Planning for Performance Testing

When there is a new engagement for Performance Testing and Tuning a large number of items need to be identified and resolved before you can even begin to plan.

Things you need to know

Subject	Objective
What are the objectives of the performance test phase	To identify precisely what the objectives, expectations and outcomes of the performance testing will be
What components constitute the system under test	To identify the business and technical components which constitute the system to be tested
What are the business transactions to be modelled	To identify the logical components and processes to be coded, this will allow you to define test scenarios
What are the NFRs	To be able to calculate the pacing of the tests. The consequence of this is that if the test does not complete within the test period, it has failed the Non Functional Requirements
What are the performance acceptance criteria	To allow you to identify is a test has passed or failed, requires further work or is good enough or good enough for now
What are the volumetrics of the system and especially the data through components under test	To identify the data and volumes thereof, the user and transaction load, operational profile including frequency and concurrency of data and processes, end-to-end, through the system
What does the capacity plan show about usage and growth over time	At what point(s) in time do we model the tests for, including busy periods and taking into account growth of data and or usage over time
What type of tests are required	Based on the objectives of the test, what needs to be proven, identify which one or more of the following tests are required: • Load – examine behaviour of the system under a specific load e.g. Normal, Peak, Outage, DoS or DDoS attacks • Stress – find the upper limits of the system • Soak – aka endurance testing, see if system can sustain a continuous load for a period of time • Spike – suddenly increase load, see what happens • Configuration – tuning a system through configuration changes • Isolation – identify an issue and find the root cause, while bedding in a new system or release this is inadvertently and unavoidably the most common
What are the priorities of each test	To allow you to prioritise and plan the tests to ensure the correct tests are completed with the resources and time available
What technology is required to test each component	How can each component be tested, is there are specific requirement or restriction for a particular set of testing tools
What does the Business environment look like	Understand components required to make the system work
What does the Test environment look like	Understand components available during testing
What does the Live environment look like	Understand components which implement the Live system
What are the differences between Test and Live	Identify risks, restrictions and limitations (including components, configuration and sizing) due to differences between Test and Live, things which may not be tested or require scaling of some sort
Is the test system shared with other teams	Will there be any restrictions on the use of the environment, especially regards to: • modifications of configuration or data • access to files and servers • dates and times when one can test
What tools are there for maintaining the system in a known state	To allow you to start each test from a well know position so as to make tests repeatable and directly comparable, scripts or processes to allow the system state to be set to a known point, such as delete scripts, file/database backup and recovery, database Flashback (Oracle) etc

What is the key data within the system	To allow you to identify important data entities, which may need to conform to certain standards, formats, ranges or values and may also be primary database keys which much maintain referential integrity across tables or even databases. This will allow you to identity what test data is required and how it needs to be generated
What metrics should be collected during the test	To allow you to identify if performance acceptance criteria have passed, may involve measurements on transactions, cpu usage, memory usage, network io, disk io, db transaction times etc. Collecting the correct metrics will allow identification of issues and also provide supporting evidence of the test results
What are the deliverables of the performance tests	• The Performance Test regression pack. • The Performance Test Report.

< come up with Theory of Everything formula for calculating load !>

At template to implement these concepts is available at <Template - Replace with Subject> - Performance Test Plan

See https://www.gov.uk/service-manual/operations/load-and-performance-testing.html

https://msdn.microsoft.com/en-gb/library/bb924356.aspx

Planning and Preparation Prevents Pi$$ Poor Performance

Related articles

- EPIC Creation - Performance Test Plan
- Performance Testing Knowledge Base
- SSB Troubleshooting
- AppDynamics
- Analysing Tests