Distributed Hash Tables & Chord



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P2P Lookup



Centralized Lookup



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Flooding



Routed Messages



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Identifier Circle



Identifier Successors



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Lookup Example



D	1	•
Bo	wd	01n
20	11 00	0.1.1

Locating Keys: Simple Lookup



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Locating Keys: Finger Tables



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Chord Lookup



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Chord Lookup





Joining the Ring



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Joining the Ring



N nodes (buckets), K keys

	Regular Hash Table	Consistent Hashing (DHT)
add/remove key (i.e., lookup)	O(1)	O(log N)
add/remove node (bucket)	O(K)	O(K/N + log N)

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Fault Tolerance



Evaluation: Lookup



Number of Nodes



Evaluation: Robustness

