

Mainnet Beta

Welcome to the guide for Celestia's Mainnet Beta, the production network that marks the pinnacle of Celestia's evolution since its inception in 2019. This network is where all components of the Celestia ecosystem come to life in a real-world environment.

Mainnet Beta is the culmination of rigorous community testing, upgrades, and feedback. It serves as the platform for deploying Mainnet Beta rollups and applications.

Network stability and upgrades

Mainnet Beta is a stable network, but will still receive updates and improvements. Any changes or upgrades will be coordinated with node operators and the broader Celestia community to ensure seamless integration and minimal service interruptions.

As we step into unexplored territories with groundbreaking technologies like data availability sampling, it's crucial to remember that Mainnet Beta remains experimental at this stage. While the network is live and functional, users may encounter occasional instability or reduced performance.

Network details

Detail Value Chain ID celestia Genesis hash
6BE39EFD10BA412A9DB5288488303F5DD32CF386707A5BEF33617F4C43301872 Genesis file
<https://github.com/celestiaorg/networks/blob/master/celestia/genesis.json> Peers file
<https://github.com/celestiaorg/networks/blob/master/celestia/peers.txt> Validators 100

Software version numbers

Software Version celestia-node [v0.17.2](#) celestia-app [v2.3.1](#)

Network parameters

Full network parameters, such as [max bytes](#), can be found in the [celestia-app specifications](#).

[CIP-13](#) has been drafted to create a living document for these parameters as a part of the CIP process.

Maximum bytes

There is a hard limit on the total blob size in a transaction, which is determined by the effective maximum square size. Given that the current governance maximum square size is 64, the total blob size in a transaction must be slightly less than ~2 MiB, or 1,973,786 bytes to be exact.

The following provides an approximation of the maximum block size:

- The maximum square size is 64x64, which gives us 4096 shares.
- One share is reserved for the PFB transaction, leaving us with 4095 shares.
- The first sparse share has 478 bytes available, and the remaining sparse shares have 482 bytes each.

This can be calculated as follows:

Total Bytes

$(1 \times 478$
bytes) + $(4094 \times 482$
bytes) = 1,973,786
bytes

Please note that there isn't a precise upper bound on the maximum total blob size. It depends on several factors:

- The maximum square size, which is determined by a governance parameter and a versioned constant.
- The maximum bytes in a block, which is determined by a governance parameter and a hard-coded constant in CometBFT.
- The number of shares occupied by the PFB transaction share.

These factors can cause the maximum total blob size that can be included in one block to vary.

See the code in [celestia-app](#) and [celestia-node](#) .

Integrations

This guide contains the relevant sections for how to connect to Mainnet Beta, depending on the type of node you are running. Your best approach to participating is to first determine which node you would like to run. Each node's guide will link to the relevant network in order to show you how to connect to them. Learn about the different endpoint types [in the Cosmos SDK documentation](#) .

Here is a list of options of the types of nodes you can run in order to participate in Mainnet Beta:

Production RPC endpoints

These RPC providers are meant to be used in production environments.

Provider URL NewMetric <https://app.newmetric.xyz/start> Numia For RPC access <https://docs.numia.xyz/overview/rpc-api-access> Numia For data warehouse access <https://docs.numia.xyz/overview/sql-access/chains/celestia> Grove <https://www.grove.city/> WARNING

Do not rely on the free community endpoints listed below for production deployments. Production deployments should rely on [service providers with SLAs](#) or your own node.

Consensus nodes

- [Consensus node](#)
- [Validator node](#)

Community consensus RPC endpoints

WARNING

Do not rely on the free community endpoints listed below for production deployments. Production deployments should rely on [service providers with SLAs](#) . * public-celestia-rpc.numia.xyz * rpc.celestia.pops.one * rpc.lunaroasis.net * rpc.celestia.nodestake.top * celestia-rpc.brightlystake.com * celestia.rpc.stakin-nodes.com * celestia.cumulo.org.es * rpc-celestia.mzonder.com * rpc-celestia-01.stakeflow.io * rpc-celestia.alphab.ai * rpc-celestia-full.avril14th.org * celestia-rpc.easy2stake.com * celestia.rpc.kjnodes.com * celestia-rpc.0xcryptovestor.com * rpc-celestia-mainnet.trusted-point.com * celestia-rpc.chainode.tech:33373 * celestia-mainnet-rpc.itrocket.net:443

Community API endpoints

- public-celestia-lcd.numia.xyz
- celestia-rest.mesa.newmetric.xyz
- api.celestia.pops.one
- api.lunaroasis.net
- api.celestia.nodestake.top
- celestia-rpc.brightlystake.com/api
- celestia.rest.stakin-nodes.com
- celestia.api.cumulo.org.es
- api-celestia.mzonder.com
- api-celestia-01.stakeflow.io
- api-celestia.alphab.ai
- api-celestia-full.avril14th.org
- celestia-lcd.easy2stake.com
- celestia.api.kjnodes.com
- api-celestia-mainnet.trusted-point.com
- celestia-api.chainode.tech
- celestia-mainnet-api.itrocket.net:443

Community gRPC endpoints

- public-celestia-grpc.numia.xyz
- celestia-grpc.mesa.newmetric.xyz
- grpc.celestia.pops.one
- grpc.lunaroasis.net:443
- grpc.celestia.nodestake.top
- celestia-rpc.brightlystake.com:9090

- celestia.grpc.stakin-nodes.com:443
- celestia.grpc.cumulo.org.es:443
- grpc-celestia.mzonder.com:443
- grpc-celestia-01.stakeflow.io:15002
- rpc-celestia.alphab.ai:9090
- grpc-celestia-full.avril14th.org
- celestia.grpc.kjnodes.com:443
- grpc-celestia-mainnet.trusted-point.com:9095
- celestia-grpc.chainode.tech:443
- celestia-mainnet-grpc.itrocket.net:443

Community WebSocket endpoints

- wss://celestia-ws.chainode.tech:33373/websocket
- wss://celestia-mainnet-ws.itrocket.net:443/websocket
- wss://celestia.cumulo.org.es:443/websocket

Data availability nodes

- [Light node](#)
- [Bridge node](#)
- [Full storage node](#)

Community Data availability (DA) RPC endpoints for bridge node sync

These RPC endpoints allow bridge nodes to sync blocks from the Celestia network. For users, they will need to provide a `core.ip` string from a consensus node's URL or IP that populates a default RPC port at 26657 to their respective DA node.

Community Data availability (DA) gRPC endpoints for state access

These gRPC endpoints for DA nodes provide state access for querying the chain's state and broadcasting transactions (balances, blobs, etc.) to the Celestia network. For users, they will need to provide a `core.ip` string from a consensus node's URL or IP that populates a default gRPC port at 9090 to their respective DA node.

TIP

```
bash celestia
```

```
< da_type
```

```
start
```

```
--core.ip
```

```
< url
```

```
--core.grpc.port
```

```
< port
```

```
celestia
```

```
< da_type
```

```
start
```

```
--core.ip
```

```
< url
```

```
--core.grpc.port
```

```
< port
```

```
Bridge nodes
```

Not all RPC endpoints guarantee the full block history. Find [an archive endpoint on the community dashboard](#) or run your own consensus node with no pruning for your bridge node. RPCs for DA nodes to initialise or start your celestia-node to Mainnet Beta with:

- public-celestia-consensus.numia.xyz

- - gRPC: port 9090
- - RPC: port 26657
- rpc.celestia.pops.one
- - gRPC: port 9090
- - RPC: port 26657
- consensus.lunaroasis.net
- - gRPC: port 9090
- - RPC: port 26657
- rpc-celestia.alphab.ai
- - gRPC: port 9090
- - RPC: port 26657
- celestia-mainnet-consensus.itrocket.net
- - gRPC: port 9090
- - RPC: port 26657

DA full and light nodes might have troubles connecting to the networks, so you can check out this [Grafana dashboard](#) to see health/uptime status of DA bootstrappers (nowcelestia network only).

You can [find the status of these endpoints](#).

Archival DA RPC endpoints

By default, light nodes prune recent data to save on storage space. Archival data availability (DA) nodes store the entire history of the chain without pruning any data so all data available data is retrievable. You can [read more about light vs archival nodes](#).

Grove archival endpoints

You can [provision your own Celestia Archival endpoint on Grove](#). [Learn more about Celestia on Grove](#), or find [the fully supported spec](#).

There is a sandbox you can leverage for testing straight in your browser:

Explorers

There are multiple explorers you can use for Mainnet Beta:

- <https://celenium.io>
- <https://celestia.explorers.guru>
- <https://explorer.modular.cloud/celestia-mainnet>
- <https://mintscan.io/celestia>
- <https://explorer.nodestake.top/celestia>
- <https://stakeflow.io/celestia>
- <https://celestia.exploreme.pro/>
- <https://mainnet.itrocket.net/celestia/>

Analytics

The following websites provide analytics for Celestia:

- <https://analytics.smartstake.io/celestia>
- <https://alphab.ai/s/m/celestia/>
- <https://services.kjnodes.com/mainnet/celestia/slashboard>
- <https://itrocket.net/services/mainnet/celestia/decentralization/>
- <https://cosmoslist.co/mainnet/celestia>

Network upgrades

There are a few ways to stay informed about network upgrades on Mainnet Beta:

- Telegram[announcement channel](#)
- Discord[Mainnet Beta announcements](#)

See the[network upgrade process page](#) to learn more about specific upgrades like the[Ginger network upgrade](#) . [\[\[Edit this page on GitHub\]](#) Last updated: [Previous page Networks overview](#) [Next page Mocha testnet](#) [\[](#)