

**SAMSUNG**

# **POWERING EXPERIENCES**

See what the world can do.



**Samsung and Xilinx:  
Delivering Computational Storage**

# Post-COVID Data Growth

Storage Needs are Exploring

Data Analytics



Unlimited Services

Network Infrastructure



Edge Computing

Data Generation



Smarter Devices

NAND Bit demand  
(Source: Omdia, '20.3Q)

5Y CAGR  
(Bit Increment)  
**NAND ~37% (GB)**

2005

2010

2015

2020

2024 (E)

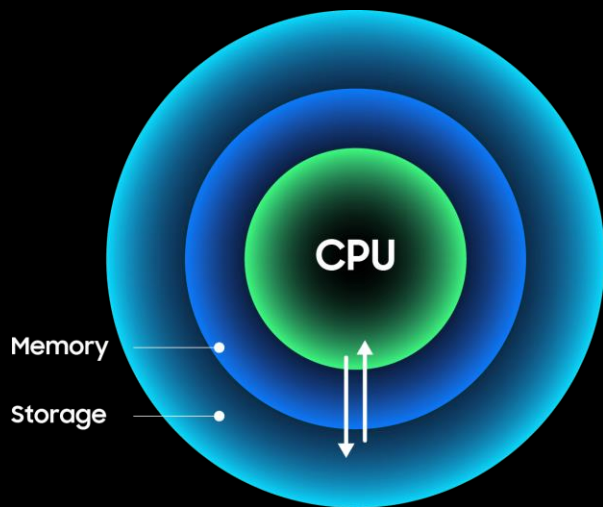


COLLABORATE. INNOVATE. GROW.

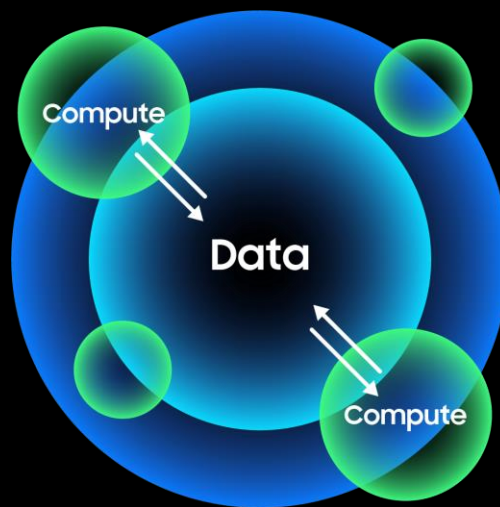
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# From Compute Centric to Data Centric

Data Gravity forcing the shift



More data  
Data-focused SW  
development

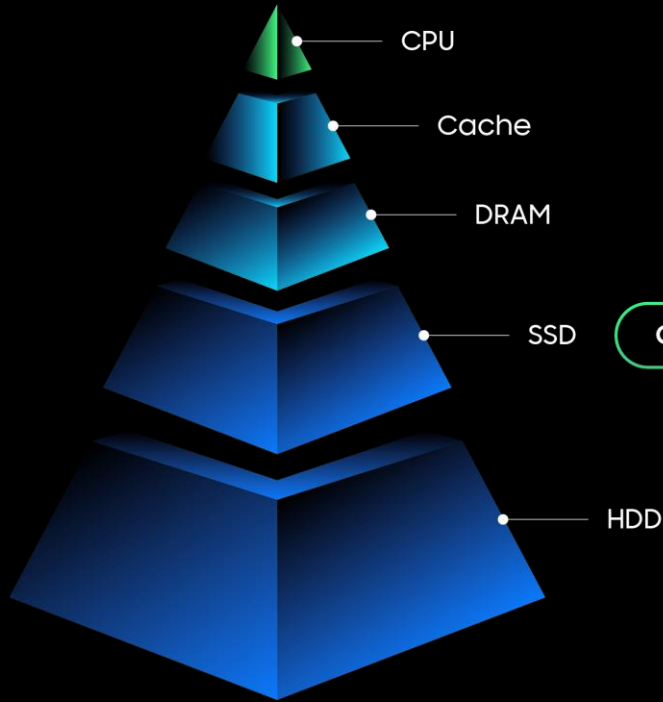


- Compute closer to data
- Distributed compute nodes
- Lower latency



# Adding Compute Where it is Needed

Closer to data is more efficient



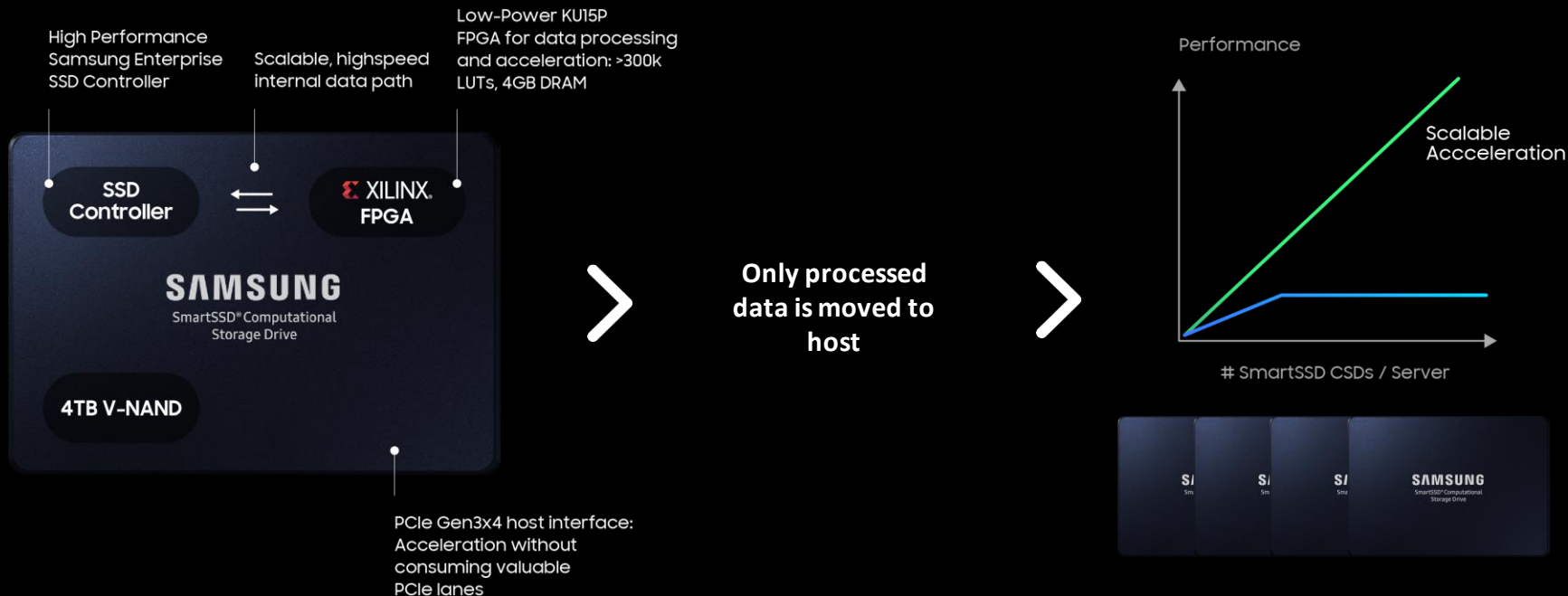
## Computational Storage starting points

- Storage-focused tasks
- Single workloads: database, video
- Smart cache layer



# SmartSSD<sup>®</sup> Computational Storage Drives

Offload data processing, accelerate results



# Cyber Forensics is a Search Problem

Search-in-Storage is Faster, Deterministic



- Non-indexed data search time reduced from ~10 hours to 25 mins
- Simple Python API
- Complex expressions and data type don't change search time



~100 TB Storage Appliance

< 25 minutes

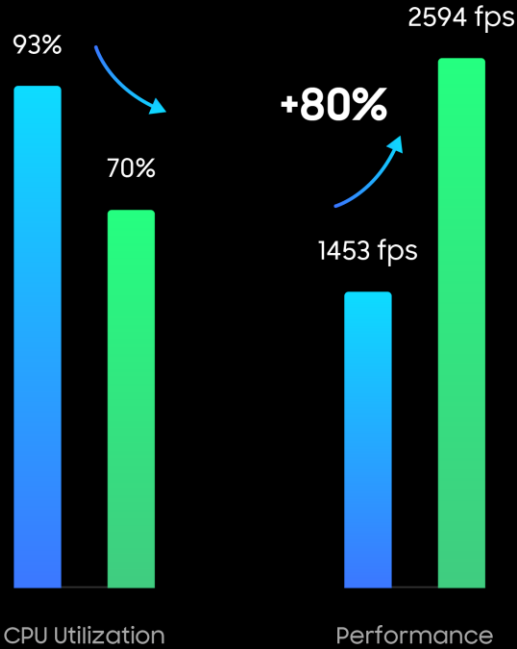


1 PB Storage Rack


< 25 minutes

# Process Video Faster

Focus on the rate-limiting step



- Lower TCO: fewer video processing servers, lower OPEX
- Performance scales as drives added

 All on CPU  
 Encode on SmartSSD Drives



- Encode
- Decode
- Overlay



- Decode
- Overlay



Encode



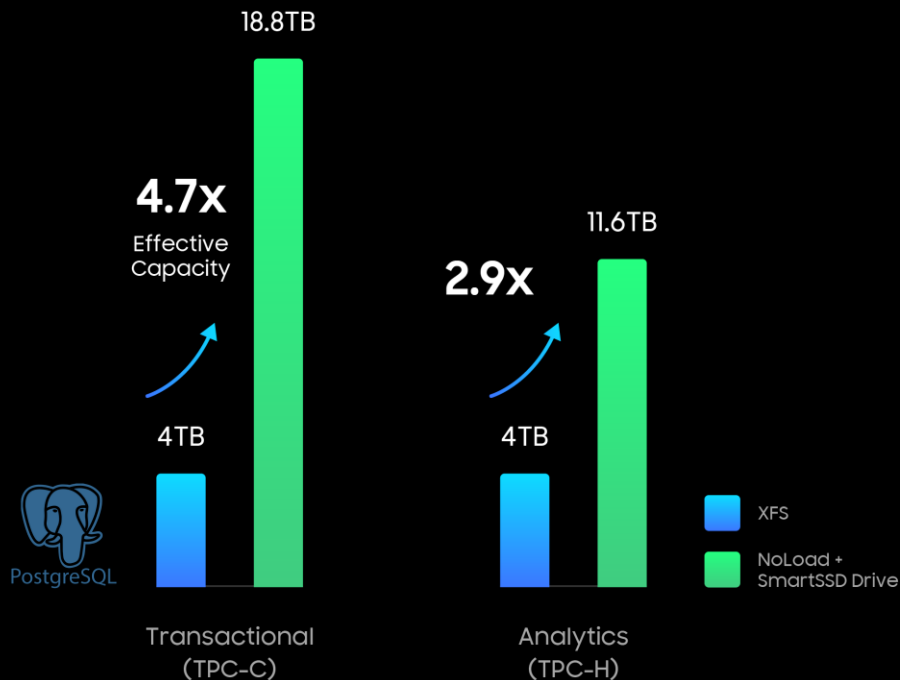


# Get More Database Performance

More billable CPU hours, lower cost per TB of storage



- Free up CPU from compression / decompression tasks
- High compression ratio at line rate on the drive
- NoLoad file system: zero application changes



# Options for Deployment

For Fast Time to Value

## Bring your own IP



Vitis

## Reuse proven IP



Storage Services

DB Acceleration



Big Data Analytics



Video Processing

## Appliances



Search-In-Storage

## On-prem or cloud



NIMBIX

Cloud

# What's Next?

- More accelerated applications, more solutions
- Computational Storage Standards
- Get started today: [xilinx.com/SmartSSD](https://xilinx.com/SmartSSD)



**Thank You**