

Abstract

The term “automation” is omnipresent when talking about Industry 4.0. In information technology, it describes the automatic handling of tasks and processes while reducing manual work. Many parts still must be automated in the future. Because of this, principles such as “continuous integration” are applied. The version control system named Perforce, and the TeamCity software are central components of this. In the following is shown, how new implementations in an existing Perforce tool contribute to the process of automation. Porting this tool from the .NET Framework to .NET Core is necessary at first. Another tool connects Perforce and TeamCity. This completely new software extends the branch-operation to the TeamCity platform by creating new matching projects/build-configurations.

The implementations were done in Visual Studio 2019 by using the programming language C#. Experiments in a valid test environment provided a good method to implement the goals. Surveys with competent employees and own research were the main sources for qualitative information gains. The results showed that the integration of tasks in an automated process provides a better use and reduces mistakes.

By porting the software, a higher compatibility is achieved and thus allows users of Linux and MacOS to access the current tool. The implementations took over central tasks to ensure the correct functionality of the Perforce software. Furthermore, the creation of the tool for TeamCity was successful. This tool automatically created valid project copies with all properties of existing TeamCity projects. The whole project which includes could be integrated into the daily work process.