

Adoptability of Chaos Engineering with DevOps to Stimulate the Software Delivery Performance

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The efficiency of the business processes has a major impact on improving the productivity of organisations. Many organisations use IT-related tools, primarily software, to enhance the efficiency of their business processes. Therefore, timely and reliable delivery of software products has become a top priority. As a result, advancing the concept of “Agility”, organisations implement DevOps practices. However, maintaining the quality of the software delivery service has become an issue due to several challenges related to the implementation of DevOps. Hence, this study was conducted with the aim of understanding the DevOps-related challenges and how “chaos engineering” can be applied along with DevOps to address those challenges. The practice of "chaos engineering" contributes to the reduction of chaos. A systematic literature review was conducted to investigate the concept of “chaos engineering” and the challenges that DevOps-implemented organisations face. Later, a qualitative study was conducted to see how chaos engineering practices can be used to address the identified DevOps challenges. Based on the thoughts and views of the industry experts who participated in this study, it was revealed that implementing chaos engineering with DevOps helps organisations address most of the DevOps challenges both directly and indirectly. Also, the study suggests a methodology to implement chaos engineering with DevOps within organisations to successfully overcome DevOps-related challenges.

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