
Stream in JS

What is Stream

- 一串人，人流
- 一串车，车流
- 一串水，水流
- 一串0,1，比特流
- 一串字节，字节流，
- 一串XX，XX流

比较流行(常见)的一些流

- 文件IO流
- Unix系统标准输入输出流
- 标准错误流(stdin, stdout, stderr)
- TCP 流
- Web 后台技术（如Nodejs）对HTTP请求/响应流

Programming Field

- 流是一个抽象接口
- 流是一组有序的，有起点和终点的字节数据传输手段。
- 它不关心文件的整体内容，只关注是否从文件中读到了数据，以及读到数据之后的处理。
- 流被分为Readable(可读流)、Writable(可写流)

time and space


Why do we need Stream?

Application in NodeJS


Case-1

List modules implement the streaming interface

Readable Streams	Writable Streams
HTTP responses, on the client	HTTP requests, on the client
HTTP requests, on the server	HTTP responses, on the server
fs read streams	fs write streams
zlib streams	zlib streams
crypto streams	crypto streams
TCP sockets	TCP sockets
child process stdout and stderr	child process stdin
process.stdin	process.stdout, process.stderr

HighWaterMark

- Readable streams option
- Buffer
- Default 64*1024 byte

Functional Reactive
&&
Stream


Case-2

Application in Browser

Examples

- Simple stream pump: This example shows how to consume a ReadableStream and pass its data to another.
- Grayscale a PNG: This example shows how a ReadableStream of a PNG can be turned into grayscale.
- Simple random stream: This example shows how to use a custom stream to generate random strings, enqueue them as chunks, and then read them back out again.
- Simple tee example: This example extends the Simple random stream example, showing how a stream can be teed and both resulting streams can be read independently.
- Simple writer: This example shows how to to write to a writable stream, then decode the stream and write the contents to the UI.
- Unpack chunks of a PNG: This example shows how pipeThrough() can be used to transform a ReadableStream into a stream of other data types by transforming a data of a PNG file into a stream of PNG chunks.

Summary Tooling

- Memory usage control
- Unified interfaces
- Flow control

Thank you!