MongoDB Distribution

Distribution using mongodb servers for storage and retrieval of data

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Synopsis

```
use MongoDB::Client;
use MongoDB::Database;

use BSON::Document;

my MongoDB::Client $client .= new(:uri('mongodb://'));
my MongoDB::Database $database = $client.database('myPetProject');

# Inserting data
my BSON::Document $req .= new: (
  insert => 'famous-people',
  documents => [
    BSON::Document.new((
      name => 'Larry',
      surname => 'Wall',
    )),
  ]
);

my BSON::Document $doc = $database.run-command($req);
if $doc<ok> {
  say "Pffoei, inserted";
}
```

Description

This distribution provides a set of modules which can help you accessing mongod server or servers.

Modules

Below are the modules provided with the distribution. The top few are the most imported ones. These will help to connect to a server, define the database and collection and to enter or modify documents in the collections. The core operation is run-command from MongoDB::Database.

MongoDB/Client.pm6

This module defines class MongoDB::Client and is used to connect to mongod and mongos servers. This module can create a MongoDB::Database object for you as well as a MongoDB::Collection object.

MongoDB/DataBase.pm6

Definition of class MongoDB::DataBase. Its main task is to provide the method run-command to access data, modify a server or to get information. A MongoDB::Collection object can be created using Database.

MongoDB/Collection.pm6

Defines class MongoDB::Collection. The main purpose of this module is to help to find data in a collection. Inserting or modifying documents in a collection is mainly done using run-command which uses the collection name in the command. In those cases a collection object is not needed

MongoDB/Cursor.pm6

Defines class MongoDB::Cursor. The module is used to iterate through found data searched for by find() from the MongoDB::Collection module. The object is almost never generated by the user but is returned by the find method.

MongoDB/Log.pm6

Logging module. Will be changed later in some external module.

MongoDB/Uri.pm6

Class MongoDB::Uri used by MongoDB::Client to parse the uri string.

MongoDB/HL/Users.pm6

Defines class MongoDB::HL::Users to administer user accounts. It is placed in HL (higher level) because all operations could be done with just the run-command. This module adds facilities like checking password length etc.

MongoDB/HL/Collection.pm6

Defines class MongoDB::HL::Collection to do more than the lower level Collection provides.

MongoDB/Server.pm6

Class MongoDB::Server is a class to represent a mongodb server. This class can return Socket objects. It also authenticates when necessary. This is not to be used directly.

MongoDB/Server/Socket.pm6

Class MongoDB::Server::Socket to represent a connection to a server. This is not to be used directly.

MongoDB/Server/Control.pm6

Class MongoDB::Server::Control is used to start and stop a mongodb server using configuration files. Mostly needed for tests and is not to be used directly.

MongoDB/Server/Monitor.pm6

Class MongoDB::Server::Monitor is used to monitor a mongodb server for changes in the server state. Not to be used directly.

MongoDB/Wire.pm6

Defines class MongoDB::Wire. Module is used to send and receive data. Not to be used directly.

MongoDB/Header.pm6

Module MongoDB::Header helps MongoDB::Wire to encode and decode documents for transport to and from the mongodb server. This is not to be used directly.

MongoDB/MDBConfig.pm6

Class MongoDB::MDBConfig is a config database singleton. This is not to be used directly.

MongoDB.pm6

Module to hold basic information reachable from other modules. Further it defines a role and an Exception class. See for more below.

MongoDB

```
package MongoDB { ... }
```

Base module to hold constants, enums and subs

Enumerations

TopologyType

```
enum TopologyType is export <
  C-UNKNOWN-TPLGY C-STANDALONE-TPLGY C-REPLSET-WITH-PRIMARY-TPLGY
  C-REPLSET-NO-PRIMARY-TPLGY
>;
```

Used to describe the state of the Client object. See also MongoDB::Client.

ServerStatus

```
enum ServerStatus is export <
  C-UNKNOWN-SERVER C-NON-EXISTENT-SERVER C-DOWN-SERVER C-RECOVERING-SERVER       = 13;   # -
  C-REJECTED-SERVER C-GHOST-SERVER

  C-REPLICA-PRE-INIT C-REPLICASET-PRIMARY C-REPLICASET-SECONDARY
  C-REPLICASET-ARBITER

  C-SHARDING-SERVER C-MASTER-SERVER C-SLAVE-SERVER
>;
```

Used to describe the status of a Server object. See also MongoDB::Client.

WireOpcode

```
enum WireOpcode is export (
  :C-OP-REPLY(1),
  :C-OP-MSG(1000), :C-OP-UPDATE(2001), :C-OP-INSERT(2002),
  :C-OP-RESERVED(2003), :C-OP-QUERY(2004), :C-OP-GET-MORE(2005),
  :C-OP-DELETE(2006), :C-OP-KILL-CURSORS(2007),
);
```

Operational codes to transport data to or from the mongodb server. The codes are used internally.

QueryFindFlags

```
enum QueryFindFlags is export (
  :C-NO-FLAGS(0x00), :C-QF-RESERVED(0x01),
  :C-QF-TAILABLECURSOR(0x02), :C-QF-SLAVEOK(0x04),
  :C-QF-OPLOGREPLAY(0x08), :C-QF-NOCURSORTIMOUT(0x10), :C-QF-AWAITDATA(0x20),
  :C-QF-EXHAUST(0x40), :C-QF-PORTAIL(0x80),
);
```

Flags to be used with e.g. find(). See also MongoDB::Collection.

ResponseFlags

```
enum ResponseFlags is export (
  C-RF-CursorNotFound(0x01), C-RF-QueryFailure(0x02),
  C-RF-ShardConfigStale(0x04), C-RF-AwaitCapable(0x08),
);
```

Response flags found in result documents from the server. Used internally.

Constants

C-MAX-SOCKET-UNUSED-OPEN

```
constant C-MAX-SOCKET-UNUSED-OPEN is export = 900;
```

Time in seconds that a socket can be left open unused.

Subsets

PortType

```
subset PortType of Int is export where 0 < $_ <= 65535;
```

Port type is a number denoting a specific protocol, e.g. 80 is for http and 27017 is for mongodb. Any protocol served by a server can be given a different port than its default. The range is from 0 to 65535 where 0 to 1023 can only be used by servers with privileges.

Helper subsets when module cannot be loaded creating circular dependencies

```
subset ClientType is export where .^name eq 'MongoDB::Client';
subset DatabaseType is export where .^name eq 'MongoDB::Database';
subset CollectionType is export where .^name eq 'MongoDB::Collection';
subset ServerType is export where .^name eq 'MongoDB::Server';
subset SocketType is export where .^name eq 'MongoDB::Socket';
```

These types can be used when an object is provided in some call interface. Only to be used internally because you cannot create a new object from it.