Zoneminder – Open Source Video Security

STLLUG
August 2017
Bats, Racoons, and Prowlers caught in the act
About Me

I have set up only one production Zoneminder server, but I have set up other Linux workstations and servers since about 1998.

I work as an independent consultant performing system and small network administration, and writing specialized technical documentation.
What is Zoneminder?

Zoneminder is a full-featured, open source, state-of-the-art video surveillance software system.

https://www.zoneminder.com
Acknowledgments

• The Zoneminder Developers.

• PassMark Software Pty. Ltd.
  for data at cpubenchmark.net.

• A visitor, who gave permission to use his photo.
Outline

- Zoneminder Capabilities
- Hardware Requirements
- Software Requirements
- Installation and Setup
- Demonstration
- Experience
Zoneminder Capabilities

- Motion Detection – only save action
- Use nearly any camera
- Web interface; Android and iOS apps
- Use many distributions: Debian, Centos, Ubuntu, Mint, FreeBSD
- Multi-server support
Hardware Requirements

• Computer that boots your chosen OS
• Memory – depends on camera count, image size, target color space, and frames/second.
• Disk space – as memory
• CPU – as memory, plus filtering
Hardware Example

- 3 Cameras: 640x480, 24bit color, 5fps
- Motion Detection, video kept 90 days
- AMD Phenom(tm) II X4 965
  CPU Mark 4213, single thread 1185
- load average .45; 4/8 GB memory use
- 49 GB stored video
Software Requirements

• Pick an O/S – no Windows support.
• Typical requirements:
  php, mariadb-server,
  apache2-mod-php7.0, vlc-plugin-base
  … and many more packages brought in during install
Software Requirements - Demo

Debian 9.1 on Virtualbox VM

base
webserver
ssh server
standard system utilities
sudo & aptitude (personal taste)
Installation and Setup

Find the installation instructions for your O/S at the Zoneminder wiki

https://wiki.zoneminder.com/

Follow instructions
Installation and Setup


--‘Getting Started’ section

• Authentication
• Theme
• Monitors
• Filter to discard old captures
Demonstration

Zoneminder installed in Virtualbox VM

D-Link 932L IP camera
Experience

Camera angles and lighting matter.

Getting wiring where you want it can be time-consuming and/or expensive.

There is a good chance you are in a hurry.

Make it your home page.
Experience

Prowler

Zoneminder: STLLUG meeting, August 2017; Ken Johnson (contact-point@pobox.com)
Experience

A Friendly Visitor

Zoneminder: STLLUG meeting, August 2017; Ken Johnson (contact-point@pobox.com)
Questions?
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Use View | Slide Master to change footing.
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RedHat, Pink Tie, Debian, Ubuntu, Mint

XML or SGML based mil-spec documents

Run the Visual C++ debugger or read a switchbox schematic.

Generate 'picture books' for custom test program sets using Python and MS Word.
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- Demonstration
- Experience

Here's what we'll cover...
Zoneminder Capabilities

- Motion Detection – only save action
- Use nearly any camera
- Web interface; Android and iOS apps
- Use many distributions: Debian, Centos, Ubuntu, Mint, FreeBSD
- Multi-server support

Motion detection – saves disk space, saves time when looking for events of interest.
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Follow instructions
I would not expose Zoneminder to the internet, but would put it behind a VPN or SSH tunneling gateway.

The default theme uses very small print.

‘Monitors’ is the Zoneminder word for cameras.
Demonstration

Zoneminder installed in Virtualbox VM

D-Link 932L IP camera

Host Ethernet 10.2.2.16
VM Ethernet 10.2.2.32
Camera 10.2.2.42

Camera password: zmdemo
Experience

Camera angles and lighting matter.

Getting wiring where you want it can be time-consuming and/or expensive.

There is a good chance you are in a hurry.

Make it your home page.

See the friendly visitor.

Home page alternative – some kind of automated monitoring so you know the cameras and the server are still running.
About 2 years ago, thefts from unlocked cars in my neighborhood.

Prowler ducked when lights came on, then resumed his business.

My car locked.

White male, slender build, approximately height.
Experience

You also capture friendly visitors.

This person kindly gave permission.

Not everyone may be so comfortable with being on camera.

In the past, have captured bats whizzing by, and a racoon on the porch. Not saved, regretfully.
Questions?
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