

CERN CONTROL AND MONITORING FRAMEWORK - C2MON

AREA OF EXPERTISE

- ICT

C2MON is a modular Java framework for fast building, highly available, large-scale industrial monitoring and control solutions. It has been developed for CERN's demanding infrastructure monitoring needs and is based on more than 10 years of experience with the Technical Infrastructure Monitoring (TIM) systems at CERN.

IP STATUS

- Distributed under Open Source licence (LGPL v.3).

C2MON provides a simple and intuitive data subscription API with integrated history browsing capabilities that can be used to form the basis for industrial dashboards and other graphical monitoring applications. It also provides powerful and configurable filtering mechanisms, essential for fine-tuning data flow and preventing data burst situations, thereby ensuring network stability and reliability.

C2MON is built on a three-tier architecture: Data Acquisition, Server and Client API. This architecture conveniently decouples functionality and allows modular development to fit particular needs.

TECHNOLOGY READINESS LEVEL

- Production

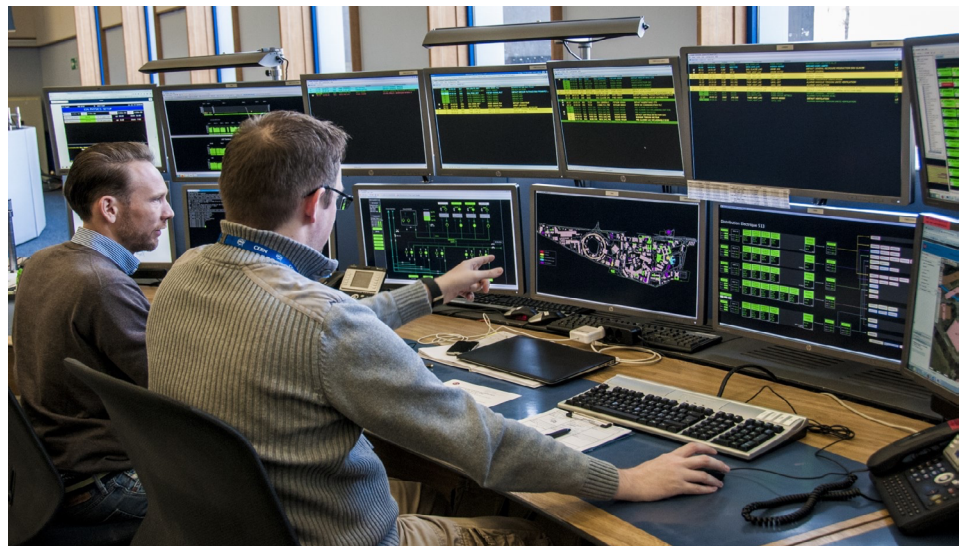
The platform supplies all core functionalities of a monitoring system while being extensible and adaptable to a wide variety of monitoring requirements. This is made possible by the modular, clusterable server architecture which benefits from a distributed in-memory cache. Sudden and unforeseen machine breakdowns or scheduled upgrades of any part of the system are handled in a transparent manner without service discontinuity.

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FEATURES

- Modern HTML5 web interface to browse the acquired data, display statistics and manage system configuration.
- Sophisticated filtering & alarm mechanism resulting to meaningful alerts.
- Modular design, allowing custom extensions. Horizontal scalability at all layers.
- Ability to handle high throughput and millions of different sensors.
- Support for arbitrary sensor value objects through JSON serialisation in planning.
- Built-in rule engine to express complex data relations.
- Load-balanced server clustering capability.
- Central configuration management.
- Ability to browse historical data through web interface and Client API.
- REST API available.

APPLICATIONS

- All types of industrial control applications.
- Large and complex control & monitoring environments with diverse infrastructure.
- Healthcare applications like patient monitoring.



technology

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