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Topic	Software
Project Partners	Rheinmetall Air Defence AG , Zürich , ZH

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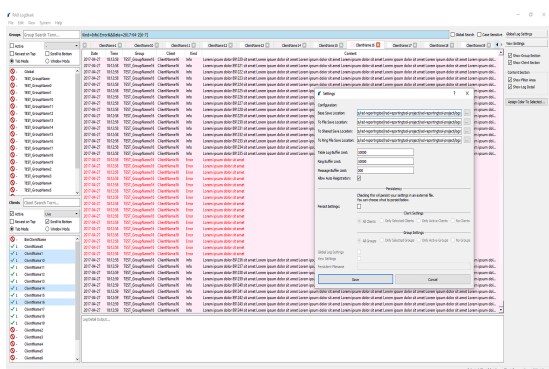
RAD Enhanced Reporting Tool

Developing a new, enhanced log reporting tool for Rheinmetall Air Defence AG
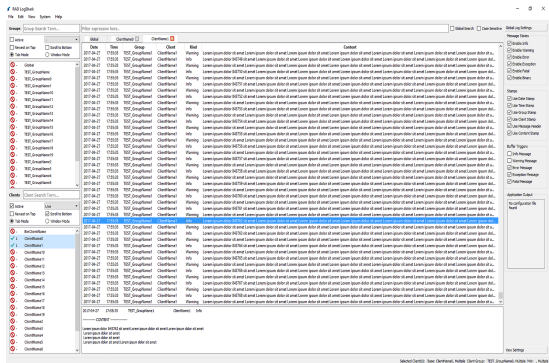
Picture 1: Main window featuring a tabbed log client view.
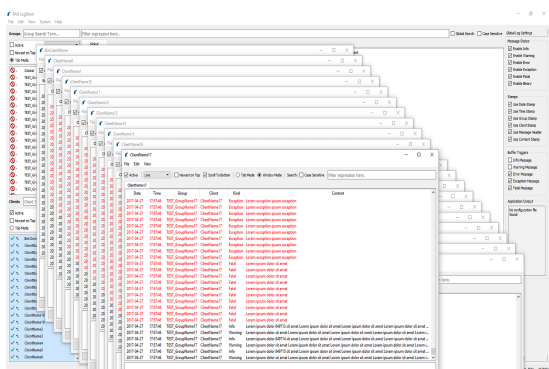
Picture 2: Main window with multiple separate log windows.

Picture 3: Main window with colored background and applied filter.

Introduction: Applications of the Rheinmetall Air Defence (RAD) corporation use a reporting library for logging events. Log output is sent via network to a central workstation that collects and visualizes it for further analysis. The main goal of developing the new reporting tool during the term project is summarized as follows: Porting the old reporting tool to a modern, user-friendly application and add new features like tabbed views, filtering capabilities and coloring of log clients.

Approach/Technologies: The project has been realized in two major phases: First, reimplementing all features of the old reporting tool and second, extending the application by desired new features. During the first phase, the aspect of performance and memory management received special focus, as the tool is required to be capable of processing large amounts of logs, arriving in short intervals and remain stable and responsive for long periods of testing, which might last several days. Due to the performance constraints the application has been implemented in C++11 and is based on the Qt GUI framework.

Result: The new reporting application offers a modern, approachable tool, making the previously tedious tasks easier. It joins log handling, aggregation and configuration in a single application and offers more control over log analysis. In order to initialize analysis, the user used to have to start two separate programs: (1) the listening server application and (2) the old reporting tool application, which served primarily as configuration manipulator. Furthermore, logs were displayed in simple windows without any capabilites for searching or filtering. Limitations like these made log analysis in the previous reporting tool cumbersome and confusing. Now, the enhanced reporting tool integrates both initial steps and makes initializing log analysis more convenient. Similar to the old reporting tool, the new application supports external configurations for quick startup or workspace arrangement. Providing all this functionality in one single application gives a better overview and makes log analysis more comfortable.