

# WiredTiger Backend for OpenLDAP



Open Source Solution Technology Corporation

Tsukasa Hamano <hamano@osstech.co.jp>

LDAPCon 2015 Edinburgh November 2015

# About OSSTech



- ID Management
- Open Source Contribution



# About WiredTiger

- Embedded database
- High performance
- High scalable



## About back-wt



# Lock Free

## bdb\_next\_id()

```
int bdb_next_id( BackendDB *be, ID *out )
{
    struct bdb_info *bdb = (struct bdb_info *) be->
        be_private;
    ldap_pvt_thread_mutex_lock( &bdb->bi_lastid_mutex );
    *out = ++bdb->bi_lastid;
    ldap_pvt_thread_mutex_unlock( &bdb->bi_lastid_mutex );
    return 0;
}
```

## wt\_next\_id()

```
int wt_next_id(BackendDB *be, ID *out){  
    struct wt_info *wi = (struct wt_info *) be->be_private;  
    *out = __sync_add_and_fetch(&wi->wi_lastid, 1);  
    return 0;  
}
```

## **fsync(2) is slow**

- Group commit

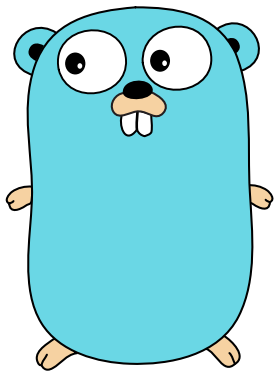


## Durability Level

- in-memory txn log – fastest but no durability
- write txn log file, no sync
- write txn log file, sync per every commit

## New Benchmark Tool - Ib

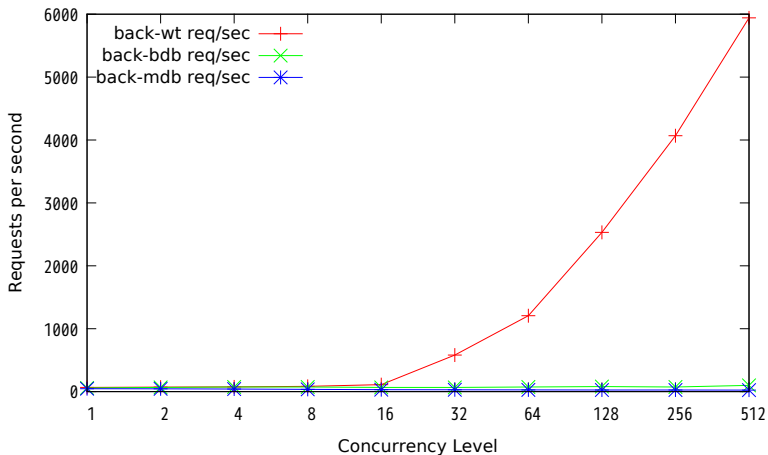
- slamd is dead
- Apache Bench like interface
- Written by goyang



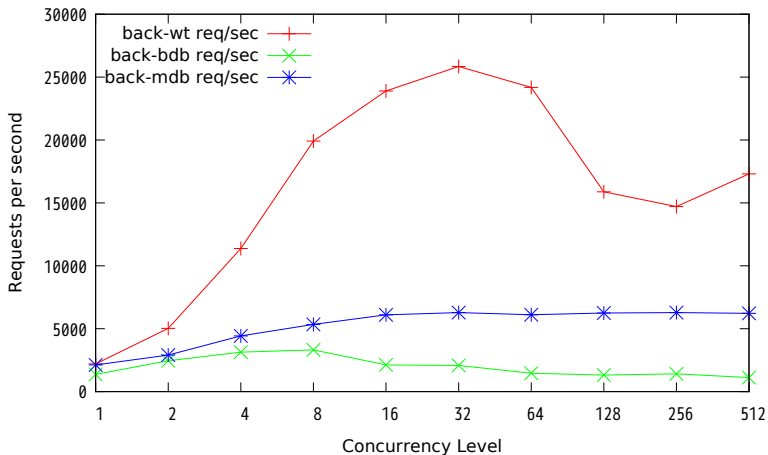
# lb

- \$ go get [github.com/hamano/lb](https://github.com/hamano/lb)
- \$ lb -c concurrency -n requests Apache Bench like interface

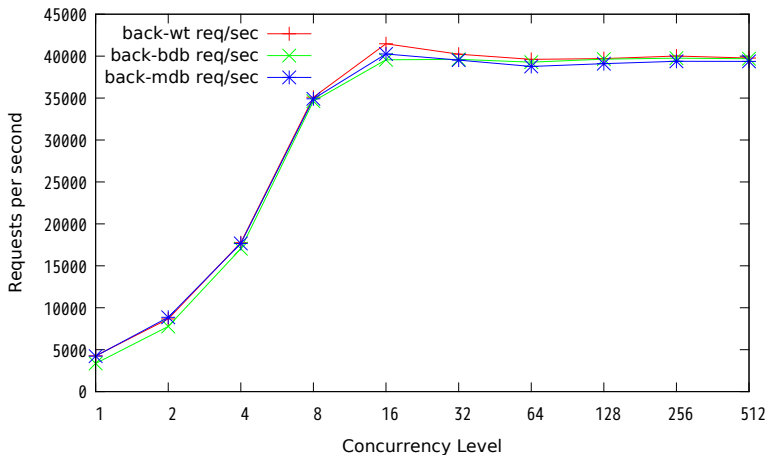
# ADD (sync) Benchmarking



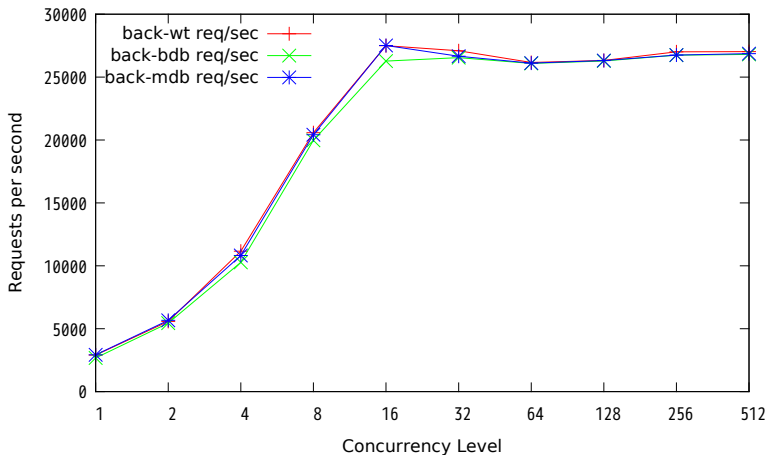
# ADD (nosync) Benchmarking



# BIND Benchmarking



# SEARCH Benchmarking



# Tests

\$ make -C tests wt

54/65



# Tasks

- Hot-backup
- alias and glue entry

# Questions?

