



SECURITY CAMERAS

HILTON HEAD ISLAND COMPUTER CLUB

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SECURITY CONSIDERATIONS

- Security
 - How are people accessing the building?
 - What areas need to be monitored?
- Deterrent
 - How visible are the cameras?
 - Can the camera easily be disabled?

CAMERA SELECTION – TYPES OF CAMERAS

- Interior or Exterior?
- Bullet or Dome type housing?
- Fixed or variable focal length and view?
- Wired or Wireless?
- Camera resolution?
- Lens focal length (angle of view)
- Supported codecs?

CAMERA SELECTION – INTERIOR OR EXTERIOR?

- Interior only cameras are usually less expensive but can only be used indoors.
- Exterior cameras are often built using more durable housings and can be used indoors.

CAMERA SELECTION – BULLET OR DOME TYPE HOUSING?

- Bullet cameras shield the camera lens from glare from the sun and rain.
- Bullet cameras more easily show the direction that the camera is pointing toward.
- Bugs can more easily build nests in the lens cover.



CAMERA SELECTION – BULLET OR DOME TYPE HOUSING?

- Dome cameras are more easily mounted.
- More durable.
- The plexiglass housing can get scratched.
- Rain can obscure the lens if directly rained on.



CAMERA SELECTION – FIXED OR VARIABLE FOCAL LENGTH AND VIEW?

- Variable view and focal length cameras are known as PTZ cameras.
- They can be remotely moved to view different directions and zoom in and out.
- They can be very expensive.
- Someone has to be logged in to adjust them.



CAMERA SELECTION – WIRED OR WIRELESS?

- Wireless cameras are easier to install.
- Wireless is less stable than wired.
- Need strong and reliable WiFi.
- Batteries limit lighting and will regularly need to be replaced/recharged.

CAMERA SELECTION – WIRED OR WIRELESS?

- Wired cameras need wires run to each camera location.
- Might need extra hardware and set up to work properly.
- Are generally more stable.
- Can have extra lights built into the camera.

CAMERA SELECTION – CAMERA RESOLUTION?

- Low resolution (anything below HD quality)
- Not good for wide angle lenses as details get pixelated.
- File size is reduced so its easier to record and store images
- Less burden on the system

CAMERA SELECTION – CAMERA RESOLUTION?

- HD resolution (720p (1280px X 720px)- 1080p (1920px X 1080px))
- Minimum standard for usable video.
- Larger file sizes.
- Can tax a WiFi connection if you have multiple cameras and cause dropped frames.

CAMERA SELECTION – CAMERA RESOLUTION?

- UHD resolution (2K (2048x1080) - 8K (7680x4320))
- High quality video with lots of detail.
- Large file sizes need a lot of storage.
- High burden on most systems.
- Can be a high burden on a WiFi network.

CAMERA SELECTION – LENS FOCAL LENGTH (ANGLE OF VIEW)

- Security cameras use very small sensors so need small millimeter size lenses.
- 2.8mm – 4mm: Wide angle view
80 – 120 degrees of view.



CAMERA SELECTION – LENS FOCAL LENGTH (ANGLE OF VIEW)

- Security cameras use very small sensors so need small millimeter size lenses.
- 5mm – 7mm: Normal view
50 – 80 degrees of view.



CAMERA SELECTION – LENS FOCAL LENGTH (ANGLE OF VIEW)

- Security cameras use very small sensors so need small millimeter size lenses.
- 8mm and above: Telephoto view
Less than 50 degrees of view.



CAMERA SELECTION – SUPPORTED CODECS?

- A codec is a bit of software to compress video. A better codec allows greater resolution of video files with less impact on the network and storage.
- AVI (Older, do not use)
- Video JPEG (MJPEG) (Older, do not use)
- MPEG4 (MP4) (40~50% savings from MJPEG) - Just okay.
- H.264 or H.264+ (40~50% savings from MPEG4) - Better
- H.265 or H.265+ (40~50% savings from H.264) - Best

VIDEO STORAGE - SERVER OR CAMERA

- Camera:
- Relies on the camera having storage. Not all camera do have storage.
- SD cards can have limited number of writes and can fail with no warnings.
- If camera is taken, all of the images are taken as well.
- Limited ability to view files remotely.

VIDEO STORAGE - SERVER OR CAMERA

- Server:
- Requires extra set up and knowledge of the server system.
- Lots of cheap and reliable storage.
- Server can more easily be monitored remotely.
- Server can be set to remove files after a given time period.

CONNECTING TO YOUR SYSTEM

- Is there a well maintained iOS or Android app?
- Is there an app for your computer?
- What do you need to do to connect to the system remotely?