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AN INFLUXDATA CASE STUDY

NewVoiceMedia Uses InfluxData to Monitor and Manage Their Global SaaS Offering

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Company in brief

NewVoiceMedia is a cloud service company based in the UK. Its award-winning ContactWorld platform is the first global true-cloud contact center solution designed to improve sales team efficiency and provide personalized service to every inquiry.

It uses cloud-based technology to connect customers through existing telephone infrastructures and provide client information to agents. ContactWorld helps organizations worldwide build a more personal relationship with every customer or prospect.

ContactWorld enables companies to get up and running quickly and cope with fluctuating demand without the redundancy or cost of traditional systems. ContactWorld joins all communications channels without expensive, disruptive hardware changes and plugs straight into your CRM for full access to hard-won data and integration with Salesforce to optimize interactions. With a true cloud environment and proven 99.999% platform availability, NewVoiceMedia ensures complete flexibility, scalability and reliability.

Case study overview

NewVoiceMedia needs to maintain a 99.999% availability guarantee for their customers using their contact center solution. High customer call reliability is critical especially when dealing with tens of thousands of calls simultaneously since even a small percentage of dropped calls very quickly turns into huge customer dissatisfaction issues. NewVoiceMedia uses InfluxData to enhance their monitoring solution to monitor their complete cloud-based solution to ensure they can meet their service guarantees.

InfluxData enhanced their technology stack in order to contain costs and provide deeper insights. The existing systems alone could not handle the volume of metrics and events their systems produced let alone support gathering data at millisecond intervals leading to even larger data volumes.

The result: NewVoiceMedia is now able to gain real-time visibility into their service's metrics and events, meeting callers' sky-high expectations for seamless cloud communication and bridging the gap between telephony and data.

In addition, InfluxData helps to support their agile development process when planning for new features. Instead of relying on traditional performance tests, they gather telemetry data directly from their code to determine how new features are being used, what the performance looks like vs. the old, and whether the new features can scale as expected. Having this information provides them with the confidence that the new code will support their service levels before it is released.

“There was no way we could react to change with our existing Opsview solution. The only thing we could react to was customer complaints.”

Jack Tench, Senior Software Engineer

The business & technical problem

NewVoiceMedia needed to accelerate response times and gain real-time visibility into platform performance. Their previous system, Opsview, can only provide visibility in minutes. This was totally unacceptable and led to customers complaining before the monitoring system even alerted them. NewVoiceMedia was worried that unless they did something, they would start losing customers since a phone call being dropped or not available for a few seconds is unacceptable. They needed a new solution that solved the following 3 needs:

Real-time responses: Real-time for NewVoiceMedia means responses in less than 1 second. Only with these response times will it be possible to maintain a 99.999% platform availability guarantee.

Challenge	Requirement
They can't afford to have even 1 error in 1 million - these issues don't happen at 1 minute intervals	High Resolution data to spot the issue combined with high reliability and availability in the monitoring solution

Handle expanding volumes: The business is in growth mode, and they needed a solution that could handle the current volume, and the projected future volumes as the business grows. They have huge volumes of calls and handle billions of pageviews and requests per day — an ongoing phone call constantly loads web pages to check automated next-steps for managing the call. They see this volume only growing exponentially.

Challenge	Requirement
Global, distributed dev teams with accelerated release cycles daily using lots of microservices results in a lot of changes to track	High volume and High Resolution data is required to monitor at this level, which wasn't possible with their older monitoring tools. Furthermore, they need to have control over retention policies and rollups

Global SaaS platform: NewVoiceMedia delivers a global platform. They need to make sure any system they use to monitor and manage their SaaS offering is accessible globally and is always up-to-date with the latest versions automatically.

Challenge	Requirement
• Varied & distributed Infrastructure - 6 clouds globally • Mix of AWS & traditional datacenters • ~1,000 servers (40% Win/60% CentOS) • Serving 500,000 requests a minute (30ms response time) • ~5,000 concurrent phone calls - up to a million a day • Lots of different programming languages (.Net, Go, Node, JS, Python)	They need a solution that can work with them on their journey to being a continuous delivery organization; which means giving them the ability to easily collect data, in some cases this could be custom data from an application (in a plug & play way) from any system (legacy and new).

The solution

"InfluxDB has become our go-to database choice. Often if we are using a different tool, we figure out how to get data out of the tool into InfluxDB. It's easier to use, performs better, and is cheaper."

The technical journey

Understanding the business & the technical problems, the team reviewed their existing tools and went out to evaluate alternatives.

Graphite: Graphite could not handle the scalability requirements of NewVoiceMedia. It could not handle the current monitoring workload of 20,000 to 30,000 writes per second. Because of the poor scalability, the hosting fees made the solution cost prohibitive.

DataDog: The lack of Open Source core with the DataDog service concerned NewVoiceMedia. They needed to add custom data sources that they could query in a way that fit their needs instead of being locked down to another proprietary system like Opsview. In addition, having no access to the database itself to pull and push data made them uncomfortable.

New Relic Insights: Was not as fully featured at the time and does not scale to cost. In addition, you can't have control over the retention times and rollups.

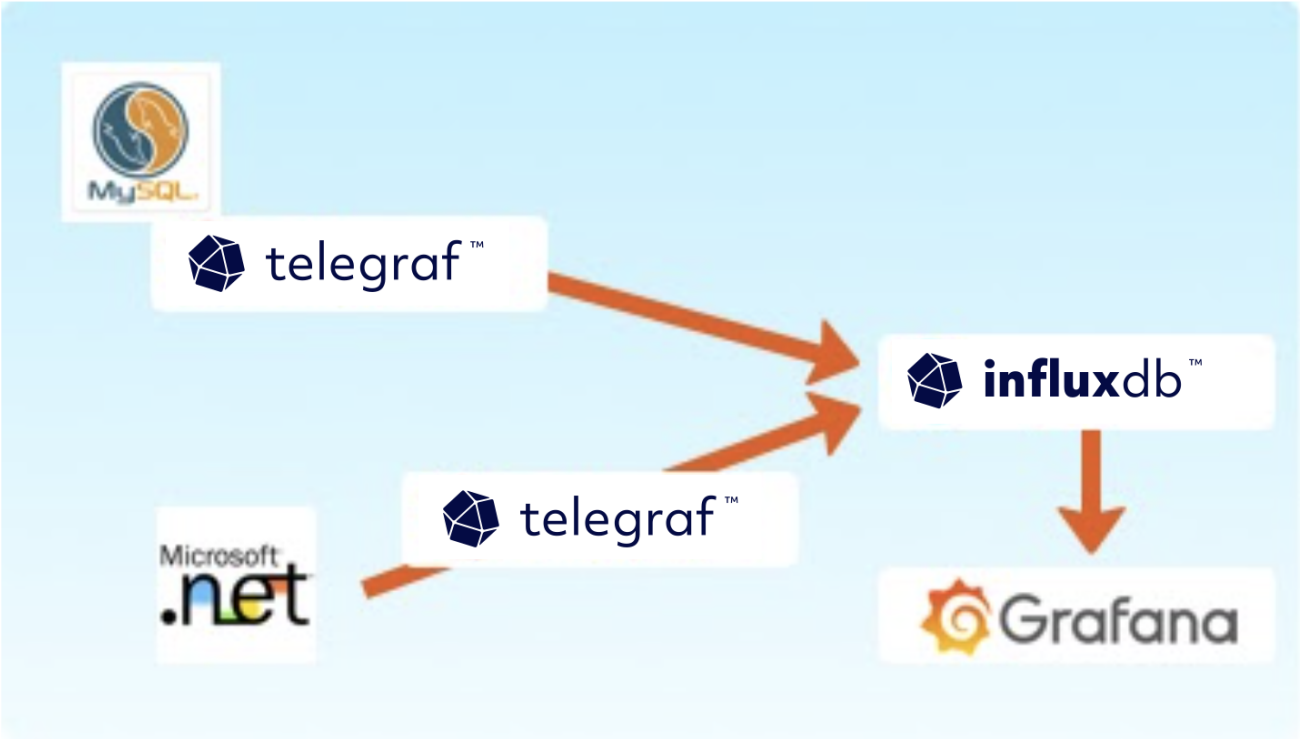
Opsview: Was their original Infrastructure monitoring tool that is based on Nagios. It was ideal when they first started because it was fast to get up and running. However, now with the changes that they have made in their infrastructure, it is slow, doesn't scale well, and has too-low resolution data which can't help them to see the issues in their infrastructure before customers report them.

ELK: Great tool as a centralized log store and does a good job with log searching. The metric graphing is limiting and doesn't work well with trending and historical data.

First use case with InfluxData

The first use case where they used InfluxData was with monitoring database replication delay. This was a custom data use case that required the tools to act quickly, which they knew their existing tools couldn't handle. They were able to build this successfully, and have continued to use this InfluxData solution in this capacity with some modifications to make it scale better as well as monitor the box that the database resides on itself.

InfluxDB in NewVoiceMedia Architecture



The above shows the final architecture that they have adopted (MySQL is just one example). They use Telegraf as a local agent and can collect all the stats from MySQL with a simple configuration change as well as any local StatsD stats. And with their move to Docker containerization, it is easy to drop the Telegraf agent into every service as they spin up and down the container to monitor for local system health and plug into whatever service happens to be in the container (MySQL, RabbitMQ, etc).

They also still use Telegraf as a central server to listen to StatsD from anything — this makes it easy to put StatsD code into any service, legacy or experimental systems, and have the metrics be sent to InfluxDB.

> *Telegraf is really powerful — and we are really happy with using it as a local agent."*

The solution

In NewVoiceMedia's use case, they use a combination of InfluxData and New Relic for collecting and reporting metrics and events.

New Relic

New Relic is actively used for infrastructure monitoring. In addition, it is used for high-level web application performance monitoring (general browser metrics, javascript error counts, what is the average response times for requests), often by the non-technical employees who appreciate how simple it is to use out of the box.

Grafana

Grafana is used for all of the graphing capabilities.

InfluxData

Centralized monitoring data store
InfluxData's InfluxDB serves as the major time series database for data ingestion and storage. They actively use Telegraf as the agent to collect metrics from a number of their systems as well as storing historical New Relic data to help them centralize their data and help them to gain significant cost savings.

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Infrastructure monitoring

InfluxData is also used for Infrastructure monitoring but at a more detailed level and for custom instrumentation. In addition, they use it to monitor upgrade performance, discover how new features are being used being by customers, and detect differences between product version performance.

Log metric store

InfluxData is now being used to store the log metrics collected from ELK for graphing and trend analysis purposes. This is useful to track how often an error is trending over time.

Auto-scaling to meet SLAs

Using Kapacitor for auto-scaling of their services when detecting changes in load to help achieve SLAs.

Normalizing data

Normalize metric data about MySQL data with Kapacitor which helps to convert their MySQL metrics to make their dashboards simpler to use.

"Now we have that telemetry to come back to. Before if we had an underlying problem that we couldn't pin down, it would be set aside with no solution, whereas now we can jump in and actually debug issues much faster."

Results

NewVoiceMedia gets real-time visibility into their service's metrics and events in order to meet their service availability requirements with the use of InfluxData and New Relic. This powerful combination provides them with insight into their entire stack, powered by the millisecond resolution metrics they needed to achieve the response times and analyze future performance.

Over the last two years, NewVoiceMedia have been revolutionizing customer communications on a global scale, with international expansion into new offices in North America, EMEA and APAC. Their ContactWorld platform provides consistency across every channel, device and location: voice, email and social media from anywhere and any device — with no extra infrastructure barriers or spiraling costs — putting call centers fully in the cloud and enabling clients to scale up and down to meet demand.

With the speed, scalability and availability gained by basing their real-time monitoring architecture on InfluxData, NewVoiceMedia gained confidence about their infrastructure and real-time visibility into their performance, allowing action in real-time and decision support. Using InfluxData, ContactWorld — the Intelligent Communications Platform for sales and service success — is helping clients create a 360-degree view of their customers and turn connections into successful conversations.

NewVoiceMedia's Use of InfluxData

Environment	Stats (production only)
200 Servers running Telegraf • A central StatsD server in each cloud/ environment	**2,000** Measurements **200,000,000** Series **20** Queries per second **24,000** Points written per second
InfluxDB Cloud - InfluxDB clusters on v 1.2 • Dev & test production	
Grafana • 2 Organizations • ~100 users • ~150 dashboards	
Small Kapacitor Node • Data rollups	

About InfluxData

InfluxData is the creator of InfluxDB, the leading time series platform. We empower developers and organizations, such as Cisco, IBM, Lego, Siemens, and Tesla, to build transformative IoT, analytics and monitoring applications. Our technology is purpose-built to handle the massive volumes of time-stamped data produced by sensors, applications and computer infrastructure. Easy to start and scale, InfluxDB gives developers time to focus on the features and functionalities that give their apps a competitive edge. InfluxData is headquartered in San Francisco, with a workforce distributed throughout the U.S. and across Europe. For more information, visit influxdata.com and follow us @InfluxDB.