Challenge

Systems management software today is no different than any other software it manages and, as such, also needs to be managed as well. This creates a vicious cycle of ever-growing complexity.

Focus

This project sought to develop an open source, standards-based messaging infrastructure that breaks this vicious cycle by creating a robust, enterprise-grade, self-managing, federated messaging environment.

Result

By developing a scalable, enterprise-grade messaging infrastructure through the open source community, standards may emerge that CA Technologies could use in its products.

PADRES: publish/subscribe applied to distributed resource scheduling

PADRES is an enterprise-grade event management infrastructure that is designed for large-scale event management applications. A publish/subscribe middleware provides many benefits to enterprise applications, such as simplified development and maintenance, more efficient queries and better scalability.

The PADRES system is a distributed, content-based publish/subscribe middleware with features such as:

- Intelligent and scalable rule-based routing protocol and matching algorithm
- Correlation of future and historic events
- Failure detection, recovery and dynamic load balancing
- Distributed system administration and monitoring

The PADRES project also researched application concerns above the infrastructure layer, such as:

- Distributed transformation, deployment and execution
- Distributed monitoring and control
- Goal-oriented resource discovery and scheduling
- Secure, decentralized choreography and orchestration

Figure 1. The overall PADRES system architecture consists of several layers that together realize a distributed workflow execution engine.
More information on CA Labs PADRES research project

CA Labs collaborated with researchers from the University of Toronto in Canada. The following papers were published about this research project:


Please also visit the PADRES site at http://research.msrg.utoronto.ca/Padres/WebHome.

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