Domain: GCP Observability

Objective	Implement a comprehensive Observability solution for GCP platform and workloads. As a cloud engineer, operations, or site reliability engineer, I want to implement observability tools for visibility across our GCP infrastructure to ensure that I can monitor, troubleshoot, and optimize the performance and health of my platform and application workloads. **Consideration:** - Ability to collect and display metrics and logs for all GCP hosted applications, infrastructure, and services. - This has a dependency on various service enablement teams for various GCP services and infrastructure. - Capability to build customized dashboards with real-time visualizations for key performance indicators for Cloud Operations and Mission Control. - Support for configuration of alerts based on thresholds for key SLOs and integrate alert pipeline with Citi infrastructure and service management system. - Support for end-to-end tracing of requests across application and infrastructure boundaries. - Ability to correlate events from different services for faster issue resolution and root cause analysis
Acceptance Criteria	- Logs from all GCP services are collected in a central observability solution. - I can search, filter, and analyze logs based on severity, labels, and time ranges. - Metrics from all GCP resources are available and displayed on custom dashboards. - Alerts are triggered when critical thresholds are crossed (e.g., CPU > 80%, memory usage > 70%). - Alerts are sent to incident management tools like ServiceNow or PagerDuty. - Traces are automatically collected for requests across multiple services. - Latency and performance bottlenecks can be visualized in the Cloud Trace console. - I can drill down into specific traces to identify the service or request causing delays. - Cloud Error Reporting aggregates similar errors from application logs. - Notifications are sent when a threshold of recurring errors is detected. - Errors are classified by service and severity for prioritization. - Uptime checks are configured for all critical services and APIs. - Alerts are generated when services become unavailable or exceed latency thresholds. - Reports on service uptime and availability are generated and viewable in the Cloud Monitoring dashboard - SLOs are defined based on key metrics like uptime, response times, and error rates. - SLO dashboards are set up, showing real-time and historical performance against targets. - Alerts are sent when SLOs are at risk of being breached - Retention policies should be set for different types of logs (e.g., error logs are retained for 30 days, debug logs for 7 days). - Cost reports for Cloud Logging and Cloud Monitoring are generated. - Log storage is optimized by exporting long-term logs to Cloud Storage.

	- All resource and service limits are accessible from single view for all GCP services across different projects. - I can get notification of an impending service limit breach. - On-premises infrastructure is integrated into Google Cloud Monitoring and Logging. - A unified dashboard displays metrics, logs, and performance data from both GCP and on-prem environments. - Alerts are set for both cloud and on-prem workloads, enabling centralized incident management. - VPC flow data is integrated into Google Cloud Monitoring and Logging. - A unified dashboard displaying network traffic data for GCP VPCs across all projects.
Stakeholders	Cloud Operations, Cloud SRE, EAP, XCS and VDI team.
Resourcing	4 GCP Cloud Engineers
Milestones	Dev Milestone 1 – Dec 2024 - Completion of GCP alert pipeline - Integration with Netcool & ServiceNow - Certification of Cloud Trace & Cloud Error Reporting Dev Milestone 2 – Feb 2025 - Centralized logging across all GCP projects per environment per initiative - Design and deployment of metrics scopes for all GCP projects per environment per initiative. - Integration of Cloud Trace & Cloud Error reporting into project vending process Dev Milestone 3 – Mar 2025 - Unified Observability for dashboards for GKE based workloads (minus traces). - Unified Observability for dashboards for GCE based workloads (minus traces). PROD – Apr 2025 Post PROD - Service and component event tracing across all certified GCP services. - Self Service custom resources to support service monitors
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