

EngageChain LAN / Enterprise Network Node Mining Deployment Guide

Applicable scenario: An environment on a LAN or enterprise network that cannot bind a fixed public IP. LAN nodes can only act as ordinary mining nodes and cannot act as global seed nodes.

1. Pre-Deployment Preparation

1.1 Hardware and Software

Component	Requirement
Operating system	Windows 10/11 (server edition also OK)
<code>engaged.exe</code>	Node main program
Network	TCP 30333 (P2P) inter-node reachability; open 8545 if remote RPC access is needed
Data directory per node	Independent directory (e.g., <code>D:\engage-data</code>), recommended empty on first deployment

1.2 Generate Miner Address

Each block-producing node needs a **fixed** miner address (the address is also the source of the VRF election key):

```
engaged.exe key generate
:: Output example:
::Address: eg10100xxx
::Public key: 5f89baxxx
::Secret key (private, 64 hex chars): d9fcxxx
::WARNING: Keep your secret key safe! Anyone with it controls the address.
```

Important: Once the address is determined, you must fixedly use `--miner-address <that address>` on subsequent starts. Changing the address causes the node to re-register, and if the address changes after a restart the node temporarily loses block-production eligibility.

2. Deployment Steps

2.1 Modify the Provided Script Accordingly:

```
@echo off
engaged.exe start ^
--p2p-listen /ip4/0.0.0.0/tcp/30333 ^
--rpc-listen 0.0.0.0:8545 ^
--bootnode /ip4/124.221.244.124/tcp/30333 ^
--http-sync-peers http://124.221.244.124:8545 ^
```

```
--data-dir data ^
--node-secret-file node_secret.txt ^
--network mainnet ^
--mine ^
--miner-address eg10100xxx ^
--log-level info
```

Key points:

- **--bootnode** points to the seed node IP; you can configure multiple **--bootnode**. First use the default one provided by the team; later you can choose more stable other nodes learned from the network: **/ip4/<seed-ip>/tcp/30333**.
- **--network** must match the seed (devnet/testnet/mainnet).
- **--node-secret-file node_secret.txt ^**: place the private key file in the same-level directory; you can also delete this config item, and the console window will prompt for manual input, which is slightly more troublesome.
- On first start, please clear the **data** directory.

2.2 Start and Wait

When the node carries **--bootnode**, it first syncs with the seed; after sync completes, it also needs to wait 2min / 15min (after height 30000) to ensure network stability before participating in block production, to avoid each mining its own independent genesis chain.

3. Common Troubleshooting

Symptom	Cause	Handling
Node startup error --miner-address is required	--mine enabled without an address	Add --miner-address <address>
Each node's height grows independently, continuous fork	Follower node did not carry --bootnode	Unify --bootnode to point to the seed, clear data and restart
Node does not produce blocks for a long time	First 120s / 15min waiting for sync	Wait; confirm seed 30333 port is reachable (telnet <seed-ip> 30333)
A node's registration is slow to go on-chain	That node lost connection to the main chain	Check network reachability, restart the node; the node will auto-resend registration