splunk>

CASE STUDY

# Graphmasters Ensures Performance and Accuracy of Navigation App

graphmasters

## Executive summary

Graphmasters is the emerging company behind Nunav, the navigation app that optimizes your route every 15 seconds and gives you the best and most accurate arrival time. The Distributed Swarm Intelligence System behind the app saves users time on each commute. Graphmasters needed a solution that would deliver real-time insights into app performance and traffic feed accuracy, to ensure the best possible experience for users. Since deploying Splunk Enterprise, the company has seen benefits including:

- Reduced downtime through real-time insights into app performance
- Monitoring of KPIs to ensure SLAs are met
- Improved accuracy by correlating traffic feeds

## Why Splunk

Right from the outset of developing the Nunav app, Graphmasters knew that it would need the ability to process a high throughput of machine data at scale, in real time. An additional challenge for the Graphmasters team was that they needed to analyze data not only from the app itself, but also Internet of Things (IoT) data from third-party traffic feeds. Insights from this data would be critical to optimize troubleshooting and ensure performance and uptime in line with service level agreements (SLAs).

Graphmasters selected Splunk software to support the Nunav app because it enables the company to index and analyze the diverse IT and IoT data sources on which the app relies. Graphmasters runs a single Splunk indexer and search head on-premises, but occasionally bursts into the cloud to take advantage of multiple indexers when required. The "peaky" nature of road travel means sometimes Graphmasters needs to scale up to meet higher demand for the app—for example, before bank holidays or on Friday afternoons, when more people are likely to be on the road.

### Industry

- Online services
- Travel and transportation

### Splunk Use Cases

- IT operations
- Business analytics
- Internet of Things (IoT)

### Challenges

- Processing high throughput of diverse IT and IoT data sources at scale
- "Peaky" nature of road travel means Graphmasters sometimes needs to scale up
- Requirement to optimize troubleshooting and ensure performance and uptime in line with SLAs

### Business Impact

- Reduced downtime due to "heartbeat" check that optimizes troubleshooting
- Real-time visualizations of KPIs help meet app performance SLAs
- Improved accuracy of the app through correlating IoT data from traffic feeds with app recommendations

### Data Sources

- Log data from traffic feeds
- Log data from the app
- Log data from Windows Azure

### Splunk Products

- Splunk Enterprise

Although Graphmasters is a small business, more than half of its employees regularly use Splunk software to run searches and analyze data, in three key use cases: performance monitoring to prevent downtime; measuring SLAs and key performance indicators; and correlating data from traffic feeds with what the app is recommending to guarantee accuracy.

## "Heartbeat" check prevents downtime

Splunk Enterprise gives Graphmasters a real-time "heartbeat" of its systems to ensure everything is working properly, preventing downtime. With Splunk software, Graphmasters can identify any load balancing problems as soon as they occur. The company has set up alerts to let the technical team know if the load on a single machine passes a certain threshold so they can scale the machine or shift the load elsewhere. The same applies to memory. Without these alerts, issues with load could result in downtime of the app or missed SLAs.

## Real-time insights help meet SLAs

Graphmasters uses Splunk dashboards to measure a number of key performance indicators (KPIs), including query times (how long it takes to provide a route in response to a query), the accuracy of the predicted arrival time and traffic reaction lag (how long it takes the system to adapt to an event in the traffic flow). By monitoring these KPIs, Graphmasters can ensure that it is meeting all SLAs around the Nunav app.

Splunk software also provides business insights around how the app is being used. For example, Graphmasters uses a Splunk heatmap to visualize where route requests are coming from geographically, thereby determining there is a large customer base in the Munich and Dusseldorf areas in Germany.

**"If we didn't have Splunk, our lives would be much more difficult... Splunk Enterprise gives us the real-time 'heartbeat' of our system that we need to deliver the best possible product to our customers."**

**Iulian Nitescu, CTO and founder**
Graphmasters

## Improved accuracy through correlating traffic feeds

Graphmasters builds traffic profiles for various roads based on data from traffic feeds. This gives the emerging company a real-time view of congestion along the road network. Splunk Enterprise also enables Graphmasters to correlate this data from traffic feeds with the app's route recommendations to detect any discrepancy, for example if there is a traffic jam that the app does not identify.