ORACLE

Supercharge Your DevOps: How Oracle Cloud DevOps Leveraged Enterprise Manager and More

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Agenda

- Oracle SaaS business portfolio
- Enterprise Manager monitoring
- Observability challenges
- Oracle SaaS observability strategy
- Observability architecture
- O&M deployment usecases
  - Logging Analytics
  - Application Performance Monitoring
  - Ops Insights
- SaaS observability strategy - key takeaways

Oracle SaaS portfolio

Enterprise Resource Planning (ERP)

- Enterprise Performance Management
- Enterprise Resource Planning

Human Capital Management (HCM)

- Human Capital Management
- Talent Management – Taleo Enterprise

Supply Chain & Manufacturing (SCM)

- Internet of Things (IOT)
- Supply Chain & Manufacturing
- Transportation Management
- Warehouse Management

Marketing

- Eloqua Marketing Automation
- Infinity Behavioral Intelligence
- Maxymiser Testing and Optimization
- Responsys Campaign Management

Sales

- Commerce
- Configure, Price, Quote
- DataFox Data Management
- Sales Automation

Service

- Digital Customer Service
- Field Service
- RightNow Service Center
- Service Center

Oracle SaaS locations*

North America - 13
South America - 5

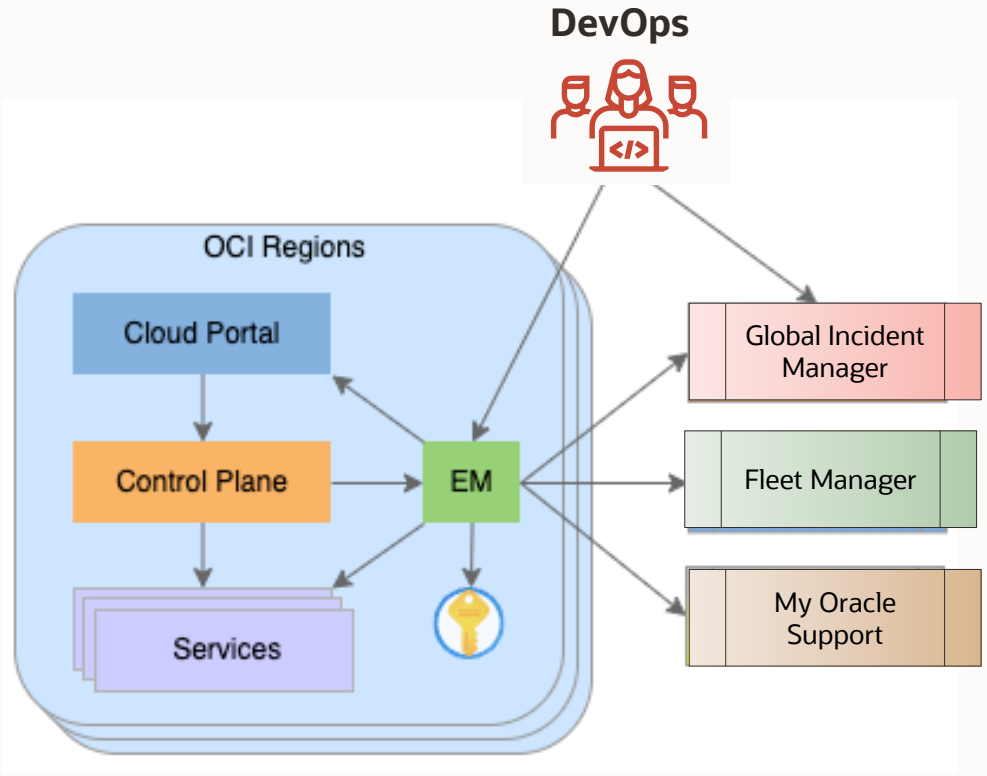
Europe - 15
Africa - 2

Asia Pacific - 10
Middle East - 4

https://www.oracle.com/cloud/public-cloud-regions/

* Expanding footprint globally

Enterprise Manager (EM) for SaaS



EM 13.5 in OCI regions

- ✓ Real-time monitoring
- ✓ Alerts and notifications
- ✓ Support workbench
- ✓ Perf Hub
- ✓ One-off patching
- ✓ Service inventory
- ✓ Service Topology
- ✓ Fleet scan
- ✓ Data masking
- ✓ Auto-remediation
- ✓ Publish service metrics
- ✓ SQL Worksheet

Observability challenges: SaaS distributed architecture

Increased complexity several loosely coupled microservices

Explosion of telemetry data

Predefined monitored metrics are not enough

Criticality of the applications being monitored

Unpredictable problems/failures – Apps, DB, Infra Logs to triage quickly

Additional debugging tools to effectively triage DB and application issues

Fleetwide analytics

- Identify outlier applications
- Quickly assess capacity needs

Detect code regressions during updates

Oracle SaaS Observability Strategy

Combine Enterprise Manager (EM) with OCI Observability and Management services such as Logging Analytics, APM, and Ops Insights to give cloud DevOps teams full visibility and efficient issue triage capabilities.

Oracle Multicloud Observability and Management

Observability and Management Platform

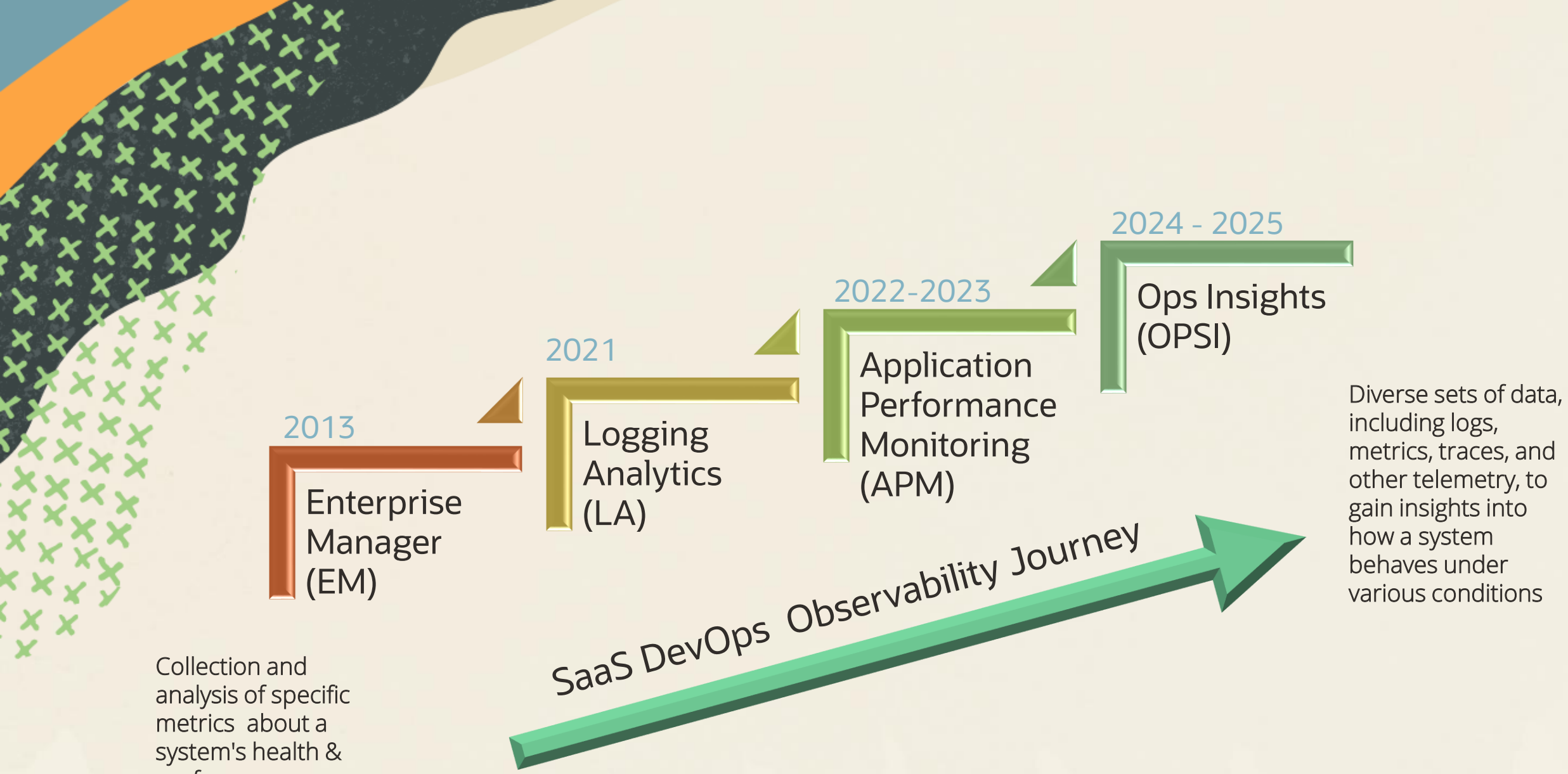
- Application Performance Monitoring
- Stack Monitoring
- Logging Analytics
- Database and OS Management
- Ops Insights

Ingest all telemetry

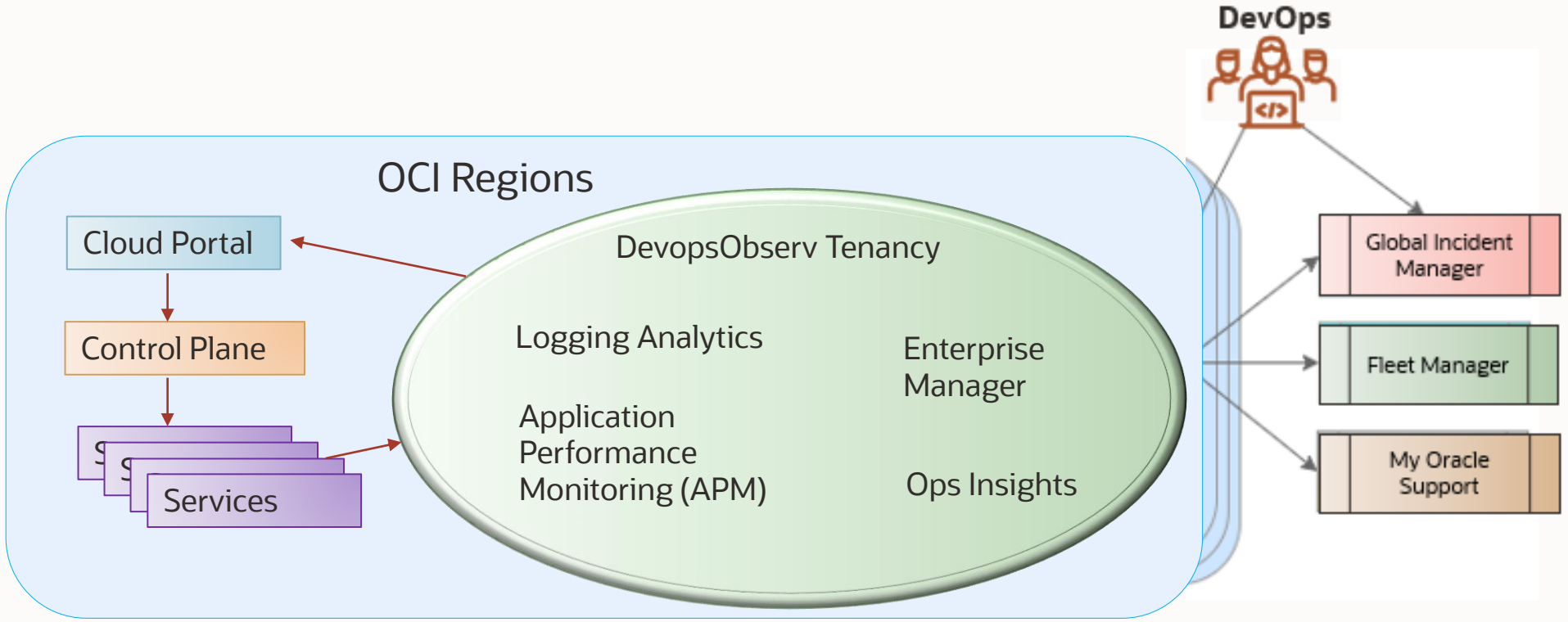
- Metrics
- Events
- Logs
- Traces
- SQL

From all clouds and on-premises

- ORACLE Cloud
- Microsoft Azure
- Google Cloud
- aws
- On-premises



Observability architecture



Logging Analytics

Oracle SaaS DevOps leverage machine learning powered Logging Analytics to triage issues in SaaS applications fleet, ensuring rapid identification and resolution.

Gain visibility into entire stack logs

Identify relevant logs for each application, microservice across the stack

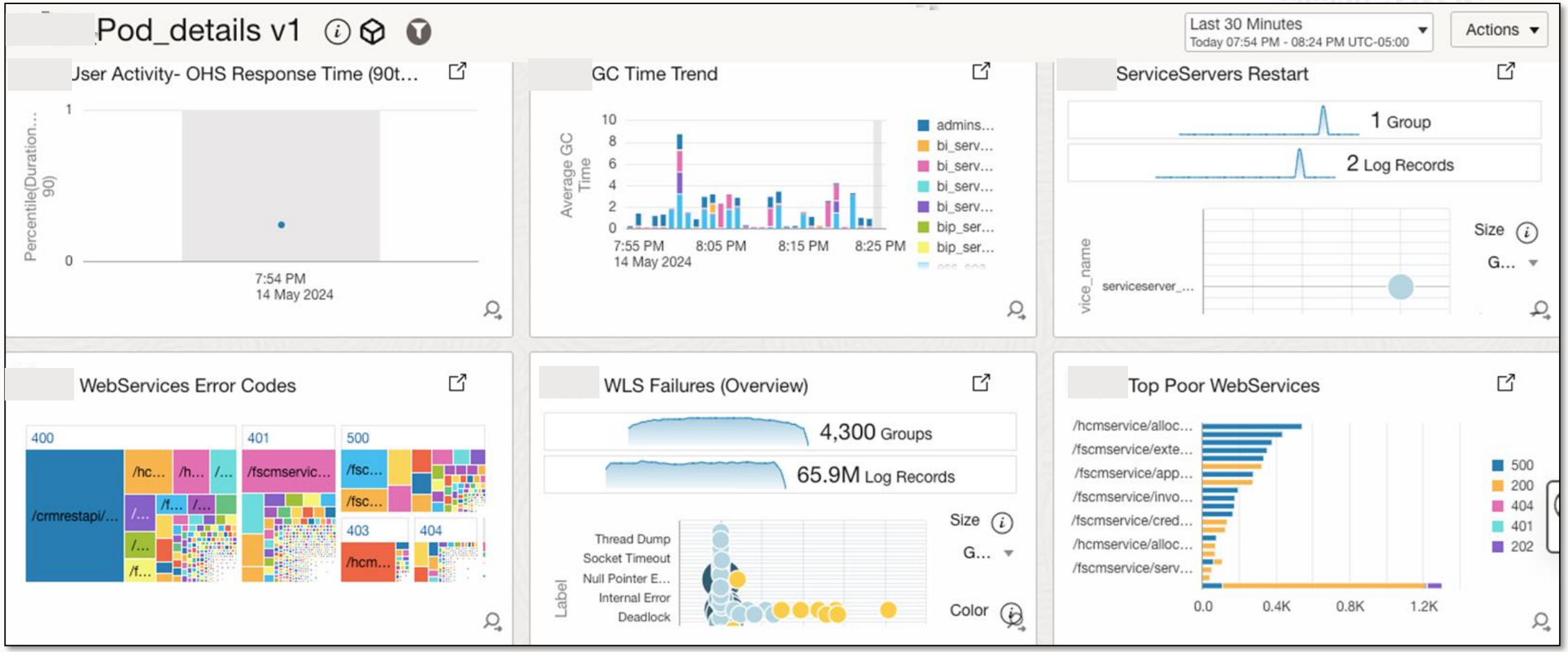
Fusion Apps Unified Model

- 192+ applications
- Non-standard log types
- 157 log types
- 250+ TB logs/day
- 247 billion log entities/day
- Database logs, Exadata logs
- WLS, OHS logs
- Custom parsers

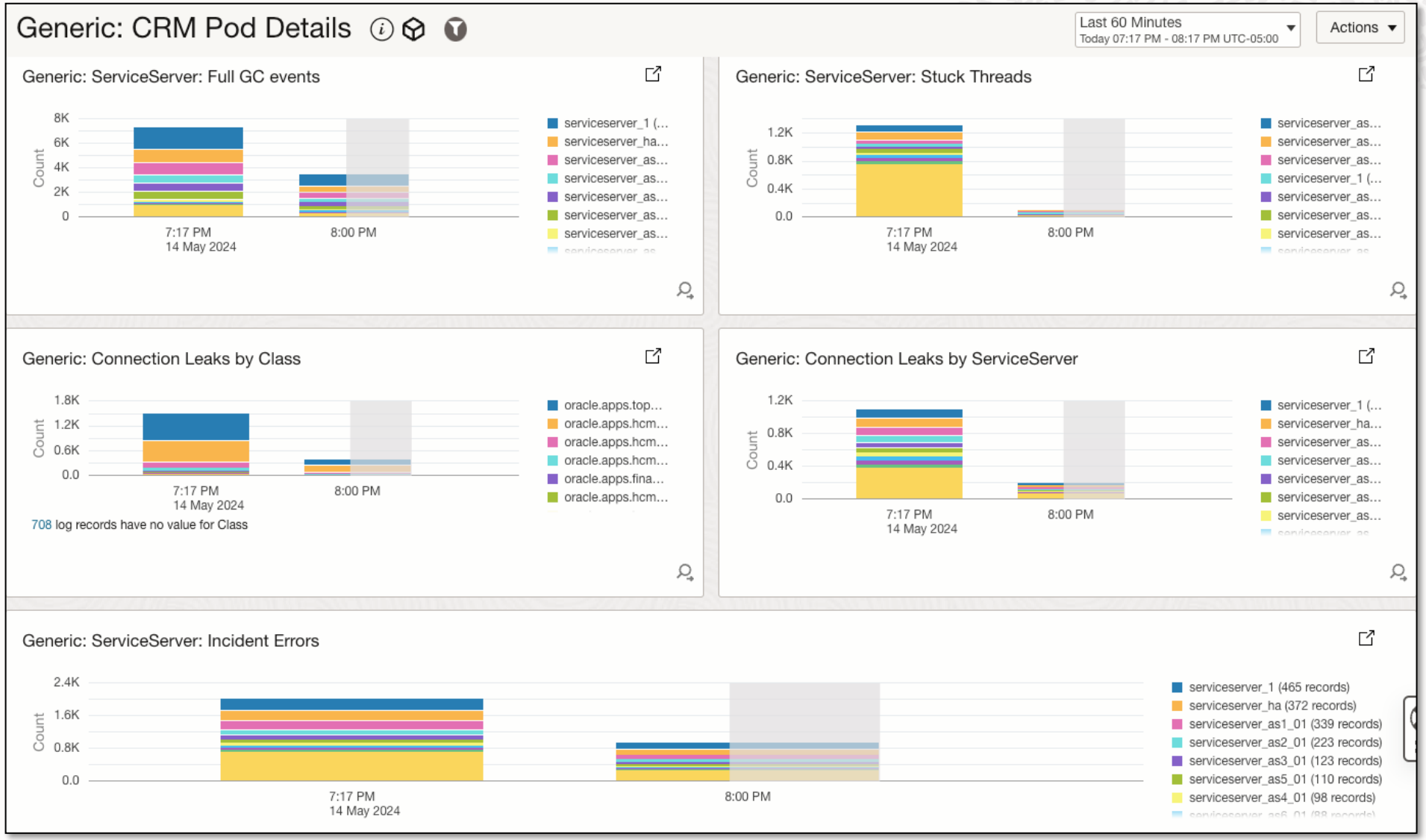
Logging Analytics deployment tip

- Use Logging Analytics extensibility features to prepare logs
  - Enrich with OCI metadata and environment details like service name, type, DB name etc.
  - Group logs by environment across all the relevant stacks - environment specific view
  - Group logs at stack level across all environments - stack specific view
  - Group Logs for shared stack ex: Exadata, cluster, ASM, Akamai, Redwood etc. into custom groups
  - Data transformation during log collection and ingestion
    - Data masking, parsers, labels, fields
  - Lookup tables for further enriching logs with business metadata (customer name, customer type, product mapping etc)
  - 400 parsers, 1820 fields/extended fields, 160 labels

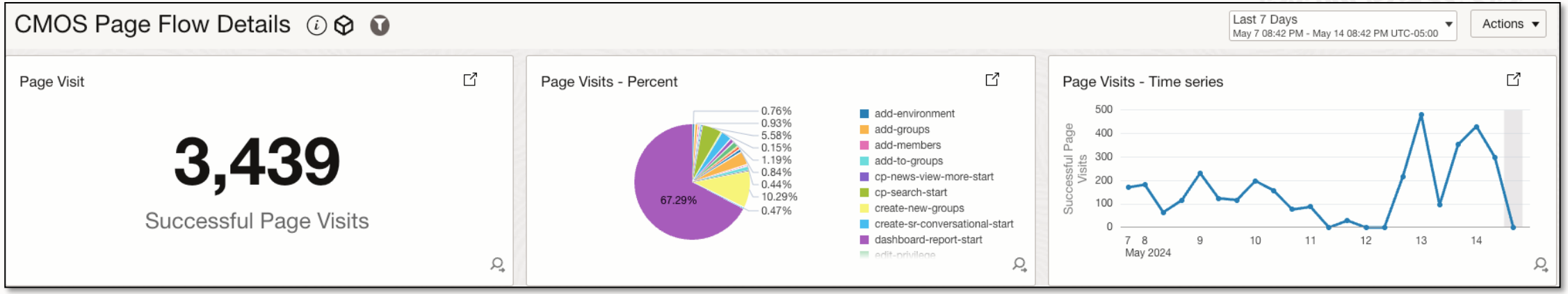
OCI Logging Analytics – use case: Examine pod health (end-to-end)



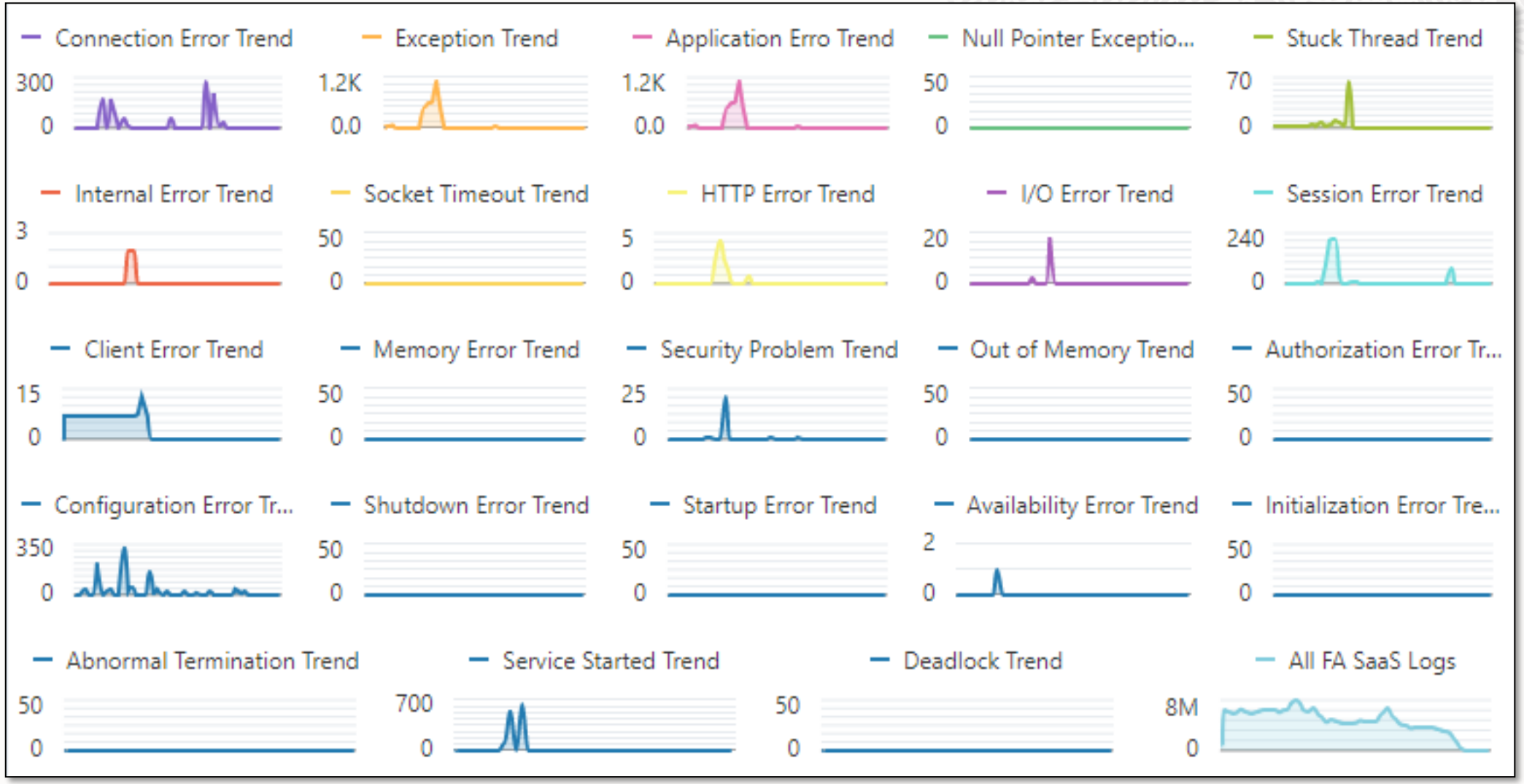
OCI LA – use case: Service-server health overview



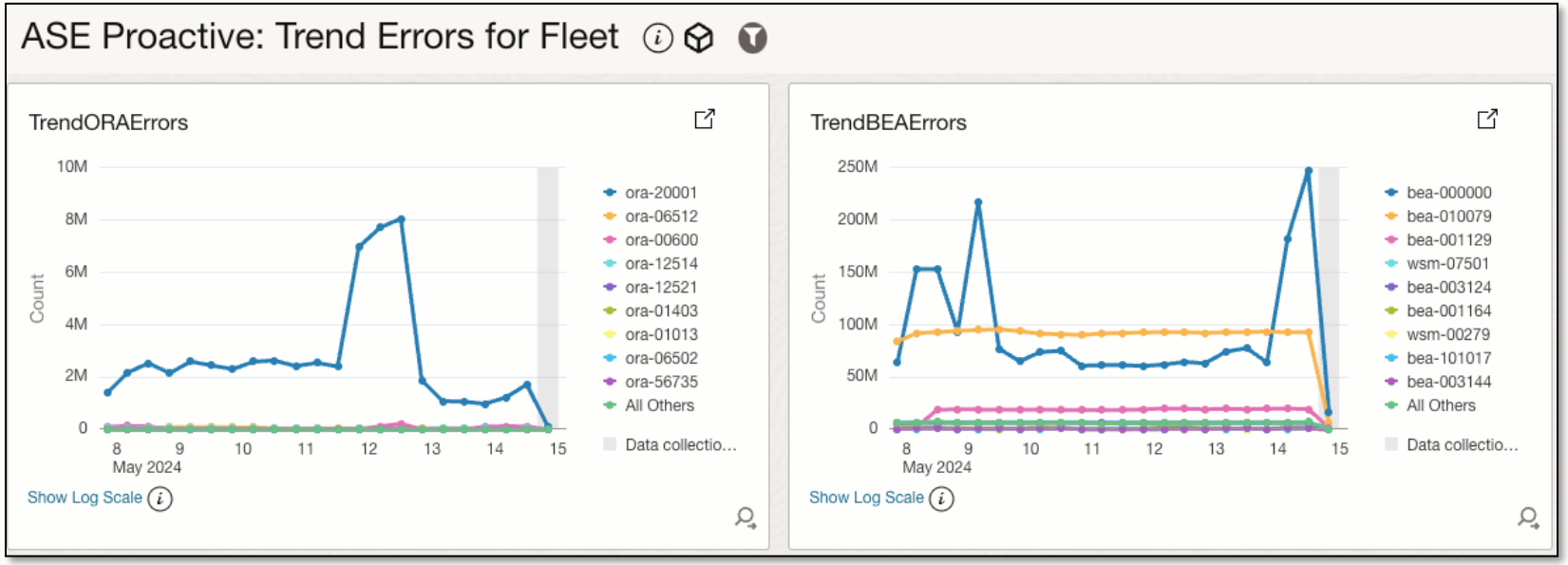
OCI LA – use case: Page views



OCI LA – use case: Analyze impact after service maintenance



OCI LA – use case: App/DB errors trend after maintenance



APM Synthetic Monitoring for service availability monitoring

Oracle SaaS DevOps leverage APM Synthetic Monitoring to continually assess service availability and proactively test latency of SaaS instances, ensuring optimal performance and uptime.

APM helps organizations monitor SLA performance

https://www.oracle.com/assets/saas-public-cloud-services-pillar-3610529.pdf

"For the purposes of calculating the Service Availability Level of the Oracle SaaS Public Cloud Services, "Available" or "Availability" means that You and Your Users are able to log in and access the OLTP or transactional portion of the Oracle SaaS Public Cloud Services. "

Testing with Synthetic Monitors

Monitor types

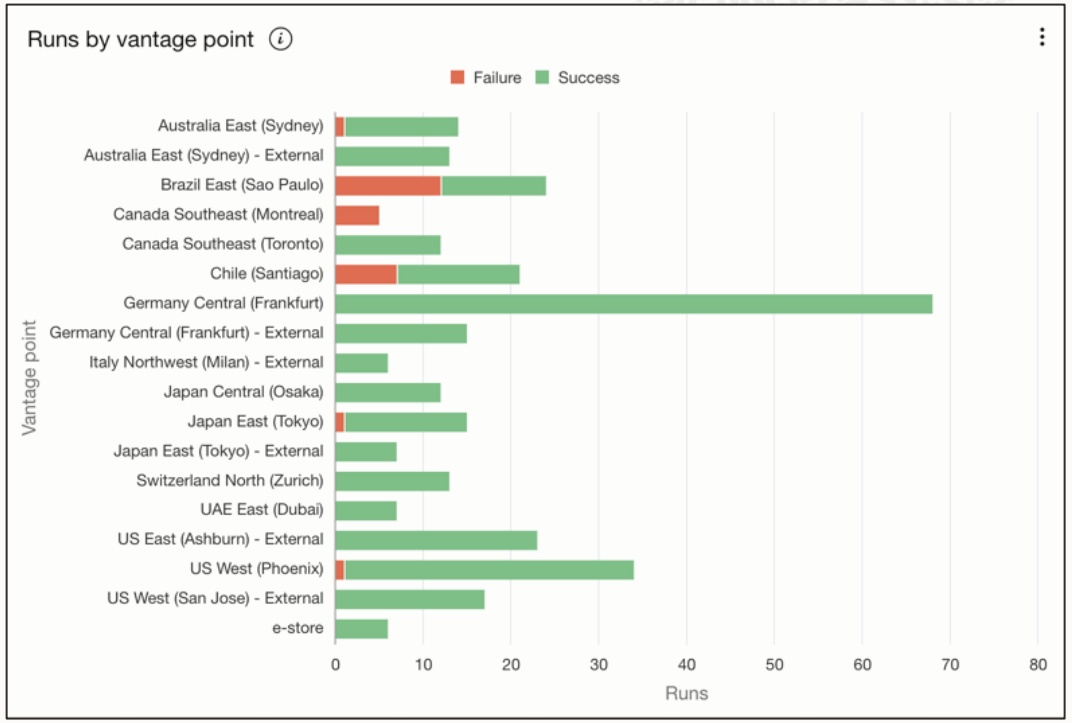
- TCP ping tests
- REST API testing
- HTTPS - browser tests
- Scripted browser Selenium tests to run login flow, module access flows etc

Execute monitors from multiple vantage points on a pre-set schedule 5 min, 10min and 30 mins

Capture response, errors, duration, snapshot images, and other monitor-specific data

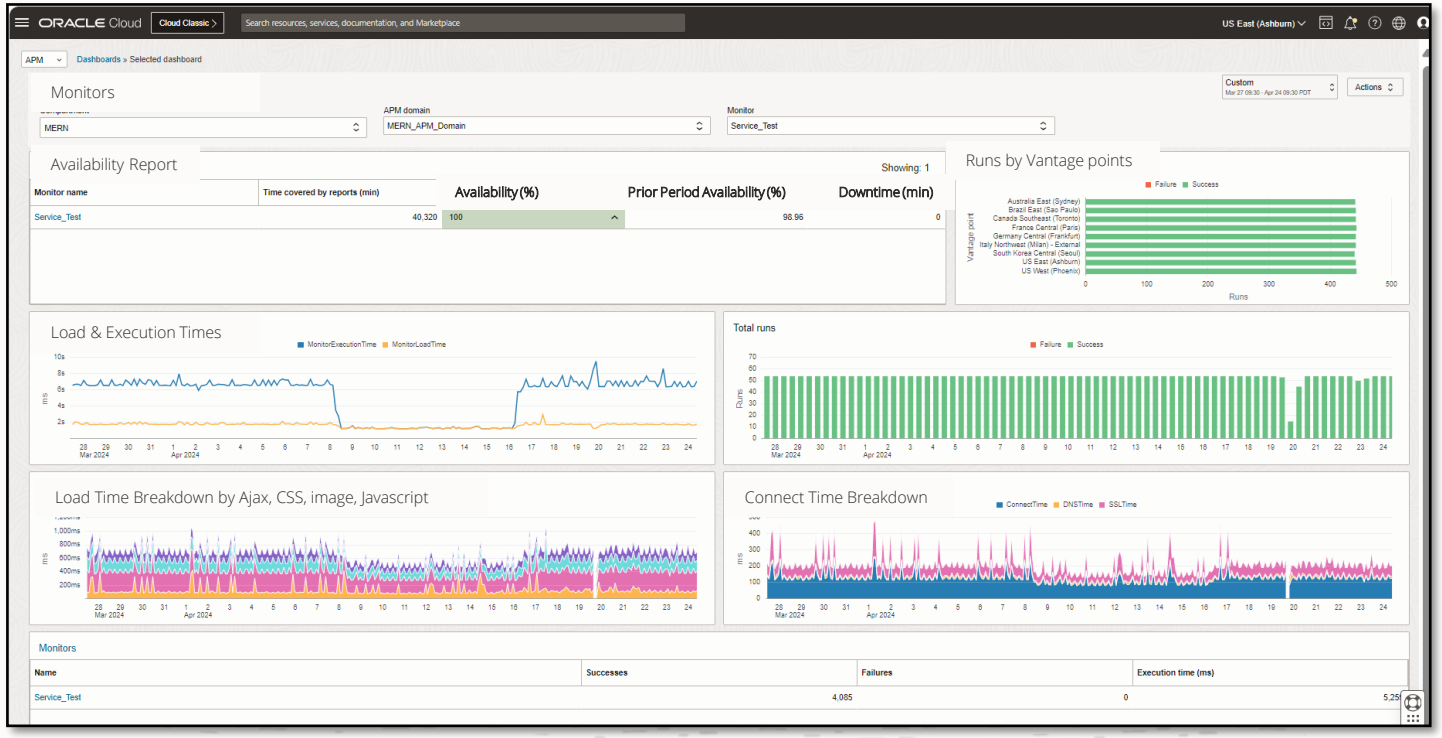
Alarms configured

- For latency > 4 seconds
- When monitor test fails in more than 2 vantage points and for 2 subsequent occurrences



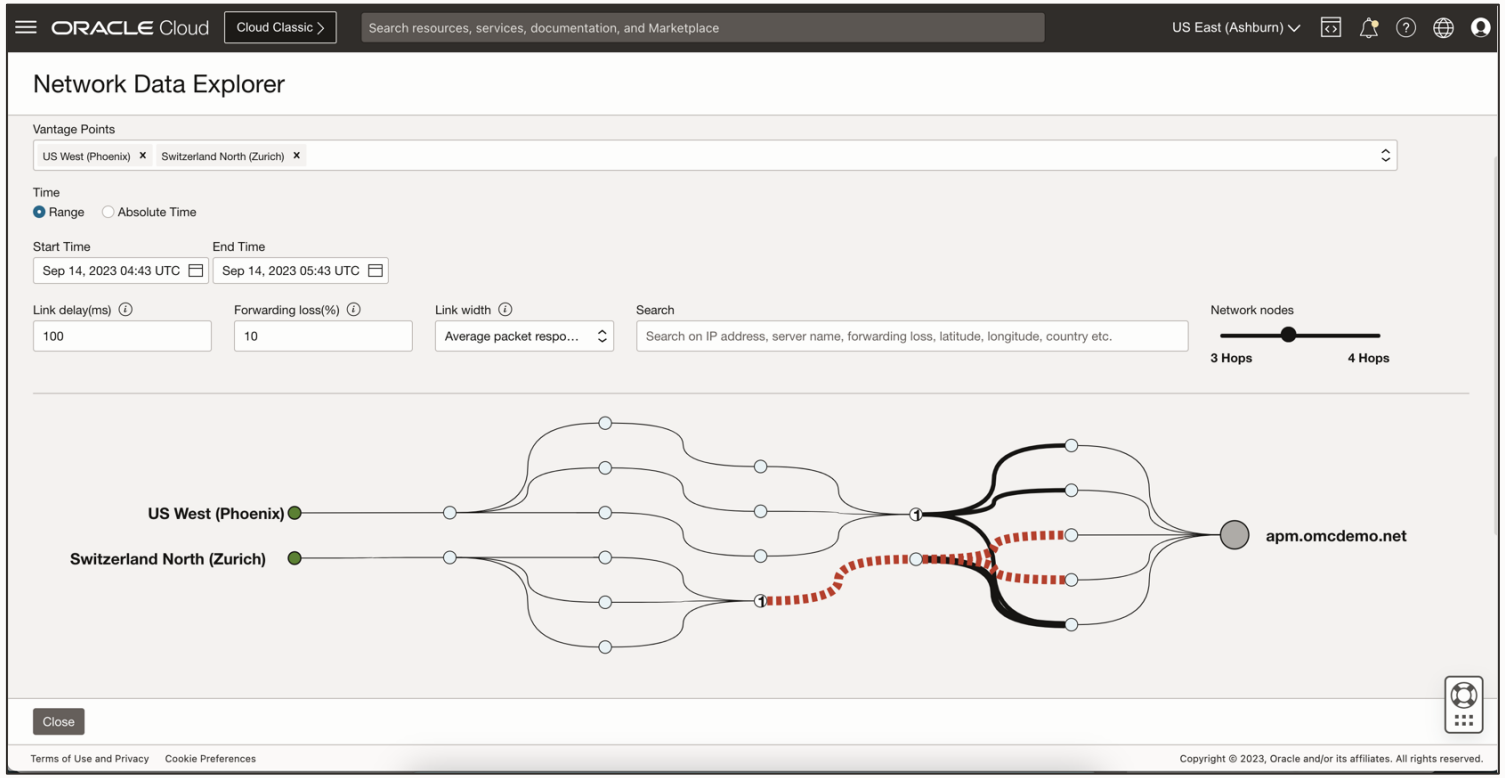
APM deployment tip

- Define availability & performance metrics
  - Availability metric
    - Failed/Succeed value for every scheduled time interval execution
    - Must be one metric
  - Service availability (SLA)
    - Percentage of the time service was available
    - Required in different time
    - Address planned downtime and exceptions
  - Performance metrics
    - % of network packet loss
    - Number of DNS lookups for each host
    - Average time for DNS lookups
    - Average time to establish connection to host
    - Average time to load request
    - Average bytes loaded in request
  - Availability % change
    - Week over week dashboard
    - Month over month dashboard



APM use case: Gain insight to network path latency and packet loss

- Gain insight to network path latency and packet loss
  - Using Network Data Explorer
  - Compare multiple synthetic monitor runs/executions
  - Identify number of hops in each run
  - Identify slow connections
  - Identify where packet loss occurs
  - Check if a particular ISP is involved



Ops Insights

Oracle SaaS DevOps leverage Ops Insights for Database and Exadata capacity planning and to identify outliers in the database fleet using SQL Insights, ADDM Spotlight, and AWR HUB.

SaaS Ops Insights use cases

- Monitor resource capacity and performance of Oracle Database fleet and Exadata
- Fleet analytics to enhance stability and better customer experience
  - Identify outlier databases by plans changes or degraded SQLs in the DB fleet with drill down from fleet to database to SQL through SQL Insights . Sqlstats data is collected every 30 mins for top 2000 SQLs from each database and curated by SQL-id with average latency and by SQL plan changes.
  - Define strategic database performance improvements plans using recommendations of ADDM Spotlight insights factoring by wait time and DB-time.
  - Gather AWR (Automatic Workload Repository) snapshots from multiple Oracle Autonomous Databases every 20 minutes and store centrally.
  - SQL performance analysis across SaaS-fleet using ASH data stored for 25 months in AWR Hub
- Weekly Capacity Planning News Report for host , database and Exadata
- Weekly News Report of fleet-wide SQL Insights highlighting SQL plan changes and performance degradation of SQLs

Key takeaways

- Enhance your observability strategy by integrating APM, Logging Analytics, Ops Insights and Enterprise Manager
- Identify different personas and the observability services and resources they will need to access
- Identify data parsing/transformation/enrichment needs based on use cases
- Review with application owners and security teams on masking sensitive data
- Measure Service Availability, SLA and performance using APM Synthetic Monitors
- Tenancy and region architecture - plan for future growth

Q&A

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