CQE

Non-Functional Test Services

CQE's Non-Functional Testing and assurance service includes: performance, security, penetration, compliance, compatibility, usability, accessibility, maintenance, operational acceptance, resilience, and disaster recovery. We provide individual Non-Functional Testing specialists, teams, consultancy and/or managed services to deliver the optimum 'Shift Left' Non-Functional Testing approach.

Service features

CQE can provide Non-Functional Testing specialists as individuals, part of a team or a managed service to deliver Non-Functional Testing that integrates effectively with any delivery approach. CQE's approach to Non-functional Testing categorises testing using three work streams utilising the individual solution's non-functional requirements, risk assessment and regulatory compliance.

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Solution Implementation Test Assurance (Support, Service & Security):

- Install, patch, maintain, back up, restore, roll back, stop/start and job scheduling
- Verification of operational procedures and production control processes
- Security audit and penetration testing governance

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Solution Execution Test Assurance (Performance, Efficiency, Usability & Accessibility)

- Demonstrate the end users can utilise the system effectively on all platforms/devices
- Ensure the system is accessible to all types of users
- Verify the solution performs as expected

Solution Destructive Test Assurance (Resilience & Recovery)

- Demonstrate component failure & recovery
- Validate failover & Disaster Recovery (DR) procedures and processing
- Ensure the system has clear and accurate Operator Alerting

CQE adopt a 'Shift Left' approach to Non-Functional Testing wherever appropriate. To establish a Non-Functional test capability as an integrated component within all approaches, Non-Functional requirements are captured and transformed. Each requirement is categorised into a set of prominent level themes which form as an umbrella over a larger subset of behavioural categories or 'aspects.'

Aspects take on the agile role of the 'Epic' with regards to requirement collation and categorisation. An epic is a high-level requirement that requires multiple lower-level user stories to be completed. This adds a measure of quality control and ensures the "definition of done" has been met.

Successfully created user stories, which include features and constraints that can be used to generate test conditions can then be managed through the product\project backlog.

This approach facilitates effective Non-Functional Testing earlier in the project lifecycle. It allows for the identification of issues such as performance bottlenecks or system vulnerabilities at a point where the solution is still being engineered meaning they have less impact and are less expensive to resolve than if they had been identified in the final Non-Functional Testing phase towards the end of the testing lifecycle.

The CQE Non-Functional Testing services include:

- Performance Testing (documented under a separate services definition document)
- Security & Penetration Testing
- Infrastructure Testing
- Usability & Accessibility Testing
- Compatibility Testing
- Maintenance & Installation Testing
- Disaster Recovery & Fail-over Testing
- Compliance Testing
- Operational Acceptance Testing

Service benefits

- Expertise in strategy, planning and execution of cloud applications
- Identification of system vulnerabilities
- Improved user experience
- Early issue detection/lower failure rate in live
- Ensure system perform against specific performance needs.
- Reduced costs of delivery
- Reduced business risk
- Ensure compliance to standards e.g. DDA, GDPR
- Assurance of operational procedures and alerting
- Prove system maintenance (installs, patching, upgrades etc.)
- Performance issues identified and rectified prior to peak periods.
- Avoid reputation damage associated with system failure

Delivery Methodology

Performance testing cannot be just an afterthought or performed by just any person who has been given access to a performance testing tool. It requires strategic planning and experienced testers to execute correctly. The results also need to be reviewed and interpreted by seasoned testers and engineers.

A comprehensive, successful performance test starts with a well-defined plan. CQE lay the groundwork, executes the plan, and reviews the results.

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Scope

CQE believe that the determination of success requires a plan or a goal. We first work with you and your team to identify the problem you are trying to solve. Are you planning on moving your application to new servers and need to validate the infrastructure suitability? Do you have concerns about usability or compliance to standards? Are you building a new system from scratch? Whatever the problem or goal is, we work with you to lay it out in simple terms. Success criteria is outlined, and all of this is independent of any vendor specification.

Plan

Once we know what we need to do, then we can devise the plan to accomplish it. This step happens automatically after the goals have been determined. The plan should be as simple as possible, in clear and concise terms. It should include all of the specific tests necessary for achieving the goals, any configuration settings that will need to be checked or modified, and all of the tools that will be used for the test.

Execute

Once we have planned the execution, next we execute the plan. On a system being newly built, the testing is phased in conjunction with development.

Operational Acceptance Testing

- Fault tolerance
- Alerting
- Failover & Recovery
- Auditing
- Disaster recovery
- Operation procedure reviews

Application Security Testing

- Secure SDLC (Security Integration Proactive Shift Left)
- Dynamic Application Testing Static Application Testing

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Ethical Hacking

- Penetration Testing
- Vulnerability Assessments
- Website Security Assessments (Static and Dynamic)
- Wireless Security Assessments
- Social Engineering
- Project Program Lifecycle Resource
- Governance, Risk, Compliance
- Threat Intelligence Cell builds

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