WHITE PAPER

UNIFIED MONITORING & SECURITY ON THE DYNATRACE PLATFORM

Deterministic AI for Federal Healthcare Systems

Detection. Diagnosis. Treatment.

These phases of the healthcare process are clearly understood and accepted by healthcare providers as essential in successfully curing the patient.

The best healthcare outcomes result from early detection. Early detection requires quick and accurate diagnosis to pinpoint the root cause of the disease. Only after a thorough and accurate diagnosis is identified can the proper treatment be administered.

The same thing is true in developing and maintaining the digital healthcare applications and systems used by patients, providers, and the IT teams that support them.

As Federal healthcare agencies are embracing innovative technologies to streamline the delivery of patient care, they are coming to grips with the need to rapidly detect, diagnose, and "treat" the problems that arise in the increasingly complex applications and systems they are deploying.

The COVID-19 pandemic forced federal healthcare agencies to greatly accelerate the development of online healthcare systems to allow both patients and their workforce to connect with essential services and data. But in the rush to develop and deploy, many agencies experienced problems that were difficult to pinpoint and repair.

Capturing the full benefits of online delivery of federal healthcare services depends on producing excellent user experience, which creates public trust and fuels adoption. Any problems that create friction for the user can weaken that trust.

Most federal healthcare agencies are still moving from siloed applications, systems, and teams to fully modernized IT environments and processes. They are moving away from sole reliance on legacy systems to a variety of environments, from on-prem legacy systems, on-prem cloud, remote cloud, and hybrid cloud.

To cope with the challenges of modernizing their applications across all these environments, these organizations are finding they need AIOps observability to manage their increasingly complex systems.

dynatrace

Why Choose Dynatrace?

Dynatrace has been a leader in the Gartner® Magic Quadrant for Application Performance Monitoring and Observability for the past 13 years.

New, Centralized Data Platform

Grail is Dynatrace's new data lake house technology, designed to optimize the storage and analysis of logs, metrics, and traces.

Analytics

Dynatrace's AI engine, Davis is designed to analyze dependencies based on the topology discovered by Dynatrace Smartscape. Dynatrace has enhanced Davis with on-demand exploratory analytics that enable IT teams to identify trends and predict performance issues that might impact customer experience.

High Availability

Dynatrace® is designed for high availability (HA). It provides automatic scaling and load balancing to meet unexpected spikes in demand and traffic. All the components are load-balanced and in active-active deployments. Long-term data storage is performed by data storage instances that provide HA via data redundancy.

What is Observability?

Observability, in the realm of IT and cloud computing, refers to the capacity to gauge the present state of a system by analyzing the data it produces, including logs, metrics, and traces. This concept has grown increasingly crucial in recent times because of the escalating complexity of cloud-native setups, which has made it more challenging to pinpoint the underlying causes of failures or anomalies.

It's important to note that observability extends beyond mere monitoring. Monitoring typically involves the use of pre-configured dashboards to flag expected performance issues. However, in an observability setup, teams comprehensively instrument the environment to gather extensive data, enabling them to dynamically explore ongoing processes and swiftly pinpoint the root causes of unforeseen problems.

AI = Clinical Care Team for Your Systems

The rapid advances in healthcare research and practice have and resulting complexity have led to specialized medical disciplines that use specific tools and tests to diagnose and treat only one of the body's systems. But a patient is more than the sum of the body's various components. As a result, many healthcare systems have created clinical care teams to share information about all the affected systems of an individual patient.

Similarly, agencies that are trying to modernize their applications and systems across diverse hybrid environments are turning to Artificial Intelligence (AI) and Machine Learning (ML) to act as a virtual clinical care team that can observe every bit of data their complex systems generate. Dynatrace, the leader in unified observability and security, has expanded its Davis© AI engine to create the industry's first hypermodal artificial intelligence which converges fact-based, predictive, and causal-AI insights with new generative-AI capabilities.

The Dynatrace Platform leverages Deterministic AI, which relies on high-quality data from all layers of the stack. It emphasizes not only data collection but also how the data is related to each other. Causality techniques are then used to derive the right context for analysis. It uses a step-by-step fault-tree analysis to precisely identify the cause of a problem in near-real-time. Deterministic AI offers the advantage of step-by-step process visibility that delivers precise answers powered by AI in addition to easily understood explanations.

BENEFITS OF DETERMINISTIC AI

The advantages of using Deterministic AI to quickly identify the root causes of a problem have benefits for every stakeholder engaged in using or developing and maintaining electronic healthcare systems.

- **Patients** benefit by being able to enter and access the data and services they need to manage their own healthcare outcomes without frustrating delays.
- **Clinicians** can serve more patients in less time by using systems that are always available.
- **IT Teams** can better cope with the complexity of today's dynamic enterprise environments. When software breaks, finding the root cause of the problem quickly and accurately with Deterministic AI on the Dynatrace Platform reduces confusion, finger-pointing among teams, and time to remediate and repair.
- **IT Managers** benefit from having their skilled workers working on high-value activities instead of spending hours or even days working on simply identifying underlying problems within increasingly complex IT environments.
- **IT Security Managers** can be assured that security is fully integrated within the software development lifecycle natively to protect health information and to ensure patient care. The Dynatrace Platform is HIPAA compliant and provides security protection and security analytics to discover, prioritize and shield from known and unknown vulnerabilities in real-time.
- **Agency Managers** benefit from reduced IT development and maintenance costs and quicker deployment of modernized applications that enhance outcomes and benefit their patients, clinicians, and IT workforce. The Dynatrace Platform also enables them to track, analyze, and optimize business processes to empower data-driven decisions that increase efficiency, reduce process errors, and improve customer satisfaction.

AI STRATEGY FOR FEDERAL HEALTHCARE AGENCIES

As the pace of AI development continues to accelerate, every federal healthcare agency will have to constantly review and refine its AI strategy to align with the commitment of the Federal Government to "promote the use of trustworthy AI" (Executive Order 13960) and to "maintain American leadership in AI" (Executive Order 13859).

Utilizing the holistic approach empowered by the Deterministic AI capabilities of the Dynatrace Platform will enable agencies to better prioritize the application and development of AI across common enterprise mission areas and mitigate risks appropriately against a shared framework of federal and department guidance.

AI-ASSISTED DEVSECOPS AUTOMATION

Dynatrace offers security solutions that reduce the time and cost to find and fix application vulnerabilities. These solutions leverage runtime context to precisely implement countermeasures and remediation.

AI-assisted prioritization frees security teams from war rooms and reduces time wasted sifting through the noise and chasing false positives.

OPERATIONAL BENEFITS OF THE DYNATRACE PLATFORM

The Dynatrace Platform provides best-in-class Application Performance Monitoring (APM). With automatic and intelligent observability at scale for cloud native workloads and enterprise apps the platform helps ensure end-to-end hybrid cloud distributed tracing, optimize service performance, enabling agencies to optimize service performance, innovate faster, collaborate efficiently, and deliver more value with less effort.

Agencies will find it easier to attract, retrain, and develop the skilled IT workforce they need to continue the evolution of the information and healthcare delivery systems needed to meet present and future needs.

Being able to offer IT workers the opportunity to learn and leverage the most advanced and modern Deterministic AI Observability Platform will enhance worker skills and satisfaction in their daily operations.

A major Federal Healthcare agency recently adopted the Dynatrace Platform to deliver more agile, scalable, secure, and cost-effective services. The implementation achieved 100% coverage across the agency's multi-cloud environment while Davis AI eliminated 99% of the false positives the agency had experienced. The agency was able to deploy Dynatrace to over 2,500 hosts in 5 hours.

V3Gate – Your Trusted Partner for Dynatrace Deterministic AI

Dynatrace is partnered with V3Gate, a Service-Disabled, Veteran-Owned Small Business (DVOSB) and Minority-Owned Business Enterprise (MBE) to serve the U.S. Public Sector.

Together, they provide Federal healthcare agencies with the ability to simplify their infrastructures, reduce costs, and create more agile IT environments.

Find out how Dynatrace and V3Gate can help your agency leverage the power of Deterministic AI.

To learn more, visit *www.v3gate.com/partners/dynatrace*