

Confidential Computing – The Next Frontier in Data Security

December 2021: Complimentary Abstract / Table of Contents



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Key objectives


Although adoption of confidential computing is nascent, its potential is tremendous, not only for the enterprises that are consuming it but also for the technology and service providers that are enabling it.

In this study, we analyze the confidential computing market with the following two objectives in mind:



To ascertain the scope and size of the confidential computing market globally

1



To create market insights on key trends and perspectives on use cases for confidential computing

2

Scope of the market assessment



Geography
Global



Industry
Cross-industry



Technology

- Services
- Software
- Hardware



Use case
Cross-use case

Executive summary of key findings | confidential computing market opportunity

This report examines the global confidential computing landscape and its impact. Some of the findings in this report, among others, are:

The CC market is poised for exponential growth

- The Total Addressable Market (TAM) for confidential computing in 2021 is **US\$ 1.9-2.0 billion**
- The CC market is expected to grow at a **CAGR of 90-95%** in the best-case scenario and **40-45%** in the worst-case scenario through 2026
- Cyber risks, regulations, and avenues for incremental revenue position CC for hyper growth

The hardware and software segments drive adoption

- The CC software segment, driven particularly by cloud service providers, is likely to constitute **~60-70% of the TAM** between 2021 and 2026
- The CC hardware segment is expected to approximately **double every year** through 2026
- Contribution of services segments will grow marginally over the next five years

Regulated industries will dominate roll-out

- **Over 75%** of demand is driven by regulated industries like banking, finance, insurance, healthcare, life sciences, public sector, and defense in 2021
- Awareness of the benefits of CC and willingness to invest in exploration is expected to **double across key regulated industries** through 2026

Enterprises in NA and Asia have the largest appetite

- Adoption varies by geography because of privacy regulations and incidence of cyber threats
- North America is expected to constitute **~40%** of the overall TAM
 - APAC will be **~20-25%** of TAM with China independently accounts for **~10-15%**
 - Europe accounts for about **25%** of TAM given its robust regulatory frameworks

Key use cases reduce privacy and security risks

- **Privacy and security** use cases, particularly on public cloud, have gained the largest traction accounting for **30-35% of overall TAM**
- Emerging technologies such as **multi-party computing and blockchain** account for a large share of the market given how CC enhances the value delivered by these technologies

This study offers six distinct chapters providing a deep dive into key aspects of the confidential computing market; below are four charts to illustrate the depth of the report

Overall market size and characteristics of confidential computing

Key takeaways



The Total Addressable Market (TAM) for CC is likely to grow at least 26x over the next five years in the best-case scenario due to growing enterprise awareness of confidential computing



The CC hardware and software markets are poised for exponential growth backed by expanding regulations, demand for comprehensive security postures, and appetite for new revenue generators



Multi-party computing and security-specific use cases across industries will be the biggest growth drivers for the technology

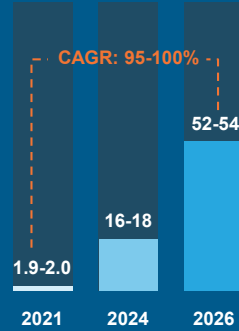


Technology-first enterprises within regulated industries such as banking, financial services, insurance, healthcare, and life sciences expected to drive growth acceleration across ~60% of the market



Large technology markets in North America and APAC constitute the lion's share of the market followed by highly regulated markets in Europe

Confidential computing TAM US\$ billion, CY 2021-26



In-depth modeling of scenarios for key segments

Public sector



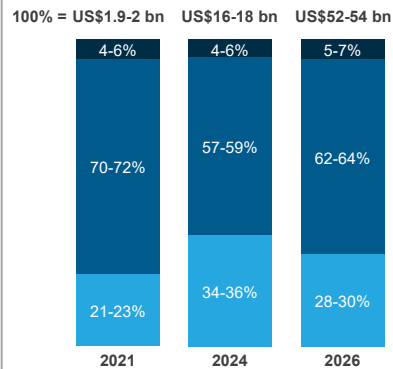
Retail and CPG

Public sector confidential computing market (US\$ billion)			Retail and CPG confidential computing market (US\$ billion)		
Best case scenario	Median case scenario	Worst case scenario	Best case scenario	Median case scenario	Worst case scenario
\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2
\$1.8	\$0.8	\$0.4	\$2.2	\$0.9	\$0.5
\$5.3	\$2.2	\$1.0	\$6.0	\$2.6	\$1.2
		2021			2024
		2026			2026

Change agents for best case	Change agents for worst case	Change agents for best case	Change agents for worst case
<ul style="list-style-type: none"> Transformation of citizen services involving critical personal data such as identification numbers and biometrics Regulation on usage of citizen data Rise in advanced cyber attacks on public infrastructures Upgrades of critical defense operations to improve cyber resilience 	<ul style="list-style-type: none"> Prohibitive government spending owing to lingering pandemic effects and slow economic recovery Hesitance to adopt new technology using public money with limited proof points Sensitivity to evolving cost premium over regular technology 	<ul style="list-style-type: none"> Increased regulation on customer data aggregation and analysis Swelling appetite for inter-enterprise collaboration for optimization and new revenue generation New commerce and sales paradigms and corresponding influx of data Increased need for supply chain resilience 	<ul style="list-style-type: none"> Slower economic recovery from the pandemic Pressure on traditional retailers from e-commerce as value and price sensitivity rise Hesitance in adopting collaborative analytics principles such as MPC

Segmentation of market across key sub-segments, industry and geographies

Confidential computing TAM, by technology segment Percentage, CY 2021-26



SERVICES SUB-SEGMENTS		CAGR = 100-105%
Global system integrators (% contribution)	In-house services practices of ISVs (% contribution)	
8-10%	90-92%	
<ul style="list-style-type: none"> Services remain limited to early proofs of concept with minimal solutions or service offerings The majority of services demand is likely to be fulfilled by in-house services practice of ISVs 		
SOFTWARE SUB-SEGMENTS		CAGR = 90-95%
Cloud service providers (% contribution)	Enablement software ISVs (% contribution)	
83-85%	15-17%	
<ul style="list-style-type: none"> The enablement software segment consists of technologies used to adopt and manage TEEs and TEE-based applications As the market matures, the contribution of enablement software is expected to rise Assumes a pricing premium of 1.5-2x regular compute for CSPs in 2021 with normalization over time 		
HARDWARE SUB-SEGMENTS		CAGR = 100-105%
Silicon chipset OEMs (% contribution)	Assembled server OEMs (% contribution)	
51-53%	47-49%	
<ul style="list-style-type: none"> Limited to no differential pricing in computing hardware for CC vs. regular will continue to drive the demand Contribution of silicon chipsets expected to outpace the assembled server market post 2024 owing to increased adoption in cloud environments 		

Exploration of key use cases and their market potential

Market contribution (2021)	Market growth (5-year CAGR)	Use case scenarios ¹	Description
5-10%	55-60%	Trusted command and control	<ul style="list-style-type: none"> Ensures only authorized commands and code are executed by edge and IOT devices. Use of confidential computing at the IOT and edge devices and back end helps control critical infrastructure by preventing tampering with code of data being communicated across interfaces Examples include execution of critical functions in autonomous cars
		Secure data and IP	<ul style="list-style-type: none"> Confidential computing in a distributed edge network can also help realize new efficiencies without affecting data or IP privacy by building a secure foundation to scale analytics at the edge without compromising data security Examples include handling automotive data at workshops without exposing sensitive IP of components or transferring proprietary data to partner clouds

Notable adopters:

¹ Refer to the appendix for detailed use case definition

Research calendar

Digital services

■ Published
 ■ Planned
 ■ Current release

Flagship reports

Release date

Artificial Intelligence (AI) Services PEAK Matrix® Assessment 2021 – Service Provider Compendium	December 2020
Artificial Intelligence (AI) Services – State of the Market Report 2021 Scale the AI Summit Through Democratization	January 2021
Digital Interactive Experience (IX) Services State of the Market Report 2021 – Moving from Persuasive to Purpose-driven Experiences	February 2021
Digital Services – Market Report 2021: Digital Transformation – Fostering Value Through Rearchitecting Change Management	April 2021
Digital Experience Platform (DXP) Products PEAK Matrix® Assessment 2021	August 2021
IoT Supply Chain Solutions PEAK Matrix® Assessment 2021	November 2021
Enterprise Blockchain Services PEAK Matrix® Assessment 2021	December 2021
Digital Twin Services PEAK Matrix® Assessment 2021	Q1 2022

Thematic reports

Release date

Customer Data Platform Trailblazers: Top 15 Start-ups Redefining Hyper-personalization	March 2021
Operationalizing Machine Learning at Scale (MLOps)	April 2021
Federated Learning: Privacy by Design for Machine Learning	May 2021
Smart Spaces Transcending Physical Boundaries	September 2021
Confidential Computing – The Next Frontier in Data Security	December 2021
AIoT Primer: the Amalgamation of Intelligence into the Internet of Things	Q1 2022
Trailblazers on Commerce Solutions	Q1 2022

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