开放原子开源基金会 OPENATOM FOUNDATION | openEuler

OpenAtom openEuler 2024 Annual Report

Igniting Intelligence Everywhere

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Harnessing Industry Innovative Strength to Build a Global Open-Source Ecosystem

In 2024, openEuler celebrated its fifth anniversary, marking a key milestone in its progression to a key player in the global open-source operating system (OS) landscape. By 2023, openEuler-based OSs held the leading share in the new server OS market in China. Impressively, as of 2024, openEuler has surpassed a total of 10 million installations, with downloads exceeding 3.85 million across 155 countries and regions, and over 2,000 cities.

A Tribute to Our Remarkable Developers

Success is not built in a day. Back in March 2020, when openEuler launched its first long-term support (LTS) version, our budding community comprised of just a handful of organization members and a few-hundred developers. Today, it has flourished into a vibrant ecosystem boasting over 21,000 developers, 1,956 partners, 109 special interest groups (SIGs), and 588 incubated project repos. This vibrant community thrives on diverse contributions – code submissions, technical documentation, collaborative discussions, and invaluable feedback. To each and every developer who has contributed to shaping openEuler, we extend our deepest gratitude.

A Bosom Friend Afar Brings a Distant Land Near

2024 marked a pivotal year for openEuler's globalization. We actively engaged in international open-source events and forged strategic partnerships with renowned organizations. These collaborations highlight openEuler's unwavering commitment to nurturing an inclusive ecosystem where innovation knows no boundaries.

United by Passion, Driven by Vision

Open-source communities thrive on passion and collaboration. Over the past five years, openEuler has built an open, diverse, and architecture-inclusive ecosystem. Each contribution has propelled this grand endeavor forward. We've built a 'Developer Honor Wall' for everyone who contributed to openEuler 24.03 LTS. Each ID represents a seemingly small effort. Collectively, they represent the massive scale of the 24.03 LTS achievement. This image resonates deeply with me, and it is with profound respect that I dedicate it to every developer in the openEuler community.

As we look ahead to 2025, our focus is on accelerating community growth, attracting global open-source enthusiasts, and co-creating an ecosystem that fosters technological breakthroughs and drives progress in the world of open source.

Xiong Wei
Committee Chairperson
OpenAtom openEuler

2025–2026 openEuler Committee

Chairperson

Xiong Wei
Huawei

Standing Committee

Han Naiping
KylinSoft

Liu Wenqing
Kylinsec

Qu Sheng
ISCAS

Zhu Jianzhong
UnionTech

Members

Gao Pei
iSoftStone

Wang Hao
xFusion

Xu Jian
China Southern Power Grid

Elton Yang
Intel

Executive Director

Hu Zhengce

The openEuler Committee serves as the supreme decision-making body for the openEuler community. It plays a vital role in the community's growth by discussing and deciding upon key matters through regular meetings.

In 2024, openEuler enhanced its organizational structure by establishing four dedicated working groups. These groups focus on critical areas including community business development, legal affairs, operations, and talent cultivation.

Thank You to Our Members

The vitality and advancement of the openEuler community are linked to the invaluable contributions of our organization members. openEuler's rapid growth has drawn an increasing number of enterprises to join our membership. In 2024, we were pleased to welcome ten new members*, whose generous support is instrumental in sustaining openEuler's community operations, outreach initiatives, academic exchanges, professional development programs, and global partnerships.

As of December 2024, the openEuler community proudly encompasses over 1,900 organization members, spanning the entire industry chain – from processors to applications and cloud services. More than just an open-source community, openEuler is a trustworthy foundational software platform, driving the digital transformation of diverse sectors and serving as an open innovation hub for technological advancements across the industry landscape.

We express our sincere appreciation to all who contribute; your dedication is essential to our shared success. Together, we are fostering a dynamic and prosperous ecosystem.

*Ten new members joined in 2024: Arm, Baidu AI Cloud, Baolande, BoCloud, Cecloud, China Southern Power Grid, CoreTek Systems, Huazhi, Linx Software, and Zhaoxin

Strategic

HUAWEI

Platinum

麒麟信安 KYLINSEC

KYLINSOFT 麒麟软件

统信软件技术有限公司

Gold

FUSION

HOPERUN 润和软件

iSoftStone 软通动力

intel

中国南方电网 CHINA SOUTHERN POWER GRID

* 天翼云

* China Unicom 中国联通

* 中国移动 China Mobile

Silver

arm

百度智能云

SWPC 奥思维

科银京成 CoreTek Systems

凝思 LINX SOFTWARE

turbolinux

博云

H3C

中国电子云

CS&S 中软国际

Bronze

BES 宝兰德 BESSYSTEM

Phytium 飞腾

广发期货 GF FUTURES

华跃技术 基础软件引领者

兆芯

Academic Institution and Non-profit Organization

ISCAS

openEuler 2024 Highlights

5 million+ new installs (2024)

10 million+ total (5 years)

Diverse adoption: Internet, finance, carrier, energy, public sectors, etc.

1,956 organization members (2024)

A YoY increase of 602

June 2024, openEuler's first AI-native open-source operating system, openEuler 24.03 LTS, was officially released, with 8 commercial distros available

39 mirror sites worldwide

Available on Alibaba Cloud, AWS, Azure, Huawei Cloud, and Tencent Cloud

Accepted as the Docker-Sponsored OSS

3.85 million+ downloads, covering 2,000+ cities, across 150+ countries and regions

20k+ community contributors

588 incubated project repos

Deep partnership with global open-source organizations, such as the Linux Foundation, OpenInfra, RISC-V, CNCF, etc.

109 SIGs

11 user groups

9 university technical groups

Held 4 industry conferences

Organized 20+ in-person meetups across 13 cities

Participated in 10+ open-source events worldwide

Deeply involved in the formulation and promotion of SBOM and SPDX

World's first open-source community to achieve ISO 18974 certification

Talent certification integrated into the OpenAtom Foundation's talent system

9 organizations joined as training partners

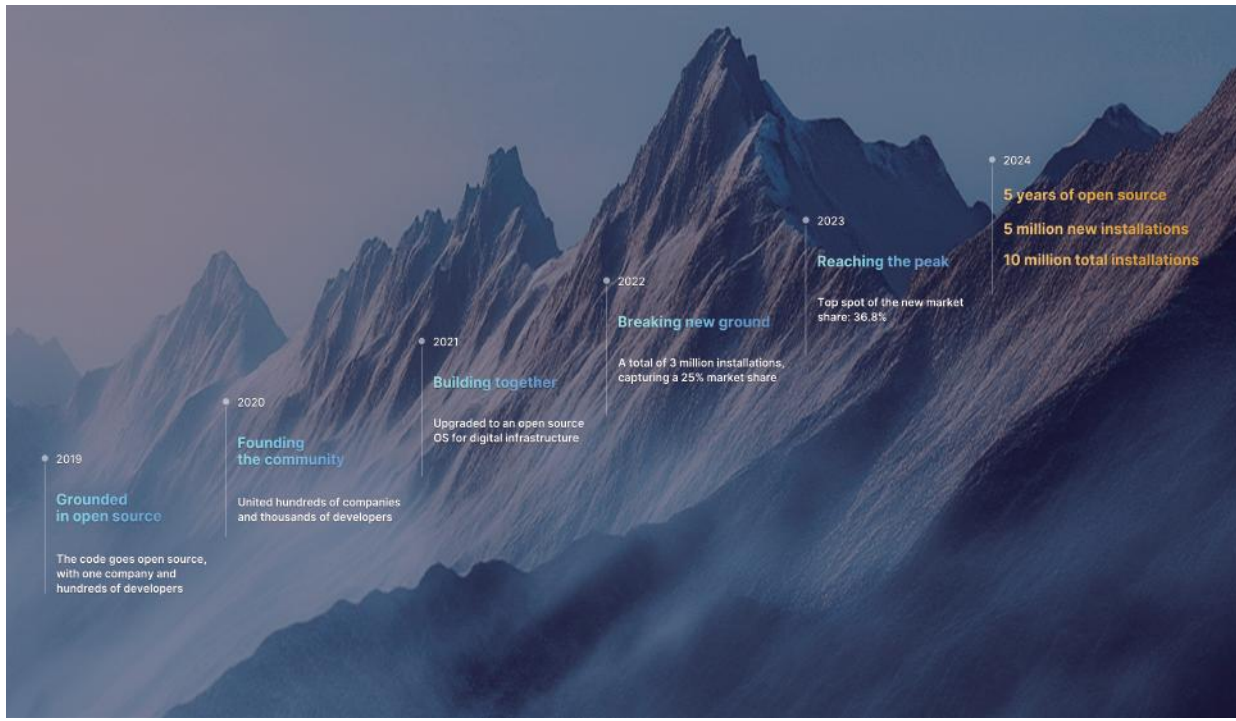
100,000+ YouTube subscribers

6,120,000+ video views

60,000+ hours of watch time

10M Installations: A Landmark Achievement in the OS Industry

openEuler thrives on collaboration, joint governance, and open contribution. Over the past five years, the community has focused on advancing foundational technologies, including kernels and scenario-specific optimizations, creating a thriving ecosystem through open collaboration and deep integration across academia and industry. openEuler's five-year journey has been marked by rapid growth, evolving from enterprise-led to community-driven, and finally achieving new milestones.



Industry-Scale Commercial Adoption

openEuler has been widely adopted in pivotal sectors such as finance, carrier, energy, and public services. Ms. Li Zhao, Senior Market Analyst at IDC, highlighted at the openEuler Summit 2024 that, users are increasingly drawn to openEuler because of its significant brand influence, vibrant community engagement, and extensive hardware compatibility.

Powering Robust Financial Infrastructure

The partnership between financial institutions and openEuler has really strengthened openEuler's tech advantages, making it a leading-edge and practical OS for digital transformation in finance. According to Ms. Nie Liqin, Secretary-General of the Beijing FinTech Industry Alliance, speaking at the openEuler Summit 2024, openEuler is making significant progress in finance. By 2024, it has been widely deployed across core systems in financial institutions, powering over 80% of all new server setups in the financial sector in China.

Driving Innovation in Internet Services

As we enter the era of intelligent computing, the Internet industry is swiftly embracing open-source solutions. openEuler is partnering with leading Internet enterprises to drive collaborative innovation, establishing itself as the foundational OS for critical Internet services.

Driving Industry Adoption and Innovation

Since its inception, the openEuler community has been dedicated to its vision of a global open-source OS for digital infrastructure, relentlessly pursuing technological innovation to create a user-friendly OS with high performance and security. By the end of 2024, openEuler had released a total of 10 versions, including 3 LTS releases and 7 innovation versions. Furthermore, more than 27 companies have launched commercial distributions based on openEuler, fully demonstrating the recognition and achievements openEuler has garnered in both technology and the commercial ecosystem.

Mr. Han Naiping from KylinSoft, one of openEuler Standing Committee members, said that, "Open source is in Kylinsec's DNA, always has been. For years, we've been big on open source – really pushing it and being part of the community. Going forward, we're all about keeping that innovation engine going, through the community, products, the whole ecosystem, and our services. Our main thing is working with the community on those core features, delivering really solid, competitive products."

"open source thrives on collaboration, joint governance, and open contribution. With this spirit, our goal is to bring together all strengths to build a truly foundational OS community, making the ecosystem better and the products stronger. Going forward, UnionTech will deepen its investment in this collaborative community," said Zhu Jianzhong, openEuler Committee member from UnionTech.

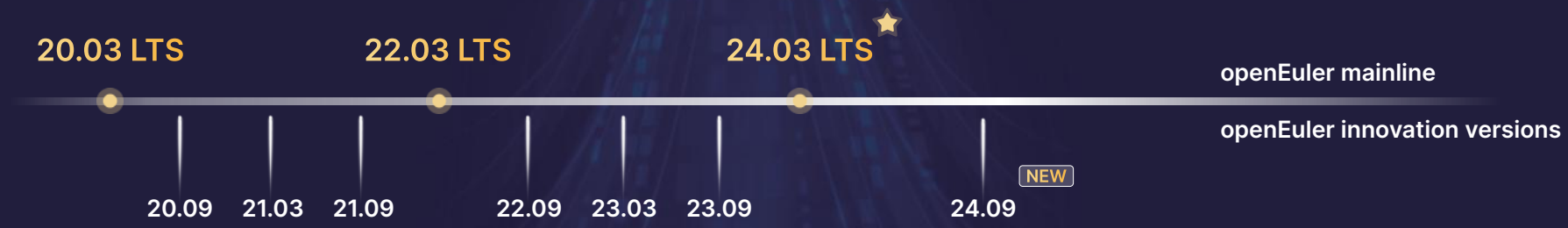
Liu Wenqing, openEuler Committee member from Kylinsec, pointed out, "We're huge supporters and active practitioners of the openEuler roadmap. A foundational community of our own is a real win-win for our tech and how people see us. Thanks to the community, we all grow and boost our businesses, which helps the community get even better—it's like a positive feedback loop that helps everyone out."

First AI-native Release and Its Commercial Adoption

In June 2024, openEuler 24.03 LTS, the first AI-native version of openEuler, was released, with major upgrades in kernel, infrastructure, AI capabilities, and all-scenario support. It is engineered to provide developers and users with high performance, robust reliability, and a highly adaptable development environment.

Community OSV members have closely followed the openEuler technology roadmap. Eight leading companies have launched commercial distributions based on openEuler 24.03 LTS. This landmark release embodies the collective efforts of hardware and software innovators throughout the ecosystem and showcases the invaluable contributions of a global community of developers. openEuler 24.03 LTS and its commercial distributions are now driving the implementation of numerous innovative features across a diverse range of industry use cases.

Five years of open source achievement and acclaim



Four Upgrades to Build an OS for the Intelligent Era

In the intelligent era, AI technologies, particularly those driven by LLMs, represent a pivotal trajectory in contemporary technological evolution. openEuler is proactively embracing this era, deeply integrating AI capabilities to build an OS for AI and develop AI for OS. The release of openEuler 24.03 LTS and 24.09 innovation version delivered significant enhancements to AI functionalities and further optimized application performance across a comprehensive spectrum of scenarios.

Linux Kernel 6.6

- Enhanced CPU scheduling and memory management to optimize virtualization performance.
- Contributed to dynamic compound pages in the upstream, doubling write performance and improving overall system efficiency.

AI Solutions

- Integrated oeAware, A-Ops, and A-Tune through the openEuler Copilot System, enabling intelligent scheduling, O&M, and tuning.
- Expanded support for hardware, AI models, frameworks, and toolchains, including PyTorch and OpenVINO, as well as key inference and retrieval algorithms like Faiss and DCN. Additionally, it integrates foundational algorithm libraries such as NumPy and ACL.

All-scenario Support Across Server, Cloud, Edge, and Embedded Environments

- Achieved 100% CPU fault detection in server environments thanks to sysSentry, ensuring high reliability and performance.
- Improved the container speeds by 80% in cloud environments through memory load-based scheduling.

Infrastructure

- Achieved unified builds for Arm, x86, RISC-V, and LoongArch, available on 39 global mirrors and major cloud platforms, enabling broader accessibility and scalability.
- Container images were recognized as Docker-Sponsored OSS.

2025 Vision: Building a More Intelligent, User-Friendly, and Resilient OS

As we advance into an increasingly intelligent future, OSs face numerous challenges. How to effectively manage rapidly growing, diverse computing resources? How do we guarantee robust data and infrastructure security amidst the widespread adoption of AI applications? And how can we empower developers with a streamlined, user-centric experience?

An Intelligent Platform to Unleash Heterogeneous Computing Power

openEuler is dedicated to deeply integrating heterogeneous computing, offering comprehensive support for interconnect standards like PCIe, CXL, and NVLink. To this end, openEuler is building a heterogeneous-converged system, employing kernel innovations to unify computing abstraction and memory addressing across diverse devices. This unified approach extends to collaborative resource management, from individual nodes to entire clusters, leveraging advanced technologies such as heterogeneous memory pooling and semantic direct access to create a platform seamlessly integrating general-purpose and AI computing.

The community's Long SIG is central to advancing heterogeneous convergence. They aim to upgrade GMEM to HyperMem, introducing heterogeneous memory pooling, unified memory semantics, and tiered policy collaboration. HyperMem delivers significant performance gains, boosting database and big data performance by 30% and resource utilization from 40% to 60% in general-purpose scenarios, and increasing long-sequence conversational AI inference throughput by 40% and recommendation throughput by 30% in AI workloads.

More Developer-Friendly Experience

openEuler prioritizes developers, continuously investing in robust infrastructure to elevate their experience. DevStation, a key incubation project, exemplifies this commitment by streamlining application development on openEuler, enhancing the end-to-end developer journey.

In addition, the openEuler community provides extensive developer resources. Like the community has hosted 2,446 meetups, and the forum attracts 35,000 monthly visitors with 9,000 active users.

Building a Resilient Community

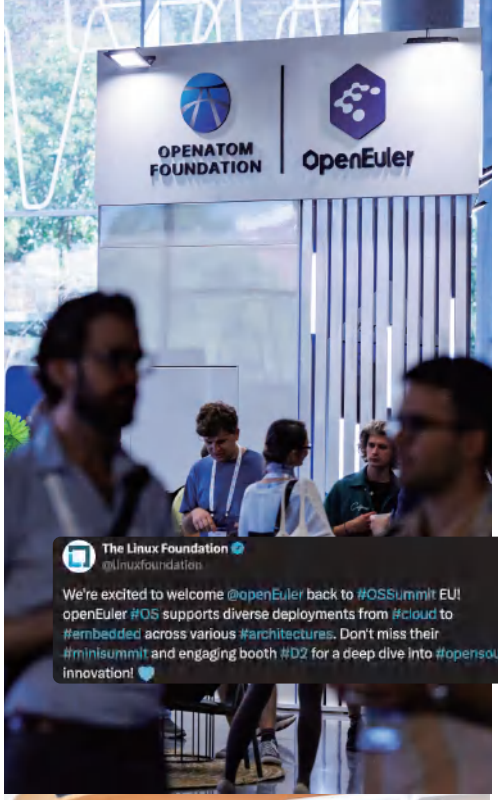
openEuler's pursuit of an open, transparent, secure, and reliable software supply chain began in 2022. Since 2023, in partnership

with CHAOSS, openEuler has refined community health assessment standards, fostering a more resilient ecosystem. In 2024, significant progress was made in enhancing community governance, ensuring long-term operational sustainability across development, operations, and maintenance.

openEuler's adherence to global standards like SPDX and ISO 18974 ensures robust security and compliance. For software operation, secGear, introduced in 2021, continues to advance confidential computing, delivering improved performance for secure databases and enhanced data privacy.

In 2024, three openEuler kernel developers joined the Linux kernel CVE review team, improving CVE identification and remediation accuracy and speed, and reinforcing the community's capacity for rapid vulnerability response.

These achievements showcase openEuler's robust capabilities as a resilient, foundational open-source OS community.



Global Expansion: From China to the World

2024 marked a year of significant globalization for openEuler. Deep collaborations with international bodies like OpenChain and OpenSSF enhanced open-source software supply chain security. openEuler also broadened native support for essential OSS across domains, with seamless integration of OpenStack and Ceph. From embedded systems to cloud platforms, openEuler's adaptable design supports diverse architectures to meet varied global requirements. By collaborating with global partners, openEuler is fostering an open and standardized ecosystem worldwide. Active in world events and promoting open source principles, openEuler is creating a strong foundation for global open-source growth.

Sharing Innovations with the Globe

In August 2024, openEuler partnered with CNCF, integrating openEuler resources into CNCF's CI. This provides free and efficient CI testing resources for CNCF projects and has already been adopted in Volcano and KubeEdge. This achievement signifies the successful integration of openEuler into CNCF's infrastructure, offering a wider range of resource options for numerous open-source projects under CNCF. This collaboration ensures smoother progress in complex testing scenarios and accelerates project iteration. Keith Chan, Head of Linux Foundation APAC Strategy and CNCF China Director, stated, "openEuler is not just an OS, it's actually an OS platform to create different OSs, so you can create OS for cloud, AI, edge, IoT, etc.

I think openEuler is ready for the global developers to collaborate, to have more contributors around the world. So, we really anticipate to have more collaboration with openEuler. openEuler is a new OS option to the world."

Cloud computing has been central to openEuler since its inception, fostering strong ties with the OpenInfra Foundation. This collaboration deepened in 2023 with openEuler becoming an associate member. The *Open Infrastructure Blueprint Whitepaper*, showcased at openEuler Summit 2024 by OpenInfra's Kendall Nelson, further validated openEuler's key role in cloud infrastructure. Kendall remarked, "openEuler has a lot of value to bring to the global market. I think that its focus on integrating with OpenStack definitely sets it apart from other open source operating systems and I think that there are more opportunities for growth globally. We have tried to help promote openEuler as much as possible to our users and our community."

For AI, openEuler fully supports LF AI & DATA in building an open platform for enterprise AI (OPEA). By integrating generative AI like LLMs and RAG, openEuler streamlines ecosystem complexity, empowering enterprises to develop scalable, intelligent AI products more efficiently.

Jointly Building New Global Software Supply Chain Security Standards

In recent years, the software domain has witnessed several high-profile security incidents, including the OpenSSL Heartbleed vulnerability, the SolarWinds breach, and the Log4Shell exploit. Some of these incidents have had far-reaching consequences. To address these challenges—particularly for complex systems like OSs—robust security protocols, advanced tools, and skilled developers and maintainers are essential.

OpenChain, a Linux Foundation project, specializes in defining and helping organizations in achieving software supply chain security. ISO/IEC 18974:2023, released by OpenChain in 2023, is a standard focused on open-source software security management. It aims to help organizations establish and maintain a structured security management system for OSS, emphasizing clear security policies and ensuring their comprehensiveness and effectiveness. By referencing OpenChain's standardized open-source compliance process, it ensures that all relevant activities are within a controllable scope. ISO/IEC 18974 also emphasizes establishing mechanisms to facilitate external inquiries and vulnerability reporting for open-source software, providing necessary resources for open-source security projects, including personnel, tools, and technical support. These measures and tools help organizations achieve security and compliance in software production, usage, and management.

Since 2023, the openEuler community and OpenChain have formed a strong partnership, using OpenChain's standards and processes to enhance openEuler's technology, procedures, tools, and personnel. By June 2024, openEuler had met all the requirements outlined in the ISO 18974 standard, becoming the first open-source community to earn this certification.

Shane Coughlan, General Manager of OpenChain, stated, "The OpenChain project and the openEuler project have a multi-year history of collaboration. We have held events together, attended each other's events, and openEuler has adopted both of the ISO standards that the OpenChain project has created and maintains. The core of our collaboration is based on the understanding that open source requires professional process management to ensure effectiveness, efficiency and sustainability. Managing a large software ecosystem such as openEuler substantially benefits from such an approach, especially in the context of commercial engagement and deployment. The collaboration between OpenChain and openEuler goes beyond the purely functional. Both represent communities of professional and volunteer contributors with a genuine commitment to open innovation. The extent of our shared activities is a reflection of this, as is our mutual communication to other communities advocated and illustrating the value of structured open source management. The OpenChain project looks forward to continuing our collaboration in 2025, and continuing to make progress in the professionalization of open source software."

openEuler's Global Journey of Growth

openEuler's global expansion began at Open Source Summit Europe in September 2022. Over the past two years, openEuler actively engaged in numerous global open source events across cities like Barcelona, Hanoi, Tokyo, Vienna, and Suwon, becoming deeply integrated into the global open source ecosystem.

In 2024, openEuler's YouTube channel surpassed 100,000 subscribers, with total content watch time exceeding 60,000 hours. The community has also gained notable traction on social media platforms like LinkedIn and X (Twitter). These interactions foster technological collaboration and shared growth within the open-source landscape.

A Thriving and Resilient Open-Source Community

Developers are the cornerstone of any community's growth, and openEuler is no exception. openEuler partners with global developers to create a diverse and architecture-inclusive software ecosystem. By 2024, the openEuler community has gathered 21,300+ developers worldwide, established 109 SIGs, and incubated over 588 innovation projects—spanning the full spectrum from kernels to AI enablement—driving continuous innovation across industries.

Thanks to Every Contributor

In 2024, openEuler released one LTS version, one innovation version, and two LTS SPs. The software ecosystem grew to 210k packages, and community contributions reached new heights, with 106.8k issues, 203.1k merged PRs, and 7,494 security vulnerabilities resolved efficiently. This progress is a testament to the tireless work of a broad ecosystem, both individual and organizational. Within just two years, 5,136 community developers have actively contributed to version development. We extend our sincere thanks to every developer whose contributions—whether in code, documentation, discussions, or feedback—have propelled the success of openEuler.

Ensuring Software Quality with a Stable Expert Team

The continued success of a community relies not just on developers writing code, but also on expert reviewers who dedicate themselves to long-term technical oversight. Their careful review process ensures that openEuler releases maintain the highest standards of quality while fostering innovation. Over the past five years, the number of community reviewers has continuously grown, with these professionals completing nearly 3.4 million technical reviews.

Since openEuler became open source, 88 experts have been reviewing code, contributing to 31% of the community's total code reviews. Notably, one contributor has amassed over 21k reviews in just five years. This unwavering dedication from developers empowers openEuler to maintain high quality control with rapid iteration and growth.

Harnessing Innovation to Drive Community Prosperity

openEuler project groups, launched in 2022, have fostered a welcoming hub for innovation across industries. The community's portfolio of incubated projects continues to grow, representing a diverse range of sectors and organizations. At the openEuler Summit 2024, twelve projects from nine organizations, formalized their contributions, injecting new energy and innovation into the ecosystem.

Open collaboration is the bedrock upon which our community stands. As we look to the future, openEuler remains committed to providing outstanding development and experiences for every organization, developer, and user involved. We invite more developers to embark on this open-source journey, contributing their expertise to shape openEuler's future.

A Vibrant Developer Community

A year of remarkable activity and engagement from the openEuler community has propelled its continued growth. openEuler actively supports this through diverse communication platforms and collaborative initiatives, fostering a thriving ecosystem for developers and users.

openEuler Summit 2024

The openEuler Summit 2024, themed "Igniting Intelligence Everywhere," convened at the Zhongguancun International Innovation Center in Beijing. This summit united global illuminators in foundational software and open-source ecosystem building, drawing over 3,000 attendees. It featured keynotes, expo areas, and technical sessions, highlighting community progress and outlining openEuler's vision.

openEuler SIG Gathering 2024

The SIG Gathering, held in July 2024, is an event tailored for developers. Nearly 300 developers from 109 SIGs gathered to discuss key technical proposals, development plans, and future goals for the community.

The gathering focused on six major technical areas: diversified computing power, all-scenario applications, AI-native support, native development with openEuler, cloud-native development, and user experience boost. Developers participated in a full day of brainstorming, sparking innovative ideas, many of which have already been implemented in upcoming releases.

Meetups

openEuler hosted 28 in-person meetups across 13 cities in 2024, attracting nearly 2k developers. These events underscore the community's robust, self-sustaining model and fuel shared growth.

Talent Development

Skilled digital talent fuels openEuler's growth. In recent years, a robust industry-education talent development system has emerged and educational resources from system basics to application development have been produced. To accelerate research implementation, openEuler university technical groups have been established. Students are further nurtured through competitions like the openEuler AI Application Challenge and the Open Source Promotion Plan (OSPP).

Talent Organization & Certification

openEuler's talent certification is now integral to the OpenAtom talent certification framework. Nine training partners are authorized to systematically grow the professional base.

Recognizing the growing need for open source OS experts, the openEuler Education Working Group was formed in 2024 to build out the talent development system. A structured training program, covering beginner to advanced levels, was launched in September to create specialized openEuler professionals.

University Collaboration

openEuler actively fostered university partnerships in 2024 to integrate industry, academia, and research.

The open source internship programs with the ISCAS trained 57 interns, yielding 86 PRs, with 38 merged. OSPP engaged 319 applicants, with 82 completing projects out of 92 tasks.

openEuler went to 20+ universities during the OpenAtom Open Source Talent Training Program, for open-source tech training. Five more universities established openEuler technical groups focused on research and innovation around openEuler 24.03 LTS, embedded tech, and XuWare.

Diverse Competitions

In 2024, the openEuler community organized seven large-scale competitions, spanning core OS tech and application development, like China International College Students' Innovation Competition.

Moreover, openEuler initiatives extended to the OpenAtom Competition, competitions co-organized with Kylinsec regarding the system migration and software development based on openEuler, and Hackathon Challenge. These year-round events attracted participation from over 100 universities and more than 4,600 students. openEuler also collaborated with FOSSASIA for the Codeheat Coding Contest, attracting 300+ developers worldwide to explore and contribute to the openEuler project.

Looking ahead, openEuler will deepen university-enterprise-community collaboration to expand opportunities for faculty and students to contribute to open source, cultivating a pipeline of innovative talent for foundational software development.

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