



Redis - Fast and Furious

N★SQL Berlin

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Self

I work at

Peritor in Berlin

I tweet

@roidrage

I code at

<http://github.com/mattmatt>

I blog at

<http://paperplanes.de>

Working on



<http://scalarium.com>

Redis - Key-Value Store

Simple, yet awesome

Fast, yet nonvolatile



code.google.com/p/redis

Redis

REmote Dictionary Server

Redis

Went public in March 2009

Just reached 1.0

Redis

< 6000 lines of code

Redis

And the code is simple

Redis

No threading, just one process

Redis

Like Memcached, only awesome

Redis

**Simple and efficient text-based protocol
(just like grandma and Memcached used to make)**

Redis Protocol



Redis Protocol

`redis["key"] = "value"`

Redis Protocol

Duh!

Redis Protocol

Values can be strings, lists or sets

Redis Protocol - Special Ops

**Push and pop elements
(atomic)**

**Fetch arbitrary set and array
elements**

Sorting



Redis Protocol

```
set foo 4
```

```
1000
```

```
+OK
```

Redis Protocol

```
set foo 4
```

```
1000
```

```
+OK
```

Request

Response

Redis Protocol

```
get foo
```

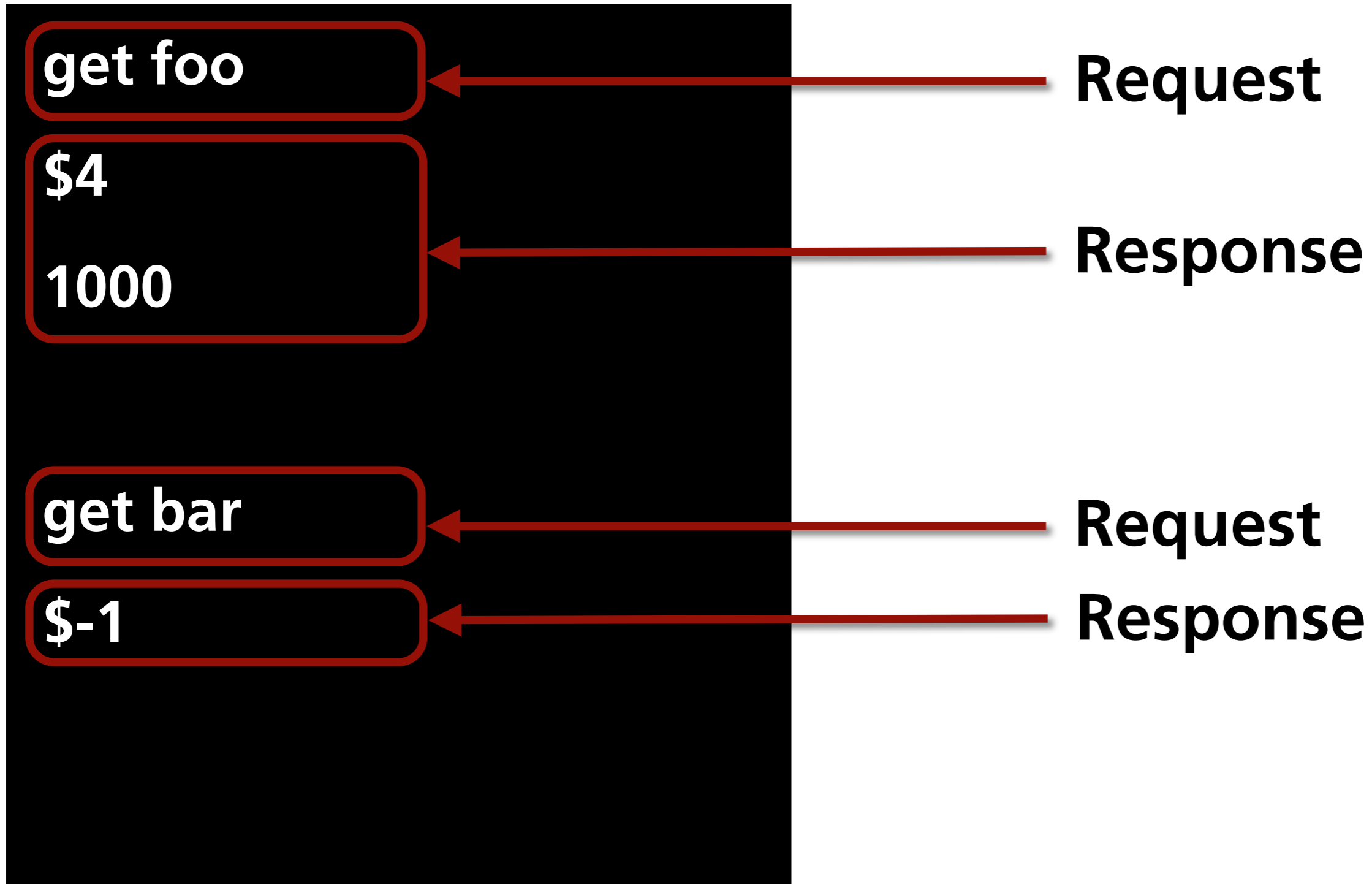
```
$4
```

```
1000
```

```
get bar
```

```
$_1
```

Redis Protocol



Redis Protocol

```
incr foo
```

```
:1001
```

```
type foo
```

```
+string
```

Redis Protocol - Lists

```
lpush pizza 4
```

```
fury
```

```
+OK
```

```
rpush pizza 8
```

```
ortolana
```

```
+OK
```

Redis Protocol - Lists

```
lrange pizza 0 1
```

```
*2
```

```
$4
```

```
fury
```

```
$8
```

```
ortolana
```

Redis Protocol - Lists

lrange pizza 0 1

Request

***2**

\$4

fury

Response

\$8

ortolana

Redis Protocol - Sets

```
sadd mq 8
```

```
rabbitmq
```

```
:1
```

```
sadd mq 6
```

```
zeromq
```

```
:1
```

Redis Protocol - Sets

smembers mq

***2**

\$6

zeromq

\$8

rabbitmq

Redis Protocol - Sets

sort mq alpha

***2**

\$8

rabbitmq

\$6

zeromq

Redis Protocol - The Rest

Random list/set access

Intersections, Unions

Monitoring

Controlling the Server

Multi-Set Commands

Redis

Data is held in memory, but can be persisted

Redis Key-Value Database

Persistent

Asynchronous

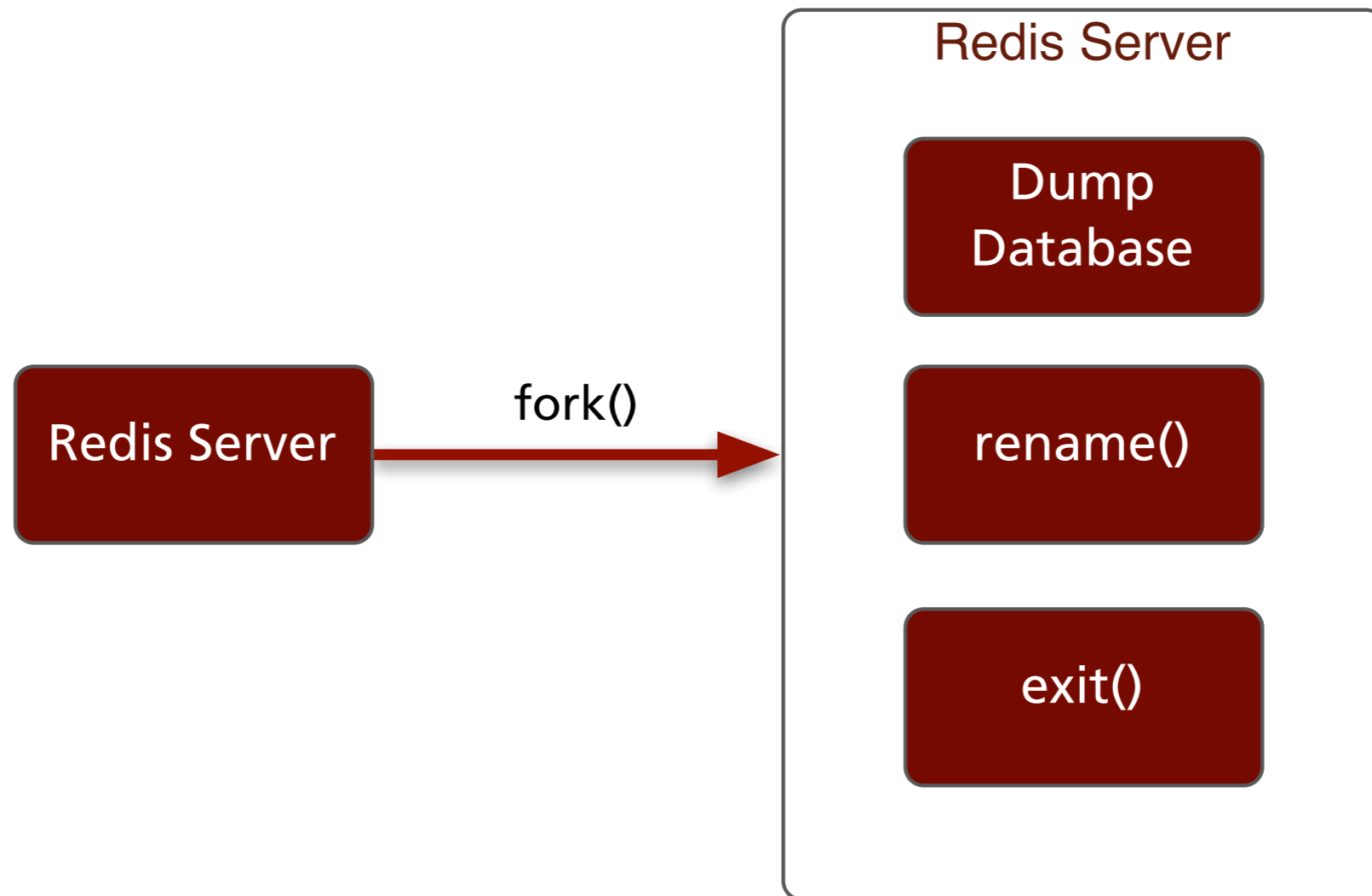
Just like Super Pursuit Mode



Redis Database

Data is written to disk asynchronously

Redis Database



Redis Database

save 900 1

save 300 10

save 60 100000

Replication

1 Master - N Slaves

Asynchronous on Master

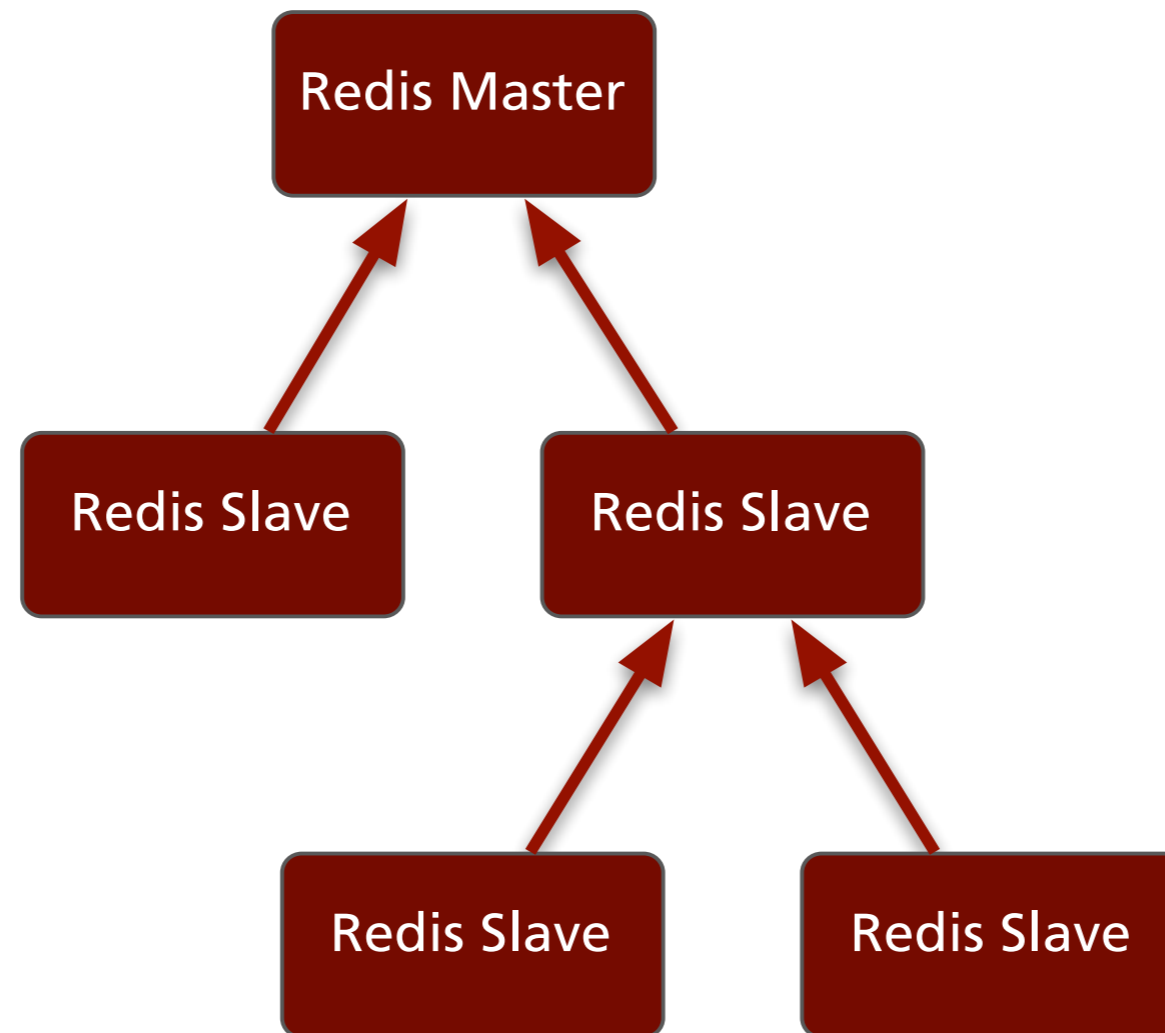
Synchronous on Slave



Redis Replication

Like dumping the database, only to a different file descriptor.

Redis Replication



Redis - Scaling

Horizontal

- Run multiple Redis processes
- Use HashRing (e.g. in redis-rb)

Redis - Scaling

Vertical

- Master-Slave setup
- Fetch data from any slave (e.g. random)

To Redis, or not to Redis?

As always, it depends

To Redis

Caching
Statistical data
Recoverable state
Worker queue

Not to Redis

100% consistent dataset required
Data is larger than memory

Redis Use Cases

Nanite - A self-assembling cluster of Ruby daemons

The most important question!

Is it faster than Memcached?

No, but fast enough for you

(if you need the extra features)

Redis

Simple, fast, awesome.

Questions?





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