

# ClearTH and Woodpecker for Post-Trade Systems

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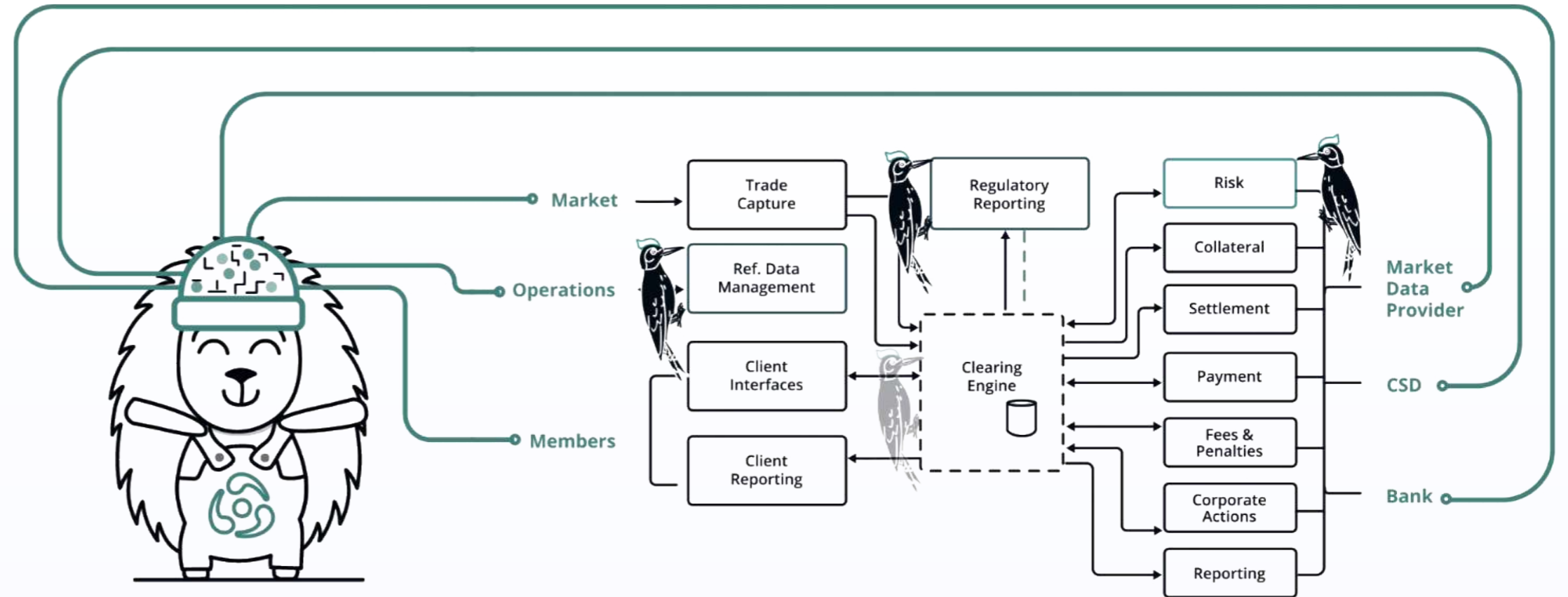
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# Introduction

In the spirit of Exactpro's motto — 'Build software to test software' — this white paper presents the company's new solution — Woodpecker, a ClearTH Extension.

ClearTH is an Exactpro test harness able to simultaneously execute multiple end-to-end test scenarios in batches. ClearTH easily detects abnormal behavior in the system under test and effectively predicts potential issues. It offers many built-in actions to cover the majority of activities in post-trade systems.

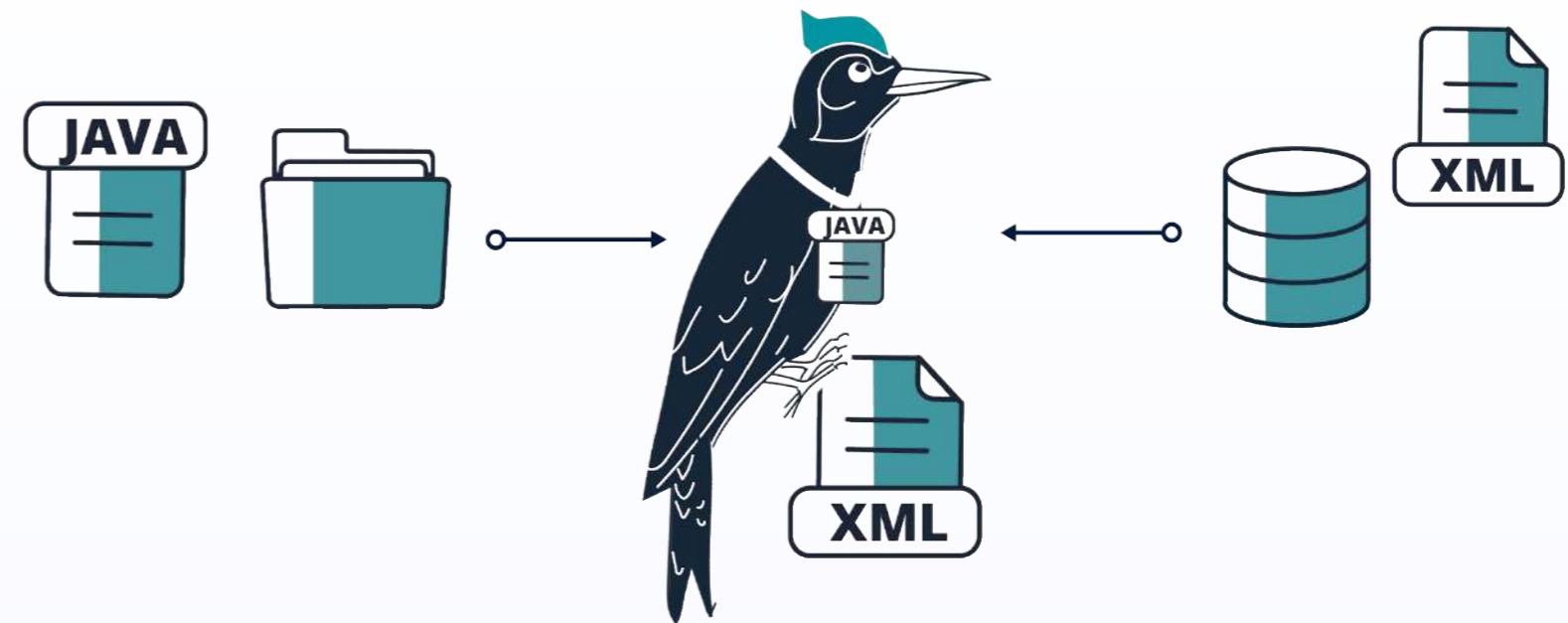


## ClearTH Features

- 1 Supports multiple protocols ( SWIFT, FIX, Market Data, etc.)
- 2 Automatically runs test scripts
- 3 Executes concurrent automated tests
- 4 Allows to create multiple-day test scenarios
- 5 Has integrated scheduler and simulators
- 6 Verifies each stage of the DLC

## Woodpecker Description and Configuration

Woodpecker is intended as an enhancement of the company's software testing capabilities. It is a tool that can be integrated into ClearTH and its automated scenarios. Like ClearTH, it is aimed at testing post-trade systems. As its improvement, it combines functional and non-functional approaches.



The core idea of Woodpecker is to act as a platform for daemons. They can either be relatively simple to provide higher performance for load testing or more complex to cover diverse testing scenarios based on different rules and logical conditions. The daemons can work independently and in groups.

## Woodpecker: Source-Friendly, Easy to Fine-tune

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As for Woodpecker's internal structure, each daemon's core is written in Java. The user has a possibility to fine-tune its functionality via XML files and through the GUI controls. The sources of data to be used are also easily customizable: it can be data from a static source (a file) or the data extracted dynamically from the system under test with SQL queries.

## Transferable

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Once configured, Woodpecker can be easily and quickly deployed into other test environments.

## Woodpecker: Intelligent and Responsive

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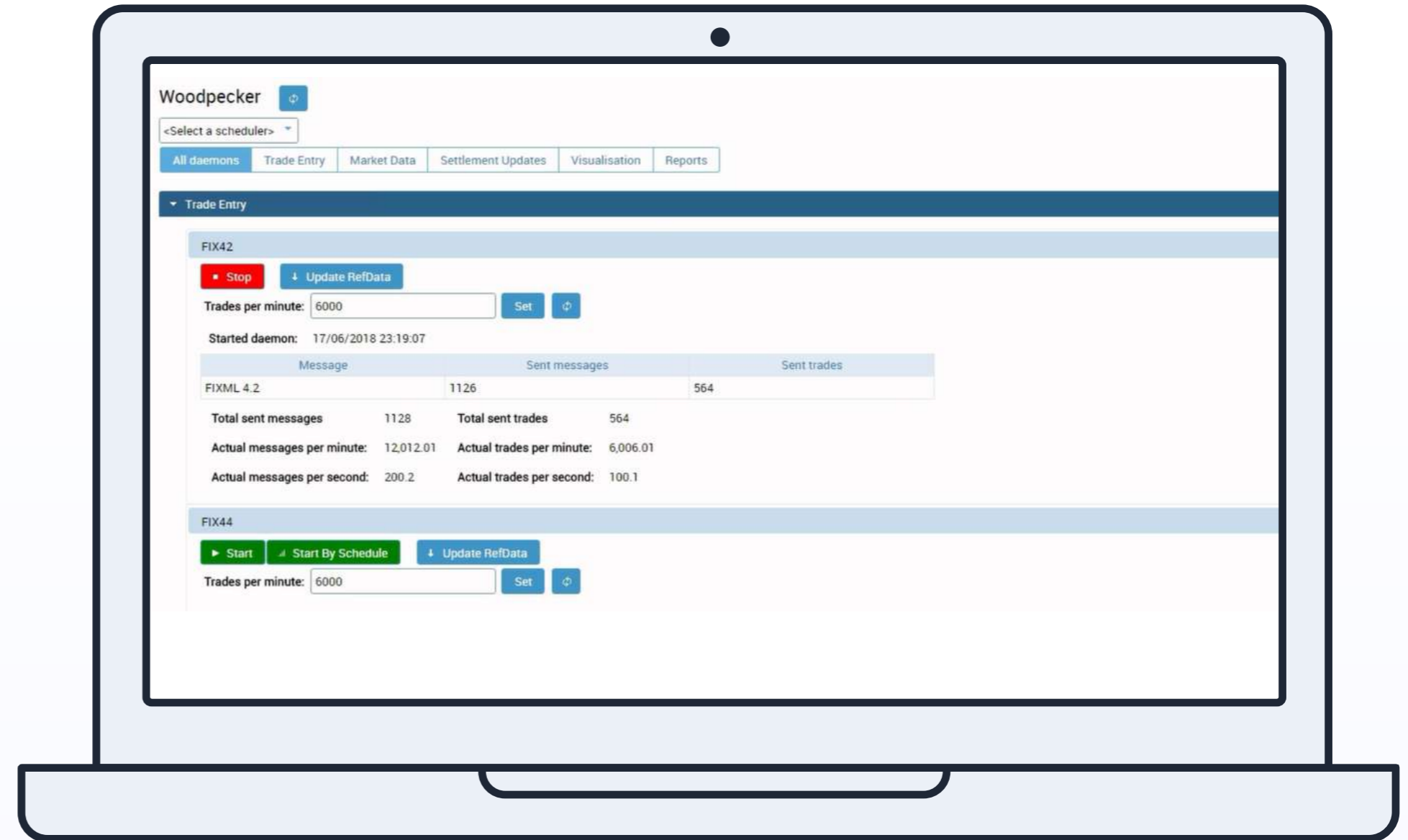
The tool can interact with the client system via diverse messaging protocols, via the front-end, using an API, or via a database. Woodpecker monitors the system and is capable of making self-corrections to the generated data flow based on the interaction with the client system. It collects feedback and adjusts the generated data flow to the client system's behaviour to reach a specific system state.

# Tab Daemons

Woodpecker's main purpose is to simulate a workflow with the system under test based on the data extracted from the system itself. A daemon sends a big load of messages based on its configuration file which contains the programmatic logic describing its behavior.

As a platform, Woodpecker allows for a number of daemons to perform at the same time. Thus, a single tool can create parallel flows of different data types through a number of connections.

Woodpecker is operated through a GUI which shows the working status of each daemon and allows to change its configuration parameters on the fly.



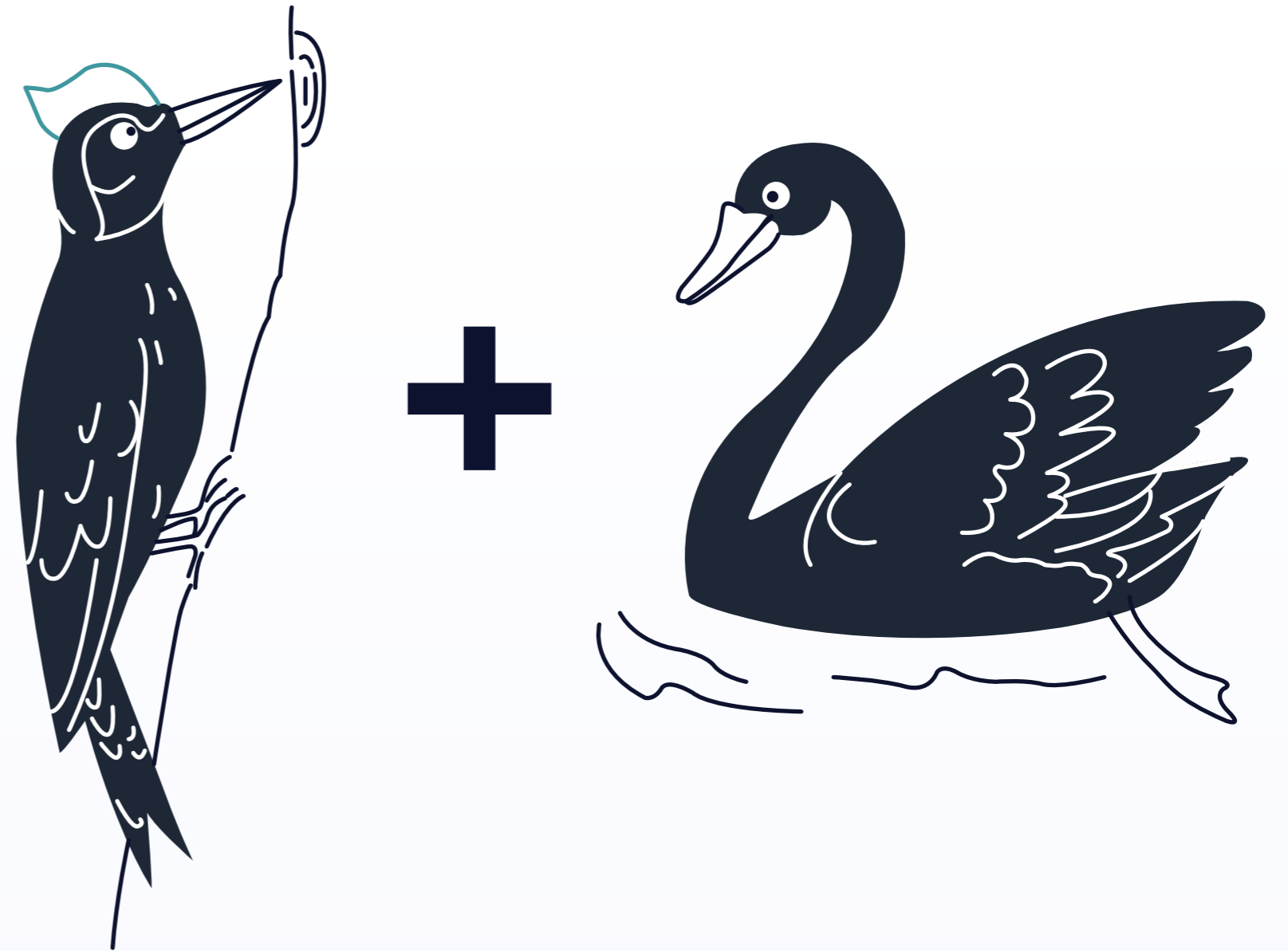
# Woodpecker: Visualization

The tool has a user-friendly visualization tab where the progress and its quantitative characteristics can be seen. Any number of daemons and their configurations can be launched at the same time. As soon as a daemon's parameters are altered, the resulting changes are visualized via a dynamic graph.



## Testing on the Edge

Woodpecker is a perfect tool for the Disruptive Testing approach: it's highly customizable, portable, it allows to flood the system under test with an algorithmically generated data flow, thus providing perfect coverage of the possible testing scenarios without any human interference. As a result, Woodpecker helps to approach the system under test from diverse angles and uncover defects that lie at the confluence of functional and non-functional testing areas. Exactpro's Black Woodpecker is now ready to look for Black Swan events in your systems.



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