

# Improving Patient Care with Container Observability



## ABOUT

**Industry**  
Healthcare

**Location**  
USA



## CHALLENGE

Unexpected autoscaling caused cost spikes during non-production Kubernetes activity.



## RESULTS

Resolved root cause quickly, reduced costs, improved performance and reliability.

### ABOUT:

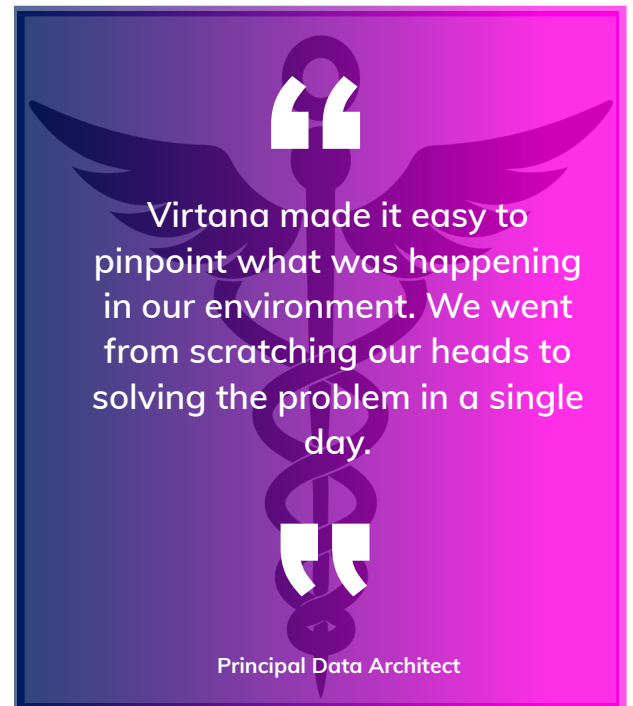
This nationally recognized cancer treatment and research institution serves patients with complex medical needs, including those undergoing advanced genetic testing and personalized oncology care. With a reputation for clinical excellence, cutting-edge research, and compassionate service, the organization is focused on harnessing technology to accelerate innovation in the fight against cancer.

### OVERVIEW:

A leading cancer research and treatment center recently used Virtana Container Observability to improve performance visibility across its Kubernetes infrastructure. Their goal was to support oncologists with a new microservices-based application that consolidated critical patient data to assist in treatment planning. Along the way, they uncovered an unexpected issue causing resource spikes and rising costs. With Virtana, they identified the root cause quickly and confidently, helping their team stay focused on what matters most: delivering exceptional care.

### THE CHALLENGE:

Developing a platform to support critical clinical decisions comes with high expectations, and the team behind this initiative knew reliability and cost-efficiency would be essential from day one. The application, built to assist oncologists during tumor board reviews, was composed of more than a dozen microservices and deployed on Azure Kubernetes Service (AKS) in a non-production environment. While validating performance and scale, the team noticed a troubling trend: the cluster would suddenly scale up to the maximum number of nodes multiple times per week, despite only light testing activity.





These unexplained spikes led to significant cost increases, with monthly cloud estimates jumping significantly just for their test environments, which would be much more expensive once they moved it to production. The team was able to rule out their own application as the cause and began to suspect an underlying infrastructure issue. But without a clear source of truth, identifying the root cause would require digging into logs and container metrics across every node—an effort that could take days or even weeks. With production looming, they needed a faster way to get answers.

### THE SOLUTION:

The team used Virtana Container Observability to move from reactive troubleshooting to proactive root cause analysis. The platform's visual dashboards made it easy to spot when the spikes occurred, while granular container and node-level telemetry allowed the team to dig into the details. "When we saw the spikes, we knew something was off, but we weren't sure where to look," said their Principal Data Architect. "Virtana made it easy to pinpoint what was happening in our environment. We went from scratching our heads to solving the problem in a single day. Without it, we would've spent a week or more digging through logs and configs across every node. It saved us time, money, and a whole lot of frustration."

They began by reviewing cluster-wide high-water marks, which revealed that CPU utilization was peaking at predictable intervals. Using Virtana's timeline view and correlation tools, they isolated the source of the activity to a specific recurring event. Diving into logs, they found that a company-wide application had been automatically deployed across all virtual machines in the AKS cluster. With no resource limits defined, this application's scans were monopolizing CPU on every node, triggering Kubernetes autoscaling behavior.

Because this application was part of a baseline configuration applied by a separate infrastructure team, the application developers hadn't realized it had been deployed. Without Virtana, it would have taken days of node-by-node investigation to uncover the root cause. Instead, they had clear, correlated evidence within hours. Once the issue was understood, the fix was straightforward: modify the baseline image to exclude this application from the Kubernetes environment and redeploy it with proper resource controls.

This wasn't just a technical win; it was a confidence boost. The team now had a repeatable way to detect anomalies, validate assumptions, and move quickly from signal to solution. For an environment tasked with supporting high-stakes clinical decisions, that kind of agility is invaluable.

“

[Virtana] enabled a new application designed to streamline tumor board case reviews, helping oncologists access and act on critical patient data more quickly.

”

Principal Data Architect



## THE RESULTS:

Their Principal Data Architect reflected, “Our infrastructure is complex. We’re running dozens of microservices and relying on Kubernetes to scale reliably. Without the right observability tools, you’re flying blind. Virtana gave us the visibility and confidence we needed to move fast without compromising stability.”

By uncovering the root cause of unexpected resource spikes, the team achieved key improvements that align with their mission to deliver timely, effective care:

- **Faster Issue Resolution:** What could have taken up to two weeks of manual debugging was resolved in less than a day using Virtana.
- **Cost Reduction:** Identified and eliminated unnecessary autoscaling events, avoiding significant monthly cloud expenses.
- **Improved Treatment Planning:** Enabled a new application designed to streamline tumor board case reviews, helping oncologists access and act on critical patient data more quickly.
- **Increased Resilience:** Strengthened Kubernetes deployment practices by promoting better resource governance and cluster control.

## WHY IT MATTERS:

The application at the center of this initiative was designed to bring together genomic data, clinical notes, surgical history, and more to support expert diagnosis and treatment planning. By building these data pipelines as RESTful microservices, the team created a foundation for reuse across future applications. More importantly, they empowered their oncologists with a tool that saved hours of preparation and allowed them to focus on the patient, not the process.

By partnering with Virtana, this organization took a significant step forward in modernizing its infrastructure and delivering technology that supports its mission. This success story highlights how observability can directly support better outcomes, both in IT and in patient care.

“

These unexplained spikes led to significant cost increases, with monthly cloud estimates jumping significantly just for their test environments, which would be much more expensive once they moved it to production.

”

Principal Data Architect