

Basic Kafka pairwise constraint discovery results

Constraint 1

```
run constraint1 {  
    #replicates = 0  
    #stores = 0  
}
```

Legal



Constraint 2

```
run constraint2 {  
    #replicates = 0  
    #stores = 1  
}
```

Executing "Run constraint2"

```
Solver=sat4j Bitwidth=4 MaxSeq=4 SkolemDepth=1 Symmetry=20  
312 vars. 27 primary vars. 690 clauses. 97ms.  
No instance found. Predicate may be inconsistent. 28ms.
```

Constraint 3

```
run constraint3 {  
    #replicates = 0  
    #stores >= 2  
}
```

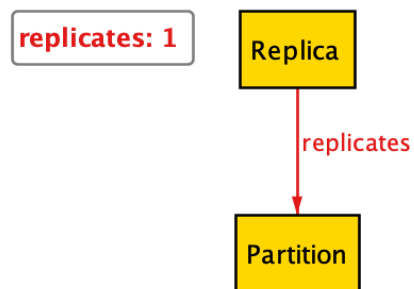
Executing "Run constraint3"

```
Solver=sat4j Bitwidth=4 MaxSeq=4 SkolemDepth=1 Symmetry=20  
316 vars. 27 primary vars. 690 clauses. 27ms.  
No instance found. Predicate may be inconsistent. 8ms.
```

Constraint 4

```
run constraint4 {  
    #replicates = 1  
    #stores = 0  
}
```

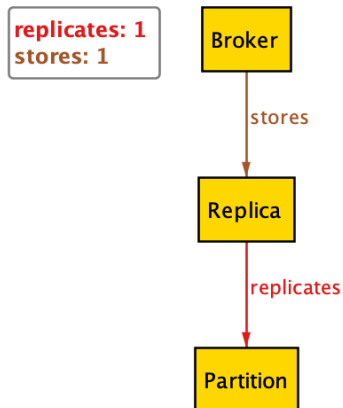
Legal



Constraint 5

```
run constraint5 {  
    #replicates = 1  
    #stores = 1  
}
```

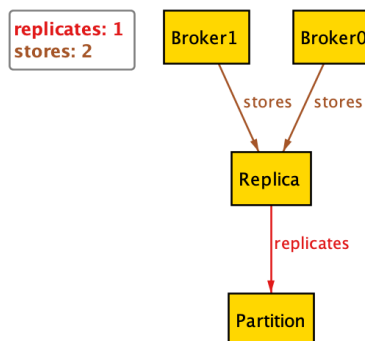
Legal



Constraint 6

```
run constraint6 {  
    #replicates = 1  
    #stores >= 2  
}
```

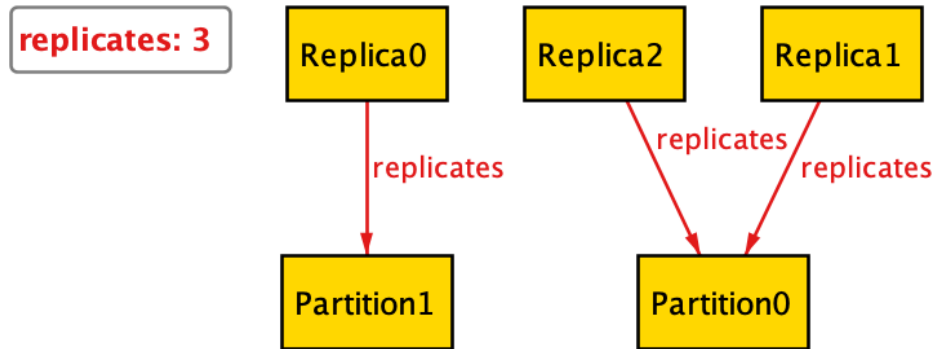
Illegal: Multiple brokers storing the same replica



Constraint 7

```
run constraint7 {  
    #replicates >= 2  
    #stores = 0  
}
```

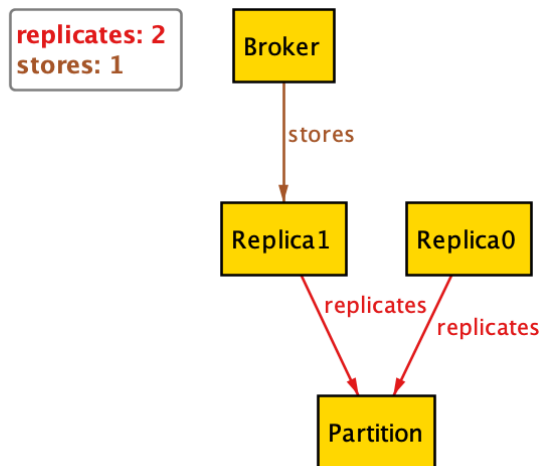
Legal



Constraint 8

```
run constraint8 {  
    #replicates >= 2  
    #stores = 1  
}
```

Legal



Constraint 9

```
run constraint9 {  
    #replicates >= 2  
    #stores >= 2  
}
```

Illegal: Same replica stored on multiple brokers

