

# Time Server

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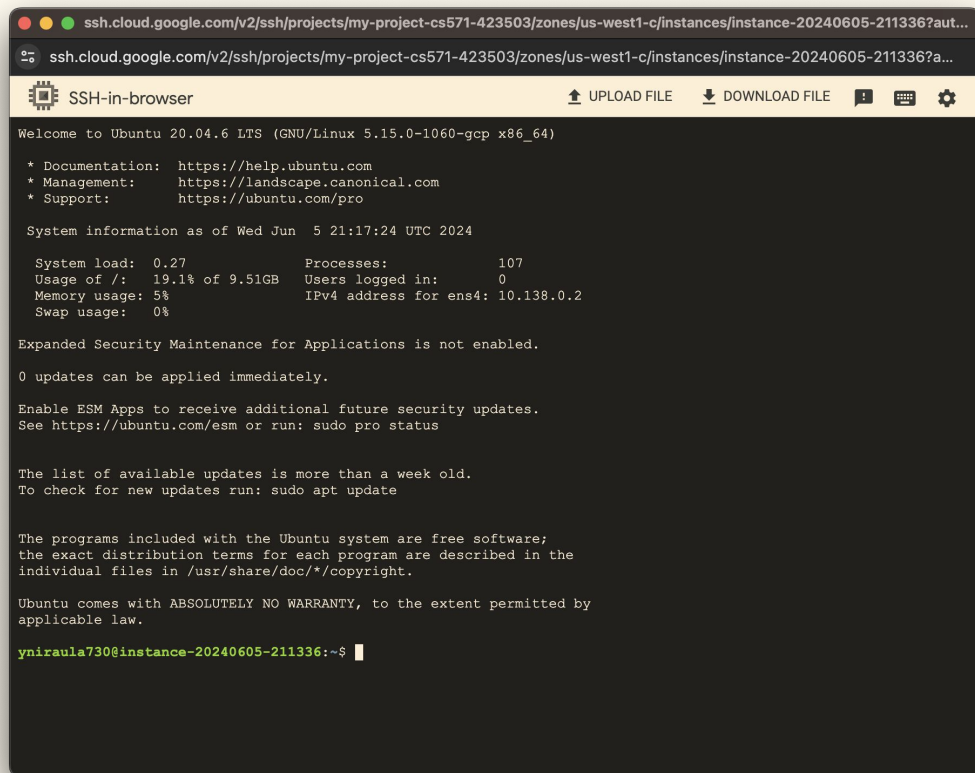
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06/05/2024

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# Set up Ubuntu Environment

- Install Ubuntu VM
- Check your Ubuntu version



The screenshot shows a terminal window titled "SSH-in-browser" with a URL bar indicating an SSH connection to a Google Cloud instance. The terminal output displays the Ubuntu 20.04.6 LTS welcome message, system documentation links, and detailed system information as of Wednesday, June 5, 2024, at 21:17:24 UTC. The system information includes a system load of 0.27, 107 processes, 19.1% disk usage, 5% memory usage, and 0% swap usage. It also notes that expanded security maintenance is not enabled and that updates are available. The terminal ends with a prompt for the user 'yniraula730'.

```
ssh.cloud.google.com/v2/ssh/projects/my-project-cs571-423503/zones/us-west1-c/instances/instance-20240605-211336?aut...
ssh.cloud.google.com/v2/ssh/projects/my-project-cs571-423503/zones/us-west1-c/instances/instance-20240605-211336?a...
SSH-in-browser
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1060-gcp x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/pro

System information as of Wed Jun  5 21:17:24 UTC 2024

System load:  0.27          Processes:           107
Usage of /:   19.1% of 9.51GB Users logged in:       0
Memory usage: 5%          IPv4 address for ens4: 10.138.0.2
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

yniraula730@instance-20240605-211336:~$
```

# Set up Nodejs and npm

- Install Nodejs and npm

```
yniraula730@instance-20240605-211336:~$ sudo apt-get install -y nodejs
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  nodejs
0 upgraded, 1 newly installed, 0 to remove and 17 not upgraded.
Need to get 29.3 MB of archives.
After this operation, 189 MB of additional disk space will be used.
Get:1 https://deb.nodesource.com/node_19.x focal/main amd64 nodejs amd64 19.9.0-deb-1nodesource1 [29.3 MB]
Fetched 29.3 MB in 1s (42.9 MB/s)
Selecting previously unselected package nodejs.
(Reading database ... 62124 files and directories currently installed.)
Preparing to unpack .../nodejs_19.9.0-deb-1nodesource1_amd64.deb ...
Unpacking nodejs (19.9.0-deb-1nodesource1) ...
Setting up nodejs (19.9.0-deb-1nodesource1) ...
Processing triggers for man-db (2.9.1-1) ...
yniraula730@instance-20240605-211336:~$ sudo apt install nodejs
Reading package lists... Done
Building dependency tree
Reading state information... Done
nodejs is already the newest version (19.9.0-deb-1nodesource1).
0 upgraded, 0 newly installed, 0 to remove and 17 not upgraded.
yniraula730@instance-20240605-211336:~$
```

- Verify the versions of node and npm

```
yniraula730@instance-20240605-211336:~$ node --version
v19.9.0
yniraula730@instance-20240605-211336:~$ npm --version
9.6.3
yniraula730@instance-20240605-211336:~$
```

# Start Node Time Server

- Create a file named timeserver.js with the following content:

```
const http = require('http');

const port = 8000
function zeroFill(i) {
  return (i < 10 ? '0' : '') + i
}
function now () {
  var d = new Date()
  let output = {'year':
d.getFullYear(),
'month': zeroFill(d.getMonth()
+ 1),
'date': zeroFill(d.getDate()),
'hour': zeroFill(d.getHours()),
'minute':
zeroFill(d.getMinutes())}

  return output;
}

let server =
http.createServer((req, res) =>
{
  res.writeHead(200,
{'Content-Type':
'text/plain'});
  res.end(now()+'\n');
});
// Listening on the port
provided on the command line
server.listen(Number(port))
console.log('Node server
running on http://localhost:'+
port);
```

# Connect to Server through Terminal

- Enter the following in the terminal:

```
node time_server.js 8000
```

- Open a new Ubuntu terminal and open the url:

```
curl http://localhost:8000/api/currenttime
```

- You should see the output with current date and time like below:

```
yniraula730@instance-20240605-211336:~$ curl http://localhost:8000/api/currenttime
{"year":2024,"month":"06","date":"06","hour":"01","minute":"44"}
yniraula730@instance-20240605-211336:~$
```

# References

- W3Schools: Nodejs tutorial
- Stack Overflow: Community solutions and discussions
- Google slides link:
  - [https://docs.google.com/presentation/d/1Du8Bp6jvi1WltTFEj2YFkrs2UneZhIh-nly5p6IONS/edit#slide=id.g2e1469f5099\\_0\\_299](https://docs.google.com/presentation/d/1Du8Bp6jvi1WltTFEj2YFkrs2UneZhIh-nly5p6IONS/edit#slide=id.g2e1469f5099_0_299)
- Github project link:
  - <https://github.com/yubrajniraula/Cloud-Computing>