

Announcing the All NEW **eG ENTERPRISE**



Release Overview Document

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Introducing eG Enterprise v7

73% of businesses report that slow application performance and poor user experience cause productivity losses

- *Kissmetric Survey*

User experience is top of mind for IT executives in today's application-centric world. Monitoring just the resource usage of applications and utilization levels of infrastructure elements is not enough any longer. In today's digital era, organizations must take a holistic perspective of user experience:

- Clearly, the availability of an organization's key IT services and their response times to end users is a key measure of user experience. At the same time, these two metrics alone cannot guarantee great user experience.
- The degree of proactiveness of an organization also contributes to user experience. The more proactive an organization is, the fewer problems that users notice and hence, better the user experience.
- The reliability of IT services is another key metric. When a service goes down, how long does it take for the organization to bring it back up to normalcy? The mean time to repair and frequency of such outages also contribute to user experience. The more accurate the diagnosis and faster the resolution, the better is the user experience.
- As the workload of a service changes, the IT organization must make sure that the user perceived quality of service remains good. Proactive capacity planning plays a key role in this.

Therefore, **organizations need to take a 360° view of user experience and make it a central component of their IT monitoring strategy.** This is true irrespective of the type of applications being used by the business – whether digital workspaces (Citrix, VMware Horizon), web applications (Java, .NET, etc.), packaged enterprise applications (SharePoint, SAP, etc.), or SaaS applications (Office 365, Salesforce, etc.).

eG Innovations is proud to announce the general availability of the latest version of its flagship performance monitoring software – eG Enterprise Version 7. This release introduces a number of new monitoring capabilities, detailed diagnosis features, new reports and analytics that help IT organizations deliver the best experience to their business/IT users.

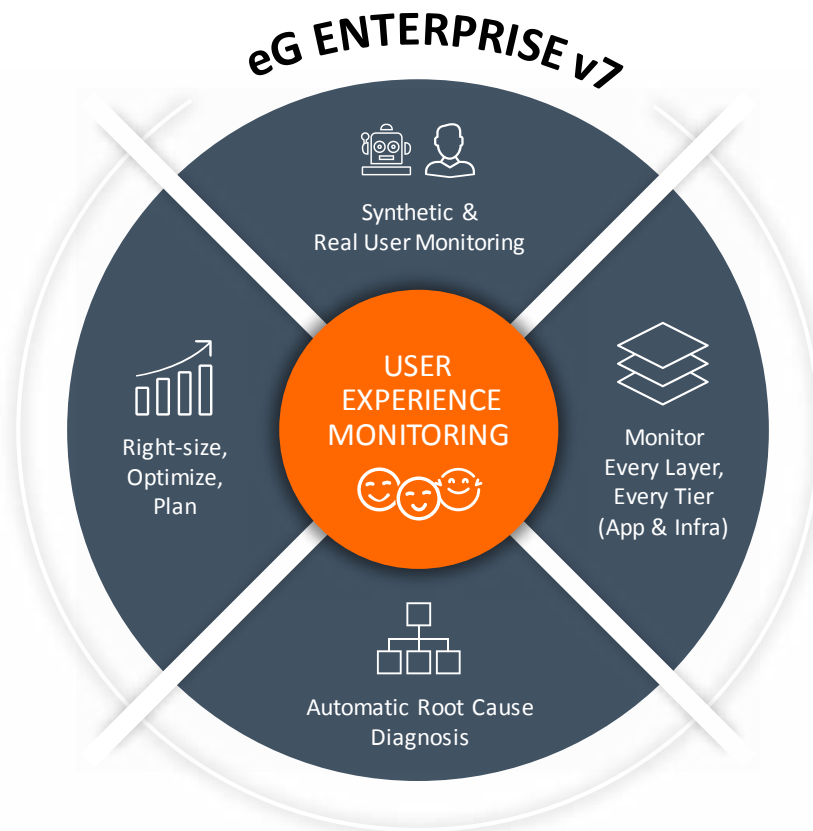
98% user experience problems rely on several parts of the IT infrastructure

- *Forrester Study*

eG Enterprise v7: The Total User Experience Monitoring and Management Solution

eG Enterprise v7 makes user experience the centerpiece of your IT monitoring and management strategy.

- Using a **combination of synthetic and real user experience monitoring**, eG Enterprise enables IT organizations to quantify the quality of service being delivered to users, and proactively notifies IT operations teams of impending problems.
- From a central web console, IT teams have insights into the **performance of every layer and every tier** of the application stack and the underlying infrastructure.
- Correlated topology views and an embedded root cause diagnosis engine help **pinpoint the root cause of user experience issues** quickly, thereby helping IT teams reduce mean time to repair and enhance service uptime and performance.
- Lastly, advanced analytics embedded in the solution **helps IT teams make the right decisions** – from determining how to balance load in the infrastructure, estimating where to add additional resources, and planning for additional capacity in the future.



The result: happy users, enhanced productivity, and tangible business ROI.

Helping you ensure stellar user experience for your end users and empowering you to become an IT Hero!

– eG Innovations Team –

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A Quick Tour of
**The New Features and Enhancements in
eG Enterprise v7**

Digital Workspace Monitoring

Enhancements to Citrix Workspace Monitoring

Citrix Virtual Apps and Desktops v7 uses a new architecture compared to earlier releases of Citrix XenApp and XenDesktop. A Citrix Delivery Controller is responsible for brokering requests, Citrix Workspace Environment is used to speed up logons, Citrix App Layering is used to simplify image management, and Citrix deployment in the cloud is an option. The communication protocol used has also changed. Adaptive transport based on Enlightened Data Transport (EDT), delivering a superior user experience on challenging long-haul WAN and Internet connections is now used by default. As the Citrix technology stack has evolved, monitoring technologies for Citrix must also evolve to support the new architecture, components, protocols and capabilities. eG Enterprise v7 includes a number of features intended to allow organizations deliver the best user experience with CVAD 7.

User Experience Monitoring Enhancements: Synthetic Monitoring

Citrix Logon Simulator

The eG Enterprise Logon Simulator for CVAD has been enhanced to capture a screenshot of every failure that occurs during logon simulation. Citrix admins can view the screenshot to see what caused the failure to happen. Both real-time and historical access to failure screenshots is supported.

Leveraging Citrix APIs, the Logon Simulator collects additional metrics about the simulated Citrix session. These new HDX metrics monitored include screen refresh latency, frames received/sent, and data received/sent, thereby providing additional insights into the quality of the simulated session.

Previous version of the Logon Simulator supported access through Citrix StoreFront and Citrix Gateway (via ADC). Now in v7, the Logon Simulator also supports Citrix access secured using OKTA, Azure AD, or AD FS. Support is also included for environments where the F5 load balancer is used instead of Citrix NetScaler.

Full Session Simulation

Full session simulation allows administrators to go beyond logon simulation, by simulating sessions where users access

applications published on virtual desktops. In eG Enterprise v7, there is a new visualization built for full session simulation to intuitively view and monitor the execution time for simulated transaction. This helps pinpoint the slow or failed step easily. Screenshot capture of failed transaction is also supported for full session simulation. Screenshot capture of failed transaction is also supported for full session simulation.

User Experience Monitoring Enhancements: Real User Monitoring

Greater Visibility into Logon Time and Breakdown

- For Citrix Cloud deployments, eG Enterprise now reports real user logon performance metrics when users log into the Citrix Cloud control plane. With this enhancement, administrators have the same insights into logon performance for Citrix Cloud deployments as they do for on-premise deployments.
- When monitoring user logon performance from the Citrix Delivery Controllers (on-premise), eG Enterprise now provides a further break down of interactive session duration into pre-user initialization, user initialization, shell duration and delay duration. An alert on any of these times could indicate problems such as heavily loaded VDA, network issue not allowing the machine to reach the AD Domain Controller, or unoptimized Group Policy Objects and logon scripts.

Monitoring User Input Delay

User input delay is a Windows performance counter (supported on Windows Server 2019 and above) which indicates how long a user request from a Citrix session stayed in queue in the Windows OS before being picked up by the OS Kernel for processing.

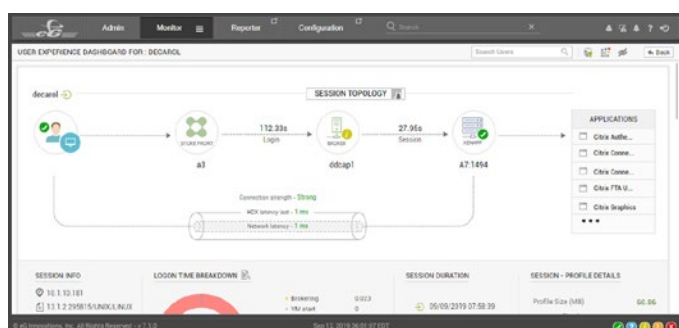
eG Enterprise v7 now reports on this metric for Citrix Virtual Apps (XenApp) from three perspectives;

- Application/process: How long was the delay for the application/process to respond to the user's request/action during a session. This indicates that during the access of this specific application/process, this delay existed
- User session: How long was the delay in the session to respond to the user's request/action. This is not at a process-level. This indicates that through the session, regardless of the application used, this delay existed.

- The Virtual Apps Server: This is not a separate counter. This just reports which user session had the maximum user input delay, and the average delay across all user sessions on this server.

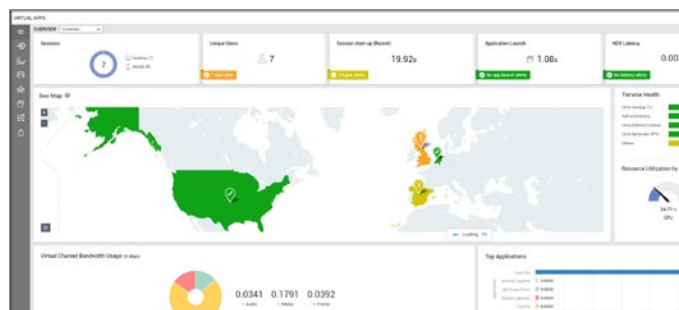
New Visualizations and Dashboards for Faster Troubleshooting

- A new Session Topology view is available as part of the user experience dashboard for CVAD. When drilling down into a user's session, administrators can see a visual representation of the topology of the various Citrix tiers supporting that session. The specific NetScaler, StoreFront, and Citrix virtual apps server being used for the session are shown along their current health states. Administrators can now visually see if any of the tiers in the Citrix delivery chain is having an issue and is therefore, affecting the user experience during the session.



Citrix Session Topology View

- Many a times, Citrix user experience issues are caused by increased latency from specific regions or from a geographical area. eG Enterprise v7 maps user sessions to geographical locations they were initiated from. The location can be auto-discovered by mapping client IP addresses to



Geo Maps Dashboard for User Experience Monitoring

geo-locations, or can be tagged based on user input. New dashboards help visualize performance by location, helping Citrix admins quickly discern if there are location-specific issues affecting Citrix user experience. New dashboards included in v7 also help admins quickly identify bottleneck areas in their infrastructure that need attention.

Monitoring New Citrix Components

eG Enterprise v7 adds monitoring capabilities for new components that have been introduced in CVAD 7. No other monitoring solution in the market, including Citrix's built-in tools such as Director and Analytics provide monitoring support for these components.

- **Citrix Workspace Environment Management (WEM):** By moving some of the tasks performed during user logon to the background, WEM speeds up user-perceived logon times for CVAD. When there is slowness or a problem with the background processing by WEM, users will notice that they will not have access to some of the resources after they login. Conventional means of monitoring Citrix logon times will not reveal issues with WEM processing. eG Enterprise v7 now adds support to monitor logon processing by WEM to identify if logon slowdowns are due to WEM processing.
- **Citrix App Layering:** App Layering is software that separates virtual applications from their underlying virtual desktop in a way that enables them to take advantage of the host operating system's native functions and can interact with other apps. If layered app delivery is slow, it will reflect as slow app launch time for the user. eG Enterprise v7 monitors if the vDisk attachment was successful, how long it took for a layered app to get attached to a user's session, and what vDisks were attached to a user's session.
- In-depth monitoring capabilities have also been added in eG Enterprise v7 for Citrix Session Recording server, Citrix Federated Authentication Server, Active Directory Federated Service and Citrix SD-WAN devices.

Deeper Visibility into the Citrix Stack

eG Enterprise v7 now goes deeper than ever into the Citrix stack to provide new metrics and uncover new problems and help accelerate troubleshooting. New deep-dive enhancements include:

- Synthetic checks are now available to monitor StoreFront availability, authentication and enumeration of published apps and desktops. This capability offers similar functionality to App Probing which is available in Citrix Director.
- Administrators can now track the URL activities of users during session access in virtual apps and desktop sessions. This capability is supported for Internet Explorer, Microsoft Edge, Google Chrome and Firefox web browsers.
- New dashboard for Citrix ADC (NetScaler) to visualize the handling of traffic through the various virtual servers and service groups
- Monitoring of TCP protocols statistics for each Citrix ADC and identification of abnormalities including excessive retransmissions, port exhaustion etc.
- Monitor ADC license details so alerts can be received when a license is nearing expiry.
- VMs on the Citrix Hypervisor can hang when they get into a dead beef state. eG Enterprise v7 now alerts administrators when such hung VMs are detected.
- Printing is often a challenge in any CVAD environment. eG Enterprise monitors for Citrix virtual apps provides detailed metrics on printing performance, so administrators can be alerted when many print job failures happen.
- Citrix admins can now track user sessions based on whether they are from desktop or mobile devices.
- Monitoring of Citrix Delivery Controllers has been enhanced so usage of tags and tag restrictions can be reported on. Metrics about machines in each delivery group that are in the different power states are also reported.
- New Citrix Delivery Controller metrics reveal registration states for soft, hard registrations, registration requests, expiry, etc. for the High Availability Service.
- The Local Host Cache (LHC) activation status is also tracked for the Citrix Delivery Controllers, so administrators can be made aware whenever the LHC is active.

Remote Control Actions for Problem Remediation

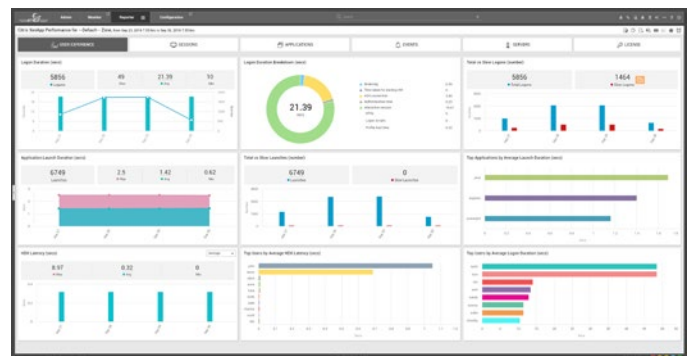
Citrix administrators often have to run a number of actions to control user sessions – for example, to shadow a session, to take a screenshot of a session, to logoff/disconnect a user from

a session, kill user GPO policies, etc. With eG Enterprise v7, these control actions can be remotely initiated by administrators from their web browsers themselves.

While control actions were supported in earlier versions, they were initiated at the server level only. In eG Enterprise v7, administrators can initiate these actions for specific user sessions. These actions are made easily accessible to admins, from the layer model view of a component itself. The actions that are available will change automatically based on the component type being analyzed. As soon as an alert is detected on the layer model of a component, the admin can initiate a control action and begin troubleshooting.

Enhanced Reporting and Analytics

- **Citrix Virtual Apps Overview Report:** eG Enterprise includes 20+ key reports that every Citrix administrator needs. However, determining which report to use in what scenario can be a bit of a challenge for the admin. eG Enterprise v7 now includes a Citrix Virtual Apps overview report that provides an at-a-glance preview of the key performance indicators for the target infrastructure. From a single report, you can see a consolidated view of user experience trends, session-level metrics, application usage data, events, server resource utilization, and license usage levels. All the charts shown in this report link to other reports available in eG Enterprise, so you can drill down into individual reports for more granular data.



Citrix Virtual Apps Overview Report

- **Citrix Virtual Apps Capacity Planning Report:** Load balancing and capacity planning are critical tasks for Citrix administrators. Supporting more users per Virtual Apps server with minimal server resources is the ideal goal. To enable Citrix admins to get actionable information on, this new report answers many key questions:

- Based on the average resource consumption per session, how many more concurrent sessions are possible?
 - How many more sessions can be additionally supported? How are sessions load-balanced across servers?
 - How is server capacity bottlenecked by resource usage?
 - How many more sessions can be supported after increasing resource capacity?
- **Citrix Virtual Apps Capacity Prediction Report:** You can perform what-if analysis with capacity prediction report. Increase the user load on Virtual Apps servers and predict what will be the resource utilization. Find out how many more servers will be needed to support an increase in user workload.
 - **Citrix Delivery Controller Reports:** The Citrix Delivery Controller plays a central role in enabling Citrix digital workspace services. This new category of reports provides insights into various aspects of usage and performance of the Citrix infrastructure from the Delivery Controller's perspective. Reports in this category offer details about:
 - User Connection Failures
 - Machine Failures
 - Failures by Reason
 - Machine Utilization
 - Load Evaluator Index Analytics
 - Unregistered Machines
 - Machines Under Maintenance
 - Sessions by Delivery Groups

Enhancements to VMware Horizon VDI Monitoring

Similar to the Citrix stack, VMware Horizon 7 has also introduced significant changes in its architecture. New components, new protocols and new delivery options are all part of the many changes introduced in VMware Horizon 7. eG Enterprise v7 is the only VDI monitoring solution that offers 360° visibility of the Horizon environment including the Connection Server, Identity Manager, Security Server, Unified Access Gateway, and more.

eG Enterprise v7 has included support for monitoring the following components:

- **VMware App Volumes:** App Volumes is an application layering software that puts applications into compartments/layers for easier deployment in a VDI environment. eG Enterprise v7 monitors the App Volumes Manager component and the AppStack applications delivered to end users are monitored as part of the virtual desktop in case of VDI and RDS in case of virtual apps. Get alerted to slow App Volumes attachment time. When this is high, user logon time and app launch time will also be high. VDI admins can drill down further to see which App Volumes are contributing to high attachment time.
- eG Enterprise v7 can now identify and classify desktops based on whether they are created using Instant Clone or Linked Clone technology.
- **VMware Horizon Pod:** The pod architecture was introduced in VMware Horizon to increase scalability to support a large number of users. Consider a Pod to be similar to a Citrix Site. The new component type VMware Horizon Pod/Farm component is used to monitor the Pod environment.
 - From one place, monitor all the session data: App and Desktop Pools, RDS Farms and RDS Hosts that are part of a Horizon Pod
 - New metrics for Desktop Pools to monitor the machines that are preparing, having problems, and prepared for use
 - Monitor the Connection Brokers in the Pod and their enablement status
- **VMware vSAN:** vSAN is being increasingly used in Horizon deployments to deliver fast, cost-effective and easy to scale VDI architecture. VMware vSAN is a logical partition in a physical storage area network (SAN) that pools together direct-attached storage devices across a vSphere/ESXi cluster to create a distributed, shared data store. eG Enterprise v7 monitors vSAN clusters as part of the VMware vCenter monitoring model.

Additionally, the VMware Horizon Logon Simulator has also been enhanced to support capturing of screenshots of failed transactions during logon simulation.

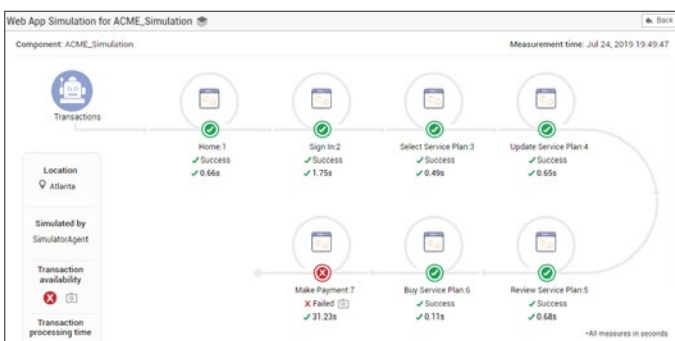
Web Application Performance Monitoring (APM)

New Synthetic Monitoring Capability for Web Applications

Until eG Enterprise v6.3, for simulating desktop applications and web applications, the same technology - full session simulation – was used. This technology is based on optical character recognition and works well for desktop and thin-client applications. For this capability to work, the recording engine and playback engine must have the same screen resolution. It is also essential that the images and buttons are present in the exactly the same position during playback as they are during recording. These constraints mean that a fair amount of effort is involved in generating and maintaining the recording and playback scripts.

For web applications, the use of OCR technology means that the full session simulation engine is not HTML-aware. Now, eG Enterprise v7 introduces a new tool for synthetic simulation and proactive monitoring of web applications. This tool, called the Web App Simulator, is HTML-aware, and is based on the Selenium technology that is widely used for automating browsers during load tests of web applications. With the web app simulator, recording of scripts and replaying them is far simpler than it was with the full session simulator.

Using a built-in recorder, synthetic operations performed on a web application are recorded and script is generated as an XML file. The script is then exported to the eG Manager from the recording tool itself. An agent installed on the playback station automatically downloads the target scripts and simulates web application access. The results of the simulation are communicated over HTTP/S to the eG Manager.



Web App Simulation Dashboard

An intuitive dashboard helps visualize the step-by-step flow of transactions and their status and response time of all

transactions. When there's a transaction failure, a screenshot of the failure is captured which can be viewed from the dashboard for further investigation.

eG Enterprise v7 also includes new reports based on the results of web app simulation. These reports allow application teams to understand simulation trends over time and identify bottlenecks for a given period of time.

In addition to web app simulation, there are also enhancements made for the protocol simulation functionality in eG Enterprise v7. New user interface, dashboards and historical reports provide real-time and historical insights about protocol performance.

Enhancements to Real User Monitoring

Real user monitoring (RUM) captures the real-time user experience of users as they access web applications. RUM breaks down web page load time into various components to help the application owner understand what the potential cause of transaction slowdown could be.

In eG Enterprise v7, there are many new enhancements made to RUM to expand its use case and to make monitoring simpler and easier.

- Deeper visibility into web page load time with more granular breakdowns:
 - eG Enterprise v7 exploits enhancements to web browser APIs and provides more granular breakdown of Browser Processing and Network Time breakdowns. For instance, eG Enterprise can highlight if requests are being queued up in the browser, waiting for the opportunity to be



Web Application-level Page Load Time Breakdown in RUM

- There is an additional drilldown to view resource details and their download time for more exhaustive analysis
- New dashboards simplify slicing and dicing of RUM data. Until eG Enterprise v6.3, only transaction-level page load time breakdowns were provided by RUM. Now, in eG Enterprise v7 get web application level response time breakdown for an aggregated view of the web application.
- The page load analytics of transactions monitored by RUM is now integrated with the tracing topology of the same transactions monitored by BTM (for Java & .NET). Clicking on the Server Time icon on the RUM topology for one request now opens up the transaction flow call graph in BTM for the same transaction. Slowness in the server side can be analyzed further in just a single click from the RUM screen.
- Support for monitoring Single Page Applications (SPA). RUM now supports a new page type called Virtual Page which allows monitoring transactions to a SPA. There won't be a topology and breakdown of page load time for requests of such applications. But the Detailed Diagnosis shows which transactions are healthy, slow, or has errors.
- Page load time breakdown and topology is now supported for AJAX web pages also.
- There many new reports included for RUM:
 - User Experience Assessment
 - Slice and Dice Analytics
 - User Satisfaction Trend
 - Device Usage Trend
 - Page Visit Health Trend

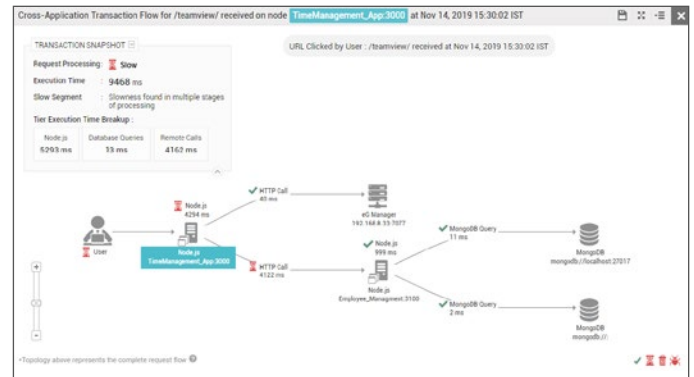
The Slice and Dice Analytics report helps understand the web transaction user experience by a variety of categories. Track the user journey over time and view historical performance data by user experience, client IP, page group, page type, URL, etc.

Expanded Coverage for Distributed Transaction Tracing

Pointcuts are application middleware and backend frameworks, protocols and remote calls that a business transaction must pass through during execution. The more technologies that can be traced, the more effective transaction monitoring can be. With every release of eG Enterprise, we add tracing support for more pointcuts and increase the scope of monitoring.

eG Enterprise v7 now support these new pointcuts for transaction tracing:

- **Java:** Mule ESB, Redis, MongoDB, SAP HANA, Ehcache, JMS Queues, JMS Topics, Web Service entry for CXF, and more



Distributed Transaction Tracing of a Multi-tiered Node.js Application

- **Microsoft .NET:** Support for Azure Web Apps

The Transaction Profiler used for Microsoft .NET now provides additional metrics from the IIS Server about the .NET CLR being used. Exceptions, Garbage Collection, memory, locks and threads, security and .NET Loader metrics are now reported. And, eG Enterprise v7 now supports auto-instrumentation of RUM when transaction tracing is instrumented for a .NET web application. This was already supported for Java applications and now has been expanded for .NET.

USER EXPERIENCE	USER NAME	REQUEST DATE	PAGE GROUP	URL
Healthy	-	Oct 29, 2019 01:23:23 - PDT	/final/admin/	/final/admin/EgTimeBar.jsp
Healthy	-	Oct 29, 2019 01:22:55 - PDT	/final/monitor/	/final/monitor/comparison/LogonSim
Healthy	-	Oct 29, 2019 01:21:32 - PDT	/final/admin/	/final/admin/EgTimeBar.jsp
Healthy	-	Oct 29, 2019 01:21:31 - PDT	/final/services/	/final/services/com.eg.EgRumCompari
Healthy	-	Oct 29, 2019 01:21:27 - PDT	/final/reporter/	/final/reporter/EgRumComparisonRe
Healthy	-	Oct 29, 2019 01:21:27 - PDT	/final/scripts/	/final/scripts/utilities/EgChartTheme
Healthy	-	Oct 29, 2019 01:21:27 - PDT	/final/scripts/	/final/scripts/utilities/EgChartTheme
Healthy	-	Oct 29, 2019 01:21:25 - PDT	/final/monitor/	/final/monitor/comparison/LogonSim
Healthy	-	Oct 29, 2019 01:21:24 - PDT	/final/reporter/	/final/reporter/EgRumRPTReport.jsp

Slice and dice report for Real User Monitoring

Transaction tracing supported for new application development languages:

- **PHP:** Web applications built on PHP powered by the Zend Engine are now supported for transaction tracing. Transactions can be monitored from the Apache HTTP Server and NGINX Web Server components in eG Enterprise.
- **Node.js:** eG Enterprise v7 support transaction tracing of applications built using Node.js powered by the V8 Engine. Additionally, deeper visibility into the V8 Engine and the application processes are also monitored as part of the Node.js application's layer model.



There are many new reports included for transaction tracing for historical performance analytics and trending:

- Business Transactions Health Overview
- Business Transactions Health Trend

- Load vs. Response Time Analysis
- Top Business Transactions Report
- Code-level Exceptions Report
- Unique User/Session Analysis Report

The top business transaction report allows application teams to list out the top business transactions by workload (calls), response time, errors and by number of slow/stalled counts. Get to know execution of which transaction (URL) needs to be optimized based on high response time, traffic or errors.

By Load			By Response Time	
URL	CALLS (NUMBER)	CALLS/MIN (NUMBER)	URL	RESPONSE TIME (MSECS)
/final/ser/let.com/eg.d	71991	51.3	/final/ser/let.com/eg.d/hqChartServlet	18539
/jms/collectJob	11260	7.8	/final/admin/Ey/seedUser/	838
/final/ser/let.com/eg.u	5812	4.0	/final/admin/DeleteUser/	786
/final/ser/let.com/eg.D	5356	3.8	/final/ser/let.com/eg.d/BTM/ShowBusC	642
/final/ser/let.com/eg.S	5351	3.8	/final/ser/let.com/eg.d/RunHealthServlet	454
/final/ser/let.com/eg.g	5141	3.7	/final/monitor/Ey/SumToolbox.jsp	385
/final/ser/let.com/eg.A	5137	3.7	/final/ser/let.com/eg.d/An/CashBoardCont	351
/final/ser/let.com/eg.S	5126	3.7	/final/monitor/Ey/TestStatusInfo.jsp	315
/final/ser/let.com/eg.U	5019	3.5	/final/monitor/BTM/ShowOutJoin.jsp	254

By Errors			By Slow/Stalled	
URL	ERRORS (NUMBER)	ERRORS/MIN (NUMBER)	URL	SLOW COUNT (NUMBER)
/final/ser/let.com/eg.U	882	0.6	/final/ser/let.co	496
/final/ser/let.com/eg.g	557	0.6		0

Top business transactions report

Enterprise Application Monitoring

Enhancements for SAP Monitoring

eG Enterprise v7 has expanded its SAP monitoring capabilities to support new SAP applications such as Fiori, BusinessOne, Hybris, Business Warehouse and Business Objects Data Services.

In addition to the new components monitored, there are also enhancements to the existing SAP monitors:



SAP ABAP Instance Dashboard

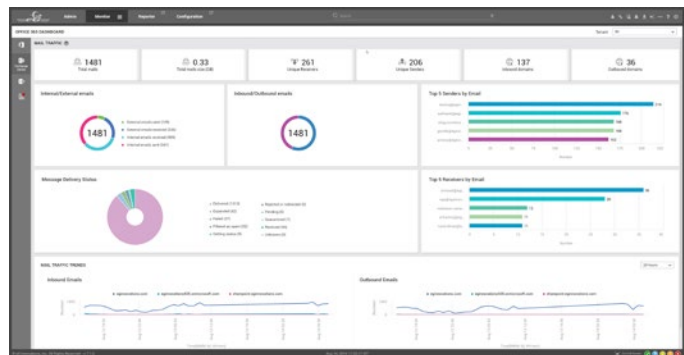
- A new dashboard is now available to visualize transaction processing by ABAP instances
- A new SAP landscape dashboard allows administrators to monitor the performance of all SAP tiers on a single screen
- Configuration change tracking is now supported for ABAP System and ABAP Instance components
- The new ABAP Dumps report reveals information on top dumps by source, types of dumps encountered, top hosts encountering dumps and user accounts that are impacted.

Enhancements for Office 365 Monitoring

eG Enterprise v7 is one of the few tools in the market that provides complete monitoring of Microsoft Office 365 (O365) environments. With these enhancements, O365 customers do not have to just rely on status updates posted by Microsoft about

the performance of the overall O365 services, but they can see in real time the real performance that their users are seeing and proactively get alerted to issues before they become business-impacting. Broadly, eG Enterprise v7 offers the following capabilities for O365 customers:

- Support for **monitoring all key O365 services** including the O365 tenant, Exchange Online, SharePoint Online, Skype for Business Online, Microsoft Teams, and OneDrive for Business.
- **Monitor the experience that users see** when accessing O365 services. A combination of synthetic and real-user monitoring is available for this. Synthetic monitors supported include a logon simulator for Exchange Online, web access check for SharePoint Online and OneDrive for Business, mail send and receive checks for Exchange Online, and call quality checks for Skype for Business Online and Teams. Synthetic monitoring can be set up from different locations to get an idea of the performance seen from different locations. Real user monitoring can also be configured and used to monitor user access and response times for SharePoint Online.
- Ability to **track the internal infrastructure used to access O365 services**, so administrators can determine if a performance issue is caused by slowness in the Microsoft cloud, or whether it is due to the organization's internal IT infrastructure.
- **Monitor the usage of O365 services** in-depth and determine abnormalities such as excessive spam traffic, malware messages being received, users being locked out, users storing large amounts of data in OneDrive, etc.



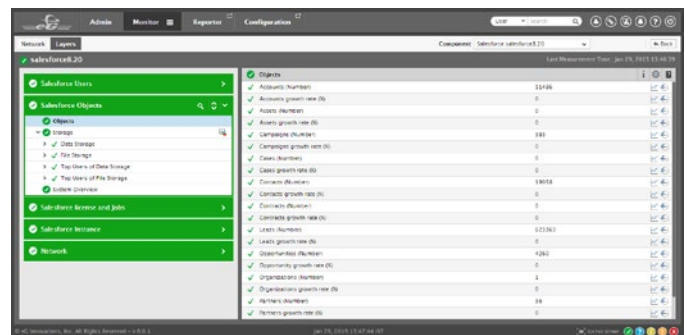
Built-in O365 monitoring dashboards in eG Enterprise v7

There are also new built-in dashboards and reports included for O365 tenant, Exchange Online and SharePoint online to

help simplify analytics. Together, these capabilities make eG Enterprise v7 a compelling solution for any organization that relies on O365 services to support their business.

Additional Monitoring Support for Packaged Enterprise Applications

In addition to the above enhancements, eG Enterprise adds out-of-the-box monitoring support for two new enterprise applications: Salesforce and Atlassian Confluence. Both have their own component types and layer models and provides deep domain expertise to gain KPIs about performance, availability, usage and so on.



Native monitoring support for Salesforce

Extended Monitoring Reach to Support New IT Infrastructure Components

To provide more extensive coverage of IT infrastructures, eG Enterprise v7 has added monitoring support for an array of new components.

Monitoring Support for New Devices, Platforms and Applications

Network Devices	Databases	Other IT Platforms
<ul style="list-style-type: none"> • MikroTik routers • Riverbed Steelhead SD • F5 BIG-IP Access Policy Manager • jetNEXUS Load Balancer • Router and switches from 3Com, Dell and HPE • Cisco BGP & QOS monitoring support for Cisco routers 	<ul style="list-style-type: none"> • Cassandra • Hadoop • MySQL Clusters • EDB Postgres Advanced Server • Microsoft SQL Server on Linux • Microsoft SQL Server Reporting Service • Microsoft SQL Server Integration Service • Postgres, MariaDB, Microsoft SQL, MySQL and Oracle hosted on AWS • Azure SQL and SQL Managed Instances hosted on Microsoft Azure 	<ul style="list-style-type: none"> • Redis • Elasticsearch • Apache ActiveMQ • MuleSoft Mule ESB • Veritas NetBackup • Raspberry Pi • Proxmox Virtual Environment • Microsoft Virtual Machine Manager (VMM) • Mosquitto MQTT Message Broker • JEUS application server • Webtob web server
Storage Systems		
<ul style="list-style-type: none"> • HPE StoreOnce Backup • Hitachi Content Platform • Dell EMC Isilon Cluster Storage • Dell EMC VNX Series 		

Greater Visibility into the Public Cloud

eG Enterprise supports monitoring two main public cloud environments out of the box: AWS and Azure. eG Enterprise leverages APIs from these vendors to get performance metrics about the cloud infrastructure and services. In addition to this, by installing the eG Agent in a cloud VM or virtual desktop, eG Enterprise can monitor the performance of applications and desktops running in the cloud.

In eG Enterprise v7, monitoring of AWS and Azure cloud environments has been enhanced to support new services.

- **For Microsoft Azure:** Billing, Identity, Enterprise Integration, Internet of Things, Data Services

- **For AWS:** Elastic Load Balancing (Application, Network and Classic)

Additionally, for AWS, eG Enterprise v7 supports monitoring in Auto-Scaling environments. When an AWS instance is dynamically created and removed on demand, monitoring for the instance and the applications running on it can also be automatically enabled and disabled.

Monitoring Support for DevOps Tools

DevOps adoption is growing in organizations. DevOps is focused on bringing in a collaboration between Dev and Ops teams towards improving productivity, efficiency and speed of software development from code commit to deploy.

There are various tools used for various stages of DevOps implementation. eG Enterprise v7 now supports monitoring some key DevOps tools to ensure all stages of application development to deployment happens seamlessly.

With eG Enterprise v7, DevOps teams can monitor **Ansible Tower, GitHub, Jira Software, Jenkins, and Bitbucket.**



Monitoring Extended for Container Environments

With the rising popularity of applications built with microservices architecture, resource provisioning has become on-demand. An application will be created on demand and it would need to be provisioned with resources to support it.

And once the application/workload is switched off, the resource needs to be reclaimed. Docker containers provide this modular and scalable auto-scaling architecture to support code pipeline management in the microservices world. Kubernetes is a popular open source platform that is used for container orchestration (deployment, management, scaling, etc.).

eG Enterprise already had support for monitoring Docker containers. Now, in eG Enterprise v7, that is further enhanced to support automatic enablement of monitoring when a container is created and automatic remove of the monitored component from the eG Manager when the container is destroyed.

Monitoring support for Kubernetes is newly introduced in eG Enterprise v7. Monitor each Kubernetes cluster as a component in eG Enterprise. Get performance metrics at a cluster-level, node-level and pod-level. Monitor namespaces, DaemonSets and pod deployments to detect bottlenecks.



Platform Enhancements for Increased Automation, Scalability and Security

Platform Upgrade and Other Product Enhancements

eG Enterprise v7 has been completely overhauled in its architecture to make it faster, easier to install and use, more scalable and secure, and more robust. Now, eG Enterprise supports Tomcat v9 and Java JDK v12.

UI Enhancements: The user interface has also been significantly enhanced with the introduction of new install wizard to help make setup easier, wizard-driven interfaces for discovery and database setup, an array of new visualizations and dashboards for monitoring, and more shortcuts for administration simplicity.

Alerting Enhancements: Email alerts have been enhanced so that they are more actionable and provide more context and clarity about problems in the IT environment. Receive a daily email about the overall health of an application/ service/

infrastructure component. This includes history of alerts, system resource utilization status for the day, average user experience metrics, and more.

Enhancements to problem alerts deliver advanced insight to know what the alert was, how long it persisted, what services were affected, detailed diagnosis, and recommendations for problem remediation.

Kiosk Mode: eG Enterprise v7 now supports Kiosk mode, which allows certain screens, dashboards and to be put on a display loop to be exhibited on large screens. This enables network operation centers (NOC) to splash eG Enterprise's monitoring screen on large screens and monitors and have them change automatically in a loop.

Scalability Enhancements: Scalability of the product has also been considerably increased. Performance improvements in

the modern Java stack are exploited to ensure that a single eG Enterprise can scale to thousands of agents. Data transmission between the eG Agents and the eG Manager now happen over compressed streams which significantly reduces the bandwidth required per agent. The eG Agent's processing of collected performance metrics has been enhanced to enable it to handle large volumes of data that can occur when a single agent is monitoring several containers or several JVMs.

Integrations with Third-Party Tools: eG Enterprise constantly adds integration with new third-party tools so that alerts in eG can be externalized and sent to other tools for further action. New integration in eG Enterprise v7 include tools ConnectWise, OpsGenie, VictorOps, SapphireIMS, Moogsoft, Microsoft Teams, WhatsApp, ZenDesk, and Microsoft Power BI.

Increased Security to Protect Against Vulnerabilities and Threats

At eG Innovations, we take security very seriously. In a world

where security and data integrity is always at risk and malicious activities are increasing to compromise security measures and get access to sensitive information, we have focused our R&D efforts to help increase our security measures and include airtight encryptions and authentication methods. eG Enterprise v7 includes the following security enhancements:



- **Two-Factor Authentication (2FA):** For both on-premises and SaaS deployment models, now eG Enterprise supports 2FA for logon. Instead of logging in with just username and password credentials, now eG Enterprise users can choose to have an additional authentication code during logon, which is dynamically generated and sent via email or can be generated via Google Authenticator mobile app. This provides increased security during logon.
- **SAML Enablement for Single Sign-On (SSO):** eG Enterprise v7 increases its security for identity and access management by supporting SSO using SAML. SSO simplifies user logon experience as users will have to log in only once—with just one set of credentials (username and password). With SSO, the application or website that the user is trying to access relies on a trusted third party to verify that users are who they say they are. eG Enterprise

v7 now supports SSO via both service provider (in this case eG Enterprise itself) initiated and identity provider (for e.g., OneLogin) initiated methods.

- **New Security Filter for Protection Against Vulnerabilities:** OWASP is an international non-profit organization dedicated to web application security. OWASP recommends that certain security filters be included in web applications to protect against and prevent security threats and risks such as Cross-Site Scripting (XSS), Cross-Site Request Forgery (CSRF), SQL Injection, Clickjacking, and more. eG Enterprise v7 includes a new security filter, which when enabled helps protect against these pernicious attacks.
- **Option to Enforce Admin User Logon from Known Locations:** Now, admin users of eG Enterprise can be enforced to login only from certain IP addresses or IP address ranges. This helps prevent misuse of admin user's logon credentials by third parties to login from anywhere and compromise security.

One-Click Dashboards: Pre-built, Out-of-the-Box Templates for Creating Custom Dashboards

Until eG Enterprise v6.3, there was a provision to build custom dashboards using a host of widgets, charts and data visualization options. In eG Enterprise v7, this is made extremely simpler with the help of the new dashboard templates are included out of the box for key components such as Citrix, SAP, SharePoint, etc. These include pre-built widgets and metrics to be displayed and can be applied to a relevant component and be launched in one click. Hence the name One-Click Dashboards. These dashboard templates can be cloned and customized to suit bespoke dashboard and widget requirements.



One-Click Dashboard in eG Enterprise v7

The interface for building new custom dashboards has also been simplified and many new widget types are included such as Activity Chart, Infrastructure Health Widget, KPI Widget, Scatter Plot, Text Widget, Topology, Trend Graph, Zone Map, and more. This further simplifies new dashboard creation and helps IT admins customize monitoring based on their specific needs.

Report Builder: New Interface to Easily Build Custom Reports

Our customers often come up with requests for new reports to be created or existing reports to be customized for their bespoke needs. eG Enterprise v7 now introduces a new built-in utility called Report Builder that empowers customers and service providers to build their own custom reports and add them to the Reporter console. Using an intuitive and easy-to-use interface, IT admins can build custom reports with different types of charts including bar chart, area chart, pie chart, stacked bar chart, heatmap, top-N chart and more.

SaaS Deployment Made Simpler, More Automated and Truly Self-provisioned

eG Enterprise supports three major options for deploying the eG Manager:

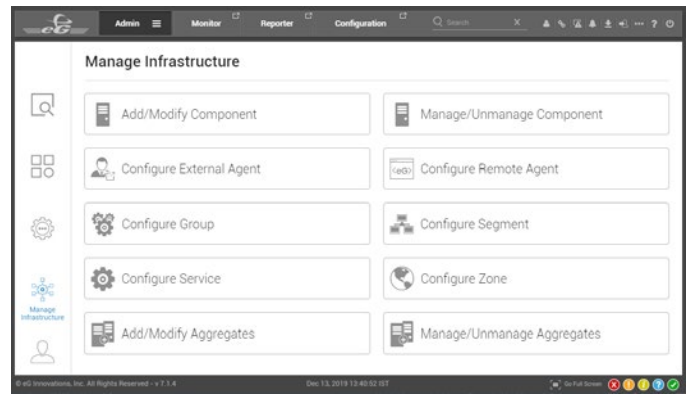
- 01

Fully on-premises:
eG Manager is hosted and managed by the customer
- 02

Fully SaaS-based:
eG Manager is hosted in a secure public cloud and managed by eG Innovations
- 03

MSP deployment:
eG Manager is hosted in the MSP premises or in the cloud and managed by the managed service provider

In case of option 2, the customer may require different departments in their IT organization (referred to as a tenant below) to have different levels of access privileges and control. And in option 3, the MSP may need to grant different levels of



Simplified UI for installation and setup

access privileges and control for different customers (tenants) and service managers.

Until eG Enterprise 6.3, in both cases, users of the tenants had to rely on eG Admin users to perform administrative tasks.

eG Enterprise v7 has made updates to its SaaS deployment model to be fully multi-tenant and self-provisioned. Customers and MSPs can now benefit from many self-service options that automate and accelerate execution of administrative actions, which include:

1. Self-registration of users
2. Download of eG Agents is further simplified
3. Automatic discovery of the IT environment
4. Auto-management of components in the eG Manager
5. Automatic naming of components in the eG Manager is now based on hostname of components
6. Auto-assignment of components to tenant zones
7. Flexibility with license assignment and reporting
8. Increase management control for tenants: add/modify/delete users, add/modify components, manage/unmanage components, configure services, segments, groups and zones, configure tests, set thresholds, set maintenance policy, etc.
9. Auto-deletion of tenants and their components
10. Admin option to easily switch between tenant profiles

eG Admins can empower tenants to perform these tasks and enable some level of autonomy for managing their monitored components and monitoring settings. eG Enterprise SaaS deployment is now truly multi-tenant and self-provisioned.

Conclusion

eG Enterprise v7 enables organizations take a 360° view of user experience. The many enhancements in this release help organizations quickly troubleshoot complex application and IT infrastructure problems without affecting user productivity and customer satisfaction.

Based on customer feedback and market analysis, eG Innovations will continue to build new monitoring, diagnosis and reporting functionality to address the performance management the needs of the modern technology landscape. We are committed to make eG Enterprise even more robust, intelligent, automated, scalable and easy to use in future product releases.

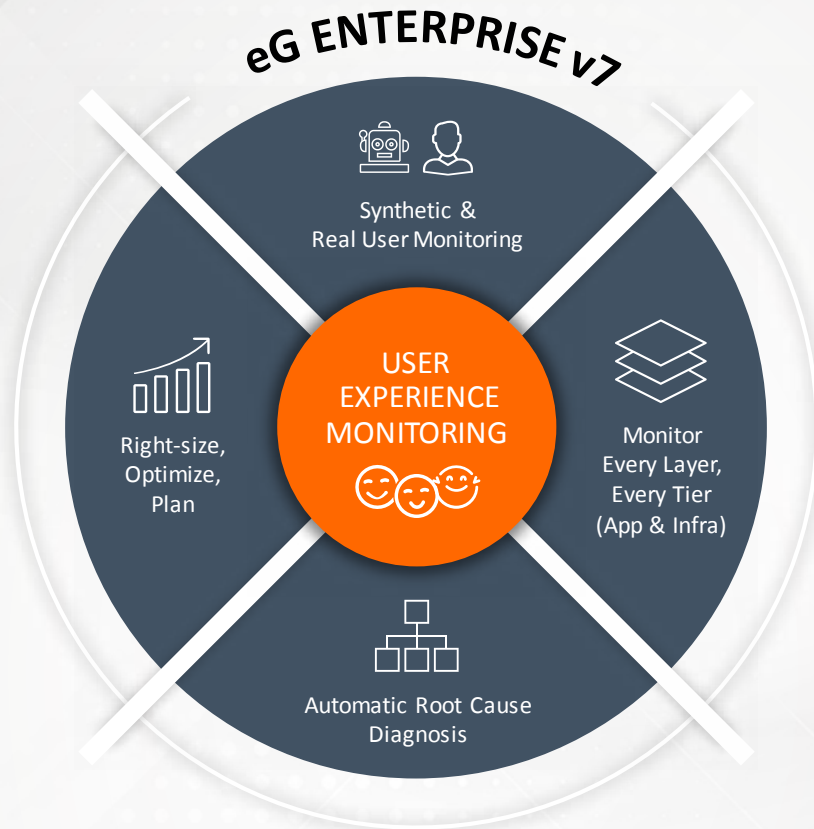
Next Steps

- ✉ | To contact eG Innovations sales team: sales@eginnovations.com
- 🌐 | Get a free trial of eG Enterprise v7: www.eginnovations.com/FreeTrial
- ✉ | For support queries and feature requests: support@eginnovations.com

About eG Innovations

eG Innovations is dedicated to helping businesses across the globe transform IT service delivery into a competitive advantage and a center for productivity, growth and profit. Many of the world's largest businesses use eG Enterprise to enhance IT service performance, increase operational efficiency, ensure IT effectiveness and deliver on the ROI promise of transformational IT investments across physical, virtual and cloud environments. To learn more visit www.eginnovations.com.

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