

Daily Report File for the Semester Project

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First, I forked the repository of tendermint. The forked repository can be found in the link <https://github.com/FurkanKarakas/tendermint>. I followed the documentation on GitHub in order to install the binaries in my local machine. It involved setting up some environment variables such as \$GOPATH.

Since the master branch is under development, I checked out to the latest version, which is currently 0.33.0. The current version of tendermint can be seen by the command:

```
tendermint version
```

We can run a single node tendermint at the moment but to run local test nets, we can utilize “docker”. To start a 4 node test net, run:

```
make localnet-start
```

The nodes bind their Remote Procedure Call (RPC) servers to ports 26657, 26660, 26662, and 26664 on the host. The nodes of the network expose their P2P and RPC endpoints to the host machine on ports 26656-26657, 26659-26660, 26661-26662, and 26663-26664 respectively. We can verify these port numbers with the following command:

```
$ sudo netstat -tulpn | grep LISTEN
```

tcp	0	0	127.0.0.1:43635	0.0.0.0:*	LISTEN	3298/code
tcp	0	0	127.0.0.53:53	0.0.0.0:*	LISTEN	597/systemd-resolve
tcp	0	0	127.0.0.1:631	0.0.0.0:*	LISTEN	811/cupsd
tcp6	0	0	:::1:631	:::*	LISTEN	811/cupsd
tcp6	0	0	:::26656	:::*	LISTEN	10874/docker-proxy
tcp6	0	0	:::26657	:::*	LISTEN	10859/docker-proxy
tcp6	0	0	:::26659	:::*	LISTEN	11005/docker-proxy
tcp6	0	0	:::26660	:::*	LISTEN	10984/docker-proxy
tcp6	0	0	:::26661	:::*	LISTEN	10832/docker-proxy
tcp6	0	0	:::26662	:::*	LISTEN	10819/docker-proxy
tcp6	0	0	:::26663	:::*	LISTEN	10951/docker-proxy
tcp6	0	0	:::26664	:::*	LISTEN	10918/docker-proxy

Note that the program uses TCP in IPv6.

In the command line window, each node is printed with a distinct color. Executed states and committed blocks are printed in the command line window. With each commitment, the height is constantly increasing.