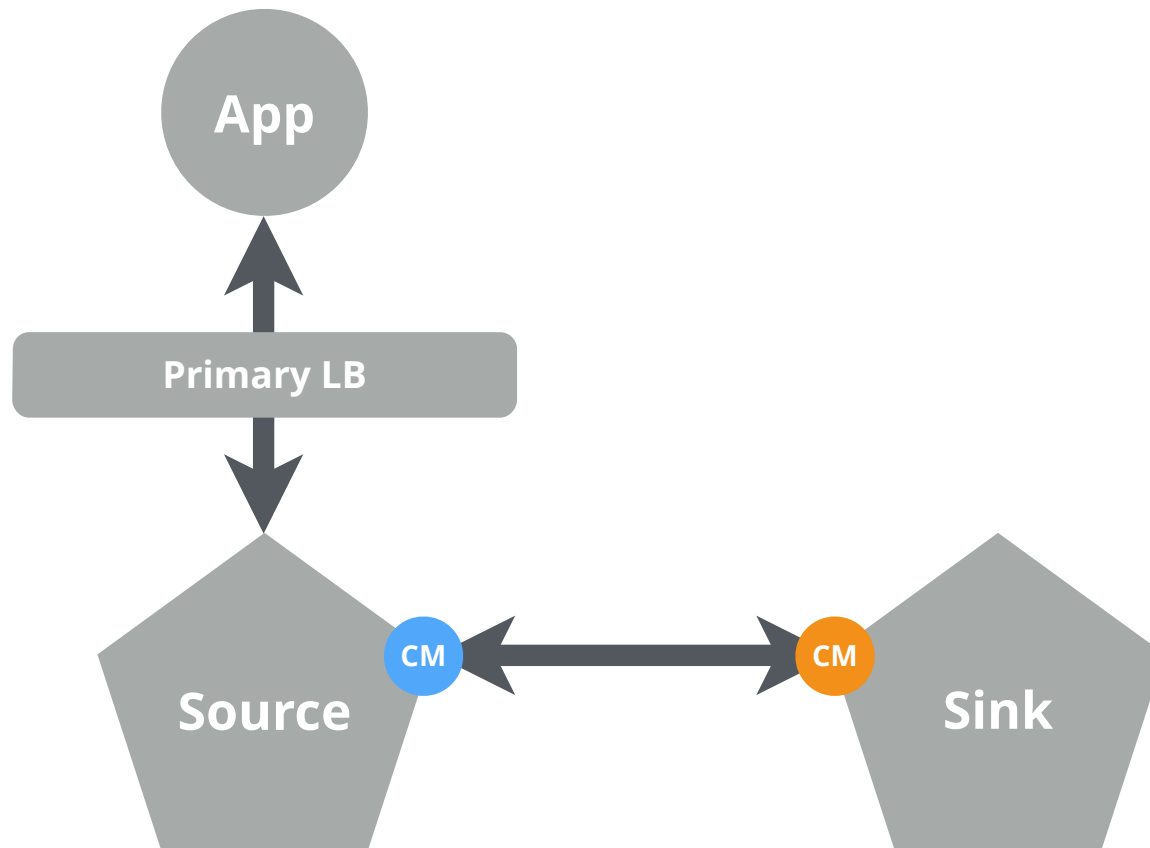


Multi Data Center

MDC Terms



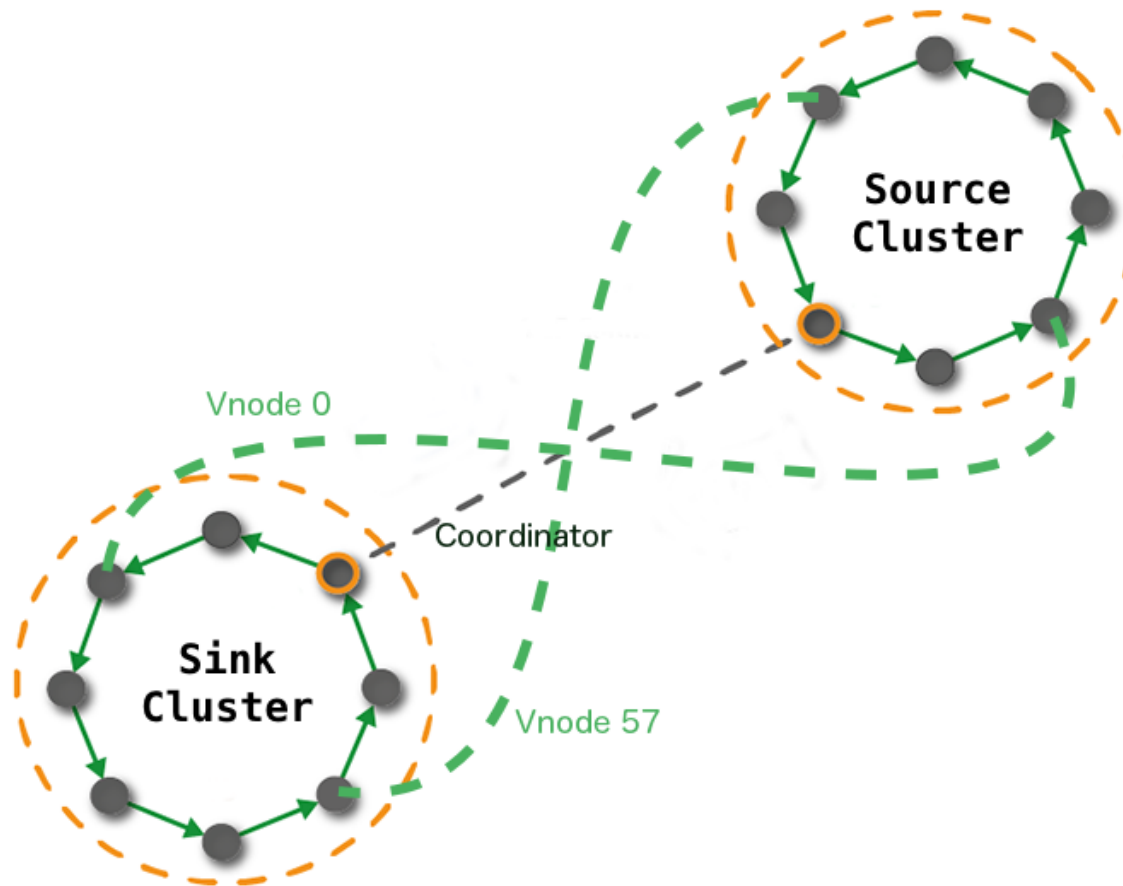
MDC Terms

- Source Cluster - Producer of replication data
- Sink Cluster - Consumer of replication data
- Cluster Manager - Enterprise Edition service providing node and protocol info
- Fullsync Coordinator - Node responsible for fullsync between source & sink
- Leader Election - Process to determine fullsync coordinator

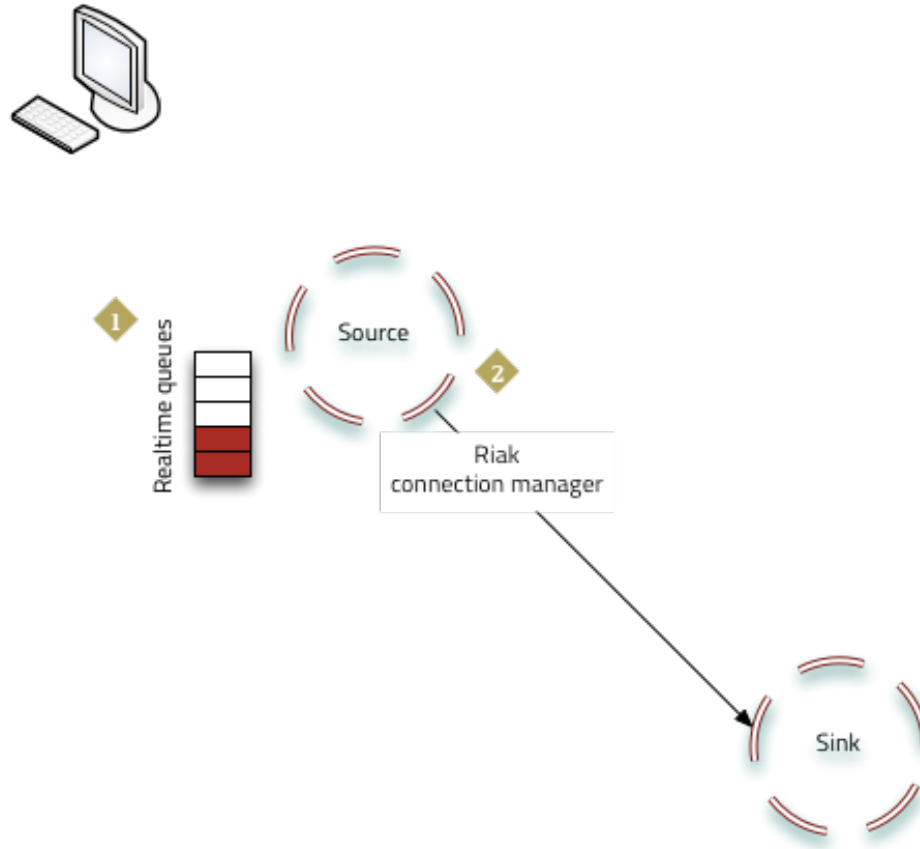
MDC Terms

- Fullsync Replication - Per partition synchronisation from source to sink
- Realtime Replication - Per node replication of requests on source to sink
- Realtime Queue - per node queue of requests to send to sink

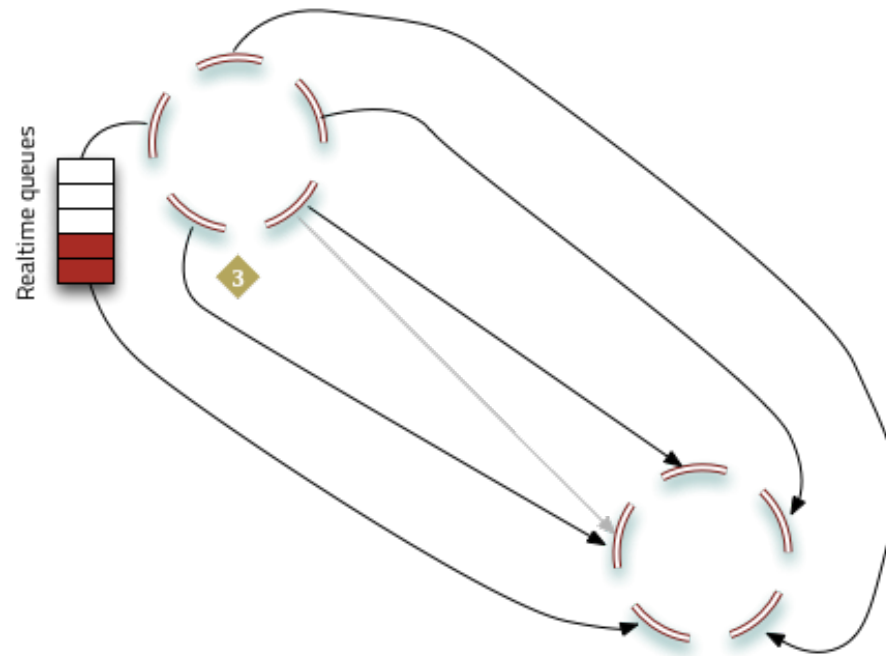
Fullsync



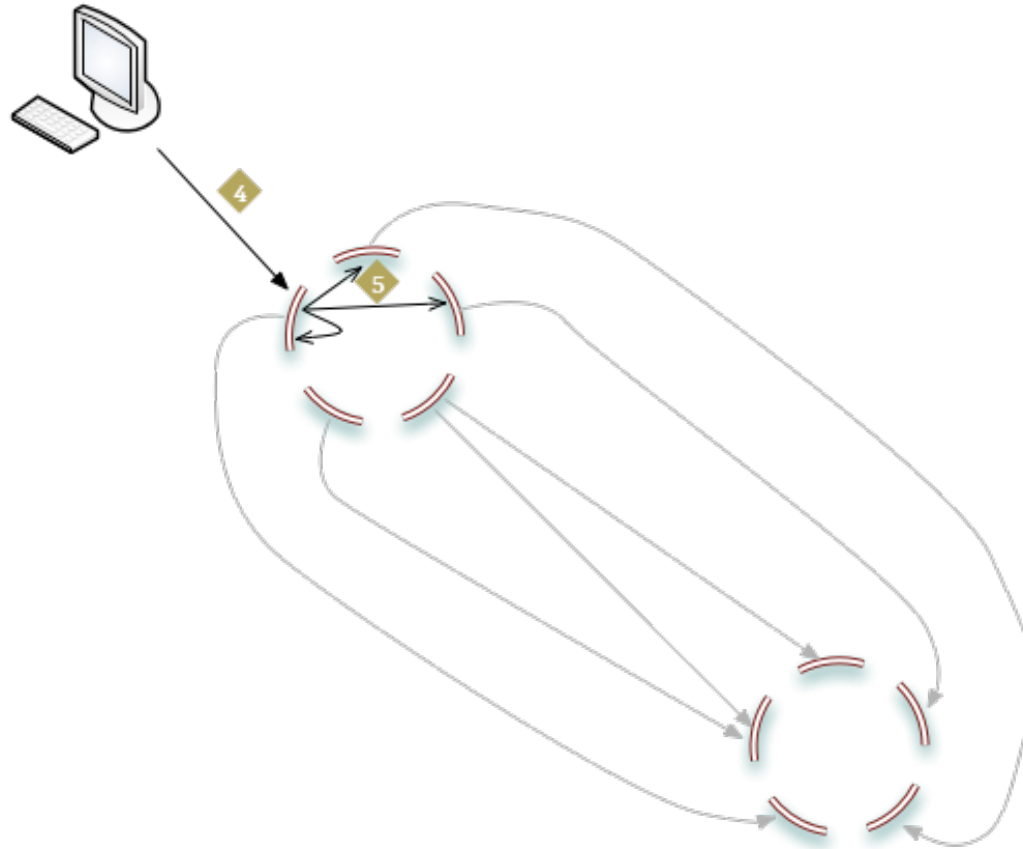
Realtime



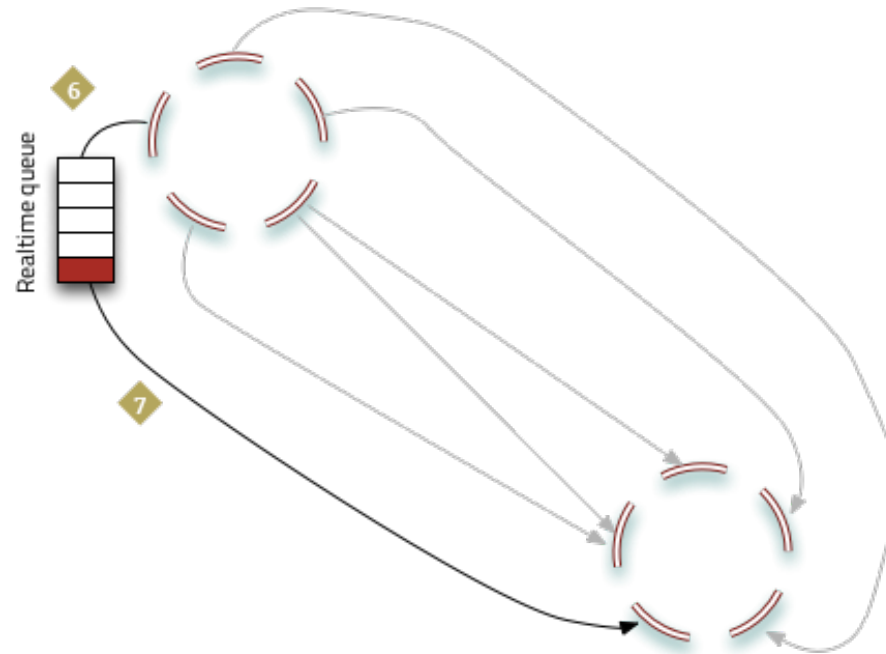
Realtime



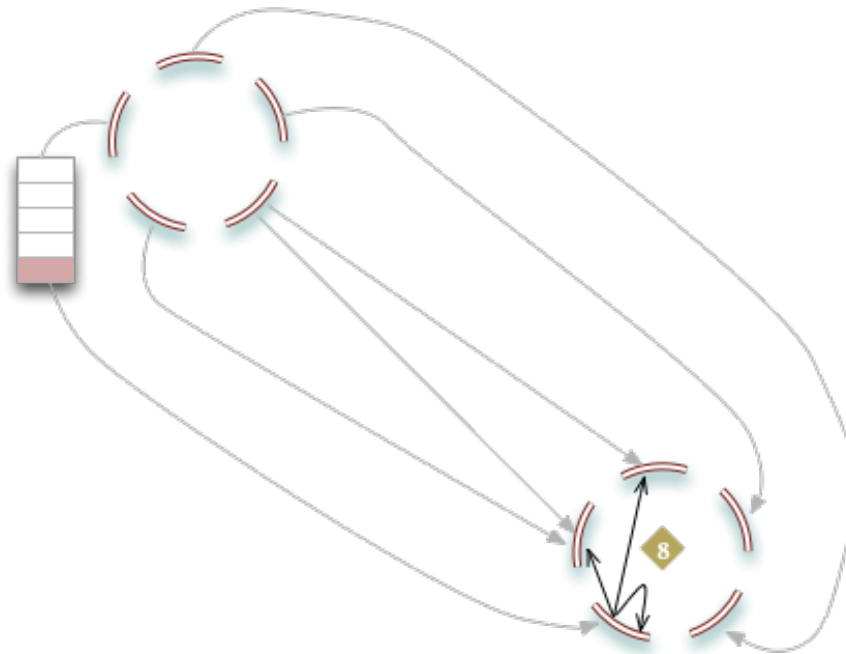
Realtime



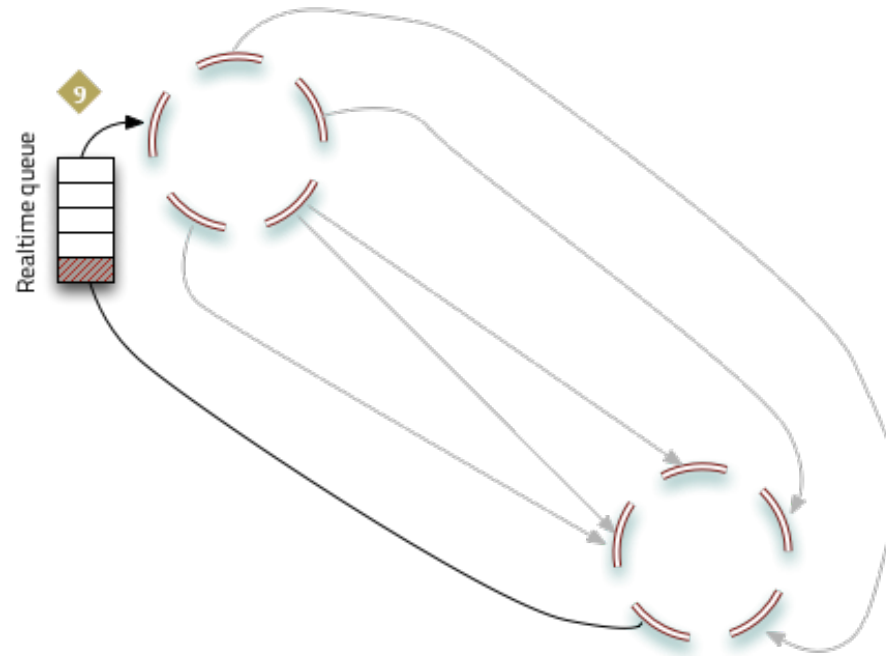
Realtime



Realtime



Realtime



Connecting Clusters

```
# name each cluster
$ riak-repl clustername Cluster1

# connect to Cluster Manager port on Sink
$ riak-repl connect <sink_ip>:<port>

# check one way connection is active
$ riak-repl connections

# (connect in other direction)
```

Repl Commands

```
$ riak-repl clustername <localname>
$ riak-repl modes <modelist>
$ riak-repl connect <host:port>
$ riak-repl disconnect {<host:port> | clustername}
$ riak-repl connections
$ riak-repl realtime enable <clustername>
$ riak-repl realtime disable <clustername>
$ riak-repl realtime start <clustername>
$ riak-repl realtime stop <clustername>
$ riak-repl fullsync enable <clustername>
$ riak-repl fullsync disable <clustername>
$ riak-repl fullsync start <clustername>
$ riak-repl fullsync stop <clustername>
$ riak-repl fullsync max_fssource_node <value>
$ riak-repl fullsync max_fssource_cluster <value>
$ riak-repl fullsync max_fssink_node <value>
```



Realtime Queue

```
$ riak-repl status | grep -A7 realtime_queue
```

```
realtime_queue_stats: [{bytes,720},  
                        {max_bytes,104857600},  
                        {consumers,[{"c2",  
                                     [{pending,0},  
                                     {unacked,0},  
                                     {drops,0},  
                                     {errs,0}]}]},  
                        {overload_drops,0}]
```



Repl Configuration

```
{riak_core, [  
    %% Every *node* runs one cluster_mgr.  
    {cluster_mgr, {"0.0.0.0", 9080 }},  
    ...  
]},  
{riak_repl, [  
    % Pick the correct data_root for your platform  
    % Debian/Centos/RHEL:  
    {data_root, "/var/lib/riak/data/riak_repl"},  
    % Solaris:  
    % {data_root, "/opt/riak/data/riak_repl"},  
    % FreeBSD/SmartOS:  
    % {data_root, "/var/db/riak/riak_repl"},  
    {max_fssource_cluster, 5},  
    {max_fssource_node, 2},  
    {max_fssink_node, 2},  
    {fullsync_on_connect, false}  
]}
```



Fullsync Configuration

- `max_fssource_cluster`
- `max_fssource_node`
- `max_fssink_node`

Realtime Configuration

- `rtq_max_bytes` (104857600 / 100MB)
- `rt_heartbeat_interval` (15 secs)
- `rt_heartbeat_timeout` (15 secs)

Fullsync Configuration

```
%% fullsync_on_connect defaults to true
{riak_repl, [
    {fullsync_on_connect, false}
]}

%% fullsync_interval
{riak_repl, [
    {data_root, "/configured/repl/data/root"},
    {fullsync_interval, 90} %% fullsync runs every 90 minutes
]}

%% fullsync_interval (multiple)
{riak_repl, [
    {data_root, "/configured/repl/data/root"},
    {fullsync_interval, [
        {"sink_boston", 120},
        {"sink_newyork", 90}
    ]}
]}
```



Fullsync Logging

```
@riak_repl2_fscoordinator_sup:start_coord:24 Starting replication  
coordination "c2"  
@riak_repl_util:start_fullsync_timer:608 Fullsync for "c2"  
scheduled in 360 minutes  
@riak_core_connection:try_ssl:208 "c1" and "c2" agreed to not use  
SSL  
@riak_repl2_fscoordinator:handle_cast:260 fullsync coordinator  
connected to "c2"
```

Use Cases

- Fullsync for regular backup to single node / smaller cluster
- Fullsync to catch up busy realtime or network connectivity issues
- Realtime and Fullsync for cluster mirroring

Repl Per Bucket

- Per bucket repl in bucket props
 - true (default)
 - both (same as true)
 - realtime
 - fullsync
 - false