

P2P

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Mobile Peer-to-Peer Network: Query Search in Mobile Network

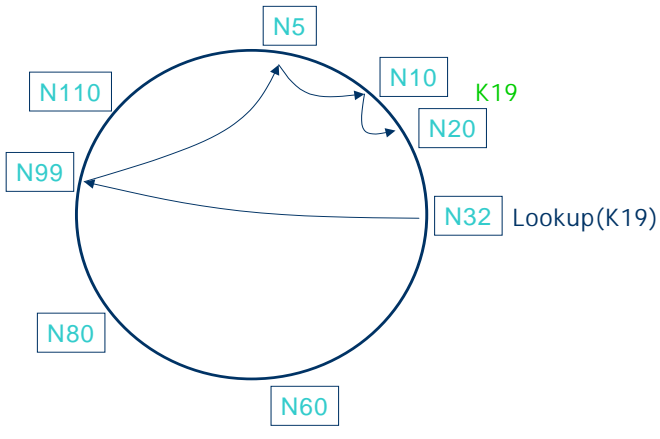
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Chord P2P 가 n 가 $O(\log N)$ P2P
 $O(\log N)$ 가 .
P2P Chord b

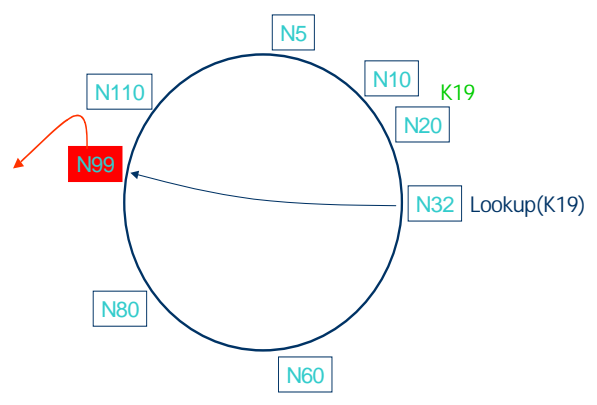
1. P2P Napster[12], P2P
Gnutella[8], Chord[1] Chord[1] Chord
Napster $O(1)$ $O(\log N)$ P2P
가 . [1,11]
가 P2P 2.1 Chord [1]
Chord Napster P2P
P2P Network P2P
 $O(N)$ Gnutella
Gnutella Napster
Gnutella[8] Napster[12] 가
Client
가 $O(N)$ Gnutella
가 P2P
P2P
가 [8,11]
P2P $O(1)$

Chord . Chord
 Gnutella[8,11]
 Successor Hash Table(
 가 .)
 가 Successor

[2]
 (1)



[1] Chord 검색 방식



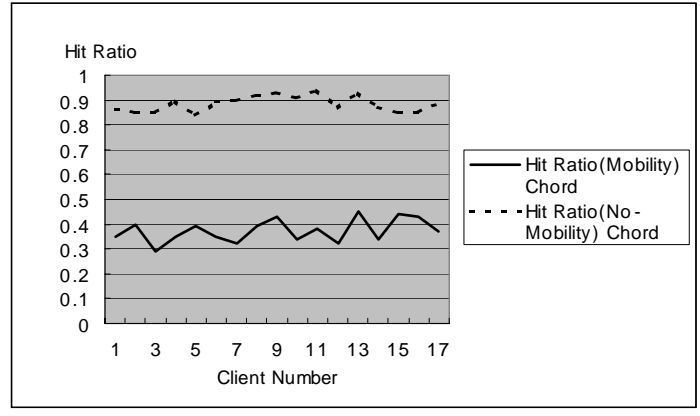
[2] Chord 키의 검색 실패

(2) 1-1

1-1 Chord
 가 가

Successor Hash Function
 Successor 가
 가

Successor Chord[1] Napster[12]
 $O(\log N)$
 P2P
 $O(\log N)$ Gnutella
 Gnutella



[1-1] 이점성에 따른 랜덤 Seed 1

Chord가 가
 가 가
 가 가

2.2. Chord
 Chord

가 가 Hand-off
 Node가 Chord

3. Chord
 Chord

(Time-out)

Successor가

On

Successor

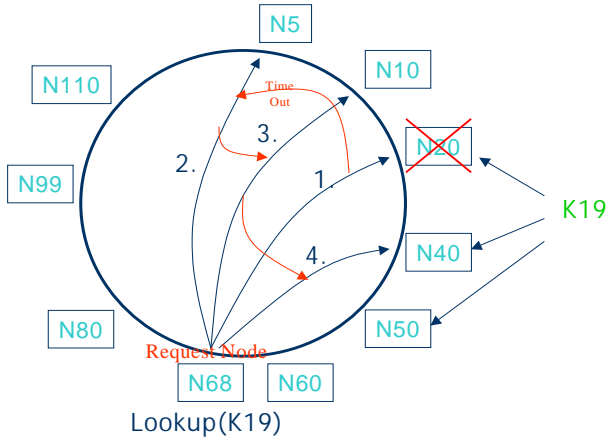
(3)

1000

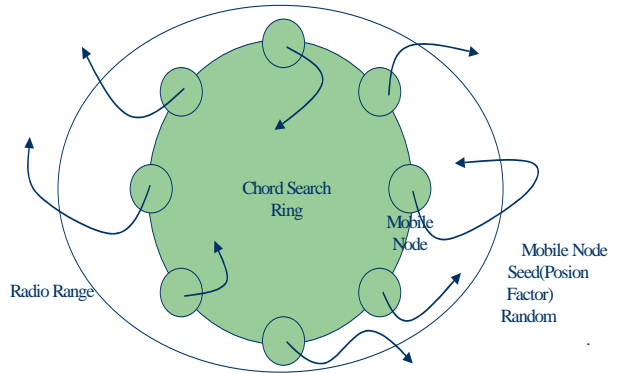
가

15

(5)



[3] Time-out | 대한 동작



[5] 실행 방법

Time-out

Time-out

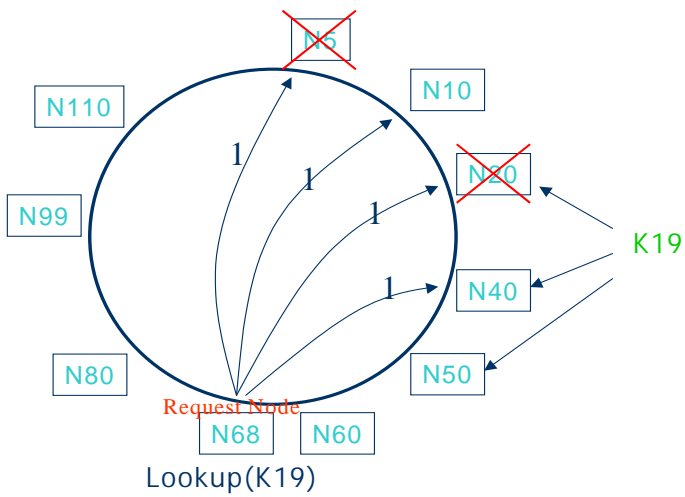
Successor

4.2

(4)

Chord

Chord



[4] 제한된 방식에서 다중 검색 요청에 따른 동작

Gnutella

4.3

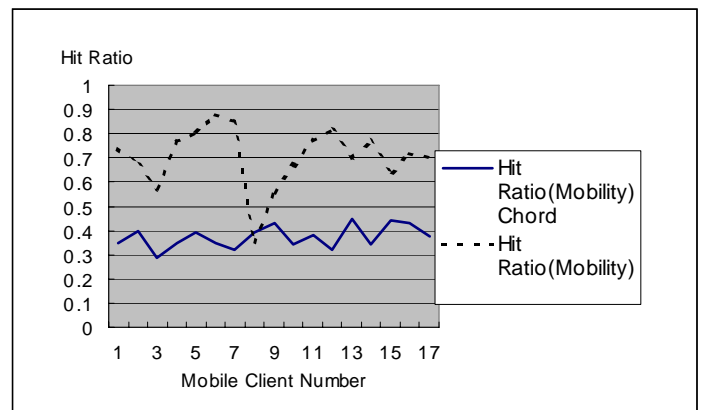
2-1

Chord

4.1

NS-2 Simulator

1000



On-Off

Off

[2-1] Redundancy Chord Chord ()

2-1

가

Trade-off
가
Time-out

8

Chord
8

가

	Gnutella	Redundancy Chord
Node 0	0.64	0.23
Node 1	0.77	0.5
Node 2	0.67	0.23
Node 3	0.57	0.56
Node 4	0.88	0.34
Node 5	0.46	0.35
Node 6	0.9	0.46
Node 7	0.34	0.33
Node 8	0.67	0.31
Node 9	0.58	0.8
Node 10	0.68	0.23
Node 11	0.71	0.56
Node 12	0.8	0.46
Node 13	0.56	0.37
Node 14	0.64	0.29
Node 15	0.37	0.36
Average	0.64	0.39875

표 1. 각 노드 검색에 걸리는 시간 비교

Gnutella

Gnutella

5.

Chord가
(37.4%)

(82.4%)

Chord

Gnutella

6.

Time-out
Trade-off

[]

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