



# MongoDB<sup>®</sup>

## E-Portfolio

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- What is MongoDB
- Key Features
- Advanced Features
- CRUD Operation



# What is MongoDB

- document-oriented database
- designed for
  - ease of application development
  - scaling

```
{  
  name: "sue",  
  age: 26,  
  status: "A",  
  groups: [ "news", "sports" ]  
}
```

← field: value  
← field: value  
← field: value  
← field: value



# What is MongoDB

SQL Terms/Concepts	MongoDB Terms/Concepts
database	database
table	collection
row	document or BSON document
column	field
primary key Specify any unique column or column combination as primary key.	primary key In MongoDB, the primary key is automatically set to the <code>_id</code> field.

Visit <https://www.mongodb.com/docs/manual/reference/sql-comparison/> for an in depth comparison



# Key Features

- High Performance
  - embedded data models reduces I/O activity
- Query API
  - Data Aggregation
  - Text Search and Geospatial Queries.
- supports multiple storage engines



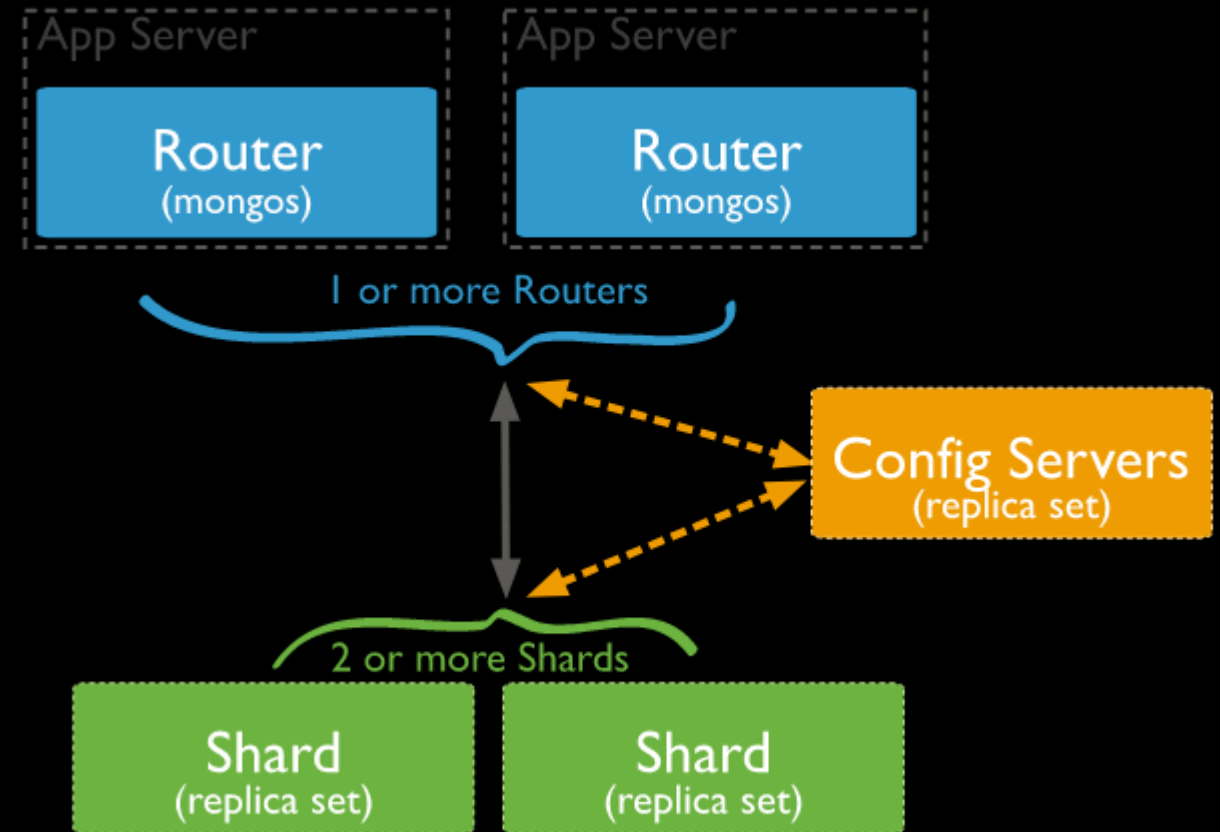
# Key Features

- replication facility, called replica set
  - automatic failover
  - data redundancy
- A replica set is a group of MongoDB servers that maintain the same data set, providing redundancy



# Key Features

- Horizontal Scalability (Sharding) as part of core functionality
  - shard: a subset of the sharded data.
  - mongos: query router, providing an interface between client applications and the sharded cluster.
  - config servers: store metadata and configuration settings





# Validation

- `validationLevel` option: how strictly validation rules apply to existing documents during an update.
- `strict` (the default): MongoDB applies validation rules to all inserts and updates.
- `Moderate`: to existing documents that already fulfill the validation criteria. Updates that do not fulfill the criteria are not checked.





# Validation

- `validationAction` option: determines whether MongoDB should
- error and reject documents that violate the validation rules or
- warn about the violations in the log but allow invalid documents.



# Validation

```
db.runCommand( {  
  collMod: "contacts",  
  validator: { $jsonSchema: {  
    bsonType: "object",  
    required: [ "phone", "name" ],  
    properties: {  
      phone: {  
        bsonType: "string",  
        description: "must be a string and is required"  
      },  
      name: {  
        bsonType: "string",  
        description: "must be a string and is required"  
      }  
    }  
  }  
},  
  validationLevel: "moderate"  
  validationAction: "warn"  
})
```



# Validation

```
db.createCollection("students", {  
  validator: {  
    $jsonSchema: {  
      ....
```



# CRUD Operation

## Demo