Hyperscale Alpha Test - Mac User Guide

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Mac User Guide

Disclaimer: These instructions could open your computer up to attack or cause other problems. You will need to already have a basic knowledge of using the terminal on a Mac to participate. Please proceed at your own risk.

Minimum Recommended System

The minimum specification recommended to operate a Hyperscale Test node:

- Mac OS
- 4 core CPU
- 16 GB RAM
- SATA SSD
- 10 Mbps downstream / 5 Mbps upstream connection
- Wired connection - avoid Wi-Fi unless you have low latency / high speed

(This space is intentionally left blank)

Prepare Your Machine

1. Install Brew (if you do not already have it installed)

/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

2. Install OpenJDK v21

You will need to install OpenJDK v21 (*default install settings are fine*):
brew install openjdk@21

Note: If you have a higher java version pre-installed you can create (or edit) the .zshrc file in your ~ home folder and insert the following into the file:
alias java21='/opt/homebrew/opt/openjdk@21/bin/java'

3. Download & Move Hyperscale Files

A) Download the hyperscale.jar and default.config files:
(see latest posts from @danhughes in **Radix Hyperscale Telegram Channel** to obtain)

B) Create a folder called **Hyperscale** on your machine and place these two downloaded files inside the Hyperscale folder

4. Turn Off VPN

It is recommended that you disable any VPN software you are running while taking part in this test.

5. Add Port Forward Rules

It would be beneficial for the test to forward port 8080 TCP and port 30000 TCP/UDP on your router to your machine. (If you need help doing this please see the **How to Port Forward** near the bottom of this guide)

6. Add Inbound Firewall Exception Rules

Along with the port forward rule you may need to also allow inbound port 8080 TCP and port 30000 TCP/UDP to get through the firewall on your Mac. This may be a setting in your OS or perhaps and/or you have a 3rd party software firewall. *(If you need help doing this please see the **How to Open A Firewall Port** near the bottom of this guide)*

7. Keep Your Machine Awake

If your computer goes to sleep after being idle for a certain amount of time it could stop your hyperscale test from running. Please disable sleep mode during this test.

Join Hyperscale Test (Start Your Node)

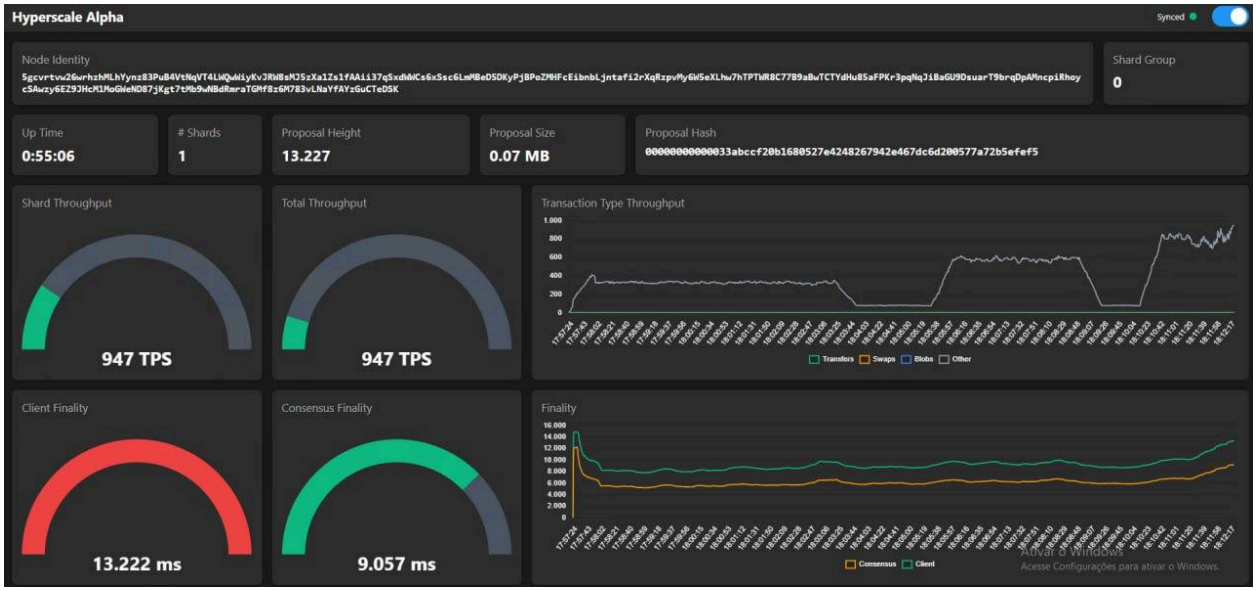
1) Open your terminal
2) Change directory to Hyperscale folder
3) Run the following command*
   java -Xms12G -jar hyperscale.jar -console

*If you have multiple java versions installed use the java21 command instead:
java21 -Xms12G -jar cassandra.jar -console

Your Hyperscale node should begin with some information and maybe a warning message. Once startup is complete you will be presented with a console cursor **>** where if you wish you can enter the console commands listed below.
*(Any issues? Go to the **Troubleshooting** section below)*

Node Dashboard

Your node's dashboard can be viewed at **http://localhost:8080/dashboard/index.html**



Console Commands

Once your node is running you can enter the following commands for more information:

ledger information about your Hyperscale instance such as if it is in sync, how many proposals it has processed, transactions, current throughput statistics etc

network lists the nodes your instance is currently connected to. Both within its local shard and remote shards (if relevant)

network -stats produces statistical information about network usage such as current bandwidth, gossip statistics, etc

Metric	Description
Synced: true	Confirms if your node is in sync or not. If it is '**false**' then either the node is still synching or it has stalled. If the Current head figure remains static and **Synched** = **false** then you may need to restart your node.
Identity: S-0 <- 5fKfkmTs...8aogFi7Y	
Current head: 50737 000000000000c6317dca7a60b7a4ac9c5f92f0	**Current head: 50737** is the tip of the network. This number will increase sequentially. Your node will be in sync when it reaches the head.
Ledger timestamp: 1708722156 / Fri Feb 23 13:02:36 PST 2024	
Atoms (P/L/AT/EL/ET/CT/T): 0/10000/0/0/0/0/9900	Atoms are a container for a transaction manifest. An Atom may contain many individual events, similar to how transactions work on Babylon . **P** = Pending, **L** = Accepted, **AT** = Accept timedout, **EL** = Execution is latent, **ET** = Execution timedout, **CT** = Commit timedout, **T** = Total committed transaction in network
Atom throughput: 0/5	The first number is local host Atom throughput and the second is the peak or global throughput
Certificates (A/R/Q): 10000/0/10000	
Packages: 0/0	
Proposal size avg: 2049	
Proposal throughput: 3/292	Proposal throughput is the number of proposals processed by the node. The first number is **??**, the second number is the latency in ms to process the proposal. In this instance the latency is 292ms. Finality can roughly be equated to 3 x this number or about 1 sec.
Proposal supers: 50737/50723 1.0002760089111449	
Commit latency: 3614/5535	
Atom pool (S/A/R/C/Q): 0 / 10000 / 0 / 10000 / 10000	
Atom vote collectors (T/E): 4907 / 21	
Proposal votes (PVR/PVP/V): 0 / 404604 / 298161	
State pool (S/A/R/V/C): 0 / 0 / 20000 / 142180 / 20000	
State vote collectors (S/T/E/L/X): 0 / 381 / 373 / 1755 / 0	
State verifications (SVB/SCV/SCC): 381 / 0 / 20000	
Proposal pool (P/V/B): 0 / 5 / 4	
Shard (G/A): 1/1.0	

Test Cleanup

Once the test is over you should:
1) Close the terminal window
2) Delete the Hyperscale folder and its contents

3) Uninstall OpenJDK (if you have no other need for it)
4) Uninstall Brew (if you have no other need for it)
5) Remove port forwarding rules (if created)
6) Remove firewall rules (if created)

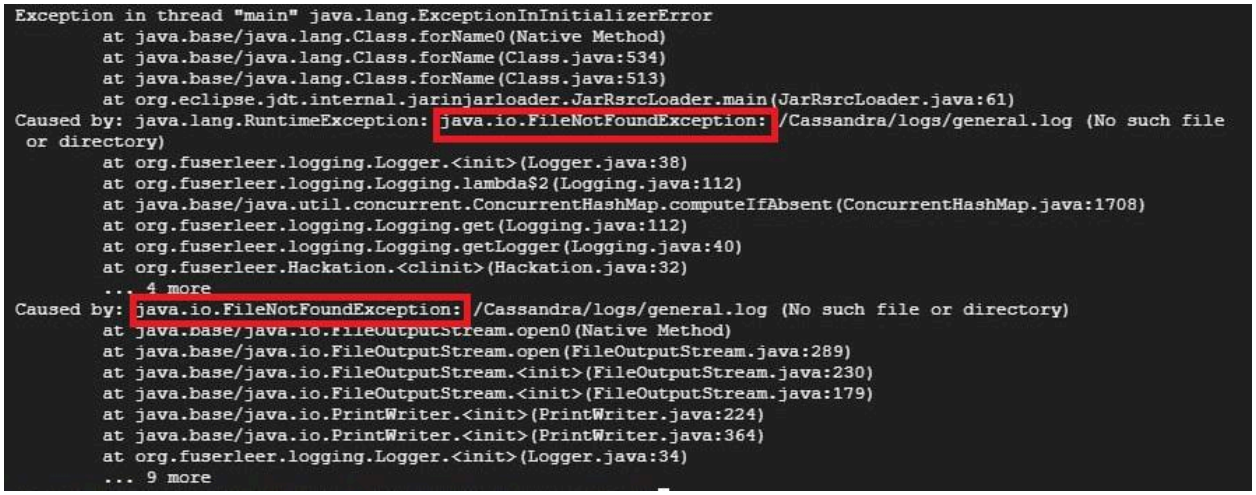
Troubleshooting

How To Restart Your Node

1) Close the terminal window
2) Delete everything inside the Hyperscale folder except the default.config and hyperscale.jar files
3) Restart your node using the steps in **Join Hyperscale Test (Starting Your Node)** above

How to Fix Error While Starting Your Node

If you receive “java.io.FileNotFoundException” when starting your Hyperscale node, please check that you are running the command from within the Hyperscale folder and that you have write permissions for the Hyperscale folder. Then follow the steps **How To Restart Your Node**.



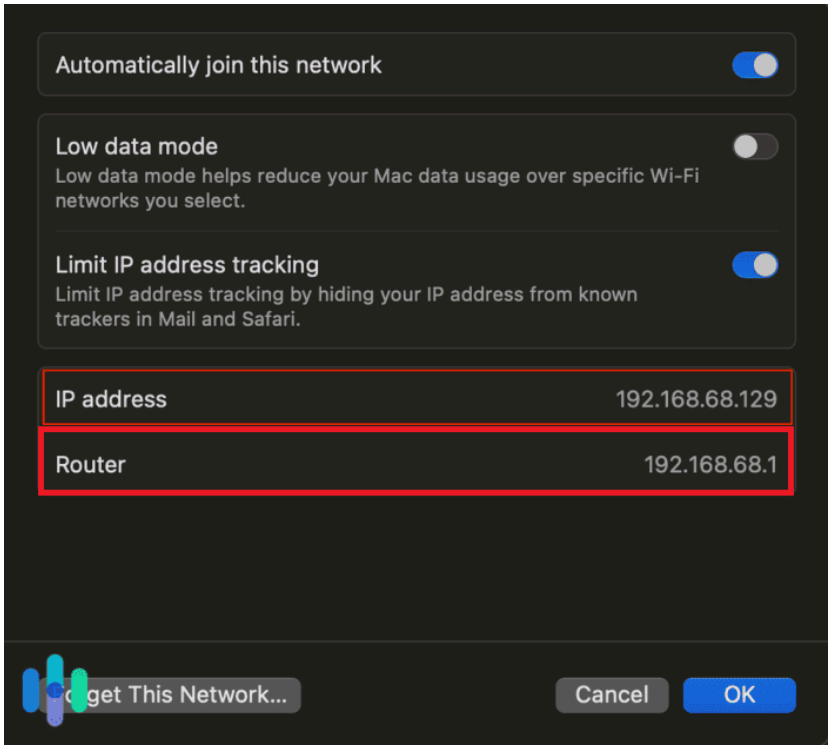
How to Port Forward

The following assumes that you only have just one router. All routers are different so I will not write any specific instructions here, but feel free to Google how to Port Forward with your router model to get exact details, like "How do I add a custom port forwarding service on my NETGEAR RAX43 router?".

One thing that is pretty much the same for all routers is that to access its settings you must type in and go to your router's IP address in your web browser. If you do not know your router IPv4 address you can get it by doing the following on your Mac:

Open System Settings
Select Network
Under Network Name, make sure it says the name of your network or router
Click Advanced
Click TCP/IP
You'll see your IP address under IPv4 Address

(also write down the IPv4 address listed too as you will need it later)



Once you get to the login screen of your router you must enter a username/password or device passcode to sign in and make changes. Many routers have their login written on the bottom of the router or on a sticker on the side of the router.

After you have logged into your router you will need to find the correct page for Port Forwarding. When you find it you will want to enable Port Forwarding (if an option) and then create a rule, like this...

Service Name=HyperscaleTest

Port=30000 *(same for starting/ending or external/internal)*

Service Type/Protocol=TCP *(if listed)*

IP=*(enter your computer's IPv4 address)*

Source=*(leave blank)*

Make sure to add and save this setting, then refresh the webpage to make sure it is saved. *(Important: You should delete this rule when the test is over and turn off Port Forwarding if you are not using it for any other rules)*

Side note: Most likely your computer's IPv4 address is dynamic (meaning it may change each day or when you reboot your computer). This will cause the Port Forwarding rule to unfortunately no longer work. If that is the case double check your computer's IPv4 address and update the Port Forwarding rule to fix it.

How to Open A Firewall Port

If your computer has a firewall enabled then you will also need to open inbound port 8080 TCP and port 30000 TCP/UDP on it as well. Your computer's firewall may be controlled by your OS, 3rd party program, or both. You should Google how to do this for your OS and/or any security software you are using.