

# Proposal

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# Chapter 1

## Hypotheses

### 1.1 DHTs are better for distributed computing under many circumstances

Distributed Hash Tables (DHTs) are traditionally used as the backbone of P2P file-sharing applications.

#### **Robustness and Fault-Tolerance**

Distributed Hash Tables are designed with a couple of assumptions in mind. One of the most prominent is that DHTs are deployed on a non-static network.

Recent research in using DHTs for High End Computing [?] shows what can happen if we remove this assumption by placing the network that is almost completely static.

#### **Load Balancing**

#### **Scalability**

#### **Heterogeneity**

#### **Ease of Adding, Removing, Maintaining, and money related factors**

#### 1.1.1 Different or subproblem: Certain DHTs are better at one application than another due to differences

#### **Design Differences Impacts**

#### **Geometries**

#### **Implementation Differences Impacts**

#### **Recursive or iterative seek**

## **Chapter 2**

# **Justification and Why I Think It's Cool**

**2.0.2 DHTs well understood**

**2.0.3 DHTs are Highly used for their intended purposed**

**Bittorrent, WoW**

**2.0.4 DHTs are being effectively leveraged for other things besides  
file sharing already**

**PaaS**

**Load Balancing in the cloud**

**Computing is a natural extension**

## **Chapter 3**

# **Possible Experiments and Applications**

### **3.0.5 Map Reduce**

**ChordReduce**

**Comparison of MapReduce paradigm on different DHTs**

### **3.0.6 High End Computing**

**Metadata Management**

**Robustness**

### **3.0.7 Graph Processing on a DHT**

**Embedding**

**Distribute the work for solving a graph on a DHT**

**Comparison to well established or state of the art methods**

### **3.0.8 Machine Learning Problems on A DHT**

**Bayesian Learning**

### **3.0.9 DHTs as a volunteer Platform**

## **Chapter 4**

# **DHT Background**

# Bibliography