TEKsystems Global Services

Topic: Performance Testing

Presented by: **JAYAPRAKASH MASARAPU**

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Performance testing

Agenda

- What is performance testing
- Why performance testing
- Types of performance testing
- Performance testing tools
- Performance testing life cycle

What is performance testing

- Performance testing is a non- functional testing
- Performance testing is test an application or server behavior with expected virtual users load to determine how fast some aspect of system performs under a particular workload.

Why performance testing

- When the application is accessing by the multiple users we need to make sure the application Performance.
- Make sure how quickly the application server will respond
- Check the stability and reliability of an application or server with expected users load

Types of performance testing

- Load Test
- Stress Test
- Spike Test
- Endurance Test
- Volume Test

Types of performance testing

Load Test

- Is my application is capable to handle peak production load? Any errors will occur under load?
- Load test will be conducted to verify EUT's behavior under normal operational capacity
  - It would ramp-up pattern where the load will be gradually increased. A steady load state will be maintained for specified time and will be gradually ramped-down.
- This test will help us to
  - Measure and determine the response times and throughput rates to support peak load.
  - Find out resource utilization of the server under normal production load
  - Identify errors under load.

Types of performance testing

Stress Test

- Stress Test will be conducted to determine the stability of given system or component beyond normal operational capacity, often to find a breaking point of the system.
  - Identify, a low load will be applied on EUT and it would be constantly ramped up till it reaches a breaking point (EUT stops responding or a steep hike in response time is observed or environmental errors are observed because of load)
- This test will help us to
  - Identify application issues that arise or become apparent only under extreme conditions
  - Determine the maximum sustainable users and throughput of the EUT/AUT
  - Identify at what point the system start degrading/ fail and reasons for the failure

Types of performance testing

Spike Test

- Spike Test will be conducted to determine the stability of given system when there is a sudden increase/ decrease in user load.
- This test will help us to
  - Find out whether the application can handle significant changes in the load
- Say for example, test will be initiated with 100 concurrent users for certain period of time, suddenly the concurred user load will be increased to 1000 and then to 1500 user. Like wise the user load will be decreased to 100 concurrent users and verify the system returns to normal operation and retaining the performance as initiated.

Types of performance testing

Endurance/ Soak Test

- Endurance Test will be conducted to verify if the system can sustain continuous expected load for prolonged period of time
  - Endurance Testing is a subset of Load Test
  - Test will be performed with defined set of concurrent users for a prolonged period of time.
- This test will help us to
  - Discover memory utilization issues and detect potential leaks (memory leaks) in EUT under sustained use.

Types of performance testing

Volume Test

- Volume Test will be conducted to test the application performance under varying database volumes
- This test will help us to
  - Measure response times, throughput rates and resource-utilization levels od WUT under different volumes.
  - Determine how database acts under various circumstances

Performance testing tools

- LoadRunner
- Jemter
- NeoLoad
- WebLOAD
- Silk Performer
- LoadUI Pro
- ..etc.

Performance testing life cycle

TEKsystems
Own change

THANK YOU