Configuring a Self-Organized Semantic Storage
Hannes Mühleisen, Tilman Walther, Anne Augustin, Marko Harasic & Robert Tolksdorf
# Trade-Offs in Storage

<table>
<thead>
<tr>
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<th>Scalability</th>
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<th>Robustness</th>
<th>Correctness</th>
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Read Hop Count – 1

Run

Cycle 20100928-0759 - Trace Results
Read Hop Count – 10 Runs

![Box plot diagram showing the number of hops for different numbers of nodes. The x-axis represents the number of nodes, ranging from 20 to 150, while the y-axis represents the number of hops, ranging from 2 to 10. Each box plot represents a run, and the box indicates the interquartile range, with the whiskers showing the range of the data.](image-url)
Number of Steps?
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- Operations are terminated after a certain number of steps has been taken
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- How should this limit been set, which impact is expected?
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- Observation: A higher value can lead to better performance
  
  (Doh!)
Hop Count Limit?
Hop Count Limit?

VS.

Diagram showing two sets of connected circles, representing different hop counts.
Hop Count Limit?

vs.

better!
Neighbor Limit?
Neighbor Limit?

- Each node is allowed to have a certain amount of neighbor nodes
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Neighbor Limit?
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vs.

vs.
Neighbor Limit?

vs.

better!
Decay Rate?
Decay Rate?

vs.

VS.
Decay Rate? vs. better!
Conclusion
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- Swarm-Based Approaches can provide scalability for a distributed storage service
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- Tuning the various parameters is a complex challenge, which requires further work
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• Swarm-Based Approaches can provide scalability for a distributed storage service

• Tuning the various parameters is a complex challenge, which requires further work

• Thank you!
Conclusion

Ants search triples for you, if you treat them right...