ACTi
Knowledge Base

How to Use Local Storage in ACTi Cameras

Contents

- Introduction
- Surveillance Solutions Using Local Storage
- Solution Comparison Table
- Required Hardware
- Setting Up the Recording System
- Downloading Recordings
- Integration with Software

Introduction

There is a growing trend in IP video surveillance market of having cameras with built-in local storage that can host the video clips and snapshots captured by the camera.

While the traditional analog camera systems had to rely on DVR to convert the analog video to digital and compress it before saving, the IP cameras directly produce compressed digital video which gives the possibility to save the digital video right inside the camera itself or by using NVR over the IP network.

When speaking about using camera's local storage in real surveillance applications, one would have many questions: What is the role of camera's local storage in the surveillance solution architecture? What are the advantages of local storage? Is it safe to rely on camera's local storage? What are the limitations of local storage? How to use ACTi cameras' local storage?

This article gives the answers to all these questions.

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Surveillance Solutions Using Local Storage

ACTi cameras' local storage system is based on MicroSDHC memory cards. Below is the list of possible scenarios where the local storage could be used.

LOCAL STORAGE ONLY

The "Local Storage Only" solution is the most basic recording system – it uses camera's built-in local storage to save video clips or snapshots either periodically/constantly, or only when the events occur, triggered by motion, digital input, etc. When there is an incident reported by someone, or the user receives an e-mail notification from the camera about the intrusion, the user would then use a remote computer to access the camera to download the video clips and snapshots from its local storage and review them in remote PC.

Live Stream (for recording)
Download
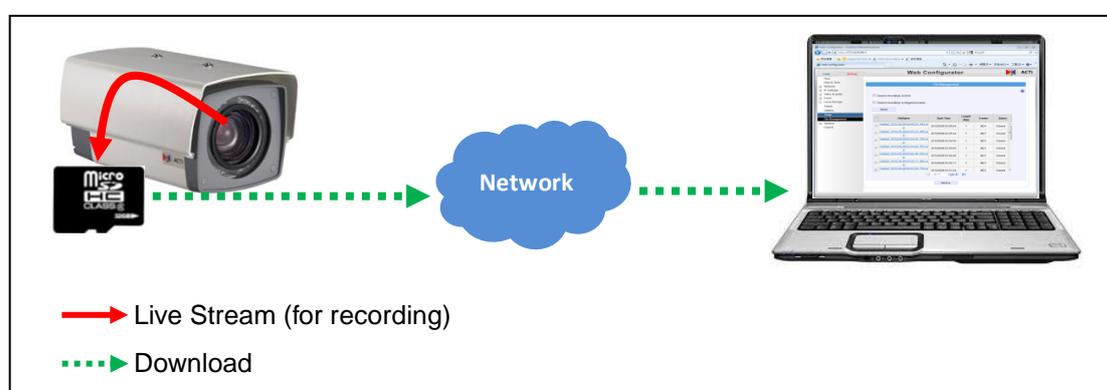
Normally, such solutions do no require constant live view since the main idea of this solution is to **optimize the cost** – the person to watch constant live view would be a major cost of human resource. However, if it is necessary to peek at the live view of the camera once in a while, it is possible to do it conveniently by Web Configurator.

Since the recording speed of MicroSDSC is not as fast as Hard Disk, therefore one should keep in mind that **MicroSDHC based recordings may sometimes have less frames recorded compared to HDD recordings**, while the quality of a single frame is just as good as in case of HDD recordings.

Possible recording methods:

Method	Snapshot to MicroSDHC	Video to MicroSDHC
Event triggered (motion, DI)	Yes	Yes
Periodical (e.g once in hour)	Yes	Yes
Constant (non-stop)	Yes	Yes* (not recommended)

* MicroSDHC technology has not been designed for non-stop 24-hours-a-day recording. The long-term impacts of non-stop recording are yet to be surveyed by IP camera manufacturers.

Advantages of "Local Storage Only" solution:

- **Very cost efficient.** It does not require any additional investment on recording solution except for purchasing an inexpensive MicroSDHC card.

- **Easy to maintain.** There is no need to maintain an additional server computer. The camera acts as a 24/7 recording server. Easy to troubleshoot as well.

- **Save bandwidth.** In the locations where the network bandwidth is limited due to technical reasons or costs a lot, it is good to record videos to local storage and only download the videos you need. Whereas downloading speed does not have to be high, compared to real-time live view bandwidth requirements.

- **Easy to access.** The camera's local storage can be accessed in many ways and from different types of computers and operating systems. In addition to browser based remote access, there is also built-in FTP server inside the camera that allows FTP clients to download the files of local storage conveniently.

Disadvantages of "Local Storage Only" solution:

- **Risk of dropped frames.** When the amount of data is big, there is a risk that MicroSDHC cannot record them all in real-time speed, because it is not a hard disk. In such case, some of the video frames may be discarded by storage system. However, the video quality of each single frame is still excellent.

- **Risk of vandalism or theft.** If the camera is within the reach of an intruder, there is a risk that one could damage or steal the whole camera together with recordings in them. In such case, all the video evidence would be lost.

- **Smaller storage space.** Compared to large storages of NVR servers, the MicroSDHC size is limited to 32GB. With the constant recording of 1Mbps video data, the 32GB memory card would be full in 3 days, and then the oldest files would start to be overwritten. Make sure to download the important videos within 3 days then.

- **Less User Interface Functions.** Compared to powerful functions of NVR, the local storage management interface is very basic.

- **File Access Depends on Network.** While NVR-based solutions offer playback capability to its local client regardless of network status, the download/playback capability of camera's local storage files depends on healthy network – if the network is temporarily down, it is impossible to get any of the recordings from the camera.

Considering advantages and disadvantages, the "local storage only" solution is suitable for **budget-sensitive retail stores, one-time events (concerts, parades), construction sites, residential, day care centers and nursing homes, pet hotels, and other locations with lower demand on security.**

LOCAL STORAGE + FTP SERVER

This is a solution that is mainly based on local storage of the camera, but with the nice additional failover capability by streaming video or snapshots automatically to a remote FTP server in case of failure of camera's local storage.

This solution is good for **minimizing the risks of recording failure** that may happen when the card is physically damaged or removed by someone.
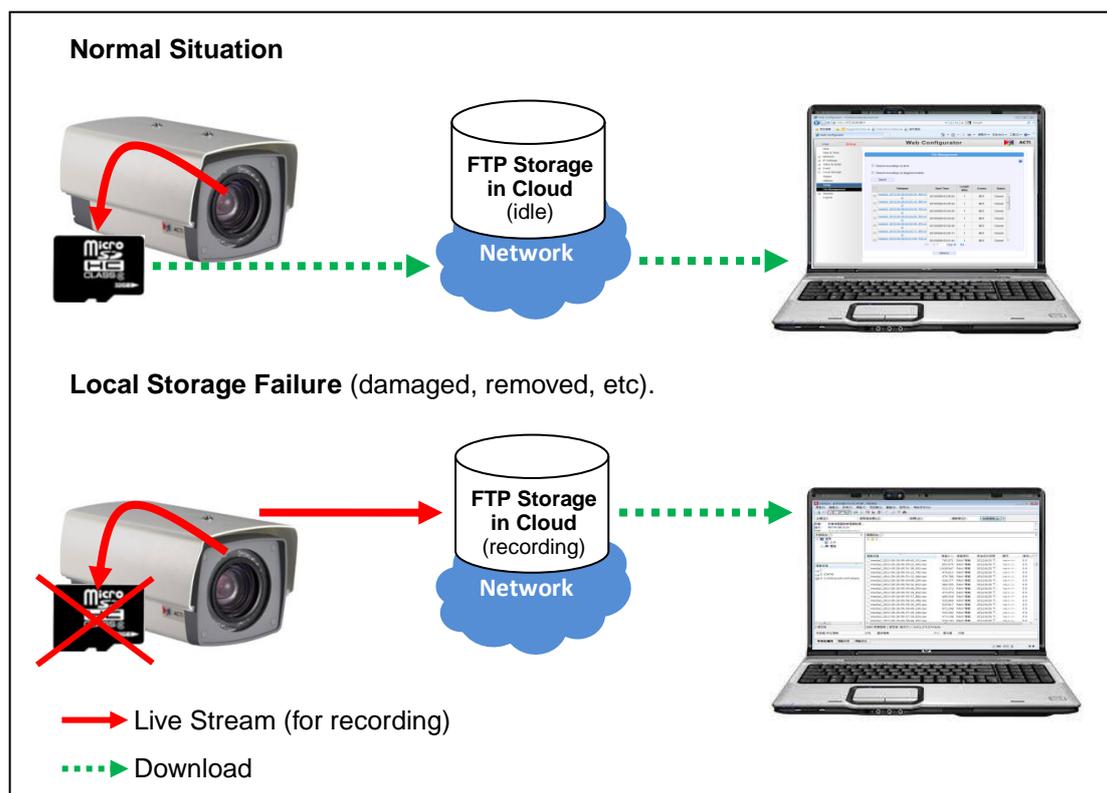
The **FTP Server** in this solution would be WAN based third party FTP hosting (Cloud FTP). Although it is also possible to use self-installed LAN or WAN-based FTP server, it would not be an economical decision – the same money you spend on building up your own FTP server, you could spend on a PC with ACTi Free 16-channel NVR instead, which is much more reliable and user friendly solution compared to FTP hosting.

To **minimize the WAN bandwidth cost** for failover recording, the resolution, frame rate and bitrate could be much lighter compared to local storage plan. For example, you could record video on MicroSDHC, and if it fails, then send snapshots to remote FTP as a bandwidth friendly method.

Possible recording methods:

Method	Snapshot to MicroSDHC or to FTP as failover	Video to MicroSDHC or to FTP as failover
Event triggered (motion, DI)	Yes	Yes
Periodical (e.g once in hour)	Yes	Yes
Constant (non-stop)	Yes	Yes* (not recommended)

* MicroSDHC technology has not been designed for non-stop 24-hours-a-day recording. The long-term impacts of non-stop recording are yet to be surveyed by IP camera manufacturers.

Advantages of "Local Storage + FTP Server" solution:

- **Cost efficient.** Compared to NVR solution, this solution is more budget friendly. Nowadays there are many FTP hosting plans that are totally free of charge.
- **Easy to maintain.** You don't need to maintain the cloud FTP hosting by yourself – the owner of the hosting would do it.
- **Save bandwidth.** In the normal condition, the bandwidth is not used at all. The bandwidth is only used when the system goes to failover mode or when downloading needed video clips from the camera.
- **Easy to access.** The camera's local storage and FTP server can be accessed in many ways and from different types of computers and operating systems.
- **Damage proof.** When the local storage gets damaged or removed, the video recording can still go on by using FTP server's storage.

Disadvantages of "Local Storage + FTP Server" solution:

- **Risk of dropped frames.** When the amount of data is big, there is a risk that MicroSDHC cannot record them all in real-time speed, because it is not a hard disk. In such case, some of the video frames may be discarded by storage system. However, the video quality of each single frame is still excellent.
- **Risk of vandalism or theft.** If the camera is within the reach of an intruder, there is a risk that one could damage or steal the whole camera together with recordings in them. In such case, all the video evidence would be lost.
- **Smaller storage space.** Compared to large storages of NVR servers, the MicroSDHC size is limited to 32GB. With the constant recording of 1Mbps video data, the 32GB memory card would be full in 3 days, and then the oldest files would start to be overwritten. Make sure to download the important videos within 3 days then.
- **Less User Interface Functions.** Compared to powerful functions of NVR, the local storage management interface is very basic.
- **File Access Depends on Network.** While NVR-based solutions offer playback

capability to its local client regardless of network status, the download/playback capability of camera's local storage files depends on healthy network – if the network is temporarily down, it is impossible to get any of the recordings from the camera.

- **Cloud FTP Uncontrollable.** Theoretically, the third party FTP depends much on the actions of its administrator. Should they accidentally remove files or suspend the service, the evidence may be lost. Also there is a theoretical risk that unauthorized people might get the chance to look at the video clips hosted in cloud FTP.

Considering advantages and disadvantages, the "local storage only + FTP server" solution is suitable for **similar projects as "local storage only" case, with more increased security with additional cost.**

LOCAL STORAGE + NVR SERVER

This is **the most professional solution** – to have the NVR server continuously record the best quality video from the camera while the local storage of the camera is being used for backup recording at the same time to have the redundant video evidence in case of NVR server failure (for example power loss of server PC, unexpected Windows OS reboot, network link failure between camera and NVR, etc.). Those backup videos can be downloaded by user by using Web Configurator or FTP Client program whenever necessary.
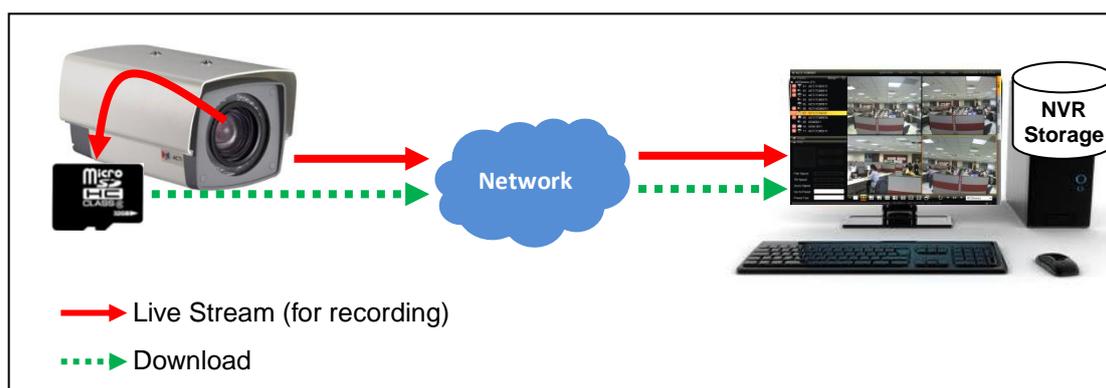
Although the video streamed to MicroSDHC could be in the same format as the one streamed to NVR, it does not necessarily have to be so. For example, you could simply save snapshots to local storage and video to NVR. Or use the dual stream capabilities of the camera to record full quality video by NVR and the lighter stream by local storage of the camera, therefore being able to save longer time period of video evidence.

Possible recording methods:

Method	Snapshot to MicroSDHC and to NVR the same time	Video to MicroSDHC and to NVR the same time
Event triggered (motion, DI)	Yes	Yes
Periodical (e.g once in hour)	Yes	Yes
Constant (non-stop)	Yes	Yes*

* Although MicroSDHC technology has not been designed for non-stop 24-hours-a-day recording, the system is mainly relying on NVR server recordings and only in case of NVR failure the MicroSDHC content is needed. In such rare cases, even the non-smooth video is acceptable, compared to having no video evidence at all.

Advantages of "Local Storage + NVR" solution:

- **Video backup.** Camera's local storage can act as a video backup system. The user does not have to invest into an additional backup server computer. Besides, the remote backup server would still be useless if the network connection from the camera fails, whereas the local storage based backup system does not require network connection.

- **Perfect quality.** Since NVR records videos on the hard disk, it is possible to record highest possible video quality from the camera.

- **Vandalism-proof evidence.** Since the main recorder is the NVR, the vandalism act on the camera does not erase the critical evidence – NVR will still be able to capture the face of the person who went to damage the camera or steal the MicroSDHC card.

- **Large NVR storage.** Since the main recorder is NVR, the storage size has practically no limit. The user can expand the storage according to the project requirements. Since MicroSDHC recordings have the role of backup only, its capacity is big enough to record videos until NVR sever or network is repaired.

- **Convenient user interface.** Since the main recorder is NVR, the user can work with convenient user interface most of the time and enjoy all the benefits, such as instant playback, synchronized playback, etc.

Disadvantages of "Local Storage + NVR" solution:

- **Additional Cost.** Compared to "NVR only" or other solutions, "NVR + local storage" solution may cost a bit more, but is definitely worthy for the projects requiring ultimate security.

Considering advantages and disadvantages, the "local storage only + FTP server" solution is suitable for **banks, governmental facilities, airports, high end retail and other high security projects.**

Solution Comparison Table

There are surveillance projects that require the highest degree of recorder security and reliability, such as banks, while some others merely need basic video evidence and prefer cost-efficient solutions, such as construction sites, pet hotels, residential, etc. The following comparison table gives a simple and clear overview of each recording solution and their value to the customer.

Security & Reliability – the higher is the value, the safer are the video recordings against possible technical recording failures, vandalism impact and theft of recording equipment and storage.

Recordings Quality – the higher is the value, the higher quality videos (high resolution and frame rate) can be recorded to given storage.

Cost Efficiency – the higher is the value, the lower will be the cost of the solution.

Recording Solution	Suitable Projects	Advandages & Disadvantages	Security & Reliability	Recordings Quality	Cost Efficiency
Local Storage Only	- budget-sensitive retail - one-time events - construction sites - residential - day care centers - nursing houses - pet hotels - non-security sites	+ Very Cost efficient + Easy to maintain + Save bandwidth + Easy to access - May drop frames - Risk of vandalism - Less UI functions - Playback not instant	★★	★★★	★★★★★
Local Storage + FTP	Similar to "Local Storage Only" projects	+ Cost efficient + Easy to maintain + Save bandwidth + Easy to access + Damage proof - May drop frames - Risk of vandalism - Less UI functions - Playback not instant - Cloud Uncontrollable	★★★	★★★	★★★★
Local Storage + NVR	- banks - governmental - airport - high end retail - high security projects	+ Video backup + Perfect quality + Vandal-proof evidence + Large NVR storage + Convenient UI - Additional cost	★★★★★	★★★★★	★★
NVR Only	All verticals	+ Perfect quality + Large NVR storage + Convenient UI - Risk of network loss - Risk of NVR failure	★★★★	★★★★★	★★★

Required Hardware

To be able to use local storage based solution, please make sure if the camera you chose supports local storage. It is written in the Datasheet, under "Interface" section.

ACTi local storage standard for cameras is MicroSDHC interface. The camera package does not include the memory card, therefore the user would have to purchase one by oneself, depending on project requirements.

There are 4 specifications to notice when choosing the suitable SD (secure digital) format for ACTi cameras: physical size (Micro), family (SDHC), speed class (4, 6, 10), capacity (4GB, 8GB, 16GB, 32GB).

Supported storage format of ACTi cameras:

Physical size	Family			Speed Class (MB/s)					Capacity (GB)						
	SDSC	SDHC	SDXC	2	4	6	10	16	2	4	8	16	32	64	128
SD															
Mini															
Micro		Y			Y	Y	Y			Y	Y	Y	Y		

Examples of compatible memory cards:

It is recommended to use **Class 10**, as it has the highest possible recording speed.

If the biggest possible storage size is required, then please use **32 GB capacity**.

Setting Up the Recording System

Recording system setup consists of 2 parts – **storage preparation** and **recording rule configuration**, to let the camera know under which condition and what kind of data is to be recorded.

STORAGE PREPARATION

If your camera has the local storage capability please make sure it has the firmware version that supports the local storage management - **TCM-series: version 4.12 or newer** (from June 2012); **KCM-series: version 5.08 or newer** (from July 2012).

The local storage capability will have the **[+] Local Storage** item shown in the "Setup Page" of Web Configurator when the MicroSDHC card has been inserted into the storage drive slot of the device. Select **"Utilities"**, to prepare the storage.
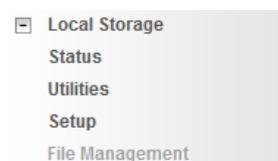
When the Mount storage media button shows "Mount" button then it means that the mass storage has been inserted to the camera, but **the connection between camera and the storage has not been established yet**. By pressing the **"Mount"** button, **the storage becomes active**. It is then possible to check the Status of the disk, write or read data on the disk, remotely access the storage by Web Configurator or FTP client, etc.
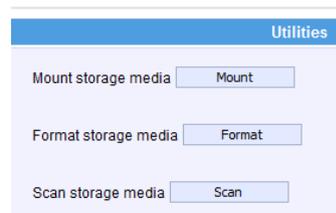
If mounting of the memory card fails, it means that the file system of the memory card is different from camera – in such case, press **"Format"** button to convert MicroSDHC card into compatible file system. It might take couple of minutes to format the storage. It may be needed when using brand new MicroSDHC cards or the ones that have been used in other devices before, such as photo cameras or mobile phones.

If the formatting of the memory card fails, then the card is either physically damaged or does not comply with the specification of the camera. In such case, please use another card.

Once the drive has been mounted, it can later be unmounted by pressing **"Unmount"** button, if necessary. The Unmount function is used when the camera is to be shut down for maintenance or when the mass storage has to be physically removed for some reason. The purpose of unmounting is to protect the currently processed data on mass storage at the moment of removal of the storage.
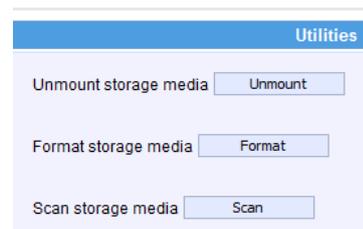
If the local storage is being used by camera and some videos or snapshots are being recorded to the disk, then the sudden shutdown or removal of the disk without unmounting may corrupt the file that currently being used by the camera. The rest of the files are not influenced in any way. Please note that "Save&Reboot" function of the camera also does unmounting automatically for the user.

When the storage has been properly mounted to the camera, the **"File Management"** page would become accessible - it is no longer grayed out. You can later use "File Management" to search, download or delete the recordings. At first, the "File Management" page would be empty since there are no files to manage yet. Therefore, you may skip that page for now.
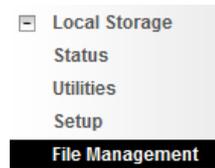
The storage is now ready to save the recordings. It is now time to configure the recording rules. For more details about storage preparation, please refer to the firmware manual.

RECORDING RULE CONFIGURATION

To define how the camera records videos or snapshots, please go to Event Handler page of the camera. There are 2 parts to configure – **the content** (video or snapshot) and the **recording trigger/schedule**.

To prepare the content, click on **[+] Event** on main menu of Setup and choose **"Event Configuration"**.
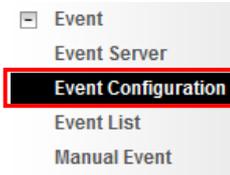
Then press the Edit button behind **"Upload video/snapshot and Audio"**.

Decide whether the camera should record video clips or snapshots.

Video configuration	Snapshot configuration
The camera has the capability to buffer up to 3 seconds of video at any time, so that we can include these 3 seconds of video to the file, to capture the moment right before the event occurred. With given settings (Pre-Buffer Time = 3; Upload Period = 57) the length of the video clip will be 1 minute.	With the settings above, it would create 1 snapshot within 1 second from the moment of triggered event.

You can freely decide the name of the file. Whatever name you choose, the camera will automatically append milliseconds in the end. It is recommended to include day code in file name so that later when the files are downloaded to remote computer, it is easier to pick up the right video.

For example, you may consider using following file name:
video_%YYYY-%MM-%DD-%hh-%mm-%ss
where %YYYY displays current year, %MM displays current month, %DD displays current day, %hh displays current hour, %mm displays current minute and %ss displays current second.

Notice! Please note that the camera uses its own date and time settings to write the file name, so please make sure the camera's date and time are correct!

Upload Path can be simply **"\"**, which means that the files will be saved in root folder of the storage.

The video source can be either "1" or "2". If you want to have different video/snapshot parameters for remote NVR recording and Local Storage recording, then you may consider adjusting camera's media 1 and media 2 settings accordingly and then choose the right video source in Event Handler page.

If you want to implement **"Local Storage + FTP"** solution, then you need to create one more Upload Configuration – **push video to FTP**, and later connect this rule with local storage failure or removal condition. In such case, you may use **"Upload/video/snapshot2"** item to fill in the additional configuration. Please remember to fill in FTP server settings as well.

Upload video/snapshot2 ☑	
Upload Media Type	○ Snapshot ◉ Video [Test]
Upload Media To	FTP Server ▼
Pre-Buffer Time	3 ▼ (0~3 seconds)
Upload Period	57 (0~86400 seconds)
Image File Name	media2_%YYYY-%MM-%DD-%hh-%
	naming rule
Upload Path	\
	naming rule
Video Source	2 ▼

Event Server

Type	Network Address	Ports
FTP Server Configuration	none	21
SMTP Server Configuration	none	none
HTTP Server 1 Configuration	none	80
HTTP Server 2 Configuration	none	80

FTP Server Configuration

Network Address	220.228.146.21
Network Port	21
User Name	Admin
User Password	●●●●●●
Mode	Passive ▼
Max. Connection Time	10 ▼ sec. (0~60 sec)

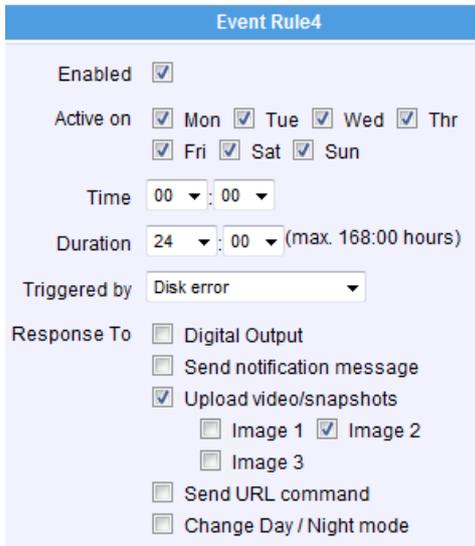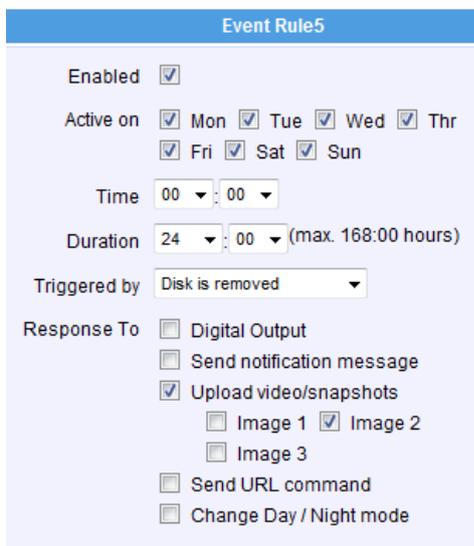When the content has been defined, you can move on to define the recording schedule under **"Event List"**.

Create a new event rule for recording purposes by clicking one of the "empty" event slots. For example, choose Rule 3:

ID	Week Day	Start	Duration	Source	Action
1	1234567	00:00	24:00	NIGHT	VPROFILE
2	1234567	00:00	24:00	MD1	IMG1
3	1234567	00:00	24:00	NONE	NONE
4	1234567	00:00	24:00	NONE	NONE
5	1234567	00:00	24:00	NONE	NONE
6	1234567	00:00	24:00	NONE	NONE
7	1234567	00:00	24:00	NONE	NONE
8	1234567	00:00	24:00	NONE	NONE
9	1234567	00:00	24:00	NONE	NONE
10	1234567	00:00	24:00	NONE	NONE

Decide whether the camera should record continuously or by specific schedule or only when the events occur.

Scheduled or Continuous Recording	Event Recording
Event Rule3 Enabled ☑ Active on ☑ Mon ☑ Tue ☑ Wed ☑ Thr ☑ Fri ☑ Sat ☑ Sun Time 00 : 00 Duration 24 : 00 (max. 168:00 hours) Triggered by Scheduler Once Every 1 Minutes Response To ☐ Digital Output ☐ Send notification message ☑ Upload video/snapshots ☑ Image 1 ☐ Image 2 ☐ Image 3 ☐ Change Motion Detection Profile ☐ Send URL command ☐ Change Day / Night mode	**Event Rule3** Enabled ☑ Active on ☑ Mon ☑ Tue ☑ Wed ☑ Thr ☑ Fri ☑ Sat ☑ Sun Time 00 : 00 Duration 24 : 00 (max. 168:00 hours) Triggered by Motion Trigger by Motion ☑ Region 1 ☐ Region 2 ☐ Region 3 Response To ☐ Digital Output ☐ Send notification message ☑ Upload video/snapshots ☑ Image 1 ☐ Image 2 ☐ Image 3 ☐ Send URL command ☐ Change Day / Night mode
By choosing **Triggered by Scheduler** it is possible to define the exact time of recording. If the frequency "Once Every x minutes" matches with the length of the video clip defined earlier, then it would basically mean continuous recording.	By choosing **Triggered by Motion** it is possible to let the recording begin only when motion is detected by the camera.

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In case of **"Local Storage + FTP"** solution, you also need to create 1 more rule, to handle the local storage failure or removal. In this example, we use rules 4 and 5 for that.

| Push video to FTP Server Upon Local Storage Failure	Push video to FTP Server Upon Local Storage Removal
Here, we chose event Rule 4 to define the condition of recording of "image" 2 upon **local storage failure**. By checking "Image 2" you choose the response to the trigger to be **"Upload/video/snapshot2".**	Here, we chose event Rule 5 to define the condition of recording of "image" 2 upon **local storage removal**. By checking "Image 2" you choose the response to the trigger to be **"Upload/video/snapshot2".**

As a result, we have 3 rules defined:

- Rule 3: default recording plan by using local storage
- Rule 4: storage error failover by using FTP
- Rule 5: storage removal failover by using FTP

Downloading Recordings

There are two ways to view the list of recordings and download them.

MANAGE FILES BY WEB CONFIGURATOR

It is possible to manage the recordings conveniently by Web Configurator's **"File Management"**. You can search, download or delete recordings.
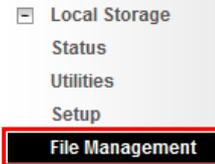
Search recordings by time

If you are looking for the recordings of specific time period, then you may check the "Search recordings by time", and select the starting time of the searchable range as well as the length of the time period.

	FileName	Start Time	Length (Min)	Events	Status
☐	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☐	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☐	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

Search recordings by triggered events

Another convenient way of searching specific recording files is to define the events that were either the triggers of the recordings or occurred during the scheduled recording. Check the "Search recordings by triggered events" and choose one of the 4 event types – Dis, Motion, Schedule or Ready for Service. All these events and can be managed under Event Handler

	FileName	Start Time	Length (Min)	Events	Status
	video_2012-06-22-08-03-11_493-frag1.raw	20120622-08:33:14	21	MD1|SCH	Writing
☐	video_2012-06-22-08-03-11_493.raw	20120622-08:03:11	31	MD1|SCH	Closed
☐	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☐	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☐	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

The largest possible recording file is approximately 30 minutes. You can see the length of each file in the file list. In case of snapshots, the length is not available.

Under continuous recording mode, the camera will make sure that the file size would not exceed 30-31 minutes – it would start writing a next file when the first file is full.
The file that is currently being saved will show the status "Writing".

Download Recordings

You can download the files manually to remote PC by clicking on the File Name. The downloaded .RAW files can be viewed with **ACTi Archive Player** or **Camera Demo Tool**.

Delete Recordings

You can manually delete the files by filling the checkboxes and then pressing the "Remove" button.

☐	FileName	Start Time	Length (Min)	Events	Status
	video_2012-06-22-08-03-11_493-frag 1.raw	20120622-08:33:14	12	MD1|SCH	Writing
☐	video_2012-06-22-08-03-11_493.raw	20120622-08:03:11	31	MD1|SCH	Closed
☑	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☑	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☑	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

|◁ ◁ [1] /1 ▷ ▷|

Remove

Search Snapshots

If the event rule of the Event Handler defines that there should be Snapshots stored on local storage instead of Video, then the snapshots will appear in File Management's file list. The extension of snapshot file is "jpg".

☐	FileName	Start Time	Length (Min)	Events	Status
☐	snapshot_2012-06-22-09-03-42_245.jpg	20120622-09:03:42	0	MD1	Closed
☐	snapshot_2012-06-22-09-03-11_044.jpg	20120622-09:03:11	0	SCH	Closed
☐	snapshot_2012-06-22-09-02-26_708.jpg	20120622-09:02:26	0	MD1	Closed
☐	video_2012-06-22-08-03-11_493-frag 1.raw	20120622-08:33:14	29	MD1|SCH	Closed
☐	video_2012-06-22-08-03-11_493.raw	20120622-08:03:11	31	MD1|SCH	Closed
☐	video_2012-06-22-07-56-35_818.raw	20120622-07:56:35	1	MD1	Closed
☐	video_12.06.22_07-51-45_677.raw	20120622-07:51:45	1	MD1	Closed
☐	video_074920_146_120622.raw	20120622-07:49:20	1	MD1	Closed

View and Download Snapshots

By clicking on the snapshot file name in file list it is possible to view the snapshot within Web Configurator. To download the snapshot, right click on the picture and save it to the computer.
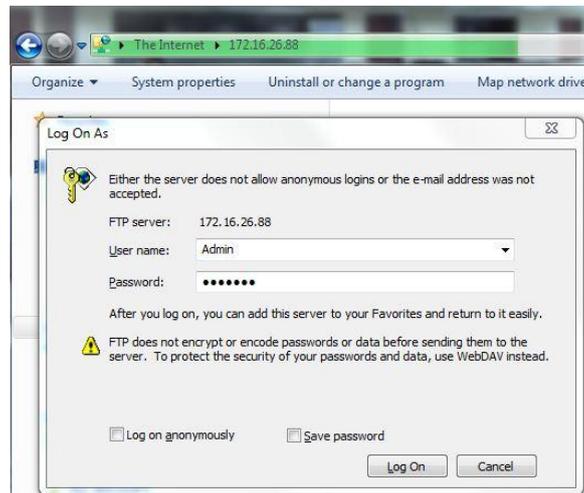

Deleting Snapshots

You can manually delete the snapshots by filling the checkboxes and then pressing the "Remove" button.

Special Rule!

When the event triggered snapshot happens during the video recording process, then the camera will not save the snapshot to the local storage, to avoid redundant information and waste of storage space, as the snapshot frame can be later extracted from video file instead.

DOWNLOAD FILES BY FTP CLIENT

In addition to Web Configurator's File Management, it is also possible to use any of the FTP Clients to list and download the recordings from the local storage thanks to the built-in FTP Server of the camera. Use the **http://** followed by camera's IP and then type the camera's account and password (default is Admin, 123456).

Notice! You may download files via FTP for your convenience, but do not delete any of the files via FTP because it would cause inconsistency between camera's file database and actual file availability.

Integration with Software

If you want to create your own user interface or software to manage the recordings in the camera, then you may refer to **the list of local storage related URL commands** below.

Local Storage of the Camera			
Get the recorded files list	system	DISK_FILE_LIST	-
Get the recorded file	system	DISK_GET_FILE=*[filename.raw]*	Any file name from the file list
Delete the recorded file	system	DISK_REMOVE_FILE=*[filename.raw]*	Any file name from the file list
Get the status of local storage	system	DISK_INFO	-
Mount or unmount the disk	system	DISK_STATE=*MOUNT*	MOUNT, UNMOUNT
Format the local storage	system	DISK_FORMAT	-
Check the report of disk format	system	DISK_FORMAT_LOG	-
Remove older files from local storage	system	DISK_REMOVE_OLD_FILES=*0*	The number represents the amount of oldest files to be deleted. 0 means deleting all files.
Set date and time filter for local storage file search	system	DISK_FILE_SEARCH_TIME=*1,2011,09, 23,13,40,30,60*	1. 1 (use time filter), 0 (not use time filter) 2. 4 digits for year 3. 2 digits for month 4. 2 digits for day 5. 2 digits for hours 6. 2 digits for minutes 7. 2 digits for seconds 8. 1-60 (time period in minutes, defines the end time of search range)
Search for event related recordings	system	DISK_FILE_SEARCH_EVENT=*DI1,DI2*	NONE, DI1, DI2, MD1, MD2, MD3, PIR, SCH (scheduled recording), READY (continuous recording)
Scan the disk for possible errors	system	DISK_SCAN	-
Check the report of the disk scan	system	DISK_SCAN_LOG	-
Set overwrite parameters and low disk warning rule	system	DISK_CONFIG=*1,5*	1. 0 (not allow overwriting), 1 (allow overwriting of oldest files) 2. 1~50 (% of remaining storage at which camera sends warning message)

For more information about URL commands, please refer to the full article **"ACTi Camera URL Commands"** in ACTi Knowledge Base at:

http://www.acti.com/kb/detail.asp?KB_ID=KB20120327001