



Simple, Fast, Secure Messaging for IoT, Cloud Native, and Microservices

Denver GO Meetup

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Created by
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The Vision

Building Messaging Systems and Solutions > 20yrs

Experienced Messaging Team



What is NATS?

✓ NATS is messaging, made for developers who don't have the time to be messaging experts

High-Performance

Always on and available

Extremely lightweight

Easy to use

At Most Once (NATS) or At Least Once Delivery (NATS Streaming)

Publish/Subscribe

Distributed Queue

Request/Reply

Cloud Native

NATS DNA

- **Go!** NATS servers and canonical clients are goLang
- Performance
- Simplicity
 - Single binary
 - **Text-based protocol!**
(<http://nats.io/documentation/internals/nats-protocol/>)
 - No external dependencies
- Availability over anything - Dial-tone
- Small footprint & embeddable
- ***Just what you need, and none of what you don't***

Some ways NATS is being used by developers

- IoT Messaging
- High Fan-out Messaging
- Mobile and Big Data
- Microservices transport
- Service Discovery
- Replacing legacy messaging systems





How simple is simple?

NATS is very, very simple and lightweight

<u>spotify/kafka:latest</u> 599 mb Layers: 21	<u>rabbitmq:latest</u> 183 mb Layers: 21	<u>zeromq/zeromq:latest</u> 443 mb Layers: 15	<u>apcera/gnatsd:latest</u> 7 mb Layers: 6
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David Williams
@DavWilliams



Following

@jdsboston @brianflannery Layers how simple NATS image is: a Go binary, config file, and Docker params: imagelayers.io/?images=rabbit...

RETWEETS
2

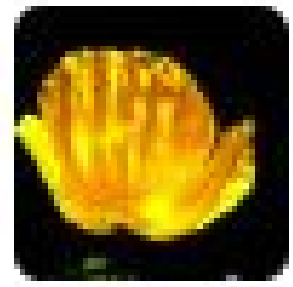
FAVORITE
1



10:09 PM - 12 Oct 2015



NATS is very, very simple and lightweight



Ahsan Naqvi
@imdataminer



Following

NATS is the most focused and frictionless messaging system I have ever used, amazing piece of technology [@nats_io](#)

NATS is very, very simple and lightweight

NATS, What a beautiful protocol

Just had a quick glance at NATS and its protocol and I went: OMG, it's like so simple and therefore so tremendously beautiful. Why? I told you. It's simple. And I can read it. As in read it and understand it without having to read a boring specification about a binary fixed protocol format.

*Read more on Daniel Wertheim's Blog: <http://danielwertheim.se/nats-what-a-beautiful-protocol/>





How fast is fast?

NATS is very, very fast

Benchmark___PubNo_Payload-8	20000000	88.6 ns/op
Benchmark___Pub8b_Payload-8	20000000	89.8 ns/op
Benchmark___Pub32b_Payload-8	20000000	97.3 ns/op
Benchmark___Pub256B_Payload-8	10000000	129 ns/op
Benchmark___Pub1K_Payload-8	5000000	216 ns/op
Benchmark___Pub4K_Payload-8	1000000	1123 ns/op
Benchmark___Pub8K_Payload-8	500000	2309 ns/op
Benchmark_____PubSub-8	10000000	210 ns/op
Benchmark___PubSubTwoConns-8	10000000	205 ns/op
Benchmark___PubTwoQueueSub-8	10000000	231 ns/op
Benchmark___PubFourQueueSub-8	10000000	233 ns/op
Benchmark_PubEightQueueSub-8	5000000	231 ns/op



Derek Collison @derekcollison · Apr 5

A [@nats_io](#) community contribution from [@nussjustin](#) that results in ~2M msgs/sec bump. Now at > 11M msgs/sec!



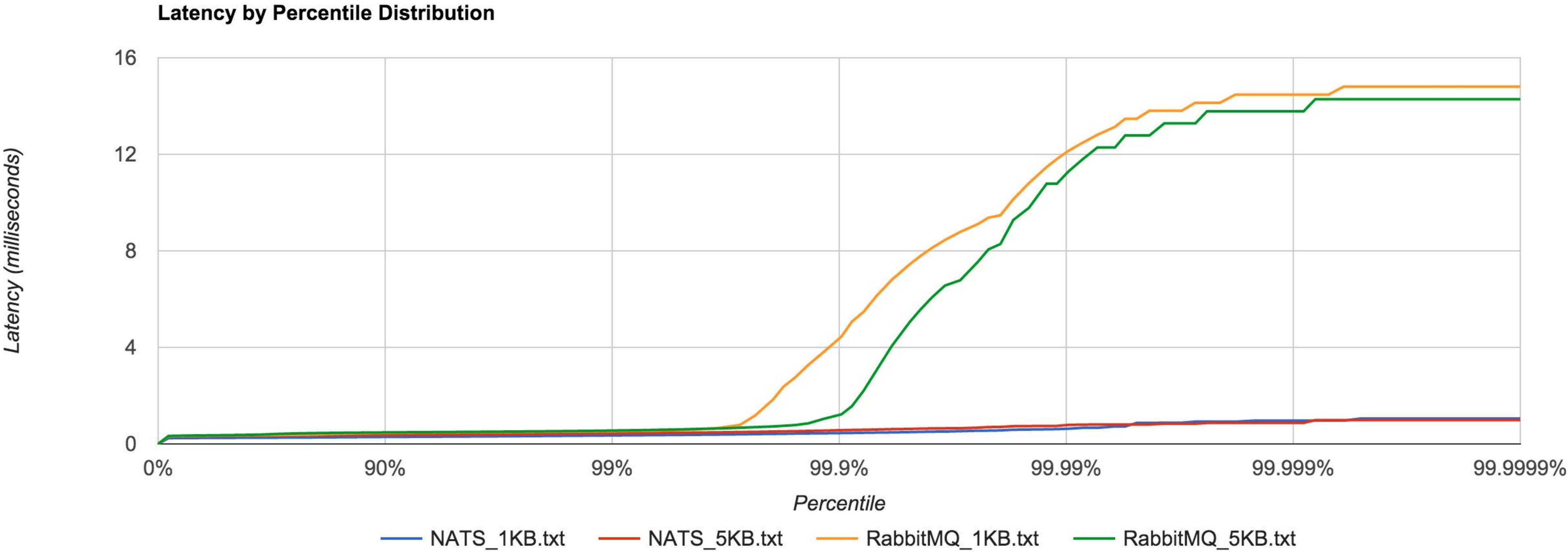
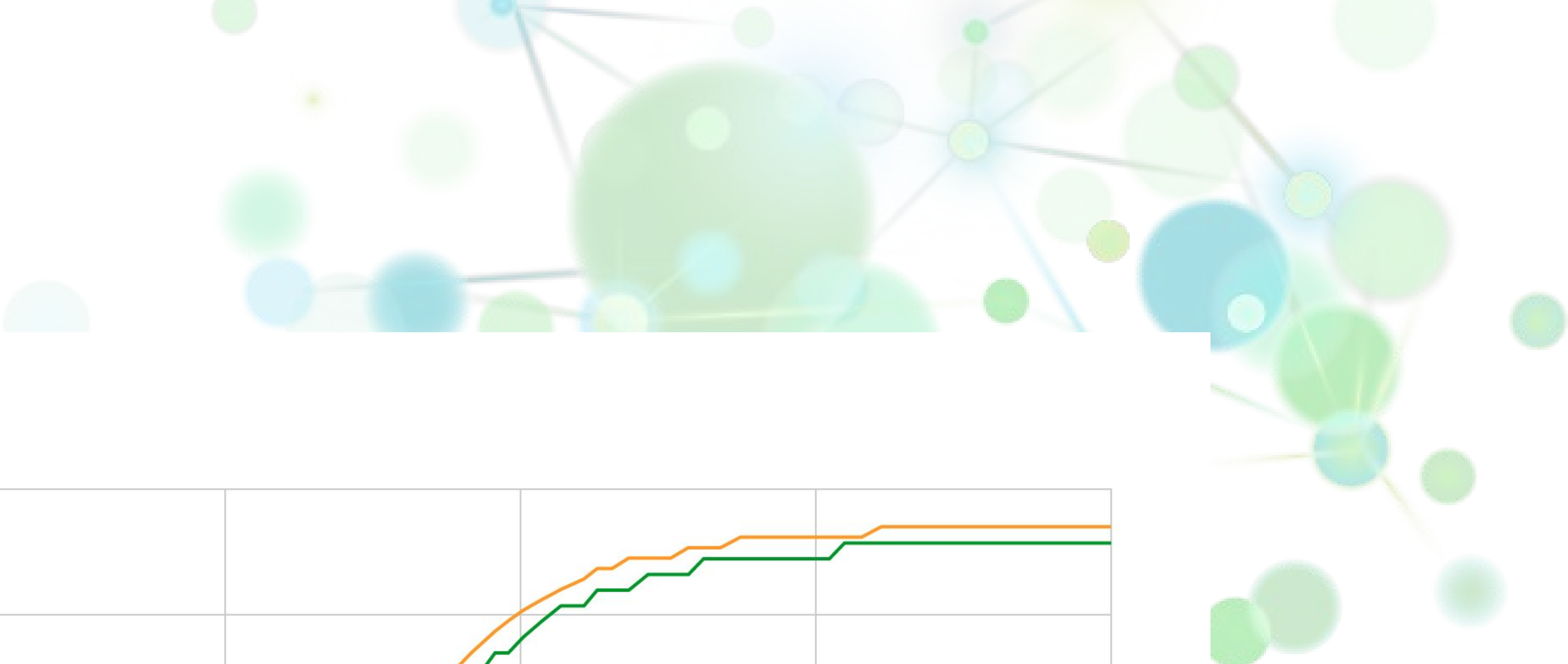
11



24



NATS = ~0 latency



*Read more on Tyler Treat's blog: <http://bravenewgeek.com/benchmarking-message-queue-latency/>





Demo

NATS Logging Demo

- NATS is so lightweight and simple - use it for logging!
 - NATS is used as a logger in **NATS Cloud** (beta)
- Demo Code
 - A simple log utility that uses NATS to send log messages to subscribers.
 - <https://github.com/ColinSullivan1/nats-logger>
- Docker Logging Plugin Work in Progress
 - Based on:
<https://github.com/moby/moby/pull/27841>

Thank You!

Colin Sullivan

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Github: [ColinSullivan1](https://github.com/ColinSullivan1)

Check out NATS at www.nats.io, and see dozens of excellent blog posts from the development community on www.nats.io/blog

Join the community! <http://www.nats.io/community/>