

# TURKEY SOFTWARE QUALITY REPORT

2023-2024

**PERFORMANCE TESTING,  
LOAD TESTING,  
and STRESS TESTING**

# CONTENT

Executive Summary

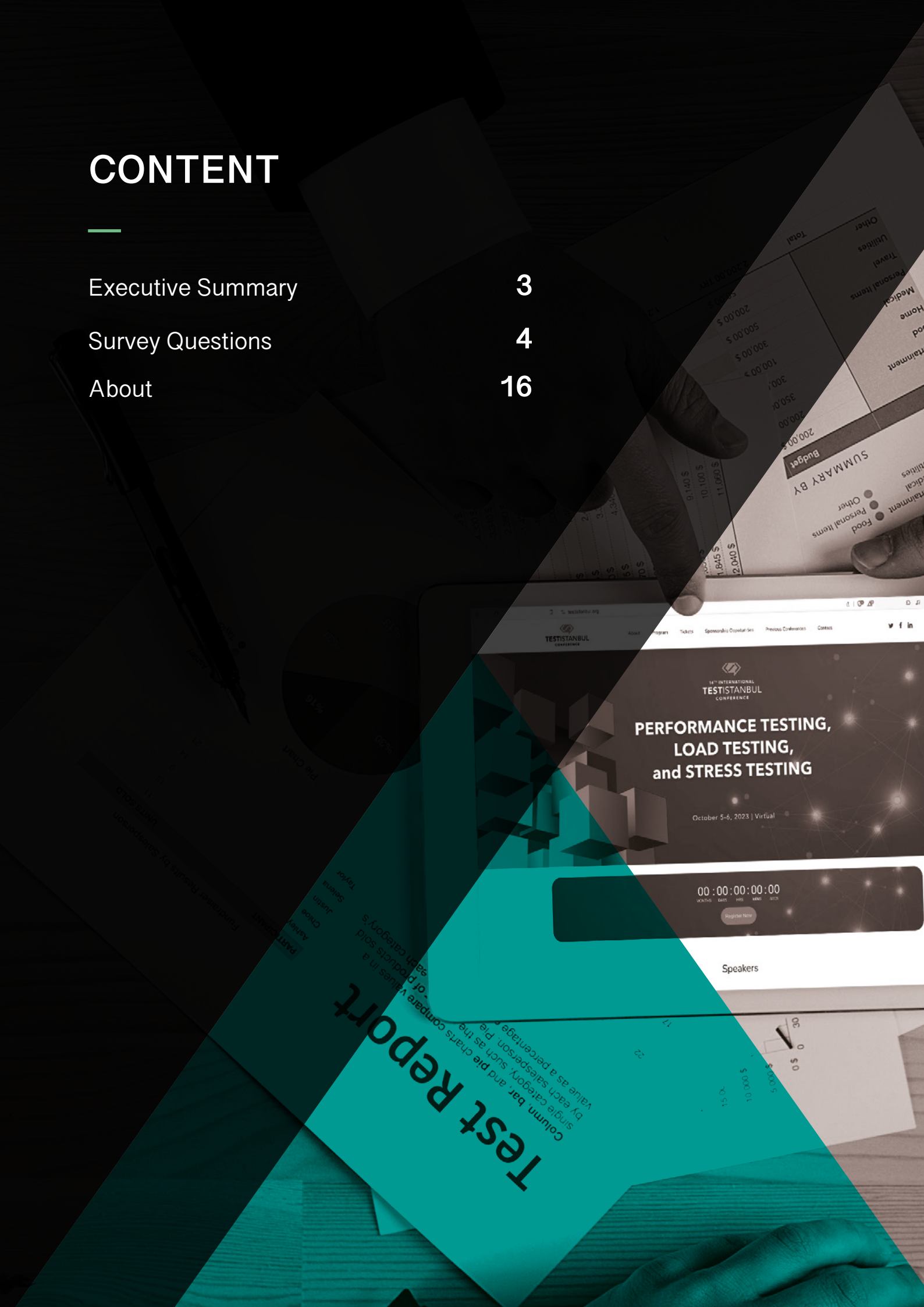
3

Survey Questions

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SUMMARY BY

Food	200.00 \$
Personal Items	350.00 \$
Travel	100.00 \$
Medical	500.00 \$
Home	200.00 \$
Other	200.00 \$
<b>Total</b>	<b>2000.00 \$</b>

Budget

TESTISTANBUL CONFERENCE

TESTISTANBUL CONFERENCE

PERFORMANCE TESTING, LOAD TESTING, and STRESS TESTING

October 5-6, 2023 | Virtual

00:00:00:00:00

Speakers

**Test Report**

Column, bar, and pie charts compare values in a single category, such as the value of products sold by each category, as the value as a percentage of the total.

# EXECUTIVE SUMMARY

Nowadays the importance of performance requirements has become one of the top IT agenda items among with functional, usability, and security requirements. Although performance requirements have gained significant attention in the last decade, there are still problems and misunderstandings while conducting performance testing and performance engineering. In this edition of Turkey Software Quality Report [TSQR], various aspects of performance testing were questioned. Here are our key findings:

- There is still a misunderstanding among performance engineering, performance testing and capacity planning terms. These terms are used interchangeably.
- The main focus of performance testing is still on time behavior. It is followed by capacity planning and resource utilization.
- The most common performance testing types are load testing, stress testing, and response performance testing.
- Apache JMeter is the most commonly used tool in the industry.
- Time behavior problems are on the top of the performance engineering agenda followed by resource utilization, capacity planning, and scalability problems.

As stated in the opening keynote of 14th International TestIstanbul conference [[www.testistanbul.org](http://www.testistanbul.org)], more focus and effort should be given to capacity planning and capacity testing in order to strive ahead in this performance age.

# QUESTIONS

1

WHICH PRINCIPLE DO YOU CARE THE MOST WHEN CONDUCTING PERFORMANCE TESTING?

2

WHICH OF THE BELOW PERFORMANCE TEST TYPES ARE USED IN YOUR COMPANY?

3

WHICH TOOLS DO YOU USE FOR PERFORMANCE TESTING IN YOUR ORGANIZATION?

4

WHAT ARE THE MOST COMMON SYSTEM PERFORMANCE PROBLEMS YOU'VE ENCOUNTERED WHILE CONDUCTING YOUR PERFORMANCE TESTS?

5

WHAT ARE THE COMMON MISTAKES THAT ARE DONE DURING PERFORMANCE TESTING?

6

WHAT ARE THE MOST IMPORTANT KEY PERFORMANCE INDICATORS (KPI) FOR YOUR PERFORMANCE TESTS?

7

WHAT ARE THE CRITICAL SHORTAGES FOR PERFORMANCE TESTING?

8

IN WHICH ENVIRONMENT(S) DO YOU CARRY OUT PERFORMANCE TESTING?

9

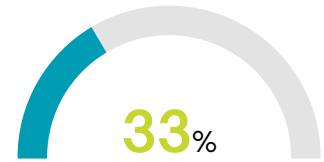
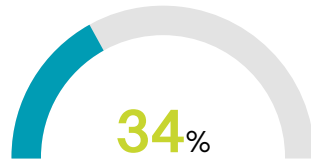
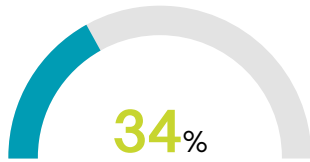
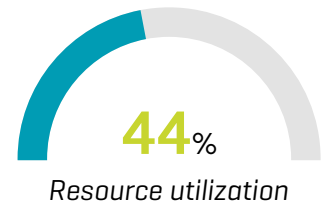
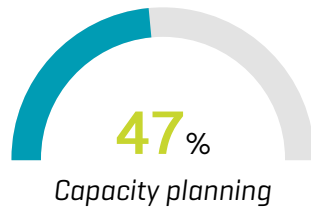
WHO ARE INVOLVED IN THE CREATION OF PERFORMANCE TEST SCENARIOS?

10

WHAT ARE THE MOST COMMON MISUNDERSTANDINGS ABOUT PERFORMANCE TESTING?

# F WHICH PRINCIPLE DO YOU CARE THE MOST WHEN CONDUCTING PERFORMANCE TESTING?

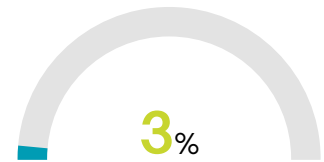
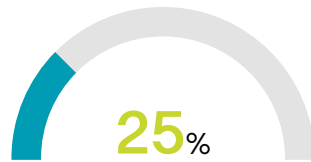
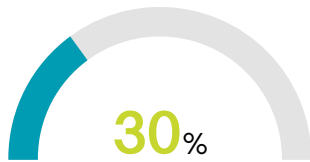
\* multiple selection was allowed



Aligned to the defined expectations of different stakeholder groups [e.g. users, system designers, operations staff etc]

Understandable and can be readily compared to stakeholder expectations

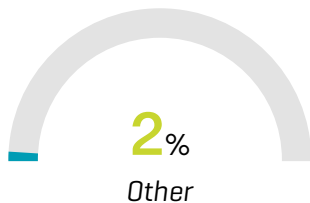
Affordable and executable



Conducted either on complete or partial systems or test environments that are representative of the production system.

Reproducible

None



# 2 WHICH OF THE BELOW PERFORMANCE TEST TYPES ARE USED IN YOUR COMPANY?

*\* multiple selection was allowed*



Load Testing



Stress Testing



Response Performance Testing



Capacity Testing



Endurance Testing



Scalability Testing



Spike Testing



Concurrency Testing



None

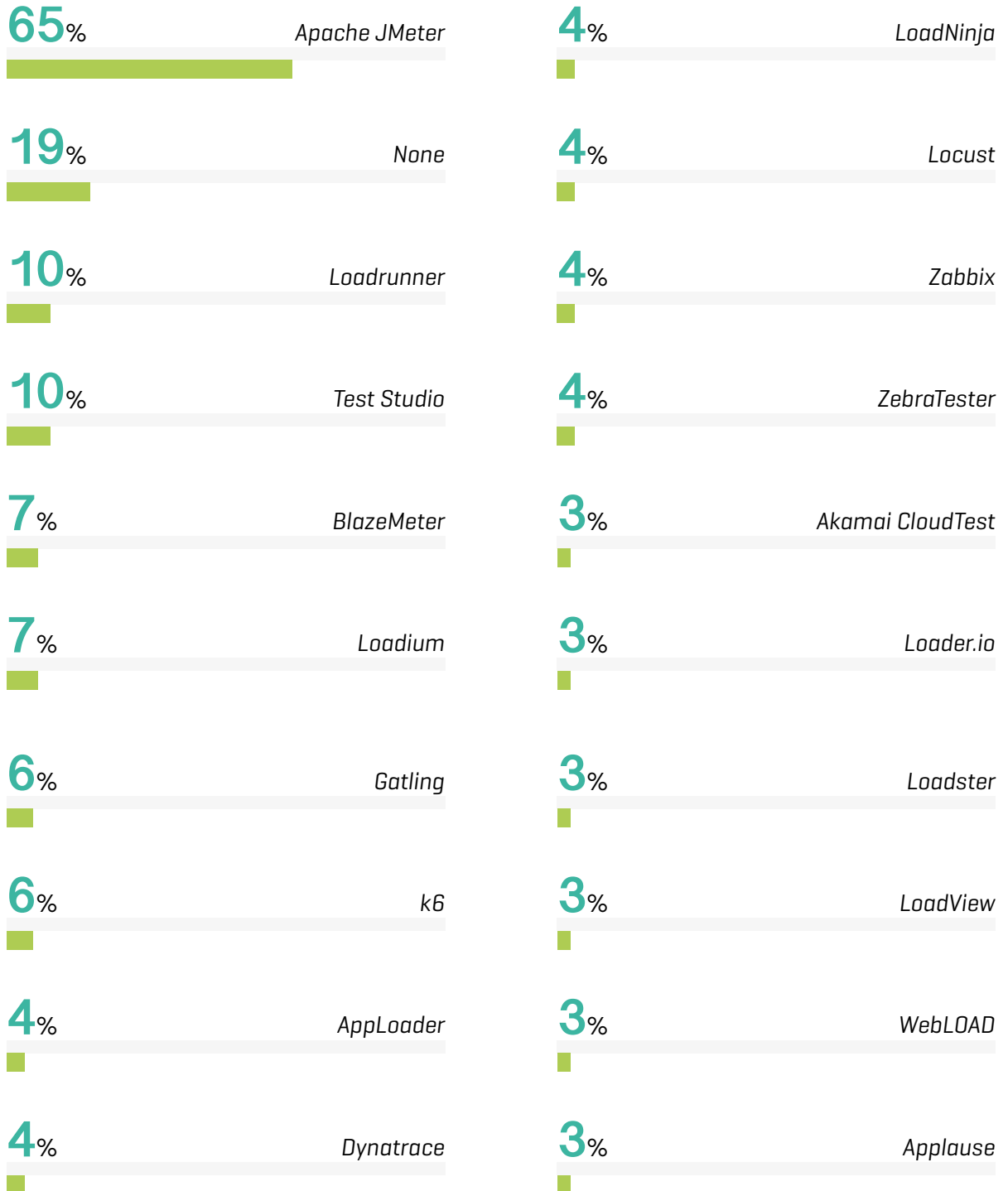


Other



# WHICH TOOLS DO YOU USE FOR PERFORMANCE TESTING IN YOUR ORGANIZATION?

*\* multiple selection was allowed*



\* multiple selection was allowed

3% Parasoft Load Test

2% Taurus

3% Rational Performance Tester

2% Tsung

2% ApacheBench

1% Artillery

2% Eggplant

1% Experitest

2% J-hawk

1% Loadero

2% Kinsta APM

1% nGrinder

2% LoadUI Pro

1% Paessler Security

2% NeoLoad

1% Silk Performer

2% OpenSTA

1% SmartMeter.io

2% SolarWinds

1% The Grinder

2% StormForge

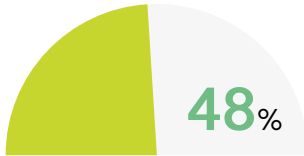
1% Other



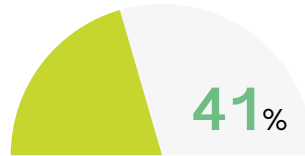


# WHAT ARE THE MOST COMMON SYSTEM PERFORMANCE PROBLEMS YOU'VE ENCOUNTERED WHILE CONDUCTING YOUR PERFORMANCE TESTS?

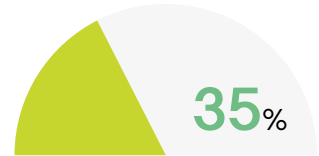
*\* multiple selection was allowed*



*Long Load time*



*Slow response under all load levels*



*Poor response time*



*Slow response under moderate-to-heavy load levels*



*Bottlenecking*



*Poor capacity*



*Degraded response over time*



*Poor scalability*



*Inadequate or graceless error handling under heavy or over-limit load*



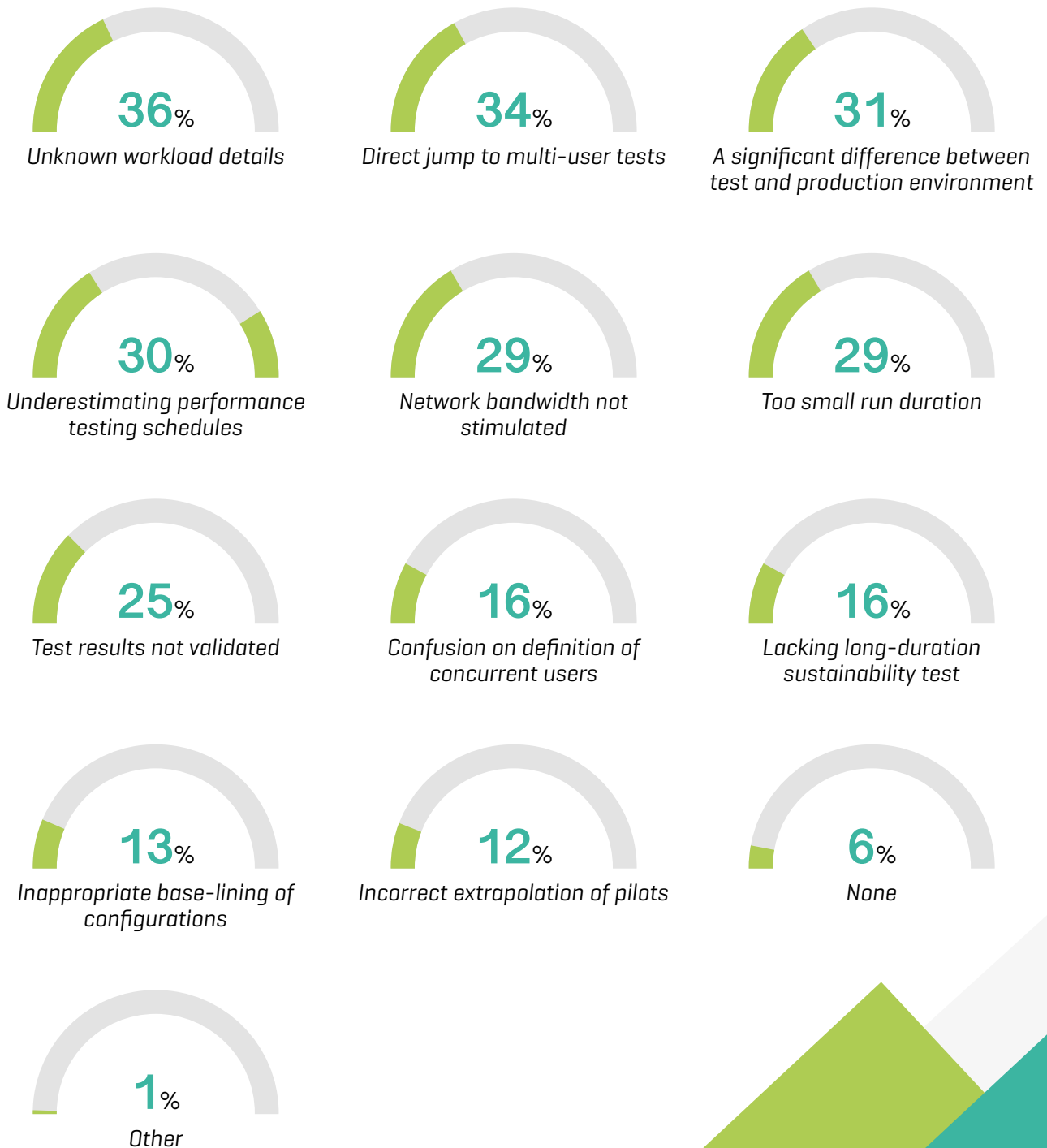
*None*



*Other*

# WHAT ARE THE COMMON MISTAKES THAT ARE DONE DURING PERFORMANCE TESTING?

\* multiple selection was allowed



# 6 WHAT ARE THE MOST IMPORTANT KEY PERFORMANCE INDICATORS (KPI) FOR YOUR PERFORMANCE TESTS?

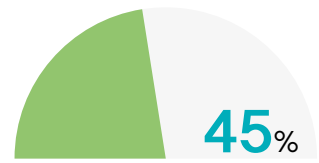
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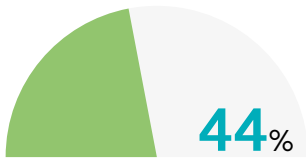
Average Response Time



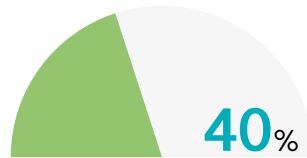
Number of Concurrent Users



CPU Usage



Memory Usage



Transaction Success Rate



Database Usage



Bandwidth Usage



Transaction Number



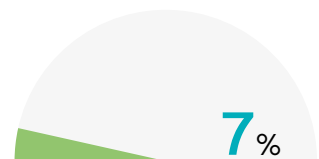
Throughput



Page Health



Time of First Byte



None

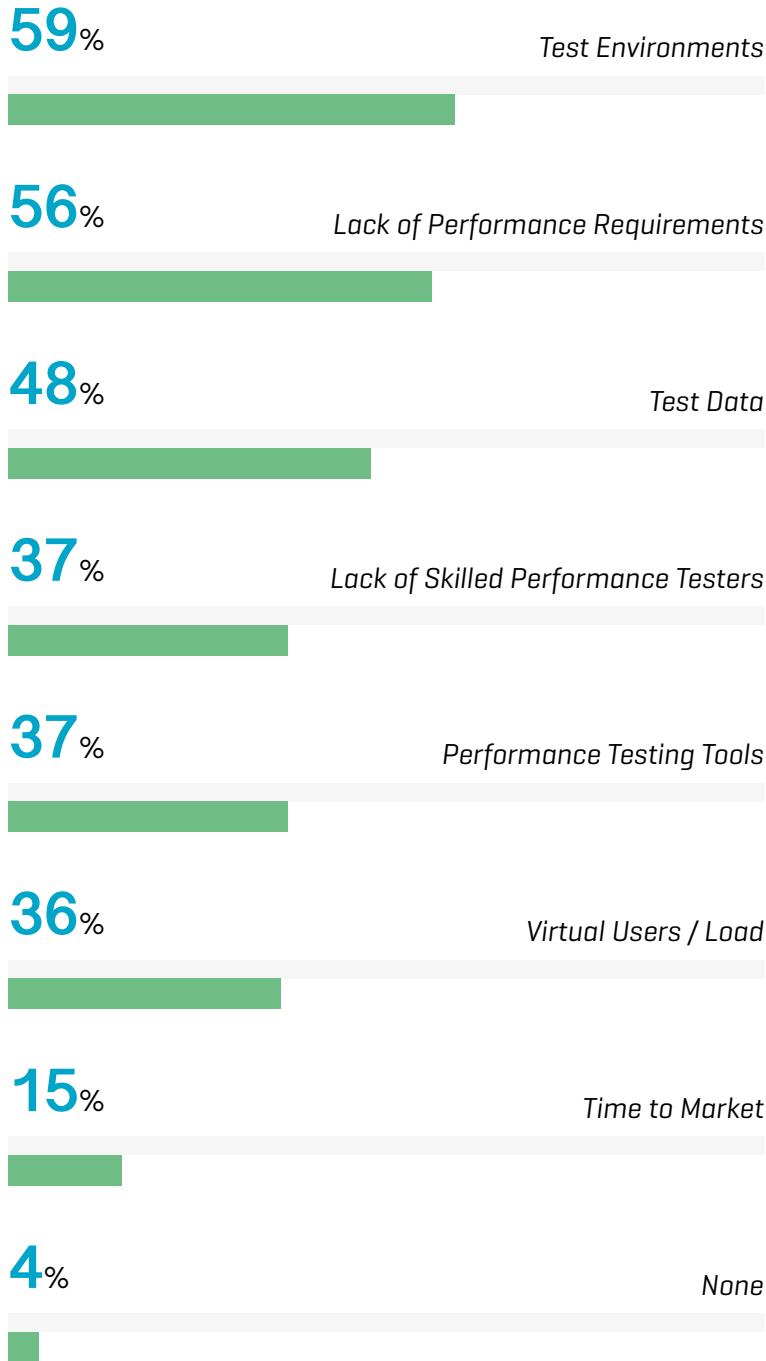


Other



# WHAT ARE THE CRITICAL SHORTAGES FOR PERFORMANCE TESTING?

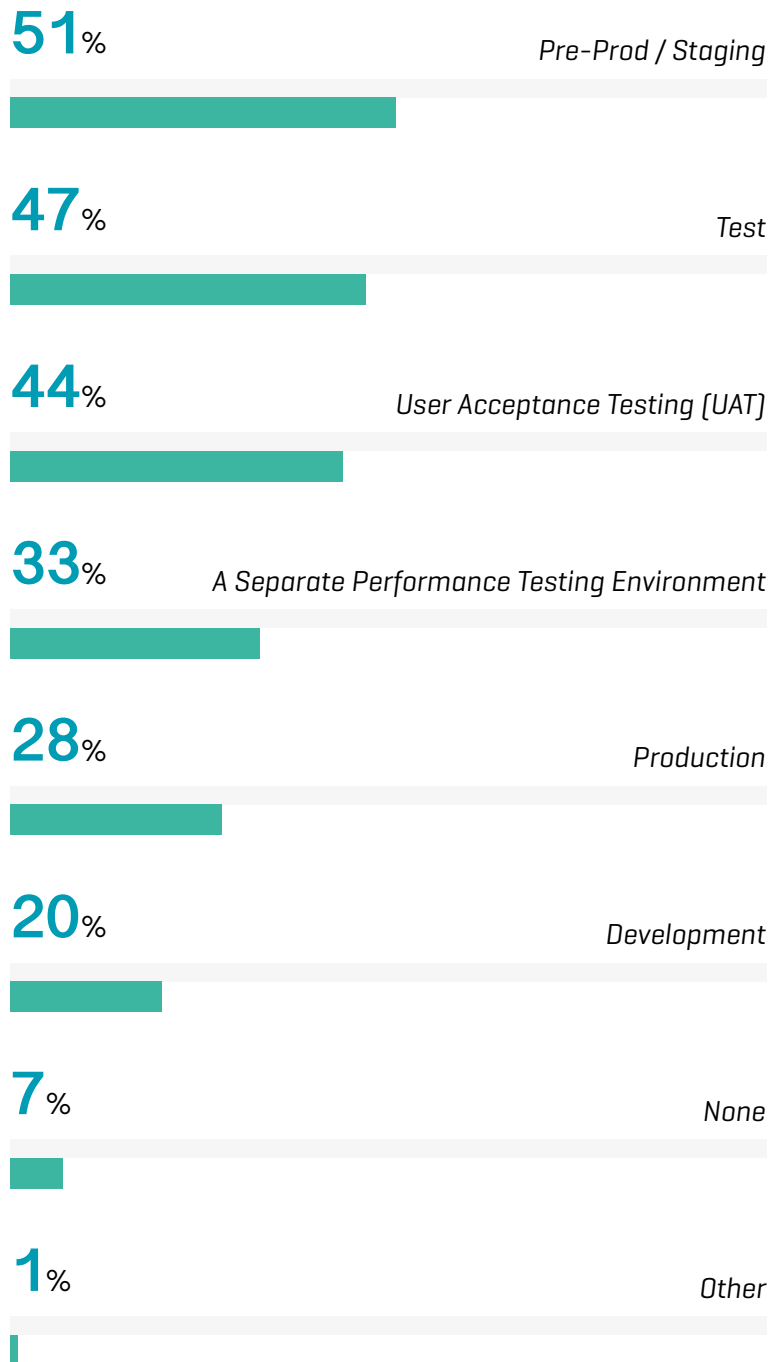
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# IN WHICH ENVIRONMENT(S) DO YOU CARRY OUT PERFORMANCE TESTING?

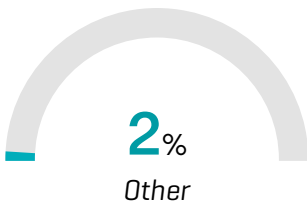
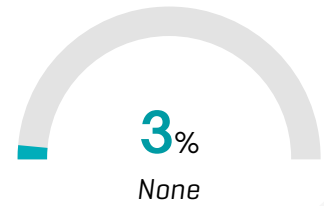
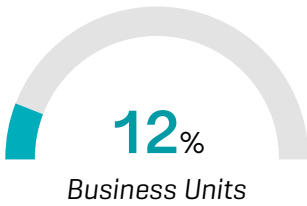
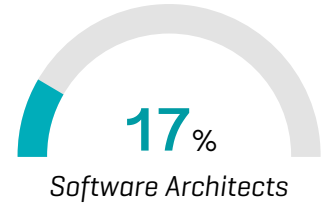
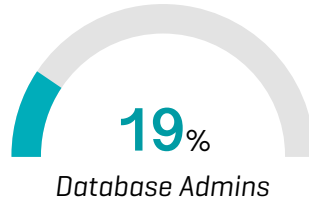
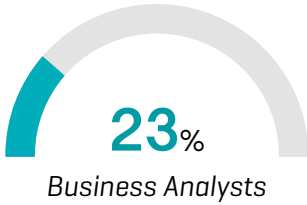
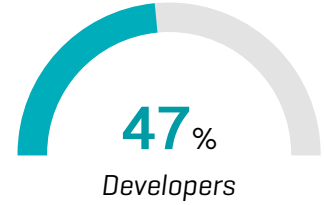
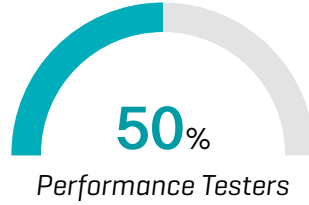
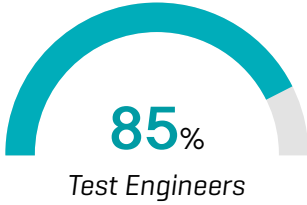
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# WHO ARE INVOLVED IN THE CREATION OF PERFORMANCE TEST SCENARIOS?

*\* multiple selection was allowed*





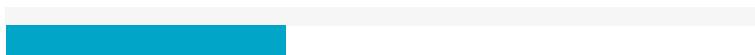
# WHAT ARE THE MOST COMMON MISUNDERSTANDINGS ABOUT PERFORMANCE TESTING?

*\* multiple selection was allowed*

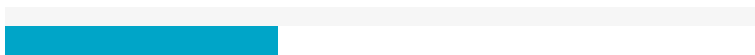
**49%** *The idea that only improving response times will increase user satisfaction*



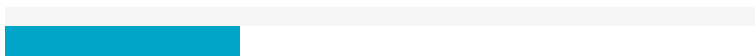
**37%** *Considering that reducing think times to zero when simulating users is a good way to load the website with more users*



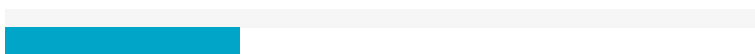
**36%** *Perception of long time to complete a process as just a page load problem*



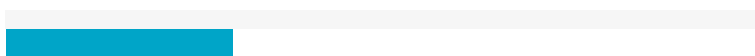
**31%** *Considering functional test cases as a good starting point for performance testing*



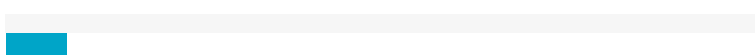
**31%** *Considering that the performance test performed in the preprod environment allows for accurate estimation*



**30%** *Using the terms performance engineering, performance testing, and capacity planning interchangeably*



**8%** *None*



# ABOUT



ISTQB® is a global, non-profit organization responsible for enabling test professionals, through globally accepted software testing certification standards to support their career development. As of June 2023, ISTQB® has administered over 1,2 million exams and issued more than 914k certifications in over 130 countries world-wide. The scheme relies on a Body of Knowledge (Syllabus and Glossary) and exam rules that are applied consistently all over the world, with exams and supporting material being available in many languages.

[www.istqb.org](http://www.istqb.org)



Turkish Testing Board has been carrying out the following activities to increase software testing awareness in the information technology sector since 2006. International Certification Turkish Testing Board conducts international ISTQB® certification exams and gives internationally accredited certificates to participants who are successful in the exam. More than 5,000 test specialist candidates have applied to the board and entered the certification exams since 2006.

## Certification Exams

- ▶ ISTQB® Foundation Level Certified Tester (CTFL)
- ▶ ISTQB® Foundation Level - Agile Tester (CTFL-AT)
- ▶ ISTQB® Specialist – Performance Testing (CT-PT)
- ▶ ISTQB® Specialist – Test Automation Engineer (CT-TAE)
- ▶ ISTQB® Specialist – AI Testing (CT-AI)
- ▶ ISTQB® Advanced Level – Test Manager (CTAL-TM)
- ▶ ISTQB® Advanced Level – Test Analyst (CTAL-TA)
- ▶ ISTQB® Advanced Level – Technical Test Analyst (CTAL-TTA)

## Translation Projects

The translation group within the board works on the translation of ISTQB® documents in order to bring international software testing terminology to Turkey. Documents translated so far are as follows:

- ▶ ISTQB® International Certified Foundation Level Software Testers Syllabus 2011
- ▶ ISTQB® International Certified Fundamental Level Software Testers Syllabus 2018
- ▶ ISTQB® Software Testing Glossary
- ▶ ISTQB® International Certified Advanced Level - Test Analyst 2012
- ▶ TMMi® in the Agile World
- ▶ Dragons Out - Bir Ejderhadan Yazılım Test Dersi

[www.turkishtestingboard.org](http://www.turkishtestingboard.org)



Turkish Testing Board has been organizing International Testistanbul Conferences since 2010. In the last fourteen conferences, 70 keynotes and more than 6,400 participants from 25 countries were hosted. Turkish Testing Board is a non-profit organization, the profit of Testistanbul Conferences is donated to scholarships.

## Panels & Events

The board organizes sector or topic-based panels for the development of the software testing industry. More than 1,300 professionals have attended the events. The panels and events held so far are TestRemote, TestFinance, TestInsurance, TestAnkara, TestIzmir, TestGames, TestFinTech, TestDefence.

[www.testistanbul.org](http://www.testistanbul.org)



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