DataStax Enterprise Consistency

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Agenda

1	Tuneable Consistency
2	Lab 4 : Hands-On Consistency

DATASTAX

Consistency

Consistency
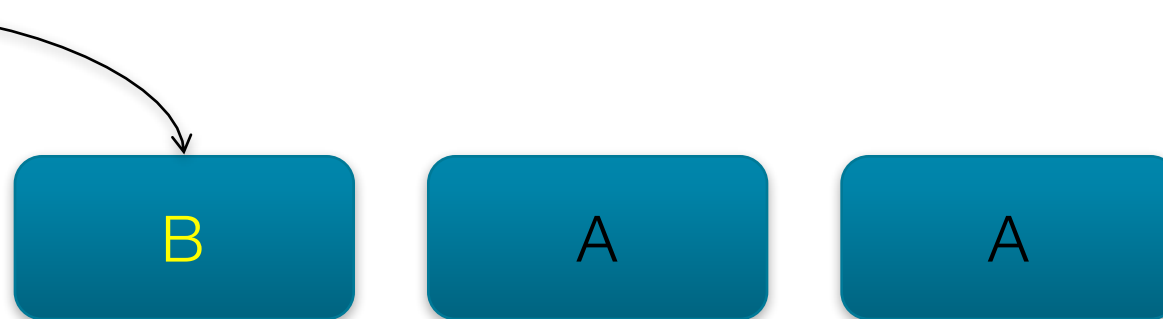
Tunable at runtime

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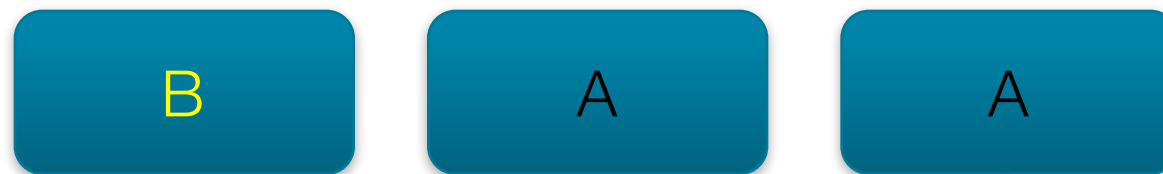
- QUORUM (strict majority w.r.t. RF)

- ALL

Apply both to read & write

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Consistency in action

RF = 3, Write ONE, Read ONE

Write ONE: B

B	A	A

data replication in progress …

B	A	A

Read ONE: A

DATASTAX

Consistency in action

RF = 3, Write ONE, Read QUORUM

Write ONE: B

| B | A | A |

data replication in progress …

| B | A | A |

Read QUORUM: A

DATASTAX
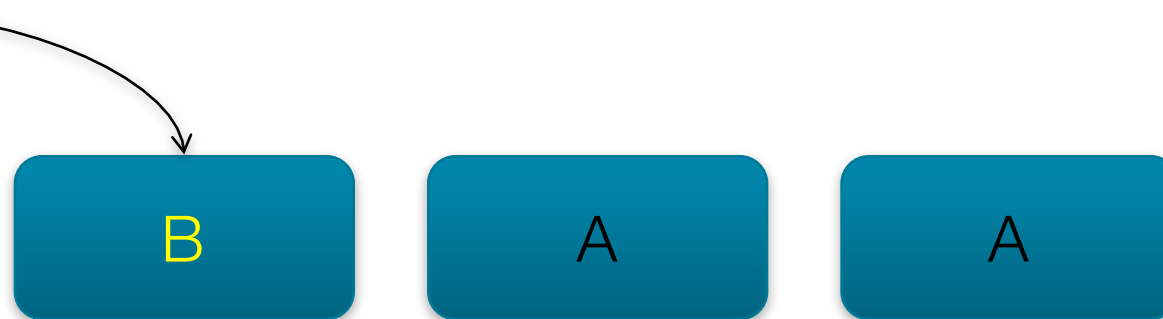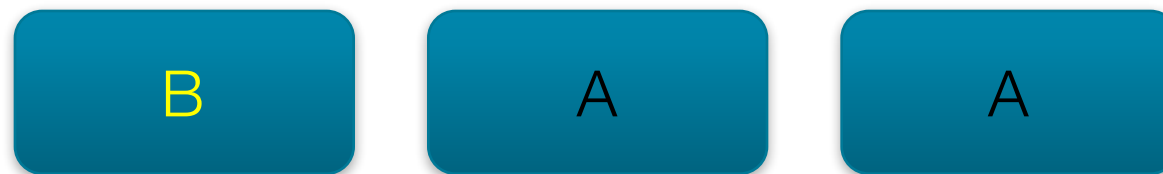
Consistency in action

RF = 3, Write ONE, Read ALL

Write ONE: B

B   A   A

data replication in progress …

B   A   A
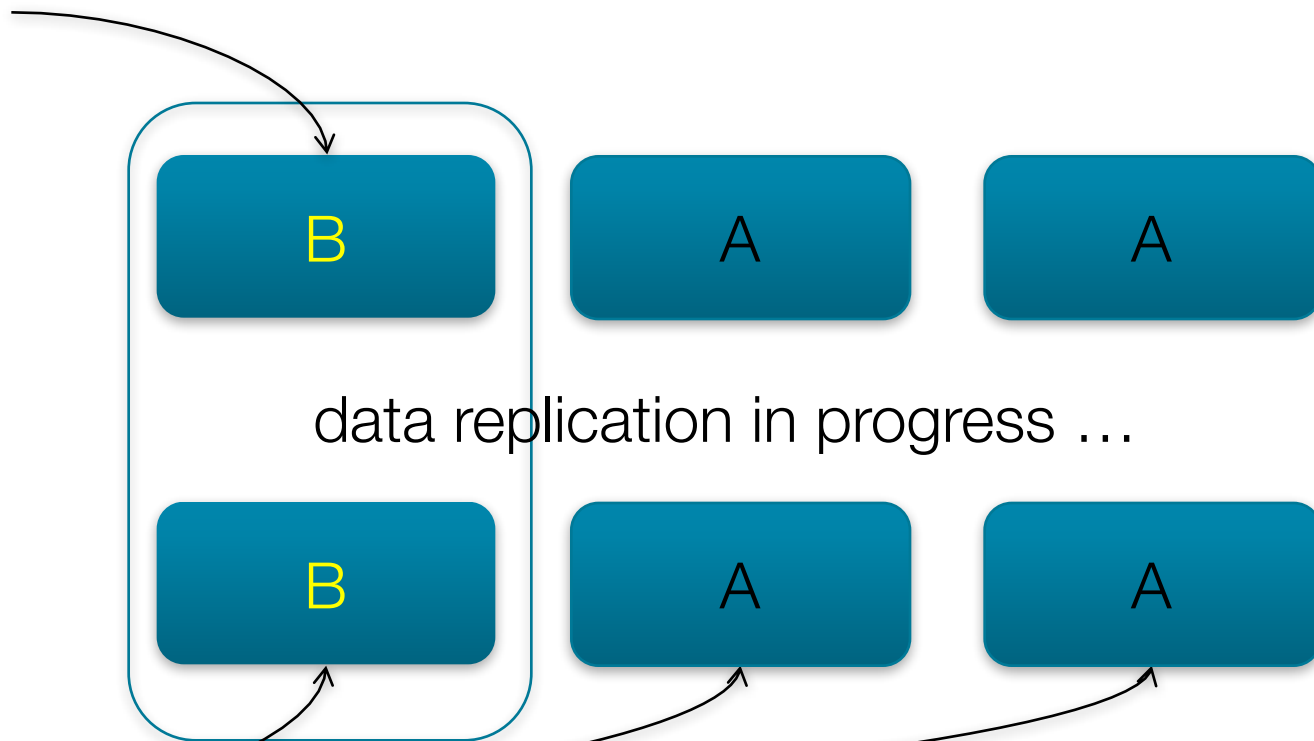
Read ALL: B

Consistency in action

RF = 3, Write QUORUM, Read ONE

Write QUORUM: B

| B | B | A |

data replication in progress …

| B | B | A |

Read ONE: A

DATASTAX
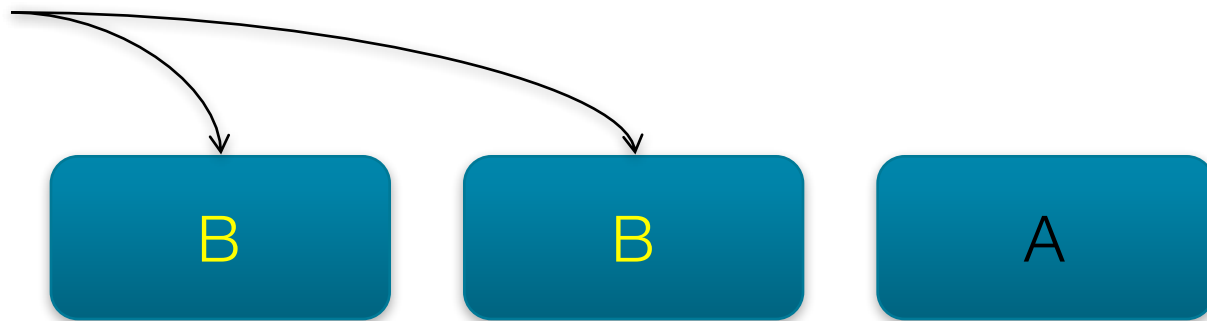
Consistency in action

RF = 3, Write QUORUM, Read QUORUM

Write QUORUM: B

| B | B | A |

data replication in progress …

| B | B | A |
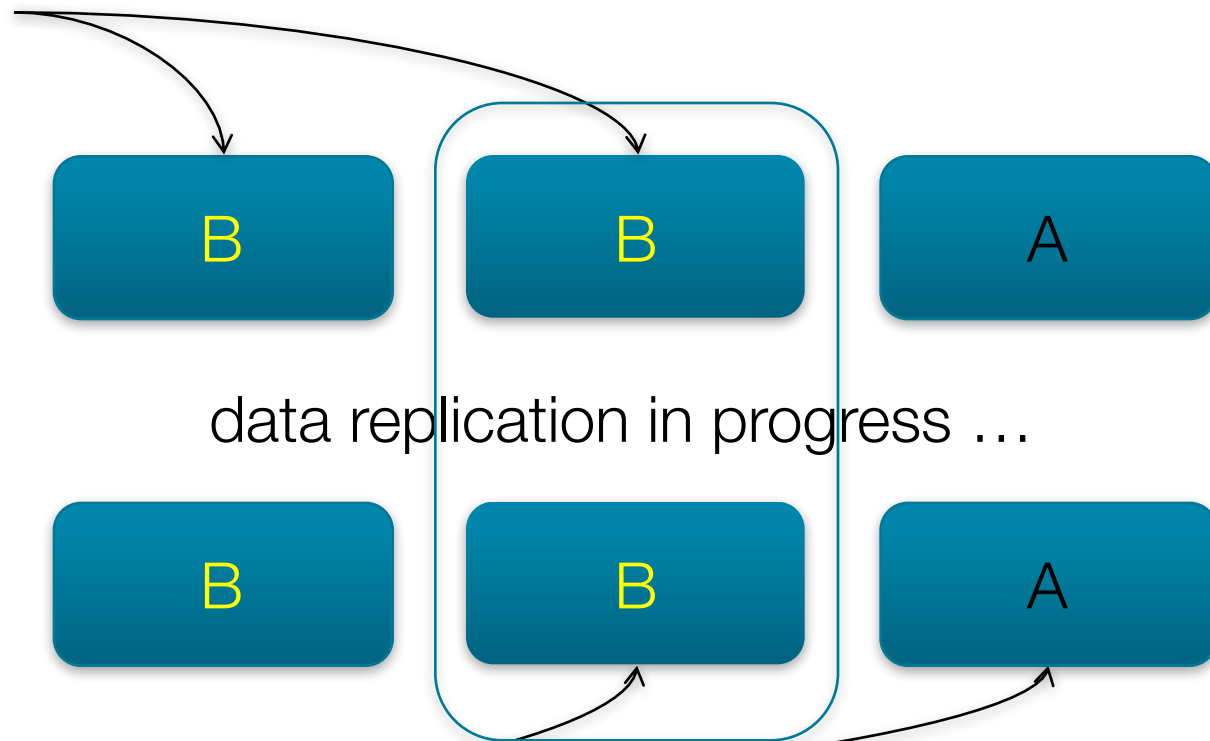
Read QUORUM: B

Consistency trade-off

Latency   **Consistency**

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

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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

Lab 4 : Hands-on Consistency

The power behind the moment. | DATASTAX

Thank You!