

Software - China (H)

Updated CPU/OS requirements for gov't PC procurement; potential boost for Xinchuang

Industry Overview

Updated PC procurement requirements unveiled

Central Government Procurement Center published the updated standards for centralized procurement of desktop and portable computers for gov't agencies (2024 version) on 11 Mar (Mon), which is applicable to government agencies (including directly affiliated institutions & departments) and parties above county-level. Besides, security and reliability assessment are required for CPU and OS ([Exhibit 2](#)). Compared to the 2023 version, key additional criteria include **1) budget**: up to Rmb5k / Rmb7k for desktop / portable computers respectively; **2) CPU**: choose among LoongSon, Phytium, Zhaoxin, Huawei Kunpeng, Hygon and ShenWei, which are all categorized as Class I by China Information Technology Security Evaluation Center (CITSEC) in 2023 ([Exhibit 4](#)), or Intel / AMD (subject to additional requirements); and **(3) OS**: need to pre-install Kylin / Tongxin UOS / Zhongke Fangde / other OS that meet security and reliability assessment requirement, or Windows 10 CMIT Government Edition (for Intel / AMD CPU only).

We think this new standard shortlists the key domestic suppliers for the first time, showing potential acceleration of IT self-sufficiency for CPU/OS/software within gov't related departments. Apart from OS companies ([Exhibit 1](#)), we believe other verticals in software space can also benefit from self-sufficiency for gov't and SoE clients, including database, office software (i.e. Kingsoft Corporation), cybersecurity, and ERP.

Potential Xinchuang acceleration; SoE demand stronger

Heading towards the end of the 14th Fifth Year Plan, software import substitution (Xinchuang) is likely to accelerate in 2024-25E, boosted by favorable policy support, in our view. Overall, we see stronger software Xinchuang demand of SoEs (especially those from critical infrastructure industries) than gov't, given they have relatively sufficient budget. Previously, the No. 79 Document (79 号文) issued by State-owned Assets Supervision and Administration Commission (SASAC) in Sep 2022 requires (1) full replacement (全面替换) of OA, portal, mailbox and etc, (2) all those in need are replaced (应替就替) for strategic decision, ERP, risk management and CRM, (3) all those could be should be replaced (能替就替) for production & manufacturing, and R&D system by 2027, for 98 central enterprises and SoEs, per Sina News. As such, 2024-2027 will be the critical period to complete the targets.

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CPU: central processing unit

OS: operating system

CRM: customer relationship management

CMIT: C&M Information Technology, a JV between China Electronics Technology Group Corporation and Microsoft Corporation

ERP: enterprise resource planning

EDA: electronic design automation

SoE: state-owned enterprise

OA: office automation

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Exhibit 1: Shortlisted CPU, OS and database companies (listed companies uncovered)

Key listed companies related to the self-sufficiency of CPU, OS and database

Category	Company	Chinese	Ticker	Product (example)
CPU	Loongson Technology	龙芯中科	688047 CH	Loongson 3A5000
	Hygon Information	海光信息	688041 CH	Hygon C86 3350
OS	ArcherMind Technology (shareholder of Tongxin)	诚迈科技	300598 CH	Tongxin server OS V20 (kernel version 4.19)
				Tongxin desktop OS V20 (kernel version 4.19)
	China National Software (Shareholder of Kylin Software)	中国软件	600536 CH	NeoKylin desktop OS V10 (kernel version 5.4)
				NeoKylin advanced server OS V10 (kernel version 4.19)
	Dawning Information (shareholder of Zhongke Fangde)	中科曙光	603019 CH	Fangde high reliability server OS V4.0 (kernel version 4.19)
				Fangde desktop OS V3.1 (kernel version 4.9)
Database	Taiji Computer (shareholder of KingBase)	太极股份	002368 CH	SeaboxSQL V11.5
	Vastdata	海量数据	603138 CH	Vastbase G100 V2.2

Source: China Information Technology Security Evaluation Center, BofA Global Research

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Exhibit 2: CPU and OS requirement for central procurement of computers by government

There are specific configuration requirements on CPU and OS for central procurement of computers

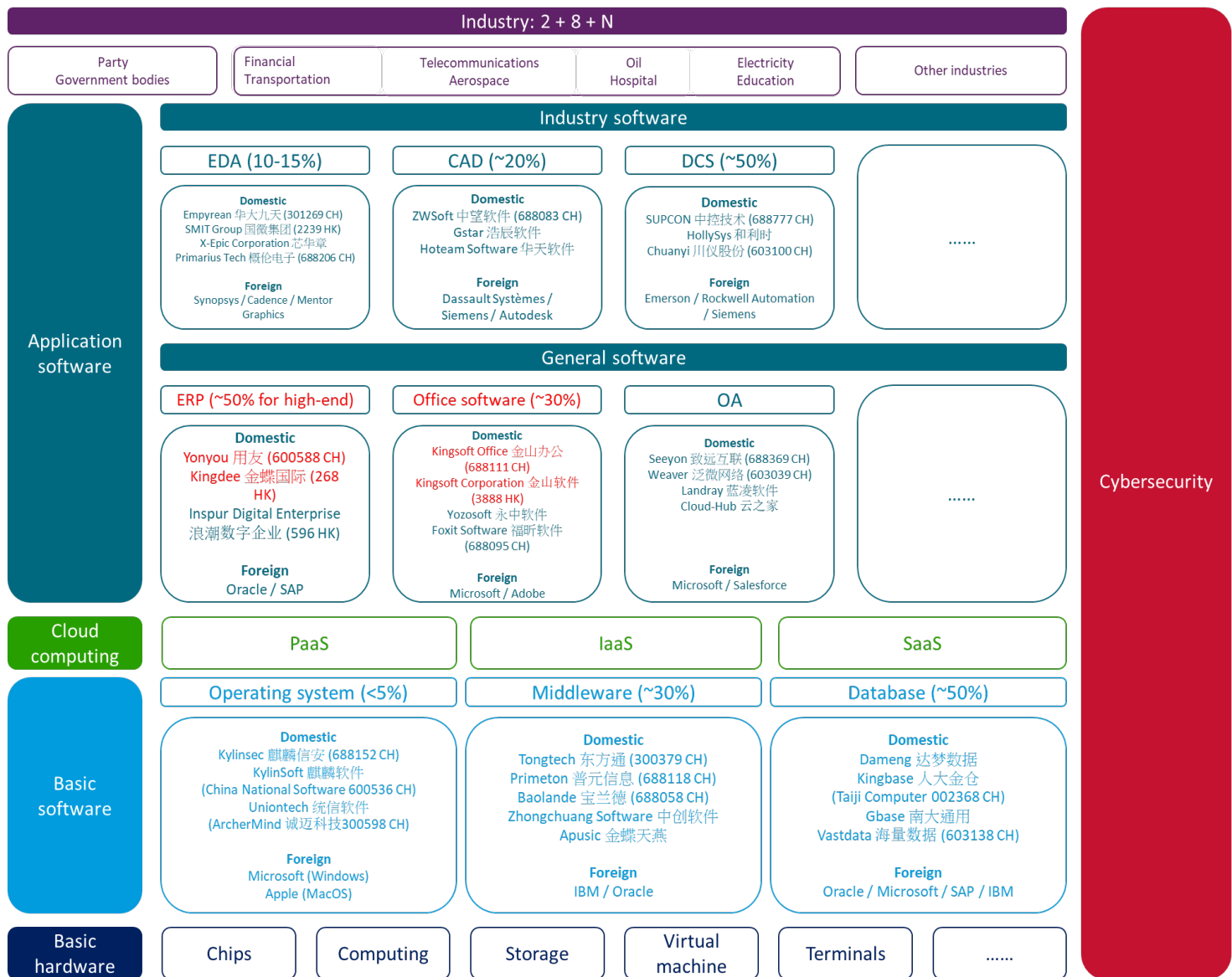
Desktop computers							
Configuration type	1	2	3	4	5	6	7 (need to fulfil certain requirements)
Budget (cap)	Rmb5k						
CPU brand	Loongson 龙芯	Phytium 飞腾	Zhaoxin 兆芯	Huawei Kunpeng 华为鲲鹏	Hygon 海光	ShenWei 申威	Intel / AMD
CPU model	≥3A5000	≥D2000	≥KX-U6780A		≥C86 3350	≥WY831	≥I5 12500 or ≥Ryzen5 5600G
Pre-installed OS	Kylin (麒麟) / Tongxin UOS (统信 UOS) / Zhongke Fangde (中科方德) / other OS that meet security and reliability assessment requirement						Windows 10 CMIT Government Edition
Portable computers							
Configuration type	1	2	3	4	5	6 (need to fulfill certain requirements)	
Budget (cap)	Rmb7k						
CPU brand	Loongson 龙芯	Phytium 飞腾	Zhaoxin 兆芯	Huawei Kunpeng 华为鲲鹏	ShenWei 申威	Intel / AMD	
CPU model	≥3A5000	≥D2000	≥KX-U6640MA	≥Kirin9006C	≥ShenWei SW421	≥I7 1355U or ≥Ryzen7 7730U	
Pre-installed OS	Kylin (麒麟) / Tongxin UOS (统信 UOS) / Zhongke Fangde (中科方德) / other OS that meet security and reliability assessment requirement					Windows 10 CMIT Government Edition	

Source: Central Government Procurement Center, BofA Global Research

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Exhibit 3: Xinchuang overview

Xinchuang aims to realize independent control in the field of information technology and ensure national information security



Source: BofA Global Research; Note: estimated self-sufficiency ratio is included in bracket

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Exhibit 4: Qualified products according to security and reliability assessment results

The results were announced in Dec 2023 and will be effective for three years

CPU		OS	
No.	Product	No.	Product
1	Kunpeng 920	1	NeoKylin desktop OS V10 (kernel version 5.4)
2	Loongson 3C5000L	2	NeoKylin advanced server OS V10 (kernel version 4.19)
3	SW1621	3	Tongxin server OS V20 (kernel version 4.19)
4	Loongson 3A4000/3B4000	4	Fangde high reliability server OS V4.0 (kernel version 4.19)
5	Loongson 3A5000/3B5000	5	Fangde desktop OS V3.1 (kernel version 4.9)
6	SW421	6	Tongxin desktop OS V20 (kernel version 4.19)
7	SW3231	Database	
8	Phytium Tengrui D2000	No.	Product
9	Phytium FT-2000	1	Dameng DB V8.4
10	Phytium FT-2000+	2	PolarDB V2.0
11	Pangu M900	3	TDSQL relational DB V8.0
12	Phytium Tengyun S2500	4	HighGo database system V4.5
13	Kirin 9006C	5	XuguDB V11.0
14	Hygon C86-3G	6	GBase 8s V8.8
15	Kirin 990	7	SeaboxSQL V11.5
16	Hygon No.2 C86 3230/3250/3280/5280/7250/7260/7280/7285	8	KingbaseES V8
17	ZX-E KX-U6780A/KH-37800D/KX-6640MA/KX-6640A	9	Vastbase G100 V2.2
18	ZX-D KX-U5580	10	GreatDB V1.0
		11	UXDB V2.1
			Company
			KylinSoft
			KylinSoft
			Tongxin Software
			Zhongke Fangde
			Zhongke Fangde
			Tongxin
			Dameng
			Alibaba Cloud
			Tencent Cloud
			HighGo Software
			Xugu Weiye
			GBase
			Eastern Jin
			Renda Jincang
			Vastdata
			GreatLinux
			Uxsino Software

Source: China Information Technology Security Evaluation Center, BofA Global Research

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