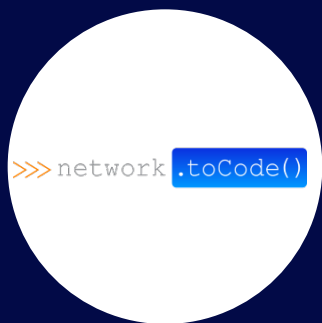




AN INFLUXDATA CASE STUDY

Network to Code Uses Telegraf and InfluxDB to Speed Up Enterprise Adoption of Network Automation



Network To Code Helps Enterprise Companies Modernize Their Network Infrastructure

Company in brief

Network to Code is a network automation solution provider founded in 2014. Network to Code provides consulting services to enterprise companies looking to bring modern DevOps practices to their organization. Network to Code is vendor independent and works with technologies from Cisco, Juniper, Arista, HP, Cumulus, and F5. They also utilize a large number of open-source tools like Ansible, Puppet, Terraform, and Telegraf. Some common problems Network to Code solves for their clients include network provision issues, security and compliance, and implementing telemetry and analytics.

Case overview

Network to Code specializes in helping companies move from traditional strategies for monitoring their IT and network infrastructure to a more modern software-centric approach. A key part of their toolset for making this possible is Telegraf and InfluxDB. Telegraf allows Network to Code to easily add support for collecting metrics from different types of hardware, transform that data, and then store it at scale using InfluxDB.

The business challenge

Network to Code works with companies that are trying to modernize their networking infrastructure. One huge aspect of this is being able to collect telemetry data from their customers' hardware. Having access to this data gives companies better insight into how their hardware is being used. The end goal is to help clients reach the point where their network teams have the same level of control and agility in their systems as modern software development teams.

| The technical challenge

In the past, it was common to only be able to collect telemetry data in 15-minute intervals. The tooling and infrastructure simply weren't in place to allow more fine-grained collection and analysis of telemetry data. With the rise in consumer expectations for software performance, that infrequent collection of telemetry is equivalent to flying blind. To provide reliable performance, companies need sub-minute level granularity so they can act quickly to manage performance issues and ideally be able to handle these situations automatically and proactively.

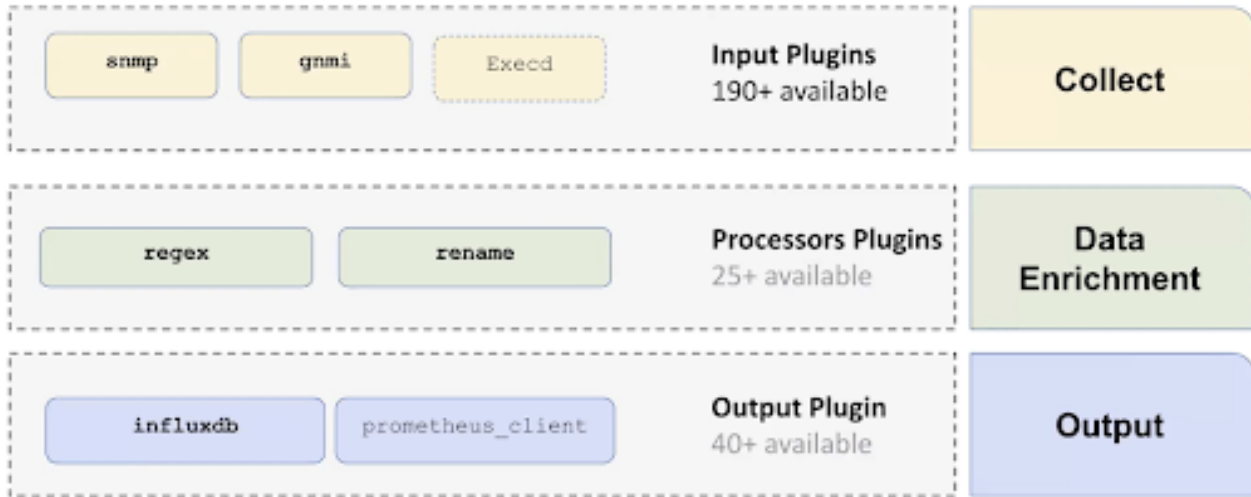
A key challenge Network to Code faced was the numerous different types of hardware that their enterprise customers had. Many have different standards and protocols used for monitoring metrics. Network to Code needed a solution that would ideally allow them to gather metrics from all those potential data sources at massive scale without a ton of additional complexity to their tech stack.

| The solution

Network to Code found the ideal solution to their problem in Telegraf. The plugin-based architecture of Telegraf made it easy to add support for new protocols, and in many cases, the Telegraf community had already created the plugin they needed which improved their development speed because they didn't need to create it themselves.

Beyond the support for collecting metrics from many different sources, another solid benefit from using Telegraf was the ability to enrich and format data before outputting the data. Using processor plugins, Network to Code is able to modify the incoming data so that it looks the same when stored regardless of what hardware created the data. Network to Code also uses Telegraf to add tags and other metadata to make creating dashboards easier for end users. An example of this is taking data from the SNMP protocol and normalizing it to look like data coming from gNMI protocol.

Telegraf Pipeline



Telegraf’s flexibility and extensibility really shine for Network to Code in situations where some hardware vendors don’t provide a standard protocol or method for producing metrics. In these situations Network to Code can use the Telegraf Execd Input Plugin to write their own custom script for collecting data. In one case, they created a script to log in to the machine via SSH and then collect the metrics from the command line. For storing this data, Network to Code uses InfluxDB because of its integration with Telegraf as well as its performance for both writing data and querying data. Dashboards are then created using Grafana.

For deployment, Network to Code runs a single instance of Telegraf for each piece of hardware they are monitoring. The main reason for this is so that configuration changes can be made without impacting multiple machines.

Results

By using Telegraf and InfluxDB, Network to Code is able to easily set up scalable network monitoring solutions for their customers with minimal operational burden. Once these metrics are collected, Network to Code can use that data to begin implementing network automation solutions due to the greater insights provided by the finer granularity data. This allows their customers to lower operations cost due to less time spent managing and configuring hardware, as well as more efficient utilization of hardware resources.

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As soon as I got some exposure to Telegraf in 2018, it's been super interesting for me to be able to see what we're able to do with Telegraf and how it can play in the network space.

Josh VanDeraa, Networkout Automation Engineer, Network To Code

Network to Code customers are typically able to improve their service reliability due to greater insight into their network analytics and fewer human-error-related incidents. Customers also benefit from being able to see all their data from a unified dashboard, rather than having it spread across multiple different monitoring systems provided by hardware vendors. Telegraf and InfluxDB make it easy to collect all this data into a single place.

Network to Code has successfully deployed this solution with enterprise customers with well over 1000 different hardware devices and are confident that Telegraf and InfluxDB can scale to handle even the largest enterprise company's workloads.

| What's next

Network to Code plans to continue their commitment to the InfluxDB ecosystem. They plan to experiment with using Flux for some of their queries to take advantage of the built-in capabilities designed specifically for time series data. They also plan to work with InfluxDB version 2 to see how it performs. Network to Code is particularly interested in InfluxDB's new storage engine and the potential for new use cases where cardinality is currently a limiting factor.

From a Telegraf perspective, Network to Code is always looking for new input and processor plugins to help enrich data and give greater visibility into their data. Because one of their core competencies is Python, Network to Code is investigating using the Starlark processor heavily for enriching and transforming data.

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](https://twitter.com/InfluxDB).



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