Monitoring

AWS Resources

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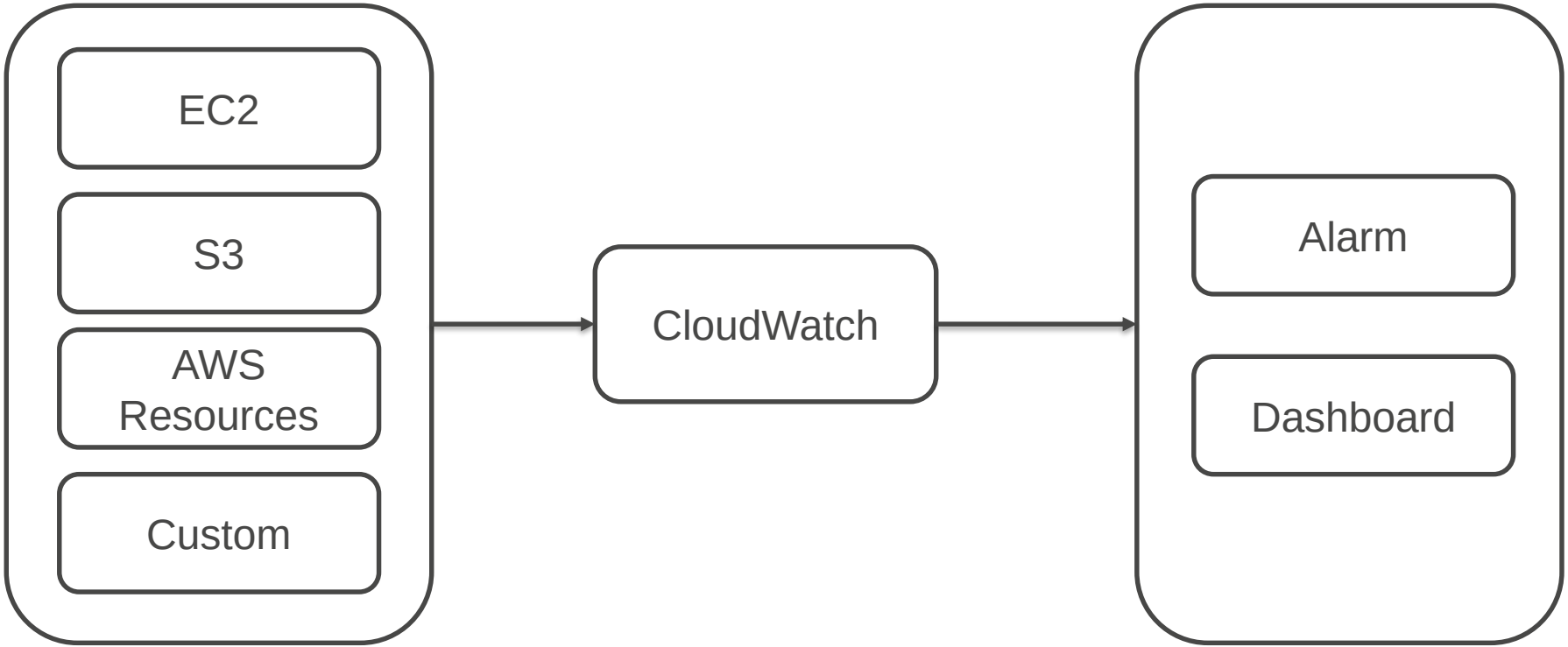
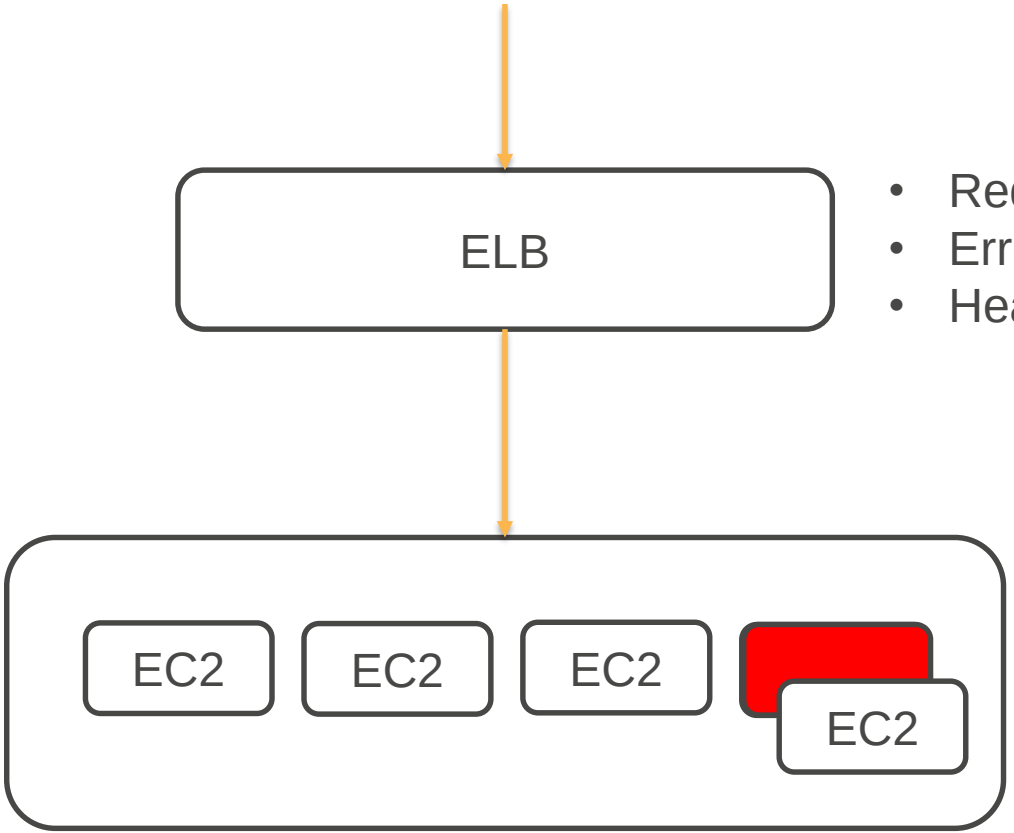
Monitoring

Service	Purpose	Use
CloudWatch	Monitoring	Monitor your resources Configure Alarms to alert Take automated action
CloudWatch Log	Monitor Logs	Monitor log files Publish Custom metrics from log file
CloudWatch Events	Real-time Changes	Detect and act Automated Code Build, Scheduled EBS Snapshots
CloudTrail	Audit Trail	Logs all activities and who performed those actions Useful for investigation, compliance monitoring

CloudWatch



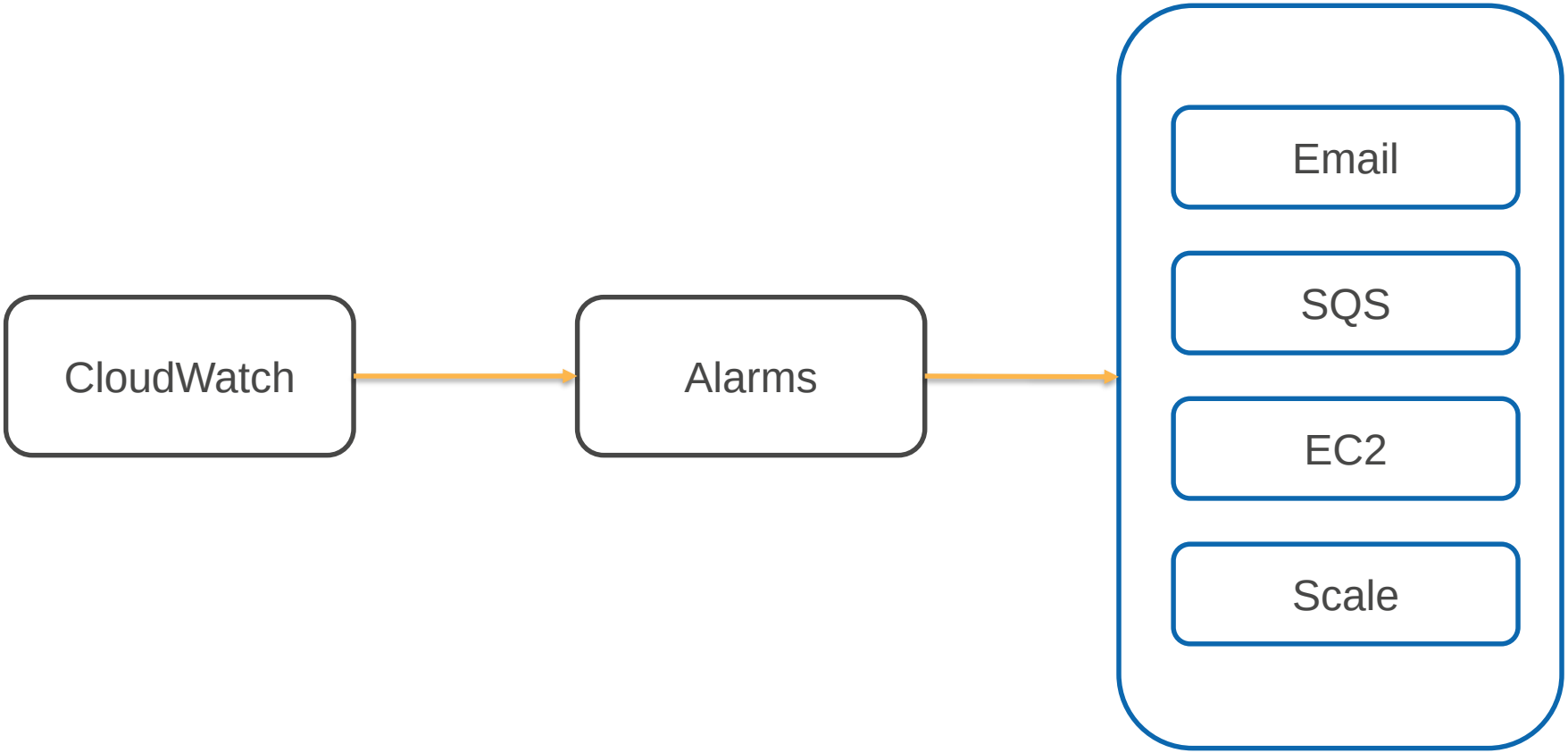
Elastic Load Balancer and EC2



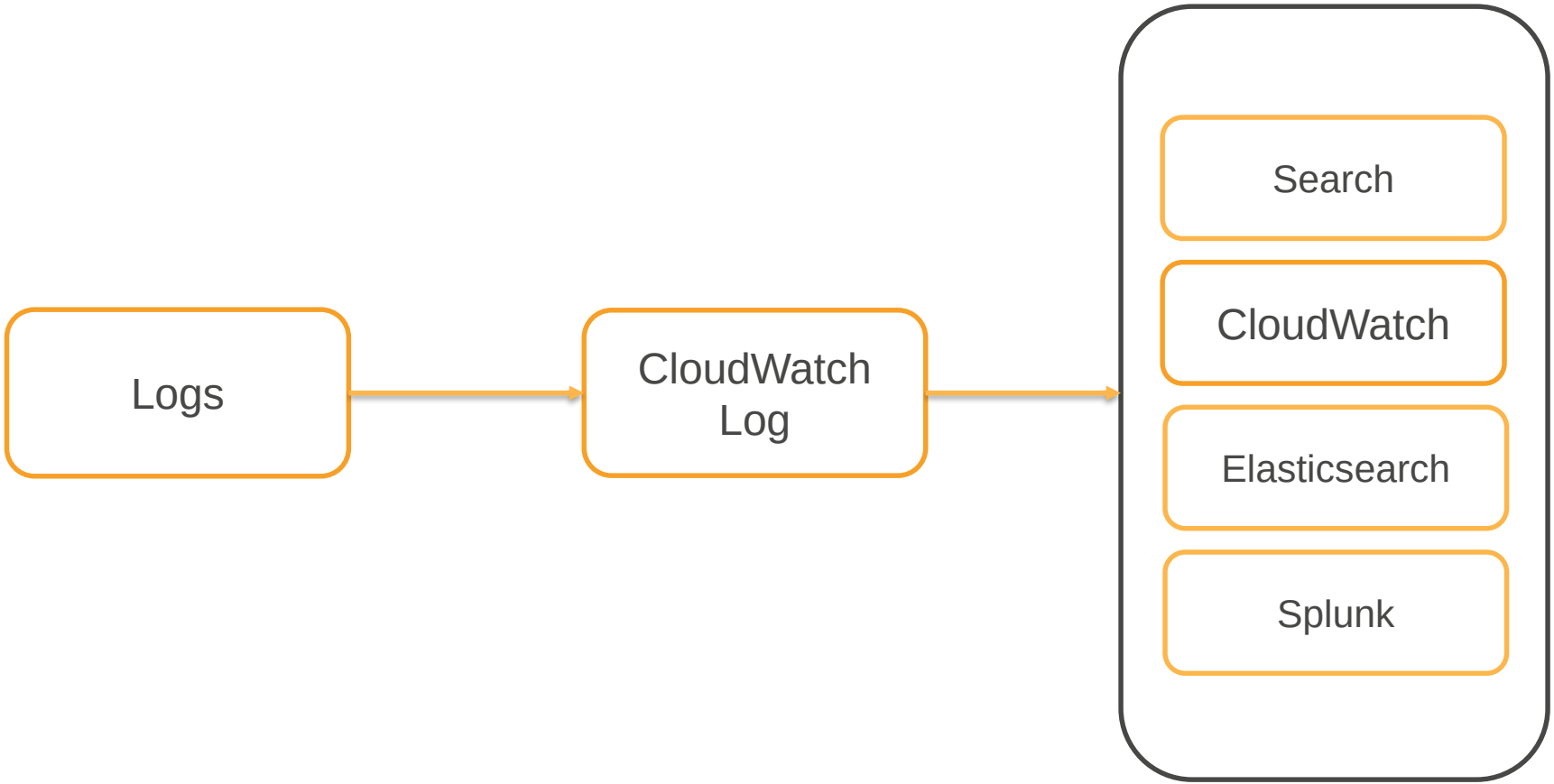
- Request Count
- Errors
- Healthy Host Count

- CPU %
- Network I/O
- Memory (using Agent)
- Disk (using Agent)
- Instance Status Check
- System Status Check

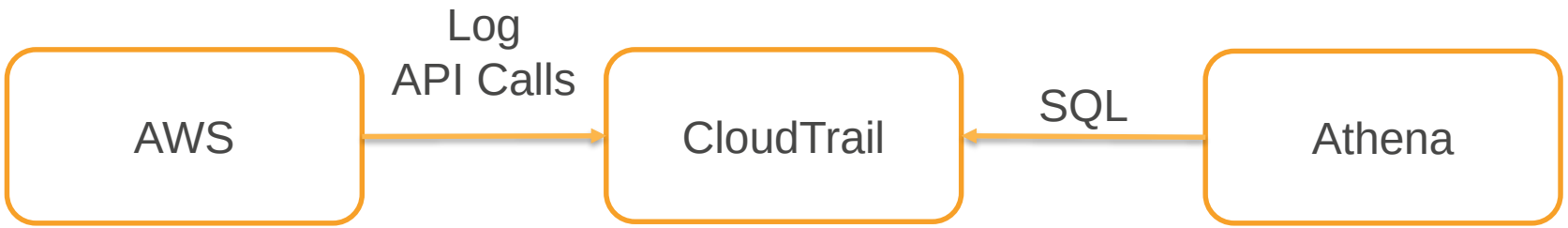
CloudWatch Alarms



CloudWatch Log – Consolidate Logs and Monitor

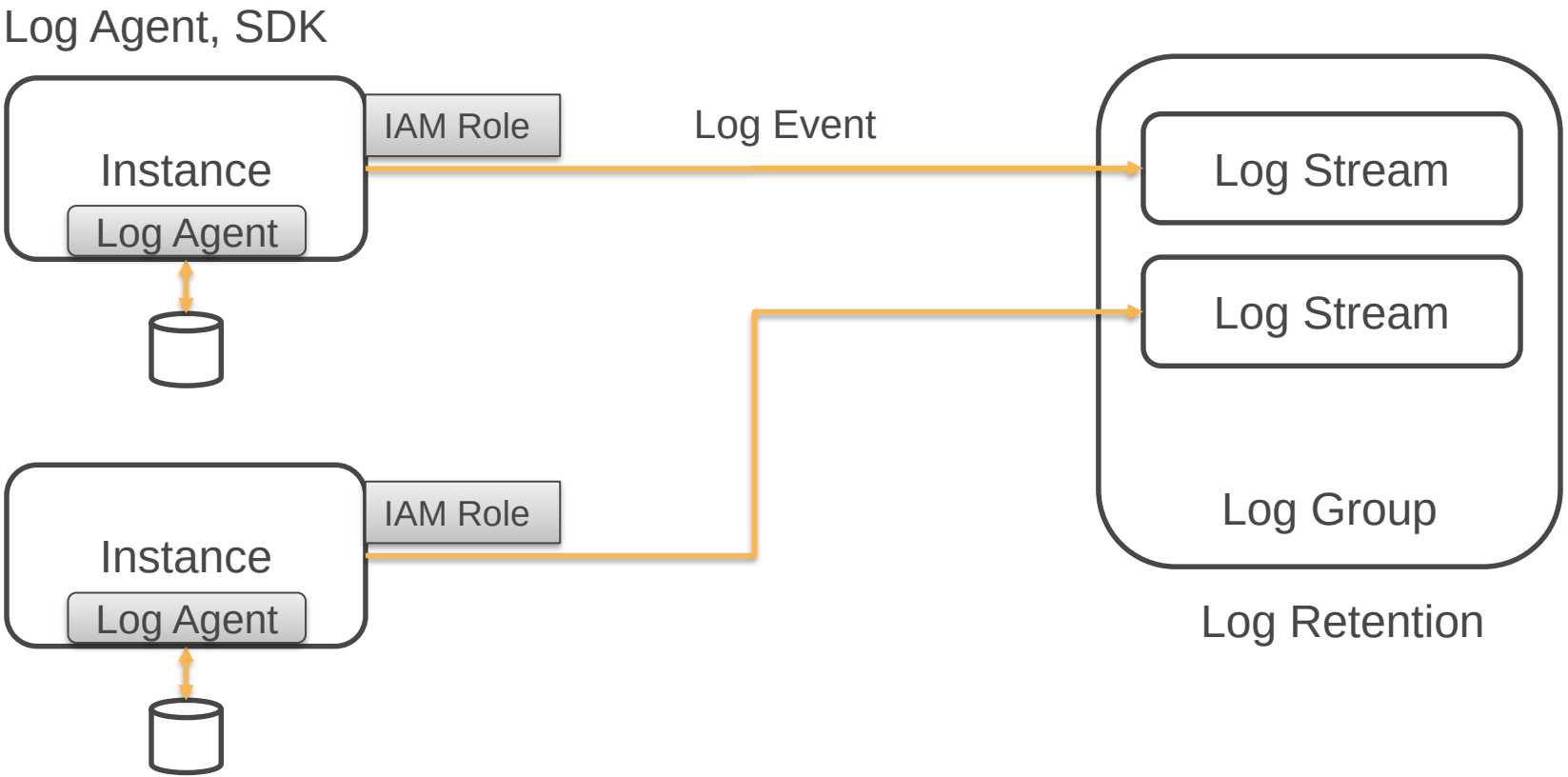


CloudTrail – Audit Trail of all API Activities

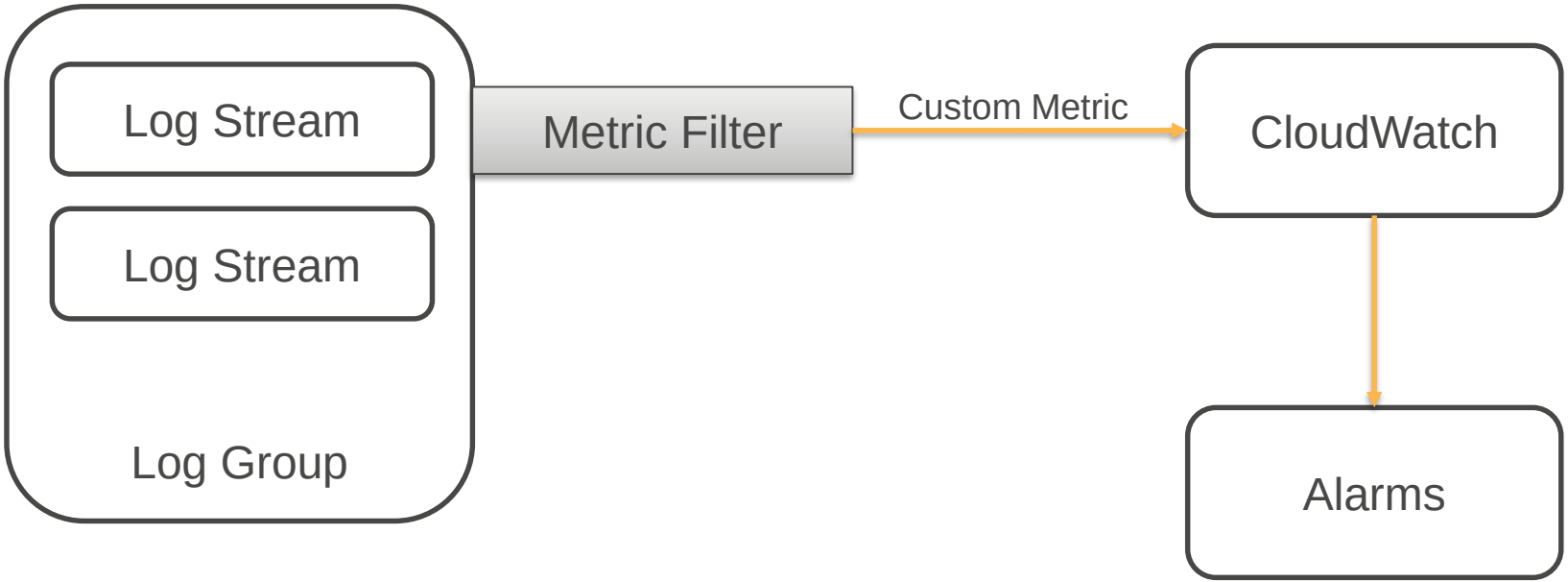


CloudWatch Logs

CloudWatch Log Architecture



CloudWatch Log Metric Filter



CloudWatch Logs

- Custom application and System log file monitoring capability
    - Monitor for specific terms, count of occurrence
    - Monitor logs from EC2 instance in Real-time
    - Monitor CloudTrail logs for specific events
    - Send to CloudWatch metric when match found
- CloudWatch Log Agent collects log from host and sends to log service – supports rotated and non-rotated files
- Archive Log data to highly durable storage with log retention setting and access when you need it

CloudWatch Terminologies

- Log Events
- Log Streams
- Log Groups
- Metric Filter
- Retention Settings

Log Events

- Activity recorded by an application or system
  - TimeStamp when event occured
  - Event Message (UTF8 encoded)
- Logical record
- Example: Web server events, CloudTrail events

Log Stream

- Log Streams – Sequence of log events from the same source (application instance, resource)
- Example: Webserver log files on a specific host

Log Groups

- Group of Log Streams
- Shares the same retention, monitoring, and access control settings
- Each log stream belongs to one Log Group
- Fleet of servers generating same type of log

Metric Filters

- Metric Filters convert log file events to CloudWatch data points
- Specify patterns to look for
- Match Terms in: Text, JSON, Space-delimited Log Events
- Assigned to a Log Group
- Log Group can contain one or more metric filters

Retention Settings

- Specify retention period for events kept in CloudWatch logs
- Expired log events are deleted automatically
- Retention is applied to a Log Group which is in-turn applied to their log streams

Lab – Stop Idle Instance

Monitor CPU Utilization

Create Alarm

Stop the instance

90th percentile - CPU Utilization is less than 10% for 15 minutes

Lab – CloudWatch Logs

Log Group

Log Stream

Custom Metrics

Chandra Lingam

50,000+ Students

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