IBM Z Integrable Real-Time Information Streaming (z/IRIS) Introduction

z/IRIS enables IBM Z Mainframe observability support in Application Performance Monitoring (APM) tools, enabling organizations to monitor, analyse & proactively alert on Mainframe services using industry leading APM software & interrelated Open-Source frameworks. The Gartner 2021 Magic Quadrant for APM predicts that by 2025, 70% of new cloud-native applications monitoring solutions will use Open-Source instrumentation, like OpenTelemetry, rather than vendor-specific agents for improved interoperability.

z/IRIS easily produces Mainframe traces & associated metrics, seamlessly integrated directly into APM servers, for lean efficient processing, correlated with associated distributed application calls generated by the workload. Traces provide rich latency & error information for applications calls. Additionally, trace tags contain Mainframe system, request & user information that can be examined using the analysis & analytical capabilities provided by APM software & associated AIOps engines.

Instrumentation metrics can be used to create dashboards, monitoring Mainframe calls & system performance, while generating anomaly alerts, as per KPI related configurable thresholds, critical to meeting business reliability targets. z/IRIS seamlessly integrates with APM tools such as Instana & data visualization tools such as Grafana to supply zero maintenance automated dashboards for commonplace day-to-day usage. Of course, each & every business requires their own perspectives, hence z/IRIS incorporates easy-to-use customizable dashboards for such requirements. Because APM & data visualization tools collect data metrics from a variety of information sources, tracing every request from cradle (E.g. Client Browser) to Grave (E.g. Host Server), the z/IRIS Mainframe data combinations for your digital dashboards are potentially infinite, where the data presented is always accurate & in real time.

IBM System Z Application Performance Monitoring (APM) Landscape

The importance of the IBM Z Mainframe platform is without doubt, being deployed by ~71% of Fortune 500 mission critical business systems, including 92 of the top 100 global banks & 23 of the top 25 global retailers. The IBM Z Mainframe processes~ 30 Billion transactions per day, compared with ~6 Billion daily Google searches.

Technologies such as z/OS Connect, provide a simple & intuitive API based method for the IBM Z Mainframe to become an interconnected platform, with all other Distributed Platforms. This dictates the evolution in Operations Management processes, considering the business application from a non-technical viewpoint, treating management from a holistic viewpoint with end-to-end monitoring, regardless of the underlying hardware & software platforms.

Increasingly IBM Z Mainframe stakeholders are becoming cognizant that traditional processes for handling Information Technology operations are becoming obsolete, hence the emergence of DevOps (DevSecOps) frameworks. Driven by digital transformation & the perpetually increasing demand for new digital services, consuming vast unparalleled amounts of data, Data Centres are becoming increasingly pressurized to deliver & maintain these mission-critical services. A major challenge is the availability of these services, where transaction & throughput workloads can be unpredictable, often ad-hoc demand driven (E.g. Consumer) & not the typical periodic planned peaks (E.g. Monthly, Annual, et al).
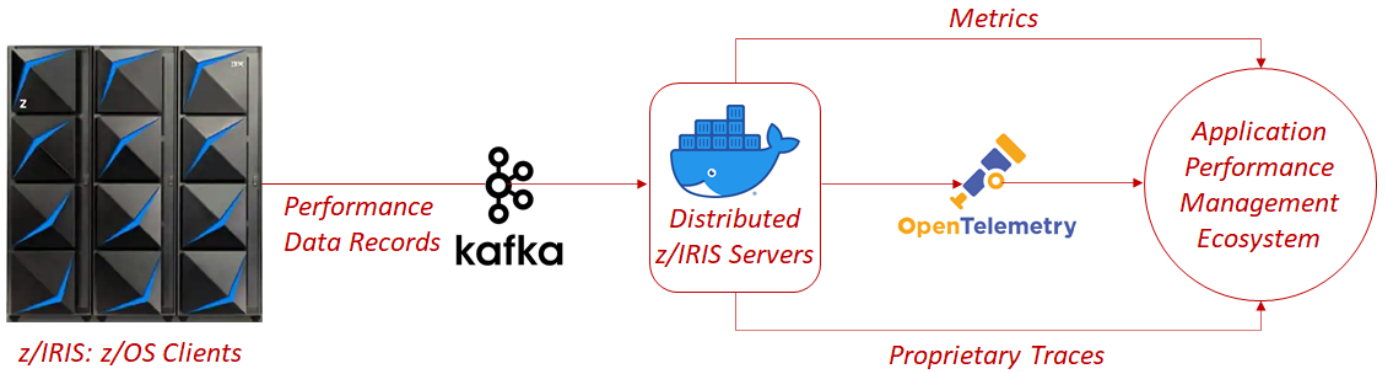
With a vast & diverse ecosystem of Application Performance Management (APM) vendors & solutions for Distributed Systems, there are very few DevOps centric IBM Z vendors & solutions. Wouldn't it be useful if there was a simple, cost-efficient & resource optimized IBM Z APM solution, which could seamlessly work with all other mainstream Distributed Systems APM solutions, providing a simplified view of end-to-end business application performance, regardless of platform?

z/IRIS Architecture Overview

z/IRIS is comprised of one or more z/OS clients, processing on typical Mainframe LPARs, supplemented with industry standard distributed systems Linux (x86) servers. A z/IRIS z/OS client is a low resource sleek IBM JZOS-based application, eligible for zIIP processing, as & when available, supplemented by HLASM modules for SMF in-memory processing, offloading ~97% of total CPU cycles to zIIP, minimizing z/OS software cost concerns:
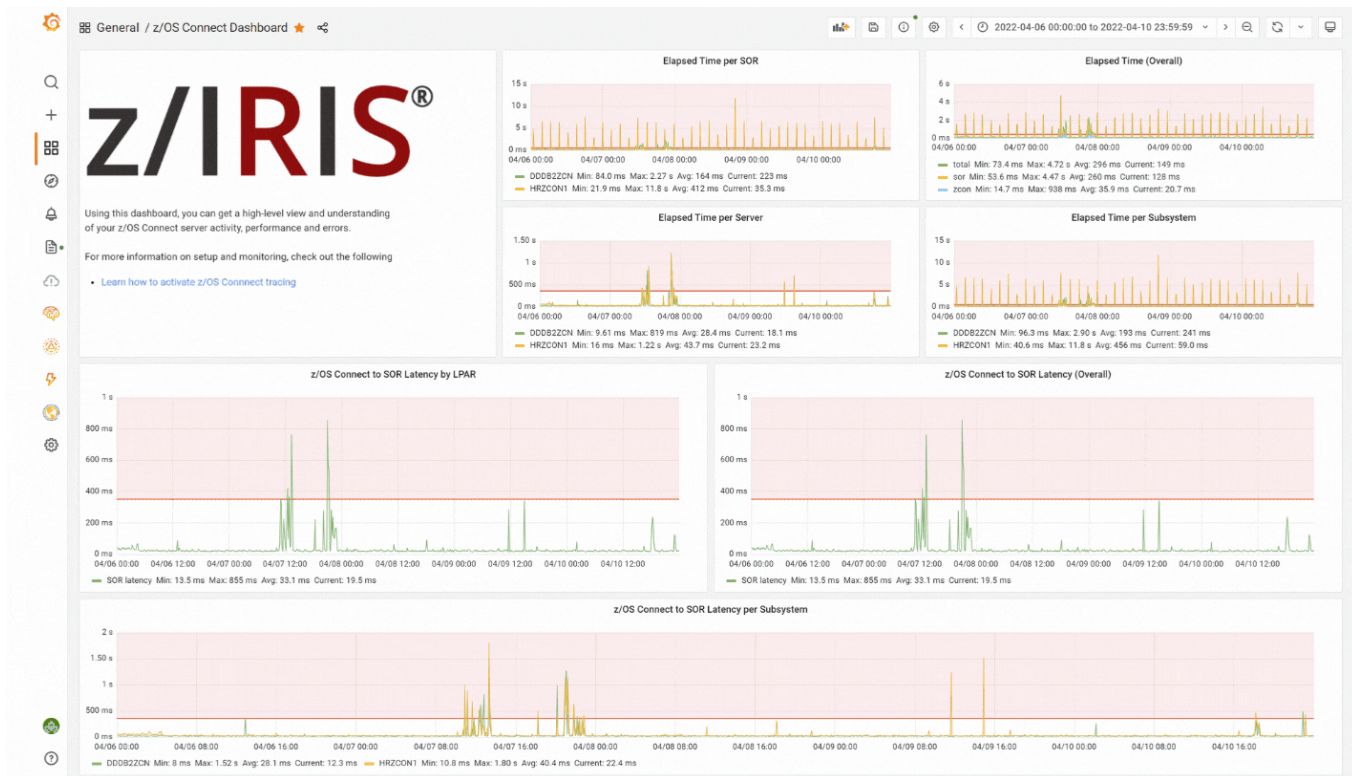
These z/IRIS clients read SMF data from predefined standard SMF in-memory resources. These SMF records are streamed in real-time, to an existing network accessible Apache Kafka cluster. The z/IRIS server reads SMF data from the Kafka cluster in near real-time, creating Mainframe traces from SMF data by transforming, formatting & normalizing data as per the OpenTelemetry OTLP format. This ensures compatibility with any APM solutions that natively support the OpenTelemetry framework. These Mainframe traces are then posted to a pre-configured APM system, for onward processing, using generally available APM vendor APIs. z/IRIS allows DevOps engineers, users & analysts to:

➢ View Mainframe traces & performance data vis familiar already deployed 3rd party APM user interfaces
➢ Search, filter & refine Mainframe traces within the context of their own business applications
➢ Configure customizable alerts based (E.g. KPI based) from data provided by z/IRIS mainframe traces
➢ Stream Mainframe metrics into in-house data sinks for future analysis & long-term data retention
➢ Utilize z/IRIS importable & customizable dashboards to visualize z/IRIS metrics via Grafana

z/IRIS Conclusion & Benefits

Today's inward facing, dispassionate & honest CIO knows their organization can spend inordinate amounts of time, being reactive to business application impact incidents, often finding they spend too long reacting to incidents & all too often they don't have enough bandwidth to be proactive & prevent the incident from occurring in the first place. It's widely accepted that for the majority of Global 1000 companies, deploying an IBM Z Mainframe platform provides them with the de facto System Of Record (SOR) data platform, with associated Database (E.g. Db2) & Transaction (E.g. CICS, IMS) subsystems. Therefore playing such a central & integral part of today's 21st century digital application infrastructure, business performance issues can affect the entire application, dictating that early detection & resolution of performance issues are business critical, with the ultimate goal of eliminating such issues altogether.

z/IRIS delivers a lightweight, resource & cost efficient z/OS APM solution to provide an end-to-end performance analysis of today's 21st Century digital solutions. Because z/IRIS leverages from industry standard Open-Source frameworks deployed by commonplace Distributed Systems APM solutions, the instrumentation captured & interpreted by z/IRIS enriches dynamically as APM functionality increases. For example, Datadog Watchdog Insights can identify increased latency from a downstream z/OS Connect application, just by processing its new capability, from existing telemetry data. The data had already been captured, as the APM functionality evolved, new meaningful business insights were gained. z/IRIS can deliver the following example benefits for any typical IBM Z Mainframe DevOps environment:

➢ *Automated IBM Z Mainframe Observability*: Automate the collection of end-to-end data tracing information.
➢ *Real Time Impact Notification*: Intelligent data processing to present meaningful DevOps dashboard notifications of business applications service status & variances.
➢ *Universal Access & Ease Of Use*: Facilitate end-to-end Application Performance Monitoring (APM) for all IT teams, not just IBM Z Mainframe Subject Matter Experts (SME).
➢ *Reduce MTTD & MTTR For Optimized User Services*: Reduce Mean Time To Detect (MTTD) & ideally eradicate the Mean Time To Repair (MTTR), the typical Key Performance Indicators (KPIs), with intelligent root cause analysis.

For more information please visit the [zIRIS Portal](#) or Email our [Sales Team](#) or call us on +44 (0) 845 0579386.

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