



# How Rome approaches digital transformation

Using AI to improve application performance across citizen services

by Elizabeth Sheehan

5-minute read

When we think of Rome, we often think of its rich history and culture. The Colosseum and the Pantheon come to mind, as well as the wonderful art and cuisine the city is famous for. But Rome is also a modern city with a vibrant population of 2.87 million citizens who are using the latest technology every single day.



Roma Capitale is the city's municipal government, and one of its missions is to make this ancient city a very modern place to live. From city-wide wifi to an online portal for everything from preschool enrollments to building permits, Roma Capitale provides an array of digital services for citizens.

Of course, ensuring positive end-user experiences across numerous services, for a city of millions, is no small feat. Roma Capitale's IT infrastructure wasn't built in a day. It is large and complex.

Roberto Massimiliani, the Head of Data Center at Roma Capitale, leads a team of five people managing 800 virtual machines (VMs) and 150 physical machines in an on-premises environment comprising bare metal, containers and Microsoft Hyper-V infrastructure.

After implementing  
IBM Turbonomic:

15%

reduction in RAM and CPU on premises

Optimized with  
the help of IBM  
Turbonomic:

800

workloads

Historically, the team followed a legacy development model for its workloads and relied on manual intervention to manage performance and minimize risk. “Before IBM Turbonomic, we were attempting to implement microservices on our container infrastructure but our developers did not have the tools they needed to fully make this transition. They just had monolithic applications which they were forcing to run on containers,” explains Massimiliani.

Like many other IT teams, this team relied on disparate monitoring tools and user complaints to identify and address performance issues. Their existing tools did not give them a comprehensive understanding of their environment; nor did they allow the team to

understand the impact of a resourcing decision before it was executed.

All the team could do was react to performance issues as they occurred, manually reallocate resources and monitor the impact afterward. This approach did not allow them to proactively and continuously assure the performance of the applications their employees and citizens were counting on.

To minimize risk and assure performance long-term, the Roma Capitale team knew they needed to explore new technologies and AI. They also needed full-stack visibility. This is when they turned to the [IBM® Turbonomic® Application Resource Management \(ARM\)](#) solution.

# The role of full-stack visibility in reducing performance risk

Once they deployed Turbonomic, Massimiliani and his team were on their way to achieving continuous performance assurance of their applications. Because of the Dynatrace integration, the team was finally able to get a full-stack view of their on-premises environment: from the application layer down to the infrastructure. “For us, one of the best features of IBM Turbonomic is the full-stack visibility,” explains Massimiliani. “With IBM Turbonomic, I can see how our containers are running and if they are running correctly: if they are using too many resources or not.”



Now that they have access to a comprehensive, real-time view of their environment as well as AI-powered resourcing recommendations, the Roma Capitale team proactively prevents performance issues and reduces waste across their environment by identifying where there is performance risk in their environment and determining the optimal way to eliminate that risk by reallocating resources. Moreover, they can see the impact of a resourcing action before they execute it. And because of the Dynatrace integration, the team can see how resourcing actions affect application response time afterward. “Once we integrated Turbonomic and Dynatrace we had the data we needed to show the entire team that resizing does not compromise performance. In fact, it improves performance,” notes Massimiliani.

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**Roberto Massimiliani**, Head of Data Center, Roma Capitale

# Reducing waste while improving performance

Since implementing Turbonomic the Roma Capitale team has reduced RAM and CPU usage across their environment by 15%. This in turn helps them minimize cost over time. “Without IBM Turbonomic, we would need to insert another host,” says Massimiliani. “IBM Turbonomic has allowed us to increase our utilization of our existing infrastructure and avoid unnecessary expenditure.”

By increasing the efficiency of their existing infrastructure, they increase its lifespan and reduce spend. Not only have they achieved 10% hardware cost reduction, they have also seen time-



savings. The team has significantly decreased the amount of time spent assessing their environment and implementing resourcing decisions. This in turn has freed them up to focus on new initiatives that are a strategic priority for Roma Capitale.

As they move forward, the Roma Capitale IT team is looking to expand their adoption of Turbonomic's automated resourcing actions. Today, they manually execute on the resourcing recommendations Turbonomic provides, but in the long term they plan to implement automation wherever possible so that they may continue to follow their charter to minimize cost while assuring the performance of the applications their citizens are using.

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### **About Roma Capitale**

[Roma Capitale](#) (external link) is the municipal government for the city of Rome, comprising many different agencies serving the city's citizens. The IT organization within Roma Capitale supports a range of software and services that are used by the registry office, parking and transportation agency, schools and more. A main area of focus for Roma Capitale's IT organization is the web portal that citizens use for a variety of activities, such as paying school fees and settling fines.

### **Solution component**

- IBM® Turbonomic® Application Resource Management

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