

Node.js Basics - Expanded

=== What is Node.js? ===

- A JavaScript runtime for building scalable network apps.
- Uses Chromes V8 engine.

=== Core Modules ===

- fs: File system
- path: Path utilities
- http: Create servers

Example:

```
const http = require('http');  
http.createServer((req, res) => {  
  res.write('Hello');  
  res.end();  
}).listen(3000);
```

=== npm & package.json ===

- npm install express
- package.json lists dependencies

=== Express.js ===

```
const express = require('express');  
const app = express();
```

```
app.get('/', (req, res) => {
```

```
res.send('Welcome');  
  
});
```

=== Middleware ===

Functions that run before route handlers

```
app.use(express.json());
```

=== Routing ===

```
app.get(), app.post(), app.put(), app.delete()
```

=== Async Code ===

- Callback Hell
- Promises
- Async/await

=== Environment Variables ===

- Use dotenv package
- Store DB credentials safely

=== File System ===

- fs.readFile, fs.writeFile

=== Deployment ===

- Use PM2 or nodemon
- Host on Render, Heroku, or VPS