Google Stackdriver

Google Stackdriver provides Monitoring, logging, and diagnostics for applications on Cloud Platform and AWS.

Features

- Monitor Google Cloud Platform and AWS.
- Find and fix issues fast.
- Full-stack insights.
- Native Google integration.
- Metrics explorer enables monitoring resources without creating charts.

Stackdriver Organization

- Managed under one account.
- Hosted under one Project.
- Monitor many Projects.
- Consider making a Project purely to host the Stackdriver account.

Partner Integrations

- Partners with:
  - BMC
  - Splunk
  - PagerDuty
  - logentries
  - Tenable Network Security
  - Atlassian Hipchat
  - Netskope

Monitoring

- Create Dashboards, Charts, and Alerts.
- Uptime and health checks.
- Monitoring agent installed into VMs.
- Custom metrics can be added to your code.

Uptime Monitoring

Condition => Incident => Notification

- Conditions can be based on Metrics or Conditionals.
- Notifications include:
  - Email.
  - SMS.
  - Webhook.
  - 3rd Party.
  - PagerDuty, HipChat, Campfire, Slack, etc.

Groups

- Aggregate metrics across a set of machines.
  - Dynamically defined.
  - Useful for high change environments.
- Separate production from dev.
- Filter GKE data by name and custom tags for cluster.

Alerts

- Alert on symptoms not causes (eg: monitor failing queries not databases going down).
- Avoid a single point of failure in your alert strategy.
- Customize alerts.
- Avoid noise.

Logging

- Platform, system, and application logs.
  - Public API to write to logs.
  - 30 day retention with option to transfer to Cloud Storage.
- Search, view, and filter.
- Log-based metrics.
- Monitoring alerts can be set on log events.
- Data can be exported to BigQuery, Cloud Storage, Cloud Pub/Sub, or Custom.
- Export only applies to new logs after it is configured.

Note: Agent needs to be installed for application logs.

Error Reporting

- Aggregate and display errors for running cloud services including:
  - Error notifications.
  - Error dashboards.
  - Code including Java, Python, JavaScript, Ruby, C#, PHP, and Go.

Tracing

- Near real time.
- Latency reporting including data from:
  - Google App Engine.
  - Google HTTP(S) load balancers.
  - Applications instrumented with Stackdriver Trace SDKs.
- Per-URL latency sampling.

Debugging

- Inspect an application without stopping it or slowing it down significantly.
- Cloud App Engine Standard or Flexible.
- Java, Python, or Go.
- Debug snapshots (capture call stack and local variables).
- Debug logpoints (inject logging into a service without stopping it).