Sep 20, 2023
Quantum Solutions Co., Ltd.

【Deep Dive】Quantum Solutions Provides Hardware and Software Applications based on ARM Technology Architecture and AI Edge Cloud Computing

Recently, ARM's IPO listing has received significant attention from the global technology industry and capital markets. This provides an opportunity for our company to explain an important component of our comprehensive transformation towards artificial intelligence (“AI”): hardware business and software applications based on ARM technology architecture and AI edge cloud computing.

On July 3, 2023, our company announced a comprehensive business cooperation with Compass Cloud Technology Pte. Ltd, headquartered in Singapore ("Compass Cloud"). Up to now, both parties have established a joint venture company, Compass Cloud AI Japan Co., Ltd. ("Compass Cloud AI Japan") and obtained comprehensive technical authorization to provide ARM architecture-based edge computing and cloud storage solutions to the Japanese market.

Compass Cloud's business is entirely based on Advanced RISC Machine (“ARM”) technology architecture for hardware and software applications. With the rapid development of AI worldwide, Compass Cloud innovates based on the ARM technology architecture to provide significant improvements in the physical capacity and efficiency of individual servers. In other words, servers designed by Compass Cloud based on ARM technology architecture can greatly reduce the physical footprint and energy consumption while achieving equivalent computing power advantages. Compared to the more popular Intel X86 processors in the market, Compass Cloud's ARM architecture servers offer better performance, high scalability, on-demand customization, enhanced performance, flexible architecture, and lower costs.

Compass Cloud's ARM architecture servers have significant advantages in the field of AI inference. Here are some key advantages:

- Advantage 1 - Energy Efficiency: ARM architecture servers excel in energy efficiency. The design of ARM chips focuses on power consumption control and energy efficiency optimization. Compared to traditional x86 architecture, ARM servers can provide higher computing performance with the same

power consumption. This enables ARM servers to have higher energy efficiency in large-scale AI inference tasks, reducing energy consumption and operating costs.

- Advantage 2 - Scalability: ARM architecture servers have excellent scalability. The design of ARM chips allows servers to flexibly expand computing resources to meet the needs of different scales and complexities of AI inference through multi-node or cluster configurations. This scalability enables ARM servers to handle high-concurrency inference tasks with better performance and flexibility.
- Advantage 3 - Low Latency: ARM architecture servers can achieve lower latency in processing AI inference tasks. Due to the architectural characteristics and optimized design of ARM chips, they can process data and respond faster, thereby reducing latency during the inference process. This is especially important for applications that require real-time processing and rapid decision-making, such as autonomous driving and intelligent security.

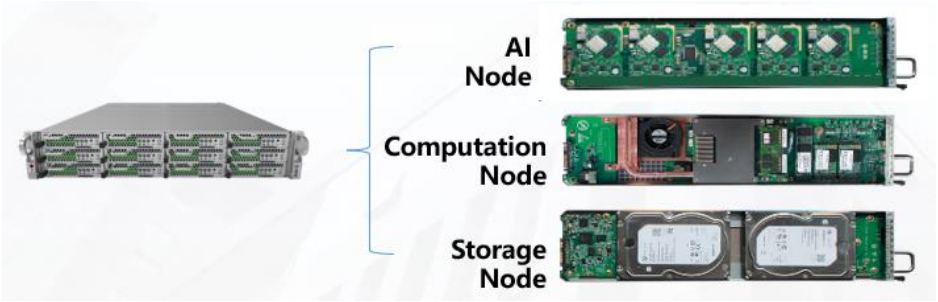
These characteristics make ARM architecture the preferred choice for an increasing number of enterprises and research institutions in AI inference tasks, providing them with efficient, reliable, and innovative solutions. These technological capabilities also give our company a first-mover advantage in the future business development in the field of artificial intelligence. We believe that servers that save space, consume less power, and increase computing power will have a sizable market.

In the field of artificial intelligence, AI training and AI inference are two crucial stages. AI training involves using large amounts of data and powerful computing capabilities to train models using machine learning algorithms, enabling them to recognize patterns, learn rules, and make predictions. AI inference, on the other hand, applies the trained models to real-world scenarios for real-time data processing and decision-making. AI training and AI inference complement each other and together constitute a complete artificial intelligence application. In 2023, the AI boom has led many large companies worldwide to develop their own large models. However, following the completion of most training and achieving a certain level of accuracy for vertical models in various industries, the demand for AI inference becomes more important. We are currently in the stage of the AI boom, and the most important large language model (“LLM”) in artificial intelligence requires not only Nvidia's high-intensity GPU chips for AI training but also efficient CPU architectures for AI inference calculations.

We believe that Compass Cloud AI Japan's ARM architecture servers are the most suitable for LLM in AI inference calculations. In early September, our company announced a collaboration with Kaytus in Singapore to provide Nvidia chip sales and services. This is for AI training purposes, while the potential use of Compass Cloud AI Japan's servers in AI inference calculations will provide us with a comprehensive hardware solution for LLM operations.

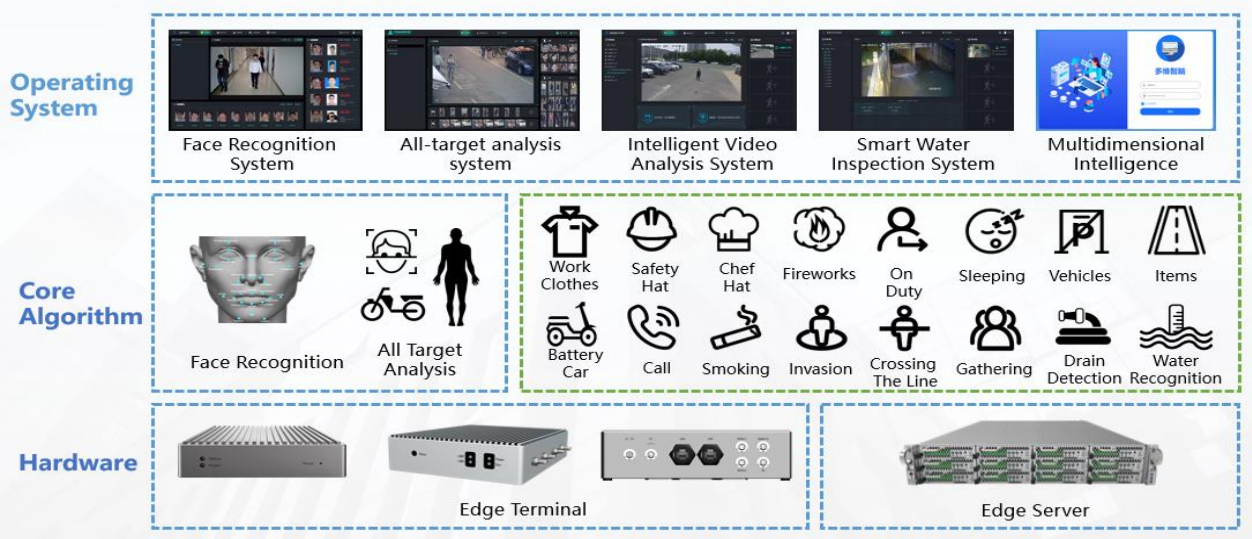
To familiarize potential technology partners with the products and services we provide and to provide investors with a clearer understanding of the company's potential, here is a brief introduction to our Compass Cloud Japan business:

1. Edge Cloud Computing + AI Inference Applications



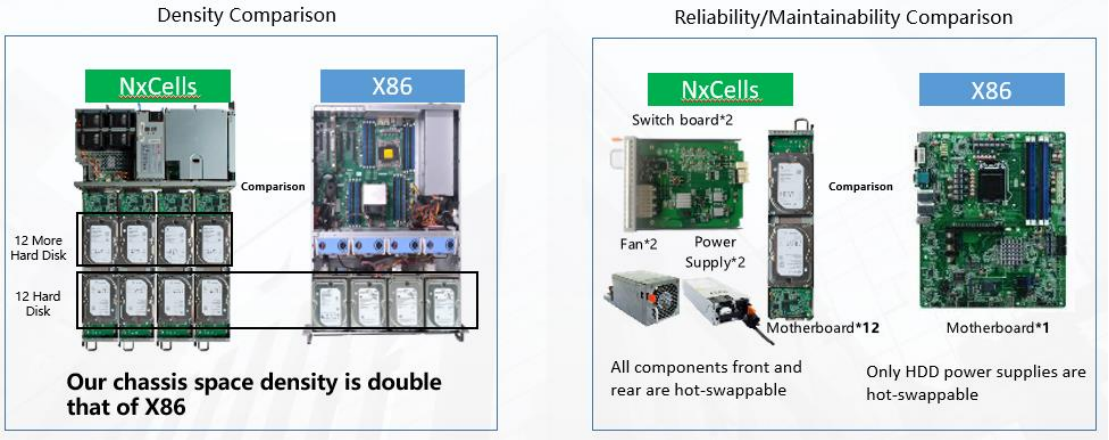
By providing solutions based on ARM architecture for edge service nodes, including computing nodes, AI nodes, storage nodes, etc., in conjunction with the development of local 5G, we can achieve low-latency edge cloud computing to adapt to local digital strategies and the development of Industry 4.0. Our solution aims to meet the computing power and storage needs of enterprises and public entities in cloud computing, while also addressing related infrastructure and hosting service requirements, as well as the demand for mobile edge computing. The design of our edge computing and edge data center solutions is specifically intended to meet the needs of the edge center market.

The specific solution includes the following: hardware, core AI algorithms, and operation systems for various scenarios:



In the application scenarios of our self-developed AI inference algorithms, the implemented AI capabilities include, but are not limited to, the following abilities:

2. High-density Storage based on ARM Architecture



The high-density storage products designed based on ARM architecture significantly increase storage capacity in terms of unit volume and power consumption.

3. Secure Mobile Phone based on ARM Architecture

"Secure Mobile Phone" is a private cloud mobile phone box exclusively for individuals, where all types of files can be hidden in the cloud machine. This includes photos, videos, apps, contacts, audio, documents, etc., ensuring absolute privacy for users and providing a more diverse experience with peripheral applications.

The functionalities of the Secure Mobile Phone are as follows:

1、 Application camouflage with strong privacy in place

The application desktop logo can be any software entry point, and remote access to the "Secure Mobile Phone" can only be obtained through a special password, ensuring that unauthorized access is prevented and data security is guaranteed.

2、 Zero occupancy of data in the regular phone with secure storage in the Secure Mobile Phone

Since all data is stored in the "Secure Mobile Phone," the regular mobile phone is merely an entry point to access the "Secure Mobile Phone," and therefore, all contents stored in the "Secure Mobile Phone" do not occupy any memory of the regular mobile phone.

3、 Protection against virus and Trojan invasion

The "Secure Mobile Phone" is based on trusted anti-dynamic security design, preventing the execution of any unauthorized programs.

4、 One-click data erasure with no trace of previous data

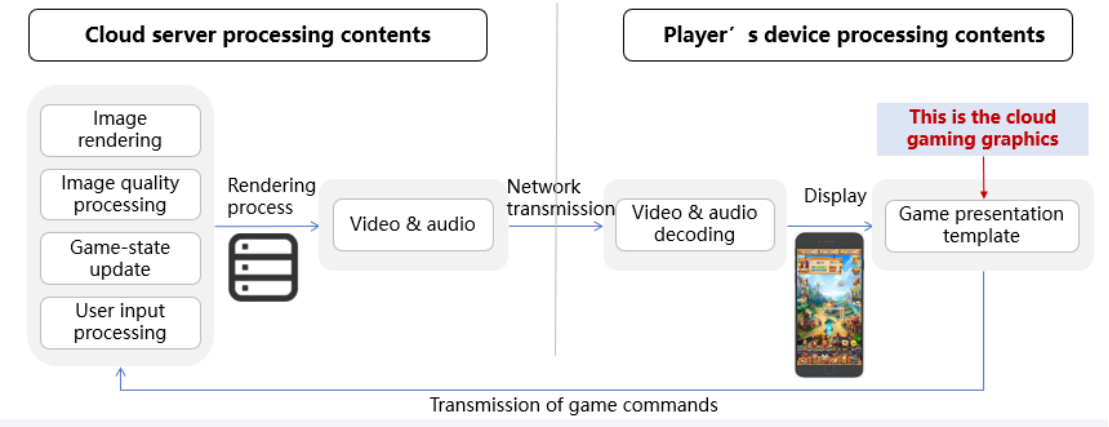
The "Secure Mobile Phone" comes with a unique feature that allows for one-click deletion of all user data, ensuring end-to-end double protection for your privacy.

5、 Dual authentication, dual encryption

The "Secure Mobile Phone" is based on a zero-trust protection system, a new generation of network security defense concept. It offers transmission encryption, storage encryption, network access security, and device data security.

4. ARM Architecture Cloud Gaming Industry Solution

What is cloud gaming? In a cloud gaming scenario, games do not run on the player's device but rather in cloud servers. The game scenes are rendered into video and audio streams by the cloud servers and transmitted to the player's gaming terminal via the network.



Game developers use our cloudification technology to process the complete APP package and generate H5 game links. Players can play games on web pages without the need to download the games.

Cloud gaming technology will bring significant efficiency improvements to Japan's gaming industry, allowing users to experience web game-like experiences instead of having to download large game packages to enter the game.

1、 Retaining the simplest user experience of instant play

With our ARM technology, we can provide rich app games in a similar instant play format to traditional web games. Players do not need to download clients and can enjoy a more diverse range of app games.

2、 Building a cloud gaming community

Building a new cloud gaming community that accumulates gaming users, making it easier for users to find the most suitable game content for themselves. The cloud gaming community allows operators to regain distribution power.

(Example reference for a Japanese gaming community: Clicking the icon will launch the game)

3、Interactive live-streaming games

Through cloud gaming, the games can be played instantly, and a cross-terminal cloud micro-client is formed. After entering the live-streaming room, the audience can join the battle by clicking the H5 floating window without downloading the game. This allows for gamers to play along with the streamer and other players on different screens, with the live-streaming room in a small floating screen format for simultaneous watching and playing.

The above is our explanation and introduction of Compass Cloud AI Japan's business. We welcome potential customers from various industries to contact us, and we will design edge computing and cloud services tailored specifically for you.

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Business	：Application development and distribution Software development

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