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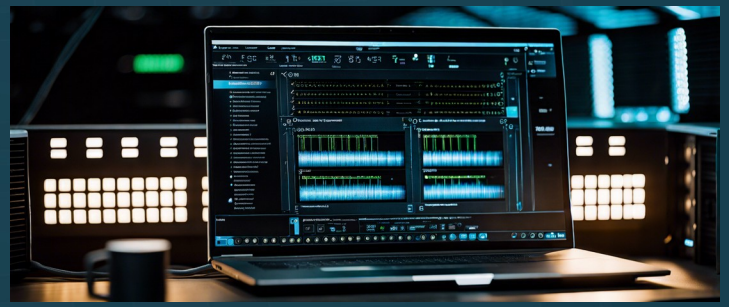
Smart Ways To Monitor Your Linux Systems Using Open Source Software

Modern open source software monitoring techniques



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https://github.com/zikusooka

Joseph Zikusooka (**ZIK**)

Founder & Technologist, Jambula Labs (East Africa)

- UNIX / Linux Server Engineer
- OpenSUSE Linux Trainer
- Smart Home Hub Innovator
- Embedded Linux Systems Builder
- Open Source Advocate & User since 2004

Monitoring – Seemingly Obvious

Why is monitoring Important?

- Avoid service interruptions and down time
- Security
- Monitor your Internet availability and bandwidth
- Get advance warning & alert notifications
- Respond to incidents Quickly
- Sleep better

Monitoring – Ghosts in the Machine!

Monitoring – Ubiquitously used

Where is monitoring needed?

- Servers e.g. Websites, APIs, Databases
- Backup and storage facilities
- Computer networks
- Edge networks
- IoT
- Data Centers

Monitoring – How it Started

Traditional & Simple Techniques

- Good Ol' Phone call from frantic client

- Email
- Pagers
- Dashboards

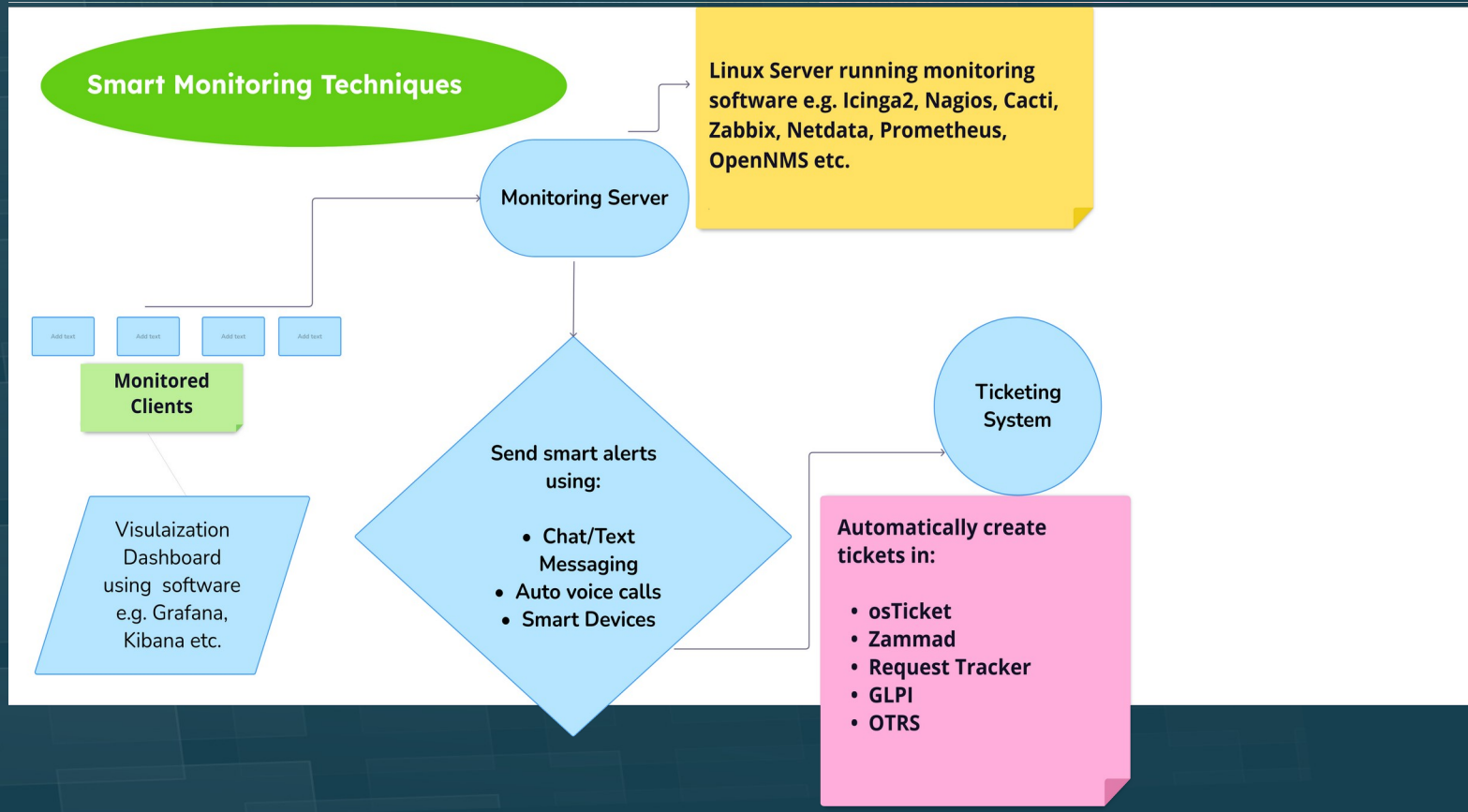
- System log messages
- Audible Alarms

Monitoring - The Holy Grail

What constitutes “smart” monitoring?

- Real-time monitoring
- Self healing
- Scalable & Flexible
- Easy integration with smart devices
- Cost efficient

Monitoring – In a Nutshell



Monitoring – How it is Going

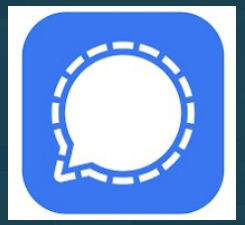
Assorted monitoring apps

- Icinga
- Nagios
- Cacti
- Zabbix
- Netdata
- Prometheus
- OpenNMS

Monitoring – We’ve gone Fishing

Smart notification channels

- Chat Messaging e.g. Signal, Matrix, Telegram, WhatsApp
- Instant messaging using XMPP e.g. Prosody, ejabberd
- Short Messaging Services e.g. SMS
- Automated voice phone calls



Monitoring – Privacy

Making alerts local, private & fun!

If Monitoring local resources i.e. Smart home, some choices of open source based notification protocols to use include:

- XMPP (Prosidy, ejabberd, etc)
- MQTT → Speakers
- Lighting
- Thinking of Home-Assistant

Monitoring – The Power of Open

Smart ways to monitor system failures using FLOSS

Existing open source software apps can be extended to make your monitoring in Linux a whole lot smarter e.g.

- Receive an alert via Signal messaging &
- Automatically create more disk space if low

Monitoring – No room left

Demo: Icinga2 → Signal Alerts

1)Install & configure Icinga2 (including Director)

Script: https://github.com/zikusooka/OpenSUSE

2)Install & configure signal-cli

https://github.com/zikusooka/signal-cli

Monitoring – The Future

A better use case for Artificial Intelligence (AI)

Monitoring using AI/ML algorithms to:

- Detect anomalies
- Predict failures
- Provide proactive recommendations
- Predict based on historical data

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