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Decipher has scale, paying customers for its Grey Matter service mesh

DECEMBER 20 2019

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Introduction

Decipher Technology Studios introduced the 1.0 version of its Grey Matter intelligent hybrid mesh platform in February 2019. It believes its use of business intelligence, zero-trust architecture and governance management as core offerings are key differentiators. There are Grey Matter deployments at several customers in a range of verticals, from commercial to government.

451 TAKE

Service mesh appears to be a good way to dictate behavior, and therefore application outcomes – optimizing cost and decreasing risk. When translated into improved business outcomes, it means a better customer experience. Decipher's Grey Matter is therefore an important addition to this market. Furthermore, it has scale, and paying customers that credential this sector from both a technology and economic point of view. 451 Research data (see Figures 1 and 2 below) show that service mesh is a critical capability that will see significantly increased adoption in the near future.

Technology

Decipher's Grey Matter is a platform for complex mesh application and microservice architecture (MASA). The company says Grey Matter's omnidirectional mesh platform enables:

- Fine-grained control of microservices, APIs and applications in an enterprise environment that consists of legacy OSS and BSS implementations, VMs, containers and hybrid cloud implementations
- Network and data micro-segmentation and policy enforcement for zero-trust protection
- Business insight over internal mesh traffic such as service-level management and business criticality measurement atop the telemetry
- Chain-of-evidence data capture
- Architecture-wide automation that improves IT operations responsiveness to analytics-driven change

Grey Matter uses Envoy open source projects with Decipher's own control plane extensions to run sidecars throughout an enterprise as a hybrid mesh network layer. The mesh sits atop legacy OSS and BSS web services, applications, libraries and APIs, while bridging new cloud-native environments running atop Kubernetes and commercial clouds.

There are multiple means of service discovery. The Grey Matter control plane implements xDS Envoy patterns and interfaces over a number of discovery paradigms. Native service discovery is employed on top of Amazon EC2, Docker Swarm, HashiCorp Consul, Kubernetes and custom xDS implementations. Using a fully managed API and convenient DevOps toolkits, enterprises can configure, manage and control fleetwide service profiles for security, segmentation, compliance and deployment topologies regardless of environment.

Grey Matter is the zero-trust-based hybrid mesh offering to the MASA (mesh application and service architecture) complexity question. Industry has signaled interest in zero-trust functions such as service-to-service mTLS connection, key rotation, service cryptographic identity and policy management throughout the enterprise service fleet. Decipher believes Grey Matter meets each of these requirements. It says that by leveraging zero trust with sidecars communicating throughout the platform, development teams can securely deploy new capabilities and functions, and do this quickly.

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Key to the platform's claimed value-add is how the Grey Matter platform captures, stores, learns and summarizes operations throughout its service mesh network layer. These metrics are derived from over 100 different service- and instance-route-level statistics for each service. Customers can create dynamic service overlays set to specific business objectives. Metrics are captured via decentralized data streams, synced and stored for in-depth service-level analysis. Its dynamically configurable overlay provides warning of pending and current policy violations, allowing users to take corrective action. It also ranks and tracks critical services, and enables network overwatch via memory, CPU, availability, error rate, latency and utilization metrics tracked at both service and route levels.

Grey Matter Intelligence 360, the platform's visualization interface, displays all the services via a Catalog service. Full mesh operations are displayed through integration of other open source tool sets such as Jaegar. Its logging, monitoring and data retention are modeled and programmed via live observables related to actions across the service mesh – from applications to infrastructure. Captured telemetry is stored using a Prometheus architecture, which is open and available for access to the customer. Additionally, event models built within the platform can be used to capture and configure a full audit chain of evidence for each service or route for storage and analysis.

Grey Matter is sold as an on-premises subscription on a per-node basis, with a SaaS control plane model coming in 2020 to create a centralized service hub and catalog for customers. The customer owns and retains their data. Decipher also delivers a suite of APIs as part of the Grey Matter platform including data segmentation. Each service is wrapped as a data plane, which is individually priced. Typical deal sizes start at \$35,000 and up depending on level of use.

Business model

Bootstrapped since inception (with an IT services provenance), Decipher has been building and operating Grey Matter for both government and commercial customers. 451 Research it did more than \$14m revenue in fiscal 2019. The 60-person company employs 70% in engineering and 30% on commercial work. It is seeking funding, and claims commercial momentum in banking, manufacturing, healthcare and telco verticals – wherever compliance is needed. It has technology partnerships with Amazon Web Services, Red Hat Solutions and Deloitte Technology Consulting.

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Figure 1

Source: 451 Research LLC

Which cloud-native technologies and methodologies are most critical to your organization's DevOps implementation? (Select all that apply)

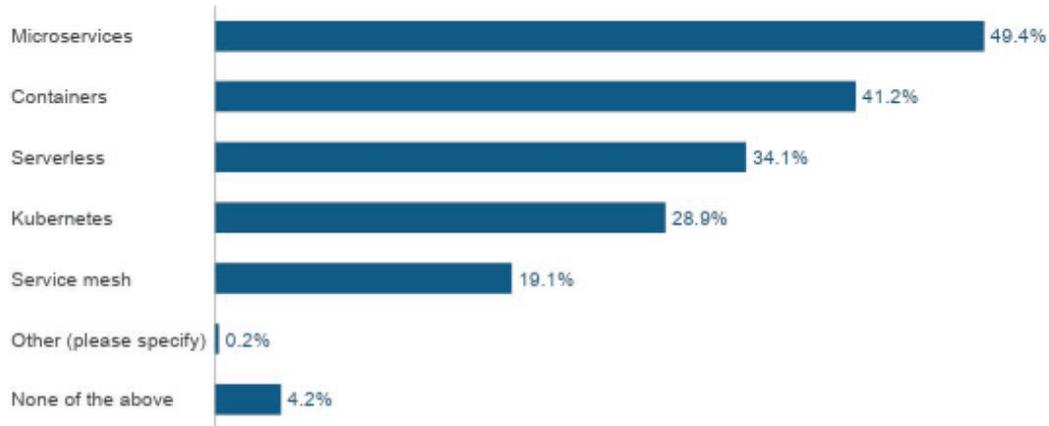
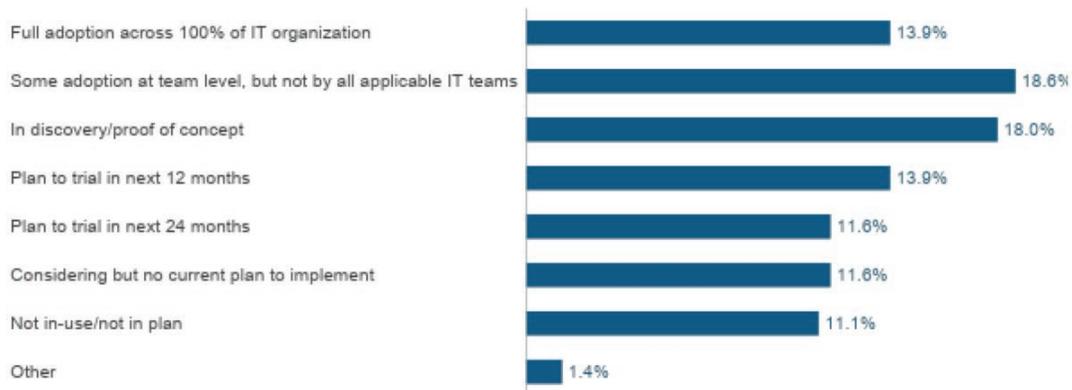


Figure 2

Source: 451 Research LLC

Please indicate your organization's adoption status for the following technologies:
Service mesh



Competition

The competition for Decipher includes F5 Networks' Aspen Mesh-managed Istio offering, Solo.io's SupeGloo service mesh orchestration, HashiCorp Consul, Tetrade.io, Kong, Banzai Cloud, Google Anthos, AWS App Mesh, Microsoft Service Mesh Interface (SMI), VMware NSX Service Mesh, Hewlett Packard Enterprise, Cisco, Oracle, IBM App Connect and Red Hat OpenShift Service Mesh.

SWOT Analysis

STRENGTHS

Grey Matter is focused on the additive value presented by service mesh technology. The platform harvests Layer 3 to Layer 7 data to feed analytics and business intelligence designed to enable policy compliance and governance. Grey Matter's intent is to manage decentralized microservices workloads, control traffic and scale infrastructure for enhanced ROI.

WEAKNESSES

Thus far, companies using the service mesh at scale have best taken advantage of the technology's environment simplification while running within Kubernetes using containers. Vendors suggest any organization employing more than one team and in a polyglot infrastructure environment can and should reap similar benefits. Operational and performance overheads to include service mesh complexity at scale are widely referred to as the main challenge that industry must address. It's becoming clear that with all of the moving parts in microservices, combined with the complexity of using service meshes (especially Istio), these need to be wrangled.

OPPORTUNITIES

In 2020, we expect greater focus on the people, process and operational aspects of service mesh with additional abstractions and packaging. There are a number of managed service mesh offerings already in the market. However, 2020 will see more approaches from new and existing market entrants that will be targeted at relieving some of the aforementioned challenges.

THREATS

Cloud adopters are enthusiastic about the promise of service mesh to consistently apply routing, health checks, circuit breaking, protocol management for mTLS transactions, policy and encryption across microservices-based applications. In practice, implementation has been hard due to difficult configuration and management demands. This may partly explain why 451 Research data shows that the majority of cloud-native or cloud-enabled software is developed internally, rather than purchased commercially. Enterprises are currently using the building blocks of cloud-native (containers, microservices, serverless, etc.) to create their own software. Scale and maturity will doubtless require more sophisticated approaches down the road. The key for Decipher's Grey Matter and other companies will be predicting the move from in-house PoCs to IT strategy (and therefore procurement cycles).