



# Major city improves utilization and performance

How Denver bridged the gap between  
application owners and IT operations

by Elizabeth Sheehan

4-minute read

The capital of Colorado and a popular tourist destination, Denver was founded in 1858 and today has a population of over 700,000. Presently, there are over 50 unique agencies performing various functions to support the city and county. The IT organization plays a critical role in supporting their efforts.



Currently, the IT team supports a wide variety of software and services that range from permitting and law enforcement solutions to procurement software, payroll and more. They

manage a virtualized environment containing 1,500 virtual machines (VMs) running on 40 hosts, and they are in the process of migrating some of their workloads to the public cloud.

Historically, the IT Operations team used disparate monitoring tools to understand how their environment was performing and to determine when and where they needed to reallocate resources. When there was a performance issue, they relied on manual intervention to diagnose root cause and identify a solution. Moreover, when application owners turned to them to allocate resources for a new service, they would often overestimate what they needed. Like many organizations, there was a misconception within the IT organization at Denver that overprovisioning could assure application performance. Unfortunately, the IT Operations team did not have a tool that would identify where they were overprovisioning and evaluate whether downsizing would support better application performance. This is when they began exploring the [IBM® Turbonomic® Application Resource Management \(ARM\)](#) solution.

Denver relies on IBM Turbonomic to assure the performance of

1,500

VMs

With the help of Turbonomic, the team achieved

33%

reduction in CPU and RAM usage

# Implementing AI-powered application resource management

Once they installed the Turbonomic ARM solution, the IT Operations team finally had a single source of truth to understand how their compute environment was performing. “We chose IBM Turbonomic because we were looking for a common language that everyone in the organization could rely on as a source of truth for what we need to right-size our environments,” explains Nick Steensland, Service Delivery Manager for the City and County of Denver. Additionally, they



finally had concrete evidence to show application owners where their VMs were overprovisioned. “IBM Turbonomic gave us the data we needed to show the broader team that overprovisioning would not only fail to assure performance, but actually put performance at risk,” says Steensland.

Because of Turbonomic’s full stack visibility, the team had the data they needed to show their database administrator, for example, that giving back CPU cores would not sacrifice the performance of their systems. This level of reporting helped them establish trust across the team and allowed them to finally begin a comprehensive resizing effort across their environment.

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**Nick Steensland**, Service Delivery Manager,  
City and County of Denver, CO

# Driving efficiency while assuring performance

Since beginning this data center consolidation effort, the IT Operations team has been able to achieve a 33% reduction in their CPU and RAM usage, all while assuring performance. They have also improved their planning processes. Now, when application owners come to the team with a resourcing request, they have historical data to support them in determining what volume of resources to actually allocate. They also are able to closely observe utilization and resize when appropriate. This capability has proven to be hugely beneficial as the team attempts to rely on their existing infrastructure to deploy new services.



A new host can cost upwards of USD 30,000. By improving the utilization of their existing infrastructure, the team has been able to assure application performance and avoid investing in a new server until there is no other option.

At this stage of their journey, the team is relying on Turbonomic's AI-powered resourcing recommendations for their virtualized environment. Their goal is to implement automated actions across this environment as well as their public cloud environment within the next 12 months. As they navigate this transition, they will continue to follow their charter to minimize spend while maintaining a consistently excellent end-user experience for their employees and their residents.

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### About Denver

[Denver](#) (external link) was founded in 1858 and today has a population of over 700,000. There are over 50 unique agencies performing various functions for citizens across the city and county. The IT organization within City and County of Denver supports a wide variety of software and services which range from permitting and law enforcement software to procurement software, payroll and more.

### Solution component

- IBM® Turbonomic® Application Resource Management

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