



draupnir

WHITEPAPER

Content Masternode & IPFS Storage Solution



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a better cryptocurrency for everyone

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The SnowGem Draupnir Content Masternode Solution

SnowGem Draupnir is a storage solution targeted at regular users, providing secure and easy storage of users files/data. There will be no advanced knowledge needed to use the service as this will be handled by the SnowGem Asgardv2 system.

SnowGem Draupnir will be fundamentally based on the Masternode system already implemented on the SnowGem network, providing a Decentralised Storage Network (DSN) to its users who value privacy and a fast, secure network solution.

Users who embrace the soon to be released SnowGem “Blackbox” will be able to participate in the core Draupnir system, providing an investment incentive and decentralised access for the SnowGem Draupnir Content network.

Advanced users of the Draupnir Solution will soon have the availability to try out new features available to snowgem due to the integration of native and third-party application services.

IPFS Technology and SnowGem

IPFS or “Inter Planetary File System” technology has been around for a few years now (2015) with the goal of providing a decentralised peer to peer network for storing and sharing data, in a similar manner to BitTorrent.

IPFS is built on a decentralised system which creates a resilient type of file storage system. Any user of the system can add content which is uniquely addressed and encrypted within the network. This unique address is shared with peers across the network for fast file indexing and retrieval in any location.

The SnowGem team believes that running IPFS technology on the SnowGem Content Masternode system will add significant advantages to the network and its users now and far into the future.

Content Masternode with IPFS

This component within the Draupnir network is the “Content Masternode” which are hosted by node operators (community, investors etc...). The Content Masternode is designed similarly to the current Masternode system requiring collateral of 10000 XSG and enough free space for the Snowgem blockchain.

In addition to this, the Content Masternode must have a good amount of resources to be able to handle the requirement of IPFS software.

The Content Masternode will be responsible for storing data securely and performing commands requested by the Content Node Supervisor System (usage, metrics etc...).

Currently setting up a new Content Masternode will be via the Asgardv2 interface due to integrations with other services.

Content Masternode Supervisor System

This component of the Content Masternode System is called the “Content Node Supervisor” which is part of the SnowGem backend service and has been designed to interact with the Content Masternode gathering data such as Content Masternode health and statistics.

The Content Node Supervisor has the responsibility of ensuring network health and that commands and requests from the user/Snowgem services are carried out accordingly.

Storage Contract Supervisor System

The Storage Contract Supervisor System is a service created by SnowGem to monitor and interact with the “Content Node Supervisor” to ensure that the agreed terms and conditions of the user’s contract are maintained accordingly.

The user must read, understand and agree with the terms and conditions of the service, select the correct package for the service and maintain the contract for the agreed period.

Everything here will be handled in the backend as a service and integrated into the user interface of Asgardv2.

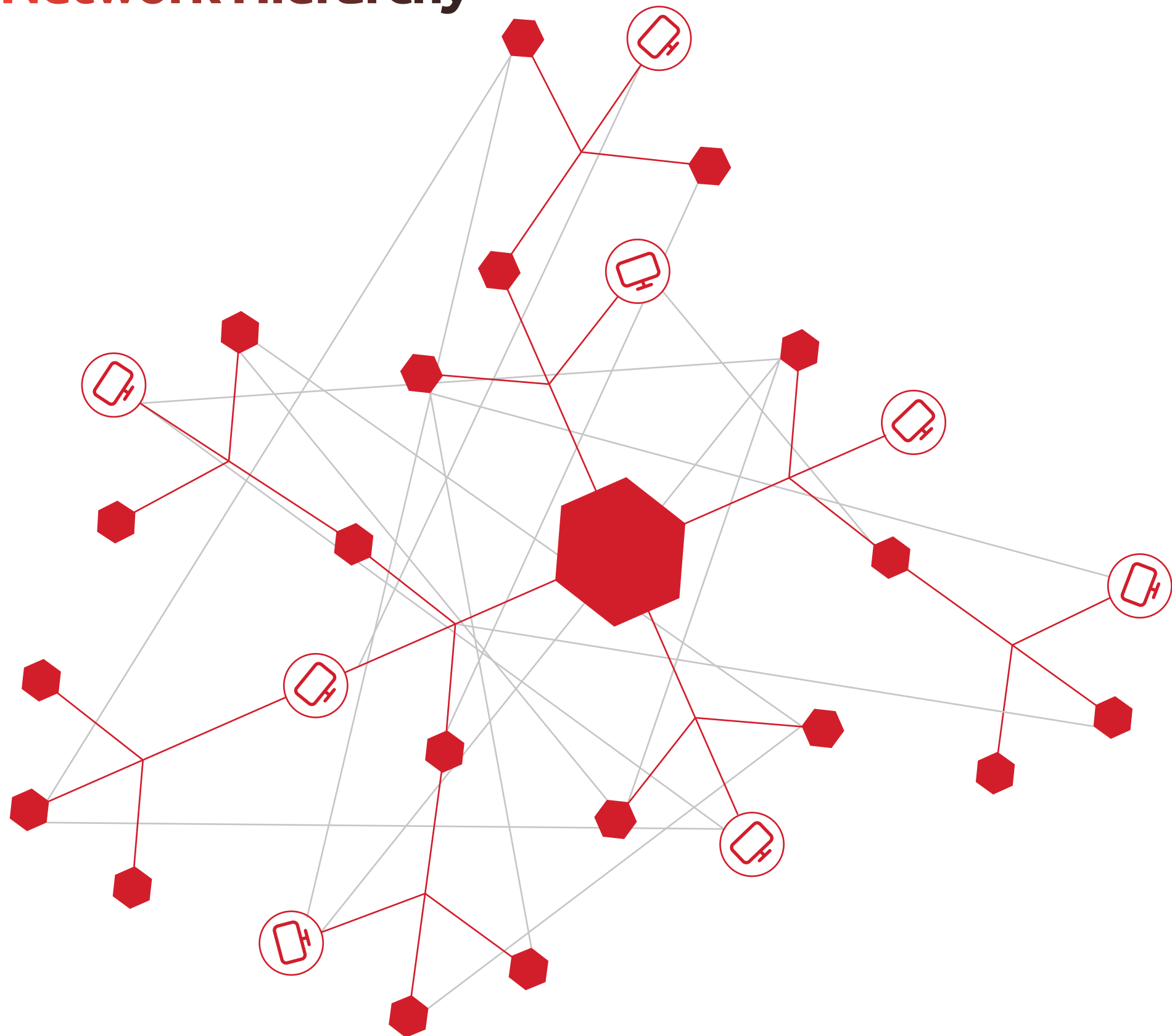
Asgardv2 User Dashboard

The Asgardv2 User Dashboard will be the main interface for most SnowGem services where users can interact with their own Masternodes just like Asgardv1 and use the payment solutions soon to be released.

The Draupnir Content Solution will be hosted and integrated within the new Asgardv2 management system where users can upload/download directory files, check metrics/stats from owned Content Masternodes, monitor rewards and setup new storage contracts from the Storage Marketplace.

The Storage Marketplace will enable users to find a solution to fit their needs beyond (and including) private document storage. This “App Store” will host services such as dApp to dApp messaging clients and Dex services. As new products become available, they will become available here.

Network Hierarchy



Uploading And Managing Files On The Draupnir Network

To store data on the SnowGem Draupnir network and use its services we must follow the basic flow below.

1. If not already done so, please create an account on the new Asgardv2 system and login with your credentials.
2. Navigate to the Draupnir Content Solution user interface.
Select the required file and add this to the placeholder ready to upload.
3. The user is required to choose storage options such as duration, a number of nodes, regions and agree to service terms and conditions.
4. The Draupnir system then calculates and asks for XSG payment for the service.
5. After 1 confirmation the contract is created and the file is encrypted, uploaded and assigned a PGP key which the user must keep securely for retrieval.
6. Once all selected nodes are uploaded with the contract and have acknowledged receipt, the upload is complete.

Retrieving And Managing Files On The Draupnir Network

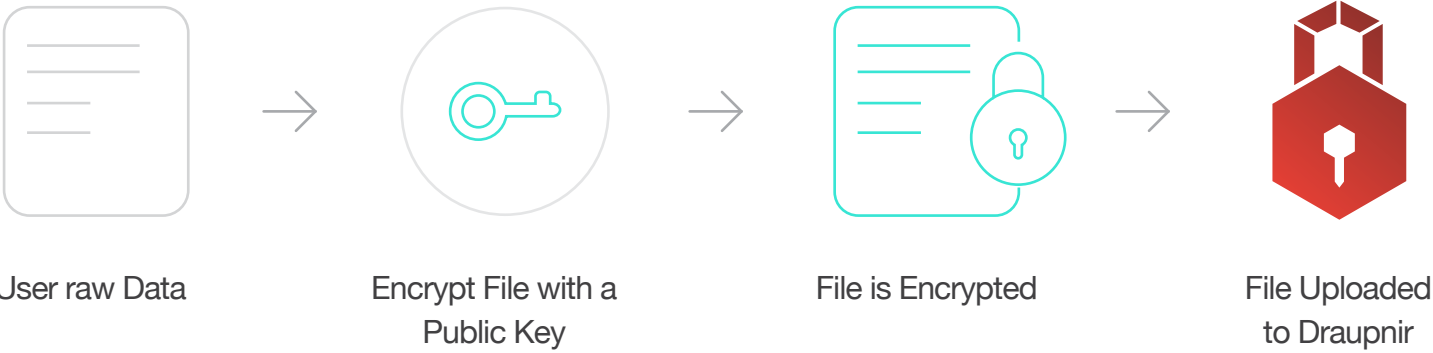
To retrieve data on the SnowGem Draupnir network and use its services we must follow the basic flow below.

1. Login to your Asgardv2 account and navigate to the Draupnir Content Solution user interface.
2. Use the built-in file explorer and choose the file you wish to retrieve from the network.
3. The Draupnir system then fetches and assembles the file.
4. The file is now stored locally within the browser IPFS node.
5. To open the file, users must decrypt the file by entering the PGP key given before uploading.
6. Process complete.

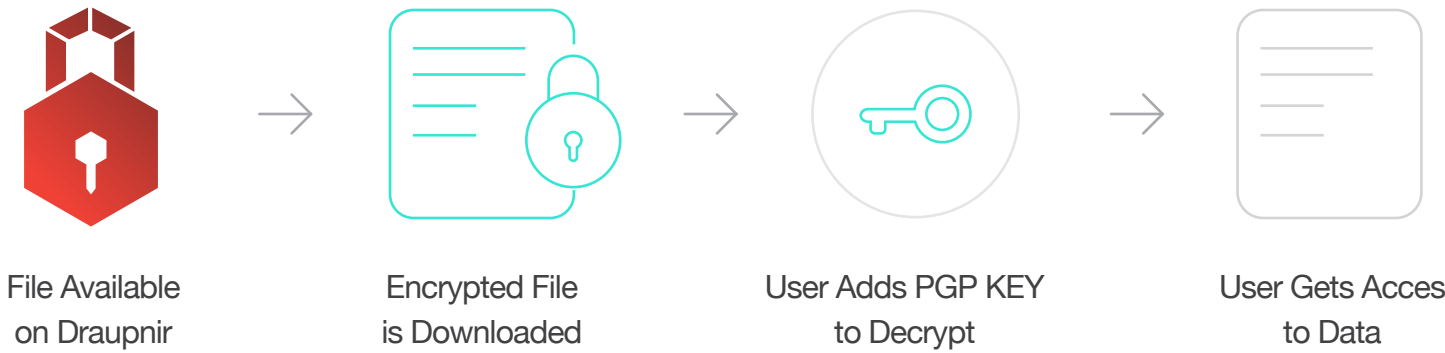
Basic Infographic Explanation

Featured below is the basic principle of how a user would interact with the SnowGem Draupnir Network through the backend of the Asgardv2 Draupnir system.

ENCRYPTION PROCESS



DECRYPTION PROCESS



Data Security and Privacy

The SnowGem team take security and privacy very seriously as it is the driving force behind the SnowGem project which is why we have implemented the Draupnir solution along with many other services.

By default IPFS and SnowGem Draupnir technology are secure by the use of the “PGP” or Private Key which only the user has access to.

Users have the option to use a VPN to access the Draupnir service to provide anonymity at any time.

Encryption

All users data by default are encrypted with AES-256 encryption with the additional use of the users “PGP” or Private Key as an extra layer of assurance.

Draupnir will have the option to use the Yubico “YubiKey” hardware device to secure users files/data and provide authentication services directly on Asgard. Using a YubiKey device increases security and privacy by the encryption of users passwords from all sites and applications, creating a single login highly secure solution similar to a hardware cryptocurrency wallet.

Data Safety and Fault Tolerance

The SnowGem Draupnir Solution with IPFS creates an ideal decentralised network all linked to one another with users data being copied and fragmented across multiple nodes. The user has to have the right Private Key to get access to the file to be able to open it after it is retrieved via P2P encrypted channels.

The SnowGem Draupnir Solution has built-in error detection and correction by default ensuring users data remains safe and secure.

Foundational Services

The SnowGem Draupnir solution is a major step within the SnowGem ecosystem, providing the groundwork for current and future planned services allowing development and ideas to flourish. Regular followers of the SnowGem project will know that “when we promise, we deliver” and we aim to continuously do so.

Interoperability

Interoperability within the SnowGem ecosystem is of high importance, with common software platforms ensuring that all SnowGem and third party services work together in harmony. The intention is to have a single dashboard where a user can handle all things related to SnowGem (Investments, Storage, Masternodes etc...), we will add third party compatibility services such as Amazon AWS Storage API along with many more as required.

Scalability

The SnowGem Draupnir solution is highly scalable by design due to the fact that this it is similar to the current successful masternode system which is decentralised and incentivised.

The Draupnir content masternode (which holds the IPFS Technology) is an incentivised community built infrastructure requiring the same collateral as the current masternode system.

User can decide how much space he/she will provide to whole ecosystem and therefore the more data space and quantity of available content masternodes the bigger and stronger the network is.

Decentralised Applications (dApps)

An exciting feature becoming available as part of the Draupnir IPFS solution is the use of third party libraries such as OrbitDB and GUN which are favourable amongst established developers.

OrbitDB which is the preferred choice is a serverless, distributed, peer to peer database system that is suited to IPFS and provides a conflict-free environment for web applications and decentralised applications (dApps).

The ambition here is that the SnowGem Draupnir solution will attract developers to the SnowGem ecosystem by having an all in one cost-effective solution.

Smart Contracts

The SnowGem Draupnir solution will be Beta tested in 2020 for Smart Contract capability, providing an extra layer of value to our network. A Smart Contract on the SnowGem blockchain will enable advanced users to perform functions to automate daily/weekly tasks either transaction or storage related.

Network Tools

To ensure that the SnowGem vision remains as promised now and far into the future, the SnowGem team will leverage a small part of the Draupnir Content Masternode System for dedicated SnowGem only services such as web applications, databases and general management services to ensure we keep to the cryptocurrency vision of being decentralised as much as possible.



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