Global capacity sharing

White Paper
Introduction

Today both the society and a corporate sector can hardly imagine living without modern communication facilities and the Internet. The Internet is expanding rapidly: more than half of the world population have online access now, and the number of servers and computers that maintain wireless networks outweighed the amount of humans a long time ago. Having a personal web-page is a must nowadays. And the number of web pages outreached 1.8 billion and continues to grow exponentially, which in its turn resulted in a boom demand for hosting data, websites and apps on web-servers. User preferences have also been changing, as are their needs and operational methods. Annual IP-traffic expansion rate amounts to 25% and this explosive growth is the result of Internet and content popularity with people and companies who are willing to get more and more new services, including high-resolution web-streams.

The number of web pages outreached 1.8 billion and grows exponentially

Shift of company operations to the Web and the trend towards digital communications model is bringing about a growing demand for data storages. Content volume growth also requires space for data storage. That is why one of the most dynamic market segments are cloud storages. High rates of expansion of world market of cloud storages are triggered by a corporate shift from traditional service consumption model towards
cloud ones — these are more simple to use and relatively cheap compared to traditional data storage methods.

Still, when storing data on the Web, a small number of people consider possible disbursements and risks that may arise if the information is lost or transferred to third parties. Moreover, there are cases when client’s confidential business information was revealed to third parties by a court decision, or when a commercial secret got into competitors hands.

Despite the boom in the data storage and processing market, there are many facilities that are used in vain while they might as well be used within the framework of sharing economy concept. Therefore bringing revenue to their owners and solving the client requests much cheaper and for a number of tasks with higher quality than traditional centralized storages.

DeNet is targeting at building a new decentralized network of IT capacity providers that are to be used to carry out a number of tasks, such as data storage, websites and apps hosting and other. The major focus would be on decentralization of facilities for hosting active tasks that require a constant load — websites, internet-services, apps, etc. Over the whole course of network development, DeNet will be providing support in the management of its decentralized platform with active participation of the community.

Our vision is an open network that provides safe and secure services to its users with the help of other stakeholders — ca-
pacity providers. The platform is to be managed is supported remotely. Each participant of the system will have a chance to choose any function to perform depending solely on its technical capability and service quality.

DeNet will start operating with an MVP — a relatively-centralized model where capacity providers are independent and distributed all over the world, with servers sending client requests owned by DeNet. This is implemented at the first stage of development to demonstrate the major functionality of the software on hosting-provider and client level. Later on, while further project development the team plans to move gradually the clients and capacity providers into a decentralized network.

DeNet aspires to become an ‘on-demand’ infrastructure decentralized platform for data – storage and web-hosting, which is secure, cheap and of high-quality. The platform will be available for both regular users and companies. We see our goal as building a decentralized hosting network for yet centralized Internet.

https://denet.pro
Executive summary: DeNet in just 30 sec

DeNet is a decentralized network created for providing and leasing IT capacities for storing, hosting and processing of data all over the world.

Why DeNet?

1. DeNet enables every user of the Web to rent truly private and secure data-storage and web-hosting.

2. DeNet enables every user to use unused capacities and receive income with minimal difficulties for renting out computing power & bandwidth.

3. DeNet will launch the decentralization of the Web from one of the most centralized frameworks — storage and web hosting.

4. DeNet is a decentralized network with transparent settlements system that takes into account a user’s contribution and reputation. It’s to user’s advantage to work in good faith here.

5. DeNet provides maximum protection and comfort for the client. Maximum uptime for a very reasonable price.

6. DeNet is not searching for investors into an idea — we’re looking for partners to cooperate with on the platform at MVP stage that has already been launched.
DNET Token:

1. A native token of DNET protocol designed for its operation and settlements between system users.

2. An instrument for reserving on a balance to lower system commissions as well as getting access for additional features.

3. An instrument for rewards for stable uptime and connect that enhances network stability and efficiency in a longer run.

4. A scalable system with a global reach.
Current industry trends  
Cloud data storage

The demand for cloud storage is driven by many factors, such as increasing adoption of hybrid cloud storage; growing need for enterprise mobility for improved efficiency; significant growth in the Internet of Things (IoT). The need for cloud storage is also increasing due to updated rules of personal data processing determined in GDPR (General Data Protection Regulation) which obligates to provide protection of personal data from unauthorized or illegal processing, destruction, and damage. The cloud storage market size is expected to grow from USD 30.70 billion in 2017 to USD 88.91 billion by 2022, at a Compound Annual Growth Rate (CAGR) of 23.7% during the forecast period. However, according to the statistics, the majority of those who rent cloud storage memory, don't use it 100%, which means that they overpay. DeNet has conducted a study on usage of cloud storage memory based on target group survey. The users from 14 countries from Europe, Asia, and North America have taken part in the survey.

The majority of those who rent cloud storage memory, don't use it 100%, which means that they overpay.

The survey respondents specified their purposes for which they use cloud computing power. It is worth noting that the respondents observably tend to hire hosting and a server for several purposes at the same time. Most frequently, such ser-
vices are used for hosting dynamic web pages (57.1% of the survey participants), static web pages (55.4%), and running applications or scripts on a server (48.2%). Furthermore, a measurable part of the respondents uses rented memory for data storage (26.8%) or to store files of large size (12.5%).

**Why users overpay**

According to own research of DeNet, there is a common tendency for users to pay for more-than-enough memory. For instance, 19% of the respondents use less than 250 MB of server physical memory, although only 2% of the survey participants pay for that memory size. In fact, more than 17% of the respondents use less than 250 MB, while they pay for higher memory capacity. Despite the fact that the demand for leasing more than 5 GB of storage space is comparatively low, one
can notice that 12% of the users pay for more than 100 GB of space (12%). These are usually “large-size” sites owners. There is the tendency to pay for more-than-enough memory as well – almost 3.5% of these respondents hire more server space than they use.

A similar phenomenon can be noticed in the case of cloud RAM usage. More than 18% of the respondents buy more RAM than they use, which is caused not only by a desire to have access to spare capacity at any time, but also by the way the companies provide their services in terms of a table of rates. All a user has to do is to choose the most suitable one on the basis of characteristics of provided capacities and their cost.
Small websites solutions

According to the audience of the sites distribution, the majority of the survey participants (73.2% of total) own small websites whose monthly reach does not exceed 1000 people.

Relatively small sites maintenance is often disadvantageous in the nowadays conditions, which are favorable predominantly for the big players. The obstacles small business face going online remain difficult because of the lack of the approach flexibility and the inability to provide an individual optimal rate for each site.

DeNet is focused on working with individuals and small busi-
nesses as well as cooperating with the major players. Thus, storing data and hosting a website by means of DeNet, one cannot only secure personal data due to the decentralization and the distribution approach, but also reduce costs of hosting and data storage and pay for the resources which have been already used. Moreover, there is no such an issue about reserve capacity the users of the DeNet network because of the possibility to obtain a required amount of extra memory or extra processing power at any time. It allows to avoid reserving memory in vain, which is unavoidable in terms of the traditional cloud services.

DeNet reduces costs of hosting and data storage as user pays only for used facilities

Web-hosting by virtue of Internet boom and a huge number of devices supporting online connection and global use of new technologies both on the corporate side and among regular users, global Web traffic has been growing exponentially. The total number of websites exceeds 1.8 billion and keeps growing rapidly. Annually the number of companies are in demand of hosting data, websites and web-applications on web-servers to provide permanent access to this information.

The total volume of IP-traffic to grow threefold by 2021 reaching 3,3 ZettaBytes

Cisco Systems in their research «Visual Network Index Forecast» claim the total volume of IP-traffic to grow threefold by
The world total volume of IP-traffic will grow threefold by 2021 reaching 3.3 ZettaBytes. 

As the company claims, the fastest growing traffic segment in data processing centers is global cloud traffic, where grow volumes amount to 30% per year and annual volume is 7.7 ZettaBytes. As estimated by an international consulting company Gartner, the volume of cloud services peaked at 246 billion US dollars in 2017 and keeps growing at a record pace.

Volume of cloud solutions market Gartner (billion $)

Source: Worldwide cloud service forecast (Market Value), Gartner
One of the major reasons for such corporate migration is economic efficiency and the need for providing information about the company on the Internet — either on a website or various apps. As a rule, it’s way cheaper for a company to rent software and storages for a website on as needed basis than to invest in building their own IT–facilities and buying expensive equipment.

Number of sites in the world

![Number of sites in the world](source: internetlivestats.com)

However, it’s worth noting that migration towards using cloud solutions as opposed to traditional centers of data processing happens pretty fast. It’s particularly true for typical tasks. Thus, in 2012 39% of works was loaded in cloud storages, and 61% was performed in traditional data processing centers. In 2017 63% of work tasks were handled in cloud data storages, while only 37% - within the framework of their conventional counterparts.
Clouds vs traditional data centers.

A huge number of users are working with cloud storages for various needs. We are listing some traditional industries that are actively using cloud solutions:

- Metallurgical, machine-building, energy companies; enterprises of the nuclear industry, telecommunication, transport and oil-service enterprises. Banks, retail, media, Internet services.
- Retail, distribution, consumer goods (FMCG).
- Consulting and audit companies.

Structure of use of cloud solutions

Such trend stems from huge advantages that a cloud gives to a user. It goes without saying that the replacement of a nicely working tool, such as conventional storage systems, can be
fueled solely by a significant efficiency of a new product. Here are the advantages of cloud hostings and storages:

• Hosting have become more available to regular users and one step closer to the ‘on demand’ concept.

• Expansion of quality and security of cloud storages and a number of successfully implemented projects.

• Integration of hosting with corporate programs and inner corporate systems, which allows to optimize business processes and build a common ecosystem.

• Companies are optimizing budgets to purchase and rent the equipment by means of migration to storages, thus saving significant budgets.

• Integration of cloud solutions with disrupting technologies, for example, in Microsoft Azure there are now available numerous technologies and platforms for tasks related to blockchain industry.

• Usability and interfaces are super simple and user-centered. It is simpler now to launch a cloud server with all the features already installed, than to build it on your own, which saves time and effort.

Yet, at the height of cloud solutions development we might forecast the following trends. Today decentralized networks are proving to be effective and created social value add for the
society, despite the fact that the technology is at an early development level. The concept of ‘Uberisation’ and ‘on-demand’ services is penetrating into mass consciousness demonstrating the growth of efficiency and decrease of disbursements for both service providers and consumers.

Besides technical advantages for consumers, decentralized solutions are bringing along a groundbreaking social value add, for instance impossibility to stop network operations on government or other government agencies demand, and obstacles for censorship and network participants. Today, when access to information on the Internet is being blocked by governments and corporations, it is especially spot on. The importance of the issue is recognized by major players in the field, for instance Mozilla Foundation by using its Firefox browser in attempt to contribute to the free Internet.

Today access to information on the Internet is being blocked by governments and corporations

The major goal that leaders of data storage market pursue (Amazon web service, Sales Force, Microsoft, IBM) is to make cloud storage technology generally accepted, as well as to adapt it to a huge ecosystem of applications. However, this storage method doesn’t guarantee either data security or non-intervention of these companies into work of your web-application on demand of various government agencies or their own reasons. Besides, these companies have full access to your data and internal processes.
We envision the future of the Internet through the lens of decentralization.Apparently, at the moment the routing, DNS and some other key factors of network operations are centralized, but this by no means stands in the way of building infrastructure for the Internet of the future. In our opinion, the development pattern of web-hosting industry can be seen as follows:

Centralized > Distributed > Decentralized

Traditional WEB Hosting > Clouds > Uber–style hosting models >
> Decentralized hosting

Uber–style hosting models is an intermediate stage in transfer from supremacy of monopoly players to fully decentralized web–hosting. At this stage web-hosting services are provided in decentralized manner, i.e. there is a large number of private facilities providers, while receiving orders and re-directing of information and requests for storage are coming through distributed (with multiple servers in different countries), but still relatively centralized, because it belongs to one or several companies. The service itself is working under marketplace model. According to our vision, this stage is needed for drilling and accumulating statistics data on refusals and major issues that arise when stored decentrally. Such experience will later allow to create a full–stack decentralized network for hosting-providers and their clients that will be working in a sustained way even under heavy workload.
A fully-decentralized hosting-model is a distributed network where each node can be both a service provider and a server that is working with client requests and control over quality of operation of other network nodes. Such division is determined by the problem of Sybil attack as well as other attacks on decentralized marketplaces. That’s why there is a need for accumulating reputation and security deposits: only the nodes with best reputation can become super-nodes of the network. Other nodes upon connection need to accumulate the level of trust and prove its utility for the network community, before they would have an opportunity to control and process client requests.

Only the nodes with the best reputation can become super-nodes of the network

The trend for combining the concept of sharing economy and decentralized settlement networks finds a wide response in the community. So, a number of projects on decentralized data storage, for example, Sia, Storj, MaidSafe and some others, have been around for quite a long time. However, these services provide mainly only data storage without the ability to host websites or perform any active tasks, such as launching applications.
### Competitors overview

<table>
<thead>
<tr>
<th>Functionality</th>
<th>iex.ec</th>
<th>Filecoin/ IPFS</th>
<th>Maidsafe</th>
<th>Sonm</th>
<th>Golem</th>
<th>Sia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decentralized solution</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cooperation with government agencies</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Web-hosting</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Applications launch</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Working product</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Dynamic file storage</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Need for downloading special apps</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Therefore, at the moment there is no working decentralized network for hosting and data storage where there are possibilities for low server rental cost, protection from transferring
information to the third parties, security and availability on demand and others will be fully implemented. In view of this, the most challenging task is development and launch of such network. This is what DeNet team has been working on. Further we will speak on advantages of our developments and product use.

**Problems & Solutions**

In this chapter we have summarized major issues in web and data hosting industry and have listed some options to resolve them by launching a decentralized network that provides hosting as well as other related services based on providing by independent contributors their IT facilities.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution using decentralized network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy and security</td>
<td>Distributed protocol &amp; encryption</td>
</tr>
<tr>
<td>Privacy and security of user data</td>
<td>DeNet network will be using a maximum amount of instruments to provide security and privacy of user data. This category includes encrypting, VPN and other technologies. We rely on the principle of Ockham's Razor - do not make data entities without the need for them.</td>
</tr>
<tr>
<td>High prices for data storage and hosting</td>
<td>P2P or B2P Sharing computer power</td>
</tr>
<tr>
<td>At the moment hosting services are</td>
<td>We are sure that using underemployed capacities and web-channels, as well as organizing secure p2p interaction for independent IT-capacities owners and their clients will be cheaper than centralized and cloud solutions. This is confirmed by our numbers listed in the Appendix. In DeNet network user pays only for used capacities which helps significantly reduce costs.</td>
</tr>
<tr>
<td>pretty much monopolized. We are sure</td>
<td></td>
</tr>
<tr>
<td>that by allowing clients and capacities</td>
<td></td>
</tr>
<tr>
<td>owners to connect directly these</td>
<td></td>
</tr>
<tr>
<td>expenses can be decreased.</td>
<td></td>
</tr>
</tbody>
</table>
### Access of government agencies to the information

All centralized hosting solutions provide information to government agencies (and sometimes to other private companies as well). This results in censorship and closing unfavourable websites and to corporate other economic espionage.

### Hosting independence from government-regulated area

We understand completely that the authorities and other companies – either on legal grounds or not – may as well visit any independent network participants to confiscate files stored on their computers too. However, with a decentralized network the chances are much lower compared to centralized network. Moreover, individuals under legislation of the most countries have the right to data privacy and prohibition to access it without a court order or some extraordinary cases (like suspected terrorist ties, etc.)

### Using a website by hosting provider for personal use

Hosting provider receives a significant value from analyzing data flow through the resources that it hosts. As well as from building in some additional analytical and other software when uploading websites and services.

### Network control & reputation model

In theory, any user of the Web can attempt to integrate something into running apps or websites pursuing own benefit. In practice, however, it doesn’t matter that much (data volume and possibilities to accumulate statistics is not that significant, as with a centralized hosting-provider). Moreover, DeNet software (open source) will be using maximum possibilities to control non-interference into users data, and in case such interference occurs it will take timely steps to lower reputation and withdraw such server deposit.

### Need for trust to a specific data center or a service provider

With centralized hosting model we entrust providing services as well as all important details to a specific provider. Here we speak about all the features that have to do with security, privacy, high uptime and many others. In essence, the client is playing a game where a hosting provider – not himself – is making the market.

### Network distribution & reputation model

With a pretty big network size, DeNet network will not guarantee working with any specific provider. Each server will have minimum opportunities to influence data stored with him. Reputation and strict control of performing obligations by the server will make it possible to trust the network and its protocol, not a specific server.
### National barriers
Many countries, China, for instance, are censoring the Internet moderating access to various services, which limits communities from different jurisdictions to access the information.

### Network without nationality or territory
DeNet is a distributed network where the owners of the information are the users themselves. We count on providing equal rights to all our participants and help them create services that are not limited by national borders.

### Network neutrality
There is an issue of free high-speed access to every resource.

### High-speed channel for everyone
One of the key roles in DeNet network is assigned to VPN-nodes (and subVPN backup nodes) with high-speed channels that provide network cohesion and high-speed access to each node, and therefore, to the website or application.

### Complexity of building end-to-end solutions
Often there exists the need to build a hosting-solution based on multiple servers located all over the world. To do this manually is rather low-efficient. There are companies and services that allow to simultaneously rent multiple servers in different jurisdictions, but in this case this jurisdiction is a intermediary and is loaded with the risks of centralized hosting.

### Multiple server order using network
Any user can order any number of servers, making a request by various parameters, for instance, a ping from data-centers and other points. Hence, an opportunity to build your own end-to-end solution without a centralized intermediary is arising, i.e. the network eliminates the intermediary.

In such a way, using a decentralized network leads to shifting the interest focus from a provider and a government to an end-user. Yes, we realize, that at the current stage of technology decentralized hosting cannot become an alternative to centralized ones for all the tasks range (for example, for hosting high-loaded web-services with a global reach). Still, for a specific task pool the correlation between price and quality together with accessibility with taking into account a user’s and
provider’s interests, this solution is pretty competitive on the market, and will become more high-demand in the course of the technology and society progressing.

Product

DeNet — decentralized network for data-storage and hosting

DeNet is a decentralized network of server capacities that allows to store websites, data, application, and is able to solve other IT-tasks in the longer run. It is a technical protocol that allows a client to get web-hosting services all over the world in a one-stop-shop mode as easy as possible, and also a self-regulated market-place that allows any user with relevant equipment to make profit by providing vacant server capacities and earn from their usage.

Our product allows a user to rent server facilities in “on demand” mode to resolve the following tasks:

• Data hosting (static data storage on a file server).

• Websites hosting. It includes disk space, database management systems, web server, integrated software for working with PHP and other languages of dynamic markup of web pages).

• Website hosting with replication around the world, based on specified parameters.
• Rent of VPN nodes and various backup capacity for Internet access.

• Rental of capacities for solving computing problems (later).

• Rental capacity for video rendering (later).

We single out two networks — semi–centralized and decentralized. It is related to the fact that we firmly believe that any big project starts with demonstration of major operation options. That’s why we have divided the development in 2 stages, with semi–centralized network already operating as an MVP.

At the first stage of testing, DeNet will move to the implementation of the decentralized network for file storage and web hosting

The first (MVP) is a set of master-node servers that receive requests and offers and commute them. These servers are located around the world, but are considered to be semi–centralized, since they belong to DeNet. With such model, it is possible to test the main functions of the system – operations with a large number of server executors, loading dynamic content, stability and quality of the software on client computers to execute orders, and much more. At the end of the first stage of testing, DeNet will move to the implementation of a fully decentralized network for web hosting, a concept and an alpha version for which is also being developed now. But before being implemented, it requires careful testing of the above–men-
tioned parameters, as well as of the economic model of the service reputation and DNET token. The accumulated statistics of errors and failures will allow to start the decentralized network in the most safe mode.

At Stage Two, a centralized intermediary (DeNet master-nodes) will be excluded, with the functions of monitoring and processing orders transferred to some servers on the network, the choice will be based on reputation. A network where executing servers, in the process of generating reputation, will be able to raise the rank and perform monitoring functions on the network, as well as directly access the customer servers will be built. In this case, the server functions that he plans to perform on the network are determined by the executor himself in the client application, taking into account the technical limitations of his equipment.

**Fig.1. A major flow-chart of DeNet core system MVP.**
Stage Two of DeNet development, as we have mentioned earlier, will launch a fully decentralized network for providing and renting IT-capacities for web hosting and other tasks. You can see a major flowchart below:

Therefore, now DeNet’s product is an operating minimum viable product (MVP) that already allows a user to rent capacities for web-hosting or data-storage from an independent provider, and the owner of equipment to monetize it. However, DeNet aspires to build a fully decentralized network based on statistics from a semi-centralized model. A semi-centralized model DeNet is operating as follows (a general scheme of operation was shown earlier, here is a simplified block-scheme):
Fig. 3. A block-scheme for operating a semi-centralized DeNet system.

**Scheme of interaction of the client with the service:**

1. The client sends a request to the core system by sending task parameters.

2. Core system interrogates servers and suggests solutions that fits the tasks and the budget.

3. The client selects the offer and sends the minimum deposit and the task.

4. The capacity provider starts execution of the task based on the initial parameters.

5. In case there is no deposit left, the system either asks for more funds, or freezes the provision of the service before adding more funds (depends on the conditions of service operation).
The cost of the service consists of actually consumed resources. They are listed in the table below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU_FLOPS</td>
<td>The number of floating-point operations per second on the processor</td>
</tr>
<tr>
<td>GPU_FLOPS</td>
<td>The number of floating-point operations per second on a video processor</td>
</tr>
<tr>
<td>RAM</td>
<td>The amount of RAM in bytes</td>
</tr>
<tr>
<td>RAM_IOPS</td>
<td>Average read / write speed per second of RAM</td>
</tr>
<tr>
<td>NETWORK/LAN</td>
<td>The average width of the Internet channel in bytes per second</td>
</tr>
<tr>
<td>DATA</td>
<td>Amount of free memory</td>
</tr>
<tr>
<td>IOPS</td>
<td>Average read / write speed per second</td>
</tr>
<tr>
<td>IP</td>
<td>Unique IP address</td>
</tr>
<tr>
<td>PORTS</td>
<td>A range of open/closed ports</td>
</tr>
<tr>
<td>Online</td>
<td>Online now</td>
</tr>
<tr>
<td>PING</td>
<td>Average ping</td>
</tr>
<tr>
<td>MaxTaskTime</td>
<td>The time that the owner guarantees is necessary in order not to give too many tasks and to enable the devices to be disconnected (for example for technical works)</td>
</tr>
<tr>
<td>*_RankTime</td>
<td>The amount of time, for example, 10 minutes 50% CPU load, CPU_RankTime = 300, is added every time after the completion of each received task, and is reset, at the time of errors due to the fault of the device owner.</td>
</tr>
<tr>
<td><strong>_Price</strong></td>
<td>The price in tokens, for which the user is ready to deposit 100%. For example DATA: 100GB - 1 token, at 10GB, the price will be 0.1 token.</td>
</tr>
<tr>
<td><strong>UpTime</strong></td>
<td>The amount of time, for example, 10 minutes (600 seconds), the time that the device is logged in to the network</td>
</tr>
</tbody>
</table>

In the above table, some of the variables are a component of the price, some are the technical parameters of the system. In general, the price for hosting will be calculated using the formula:

\[
P = (n_1 N_1 + n_2 N_2 + \ldots + n_k N_k) - \text{Penalty}
\]

\(n\) — a weight factor (a fraction of the total number of a given server resource, for example, memory);

\(N\) — the cost of renting this resource server fully.

In this manner, the price for hosting per unit of time is calculated by the sum of all resources and their share that was purchased after deduction of any possible penalties.

By providing its resources through a semi-centralized system, each server, in addition to payment, receives also reputation points for stable and conscientious work. The mechanics of the reputational system will be discussed further in the “Reputation” section.

A fully–decentralized network will be operating as follows.

There is no central network–nodes anymore, there are only
clients and servers of different rate (the rate is defined by the reputation). Each server, depending on its capabilities and goals, can perform the following tasks:

<table>
<thead>
<tr>
<th>A role in the system</th>
<th>Performed tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client</strong></td>
<td></td>
</tr>
<tr>
<td>• Requests the network about the capabilities and cost of executing its task.</td>
<td></td>
</tr>
<tr>
<td>• Provides source files and pays for the execution of the first unit of work (deposit).</td>
<td></td>
</tr>
<tr>
<td>• Extends the work by adding a deposit or recalling the task at the end of the first unit.</td>
<td></td>
</tr>
<tr>
<td><strong>Server</strong></td>
<td></td>
</tr>
<tr>
<td>• Provides hosting services.</td>
<td></td>
</tr>
<tr>
<td>• Has a unique IP address.</td>
<td></td>
</tr>
<tr>
<td><strong>Master-node Server</strong></td>
<td></td>
</tr>
<tr>
<td>• Accepts client requests and distributes them in automatic mode.</td>
<td></td>
</tr>
<tr>
<td>• Controls the operation of servers.</td>
<td></td>
</tr>
<tr>
<td>• Can provide hosting services (or may not provide and operate only as an accounting and supervisory authority to ensure the stability of the network).</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-Server</strong></td>
<td></td>
</tr>
<tr>
<td>• Does not have a unique IP address.</td>
<td></td>
</tr>
<tr>
<td>• Can duplicate or work to «replace» the primary server.</td>
<td></td>
</tr>
<tr>
<td><strong>VPN-Server</strong></td>
<td></td>
</tr>
<tr>
<td>• Connects servers and provides high availability.</td>
<td></td>
</tr>
<tr>
<td>• Unique IP address.</td>
<td></td>
</tr>
<tr>
<td>• High-speed internet and minimal ping.</td>
<td></td>
</tr>
<tr>
<td><strong>subVPN-Server</strong></td>
<td></td>
</tr>
<tr>
<td>• Security VPN, which connects additionally 2 nodes within a network.</td>
<td></td>
</tr>
</tbody>
</table>
An important factor in the decentralized system is reputation. Any server on the network has the following parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit</td>
<td>The volume of the deposit located technically in such a way that it can be withdrawn as a penalty for unsatisfactory work</td>
</tr>
<tr>
<td>Balance</td>
<td>Balance on the personal address of the server, only the owner of the server has access to it</td>
</tr>
<tr>
<td>Reputation</td>
<td>Reputation is an internal, non-tradable digital unit that is accrued according to a given algorithm upon successful operation</td>
</tr>
<tr>
<td>Rank</td>
<td>Rating of the server in some region or nomination (web hosting, file hosting, video rendering)</td>
</tr>
</tbody>
</table>

Each server can be a VPN server and a regular server with decent Internet and technical infrastructure. The user himself puts in the client application what functions he wants to perform, and if he has technical capacities, he starts to operate in this role.

**Product advantages**

In comparison with traditional centralized hosting or cloud solutions, the product has the following significant advantages:

1. Ease to use. You can rent hosting in just a few minutes starting from one-hour use time.
2. The economy. Our experience shows that the cost of hosting in our system is several times cheaper in comparison with centralized solutions. DeNet proposes payment only for used facilities, which means that client will never overpay for idle capacities as it is done in traditional cloud services.

3. Energy. Careful attitude to the resources of the planet through decreasing of energy consumption.

4. Security and privacy. We use all available tools to preserve the security and privacy of the client, developed to date. In addition, due to the distribution of risks across multiple servers, the overall probability of obtaining unauthorized access to information from multiple websites, as is often the case with centralized companies, is significantly reduced.

5. Minimum trust to the server. In DeNet, the user needs to trust only the operation of the network protocol, published as open source code on Github that anyone can examine and verify.

6. Without states, borders, and discriminations on a national basis. There are no territories or restrictions on the DeNet network, everyone can be a member of the network, receive income and order services.
7. Maximum quality of work and security of the client. The DeNet network was developed taking into account the pool of negative attack scenarios and the malicious performance of capacity providers. In view of this, the reputation model, bonuses fund, security deposits and other functions that stimulate the server to provide services of the highest quality were integrated into the system, and in case of failure to perform, the funds are returned and the reputation may be lost.

8. Well-designed network connectivity model. One of the problems of decentralized networks is high ping and other delays due to poor connection. In the web hosting industry this is unacceptable, that’s why DeNet network has developed at the maximum a connection mode through VPN and sub-VPN servers.

9. Introducing package solutions. Due to the large number of DeNet servers participating in the provision of capacity, it is possible to lease a set of servers according to a specified criterion for building private server solutions. This can be both a VPN network and replication of websites and other tasks.

10. API (application programming interface) for developers. We have developed an application for renting out computing spare power.
Project business model

Generalized DeNet economy concept

DeNet is a network of devices, users and capacity providers built using blockchain technologies. For the organization of sustainable development of the network over a long period of time, it is necessary to create an internal economic system aimed at inscribing the contribution of bona fide users to the system and eliminating negative and fraudulent activities.

Requirements for the internal economic system of distributed DeNet network for web hosting:

1. Organization of stable monetary circulation in the system with the possibility of transferring microtransactions.

2. Encouraging capacity providers operating in good faith and eliminating fraud and violators.

3. Economic incentives aimed at the constant expansion of the network in the external world and the creation of additional value for each participant.

DeNet uses a fee-based business model: generating incomes from vacant server capacities rental of private and corporate clients

In the industry of blockchain technologies and the organization of distributed systems, the concept of decentralized anony-
mous marketplaces is well-known. It is widely described in the annotation of a number of projects and scientific publications and is reduced to the ability to commit malicious acts by an uncontrolled series of unidentified participants. These users can intentionally disrupt the network from the beginning (in the case of DeNet — to take on tasks and deliberately fail to comply with them, undermining the credibility of the protocol), to engage in cross-threading the reputation or other parameters that determine the trustworthiness of the participant with the intent to commit unscrupulous activity in the future. DeNet team understands what a difficult task is before it, when it comes to the actual launch of the network and its operation over a long time.

To implement stable monetary circulation in a decentralized network and counteract Sybil’s attacks (as well as some others described elsewhere), we introduce the following concept.

In the DeNet network, a DNET token is operating, as well as an internal account of the DRS (Denet Reputation Score). DNET serves for economic interactions between network members and is a freely transferable digital instrument. DRS is reputation points in the system and is also stored to the address, but cannot be transferred to another participant. DRS can only be credited for bona fide long-term work and is accounted for as a server’s reputation in the network.
Thus, DNET is the unit serving the protocol of interaction of the decentralized hosting network, and DRS is the internal reputation unit. The introduction of currency for maintenance of the protocol and technical block-infrastructure brings about simplification of calculations and automation of processes. As a result, all participants in the process receive a significant increase in efficiency and reduce costs. In addition, the blockchain infrastructure allows the implementation of a number of use-cases that increase the value of the product, including paying strictly for consumed technical resources and time, which was much more difficult to implement with “traditional” stack of technologies.

All participants in the process receive a significant increase in efficiency and reduce costs.

The development of the DeNet network is divided into two big stages — a semi-centralized model and fully decentralized.

At Stage One (semi-centralized) the system is operating as follows and functions as an uber-style marketplace where the system of accounting and distribution of hosting orders is located in the distributed network of several servers belonging to DeNet (see the section “Product” and “Technical Chapter” for more detailed information about the operation of the system). These servers are engaged in the allocation of requests for work and control over the quality of its performance (uptime, etc.). At the semi-centralized stage, the economic model of the service
will work as follows: tokens DNET will be accepted for payment for hosting. Part of the funds will go as a network commission to the fund. The fund’s resources are not intended for project development.

Fig.4. A block-scheme for flow of funds in semi-decentralized DeNet model.

<table>
<thead>
<tr>
<th>Payment token</th>
<th>The rules of the system</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNET &amp; DRS</td>
<td>The standard amount of commissions to the development fund, the standard mechanism for accruing the reputation.</td>
</tr>
<tr>
<td>DNET</td>
<td>Reduced commissions, increased accrual reputation for supporting the domestic economy. Payment tokens DNET allows users to a discount of 10-15%</td>
</tr>
</tbody>
</table>

When migrating a project to a fully decentralized network, several types of servers will be introduced (master–server, server, sub–server). Master–server deals with the distribution of user requests for hosting and job control, a server deals with performing tasks, a sub-server deals with performing additional
tasks to ensure stability and connectivity of the network. Master servers earn a commission for their work on collecting client requests, interviewing capacity providers and receiving their offers, arranging payment between them with additional conditions (a hold), and listing the network commission for the development and maintenance of high-quality work.

In a completely decentralized DNET network, the problem of a decentralized anonymous marketplace and the typical attacks associated with this concept is solved as follows:

1. A new server cannot take significant orders with payment without making a minimum deposit in DNET tokens, which is held in case of failure to complete the task.

2. Continuous high-quality server operation, including such characteristics as uptime is rewarded with DRS reputation points. These points are slowly accumulated, but are easily burnt when the obligations are not performed.
3. The level of reputation and/or deposit gives the server access to more expensive and responsible tasks.

Thus, carrying out Sybil’s attacks in a longer run becomes quite an expensive endeavour. A system of this kind also gives useful social user-cases to the system. A new server without reputation (or with a humble reputation) can provide volunteer network services to build up the reputation. For example, it could be operating as a VPN or a sub-VPN server, as well as a data replication server or a dynamic DNS server. This increases the value and connectivity of the network over a long distance without increasing the cost of services for the end user.

To increase motivation for quality work, the Support Fund is introduced. This is a fund to support servers with high reputation or a high rate of reputation dynamics to increase. This is done in order to maximize the accumulation of reputation. Reputation brings the best orders and good customers.

The Support Fund is introduced to increase motivation for quality work

This model was developed with a view of maximum protection of users from fraudulent actions, on the one hand, and identification of planned development of the network and conscientious work in it, on the other. We believe that on DeNet network the user and his comfort is one of the most important moments, as compared to centralized hosting services.
DNET token

The economics of the DeNet platform has a digital settlement unit — a DNET token. Token DNET developed on the standard ERC-20 on the Ethereum blockchain. The ERC-20 standard defines a set of rules that must be followed in order for a token to be accepted and to be able to connect with other tokens on the network. The tokens are blockchain assets that can be valuable, and can also be sent and received like any other cryptocurrency.

Unlike other cryptocurrencies like bitcoin or Litecoin, ERC-20 tokens are tied to Ethereum, use its network address format and are being sent using Ethereum transactions. Accordingly, transactions with ERC-20 tokens can be tracked in block Viewer.

In the DeNet ecosystem, tokens are implemented using smart contracts. A smart contract controls the creation and execution of tasks. When a NY task is created, there are defined resource requirements, execution time, and preferable cost in DNET tokens. The specified number of tokens is frozen by the smart contract, and if the task succeeds, it is listed to the participant or a group of network participants who completed the task. If the network participant has not fulfilled its obligations or has not fully fulfilled, the frozen tokens are returned to the task Creator, or are redirected to the participant who has assumed the task execution, and the rating of the contractor who has evaded execution is reduced. Due to the decentralization of
the Denet ecosystem, there is a need for a decentralized database, which is the Ethereum blockchain. This database stores all data on executable tasks, payments and executors.

The number of DNET is limited mathematically and is embedded in the source code. Users interact within the system, exchanging tokens or handing them over to the network (i.e. to master servers). Users can interact p2p within the framework of the IT-capacities rentals (sending tokens outside the master server), but in this case the protocol includes a notification mechanism for the master server to start operating to monitor uptime and correct reputation accrual.

There is a network commission aimed at refilling the fund of awards. DeNet network architecture seeks to reduce commissions for servers (or their associations operating from a single network address, for example, a data center) with a significant number of DNET tokens on balance and storage. To calculate the number of tokens on hold, we take into account constant scaling of the network, i.e. – joining in of new servers as participants.

The number of servers that can receive a discount on the commission for holding tokens in proportion to the overall Z network size:

\[ N_{\text{servers}} = K \cdot Z \]

\( K \) = proportion of servers defined by the community with an option to lower commissions.
\[ N_{\text{max}} = \frac{(H_p \cdot M_b)}{N_{\text{servers}}} \]

\( N_{\text{max}} \) — the maximum effective amount of holding (storing) of tokens on the balance in percent of total issue.

\( H_p \) — the maximum allowed volume of monetary base (share from 1, 1 = 100%), which is supposed to be hold within the storage on the balance.

\( M_b \) — the size of the monetary base (the number of tokens issued).

\( N_{\text{servers}} \) — the maximum number of servers that can exist in the network with reduced commissions.

\[ N_{\text{min}} = \frac{N_{\text{max}}}{M} \]

\( N_{\text{min}} \) — the minimum amount of hold on the balance, leading to a reduction of the commission of the network.

\( M \) — the difference between the largest and the smallest discount by times, or the constant set by the community.

The maximum effective hold amount is created and calculated for the purpose of lack of economic efficiency (within the framework of work within the system) to have a significant part of the tokens on the balance of the server. Thus, this approach helps to prevent excessive centralization of ownership of DNET-tokens.
An Example

A total of 100,000,000 DNETs were issued. There are 1,000 servers on the network. Parameter $K = 0.1$, i.e. 50% of servers can claim reduction of commissions. The mechanics of reduction of commissions is approved as a step-by-step decline from 10% to 2% in 1% increments, i.e. there are 8 reduction steps. The maximum amount of funds associated with the balance of servers cannot exceed 49%, which is a fairly significant value. However, with the growth of the network and the number of servers that can reduce the commission this figure will quickly fall. In this example, the minimum effective holding capacity is 4900 DNET with $M = 20$ ($M$ is manually selected in this example).

As soon as the number of servers in the network stably exceeds the next value, for example, $+ 20\%$ from the previous, i.e. 1200, the parameters will be recalculated. Thus, the servers that have not reached the maximum discount have the opportunity to move to the next level of savings, and those servers that did will their tokens on the market without losing the status that provides savings on commissions.

This concept is at the testing stage and will be repeatedly evaluated for efficiency at the stage of a conditionally decentralized network. Constants and calculations are purely demonstrative and are not a public offer and are not relevant to the operation of the network in real conditions.
According to economic model for one market, DeNet must support it operations for 2 years to become self-repayment and gain enough users to support platform. Calculated total costs are around 3 mln $*. 

These costs are – Marketing, Development, Legal, Administrative, Community building & Support, Acquisition cost of users for 5 products:

- **Storage for individuals** (launch 2018)
- **Storage for entities** (launch 2018)
- **Web hosting for individuals** (launch 2019)
- **Web hosting for entities** (launch 2019)
- **Computing calculations for entities** (launch 2020)

We intend to operate on 10 markets, launching activity one by one. Core markets we analyze and focus on are South Korea, Malaysia, Indonesia, India, Japan, Australia, Vietnam, Germany,
Brazil, Argentina. We consider US as one of the markets, but we still investigate the possibility to operate on this market with the help of our partners Giga-Watt (giga-watt.com), Daplie (daplie.com), Eggs (eggsdc.com) and Naoris (naoris.com).

If we reach Soft cap it will enable DeNet to release only Data Storage service for South Korea market.

If we reach Hard Cap we will launch all 5 products on 10 markets starting scaling from Asia.

Detailed economy calculations and technical roadmap are available under NDA agreement.

Token distribution

• 1% Bounty

• 3% Referral program

• 5% Advisers & Legal

• 10% Reward fund*

• 11% Team (lockup for team 6 months with possibility to assess 20% tokens each quarter)

• 70% Token Sale

All unsold DNET tokens will be burned. There would be no emission after Token Sale.
Reward fund is made to support development and stimulate nodes with high Reputation.

**Token sale schedule***

*Pre-sale*

From 1 to 14 October 2018

There is no lower threshold.

The rate is fixed at the time of payment.

The upper threshold of $100 thousand (over $100 thousand - you become a member of the closed pre sale and receive additional bonuses).

*Main sale phase starts*

The main token will be without the usual bonuses.

The bonus system will be used only during the October pre-season. Further sale of tokens will be presented in a new form.

We accept BTC, ETH, LTC.
Reputation system

One of the essential parts of both a semi-centralized and a decentralized DeNet network will be the mechanism of working with reputation. We firmly believe that reputation is the currency of the future. Our reputation system and the nuances of charging and writing off reputation points are described in detail in the technical part of White Paper.

In order to build a stable economic system and counteract Sybil and other attacks, the reputation system will be described in detail.

When designing the system, we were coming from the following principles:

1. The reputation of the server is slowly accrued (solely on the basis of the work performed with high-quality, taking into account additional achievements, for example, long time uptime or volunteer work).

2. The server’s reputation quickly burns with a single or more with systematic failure (or poor performance) of its obligations.

3. Reputation is the right to deferred additional DRS Token to the server performing quality work.

4. This makes it profitable for bona fide and high-quality server operation in the longer run, and improves the quality of work and efficiency of the network as a whole.
Thus, each server in the network has two addresses – the address for accruing DNET tokens, which also contains the reputational tokens. Tokens are non-transferable and are charged by the network only when certain conditions are met; their charge does not depend on the human factor.

Reputational tokens were introduced to maximize the transparency of the final accounting for the reputation of each participation with the ability to record this parameter in the blockchain itself, rather than the centralized database that is audited on the blockchain. Based on the balance of reputation points, it becomes easy to calculate the winners by any criterion in any nomination and automatically make incentives, to operate in the same way, from the fund. Thus, the problem of transparent accounting of the reputation and distribution of the fund’s resources according to its accumulation is solved, which is extremely important for the stable development of the network.

The technical part of project implementation

For this point check out “DNET Yellow Paper”, which is shared at official DeNet website denet.pro
Team

Rafik Singatullin
CEO
Successfully passed his professional path from the builder, co-founder of the construction project at the intersection of architecture and innovation to CEO of DeNet. He gathered the industry experts and united them in DeNet, launched all the processes of DeNet. Was the first fundraiser. Attracted investments in the project. Conquered Kilimanjaro in 2016. LinkedIn

Denis Shelestov
CTO
Author of the idea and main DeNet architect. At the age of 16, he created a social network for teenagers (Willdev) who were keen on solving Olympiad problems. Taught the development of Telegram-bots. Was engaged in custom commercial software development. He implemented a number of independent projects, including his own programming school and fund that supported young entrepreneurs. LinkedIn

Olga Belonozhko
COO
Responsible for the operational management, task pipeline, project management. LinkedIn
Andrei Kulik

Advisor

CEO and Co-Founder at AI Matter Inc (Acquired by Google in Aug 2017), Angel investor. Google engineer with over 15 year’s experience in high-load distributed systems. [LinkedIn]

Jim Blasko

Advisor

Blockchain developer from Las Vegas. Blasko has been in Bitcoin since 2010 and has been an advocate for cryptography for over 20 years. He is the creator of well-known cryptocurrencies such as UnbreakableCoin, Voxels, eBoost, and Guardium. Blasko is the founder of the upcoming platform known as Aspire and the co-founder of cryptomarket.co, as well as the cofounder of the popular BitcoinTalkRadio.com radio station. Blasko constantly travels as a speaker at crypto conventions and events globally and is Michael Terpin’s personal technology advisor and business partner. [LinkedIn]

Simon Cocking

Advisor

Simon Cocking is Senior Editor at Irish Tech News, Editor in Chief at CryptoCoinNews, and freelances for Sunday Business Post, Irish Times, Southern Star, IBM, G+D, and others. He is a top ranked member of the ‘People of Blockchain’ (currently ranked at #1 / 1000). He also been named on 10 global Twitter influencer lists in the last 12 months. He has been based in Ireland for over 22 years and has cofounded or founded six successful companies. [LinkedIn]

Dave Carlson

Advisor

Dave Carlson is a former Microsoft software engineer who got into Bitcoin in 2010. Carlson is the CEO of Giga Watt, a blockchain hosting and servicing center for mining hardware. Carlson’s previous ran a bitcoin mining firm, called MegaBigPower which was acquired by Giga Watt. Carlson advocates for a balance of mining power in North America and promotes the transition of computing services like DeNet to mineable Blockchain. [LinkedIn]
Amir Malikov

Business development Asia

The head of the HR department of the Innopolis special economic zone Beijing branch, bringing on board new developers in China. The proven experience of heading the sales department of the Halal Guide startup (300% sales growth in 14 days). Successfully raised $2000000 for the Halal Guide project during the Dubai startup conference. The Halal Guide pitch was considered to be the best pitch on Startup Sauna Helsinki in Kazan IT Park. The Beijing International Studies University professor. The permanent provider and logistics manager of the Silk Way Rally. LinkedIn

Vasily Sumanov

Adviser

An ICO expert, a blockchain-analyst, researcher, and developer of digital assets circulation systems. A creator of economic and business models for a number of blockchain-startups. A blockchain enthusiast since 2013 with extensive experience in trading in the crypto-currency market, an active researcher of the post-industrial economy. LinkedIn

Marya Titova

CFO

13-year experience in the field of finance and investment, including the creation and management of closed-end mutual funds, the formulation of company budgeting, the organization of basic business processes, analysis of investments projects.

Fail Zaripov

Core Developer, backend, security, Diploma of the 3rd degree of IOIP

2 Diploma from the regional tour of the All-Union Informatics (prize-winner)Diploma of 3 degrees. Participation in the INTERNATIONAL TOURNAMENT IN INFORMATICS, 2013, Shumen, Bulgaria.

Danis Sabitov

Development of web applications and security systems.
Anton Polikasov
Core Developer, devops, miner-apps
1 place in the regional championship of RT on System and network administration Programmer since the age of 12.

Adil Amirov
Core Developer, backend, security

Iskander Nizamov
Project manager
8-year experience in IT analytics, management and project management, successful experience in creating and launching high-load projects, analysis of IT market trends. Construction and optimization of processes and UI models.

Meret Danatarov
Front-end Developer
The leader of the front-end development and design. The developer of interfaces and business logic.

Ramazan Mardigallyamov
UX/UI Designer
Risks

There is no guarantee of making profits or income

All examples of the calculation of income and profits used in this paper were provided only for demonstrative purposes or for demonstrating the industry’s averages and do not constitute a guarantee that these results will be achieved, according to the marketing plan.

DNET are not considered to be investment

DNET tokens are not some kind of official or legally binding investment. Due to unforeseen circumstances, the objectives set forth in this document may be amended. Despite the fact that we seek to reach all the goals described in this document, all persons and parties involved in the purchase of DNET tokens do so at their own risk.

Quantum Computers

Technical innovations, such as the development of quantum computers, may pose a danger to cryptocurrencies, including DNET tokens.

Risk of failure

It is possible that for various reasons, including without limitation, the insolvency of business agreements or marketing strategies, that the DeNet project and all subsequent marketing
activities related to the funds collected in this Token sale may not succeed.

**Risk while using new technology**

Crypto-tokens, such as DNET, are fairly new and relatively untested technology. In addition to the risks mentioned in this document, there are additional risks that the DeNet team cannot foresee. These risks can materialize in other forms of risk than those specified here.

**Risk of price war with industry leaders**

At the moment, the cloud storage market is heavily monopolized by large players. Our project has a technological competitive advantage, which can potentially pose a threat to the dominant position of major players. In this regard, we can expect that to drive out the project from the market will begin a price struggle, the outcome of which cannot be predicted in advance.
Conclusion

To ensure the sustainable development of the DeNet network, an original socio-economic system was developed. The system includes a token that serves the protocol of interaction and economic calculations between the participants. In addition, this token is used for hold on the balance in order to reduce network and is used to reward bona fide network members for high-quality work over a long timeframe.

The criterion of remuneration is the accumulation of reputation, numerically expressed in DRS tokens, accrued on a transparent mechanism for specific merits. The introduction of reputation also motivates the participants of the system to partially or completely volunteer work at an early stage of interaction with the network and allows to reward bona fide participants as transparently as possible through payments from the fund collected by the system from commissions from payment of services.

The current state of the Internet and the problems that are associated with the implementation of access to it and the exchange of information today are extremely acute. This is privacy, security, interference of various structures, censoring information. High concentration of data from centralized hosting providers and unauthorized access to them, cooperation with authorities and persecution on various beliefs that do not harm society.
All this leads to the conclusion that today the Internet is controlled, but not by its users and does not belong to them de facto, although they are the main contributors of this network. The need for a gradual decentralization of the Internet is obvious today, as it is also obvious that the practical implementation of this idea is far from being technically feasible here and now for many reasons.

However, this does not prevent to begin decentralization of various segments of the network, for example, the web hosting industry, where technologies allow it to be done for a whole class of practical tasks.

In this WhitePaper, the concept of decentralized hosting DeNet was introduced. Economic and social reputation model of service is described, which motivates users to long-term high-quality work and allows all participants to receive value-high-quality services at low cost or earning potential. According to our estimates, each participant of the network receives significant additional value from participation in it.

The DeNet project is currently at the stage of a successful MVP and is intensively continuing to develop a fully decentralized DeNet protocol.
**Links**


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