PROBLEM STATEMENT :

How to deploy a Node.js application in production

We will see how to run and deploy NodeJS apps.

NodeJS is a cross-platform, open-source server environment that can run
on Windows, Linux, Unix, macOS, and more.

NodeJS is a back-end JavaScript runtime environment, runs on the V8 JavaScript Engine, and executes JavaScript code outside a web browser.

NodeJS lets developers use JavaScript to write command line tools and for server-side scripting.

The functionality of running scripts server-side produces dynamic web page content before the page is sent to the user's web browser.

Consequently, Node.js represents a "JavaScript everywhere" paradigm,[6] unifying web-application development around a single programming language, rather than different languages for server-side and client-side scripts.

Release[68]	Status	Code name	Release date	Maintenance end
0.10.x	End-of-Life		2013-03-11	2016-10-31
0.12.x	End-of-Life		2015-02-06	2016-12-31
4.x	End-of-Life	Argon[69]	2015-09-08	2018-04-30
5.x	End-of-Life		2015-10-29	2016-06-30
6.x	End-of-Life	Boron[69]	2016-04-26	2019-04-30
7.x	End-of-Life		2016-10-25	2017-06-30
8.x	End-of-Life	Carbon[69]	2017-05-30	2019-12-31
9.x	End-of-Life		2017-10-01	2018-06-30
10.x	End-of-Life	Dubnium[69]	2018-04-24	2021-04-30
11.x	End-of-Life		2018-10-23	2019-06-01

Release[68]	Status	Code name	Release date	Maintenance end
12.x	End-of-Life	Erbium[69]	2019-04-23	2022-04-30
13.x	End-of-Life		2019-10-22	2020-06-01
14.x	Maintenance LTS	Fermium[69]	2020-04-21	2023-04-30
15.x	End-of-Life		2020-10-20	2021-06-01
16.x	Maintenance LTS	Gallium[69]	2021-04-20	2023-09-11[70]
17.x	End-of-Life		2021-10-19	2022-06-01
18.x	Active LTS	Hydrogen[69]	2022-04-19	2025-04-30
19.x	**Current**		2022-10-18	2023-06-01
20.x	Planned		2023-04-18	2026-04-30

SOLUTION :

Step 1 - Install NodeJS

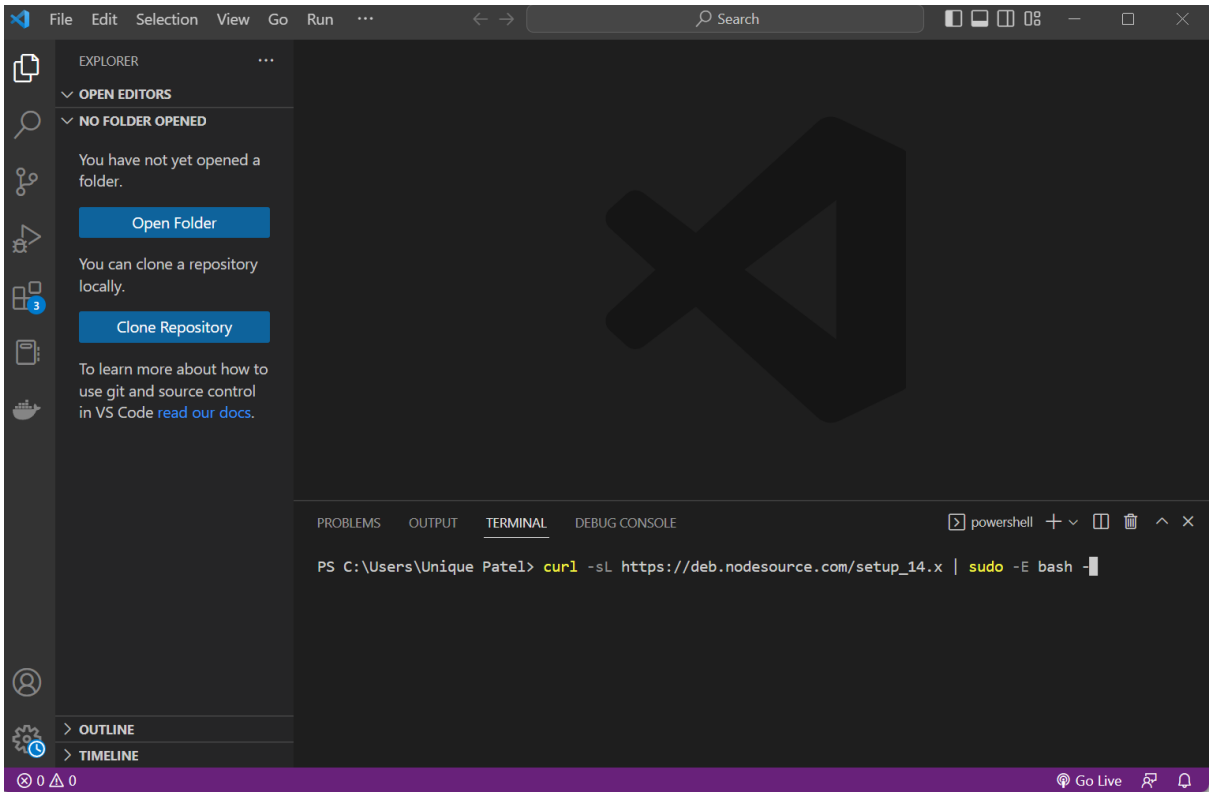
Download NodeJS from NodeSource. NodeSource is a company which provides enterprise-grade Node support and maintains a repository containing the latest versions of Node.js.

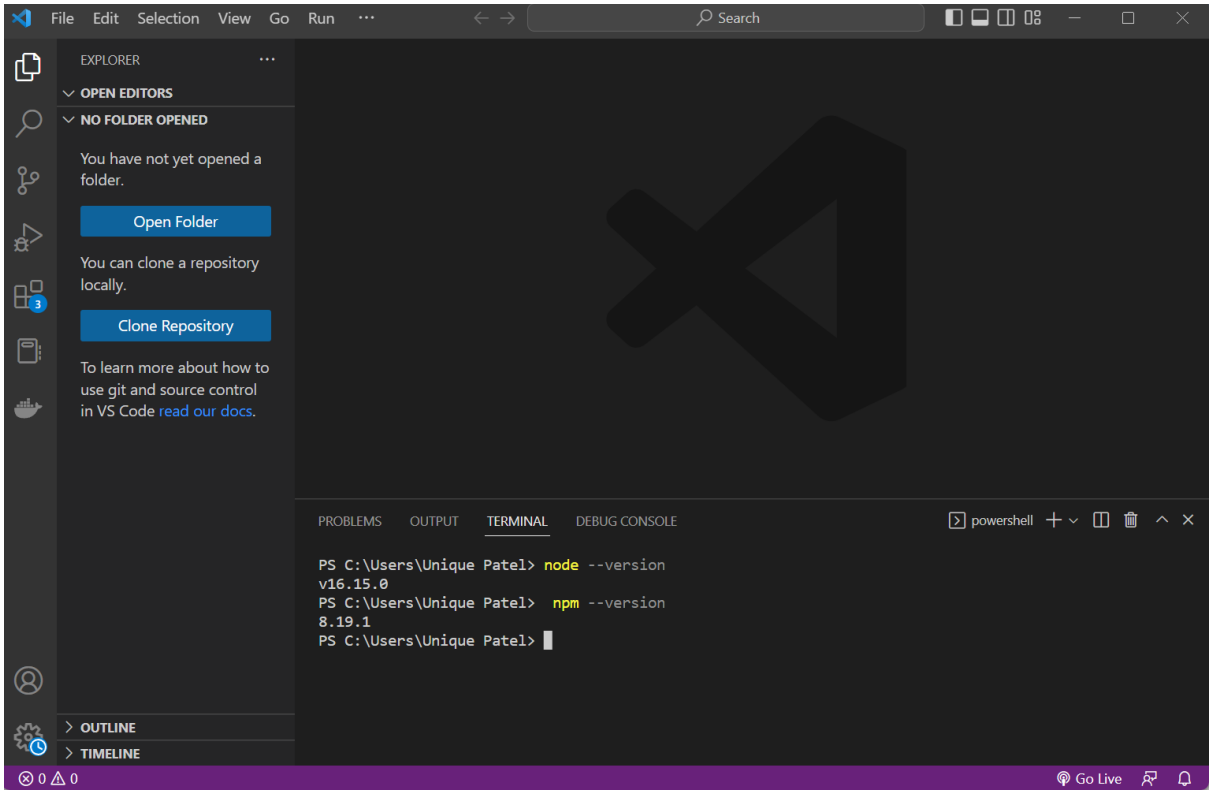
```
curl -sL https://deb.nodesource.com/setup_14.x | sudo -E
bash -


sudo apt-get install -y nodejs
```

Check the installation of node and npm using the following commands:

```
node --version
npm --version
```


File Edit Selection View Go Run ···
Search
EXPLORER
OPEN EDITORS
NO FOLDER OPENED
You have not yet opened a folder.
Open Folder
You can clone a repository locally.
Clone Repository
To learn more about how to use git and source control in VS Code read our docs.
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
powershell
PS C:\Users\Unique Patel> curl -sL https://deb.nodesource.com/setup_14.x | sudo -E bash -
OUTLINE
TIMELINE
0 0
Go Live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PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
powershell
PS C:\Users\Unique Patel> node --version
v16.15.0
PS C:\Users\Unique Patel> npm --version
8.19.1
PS C:\Users\Unique Patel>
OUTLINE
TIMELINE
0 0
Go Live

Step 2 - Creating a sample NodeJS file

Let's create a sample app.

```
sudo vi new.js
```

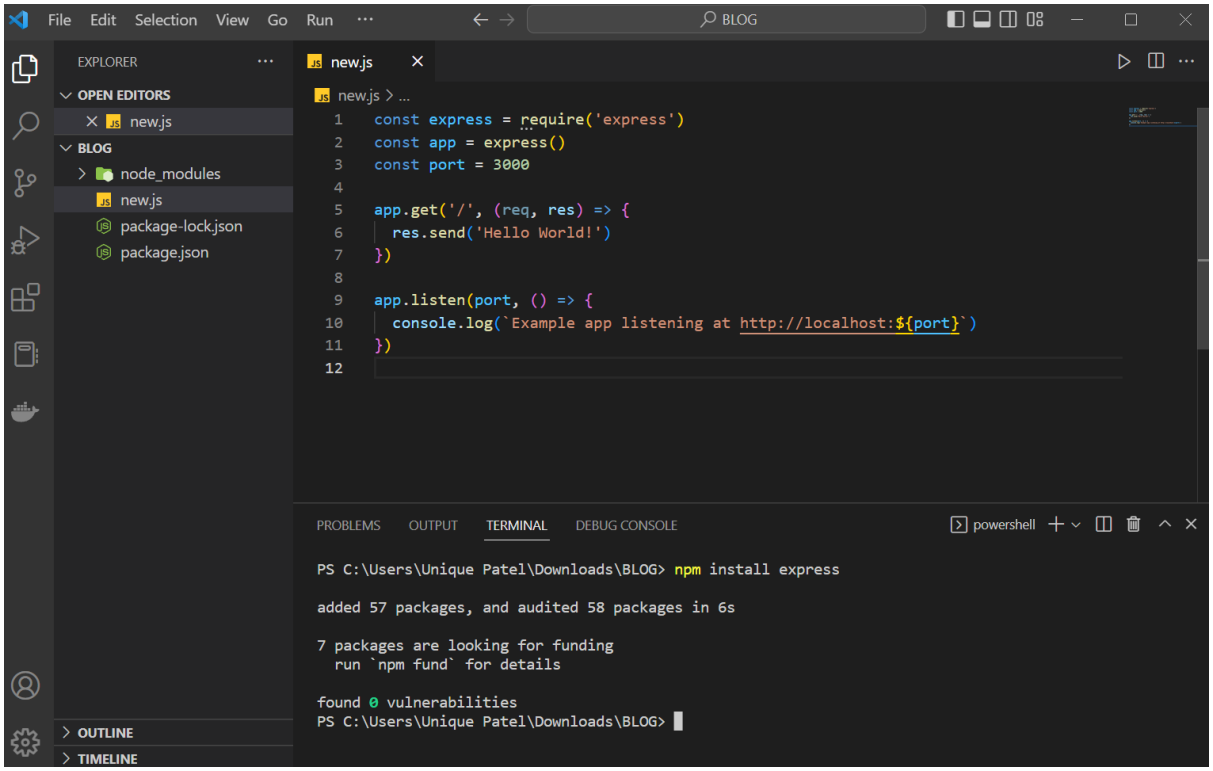
```
const express = require('express')
const app = express()
const port = 3000

app.get('/', (req, res) => {
  res.send('Hello World!')
})

app.listen(port, () => {
  console.log(`Example app listening at
http://localhost:${port}`)
})
```

Install Express so that we can run this app server:

```
npm install express
```

```
node app.js
```

You should now be able to see the hello world page when you visit **http://server-ip:3000**



Hello World!

Step 3 - Using pm2 as a process manager

Install and use pm2 as a process manager. Install pm2 using the commands below :

```
sudo npm i pm2 -g
```

Start the application using the following command :

```
pm2 start app.js
```

Step 4 - Configuring Nginx as a reverse proxy

Now let's configure Nginx as a reverse proxy. This will help us get the security features from Nginx. Also, we can serve static content using Nginx.

```
sudo apt install nginx
```

```
sudo vi /etc/nginx/sites-available/nodeApp
```

```
server{
  server_name 165.232.177.116;

      location / {
        proxy_pass http://localhost:3000;
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
}
```

Activate this configuration using the command below:

```
sudo ln -s /etc/nginx/sites-available/nodeApp
/etc/nginx/sites-enabled
```

Visit : **http://your-ip/**

GitHub Link : **https://github.com/007unique/blog/tree/master**

Challenges Faces :-

- Fixing cookie violations in Node.js with Express
- Migrate a Java service to Node.js for specific tasks
- Increase the data submission limit in HTTP responses
- Sharing components, modules, or libraries between projects
- Identify the most appropriate package for your needs.

Business Benefit :-

- In node js development services, the code is multiple-platform and multiple browsers compatible, i.e. the code written in one language can run on multiple platforms thereby reducing the need to re-invent the wheel with code to be re-written for different platforms.

- No special talent is required to engineer and handle front-end and back-end in node.js, as using a common language both can be handled.

- Its architecture is concurrent in nature that enables enterprises to build network applications that can handle multiple concurrent connections with increased performance.

THANK YOU

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