

Saving Network Camera Data onto SD Memory Card

This chapter explains how network camera data is saved onto SD Memory Card.

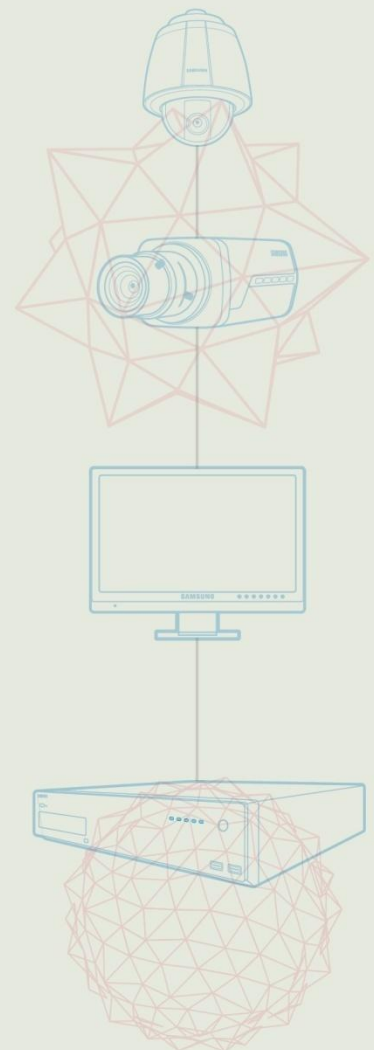


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Overview

In general, video footage recorded by a network camera is stored on a connected NVR (Network Video Recorder). In case of a troubled network connection and other possible NVR problems regarding file saving, the network camera can be equipped with SD memory card for autonomous data storage.

Samsung Network Cameras support SD memory cards for data saving that can be used for autonomous saving for events data including broken network, alarms and motion detections.

Mostly, the SD memory card is not bundled with Samsung Network Cameras. To save video data in Network Camera's SD memory card, check whether the camera supports SD memory card and its recommended SD memory card specifications before using.

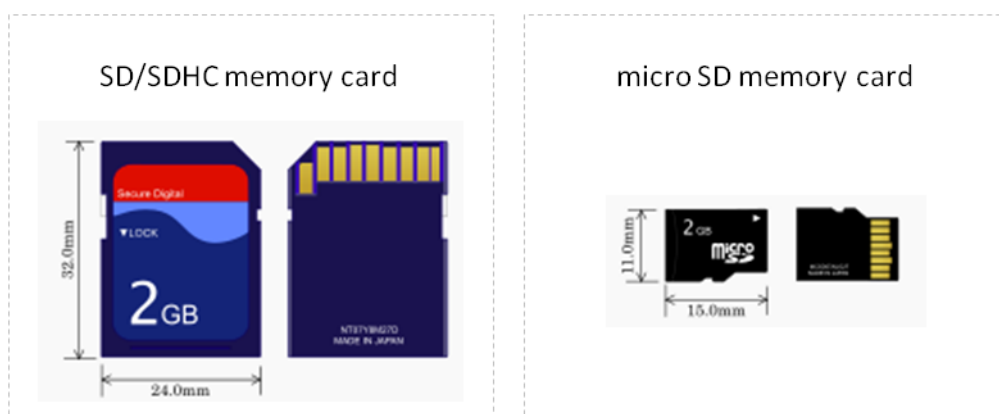
This tutorial was written based on the new camera which has new platform and GUI. To see the previous version of the tutorial, please click the link below.

[http://update.websamsung.net/OnlineTutorial/\(Online\) Saving onto SD Memory Card 20120710.pdf](http://update.websamsung.net/OnlineTutorial/(Online) Saving onto SD Memory Card 20120710.pdf)

SD Memory Card (Secure Digital Memory Card)

The SD Memory card is a flash memory device frequently used with mobile phones, digital cameras and other small portable digital devices as their storage medium. Samsung Network Camera's support SD memory cards for its video storage. Besides the SD memory cards, the SDHC (SD High Capacity) memory cards of bigger capacity are also supported, while some models support micro SD memory cards.

Fig 1. Size by memory card types



When using SD memory cards, pay attention to the following:

- Do not bend or drop the SD memory card.
- Do not store or use the SD memory card in a high temperature, high humidity or dusty

places.

- Be careful not to apply foreign substances on the terminals of SD memory card.
- If the SD memory card has reached its lifespan, no data will be saved. In such cases, purchase a new SD memory card and replace it.
- If the data protection tab or switch is locked, no data can be written into the memory card. Check if the switch is locked before using.

Recommended specifications of SD memory card supported by most of Samsung Network Cameras: Before using, check whether your SD memory card satisfies the below features:

- Recommended manufacturers: SanDisk, Transcend, Samsung
- Capacity: 2 ~ 32 GB
- Write/Read Speed: more than 10 Mbps, minimum Class 6 or higher

SD memory card data read/write speed is classified as shown in the table below. If used memory card's data read/write speed is not fast enough to the required speed, saving or reading data to/from the memory card may experience data loss. Check the read/write speed of the SD memory card before using with your network camera.

Fig 2. SD Memory Card
Read/Write Speed

Class	Minimum Performance
 Class 2	2MB/sec = 16Mbps
 Class 4	4MB/sec = 32Mbps
 Class 6	6MB/sec = 48Mbps
 Class 10	10MB/sec = 80Mbps

Inserting / Ejecting the SD Memory Card

Inserting the SD Memory Card

Disconnect the power cable from the network camera before inserting the SD memory. Unfasten the SD Memory card slot cover and open it to insert the card in the direction of the arrow. Check whether the SD Memory card faces correct direction when inserting. SD Memory Card may be damaged if forcibly inserted in the wrong direction.

Fig 3. Inserting the SD Memory Card



After inserting the SD Memory Card, turn the power on in order to check if the SD Memory card works correctly with the SD indicator located on the rear side of the camera. When the SD memory card works correctly, the indicator is turned on. If it blinks, it indicates the memory card is not inserted properly, has insufficient free space, or is experiencing a recording failure. If the SD indicator is turned off, it means the camera is not powered or in restarting, there is no memory card inserted, or the camera has not been configured to record.

Ejecting the SD Memory Card

Gently press the exposed tip of the SD memory card inserted in the slot to eject it from the network camera. When you eject the SD memory card during recording, data being recorded may be damaged. When ejecting the inserted memory card, be sure to stop recording first for data safety.

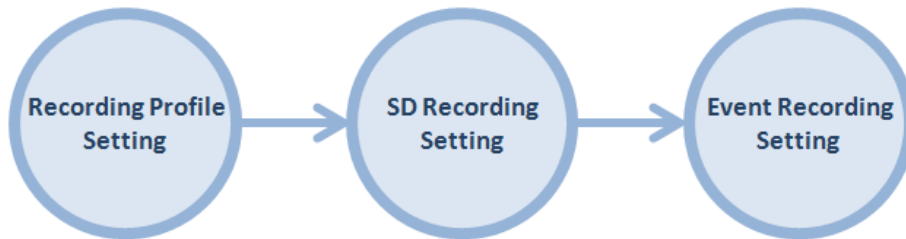
Fig 4. Ejecting the SD Memory Card



SD Memory Card Recording Settings

Properly insert the SD memory card into the camera, and configure the camera to start recording onto the SD memory card.

Fig 5. Recording setup procedure

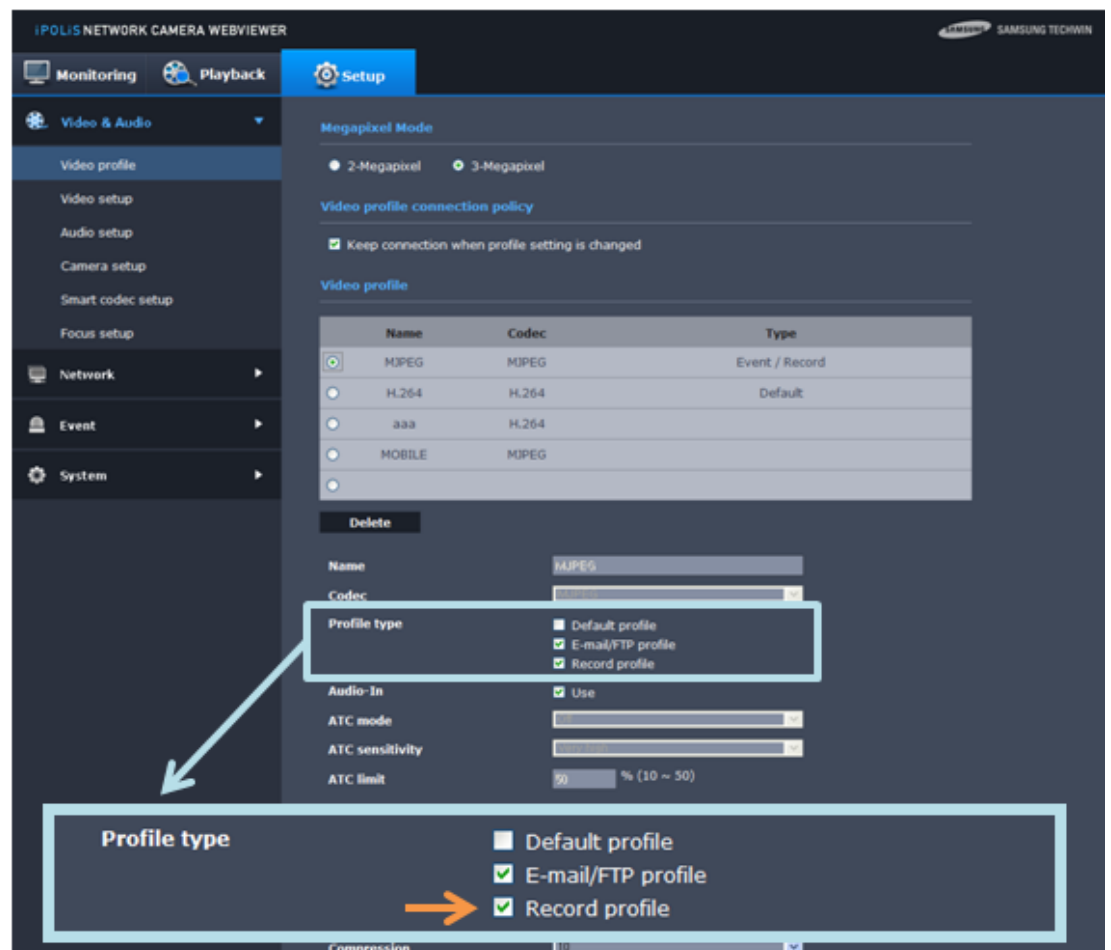


Setting the Recording Profile

Set the video recording profile to be used for SD memory card recording. Access the network camera on the Web Viewer, and move to the [Setup] page. The [Video Profile] in [Audio & Video] settings shows which profile is currently used for recording. To change the profile, select one from supported profiles and set to [Recording Profile].

After making changes, click [Apply] button near the bottom to apply changes.

Fig 6. Setting the Recording Profile



Setting the SD Save

Move to [Event] > [Storage] in [Setup] page to configure the network camera's recording options and conditions. You can check used data storage and formatting the storage device in the page too.

You can check the <Total Capacity> and <Available Space> of the SD memory card in this page. Set <Record> to <Use> if there is enough space in the SD memory card or click <Format> button to format and delete all existing data and make room for new recordings. After formatting is complete, set <Record> to <Use>.

If the SD memory card used in the network camera fails to satisfy required data read/write speed, the camera records 1 frame only at a second regardless of the saving settings.

For a SD memory card with a large capacity, the formatting will take longer accordingly.

If the maximum target bitrate or complexity of image frames are too high so the resulting data size is too large and beyond the memory card's read/write capability, camera may only record at 1fps even if it's set to Full Frame Saving.

Approximately 90% of the actual SD memory card capacity can be used for video data storage, since it is partially used for system operations.

And, specify what conditions decide to record video.

The Record Profile shows the assigned codec for saving recorded video that has been selected previously.

If it's set to overwrite, new recordings overwrite the oldest recording when reached the SD memory card's total capacity.

Pre-alarm time is set the time from when to record prior to the detection of an event, where the Post-alarm time sets the time by when to record after the end of an event.

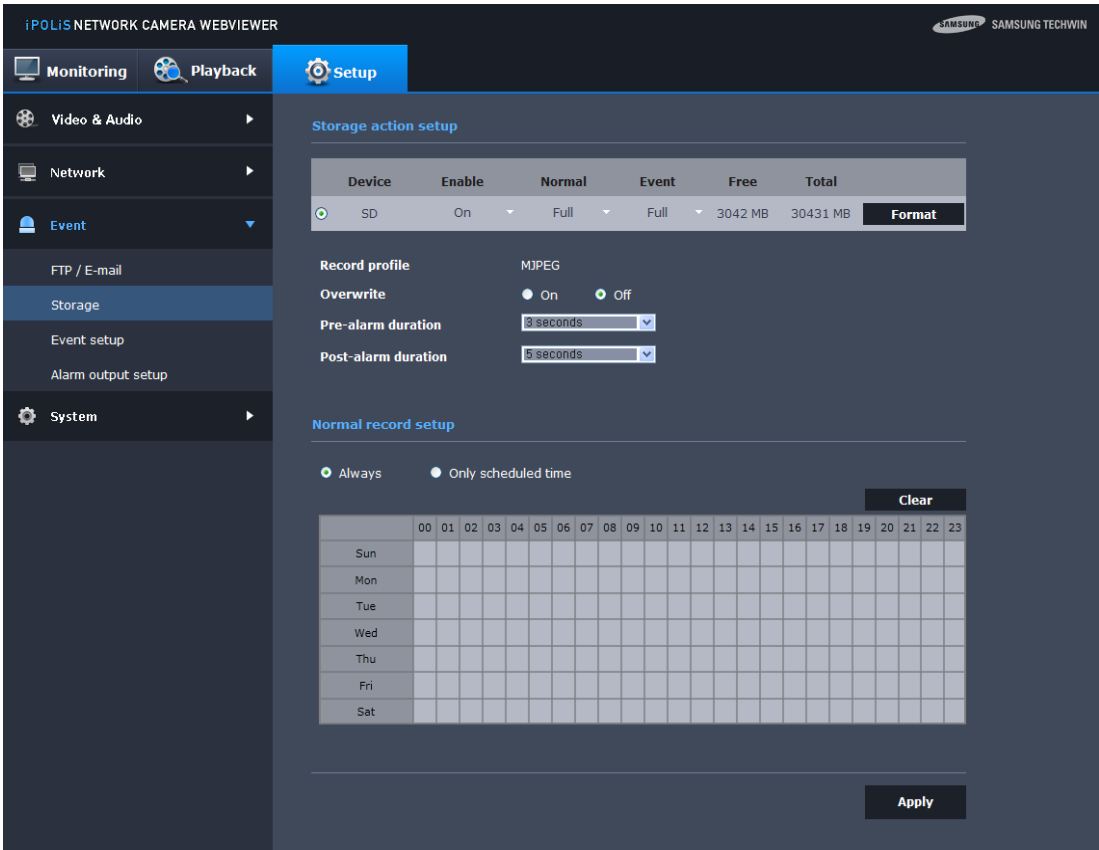
You can set Pre-alarm time up to 5 seconds before the occurrence of the alarm.

You can set Post-alarm time up to 120 seconds after the occurrence of the alarm.

General and Event fields set whether to save all frames or I-frames only for each data saving. The general field is for scheduled recordings, while event field is for event recordings such as alarm/motion detection/broken network connection.

Configure the recording schedule table and click [Apply] button near the bottom to apply changes.

Fig 7. Setting the SD Save

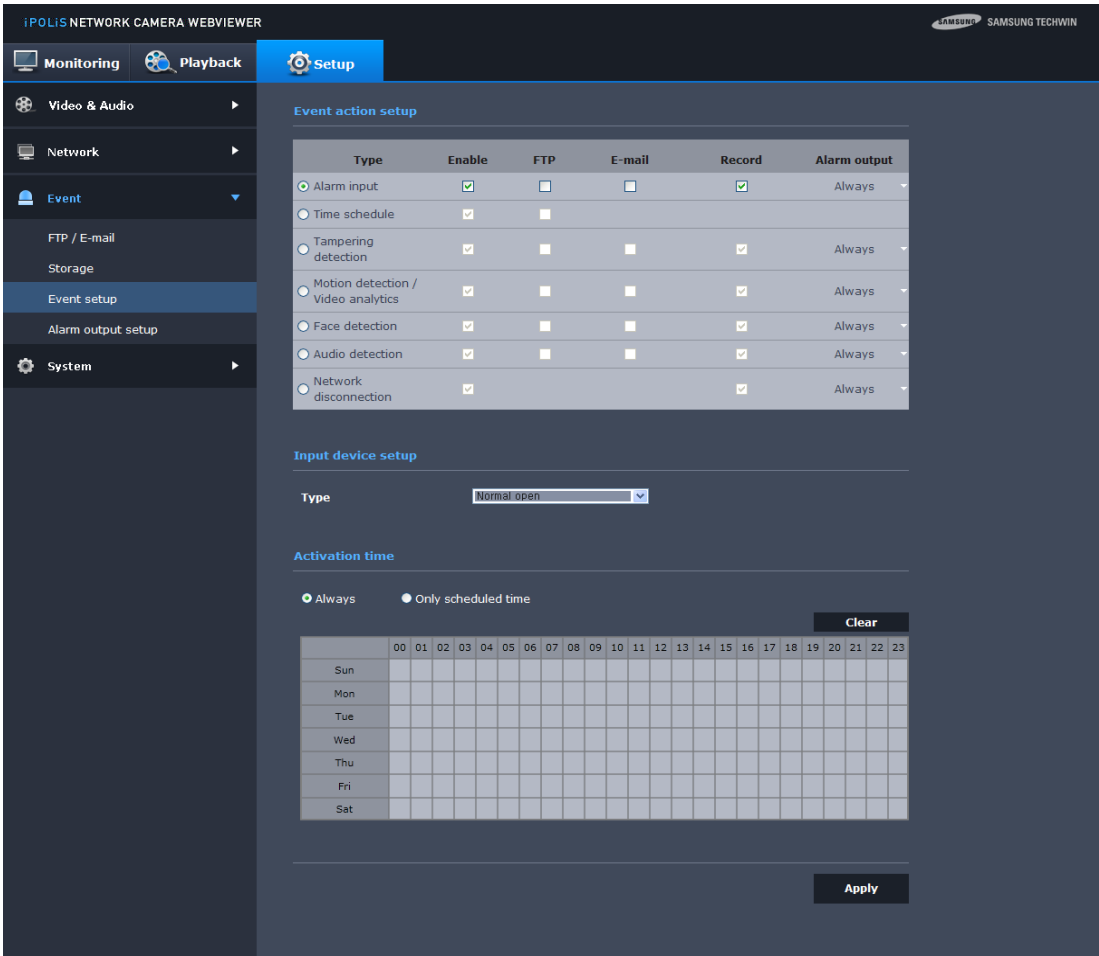


Setting the Event Recording

Configure the network camera’s recording setup for detected events (alarm-in, motion detection, intelligent video analysis and cable cut, etc).

Move to the [Event Setup] menu in [Setup] page of Web Viewer and configure the event related recording settings for each event and time-scheduled recording condition. Set the desired event to [Enable], and select the [Record] checkbox to record the video in accordance with configured event type.

Fig 8. Setting the Event Recording



Searching Video on SD Memory Card

Once video recordings are saved on the SD memory card properly, you can search and play videos using Web Viewer or NET-i Viewer.

Searching Videos with Web Viewer

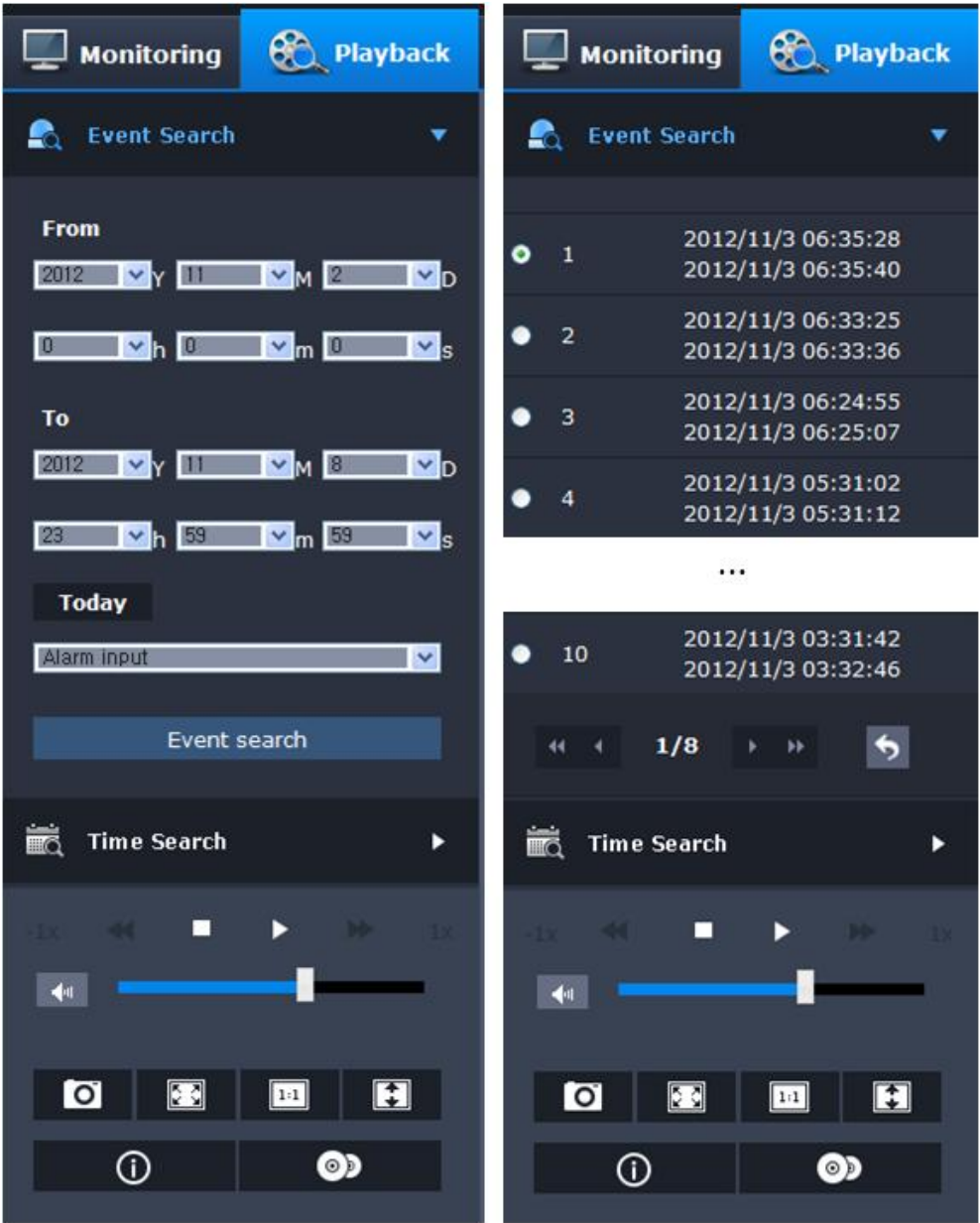
Access the network camera from the [Playback] page of Web Viewer. Searching videos supports two methods: one that is event-based and the other is time-based.

To search event video recordings, set the beginning and ending search period and select desired event types, and click Search button.

If more than 500 events are recorded within the search period, your search will be limited up to the date when the 500th event is recorded.

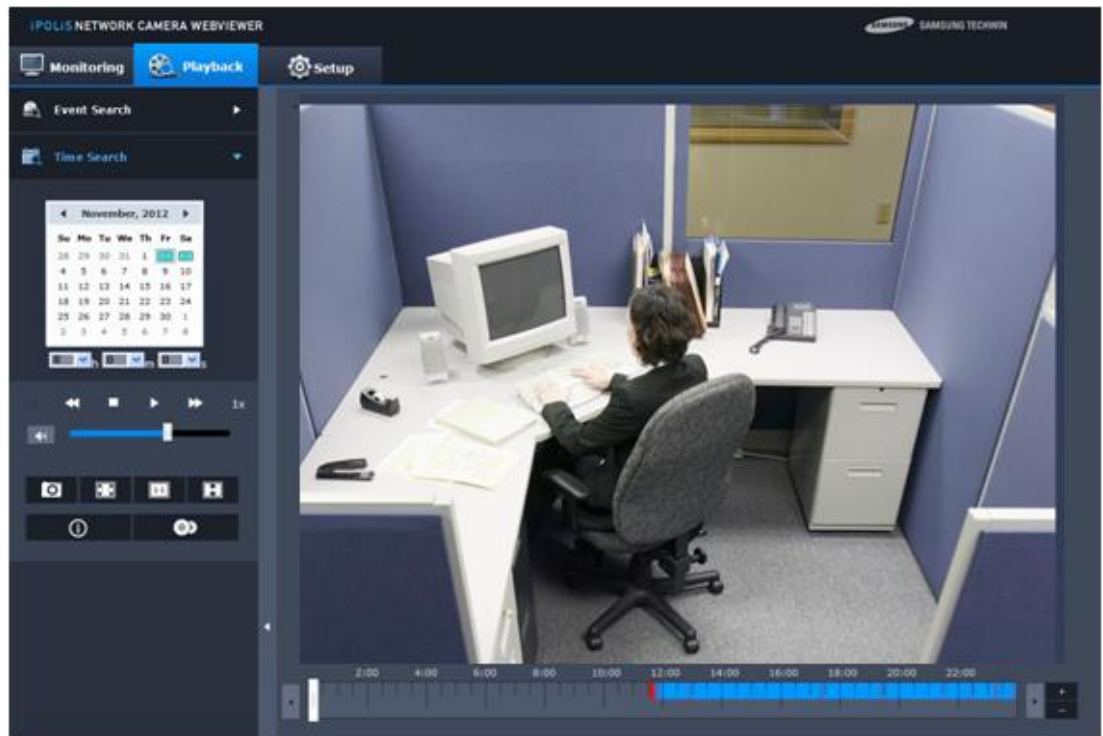
If found with matching results, the search result list appears. Select desired item and click Play button to start playback.

Fig 9. Web Viewer
Event Search



To run a time-based search, click Time Search tab to display the calendar whose dates containing recorded videos are marked. Select a date to display the timeline of the selected date that is indicating the recorded video chronologically on the right pane. General recordings of scheduled recording are colored in blue, where event recordings are colored in red on the timeline. Move the time bar to a desired time position and click Play button, or set the beginning time in the time fields under the calendar and click Play button to start playback.

Fig 10. Web Viewer
Video Search



Web Viewer's [Playback] page provides functions listed below as well as playback.

- Capture – Captures still image from the video being played into .jpg or .bmp format
- Full screen – Fills the entire screen with the video currently being played
- Fix the resolution – Sets the resolution to 640x480 regardless of the resolution setup configured in the camera
- Screen Optimization – Switches the video size to as big as the web browser.
- Time Information – Displays time information of the video currently being played
- Backup – Saves the video being played into the local computer's storage as in .avi format

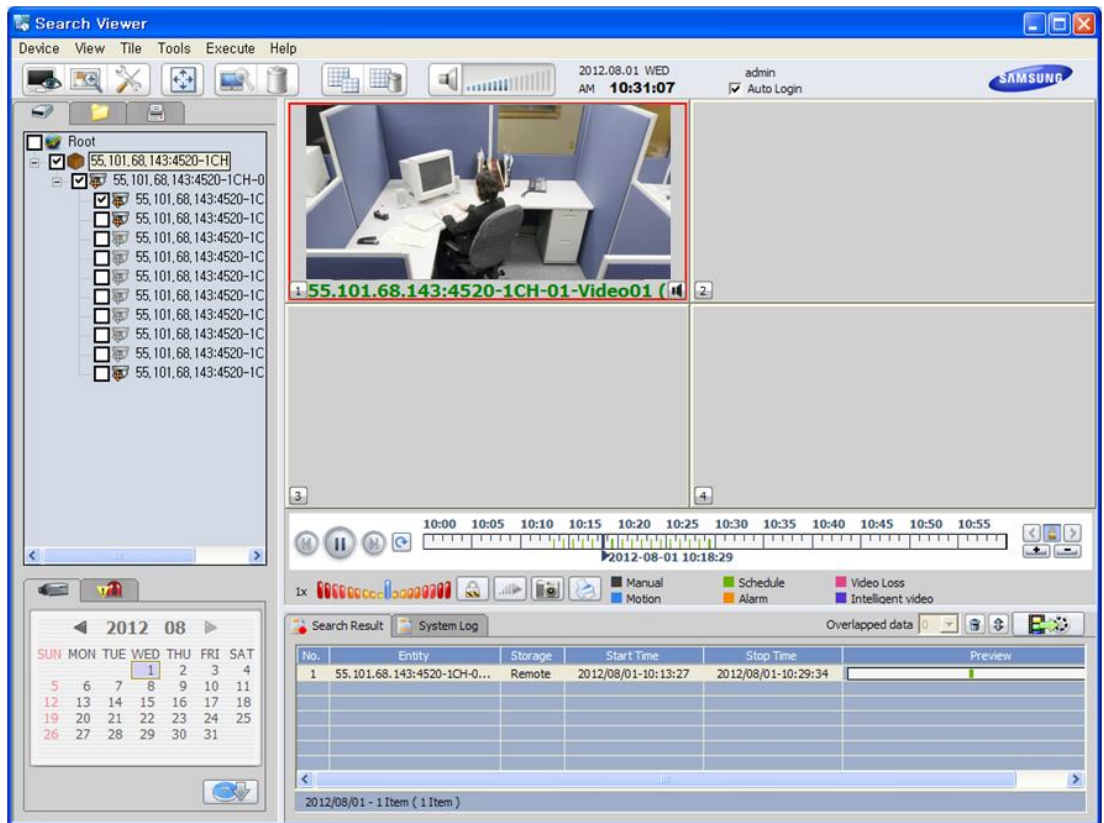
Searching Videos with NET-i Viewer

Install the NET-i Viewer application program on your computer, and run Setup Tool first to add desired network camera for search; then, run the Search Viewer. Select the desired camera from the "Network Search" tab of the device tree displayed on the left.

After selecting a camera, select either one of [Date Search] and [Event Search] under the device tree to begin your search. Click [Search] button on the left bottom side to display dates with recorded data on the calendar. Select a date by clicking it to display a list of saved recording data on the bottom right side. Double click on a desired data item, or drag it and drop on a tile to start playback.

For further details on using playback control, capturing, printing and backup functions provided with Search Viewer of the NET-i Viewer, refer to user's manual.

Fig 11. Searching Videos with NET-i Viewer



Searching Videos with SSM

Install the SSM (Samsung Security Manager) application program on your computer, and run [Settings] menu from Console application first to add desired network camera for search.

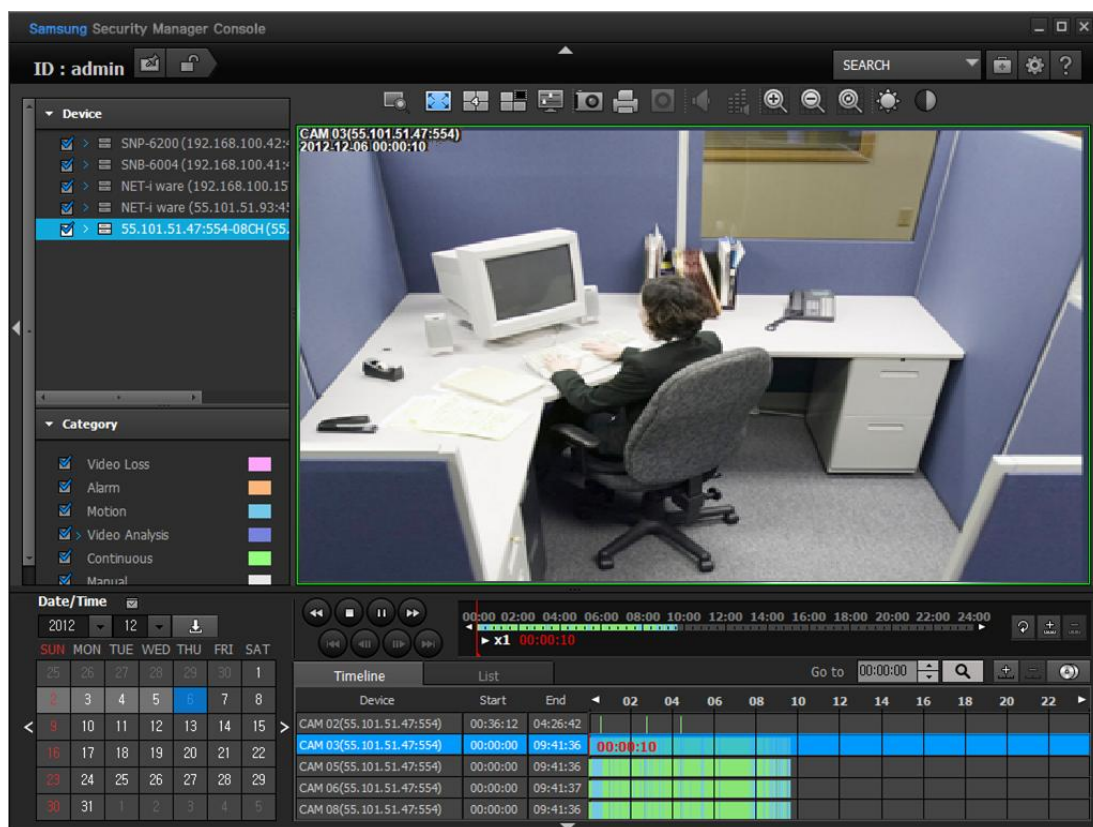
For further details on adding and setting Media Gateway in order to add cameras, refer to SSM user's manual.

Then run [SEARCH] from Console. Select the desired camera from the "Device" pane displayed on the left.

After selecting a camera, select desired search category items from [Category]. Select year and month from [Date/Time] pane and click Load  button. If a date has recorded data, it is marked in color. Select a date by clicking it to display a list of saved recording data on the bottom right side. Double click on a desired data item, or drag it and drop on a tile to start playback.

For further details on using playback control, capturing, printing and backup functions provided with SEARCH of the SSM Console, refer to user's manual.

Fig 12. Searching Videos with SSM



Supported SD Memory Cards by Models (As of November 2012)

Network Camera	SD/SDHC Supported by	SNB-7002, SNB-7000, SNB-5000, SNB-3002, SNZ-5200 SNO-7082R, SNO-7080R, SNV-7080R, SNV-5080R SND-7082(F), SND-7080(F), SND-5080(F), SND-3082(F), SND-3080(F) SNV-7082, SNV-7080, SNV-5080, SNV-3120, SNV-3082 SNP-6200(H), SNP-5200(H), SNP-3371(H/TH), SNP-3302(H), SNP-3120(VH) ✧ SNO-7082R, SNO-7080R, SND-7080(F) – Includes 4GB SD Memory Card.
	mini SD Supported by	SNB-1001 SNV-1080R, SNV-1080 SND-1080, SND-1011
	SD Memory Not supported	SNB-7001, SNB-5001 SNO-5080R, SNO-1080R SND-7011, SND-7061, SND-5011, SND-5061, SND-5010, SNV-5010
Encoder		SPE-100 SPE-400



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- Functions and specifications on this document are subject to change without prior notice for improved performance and quality.

You can find more information from the "Online Tutorial" at Samsung Techwin's CCTV site.

<http://www.samsungcctv.com>