



Learn How Shutterfly Employs Continuous Performance Testing To Deliver Winning Customer Experiences Build After Build



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○ AGENDA

- What is continuous performance testing about?
- Let's see how Shutterfly does it!
- Best practices
- Challenges
- Q&A

- How to avoid this job?

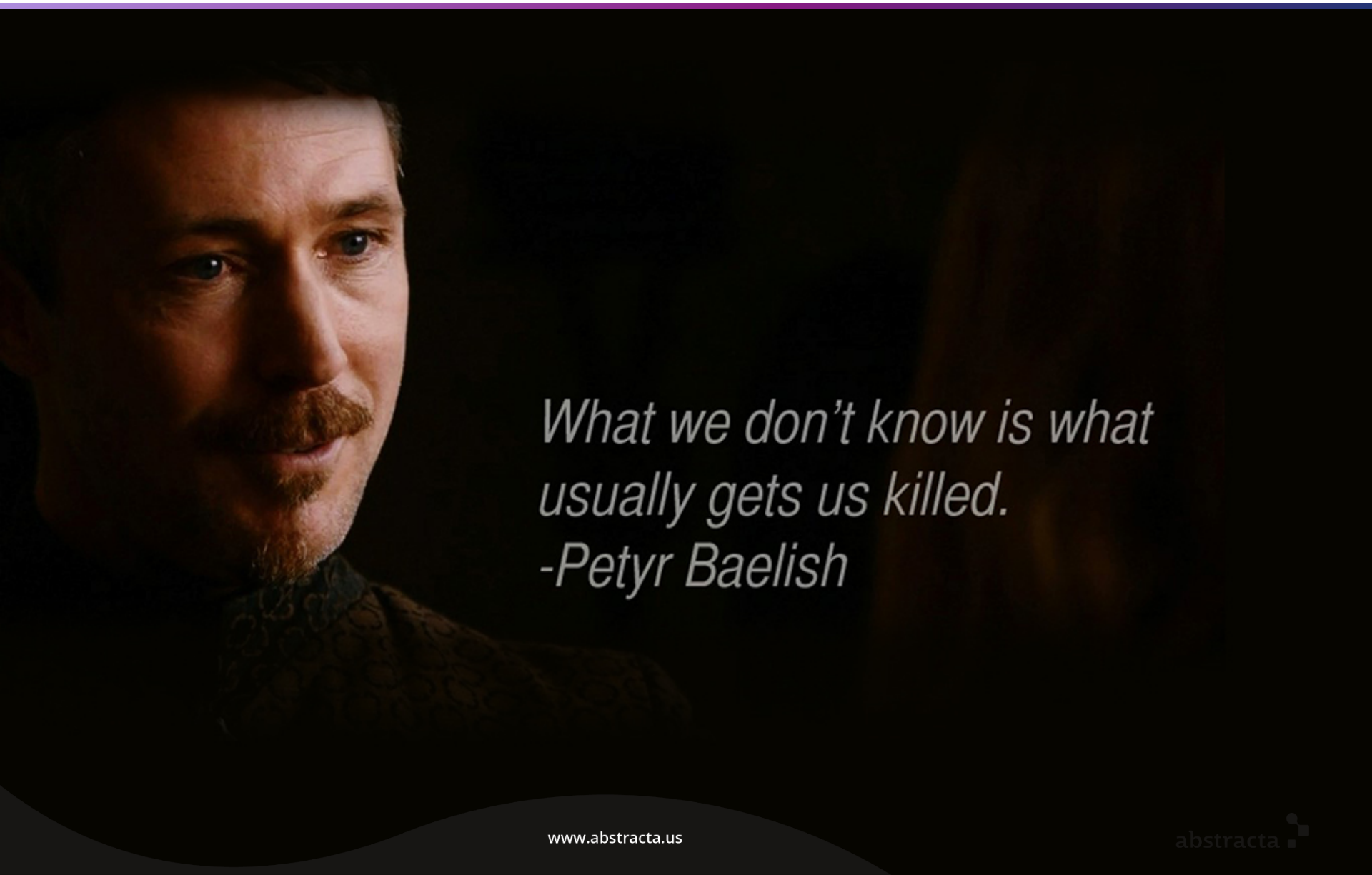
Be proactive instead of being a firefighter solving problems in production.



A person is sitting at a wooden desk, typing on a silver laptop. They are wearing a light-colored sweater and a watch with a brown leather strap. A black cup with a tea bag is on the desk next to the laptop. A speech bubble is overlaid on the right side of the image.

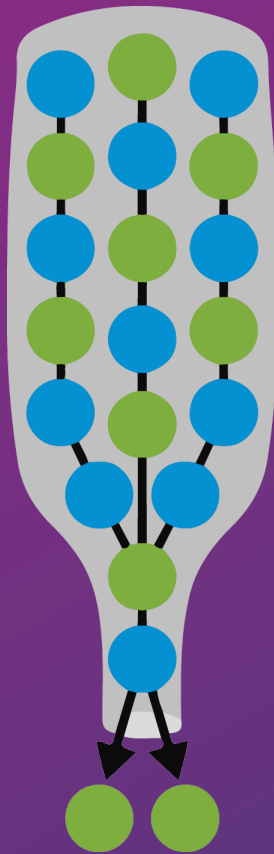
**What is
performance
testing about?**

◉ Measurement



*What we don't know is what
usually gets us killed.
-Petyr Baelish*

○ Bottlenecks



Breaking point



- Continuous performance testing

THE GOAL

*“Be able to detect the **exact moment** when someone enters a line of code, a configuration or hardware change that impairs the performance of the system”*

Let's see how Shutterfly does it

○ Key aspects

- Build continuously
- Run functional and load tests
- Run different checks
- Run 300 unit load tests (built by developers), three times per week
 - using Jenkins
 - dedicated environment

○ Key aspects

Add acceptance criteria (assertions) to the tests

- Response times
- Throughput

I like to call this "cinching the belt tight".

- ◉ How does it work?

Methodology for profiling a load test

◉ Methodology : Profiling a load test

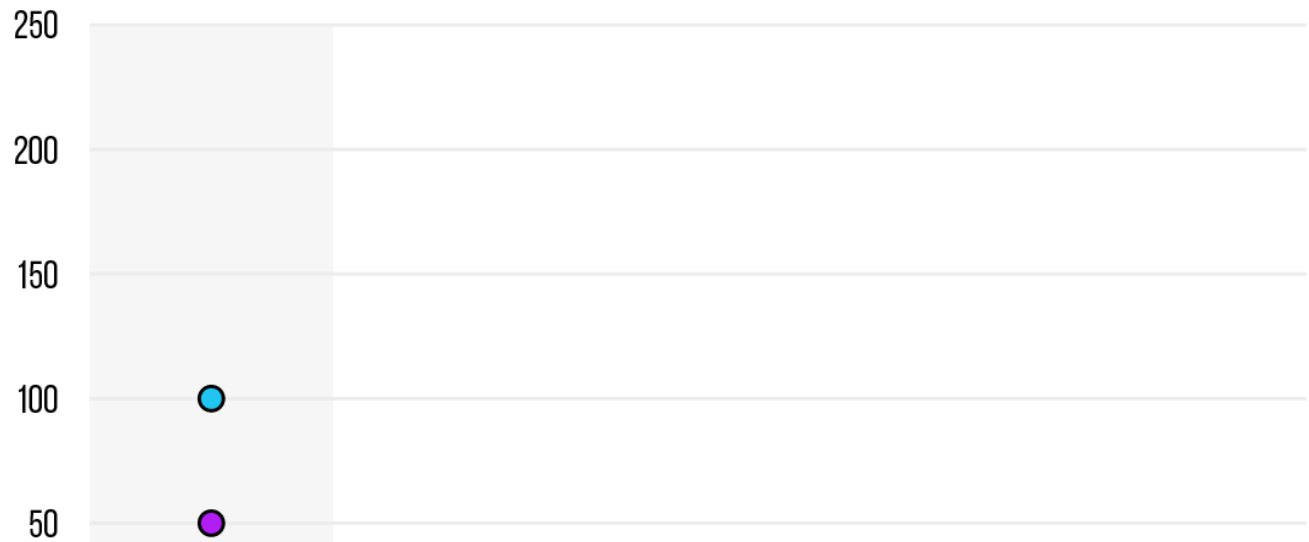
1 - Have an exclusive environment for tests

2 - Develop a new test functionally, for example **retrieve my photo albums**

3 - How do we find the throughput and response times ratios that our service can achieve?

○ Methodology

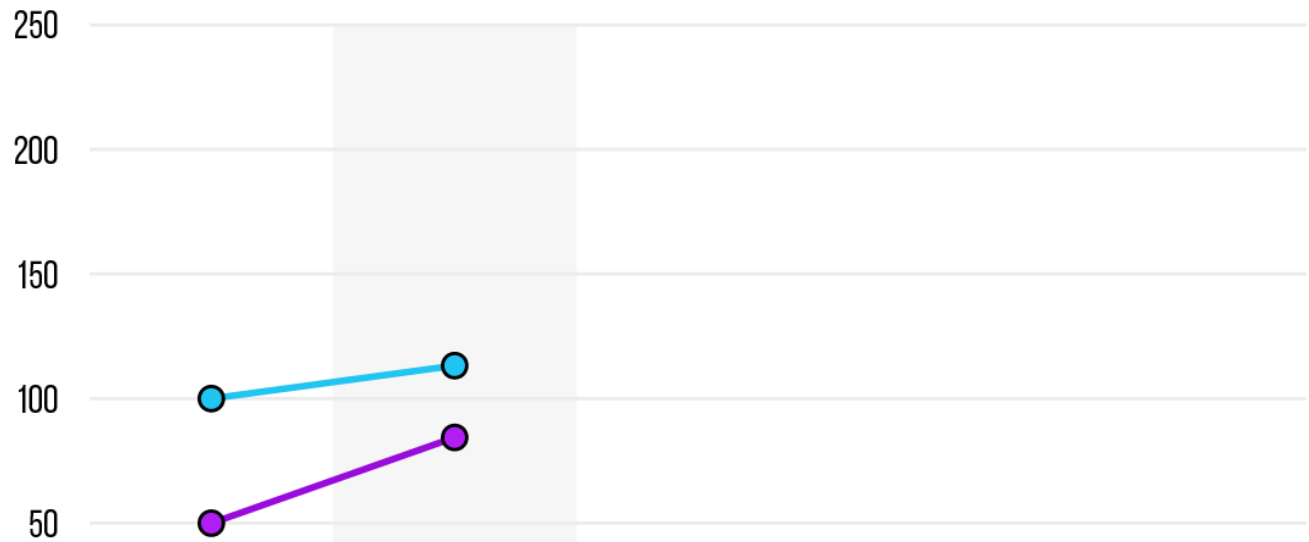
RESPONSE TIMES AND THROUGHPUT AGAINST VU



VIRTUAL USERS	100				
● TPS	50				
● P95 RESPONSE TIMES (MS)	100				

○ Methodology

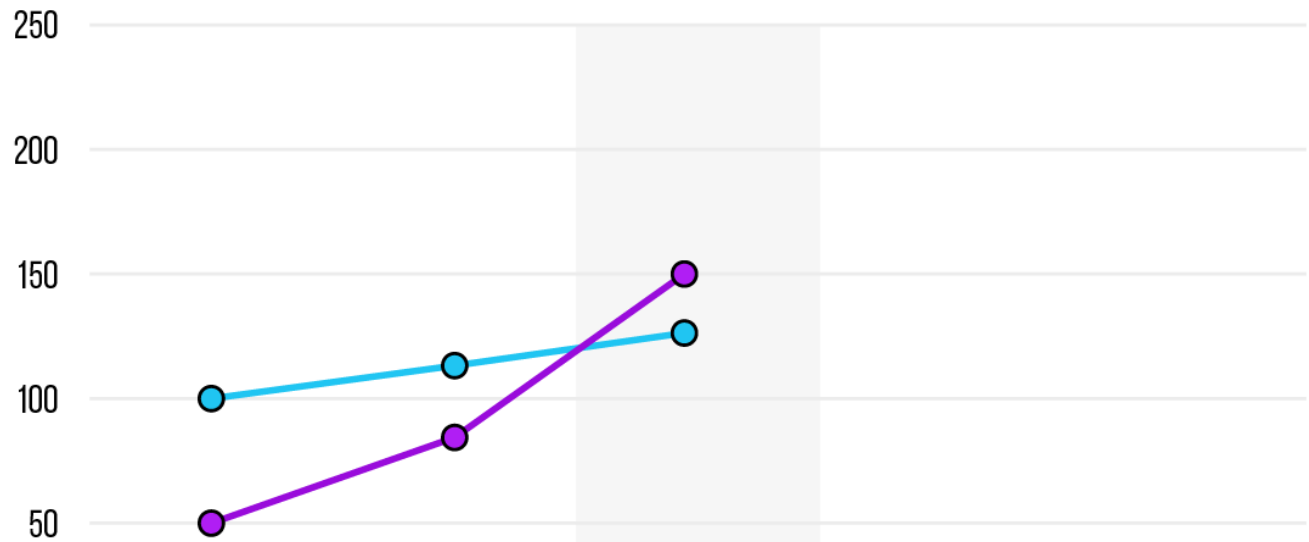
RESPONSE TIMES AND THROUGHPUT AGAINST VU



VIRTUAL USERS	100	200			
TPS	50	75			
P95 RESPONSE TIMES (MS)	100	115			

○ Methodology

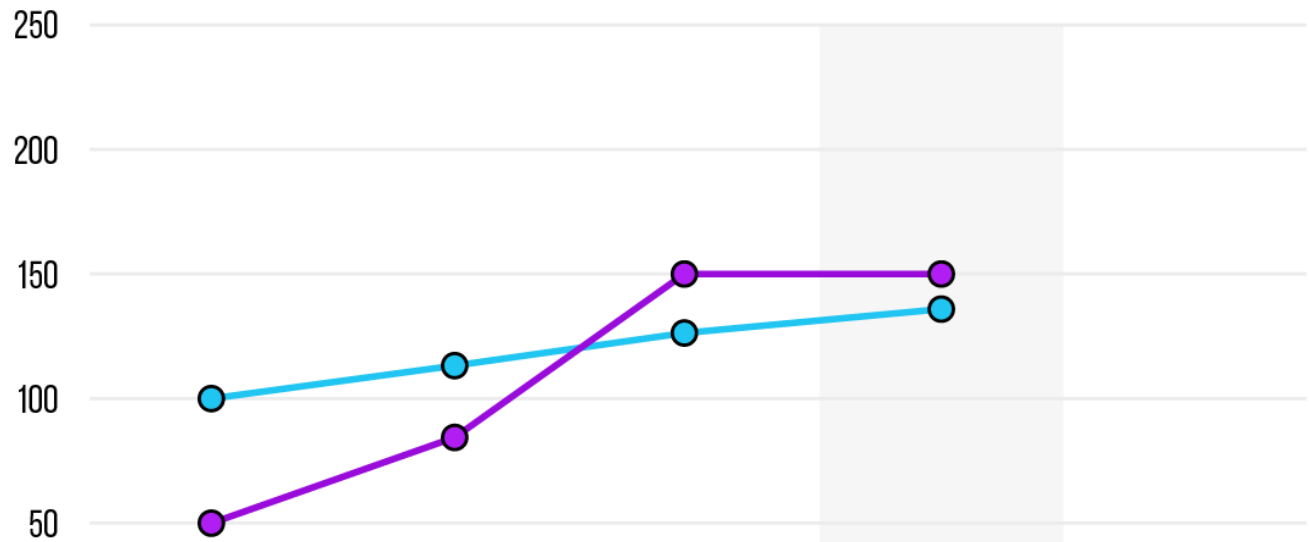
RESPONSE TIMES AND THROUGHPUT AGAINST VU



VIRTUAL USERS	100	200	350		
TPS	50	75	150		
P95 RESPONSE TIMES (MS)	100	115	130		

○ Methodology

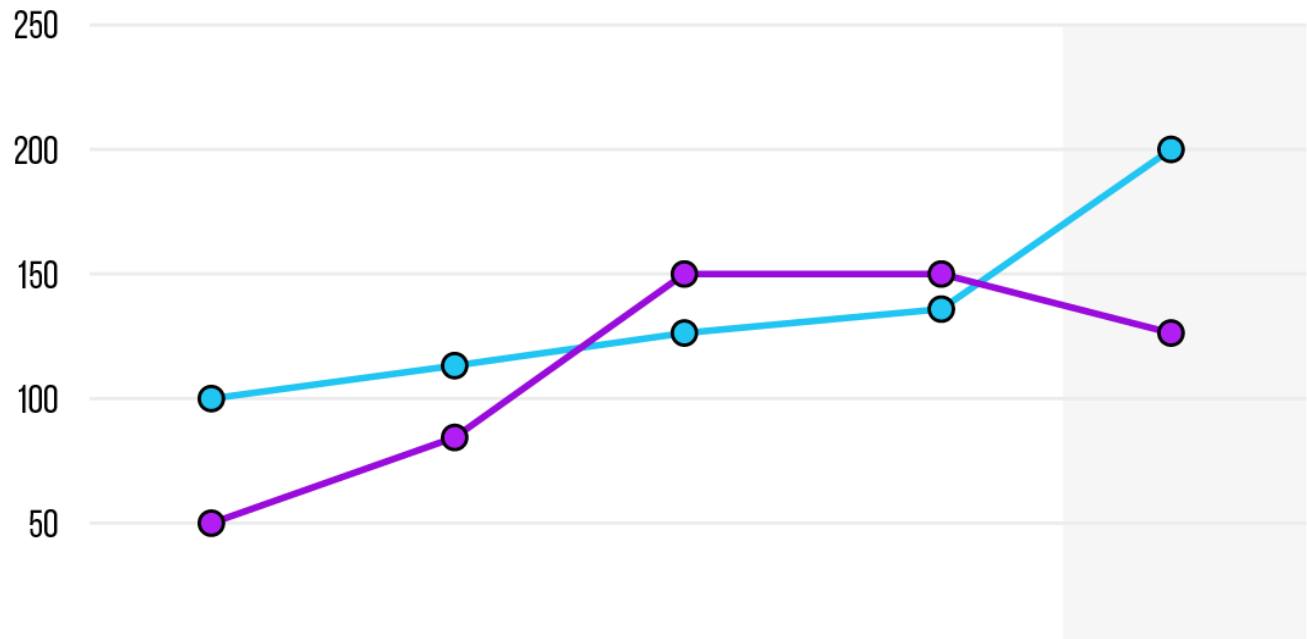
RESPONSE TIMES AND THROUGHPUT AGAINST VU



VIRTUAL USERS	100	200	350	400	
TPS	50	75	150	150	
P95 RESPONSE TIMES (MS)	100	115	130	140	

○ Methodology

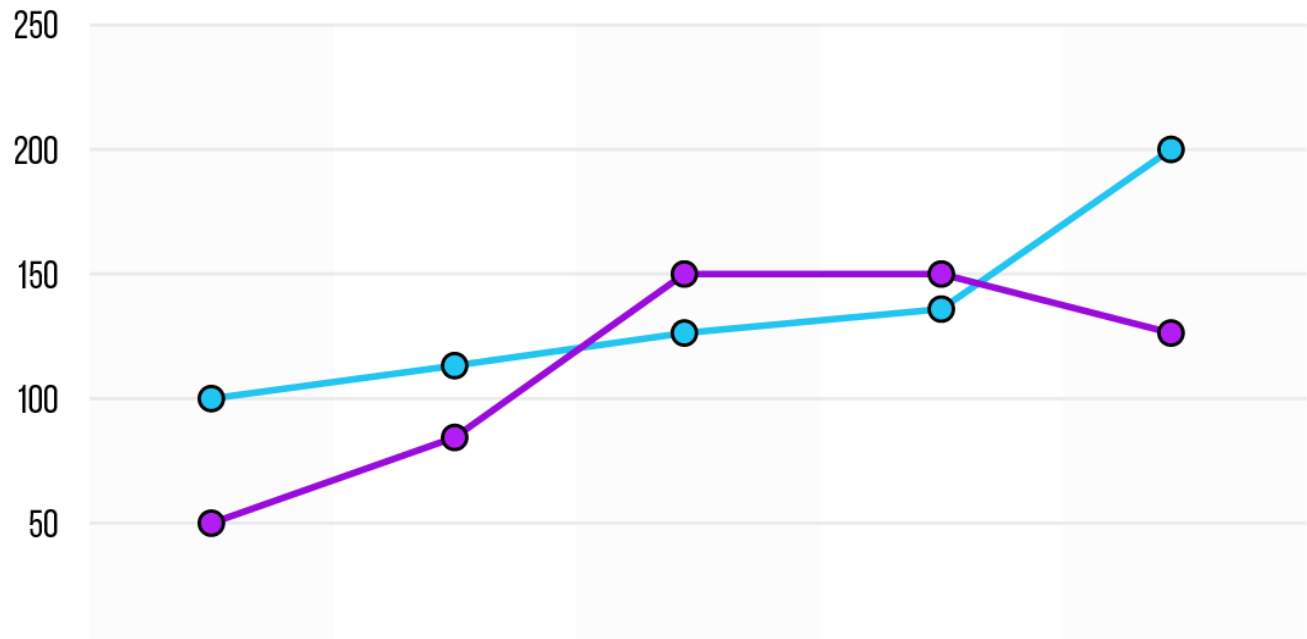
RESPONSE TIMES AND THROUGHPUT AGAINST VU



VIRTUAL USERS	100	200	350	400	450
TPS	50	75	150	150	125
P95 RESPONSE TIMES (MS)	100	115	130	140	200

○ Methodology

RESPONSE TIMES AND THROUGHPUT AGAINST VU



VIRTUAL USERS	100	200	350	400	450
TPS	50	75	150	150	125
P95 RESPONSE TIMES (MS)	100	115	130	140	200

○ Pass / Fail criteria


“Knee”: 350 concurrent users

- $< 1\%$ error
- P95 Response Times
 $< 130\text{ms} + 20\%$
- Throughput ≥ 150 TPS

- What's the main result?

The day the performance of
retrieving my photo albums
degrades, it will be detected as soon
as possible.

- ◉ What's the main Result?



Avoid the
firefighter's
job!

◉ Tools?

At Shutterfly, we use

Gatling



+

Jenkins



+

Graphite



+

AppDynamics

APPDYNAMICS

◉ Challenges?

- Environment set-up
- Initial learning and adaptation
- Taking care of the CI infrastructure
- Trust your results

◉ Final recommendations

- Have automatic feedback from all tests
- Periodic test recalibration and maintenance
- Production testing is still needed!

A hand holding a loyalty card over a laptop screen displaying a shopping website. The background is a purple gradient. The laptop screen shows a website with a banner for 'UP TO 70% OFF' and various product listings. The hand is holding a card that says 'LOYALTY CARD' and 'LA CO. UK'.

Questions?

○ References

- How Shutterfly Masters Continuous Performance Testing

<http://www.abstracta.us/2016/10/17/shutterfly-continuous-performance-testing/>

- Gatling tool review for performance tests (written in Scala)

<http://www.abstracta.us/2016/07/11/gatling-tool-review-performance-tests-written-scala/>

- Introduction to Taurus, an alternative to JMeter

<http://www.abstracta.us/2015/09/07/introduction-to-aurus-an-alternative-to-jmeter/>

- Checklist: 8 Ways to Improve JMeter Scripts

<http://www.abstracta.us/2016/03/07/checklist-8-ways-to-improve-jmeter-scripts/>



THANK YOU!



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A hand holding a smartphone displaying a shopping app with various product listings and discounts. The background is a solid purple color.

Ready to start testing performance continuously with the help of experts?

Contact Abstracta for a free consultation; We
will help assess the best plan for you and be
your go-to QA partner.

hello@abstracta.us