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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 46795-2025

Cybersecurity technology - Public key cryptographic application technology framework

网络安全技术 公钥密码应用技术体系框架

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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 Cybersecurity Standardization Technical Committee (SAC/TC260). This document was drafted by: GEL Software Co., Ltd., Beijing Guomai Xin'an Technology Co., Ltd., and Beijing Xin'an Century Technology Co., Ltd. Limited Company, China Electronics Technology Network Security Technology Co., Ltd., CESI (Shenzhen) Electronic Information Product Standardization Engineering Center Co., Ltd., Guangdong Provincial E-commerce Certification Co., Ltd., Xingtang Communication Technology Co., Ltd., China Electronics Technology Standardization Institute, and Zhixun Password (Shanghai) Testing Technology Co., Ltd., Zhong'an Yunke Technology Development (Shandong) Co., Ltd., Anhui Wentian Quantum Technology Co., Ltd., Shanghai Digital Certificate Certification Center Co., Ltd., Alibaba Cloud Computing Co., Ltd., Xinjiang Digital Certificate Authentication Center (Co., Ltd.), China Telecom Quantum Information Technology Group Co., Ltd. Group Co., Ltd., Feitian Technologies Co., Ltd., National Technology Co., Ltd., Shanghai Shiyan Information Technology Co., Ltd., Changchun Ji Dazhengyuan Information Technology Co., Ltd., Zhejiang Guoli Xin'an Technology Co., Ltd., Beijing Topsec Network Security Technology Co., Ltd., Shenzhen Aolian Information Security Technology Co., Ltd., the Third Research Institute of the Ministry of Public Security, and the National Engineering Research Center for Common

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Technologies of Information Security of the Chinese Academy of Sciences Co., Ltd. Beijing Guotai Wangxin Technology Co., Ltd., Zhengzhou Xinda Jiean Information Technology Co., Ltd., and Beijing Zhongke Zhuoxin Software Testing Technology Center Heart, Beijing Digital Certification Co., Ltd., ZhongAn Wangmai (Beijing) Technology Co., Ltd., Asia Digital Information Technology (Shanghai) Co., Ltd. Zhejiang Yunduanbao Network Technology Co., Ltd., Yuweng Information Technology Co., Ltd., Hangzhou Hikvision Digital Technology Co., Ltd., Cheng Dujiuxin Information Technology Co., Ltd., Beijing Qimingxingchen Information Security Technology Co., Ltd., and Qi Anxin Wangshen Information Technology (Beijing) Co., Ltd. Limited Liability Company, the Sixth Research Institute of China Electronics Information Industry Group Co., Ltd., and Huawei Technologies Co., Ltd. The main drafters of this document are. Zheng Qiang, Liu Ping, Yuan Feng, Wang Zongbin, Zhang Liting, Chen Shule, Zhao Min, Feng Weiduan, Jiao Jingwei, Wang Nina, and Han Wei. Huang Jingjing, Zheng Haisen, Liu Jingjing, Wang Yulin, Li Shiqi, Tan Ruihu, Luo Jun, Xu Xiaoming, Zhu Pengfei, Walibek Tudahun, Yin Wenji Fu Yuepeng, Zhao Lili, Li Hongbo, Lei Xiaofeng, An Gaofeng, Cheng Zhaohui, Dan Bo, Fu Dapeng, Jia Huihui, Sun Jian, Hu Jianxun, Li Xin, Fu Bowen Liu Weihua, Liu Zhong, Huang Fufei, Li Honglin, Wang Tianshun, Zhai Xinyuan, Wang Bin, Chen Xiaoyu, Guo Jingyu, Zhu Guangjian, Zhang Bin, Zheng Chenglong, Xiao Sang, Wang Long Zeng Guang and Chen Jiadong. Network security technology Public Key Cryptography Application Technology Framework

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1 Scope

GB/T 46795-2025 is the Chinese national standard covering the framework of public key cryptography as applied in China - the algorithms, the certificate and identity based branches, the key management and the relationship between the components. First edition, and it is the frame the SM2 message format and the identity-based standards sit in. Issued on 2 December 2025, it has been in force since 1 July 2026.

This document establishes the framework for public-key cryptography application technologies, including the cryptographic device layer, the general cryptographic service layer, the typical cryptographic service layer, and... The cryptographic infrastructure layer describes the components within this framework and their relationships. This document applies to the research, design, development, and application of public-key cryptography technologies and products.

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.

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GB/T 25069-2022 Terminology for Information Security Technologies

3 Terms and Definitions

The terms and definitions defined in GB/T 25069-2022, as well as the following terms and definitions, apply to this document.

3.1 A collection of physical or virtual cryptographic resources.

Note. It can monitor, allocate and load balance cryptographic resources in real time, and has the characteristics of scalability, high performance and low risk.

3.2 cryptographic module To implement cryptographic operations, relatively independent software, firmware, hardware, or a combination of these three components are required. [Source: GB/T 25069-2022, 3.379]

3.3 cryptomachine A device that can operate independently, perform cryptographic operations, key management, and provide cryptographic services. [Source: GB/T 25069-2022, 3.377]

3.4 A terminal cryptographic device that performs cryptographic operations, manages keys, and provides cryptographic services.

Note. Generally, a Universal Serial Bus (USB) interface is used.

3.5 timestamp The data obtained by signing time and other data to be signed, which is used to indicate the attributes of the data. [Source: GB/T 25069-2022, 3.542]

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