



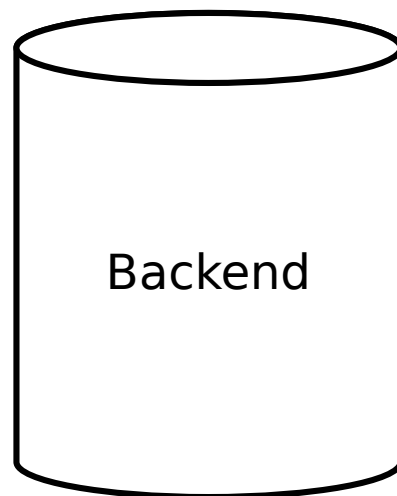
DE LA RECHERCHE À L'INDUSTRIE

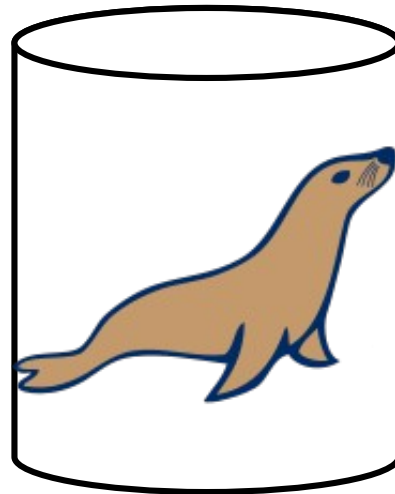
RobinHood-v4 progress report

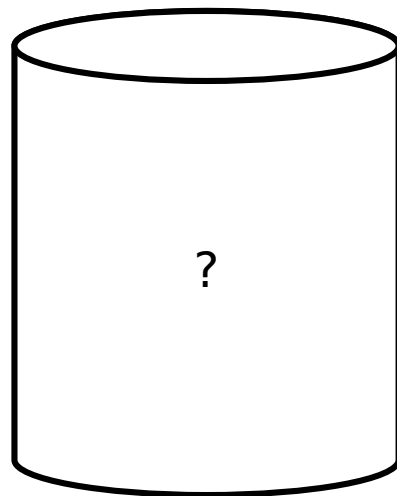
What is RobinHood?

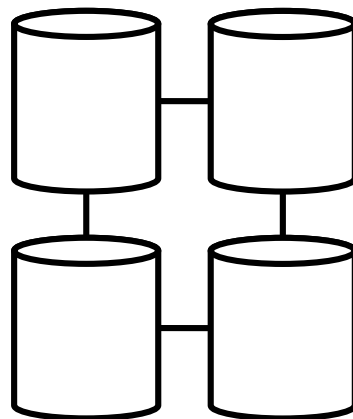
RobinHood mirrors a filesystem's metadata,
and makes it queryable

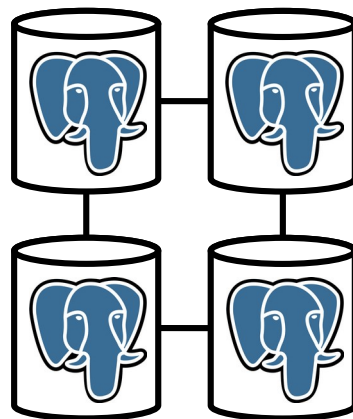
- Mirror
 - Read Replica
 - Snapshot
 - Disaster Recovery
- Query
 - Expressiveness
 - Performance
 - Efficiency

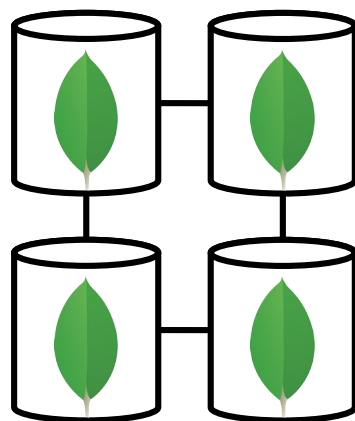


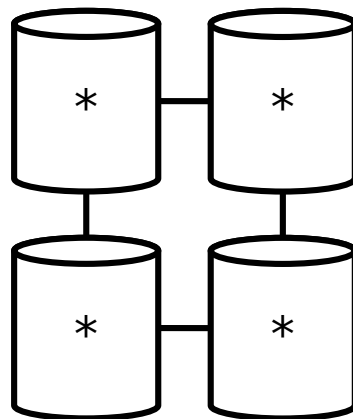


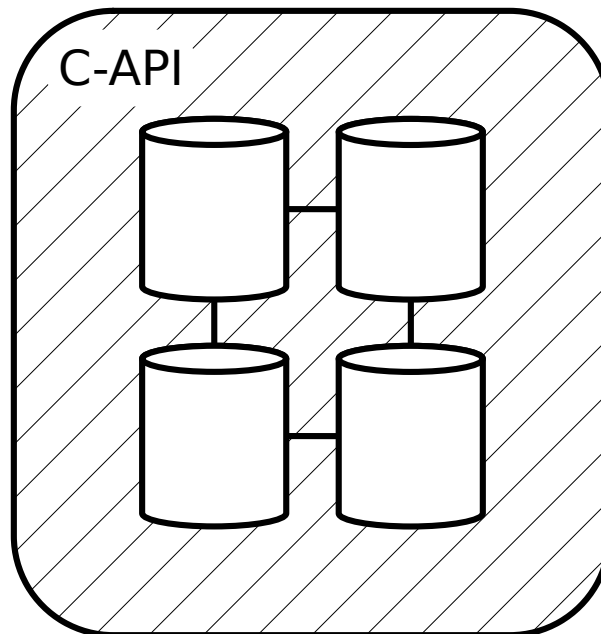


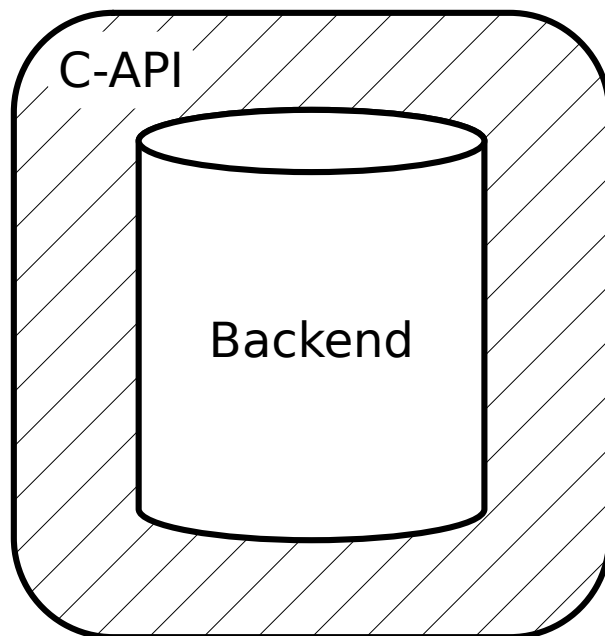


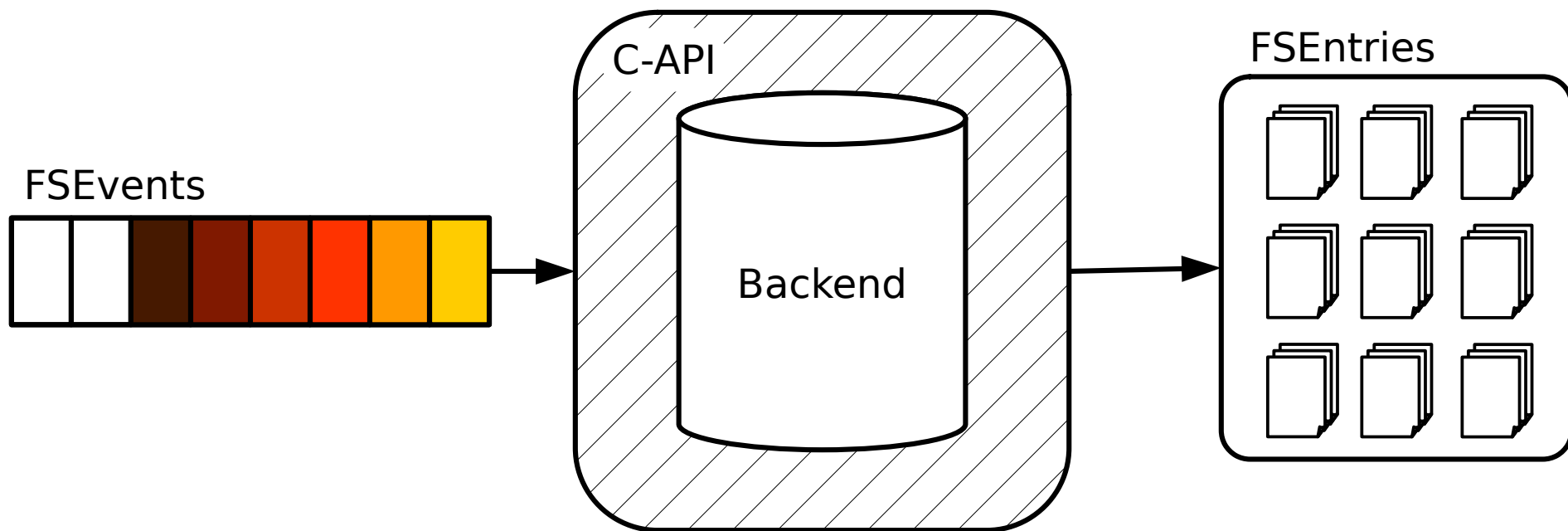


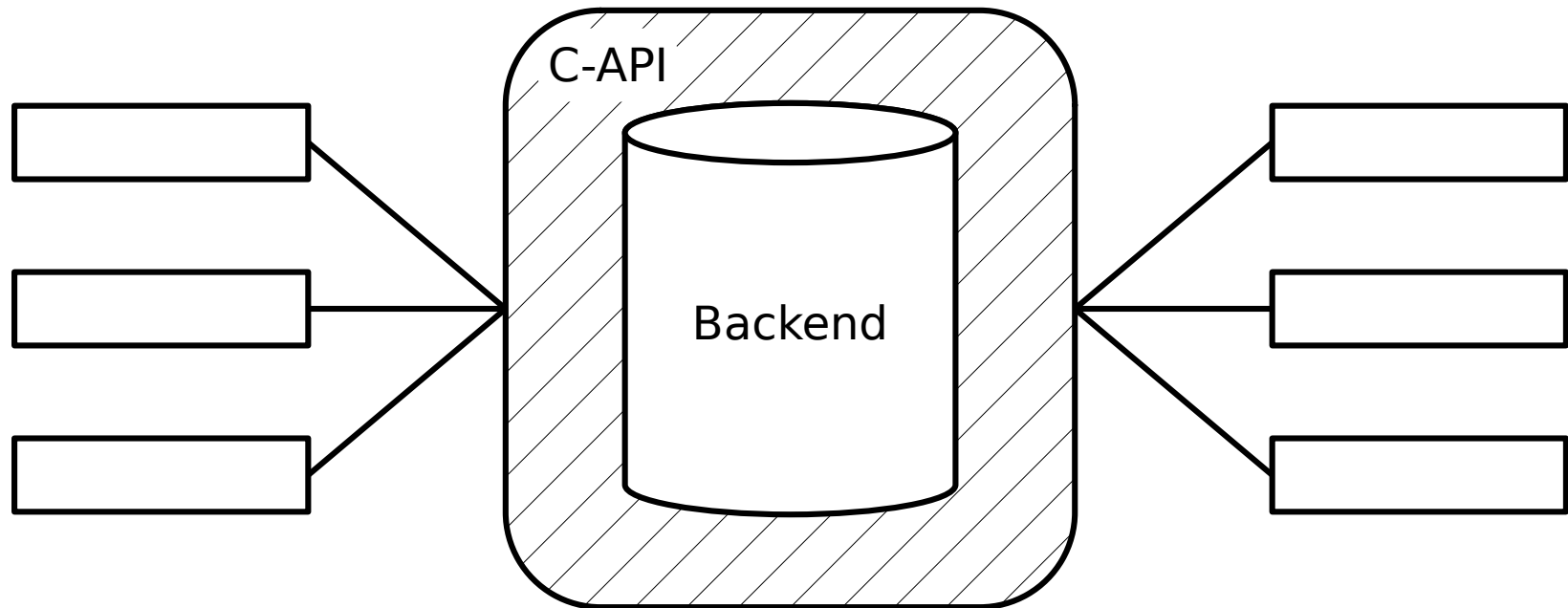








IN**OUT**



Applications

rbh-sync

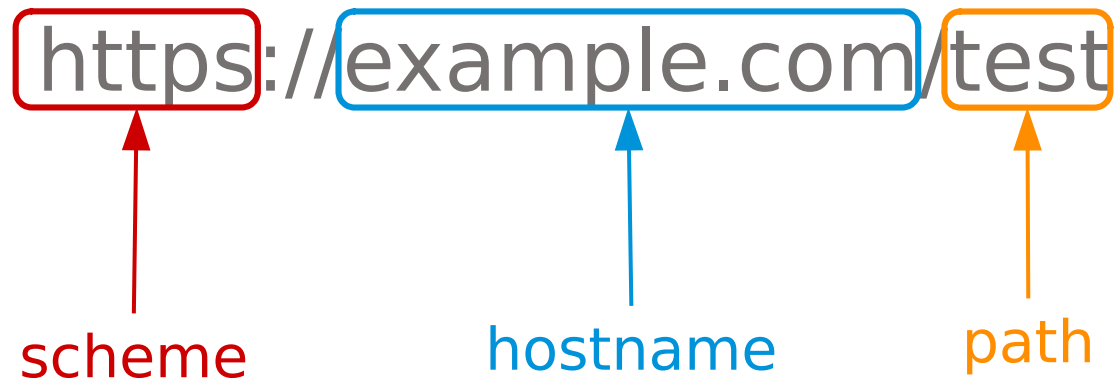
rbh-sync synchronizes two RobinHood
backends

rbh-sync SRC DEST

```
rbh-sync rbh:posix:/mnt/scratch rbh:mongo:scratch
```

- Uniform Resource Identifier
- RFC 3986:
scheme:[//[userinfo@]host[:port]]path

<https://example.com/test>



rbh:mongo:scratch

rbh:mongo:scratch

The diagram shows the URI 'rbh:mongo:scratch' with two labels and arrows pointing to its components. The label 'scheme' is in red and points to 'rbh', which is enclosed in a red rounded rectangle. The label 'path' is in orange and points to 'mongo:scratch', which is enclosed in an orange rounded rectangle.

rbh:mongo:scratch

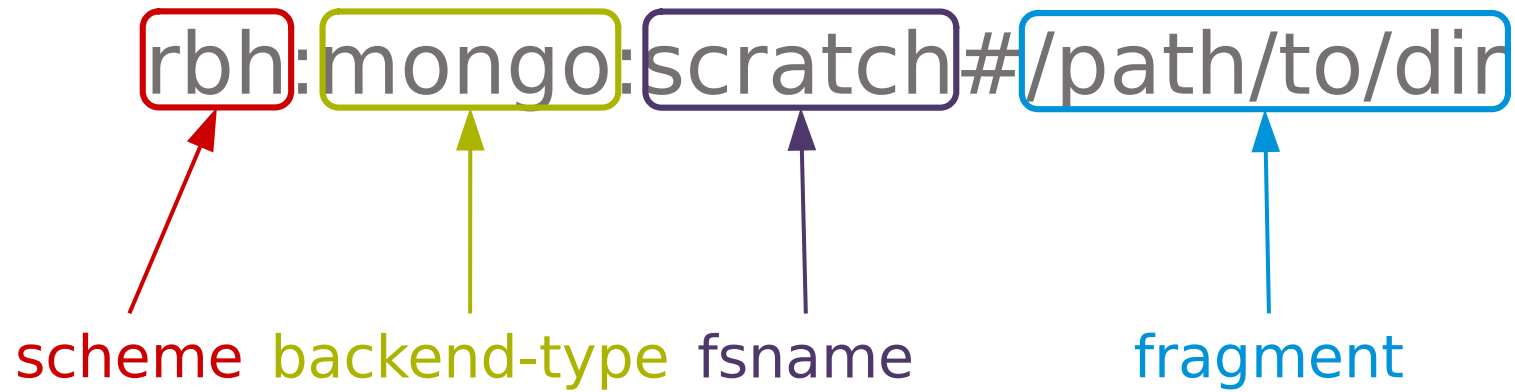
The diagram shows the URI 'rbh:mongo:scratch' with three colored boxes highlighting its components: a red box around 'rbh', a green box around 'mongo', and a purple box around 'scratch'. Below each box is an arrow pointing to a label: a red arrow points from the 'rbh' box to the label 'scheme', a green arrow points from the 'mongo' box to the label 'backend-type', and a purple arrow points from the 'scratch' box to the label 'fname'.

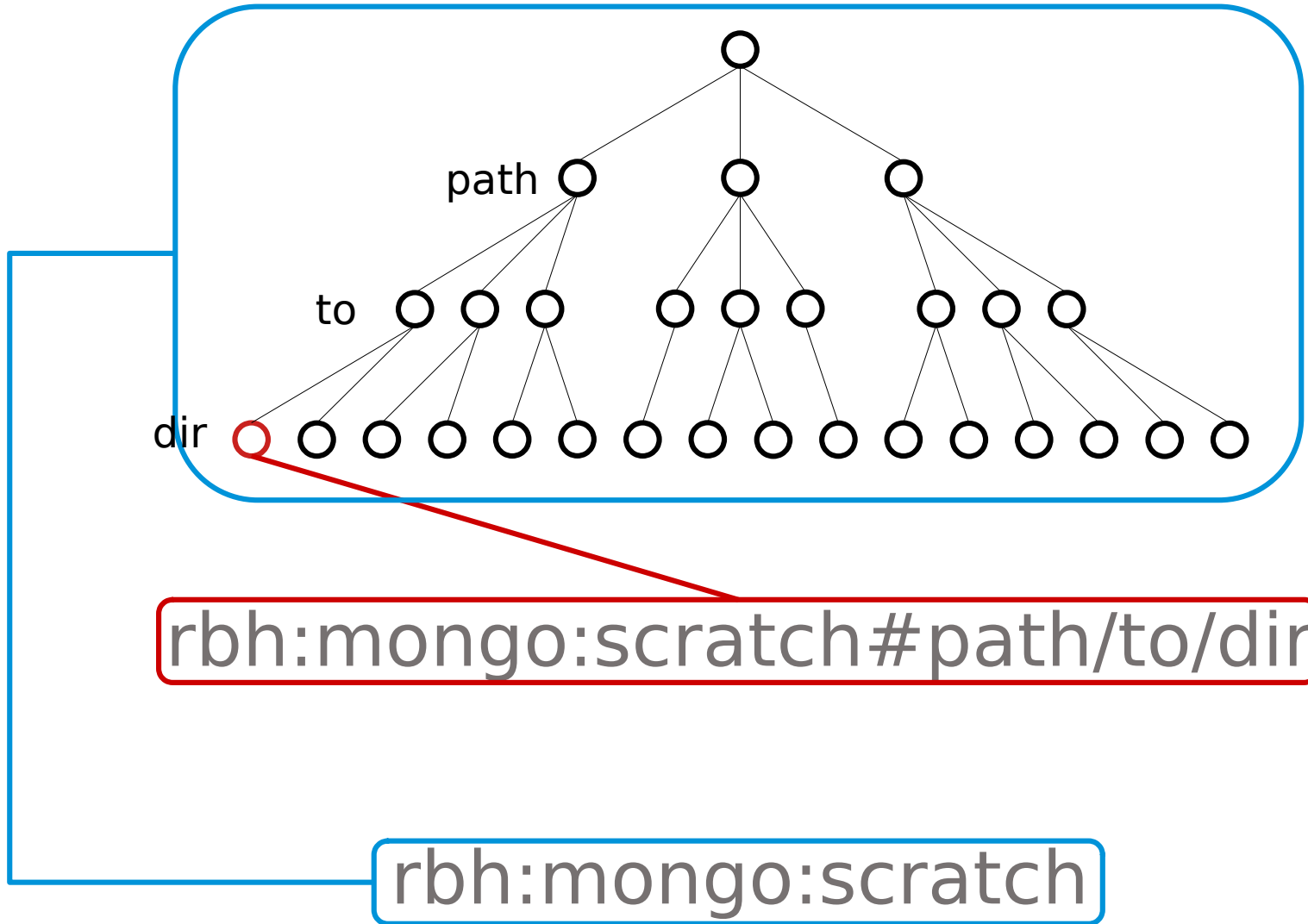
scheme backend-type fname

rbh:mongo:scratch#/path/to/dir

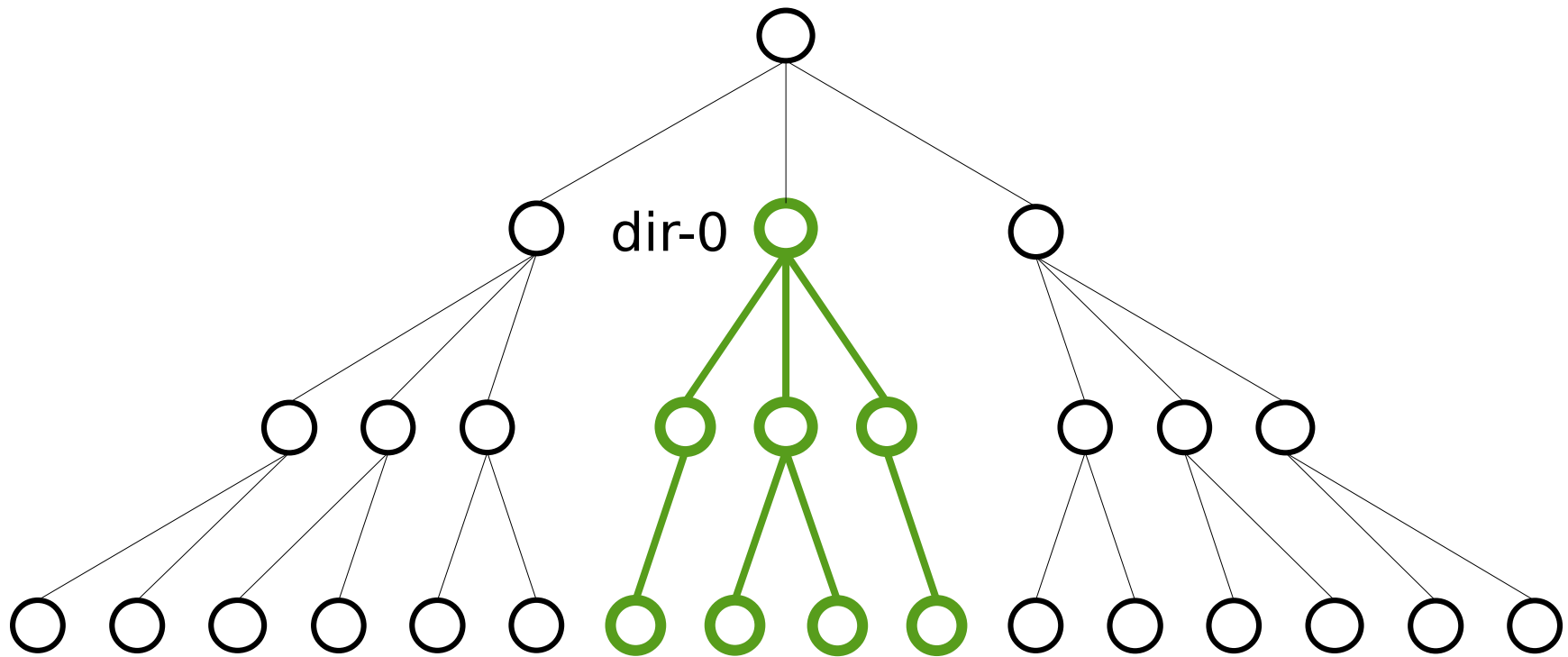
The diagram shows the URI `rbh:mongo:scratch#/path/to/dir` with three colored boxes highlighting the components: a red box around `rbh`, a green box around `mongo`, and a blue box around `scratch`. Below each box is an arrow pointing to a label: a red arrow points to `rbh` with the label `scheme` in red; a green arrow points to `mongo` with the label `backend-type` in green; and a blue arrow points to `scratch` with the label `fname` in blue.

scheme backend-type fname

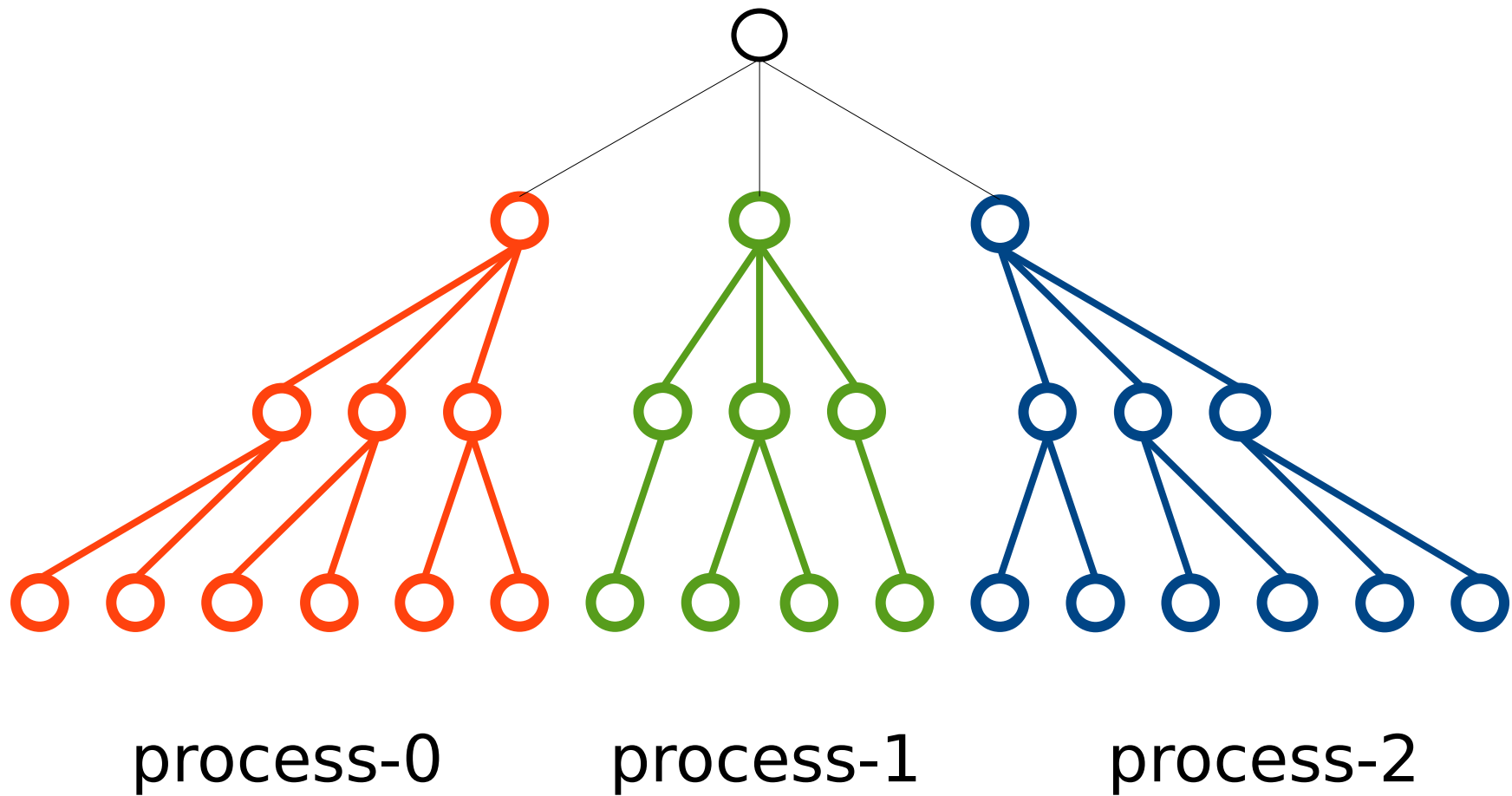




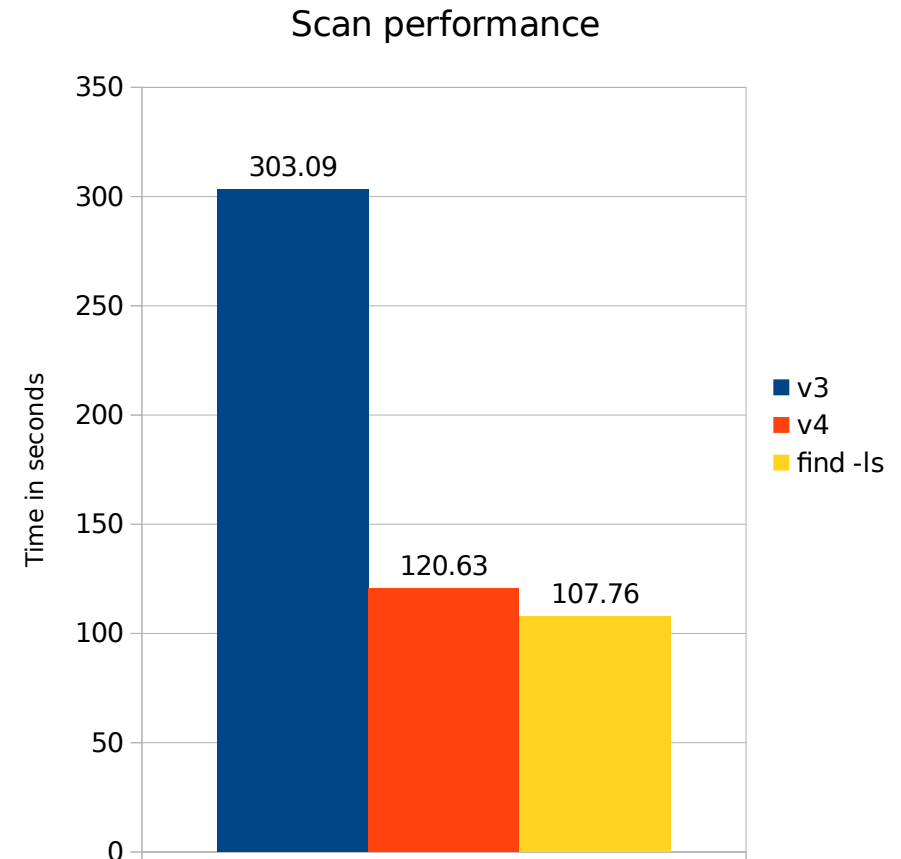
```
rbh-sync rbh:posix:/mnt/scratch#dir-0 \  
        rbh:mongo:scratch
```



```
cd /mnt/scratch
for dir in *; do
    rbh-sync posix:/mnt/scratch#"$dir" mongo:scratch &
done
wait
```

- 1 node:
 - 16 cores
- Lustre on RAM:
 - 1 MDT
 - 8 OSTs
 - Cold cache
- Filetree structure:
 - 4 levels of dirs
 - Branching factor of 16
 - 5th level: ~1M files of 1KiB each



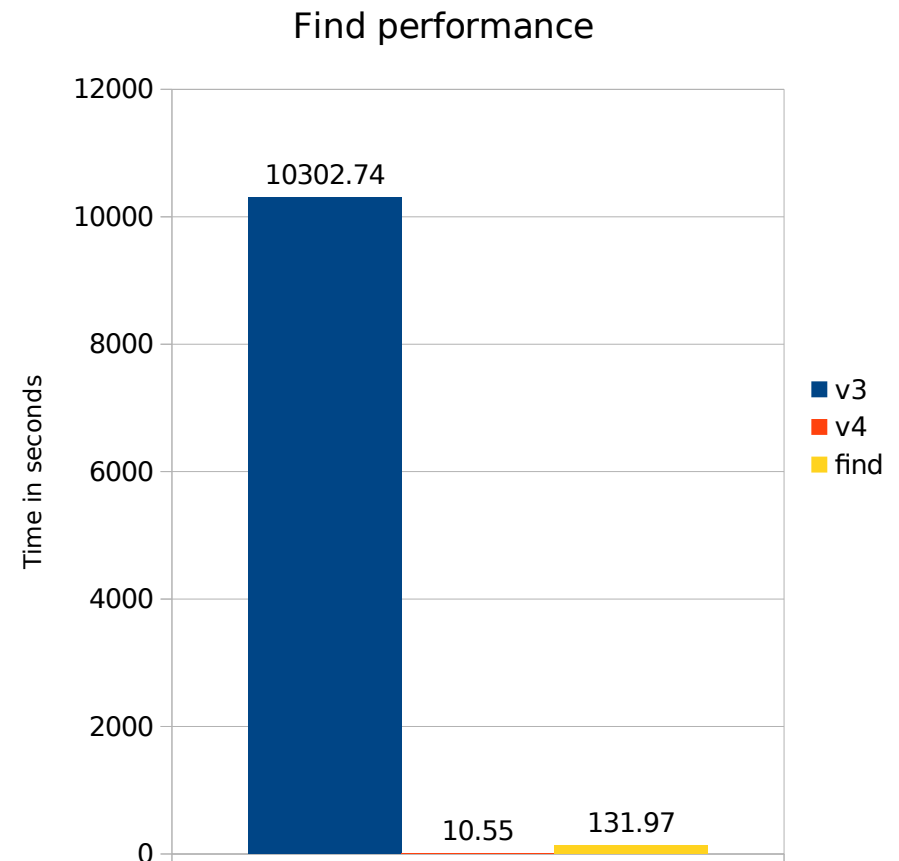
rbh-find

A clone of (gnu-)find that queries RobinHood

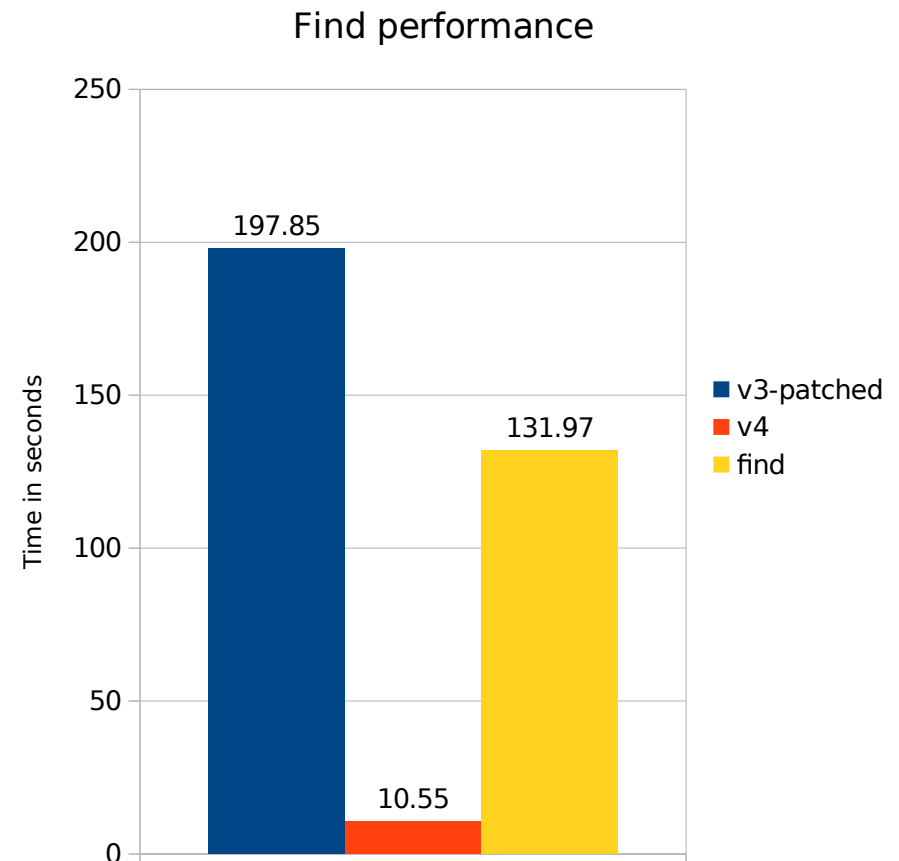
rbh-find [URI ...] [[predicates] [actions] ...]

```
rbh-find rbh:mongo:scratch -name 'a*' -print0
```

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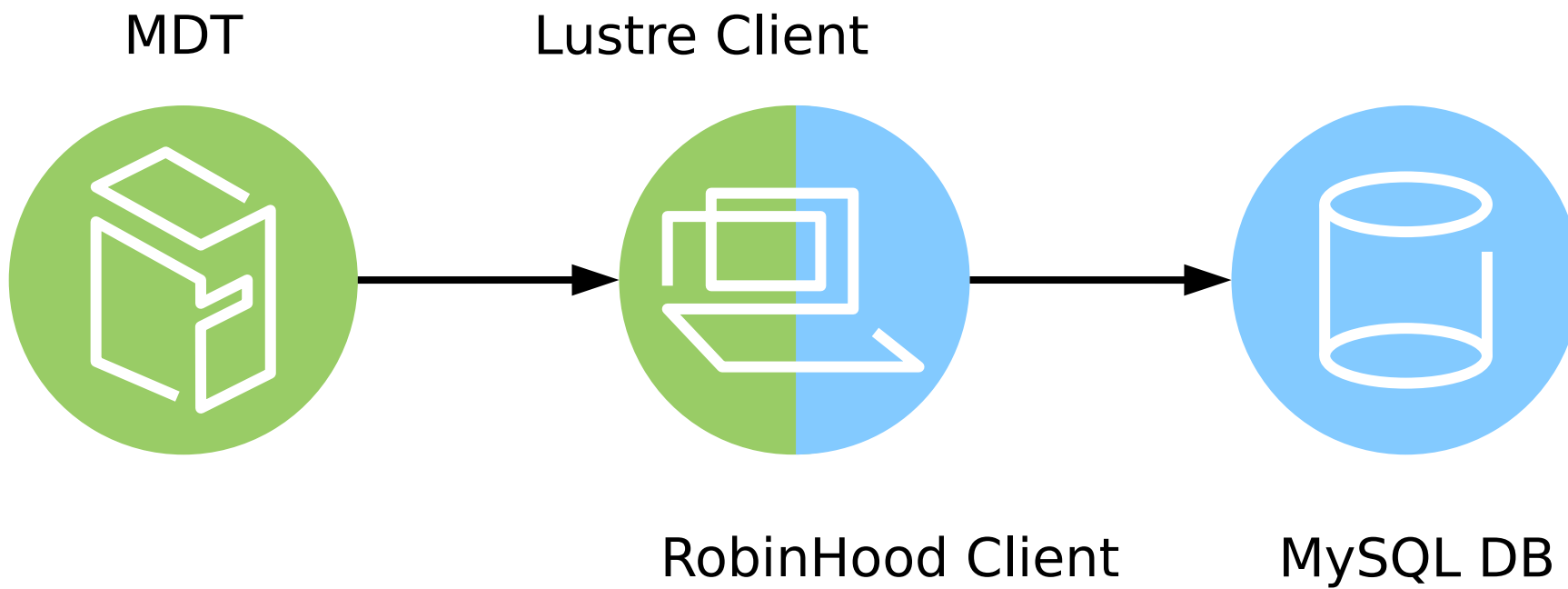
rbh-fsevent

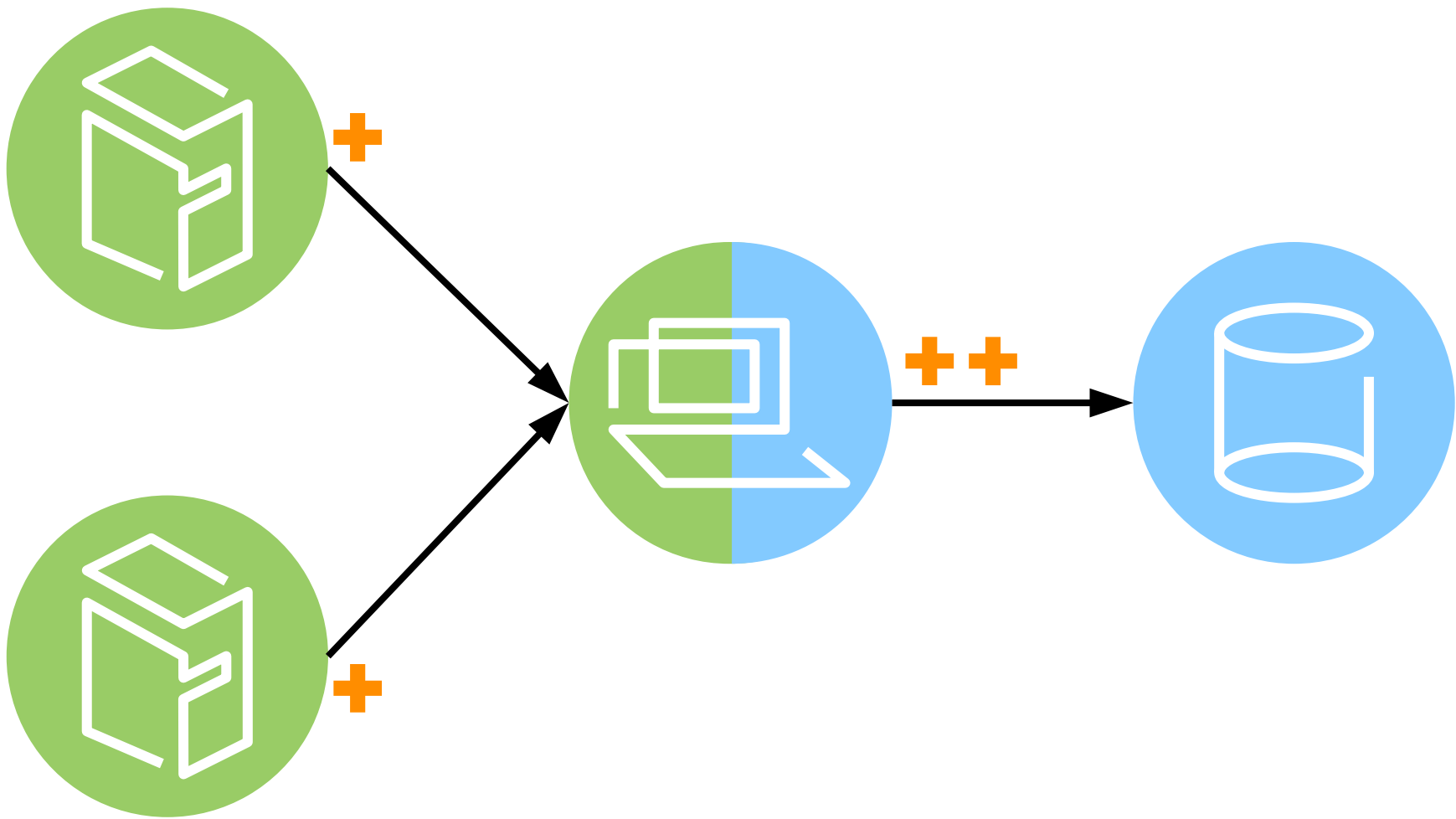
Apply filesystem events on a RobinHood backend

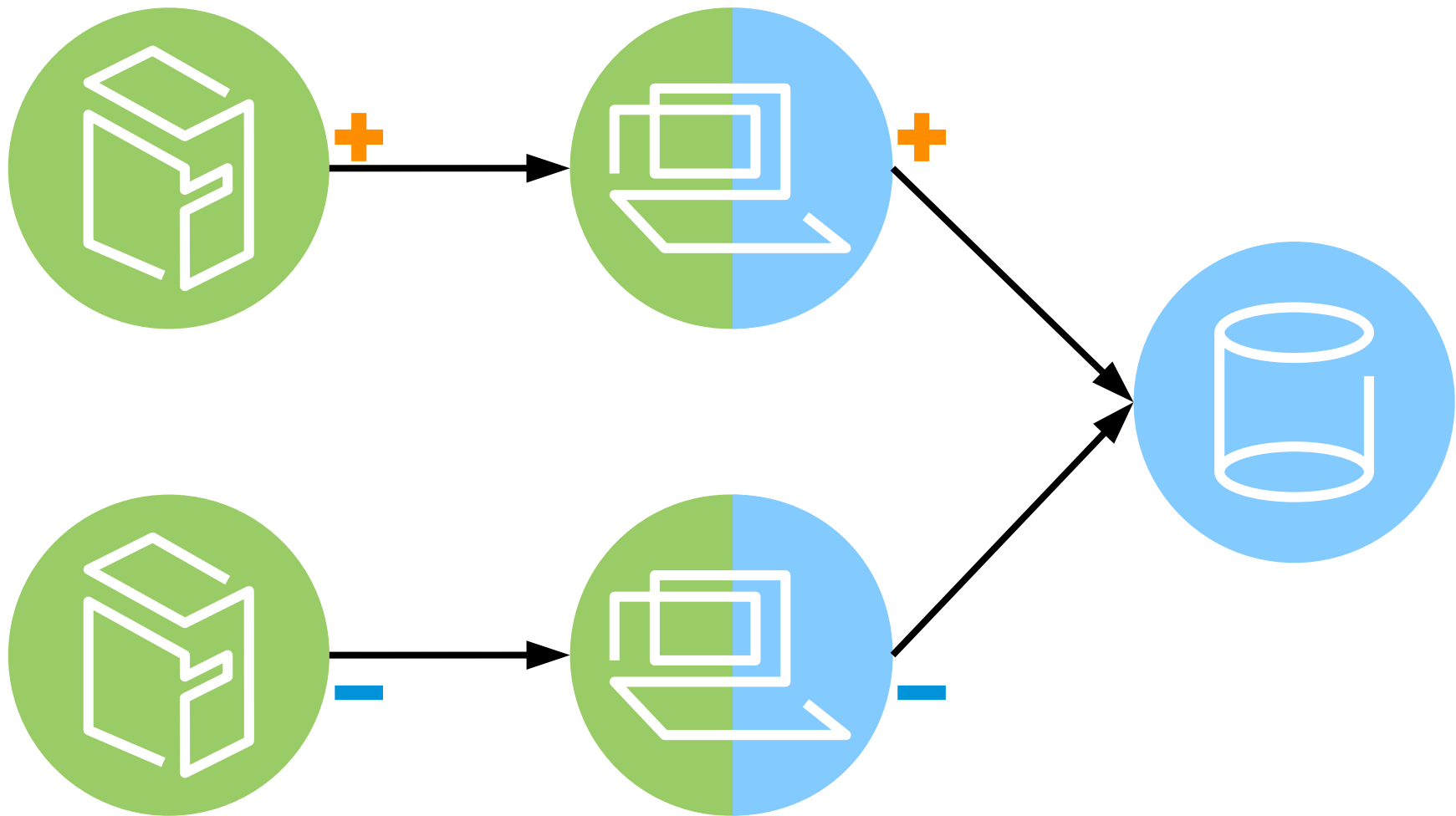
TODO

Changelog processing

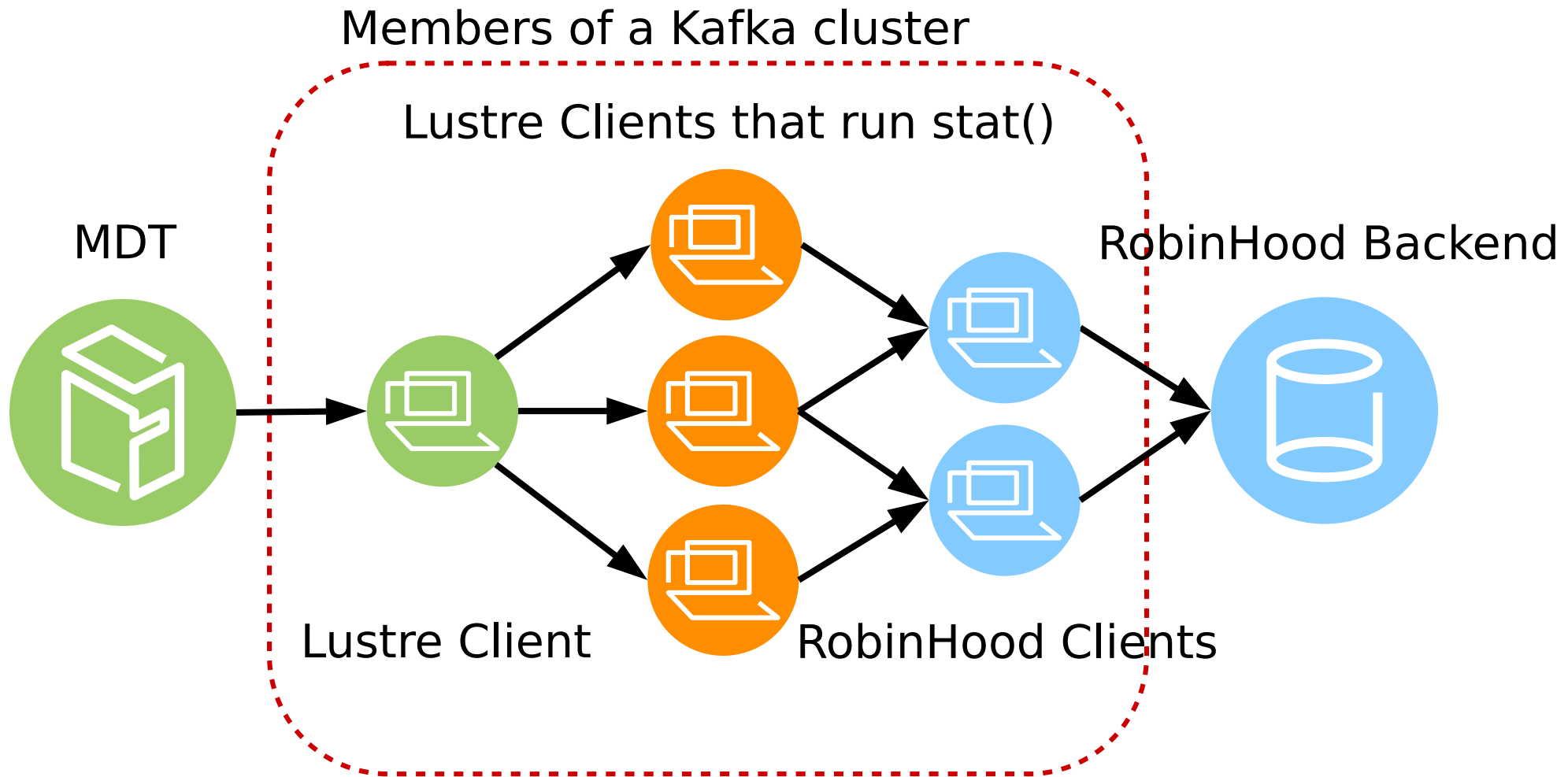
Before

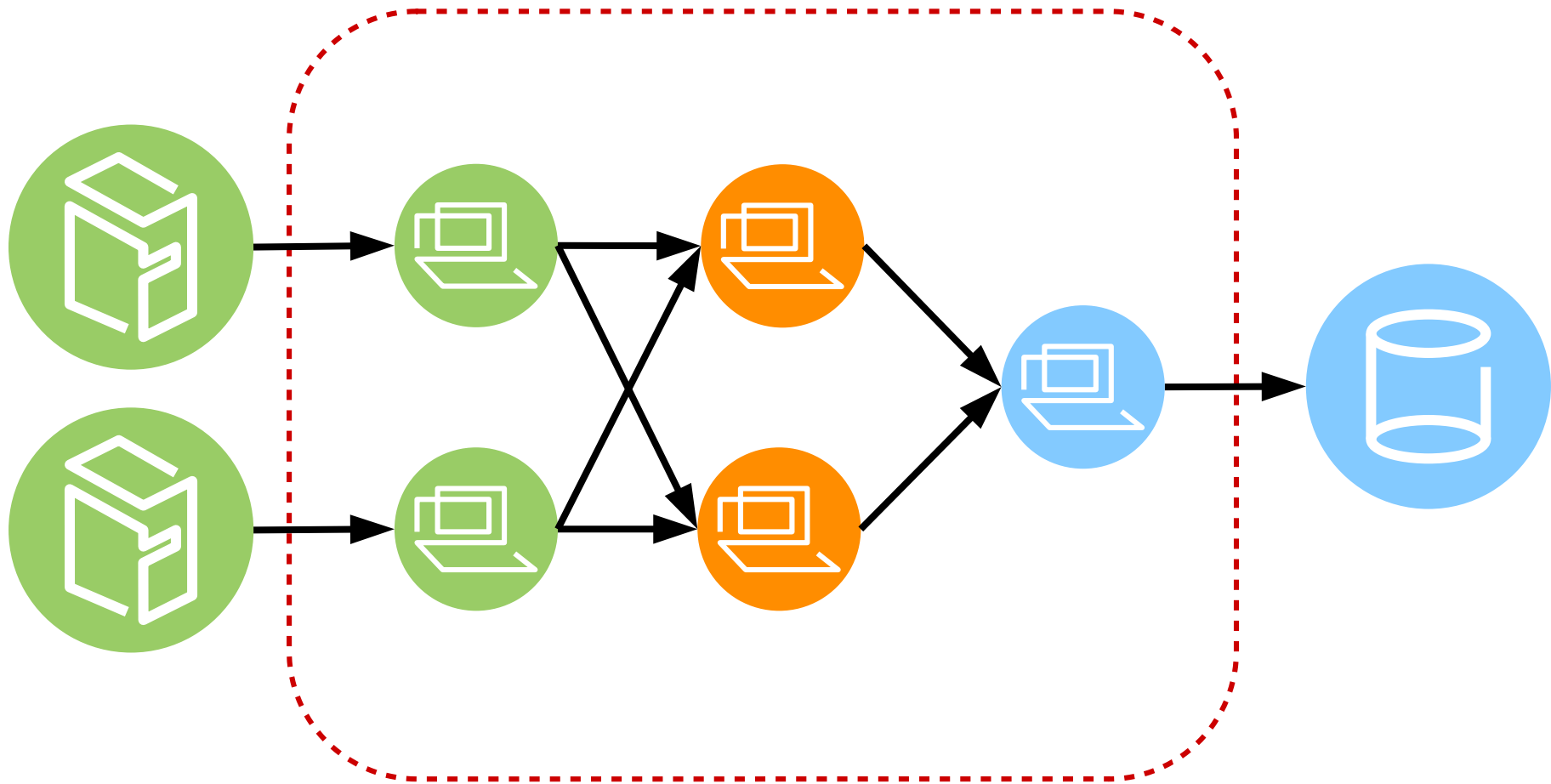


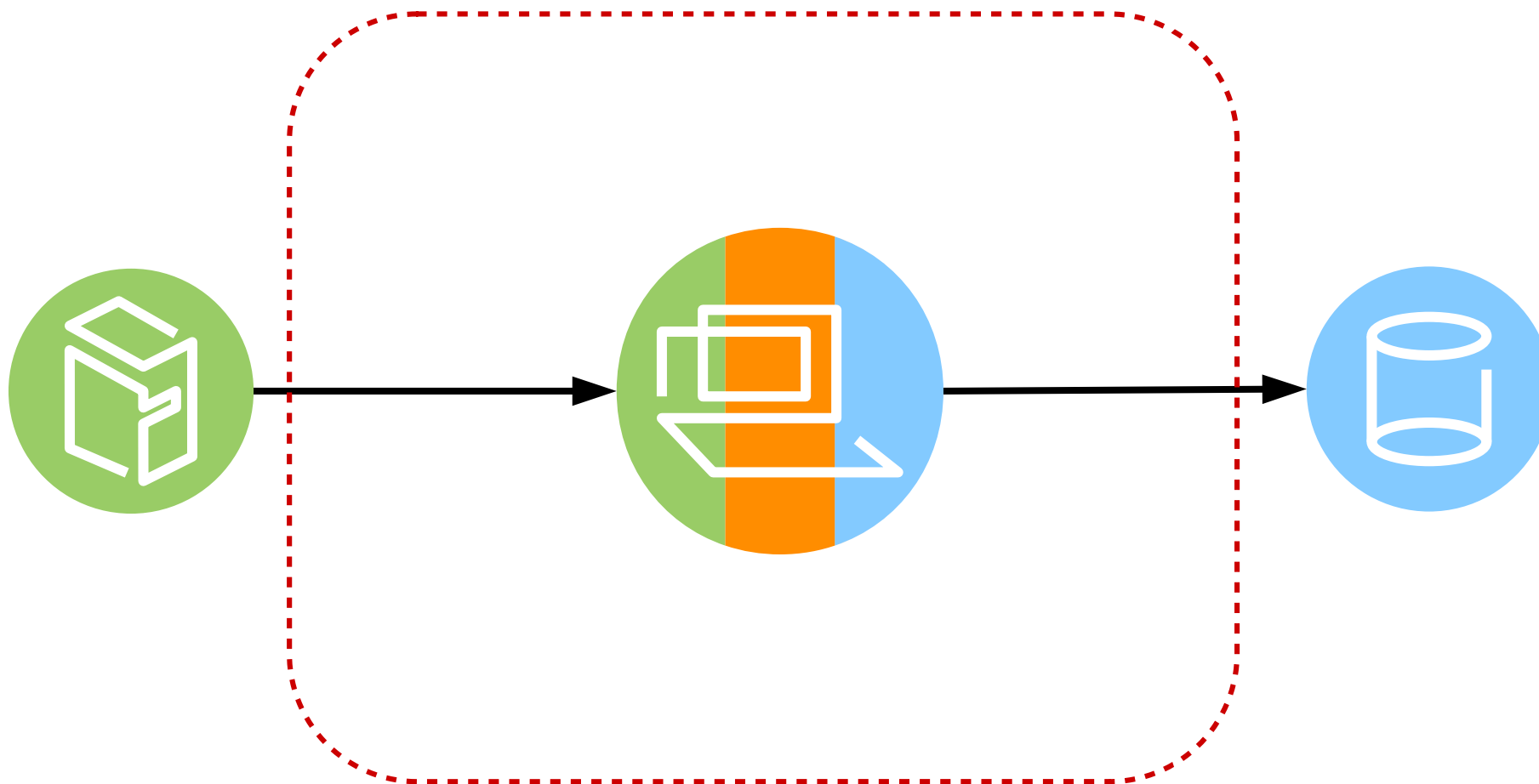




After









Thank you