

Cassandra for Developers

What Is Cassandra?



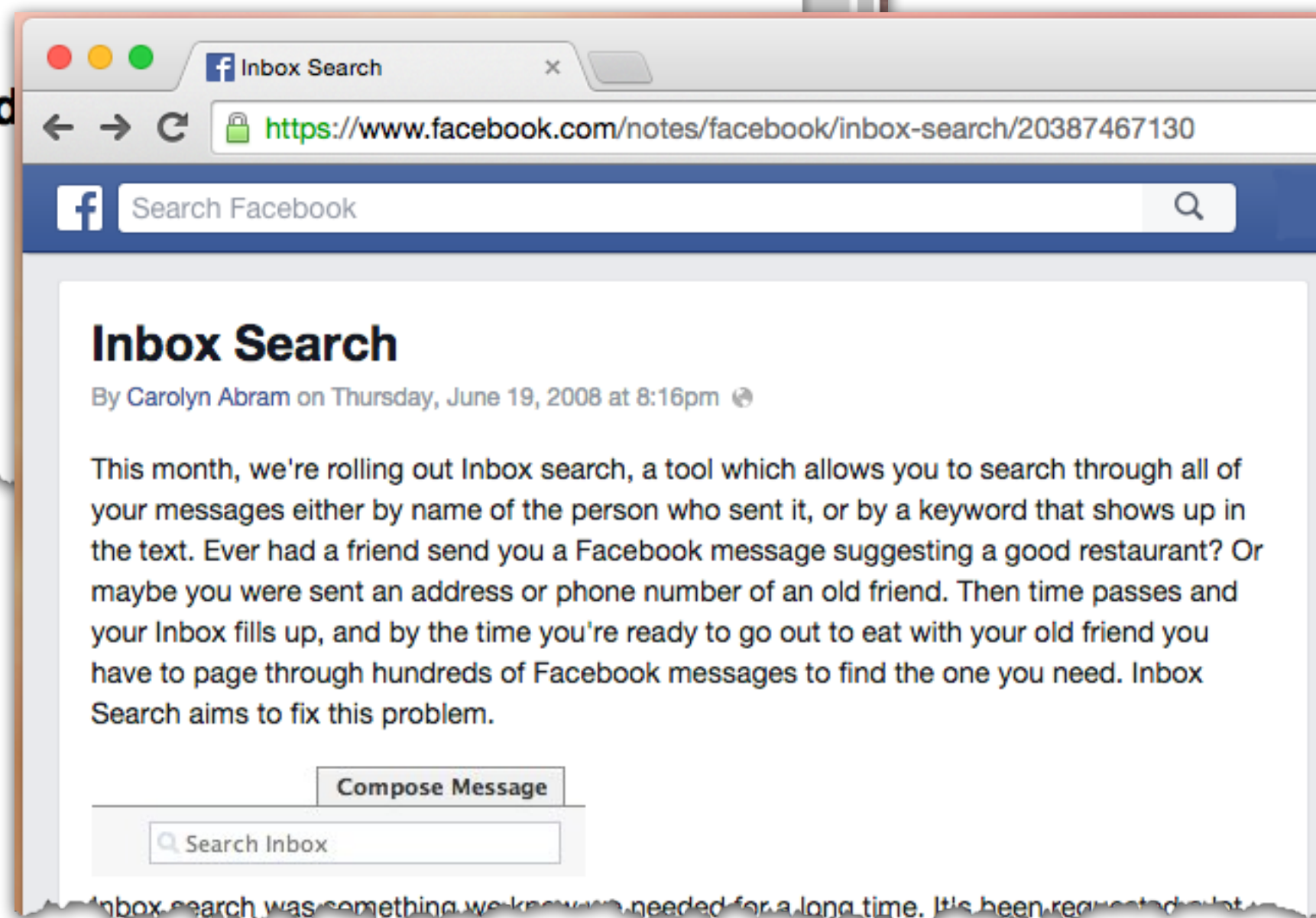
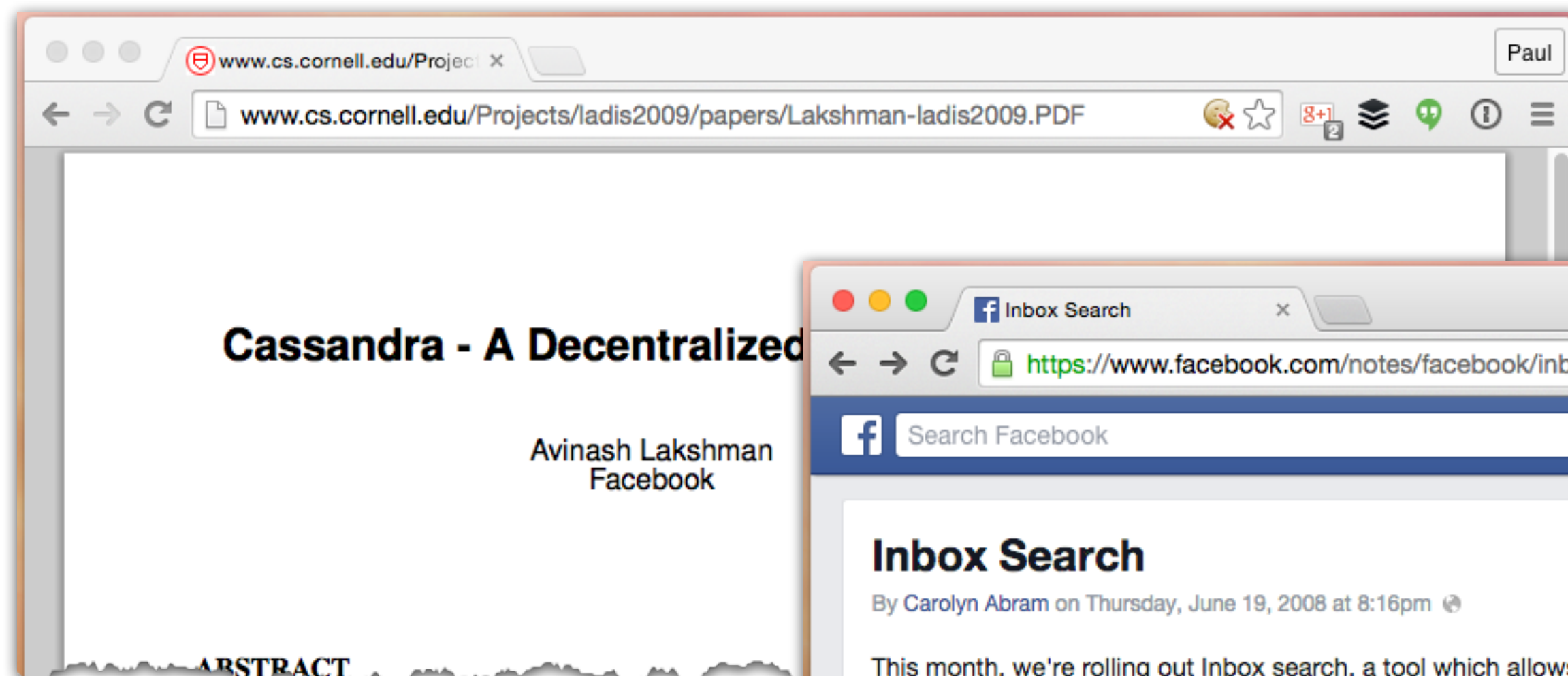
Paul O'Fallon

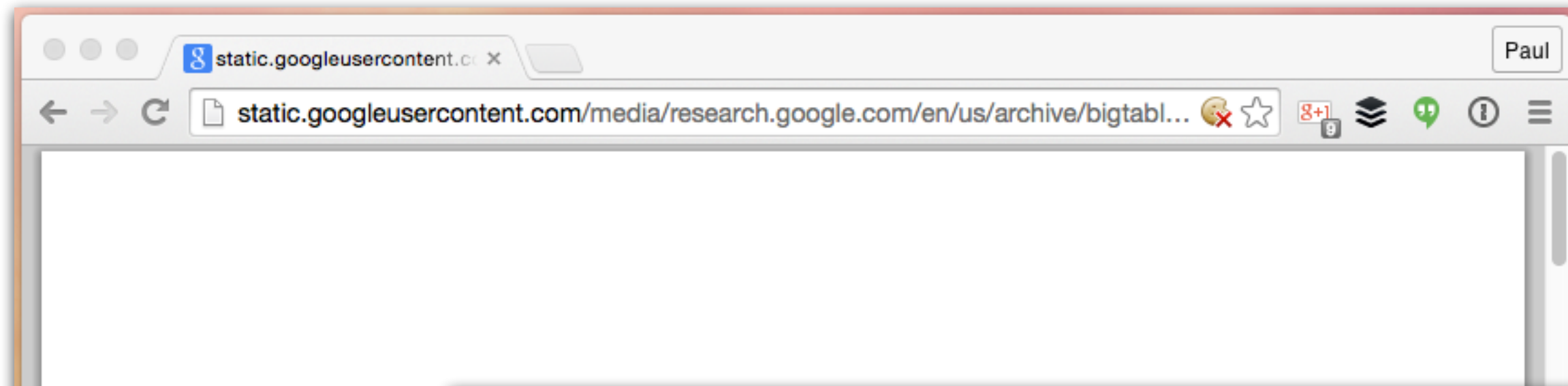
@paulofallon

Overview

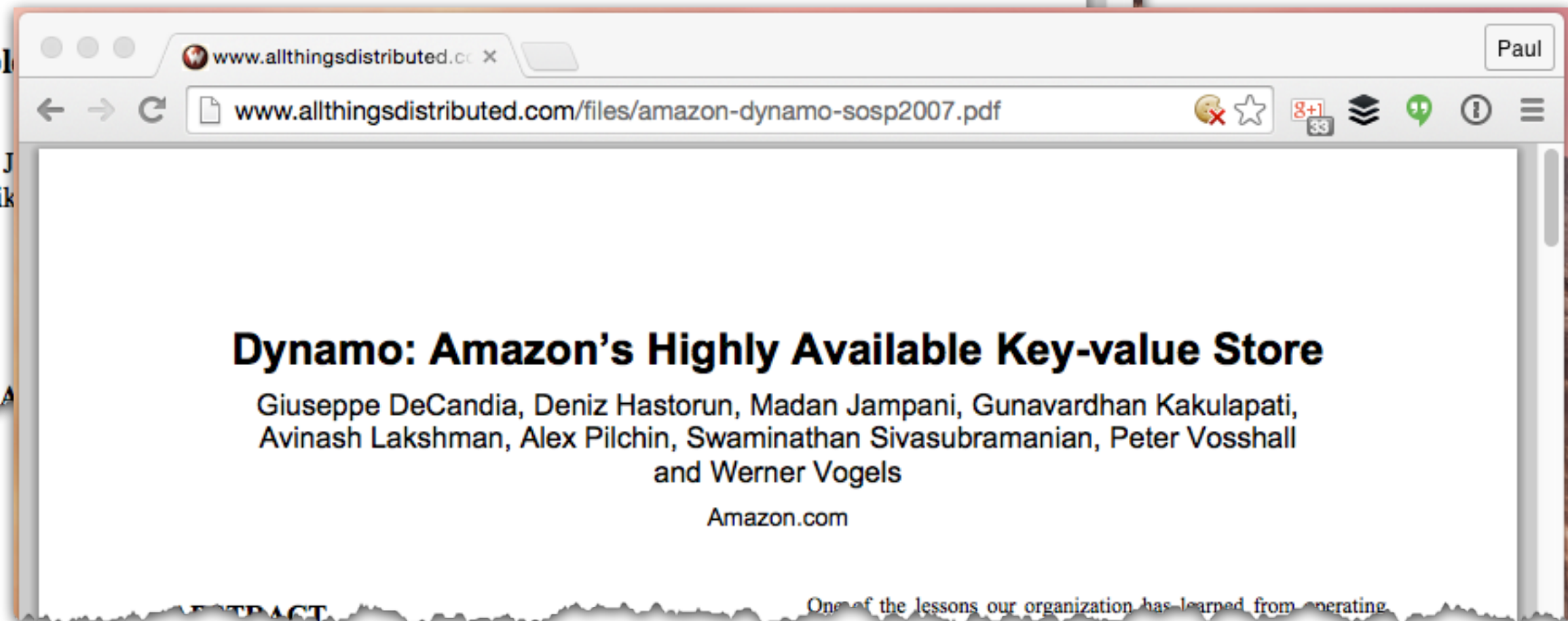
A Brief History of
Cassandra

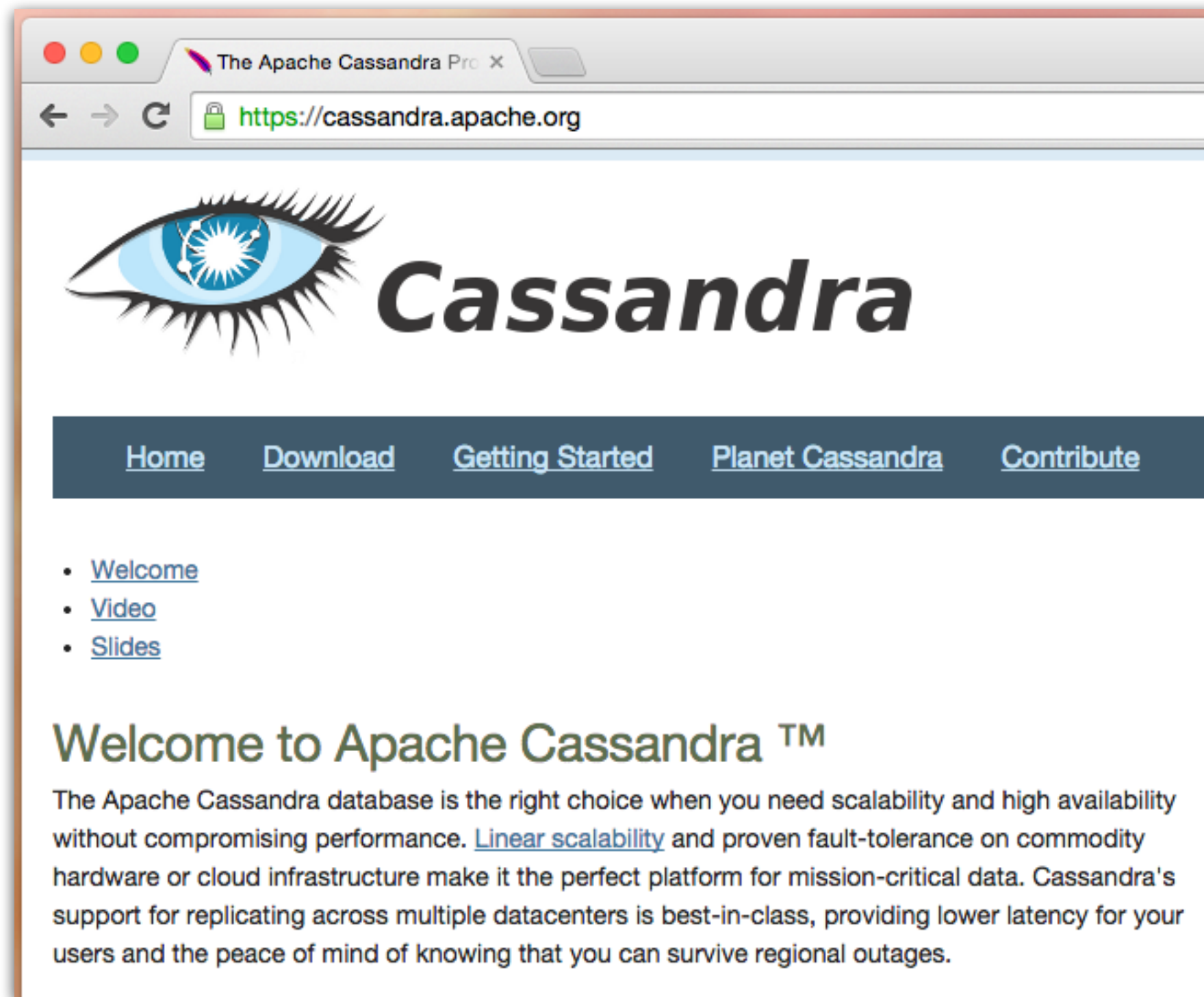
Topology of a
Cassandra cluster





Bigtable
Fay Chang, J
Mik





Migrating Netflix from Data X

www.slideshare.net/adrianco/migrating-netflix-from-oracle-to-global-cassandra

slideshare Search

Home Leadership Technology Education M

Replacing Datacenter Oracle Global Apache Cassandra

July 11, 2011
Adrian Cockcroft
@adrianco #netflixcloud
<http://www.linkedin.com/in/adrianco>

Apple Inc.: Cassandra at A X

https://www.youtube.com/watch?v=Bc4ql9TDzyg

YouTube



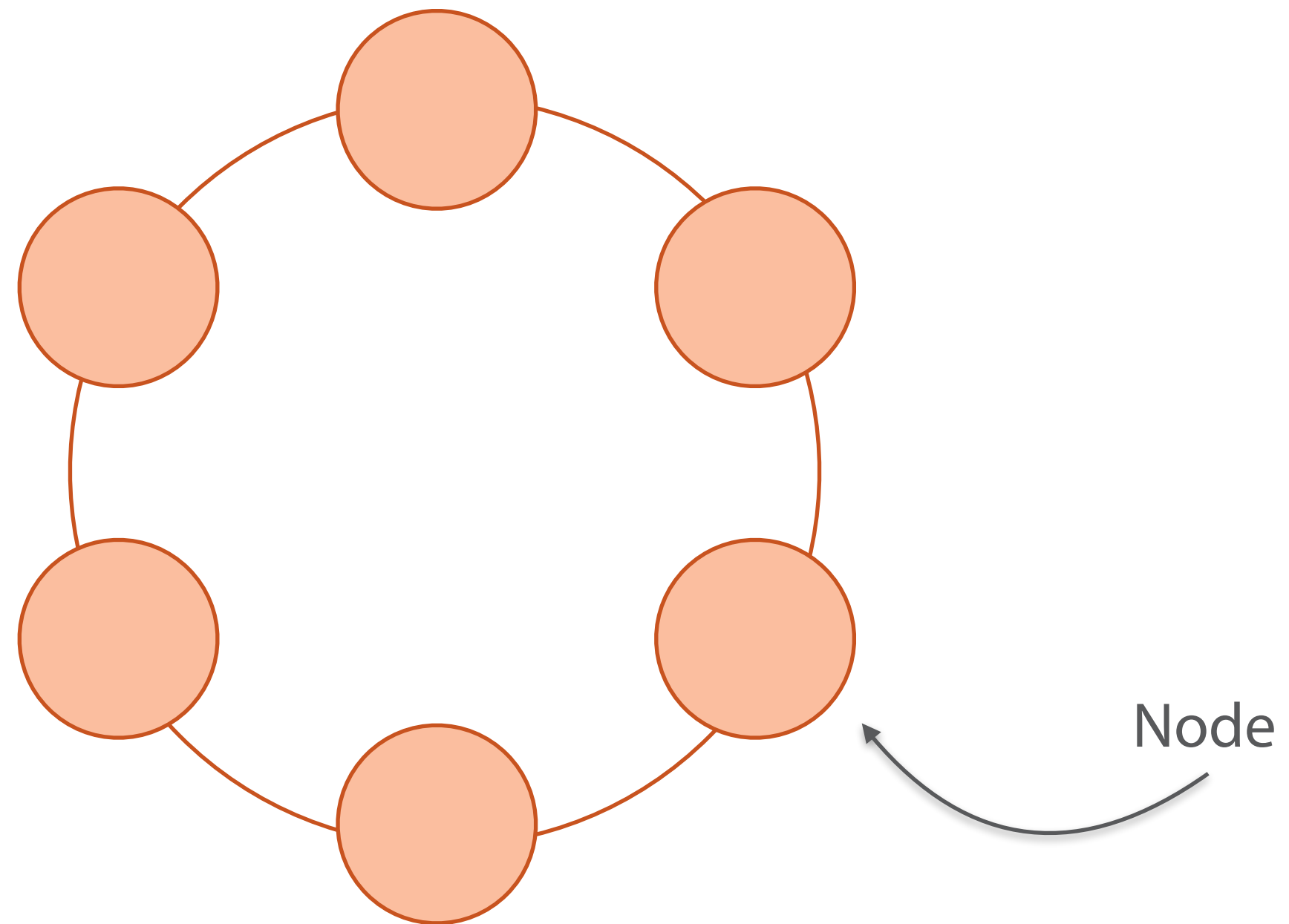
Cassandra at Apple
at Massive Scale

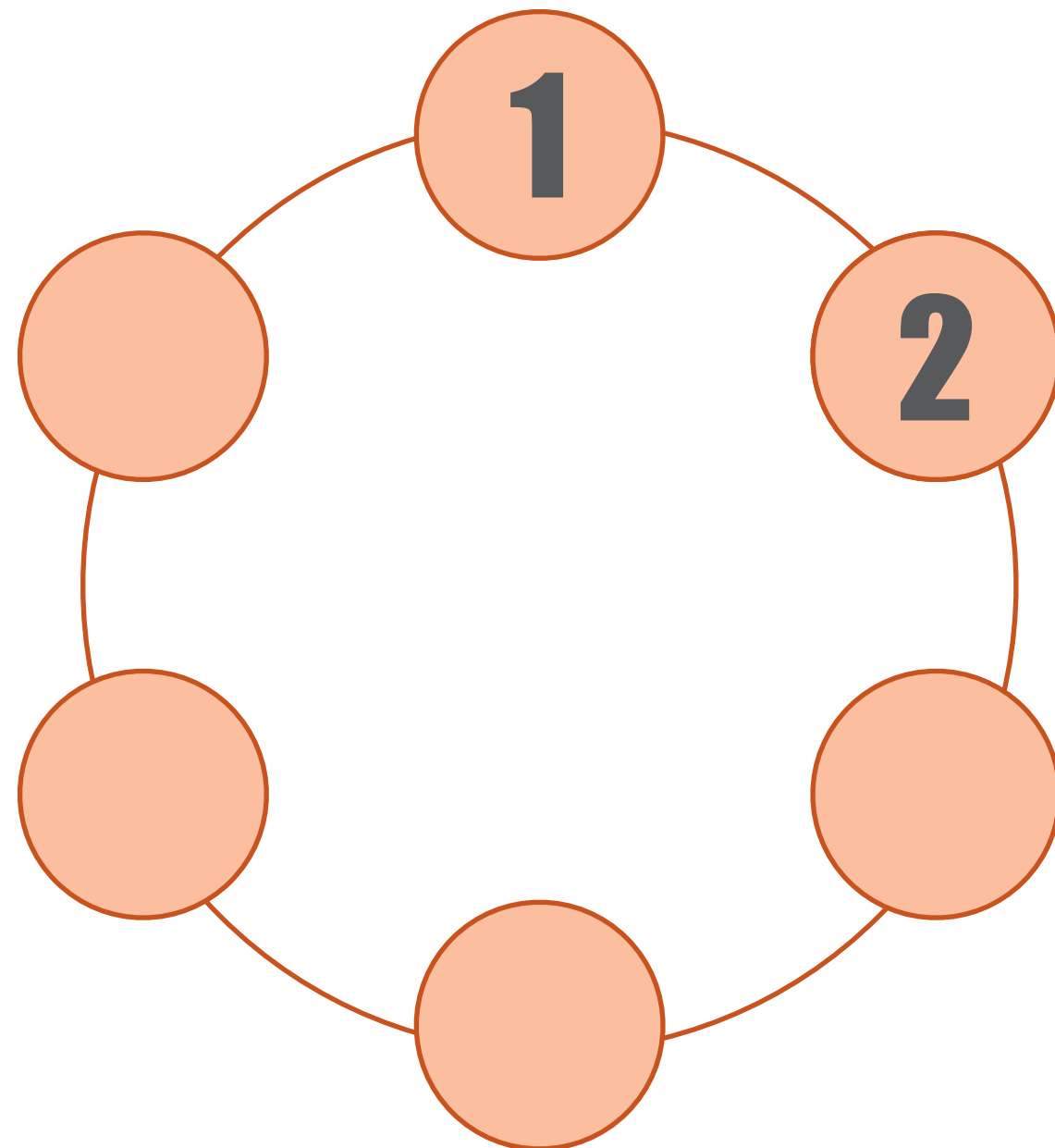
Sankalp Kohli

#CassandraSummit This presentation is not a contribution

CASSANDRA SUMMIT 2014

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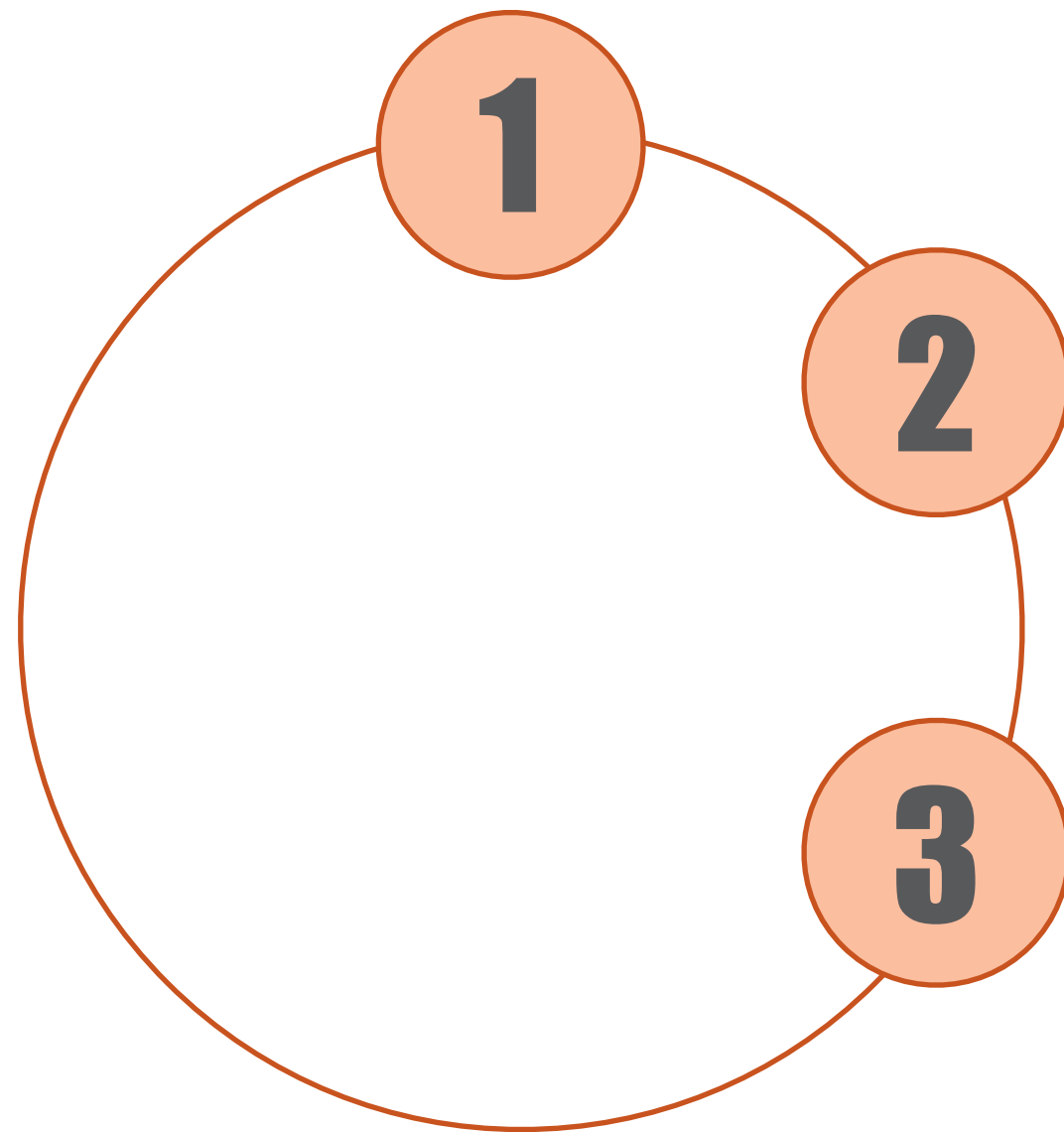


Storing Data in Cassandra

Range of all possible token values

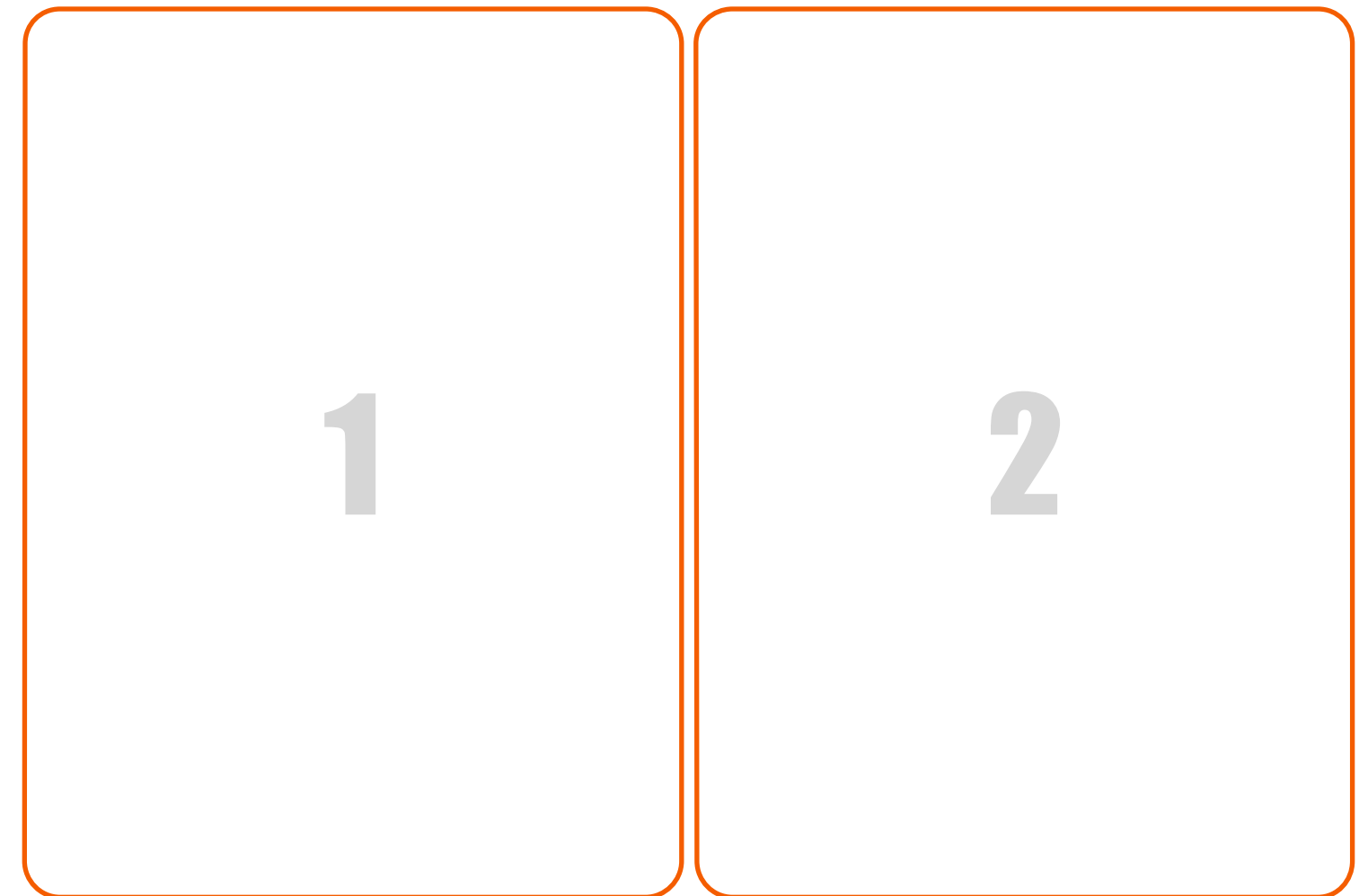
1

-2^{63} to $+2^{63}$

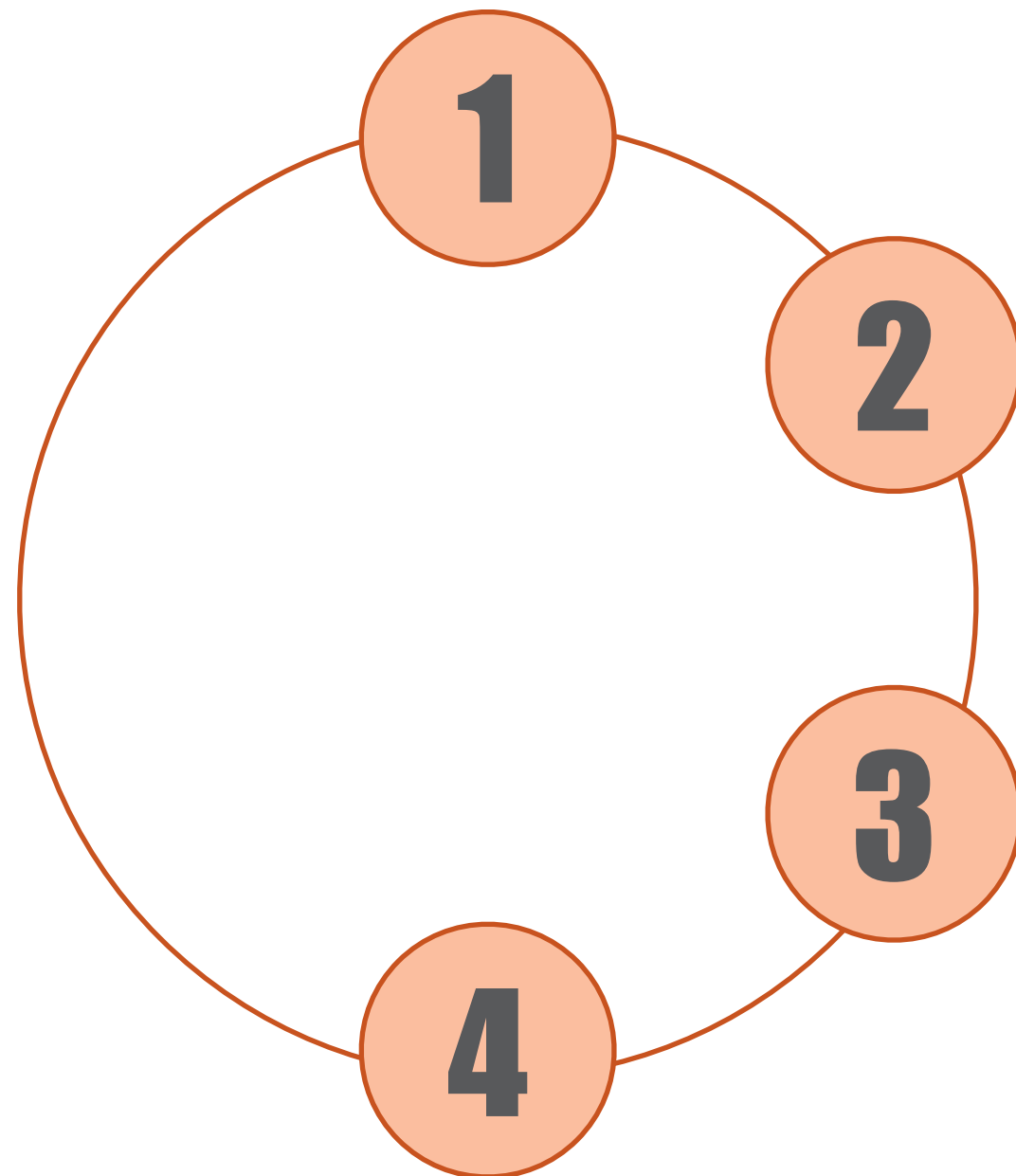


Storing Data in Cassandra

Range of all possible token values

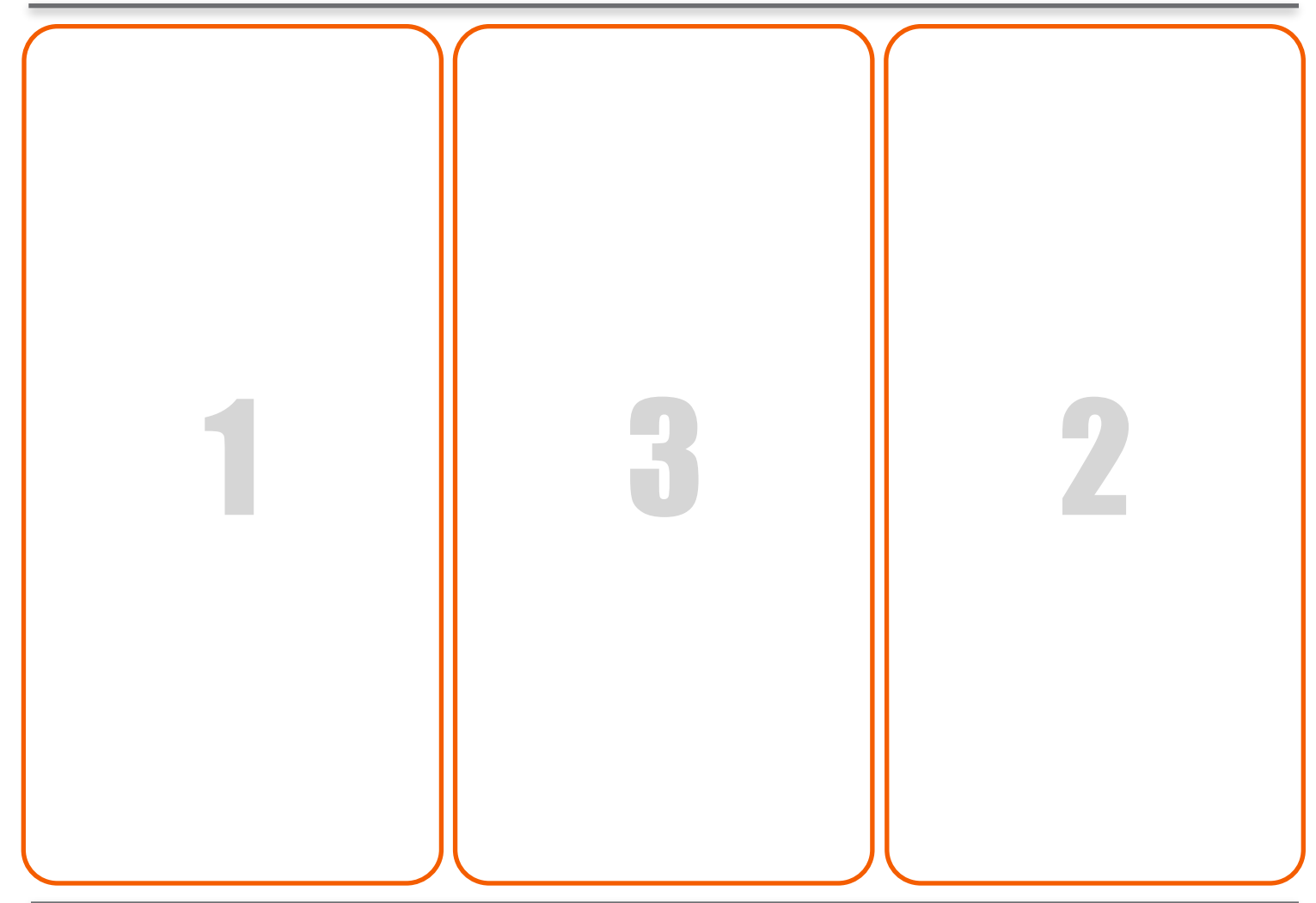


-2^{63} to $+2^{63}$

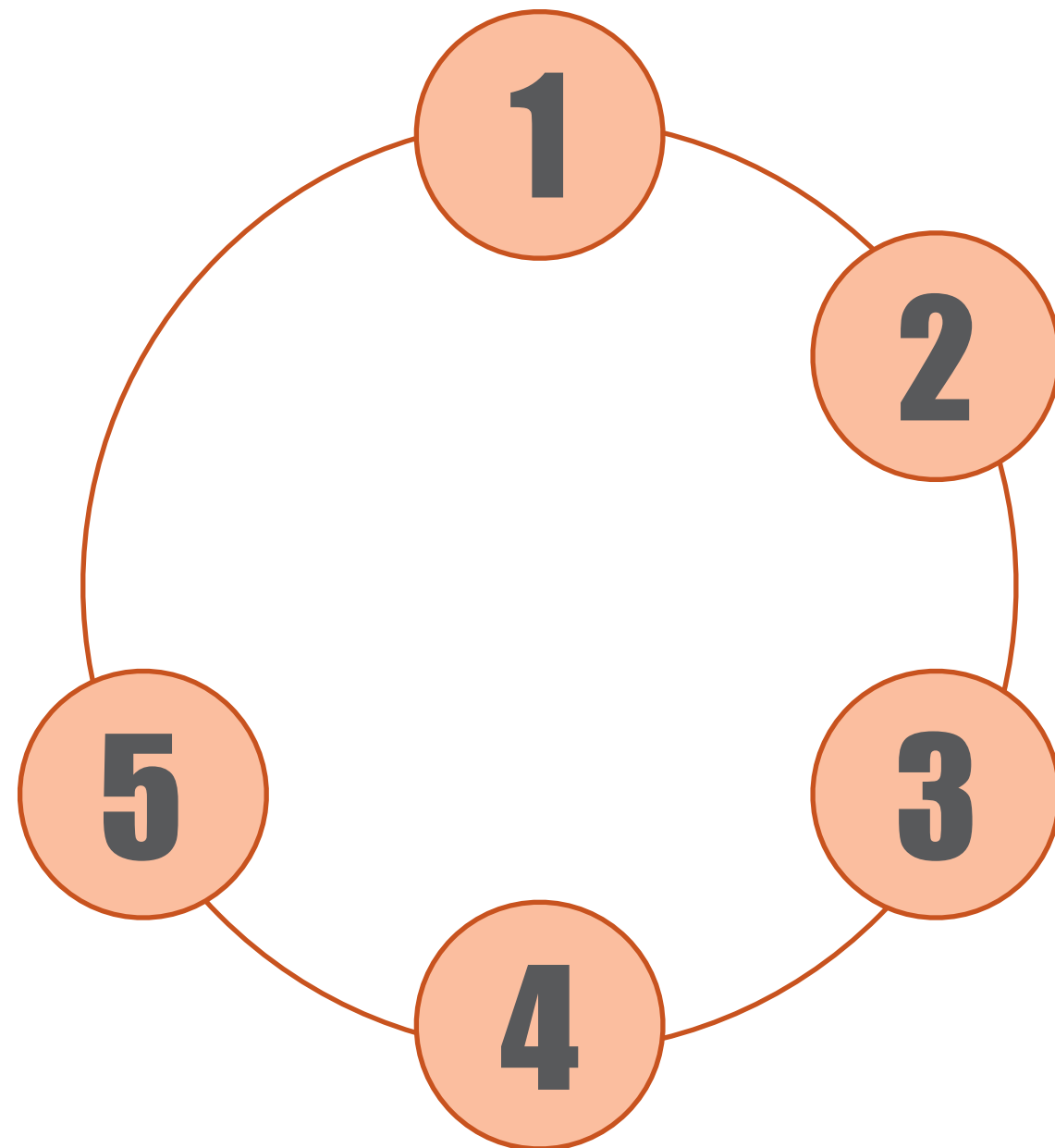


Storing Data in Cassandra

Range of all possible token values

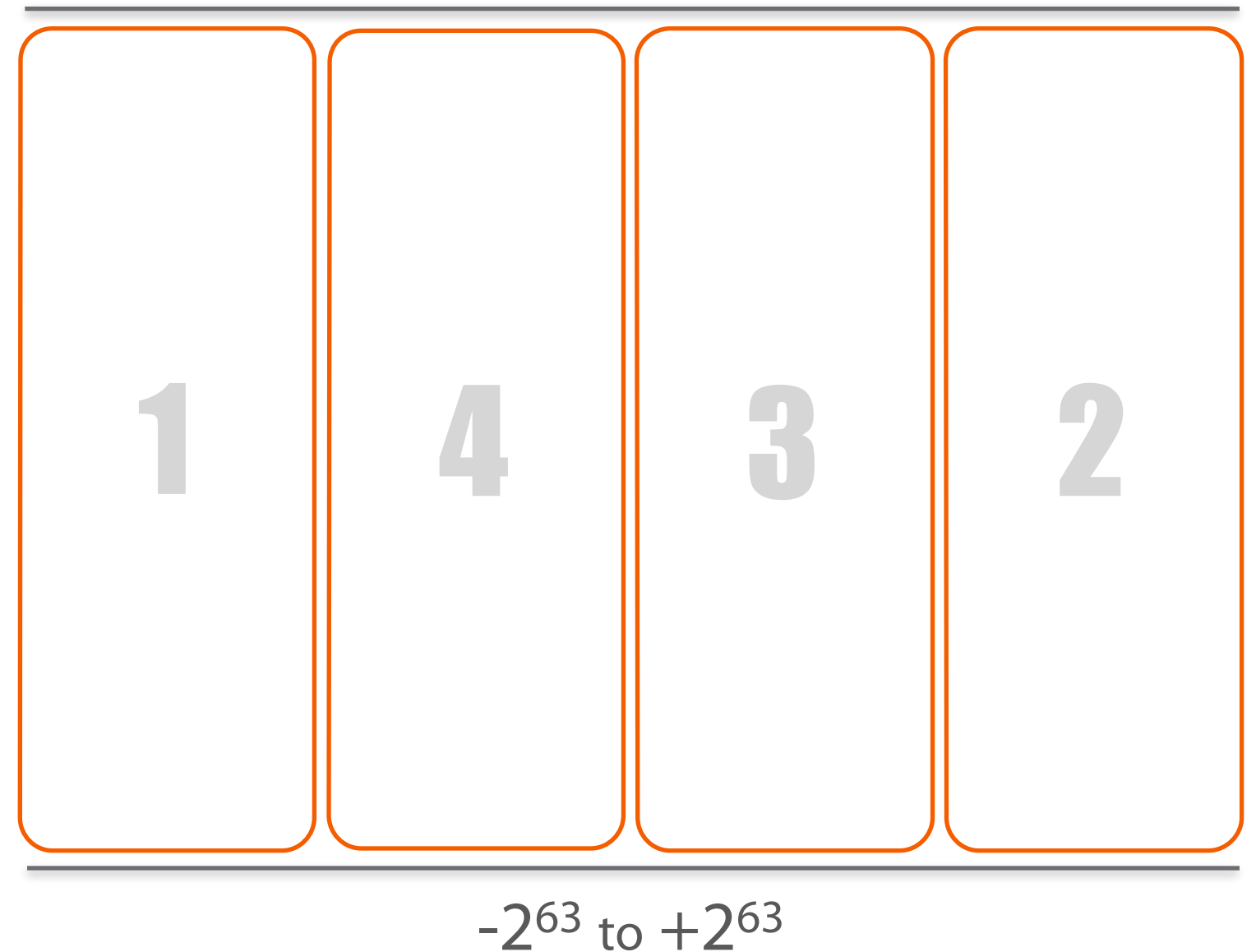


-2^{63} to $+2^{63}$

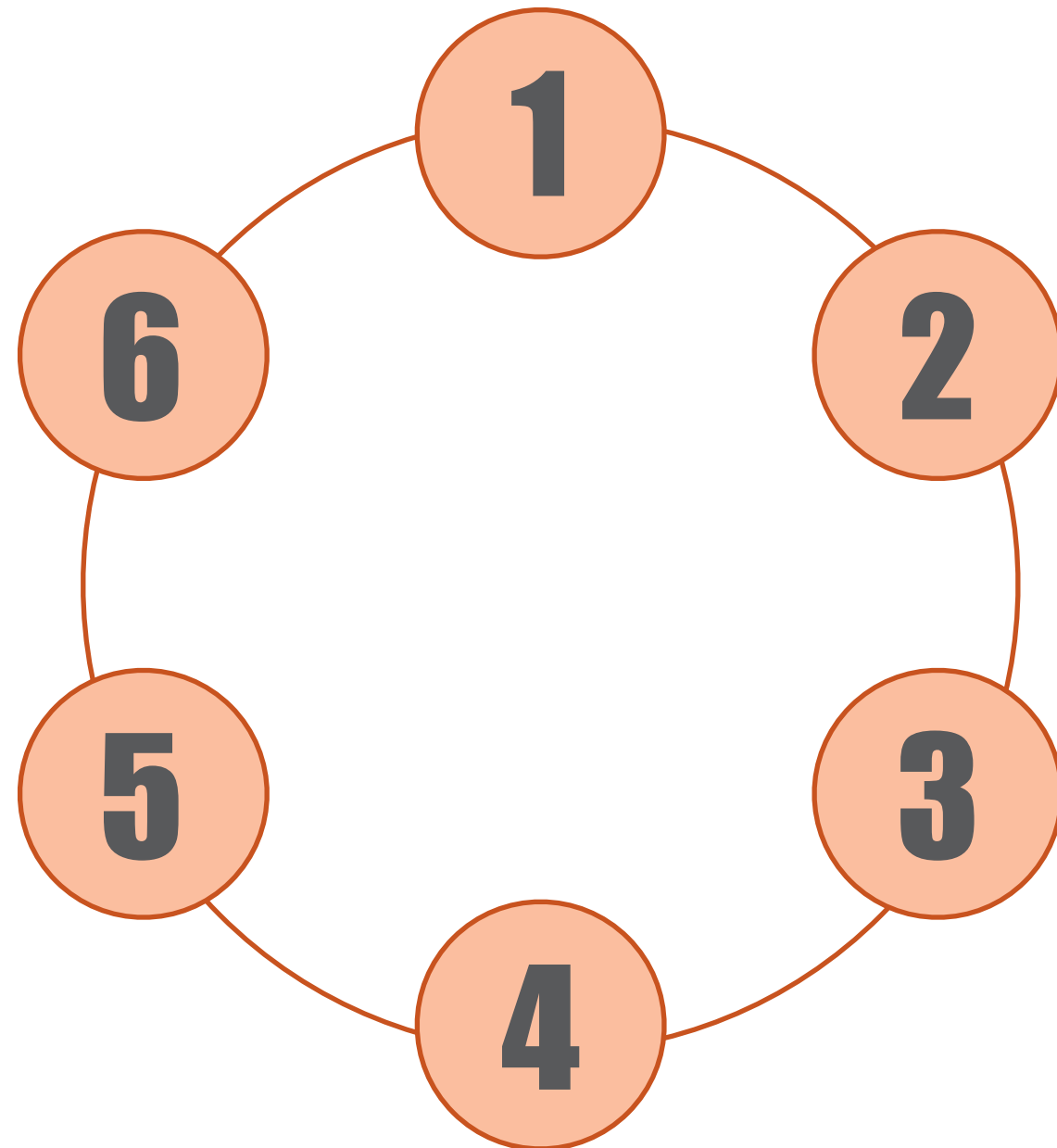


Storing Data in Cassandra

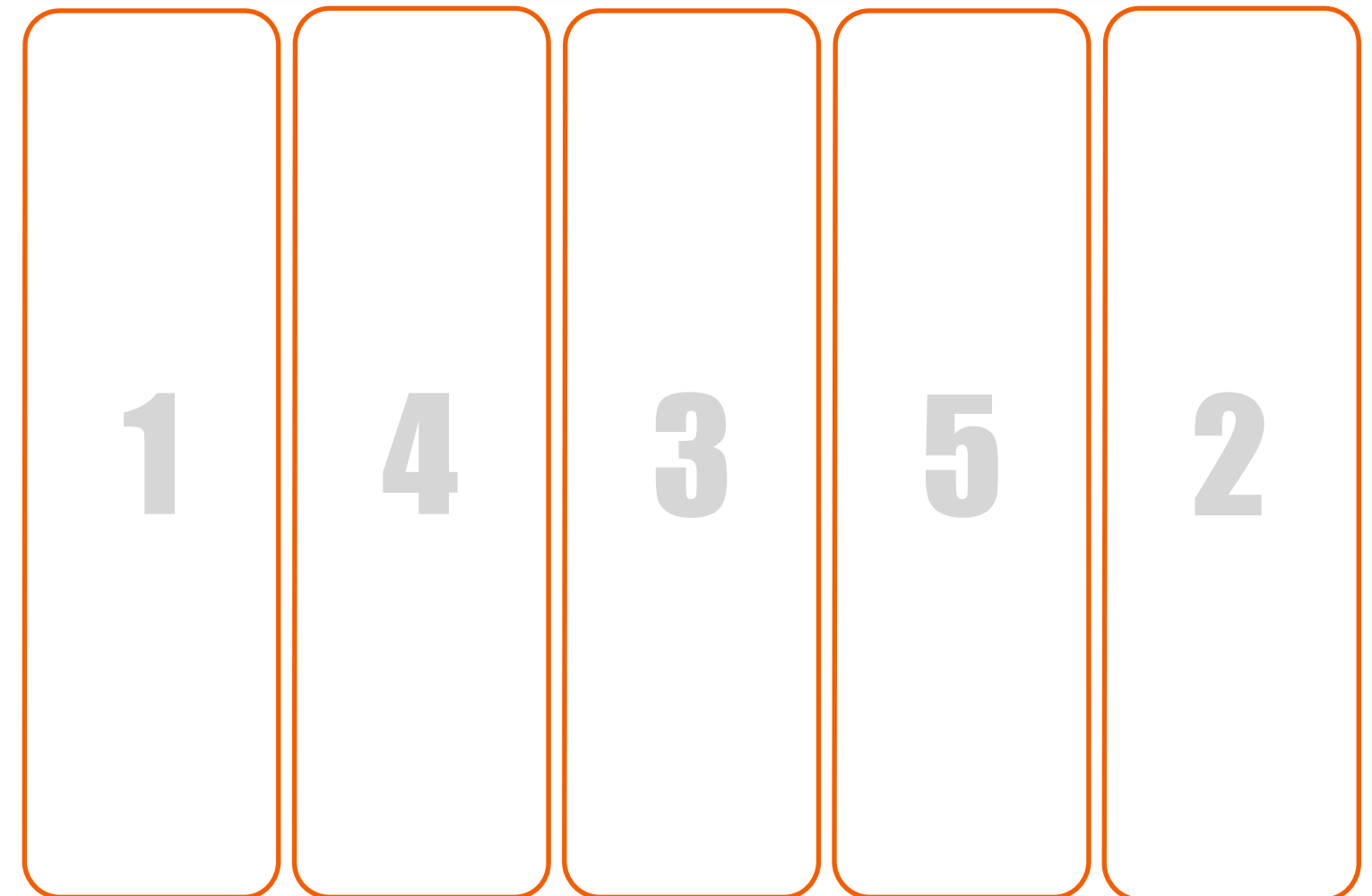
Range of all possible token values



Storing Data in Cassandra

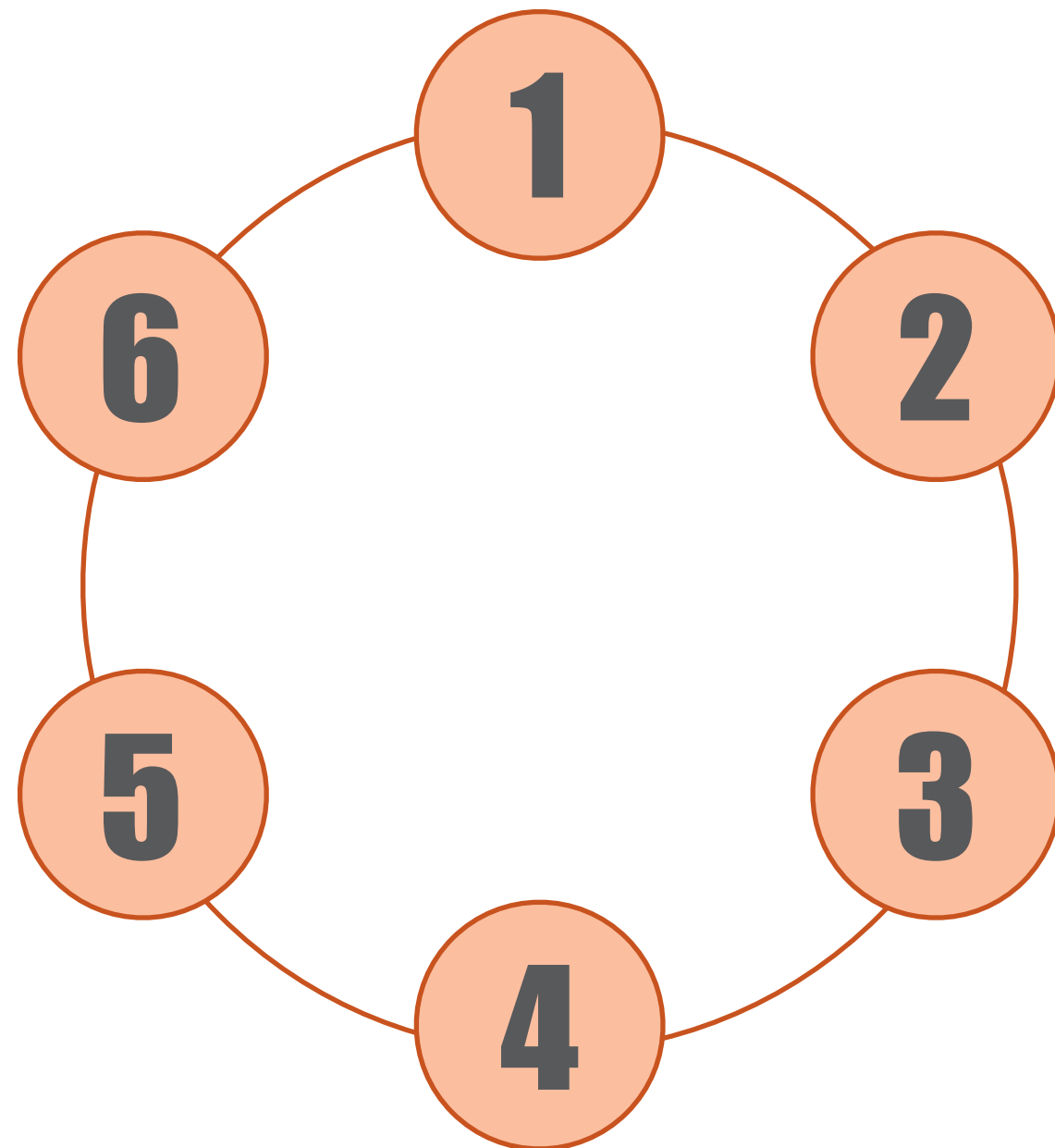


Range of all possible token values

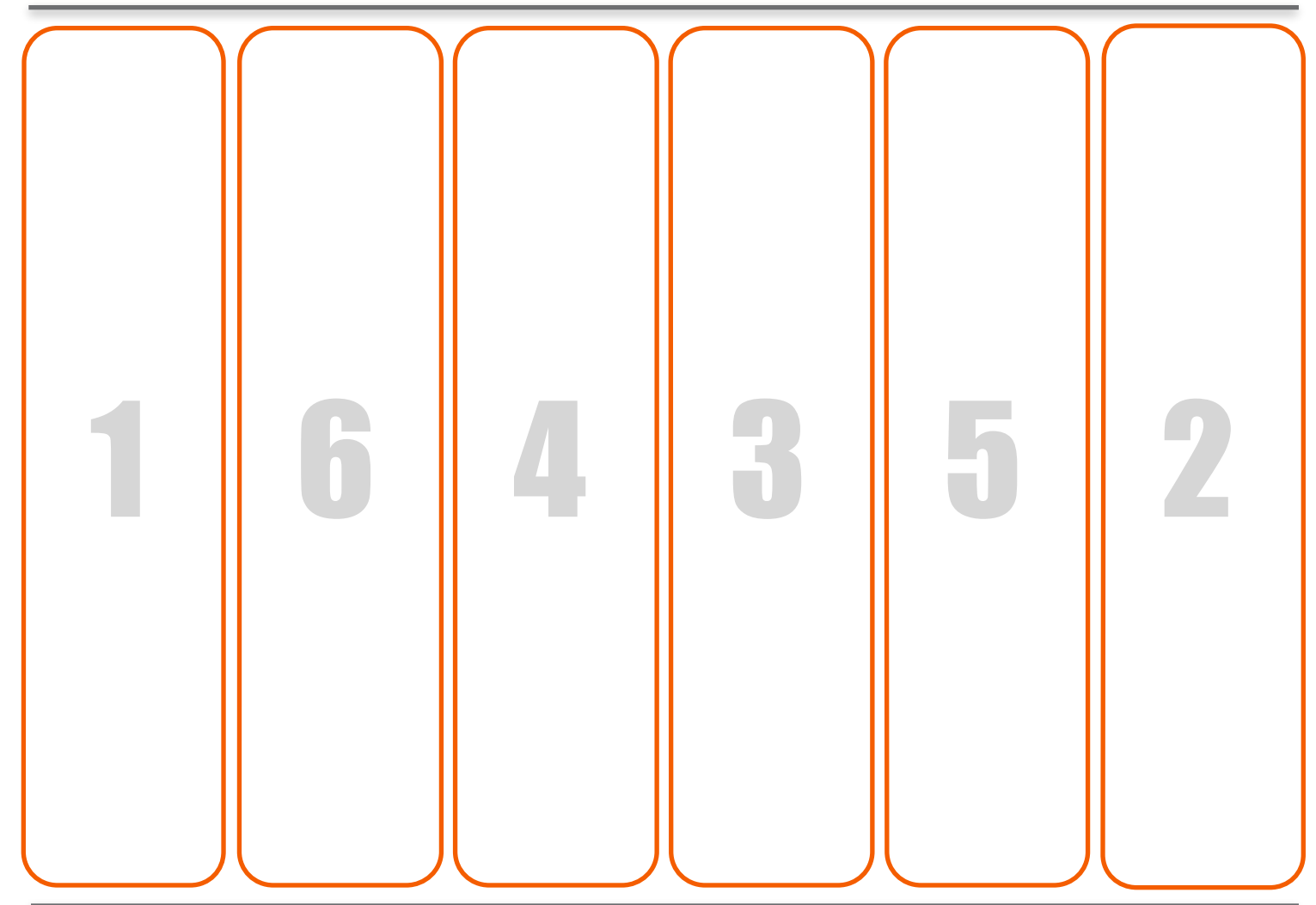


-2^{63} to $+2^{63}$

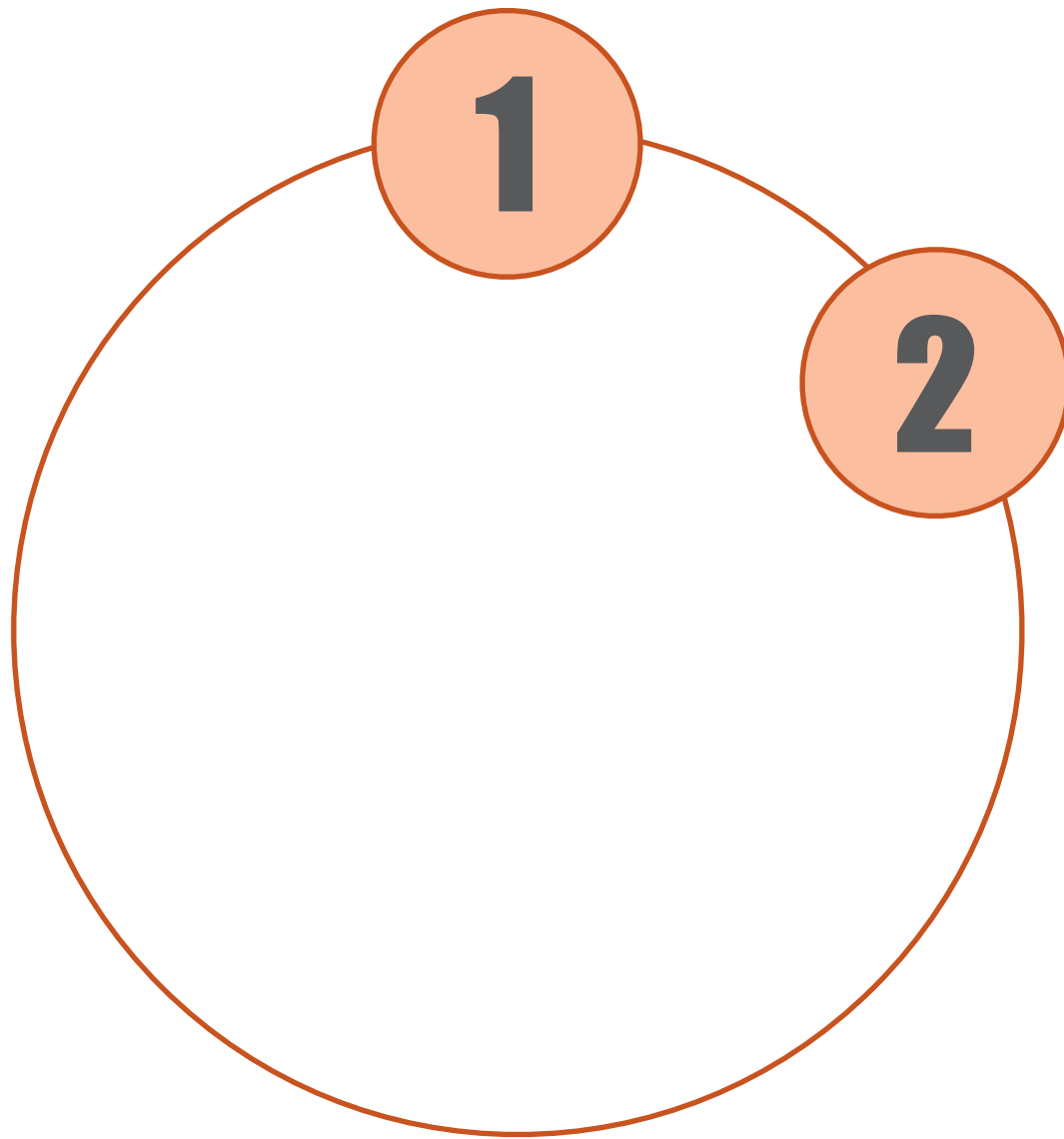
Storing Data in Cassandra



Range of all possible token values

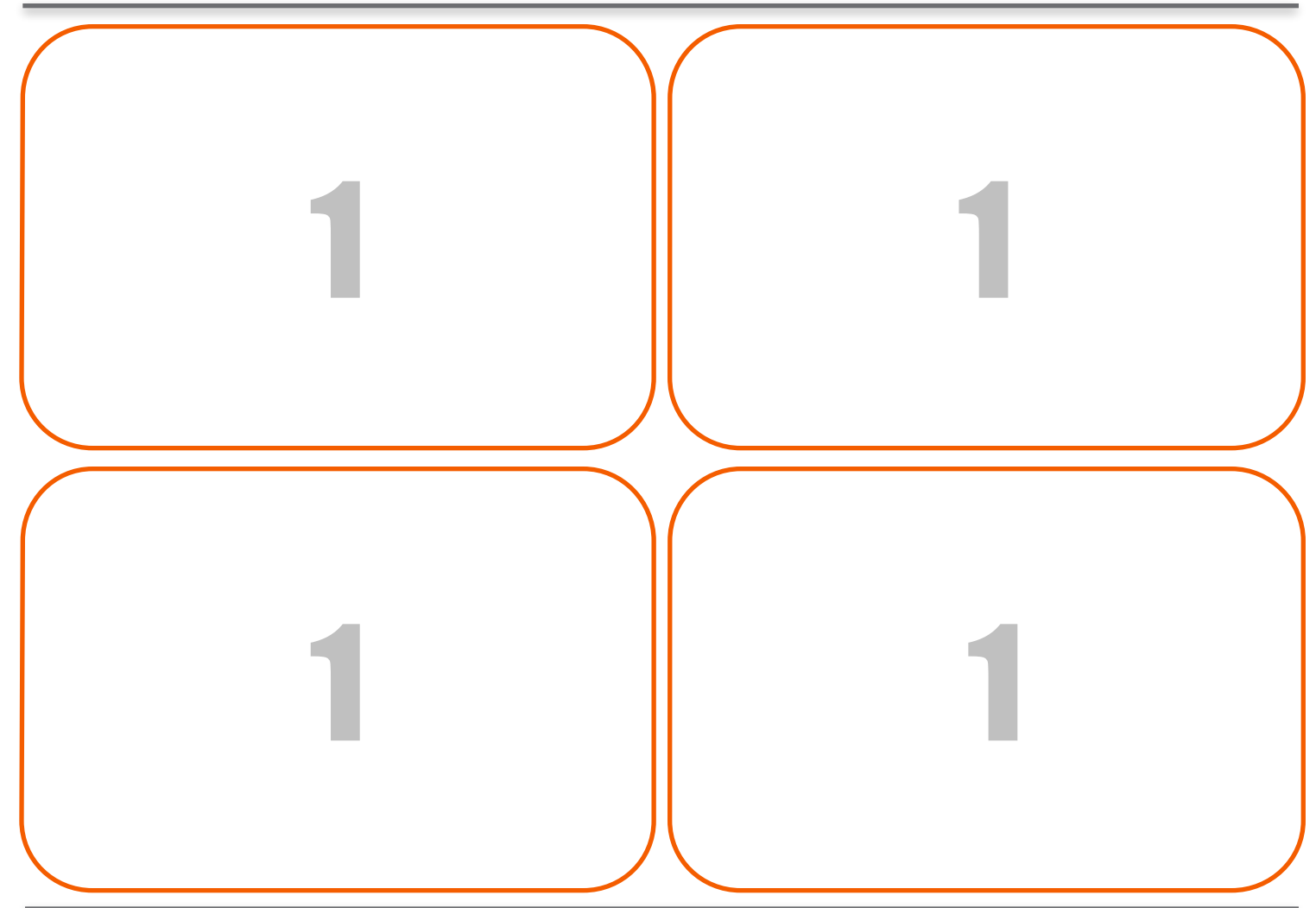


-2^{63} to $+2^{63}$

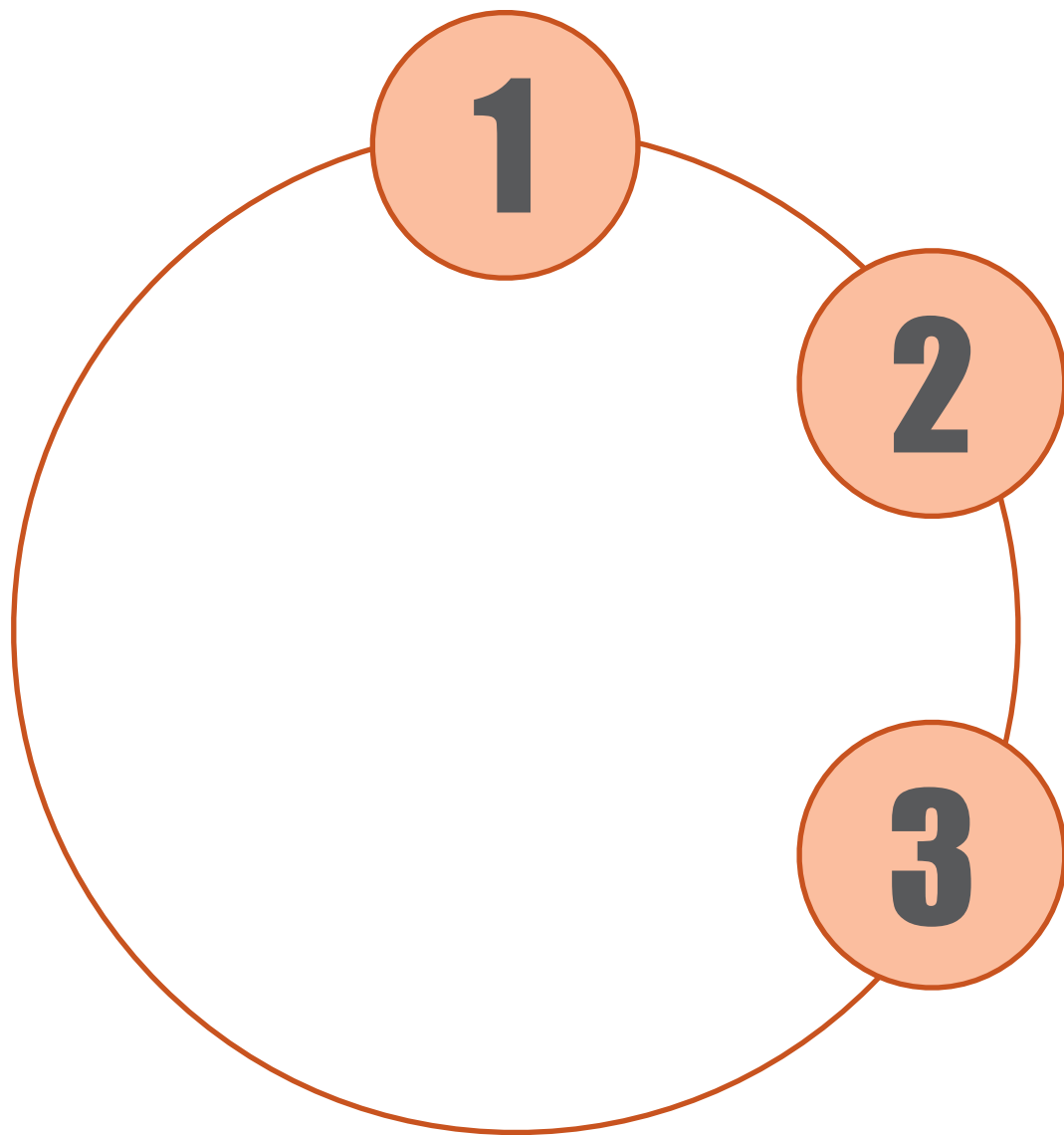


Storing Data with Virtual Nodes

Range of all possible token values



-2^{63} to $+2^{63}$

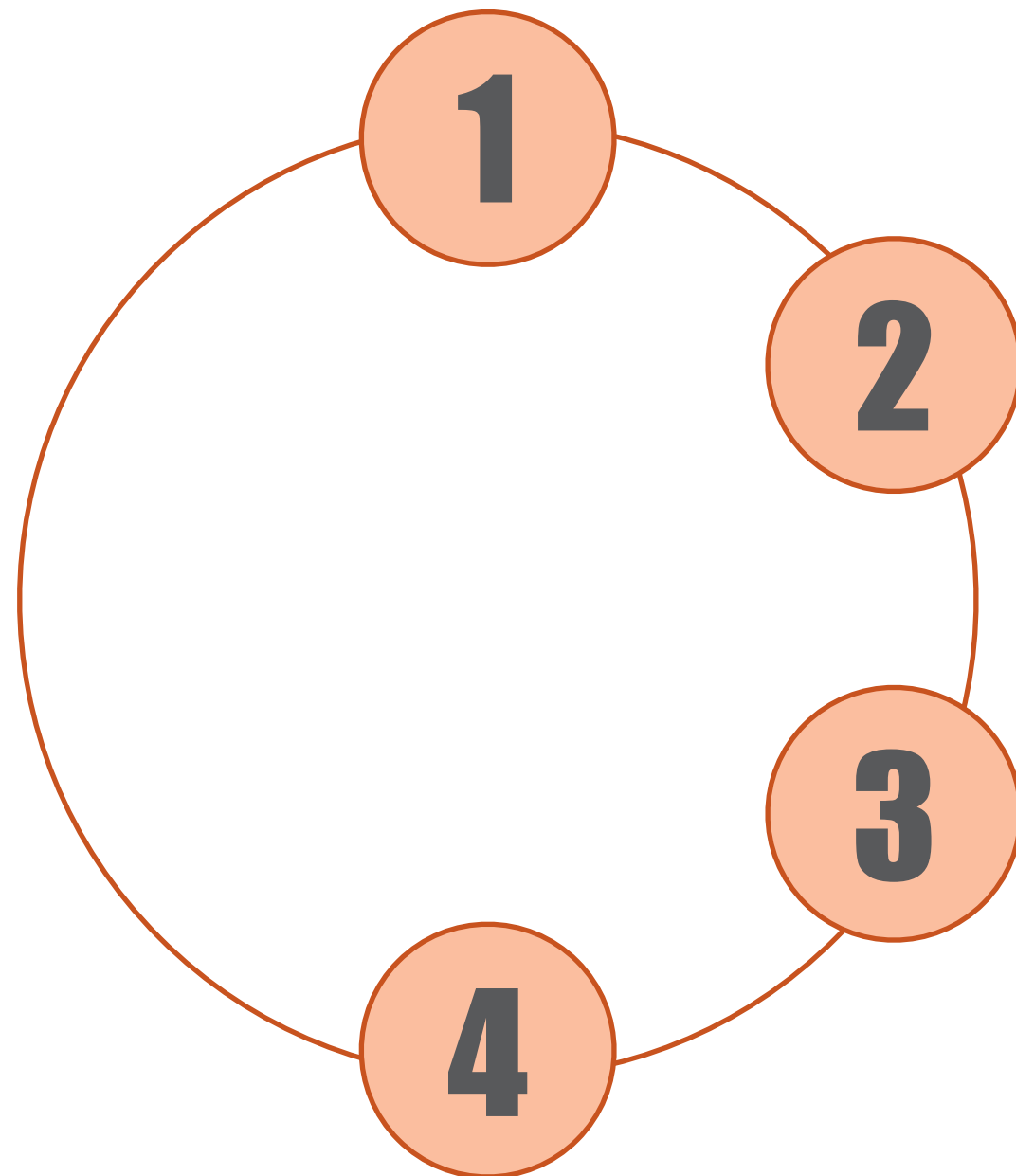


Storing Data with Virtual Nodes

Range of all possible token values

1	2
2	1
1	2
2	1

-2^{63} to $+2^{63}$

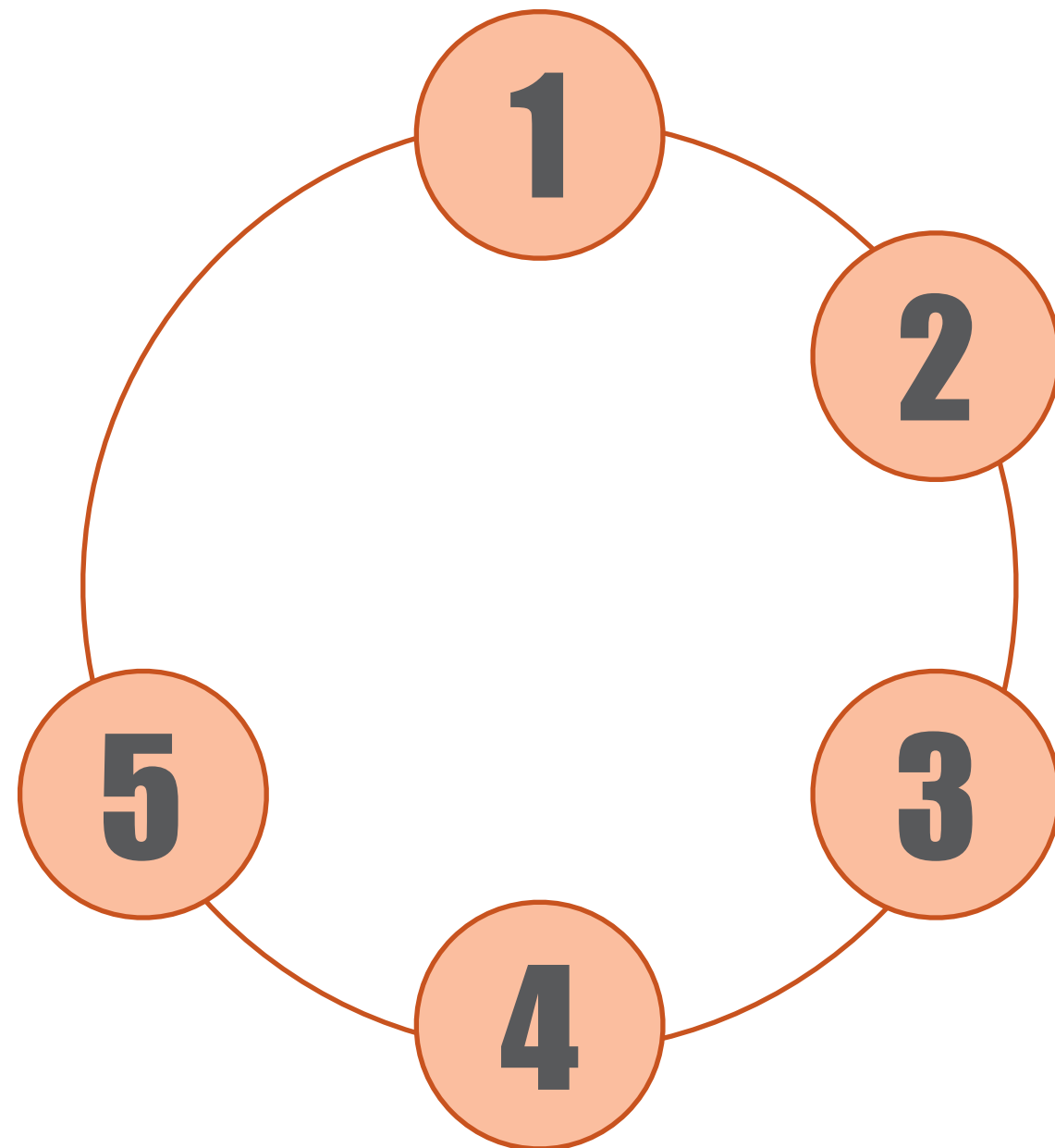


Storing Data with Virtual Nodes

Range of all possible token values

1	2	3
2	3	1
1	2	3
3	2	1

-2^{63} to $+2^{63}$

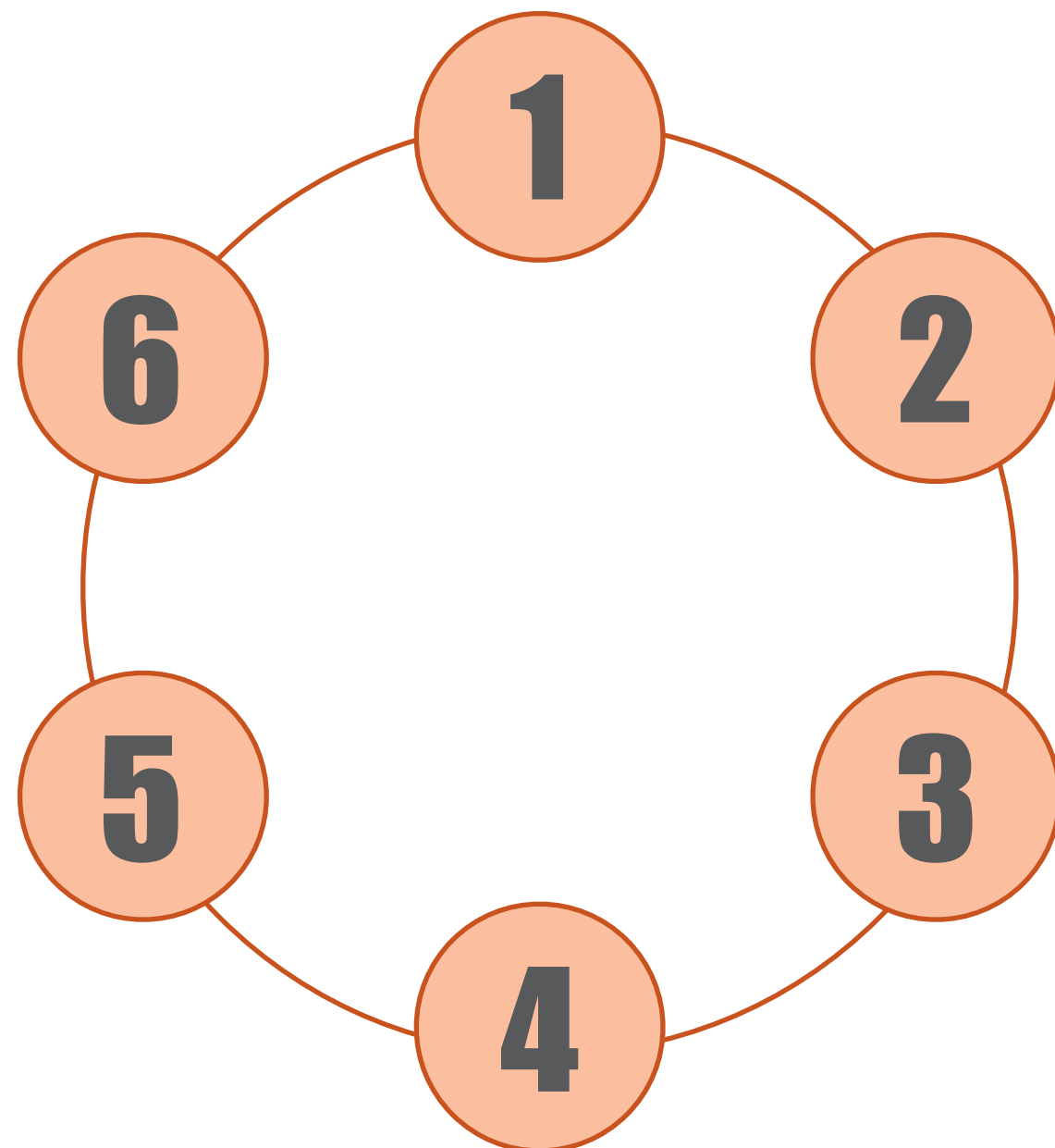


Storing Data with Virtual Nodes

Range of all possible token values

1	2	3	4
2	4	3	1
4	1	2	3
3	2	4	1

-2^{63} to $+2^{63}$

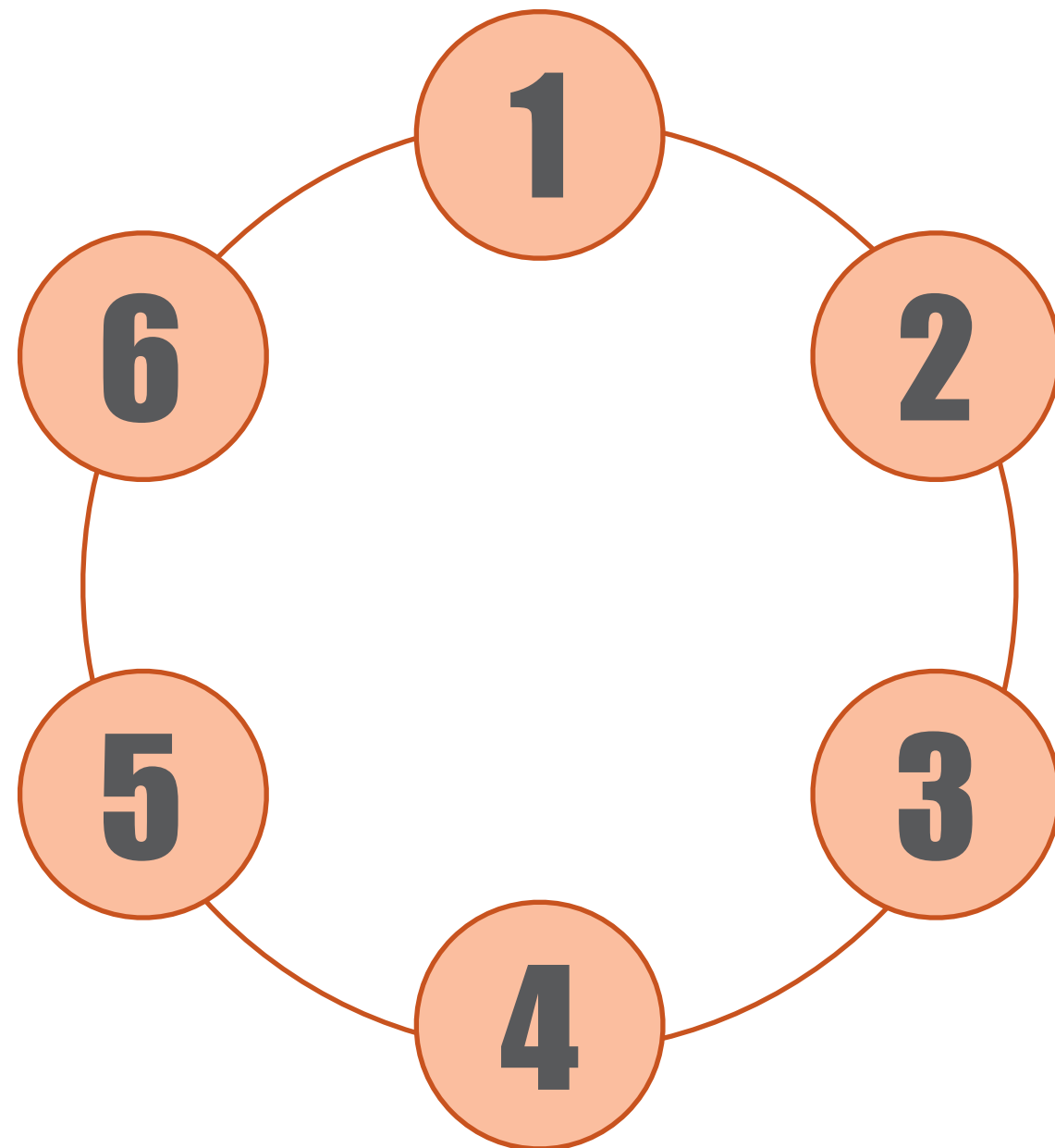


Storing Data with Virtual Nodes

Range of all possible token values

1	2	3	5	4
5	2	4	3	1
4	1	2	3	5
3	5	2	4	1

-2^{63} to $+2^{63}$



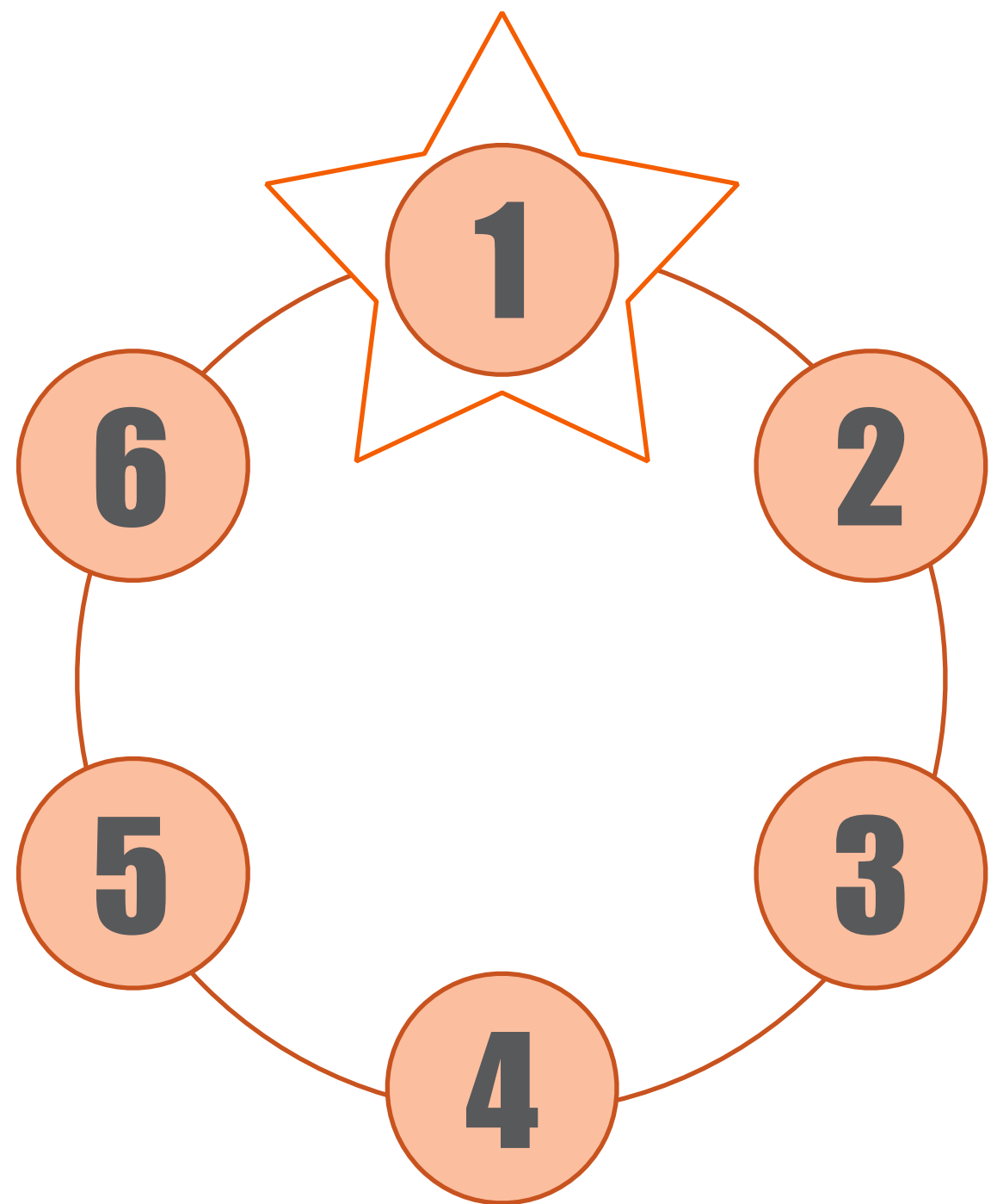
Storing Data with Virtual Nodes

Range of all possible token values

1	2	3	5	4	6
5	2	4	6	3	1
4	6	1	2	3	5
3	5	2	4	6	1

-2^{63} to $+2^{63}$

Token Allocation via the Partitioner

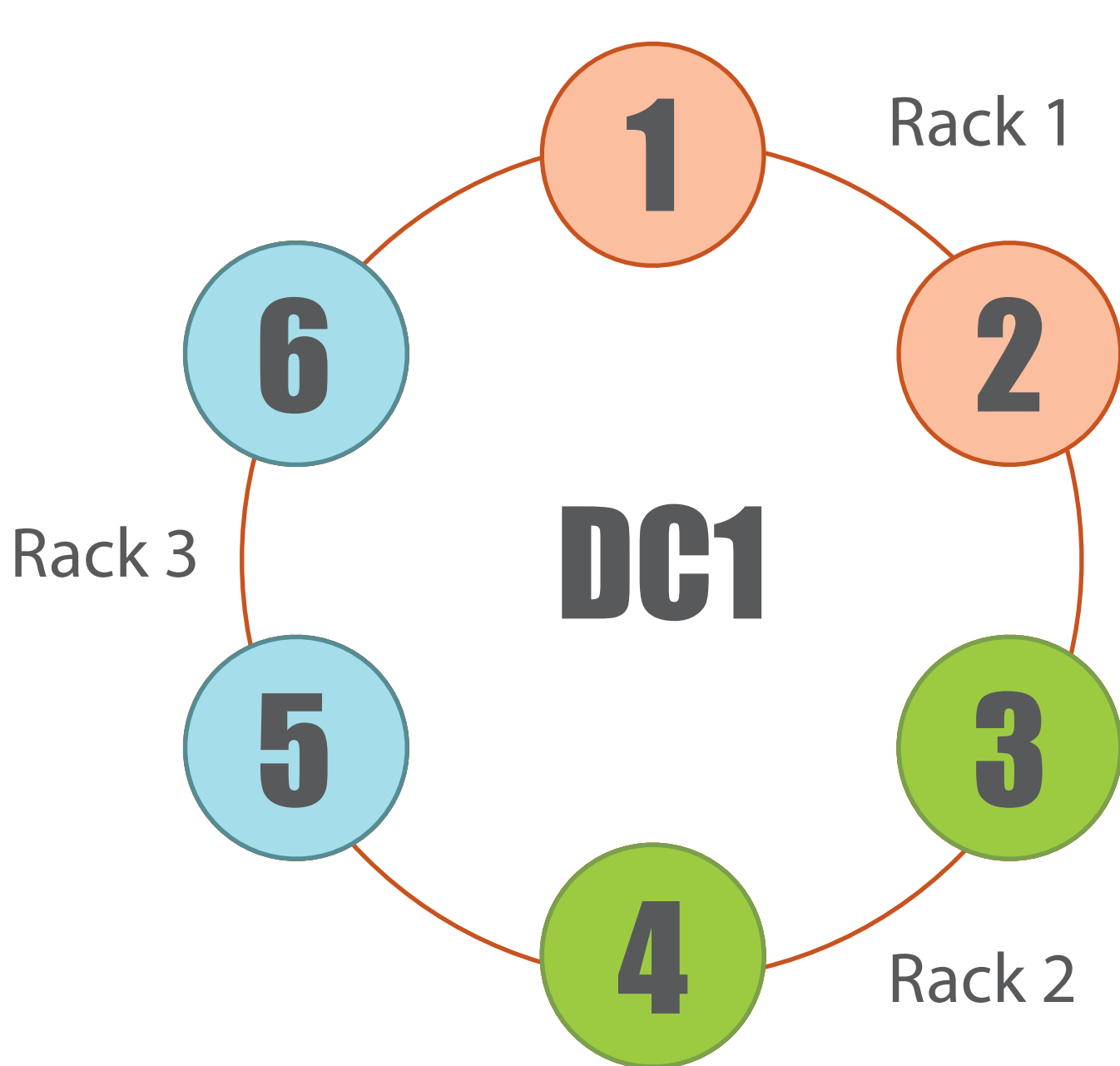


insert into...

hash(partition key)

1	2	3	5	4	6
5	2	4	6	3	<u>1</u>
4	6	1	2	3	5
3	5	2	4	6	1

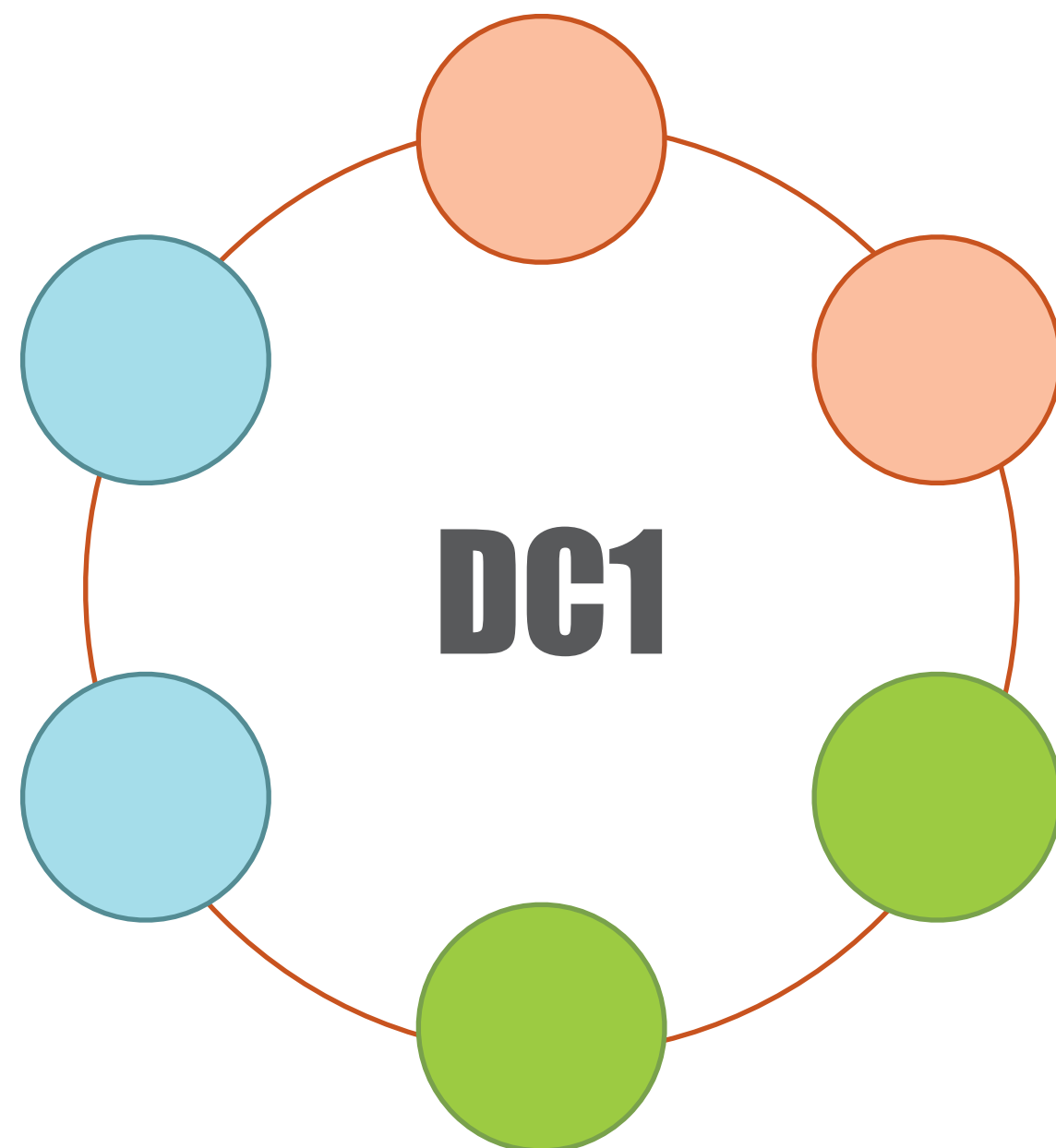
-2^{63} to $+2^{63}$



Snitch

SimpleSnitch

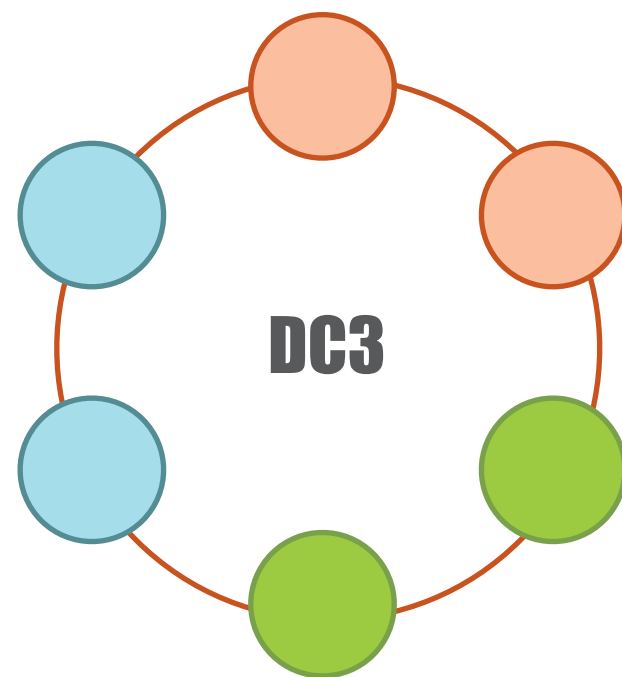
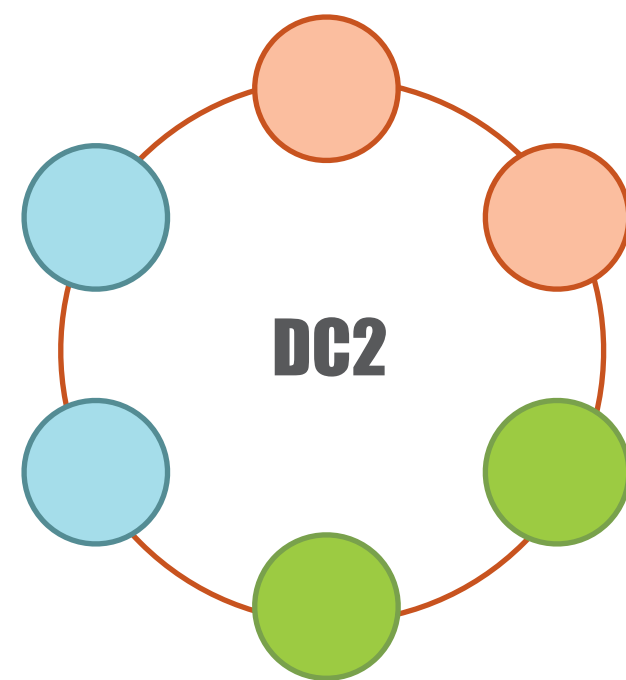
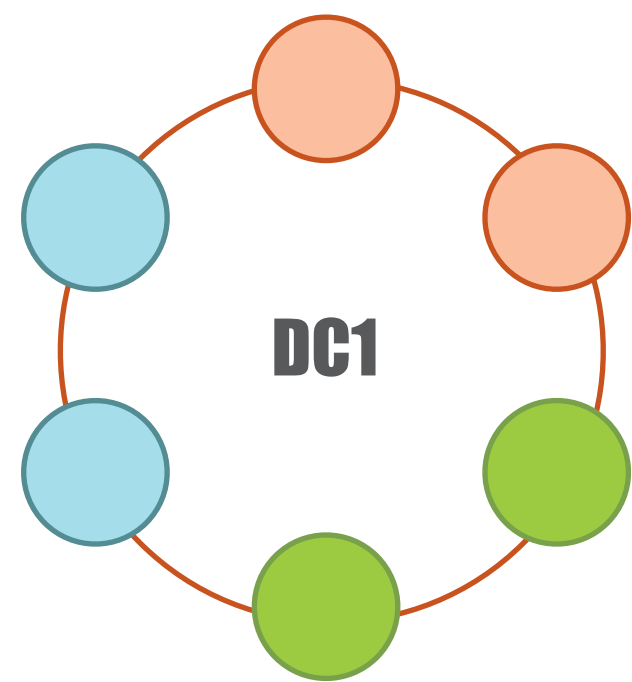
GossipingPropertyFileSnitch



Snitch

SimpleSnitch

GossipingPropertyFileSnitch



Snitch

SimpleSnitch

GossipingPropertyFileSnitch

PropertyFileSnitch

EC2Snitch

EC2MultiRegionSnitch

GoogleCloudSnitch

CloudstackSnitch

Conclusion

- History of Cassandra
- How data is spread around a cluster
- How snitches are used to describe a cluster
- Launched single and multi-DC clusters with Docker
- Used “nodetool” commands to inspect our cluster