

Goliath Application Availability Monitor for Hospitals Using Cerner

Technical Overview

Cerner Lights On:
Cerner Monitoring



50+ Topics Including

- Physician Alignment
- Overall Compliance Checks
- Configuration Standard
- Solution Health
- Adoption Rate
- Regulatory Compliance
- Response Time Summary
- Average Transaction Response Time
- Revenue Cycle
- Nursing Standards
- Stability

Goliath Technologies
On-Premises Monitoring



Topics Including

- End User Experience Metrics
- On-Premises Virtual Desktop Infrastructure
- Customer VMware
- Other Customer Applications
- User Profile Processing
- Synthetic Citrix/VMware Launch
- User Application > Server Correlation
- ICA/HDX Channel
- User Account Domain Authorization
- User GPO Processing
- NVIDIA vGPU Performance

4%
Overlap
ICA
RTT

“Goliath Technologies has the only solution of this kind that combines the ability to preemptively alert us if clinicians will have difficulty when attempting to access Citrix & Cerner. This provides us with an early warning system that is better than real-time and is one of the reasons we selected Goliath as a partner.”

Justin Monnig
General Manager of Crossings Healthcare Solutions

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I. Introduction - Proactive End User Experience Monitoring

To be truly proactive, an administrator needs a technology that is better than real-time. This means advance warning of issues that prevent access to mission-critical applications before users are impacted.

While Healthcare IT leaders take great care in choosing the right Electronic Health Records system, some may overlook the critical role that a virtualized desktop delivery infrastructure like Citrix and VMware Horizon plays by providing access to Cerner and other mission-critical applications. The reality is that an organization's on-premises desktop delivery infrastructure, and performance requirements for delivery of other applications, may negatively impact end user experiences with Cerner. Understanding how the performance of the on-premises delivery infrastructure impacts the end user experience requires powerful, purpose-built tools that allow them to proactively anticipate, troubleshoot, and prevent access and performance issues. Without these tools, the true root cause of performance issues cannot be established and corrected.

Goliath Application Availability Monitor for hospitals using Cerner is purpose-built to proactively anticipate and identify end user experience issues with the entire virtual desktop delivery infrastructure used to deliver this mission-critical data. Goliath Technologies' monitoring capabilities combined with Cerner's remote hosting technologies and services, provide healthcare organizations with advanced warning of potential end user experience issues and objective technical evidence of root cause to prevent future issues. This results in faster detection, identification and resolution of these issues before users, or patients, are impacted.

In this technical overview, we will review the end user experience monitoring and management capabilities of Goliath Performance Monitor as it is used to support Citrix, VMware Horizon, Cerner and other business applications in a healthcare setting. We will describe the technical elements that make-up the healthcare IT-specific functionality and how to leverage the specific features to ultimately be proactive and stay ahead of end user experience issues.

Our technology runs behind the scenes at the hospital or other end user locations and confirms application availability for Cerner. If a problem is detected, it triggers alerts for IT in advance of a clinician or healthcare worker experiencing a problem. This is what we call better than real-time, or before an issue actually impacts the end user community.

Goliath Application Availability Monitor for hospitals using Cerner offers complete visibility into user experience from the hospital endpoint to the datacenters where the applications are hosted. Because of this we are able to:

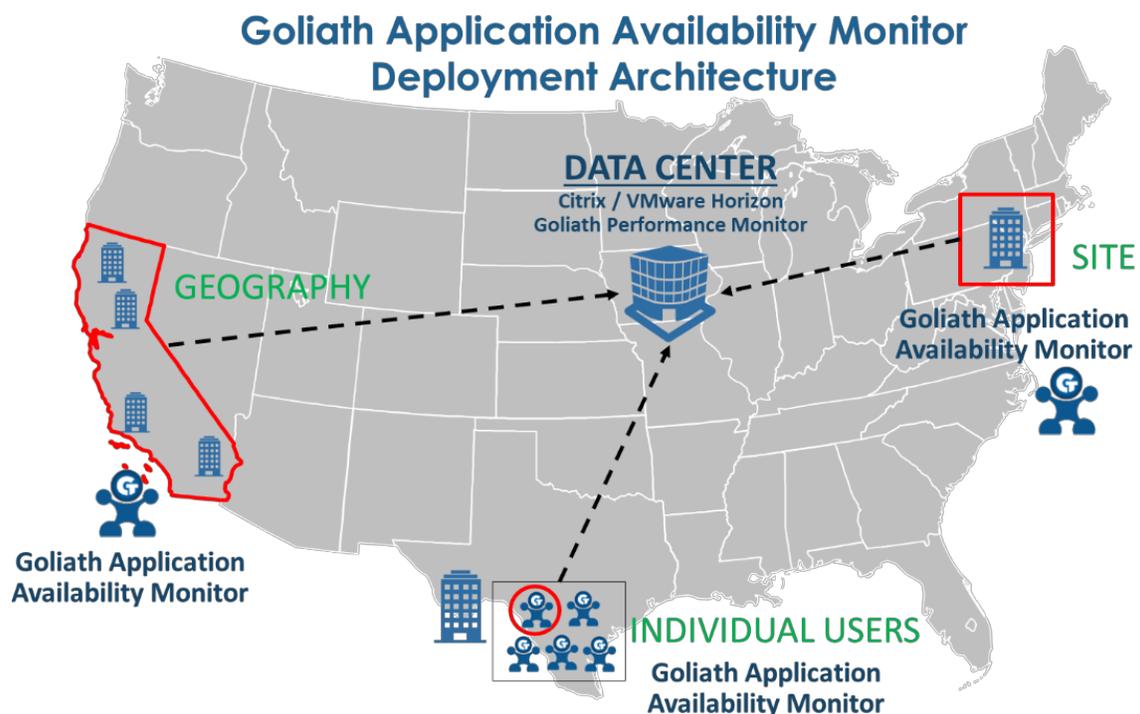
- Automatically exercise and test every aspect of the delivery infrastructure for errors
- Obtain actionable intelligence that promotes productive collaboration with Cerner
- Provide better than real-time visibility that solves issues before they occur

II. The Goliath Application Availability Monitor

The Goliath Application Availability Monitor ensures that the Cerner Millennium applications like PowerChart, SurgiNet, FirstNet, additional Cerner applications, and any other Citrix- or VMware Horizon- delivered applications are always available. The monitor uses 'virtual users' to test and confirm that applications will launch when your real end users attempt to access them. By actually logging in the same way an actual user accesses and launches applications from the hospital or clinic where users are located, in the exact same way that a real end user does, this technology allows for advance discovery of issues by validating that the entire virtual desktop delivery workflow will execute properly. The key benefit is that when an issue is discovered by a virtual user, it can be addressed before end users are ever impacted.

The Goliath Application Availability Monitor prevents end user experience issues resulting from:

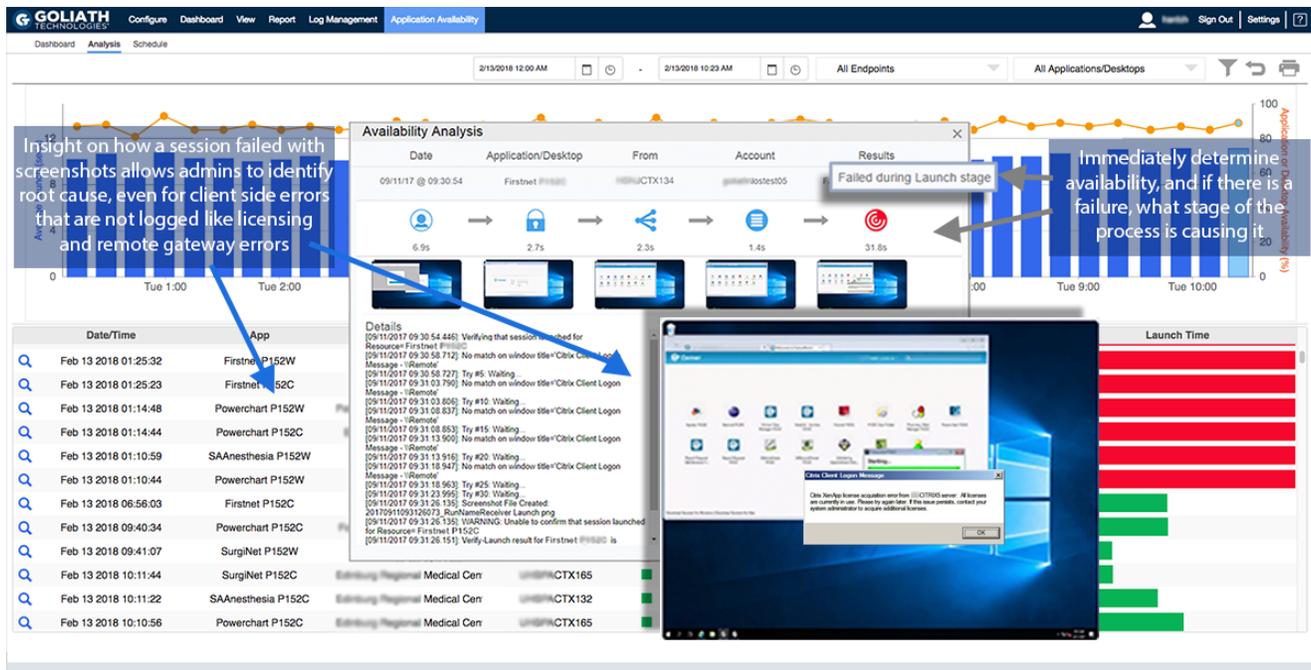
- 1) Issues in the Desktop Virtualization Delivery infrastructure
 - Citrix: ICA, NetScaler, StoreFront, XenApp, XenDesktop, VDI Sessions
 - VMware Horizon: Load Balancer, Connection Server & Composer, vCenter Server, Virtual Desktop Pools, RDSH Pools
 - Microsoft RDS: RD Gateway, RD Web Access, RD Session Host, RD Virtualization Host
 - Backend Systems: Active Directory, SQL, License Servers, Profile Servers
 - Virtualized Desktops or Applications
- 2) Applications Not Enumerating
- 3) Application or Desktop Launch Failure
- 4) Slow Application Launch Times
- 5) Networks Not Available



III. Goliath Deployed at Remote Locations

When deployed at remote locations, Goliath Application Availability Monitor launches real application sessions with virtual users on an automated schedule. This technology provides insight into what an actual end user will experience before they access Citrix or VMware and launch Cerner or other applications. This is 'better than real-time' because access failures and slowness related issues are identified and dramatically reduced by knowing about them before end users are impacted.

This image contains a screen capture of the live launch dashboard which allows administrators to have a complete view of end user experience from a single pane of glass. As you can see below, there is a failure of an application at one of the hospital locations. By having the failures appear in red at the top of the page, it makes the identification of the issues easier and puts the necessary information right at IT's fingertips.



The image above is a screen capture of the launch drill down. To identify the root cause of the failure, administrators can click to drill down and view further detail. As seen here, the Application Availability Monitor identified a failure launching the application, specifically with respect to licensing issues, as evidenced in the screenshot, and therefore indicated a failure in the last stage and sent an alert. Having the tools for drilling directly into the root cause enables faster time to resolution.

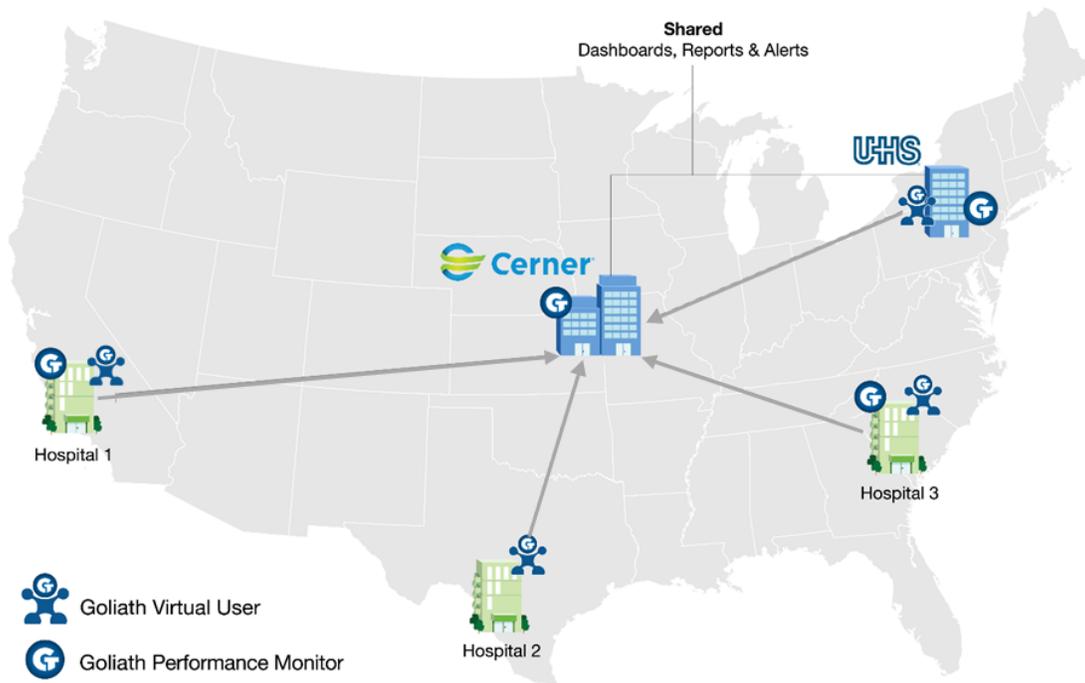
Goliath Performance Monitor and Goliath Application Availability Monitor, the Goliath End User Experience Monitoring and Management products, are a complete end-to-end visibility toolset that will empower your organization with advance warning and actionable intelligence, ensuring that your end users have the highest quality user experience possible.

IV. Sample Deployment: UHS

UHS is one of the 10 largest for-profit healthcare organizations in the United States. Today, UHS has Goliath Performance Monitor and Goliath Application Availability Monitor deployed at their corporate office, 30 acute care hospitals, and within the Cerner datacenter on Citrix servers running Cerner applications.

UHS has configured and scheduled the availability monitors to launch tests to confirm applications are available 24/7/365. Currently, approximately 15,000 application test launches occur daily with a real-time alert being triggered if a logon fails or exceeds a logon time threshold. This should alert administrators before the logon difficulty manifests to end users so they have the ability to remediate the issue before clinicians or healthcare workers are impacted.

Image Description: UHS Deployment



V. Integration with Other Goliath Technologies Software

The Goliath Application Availability Monitor and Goliath Performance Monitor are fully integrated to enable proactive management of the clinicians' and healthcare workers' end user experience. The integration of these technologies is significant because together they can alert you to issues and also determine underlying root cause. They provide an end-to-end solution for anticipating, troubleshooting and preventing end user experience issues.

Goliath Performance Monitor

Goliath Performance Monitor enables proactive IT performance monitoring for virtual server, virtual desktop, hybrid cloud, and healthcare environments. Goliath Performance Monitor is the primary engine for delivering visibility, metrics, alerting, reporting, and self-healing capabilities to IT, and specifically, Cerner and Citrix or VMware administrators. In addition, it provides the primary lens into both the on-premises virtual desktop delivery infrastructure as well as the Cerner application delivery servers, allowing for enhanced and more productive collaboration with Cerner.

Goliath Topology View for Citrix

The Goliath Topology View, a component of the Goliath Performance Monitor provides a visual guide to the logical relationships and connections of your entire Citrix infrastructure and shows the health of each individual component at a glance. It provides detailed information on the status of your delivery groups, machine catalogs, images, clusters and hosts that allows you to quickly identify and troubleshoot macro-level events affecting locations, regions, and other large groups of users. This allows you to identify and troubleshoot onsite Citrix issues that may be creating a false impression of Cerner performance, especially when monitoring end user experience from the Cerner data center perspective does not find any issues.

VI. Resolve End User Experience Issues for Any Citrix or VMware Delivered Application

Goliath Technologies' IT operations software products include the Cerner application agent, pre-configured monitoring rules, alerts, dashboards, and reports. This level of visibility provides actionable intelligence for differentiating Cerner application related issues from on-premises delivery issues such as network latency, device malfunction, or resource issues.

The Application Availability Monitor, combined with comprehensive monitoring of the application access process empowers IT administrators to discover and resolve problems with session initiation, duration, and application launch in advance of lost productivity.

VII. Working With Cerner to Improve End User Experience

Cerner Lights On Network® and Goliath Technologies offer a powerful and complimentary feature set that together deliver significant value to our mutual customers. Cerner Lights On Network is the best technology available to support Cerner and Cerner hospitals with the complex needs and requirements of multiple stakeholders throughout the hospital. It provides a robust, comprehensive set of features that covers many critical areas including Compliance, Security, Adoption, Configuration Standards, Performance, Users, Outcomes and much more.

Goliath Technologies focuses instead on the Citrix / VMware environment on-premises at the hospital locations. Goliath's software is specifically used by the systems engineers in hospital IT organizations that support both users accessing Cerner over Citrix and VMware, and other corporate staff at the hospital. Goliath focuses on reducing end user experience issues on-premises when users are interacting with any Citrix or VMware Horizon delivered applications. Most Cerner hospitals are using Citrix and/or VMware Horizon to deliver access to multiple corporate applications, not just access to Cerner RHO.

The different roles and users for our products actually present additional value for both Cerner and Cerner hospitals.

- The combined metrics available from both Cerner Lights On Network and Goliath Technologies allow hospitals to analyze a holistic view of their environments.
- This holistic view allows hospitals to pinpoint the specific root cause of performance issues – which are likely to actually exist in the on-premises delivery infrastructure, not Cerner itself.
- Goliath's proactive approach to Citrix performance issues leads to less criticism for Cerner and reduces support calls to CernerWorks.

To find out how Goliath Technologies proactively resolves on-premises end user experience issues for any Citrix or VMware delivered application, contact a member of the Goliath Technical team.

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ABOUT THE AUTHORS

Goliath Technical Support Team



The team members collaborated to bring together this guide by calling on their past customer experiences and expert knowledge of end user performance troubleshooting. In addition to creating technical documentation, this team also provides superior support to Goliath customers and product feature/function guidance to our development team.

Cerner is now an authorized Goliath Technologies reseller. For more details on purchasing Goliath Performance Monitor please contact your Cerner representative.