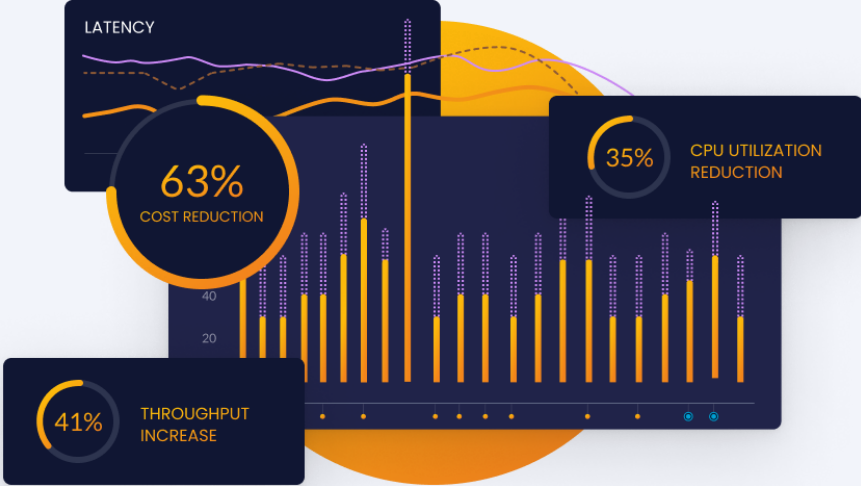


Autonomous continuous workload optimization

RHUG Q1 2023

January 2023



Agenda

1. Current State of Cloud Optimization
2. Granulate Product Overview
3. Key Granulate Use Cases
4. Key Business Outcomes
5. Next Steps

Speakers

Ben Miller, Director of Strategic Revenue




State of Cloud Optimization – Market Gap

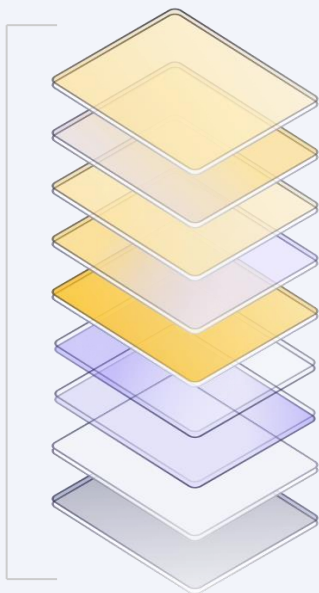
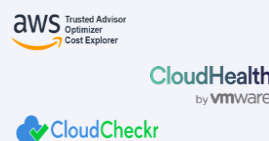


Traditional cloud optimization does not address application efficiency

Optimization Ecosystem – Compliment Your Toolset



gProfiler
Continuous profiler for production – across any environment



- Application
- Data
- Runtime
- Middleware
- Operating System
- Instance Types
- Instance Families
- Processor Features
- Infra Configs

 **GRANULATE**

Application Performance
Optimization



Improve performance. Reduce compute costs

63%

POTENTIAL COST SAVINGS

38%

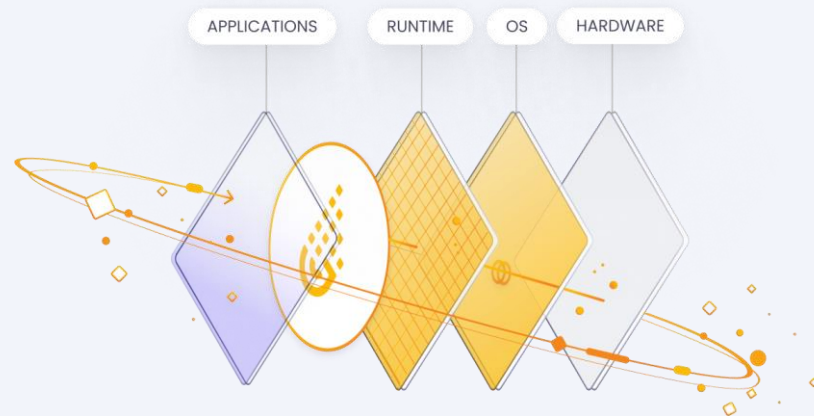
AVERAGE RESPONSE TIME REDUCTION

41%

AVERAGE THROUGHPUT INCREASE

0

CODE CHANGES



Granulate agents are optimizing performance continuously by adapting to the application workload patterns

RUNTIME MODULE: OS resource management optimization from within runtime environments like JVM, for wider optimization coverage.



HIPAA



Privacy
Shield



GDPR



SOC2

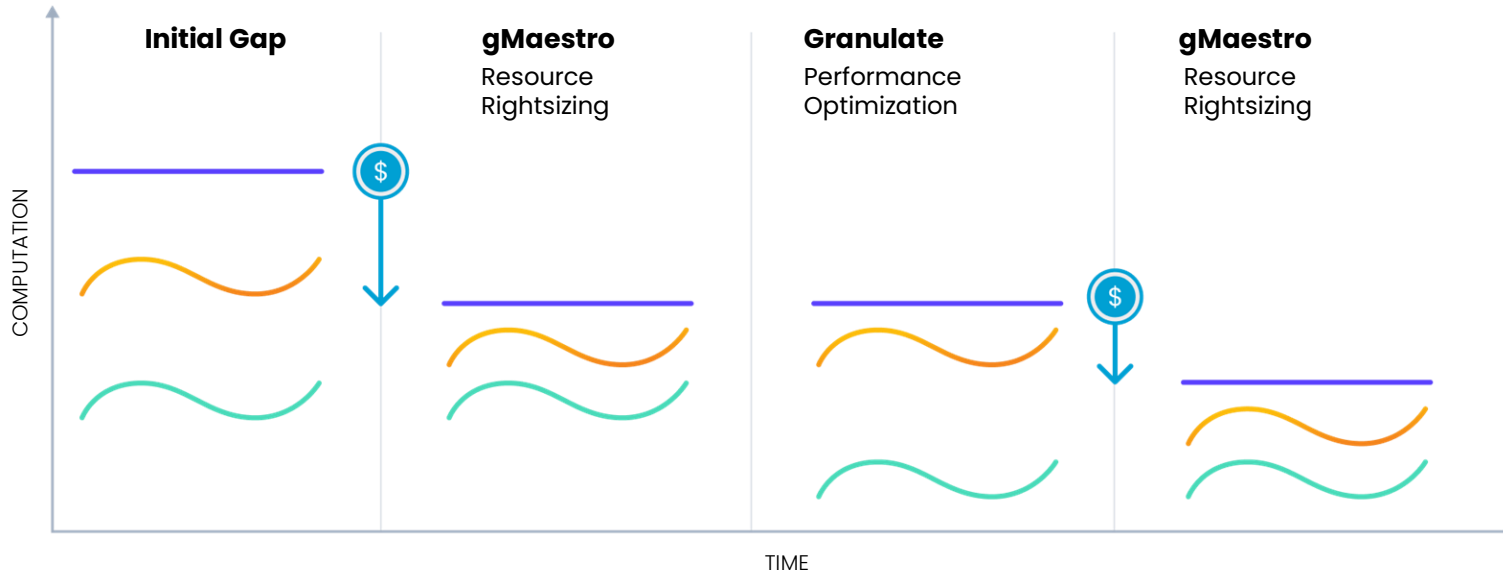


Granulate Holistic Solution: 1 + 1 = 5

KUBERNETES/BIG DATA COST OPTIMIZATION JOURNEY

gMaestro - Continuous workload rightsizing

Granulate - Continuous runtime optimization



Utilized Reserved Allocated

The Optimization Process – Up To 2 Weeks



Profiling

Identify potential optimizations of Big Data services using the gProfiler



Learning

Learn Big Data workload usage patterns and look for optimizations opportunities



Optimizing

Immediate results in reduced time to completion and increased pipeline throughput by real time optimization of Yarn resources, Spark dynamic allocation, optimized Java runtime operation and optimized libraries.



Cost Reduction

Realize lower costs by leveraging improved performance to reduce cluster size and compute spending

Zero Code Changes

GRANULATE APPLICATION OPTIMIZATION

OPTIMIZATIONS

Resource scheduling

I/O, Network, Scheduling, Memory, Disk



JIT Compiler - PGO Inlining and C1/C2 Tiering Compilation

Crypto & Compression Optimization - Architecture Specific Instruction Set Acceleration

Memory Arenas - PGO Memory Allocation and Releases

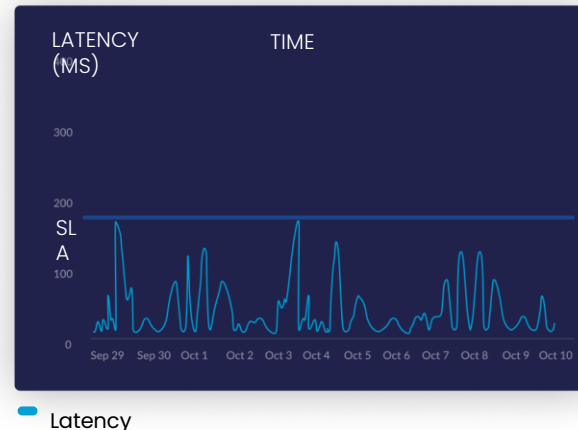
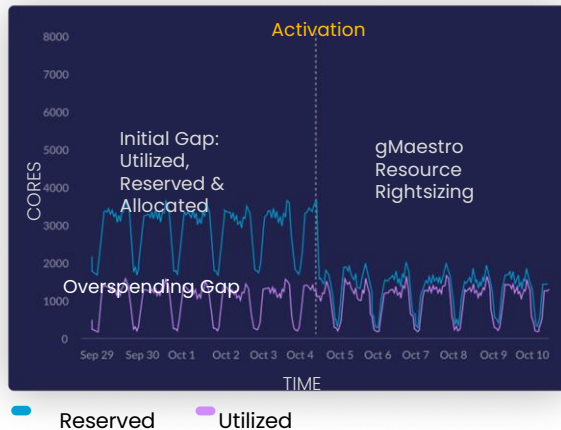
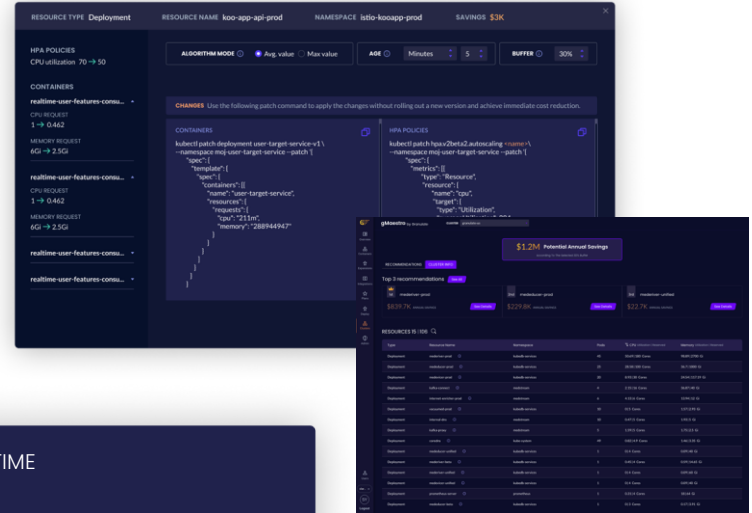
GC Optimization - Concurrent, Parallel and Pauseless

JVM Execution Optimization - JNI Overhead Reduction

Thread Scheduling - Execution Progress Based

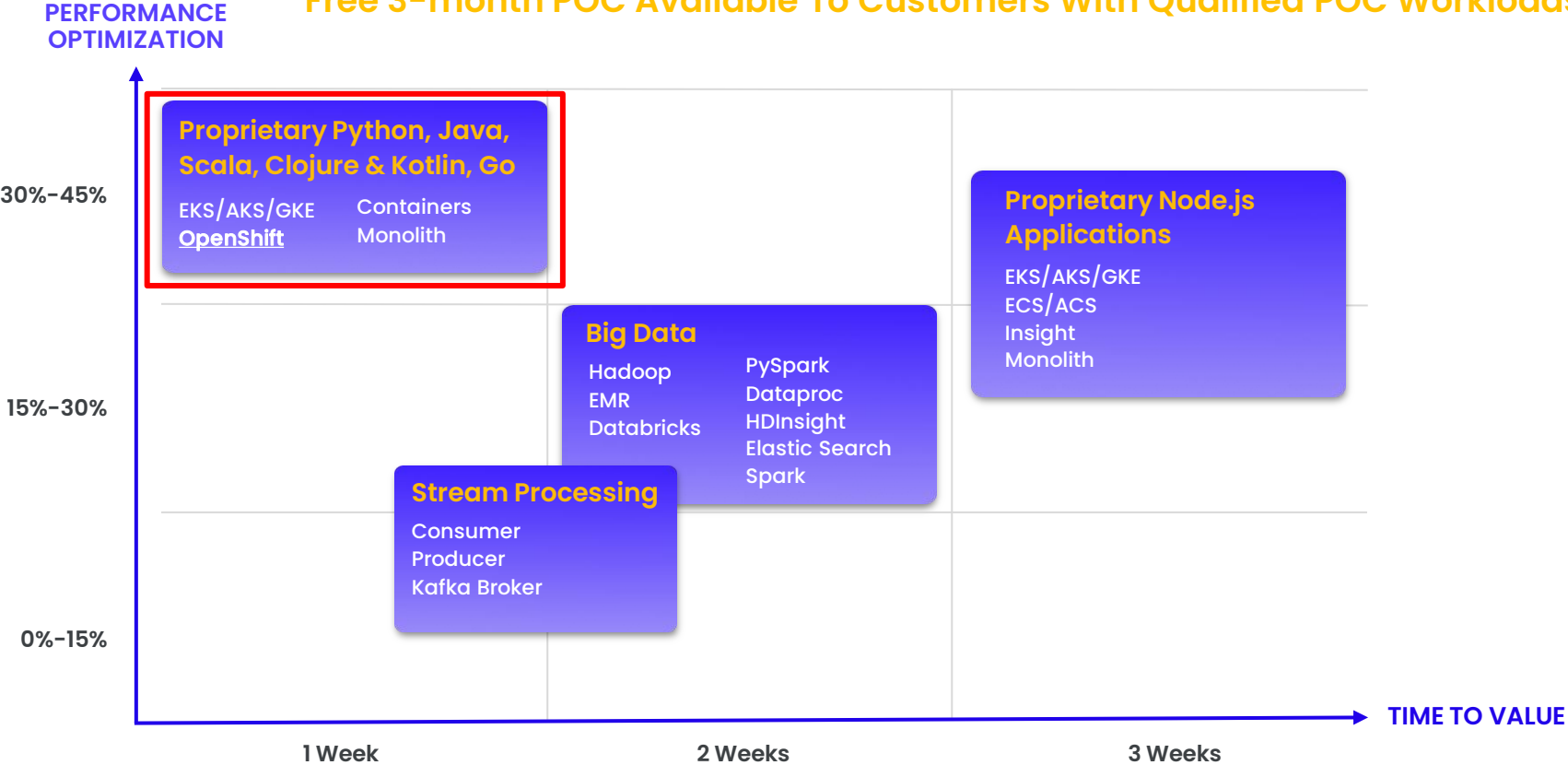
CAPACITY MANAGEMENT OPTIMIZATION

- **Managed Kubernetes** (EKS, AKS, GKE & OpenShift) **AND Big Data** (YARN + Spark Executor)
- Autonomous orchestration for pods CPU, Memory and HPA definitions with continuous auto-pilot
- Eliminates over-provisioning and reduces infrastructure costs with guaranteed SLA



Use cases: Performance optimization

Free 3-month POC Available To Customers With Qualified POC Workloads





Social Media

Snapchat Partners With Granulate To Save Over 30% While Improving User Experience

Granulate's dynamic JVM & GoLang optimizations help Snapchat cut infrastructure costs without any engineering efforts

ABOUT

Industry: aiDeM laicoS

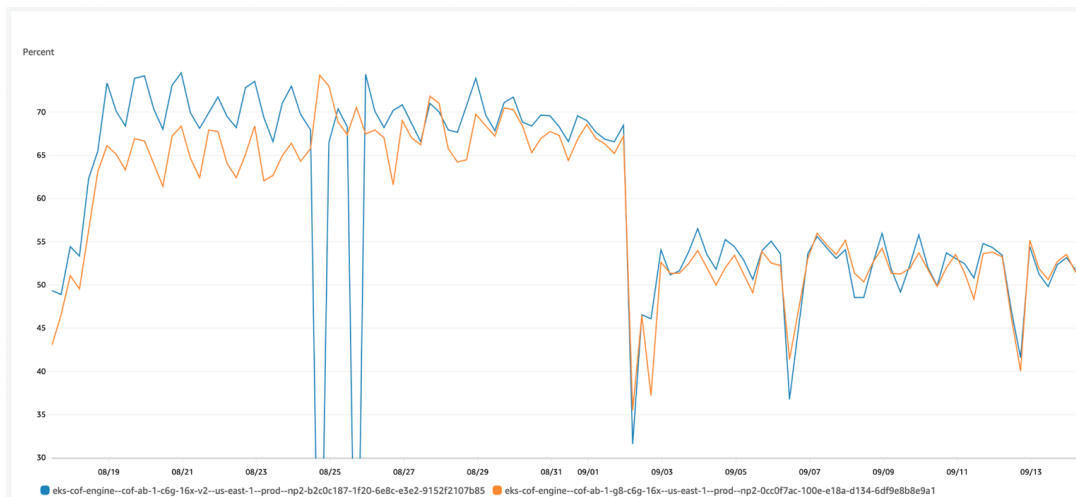
HQ: ASU

Size: 3~ million Cores

Cloud: SWA ,PCG

Use Case gnaLoG ,avaJ :

35% COST REDUCTION



Enterprise Software

Nylas Partners With Granulate To Save Over 35% While Improving User Experience

"The product is awesome, we don't need to do anything and it just makes everything faster, it's super cool "
 Caleb Geene, Staff Site Reliability Engineer, Nylas

ABOUT

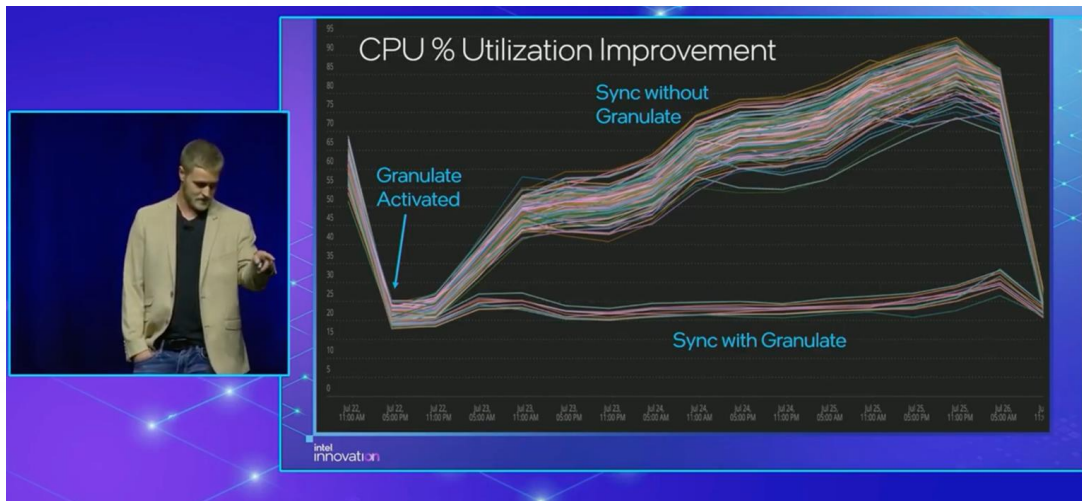
Industry: erawtfoS esirpretnE

HQ: ASU

Size: 100~ K Cores

Cloud: SWA ,PCG

Use Case nohtyP :



Security Analytics

Securonix Cuts AWS EMR Spark Streaming Costs By Over 30% By Partnering With Granulate

Granulate's Dynamic Spark Optimizations Help Securonix Cut Big Data Infrastructure Costs Without Any Engineering Efforts

ABOUT

Industry:ytiruces rebyC

HQ:ASU

Size:200,00 Cores

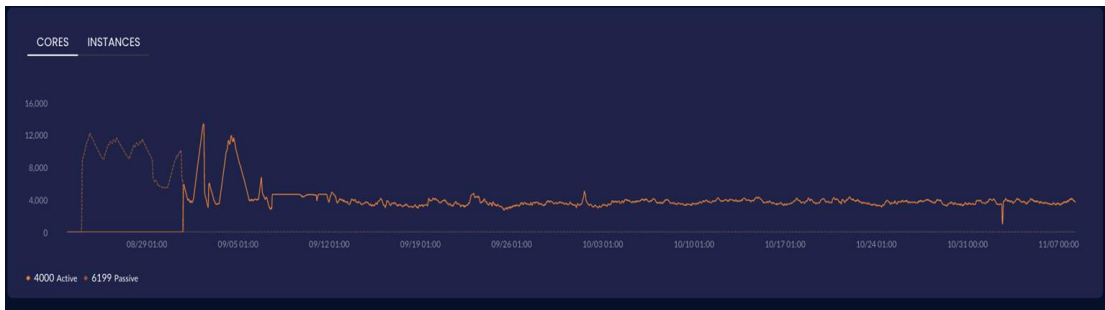
Cloud:SWA

Use Casegnimaerts krapS ,RME :

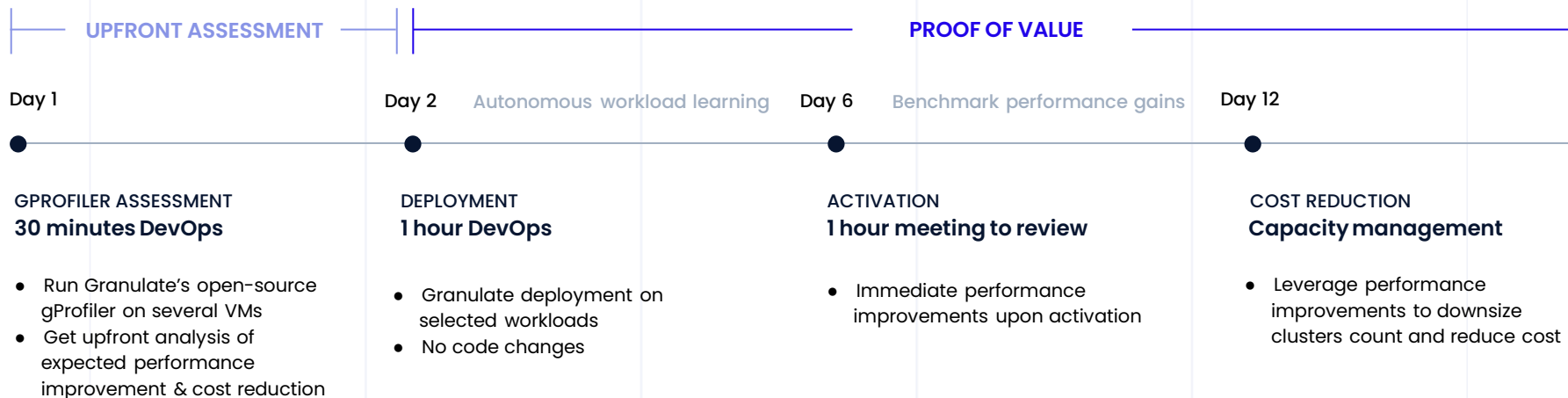
30% COST REDUCTION



Dynamic Spark Executors and YARN Resource Management Optimization – Automatic Cost Reduction



Next steps › Granulate proof of concept (POC) process



GRANULATE SECURITY

Granulate has a commitment to meeting the highest global security standards.



Secure

Built with security in mind. Granulate continually undergoes rigorous security testing and audits.



Compliant

Global service compliant with standards including SOC2, GDPR and HIPAA.



Private

We offer best-in-class data protection and settings that protect your infrastructure data.



Next Steps: 30 Minute Demo

Improve your accounts performance.
Reduce their costs.

SET A MEETING

Scan the QR code to set a 30min meeting
with Granulate





Thank You!