**Challenge**

Managing enterprise IT systems can be complex. Many systems management tasks are manual, time consuming and inefficient. Customers are seeking policy-based, autonomic solutions in order to align business policies with IT management.

**Focus**

The goal of this project was to develop a framework for policy-based autonomic management of web services and applications.

**Result**

By implementing policy-based autonomic management solutions, customers can reduce the labor costs of managing complex environments and align IT systems operations and performance with business policies.

The Autonomic Computing project investigated the application of autonomic computing concepts to the management of web services. Researchers developed a distributed framework for the management of web services and a policy-based model for performing management within the framework.

Autonomic computing provides a solution to the problem of managing enterprise IT systems. The challenge is to implement an autonomic computing cycle that involves sensors and autonomic effectors and an architecture that is capable of supporting the MAPE loop: Monitor, Analyze, Plan, and Execute. The knowledgebase in the MAPE loop will generally consist of business and/or IT policy statements, as well as architecture and configuration models along with diagnostic and planning models.

The research project’s autonomic computing framework addressed several key research questions that are fundamental to autonomic computing solutions, such as automatic service level agreement (SLA) negotiation, SLA monitoring, workflow execution and event stream processing. The framework also exploited industry standards, namely Web Services Distributed Management (WSDM).

This research proposed a unique investigation into policy-based autonomic management for web services. The ability of a system to manage according to user guidelines expressed as high-level business policies is a key feature of a truly autonomic system. The research advanced the state of knowledge in the area of autonomic management, provided high-quality training for students and produced techniques and tools that could have been adapted by CA Technologies for its system management products.
More information on CA Labs Autonomic Computing research project

CA Labs is collaborating with researchers from Queen’s University in Canada. The following papers were published about this research project:


For additional information about this or other CA Labs projects, please contact Carrie.Gates@ca.com.