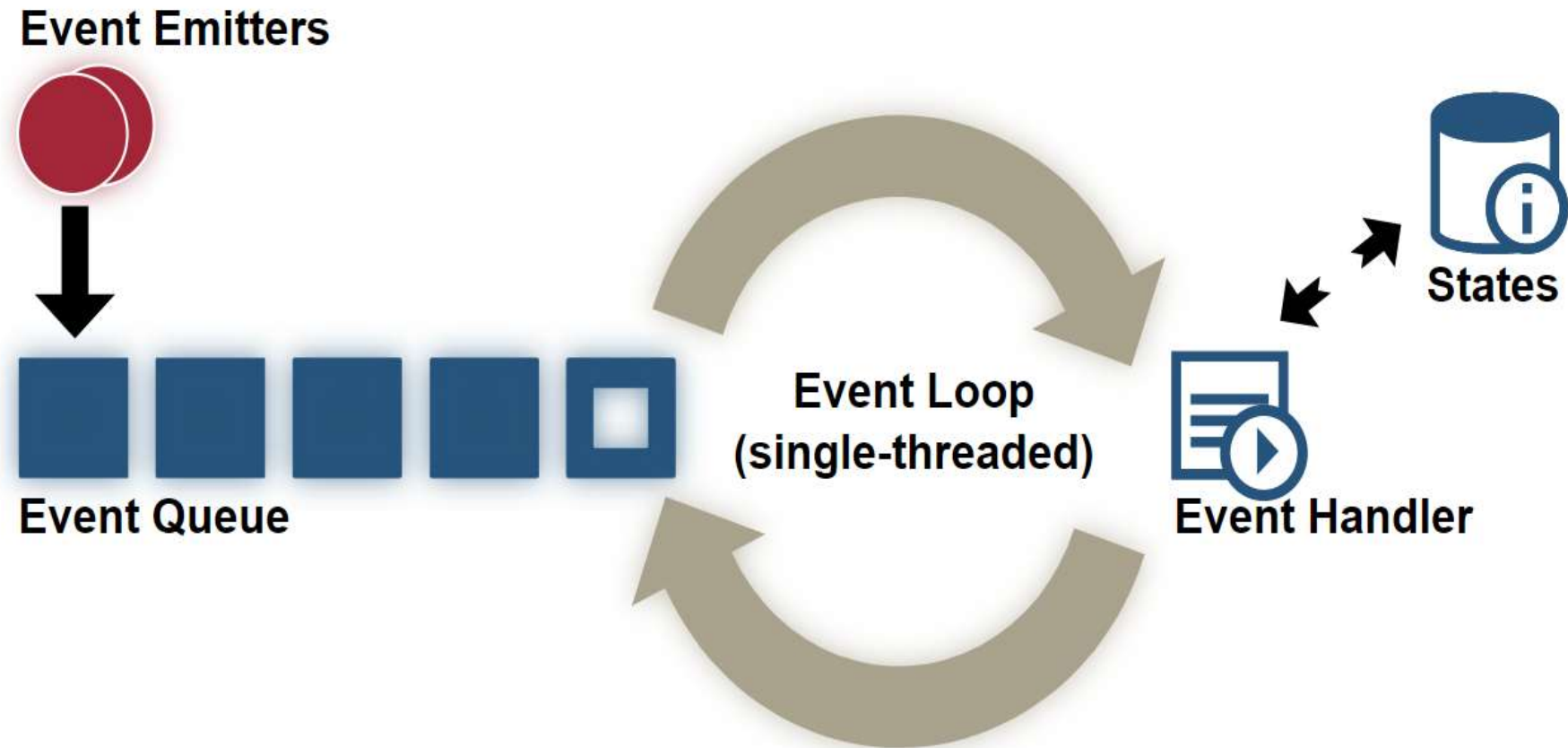# NODE JS

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NODE JS

Event Loop and Event Emitter

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- Node.js is a single-threaded application, but it can support concurrency via the concept of **event** and **callbacks**.

- Every API of Node.js is asynchronous and being single-threaded, they use **async function calls** to maintain concurrency.

- Node uses observer pattern. Node thread keeps an event loop and whenever a task gets completed, it fires the corresponding event which signals the event-listener function to execute.

- Node.js uses events heavily and it is also one of the reasons why Node.js is pretty fast compared to other similar technologies.

- As soon as Node starts its server, it simply initiates its variables, declares functions and then simply waits for the event to occur.

- In an event-driven application, there is generally a main loop that listens for events, and then triggers a callback function when one of those events is detected.

- The functions that listen to events act as **Observers**.

- Whenever an event gets fired, its listener function starts executing. Node.js has multiple in-built events available through events module and EventEmitter class which are used to bind events and event-listeners

```
var events = require('events');

// Create an eventEmitter object
var eventEmitter = new events.EventEmitter();
```

EventEmitter provides multiple properties like **on** and **emit**. **on** property is used to bind a

function with the event and **emit** is used to fire an event.

Methods:
- addListener(event, listener)
- on(event, listener)
- once(event, listener)
- removeListener(event, listener)
- removeAllListeners([event])
- setMaxListeners(n)
- listeners(event)
- emit(event, [arg1], [arg2], [...])

Class Methods:

- listenerCount(emitter, event)

Events:

- newListener

event – String: the event name

listener – Function: the event handler function

This event is emitted any time a listener is added. When this event is triggered, the listener may not yet have been added to the array of listeners for the event.

- removeListener

This event is emitted any time someone removes a listener. When this event is triggered, the listener may not yet have been removed from the array of listeners for the event.

THANK YOU

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