

Performance and Load Testing Utilizing JMeter

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What is the problem?

- Software development is expensive
- Lack of performance/load testing before software goes live
- Procrastinating on performance/ load testing could yield more difficult to fix bugs
- Possible reputation damage when software delivered is too slow and/or unreliable



Why is this difficult

- Business representatives and engineers must work together to prioritize expectations
- Knowledgeable engineer must be allocated to write the performance/load tests
- Deadlines restrict what bugs can be fixed
- Performance/load tests must be run against production



How I solved it

- Research current subscriptions your company already pays for in search of a performance/load test tool
- I prefer free software with a lively community to ask questions to
- JMeter by Apache



JMeter by Apache

- JMeter is an open source free application
- Mimics users to put stress on an application to reveal performance
- Works at a protocol level to appear like a browser
 - Never executes JavaScript
- Wonderful documentation with a large community of users



Getting started

- Gather a flow
- Create the flow in JMeter
- Add necessary variables
- Utilizing Fiddler



Running JMeter

- I prefer to run the tests in the GUI
- Run the tests outside normal business hours to limit disrupting customers
- Once testing has completed, verify the environment is still up and running for customers



Performance tests

- Defined by management and the business requirements of how many customers are expected to be in the system at once
- Run the tests for 2-3 hours
- Monitor for server errors



Load tests

- Determine how gracefully the application can recover from being overloaded
- Watch the server CPU usage to understand how many threads are needed to reach 99%+ usage
- Run the tests for 1-2 hours
- Upon conclusion of tests, monitor queues as they empty



Understanding the results

- Mindfully skim the requests for errors
 - When too many requests fail, I terminate the test run to triage the issue
- The results tree node will yield details on the individual requests sent and the exact response
- Save the results of a satisfactory test run for future reference



Conclusion

- This is an outline of how I use JMeter
- The JMeter tests I have written thus far in my career have found bugs in production which the team decided needed to be fixed

