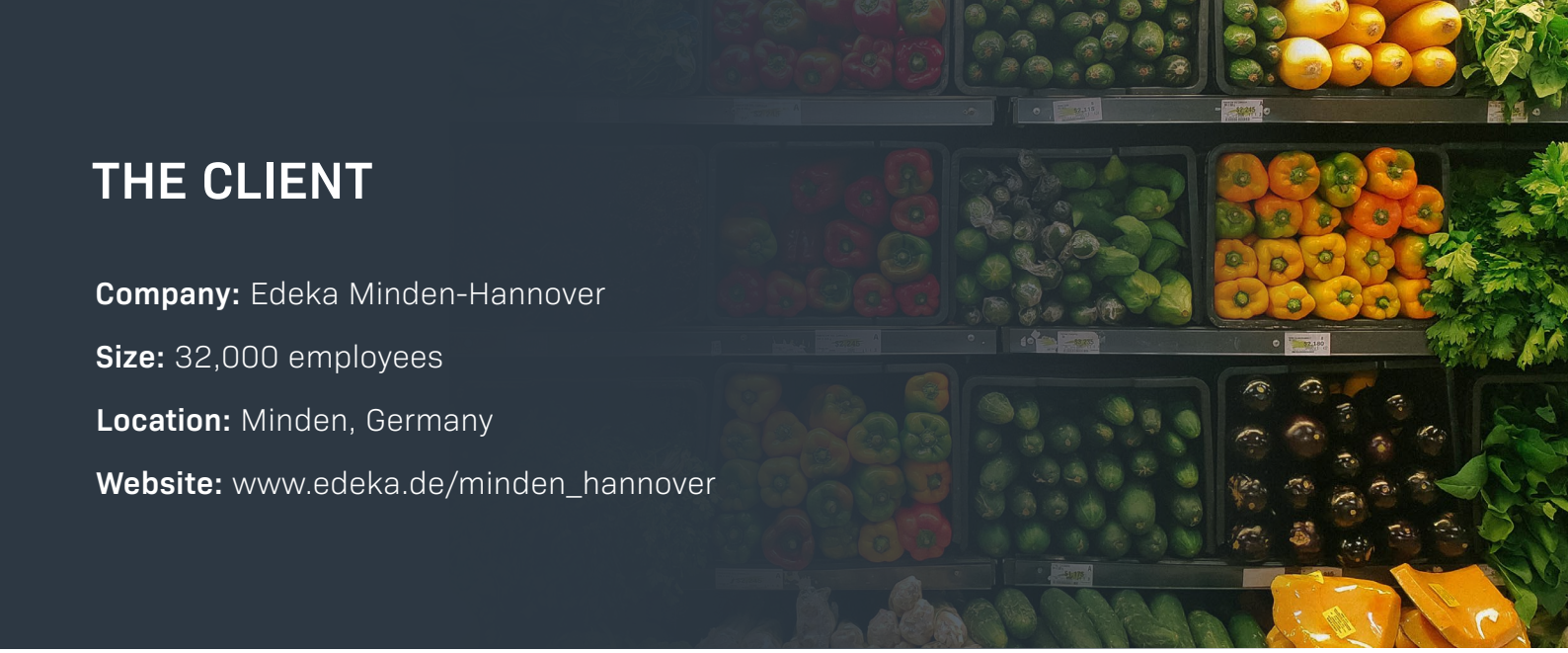
checkmk

Case Study

Checkmk monitors retail environments at Edeka



THE CLIENT

Company: Edeka Minden-Hannover

Size: 32,000 employees

Location: Minden, Germany

Website: www.edeka.de/minden_hannover

Edeka Minden-Hannover with a turnover of 10.6 billion Euros in 2021, 32,000 employees and around 1,600 stores is the largest of seven Edeka regional cooperatives in Germany. The regional market reaches from The Netherland's to Poland's borders. It covers a part of Eastern Westphalia, most of Lower Saxony, and likewise the federal states of Bremen, Sachsen-Anhalt, Berlin and Brandenburg.

KEY POINTS

- Edeka Minden-Hannover has been using Checkmk since 2012. Before Checkmk, the IT team used Nagios as monitoring solution, which was no longer sufficiently scalable and was not able to meet the requirements of Edeka anymore.

- Checkmk was originally intended to be used as a front-end for managing the Nagios environment, but after a short time, the IT team decided to completely replace Nagios with Checkmk. The migration of the 1,200 Nagios servers went smoothly.

- The challenge was not only the large scale of the existing Nagios monitoring, but also the special requirements of the retail sector.

EDGE MONITORING OF RETAIL ENVIRONMENTS

Edeka Minden-Hannover was looking for a cost-efficient, flexible and modern solution for monitoring its stores and central IT systems. The organization originally switched to the Nagios open source software. The IT team installed Nagios manually and extended it bit by bit with add-ons such as NSCA or NagVis. However, the performance of Nagios soon reached its limits.

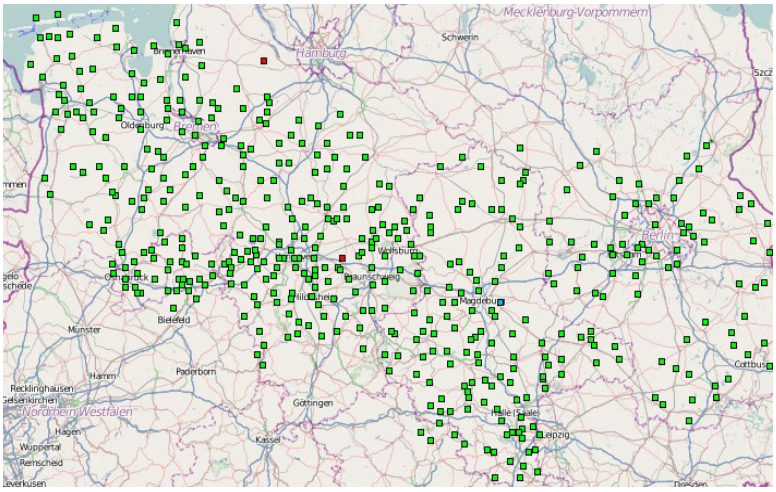


Figure 1: Edeka Hannover-Minden monitors 1,600 locations with Checkmk

A first problem was the heavy network load due to the many details the monitoring has to cover. Also, even with graphical configuration tools such as NConf, the workload for the IT team just for managing the monitoring environment became unbearable. In time, the Nagios server also turned out to be a performance bottleneck. Thus, the IT team had to start looking for a Nagios alternative.

Edeka Minden-Hannover found Checkmk and was able to replace its Nagios environment easily. Thanks to Checkmk, the IT team can continue using existing Nagios plug-ins after some minor adjustments. Edeka Minden-Hannover was also able to install Checkmk in its existing Suse Linux Enterprise server infrastructure, because Checkmk runs on any major Linux distribution.

Edeka Minden-Hannover's monitoring requirements are high: The IT team wants gather the monitoring data at a central site to be able to gain an overview of all of their IT environments. The monitoring should automatically generate a central status monitor in the form of a map based on GPS coordinates.

THE CHALLENGE

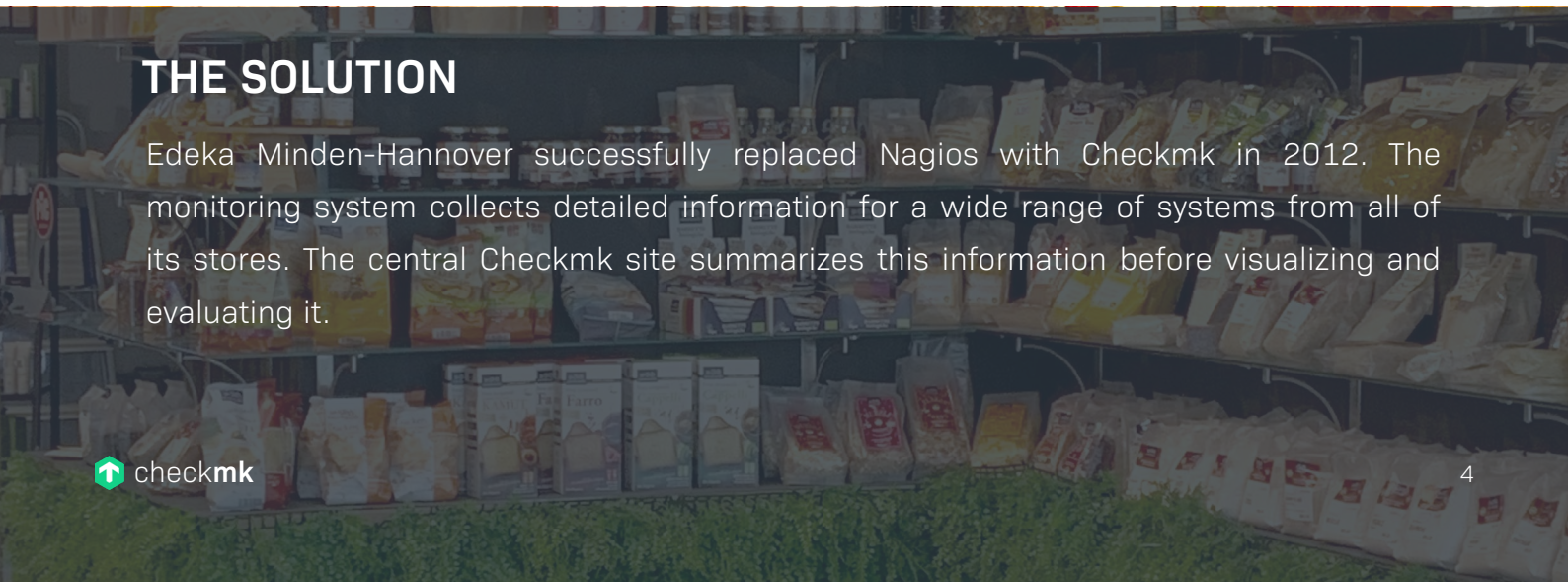
The replacement of more than 1200 independent Nagios servers is certainly not an everyday event. Generally, the management of such environments is more than a full-time job. But this is not the only impressive number within this set-up: As of today each of those 1,200 servers monitors an average of 25 hosts and 250 services. This adds up to 300,000 services, which Checkmk checks once every minute. All of this information is then aggregated in one central site.

In critical situations, it is also important to send automatic notifications, for example, if fewer than a specified percentage of cash registers are ready to operate in a store.

> *The speed and achievement of objectives, from the planning to the implementation surprised us. From the beginning the work together with tribe29 was professional and determined.*
>
> **Arne-Nils Kromer,** POS Development and Monitoring at Edeka Minden-Hannover

In most markets, there are no IT specialists available, so another requirement is that employees without IT experience should also be able to understand and use on-site monitoring. At the same time, the monitoring should automatically add new systems into the monitoring. In addition, monitoring in the stores must also continue to work, even if a store is disconnected from the rest of the network or the connection is unstable. The only way to ensure this is to monitor local systems through a local monitoring site.

At the same time, Edeka Minden-Hannover wants the monitoring to aggregate the data centrally. Checkmk brings its own agents that do not need to be configured on the monitored systems. This made the rollout very easy, even with large number of systems. Thanks to its inventory function, Checkmk automatically detects, which aspects of a system can be monitored. Checkmk regularly scans the local network of the respective store for new components. To do this, the IT team relies on the standard nmap tool. As soon as this finds a new system, Checkmk uses the automatic inventory function to determine, which of the systems' services need to be monitored. The IT team configures the threshold values via flexible rules on the central monitoring site and



THE SOLUTION

Edeka Minden-Hannover successfully replaced Nagios with Checkmk in 2012. The monitoring system collects detailed information for a wide range of systems from all of its stores. The central Checkmk site summarizes this information before visualizing and evaluating it.

applies the monitoring rules globally across all stores. Checkmk thus minimizes the effort required to manage the monitoring in the stores. The rule set consists of 26 different rules. The aggregated overall status from each market can then be evaluated in the central Checkmk site. This aggregation is realized with the help of the Checkmk Business Intelligence (BI).
Checkmk uses its JSON-based web service for the implementation. This ensures that the information in the central site is up to

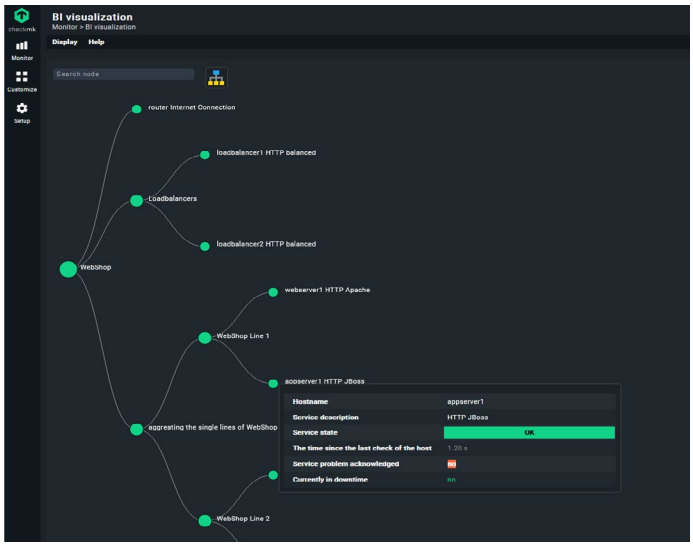


Figure 2: Store systems aggregated in Checkmk's BI.

date and reflects the current state of the IT in the stores. A dashboard based on the data from the central site displays the overall status on two 55-inch monitors. On this dashboard, there are individual views (dashlets) that show, among other things, the stores with connection problems and host or service problems in their own lists. As part of the project, NagVis was extended to include geomap functionality. NagVis creates a map using the GPS coordinates of all locations and freely available map material from Openstreetmap and positions the locations on this map.

SUCCESSFUL ROLLOUT TOGETHER WITH TRIBE29

During the initial installation of Checkmk, tribe29 also developed some new Checkmk checks (such as the monitoring of Bintec routers), which were subsequently incorporated into the official version of Checkmk. Following a few weeks of planning, Edeka Minden-Hannover and tribe29 carried out this major rollout to all stores in a four-day on-site process.
Within six hours, Edeka Minden-Hannover had installed a total of 1,200 monitoring systems, that is three new systems per minute. Following the installation, Edeka Minden-Hannover connected

THE ADVANTAGES

With Checkmk, Edeka Minden-Hannover now has a very scalable and precise monitoring system in place. The company is thus optimally positioned for current and any future monitoring challenges. The switch from Nagios to Checkmk had already paid off for the company after a short period of time, as the new system has significantly reduced the workload on the IT team.

all of the systems in the stores to the central site. At the same time, the IT team put the geomap with the information from the stores into operation.

With little effort, and in partnership, Edeka Minden-Hannover and tribe29 developed and successfully implemented a suitable monitoring solution. The entire project was developed based on license-free software. At the same time, tribe29 provided expertise and further expanded the customers' monitoring know-how.

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