ICS 35.020
CCS L 67

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 46575-2025

Intelligent computing - Internet of supercomputing - Reference architecture

智能计算 超算互联网 参考架构

Issued on: October 31, 2025 **Implemented on: October 31, 2025**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

Table of Contents

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that

some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Intelligent Computing Standardization Working Group (SAC/SWG32). This document was drafted by: Sugon Information Industry (Beijing) Co., Ltd., Zhejiang Laboratory, Tsinghua University, and the National Supercomputing Center in Wuxi. Peking University Changsha Institute of Computing and Digital Economy, Beijing University of Aeronautics and Astronautics, National University of Defense Technology, Sun Yat-sen University, and the Computer Science Department of the Chinese Academy of Sciences Network Information Center, Shandong Provincial Computing Center (National Supercomputing Center in Jinan), Sugon Intelligent Computing Information Technology Co., Ltd., Sichuan Cloud Computing Technology Co., Ltd. China Mobile (Suzhou) Software Technology Co., Ltd., ZTE Corporation, China Mobile (Suzhou) Software Technology Co., Ltd., China United Network Communications Co., Ltd. Research Institute, China Telecom Cloud Technology Co., Ltd., Kaiyuan Cloud (Beijing) Technology Co., Ltd., Super Fusion Digital Technology Co., Ltd., Chengdu Supercomputing Center Operations Management Co., Ltd., Hangzhou Dianzi University, Oriental Supercomputing (Shenzhen) Technology Co., Ltd., Shanxi Taihang Laboratory Co., Ltd., Zhejiang University Hwatech Technology Co., Ltd., Xingyin Information Technology (Shanghai) Co., Ltd., State Grid Information & Communication Industry Group Co., Ltd., China Information & Communication Research Institute, Ningchang Information Industry (Beijing) Co., Ltd., Shanghai Supercomputing Center, Shanghai University, Shanghai Youka Network Technology Co., Ltd. Shanghai Zhangjiang Institute of Mathematics, China Mobile (Hangzhou) Information Technology Co., Ltd., H3C Technologies Co., Ltd., Inspur Cloud Information Technology Co., Ltd. Hangzhou Xieyun Technology Co., Ltd., China National Institute of Standardization, Guangdong Branch of China United Network Communications Co., Ltd., and Zhongke Kekong Information. Industrial Co., Ltd., Qingdao Guoshi Technology Group Co., Ltd., China Telecom Digital Technology Co., Ltd., Shanghai Academy of Sciences, National Supercomputing Center Shenzhen Center (Shenzhen Cloud Computing Center), Zhengzhou University, China Jiliang University, China Electronics Technology Group Corporation (Hikvision), Sugon Information Industry (Henan) Co., Ltd. Company, Shangzhou (Henan) Computing Technology Co., Ltd., Yangtze River Delta Quantum Technology Industry Innovation Center, Beijing Wanjie Data Technology Co., Ltd. Zhejiang Huirong Network Technology Co., Ltd., Zhongyuan Computing Power Technology Development Co., Ltd., Northwestern Polytechnical University, Beijing Lianguangtong Network Technology Co., Ltd. Company, Beijing Aerospace Huihai System Simulation Technology Co., Ltd., China Article Numbering Center. The main drafters of this document are. Cao Zhennan, Zhao Huan, Yang Kun, Yang Guangwen, Huang Zhenchun, Liu Yi, Fan Chun, Shi Peichang, Lu Yutong, Meng Xiangfei, and Guo Ying. Liu Na, Wang Jianbo, Li Yonghui, Chen Jiahui, Guan Xiaodong, Zheng Jiajia, Qu Long, Guo Yang, Li Xiang, Fang Qiming, Wu Can, Mao Chang, Wang Haiyan, Wang Jing Zhang Yu, Li Tao, Zhang Jing, Liu Zesan, Chen Jing, Dong Xiaohai, Guo Qing, Han Shujun, Sui Chenglong,

Gao Wei, Mu Yubo, Yang Li, Wang Zhijia, Deng Shixian Gou Haipeng, Ding Xinhui, Sun Zhaoyang, Liu Wenbin, Yu Moqing, Lou Zhibin, Zhi Xiaoli, Wang Lei, Liu Yuezhou, Chen Libo, Song Lei, Zhou Chao, Qin Yi, Chen Yichen, Chen Zhiyu, Zou Xiaobing, Wang Chengrui, Zhang Yu, Yu Zhe, Cai Zhengong, Wang Cheng, Wang Jun, Wang Yanfei, Huang Tao, Liang Yonggui, Jiao Yangyang, Zheng Liushuai Zhou Bo, Zhang Zhixiao, Wang Sen, Chen Jie, Jiang Zhangjian, Zeng Anli, Fang Fang, Yang Shangzhi. Intelligent Computing Supercomputing Internet Reference Architecture

1 Scope

GB/T 46575-2025 is the Chinese national standard covering the architecture for federating China's supercomputing centres into one accessible resource - the layers from the machines up to the applications, the scheduling and the data movement between sites, the identity and accounting across operators. First edition, with the platform operation requirements GB/T 46574-2025 and the terminology GB/T 46572-2025. Issued on 31 October 2025, it has been in force since 31 October 2025.

This document provides information on the supercomputing internet reference architecture, including supercomputing internet roles, activities, functional architecture, functional descriptions, and related aspects. The relationship between them. This document applies to the design, development, and service management of supercomputing internet, and provides a reference for implementation and application.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 37988-2019 Information Security Technology - Data Security Capability Maturity Model

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 By leveraging network infrastructure and/or high-speed interconnect technologies, the interconnection, aggregation, and sharing of supercomputing hardware, software, applications, and services can be achieved. It is a computing power ecosystem that integrates computing power supply, software and application development, and value-added services to provide users with diversified computing power services. system. [Source: GB/T 46572-2025, 5.2]

3.2 A computing power scheduling and service platform that provides various products and services for the supercomputing internet (3.1).

3.3 User Organizations or individuals using computing services, application publishing, application trading, and application delivery through the supercomputing internet platform.

Note. This includes merchants, customers, etc.

3.4 customer Organizations or individuals who register and purchase resources on the supercomputing internet platform.

Note. Resources include computing resources, storage resources, network resources, data resources, technical resources, software resources, model resources, etc.

3.5 Merchant service provider Organizations or individuals that register and sell goods or provide services on the supercomputing internet platform.

Note. Services include computing resource services, storage resource services, network resource services, data resource services, technical resource services, software resource services, and model resources. Services, etc.