

# OdysseusNet Replication

Here is described, how to replicate operators in OdysseusNet. It is slightly different than the replication of the peer feature in [Replication](#)

You can replicate all operators, which can be replicated, beginning upwards a operator in the plan (along the dataflow).

To do so, you have to specify the operatorid in the modification options:

```
#NODE_MODIFICATION REPLICATION [OPERATOR_ID] <REPLICATION_DEGREE>
```

And specify the id of a operator:

```
OUTPUT_STREAM = OPERATOR({OPTIONS, ID='OPERATOR_ID'}, INPUT_STREAM)
```

E. g. the following query only replicates the JOIN-Operator:

```

#PARSER PQL
#CONFIG DISTRIBUTE true

#NODE_PARTITION OPERATORCLOUD          /// Select OperatorCloud strategy for Partition phase
#NODE_MODIFICATION REPLICATION window2 2      /// Select Replication strategy for Modification phase (with
replication degree 2 and operator window2 to begin (exclusive) replication with)
#NODE_ALLOCATION QUERYCOUNT              /// Select User-strategy for Allocation phase
#NODE_PREPROCESSOR APPEND_KAFKA
///#WORKER_TARGET_PARAMETER (host=localhost:29092)
#WORKER_TARGET_PARAMETER (host=broker:9092)

#RUNQUERY
nexmark:auction = ACCESS({source='nexmark:auction',
    wrapper='GenericPush',
    transport='TCPClient',
    protocol='SizeByteBuffer',
    dataHandler='Tuple',
    options=[
        ['host', 'nexmark'],
        ['port', '65441'],
        ['ByteOrder', 'LittleEndian']
    ],
    schema=[
        ['timestamp', 'STARTTIMESTAMP'],
        ['id', 'INTEGER'],
        ['itemname', 'STRING'],
        ['description', 'STRING'],
        ['initialbid', 'INTEGER'],
        ['reserve', 'INTEGER'],
        ['expires', 'LONG'],
        ['seller', 'INTEGER'],
        ['category', 'INTEGER']
    ]
})

nexmark:bid = ACCESS({source='nexmark:bid',
    wrapper='GenericPush',
    transport='TCPClient',
    protocol='SizeByteBuffer',
    dataHandler='Tuple',
    options=[
        ['host', 'nexmark'],
        ['port', '65442'],
        ['ByteOrder', 'LittleEndian']
    ],
    schema=[
        ['nexmark:bid','timestamp', 'STARTTIMESTAMP'],
        ['nexmark:bid','auction', 'INTEGER'],
        ['nexmark:bid','bidder', 'INTEGER'],
        ['nexmark:bid','datetime', 'LONG'],
        ['nexmark:bid','price', 'DOUBLE']
    ]
})

windowed_auction = TIMEWINDOW({SIZE=10000, SLIDE=10000},nexmark:auction)
windowed_bid = TIMEWINDOW({SIZE=10000, SLIDE=10000, ID='window2'},nexmark:bid)

out = JOIN({
    PREDICATE='id = auction'
},
    windowed_auction,
    windowed_bid
)

```