MetaNeuron

White Paper

lobal AI Distributed Supercomputing Supply Agreement

MetaNeuron

V1.0

summary

Welcome to
MetaNeuron

At present, the importance of computing power has been elevated to a new level. As a new productivity in the digital economy era, computing power plays an important role in promoting scientific and technological progress, digital transformation of industries, and the economic and social development of mankind. The development of global computing power is facing challenges such as diversified applications and imbalance between supply and demand. The rise of emerging fields such as artificial intelligence, digital twins, and the metaverse has promoted the rapid growth of computing power, diversified innovation of computing technology, and the reconstruction of the industrial structure.

The scale of computing power continues to expand, and the super computing chain has become the main driving force. From the perspective of infrastructure, the deployment of global data centers and intelligent computing centers has accelerated, and the scale of global infrastructure computing power will reach 500EFLOPS in 2023. The scale of data center racks in use worldwide exceeds 10,000 standard racks, and nearly 100 intelligent computing centers have been put into operation.

From the perspective of computing devices, the world's cumulative shipments in the past six years have reached nearly 10,000 general-purpose servers and 3 million AI servers, with a growth rate of 50%. Among them, intelligent computing power has become the driving force for growth, with a growth rate of 85%.

The computing power industry is booming, and the computing power innovation capability is constantly improving. The scale of the computing industry accounts for about 20% of the electronic information manufacturing industry, with more than 10,000 enterprises above a certain scale. The market share of complete

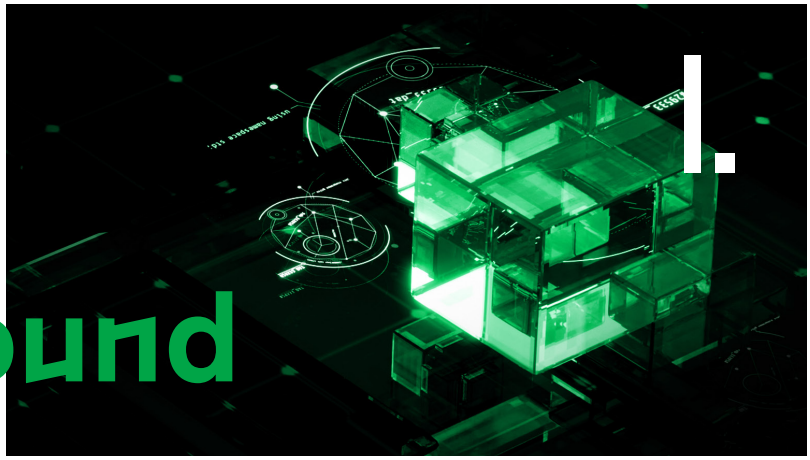
machines continues to rise, forming an industrial ecology covering underlying software and hardware, complete machine systems and applications. A number of advanced computing technology innovations have emerged, and breakthroughs have been made in computing chips, computing systems, computing software and other aspects. Emerging computing platforms and systems are accelerating innovation, and cutting-edge computing technologies have made breakthroughs in multiple areas.

The benefits of computing power empowering the industry are becoming increasingly apparent. The capacity of global network infrastructure has been steadily improving, the demand for data output has been growing rapidly, and the pace of open sharing of data resources has been accelerating. The demand for computing power for global consumption and industry applications has grown rapidly. The Internet is still the industry with the largest demand for computing power, accounting for nearly 50%. Telecommunications, finance, and blockchain are industries with large computing power applications. The demand for computing power in the manufacturing industry has great potential for improvement.

Computing power boosts economic growth and accelerates the pace of development around the world. In 2022, the global computing power industry represented by computers will reach 35 trillion US dollars, directly and indirectly driving total economic output of 30 trillion and 16 trillion yuan respectively. However, it still faces problems such as weak technology industry, urgent need to optimize the development environment, and unmet computing power demand.

The MetaNeuron supercomputing protocol establishes global computing power development 2.0 from five dimensions: computing power scale, computing power technology, computing power industry, computing power environment, and computing power application. It improves the two dimensions of computing power industry and computing power technology, and promotes the development of computing power technology industry, infrastructure construction, and computing power application in the world.

1. Background



Computing power is the new productivity in the digital economy era. It has become the core force to promote the development of the digital economy and the solid foundation to support the development of the digital economy. It plays an important role in promoting scientific and technological progress, promoting the digital transformation of industries, and supporting economic and social development. According to reports, every $1 invested in computing power will drive economic output of $3 to $4.

The current development of computing power faces the challenges of diversified applications and imbalanced supply and demand. On the one hand, as we enter the era of artificial intelligence, the rapid rise of emerging technologies, the explosive growth of massive data, and the increasing diversification of application scenarios have stimulated hundreds or thousands of times of computing power growth and accelerated the diversification and upgrading of computing power. On the other hand, the improvement of computing power faces multi-dimensional challenges. There is still a huge gap in the transformation from chips to computing power. The computing power scale that can be brought about by the upgrade of existing computing technology is only about several times a year. The gap between supply and demand is still large. Whether it is the hardware level or the architecture level, the development of computing technology is in urgent need of change.

In the digital economy era, computing power scale is an important indicator of the development level of digital productivity in countries and regions, and is productivity; computing power industry is the foundation of national scientific and technological development, and is competitiveness; computing power technology is the source of computing power innovation and development, and is the driving force; computing power environment is an important condition for computing power development, and is an auxiliary force; computing power application reflects the demand for computing power development, and is the traction force. Computing power technology and computing power industry represented by advanced computing provide solid support for the development of computing power scale, computing power environment provides soil for the development of computing power scale, computing power technology, and computing power industry, computing power application drives the growth of computing power scale and computing power industry, and drives the upgrading of computing power technology. The five elements promote each other and develop in a coordinated manner.

1.1 Global computing power enters a new round of rapid development

Computing power is the new productivity in the digital age. The demand for computing in the era of intelligent everything is increasing by hundreds or thousands of times. The rapid rise of emerging fields such as scientific research, artificial intelligence, digital twins, and the metaverse is driving the rapid growth of global computing power, driving diversified innovation in computing power technology and products, and driving the reconstruction of the industrial landscape. Computing power has become a new engine for the development of the global digital economy and a new focus of strategic competition among countries.

The scale of computing power is growing steadily
The global computing power scale maintains a high and stable growth trend. In the context of the digital economy era characterized by the perception of all things, the interconnection of all things, and the intelligence of all things, the total amount of global data and computing power continue to show a high-speed growth trend. According to the National Data Resources Survey Report, the total global data output in 2021 was 67ZB, with an average growth rate of more than 26% in the past three years. According to data research, the total computing power of global computing devices reached 615EFlops in 2021, with a growth rate of 44%, of which the basic computing power scale was 369EFlops, the intelligent computing power scale was 232EFlops, and the supercomputing power scale was 14EFlops.

It is predicted that in 2030, mankind will usher in the YB data era, and the global computing power will reach 56ZFlops, with an average annual growth rate of 65%, of which the basic computing power will reach 3.3ZFlops, with an average annual growth rate of 27%; the intelligent computing power will reach 52.5ZFlops, with an average annual growth rate of more than 80%; and the supercomputing power will reach 0.2ZFlops, with an average annual growth rate of more than 34%.

Diversified demands accelerate the diversification and upgrading of computing power.
Diversified intelligent scenarios require diversified computing power. The rapid rise of emerging fields such as artificial intelligence, scientific research, and the metaverse has put forward higher requirements for computing power. Taking the metaverse as an example, Intel estimates that the computing power of the metaverse needs to be increased by a thousand times, and NVIDIA believes that the real-time rendering computing power under immersive experience is still a million times short.

In terms of basic computing power, cloud computing has basically returned to its pre-epidemic growth level. According to IDC data, the global cloud computing IaaS market size will grow to US$91.35 billion in 2021, up 35.64% year-on-year, and the IaaS+PaaS market will reach US$159.6 billion, up 37.08% year-on-year. Cloud computing will become the mainstream general computing model in the future, providing basic support for new technologies such as big data, artificial intelligence, and 5G, as well as a source of power for the digital

transformation and intelligent upgrading of industries. In terms of intelligent computing power, there is a contradiction between the current demand for massive and complex data processing and the supply of single computing power. More than 80% of the rapidly expanding data in the world is unstructured data (text, pictures, voice, video, etc.). As Moore's Law and Dennard scaling slow down, the annual performance improvement of chips represented by CPUs does not exceed 15%, which is difficult to meet the needs of processing unstructured data such as videos and pictures. Diversified intelligent computing power is urgently needed. In terms of supercomputing power, the ten-year thousand-fold law continues. The new supercomputer Frontier of the Oak Ridge National Laboratory (ORNL) in the United States has a performance of 1.102 EFlops (100 billion floating-point operations per second) in the Linpack benchmark test, surpassing Japan's Fugaku to become the world's first publicly confirmed 100-billion-floating-point supercomputer. The world's supercomputers have officially entered the E-class computing era.

1.2 The computing power industry is booming

Benefiting from the rapid economic recovery, the global server market continues to grow. In terms of complete machines, the global server market shipments and sales in 2021 were 13.539 million units and US$99.22 billion, respectively, up 6.9% and 6.4% year-on-year. HPE/H3C ranked first in the global server market with a market share of 15.6%. Dell, Inspur, Lenovo and Huawei ranked second to fifth, with market shares of 15.4%, 8.9%, 6.4% and 1.9%, respectively. In terms of chips, the server chip market has long been dominated by the X86 architecture, with Intel and AMD holding market shares of 81% and 16%, respectively. As Intel's dominance in servers weakens, AMD's market share will continue to increase. In addition, ARM server chip products are gradually rising. Nvidia, Amazon, Huawei, Alibaba and other domestic and foreign giants have successively launched self-developed ARM server CPUs. It is expected that the market share of ARM servers will continue to increase, approaching 10% by 2024, becoming an important supplement to general computing power.

The increasing scale of training data and model complexity have driven the rapid growth of demand for AI servers. In terms of the whole machine, according to IDC statistics, in 2021, the global AI server market size reached US$15.6 billion, a year-on-year increase of 39.1%, exceeding the growth rate of the global AI market (including hardware, software and services) by 22.5%, becoming the driving force for the growth of the overall AI market.

In the global AI server market in 2021, Inspur, Dell, and HPE ranked the top three with market shares of 20.9%, 13.0%, and 9.2%, respectively. The total market share of the three manufacturers reached 43.1%, and Huawei (5.8%) and IBM (4.1%) ranked fourth and fifth. In terms of chips, traditional chip giants are accelerating the improvement of AI chip product systems, continuously advancing full-capability construction, and seizing the leading position in the diverse computing power ecosystem. Intel released a new generation of high-performance deep learning AI training processor Habana Gaudi2, which is twice as fast as the previous generation. After completing the acquisition of Xilinx, AMD plans to integrate Xilinx's FPGA AI

engine into the CPU. Nvidia launched a new architecture GPU, using TSMC's 4nm process, integrating 80 billion transistors, which greatly improved the computing speed of AI.

The era of E-class supercomputers has arrived, and supercomputer equipment manufacturers have accelerated the pace of industrialization. In terms of complete machines, supercomputer equipment manufacturers have strengthened industrial integration and layout. On the TOP 500 list, Lenovo is currently the largest supercomputer manufacturer, with a total of 161 units, accounting for 32.2% of the world; HPE has 96 units on the list, accounting for 19.2%, ranking second; Inspur, Atos, and Sugon ranked third to fifth with 50 units, 42 units, and 36 units, accounting for 10%, 8.4%, and 7.2% respectively.

After HPE acquired Cray for $1.3 billion, it launched the first E-class supercomputer Frontier, and is expected to launch a supercomputer with a performance of more than 2 EFlops in 2023. France's Atos has launched a new supercomputer BullSequana XH3000, which will achieve E-class traditional digital simulation and 10E-class AI accelerated computing. In terms of chips, CPUs are still dominated by Intel and AMD. There are as many as 388 supercomputers using Intel CPUs on the TOP 500 list, accounting for 77.6%, and 93 use AMD processors. In addition, heterogeneous computing chips are increasingly used in supercomputers. A total of 168 supercomputers on the TOP 500 list use accelerator/coprocessor technology, of which 154 use NVIDIA chips and 8 use AMD chips.

1.3 Computing technology urgently needs diversified innovation

Only advanced computing technology can lay the foundation for the development of computing power. In the era of artificial intelligence, the massive data torrent and the explosion of diverse application needs have driven the exponential growth of computing power and the continuous adjustment of computing power structure. A single technology upgrade path can no longer match the demand for high-quality development of computing power. Advanced computing technology characterized by diversification and integration has ushered in a new wave of development. Facing the information processing needs of scenarios such as massive data, real-time response, ubiquitous diversity, green security, etc., through the integrated innovation and disruptive reconstruction of computing theory, computing devices, computing components, and computing systems, higher computing power, higher energy efficiency, more diverse, and more flexible computing technologies and products are formed, which will help to achieve the improvement of single-point computing performance and the efficient use of computing power systems, solve the challenges faced by computing power, and break the computing power crisis in the post-Moore era. On the one hand, advanced computing, as a new driving force for technological innovation, promotes the continuous evolution of classical computing technology based on silicon-based semiconductors, gradually changes chip design ideas with systematic thinking, and forms a diversified computing architecture. On the other hand, disruptive computing technologies such as quantum computing, storage and computing integration, optical computing, and brain-like computing have made breakthroughs and progress, promoting non-classical computing from theory to practice. With the continuous

development of advanced computing technology, the existing computing power scale will be effectively improved, the computing power cost will be significantly reduced, the computing power utilization efficiency will be improved, and the computing power system will undergo a subversive change.

Computing chips are accelerating breakthroughs. While the performance of general-purpose chips such as CPUs and GPUs continues to upgrade, the development of specialized computing chips is still continuing. Artificial intelligence chips have entered the commercial landing stage. The industry has formed chip solutions covering all scenarios. NVIDIA GPUs occupy the main market share on the cloud training side, and the high-performance chip architecture on the cloud inference side has diversified development; the end-side scenarios are highly fragmented, and a number of commercial landing products have been formed in the fields of autonomous driving, video surveillance, smart homes, etc. Data processing unit (DPU) chips have become a new hot spot in the industry. The rapid growth of data-intensive demand has put forward new requirements for the existing computing architecture in the cloud. DPU chips that focus on data acceleration processing and various types of cloud resource management are actively innovating and have become an important driver for improving system performance. At present, chip manufacturers such as NVIDIA, Intel, and Marvell, cloud service providers such as Amazon and Alibaba Cloud, and emerging companies such as Xinqiyuan and Zhongke Yushu have all developed self-developed DPU products.

Heterogeneous computing has become the mainstream model. With the significant increase in the proportion of heterogeneous computing in various typical applications such as mobile Internet, artificial intelligence, and high-performance computing, diversified and cross-system processor collaboration has become an important means to improve computing parallelism and energy efficiency, mainly involving the reconstruction of the hardware architecture and the integration of software and hardware. The hardware architecture breaks through the CPU-centric system, and the application dimension gradually deepens from the chip and the node to the system-level partition heterogeneity. The computing architecture explores new systems such as multi-engine separation from the typical model of "control chip + various dedicated acceleration chips", which is expected to achieve larger-scale multi-system efficient parallel scheduling. Software collaboration takes cross-domain unification and flexible deployment as important directions. With the help of a unified heterogeneous software platform, it integrates compilers, programming languages, acceleration libraries, development tools, etc., provides programming models and application programming interfaces for different underlying computing architectures, and realizes unified management and scheduling of diverse heterogeneous computing power. Typical representatives include Intel OneAPI, NVIDIA CUDA, and Huawei Beiming Diversity Computing Fusion Architecture.

Ubiquitous collaborative computing applications are deepening. Ubiquitous collaboration is a broader concept of computing system innovation. Among them, center-edge collaboration has been applied in many scenarios, and has gradually deepened from local data preprocessing to cloud-edge collaborative support for application computing processes. Artificial intelligence training has shifted from cloud-based to cloud-edge collaboration, and reasoning has shifted

from cloud-based and end-based to edge-end collaboration. At present, cloud-edge-end ubiquitous computing architecture and edge-side computing power realization are the focus of promotion. In the computing power network, cloud, edge, and end together form a multi-layer three-dimensional ubiquitous computing architecture, which, through deep integration with the network, constitutes a new infrastructure for the computing power network. Edge-side computing power realization is constrained by scenarios, and there are large differences in function definition, performance requirements, etc. It is currently in the initial stage of sorting out common needs and clarifying the architecture. With the continuous expansion of the commercial scale of multi-dimensional collaborative systems such as cloud-edge-end collaboration, edge computing, and multi-device collaboration, the proportion of edge computing deployment will continue to increase.

A preliminary exploration of the industrialization of cutting-edge computing. Computing technology is cross-integrated with multiple disciplines such as mathematics, physics, and biology. The innovation of cutting-edge disruptive computing technologies such as storage-computing integration, optical computing, and quantum computing has become an important direction for future exploration. At present, some fields have begun to move towards industrial exploration. The storage-computing integration architecture enables computing in storage units, which is expected to overcome the bottleneck of the "memory wall". At present, a number of start-ups such as Zhicun Technology have emerged in the industry, and related products have been applied in the Internet of Things and wearable devices. Optical computing uses optical properties such as refraction and interference of optical devices for calculations. The product prototype has begun to be tested in data centers, and commercial products are expected to be launched within two years. Ecological construction has become the focus of future development and breakthroughs. Quantum computing has demonstrated its superiority in computing power in solving specific problems such as random circuit sampling and Bose sampling. Research institutions are trying to apply it in scenarios such as encryption and decryption, chemical simulation, and drug development.

1.4 Computing power empowerment continues to deepen

Computing power has a significant driving effect on the development of the digital economy and GDP. On the one hand, it accelerates the innovative development of information technology industries such as electronic information manufacturing, software and information technology services, the Internet industry, and the communications industry. On the other hand, it promotes the digital transformation and upgrading of traditional industries such as manufacturing, transportation, and retail, bringing extended benefits such as industrial output value growth, improved production efficiency, business model innovation, and user experience optimization.

Computing power drives the development of digital industrialization. At present, computing power, as an important foundation support for the core industries of the global digital economy, has increasingly highlighted its role in driving the development of upstream and down-

stream industrial chains, especially in the fields of integrated circuits, servers, and cloud computing. In terms of integrated circuits, global sales of computing and storage-related integrated circuits in 2021 were approximately US$200 billion, an increase of more than 20% over last year. In terms of servers, data center infrastructure investment continued to rise in 2021, with global server market shipments and sales of 13.539 million units and US$99.22 billion, respectively, up 6.9% and 6.4% year-on-year. In terms of cloud computing, driven by the digital transformation of the industry enabled by computing power, cloud-native technologies continue to be implemented, driving the all-round improvement of technical architecture, application performance, and cloud benefits. In 2021, the global cloud computing market size reached US$408.6 billion, a year-on-year increase of 29.0%, maintaining a high-speed growth and rapid innovation trend.

Computing power has become a key engine for the steady growth of industrial digitalization. The continuous investment in computing power provides the original driving force for the digital transformation of the industry and lays a solid foundation for achieving improved production efficiency, optimized service capabilities, and innovative business models. Among them, the digital transformation of the manufacturing industry is a field with a high degree of dependence on computing power and a more significant improvement in production efficiency. The investment in computing power represented by cloud computing, edge computing, and intelligent computing is conducive to creating a highly coordinated intelligent manufacturing ecosystem. In 2021, Siemens, an international manufacturing giant, successfully built the first factory based entirely on the concept of a digital enterprise. It uses digital twin technology in planning, analysis, simulation, testing, and verification processes. With the support of powerful computing power, it has achieved a 50% increase in feeding speed, a 40% increase in space efficiency, a 30% increase in batch production flexibility, and a 20% increase in productivity.

The scale of computing power in countries around the world is positively correlated with the level of economic development. At present, with the continuous consolidation of the computing power base, the supporting role of computing power in the development of the digital economy and the digital transformation of thousands of industries has become more prominent, and it has become an important indicator for measuring the degree of economic and social development in a region. Among them, computing power has a significant driving effect on the development of the digital economy and GDP. In 2021, the global computing power scale increased by 44%, and the scale of the digital economy and nominal GDP increased by 15.6% and 13% respectively. The scale of computing power in countries around the world is closely related to the level of economic development. The higher the level of economic development, the larger the scale of computing power. In 2021, 17 of the top 20 countries in terms of computing power are among the top 20 economies in the world, and the top five are ranked the same. Compared with 2020, the computing power rankings of the United Kingdom, the Netherlands, Italy, Australia, Singapore and other countries have improved.

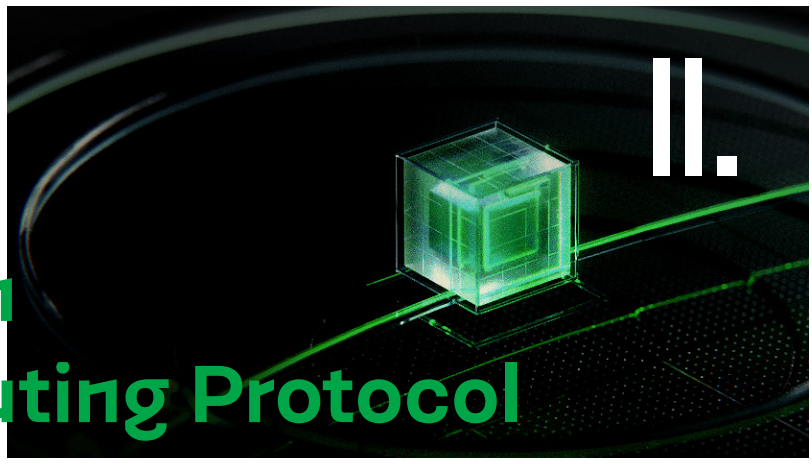
1.5 Computing power competition continues to intensify

Major countries and regions in the world are deepening their computing power development paths. Computing power has become an important means for countries to seize the leading position in development, and major countries and regions in the world have accelerated the process of strategic layout. The United States attaches great importance to the development of emerging computing technologies, and leads the direction of technological innovation by updating the technology list, and continues to consolidate the United States' global leadership in the field of computing technology. In February 2022, the White House of the United States released a new version of the "Critical and Emerging Technology List", covering fourteen key technologies such as advanced computing and five emerging technology fields. Among them, advanced computing includes six sub-fields: supercomputing, edge computing, cloud computing, data storage, computing architecture, and data processing and analysis. Japan has formulated a quantum and artificial intelligence technology development strategy at the national level. In terms of quantum technology, Japan has set up eight "Quantum Technology Innovation Bases" and established the "Quantum Technology New Industry Creation Agreement" (Q-STAR) to promote the development and industrialization of quantum technology. In the "Vision of Quantum Future Society", Japan has proposed to build the first domestically produced quantum computer in Japan in 20224 and reach 10 million quantum technology users by 2030. In terms of artificial intelligence technology, Japan has released the "AI Strategy 2022", focusing on the five strategic goals of talent, industrial competitiveness, technology system, international cooperation, and responding to urgent crises to accelerate the development of artificial intelligence technology industry. The EU continues to increase investment in computing infrastructure construction and key technology research and development. In September 2021, the EU plans to invest US$177 billion in data infrastructure, 5G, quantum computing and other fields; in February 2022, the EU issued the European Chip Act with an investment of more than 43 billion euros, proposing to focus on new generation processors, artificial intelligence, edge computing and other chip technologies, and develop fin field effect transistors (FinFET), all-around gate transistors (GAA), fully depleted silicon on insulator (FD-SOI) and other semiconductor process technologies, to strengthen the competitive advantages of EU countries in high-end chip design and semiconductor production processes, and increase the EU chip production capacity from the current 10% of the world to 20% by 2030.

The global computing power competition is becoming increasingly fierce. In terms of computing power level, the United States, China, Europe, and Japan account for 34%, 33%, 14%, and 5% of the global computing power scale, respectively. Among them, the United States and China are in the first echelon of the global basic computing power competition, and the gap between China and the United States is narrowing. The United States ranks first in the global basic computing power, with a share of 37%. In terms of intelligent computing power, China and the United States are in the lead, accounting for 45% and 28% of the global computing power, respectively; the United States and Japan, the total computing power share is 48%, 22%, and 18%, respectively.

1.5 Diversified digital demands force computing industry innovation

Traditional computing services are increasingly unable to adapt to more digital transformation needs. This change is not only the internal differentiation of the computing service market, but more importantly, it is driven by digital needs. In the past, enterprise data may only be the backup, upload, and storage of important data. Today, enterprise data often faces multiple demands such as data mining, data identification, data distribution, data processing, and data application. Especially in new scenarios such as artificial intelligence, blockchain, AI smart transportation, industrial Internet, and smart cities, the demand for computing power is more stringent, such as higher computing power, security capabilities, lower latency, smarter algorithms, and so on. As a result, traditional computing services must seek new paths to meet diverse market demands.



MetaNeuron Supercomputing Protocol

MetaNeuron Overview

MetaNeuron aims to provide cheap computing power and sustainable development super power for AIGC entrepreneurs and AI developers around the world. It promotes the development of the artificial intelligence industry through the construction of distributed computing power cluster networks and computing power leasing services under trusted networks. At the same time, it provides global investors with convenient ways to participate in the artificial intelligence track and AI income paths. As a global experiment, the MetaNeuron supercomputing protocol allows users to purchase AI supercomputing network mapping servers and enjoy dividends on the computing power generated by the corresponding servers according to the protocol mining allocation mechanism.

MetaNeuron Supercomputing Protocol

MetaNeuron's business covers IDC data center, data security, cloud computing, DNS&CDN, system development, etc.
MetaNeuron will provide multi-centralized supercomputing power leasing services for clients, Web3 institutions, and enterprise-level users. Through the blockchain on-chain model, it will build a supercomputing cluster based on the computing power server of the computing power supply network system. It will mainly build a decentralized digital and intelligent integrated AI computing power system to serve global AI companies and digital economy companies.

2.1 Create a butterfly effect led by MetaNeuron

Compared with traditional cloud computing services, MetaNeuron can provide users with collective computing power services. MetaNeuron connects distributed computing power from all over the world. The investment and use of idle resources has significantly reduced the computing power cost of artificial intelligence.

In addition, MetaNeuron adopts the model of "on-chain consensus, off-chain computing". Among them, the off-chain computing nodes are not constrained by the consensus algorithm, and the computing power of multiple nodes can be combined through concurrent programming. Even in the face of heavy computing tasks of artificial intelligence, MetaNeuron can provide it with a steady stream of computing power services.

MetaNeuron is built on a trusted execution environment, which means that even malicious nodes cannot steal AI data or manipulate the execution of its automated programs to provide false results. Through the trustless computing environment provided by MetaNeuron , people do not have to worry about centralized control, and solve various problems such as privacy protection that may exist in the application of AI through the underlying technical framework, thereby establishing a reliable and trustless AI ecosystem.

☒ Low-latency AI interaction
In theory, for developers, artificial intelligence pursues speed, which includes the speed of model training, the speed of inference of model applications, etc., eliminating indiscriminate heavy tasks in deep learning applications, and continuously performing rapid iterations. The speed of artificial intelligence interaction depends on the performance of the computing node device itself. MetaNeuron uses the model executed off-chain to achieve millisecond-level request responses. Therefore, through the continuous iteration and training of MetaNeuron technology, low-latency interaction can be achieved.

☒ Super Internet with easy access
Artificial intelligence plays an important role in data processing, management, and structuring when accessing the internet.

Artificial intelligence tools simplify the absorption, modification and management of data, thereby effectively providing more comprehensive, intelligent and practical services to the Internet and its users. MetaNeuron 's core technology can access and access any Web2 and Web3 data and services through built-in Internet access. In addition, MetaNeuron 's cross-chain technology connects multiple blockchain ecosystems, and even data and assets on different chains can be interoperable, allowing artificial intelligence to complete easily accessible Internet services and respond to a wider range of network requests.

In summary, the decentralized supercomputing network created by MetaNeuron not only has the functions of traditional smart contracts, but more importantly, the "separation of consensus and computing" makes large-scale off-chain computing, off-chain data requests and real-time responses a reality. It can carry high-density, low-latency, real-time interaction, off-chain interconnection and other application scenarios on a large scale, providing a solid infrastructure foundation for the development of artificial intelligence technology.

2.2 Building a new computing power production relationship

MetaNeuron different from traditional cloud computing is that it uses blockchain technology to build a new production relationship and innovatively solve the problem of computing power supply. By reconstructing the computing power industry chain, it transforms the traditional computing power, a closed system dominated by giants, into an open system where everyone can participate in co-construction and share benefits, and jointly build the infrastructure for the era of artificial intelligence + Web3 + 5G.

As the computing power demand of artificial intelligence + Web3 + 5G exceeds the traditional computing power supply, MetaNeuron 's computing power characteristics (high performance, high density, low latency, low cost, and full coverage) are becoming more and more prominent. MetaNeuron has data centers from all over the world to meet the needs of business development. It will schedule and manage data centers at different levels (regional nodes, edge nodes) to create a unified global supercomputing performance cluster to better meet the business needs of the global computing power market and improve the utilization efficiency of computing power resources.

2.3 Breaking the boundaries of artificial intelligence

In order to solve the contradiction between the actual demand for running artificial intelligence on the embedded front end and its own insufficient performance, MetaNeuron provides a distributed artificial intelligence (AI) computing power architecture system that can be flexibly deployed. MetaNeuron sends the data that needs to be calculated by the embedded system to the cloud through a set of carefully designed network communication programs, and then uses the GPU workstation cluster on the cloud for high-speed computing. MetaNeuron can efficiently manage the operation of each workstation in the cloud, and its flexible deployment

feature enables it to easily and quickly increase or reduce computing power according to different computing loads, thereby achieving energy saving and optimization of computing power. The characteristics of MetaNeuron's distributed supercomputing give this system certain disaster recovery redundancy features, effectively avoiding the paralysis of the entire system due to the collapse of a few computing nodes, and using cluster computing mode, greatly reducing the system's requirements for the number of public network IPs.

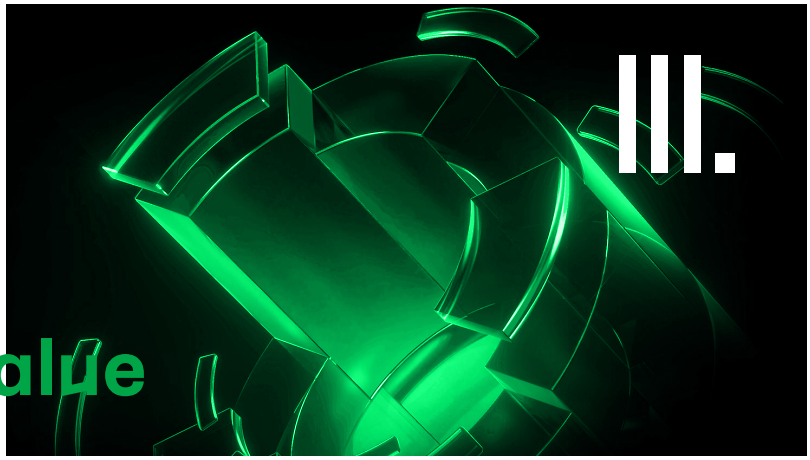
2.4 Make DePIN more diverse

Computing power is the basis of everything, including Depin and AI .

Depin can provide AI with data about the physical world. Depin, which uses blockchain technology, has a lot of overlap with the Internet of Things. Regardless of whether the project that collects data from the physical world uses blockchain technology, decentralized bandwidth services are needed. Because the physical world is distributed over a wide area, it is not concentrated in data centers like the Internet. Then the bandwidth distributed in various places can meet the transmission of data.

The MetaNeuron supercomputing protocol will pave the way for widespread application of the DePIN ecosystem, and the adoption of DePIN will surpass its own development bottleneck . MetaNeuron has 350,000 nodes in 150 countries and regions, achieving a bandwidth capacity of more than 20 Tb/s. Users include well-known projects such as Filecoin, Arweave, Arbitrum, Greenfield, OKX chain, and BNB chain.

MetaNeuron nodes are very user-friendly and accept various existing hardware such as personal computers, servers, IoT devices, etc. The key point is that it does not require the purchase of mining machines like other Depin projects, which greatly reduces the user's investment cost. This allows MetaNeuron to grow rapidly and gather long-tail bandwidth resources to help AI, big data, Depin and other fields.



MetaNeuron Ecological Value

3.1 Building a global supercomputing network and an open Spark ecosystem

MetaNeuron will create a DePIN high-performance supercomputing space network. Through distributed computing power clusters and Ai artificial intelligence engines, it can more efficiently achieve exponential scale growth for current supercomputing center clusters, thereby reducing computing costs and increasing commercial value.

3.2 Providing efficient, reliable and secure computing resource sharing for global users

The MetaNeuron supercomputing protocol ecosystem includes various participants such as nodes, developers, and applications. Miners use computers as mapping server nodes to support network security and availability by providing computing resources. Developers create and publish applications that use computing resources on the MetaNeuron supercomputing protocol for calculations and processing, providing global users with an efficient, reliable, and secure computing resource platform.

3.3 Providing solutions for artificial intelligence

With the advent of a new wave of global artificial intelligence and the large-scale application of AI, the MetaNeuron infrastructure platform with "higher, faster, stronger" capabilities is favored by enterprises. MetaNeuron is applicable to the field of artificial intelligence AIGC, and can provide computing power services, data services and algorithm services required for artificial intelligence applications. Through the production, aggregation, scheduling and release of computing power, it can provide large-scale model training computing power of up to tens of millions or hundreds of millions of dollars as a proprietary API or open source checkpoint, promoting the development of AI industry clusters.

3.4 Providing a training plan for the model algorithm

MetaNeuron provides a one-stop cluster solution, integrating underlying technologies such as GPU topology awareness, affinity scheduling, and high-IO parallel file systems. It supports multiple model training methods, is compatible with mainstream AI frameworks, and expands and customizes the industry's mainstream distributed training solutions to increase the amount of training data and shorten the model delivery cycle. It provides a customized algorithm framework, uses code generation and other methods, and provides a rich set of operators to simplify steps such as data set import, feature engineering processing, and pre-trained model dependency, thereby improving AI training development efficiency. For training of large models in a distributed environment, ZeRo and other technologies are used for video memory optimization to break the barriers between video memory and internal memory and reduce video memory overhead for training.

MetaNeuron Innovative Technology

In order to overcome the problem in existing technologies that it is difficult to ensure data security while performing distributed computing on large-scale data, the MetaNeuron supercomputing protocol provides a blockchain-based distributed computing method and system through technological innovation.

4.1 MetaNeuron Super Computing Solution

Writing a smart contract according to computing requirements and publishing the smart contract to the blockchain, wherein the smart contract contains a distributed computing function and a result aggregation function, so that each slave node in the blockchain performs distributed computing according to the distributed computing function in the smart contract and the local data set, and uploads the computing results to the blockchain;

The calculation result of each slave node is obtained from the blockchain, and the calculation results of all slave nodes are summarized according to the result summary function in the smart contract.

4.2 MetaNeuron task release module and result summary module

The task publishing module is used to write smart contracts according to computing requirements and publish the smart contracts to the blockchain. The smart contracts contain distributed computing functions and result aggregation functions, so that each slave node in the blockchain performs distributed computing according to the distributed computing functions in the smart contracts and the local data set, and uploads the computing results to the blockchain;
The result aggregation module is used to obtain the calculation results of each slave node from the blockchain and aggregate the calculation results of all slave nodes according to the result aggregation function in the smart contract.

4.3 Specific implementation methods

The MetaNeuron supercomputing protocol writes smart contracts according to computing needs and publishes the smart contracts to the blockchain. The smart contracts contain distributed computing functions and result aggregation functions, so that each slave node in the blockchain performs distributed computing according to the distributed computing functions in the smart contracts and the local data set, and uploads the computing results to the blockchain.

MetaNeuron supercomputing protocol is specific. When a node in the blockchain has a computing demand, the node is used as the master node. On this basis, the master node writes a smart contract according to its own computing needs. It should be noted that a smart contract is a special protocol used when formulating a contract in a blockchain. It contains a code function and can also interact with other contracts, make decisions, store data, and transfer Ethereum. In an embodiment of the present invention, a distributed computing function and a result summary function are included in the smart contract. It can be understood that the distributed computing function in the smart contract indicates what kind of distributed computing is performed on the data, and the result summary function in the smart contract indicates how to summarize the results of the distributed computing. The distributed computing function and the result summary function in the smart contract together constitute a distributed computing framework. In addition, the smart contract also includes a description of the smart contract, which summarizes the main content of the smart contract.

Furthermore, the master node publishes the written smart contract to the blockchain, and other nodes in the blockchain can view the smart contract from the blockchain. Other nodes in the blockchain determine whether they have computing resources by viewing the description of the smart contract. In an embodiment of the present invention, nodes with computing resources are used as slave nodes. After viewing the smart contract, each slave node will use a claim mechanism to obtain the smart contract from the blockchain and store it locally. At the same

time, each slave node's acquisition operation of the smart contract will be recorded in the blockchain's ledger for permanent evidence. After obtaining the smart contract, each slave node performs distributed computing according to the distributed computing function in the smart contract and the local data set, that is, the local data set is input into the distributed computing function for distributed computing. Finally, each slave node uploads its own calculation results to the blockchain.

Obtain the calculation results of each slave node from the blockchain, and summarize the calculation results of all slave nodes according to the result summary function in the smart contract. After each slave node uploads its own calculation results to the blockchain, the master node can obtain the calculation results of each slave node from the blockchain. On this basis, the master node determines whether the distributed computing tasks in the smart contract are completed according to the calculation results of all slave nodes. If all distributed computing tasks in the smart contract are completed, the master node will summarize the calculation results of all slave nodes according to the result summary function in the smart contract.

It should be noted that the MetaNeuron supercomputing protocol uses nodes in the blockchain for distributed computing and result aggregation. Since any operations of the nodes in the blockchain will be recorded in the blockchain ledger, and the data in the blockchain is tamper-proof, it can effectively ensure the authenticity and security of the data while achieving distributed computing.

The MetaNeuron supercomputing protocol provides a distributed computing method based on blockchain. The master node in the blockchain writes a smart contract according to its own computing needs and publishes the smart contract to the blockchain, so that the slave nodes in the blockchain perform distributed computing based on local computing resources and the distributed computing functions in the smart contract. Finally, the master node summarizes the computing results of all slave nodes according to the result summary function in the smart contract. This method is redesigned and improved on the basis of the existing blockchain system, transforming the entire blockchain transaction process into a distributed computing framework, so that while achieving distributed computing of large-scale data, it can also effectively realize the secure sharing of data to ensure data security and prevent data leakage.

The MetaNeuron supercomputing protocol also provides a distributed computing method based on blockchain, which aggregates the calculation results of all slave nodes according to the result aggregation function in the smart contract. It also includes: using a preset algorithm to filter the calculation results of all slave nodes to obtain all the filtered calculation results; accordingly, the calculation results of all slave nodes are aggregated according to the result aggregation function in the smart contract, specifically: all the filtered calculation results are aggregated according to the result aggregation function in the smart contract.

On the basis of the above technical solution, if there are dishonest nodes among all the slave nodes, abnormal data may appear in the calculation results; at the same time, if there are errors in the local data sets of some slave nodes, abnormal data may also appear in the calculation

results. In view of this, after obtaining the calculation results of all slave nodes, the MetaNeuron supercomputing protocol master node uses a preset algorithm to filter the calculation results of all slave nodes to obtain all the filtered calculation results. On this basis, the master node summarizes all the filtered calculation results according to the result summary function in the smart contract. Among them, the preset algorithm can be an outlier detection algorithm, which can be set according to actual needs.

The MetaNeuron supercomputing protocol master node uses a preset algorithm to filter the calculation results of all slave nodes. The specific implementation process is as follows:
Since the historical calculations participated by each slave node in the blockchain are recorded in the blockchain ledger, the master node can obtain the historical calculation records of each slave node from the blockchain ledger. Among them, the historical calculation record of each slave node contains the number of historical calculations participated by each slave node, the number of data involved in each historical calculation, and the time from each historical calculation to the present. The master node determines the weight of each slave node based on the number of historical calculations participated by each slave node, the number of data involved in each historical calculation, and the time from each historical calculation to the present contained in the historical calculation record of each slave node. Assuming that the weight of a slave node is P, the specific calculation formula of P is:

Where n represents the number of historical calculations in which the slave node participates; si represents the number of data items involved in the i-th (i is not greater than n) historical calculation; ti represents the time from the i-th (i is not greater than n) historical calculation to the present.

The weight of each slave node can be determined through the above method steps. On this basis, the master node determines the local outlier factor corresponding to the calculation result of each slave node according to the outlier detection algorithm and the weight of each slave node. In the outlier detection algorithm, let the sample set be D, the distance between sample o and sample p be d(o,p), and define dk(o) as the kth distance of point o. When the following conditions are met, dk(o) = d(o,p): (1) There are k points $p' \in D\{o\}$ in the point set, such that $d(o,p') \leq d(o,p)$; (2) There are k-1 points $p' \in D\{o\}$ in the point set, such that $d(o,p') < d(o,p)$; that is, p is the kth point closest to o. Define Nk(p) as the kth distance neighborhood of point p, satisfying $Nk(p) = \{p' \in D\{o\} | d(o,p') \leq dk(o)\}$. Define the kth reachable distance from point p to point o as $dk(o,p)=\max\{dk(o),d(o,p)\}$.

The calculation formula of the local outlier factor LOFk(o) of the definition point o is:
Combining the above formula, the local outlier factor of each sample in the sample set D can be calculated. The larger the local outlier factor of a sample, the more likely it is that the sample is an abnormal sample.

Based on the above outlier detection algorithm, the MetaNeuron supercomputing protocol takes the combination of the calculation results of all slave nodes as a sample set, and takes the calculation result of each slave node as a sample in the sample set. On this basis, the POS

algorithm is selected to improve the distance in the above outlier detection algorithm. Let the new distance be the POS distance: d'(o,p), then the new distance is where Pn represents the weight of the nth slave node. For the calculation result of each slave node, the POS distance corresponding to the calculation result of each slave node is substituted into the outlier detection algorithm to obtain the local outlier factor corresponding to the calculation result of each slave node.

Finally, the master node screens the calculation results of all slave nodes according to the local outlier factors corresponding to the calculation results of all slave nodes. Specifically, a local outlier factor threshold can be set in advance. On this basis, if the local outlier factor corresponding to the calculation result of a slave node is greater than the local outlier factor threshold, the calculation result of the slave node is deleted; if the local outlier factor corresponding to the calculation result of a slave node is not greater than the local outlier factor threshold, the calculation result of the slave node is retained. In addition, the calculation results of all slave nodes can be screened by presetting the abnormal data ratio, which can be set according to actual needs.

Commercial Value and Application

The MetaNeuron supercomputing protocol organizes and motivates supercomputing supply equipment from all over the world, allowing individuals to participate and contribute, and to withdraw at any time, thereby providing a solid supercomputing infrastructure for artificial intelligence AI.

5.1 MetaNeuron supercomputing protocol has significant efficiency advantages over traditional cloud computing

The gross profit of centralized cloud has reached more than 40%, and it still uses industrial electricity and industrial bandwidth. After the decentralization of the MetaNeuron supercomputing protocol, it uses civilian electricity and civilian bandwidth fees. In this way, the explicit cost is reduced by at least 50%.

5.2 MetaNeuron Supercomputing Protocol Distributed Computing

The MetaNeuron supercomputing protocol requires absolutely zero fault tolerance because the ledger is a distributed smart contract. The MetaNeuron supercomputing protocol splits the computing power of the cluster into segments and task clusters for calculation, and then summarizes and outputs the results. For calculation errors or false calculations, only a corresponding inspection and verification mechanism is needed.

5.3 Application Scope of MetaNeuron Supercomputing Protocol

The MetaNeuron supercomputing protocol is not only applicable to Web3 applications, but also to AIGC; Web3 is the value Internet, and the value of data needs to be reversed. MetaNeuron believes that AI is a singularity. Existing dApps only rely on decentralized rectification of the Web2 application model, which belongs to the imaginable market scale, while AI is a Web3 market with an unknown ceiling.

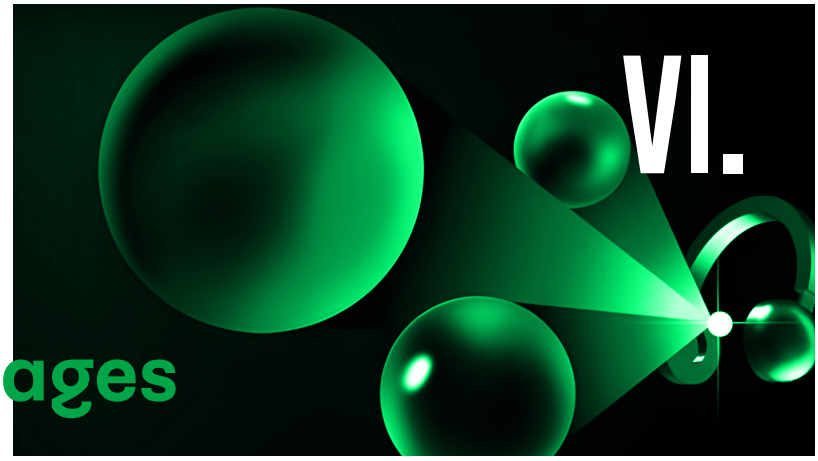
As we all know, ChatGTP requires 70 million USD of cloud computing power to train each model, and cloud computing has encountered expansion bottlenecks. Of course, 40% of this 70 million USD is used as gross profit for Microsoft Cloud. Therefore, MetaNeuron supercomputing protocol will undertake the computing needs of AIGC. And the widespread AI+ Web3 applications will also generate strong demand for MetaNeuron supercomputing protocol distributed computing.

5.4 MetaNeuron supercomputing protocol empowers Layer 2

MetaNeuron is essentially a computing network based on a blockchain distributed cloud computing platform, which is managed by smart contracts. At the same time, it can transmit external information and resources to the chain through oracles, that is, it can connect the blockchain with secure external resources in a distributed manner, providing blockchain developers with a bridge to the off-chain world of data, APIs and computing power, helping blockchain applications and services including DeFi. In this way, MetaNeuron can greatly improve the performance of the main chain and reduce costs to achieve scalability.

MetaNeuron itself can integrate mapping servers and provide Layer2 services, which means that MetaNeuron can provide corresponding services for the expansion of many mapping servers including Ethereum. MetaNeuron plans to first provide Layer2 solutions for Ethereum and Algorand, and will integrate many blockchain systems including Polkadot and Cosmos in the future. After integrating and bridging many blockchain systems, MetaNeuron can also serve as a hub for different blockchain systems, helping different ecosystems to achieve cross-chain based on AIH tokens, while expanding capacity and promoting the positive development of DeFi and other sectors within each ecosystem.

Traditional Layer2 focuses more on smart contracts and is more inside the blockchain system, while MetaNeuron not only provides a Turing-complete Layer 2 computing oracle solution, allowing MetaNeuron to run code in any language (such as Python, GO or C++, etc.), but also pre-sets multiple computing templates in the network and establishes a DAPP market for third-party computing services, allowing blockchain developers to call them quickly and easily. More importantly, MetaNeuron also has an off-chain MetaNeuron platform that already has a large number of nodes and computing resources as Layer-3 support. At the same time, the MetaNeuron platform also provides cloud computing services to users in the real world, while solving the current blockchain scalability problem, it truly realizes the interconnection between the real world and the blockchain. In summary, through MetaNeuron , anyone can sell and consume decentralized computing resources through blockchain smart contracts or more traditional cloud computing APIs.



MetaNeuron Core Advantages

In addition to global supercomputing clusters and other resources, MetaNeuron also distributes computing needs to many nodes in the system, breaking up computing power and distributing it to individual users to create value. In addition, MetaNeuron also provides supercomputing services to enterprises by integrating idle computing resources around the world, and builds a market for buyers and sellers of computer computing power based on the Token economy. Compared with traditional computing power services, the MetaNeuron supercomputing protocol lowers the threshold and usage fees of supercomputing services, and will bring efficient computing power services to fields such as artificial intelligence and blockchain in the future.

6.1 Making fragment resources available

The MetaNeuron supercomputing protocol enables everyone to earn monetary rewards by sharing their personal computing space (such as hard disk). This monetary reward is paid directly to the individual by the tenant, and the platform providing the service only charges a tiny service fee.

6.2 The power of mass participation

Everyone can access the data on the MetaNeuron supercomputing protocol public blockchain, and everyone can issue transactions to be written into the blockchain. Participants in the consensus process maintain the security of the database through cryptographic technology and built-in economic incentives.

6.3 No need for permission from a company or organization to use, i.e. code liquidity

The MetaNeuron supercomputing protocol is open, transparent, and open source on the Internet. You can upload and download the required information anytime and anywhere without going through any institution or organization. This is crucial for application services. There is no need to take sides or be politically correct. As long as the access standards of the cloud computing protocol are met, the services they develop can last forever. For example, American technology giants Apple, Google, and Amazon have banned Parler, a social platform that has gathered many Trump supporters. According to BuzzFeed News, Parler pays AWS more than $300,000 in hosting fees every month. However, some analysts believe that even without cloud services, building a data center by yourself is difficult, and there may not be other hosting service providers willing to provide services.

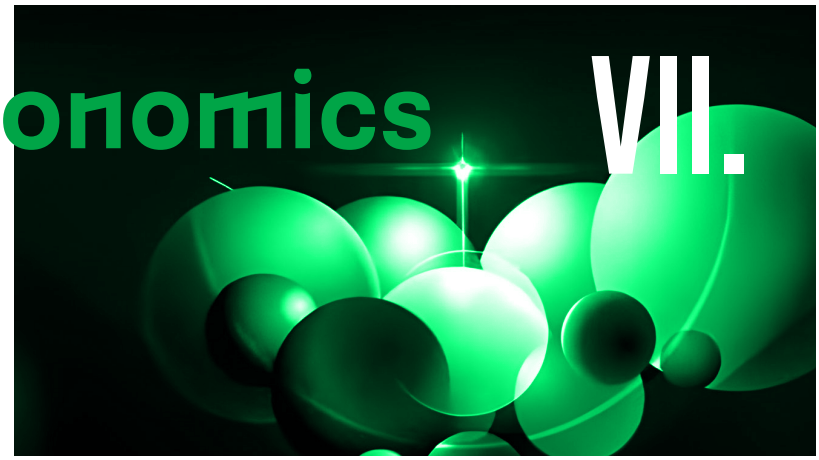
6.4 High security and high convenience

Traditional cloud computing companies purchase or rent servers to store their customer files, and use RAID solutions or multi-data center methods to protect data security. However, using the MetaNeuron supercomputing protocol does not require centralization, the purchase of expensive equipment, and maintenance manpower.

6.5 Personal Privacy Security

Under the current computing paradigm, all companies that "go to the cloud" assume that cloud platforms such as Alibaba Cloud and AWS protect corporate data confidentiality and user privacy through laws. But in fact, although centralized cloud platforms use a lot of R&D costs to build privacy protection systems, the ownership of data still belongs to the enterprise, and the actual physical control rights belong to the cloud platform. However, in the MetaNeuron supercomputing protocol, we can see a system that can completely distinguish data ownership and data usage rights from the protocol layer and the physical layer. This is a key attribute to distinguish whether a cloud service is a "next generation" product.

Token Economics VII.



Token name: MNT Total issuance: 21,000,000.00 (21 million pieces)
Output mechanism: 100% output through HPOS mining mechanism, no private placement, fair output
Distribution method: 1 million AIHs will be used for node pre-mining, and the remaining 20 million will be mined through computing power mining.

AIH Token
MetaNeuron equity token AIH is a record of community behavior contribution value before the MetaNeuron supercomputing protocol goes online. This record will receive huge benefits when the supercomputing protocol goes online.

Team and future planning VIII.

8.1 Core Team

MetaNeuron team was co-founded by senior AI practitioners, investors, and technology geeks from all over the world. The core members are experienced and passionate people from various fields in Silicon Valley. The members have led and promoted multiple AI projects to rapidly develop the global blockchain market, and through joint efforts, they have created this global supercomputing supply system.

MetaNeuron CEO —Chris Watson

Chris Watson is committed to applying artificial intelligence technology to the world. As a senior AI expert, he has a rich technical background and entrepreneurial experience. When he was a core member of the LaMDA system research at Google, he accumulated valuable knowledge in the field of artificial intelligence. Chris Watson's vision is to provide sustainable development super power for AIGC entrepreneurs and AI developers around the world through the MetaNeuron supercomputing protocol, and promote innovation and development in the artificial intelligence industry.

Bruce Wagner , CTO of MetaNeuron

Bruce Wagner is a technology leader with outstanding technical capabilities and rich experience. He has deep expertise and successful practical experience in the fields of artificial intelligence and distributed systems, and has held important technical positions in many technology companies. Bruce Wagner is committed to applying the most cutting-edge technologies to MetaNeuron 's super computing platform, promoting the company's technological innovation and development, and providing reliable technical support for the global AI industry.

Pamela Ann , COO at MetaNeuron

Pamela Ann is the Chief Operating Officer of MetaNeuron . She has extensive operational management experience and excellent execution capabilities. She has served in senior management positions in leading companies in multiple fields and has accumulated rich management experience and business insights. Pamela Ann is committed to optimizing MetaNeuron 's operational processes and business strategies to ensure the company's efficient operation, achieve business goals, and contribute to the development of the global AI industry.

8.2 MetaNeuron Foundation

MetaNeuron Foundation was jointly initiated by MetaNeuron Labs, Inflection AI and other institutions, aiming to develop ecological support for community and ecological investment construction.

MetaNeuron Foundation manages assets/funds for, but not limited to, the following purposes:
01 AI project support development
02 Development and maintenance of supercomputing supply protocols
03 AI cutting-edge technology and thinking research investment
04 Construction of DePIN Ecological Physical Infrastructure
05 Initial funding for AI developers

06 Research and development in the context of AI+DePIN
07 Application support of AI models
08 Develop relevant commercial and public welfare investments
09 Global Popularization of Decentralization Concept and Public Welfare Investment
10 Special incentives for super nodes

8.3 MetaNeuron Development Plan

Phase 1: Infrastructure

-Build a prototype of the MetaNeuron platform to implement basic computing resource management and allocation functions.
-Conduct preliminary market research to understand user needs and industry trends
-Recruiting a technical team to develop a multi-node computing power grid-connected system that supports x86 cluster architecture
-Strengthen cooperation with hardware vendors to support fine-grained allocation of single TPU resources

Phase 2 : Scaling Up

-Increase marketing efforts, expand user base, and expand partner network
-Started preparing for the development of a multi-node computing power grid-connected system that supports ARM architecture
-Introducing NVMe+RDMA technology to improve storage performance and data access speed and optimize system performance
-Customized deep learning and reasoning framework to meet user's personalized needs
-Expand international markets, carry out cross-border cooperation, and enhance global influence

Phase 3 : Continuous Innovation

- Promote the implementation of a fine-grained allocation system for single GPU resources to improve computing resource utilization
- Improve storage solutions, implement NVMe+RDMA technology, and improve storage performance
- Expand vertical field applications and deepen the application scenarios of artificial intelligence in different industries
- Strengthen in-depth cooperation with industry partners to jointly explore the future development of supercomputing

Disclaimer

This white paper is only used as a project description, and any action taken is deemed to be an act for which the individual voluntarily bears all consequences.

Except for the contents described in this white paper, the team makes no representations or warranties about MetaNeuron or the project license. The project should follow the principle of voluntary participation, risk, responsibility and self-financing. There are risks in the development, maintenance and operation of MetaNeuron , which may be beyond the control of MetaNeuron . In addition to the contents of this white paper, users are also required to pay attention to the risks described below and evaluate the ability of the parties to bear the risks described below. The development of the MetaNeuron project may involve the following risks:

Insufficient information

As of the time of this white paper, MetaNeuron is still under development. Its philosophy, consensus mechanism, algorithm, code, and other technical details and parameters may be frequently updated and changed. Although this white paper contains the latest key information of MetaNeuron , it is not absolutely complete, and MetaNeuron will still be adjusted and updated from time to time for specific purposes. MetaNeuron will try its best to provide community members with various information about the development of the common chain, but it cannot ensure that all information will be transmitted to every token holder in real time.

Risks associated with judicial oversight

Encrypted digital assets are or may be regulated by authorities in different countries. MetaNeuron may receive inquiries, notices, warnings, orders or rulings from one or more competent authorities from time to time, and may even be ordered to suspend or terminate any development or action related to the NA chain.

MetaNeuron may be seriously affected, hindered or terminated. Because regulatory policies may change at any time, MetaNeuron 's existing regulatory approvals in any country may only be temporary.

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Any person who violates any representation, warranty, obligation, commitment or other requirement set forth in this White Paper when purchasing MetaNeuron , and the resulting inability to use or extract MetaNeuron ;
MetaNeuron 's trading plan is abandoned for any reason ;
MetaNeuron and the resulting inability to deliver or use MetaNeuron ;
MetaNeuron and the resulting inability to meet previously disclosed schedules;
Errors, flaws, defects or other problems in the MetaNeuron source code;
Failure, crash, breakdown, rollback or hard fork of the MetaNeuron Platform;
MetaNeuron fails to achieve any particular function or is unsuitable for any particular purpose;
Failure to disclose timely and complete information regarding the development of MetaNeuron .