DataStax Enterprise Architecture

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Agenda

1	Tuneable Consistency
2	Lab2 : Hands-On Consistency

DATASTAX

Consistency

CAP

Consistency

Tunable at runtime

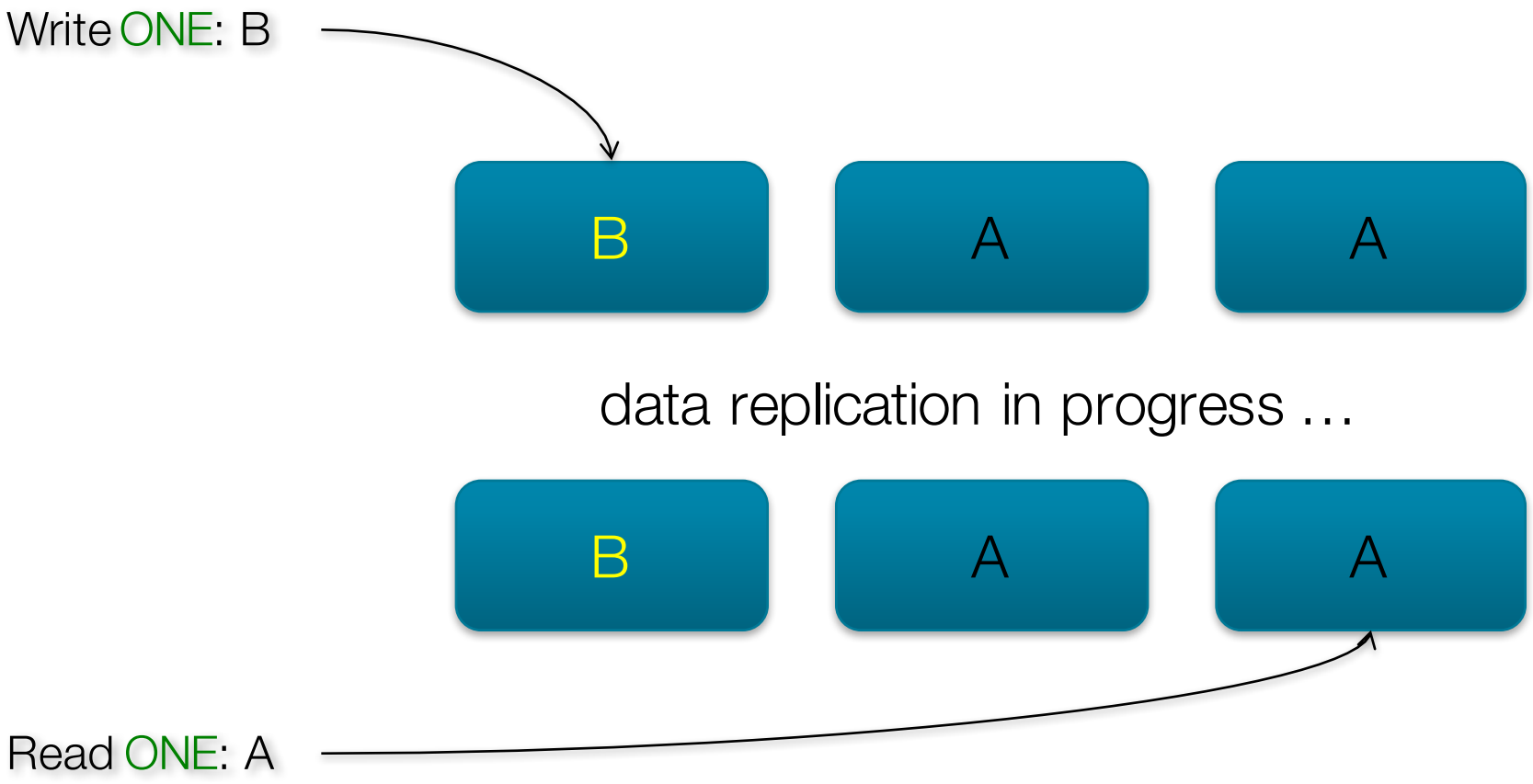
- ONE
- QUORUM (strict majority w.r.t. RF)
- ALL

Apply both to read & write

DATASTAX

Consistency in action

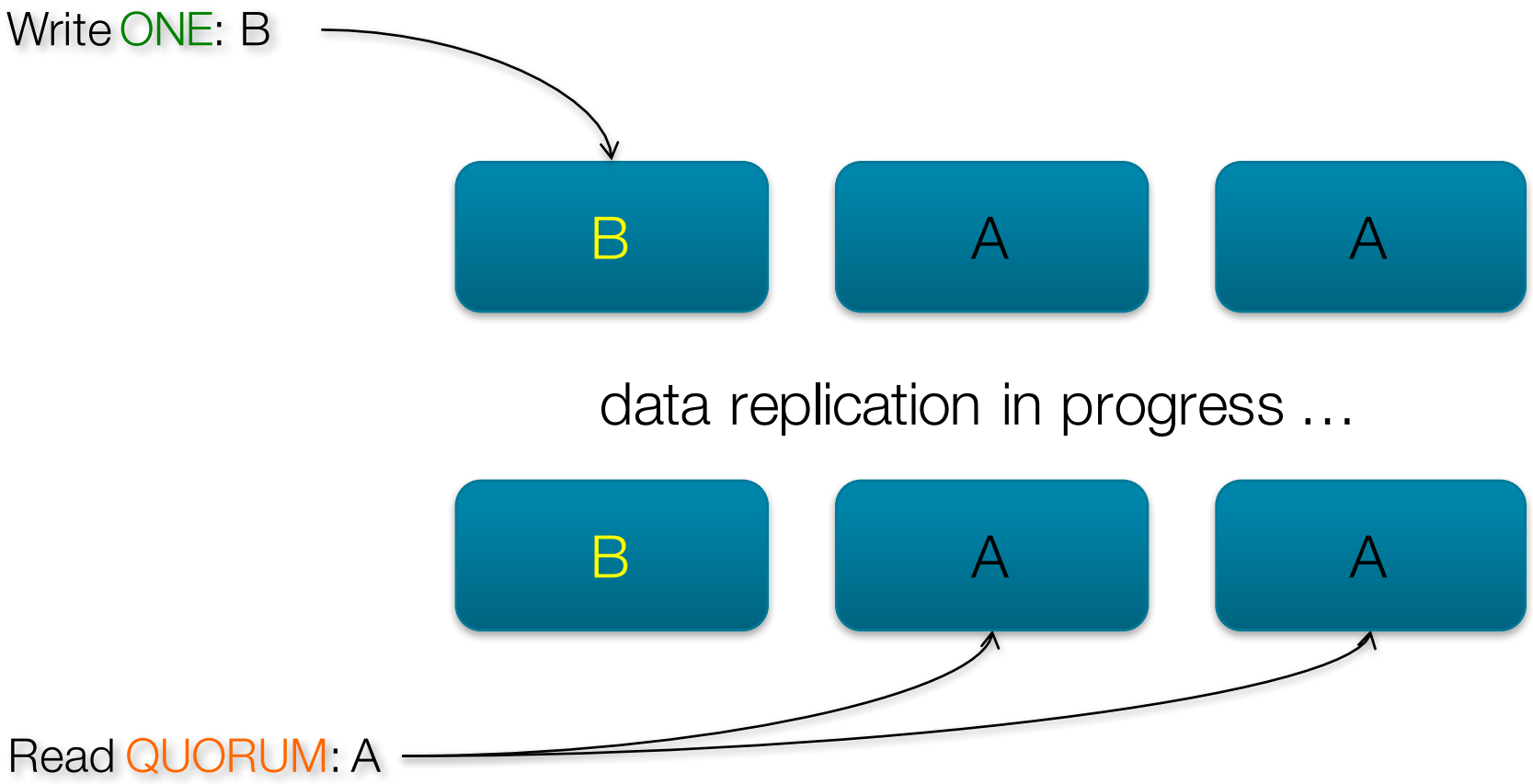
RF = 3, Write ONE, Read ONE



DATASTAX

Consistency in action

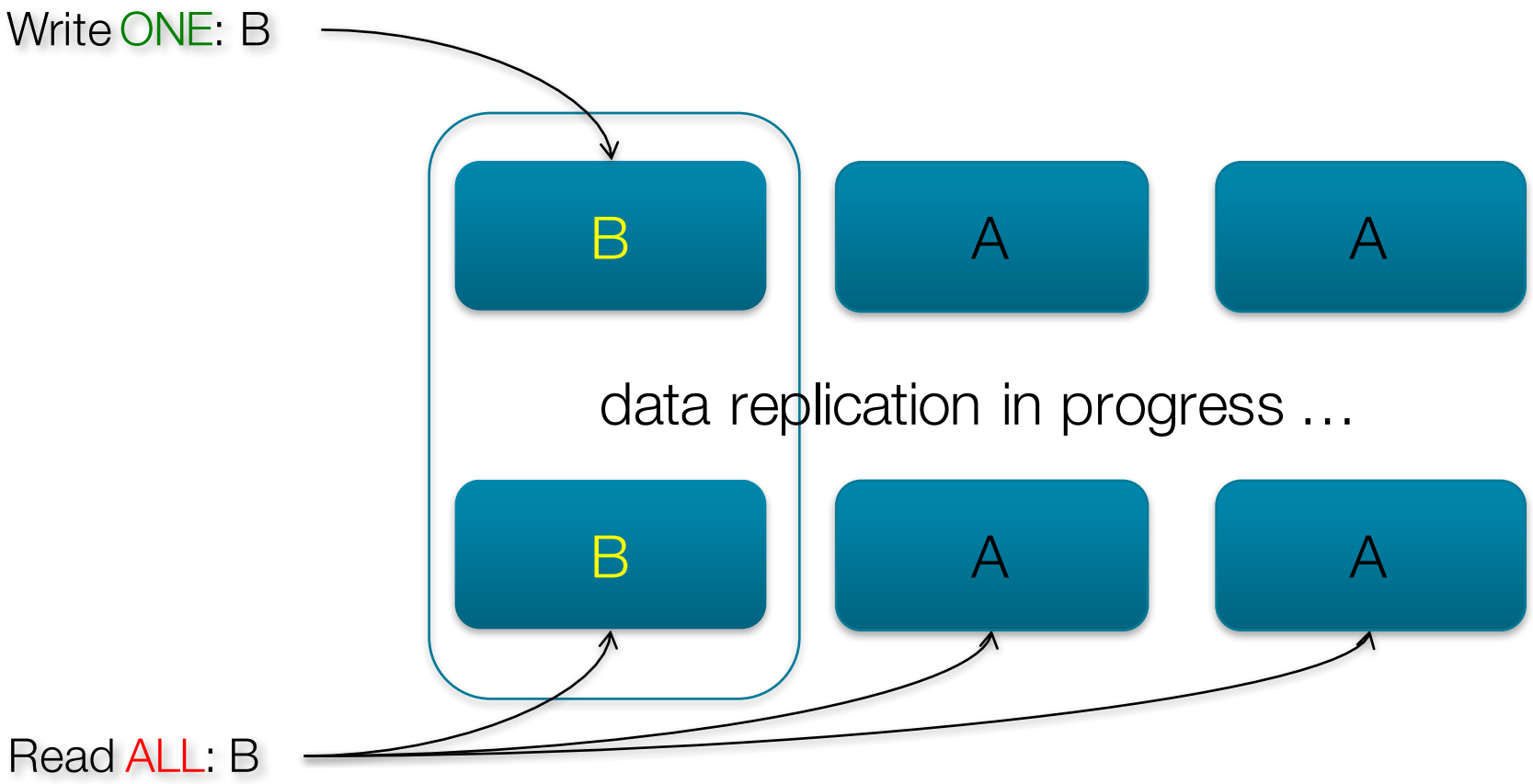
RF = 3, Write ONE, Read QUORUM



DATASTAX

Consistency in action

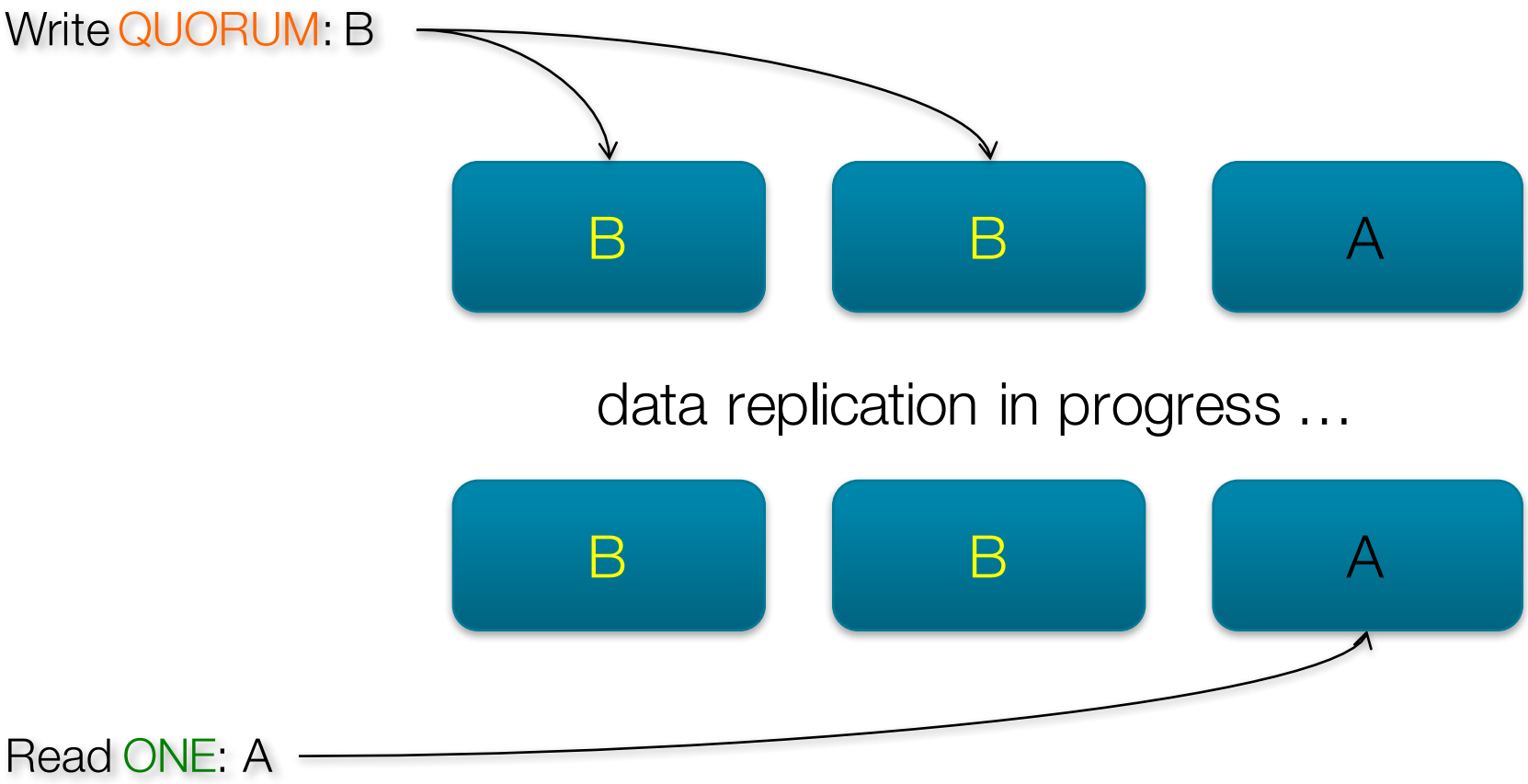
RF = 3, Write ONE, Read ALL



DATASTAX

Consistency in action

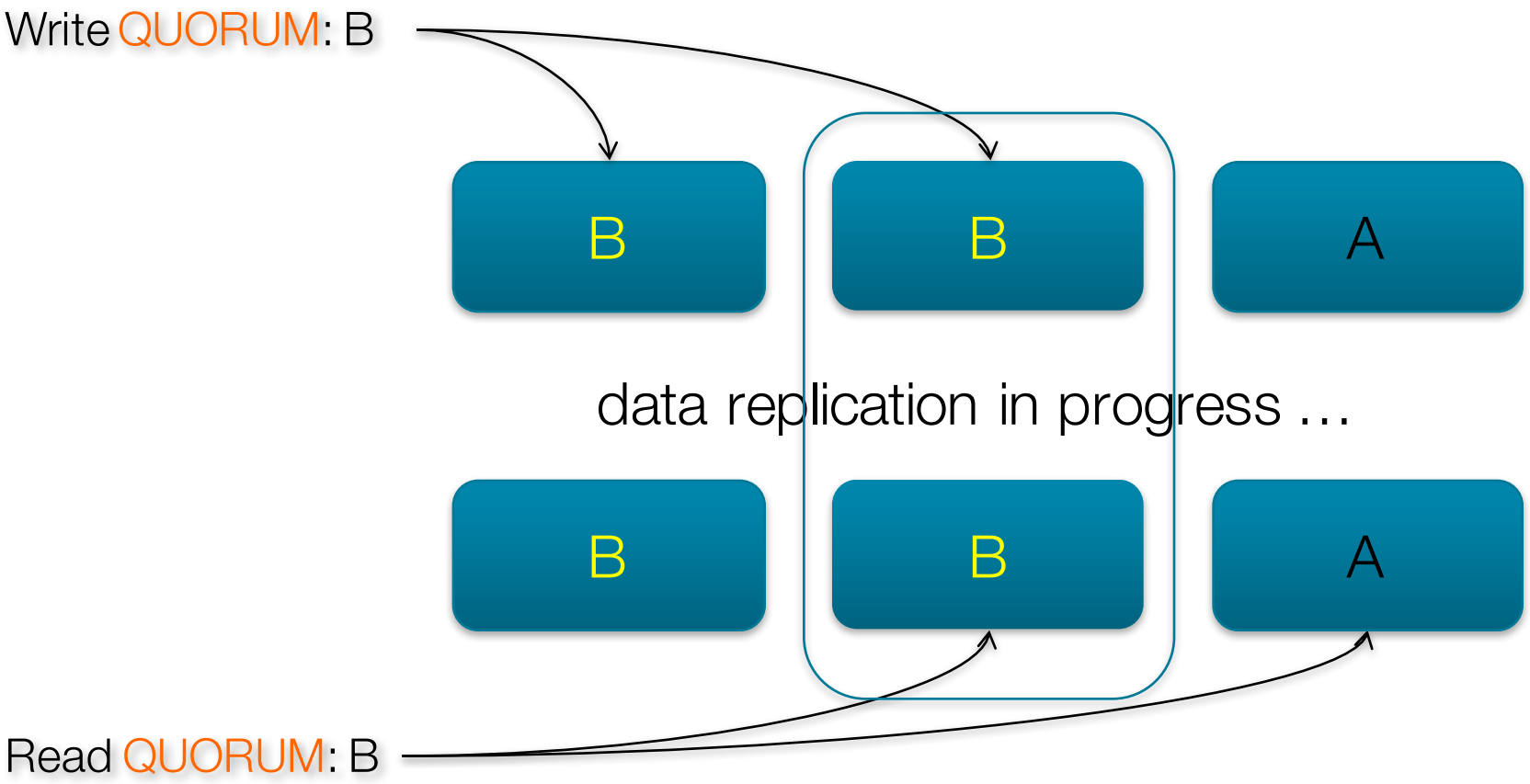
RF = 3, Write QUORUM, Read ONE



DATASTAX

Consistency in action

RF = 3, Write QUORUM, Read QUORUM



DATASTAX

Consistency trade-off

DATASTAX

Consistency level

ONE

Fast, may not read latest written value

DATASTAX

Consistency level

QUORUM

Strict majority w.r.t. Replication Factor

Good balance

DATASTAX

Consistency level

ALL

Paranoid

Slow, no high availability

DATASTAX

Consistency summary

$ONE_{Read} + ONE_{Write}$

☞ available for read/write even (N-1) replicas down

$QUORUM_{Read} + QUORUM_{Write}$

☞ available for read/write even 1+ replica down

DATASTAX

Vielen Dank!