

QRNG WEB SERVICE SECURITY TESTING

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Internet services have many advantages, but as the number of applications increases, so do the number of cyber threats. Not only the number of attacks on web resources is increasing, but also the economic consequences of such attacks. Improvement of methods and systems for protecting web resources from attacks is an urgent scientific problem.

The object of the research is the construction of a secure web service for the quantum random number generator (Quantum Random Number Generation, QRNG). The subject of the study is methods and means of evaluating the protection of the QRNG web service.

Web service (web-service) is a program on the Internet that provides a service or responds to a certain user request. The web service for QRNG [1] generates and provides a random sequence upon user request on the Website.

The purpose of the work is to increase the level of security assessment of the web service for QRNG due to the improvement of methods and means of detecting potential threats based on the analysis and research of the current state and prospective methods of assessing threats to information resources and global practices of implementing information security management systems.

A threat model and an intruder model for the QRNG web service were built, and the results of a comparative analysis of modern web service security testing methods were provided, such as: "Technical Guide to Information Security Testing and Assessment" NIST SP 800-115 [2]; OWASP security testing methodology [3]; OSSTMM security testing methodology [4]; PTES penetration testing performance standard [5].

References

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