Challenge
Architects and developers lack consistent documentation and a single repository for providing searchable information on a service or component’s architectural attributes, which leads to unnecessary and costly development.

Focus
This CA Labs research project is focused on the formation of a repository solution that will enable architects and developers to catalog, search, evaluate and evolve an architecture components portfolio that includes software assets and SaaS and cloud services.

Result
A portfolio repository will enable reuse and help technical communities mature. Organizations will benefit from improved resource utilization, reduced development and maintenance costs, faster delivery, and increased potential for organizational innovation.

Duplicate development of functional or service components that an organization already owns or licenses is a common and unnecessary drain on architects, developers and organizational resources.

The benefits of service and component reuse are faster solution delivery, improved resource utilization, and savings in development and software cost of ownership. Having access to a repository of available components and their architectural features would enable reuse. Organizations would gain additional benefits related to best practices adoption, increased collaboration and innovation, greater control over the enterprise architecture, consistent integration of software elements, and analysis of the quality of software assets.

The CA Labs ComCat research project is targeted at the development of a structured repository that captures the technical and architectural description of an organization’s software assets. Assets would include software assets and licensed service resources such as SaaS and cloud offerings. A prototype repository will provide a consistent view into the inventory of an architecture components portfolio, including architecture blueprints, functional and non-functional characteristics, internal expertise, related assets and integrations, and more.

The ComCat repository will act as a tool for capturing and evaluating architectural metrics, exposing the quality of components relevant to architectural requirements, and maintaining an IT inventory list. Different types of architectural metrics, dashboards and quality attributes will be extracted from catalogued documents. The extracted data will support specific reports that can be used in decision-making related to architectural and cost analysis of in-house versus external software resources, and reports that provide an overall component quality assessment rating based on multiple-perspective requirements.

Figure 1 With the ComCat repository solution, all users have a single catalog source from which to draw information about computer and service use across the enterprise.
CA Labs Research Brief: Architecture and Software Engineering

More information on CA Labs ComCat research project

CA Labs is collaborating with researchers from University of Haifa, Israel. The following papers were published about this research project:


The following United States Patent and Trademark Office patents have been filed for the CA Labs ComCat research project:

- No 12/728,616 “Hybrid Software Component and Cloud Computing Service”

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.