

# Demo: Visualization of Stability Monitoring for Node Selection

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**Problem:** Select a set of testbed nodes to run distributed experiments with better performance and repeatability

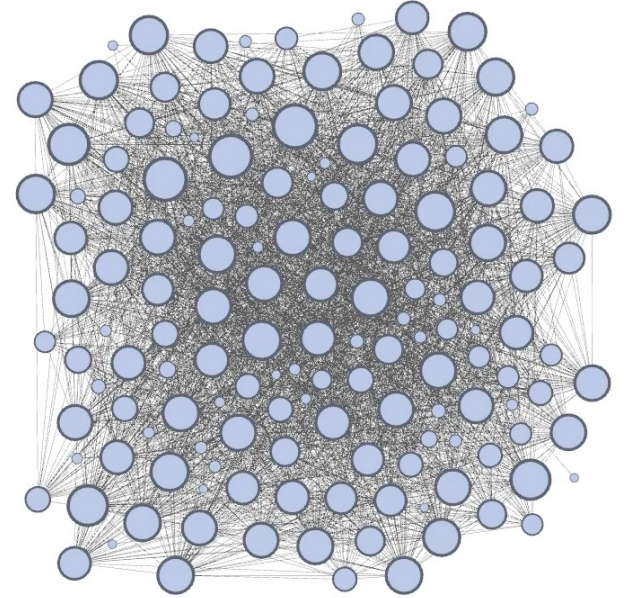
**Demo:** Visually demonstrate a strategy for selecting stable sets of nodes based on pairwise measurements

**Overview:**

- Pairwise monitoring of the nodes of the testbed
- Modeling the networks as a stability graph
- Searching for certain structures within this graph

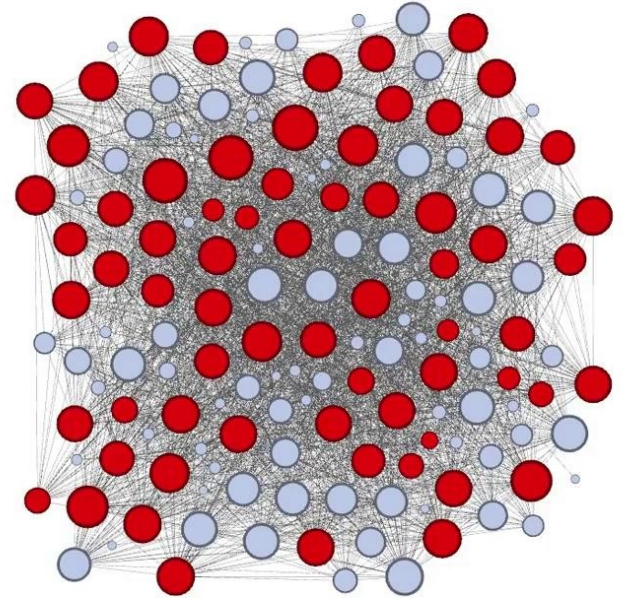
# Stability Graph

- Generated from monitoring data (PlanetLab testbed)
- Pairwise RTT monitoring, not individual features or central ping
- Edge: at least 90% of the sampled RTTs were less than a given threshold during a given time period
- Size of the nodes are proportional to their degrees



# Selecting nodes

- Goal: maximize the connectivity between the selected nodes
- Simple approach: neighbors from a node with high degree



# $k$ -core

- Subset of nodes that form a graph with minimum degree  $k$
- Goal: maximize the value of  $k$ , so the selected nodes are as well connected as possible among themselves
- In our experiments, running distributed experiments on nodes selected by the  $k$ -core strategy presented better performance and repeatability than running nodes selected based on degree, clique, ping from a single location and features of the nodes themselves, such as CPU load, etc

