Project 1: Uptime Kuma - Availability Monitoring

Grafana Cloud Dashboard for Website & API Uptime Tracking

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Project Date: October 24, 2025
Grafana Instance: mgkvenkatesh3.grafana.net
Dashboard Name: Uptime Monitoring Dashboard
Status: Completed

1. Project Overview

This project implements a comprehensive uptime monitoring solution using Grafana Cloud, Prometheus, and Uptime Kuma. The dashboard provides real-time visibility into website and API availability, response times, and SSL certificate health.

Project Objectives

- Monitor website and API endpoints for uptime/downtime status
- Track and visualize response times for performance analysis
- Monitor SSL certificate expiration dates
- Generate availability reports for stakeholder communication
- Provide at-a-glance status overview of all monitored services

2. Technologies & Infrastructure

Component	URL/Details	Purpose
Grafana Cloud	mgkvenkatesh3.grafana.net	Dashboard visualization platform
Prometheus	https://promuk.tarcin.in	Metrics collection and storage
Uptime Kuma	https://uptime.tarcin.in	Uptime monitoring service

3. Dashboard Panels Configuration

Panel 1: Monitor Summary

Purpose: **Provides quick statistics showing total monitors UP vs DOWN**

Configuration Details:

- **Visualization Type:** Stat (Horizontal)
- **Queries:**
    - Query A: `count(monitor_status == 1)` - Shows monitors UP
    - Query B: `count(monitor_status == 0)` - Shows monitors DOWN

- **Color Scheme:** Green for UP, Red for DOWN
- **Display Mode:** Background color for easy visual identification

Panel 2: SSL Certificate Expiry (Days Remaining)

Purpose: Track SSL certificate expiration to prevent service disruptions

Configuration Details

- **Visualization Type:** Table
- **Query:** `monitor_cert_days_remaining`
- **Thresholds:**
    - Red: 0-7 days (Critical - Immediate action required)
    - Orange: 7-30 days (Warning - Plan renewal)
    - Green: 30+ days (Healthy)
- **Display Fields:** Monitor name, URL, days remaining

Panel 3: Response Time (ms)

Purpose: Monitor website/API performance and identify latency issues

Configuration Details:

- **Visualization Type:** Time Series (Line Graph)
- **Query:** `monitor_response_time`
- **Unit:** Milliseconds (ms)
- **Legend Format:** {{monitor_name}}
- **Time Range:** Last 6 hours (configurable)
- **Features:** Multi-line graph showing all monitors simultaneously

Panel 4: Monitor Status Overview

Purpose: Real-time status display for all monitored services

Configuration Details:

- **Visualization Type:** Stat (Grid layout)
- **Query:** `monitor_status`
- **Value Mappings:**
    - 1 → "UP" (Green)
    - 0 → "DOWN" (Red)
- **Display:** Shows monitor name and URL
- **Layout:** Grid view for easy scanning

4. Monitored Services

#	Service Name	URL	Type
1	Tarcin Official Website	https://tarcin.in	HTTP(S)
2	Clickhouse	https://clickhouse.tarcin.in	HTTP(S)
3	Grafana	https://grafana.tarcin.in	HTTP(S)
4	Grafana Dev	https://grafana-dev.tarcin.in	HTTP(S)
5	Proxmox	https://myserver.tarcinrobotic.in:8006	HTTP(S)
6	Sprouted	https://velammal.sprouted.in	HTTP(S)
7	Grafana-2	https://grafana.tarcin.in	HTTP(S)

5. Key Metrics & Queries

Primary Prometheus Metrics

```
# Monitor Status (1 = UP, 0 = DOWN) monitor_status # Response Time in
Milliseconds monitor_response_time # SSL Certificate Days Remaining
monitor_cert_days_remaining # SSL Certificate Validity
monitor_cert_is_valid # Count of UP Monitors count(monitor_status == 1) #
Count of DOWN Monitors count(monitor_status == 0) # Average Uptime
Percentage (24 hours) avg_over_time(monitor_status[24h]) * 100
```

6. Dashboard Features & Capabilities

Real-Time Monitoring

- Auto-refresh capability (configurable: 5s, 30s, 1m, 5m)
- Instant status updates when services go up or down
- Live response time tracking

Time Range Selection

- Flexible time windows: 5 minutes to 90 days
- Custom date range selection
- Quick presets: Last 6 hours, 24 hours, 7 days, 30 days

Visual Indicators

- Color-coded status: Green (UP), Red (DOWN)
- SSL certificate expiry warnings
- Performance graphs with spike detection

Reporting Capabilities

- SLA/uptime percentage calculations
- Historical trend analysis
- Exportable dashboard for stakeholders

7. Setup & Configuration Steps

Step 1: Data Source Configuration

1. Navigate to Connections → Data sources in Grafana
2. Click "Add new data source"
3. Select "Prometheus" from the list
4. Configure settings:
    - Name: Uptime Kuma Prometheus
    - URL: https://promuk.tarcin.in
    - HTTP Method: POST
    - Series limit: 40000
5. Click "Save & Test" to verify connection

Step 2: Dashboard Creation

1. Go to Dashboards → New Dashboard
2. Add visualization panels as described in Section 3
3. Configure each panel with appropriate queries
4. Set time ranges and refresh intervals
5. Arrange panels in logical layout
6. Save dashboard with descriptive name

Step 3: Dashboard Optimization

1. Set default time range to "Last 6 hours"
2. Enable auto-refresh (recommended: 1 minute)
3. Configure panel descriptions for clarity
4. Add dashboard tags for organization
5. Export JSON for backup

8. Conclusion

This project successfully demonstrates the implementation of a comprehensive uptime monitoring solution using Grafana Cloud, Prometheus, and Uptime Kuma. The dashboard provides real-time

visibility into service availability, performance metrics, and SSL certificate health across 7 monitored endpoints.

All dashboard panels have been correctly configured with appropriate queries, visualizations, and thresholds. The current infrastructure connectivity issue (Cloudflare Tunnel Error 1033) is external to the dashboard configuration and will be resolved by the infrastructure team.

The project deliverables include a fully functional dashboard design, comprehensive documentation, and exportable configuration files for backup and sharing purposes.

Project Status: Successfully completed with production-ready dashboard configuration pending infrastructure resolution.

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Grafana Monitoring Projects Series