HUDDLE 01 dRTC

DePIN dedicated to making real time communication much cheaper and performant.

DePIN: Pushing decentralization beyond blockchain

ดีพิน:ผลักดันการกระจายอำนาจให้เหนือกว่าบล็อคเชน

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DePIN stands for Decentralised Physical Infrastructure

Blockchain has transformed how we think about digital assets, finance, and gaming. We've seen NFTs revolutionize digital ownership, DeFi reshape financial systems, and smart contracts automate trust. But there's a paradox: while we're building decentralized applications, we're still completely dependent on centralized infrastructure to run them.

Our dApps run on AWS. Our Web3 front-ends rely on Vercel & Cloudflare. Our communication flows through centralized servers. Today, I'm going to show you how DePIN is closing this gap, bringing the power of decentralization to the very infrastructure that powers our digital world.

Imagine if every piece of infrastructure you use daily - from internet connectivity to cloud computing - was owned and operated not by tech giants, but by developers like you.

Why DePIN #1

Charging for Stocks, Paying for Flows

When web hosting services first emerged in the mid-1990s, you paid for everything on a separate meter: bandwidth, storage, CPU, and memory.

The market evolved to a fixed-fee model.

Imagine data is water. AWS fills a bucket full of water and then charges you based on how much water is in the bucket. This is known as charging based on “stocks.”

AWS doesn't pay for the amount of water that ends up in their customers' buckets, but rather the capacity based on the diameter of the “hose” that is used to fill them. This is known as paying for “flows.”

Estimated average AWS utilization per month	20%			
AWS Region	**AWS Cost at 1TB/month***	**Implied Mbps $**	**Estimated Regional Cost Per Mbps**	**Markup**
US/Canada	$92.07	$6.37	$0.08	7959%
Europe	$92.07	$6.37	$0.08	7959%
India (Mumbai)	$111.82	$7.73	$1.00	773%
Singapore	$122.76	$8.49	$0.50	1698%
Korea (Seoul)	$128.90	$8.91	$2.50	357%
Japan (Tokyo)	$116.63	$8.07	$0.50	1613%
Australia (Sydney)	$116.63	$8.07	$1.00	807%
Brazil (Sao Paulo)	$153.45	$10.61	$0.50	2122%
	* Taken from the official AWS "Simple Monthly Calculator" as of July 21, 2021			

US / Canada — customers pay **80x** Amazon’s costs

Europe — customers pay **80x** Amazon’s costs

South America (Sao Paulo) — customers pay **21x** Amazon’s costs

Japan (Tokyo) — customers pay **17x** Amazon’s costs

Singapore — customers pay **17x** Amazon’s costs

Australia (Sydney) — customers pay **8x** Amazon’s costs

India (Mumbai) — customers pay **8x** Amazon’s costs

South Korea (Seoul) — customers pay **3.5x** Amazon’s costs

Estimated based on AWS’s publicly available pricing via their Simple Pricing Calculator as well as an estimate of wholesale bandwidth pricing as of 21 July 2021

Why DePIN #2

Why I'm bullish on bandwidth based DePIN projects

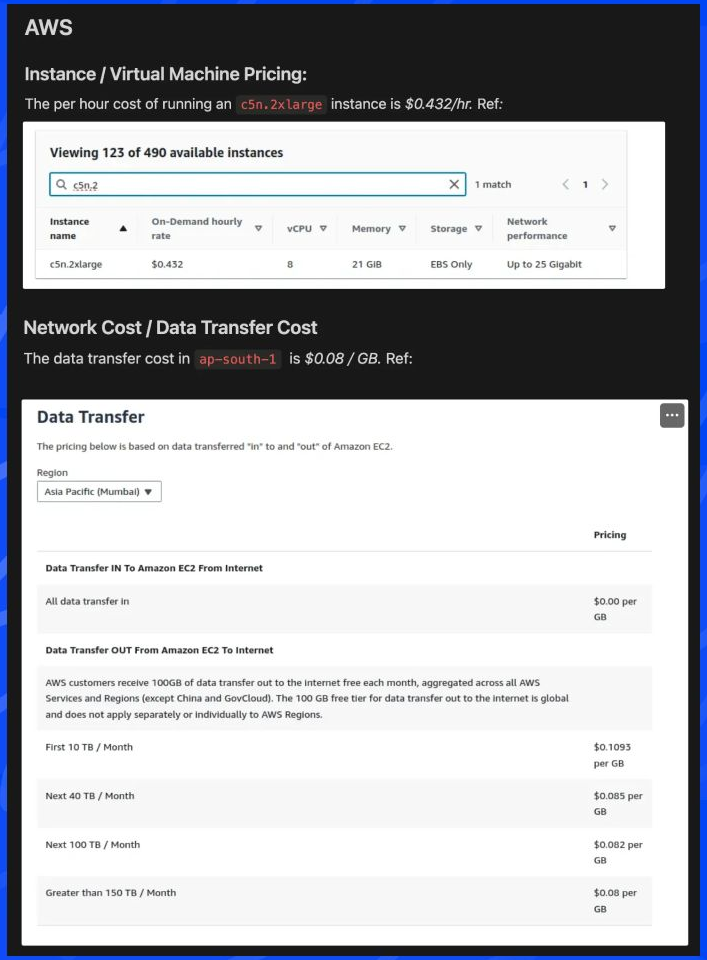
For a single participant the average bitrate consumption is around 700 Kbps.

For 8 Speakers and 20 Listeners:

1. **Data consumed per second: (700 Kbps * 8) * 20 = 112,000 Kbps = 112 Mbps**
2. **For 100 such rooms = 11,200 Mbps**
3. **Data consumed in 1 hour = 11200 Mbps * 60 * 60 = 40,320,000 Mb or 40,320 Gigabit**

Data Transfer cost for 1 hour of video call on AWS = $0.08 * 5,040 GB = $403.2

Total Cost: $403.2 (Data Transfer Cost) + $0.432 (Instance Cost) = $403.632



AWS

Instance / Virtual Machine Pricing:

The per hour cost of running an `c5n.2xlarge` instance is *$0.432/hr.* Ref:

Viewing 123 of 490 available instances

c5n.2 — 1 match

Instance name	On-Demand hourly rate	vCPU	Memory	Storage	Network performance
c5n.2xlarge	$0.432	8	21 GiB	EBS Only	Up to 25 Gigabit

Network Cost / Data Transfer Cost

The data transfer cost in `ap-south-1` is *$0.08 / GB.* Ref:

Data Transfer

The pricing below is based on data transferred "in" to and "out" of Amazon EC2.

Region: Asia Pacific (Mumbai)

	Pricing
Data Transfer IN To Amazon EC2 From Internet	
All data transfer in	$0.00 per GB
Data Transfer OUT From Amazon EC2 To Internet	
AWS customers receive 100GB of data transfer out to the internet free each month, aggregated across all AWS Services and Regions (except China and GovCloud). The 100 GB free tier for data transfer out to the internet is global and does not apply separately or individually to AWS Regions.	
First 10 TB / Month	$0.1093 per GB
Next 40 TB / Month	$0.085 per GB
Next 100 TB / Month	$0.082 per GB
Greater than 150 TB / Month	$0.08 per GB

Popular DePIN projects

/ Bandwidth Based DePIN projects

HUDDLE 01 dRTC | grass

/ Mobile

Helium Mobile™ | SOLANA MOBILE

/ Vape-to-Earn

PUFFPAW

/ AI

Aethir | io.net

Building a DePIN

1. Look for a market which is being overpriced for a service and costs can be brought down by decentralization
2. Build a POC and progressively decentralize. - Priority should be decreasing cost for the user.
3. Find a way to do off-chain compute provably and move it on-chain. (cuz decentralization is hard)

The Less “P” the better

Thank you!

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