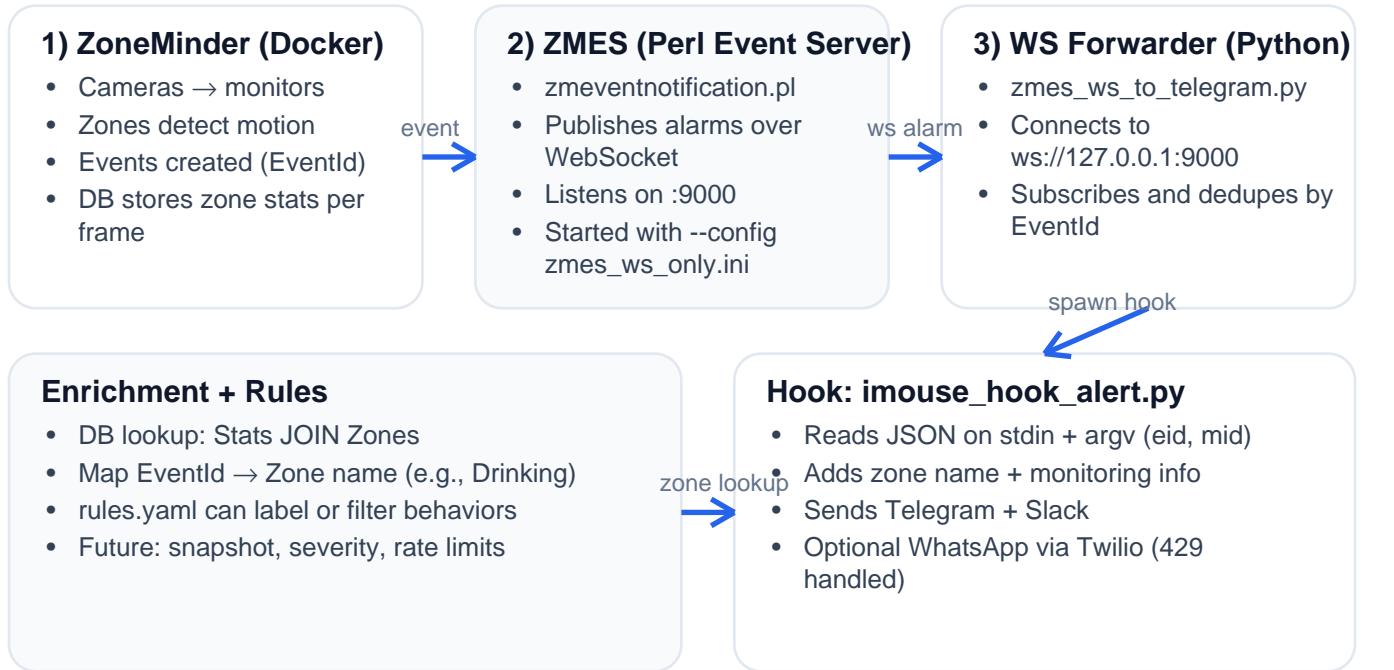


iMouseGuard Architecture

How ZoneMinder motion events become enriched alerts (Telegram, Slack, WhatsApp).



Key files on disk

- /opt/iMouseGuard/zmeventnotification/ (perl server)
- /opt/iMouseGuard/iMouseGuard/config/ (ini + rules)
- /opt/iMouseGuard/iMouseGuard/bin/ (forwarder + hook)

Env + endpoints (from .env)

- WS_URL=ws://127.0.0.1:9000
- MYSQL_HOST=db MYSQL_USER=... MYSQL_PASSWORD=... ZM_DB_NAME=zm
- TELEGRAM_TOKEN / TELEGRAM_CHAT_ID / TELEGRAM_THREAD_ID
- SLACK_WEBHOOK_URL • WhatsApp: TWILIO_* + WHATSAPP_*

Operations Commands

Inside the ZoneMinder container: start/stop/status, logs, editing, zone debug.

Status checks

```
ps aux | egrep "zmeventnotification.pl|zmes_ws_to_telegram.py" | grep -v egrep
ss -ltnp | grep ":9000" || echo "9000 not listening"
tail -n 30 /opt/iMouseGuard/iMouseGuard/logs/zmes.log
tail -n 30 /opt/iMouseGuard/iMouseGuard/logs/ws_forwarder.log
```

Stop services

```
pkill -f zmeventnotification.pl || true
pkill -f zmes_ws_to_telegram.py || true
sleep 1
ps aux | egrep "zmeventnotification.pl|zmes_ws_to_telegram.py" | grep -v egrep || echo "stopped"
```

Start (recommended)

```
mkdir -p /opt/iMouseGuard/iMouseGuard/logs

# 1) Start ZMES (WebSocket server)
cd /opt/iMouseGuard/zmeventnotification
nohup perl -T zmeventnotification.pl --config=/opt/iMouseGuard/iMouseGuard/config/zmes_ws_only.ini \
  > /opt/iMouseGuard/iMouseGuard/logs/zmes.log 2>&1 &
echo $! > /opt/iMouseGuard/iMouseGuard/logs/zmes.pid
```

Edit config / scripts

```
nano /opt/iMouseGuard/iMouseGuard/.env
nano /opt/iMouseGuard/iMouseGuard/config/zmes_ws_only.ini
nano /opt/iMouseGuard/iMouseGuard/bin/imouse_hook_alert.py

# Python sanity check
python -m py_compile /opt/iMouseGuard/iMouseGuard/bin/imouse_hook_alert.py
```

Zone name for an EventId (DB)

```
EID=988796
mysql -h "$MYSQL_HOST" -u "$MYSQL_USER" -p"$MYSQL_PASSWORD" zm -e "
SELECT z.Name, s.Score, s.AlarmPixels, s.Blobs
FROM Stats s
JOIN Zones z ON z.Id=s.ZoneId
WHERE s.EventId=$EID
ORDER BY s.Score DESC
LIMIT 5;"
```