### **GKE Sonnet++ Postmortem (incident #465)**

#### **Incident Summary**

* **Date and Time of Incident**: June 13, 2024, 10:00 AM - 11:30 AM (UTC)
* **Impacted Services**: Web application running on Google Kubernetes Engine (GKE)
* **Duration of Impact**: 1 hour 30 minutes
* **Root Cause**: Pod misconfiguration leading to application crash

#### **Incident Timeline**

* **Time of Detection**: 10:00 AM
  + Automated alert triggered due to increased error rates.
* **Time of Notification**: 10:02 AM
  + Incident response team notified via email and Slack.
* **Time of Acknowledgment**: 10:05 AM
  + Incident acknowledged by on-call engineer.
* **Time of Initial Investigation**: 10:10 AM
  + Logs and metrics reviewed to identify the cause of the error.
* **Time of Root Cause Identification**: 10:30 AM
  + Identified pod misconfiguration as the root cause.
* **Time of Resolution**: 11:00 AM
  + Applied correct configuration and restarted affected pods.
* **Time of Full Service Restoration**: 11:30 AM
  + Verified that the application was functioning normally.

#### **Resolution Steps**

1. **Investigation**:
   * Reviewed Cloud Logging for error messages and stack traces.
   * Identified configuration error in pod specifications.
   * **Log entry**: Error: Invalid memory limit configuration for pod nginx
2. **Mitigation**:
   * Corrected the pod configuration in the deployment YAML file.
   * Applied the updated configuration.
3. **Verification**:
   * Monitored the application to ensure normal operation.
   * Verified metrics in Cloud Monitoring showed normal levels of traffic and error rates.

#### **Action Items**

1. **Configuration Review**:
   * Conduct a thorough review of all pod configurations to ensure correctness.
   * **Owner**: DevOps Engineer
   * **Deadline**: June 20, 2024
2. **Automated Configuration Validation**:
   * Implement automated validation checks for pod configurations using CI/CD pipelines.
   * **Owner**: CI/CD Engineer
   * **Deadline**: June 25, 2024
3. **Incident Response Training**:
   * Conduct a training session for the incident response team to improve detection and resolution times.
   * **Owner**: Incident Manager
   * **Deadline**: June 30, 2024
4. **Documentation Update**:
   * Update incident response documentation to include lessons learned and new procedures.
   * **Owner**: Technical Writer
   * **Deadline**: June 22, 2024

### **Post Mortem Meeting Notes**

**Date of Meeting**: June 14, 2024

**Attendees**:

* Incident Manager
* On-call Engineer
* DevOps Engineer
* CI/CD Engineer
* Technical Writer

**Discussion Points**:

* **What Went Well**:
  + Prompt detection and notification of the incident.
  + Quick identification of the root cause.
  + Effective communication within the incident response team.
* **Areas for Improvement**:
  + Initial misconfiguration was not caught in earlier stages.
  + Lack of automated checks for configuration errors.
  + Need for more comprehensive incident response training.

**Action Items Review**:

* Assigned owners and deadlines for all identified action items.
* Agreed to track progress in the next reliability review meeting.