eG Innovations

AIOps for Hybrid IT

with eG Enterprise 7.5

Release Notes

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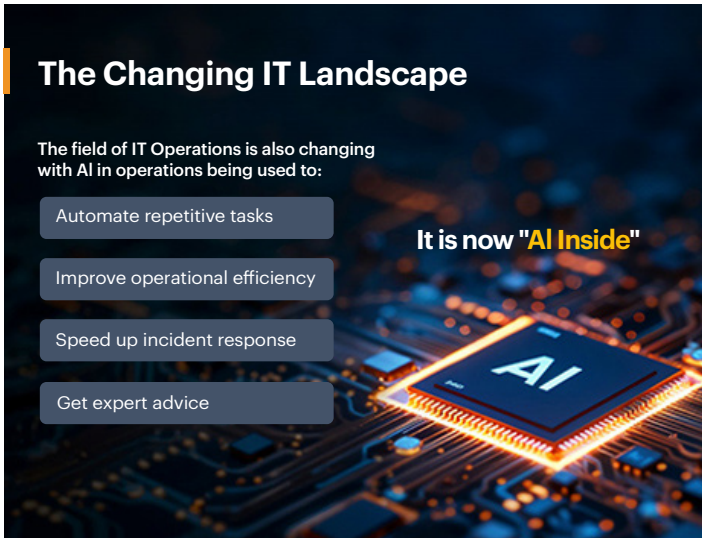
Introduction

Over the last year, artificial intelligence-based innovations have captured everyone's attention. The evolution of AI models such as Google's Gemini, Microsoft's Copilot, ChatGPT and DeepMind have enhanced reasoning capabilities and allowed software to perform tasks without significant training.



The world of IT operations — which deals with deployment, monitoring and troubleshooting of IT applications and infrastructure technologies — has also been influenced by the advent of AI technologies. AIOps (Artificial Intelligence for IT operations) applies machine learning and analytics to manage the growing complexity of IT environments. Enterprises and service providers are seeking solutions that implement a wide range of AIOps capabilities to predict and prevent failures and provide recommendations for configuration and resource allocation. This proactive approach helps reduce operational costs and allows IT teams to focus on strategic initiatives — ultimately improving business efficiency.

Another major trend is the shift in cloud adoption. While many organizations are still pursuing a cloud-first strategy, others are repatriating workloads due to rising costs, reduced resiliency, and the need for simpler governance. This dual trend requires enterprise solutions to support both cloud and on-premises environments — including hybrid deployments.

These two trends significantly influenced the evolution of the eG Enterprise observability solution. This whitepaper describes the key enhancements in our latest release, eG Enterprise v7.5.

To Cloud or Not to Cloud?

94% **of all companies worldwide use cloud computing** in their operations.

85% **of organizations** are projected to embrace a cloud-first principle by 2025.

Source: https://colorlib.com/wp/cloud-computing-statistics/

The last year also saw the rise of **cloud repatriation.**

Source: https://www.eetimes.eu/cloud-repatriation-on-the-rise-83-of-cios-plan-workload-shifts-in-2024/

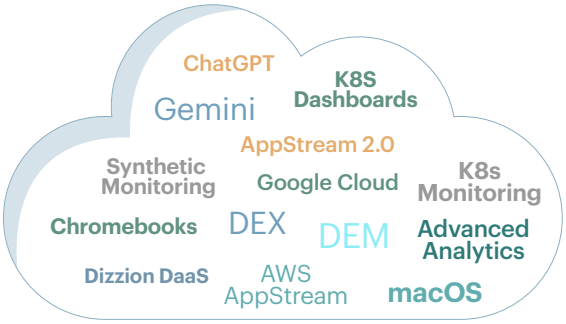
Other Industry Trends Influencing eG Enterprise Evolution

There have been several other relatively minor trends that have influenced the eG Enterprise roadmap:

- **Flux in the end-user computing (EUC) industry:** The acquisition of Citrix by the Cloud Software Group and the separation of the Horizon EUC portfolio from VMware and subsequent rebranding as Omnissa were very significant events. Both vendors changed their licensing models for their solutions, forcing customers to look at other alternatives. This has resulted in significant interest around cloud-based VDI offerings.
- **Increasing interest around Digital Experience Monitoring:** With hybrid workstyles being common, there has been significant interest from IT organizations for monitoring the digital experience of employees.
- **Wider adoption of containers and microservices:** Many organizations have been actively adopting container and microservice technologies. While containerization has many advantages, it also makes monitoring and management more challenging because of the transient, dynamic and inter-dependent nature of these environments.

eG Enterprise v7.5 Continues the Observability Journey

Starting with v7, eG Enterprise began expanding its value beyond just monitoring application and infrastructure performance. Customers now use eG Enterprise to monitor and control cloud costs, secure applications and servers, forecast future requirements, and optimize resource sizing. eG Enterprise v7.5 builds on this foundation, adding new capabilities in several key areas.



To address the evolving needs of enterprises and service providers, eG Enterprise v7.5 includes:

- **Integration with GenAI** services to provide recommendations and insights, making it easier than ever for IT staff to use and benefit from the observability solution.
- **Intelligent analytics** for detecting changes and trends so administrators can pre-emptively take action to remediate issues.
- **Enhanced capabilities for cloud workspaces** (AWS and Azure) and support for multi-session Amazon AppStream 2.0, Dizzion DaaS and Cloud PC and Google Workspaces.
- **Enhanced Digital Employee Experience (DEX) monitoring** for Windows and Linux endpoints and support for Google Chromebooks and macOS.
- Built-in capability to **synthetically monitor any type of application** – thick client, thin client, web, etc.
- **Enhanced coverage of on-prem and cloud environments,** including support for Google Cloud, new Azure and AWS services, Infoblox, Dell Boomi and other on-prem technologies.
- **Deeper insight into Kubernetes deployments,** and new dashboards that enable faster analysis and troubleshooting.

Like any major release, eG Enterprise v7.5 introduces new monitoring capabilities, scalability and performance enhancements, and also includes a significantly restructured security architecture. Enhancements in this release span all four major use cases of eG Enterprise: Unified end-to-end monitoring, Application performance monitoring (APM), Digital workspace monitoring and Enterprise application monitoring.

eG Enterprise v7.5 Summary

In a Nutshell

650 different types of application / infrastructure components

8000 different checks

58,500 unique metrics tracked

Platforms Supported

+Added
- Agent/Manager on Windows 2025
- Agent on Linux 64 - bit ARM
- VM agent for macOS

Enhanced Security

- AES - 256 encryption
- Preventive controls built - in
- Protection at every stage

Improved Core

- Tomcat 11
- JDK/JRE 21

Architectural Improvements

Architectural updates in eG Enterprise v7.5 improve its scalability, performance, and security. The underlying application server engine is based on Apache Tomcat 11 and the Java Runtime uses version 21. Both of these changes contribute significantly to performance improvements. Optimizations have been made across all components of eG Enterprise:

- HTTP/2 is used over SSL, contributing to a 10-55% increase in responsiveness.
- Reads/writes of INI files used to store configuration data on the manager and agents are optimized for faster accesses.
- Heartbeats are enabled for agent/manager communication, making it faster and more reliable to detect agents that are not reporting.
- Database accesses have been made faster by setting larger fetch sizes from the database by default for data accesses.
- Modern Java virtual machine Garbage Collection (GC) parameters have been added to the Agent and VM agent, reducing memory foot-print by 15-50%.
- Log rotation technology used by the manager and agents has been made more efficient, reducing overheads.

Security Improvements

eG Enterprise's security architecture has been revamped, with a secure by design principle adopted at every stage of the lifecycle:

- eG Manager and Agent services now use a lower privileged service account on Windows OS. This minimizes the chances of eG Enterprise services being exploited for attacks.
- To force security best practices, SSL is turned on by default during installation of the manager and agents.
- During installation, administrators are forced to change the default credentials for the standard eG Enterprise user accounts, thereby enhancing security.
- Automatic expiry of passwords is now supported. Moreover, passwords are stored using one-way hashing, making it computationally infeasible to reverse-engineer the original password.
- AES 256 is now the default standard for encryption in eG Enterprise.
- Credentials stored in eG Enterprise are encrypted in a deployment-specific manner. This ensures that it is not possible to decrypt credentials taken from one installation on another installation.
- eG Enterprise can be configured for strict authentication of agents. Once this is set, agents downloaded from one manager cannot communicate with other managers. This is particularly important for cloud/SaaS deployments.

Enhanced Security Profile

External Validation with 200+ checks covering:

- Config & Deployment
- Identity Management
- Authentication
- Authorization
- Session Management
- Data Validation
- Error Handling
- Cryptography
- Business Logic
- Client-Side
- Data Exposure

- Temporary data that is stored on the agent systems before transmission to the manager can also be encrypted, making it impossible to alter the data prior to transmission.
- Safeguards against replay attacks and request modification attacks have also been introduced.

Another significant change is that VM agents that are used to get inside views of performance of VMs, cloud desktops, physical desktops, etc., communicate with remote agents over SSL by default.

Functionality Enhancements

Installation and Logon Improvements

As with security changes, functional improvements have been introduced at every stage of the eG Enterprise lifecycle. During installation:

- Windows 2025 Server OS is now supported for the eG manager and agents. eG Agents now also support Linux on ARM 64 and SELinux platforms. VM agents are now available for macOS also.
- While the eG manager could previously be installed with MS SQL PaaS as the backend, now SQL PaaS service integrated with Azure Entra ID is supported.
- Agent installation is simplified with one-line commands. The command for Windows OS now supports TLS v1.2 by default and uses background transfer for improved speed.

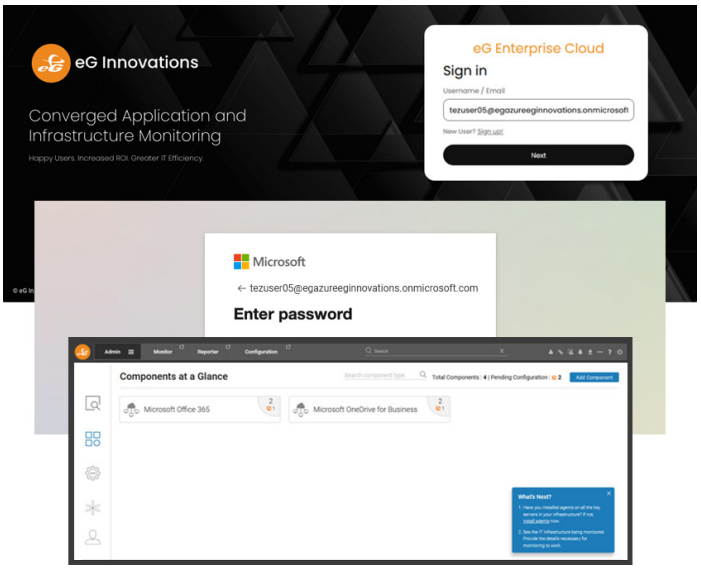


Figure 1: The eG Manager can be integrated with multiple SAML identity providers. The login page hides the details of the identity providers.

In earlier versions, for authentication and logon, eG Enterprise had integration support with Azure Entra ID and SAML when used in a single enterprise deployment mode. This integration is now supported in a multi-tenant SaaS deployment mode as well. For security, the login page does not reveal the Identity providers supported by an eG Enterprise instance. Instead, after a user enters their login ID, the system auto-discovers the identity provider mapped to this login ID and redirects the user to authenticate themselves accordingly. With this model, multiple Entra IDs/SAML identity providers can be supported by a single instance of the eG Enterprise manager.

Gen AI Integration

To simplify monitoring, diagnosis, and troubleshooting, eG Enterprise now includes a new integration with Gen AI services. ChatGPT and Gemini are supported currently and an administrator can choose which of these services is to be used from the eG Enterprise console. There are five options to request AI assistance.

- If you want to know the explanation of an alert, click on the *Explain* option. You are informed about the typical reasons for an alert and what could cause it.
- The *Analysis* link reviews the alarm under consideration and presents top impacts the problem may have on your service/infrastructure and why you need to take action to resolve it.
- The *Anomaly Detection* selection analyzes data relating to the alarm – e.g., the last hour is analyzed and time specific issues are highlighted.
- The *Root-cause Analysis* selection examines detailed diagnosis information and provides insights into what the cause of the problem is and how to fix it.
- The *Best Practices* tab suggests how to resolve the issue and what steps to take to avoid a recurrence of the problem in the future.

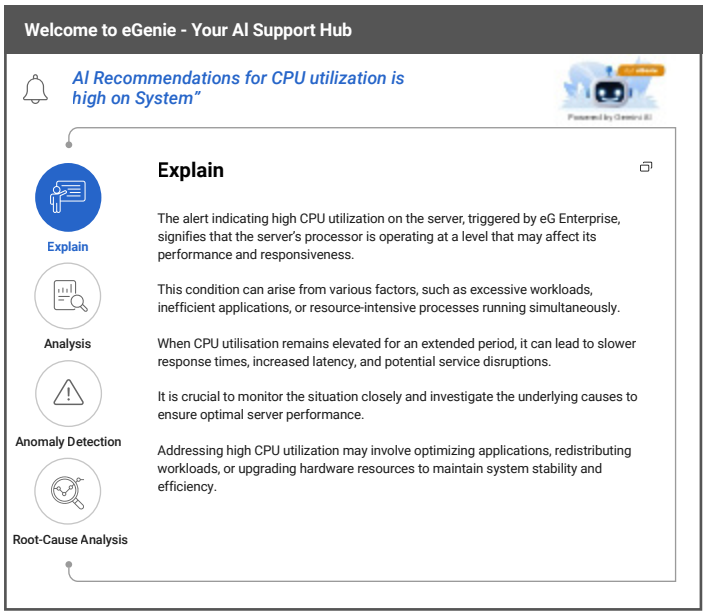


Figure 2: *Different options available for eG Enterprise users to leverage know-how from GenAI services.*

AI integration is available from the current alarms window, alarm history, and from the metrics view of the layer model. By making expert advice and easily understandable inputs available from Gen AI services, this integration greatly simplifies the usage of eG Enterprise. Non-experts can effectively use eG Enterprise by quickly understanding what each metric represents, why it matters, and how to resolve issues when values change.

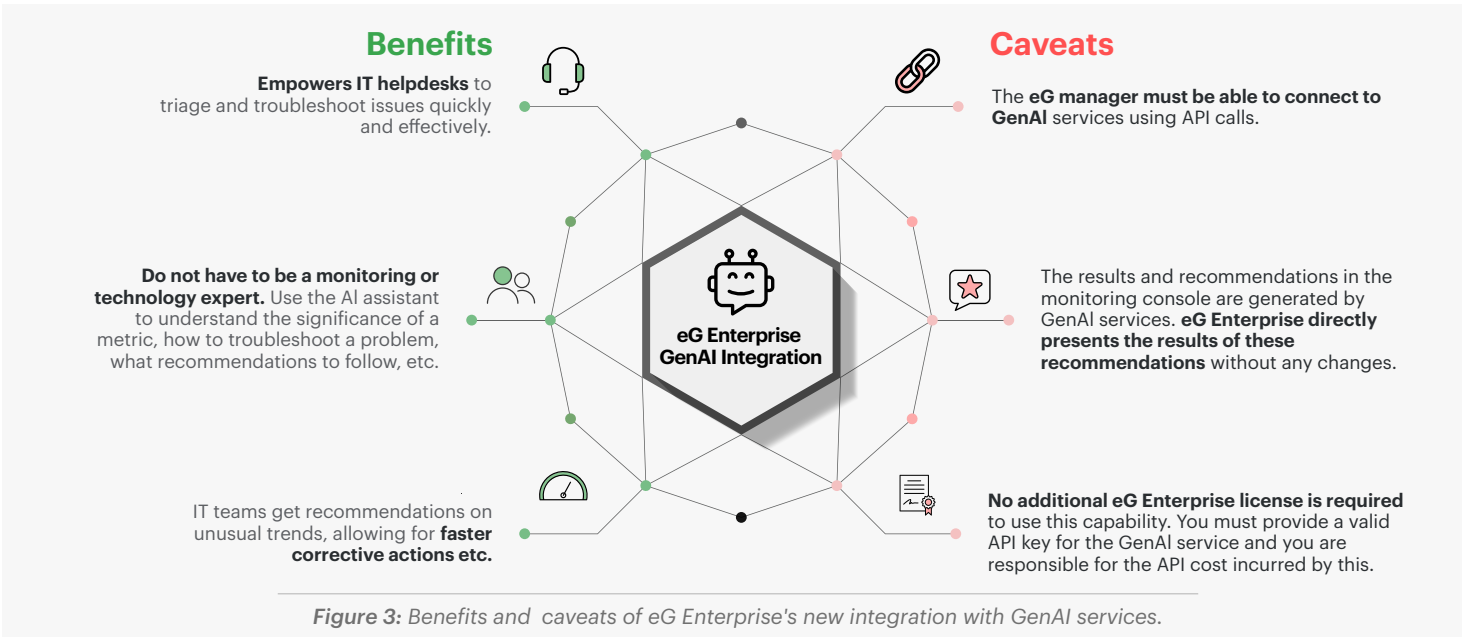


Figure 3: *Benefits and caveats of eG Enterprise's new integration with GenAI services.*

Analytics Improvements

eG Enterprise v7.5 offers improved forecasting. The forecasting methodology and visualization have both been enhanced. Rather than a simple linear projection, eG Enterprise now forecasts a confidence range within which the metric is expected to fall. Furthermore, forecasts for multiple metrics can now be included in a single report, simplifying cross-metric analysis.

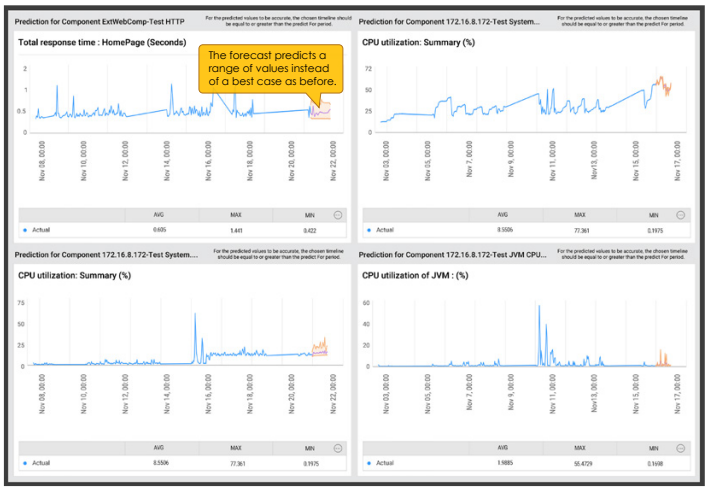


Figure 4: Multi-metric forecasting is now supported. The area in brown shows the forecasted range for each metric.

eG Enterprise now includes new analytics to track the rate of change in metrics. Since thresholds are typically configured based on an organization's alerting needs, they may not alert on a metric that changes rapidly. A fast changing metric, even if it remains below the threshold, may still indicate a significant event that administrators should be aware of. New reports in eG Enterprise allow administrators to select any metric of interest and identify which components or descriptors exhibit the fastest growth.

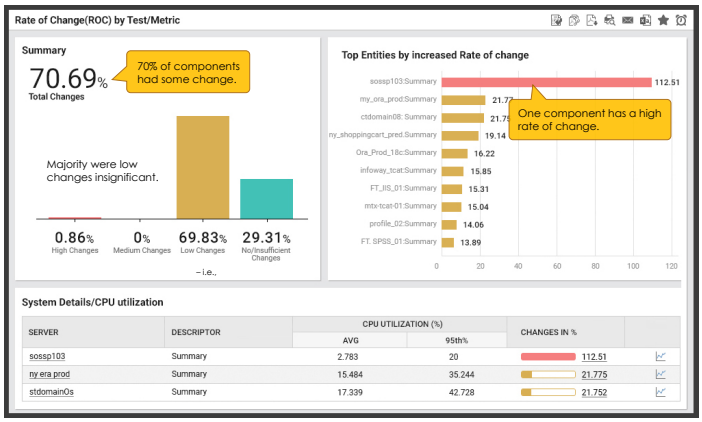


Figure 5: eG Enterprise now tracks rate of change of metrics and highlights any significant changes that may be indicative of anomalies.

A reporting option is also available that allows administrators to quickly identify which combinations of metrics, components, and descriptors are experiencing the fastest rate of growth.

By tracking the rate of growth, organizations can take a truly proactive approach — enabling them to act before issues arise or identify opportunities to optimize the monitored infrastructure and applications.

Figure 6: A Similarity report that groups components based on their similarity of metrics. Outliers are clearly highlighted.

Another analytics enhancement — particularly useful for large environments — is the *Similarity Analysis report* for outlier detection. When hundreds of systems and applications are being monitored, how can you identify which ones exhibit significantly different behavior compared to the rest? For a specific metric, the similarity report considers the 25th, 50th, 75th percentiles, min/max values of each component and groups components with overlapping value ranges. Components with no overlap are placed into separate groups. The similarity report provides a visual summary that makes it easy for administrators to identify outliers and take corrective action early.

Alerting Improvements

When integrating with ITSM systems for ticketing, eG Enterprise now provides the option to include a clear, human-readable textual representation of each alarm in the ticket content. During configuration, administrators can select which fields — from a list of available options — should be included in a ticket.

In eG Enterprise, the maintenance mode concept is used to suppress alerts during planned downtime. When the monitoring system itself is undergoing maintenance (e.g., database reindexing, backups, etc.), administrators can now activate maintenance mode for the entire system and all agents with a single click — preventing a flood of unnecessary alarms. Additionally, maintenance policies can now be applied at the zone, segment, or service level, reducing the time that administrators spend configuring policies for individual components.

Domain-Specific Enhancements

The key to eG Enterprise's value lies in its effective integration of domain expertise with analytical intelligence. Knowledge of which metrics to collect and how to interpret them is embedded in the solution, and is based on vendor best practices, expert insights, and real-world experiences. With every release, eG Enterprise expands its coverage across the IT infrastructure and application landscape.

Figure 7: eG Enterprise augments AIOps capabilities with domain-specific intelligence, providing a compelling solution for converged application and infrastructure monitoring.

Enhancements in v7.5 address all four major use cases and are discussed in detail in the following sections.

New Digital Workspace Platforms Supported

- **Dizzion DaaS and Cloud PC** offer a lower-cost alternative to Citrix and Omnissa Horizon. eG Enterprise VM agents can now be deployed on Dizzion virtual desktops to monitor the performance of each user session. Key user experience metrics reported per session include network latency, frame quantization levels, frame display rate, and estimated bandwidth usage.

- eG Enterprise VM agents can be deployed on **Windows 365 Cloud PCs** to monitor all aspects of user experience, including logon time, application launch time, network latency, and more. User experience dashboards and specialized reports for Windows 365 are built into the eG Enterprise platform.

- **Amazon AppStream** now supports multi-session hosts, allowing multiple user sessions to run on the same Windows host. eG Enterprise agents deployed on AppStream hosts automatically monitor all aspects of AppStream user experience — from logon time to app launch time to round-trip latency. All dashboard and reporting capabilities available for other digital workspace technologies are also supported for Amazon AppStream 2.0 multi-session hosts.

Enhanced Support for Citrix, Omnissa Horizon and Azure Digital Workspace Technologies

- **Logon Simulator Enhancements:** Monitoring, diagnosis, and reporting capabilities have been further improved for supported digital workspace technologies, including Citrix, Omnissa, and Azure Virtual Desktops. Logon simulators have been enhanced to support the latest interfaces of both on-premises and SaaS versions offered by these vendors.

  Support has also been added for a retry mechanism to reduce false alerts. Logon simulators can now be configured to retry multiple times and will only report an availability failure if all retries are unsuccessful. Logon simulation also supports the latest versions of OKTA, DUO, Azure Entra ID, and ADFS as identity providers. Dynamic two-factor authentication (2FA) is supported via native OTP from Citrix Cloud and on-premises gateways, as well as OAuth software tokens from Azure Entra ID.

- **Windows Resource Monitor Integration:** For Citrix Virtual Apps and Desktops, as well as Omnissa Horizon, eG Enterprise agents and VM agents now integrate with Windows Resource Monitor to provide latency metrics related to connectivity from various client applications. This information helps administrators determine whether slowness is caused by connectivity issues between the remote desktop or app system and backend applications. Future versions of eG Enterprise will include dashboards to visually present this data to administrators.

- **New Citrix Monitoring Capabilities:** eG Enterprise now integrates with the latest enhancements in Citrix Virtual Apps and Desktops, offering deeper insights into user experience and performance. New capabilities include:

  - Enhanced Citrix EDT performance analysis through integration with the latest Citrix counters.
  - Tracking of new Citrix HDX Graphics counters for each virtual app or desktop session.
  - Improved visibility into user logons, including monitoring of both machine and user Group Policy Objects (GPOs), as well as AppX package load times.
  - Logon times are now displayed in the user experience dashboard, even when the virtual desktop has migrated between hypervisors.
  - New performance and latency metrics have been introduced to identify bottlenecks in the Citrix provisioning services tier.

- **Citrix Studio Maintenance Policy Integration:** eG Enterprise can now be integrated with Citrix Studio's maintenance policy management. It automatically discovers maintenance configurations defined in Citrix Studio for different delivery groups and synchronizes them with its own monitoring system. When a Citrix virtual app server is placed into maintenance mode via Citrix Studio, eG Enterprise automatically reflects this change from a monitoring perspective. Similarly, when a delivery group is taken out of maintenance, the change is mirrored in eG Enterprise.

  Previously, administrators had to manually configure maintenance mode in both Citrix Studio and eG Enterprise. This new automatic integration significantly reduces administrative effort, saves time and avoids false alerts.

- **Support for Blacklisted Clients:** In both Citrix and Omnissa environments, administrators can now configure client blacklisting policies. If a user connects from a blacklisted device, the session is immediately terminated, and the event is recorded. Administrators can view and track such instances directly from the eG Enterprise console.

- **Support for the latest Horizon versions:** Following the divestment of Omnissa from VMware, newer versions of Omissa Horizon 8 (2412 and higher) have introduced significant changes to registry keys, service names, process names and folder names used by Horizon components. eG Enterprise agents and

Figure 8: When user endpoints are monitored with eG VM agents, the user session topology also shows the relevant endpoint for the user session with insights into the endpoint performance.

VM agents now have support for the latest versions of Horizon, at the same time ensuring backward compatibility for earlier versions.

- **Integration of Endpoint Monitoring with User Session Topology:** The user session topology view in the user experience dashboard now includes metrics from VM agents installed on endpoints. This enhancement enables administrators to determine whether latency when accessing a virtual desktop is due to poor network connectivity from the user's home environment. By integrating endpoint visibility into the session topology, administrators can troubleshoot issues more quickly and proactively address performance complaints such as "my desktop is slow."

- **Remote Control Support for VDI:** Remote control is now supported for virtual desktops as well. Without requiring any additional TCP ports to be opened on the desktops, administrators can perform the same set of control actions previously available for virtual app sessions.

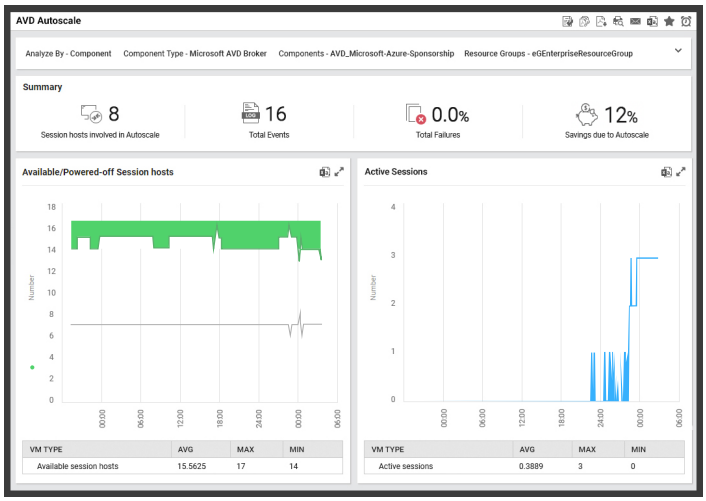


Figure 9: Azure auto-scaling reports provide insights into savings from auto-scaling.

- **AVD Monitoring Enhancements:** For Azure Virtual Desktop (AVD) deployments, eG Enterprise now provides detailed bandwidth usage and latency insights for every user session. These metrics are combined to generate a comprehensive user experience score per session.

  New capabilities include deeper visibility into FSLogix status, diagnostics to identify connectivity issues from session hosts, and monitoring of RDS Shortpath — a technology that establishes a direct UDP-based connection between the AVD client and the session host.

  Additionally, new reports are available to assess the effectiveness of AVD auto-scaling, detect session host sprawl, and identify outdated clients being used to access the AVD infrastructure.

Enhanced Endpoint Monitoring and Reporting

To meet the Digital Employee Experience (DEX) monitoring and reporting needs of enterprises, significant enhancements have been made to endpoint monitoring and reporting capabilities.

eG Enterprise now supports macOS, with a dedicated VM agent available for macOS devices. In addition to supporting IGEL thin clients, Dell Wyse ThinOS is now supported, with agents embedded directly within the operating system. Google Chromebook endpoints are also monitored using an agentless approach via integration with the Chrome Management Telemetry API.

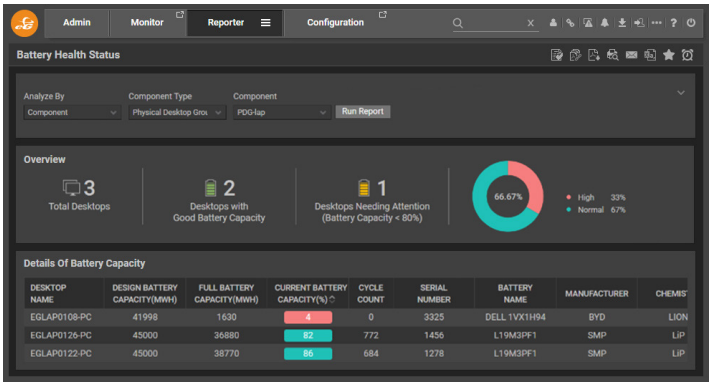


Figure 10: Report highlighting the battery status of desktops/laptops and indicating the ones that need replacement.

Several key enhancements in Windows desktop monitoring now offer deeper insights to enable proactive alerting and faster issue diagnosis:

- Windows memory exhaustion events that may impact Digital Employee Experience (DEX) scores are now detected and highlighted.
- VM agents integrate with native OS telemetry to report machine reliability metrics.
- Blue Screen of Death (BSOD) events are tracked, and the underlying causes are reported in the eG Enterprise console.
- Non-responsive applications are detected, with reports identifying the most frequent offenders.

- Hardware status monitoring is now supported for Windows desktops.
- A home network topology view visually displays connectivity from the user's home, helping both administrators and end-users identify potential performance bottlenecks.
- Battery status monitoring is now supported. A new Battery Health Status report helps identify desktops and laptops that may require battery replacement.
- Disk health monitoring is enabled through integration with S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology), which is supported by HDDs, SSDs, and eMMC drives. This integration detects and reports key indicators of drive reliability, allowing administrators to proactively anticipate and address potential hardware failures.
- A configurable Digital Experience Score is now available. This score consolidates various performance and usage metrics into a single, comprehensive measure of the overall digital user experience.
- Most of the key reports available for virtual desktops have been supported for physical desktops as well.

With the addition of these capabilities, eG Enterprise offers a complete observability solution for all types of digital workspaces — whether based on on-premises VDI, cloud-hosted VDI, or physical desktops.

The licensing model for physical desktops has been updated. Usage of physical desktops is now tracked separately from virtual desktops. To monitor physical desktop workloads, customers are required to purchase concurrent physical desktop monitoring licenses.

Physical Desktop Monitoring Summary

eG Enterprise provides in-depth monitoring of every aspect of Desktop performance:

Operating System

- CPU and GPU utilization
- Memory utilization
- Page file utilization
- Disk busy
- Disk space usage
- OS handles in use
- Blue screen of death
- Boot time
- DNS status

Networking

- Bandwidth usage by interface
- Packet discards by interface
- Queue length by interface
- TCP connections established
- TCP segment traffic (in/out)
- TCP retransmission

Events/Security

- System events by criticality
- Security events by criticality
- Application events by criticality
- Powershell executions
- Windows update status
- Vulnerable system drivers

Sessions

- Established sessions
- Disconnected sessions
- Active and Idle time
- Logon time and breakdown
- GPO processing

Applications

- Concurrent instances running
- Resource usage by application
- Application launch time
- Browser URLs accessed
- Browser resource usage

Digital Experience

- User Input delay
- Wi-Fi Signal Strength
- Local network latency
- ISP and Internet latency
- Latency by application and internal vs. external
- Digital experience ratings

eG Enterprise now integrates with Microsoft Intune for comprehensive device management. This integration is agentless, enabled through API-based connectivity. With eG Enterprise for Microsoft Intune, administrators can:

- Monitor the Intune devices and figure out non-compliant devices/error-prone devices.
- Track the validity of Apple MDM Push Certificates.
- Monitor Apple Volume Purchase Program (VPP) Tokens and identify expired tokens.
- Monitor Android Device Enrolment Profiles and identify expired profile tokens.
- Monitor Windows 365 devices and identify the devices that had failed, deprovisioned, in grace period etc.
- Track the validity of device certificates.
- Track the validity of certificate connectors and more.

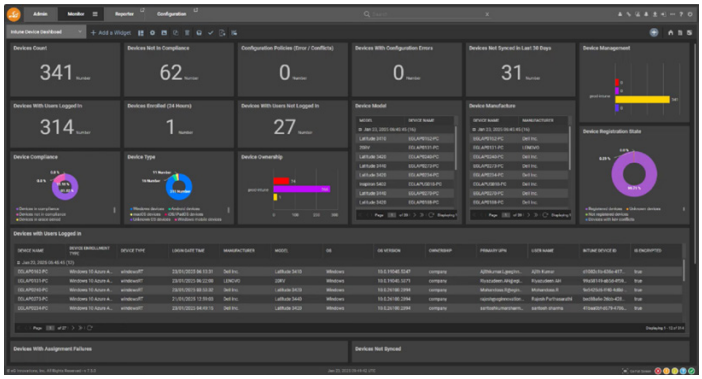


Figure 11: *Dashboard showing current status of Microsoft Intune managed clients.*

Enhanced Support for Cloud Environments

eG Enterprise aims to make Azure monitoring simple and effective. To achieve this, several new capabilities have been added to eG Enterprise:

- To monitor a Microsoft Azure subscription, several pre-requisites need to be fulfilled. eG Enterprise now provides a simple admin interface where by just following the step-by-step procedure, one can set up Azure subscription monitoring in minutes.
- Once you configure an Azure subscription for monitoring, you can see Azure service health advisories on the eG Enterprise console.
- Integration with the Azure Resource Graph API allows eG Enterprise to track all Azure resource changes including modifications, updates, or alterations made to resources within your Azure environment. This information is useful for compliance reporting.
- eG Enterprise's integration with Azure Advisor has been enhanced, so you can clearly see VM resizing recommendations. This information is also the basis for eG Enterprise's Azure VM Resizing report, using which administrators can quickly and easily see how to resize their VMs to save cost and enhance performance.
- Another way to save cost is to reduce the wasted resources in a subscription. eG Enterprise tracks and reports on different types of wasted resources including old VM snapshots, unused load balancers, unused app service plans, unused storage accounts, orphaned roles, unused IP groups, NAT gateways and virtual networks without subnets, etc.
- Monitoring for several new Azure services has also been added. The services covered include Azure Application Gateways, Azure DNS Zones, Azure DNS Private Resolvers, Azure API Management, Azure Data Factory and Azure Management Groups.

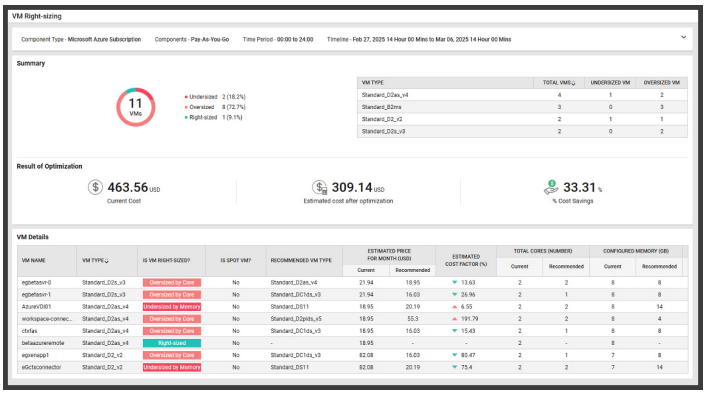


Figure 12: *Azure VM right-sizing report highlights where resources can be reduced and cost savings achieved.*

eG Enterprise also offers broader visibility into AWS services. Configuration of AWS monitoring has been simplified with more specific permissions being required. Support is now available for monitoring AWS from trusted nodes (managed identities) using IAM Roles.

Monitoring of AWS is now carried out via REST APIs rather than the AWS SDK. This shift eliminates the overhead of the SDK and results in a 25% reduction in the agent's disk footprint.

- Billing insights are now reported using tags. The increase in billing during each measurement period is tracked separately, and by auto-baselining this metric, administrators can be alerted if the AWS bill starts growing at a faster rate than usual.
- Integration with AWS Inspector now allows eG Enterprise to surface vulnerabilities with EC2 instances, Lambda functions and container images.
- By reporting on AWS Config service, eG Enterprise allows admins to assess, audit and evaluate the configuration of AWS resources and be alerted to non-compliant configurations.
- Right-sizing reports are available to help administrators identify under-sized and over-sized VMs and reconfigure their deployment to maximize performance and reduce costs.

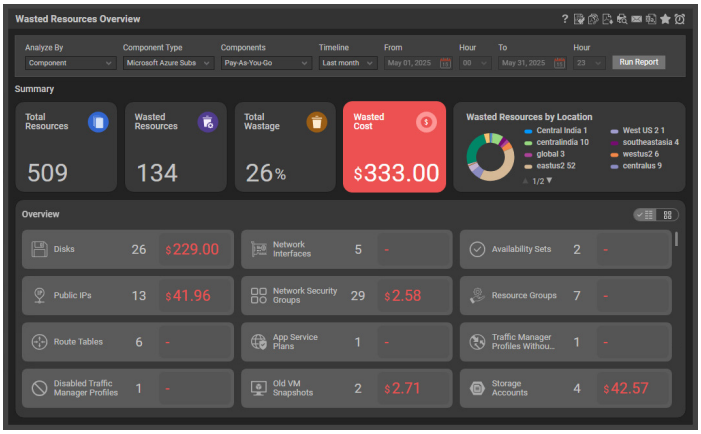


Figure 13: Azure wasted resources report highlights resources that can be decomissioned and costs saved.

Monitoring support for Google cloud platform (GCP) has also been introduced in eG Enterprise. The initial set of services supported includes the compute engine, storage, spanner, resource manager, datastore, composer, file store, big query, big tables and billing.

Kubernetes and Container Monitoring Enhancements

Kubernetes offers power and flexibility, but its dynamic and ephemeral nature breaks traditional monitoring models. Pod restarts, resource contention, and scheduling failures can occur rapidly across distributed nodes, making issues difficult to detect and resolve before they impact application performance. Since infrastructure, orchestration, and applications are tightly coupled, faults in one layer can quickly cascade through the entire stack. eG Enterprise now makes it possible to monitor all the common cloud-managed and on-prem Kubernetes platforms in one single console.

Kubernetes Distributions and Versions Supported

No.	Description	Support Status
1	Amazon Elastic Kubernetes Service (EKS)	Supported
2	Azure Kubernetes Service (AKS)	Supported
3	IBM Kubernetes Service	Supported
4	Google Kubernetes Engine (Standard)	Supported
5	Rancher (RKE)	Supported
6	RedHat OpenShift (OCP)	Supported
7	VMware vShere Kubernetes Service (VKS)	Supported
8	Naver Cloud Kubernetes Service (NKS)	Supported
9	Native Kubernetes	Supported

Kubernetes has different types of nodes. The master nodes that control the functioning of the cluster and the worker nodes that handle application workloads.

eG Enterprise now includes different models for these two types of nodes to allow their key functions to be tracked. For the master node, detailed metrics for Kube Controller Manager health, Kube Scheduler health and Etcd health are now tracked. In the same manner, for worker nodes, Kubelet health, Kube DNS health and Kube Proxy Health are among the new monitoring capabilities. At the cluster level, failed jobs are tracked by namespaces. Workload scaling is monitored by tracking ReplicaSets and StatefulSets.

New dashboards are introduced to track the cluster health, with drilldowns to see node health, container health and so on. Reports on node performance are also available so administrators can identify the top nodes by resource usage. Node monitoring is now achieved using gRPC API calls rather than command executions. This and several other optimizations have resulted in a significantly lower resource usage when monitoring K8S environments.

Several enhancements have been made to enable automated full-stack monitoring. Both Helm and YAML manifest installation methods are supported, allowing IT teams to choose the approach that best fits their workflows and expertise. Auto-discovery features

tailored to container environments are now also available. Monitoring can be auto-configured by populating credentials and other required details via a) Environment variables set in the application pod, b) ConfigMaps, or c) Kubernetes annotations. Additionally, mechanisms are provided to automatically map monitored applications to end users, further streamlining the setup process.

Monitoring of containerized applications is now licensed separately. For each monitored node, up to five containerized applications are eligible for full-stack monitoring at no additional cost. Monitoring of any additional containerized applications beyond this limit requires separate licenses. These are concurrent application licenses, managed in the same manner as concurrent VDI user licenses.

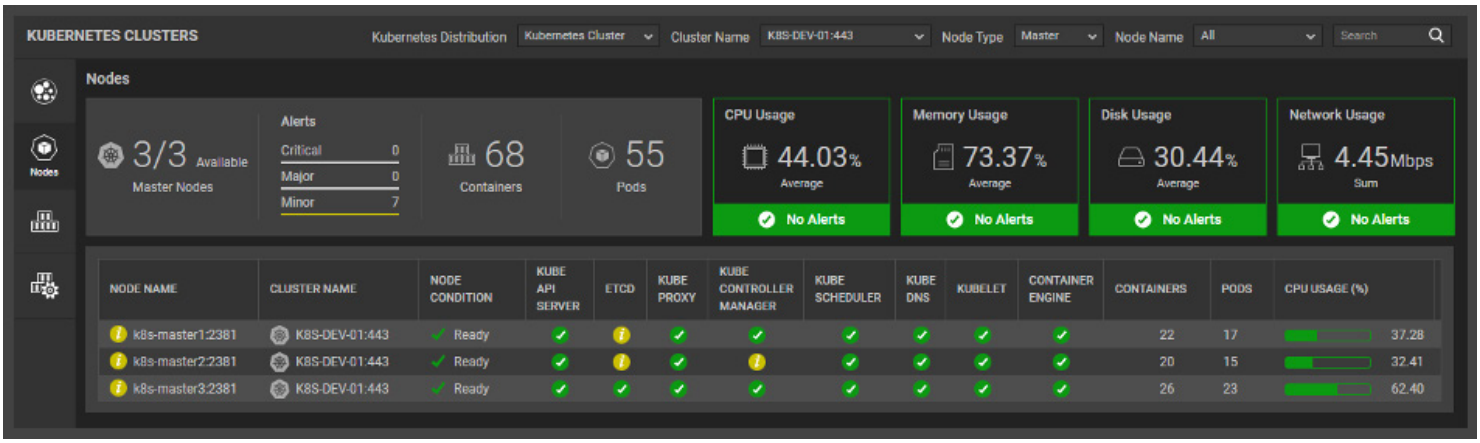


Figure 14: An overview of the master nodes in a Kubernetes cluster. The dashboard provides an at-a-glance view of key metrics.

Synthetic Monitoring Enhancements

When monitoring applications, synthetic monitoring plays a very important role. After all, it is the simplest and most cost-effective way of tracking application performance. eG Enterprise includes a number of new synthetic monitoring options:

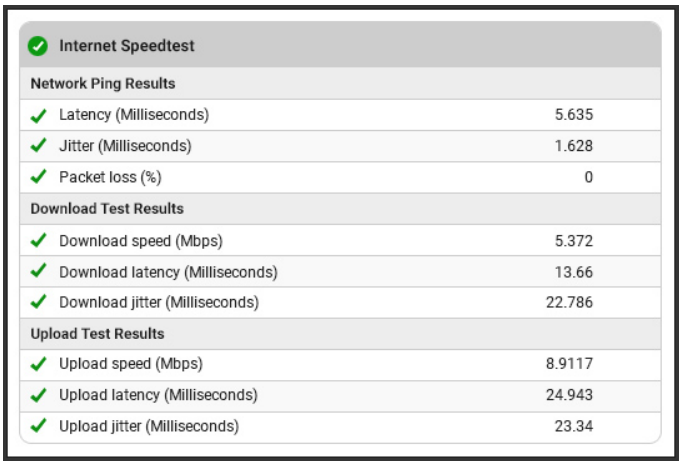


Figure 15: eG Enterprise now monitors the speed of an Internet connection. Integration with Ookla Speedtest is supported.

- Monitoring of Internet connection speed is important – whether it is from a home, an office, or a data center. eG Enterprise now integrates with Ookla Speedtest, industry standard speed test to report on Internet connection speed on an on-going basis.
- eG Enterprise web URL monitoring has been extended to check for web site defacements. Defacement is a malicious change to a web site and if not monitored, a defacement is noticed only when user complaints are received. To enable proactive monitoring, eG Enterprise reports on the percentage of links on a home page that have changed. This is usually an indicator of an attack.
- REST APIs play a critical role in today's distributed application environments. Since many services expose functionality via REST APIs, it is essential to monitor these APIs continuously (24x7) to ensure availability and correctness. The built-in REST API monitor in eG Enterprise allows IT administrators to configure the type of request (e.g., GET, POST), request parameters and headers, and the authentication method to be used. Based on this configuration, eG Enterprise issues the request and captures the response. It also supports validation of the response for correctness, helping ensure that APIs are functioning as expected.

The Web App Simulator, which supports multi-step web transactions using a record-and-replay mechanism, has been significantly enhanced to address more advanced

use cases. To accommodate web applications with dynamic pop-ups or advertisements, the simulator now allows optional activities to be configured during the script recording process.

While previously focused on HTML-based web applications, the simulator has been extended to support complex web applications including ones that have Windows pop-ups, Canvas-based HTML5 applications, web applications that use Shadow DOM elements and media-rich applications. This is achieved through a new capability that integrates image recognition and OCR capabilities, enabling the simulator to handle transitions from browser-based access to native applications. For example, the web app simulator can now support scenarios such as a Citrix session that begins in a browser but shifts to a native Workspace App. Additionally, several new actions are now supported, including executing Windows commands during the simulation, reading files and extracting values from the file for use as inputs in subsequent steps. These improvements significantly broaden the simulator's ability to support a diverse range of web and hybrid application environments.

A new **Universal simulator** has also been introduced to support thick/thin client applications. This new capability replaces the image recogntion/OCR capabilities of a third-party product that was bundled with eG Enterprise in the past. The universal simulator relies entirely on OCR capabilities, and whereas the web app simulator functions when the session being recorded starts with a web application, the universal simulator handles both non-web and native applications. This new capability positions eG Enterprise as one of the few solutions with native support for simulating any type of web or non-web application. While the earlier solution required an expensive, separate third-party agent to be licensed and deployed, the new Universal Simulator uses the standard universal monitor license of eG Enterprise, offering a significant cost-benefit.

Real User Monitoring (RUM) Enhancements

New user experience metrics are now available through eG RUM (Real User Monitoring). The Visually Complete Time of web pages is now reported. This metric represents the moment when the page's primary content is fully visible to the user — essentially when the visual loading process is complete. Another newly supported metric is the Speed Index, which evaluates web page performance by measuring how quickly above-the-fold content becomes visually complete. In addition, Core Web Vitals — a set of key performance indicators defined by Google to assess real-world user experience — are also captured and reported by eG RUM. These enhancements provide deeper insights into web application performance from the end-user's perspective and help identify areas for optimization.

Also new are session-level metrics that offer insights into user experiences at both the aggregate level (through overview metrics) and the granular level (with session-specific details).

eG RUM now also includes the capability to replay user sessions. Instead of recording a video, it captures user interactions — such as clicks, scrolls, and page navigations — by tracking DOM updates. This approach significantly reduces storage requirements while still enabling accurate session replays. The recorded events are then replayed in sequence, allowing IT teams to visually reconstruct and analyze the user's journey through the application.

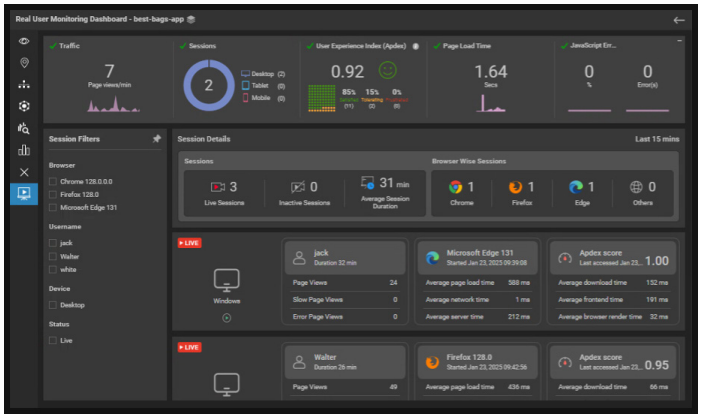


Figure 16: See live sessions using eG Real User Monitoring. Session recording and playback for analysis, troubleshooting and performance optimization is also supported now.

This helps teams diagnose issues, enhance UX, and support users more effectively. Privacy safeguards and efficient data handling ensure compliance and minimal impact on app performance.

Other Application Performance Monitoring Enhancements

eG Enterprise APM has been extended to support Java 23. Furthermore, the overheads of JVM thread-level monitoring have been minimized. Thread monitoring has been enhanced to include the detection and reporting of long-standing blocked threads within the JVM.

Additionally, the eG agent now supports on-demand heap dumps of JVM memory, enabling more effective troubleshooting of memory bottlenecks.

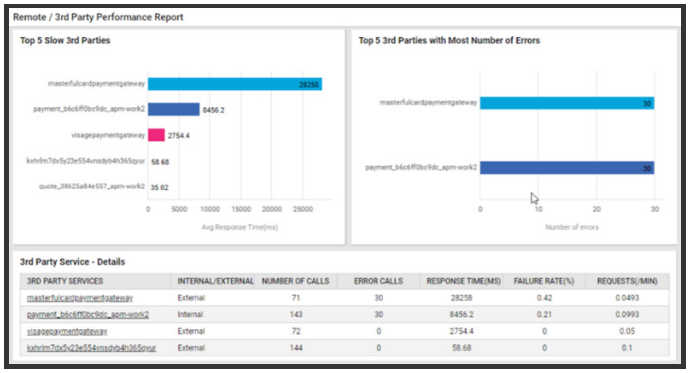


Figure 17: *A new report highlighting the performance of third-party services used by a Java application. Quickly see which service is affecting your application's performance.*

Transaction tracing is essential for identifying performance bottlenecks during code execution. Previously, eG Enterprise reported only the top N (configurable) transactions by processing time within each application tier. However, if a transaction did not appear in the top transactions captured across multiple tiers, the transaction flow topology could appear incomplete. To address this, eG Enterprise now employs multi-level transaction tracking. While detailed insights are still collected for the top transactions at each tier, an additional, less granular level of detail is now gathered for a broader subset of transactions (i.e., processing times, but not the detailed processing steps). This multi-level tracking approach increases the likelihood of constructing and displaying the complete transaction flow graph.

In addition, wait times in message queues are now explicitly tracked and reported, helping to pinpoint queue processing delays as potential bottlenecks. Support has also been added for Lambda expressions, Jakarta Mail, and Java Message Service (JMS), further enhancing the platform's capabilities in modern Java environments.

The Slice and Dice report has been enhanced to give administrators greater flexibility in analyzing transaction processing. They can now view transactions either across all nodes, to understand processing bottlenecks at each tier, or based on the first node in the processing chain, which provides end-to-end visibility. While the per tier analysis is useful for administrators of each tier, the end-to-end visibility is valuable for application owners seeking to assess total transaction performance.

A new third-party processing report helps identify which third-party processors are the slowest and are therefore, impacting application performance.

For .NET applications, eG Enterprise's transaction tracing capabilities have been expanded to support modern cloud-native environments. Tracing now supports Azure services such as Azure SQL, Azure Blob Storage, and Azure Table Storage, enabling deeper insight into application interactions with cloud components.

Enhanced tracing also covers SignalR functions, Lambda expressions and Serilog-based logging. In addition, tracing support has been extended beyond web applications running on Microsoft IIS to include standalone Windows services, ensuring comprehensive visibility into back-end application logic and performance.

O365 Monitoring Enhancements

Monitoring of Microsoft 365 (O365) services has been made more secure and efficient in eG Enterprise. Previously, the eG Enterprise Entra application required broad permissions — even when administrators intended to monitor only a subset of O365 services. Now, fine-grained permissions are granted based on the specific services being monitored, enhancing security and compliance.

The pre-requisites fulfillment script has also been improved. It is now configuration-driven rather than interactive, enabling fully automated setup with no manual intervention.

In line with Microsoft's updates, eG Enterprise has transitioned from the deprecated Azure Active Directory (Azure AD) Graph API to the Microsoft Graph API, which is now used exclusively to collect and report metrics.

Leveraging new capabilities in the Microsoft Graph API, eG Enterprise can now monitor user presence in Microsoft Teams. A new User Presence Report shows the

number of users in each presence state (e.g., Available, Away, On Call) and the top users by each presence category, helping organizations understand usage patterns and availability trends.

The O365 dashboards now provide comprehensive details of all Microsoft Teams calls — available once a call has ended. IT administrators can use this information to track call quality and duration, view the list of participants, analyze system, network, call, and user feedback metrics for each participant. These detailed insights are available only with user-based licensing for O365.

Additionally, O365 monitoring has been made more scalable — a single agent can now securely collect and report metrics across multiple tenants, simplifying deployment and management in multi-tenant environments.

Figure 18: *User presence reports for O365.*

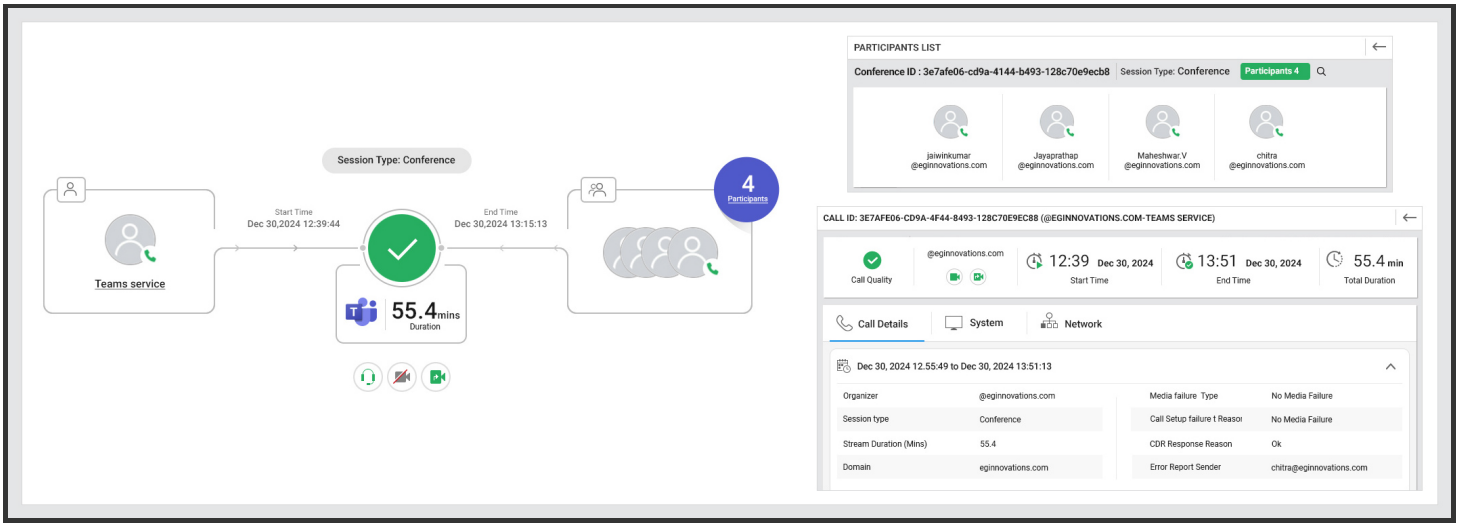


Figure 19: *Dashboard showing details of specific Teams calls.*

SAP Monitoring Enhancements

Monitoring SAP environments is another key use case for eG Enterprise. The platform now supports monitoring of the latest SAP S/4 HANA (2023, on-premises) and SAP S/4 HANA Cloud (version 2408) deployed in Private Cloud Environments (PCE). Additionally, eG Enterprise provides agentless monitoring for SAP PCE installations, enabling seamless visibility without deploying monitoring agents.

SAP® Certified
Integration with RISE with SAP S/4HANA Cloud

This includes support for SAP S/4 HANA, SAP NetWeaver (Java stack), SAP HANA (excluding runtime-licensed installations), and SAP Web Dispatcher. In SAP cloud environments — where agents cannot be installed on SAP Private Cloud Environment (PCE) hosts — eG Enterprise leverages the SAP JCo interface to enable agentless monitoring of key host metrics such as CPU, memory, and disk activity. eG agents now also support comprehensive monitoring of SAP Cloud Connectors, which are critical components enabling secure communication between SAP Cloud products and on-premises or private cloud systems in a customer's landscape.

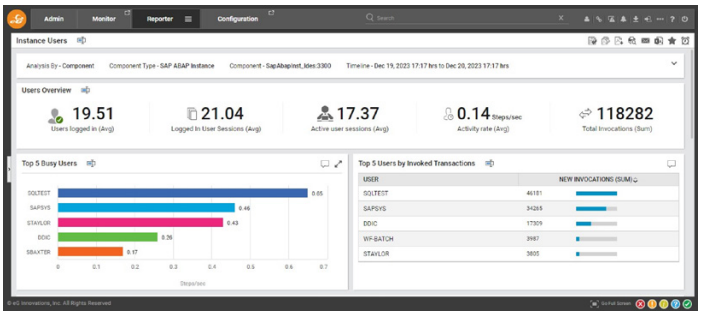


Figure 20: Dashboard of an SAP instance showing overall and top user activity.

In addition to enhanced SAP dashboards, new SAP-specific reports are now available. These include instance-level overviews, user activity reports, job and transaction/task reports, and work process utilization reports. For SAP ABAP systems, additional reports offer insights into overall system performance, communication metrics, and performance of SAP NetWeaver Gateways.

Other Unified Monitoring Enhancements

Comprehensive and deep coverage is essential for any hybrid IT monitoring solution — especially when it comes to security. With security being a top priority for organizations, recent enhancements in eG Enterprise further strengthen its capabilities in monitoring and securing enterprise environments.

- **SSL Certificate Monitoring:** SSL certificates are now pervasive across software and hardware components, and with shorter certificate lifecycles becoming the norm, continuous monitoring of certificate expiry and validity is critical. eG Enterprise now provides broader and deeper insights into all SSL certificates used within the enterprise.
- **PowerShell Script Monitoring:** PowerShell scripts are extensively used in Windows environments for automation — but also represent a common attack vector. eG Enterprise agents now detect and report the execution of unsigned PowerShell scripts, helping identify potential misuse or unauthorized activity.
- **Java Runtime Version Visibility:** The use of multiple or outdated Java Virtual Machine (JVM) versions across an organization can introduce security vulnerabilities and potential license compliance issues. eG Enterprise now reports on all JVM versions in use, enabling IT teams to detect inconsistencies, outdated runtimes, or unauthorized installations.

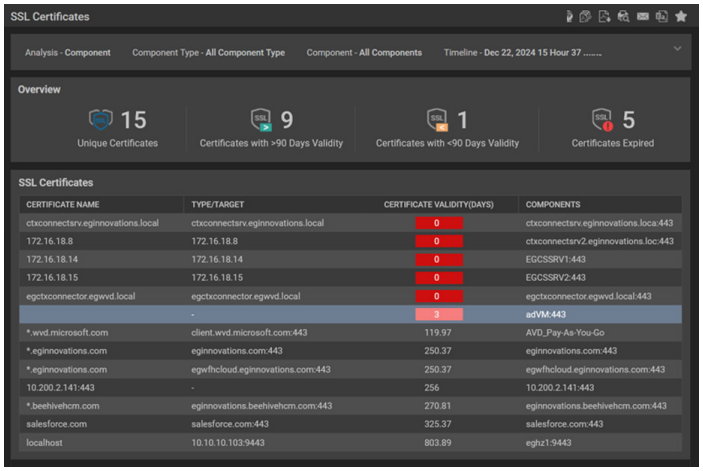


Figure 21: SSL certificates report highlighting the certificates that are nearing expiry and where they are deployed.

Enterprise networks rely on a wide range of middleware technologies, and lack of support for these components can create visibility gaps. To address this, eG Enterprise now offers customized monitoring for several key middleware platforms, including Solace PubSub+ message brokers, Apache Flume (an open-source, distributed service for collecting, aggregating, and transporting large volumes of log data), Memcached (a distributed memory caching system), Dell Boomi (a PaaS platform enabling integration between cloud and on-premises applications), and the webMethods microservices runtime.

Database monitoring capabilities have also been significantly expanded, with new support for Couchbase databases and clusters, MongoDB Atlas, and Amazon DynamoDB. Additionally, cluster-level monitoring has been improved to deliver consistent metrics across different database types, helping to detect and troubleshoot abnormal behaviors more effectively. Finally, SSL certificate-based authentication is now supported for all database server types, enhancing security across the board.

Even for monitoring Windows operating systems, eG Enterprise offers far more than basic metrics like CPU, memory, and disk utilization. The platform now includes advanced capabilities such as Windows OS license status tracking, monitoring of Windows Updates, Blue Screen of Death (BSOD) analysis, detection of memory exhaustion events, and machine stability and reliability reporting. These enhancements provide deeper visibility into system health and help proactively identify issues that could impact performance, compliance, or user experience.

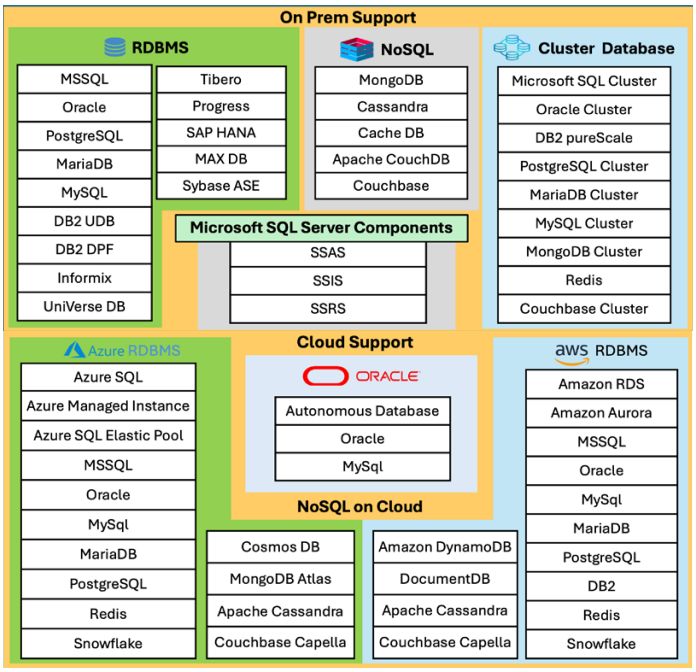


Figure 22: eG Enterprise has broad-ranging support for databases deployed on-prem and in the cloud.

Significant enhancements have also been introduced for Linux and Unix environments. eG Enterprise now supports SELinux, with the agent capable of running as a confined service, enhancing security and compliance. Additionally, Linux on ARM64 processors is fully supported, expanding coverage for modern hardware platforms. Key improvements include hardware monitoring support for Linux systems, tracking Out-of-Memory (OOM) kill events, monitoring of AIX clusters and memory paging, and monitoring of Solaris memory pages. These updates ensure comprehensive visibility across diverse Unix/Linux platforms, making eG Enterprise even more valuable for enterprises running hybrid or heterogeneous infrastructures.

Conclusions

IT observability solutions must evolve rapidly to keep pace with the ever-changing technology landscape. The latest enhancements in eG Enterprise deliver deeper and broader insights into customers' technology stacks. At the same time, with IT departments facing mounting pressure to achieve more with fewer resources, there is a growing need for solutions that are simple to administer, automated, and that augment IT operations. The AIOps capabilities and AI integration introduced in eG Enterprise significantly reduce the need for IT administrators to be experts in every technology they monitor. These recent improvements — addressing all key use cases — make eG Enterprise a valuable solution for enterprises operating in hybrid IT environments.

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