CA Labs Research Brief: Architecture and Software Engineering

C3A: CA Technologies agile architecture

Challenge
The challenge for software architects and development managers is to manage the product architectural vision, tactical deliverables and service and support requirements.

Focus
The goal of the C3A project was to ensure that innovation and research activities are inherently and consistently included as an integral part of the product development process through agile architectural evolution techniques.

Result
Constructing the C3A architecture in a modular manner enables CA to structure any given solution from incremental building blocks to provide an architectural and innovation roadmap to customers.

In the C3A project, researchers sought to combine the quick feedback in delivering incremental releases, as featured by an agile process, with the architecture-provided long-term vision, thus producing an agile architecture methodology.

The C3A research project consisted of the following sub-projects:

- **C3A in Access Control**: This project provided a lean method for presenting a single conceptual view of access control components, as well as detailing constraints in refactoring monolithic components into modular, scalable building blocks.
- **C3A for the Unified Service Model**: This research provided a new design of the conceptual reference architecture of the Unified Service Model (USM) and the proposed first generation of the implementation architecture.
- **C3A in Security Compliance Manager (SECOM)**: This project provided a lean method for presenting a single conceptual view of SECOM components, as well as detailing constraints in expanding and evolving the architecture.
- **C3A in Service Availability Management**: This research documented the implementation architecture and identified areas for innovation in the product architectural roadmap.
- **C3A Server Virtualization in Access Control**: This project is a generic reference and implementation architecture that defines the agent area of operating system enforcement rules, as well as the management, auditing and messaging capabilities aspects of it.
- **C3A in Complex Event Processing**: This project detailed the reference architecture for complex event processing as a blueprint for enterprise event management, supporting scalable solutions for large-scale, multi-language events systems.

Figure 1. The C3A joint architecture framework fosters a communicative effort around architectural aspects of requirements elicitation, high level design, quality assurance, maintenance and support, resulting in an architectural centric evolution.
More information on CA Labs C3A research project

CA Labs collaborated with researchers from the CA Technologies internal development and product management teams. The following papers were published about this research project:


The following United States Patent and Trademark Office patent application was filed for the CA Labs C3A research project:

- Patent application number 61/097,439, “System and Method for Performing Complex Event Processing”.

For additional information about this or other CA Labs projects, please contact Ethan Hadar at Ethan.Hadar@ca.com.

About CA Labs and innovation

CA Labs is the research arm for CA Technologies and a hub for the company’s initiatives for innovation. CA Labs collaborates with the world’s foremost researchers in academia, industry and government to perform advanced research to address cloud, software-as-a-service, security, virtualization, automation, mainframe, service assurance, and service and portfolio management challenges. For more information, visit ca.com/calabs.