



# Are logs a software engineer's best friend? Yes -- follow these best practices



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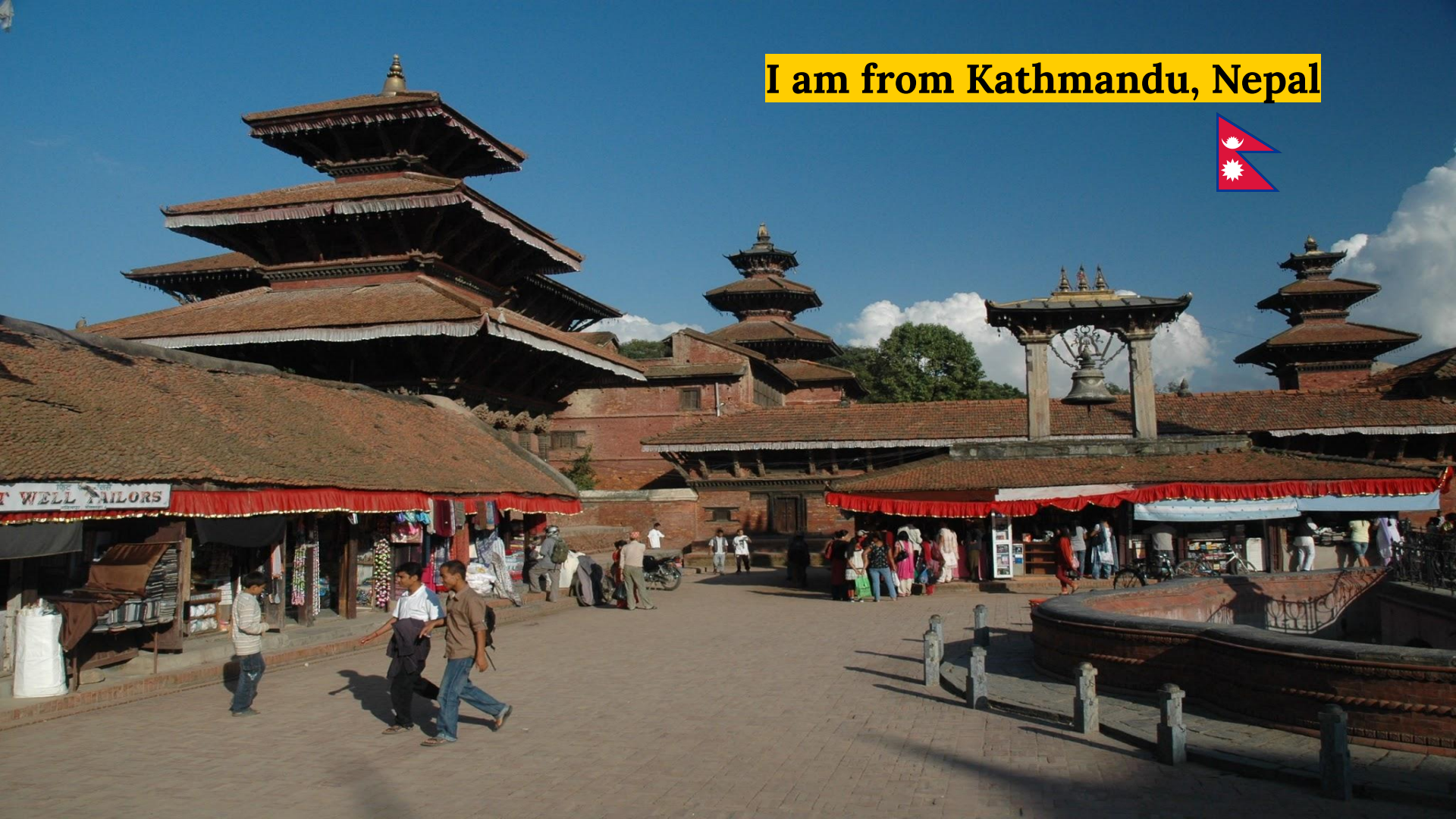


## whoami

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- Senior Software Engineer
  - Tech solution provider
- Agile follower
- Conditional microservices believer

I am from Kathmandu, Nepal



I work at THE ICONIC

THE ICONIC  
TECH





# Agenda

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- ⦿ What is application log?
- ⦿ Why log from the application level
- ⦿ Tools of the trade -- How?
- ⦿ Logging Best practices
- ⦿ Key Takeaways
- ⦿ Demo

*What is application log?*



“Logs are the **stream of aggregated, time-ordered events** collected from the output streams of all running processes and backing services.”

- 12Factor.net

“

*“An application log is a file of events that are logged by a software application. It contains errors, informational events and warnings.”*

*- Technopedia*

“





**Why** *log from application level?*



*“The feature I deployed to production last week was working fine till yesterday, but now I have no idea why it is not working!”*

- One of us



“



**Logs help to pinpoint the exact place where the software is not working as expected**

**To stop speculating and figure out the real data and metrics on any env**



**Logs are one of the ways your app communicates back to you**



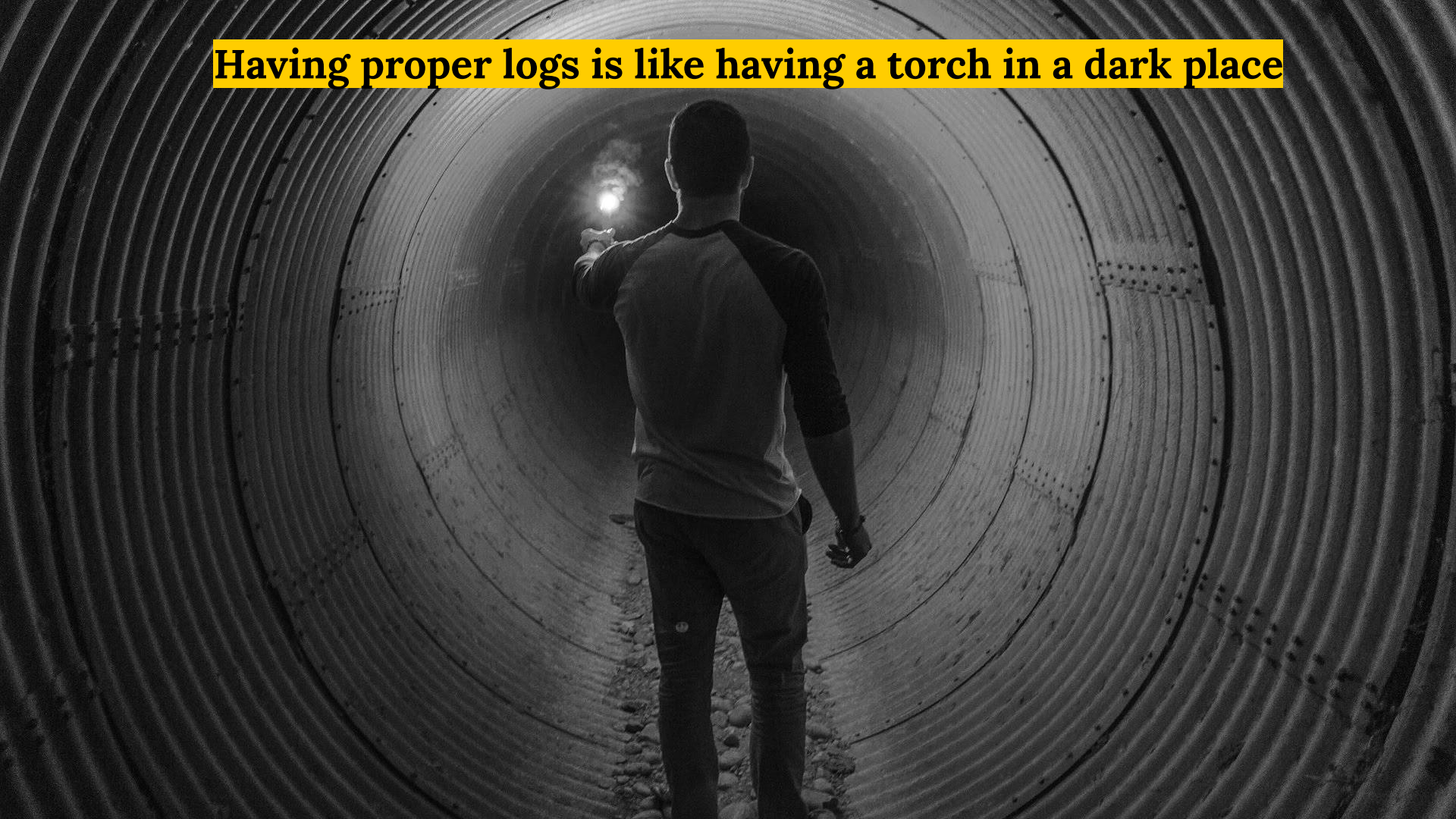
**SPEED  
TO  
TRUTH**

**Even if you land into a mess, you know a way to sort things fast  
(MTTR)**



**"CHECK THE LOGS AND FIND OUT HOW WE GOT IN THIS MESS."**

**Having proper logs is like having a torch in a dark place**





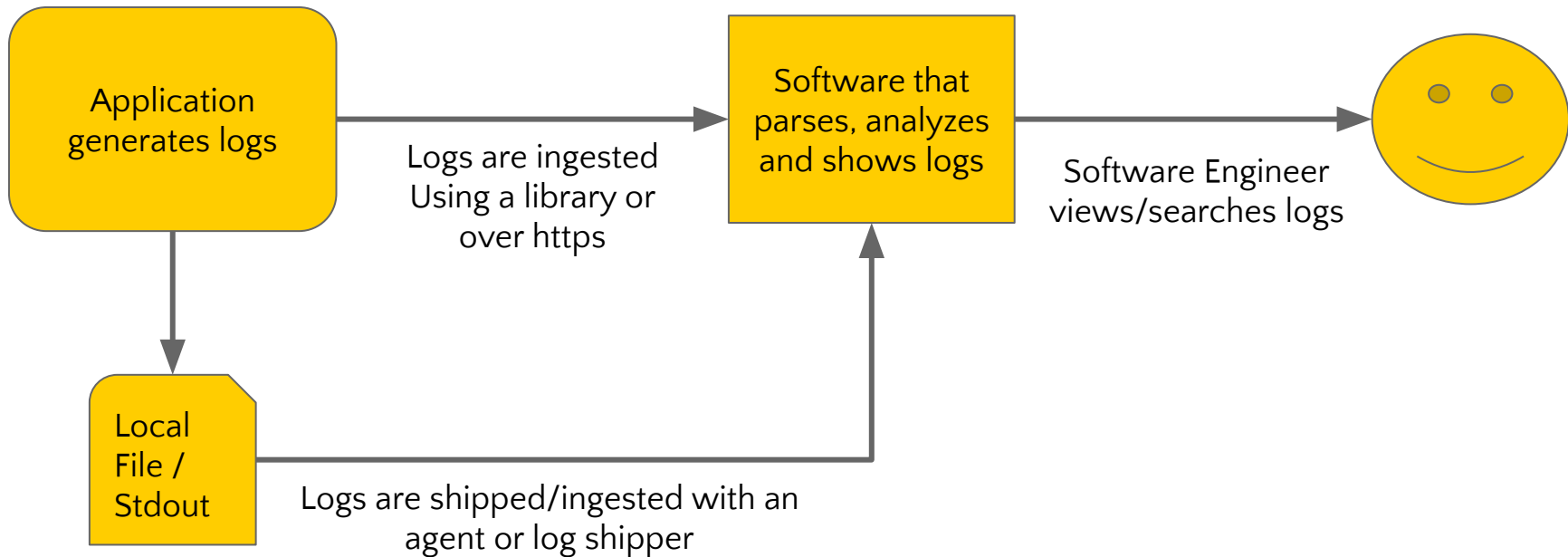
# **Tools** of the trade -- How?



**Please don't hammer the screw :)**



## ● Simplified components of logging





## Use a trusted logging library

Language	Library	Github stars
PHP	<a href="#"><u>Monolog</u></a>	~16.0k
TypeScript/JS	<a href="#"><u>Winston</u></a>	~14.2k
Python	<a href="#"><u>Native</u></a>	N/A

Note: Don't forget about monolog [handlers and formatters](#) :)

# Use a trustworthy software to view and search your logs

Self Hosted



SAAS



Cloud  
Provider  
Based

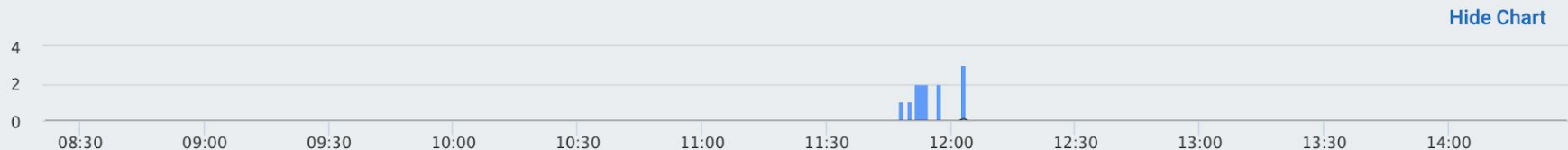




# No tail -f ..., a good UI to view/search logs will make your life a lot easier

Queries Mode What would you like to search for? Time picker

Select Simple  Functions Last 6 Hours Search Save Reset



Hide Chart

## Log Entries



Labels: All (13)

Start live tail

Log display

Download Log

```

» 17 Oct 2019 11:48:37.708 [2019-10-17 00:48:36] local.INFO: testing {"type":1}
» 17 Oct 2019 11:48:47.678 [2019-10-17 00:48:46] local.INFO: testing {"type":1}
» 17 Oct 2019 11:49:36.034 [2019-10-17 00:49:35] local.INFO: testing {"type":1}
» 17 Oct 2019 11:50:15.704 [2019-10-17 00:50:14] local.INFO: testing {"type":1}
» 17 Oct 2019 11:52:13.495 [2019-10-17 00:52:11] local.INFO: testing {"type":1}
» 17 Oct 2019 11:52:13.781 [2019-10-17 00:52:13] local.ERROR: This is an error - this in an Exception {"stackTrace":"#0 [internal function]: App\\Http\\Controllers\\HomeController->index()}
» 17 Oct 2019 11:53:55.282 [2019-10-17 00:53:54] local.INFO: testing {"type":1}
» 17 Oct 2019 11:53:55.542 [2019-10-17 00:53:55] local.ERROR: This is an error - this in an Exception {"stackTrace":"#0 [internal function]: App\\Http\\Controllers\\HomeController->index()}
» 17 Oct 2019 11:53:58.182 [2019-10-17 00:53:57] local.INFO: testing {"type":1}
» 17 Oct 2019 11:53:58.531 [2019-10-17 00:53:58] local.ERROR: This is an error - this in an Exception {"stackTrace":"#0 [internal function]: App\\Http\\Controllers\\HomeController->index()}

```

# Logging *best practices*



A clear glass filled with water sits on a rustic wooden surface. The background is dark and out of focus. Two yellow text boxes are overlaid on the image. A small yellow lightbulb icon is at the bottom center.

**Log information optimally**

**Too Much = noise, too less = inadequate information**





## RFC-5425 (8 Levels)

Emergency

Alert

Critical

Error

Warning

Notice

Info

Debug



**Always follow logs severity standards**

**Emergency = phone rings at 1 AM, Info = good to know**



## Structure your logs

Structured logs are easier to parse and search, always provide context.





**Don't hamper speed and performance**

**Write logs locally or async as far as possible, may be use a queue and consumer.**





**Add traceability for microservices**

**Same request ID travels across services. Ability for distributed tracing.**





**Do not log sensitive information**

**Like passwords, credit card information, phone numbers etc**



# Key *Takeaways*



**Start logging today**



**It is easier than you think and benefits outweigh the cost**





**Logs can reveal things you didn't know existed at unexpected sources**



**Logging > error tracking, it keeps a track of your application health**



**Find the right tools, invest in a log management software that suits your needs**



**Logs with optimally configured alerts are very powerful**



# Demo



- <https://github.com/geshan/laravel6-logging>
- Pull Request - [PR](#)

**Logs are an integral part of building happy, robust and scalable software**





# Thanks!

Any questions? Later :)

THE ICONIC is [hiring](#) - Engineering Manager

You can find me at

- [@geshan](#) (geshan@gmail.com)
- [Geshan.com.np](#)
- Slides: [bit.ly/logging-lau](#)



## Credits/References

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