Managing Citrix Environments
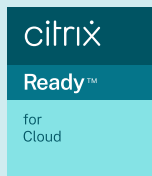
Universal IT monitoring and simulation from a single pane of glass with eG Enterprise

citrix
Ready™
for Cloud

eG Enterprise is a total performance management and observability solution that provides automated IT monitoring, diagnosis, and reporting for Citrix environments. Organizations can use eG Enterprise to troubleshoot application slowdowns, user experience issues, network outages, virtualization bottlenecks, server failures, storage hotspots, and more. eG Enterprise bridges the gaps between a single-vendor management solution to make your helpdesk team more proactive—across physical, virtual, or cloud-based Citrix deployments.

Managing dynamic Citrix infrastructures

As organizations grow and modernize into private and public clouds, their Citrix infrastructure can become complex, with intricate dependencies on the underlying infrastructure. Unforeseen issues with virtual machine resources, cloud connectivity, or opaque hidden infrastructure components can cause performance problems for users. Slow logons, session disconnects, delayed application launches, or poor responsiveness can be the result. Helpdesk personnel are often left reacting to apparent effects rather than understanding root causes, making simple issues challenging to diagnose and resolve.

While excellent management tools exist for Citrix environments and other infrastructure components, few take a comprehensive perspective across multivendor infrastructure. Even with the availability of sophisticated management tools, gaps can prevent end-to-end visibility into the performance and operational health of Citrix infrastructure. As separate management platforms have proliferated, multiple tools often overwhelm helpdesk personnel, negatively impacting their productivity. The result can be unhappy users and lost user productivity.

Citrix and eG Innovations

As a Citrix Ready Premier partner, eG Innovations improves the Citrix user experience while helping

Citrix administrators and helpdesk personnel ensure seamless service delivery across their organization. eG Innovations delivers actionable performance insights to help Citrix admins detect, diagnose, and solve problems before they impact end users. With end-to-end visibility into the Citrix delivery chain, eG Enterprise lets organizations:

- **Monitor** all aspects of the user experience, including login, app launch, latency, disconnects, etc.
- **Gain visibility** into every layer and every tier of the Citrix and non-Citrix tiers of your infrastructure
- **Get to the root cause** of performance problems in one click
- **Optimize, right-size, and plan** for capacity expansion using empirical data
- **Remediate application and infrastructure issues** quickly and accurately with AIOps-powered automated diagnostics

eG Enterprise, a total performance management solution

A typical Citrix deployment has many tiers and layers. Network connectivity and bandwidth availability can represent additional complicating factors as organizations move to the cloud. For example, an incorrectly sized Azure virtual machine type for Citrix virtual app may mean more time for user or application request processing, resulting in a perceived lack of performance. Citrix Director focuses on sessions, while Citrix Analytics reports the percentage of users impacted. Using eG Enterprise on top of these tools provides end-to-end multivendor product visibility.

eG Innovations' focus is to bridge the gaps between multivendor solutions and make the Citrix help desk team proactive. eG Enterprise monitors every layer and every tier, including Citrix and all supporting infrastructure. This focus includes on-premises or mixed-vendor infrastructure such as Nutanix or VMware Hypervisor and hyperscale clouds like Microsoft Azure and Amazon Web Services. eG Enterprise helps by accurately modeling the end-to-end Citrix environment, proactively identifying potential issues before they

become real problems, and assigning tickets to the right support team for resolution.

Complete end-to-end Citrix services monitoring

Hybrid clouds can be complex to manage. Many organizations have extensive on-premises infrastructure and various cloud services—all with complex security and regulatory constraints. eG Innovations supports these hybrid cloud environments with deep domain expertise and analytics for troubleshooting while presenting a comprehensive perspective on the performance of IT infrastructure (Figure 1). As a verified Citrix Ready application that is a purpose-built monitoring solution for Citrix workspaces, eG Enterprise supports the latest versions of Citrix Workspace components, including:

- **Virtual apps**. eG Enterprise lets organizations track critical performance metrics and get alerted to issues before they can compound and cause diverse symptoms. Organizations gain unparalleled visibility into Citrix login time, Citrix Independent Computing Architecture (ICA) round trip time, network latency, HDX capabilities, line speed, bandwidth, users, and applications. By managing the Virtual Apps service

end-to-end, not as individual silos, organizations can troubleshoot issues with automated performance correlation and root cause diagnosis. Historical trends can help optimize Citrix infrastructure and provide capacity planning insights.

- **Virtual desktops**. eG Enterprise is the only solution that provides inside and outside views of virtual desktops, helping Citrix administrators to get unparalleled insights into Citrix Virtual Desktop performance. Organizations can monitor all aspects of Virtual Desktops performance, from logon to desktop access, application launch, and session resource usage. By monitoring the user experience at each VDI tier, organizations can identify potential bottlenecks and remediate them automatically. Deep visibility into HDX virtual channels allows measuring the Citrix user experience for every desktop session. Built-in reports and analytics help optimize the scale of the Citrix environment.

- **Citrix Cloud**. Moving to Citrix Cloud doesn't mean you don't have to monitor the Citrix service. For example, problems in the Citrix Cloud control plane can result in slow Citrix access. Administrators ultimately remain responsible for logon times, sessions, round-trip times, and the entire user experience, independent
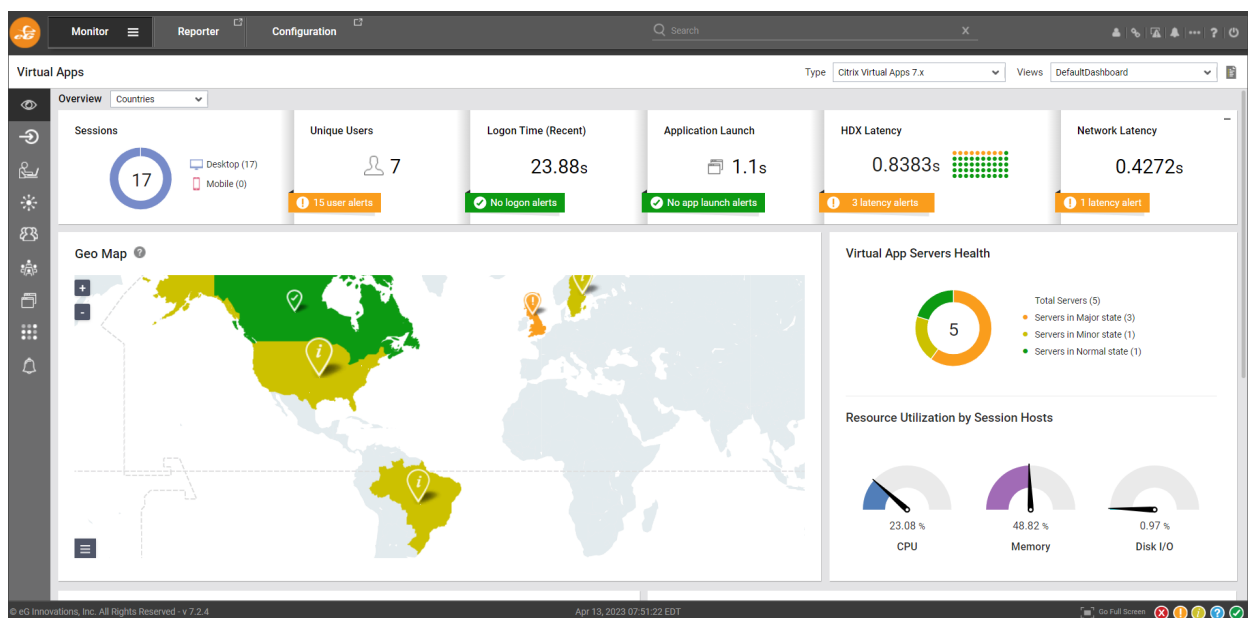

Figure 1. eG Enterprise provides a comprehensive perspective of your Citrix infrastructure through a single pane of glass.

of service hosting. eG Enterprise provides visibility into Citrix on-premises and cloud services to quickly isolate root causes with Citrix services. eG Enterprise monitors the Citrix Cloud control plane and all the tiers of the local resource plane, with both synthetic and actual user monitoring to track user experience. Organizations can rapidly identify root causes, resolving whether issues stem from the Citrix Cloud, local servers, virtualization, storage, or the network (Figure 2).

- **NetScaler**. NetScaler has evolved to support a variety of functions, including application firewalls, VPN tunnels, caching and acceleration, compression, and ensuring fast delivery of web and desktop applications. Since it plays such a central role in Citrix environments, the performance of NetScaler is critical. NetScaler performance can impact the user experience, but it is also essential for safeguarding the security and sanctity of the IT infrastructure. eG Enterprise gives administrators excellent visibility into the performance and usage of all NetScaler instances. One console provides alerts for all NetScaler anomalies, including high traffic, security violations, login errors, load balancing issues, SSL certificate issues, etc.

- **Citrix StoreFront**. Citrix StoreFront is the gateway to Citrix services. If Citrix StoreFront is down or

slow to respond, users will have issues accessing Citrix services, resulting in a poor user experience and reduced business productivity. eG Enterprise monitors dozens of Citrix Storefront key performance indicators (KPIs), providing a comprehensive view of Citrix StoreFront performance. By monitoring Citrix StoreFront services from the inside and the outside, organizations can monitor all Citrix StoreFront servers and associated services while tracking the availability and responsiveness of Citrix StoreFront stores. Proactively testing Citrix StoreFront enumeration and application availability provides alerts to administrators before users complain. Administrators get baseline Citrix StoreFront health metrics and KPI deviations that may cause performance issues.

- **Citrix Provisioning Services**. Large-scale application and desktop virtualization environments often employ Citrix Provisioning Services (PVS). Bottlenecks in the PVS servers can lead to slow boot times, causing desktops and applications to be unavailable or slow. Since users do not directly access Citrix PVS, slowdowns or Citrix PVS failures can be hard to detect. eG Enterprise is one of the few solutions that provide deep visibility into every aspect of Citrix PVS performance—independent of the server's physical or virtual machine deployment. In-depth visibility and analysis of Citrix PVS KPIs at the server operating
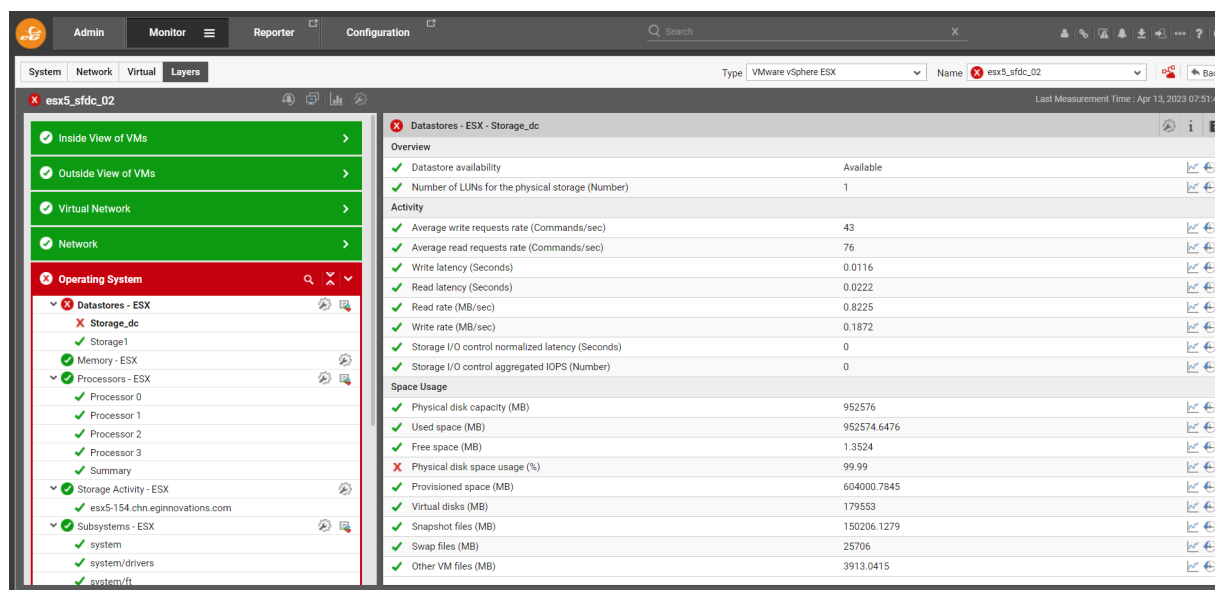

Figure 2. Administrators and call center personel can instantly drill down to understand the root cause of performance problems, before they impact larger groups of users.

system, infrastructure, and application layers are the keys to identifying Citrix PVS problems proactively.

Synthetic user monitoring

With end-to-end monitoring capabilities, Citrix teams can rapidly perform root-cause performance analysis across all tiers and layers. Beyond improving the user experience, these insights can aid organizations with capacity planning and infrastructure optimization. eG Enterprise provides a full suite of synthetic monitoring solutions, including:

- **Citrix Logon Simulation** simulates a Citrix HDX protocol session using pre-defined sequences and Citrix session logging.
- **Full Session Simulation** portrays a real user interacting with a Citrix session and performing typical tasks such as editing a Microsoft Word document or checking e-mail in Microsoft Outlook.

Enterprise-wide visibility through a single pane of glass

eG Enterprise uses a combination of agent-based and agentless approaches to monitor the health and performance of the entire IT infrastructure from application code to bare metal across physical, virtual and cloud, and hybrid IT environments – from a single

pane of glass. Using a patented performance correlation and root cause diagnosis technology, eG Enterprise simplifies performance troubleshooting, resulting in faster problem resolution and increased operational efficiency for IT pros.

- **Universal IT monitoring technology**. The eG Universal Monitor (Figure 3) enables the unified IT monitoring of over 200 applications, more than ten operating systems, ten plus virtualization platforms, and over 20 storage devices. Based on embedded domain expertise, the eG Universal Monitor provides performance monitoring insights into end-user experience, business transactions, applications, and the supporting infrastructure (physical, virtual, and cloud). Administrators can choose between agent-based and agentless monitoring options.
- **AIOps-powered automatic dynamic baseline**. Setting thresholds for thousands of performance metrics is tedious, time-consuming, and requires significant expertise. Administrators often cannot manually set effective thresholds as they vary with the time of day or week. eG Enterprise uses simple auto-deploy and discovering technologies and collects the metrics. By analyzing historical data, it automatically determines time-varying thresholds. Multiple levels of thresholds are supported to allow problem escalation. Deviations from the norm can trigger alerts, so you are informed pre-emptively before problems escalate and impact the user experience.
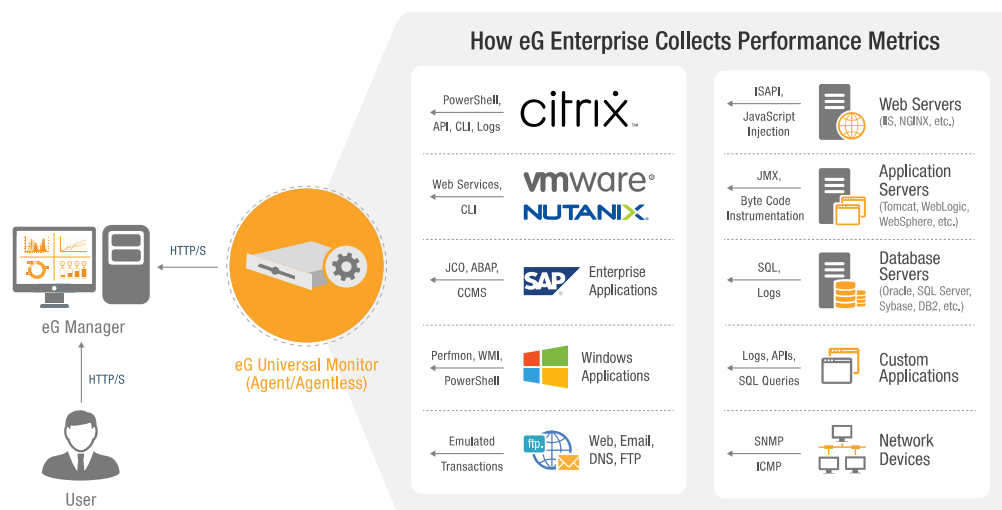

Figure 3. The eG Universal Monitor monitors hundreds of applications.

- **Automatic performance correlation and root cause diagnosis**. Since IT infrastructures are highly interdependent, a problem in one tier can ripple and affect all the other tiers. New interdependencies introduced by virtualization and cloud computing further accentuate the situation. eG Enterprise embeds the industry's first truly virtualization- and cloud-aware root cause diagnosis technology. eG Enterprise correlates performance alerts from different tiers by discovering application-to-VM, VM-to-host, and host-to-storage dependencies. It automatically pinpoints where the root cause of a problem lies.

- **Built-in reports and analytics**. eG Enterprise provides numerous pre-configured dashboards and reporting templates to aid administrators in comparing, correlating, and analyzing the performance of specific components, segments, and services. It also helps analyze the health of individual system components and metrics generated in the monitored environment. For enhanced historical reports and analysis, eG Enterprise also includes an optional eG Reporter solution that offers comprehensive pre-canned and customizable reports of the target infrastructure's availability, performance, and usage.

- **eG Enterprise Licensing**. eG Enterprise monitors the Citrix license server in both an agent-based and agentless manner. Customers can select server-based or user/VM-based license types, depending upon the nature of their environment and their monitoring needs. With a single eG manager, you can have the Citrix DaaS or cloud components in your environment managed using user/VM licensing, with all other applications using server-based licensing. The eG Enterprise license console helps you continuously track license usage and proactively detect a potential violation.

Conclusion

As a complement to Citrix Director and Citrix Analytics, eG Enterprise allows organizations to proactively monitor, diagnose, and report on the performance of Citrix virtual apps and desktops. Organizations get end-to-end visibility and the ability to correlate performance across tiers automatically. With Citrix-specific functionality and proactive notifications, administrators and helpdesk personnel can rapidly drill down into underlying performance problems that are otherwise difficult to observe or measure.