



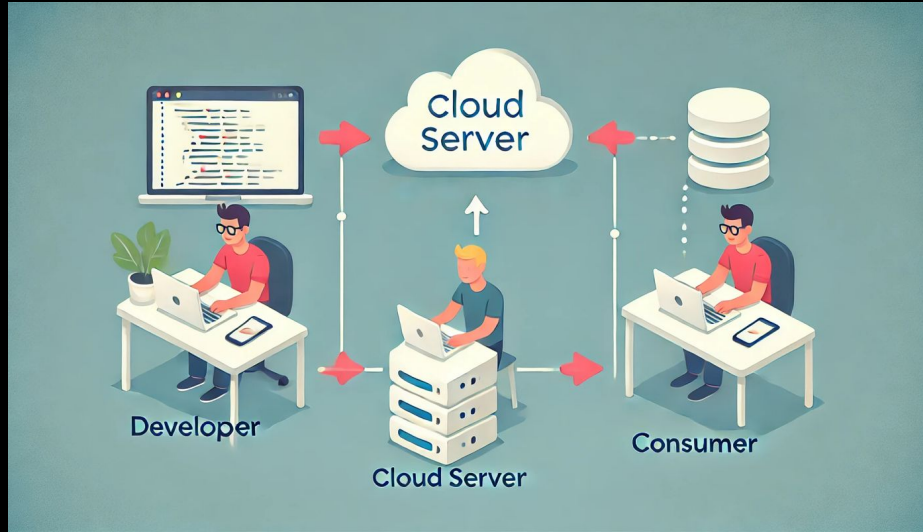
22. Deploying Apps

1. What is Deployment?
2. Cloud vs Local Deployments
3. Using Environment Variables
4. Secure Response Headers
5. Use Compressed Assets
6. Request-Response Logging
7. Using SSL/TLS Encryption
8. Using Hosting Provider





22.1 What is Deployment?



- **Releasing** software to users.
- **Making** software operational.
- **Transitioning** from testing to live environments.
- **Using** automated or manual processes.
- **Delivering** new features and improvements.



22.2 Cloud vs Local Deployments

Aspect	Cloud Deployment	Local Deployment (On-Premises)
Infrastructure	Hosted on third-party cloud providers' servers	Hosted on organization's own servers and hardware
Scalability	Easily scalable; resources adjusted quickly based on demand	Limited scalability; requires physical hardware upgrades
Cost	Pay-as-you-go with lower upfront costs (Operational Expenses)	High upfront investment in hardware (Capital Expenses)
Maintenance	Managed by cloud provider; less effort for the organization	Managed internally; organization handles all maintenance
Accessibility	Accessible anywhere with internet connectivity	Typically accessible only within the organization's network
Control	Less control over underlying infrastructure	Full control over hardware and software configurations



22.3 Using Environment Variables

```
const MONGO_DB_URL =  
  `mongodb+srv://${process.env.MONGO_DB_USERNAME}:${process.env.MONGO_DB_PASSWORD}@kgcluster.  
  ie6mb.mongodb.net/${process.env.MONGO_DB_DATABASE}`;  
  
const PORT = process.env.PORT || 3000;  
mongoose.connect(MONGO_DB_URL).then(() => {  
  
  const SEND_GRID_KEY = process.env.SEND_GRID_KEY;  
  
  const forgotEmail = {  
    to: email,  
    from: process.env.SENDER_EMAIL || 'contact@completecoding.in',  
    subject: 'Here is your OTP to reset your Password',
```



22.3 Using Environment Variables

Server

PORT=3000

MongoDB

MONGO_DB_USERNAME=root

MONGO_DB_PASSWORD=root

MONGO_DB_DATABASE=airbnb

Email

SEND_GRID_KEY=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

SENDER_EMAIL=contact@completecoding.in



.gitignore

1 | .env

2 |

3 | .DS_Store



22.3 Using Environment Variables

🔍 .env.example U ✕

5 NodeJs and ExpressJs > 18 deployment > 🔍 .env.example

```
1  # Server Configuration
2  # Port number for the server to listen on (e.g. 3000)
3  PORT=
4
5  # MongoDB Database Configuration
6  # Username for MongoDB authentication
7  MONGO_DB_USERNAME=
8  # Password for MongoDB authentication
9  MONGO_DB_PASSWORD=
10 # Name of the MongoDB database
11 MONGO_DB_DATABASE=
12
13 # Email Service Configuration
14 # SendGrid API key for sending emails
15 # Get this from your SendGrid account dashboard
16 SEND_GRID_KEY=
17 # Email address used as the sender for all outgoing emails
18 # Format: example@domain.com
19 SENDER_EMAIL=
```



22.3 Using Environment Variables

npm Search Sign Up Sign In

dotenv TS
16.4.5 • Public • Published 9 months ago

Readme Code Beta 0 Dependencies 50,765 Dependents 86 Versions

announcing **dotenvx**. *run anywhere, multi-environment, encrypted envs.*

Dotenv is supported by the community.

Special thanks to:

warp
Warp is a blazingly fast, Rust-based terminal reimagined to work like a modern app.
Get more done in the CLI with real text editing, block-based output, and AI command search.

WorkOS
Your App, Enterprise Ready.
Add Single Sign-On, Multi-Factor Auth, and more, in minutes instead of months.

Install

```
> npm i dotenv
```

Repository
github.com/motdotla/dotenv

Homepage
github.com/motdotla/dotenv#...

♥ Fund this package

Weekly Downloads
44,221,149

Version
16.4.5

License
BSD-2-Clause

```
prashantjain@Prashants-MacBook-Pro 18 deployment % npm install dotenv
added 1 package, and audited 299 packages in 581ms

51 packages are looking for funding
  run `npm fund` for details

1 high severity vulnerability

To address all issues, run:
  npm audit fix

Run `npm audit` for details.
```

```
5 NodeJs and ExpressJs > 18 deployment > JS app.js > ...
1   ...require("dotenv").config();
2
```



22.3 Using Environment Variables

```
!+! .env.development  U
!+! .env.example      U
!+! .env.production   U
```

```
const environment = process.env.NODE_ENV || 'development';
require("dotenv").config({
  path: `./.env.${environment}`
});
```

```
"scripts": {
  "test": "echo \"Error: no test specified\" && exit 1",
  "tailwind": "npx tailwindcss -i ./public/styles/input.css -o ./public/styles/output.css --watch",
  "dev": "concurrently \"npm run tailwind\" \"NODE_ENV=development nodemon app.js\"",
  "start": "NODE_ENV=production node app.js"
},
```

For Windows

```
"scripts": {
  // ... existing code ...
  "tailwind": "npx tailwindcss -i ./public/styles/input.css -o ./public/styles/output.css --watch",
  "dev": "concurrently \"npm run tailwind\" \"set NODE_ENV=development&& nodemon app.js\"",
  "start": "set NODE_ENV=production&& node app.js"
}
```




22.4 Secure Response Headers

npm

helmet TS
8.0.0 • Public • Published 2 months ago

[Readme](#) [Code](#) Beta [0 Dependencies](#) [5,441 Dependents](#) [132 Versions](#)

Helmet

Help secure Express apps by setting HTTP response headers.

```
import helmet from "helmet";

const app = express();

app.use(helmet());
```

Helmet sets the following headers by default:

- Content-Security-Policy**: A powerful allow-list of what can happen on your

Install

```
> npm i helmet
```

Repository
github.com/helmetjs/helmet

Homepage
helmetjs.github.io/

Weekly Downloads
3,313,977

```
prashantjain@Prashants-MacBook-Pro 18 deployment % npm install helmet
added 1 package, and audited 300 packages in 615ms

51 packages are looking for funding
  run `npm fund` for details

1 high severity vulnerability

To address all issues, run:
  npm audit fix
```



22.4 Secure Response Headers

```
const helmet = require("helmet");  
  
const app = express();  
app.use(helmet());
```

▼Response Headers	
Raw	
Connection:	keep-alive
Content-Security-Policy:	default-src 'self';base-uri 'self';font-src 'self' https: data:;form-action 'self';frame-ancestors 'self';img-src 'self' data:;object-src 'none';script-src 'self';script-src-attr 'none';style-src 'self' https: 'unsafe-inline';upgrade-insecure-requests
Cross-Origin-Opener-Policy:	same-origin
Cross-Origin-Resource-Policy:	same-origin
Date:	Thu, 28 Nov 2024 11:30:24 GMT
Etag:	W/"2a7a-RJYQ4tZOJFrdD8vfcF7xdRYNqB8"
Keep-Alive:	timeout=5
Origin-Agent-Cluster:	?1
Referrer-Policy:	no-referrer
Strict-Transport-Security:	max-age=31536000; includeSubDomains
X-Content-Type-Options:	nosniff
X-Dns-Prefetch-Control:	off
X-Download-Options:	noopen
X-Frame-Options:	SAMEORIGIN
X-Permitted-Cross-Domain-Policies:	none
X-Xss-Protection:	0



22.5 Use Compressed Assets

The screenshot shows the npm package page for 'compression'. At the top, there's a search bar and 'Sign Up'/'Sign In' buttons. The package name 'compression' is displayed with a 'DT' badge. Below it, the version '1.7.5' is shown, along with 'Public' and 'Published a month ago'. A row of buttons includes 'Readme', 'Code' (with a 'Beta' badge), '7 Dependencies', '7,925 Dependents', and '37 Versions'. The main title 'compression' is followed by a row of status badges: 'npm v1.7.5', 'downloads 85M/month', 'ci success', and 'coverage 100%'. The description states 'Node.js compression middleware.' and lists supported codings: 'deflate' and 'gzip'. An 'Install' section shows the command 'npm i compression'. The 'Repository' and 'Homepage' both point to 'github.com/expressjs/compression'. A 'Weekly Downloads' graph shows a peak of 20,090,348. The 'Version' and 'License' sections are partially visible at the bottom.

npm 1.7.5 • Public • Published a month ago

Readme Code Beta 7 Dependencies 7,925 Dependents 37 Versions

compression

npm v1.7.5 downloads 85M/month ci success coverage 100%

Node.js compression middleware.

The following compression codings are supported:

- deflate
- gzip

Install

This is a **Node.js** module available through the **npm registry**. Installation is done using the **npm install** command:

Install

```
> npm i compression
```

Repository

github.com/expressjs/compression

Homepage

github.com/expressjs/compression

Weekly Downloads

20,090,348

Version License

```
prashantjain@Prashants-MacBook-Pro 18 deployment % npm install compression
```

```
added 3 packages, and audited 303 packages in 654ms
```

```
51 packages are looking for funding
  run `npm fund` for details
```

```
1 high severity vulnerability
```

```
To address all issues, run:
  npm audit fix
```








```
Run `npm audit` for details.
```







```
const compression = require("compression");
const app = express();
app.use(helmet());
app.use(compression());
```



22.5 Use Compressed Assets

```
//app.use(compression());    app.use(compression());
```

Name	Status	Type	Ini...	Size
 localhost	200	document	Ot...	11.4 kB
 output.css	200	stylesheet	(.inde	22.2 kB
 house1.png	200	png	(.inde	388 kB
 house7.png	200	png	(.inde	331 kB
 house2.png	200	png	(.inde	350 kB
 2024-11-26T...	200	jpeg	(.inde	1.3 MB
 favicon.ico	404	text/html	Ot...	2.1 kB

Name	Status	Type	Ini...	Size
 localhost	200	document	Ot...	2.3 kB
 house2.png	200	png	(.inde	350 kB
 2024-11-26T...	200	jpeg	(.inde	1.3 MB
 output.css	200	stylesheet	(.inde	6.0 kB
 house1.png	200	png	(.inde	388 kB
 house7.png	200	png	(.inde	331 kB



22.6 Request-Response Logging

Search packages

Search

Sign Up

Sign In

morgan DT

1.10.0 • Public • Published 5 years ago

Readme

Code Beta

5 Dependencies

9,399 Dependents

26 Versions

morgan

npm v1.10.0 downloads 22.3M/month travis 404 coverage 100%

HTTP request logger middleware
for node.js

Named after **Dexter**, a show you should not watch until completion.

API

```
var morgan = require('morgan')
```

Install

```
> npm i morgan
```

Repository

github.com/expressjs/morgan

Homepage

github.com/expressjs/morgan#readme

Weekly Downloads

5,376,642

Version

1.10.0

License

MIT

Unpacked Size

Total Files

```
prashantjain@Prashants-MacBook-Pro 18 deployment % npm install morgan
added 4 packages, and audited 307 packages in 808ms

51 packages are looking for funding
  run `npm fund` for details

1 high severity vulnerability
  To address all issues, run:
    npm audit fix

Run `npm audit` for details.
```



22.6 Request-Response Logging

```
const fs = require("fs");
const morgan = require("morgan");

const accessLogStream = fs.createWriteStream(path.join(__dirname, "access.log"), {
  flags: "a",
});

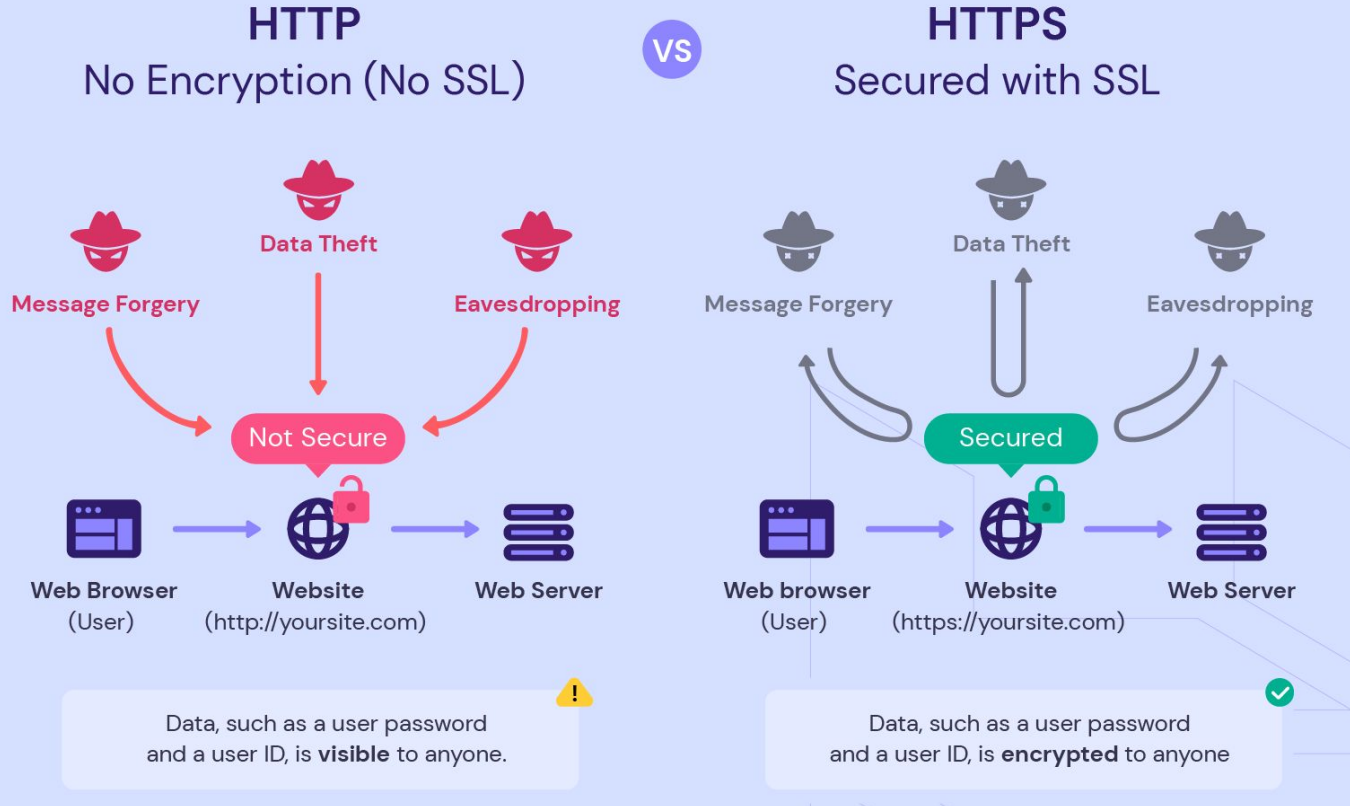
app.use(morgan("combined", { stream: accessLogStream }));
```

5 Node.js and Express.js > 18 deployment > access.log

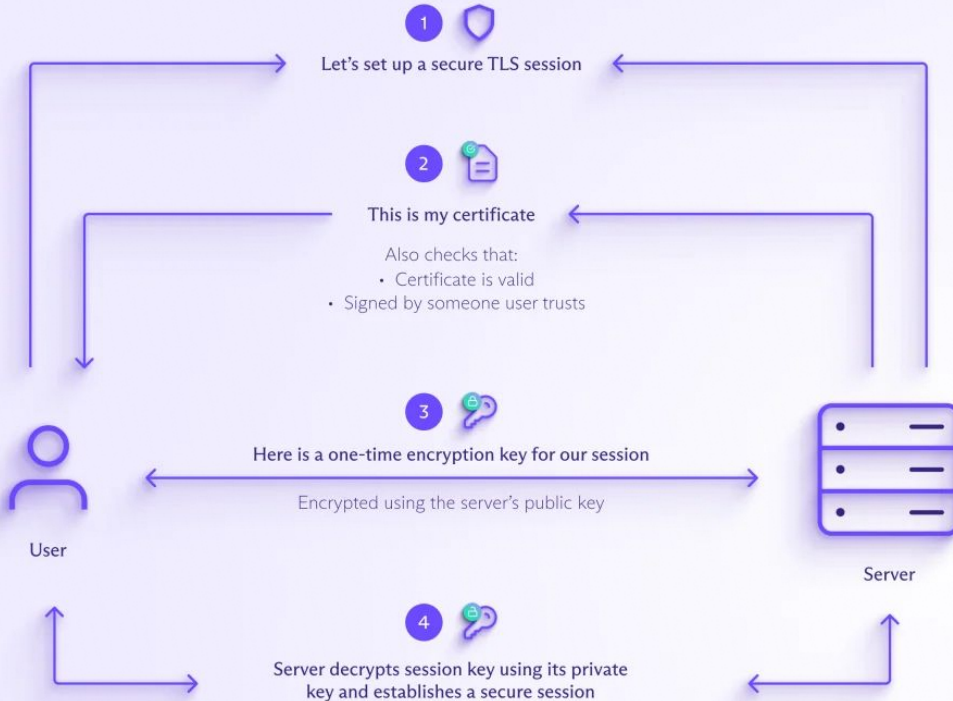
```
1 ::1 - - [28/Nov/2024:11:43:55 +0000] "GET / HTTP/1.1" 304 - "http://localhost:3000/homes/6739886801b45364227c9428" "Mozilla/5.0
(Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.0.0 Safari/537.36"
2 ::1 - - [28/Nov/2024:11:43:55 +0000] "GET /styles/output.css HTTP/1.1" 304 - "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.0.0 Safari/537.36"
3 ::1 - - [28/Nov/2024:11:43:55 +0000] "GET /images/house1.png HTTP/1.1" 304 - "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.0.0 Safari/537.36"
4 ::1 - - [28/Nov/2024:11:43:55 +0000] "GET /images/house7.png HTTP/1.1" 304 - "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.0.0 Safari/537.36"
5 ::1 - - [28/Nov/2024:11:43:55 +0000] "GET /images/house2.png HTTP/1.1" 304 - "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.0.0 Safari/537.36"
6 ::1 - - [28/Nov/2024:11:43:55 +0000] "GET /uploads/2024-11-26T15:17:10.226Z-1449px-Mona_Lisa,_by_Leonardo_da_Vinci,
_from_C2RMF_retouched.jpg HTTP/1.1" 304 - "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko)
Chrome/131.0.0.0 Safari/537.36"
7 ::1 - - [28/Nov/2024:11:43:55 +0000] "GET /uploads/2024-11-26T15:17:10.226Z-1449px-Mona_Lisa,_by_Leonardo_da_Vinci,
_from_C2RMF_retouched.jpg HTTP/1.1" 200 1286409 "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like
Gecko) Chrome/131.0.0.0 Safari/537.36"
```



22.7 Using SSL/TLS Encryption



22.7 Using SSL/TLS Encryption





22.8 Using Hosting Provider

Microsoft | Azure

Build in the cloud with an Azure account

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Pay as you go

Get started with Azure

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Manage access, set smart policies, and enhance security with Microsoft Entra ID.

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Azure services

Choose the Azure account that's right for you

Pay as you go or try Azure free for up to 30 days. There's no upfront commitment—cancel anytime.



22.8 Using Hosting Provider



Azure

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Partners ▾

Resources ▾

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Contact Sales

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- Architect your solutions & organize resources.
- Estimate & manage costs.
- Deploy common services, including virtual machines, web apps, and SQL databases.

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