



Improving the Constituent Experience Through Observability

Digital services today are core to the way government meets mission, with online access driving higher levels of responsiveness. Now government agencies are under pressure to deliver these services more reliably. Constituents expect online encounters that mirror their private-sector experiences with responsiveness being increasingly defined as 24-by-7 availability.

The challenge? Agencies lack observability — actionable insight into how critical applications and systems are performing, especially as digital services move to the cloud. Without observability, it's difficult to identify and mitigate potential problems before they impact end users.

To learn how agencies can gain better visibility, GovLoop partnered with application performance management and IT operations analytics provider, Cisco AppDynamics to create this report.



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Challenge: Cultural, Technical Hurdles

When government agencies make services available online, constituents expect ready and reliable access to those systems and resources. Here are some of the common problems that make it difficult for agencies to gain the visibility they need to keep systems up and running:

- **Siloed Data and Personnel**

Agencies typically have multiple teams using a variety of tools to monitor the performance of their core applications and systems. That produces a lot of data, but they lack a holistic view of their IT ecosystem, which stymies their ability to identify and resolve problems.

- **Lack of Comprehensive Analytic Tools**

Another problem is that traditional monitoring tools are not sufficiently comprehensive. They can't peer into the dozens of microservices that support a cloud application or recognize dependencies that span multiple systems.

- **CSP monitoring tools fall short**

In the case of cloud applications, IT teams often rely on tools their cloud service providers offer to support observability. These may deliver limited logging data, but will fail to inform IT teams about activity that spans both on-prem and multi-cloud implementations.

"IT will have teams that manage databases, teams that build applications, teams that build networks. They're all siloed, using their own tools for their own specific domain, which does not give them the full application stack. That's a huge challenge," said Gregg Ostrowski, CTO Adviser, Cisco AppDynamics.

Solution: Modernized Observability

New levels of system reliability are needed to ensure convenient and effective constituent interactions. To meet that bar, an agency needs observability across the full IT stack, including applications, compute, storage and services.

Incorporating analytics takes observability beyond traditional monitoring. Where monitoring merely flags symptoms, robust analytics will surface key trends and events to drive toward root causes, accelerating the IT team's ability to identify and mitigate problems.

Here are the basic steps in delivering full-stack observability:

- **Collecting data** from systems across the entire application ecosystem
- **Auto-discovery and mapping**, which identifies traffic flows across your environment
- **Monitoring users' digital experience** across various devices, browsers and services
- **Establishing baseline performance** and setting alerts to flag potential issues
- **Conducting root cause diagnostics** to help IT teams understand and prioritize issues
- **Creating dashboards** that provide IT staff with an at-a-glance understanding of performance levels

"Monitoring is all about silos. Observability, on the other hand, is about the entire path of the application."

– Gregg Ostrowski, Cisco AppDynamics

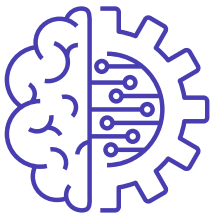
Key Capabilities of a Robust Observability Solution



End-to-End Visibility

A chief goal of observability is improved meantime to resolution. "As agencies bring more applications and services online, they need to ensure they are always up and running," said Manny Sidhu, Regional Director, Civilian at Cisco AppDynamics.

To deliver that seamless end-user experience, IT teams need visibility across the application delivery ecosystem, down to the level of microservices, enabling them to see all the dependencies and shared components within the application. End-to-end visibility lets administrators identify and remediate problems faster, across the entire IT infrastructure.



Robust AI/ML Capabilities

Given the scale and complexity of modern IT deployments, observability must incorporate artificial intelligence and machine learning to help pinpoint problems and drive improvements for end users.

"When you break up an application into 15 or 20 different microservices, you increase significantly the volume of data that it takes to properly observe that application, and it increases meantime to repair," Ostrowski said. "You need the power of AI in order to be effective."



Dynamic Baselining

Modernized observability replaces static threshold monitoring with dynamic baselining, using the power of AI to understand what normal usage looks like and triggering alerts when performance deviates from the norm. This ability to deliver real-time insights into performance in turn elevates end users' experience.

"Citizens expect a higher level of service, whether they are making payments or accessing benefits," Sidhu said. "Dynamic baselining is key to meeting that need."



Enhanced Visibility in the Cloud

In a modernized observability platform, customizable and configurable dashboards give administrators a broader and deeper view of cloud-based operations.

"You can see how well the app is performing based on a region. You can keep an eye on the user experience," Ostrowski said. "By bringing in all those different metrics, connecting app performance to the business journey, it helps bridge the gap between the technologists and mission heads."



Case Study: Delivering on Open Enrollment

For one federal agency, open enrollment season presented a challenge. Improved observability helped the agency meet their mission.

The challenge: Open enrollment often means an influx of users crowding onto an application during a limited window of time. In this case, that caused systems to stall. Users would log in and sessions would time out before they could complete the enrollment process.

The solution: With AppDynamics, the agency was able to pinpoint bottlenecks, identifying specific memory issues and server problems. Administrators could see the issues, and with just three clicks, they were able to identify the root causes and apply rapid remediations.

The outcomes: Downtime is unacceptable in a limited-window open enrollment scenario. With the greater visibility available through AppDynamics, the IT team was able to use its time and resources more effectively. Even more significantly, end users were able to enroll reliably and consistently, ensuring that the agency could meet its core mission.

“They could see where the application wasn’t performing, and with three clicks, they could get down to the root cause.”

– Manny Sidhu, Cisco AppDynamics

How AppDynamics Helps

With a FedRAMP Moderate, mission-first observability platform, AppDynamics helps government agencies deliver a flawless end-user experience. It provides full-stack visibility, allowing IT teams to pinpoint root causes of application problems in real time, from third-party application programming interfaces down to code-level issues, and its fully air-gapped solutions support national security agencies with maximum security.

Learn more at www.appdynamics.com.



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