INTRO

MongoDB Introduction

Document Database

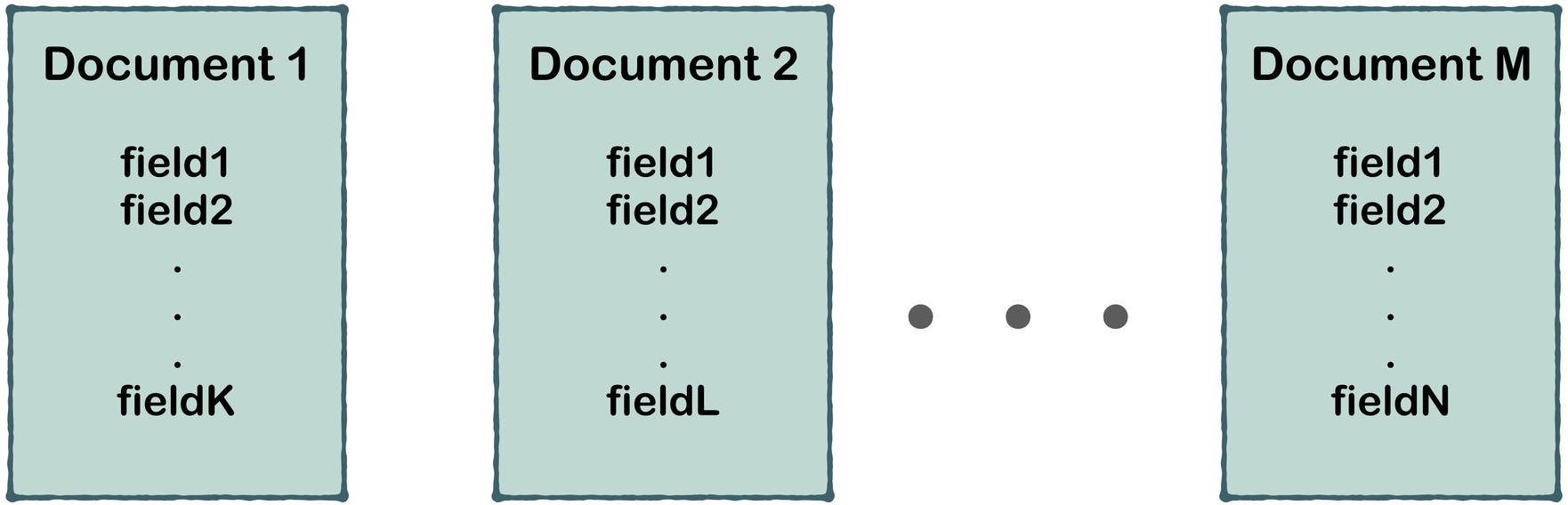
JSON

Extended JSON

BSON

MongoDB Structure

Document Database



JSON Format

```
{
  "name1": value1,
  "name2": value2,
  "name3": value3,
  .
  .
  .
  "nameN": valueN
}
```

JSON - JavaScript Object Notation

JSON Data Types

```
{
  "string": "That's a sample string",
  "number": 6,
  "boolean": true,
  "array": ["first", "second", "third"],
  "object": {
    "key1": 1,
    "key2": "Sample",
    "key3": true,
    "key4": [1, 2, 3],
    "key5": {
      "nestedObjKey1": 10,
      "nestedObjKey2": false
    }
  },
  "null": null
}
```

JSON supports 6 Data Types

- String
- Number
- Boolean
- Array
- Object
- Null

BSON

- BSON - Binary JSON
- MongoDB stores documents in BSON format

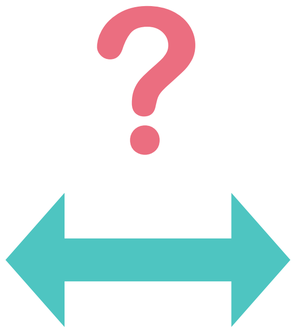
BSON Data Types

- String
- Double
- 32-bit Integer
- 64-bit Integer
- Boolean
- Array
- Object
- Null
- Regular Expression
- Timestamp
- Binary data
- Date
- ObjectId
- and others...

Conversion between JSON and BSON

JSON Types

- String
- Number
- Boolean
- Array
- Object
- Null



BSON Types

- String
- Double
- 32-bit Integer
- 64-bit Integer
- Boolean
- Array
- Object
- Null
- Regular Expression
- Timestamp
- Date
- ObjectId

Extended JSON

Shell Mode

- Inline BSON types
- Internal MongoDB mode
- MongoDB Shell understands

Strict Mode

- Represents BSON types using special key names prepended with $
- JSON Standard compatible
- For all JSON parsers

BOTH modes supported by:

- External MongoDB drivers and REST API
- mongoimport Utility

Extended JSON Examples

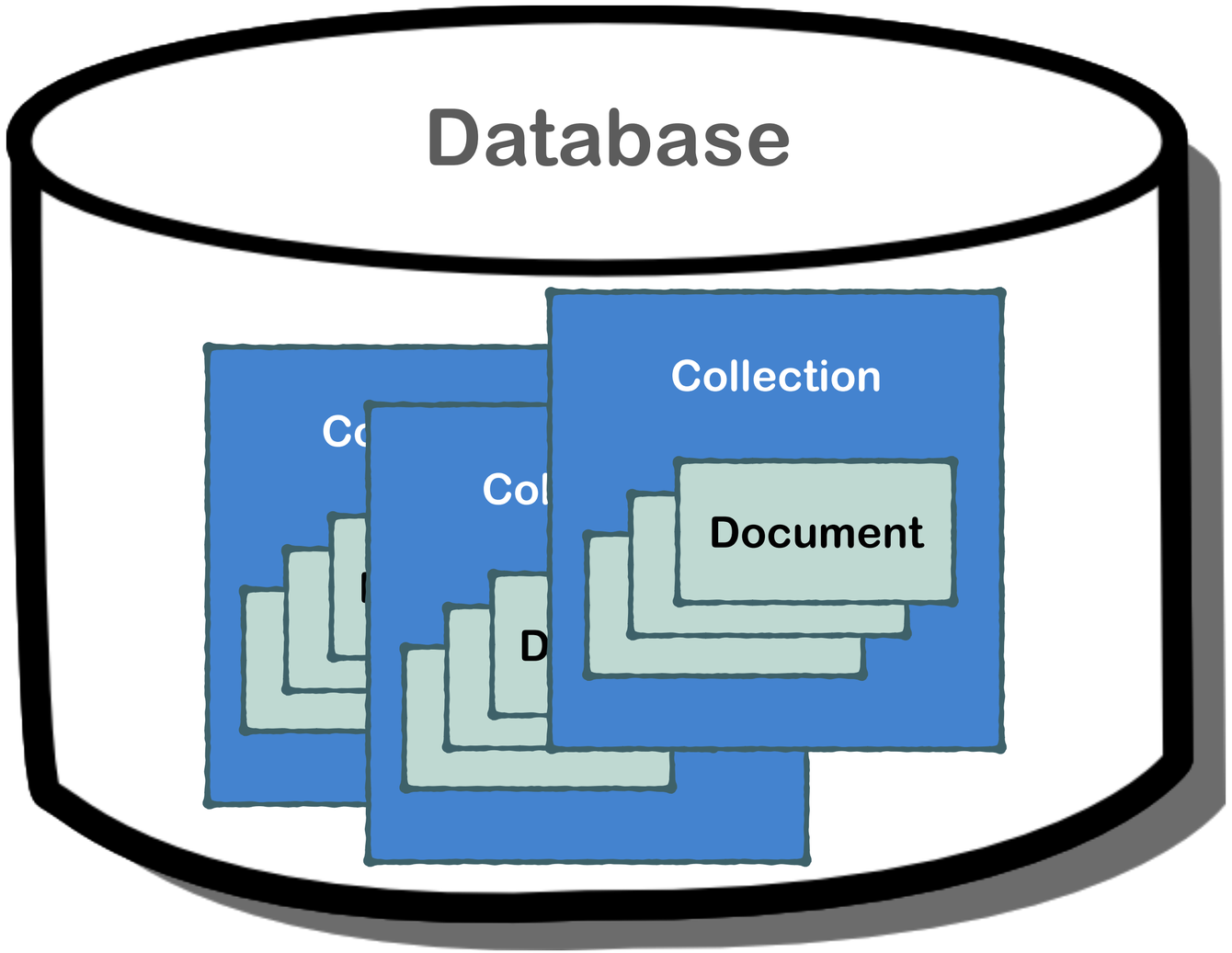
Shell Mode

```
{
  "_id": ObjectId("58be99e912eb83b7e4f5b07c"),
  "name": "Bonita Hayes",
  "age": NumberInt(39),
  "registered": ISODate("2018-03-24T01:24:10 -02:00")
}
```

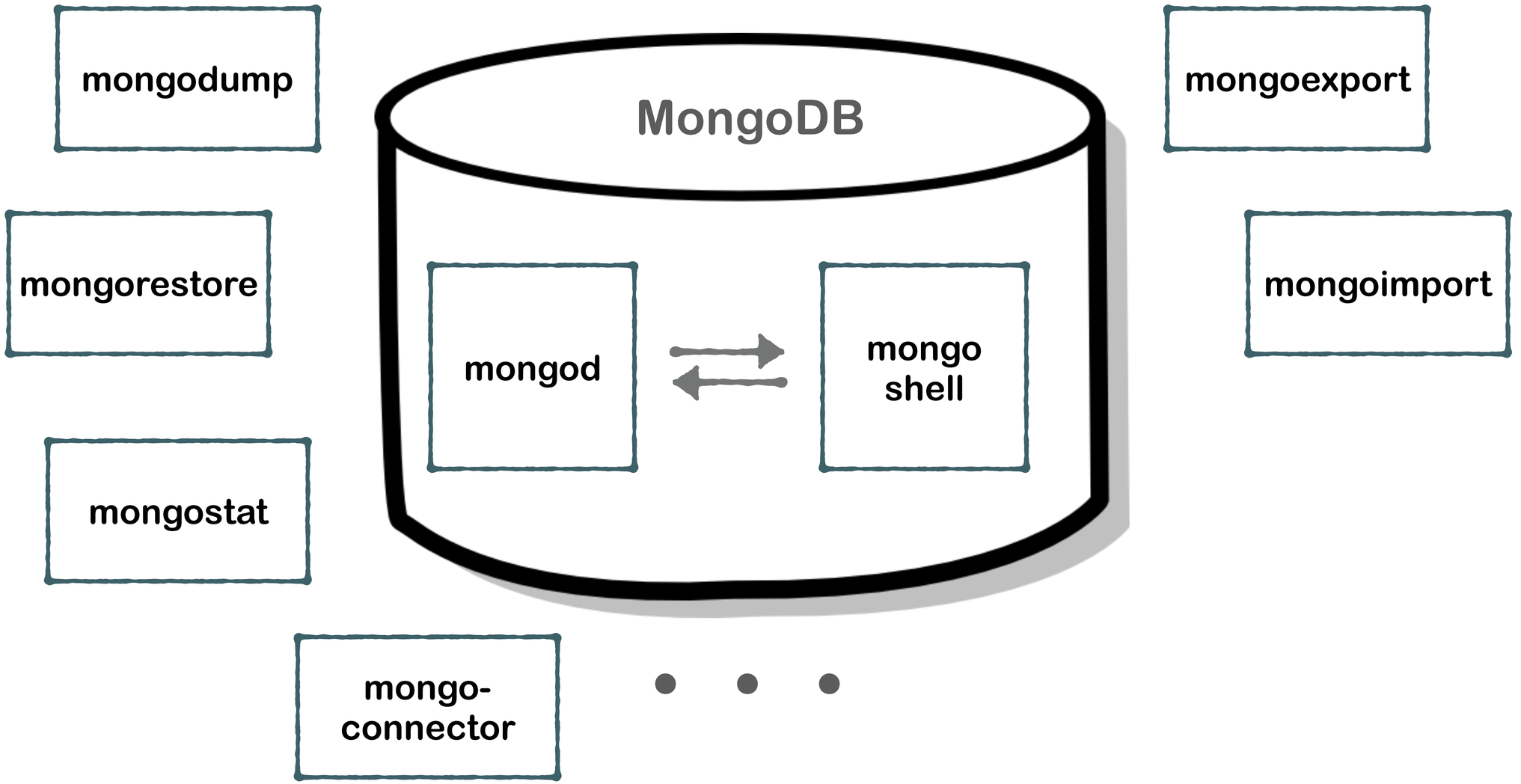
Strict Mode

```
{
  "_id": { "$oid": "58be99e912eb83b7e4f5b07c" },
  "name": "Bonita Hayes",
  "age": 39,
  "registered": { "$date": "2018-03-24T01:24:10 -02:00" }
}
```

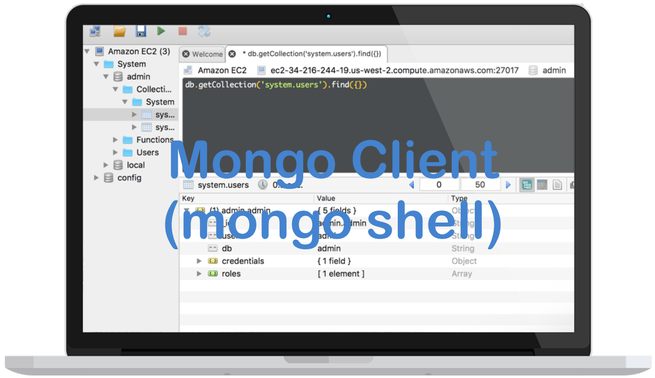
MongoDB Structure



MongoDB Architecture



MongoDB Interaction



Create
Read
Update
Delete

Mongo Server
(mongod)

Node.js
Java
.NET
Ruby
Python

Note

SSL is strongly recommended

SUMMARY

- **MongoDB Introduction**

  Document Database

  JSON

  BSON

  JSON and BSON Data Types

  Extended JSON

  MongoDB Architecture