# CCTV Raspberry Pi Based System with Storage

## **Project Overview:**

In this project is going to show you how to build a complete Raspberry Pi based cctv surveillance system in which you can manage all your cameras from one single place using Vide Aggregator [RPI4]

The system built also allows you to save your frames from all your cameras in a SSD Disk drive.

## **Parts Required**

1. 4x [Raspberry Pi Zero W](https://makeradvisor.com/tools/raspberry-pi-zero-w-kit/) (with built-in Wi-Fi)

2. 1x Raspberry Pi4

3. 1xSSD Disk

4. 5x [MicroSD Card16GB](https://makeradvisor.com/tools/microsd-card-raspberry-pi-16gb-class-10/)

5. 5x  [5V 3A power supply](https://makeradvisor.com/tools/raspberry-pi-power-supply/)

**Storage:**

File Storage will be divided in 3 parts

* SD card Storage
* SSD disk Storage
* Cloud Storage

**SD card Storage:**

* File Storage in local camera video in two parts

1.short term

* 3mints video in SD card storage for 7days.
* After the 7 days the stored data will delete FIFO (first in first out).

2.long term

* Receiving notifications when the Event trigger video storage for permanent.
* After stored data will delete FIFO (first in first out).

**SD Card**

**Short term**

**Long term**

**3mints video storage**

**Event trigger** **video storage**

**FIFO**

**FIFO**

**SSD disk Storage:**

In SSD disk file storage for each video stores in different ways.

* 1-week video for 30 fps (frame per second)
* 2 weeks video for 15fps
* 3-4 weeks to 1-month video for 12 fps
* 1-3 months video for 9 fps
* More than 3 months 1 fps

**FIFO**

**SSD**

**Storage**

**Permanent Storage**

**Video Storage**

**Cloud Storage:**

Cloud storage is a way of storing video storage data in online.

* Receiving notifications when the Event trigger video storage for 6 fps
* 6 image fps store
* 150 images randomly

**Cloud Storage**

**Permanent Storage**

**Video Storage**

**FIFO**

## 

**Raspberry Pi0 with camera1 and 16GB SD card**

**Raspberry Pi0 with camera3 and 16GB SD card**

**Raspberry Pi0 with camera2 and 16GB SD card**

**Video Aggregator [RPI4]**

**SSD**

**Edge Controller [RPI4]**

**Cloud**

* Intranet connection between Envy Cameras and Aggregator in presence of internet to Aggregator
* Protection against enabling internet connection from Aggregator through Wireless
* Super Capacitor for safe shutdown
* System starting and reset messages
* 99.99% availability of Video Storage
* New Video Solution [ENVY]
* Temperature consideration for RPI
* AWS

**Note:**

* Andreas and LORA
* Envy
* SSD
* Event Video at Hyderabad server
* AWS
* AWS