ICS 35.030
CCS L80

# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 42564-2023

## Information security technology - Security technical requirements for edge computing

信息安全技术 边缘计算安全技术要求

**Issued on: May 23, 2023** **Implemented on: December 1, 2023**

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

# Table of Contents





## Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting: Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed and managed by the National Information Security Standardization Technical Committee (SAC/TC260): This document is drafted by: China Mobile (Hangzhou) Information Technology Co:, Ltd:, China Mobile Communications Group Co:, Ltd:, China Electronics Technical Standards Chemical Research Institute, National Computer Network Emergency Coordination Center, the Third Research Institute of the Ministry of Public Security, National Industrial Information Security Development Research Center Xin, China Power Great Wall Internet System Application Co:, Ltd:, Huawei Technologies Co:, Ltd:, Tencent Cloud Computing (Beijing) Co:, Ltd:, Sangfor Technology Co:, Ltd:, Lenovo (Beijing) Co:, Ltd:, Hisense Group Holdings Co:, Ltd:, AsiaInfo Security Technology Co:, Ltd:, Beijing Baidu Duwangxun Technology Co:, Ltd:, H3C Technology Co:, Ltd:, Alibaba Cloud Computing Co:, Ltd:, Inspur Electronic Information Industry Co:, Ltd:, Beijing Beijing University of Science and Technology, Beijing Shanshi Network Information Technology Co:, Ltd:, Hangzhou Hikvision Digital Technology Co:, Ltd:, Beijing Tianrongxin Network Security Technology Co:, Ltd:, Datang Microelectronics Technology Co:, Ltd:, Hangzhou Anheng Information Technology Co:, Ltd:, Venustech Information Technology Group Group Co:, Ltd:, Zhijiang Laboratory, Institute of Information Engineering, Chinese Academy of Sciences, China Electronics Technology Network Information Security Co:, Ltd:, Beijing Shenzhou NSFOCUS Technology Co:, Ltd:, Shanghai 30Guard Information Security Co:, Ltd:, State Grid Xinjiang Electric Power Co:, Ltd: Electric Power Research Institute, Shenzhen Shenzhen Yuanlian Technology Co:, Ltd:, Guangdong Telecom Planning and Design Institute Co:, Ltd:, Beijing Eye Technology Co:, Ltd:, Beijing Digital Certification Co:, Ltd: Co:, Ltd:, Zhengzhou Xinda Jiean Information Technology Co:, Ltd:, Guangzhou University,

China Automotive Engineering Research Institute Co:, Ltd:, Shanghai Guanan Information Technology Co:, Ltd:, Shenzhen Hailiang Technology Co:, Ltd:, Hengan Jiaxin (Beijing) Technology Co:, Ltd:, Fei Nuo Menzhen (Beijing) Branch Technology Co:, Ltd:, Rockwell Automation (China) Co:, Ltd:, Rockwell Technology Group Co:, Ltd:, Chengdu Weston Information Industry Co:, Ltd:, Shanghai Yitu Network Technology Co:, Ltd:, Schneider Electric (China) Co:, Ltd:, Hangzhou Xieyun Technology Co:, Ltd: The main drafters of this document: Lu Xiaoming, Qiu Qin, Wang Chenguang, Zhang Jinwei, Lu Qing, Zhixulong, Sun Yan, Wang Wenlei, Zhang Yan, Sun Yan, Min Jinghua, Yan Minrui, Wang Yongxia, Zi Ran, Huang Jiandong, Gao Xuesong, Xue Hui, Wu Yuesheng, Wan Xiaolan, Li Xiaocheng, Song Guixiang, Lin Fuhong, Ren Liang, Zhou Shaopeng, Wang Yan, Wang Yong, Li Jianfeng, Bi Qinbo, Li Zhenting, Liu Yuling, Bi Min, Yin Yawei, Ganlu, Shu Fei, Ye Sihai, Lu Weizhou, Shang Ke, Wang Xinhua, Liang Songtao, Xu Guangxia, Quan Daiyong, Xie Jiang, Guo Jianfeng, Xu Xinbai, Ge Qiang, Peng Xiaobo, Li Wei, Zhang Wenke, Liu Yiheng, Yan Xinhua, Wang Aoyu, Wu Junyi, Huang Yiming, Zhang Jihu, Wang Xiaoming: Information Security Technology Edge Computing Security Technical Requirements

## 1 Scope

GB/T 42564-2023 sets out what has to be secured when computing moves out of the data centre and to the edge of the network. Edge nodes sit in base stations, factories, roadside cabinets and vehicles, which changes the problem in ways that matter: the hardware is physically reachable by people who do not work for its owner, the node may be offline from the cloud when a decision has to be made, and responsibility is split between the edge provider, the cloud provider, the device owner and the application developer without any of them owning the whole path. This document gives the edge computing security framework and then the technical requirements across it - infrastructure security, network security, application security, data security, security operation and maintenance, and security support - together with the two collaboration surfaces that are specific to the architecture: device-to-edge and cloud-to-edge. It opens with the reference architecture, the security responsibilities of each party and the major risks, so the requirements can be read against a stated division of duties. Under ICS 35.030 and CCS L80, it is written to guide edge computing providers and developers, and to give evaluators something concrete to test.

This document specifies the edge computing security framework and the infrastructure security, network security, application security, data security, Technical requirements for security operation and maintenance, security support, device-edge collaboration security, and cloud-edge collaboration security: This document is applicable to guide edge computing providers and edge computing developers to carry out research and development, testing, deployment and operation of edge computing:

## 2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document:

GB/T 20271-2006 Information Security Technology Information System General Security Technical Requirements

GB/T 22239-2019 Basic Requirements for Network Security Level Protection of Information Security Technology

GB/T 25069 Information Security Technical Terms

GB/T 30276-2020 Information Security Technology Network Security Vulnerability Management Specification

GB/T 35273-2020 Personal Information Security Specifications for Information Security Technology

GB/T 35293-2017 General requirements for information technology cloud computing virtual machine management

GB/T 37092-2018 Security requirements for cryptographic modules of information security technology

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

GB/T 38626-2020 Guidelines for Password Protection of Information Security Technology Intelligent Networking Devices

GB/T 39786-2021 Basic Requirements for Cryptography Application in Information Security Technology Information System

GB/T 41479-2022 Information Security Technology Network Data Processing Security Requirements

## 3 Terms and Definitions

GB/T 20271-2006, GB/T 25069, GB/T 35273-2020 and the following terms and definitions apply to this document: 3:1 edge edge The boundary between related digital and physical entities, formed by networked sensors and actuators: [Source: ISO /IEC TR23188:2019, 3:1:2] 3:2 edge computing edgecomputing A form of distributed computing with data processing and storage at or near the edge: [Source: ISO /IEC TR23188:2019, 3:1:3, with modifications] 3:3 edge computing node edgecomputingnode An entity that provides storage, computing, networking, and other resources at or near the edge: