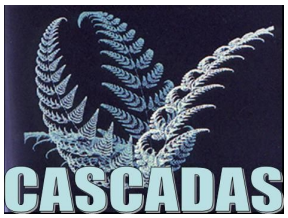

dependable evolvable pervasive software engineering group

Self-Aggregation Techniques for Load Balancing in Distributed Systems

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Motivation

Is it possible to balance the workload in a network of interconnected heterogeneous nodes?

- Yes, but what about efficiency?
- Assumptions:
  - Nodes and jobs belong to a type;
  - Nodes can only process and receive jobs of their own type;
  - Jobs may arrive from other nodes or from the environment.
- Goals:
  - Balancing jobs of a given type among nodes of the same type;
  - No centralization / No global information is available;
  - Nodes may appear and disappear unpredictably (churn).

Our Approach

1. Aggregate nodes of the same type into homogeneous domains.
2. Balance the workload in every domain.