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Experimental Analysis of Specification Language Impact on NPP Software Diversity

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Abstract

When redundancy and diversity is applied in NPP digital computer system, diversification of system software may be a critical point for the entire system dependability. As the means of enhancing software diversity, specification language diversity is suggested in this study. We set up a simple hypothesis for the specification language impact on common errors, and an experiment based on NPP protection system application was performed. Experiment result showed that this hypothesis could be justified and specification language diversity is effective in overcoming software common mode failure problem.