

# Preparing for the Flood.



How to Load Test to Prepare your WordPress site for a viral event.

Tony Le

## In this session, you'll learn...

- What is a load test
- When/Why you should load test
- Best practices - types of tests, KPIs, tools,
- What to do in a short timeframe?



## Tony Le

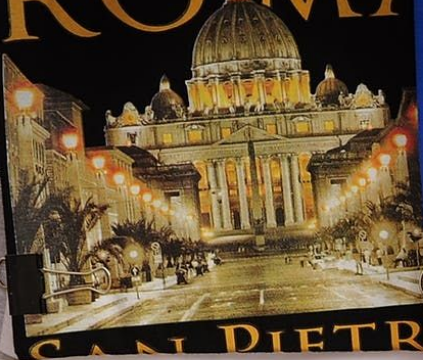
Solutions Engineer & WordPress Evangelist

- Was in a Funny or Die sketch featured on Tosh.0
- Attended first 10 day silent meditation retreat last year
- Enjoys barefoot running

The background features a dark, almost black, grid pattern. Overlaid on this grid are several glowing, ethereal blue lines that resemble lightning or energy pulses, primarily concentrated on the left and right sides of the frame. In the center, a solid black rectangular area contains the text.

**Why is this subject  
important?**















This site can't be reached

The webpage at <https://www.oxfordjournals.org/> might be temporarily down or it may have moved permanently to a new web address.

ERR\_FAILED



**50%**

**OFF EVERYTHING**

**BLACK  
FRIDAY**



ellen

# SHARK TANK







## Technology

# Google's Coronavirus Testing Website Crashes On First Day, Screenings Will Have To Wait

By Rishabh Jain

03/17/20 AT 4:30 AM



Diseases (NIAID) - Director

## MOST READ

1 / How US Grocery Stores Adjust Hours Amid Coronavirus



2 / US Accused Of 'Modern Piracy' For Redirecting Face Mask Shipment From Germany



3 / Corona Beer Production Stopped In Mexico Amid Coronavirus Pandemic



4 / Dow, S&P, Nasdaq Futures Point To Monday Opening Gain



[The Coronavirus Outbreak](#)**LIVE**[Latest Updates](#)[Should I Wear a Mask?](#)[Maps](#)[Markets](#)[What You Can Do](#)[Newsletter](#)

## *Facebook Is ‘Just Trying to Keep the Lights On’ as Traffic Soars in Pandemic*

The social network is straining to deal with skyrocketing usage as its 45,000 employees work from home for the first time.





## *Surging Traffic Is Slowing Down Our Internet*

With people going online more in the pandemic, internet traffic has exploded. That's taking a toll on our download speeds and video quality.





# How much traffic can my site handle?

*It depends.*

**Mostly on two factors:**

- 1. Infrastructure**
- 2. Application Code**













**What is a load test?**

# What is a load test?

- Process of putting demand on a system
- Performed to simulate peak traffic
- In other words, how does the site perform under heavy load?





**Why should you load test?**

# Functional tests don't reflect the real world.

- Doesn't reflect how users will use it in real life
- Code can behave differently under load
- Servers perform differently under stress

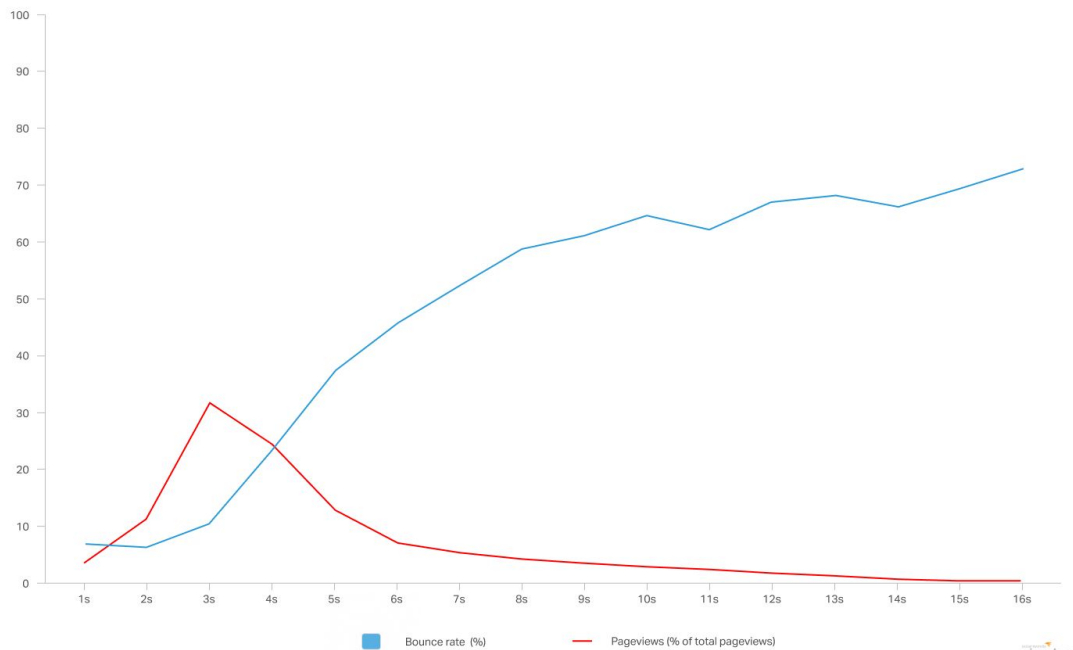


# Downtime is expensive. Every minute counts.

- According to [Blazemeter](#), one minute of downtime during Black Friday costs an organization \$4,700 on average.
- [Gartner](#) cites network downtime costs, on average, of \$5,600 per minute.
- In the U.S., Amazon is estimated to have lost \$72.4 million in revenue based on 63 minutes of downtime. That's about \$1.15 million of lost revenue per minute.

# Users don't have time.

Web Page Load Time vs Bounce Rate



Page Load Time (seconds)      Bounce Rate (%)

1	7
2	6
3	11
4	24
5	38
6	46
7	53
8	59
9	61
10	65
11	62
12	67
13	69
14	66
15	69
16	73



## **Best Practices- types of tests, KPIs and tools**



## **Test early and test often.**

- More time there is to fix any bugs or address any bottlenecks
- Performing a small load test after any major site changes
- Larger volumes of concurrent users may present different results than a normal traffic scenario

# **Don't test on production. Unless you really have to.**

- Not feasible for businesses with international visitors
- Test on a like-for-like non-production environment
- Include non-WordPress integrations
- Production: test during off-business hours

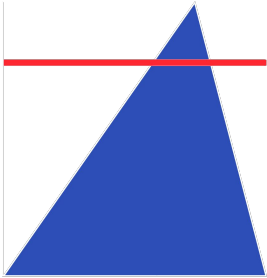
## **Don't test on a shared environment.**

- Inaccurate results
- Limitations to scale
- Blocked load testing traffic
- Noisy neighbor effect
- Rate limiting

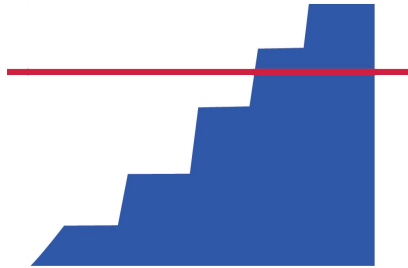


# What kind of test?

**Spike** - How does a system respond to a sudden increase and decrease in load?  
e.g. A Live Online Event



**Stress** - How does a system respond to consistent high intensity loads? Where does it fail?  
How does it recover? e.g. A Flash Sale



**Soak** - How does a system respond to high load over time? e.g. Black Friday



# Open-source tools



 **BlazeMeter**

 **LoadStorm**<sup>®</sup>  
CLOUD LOAD TESTING TOOL

 **loader.io**

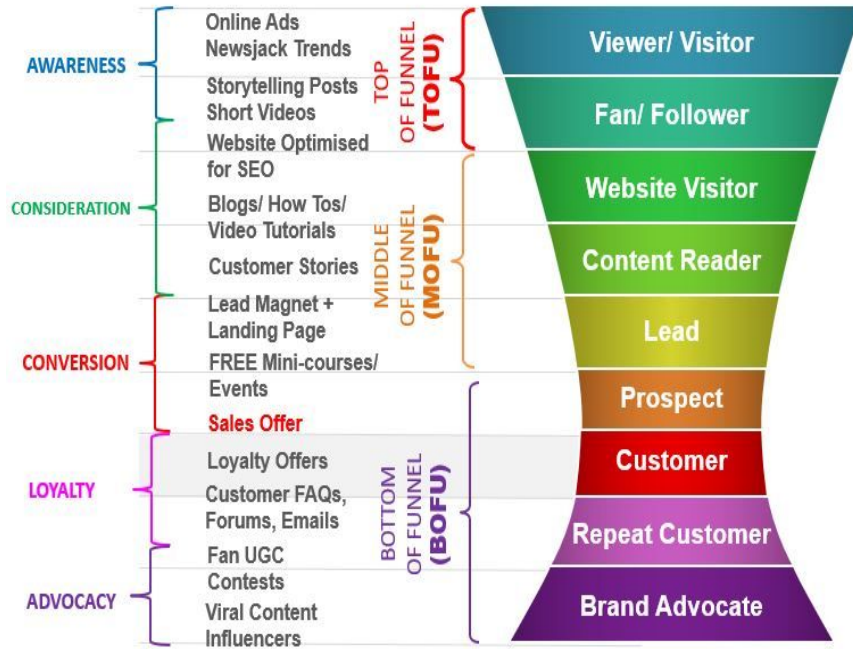
 **Taurus**

 SMARTBEAR  
**LoadNinja**

 **ARTILLERY.IO**



# Creating a Realistic Scenario



- Review historical metrics
- What does the user journey look like?
- Where are users coming from?
- Percentage of web vs mobile users?
- When do they drop-off?

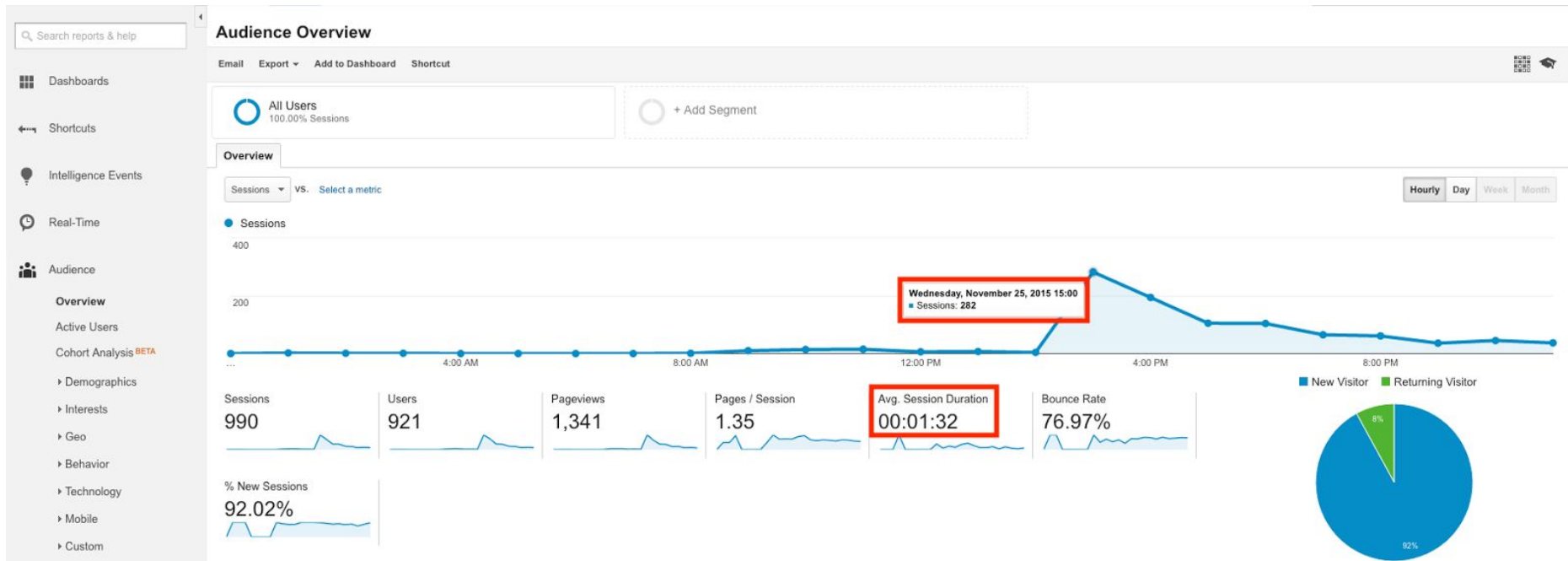
# Creating a User Flows

1. User visits home page → bounces immediately (40%)
2. User visits home page → navigates through several pages → drops off (30%)
3. User visits home page → navigates through several pages → visits product page → drops off (25%)
4. User visits home page → chooses a product → adds to cart → drops off (4%)
5. User visits home page → visits product page → chooses a product → adds product to cart → checks out (1%)

# Calculate Concurrent Users

$$\frac{[\text{Peak Hourly Sessions} \times \text{Average Session Duration (secs)}]}{3600}$$

# Calculate Concurrent Users









# Creating a Script


Hi Tony

USER FLOW 1



▶ Run ▼

 Edit ▼

 Save ...

▼ Advanced Options

User Agent

Current Browser ▼



Filter Pattern \*

http://\*/\*, https://\*/\*

☒ Disable Browser Cache

Save in Project

Default project >

 Powered by BlazeMeter ® v 4.7.1 

Download your scripts X


Select script(s) to save

☒ JMeter only (JMX)  
☐ Selenium only (YAML)  
☐ JMeter & Selenium combined (YAML)

Select domains to include in your JMeter script

☐ livechatinc.com  
☐ us1.salesloft.com  
☒ wpe.codes  
☐ googleapis.com  
☐ googletagmanager.com  
☐ wpengine.com  
☐ gstatic.com

Save

 Powered by BlazeMeter ® v 4.7.1

# Modifying a Script



### HTTP Request

**Name:** Home Page

**Comments:**

**Basic** **Advanced**

**Web Server**

**Protocol [http]:**  **Server Name or IP:**  **Port Number:**

**HTTP Request**

**Method:** GET  **Path:** /  **Content encoding:**

☐ Redirect Automatically ☒ Follow Redirects ☒ Use KeepAlive ☐ Use multipart/form-data for POST ☐ Browser-compatible headers

**Parameters** **Body Data** **Files Upload**

**Send Parameters With the Request:**

Name:	Value	Encode?	Include Equals?

## Define KPIs

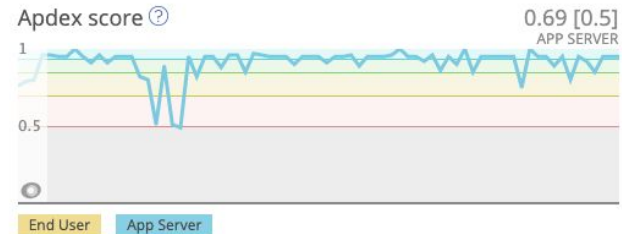
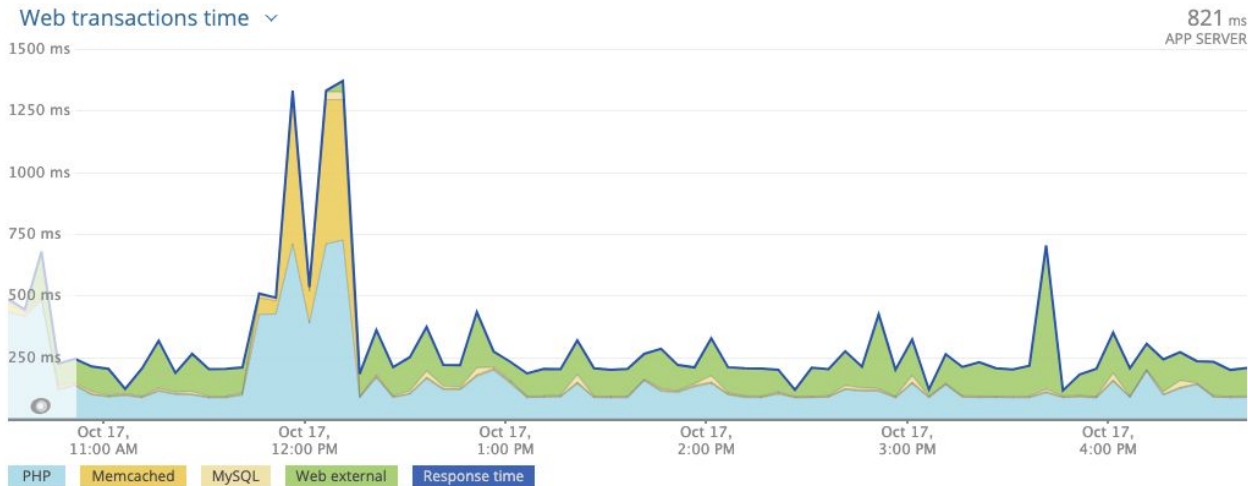
- Response time
- Error %
- Ratio of failed to successful transactions
- Peak requests per second
- Dynamic requests
- Apdex Score
- CPU, I/O Wait, Memory

# Monitoring tools

- Monitoring tools provided by the load test service
- Use application performance monitoring for measuring backend speed
- External Uptime Monitoring
  - Pingdom/Uptime Robot



# Application Performance Monitoring



# What's the tipping point?



*Image by Blazemeter*

# What's the tipping point?



# Access Logs

```
cut -d' ' -f6,7 wpecodes.access.log | sort | uniq -c | sort -rn | head
```

```
18037 "POST /integration/  
17655 "POST /service/  
17353 "POST  
/blog/wp-engine-best-customer-experience-world/  
10710 "POST /plans/  
7451 "POST /agency/  
7239 "POST /about-us/
```





**What to do in a short  
timeframe?**

## **Things to do before high traffic event.**

- Notify your webhost or support team
- Perform any site optimizations

# QUEUE-IT

## You are now in line

You are in line for the anticipated event. When it is your turn, you will have 10 minutes to enter the website.

[What is this?](#)



Your number in line: 8445

Number of users in line ahead of you: 1758

Expected arrival time on the website: 2:34 PM GMT

Your estimated wait time is: 5 minutes

● Status last updated: 2:29:56 PM GMT

Message last updated: 2:29 PM GMT

This is a test message.

Please notify me when it is my turn:

[Notify me by e-mail](#)

[Leave the line](#) (You will lose your place)

Queue ID: [64da7b60-c59b-40ce-8293-b6ae18f4cfd9](#)

QUEUE-IT

**Questions?**

# Resources

[White Paper - Preparing for Peak Traffic: A Load Test Guide](#)

[Queue-it](#)

[Blazerunner](#)

[LoadImpact Testing E-commerce](#)

[WooCommerce API Test Load Script](#)

[Apache JMeter<sup>TM</sup> Academy](#)



Thank You.

A horizontal band of glowing blue energy or light waves, resembling a stylized lightning bolt or a series of connected points, stretches across the middle of the slide. The light is a vibrant cyan-blue, with a soft, ethereal glow that fades into the dark background. The background itself is a deep black, overlaid with a fine, dark gray grid pattern that adds a technical or digital feel to the overall aesthetic.