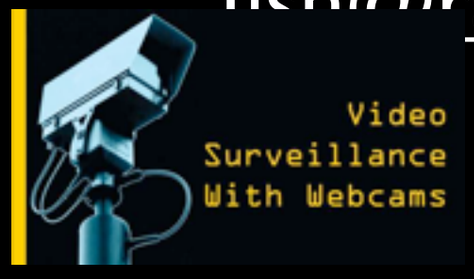
DIY Video Surveillance

by Barry van Kampen
fish@randomdata.nl

Video Surveillance

NO TRESP. VIDEO

WARNING VIDEO SURV.



Who?

- Fish_ aka Barry?
- Proud to be a Nerd at ITQ
- Founder of Randomdata
- HiTB Core crew
- 0xThinker!

Agenda

- Introduction
- Professional systems
- DIY systems
- Zoneminder walk thru
- Hands-on!

Video Surveillance

Professional systems

Professional systems

- Closed environment
- Specialists only
- $$$$$$$
- Vendor locking

DIY systems

How

- Camera's
  - Hardware IP cam's
  - Webcam based

- Central management
  - Zoneminder
  - Synology Surveillance station
  - Others

- Viewer

Pro's and Con's

Pro's

- OS solution makes it easy to adapt the environment yourself
- Cost effective
- Quite sophisticated

Con's

- Only DIY support
- Small install base
- Bugs

Zoneminder

Runs on any Linux distribution!
Supports video, USB and network cameras.
Support Pan/Tilt/Zoom cameras, extensible to add new control protocols.
Built on standard tools, C++, perl and PHP.
Uses high performance MySQL database.
High performance independent video capture and analysis daemons allowing high failure redundancy.
Multiple Zones (Regions Of Interest) can be defined per camera. Each can have a different sensitivity or be ignored altogether.
Large number of configuration options allowing maximum performance on any hardware.
User friendly web interface allowing full control of system or cameras as well as live views and event replays.
Supports live video in mpeg video, multi-part jpeg and stills formats.
Supports event replay in mpeg video, multi-part jpeg, stills formats, along with statistics detail.
User defined filters allowing selection of any number of events by combination of characteristics in any order.
Event notification by email or SMS including attached still images or video of specific events by filter.
Automatic uploading of matching events to external FTP storage for archiving and data security.
Includes bi-directional X.10 (home automation protocol) integration allowing X.10 signals to control when video is captured and for motion detection to trigger X.10 devices.
Highly partitioned design allow other hardware interfacing protocols to be added easily for support of alarm panels etc.
Multiple users and user access levels Multi-language support with many languages already included Full control script support allowing most tasks to be automated or added to other applications.
Support external triggering by 3rd party applications or equipment.
xHTML mobile/cellular phone access allowing access to common functions
iPhone interface available

Surveillance modes

Surveillance modes

'None'

The monitor is currently disabled and no streams can be viewed or events generated.

Surveillance modes

'Monitor'

The monitor will only stream feeds but no image analysis is done and so no alarms or events will be generated

Surveillance modes

‘Record’

In this case continuous events of a fixed length are generated regardless of motion which is analogous to a convention time-lapse video recorder. No motion detection takes place in this mode.

Surveillance modes

'Modect'
All captured images will be analysed and events generated where motion is detected.

Surveillance modes

‘Mocord’

This is a hybrid of Modect and Record and results in both fixed length events being recorded and also any motion being highlighted within those events.

Surveillance modes

'Nodect'

This is a special mode designed to be used with external triggers. In Nodect no motion detection takes place but events are recorded if external triggers require it.

Walk thru

External viewers

Eyezm

DIY

CD

unpack the tar file

BOOT

boot the VM

LOGIN

username: zmadmin
password: zmadminpwd21

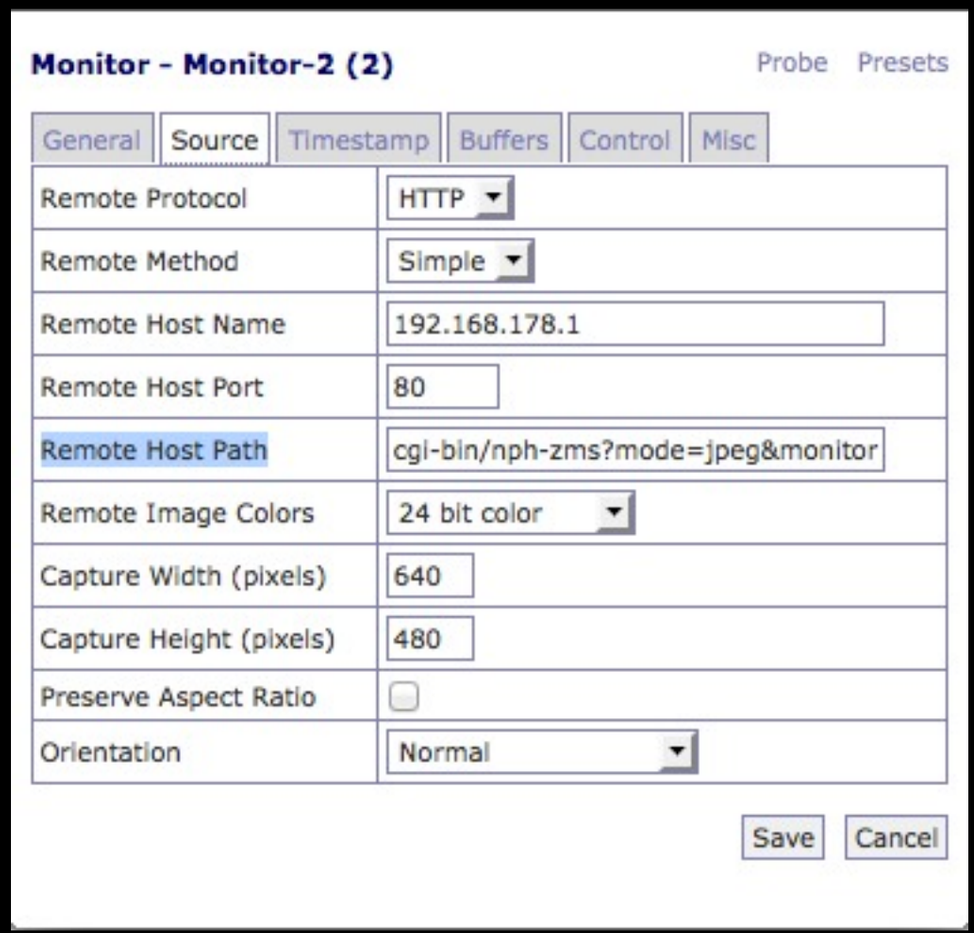
ETH0?

NAT or direct connect
?sudo ifconfig eth0 192.168.178.XXX
ping 192.168.178.1

Interface

open the interface: http://192.168.178.XXX

Add a cam



dircgi-bin/nph-zms?mode=jpeg&monitor=5&scale=100&maxfps=5&buffer=10

?

Contributions:

Zoneminder:
http://www.zoneminder.com/

Viktor Petersson for the vmware image:
http://viktorpetersson.com/open-source/zoneminder-virtual-appliance/

Google: http://www.google.nl/?q=video%20surveillance

Eyezm: http://eyezm.com/