

BLOG POST

Oracle Brings Holistic Observability to the Enterprise

How Oracle Cloud Observability and Management Changes DevOps Best Practices



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INTRODUCTION

At an Oracle virtual launch event on October 6, 2020, Clay Magouyrk announced a new offering in the area of observability and management of complex application technology stacks. Oracle Cloud Observability and Management Platform (Oracle Observability and Management going forward) provides Logging, Logging Analytics, and Operations Insights immediately (general availability now) and will shortly offer Application Performance Monitoring and Database Management. Service Connector Hub (GA now) enables easy data movement across Oracle and third-party observability tools using open standards. Combined, these cloud services enable observation and management across public, hybrid and private clouds as well as on-premises, remarkably beyond Oracle Cloud and supporting third-party cloud platforms.

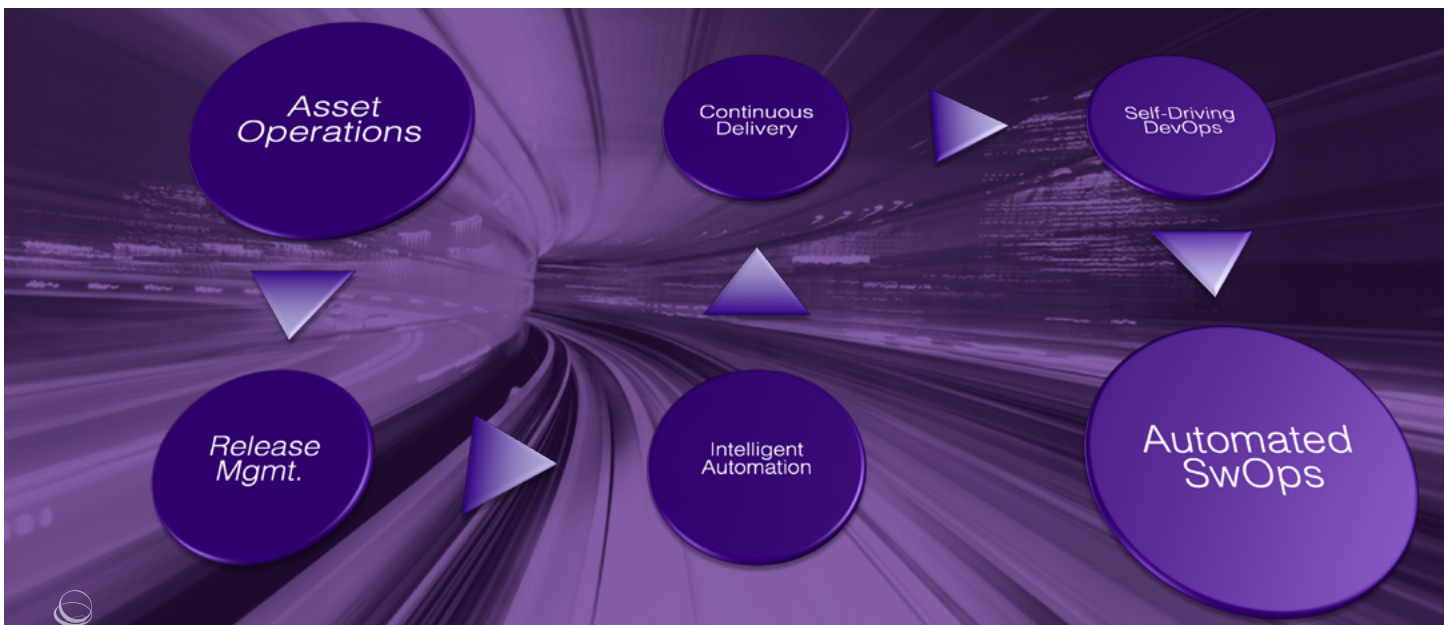
This blog post explores what sets Oracle Observability and Management apart from its competitors in the market, presents key differentiators and concludes with actionable recommendations for CxOs.

WHAT ARE THE KEY TRENDS?

DevOps is moving through a five-step evolution from the DevOps Ginnungagap (or absolute nothingness, in Norse mythology) to its end state: the overall Automated Software Operations (ASO) (see Figure 1). Oracle Cloud Observability and Management contributes to key milestones on that journey:¹

- **Intelligent automation.** Automating the release process requires information and analytics on the location of deployed assets. Oracle Observability and Management enables the key insights that underpin this process and can help ensure the proper operation and automation of these assets.
- **Continuous delivery.** Continuous delivery (CD) without measurement and observation is useless, potentially even dangerous. For next-generation applications, the underlying logging capabilities of Oracle Observability and Management create the necessary instrumentation of continuous delivery—not only on Oracle Cloud but on all deployment platforms.

Figure 1. The Evolution of DevOps to the End State of Automated Software (ASO)



Source: Constellation Research

- **Self-driving DevOps.** Like all software categories, DevOps needs to enter the operator-free, driver-free, self-driving stage. DevOps needs to run—even when the human operators are not there for any given reason. Oracle is a strong investment into this direction, with its efforts building an autonomous technology stack. Oracle Observability and Management forms the underlying data and automation to enable self-driving Ops.
- **Next-gen computing is real.** Enterprises need to move workloads across cloud and on-premises, enabled by a next-generation computing platform. Of course, enterprises need observation and management capabilities for all of those workloads in a single pane of glass to manage workloads successfully.²
- **Multicloud is real.** Enterprises use multiple public clouds, either through planned efforts or unplanned, ad hoc initiatives. Unfortunately, each cloud comes with its own pane of glass, and with that creates operational inefficiencies and complexities for enterprises.

- **Multivendor is real.** The days of single sourcing IT to a single vendor are long over. Each vendor comes with its own instrumentation, making it harder for enterprises to manage their multivendor assets and platforms.

Compared with other point solutions and cloud services, Oracle Observability and Management offers a holistic approach that covers the entire deployment plane that an enterprise has at its disposal for its workloads: public cloud, hybrid cloud and on-premises deployments.

WHAT IS ORACLE CLOUD OBSERVABILITY AND MANAGEMENT PLATFORM?

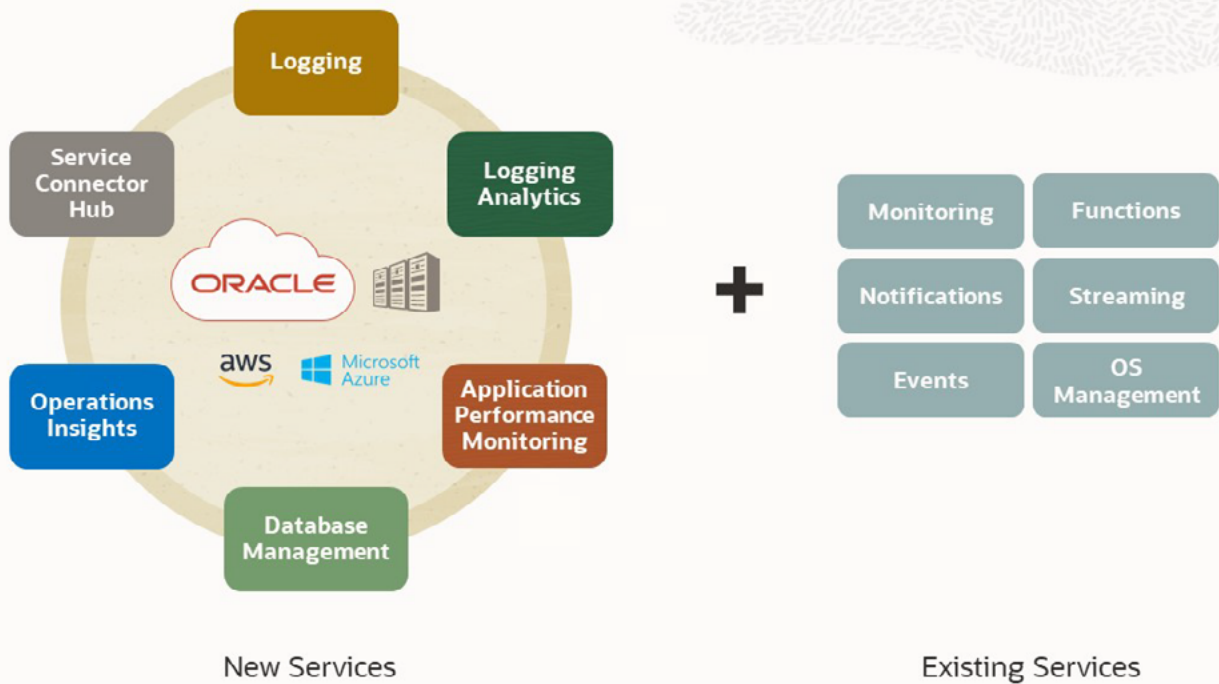
Oracle is adding six new services to its observability and management product suite, on top of capabilities that already were supporting key DevOps processes such as monitoring, notifications, events, functions, streaming and OS management (see Figure 2).

1. Logging
2. Logging Analytics
3. Applications Performance Monitoring
4. Database Management
5. Operations Insights
6. Service Connector Hub

The new offering was built with several key qualities in mind:

- **Support the full stack.** To provide a holistic view on what is happening in IT environments, Oracle decided to support the full stack, from “chip to click” across all layers of technology.

Figure 2. Oracle Cloud Observability and Management Platform



Source: Oracle

- **Eliminate data silos.** Scaling to the data needs of a modern observability and management solution is crucial, which enables a complete view on all data necessary to perform these tasks.
- **Cover any cloud.** In a multcloud, hybrid and private cloud world, it is key to enable data, insights and management across all cloud deployment forms.
- **Support heterogeneity out of the box.** The architecture had to account for the real world, where there is not only one vendor providing IT infrastructure to an enterprise.
- **Based on open standards.** True to its open standards DNA, Oracle supports standards for its observability and management platform, as well as open source (e.g., CNCF, OpenTracing, OpenTelemetry, Cloud Events, Fluentd and more).
- **Powered by API-first approach.** Enabling interoperability with APIs is key to ensure system robustness. More importantly, an API-first approach enables integrations with prebuilt products.

- **Built-in AI/ML solutions.** Instead of delivering yet another toolkit for observability and management needs, Oracle delivered applied AI/ML-powered solutions that provide immediate insight, eliminating the need for guidance from data scientists (at least in this space).
- **Empower the business.** Oracle wants to enable business users to understand and manage the state of their critical platforms.
- **Enable DevOps.** Giving DevOps the flexibility options of both prepackaged and composable apps was another quality that Oracle wanted to deliver with its observability and management offerings.

Taking Logging to the Next Level

To understand what is happening with systems, we must have the fundamental capability to process, administer and analyze logs. Rightfully so, Oracle has offered logging capabilities with its portfolio.

Oracle makes it easy to turn on logging—it's a one-click experience across the whole fleet of relevant systems. The service inherently understands the fundamental log types: audit, infrastructure, database and application logs. Oracle Observability and Management allows the combination and correlation of all logs via a single view. It also allows searching of logs for relevant data and related event types. Pricing for Logging includes a free tier beyond which you only pay, monthly, 5 cents per gigabyte of log storage.

With the help of service connectors that can be triggered by rule-based actions, Oracle enables Oracle Logging users to act and manage the underlying systems. Logs can also be moved to other locations and destinations—for instance, for inspection by third-party tools.

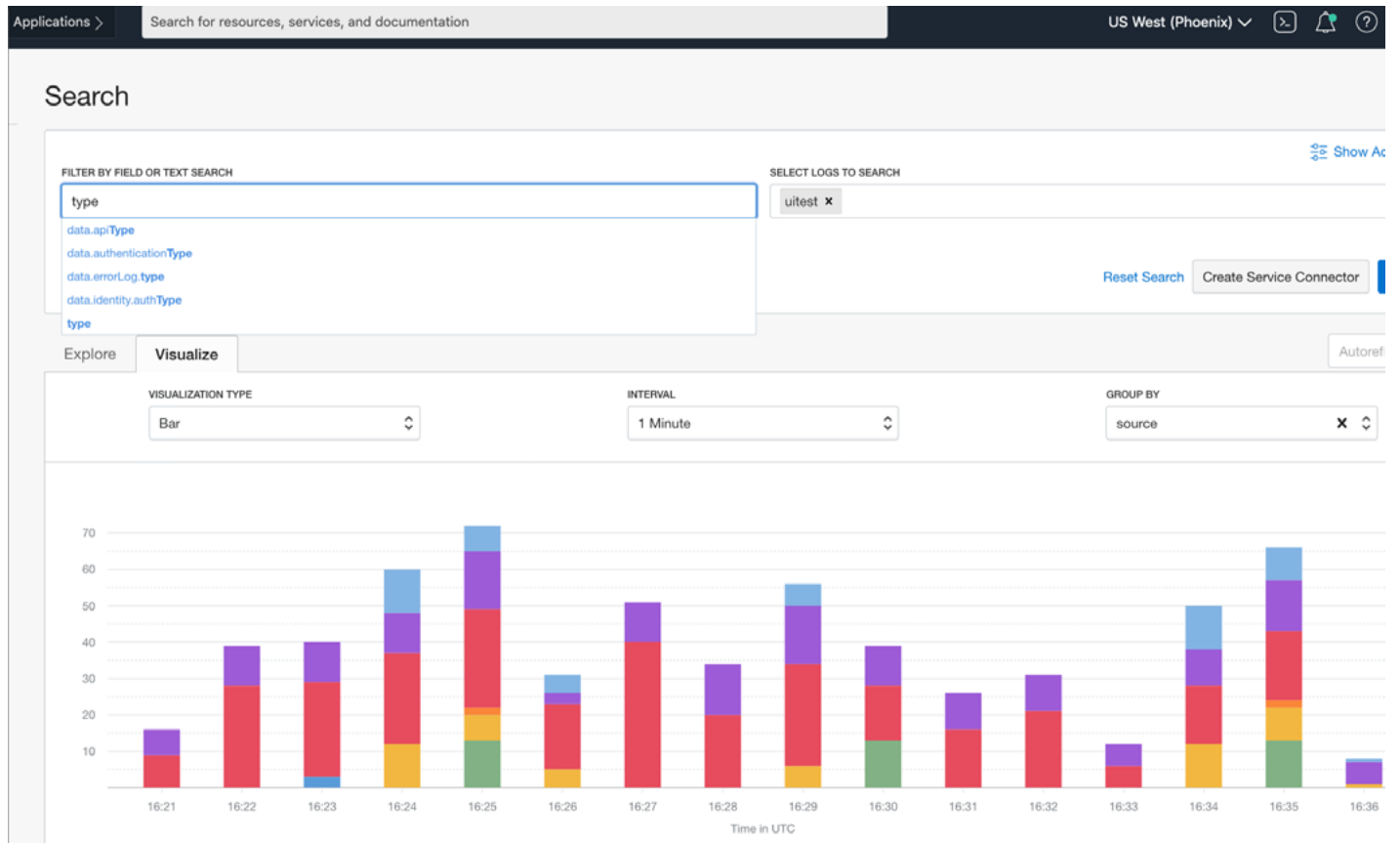
Finally, the logging component of Oracle Observability and Management is built on open standards, prominently leveraging Fluentd for log ingestion being compliant with the popular CNCF cloudevents 1.0 framework (see Figure 3 for an example).

In addition to the logging framework, Oracle offers the Logging Analytics module as part of the platform.

Logging Analytics makes it easy to analyze and explore data. It allows the easy analysis of patterns and outliers in logs, and enables topology-aware data drill-downs, which are self-explaining and easy to use, so that business users can drive the analysis. Oracle provides curated ML algorithms that find anomalies in real time, the most prominent ones being Cluster, Link and Classify (see Figure 4).

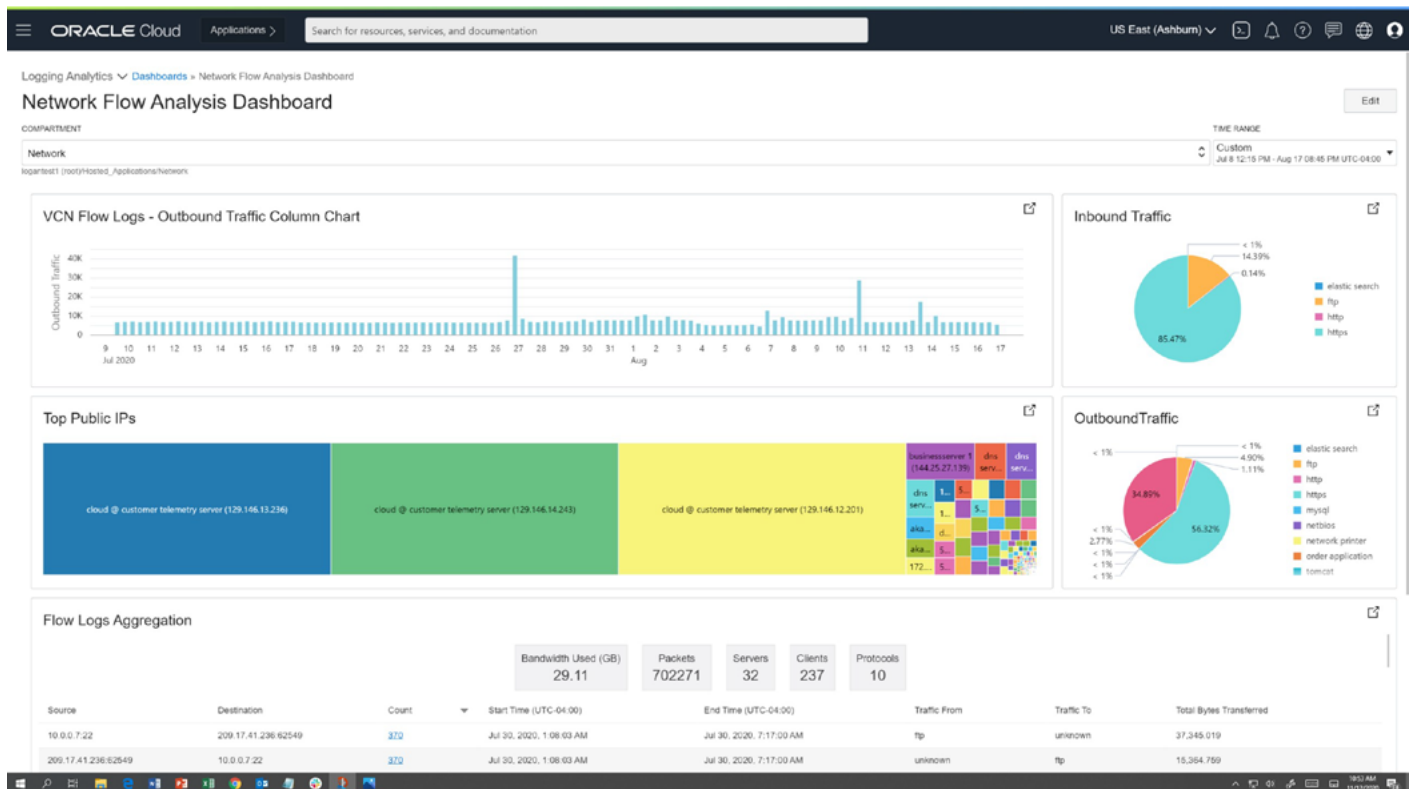
As logging data can quickly get unmanageable, Oracle allows the archiving of log data by user-defined rules, and even more importantly, the recall of logs should analysis require the data. This enables the retention of logging data at low cost.

Figure 3. Screenshot of Logging Service



Source: Oracle

Figure 4. Screenshot of Logging Analytics



Source: Oracle

To understand complex logs right out of the box, Oracle Observability and Management ships with over 250 out-of-the-box parsers for both Oracle and non-Oracle technology stacks.

Logging Analytics supports operations-optimized ML with pattern recognition, such as clustering: the aggregation of data into groups that allows to show trends, anomalies, and outliers to manage systems. Moreover, clustered events can be correlated, and clustered patterns can be compared.

Additionally, events can be linked across common resources, enabling relationship analysis between events and compute resources. Linked events can be analyzed through aggregation, clustering and anomaly detection as well as sequence analysis.

Oracle enables all these analytical capabilities through a powerful underlying data organization that allows not only organization of the logging data but also enables finding the right data based on organizational structures, labels and more.

Most importantly, Oracle Observability and Management supports a wide array of third-party offerings, in addition to the out-of-the-box and end-to-end support for Oracle offerings:

- **Out-of-the-box support.** The offering supports 250+ parsers (e.g., Apache, Bluecoat, Checkpoint, Citrix, F5, IBM, JBoss, Juniper, Linux, Microsoft, MongoDB, NetApp, NNGINX, node.js, PostgreSQL, SAP, Squid and many more).
- **Easily extensible.** The offering enables users to build custom parsers for any not-supported workloads, with a variety of popular parsing techniques that are available (e.g., Regex, JSON, XML, etc.).

Finally, the underlying data archive of Oracle Observability and Management can be easily deployed (e.g., instantly with Oracle Cloud Infrastructure, or OCI) and quickly configured (e.g., powered by role-based access), and it can simply be expanded and managed (e.g., through policy-based archive/league capabilities).

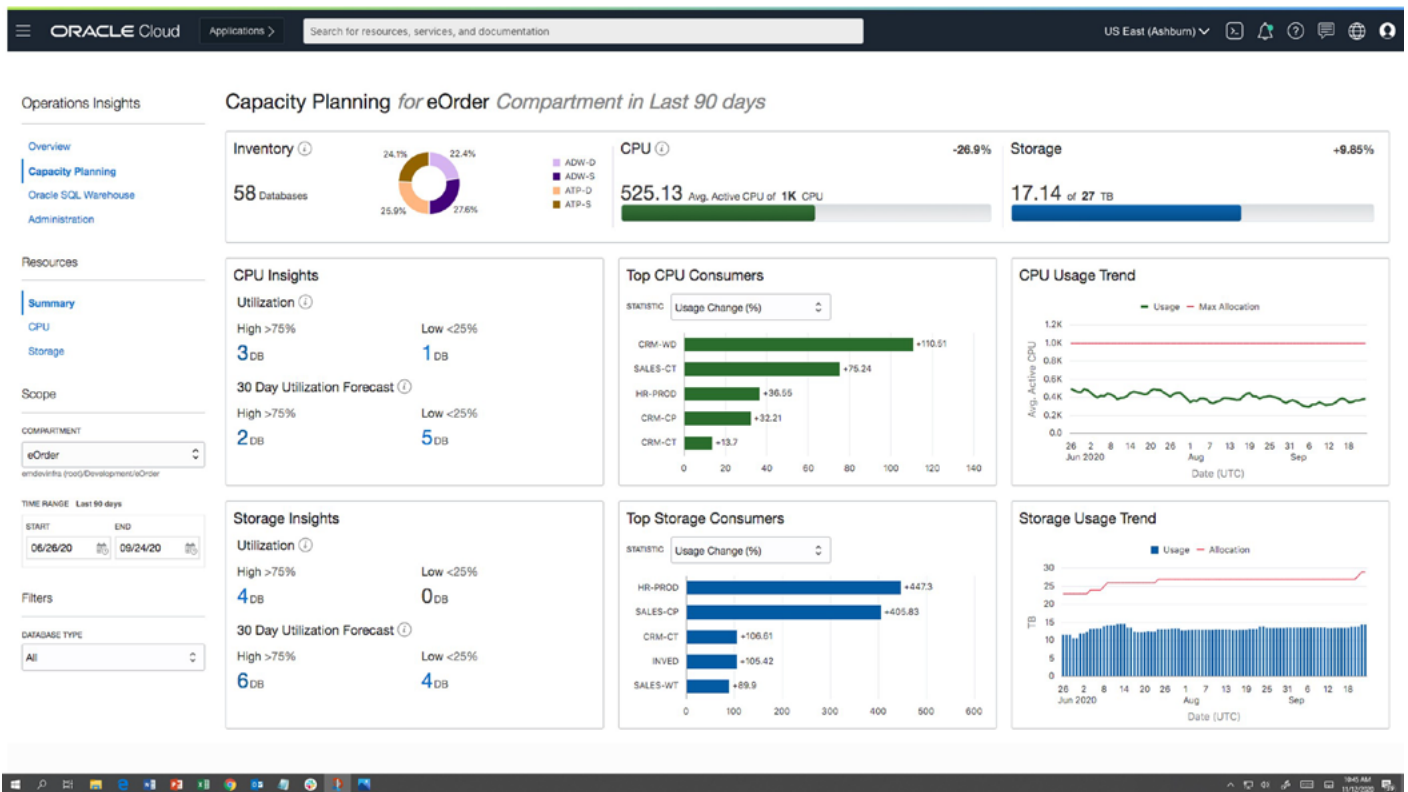
Pricing for Logging Analytics includes a free tier, beyond which your cost is based only on the size of stored logs.

And There's More...

Oracle also offers the following two modules/components as part of the Oracle Observability and Management offering:

- **Operations Insights.** This service (see Figure 5) provides capacity planning that empowers enterprises to understand historical hardware demands for their database usage and forecast them into the future, allowing the cost optimization of operations and identifying both under- and over-utilized servers. Moreover, this offering features a SQL Warehouse that holds all SQL-related performance data for long-term analysis. The offering enables enterprises to forecast and predict future database capacity needs, combining historical data and linear/ML-based forecasting algorithms.

Figure 5. Screenshot of Operations Insights

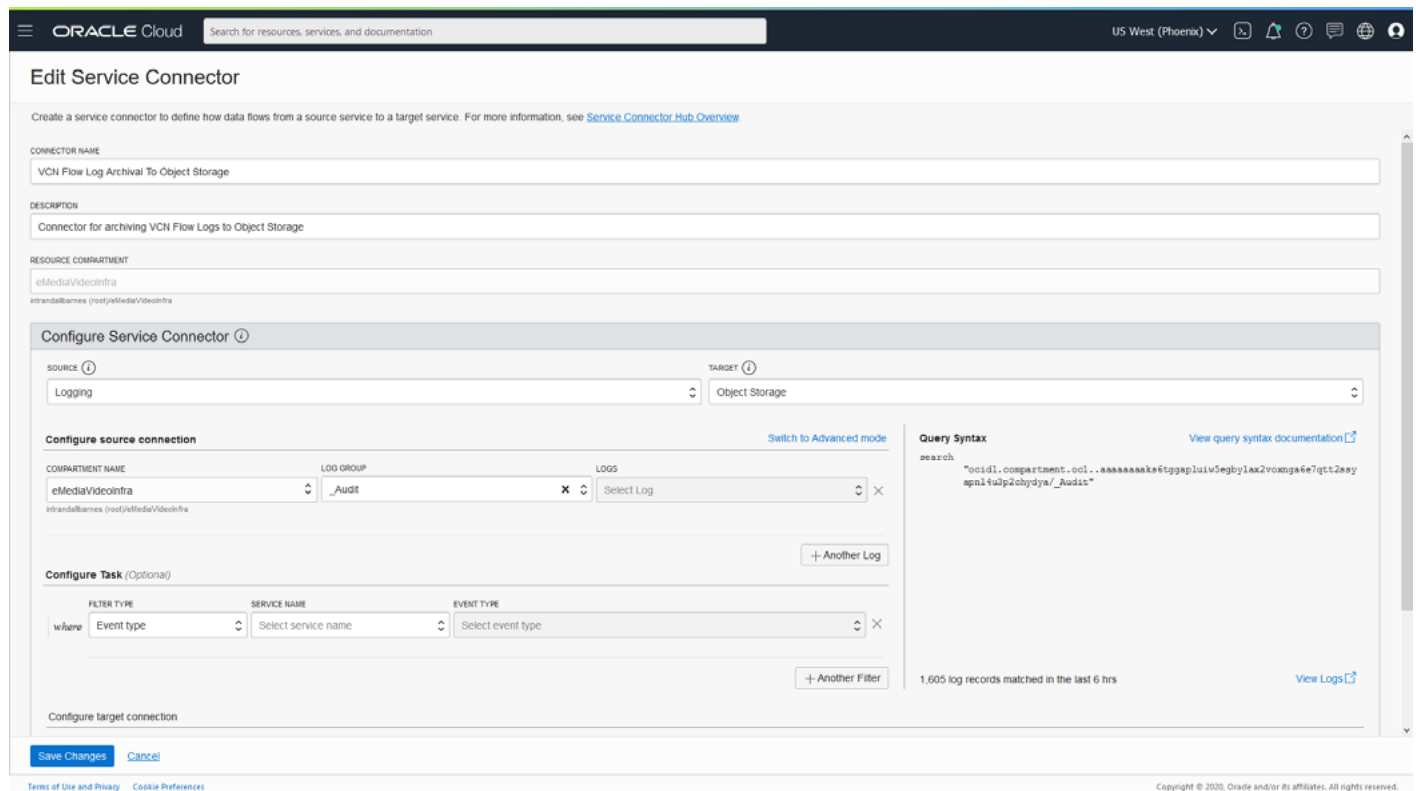


Source: Oracle

Oracle is offering Operations Insights as a free service for Oracle Autonomous Database workloads.

- **Service Connector Hub.** An offering with more of an interoperability focus (see Figure 6), Oracle Service Connector Hub enables enterprises to use a central console for designing and managing all cloud-based data exchange related to observability. For example, users can use drag-and-drop workflows to emit logs to be monitored; move them to archives or third-party, Kafka-compatible tool sets with one click; or enable third-party ticketing and workflow solutions to be alerted via functions and notifications about events in the log data. Finally, the offering provides robust out-of-the-box integrations with many third-party tools from vendors such as PagerDuty, Twilio and Grafana. Service Connector Hub is free.

Figure 6. Screenshot of Service Connector Hub



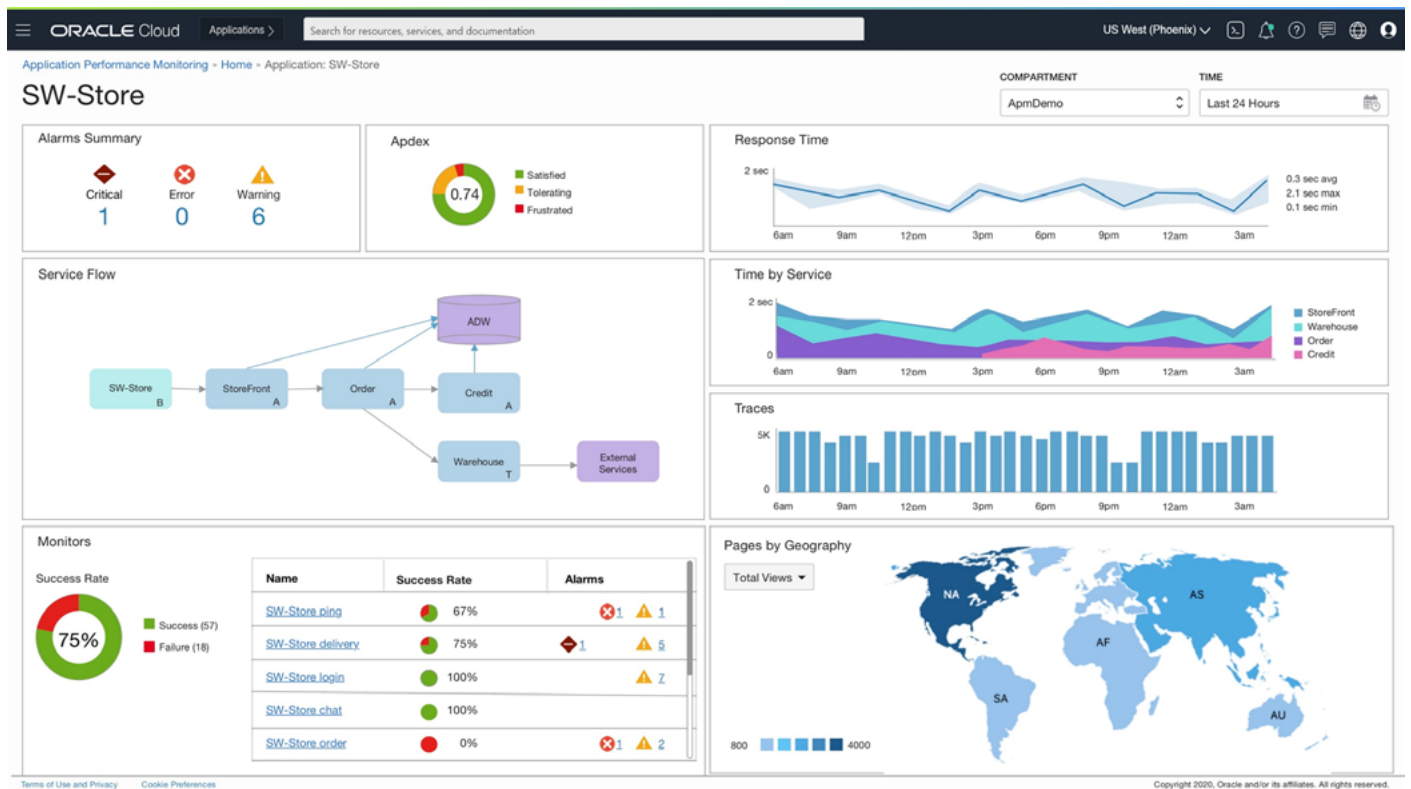
Source: Oracle

A Suite of Observability and Management in the Making

Beyond Logging, Logging Analytics, Operations Insights and Service Connector Hub, which have gone generally available with the launch in October 2020, there are two more offerings on the Oracle Observability and Management Platform side that are in prerelease or limited availability right now:

- **Application Performance Monitoring.** This offering (see Figure 7) allows DevOps personnel to monitor complete application behavior across deployment options, supporting both end-user and server monitoring, synthetic monitoring and distributed tracing (compatible with OpenTracing and OpenMetrics). On the end-user side, the offering allows measurement of real and synthetic end-user performance in both browser and app usage, enabling session diagnostics with full platform data (e.g., browser types and versions and more).

Figure 7. Screenshot of Application Performance Monitoring



Source: Oracle

- **Database Management.** Not surprisingly, Oracle provided an observability and management offering for Oracle Database management. This offering allows monitoring and management of an enterprise's fleet of Oracle Databases, across the cloud and on-premises, offering a cloud-based delivery model for consuming capabilities previously only available in Oracle's on-premises Enterprise Manager products. Performance diagnostics are driven by an integrated view of all database activity. Specifically, Oracle offers features such as ASH Analytics, SQL and session details, blocking sessions, real time monitoring as well as integrated database administration for common DBA tasks.

WHY DOES THIS MATTER?

Enterprises run more software on more platforms than ever. The "multis" are real, and with multicloud and multivendor reality setting in, CxOs need powerful tools that can span the silos and give their teams a chance to observe and manage their systems and their respective workloads.

More specifically, CxOs care about next-generation observability and management platforms to help them handle their key five challenges (see Figure 8). The most prominent challenges include:

- **Employee scarcity and skills shortage.** Unfavorable aging dynamics in the first world make it imperative to use technology. Enterprises and IT departments, specifically, are not immune to these changes, and CxOs find it increasingly more difficult to hire employees with the right skills. Enterprises often pay regal amounts to IT outsourcing firms to solve this challenge. And enterprises that do not outsource find it just as difficult to train and improve the skills of their workforce—a good reminder that no enterprise function is being more disrupted by the cloud than IT. More powerful tools to make their existing employees more productive and effective are paramount.
- **Cost pressure.** For decades now, CxOs have been asked to reduce costs *and* do more with less, especially with IT. For a long time, the benefits of Moore’s Law have bailed out CIOs because they were able to offer better computing power at the same costs or equal computing at lower costs. However, Moore’s Law is running out of runway and, at the same time, new next-generation application use cases require innovative new platforms that charge a premium. Observability and management

Figure 8. The Five Buyer Challenges



Source: Constellation Research

tools can command premium prices and their cost across each vendor solution adds up, especially when it comes to the human skills to manage them. Lastly, an enterprise cannot put a price tag on the visibility of their system landscape.

- **The innovation imperative.** While software is eating the world, enterprises are turning into software companies and, as such, they need to innovate faster than ever. This makes CxOs look for winning platforms that ideally allow them to move workloads as seamlessly as possible across platforms or from on-premises to the cloud. As enterprises flock to platform-as-a-service (PaaS)³ products to help them build these next-generation applications,⁴ workload portability is a key acquisition criterion and overall success factor for the selection of a PaaS⁵ platform. The result is an exponentially more complex system landscape that requires more powerful system observability and management tools.

Oracle Cloud Observability and Management Platform is an offering that allows CxOs and their teams to address employee capacity and skills shortages, helps to alleviate cost pressure and helps their enterprise to practice Enterprise Acceleration—that is, strategies that help an enterprise to become more agile—and move faster by following the innovation imperative.

ADVICE FOR CXOS

Constellation has the following recommendations to CxOs regarding the new Oracle Cloud Observability and Management Platform:

1. **Accept the automation imperative.** Enterprises need to look at automation to increase their productivity and efficiency. The shift from specialized operations to self-driving software is in full swing, and Oracle is a pioneer in this move to autonomous solutions. Enterprises have never scaled up through people but by using tools and automation. This creates the automation imperative (that is, if a process can be automated, it should be) regarding IT operations, where CxOs need to look at any automation option that is at their disposal. Fast economic turns likely accelerated by pandemic outbreaks further increase the pressure to automate and strengthen the automation imperative.

Remarkably, Oracle Observability and Management is one of the first products to address both a vendor's technology stack and third-party platforms both on-premises and in the cloud.

2. **Oracle customers should evaluate Oracle Observability and Management sooner rather than later.** Existing Oracle customers will not have a difficult time deciding whether to adopt Oracle Observability and Management. There is too much automation goodness coming from the offering as to be able to afford to ignore it. Efficiency gains and ROI should be easy to quantify and justify the investment.
3. **Non-Oracle customers need to do a cost-benefit analysis for a potential switch to Oracle.** Oracle is certainly challenging its competitors to a more holistic approach to both observability and management of platforms, including third-party platforms. It is unlikely all competitors will respond, but some may. CxOs need to understand which of their platform vendors maybe up for the task and by when, and then map that to the existing and future capabilities of Oracle Observability and Management.
4. **Consider Oracle Observability and Management for next-generation applications.**⁶ Enterprises need to build next-generation applications that reflect the new best practices in the era of Infinite Computing.⁷ But to be successful with their next-generation applications, they need to have the proper platforms to manage systems and workloads. Oracle offers this today with Oracle Observability and Management, so CxOs must look at the offering.
5. **Practice commercial prudence.** As always, CxOs need to practice commercial prudence when it comes to platform decisions. One-time costs, ongoing costs, capex vs. opex, and lock-in effects are the key areas of consideration before making platform decisions. DevOps platform decisions are no exception to the consideration of commercial prudence in all phases of purchase, adoption and usage cycle.

MYPOV

The system landscape of enterprises is rapidly turning into more complex constructs than they have ever been before. New technologies like AI, big data and cloud spur the need for next-generation applications, resulting in more systems and platforms to manage than ever before. New application use cases like the Internet of Things add a whole plethora of new platforms and complexities.

Vendors have responded to this trend and are offering enterprises tools that allow the monitoring of their platforms. The challenge is that these tools are limited to the scope of the products and platform of one vendor.

Oracle offers an open approach to observability and management that spans multiple products and platforms. This is the true north for the DevOps market. Enterprises need tools to reduce complexity and offerings that allow them to eliminate single-vendor silos.

These are the early days for Oracle Observability and Management, but it is off to a promising start, based on a DNA of openness, extensibility and—like every Oracle offering—a commitment to lower the TCO in the space.

ENDNOTES

¹ For more on Automated Software Operations, see: Holger Muller, “The Future of DevOps Is Automated Software Operations,” Constellation Research, June 21, 2019. <https://www.constellationr.com/research/future-devops-automated-software-operations>

² For more on next-generation computing, see the Constellation Research Market Overview: Holger Mueller, “Next-Gen Computing: The Enterprise Computing Model for the 2020s,” Constellation Research, September 14, 2018, <https://www.constellationr.com/research/next-gen-computing-enterprise-computing-model-2020s>

³ For more best-practice considerations for PaaS offerings, see: Holger Mueller, “As PaaS Turns Strategic, So Do Implementation Considerations,” Constellation Research, May 9, 2018. <https://www.constellationr.com/research/paas-turns-strategic-so-do-implementation-considerations>

⁴ For more on next-gen applications and PaaS offerings, see: Holger Mueller, “Why Next-Gen Apps Start with a Next-Gen Platform as a Service,” Constellation Research, April 5, 2018. <https://www.constellationr.com/research/why-next-gen-apps-start-next-gen-platform-service>

⁵ For a Constellation ShortList™ on PaaS vendors, see: Holger Mueller, “Constellation ShortList PaaS Tool Suites for Next-Gen Apps,” Constellation Research, February 12, 2020. <https://www.constellationr.com/research/constellation-shortlist-paas-tool-suites-next-gen-apps> Also: Holger Mueller, “Constellation ShortList PaaS Suites for Next Gen Apps,” Constellation Research, February 19, 2020. <https://www.constellationr.com/research/constellation-shortlist-paas-suites-next-gen-apps>

⁶ For more on next-generation applications, see: Holger Mueller, “The Era of Infinite Computing Triggers Next-Generation Applications,” Constellation Research, June 1, 2018. <https://www.constellationr.com/research/era-infinite-computing-triggers-next-generation-applications>

⁷ For more on Infinite Computing, see endnote 6.

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Holger Mueller is vice president and principal analyst at Constellation Research, providing guidance for the fundamental enablers of the cloud, IaaS, PaaS, with forays up the tech stack into big data, analytics and SaaS. Holger provides strategy and counsel to key clients, including chief information officers (CIO), chief technology officers (CTO), chief product officers (CPO), investment analysts, venture capitalists, sell-side firms and technology buyers.

Prior to joining Constellation Research, Holger was VP of products for *NorthgateArinso*, a KKR company. He led the transformation of products to the cloud and laid the foundation for new business-process-as-a-service (BPaaS) capabilities. Previously, he was the chief application architect with *SAP* and was also VP of products for *FICO*. Before that, he worked for *Oracle* in various management functions—both on the application development (CRM, Fusion) and business development sides. Holger started his career with *Kiefer & Veitinger*, which he helped grow from a startup to Europe's largest CRM vendor from 1995 onwards. Holger has a Diplom Kaufmann from University of Mannheim, with a focus on Information Science, Marketing, International Management and Chemical Technology. As a native European, Mueller speaks six languages.

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