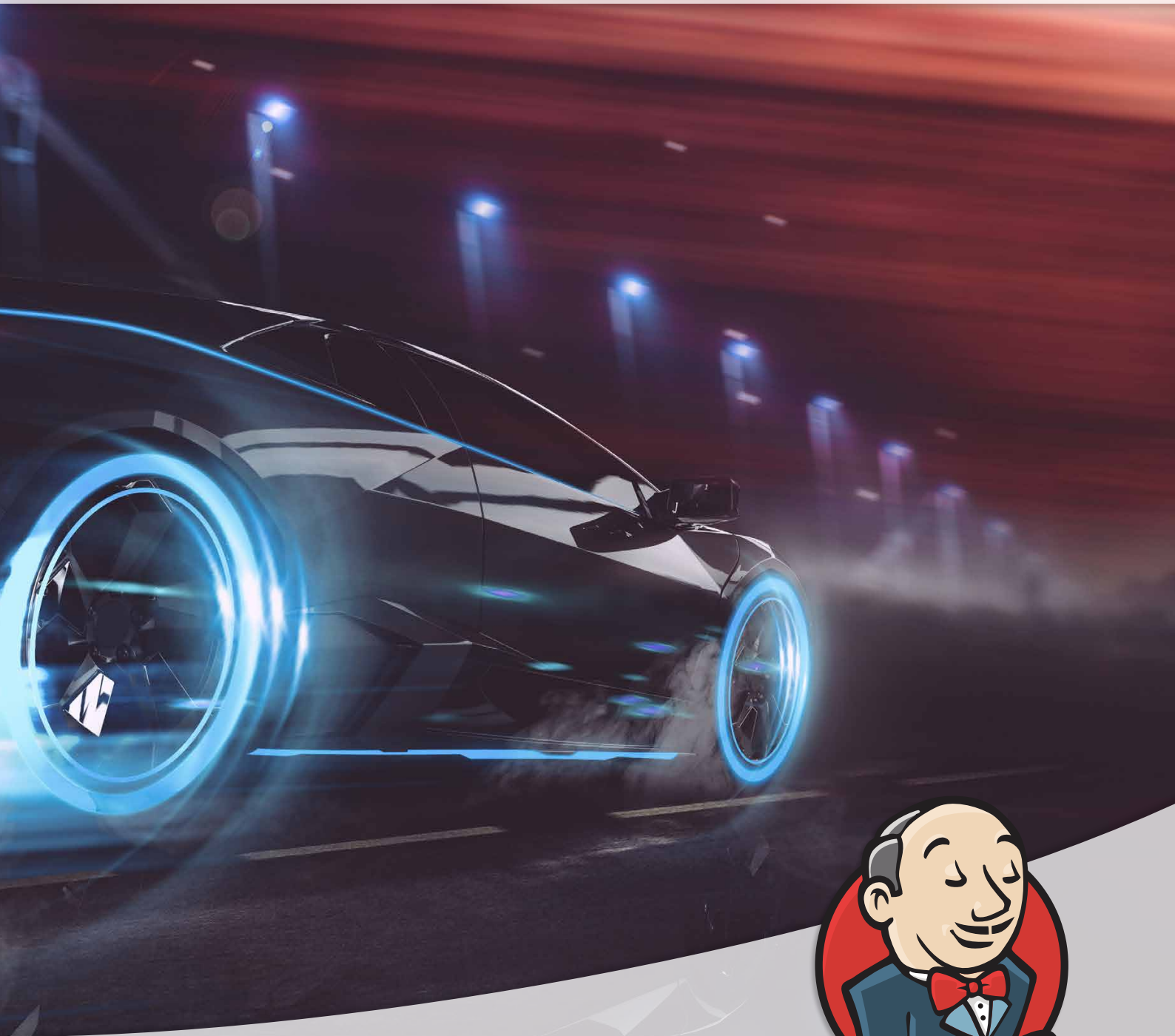


Continuous Integration with EXAM

EXAM in CI workflow with Jenkins



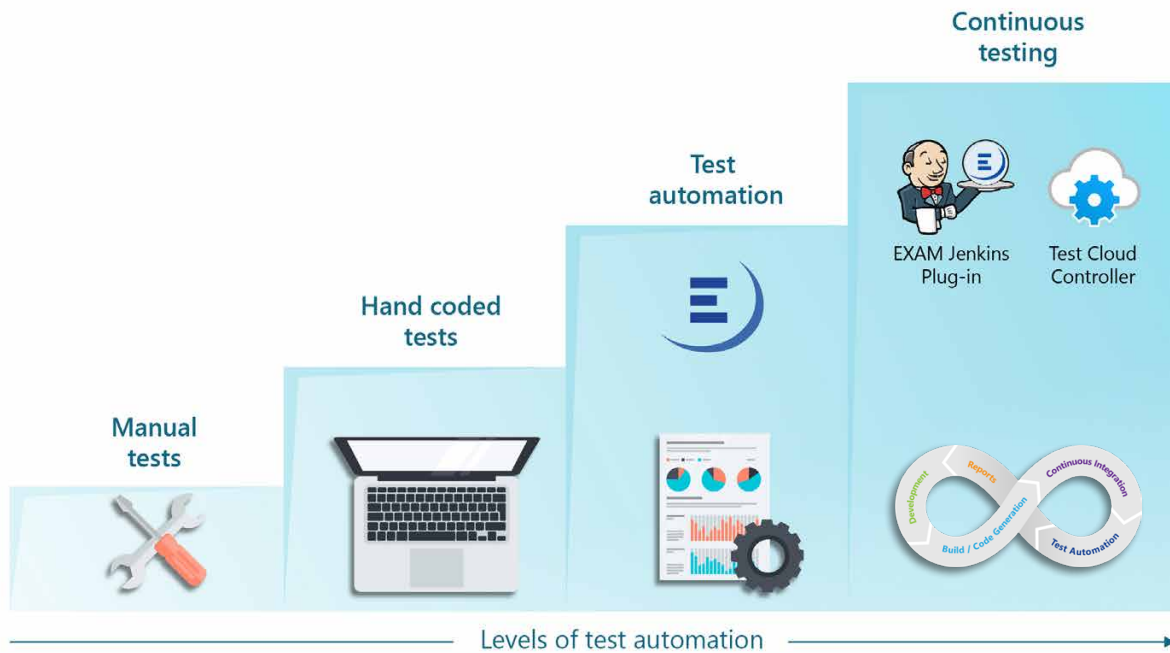
- » Use of EXAM in Continuous Integration Process (CIP) using Jenkins as an example
- » Continuous testing at various stages of software development
- » Higher utilization of test resources and better display of results

Continuous Integration with EXAM

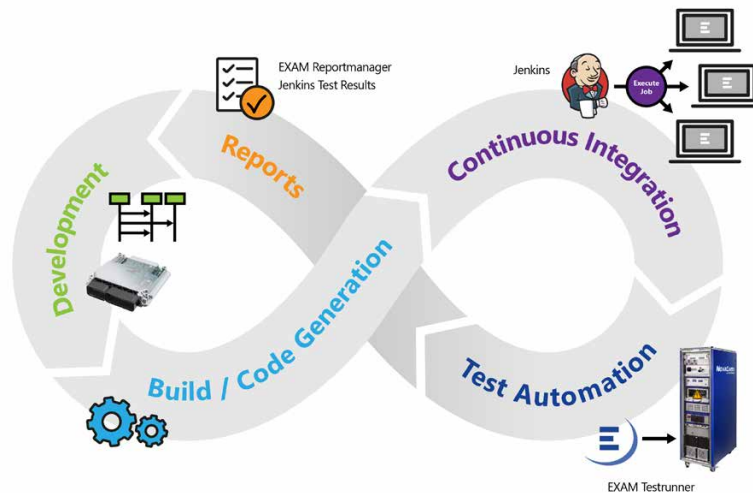
Short development cycles and the accompanying continuous increase in the number of vehicle functions along with a greater diversity of options make ECUs more complex and thus place higher demands on test tools and test automation during development. This is why build environments are playing an increasingly important role in the associated software tests. Using conventional methods, test cases are usually executed manually on test benches by test designers or coordinators.

MicroNova has developed a way to automate this process: The EXAM Jenkins Plug-in allows the test automation solution to be integrated into the Continuous Integration (CI) workflow for the Jenkins platform.

For this purpose, the MicroNova Plug-in connects the Jenkins CI system with EXAM via the REST interface, which itself is done through the Jenkins interface. The result is that the EXAM test automation solution can be controlled remotely thereby allowing tests to be carried out automatically and continuously at the various stages of the software's development.



This automation of the test execution improves the utilization of test resources used in the testing, making it possible to use the results very quickly in the development process. In this way, test effort as well as sources of error in the test process can be reduced over the long term.



Advantages of CI with EXAM



Efficiency and Fast Error Correction

The EXAM REST-API Plug-in from MicroNova automates the test execution in the build environment and thereby increases the efficiency of ECU validation. The larger number of results made available faster can be fed back into the development process directly and continuously.



Optimal Utilization of Test Resources

Because the automated test can be executed separately from the test order, the local linkage between HiL system and test designer can be dispensed with.



Shorter Development Times

Development can be accelerated through early integration.



Remote Control of EXAM

The EXAM test automation solution can be controlled and monitored via the interface.



Quality Assurance

Compared to manual test starts which require greater effort in configuration, automated test starts and configuration significantly reduce error susceptibility and thereby ensure consistently high quality.

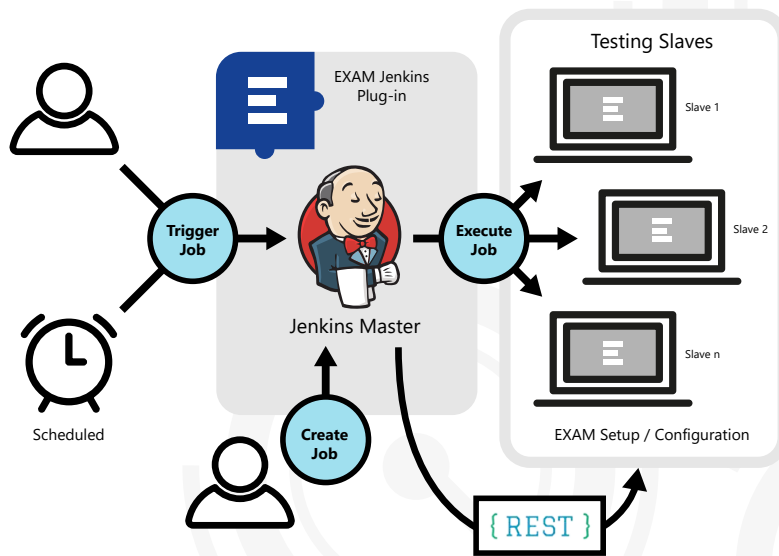


Flexibility and Performance

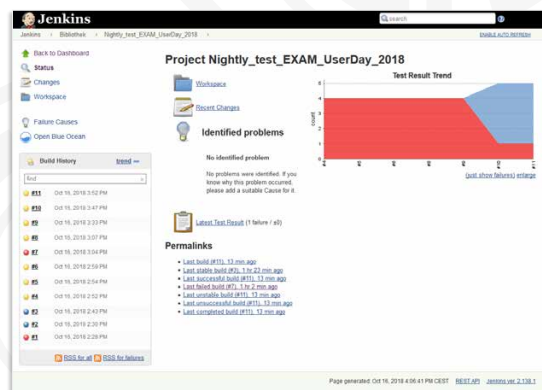
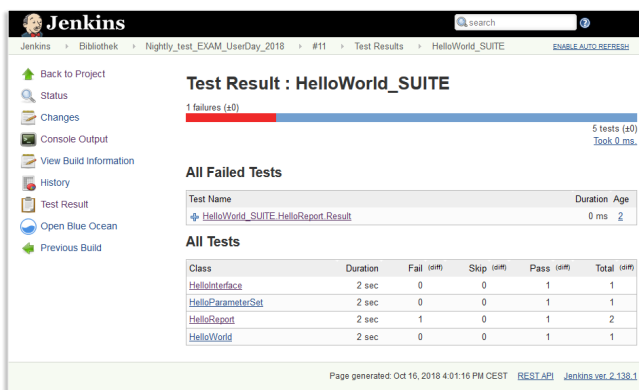
The high degree of automation ensures continuous automated testing (Continuous Testing) in various software development stages.

Operating Mode

Continuous Integration with EXAM requires two components: a Jenkins Plug-in and an EXAM REST-API Plug-in. The Jenkins Plug-in is available for download at <https://jenkins.io/> under Open Source License (MIT). MicroNova provides the EXAM REST-API Plug-in subject to license conditions. It is available under both node-locked and floating licenses.



The EXAM test runs with their respective results and trend graphs are clearly displayed in Jenkins along with the REST-API calls:



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