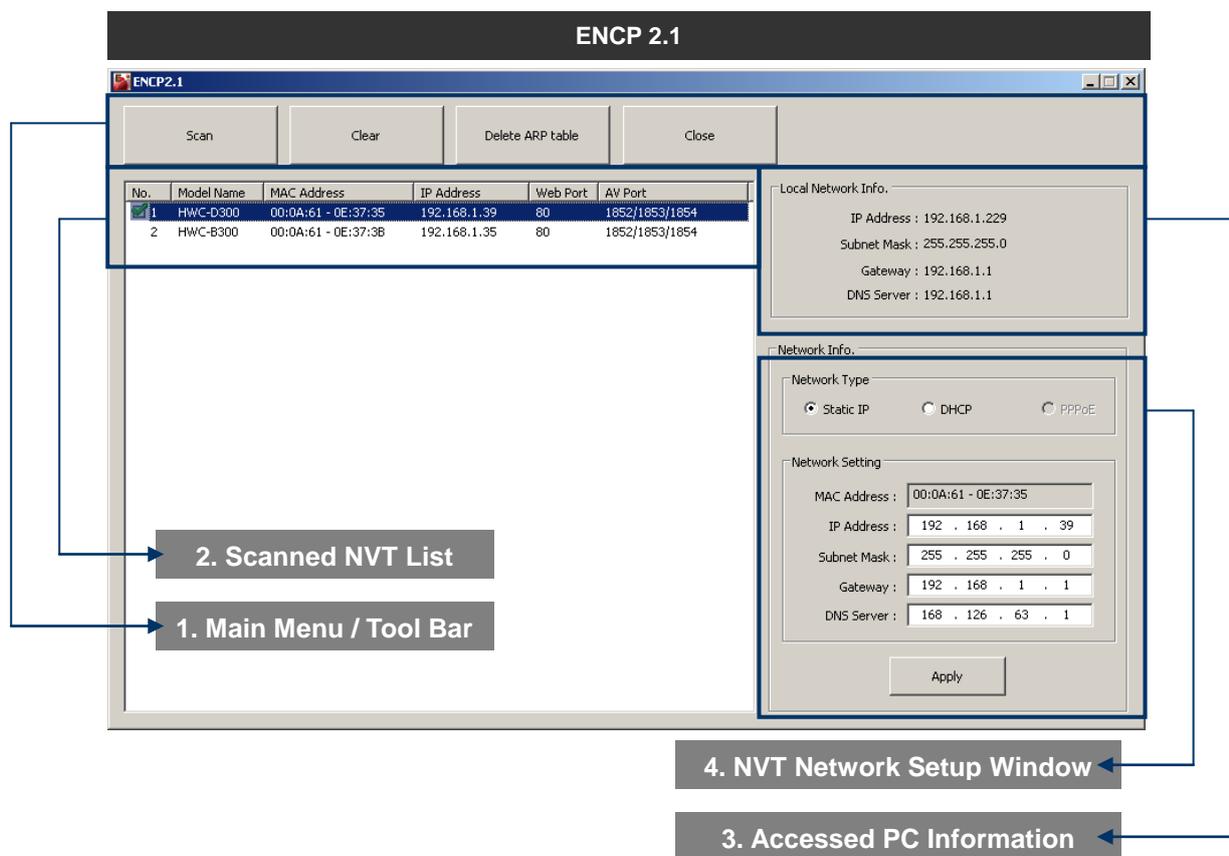


Click “Finish” to complete the uninstallation

2. ENCP 2.1

2-1. Overview

- ENCP(Easy Network Configuration Program) makes you to accomplish the network setting of NVT easily by using automatic searching function.
- Run: Start → All Program → NVS4.1 → ENCP 2.1
- **Environment for the ENCP**
 - NVT and client PC where ENCP works should be on the same (local) network.
(Both devices should use the same router or switch as a gateway)
 - If the ENCP doesn't work due to firewall, execute ENCP after connecting NVT and client PC with twisted LAN cable directly.
- **Basic functions**
 - Automatic searching of the NVT in the local network.
 - Changing the network setting of NVT (ex. IP, Subnet Mask, Internet connection type, Gateway)



2-2. Main Menu / Toolbar



► Tool Bar

- **Scan**
 - Please click this button for scanning NVT.
 - Server list will display basic information of the searched NVT in the local network

- **Clear**
 - This button is to clear searched NVT from Server list.

- **Delete ARP table**
 - This button is to delete the ARP table.

- **Close**
 - This is to close ENCP and exit.

2-3. Scanned Server List

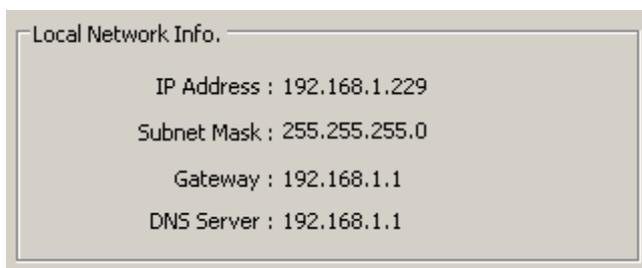
- IP servers that are scanned in the local network appear on this Server list.
- Please click the title of the header for re-arranging server list by each title.

No.	Model Name	MAC Address	IP Address	Web Port	AV Port
1	HWC-D300	00:0A:61 - 0E:37:35	192.168.1.39	80	1852/1853/1854
2	HWC-B300	00:0A:61 - 0E:37:3B	192.168.1.35	80	1852/1853/1854

- ◀ Header
- ◀ A selected camera
- Server List

2-4. Client PC Information

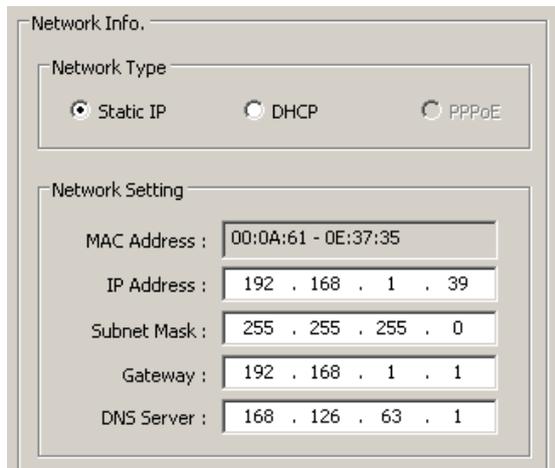
- "Local Network Info" shows network information of client PC where ENCP is running.
- ENCP checks this information automatically.



► Network Information of PC

2-5. Network Setting

▪ Network Info.



Network Info.

Network Type

Static IP DHCP PPPoE

Network Setting

MAC Address : 00:0A:61 - 0E:37:35

IP Address : 192 . 168 . 1 . 39

Subnet Mask : 255 . 255 . 255 . 0

Gateway : 192 . 168 . 1 . 1

DNS Server : 168 . 126 . 63 . 1

- Network Type: NVT supports static IP or DHCP
- MAC Address : Unchangeable physical Address
- IP Address : An appropriate IP address is required
- Subnet Mask
- Gateway Address
- DNS Server

5-6. Apply

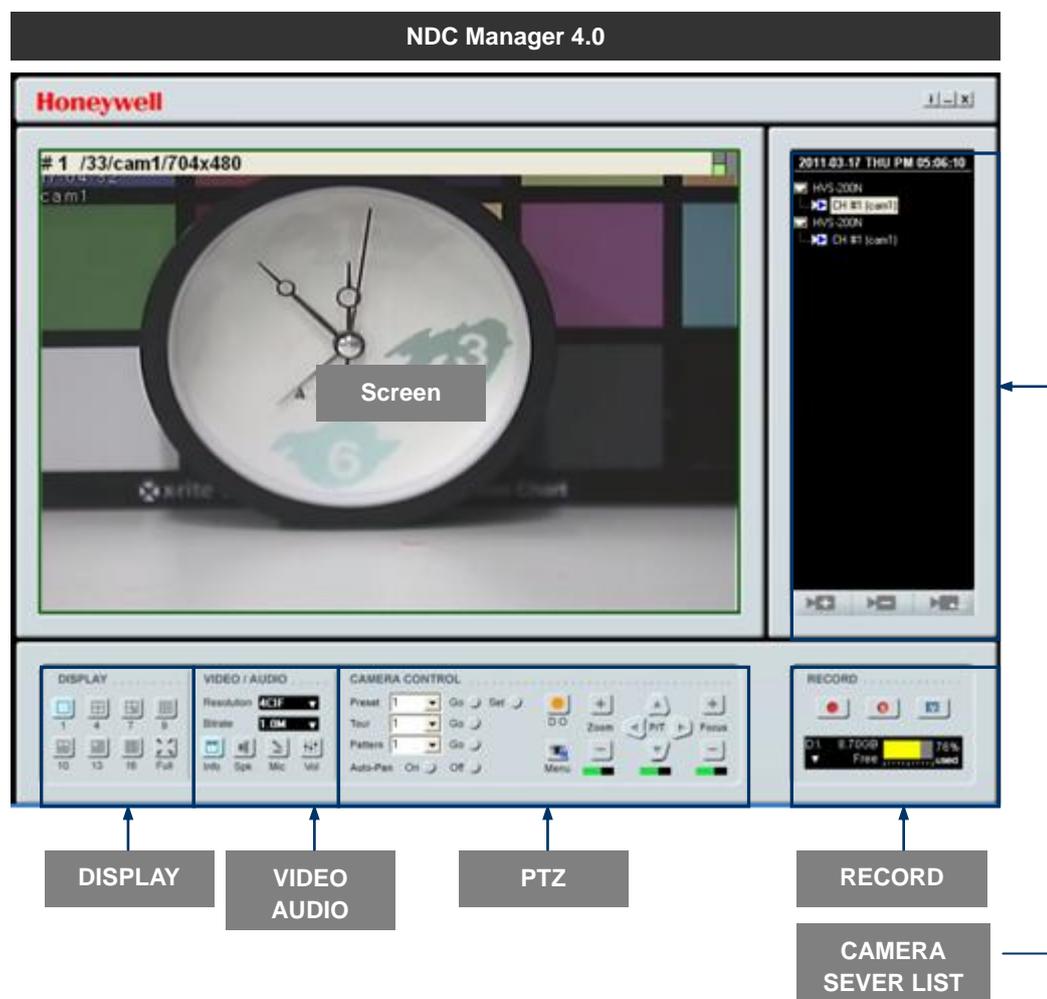
Below button is used to apply the changes



3. NDC Manager 4.1

3-1. Overview

- NDC Manager manages NVT over LAN or WAN.
- Basic functions
 - Convenient tree-view display to manage a numbers of NVT.
 - Video/Audio monitoring for multiple NVT.
 - Right-mouse-button menu for frequently used functions.
 - Display : Diverse display methods (1, 4, 7, 9, 10, 13, 16 and full-screen mode).
 - Video : Resolution and quality(Bitrate) control.
 - Audio : Speaker and microphone connection / Volume control.
 - PTZ : Pan/ Tilt/ Zoom control.
 - Record : Video/Audio recording, still image save and indication of disk usage.



Ref. The logo can be changed by the file "Mgrlogo.bmp" on the installation folder.

3-2. Server List

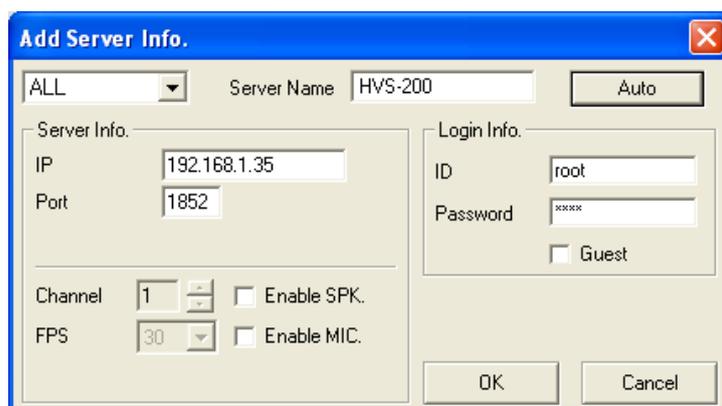
- Displays current date and time.
- Add a NVT to server list.
- Delete a NVT from server list.
- Change NVT connection information.
- Execution of monitoring.
- Pop-up menu for frequently used functions.

▪ Date and Time

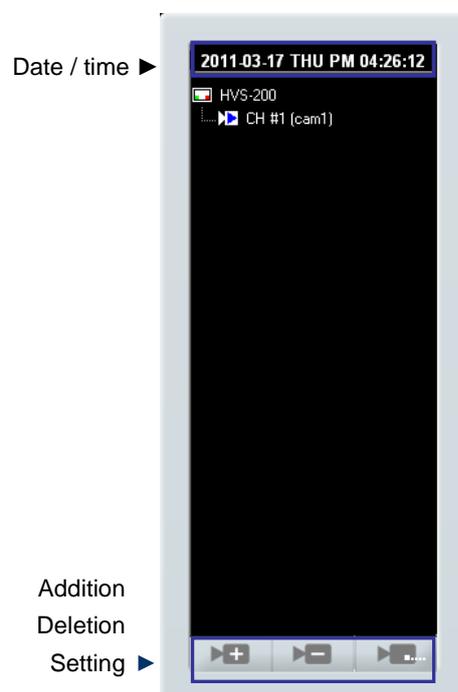
- The date and time on NDC Manager are synchronized with the current date and time of client PC.

▪ Add a NVT to Server List

- Press  button to open Add Sever Info. dialog box.
- Up to 50 servers can be registered on this server list.



< Add Server Info. Dialog >



< Server List >

① Model Selection

- ② **Server Name** : Input a representative name (to recognize the location or purpose easily).

If this remains blank, it is filled with default model name.

- ③ **IP** : Assign an IP address or host name (ex. *192.168.1.2* or *cell.cable.nu*)

- ④ **Port** : Port number using for transmitting video/audio data (The default value is 1852)

- ⑤ **Channel** : Shows the camera number which is connected to NVT (Fixed as 1)

- ⑥ **ID** : ID of administrator is fixed as "root"

- ⑦ **Password** : The default password of administrator is "pass"

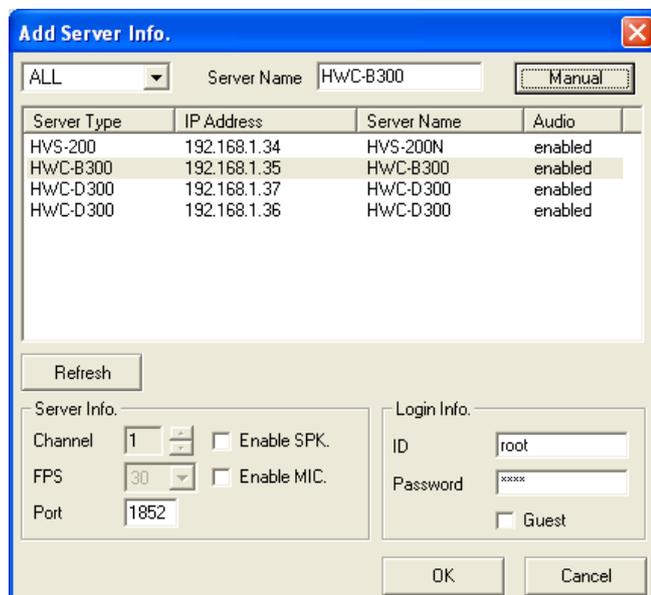
- ⑧ **Guest**: To allow login with guest authority, please check this option.

- ⑨ **Enable SPK.** : To use PC speaker, check this option. Speaker should be connected to NVT

- ⑩ **Enable MIC.** : To use PC microphone, check this option. Mic should be connected to NVT
- ⑪ **OK / Cancel** : Confirm or cancel the setting. User can change the setting values later.
- ⑫ **Auto** : This button scans local network and shows the list of all NVT in the local network

Select a NVT on the list to register to NDC Manager.

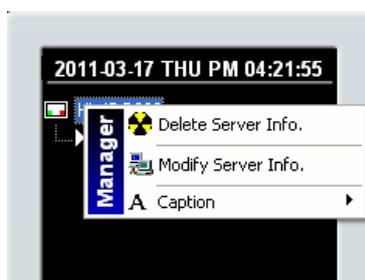
“Refresh” button is to re-scan NVT in local network.



< Add Server Info. Dialog when Auto button pressed >

▪ **Delete a NVT from Server List**

- After selecting a NVT (not CH#1) on server list, press  button.
- Warning Message appears to confirm deletion.
- Click the “Yes” button to complete deletion. (Selected NVT will disappear on the list)



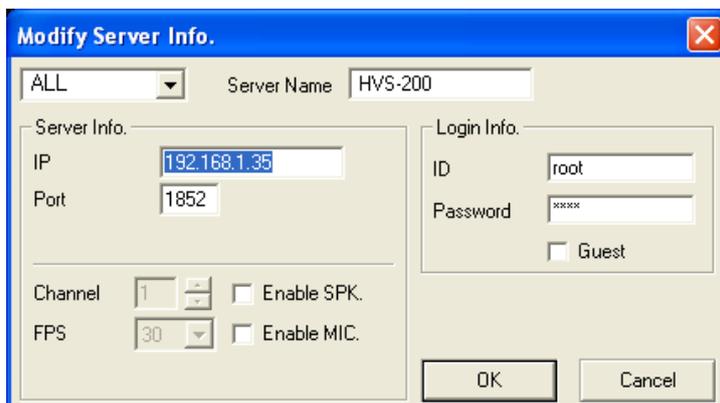
< Selecting a NVT to delete>



< Warning Message >

▪ **NVT Re-configuration**

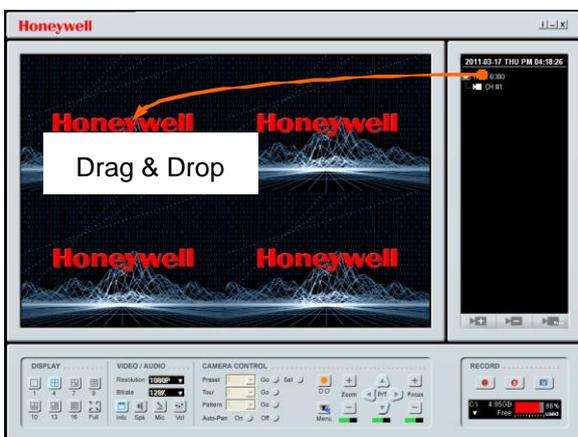
- After selecting a NVT (not CH #1), press  to open **Modify Server Info** dialog.
- Refer to the section of **Add Server Info** dialog for the details about **Modify Server Info** dialog.
- After modification, click “OK” button for applying the changes.
- If the setting is changed, it may be required to re-connect to NVT again.



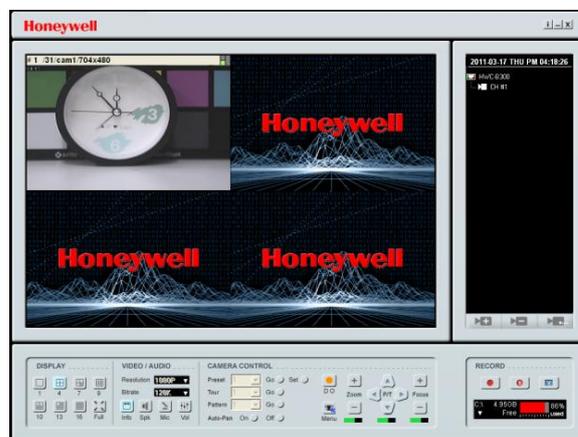
< Modify Server Info. Dialog >

▪ **Monitoring**

- Double-click a registered NVT then linked server’s video will be shown.
- Drag the linked camera from server list and drop it into desired screen.



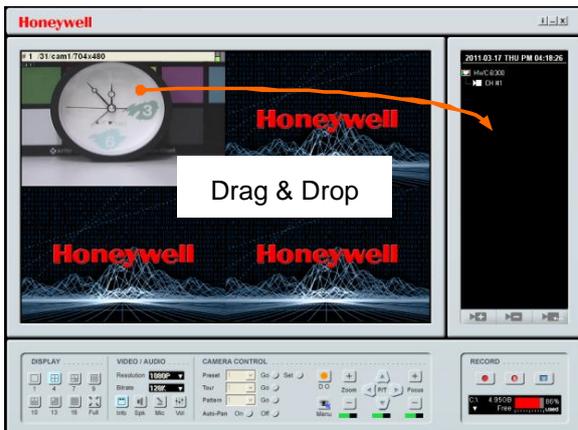
< Drag & Drop >



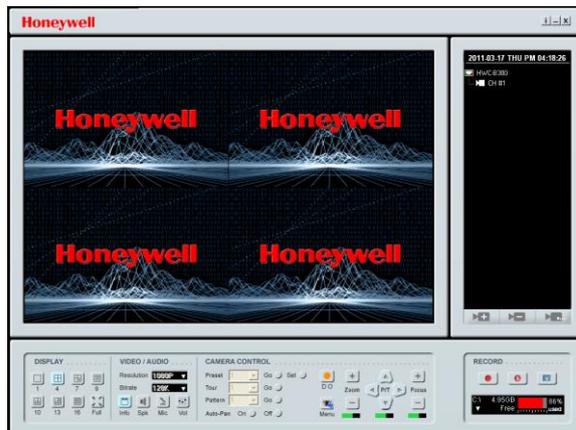
< After Execution >

▪ **Stop Monitoring**

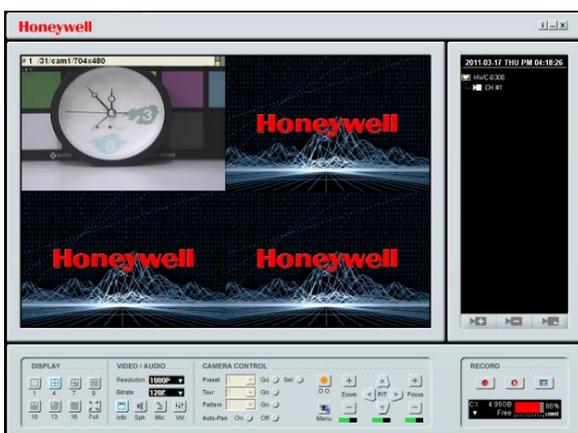
- Select a image then drag & drop it to server list.



<Drag & Drop>



<After Execution>



< Right-mouse-button click >

- **Tip** : Users can execute the same operation by clicking the right-mouse-button and selecting “Close” at the pop-up menu.

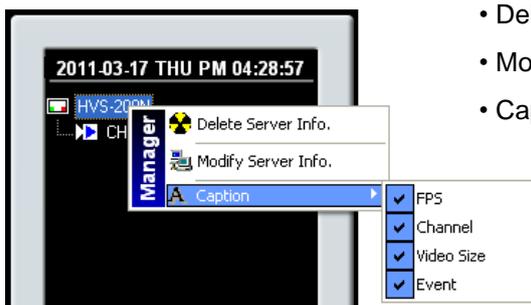


< Pop-up Menu >

▪ **Popup Menu**

- Pop-up menu on server list helps the fast execution of primary functions.
- Server Menu : Move a mouse pointer on a NVT (Server Name) and click the right button.
- Camera Menu : Move a mouse pointer on camera and click the right button of the mouse.

① **Server menu**



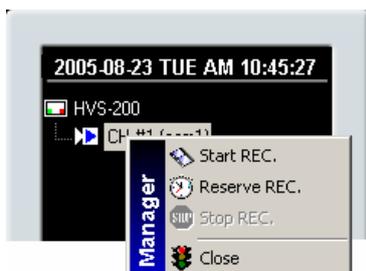
< Camera List >

- Delete Server Info : Deletes a NVT from server list.
- Modify Server Info : Modify the setting of a NVT.
- Caption : Select information items to be displayed
 - FPS : shows transmission speed. (frame/sec)
 - Channel : means server name.
 - Video Size : shows image resolution.
 - Event : indicates digital input or motion detection.

② Camera Menu



▶ Status of idle



▶ Status of monitoring

- Start recording while monitoring
- Reserve recording while monitoring
- Close: Close monitoring



▶ Status of recording

- Show Recording Options : User can check the recording options
- Stop Recording
- Close : stop recording and monitoring

• Tip: Icons of Server List

	NVT
	Status of idle
	Monitoring
	Recording with Monitoring
	Recording without Monitoring
	Motion Detection
	Digital In
	Monitoring+Reserve Recording

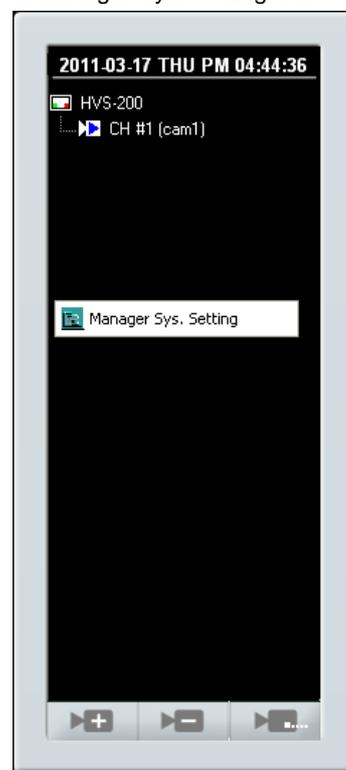
▪ Manager Sys. Setting

- Put the mouse pointer on blank space of server list (not on a server name or a CH #1) and then click the right button of the mouse and press **Manager Sys. Setting**.
- A new dialog box appears on server list position.
- Check the box of **System Set** to change the values.
- Click "OK" to apply the newly changed setting values.
- Click "Cancel" to cancel.

① Password (default: admin)

- NDC Manager's user password could be specified by checking the box of Enable Password.
- If the password is activated, an authentication process is required to start and finish NDC Manager.
- If the **Enable Password** check box remain blank, the password setting will not work.

< Manager Sys. Setting Start >



② Time Interval

- Time interval means the period of making a recording file.
- The default value is 5 minutes. (Selectable among 5, 10, 15, 20)
- If a user changes the setting while recording, NDC Manager stops recording, applies the new setting value and restarts automatically.

③ Del. Unit

- Default value is "time" (Selectable between "day" and "time")
- When NDC Manager erases the older file for insufficiency storage to record, selecting "time" deletes by file-based and selecting "day" deletes by folder-based.

④ Disk Full Warning

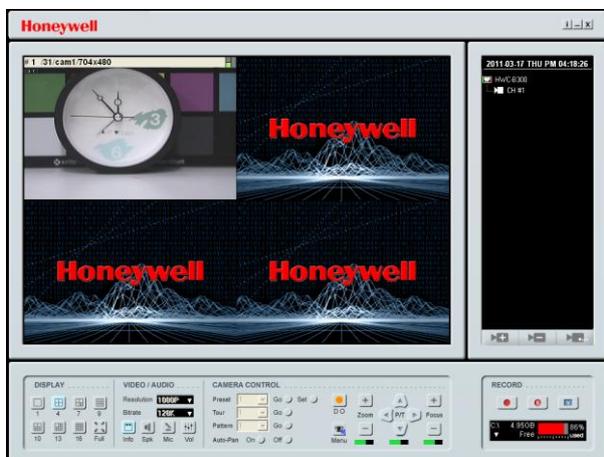
- Selectable among 5, 10, 20, 30GB
- If free space of disk drive for recording is less than the selected value, NDC Manager starts to erase the older files.
- It is recommended to backup the files to another drive or CD before overwrite the old files.
- In case of first recording, if the free space is less than the setting value then recording will not be started and the HDD indicator will shows RED color (In normal case, it shows YELLOW)



< Manager Sys. Setting dialog box >

3-3. Screen

- Pop-up menu on Screen : Move a mouse pointer on an image and click the right button to see the below pop-up menu.



< Pop-up menu execution >

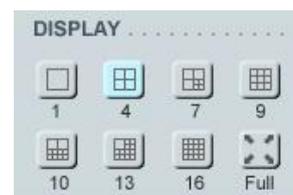


< Pop-up menu on screen >

- Ext. Control : Aux & Preset control
- Start REC : starts recording at once.
- Reserve REC : reserves a recording.
- Web link : browser link of NVT.
- Caption : refer to server menu section for the details
- Close : close connection.

3-4. Display

- NDC Manager supports split screen format of 1, 4, 7, 9, 10, 13 and 16.
- "Full" means full-screen and displaying image extends fully fit to monitor. (NDC Manager keeps the screen split format)
- To return from full-screen mode, press ESC on keyboards.



< DISPLAY >

3-5. Video

- Video panel controls quality and resolution of the transferred image.
- Resolution control is not available with "guest" account.

	D1	4CIF	VGA	CIF	QVGA
NTSC	720X480	704X480	640x480	352x240	320x240
PAL	720X576	704X576	640x480	352x288	320x240

< Supported resolution and its image size>



< Video / Audio >

▪ BITRATE (Only applicable to CBR Mode)

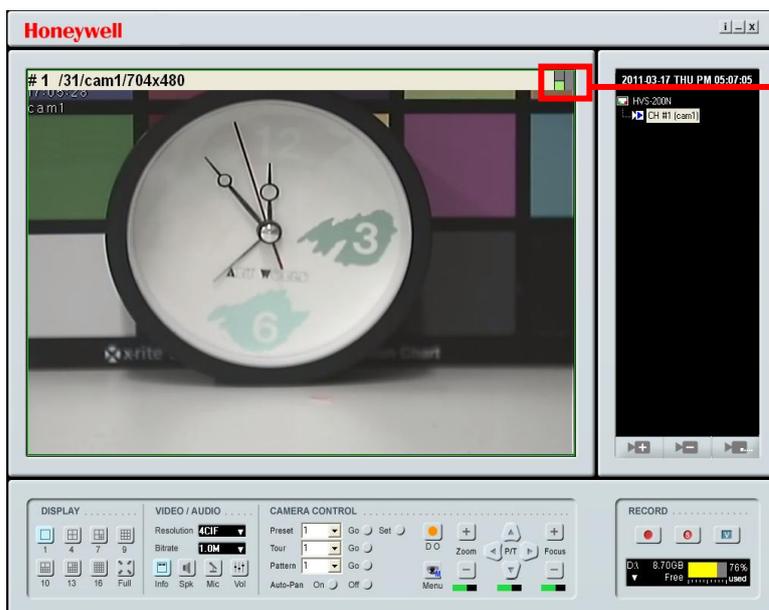
- This option controls the transmitting bandwidth.
- Selectable values : 32K, 64K, 128k, 256k, 384k, 500k, 750k, 1M, 1.5M, 2M, 4M (bps)
- The video quality is automatically controlled by the assigned bitrate (Users should select suitable bitrate according to the network environment)

▪ **Quality (Only applicable to VBR Mode)**

- This option controls the video quality transferred from a server.
- Range : 2~31 (Lower number will show better video quality)
- Bitrate of transferred video will be automatically changed to fit to target quality level. (Users should select suitable quality level according to the network environment)

▪ **Image Information View**

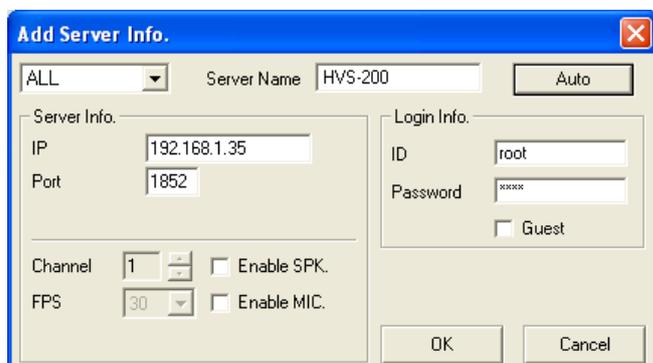
- If  button is activated then information of transmitted image will be shown as below.
- This information bar shows server name, fps, resolution, event information.



Red	Motion Detected
Green	Video Connected
Blue	Alarm Input

3-6. Audio

- Audio can be used when proper audio device is connected to NVT.
- Only selected channel can support audio.
- Configure **Modify Server Info.** Dialog box to use audio function.



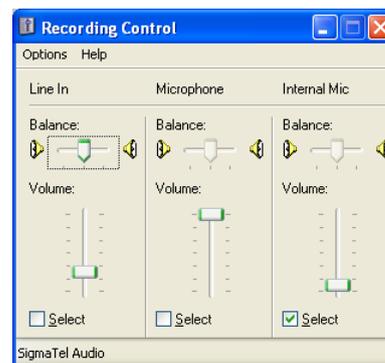
- Check Enable SPK. and / or Enable MIC. to use each function.
- Note : It is available to use Speaker function as a guest account but not available as to Microphone function.

▪ **Speaker (PC speaker)**

- Select a NVT which has a microphone.
- Click the  button.
- Speaker will be activated and audio data which was transferred from “Audio-In” connector of remote NVT will be heard.
- Click above button again or click another channel will stop speaker.

▪ **Microphone (PC microphone)**

- Select a NVT which has a speaker
- Click the  button.
- Microphone will be activated and audio data which enters PC microphone will be heard at the speaker of remote NVT.
- Click the button again or click another channel will stop speaker.
- User can click the  button for adjustment of PC microphone.



< Recording Control >

3-7. Pan/ Tilt/ Zoom

- This is available only when a PTZ device is properly connected to NVT.
- NVT must have suitable control protocol inside. Please check the protocol list on the webpage of NVT.



< Camera Control >



< Camera Manu Control >

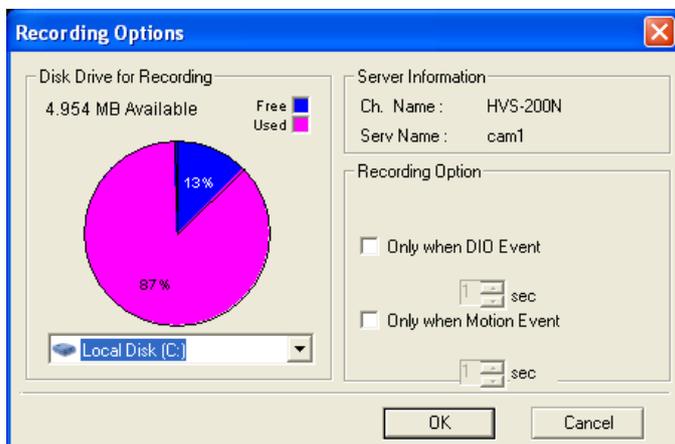
▪ **About PTZ buttons**

- Preset : select a preset number from combo box, and click “Go” or “Set” button.
Max. 63 presets positions are supported.
“Set” saves the preset position, and “Go” makes camera move to the selected preset position.
- Tour : select a Tour number, and click “Go” button (“Set” is not supported for Tour)
- Pattern : select a Pattern number, and click “Go” button (“Set” is not supported for Pattern)
- Auto-Pan : On and off the Autopan function (“Set” is not supported)
- DO (Digital Output) : It can be used for alarm output
- Menu (PTZ Menu) : Open the PTZ menu (Supportable PTZ model is restricted)
- Zoom : Zoom in / Zoom out buttons support Zoom control
- Focus : Focus in / Focus out buttons support Focus control
- P/T (Pan/Tilt) : These buttons supports camera Pan and Tilt control

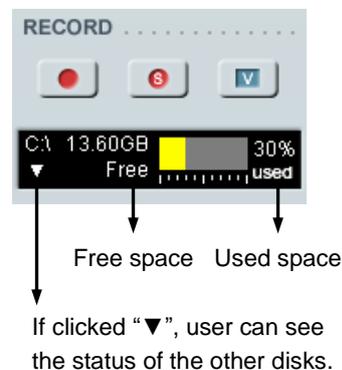
3-8. Recording

▪ Recording

- Select a camera channel at server list and click  button.
Or, click “Start Recording” after select a split screen and click the right button of the mouse.
- **Recording Options** dialog box will be shown as follows.



< Recording Options >

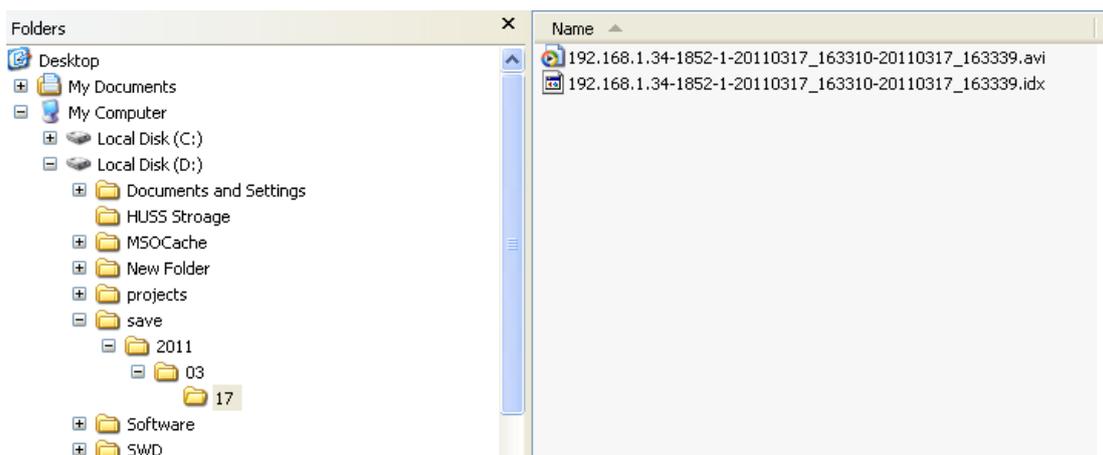


< Record >

- Above **Recording Options** shows the free space of the selected drive.
- If no setting is changed and “OK” button is clicked, recording process starts and continues until “Stop Recording” is clicked.
- Recording Option may be useful to use the disk effectively.
 - ① **Only when DIO Event** (occurs) : If this option is checked, recording will be started when server takes a trigger signal from connected alarm sensor.
 - ② **Only when Motion Event** (occurs) : If this option is checked, recording will be started when server takes a signal from internal motion detector.
- Maximum recording time by Event is 50secs.
- Disk Drive to Record : The default drive is “C:” but, the location for recording can be changed to any drive on PC.

Note : To use recording options by Motion event, corresponding NVT’s motion detection function must be enabled properly.

- **selected drive:\save\year\month\date** folder will be created when NDC Manager starts recording.



- The recording file extension is *.avi.
- The index file which is used for playback has extension of *.idx.
- The files which are currently recording have “.tmp” extension.
- Created file name includes following information :
IP or hostname-port-channel-year/mon/date_hour/min/sec(start)-year/mon/date_hour/min/sec(end)

▪ **Saving a still image**

- Select a camera on server list and click  button.
- **C:\save\year_BMP\month\date** folder will be created and image will be saved there.

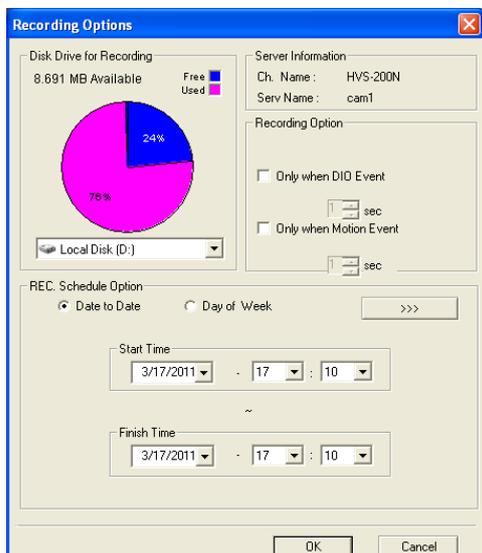


▪ **NDC Viewer Link**

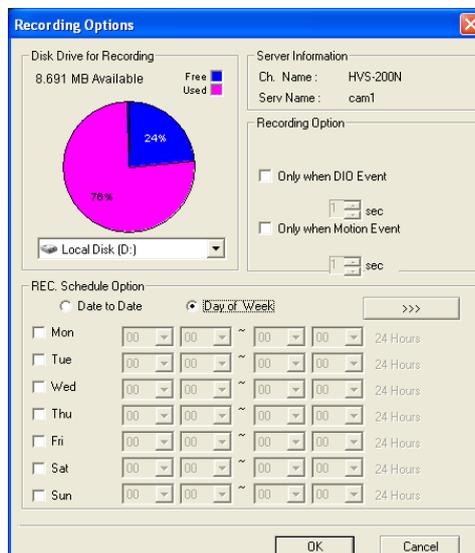
- Click  button to execute NDC Viewer.
- NDC Viewer can be used for playback recorded images. (Refer to NDC Viewer section for the details)

▪ **Scheduled Recording**

- Click **Reserve Recording** after selecting a channel on server list. Reserve recording also can be executed from pop-up menu on a screen.
- **Schedule Option** shows as below.

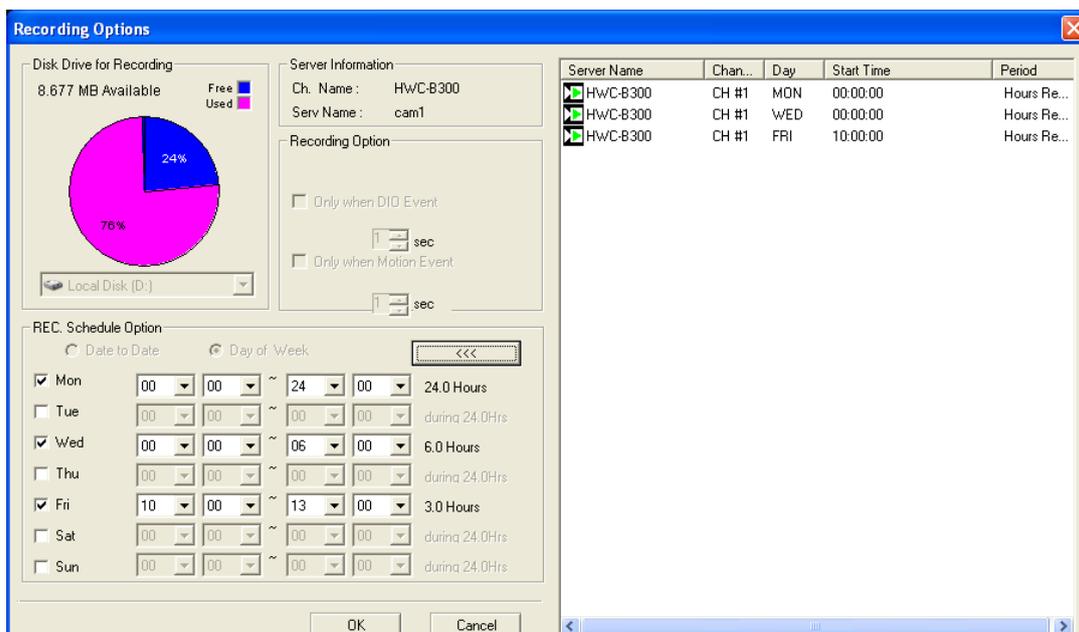


< Schedule Option - Date to Date >



< Schedule Option - Day of Week >

- **Date to Date** : User can select special date and time to decide start and finish.
- **Day of Week** : User can schedule plural recordings.
- Extension button : Clicking “>>>” button shows reserved recording schedule.
- The extension dialog box will be shown as follows.

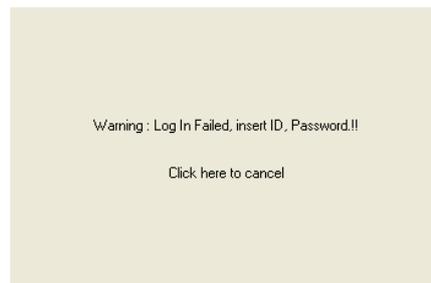


< Extended Recording Options >

3-9. Error Messages

① Login Error

- When ID or password was wrong, this error message will appear.
- It is necessary to type the correct ID and password.
- Click the error message box to cancel.



< Login Failed Error >

② Server Disconnected Error

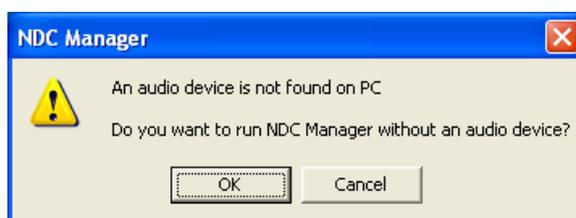
- When IP address or hostname was wrong, this error message will appear.
- NDC Manager keeps connecting the IP address or the hostname even while this warning is on.
- Click the error message box to cancel.



< Server Disconnected Error >

③ Audio Module Operating Error

- When there is some trouble with audio module, this error message will be appeared.
- If clicked below "OK" button, user can use NDC manager without audio.



< Audio Error >

④ Disk Space Full Error

- When NDC Manager cannot run overwrite files, or the file is in using by other multimedia programs, below error message box will appear.
- Prepare sufficient disk space or close other multimedia programs.

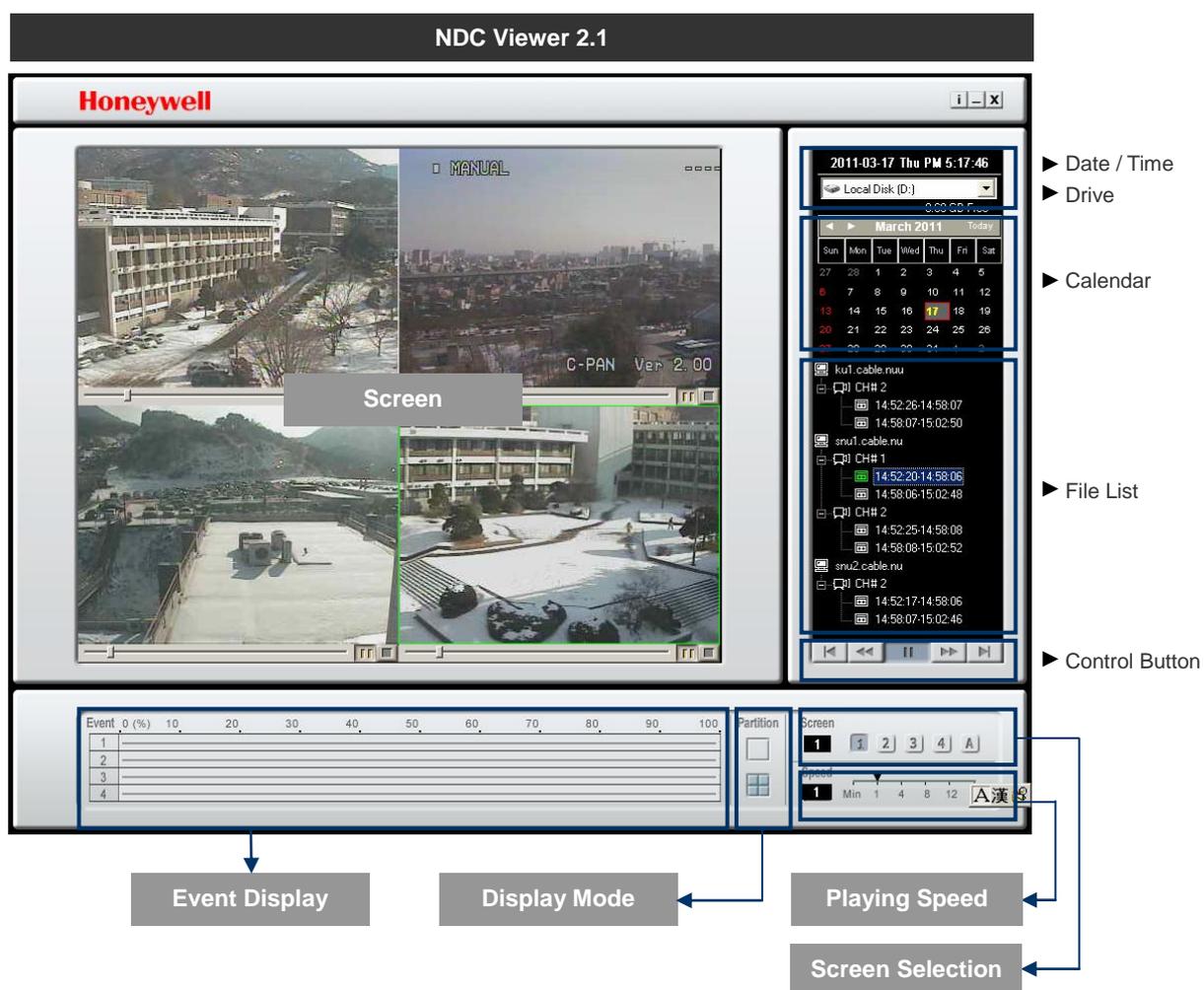


< Insufficient disk space >

4. NDC Viewer 2.1

4-1. Overview

- NDC Viewer (Network Digital Camera Viewer) plays video clips which were recorded by NDC Manager.
- Basic functions
 - Image control : Play/ Stop/ Move/ Rewind/ Forward (Play/ Stop by “Drag and Drop”)
 - Display Mode : Single or Quad display
 - Simultaneous play in quad display mode
 - File management using Tree-view method
 - Playing speed : 0.01~16
 - Recorded file list in order of date and server
 - Current date and time display
 - Mouse operation : Drag and Drop/ Double-click/ Right button menu
 - Event display of alarm or motion detection

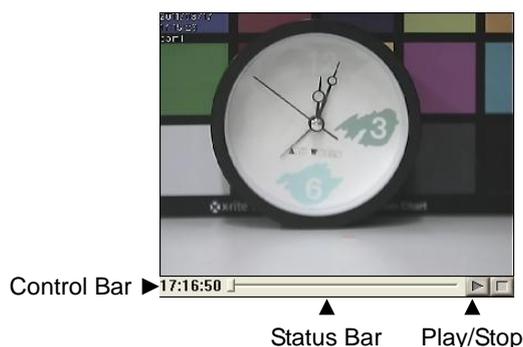


Ref. The logo can be changed by the file "logo.bmp" on the installation folder.

4-2. Functions

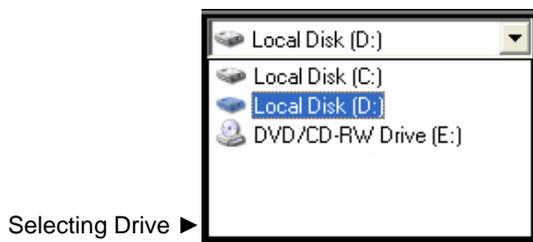
Screen (Control Bar)

- Select a screen and double-click a recorded file to play.
- Single or quad display mode is selectable.
- Image control is available by using "Control Bar" on the lower part of each screen.



Date / Time, Drive

- "Date / time" displays the current date and time of PC
- "Drive" shows the current target hard drive.
- Free space of selected hard drive is shown the below.
- Select a drive which includes recorded files for playback by clicking the arrow button on the right corner.



Calendar

- The red mark indicates today and date displayed with bold style means they include recorded data.
- If clicked a day among bold style days, saved image files appear on the "File List" under the "Calendar"



File List

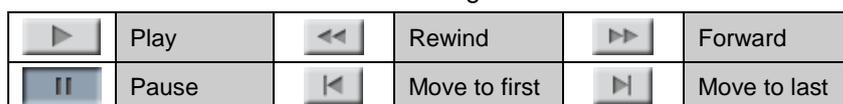
- Saved files are classified by date and server.
- Drag and drop or double-click file starts playback.
- Playback of saved data automatically jumps to the next file in the same server when it finishes.



► File List

Control Button

- Control buttons have six functions for image control.



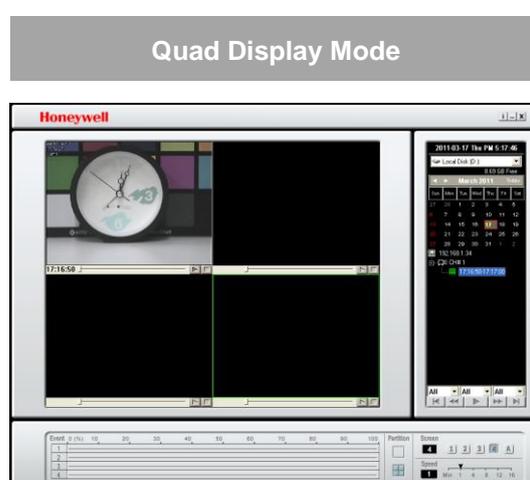
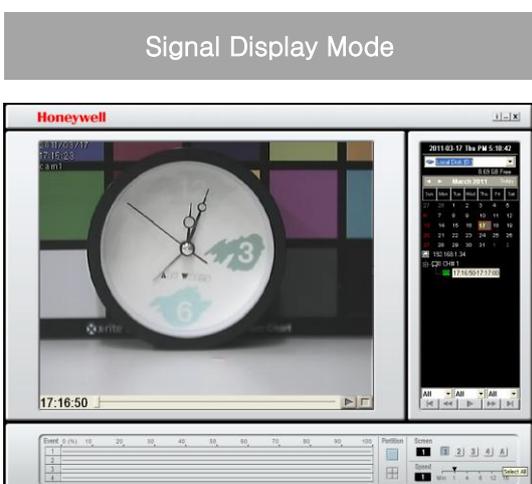
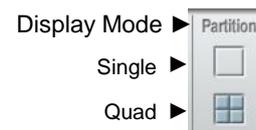
► Control buttons

▪ Event Display Panel

- Event display panel shows blue or red color bar which means the portion was recorded by alarm sensor trigger or motion detection
- Images saved by alarm sensor marks blue bar on event display panel.
- Images saved by motion detection marks red bar on event display panel.
- By clicking a point on event display panel, you can shift to related time period.

▪ Display Mode

- NDC Viewer has single or quad display mode.
- Double-click on the screen changes display mode.



▪ Screen Selection

- At quad display mode, it is used to assign a screen to play.
- Green outline on any screen means the screen is selected now.
- The button **A** is for controlling all screens in quad mode.
(Green outline on the screen will disappear)



▶ Screen Selection

▪ Playing Speed

- Playing speed varies by scrolling the arrow on the bar or clicking the number below the bar.
- The range is from 0.01 to 16



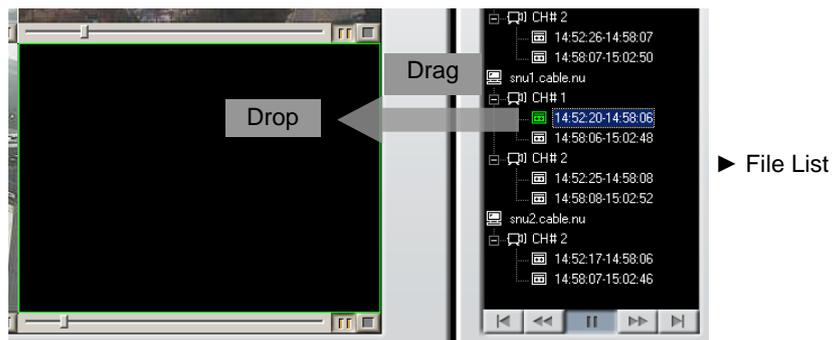
▶ Playing Speed

4-3. Play, Stop and Deleting file

- Playing an image file
 - File List shows recorded files classified by date and server.
 - There are two methods to play files (Drag & Drop, Double-click)

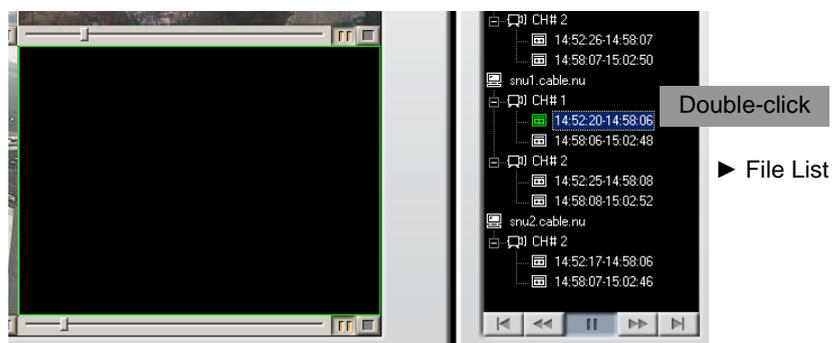
① Drag and Drop

- Please select a screen to play an image. (a green outline will show up on the screen)
- To play a file on a screen, drag a file and drop it on the screen.



② Double-click

- Please select a screen to play an image. (a green outline will show up on the screen)
- Move the mouse on File List and double-click a file on it



- Closing playback
 - There are two methods to close playback (Drag & Drop, Right button menu)

① Drag and Drop

- To close a file from a screen, drag the screen and drop on File List.



② Right button menu

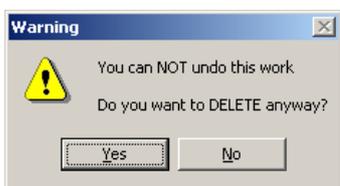
- Please select a screen to close playback (a green outline will show up on the screen)
- Click the right button of the mouse on the screen.
- Select “Close(C)” on the pop-up menu.



► Right-mouse-button on a screen

▪ Deleting an image file

- Please select a screen to delete an image (a green outline will show up on the screen)
- Please click the right button of the mouse on a file or the Screen. (refer to upper images)
- Select “Delete(D)” on the pop-up menu.



► Warning Message

- Above warning message will appear to confirm file deletion.
- Click “Yes”
- Deleted file can not be restored.