

Initialize and Configure Geth

1. Initialise with Genesis

```

root@DESKTOP-47VGQDK:~/avail-project/op-geth# mkdir datadir
mkdir: cannot create directory 'datadir': File exists
root@DESKTOP-47VGQDK:~/avail-project/op-geth# build/bin/geth init --datadir=datadir genesis.json
INFO [10-29|03:52:16.746] Maximum peer count          ETH=50 total=50
INFO [10-29|03:52:16.748] Smartcard socket not found, disabling err="stat /run/pcscd/pcscd.comm: no such file or directory"
INFO [10-29|03:52:16.752] Set global gas cap          cap=50,000,000
INFO [10-29|03:52:16.753] Initializing the KZG library backend=gokzg
INFO [10-29|03:52:16.840] Defaulting to pebble as the backing database
INFO [10-29|03:52:16.840] Allocated cache and file handles database=/root/avail-project/op-geth/datadir/geth/chaindata cache=16.00MiB handles=16
INFO [10-29|03:52:16.890] Opened ancient database      database=/root/avail-project/op-geth/datadir/geth/chaindata/ancient/chain readonly=false
INFO [10-29|03:52:16.890] State schema set to default scheme=path
ERROR [10-29|03:52:16.890] Head block is not reachable
INFO [10-29|03:52:16.919] Opened ancient database      database=/root/avail-project/op-geth/datadir/geth/chaindata/ancient/state readonly=false
INFO [10-29|03:52:16.919] Writing custom genesis block
INFO [10-29|03:52:17.373] Successfully wrote genesis state database=chaindata hash=b93f37..8dd478
INFO [10-29|03:52:17.373] Defaulting to pebble as the backing database
INFO [10-29|03:52:17.373] Allocated cache and file handles database=/root/avail-project/op-geth/datadir/geth/lightchaindata cache=16.00MiB handles=16
INFO [10-29|03:52:17.423] Opened ancient database      database=/root/avail-project/op-geth/datadir/geth/lightchaindata/ancient/chain readonly=false
INFO [10-29|03:52:17.423] State schema set to default scheme=path
ERROR [10-29|03:52:17.424] Head block is not reachable
INFO [10-29|03:52:17.489] Opened ancient database      database=/root/avail-project/op-geth/datadir/geth/lightchaindata/ancient/state readonly=false
INFO [10-29|03:52:17.489] Writing custom genesis block
INFO [10-29|03:52:17.927] Successfully wrote genesis state database=lightchaindata hash=b93f37..8dd478
root@DESKTOP-47VGQDK:~/avail-project/op-geth#

```

2. Run op-geth

```

INFO [10-29 04:09:02.319] Maximum peer count ETH=0 total=0
INFO [10-29 04:09:02.319] Smartcard socket not found, disabling err="stat /run/pcscd/pcscd.com: no such file or directory"
INFO [10-29 04:09:02.323] Set global gas cap caps=50,000,000
INFO [10-29 04:09:02.323] Initializing the K20 library backend=gokzg
INFO [10-29 04:09:02.417] Allocated trie memory caches clean=154,000MB dirty=256,000MB
INFO [10-29 04:09:02.412] Defaulting to pebble as the backing database
INFO [10-29 04:09:02.412] Allocated cache and file handles database=/root/avail-project/op-geth/datatdir/geth/chaintdata cache=512,000MB handles=524,288
INFO [10-29 04:09:02.458] Opened ancient database database=/root/avail-project/op-geth/datatdir/geth/chaintdata/ancient/chain readonly=false
INFO [10-29 04:09:02.459] State scheme set by user scheme=hash
INFO [10-29 04:09:02.459] Head block is not reachable
INFO [10-29 04:09:02.462] Writing default main-net genesis block
INFO [10-29 04:09:02.474] Persisted trie from memory database nodes=12356 size=1.79MiB time=90.108452ms gcnodes=0 gcsize=0.000 gctime=0s livenodes=0 livesize=0.000
INFO [10-29 04:09:02.945] -----
INFO [10-29 04:09:02.945] Chain ID: 1 (mainnet)
INFO [10-29 04:09:02.945] Consensus: Beacon (proof-of-state), merged from Ethash (proof-of-work)
INFO [10-29 04:09:02.945] -----
INFO [10-29 04:09:02.945] Pre-Merge hard forks (block based):
INFO [10-29 04:09:02.945] - Homestead: #1150000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/homestead.md)
INFO [10-29 04:09:02.945] - DAO Fork: #1920000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/dao-fork.md)
INFO [10-29 04:09:02.945] - Tangerine Whistle (EIP 150): #2463000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/tangerine-whistle.md)
INFO [10-29 04:09:02.945] - Spurious Dragon1 (EIP 155): #2675000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/spurious-dragon.md)
INFO [10-29 04:09:02.945] - Spurious Dragon2 (EIP 158): #2675000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/spurious-dragon.md)
INFO [10-29 04:09:02.945] - Byzantium: #4370000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/byzantium.md)
INFO [10-29 04:09:02.945] - Constantinople: #7280000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/constantinople.md)
INFO [10-29 04:09:02.945] - Petersburg: #7280000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/petersburg.md)
INFO [10-29 04:09:02.945] - Istanbul: #9060000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/istanbul.md)
INFO [10-29 04:09:02.945] - Muir Glacier: #9200000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/muir-glacier.md)
INFO [10-29 04:09:02.945] - Berlin: #12240000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/berlin.md)
INFO [10-29 04:09:02.945] - London: #12965000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/London.md)
INFO [10-29 04:09:02.945] - Arrow Glacier: #17720000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/arrow-glacier.md)
INFO [10-29 04:09:02.945] - Gray Glacier: #19105000 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/gray-glacier.md)
INFO [10-29 04:09:02.945] -----
INFO [10-29 04:09:02.945] Merge configured:
INFO [10-29 04:09:02.945] - Hard fork specification: https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/paris.md
INFO [10-29 04:09:02.946] - Network known to be merged: true
INFO [10-29 04:09:02.946] - Total terminal difficulty: 58750000000000000000000000
INFO [10-29 04:09:02.946] -----
INFO [10-29 04:09:02.946] Post-Merge hard forks (timestamp based):
INFO [10-29 04:09:02.946] - Shanghai: #168133845 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/shanghai.md)
INFO [10-29 04:09:02.946] - Cancun: #1710338135 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/cancun.md)
INFO [10-29 04:09:02.946] -----
INFO [10-29 04:09:02.946] -----
INFO [10-29 04:09:02.946] Loaded most recent local block number=0 hash=0d4567...cb8fa3 tx=17,179,869,184 age=557m2u
WARN [10-29 04:09:02.946] Failed to load snapshot err="missing or corrupted snapshot"
INFO [10-29 04:09:02.951] Rebuilding state snapshot
INFO [10-29 04:09:02.954] Initialized transaction indexer range="last 2350000 blocks"
INFO [10-29 04:09:02.954] Initializing Ethereum protocol account=2869 @version=cn1b
INFO [10-29 04:09:02.954] Resuming state snapshot generation nonce=D4927...04944 account=0 slots=0 storage=0.008 dampling=0.22949ms
INFO [10-29 04:09:03.069] Generated state snapshot account=8893 slots=409.6418 dampling=0.0722ms
INFO [10-29 04:09:03.075] Gasprice oracle is ignoring threshold set threshold=2
INFO [10-29 04:09:03.078] Engine API enabled protocol=eth
INFO [10-29 04:09:03.078] Starting peer-to-peer node instance=geth/v1.10.108-0-stable-5c2e7580/1linux-amd64/gtk.21.26
INFO [10-29 04:09:03.095] New local node record seq=1730,174,943,095 id=fb16be25fdae284b ip=127.0.0.1 uip=0x300303
INFO [10-29 04:09:03.095] Started P2P networking self="mode://689596ad457313099492f6ae526b36d57649388f63bf27f6d6fe7f84df7b2c23354e2015dabc843aa08b599a098838701e100f6171cd0bf4cf2f327127.0.1:30013?discport=0"
INFO [10-29 04:09:03.096] IPC endpoint opened url=/root/avail-project/top-geth/datatdir/geth.ipc
INFO [10-29 04:09:03.097] Loaded JMT secret file path=jmt_txt rsl=0a5515ad0a8
INFO [10-29 04:09:03.097] HTTP server started endpoint=[:]:9545 auth=false prefix=cons* vhostns*
INFO [10-29 04:09:03.097] Websocket enabled url=ws://[:]:9546
INFO [10-29 04:09:03.097] Websocket enabled url=ws://[:]:9551
INFO [10-29 04:09:03.097] HTTP server started endpoint=[:]:9551 auth=true prefix=cons+localhost vhostns*

```

3. Run op-node

```
root@DESKTOP-47VQ0CQ:/avalon-project/optimalism/op-node # ./bin/op-node --l2-http://localhost:9551 --l2-jwt-secret=/jwt.txt --sequencer.enabled --sequencer.l1-confs=5 --verifier.l1-confs=4 --rollup.config=/rollup.json --rpc.addr=0.0.0.0 --rpc.port=8547 --p2p.disable --rpc.enable-admin --p2p.sequencer-key=$GG_SEQUENCE_PRIVATE_KEY --l1-$l1_RPC_URL --l1.rpckind=quicknode --alt-da.enabled=true --alt-da.server=$DA_SERVER_HTTP
```

```
INFO [10-30(04):10:11.434] Not opted in to ProtocolVersion signal loading, disabling ProtocolVersions config track now.
```

```
INFO [10-30(04):10:11.435] No persisted sequencer state loaded
```

```
WARN [10-30(04):10:11.435] Alt-DA Mode is a Beta feature of the MIT licensed OP Stack. While it has received initial review from core contributors, it is still undergoing testing, and may have bugs or other issues.
```

```
INFO [10-30(04):10:11.435] Rollup Config {  
  "l2_chain_id": 42069,  
  "l2_network": "unknown L2",  
  "l1_chain_id": 1,  
  "l1_network": "sepolia",  
  "l2_start_time": 1_730_099_316,  
  "l2_block_hash": "0x8bb8c4dcf474bf9f98be393dadc8fb84acfeffcd4ad4e98b6c25",  
  "l2_block_number": 0,  
  "l1_block_hash": "0x578ba489f0ef11b3cc4e6961509",  
  "l1_block_number": 6,  
  "rollup_time": "genesis",  
  "canyon_time": "genesis",  
  "pragmatic_time": "not configured",  
  "holocene_time": "not configured",  
  "interop_time": "not configured",  
  "distro": "mainnet"
```

```
WARN [10-30(04):10:11.435] Alt-DA Mode is a Beta feature of the MIT licensed OP Stack. While it has received initial review from core contributors, it is still undergoing testing, and may have bugs or other issues.
```

```
INFO [10-30(04):10:11.435] Initializing rollup node version=v1.9.1-4797ddb7-1724853807
```

```
WARN [10-30(04):10:12.169] This endpoint is required for the Ecotone upgrade, but is missing, and configured to be ignored. The node may be unable to retrieve EIP-4844 blobs data.
```

```
WARN [10-30(04):10:12.169] failed to dial address, but may connect later addr=http://localhost:9551
```

```
WARN [10-30(04):10:13.279] failed to dial address, but may connect later addr=http://localhost:9551
```

```
WARN [10-30(04):10:15.476] failed to dial address, but may connect later addr=http://localhost:9551
```

```
WARN [10-30(04):10:15.476] failed to dial address, but may connect later addr=http://localhost:9551
```

4. Run op-batcher

```
root@DESKTOP-47VGQDK:~/avail-project/optimism# cd op-batcher
root@DESKTOP-47VGQDK:~/avail-project/optimism/op-batcher# ./bin/op-batcher \
root@DESKTOP-47VGQDK:~/avail-project/optimism/op-batcher# cd op-batcher \
root@DESKTOP-47VGQDK:~/avail-project/optimism/op-batcher# ./bin/op-batcher \

--l2-eth-rpc=http://localhost:9545 \
--rollup-rpc=http://localhost:8547 \
--poll-interval=1s \
--sub-safety-margin=6 \
--num-confirmations=1 \
--safe-abort-nonce-too-low-count=3 \
--resubmission-timeout=30s \
--rpc.addr=0.0.0.0 \
--rpc.port=8548 \
--rpc.enable-admin \
--altda.da-server=$DA_SERVER_HTTP_URL \
INFO [10-30|04:04:37.577] Initializing Batch Submitter
WARN [10-30|04:04:37.802] failed to dial address, but may connect later addr=http://localhost:9545
WARN [10-30|04:04:39.806] failed to dial address, but may connect later addr=http://localhost:9545
WARN [10-30|04:04:41.809] failed to dial address, but may connect later addr=http://localhost:9545
WARN [10-30|04:04:43.810] failed to dial address, but may connect later addr=http://localhost:9545
```

5. Run op-proposer

```
root@DESKTOP-47VGQDK:~/avail-project/optimism/op-proposer# ./bin/op-proposer --poll-interval=12s -
-rpc.port=9560 --rollup-rpc=http://localhost:8547 --l2oo-address=$L200_ADDR --private-key=$PROPO
SER_KEY --l1-eth-rpc=$L1_RPC_URL --game-factory-address=0x0000000000000000000000000000000000000000000000000000000000000000 --
proposal-interval 3s
t=2024-10-31T04:07:42+0000 lvl=crit msg="Application failed" message="failed to setup: invalid CLI fla
gs: neither the `DisputeGameFactory` nor `L2OutputOracle` address was provided"
root@DESKTOP-47VGQDK:~/avail-project/optimism/op-proposer# ./bin/op-proposer --poll-interval=12s -
-rpc.port=9560 --rollup-rpc=http://localhost:8547 --l2oo-address=$L200_ADDR --private-key=$PROPO
SER_KEY --l1-eth-rpc=$L1_RPC_URL --game-factory-address=0x0000000000000000000000000000000000000000000000000000000000000000 -
-proposal-interval 3s
INFO [10-31|04:07:56.425] Initializing L2Output Submitter
WARN [10-31|04:07:56.530] failed to dial address, but may connect later addr=http://localhost:8547
WARN [10-31|04:07:58.547] failed to dial address, but may connect later addr=http://localhost:8547
WARN [10-31|04:08:00.550] failed to dial address, but may connect later addr=http://localhost:8547
WARN [10-31|04:08:02.556] failed to dial address, but may connect later addr=http://localhost:8547
WARN [10-31|04:08:03.086] failed to dial address, but may connect later addr=http://localhost:8547
WARN [10-31|04:08:05.087] failed to dial address, but may connect later addr=http://localhost:8547
WARN [10-31|04:08:07.088] failed to dial address, but may connect later addr=http://localhost:8547
```