Total Performance Visibility

Release Notes for eG Enterprise v6.3.7

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Release Notes for eG Enterprise v6.3.7

Version 6.3.7 is a minor release of the eG Enterprise Suite. This document provides a comprehensive list of enhancements and bug fixes that are part of this release.

1.1 Monitoring Enhancements

1.1.1 Citrix Monitoring Enhancements

The following enhancements are made to the eG Enterprise's Citrix Monitoring capabilities in v6.3.7:

- **Citrix Logon Simulator Enhancements:**
  - The Google Chrome driver bundled with the logon simulator has been updated so that chrome version 70 and above can be supported from eG Enterprise v6.3.7.
  - The Citrix logon simulator now supports connections through F5 Load Balancer using password-based authentication.
  - The logon simulator has been enhanced to support Citrix StoreFront v1811/1812.

- **Monitoring Citrix Workspace Environment Management (WEM):** One of the common reasons for poor user logon experience in a Citrix XenApp/XenDesktop environment is the delay in profile loading and group policy application. Using Citrix Workspace Environment Management (WEM), this delay can be greatly minimized! Citrix WEM uses intelligent resource management and Profile Management technologies to provide the best logon experience to users in Citrix XenApp and XenDesktop deployments (see Figure 1).

  Figure 1 depicts the architecture of Citrix WEM. The WEM Administration Console is where policies are defined and managed, resources are created and assigned, and users are authorized. The settings so defined are communicated to a WEM Broker, which stores the same in a SQL server backend. WEM Agents are deployed on VDAs or physical Windows devices. These agents communicate with the WEM Broker and enforce the settings you configured. An Active Directory server is used to push the settings to users.
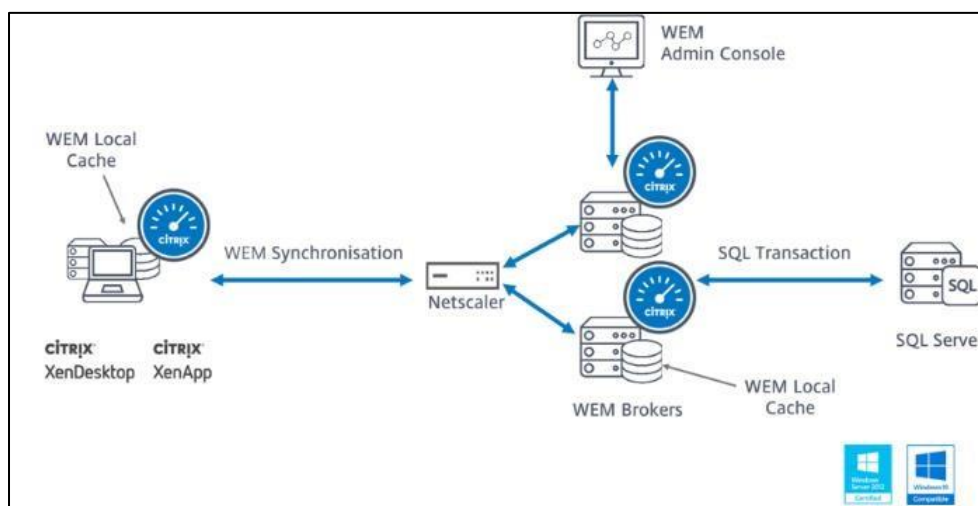

Figure 1: Architecture of Citrix WEM

Typically, the WEM agents offload the critical logon processing steps – eg., group policy application, logon script execution, drive/printer mapping, etc. – and perform them after the logon, thus significantly improving logon speed (see Figure 2).
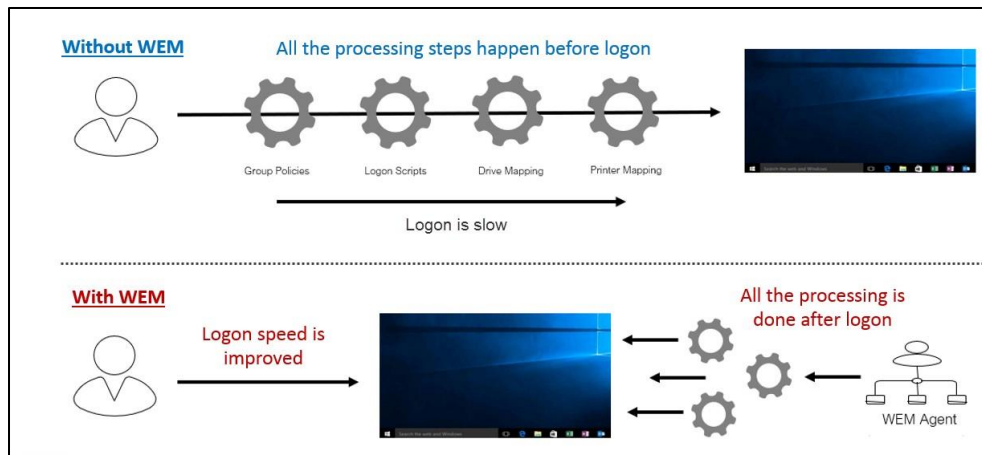
Figure 2: How Citrix WEM helps minimize logon time

This is why, where WEM is employed, user logons will be quick and hassle-free. However, if WEM clients – i.e., the WEM agents - experience delays or errors in logon processing, it can cause serious performance issues post logon. In other words, user profile loading, logon script execution, drive mapping etc., can become very slow. Because of such issues, a Citrix user will be unable to access the application/desktop profile, even after logging in quickly.

Besides processing delays on the WEM clients, the unavailability, poor responsiveness, and errors in functioning of the WEM broker can also impact WEM performance, and consequently, affect user experience.

Therefore, to assure users of a high quality experience, administrators of WEM-enabled environments should continuously monitor the WEM processing times on the clients. Additionally, the WEM broker should also be periodically checked for availability, responsiveness, and operational errors. eG Enterprise v6.3.7 helps in this regard!

In this version, an eG agent deployed on a Citrix XenApp server or a XenDesktop VM monitors overall WEM processing duration on the client, the initial processing duration and the WEM agent processing duration of each desktop. In the process, administrators are proactively alerted to a delay in WEM start-up. The root-cause of the delay is also accurately pinpointed - is it due to longer network processing? is it owing to a delay in printer processing? or is it because external task processing is taking a long time?. Errors in processing that could be slowing down WEM start-up are also highlighted, so that administrators can easily rectify them.
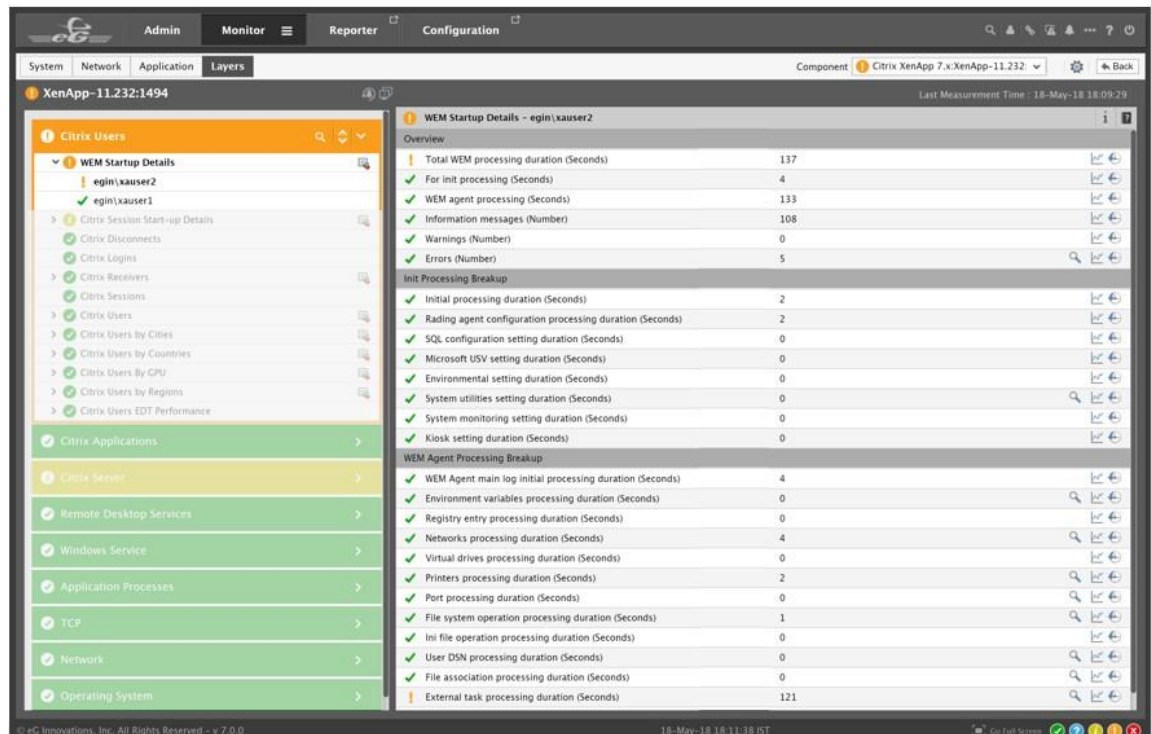
Figure 3: Statistics on WEM processing

Additionally, this version also provides deep dive visibility into the performance of the Citrix WEM broker. The availability and responsiveness of the broker, errors captured by its events logs, and the broker's connectivity with the license server and SQL database are periodically checked and administrators promptly notified of problems.

This way, eG Enterprise v6.3.7 captures and reports WEM-related performance bottlenecks that can impact overall user experience with Citrix XenApp, accurately pinpoints where the bottlenecks lie, and thus enables administrators to rapidly initiate remedial measures.

- **Monitoring the resource utilization of the browsers accessed by Citrix XenApp users:** In recent times, browsers have become one of the common ways to access many applications in enterprises. The same browser may be used for accessing multiple applications. Further, users may even use browsers to access non-corporate web sites from their environment. In modern architectures, a lot of the processing is done by the scripts executed on browsers. This further adds processing tasks to the browsers. Citrix administrators need to know when exactly specific browser instances started taking up excessive resources (CPU, memory, disk) and most importantly, what URLs were accessed when a browser started taking up resources. For this purpose, eG Enterprise v6.3.7, has introduced a new monitoring capability that helps XenApp administrators figure out the resource utilization of the browsers accessed by the Citrix users. By auto-discovering the browser instances accessed by each user connected to a Citrix XenApp server/server farm, this test when executed reports the number of sessions initiated and the number of processes running for each browser. The URLs that were accessed when a browser started taking up resources are also reported. Administrators can figure out the URL and browser that is responsible for excessive resource utilization by a user.

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1.1.2 Virtualization Monitoring Enhancements

- **Monitoring VMware App Volumes Manager:** VMware App Volumes is a real-time application delivery system that enterprises use to dynamically deliver and manage applications. Applications are bundled in AppStacks and delivered by attaching a standard VMDK file to a virtual machine. Where VMware App Volumes is used, any issue in the health of App Volumes or AppStacks can deny users access to business-critical applications. To avoid this, eG Enterprise v6.3.7 closely monitors the VMware App Volumes Manager - a Web-based interface used for centrally managing the applications delivered via VMware App Volumes. Using this eG Monitor, administrators can accurately isolate problematic AppStacks, Writable Volumes and the App Volumes. eG Enterprise also provides the availability and response time of the VMware App Volumes Manager round the clock so that administrators can detect the non-availability of the VMware App Volumes Manager before end users notice and initiate corrective measures. The license validity of the VMware App Volumes Manager is also monitored and the users who are currently using the licenses are enumerated. Each datastore of the VMware App Volumes Manager is also monitored and the datastore that is running out of space is pinpointed.

- **Monitoring virtual disk usage from 'outside' a VM:** Previously, to know the capacity and usage of each virtual disk, 'inside view monitoring' had to be enabled for each VM on a VMware vSphere server. Starting from v 6.3.7, this is no longer required. The eG agent monitoring VMware vSphere servers can now pull metrics on virtual disk usage from 'outside' the VMs – not 'inside'.

- **Monitoring of VMware Horizon Pods**: A VMware Horizon Pod is a collection of View Connection Server instances. A pod also consists of shared storage, a database server, and the vSphere and network infrastructures that host desktop and application pools. The primary goal of a pod is to load-balance connections to a site/datacenter and to ensure the high availability of the VDI infrastructure through fail-over capabilities. This means that performance issues in a pod can deny/delay users access to their desktops. To prevent this, v6.3.7 provides deep dive visibility into the performance of a pod. The eG Monitor for the VMware Horizon Pod reports the status of each connection server instance in a pod, pointing you to unavailable/disabled instances. The status and usage of desktop/application pools managed by a pod are also reported, so that over-utilized pools and those that are in an abnormal state are highlighted. The session load on each pool is monitored, and load-balancing irregularities are brought to light.

- **Monitoring the resource utilization of the browsers accessed by VMware Horizon View RDS users:** In recent times, browsers have become one of the common ways to access many applications in enterprises. The same browser may be used for accessing multiple applications. Further, users may even use browsers to access non-corporate web sites from their environment. In modern architectures, a lot of the processing is done by the scripts executed on browsers. This further adds processing tasks to the browsers. VMware Horizon View administrators need to know when exactly specific browser instances started taking up excessive resources (CPU, memory, disk) and most importantly, what URLs were accessed when a browser started taking up resources. For this purpose, eG Enterprise v6.3.7, has introduced a new monitoring capability that helps VMware Horizon View RDS administrators figure out the resource utilization of the browsers accessed by the VMware Horizon View RDS users. By auto-discovering the browser instances accessed by each user connected to a virtual

server farm, this test when executed reports the number of sessions initiated and the number of processes running for each browser. The URLs that were accessed when a browser started taking up resources are also reported. Administrators can figure out the URL and browser that is responsible for excessive resource utilization by a user.

- **Enhancements to VMware Horizon Connection Server monitoring**: VMware Horizon Connection Server monitoring has been enhanced in this version to provide deeper visibility into the following:

  - Problem states of desktops in desktop pools

  - Status of each RDS host in an RDS farm

  - Status of applications in each application pool

1.1.3 Java Monitoring Enhancements

- **Support for Java 9:** JVM monitoring is now supported for Java 9 and higher. Tag and follow transaction tracing is also now supported for applications using Java 9 and higher.

- **Turning off POJO profiling:** Starting with this version, plain old java objects (POJO) profiling is turned off by default during transaction tracing in order to minimize the overheads involved. Administrators still have the option of turning POJO tracing on if they desire. To enable POJO tracing, edit the **btmOther.props** file (in the <EG_AGENT_INSTALL_DIR>\lib\btm directory) on the target JVM node. Go to the end of the file and set the INSTRUMENTATION_LEVEL flag to 1. Then, save the file.

1.1.4 AWS Monitoring Enhancements

- **Monitoring application load balancers:** Application load balancers on AWS are now monitored, so that administrators can be quickly alerted to unhealthy targets, processing errors, TCP connection overloads, over-utilization of load-balancer capacity units, and poor responsiveness, per load balancer.

- **Monitoring network load balancers:** Network load balancers are now monitored, so that unhealthy targets can be captured and the usage of load-balancer capacity units can be tracked per load balancer.

1.1.5 Microsoft Office 365/Exchange Online/SharePoint Online Enhancements

- **Detailed diagnostics for Mail Traffic Statistics test:** The **Mail Traffic Statistics** test mapped to the Microsoft Exchange Online component now reports detailed metrics for the *Pending items* and *Quarantined items* measures. Using the detailed diagnostics, you can tell which messages are quarantined / are pending on Microsoft Exchange Online, when they were sent, and to whom. This greatly helps troubleshooting.

- **Proxy server support for Office 365 monitoring:** An eG remote agent is now able to monitor Microsoft Office 365 even when it has to use a proxy server to connect to the cloud. This was not supported earlier.

1.1.6 Enhancements to Microsoft Windows

➢ **Support for Windows 2019:** eG Enterprise v6.3.7 now supports Windows 2019 server. The eG agent and VM agent can be installed on this operating system.

➢ **In-depth analysis of Windows Services and their associated processes:** Many server applications in Windows environments run as background services. For each service that is running, there may be one or more associated processes. In some Windows environments, a service may suddenly become unresponsive causing the application corresponding to that service to stop. The service itself may have stopped because one/more processes associated with that service have suddenly become unresponsive or are contending for limited resources. To enable administrators to accurately isolate the root-cause of service failures, version 6.3.7 provides visibility into the health of the processes associated with configured Windows services. Alongside the availability and responsiveness of each service, eG Enterprise also reports the status and resource usage of the processes associated with that service. With the help of this information, administrators will not only be able to spot unavailable/unresponsive services, but will also be able to figure out if the associated processes are impacting service health. Detailed diagnostics will also lead you to the exact process that could be contributing to the service problem.

➢ **Enhancements to configuration monitoring:** Previously, when tracking the configuration of a Windows system, the *Disk capacity* measure of the **Drives Capacity** configuration test reported the total disk capacity only. This has now been changed to allow the capacity of individual disk drives to be reported. A **REPORT PARTITIONS** flag is introduced while configuring this test. If this flag is set to *Yes*, then this test will display the capacity of each partition separately.

1.1.7 Enhancements to NetFlow Monitoring

• **Capturing the type of traffic flowing through the network interfaces:** Typically, eG's Netflow collector captures and reports both the input and output traffic flowing through each network interface of a monitored device. In the real world however, some interfaces may be configured to handle only one type of traffic – either input or output. To lend administrators the flexibility to choose the type of traffic they want to monitor based on the network interface configuration, a new **SHOW TRAFFIC** flag has been introduced for the **Top Sources**, **Top Destinations** and the **Top Conversations** tests. This flag can be set to **IN TRAFFIC** to monitor only input traffic, or **OUT TRAFFIC** to monitor output traffic. Say, this parameter is set to **IN TRAFFIC**. In this case, eG Enterprise automatically hides all network interfaces that are configured to handle ONLY outgoing traffic from the eG monitoring console. Only network interfaces that support input traffic will appear as descriptors of these tests and will report flow analytics.

1.1.8 Other Monitoring Enhancements

• **Elasticsearch Monitoring**: Elasticsearch is an open-source, RESTful, distributed search and analytics engine built on Apache Lucene, which is commonly used for log analytics, full-text search, security intelligence, business analytics, and operational intelligence. To periodically check the efficiency of this search engine and to proactively alert administrators to inconsistencies in its performance, eG Enterprise v6.3.7 offers a specialized monitoring model

for Elasticsearch. Using the eG Monitor for Elasticsearch, administrators can determine the health of the Elasticsearch cluster and the indices in the cluster. The count of indexes and the number of documents added to the indexes can be measured. In addition, the Monitor tracks the search queries processed by the engine, reports the time taken by the engine for query execution, and also pinpoints the queries that are taking too long to execute. For each index, the Monitor also reports the count of active primary and replica shards in that index.

- **HP MSA 2052 Monitoring**: Starting with eG Enterprise v6.3.7, you can use the HP P2000 SAN monitoring model to monitor HP MSA 2052.

1.2 Usability Enhancements

1.2.1 Admin

- **Auto-creation of component groups:** When monitoring Citrix infrastructures, administrators often prefer to manage delivery groups on a Citrix Delivery Controller as Component Groups in eG. Previously however, to achieve this, administrators had to manually create a component group in eG for every delivery group managed by the controller. This meant that every time the delivery group configuration changed, the configuration of the corresponding component group had to be manually changed. Version 6.3.7 saves the time and effort involved in this exercise by completely automating this cumbersome process!

  If an eG agent is installed on a Citrix Delivery Controller and is monitoring it, then this agent can now auto-discover all the delivery groups managed by that controller and the XenApp servers in each group. The eG manager uses the details so discovered to accurately identify the delivery group to which a managed XenApp server belongs. With this knowledge, the eG manager then automatically creates a component group in eG, adds the managed XenApp server to it, and also assigns the delivery group's name (by default) to that component group. If later, XenApp servers are added/removed from a delivery group, eG Enterprise auto-detects this change and updates the corresponding component group configuration accordingly. This eliminates the need for any manual intervention in component group maintenance.

  To enable this capability, two new flags have been introduced in this version:

  o **AutoCreateGroups**: Available in the [DISCOVERY_SETTINGS] section of the eg_services.ini file (in the <EG_INSTALL_DIR>\manager\config directory). The flag is set to false by default. If set to true, then eG Enterprise will check whether/not a managed XenApp server is part of any of the auto-discovered delivery group. If so, then eG will auto-create a component group corresponding to that delivery group, and will add the XenApp server to it.

  o **PrefixForAutoCreatedGroupNames:** Available in the [DISCOVERY_SETTINGS] section of the eg_services.ini file (in the <EG_INSTALL_DIR>\manager\config directory). By default, the component groups that eG auto-creates will be named after the delivery groups they represent. If you want the auto-created component group names to be prefixed by any string, then specify that string here.

Note:

If a delivery group is removed, then eG Enterprise will automatically remove the corresponding component group, only if that component group is not part of any segment/service configuration. Also, even if a delivery group is removed, eG Enterprise will NOT remove/unmanage the managed XenApp servers in that group.

- **Extending the privileges of the LimitedAdmin role:** In older versions, LimitedAdmin users could create maintenance policies for components assigned to them, but they were not allowed to view those maintenance policies configured by other users for the same components. Because of the lack of visibility into the policies created by other users, LimitedAdmin users ended up creating duplicate policies for components. To avoid such duplicates, starting with eG Enterprise v6.3.7, a user with LimitedAdmin privilege will be able to view the maintenance policies created by other users.

- **Quick and easy selection of hosts to be assigned to external/remote agents:** Earlier, when an **External agent** is chosen from the **ASSIGN – EXTERNAL AGENTS** page, the **HOSTS MANAGED BY OTHER EXTERNAL AGENTS** list displayed all the components managed by all other external agents in that environment. In large environments where hundreds of hosts are managed, administrators had to keep scrolling down the **HOSTS MANAGED BY OTHER EXTERNAL AGENTS** list endlessly to locate and choose the specific hosts of interest to them. To avoid this inconvenience, a **HOSTS MANAGED BY** list box has now been introduced in the **ASSIGN – EXTERNAL AGENTS** page. eG Enterprise automatically populates this new list box with all the external agents configured in the target environment. Administrators can choose a particular external agent from this list, so that they have the hosts managed by this external agent alone to choose from for assignment. A **Search** option is also provided, so administrators can quickly find the host that they want to assign to an external agent from across the infrastructure. The **HOSTS MANAGED BY** list has also been introduced in the **ASSIGN – REMOTE AGENTS** page to enable quick and easy assignment of hosts to remote agents.

- **Centralized review of test configuration across components:** In large environments where thousands of components are managed, administrators often found it difficult to review the test configuration of a test across components and identify inconsistencies (if any). To ease their pain, eG Enterprise v6.3.7 has introduced a special **Test Configuration** page that appears when you navigate through the menu sequence: *Agents -> View Test Configuration* in the eG administrative interface. Using this page, administrators can, at-a-glance, verify the configuration of a chosen test across all components of a particular type.

- **Enhanced search for upgrade information on eG agents:** In v6.3.7, administrators can use the **AGENTS UPGRADE – ADVANCED SEARCH** page to filter components/agents based on component groups. To this effect, a **Component Groups** option has been introduced in the **Component / Agent type** list. Choosing this option will provide administrators with a list of component groups to choose from. Picking a component group from this list will display the eG agents monitoring the components in that group, and the upgrade status of each agent. This way, administrators can quickly find the agents they want, easily view their upgrade status, and also instantly initiate upgrade-related operations on them.

1.2.2 Monitor

- **VC Datastores View:** Unavailable, slow, and space-hungry datastores can adversely impact the performance of VMs and vSphere servers that are actively using them. To enable VMware administrators to rapidly isolate such problematic datastores from across the virtualized infrastructure, eG Enterprise v6.3.7 provides a **VC Datastores View Dashboard**. This dashboard provides a consolidated list of datastores managed by all monitored vCenter servers in the target environment. A quick glance at this dashboard reveals the unhealthy datastores and the reasons for their ill health – is the datastore unavailable? Is it running out of space? Is it slow in processing I/O? Using the count of VMs and vSphere servers that are currently using a problematic datastore, administrators can also easily assess the impact of the datastore problem.

Figure 4: The VC Datastores View dashboard

To know which VMs/desktops were affected by the datastore problem, administrators can drill down from a datastore displayed in the dashboard. Zooming into an affected virtual desktop will lead administrators to the User Experience Dashboard. Here, administrators can accurately identify the users whose VDI experience suffered because of the datastore problem.

USERS/DESKTOPS	HOST	TOTAL IOPS (Commands/sec)	DISK READS (Commands/sec)	DISK WRITES (Commands/sec)	DISK THROUGHPUT (GB)	HIGHEST LATENCY (Seconds)	VIRTUAL CPU UTILIZATION (%)	MEMORY LIMIT (GB)	CONNECTION STATUS (Number)
DEV-LINRHEL-7.0-ANSIBLE-(11.111)	Linux_monitor	✓6	✓0	✓6	✓0.02	✓0	15.38	✓Unlimited	✓Connected
DEV-WIN81-eG7.x-KIMU-(9.244)	Linux_monitor	✓3	✓0	✓3	✓0.05	✓0	8.77	✓Unlimited	✓Connected
DEV-WIN19STD-CTX7.18-DDC2-(11.139)	Linux_monitor	✓3	✓0	✓3	✓0.04	✓0	26.9	✓Unlimited	✓Connected
DEV-WIN12R2-CTX7.18-XA & RDSH-(11.1...	Linux_monitor	✓2	✓0	✓1	✓0.02	✓0	8.07	✓Unlimited	✓Connected
DEV-WIK12R2-eG-(11.253)	Linux_monitor	✓2	✓0	✓2	✓0.01	✓0	13.89	✓Unlimited	✓Connected
DEV-LINFSD-Insight-(9.241)	Linux_monitor	✓2	✓0	✓2	✓0.05	✓0	2.24	✓Unlimited	✓Connected
TEZ-WIN12R2-CTX-XA716-(9.112)	Linux_monitor	✓2	✓0	✓2	✓0.01	✓0	5.37	✓Unlimited	✓Connected
DEV-LINNS-MAS-12.1.48.18-(9.67)	Linux_monitor	✓1	✓0	✓1	✓0.03	✓0	1.2	✓Unlimited	✓Connected
INF-WIN08R2-eC-(9.106)(old-9.9)	Linux_monitor	✓1	✓0	✓0	✓0.02	✓0	0.68	✓Unlimited	✓Connected
DEV-WIN16-eC-(11.64)	Linux_monitor	✓1	✓0	✓1	✓0.01	✓0	8.11	✓Unlimited	✓Connected
TEZ-WIN12R2-eG-(9.19)	Linux_monitor	✓1	✓0	✓1	✓0.01	✓0	9.42	✓Unlimited	✓Connected
DEV-WIN19STD-CTX7.18-PVS-(11.144)	Linux_monitor	✓1	✓0	✓1	✓0.01	✓0	5.17	✓Unlimited	✓Connected
egin\xdadmin_on_DEV-WIN16-eC-(11.64)	Linux_monitor	✓0	✓0	✓0	✓0.02	✓0	8.26	✓Unlimited	–
egin\xdadmin_on_TEZ-WIN12-GERMAN-(9...	Linux_monitor	✓0	✓0	✓0	✓0.01	✓0	17.31	✓Unlimited	–
DEV-WIN10-DOTFUSCATOR-(9.35)	Linux_monitor	✓0	✓0	✓0	✓0	✓0	2.74	✓Unlimited	✓Connected
SUPT-WIN81-TMVR-(8.229)	Linux_monitor	✓0	✓0	✓0	✓0	✓0	2.32	✓Unlimited	✓Connected
DEV-LINRHEL-7.0-MYSQL-(9.200)	Linux_monitor	✓0	✓0	✓0	✓0	✓0	0.97	✓Unlimited	✓Connected

Figure 5: Drill down view of a datastore

This way, within a few mouse clicks, the **VC Datastores View Dashboard** helps administrators trace a datastore problem back to the precise user who is affected by that problem.

- **User Experience Dashboard Enhancements:**

  - Starting with eG Enterprise v6.3.7, the User Experience Dashboard can be easily configured to display the IP address and name of the client machine from which a user is accessing a virtual desktop. This way, the dashboard not only reveals who is logged into which desktop, but also indicates from where. This greatly aids troubleshooting. To enable this display, select the check boxes against the Client IP and Client Name options from the **More Options** drop down window.

  - Administrators can even search the Client IPs of their choice using the Search Client IP text box. To enable the **Search Client IP** text box, administrators need to set the **EnableAddtionalSearch** flag available in the **[Additonal_Search]** section of the **<eG_INSTALL_DIR>\manager\config\eg_endUserDetails.ini** file to **true**.

  - The User Experience Overview Dashboard typically lists all the **Users/Desktops** currently logged in/accessed, regardless of which Active Directory (AD) Group such users/desktops belong to. Starting with eG Enterprise v6.3.7, if the VDI environment is managed by Active Directory, then the **User Experience Overview** dashboard automatically groups **Users/Desktops** by **AD group**. A quick glance at this dashboard will now help administrators figure out which AD group a problematic user/desktop belongs to, thus minimizing troubleshooting time.

USERS/DESKTOPS	HOST	VENDOR NAME	CITY NAME	CLIENT IP	TIME SINCE LAST ACTIVITY (Minutes)	LATENCY (Seconds)	MEMORY USAGE (%)	DISK BUSY (%)	IN NETWORK TRAFFIC (Mbps)	FREE SPACE (GB)
CN=xd-admins,CN=Users,DC=egin,DC=local (1)										
egin\xdadmin_on_TEZ-WIN12-CER...	Linux_monitor	eBay	Chennai	-	-	-	-	-	-	-
CN=xenmobile,CN=Users,DC=egin,DC=local (1)										
egin\xdadmin_on_TEZ-WIN12-CER...	Linux_monitor	eBay	Chennai	-	-	-	-	-	-	-
Default (5)										
egin\egtesting_on_TEZ-WIN12R2-...	Linux_monitor	eBay	Chennai	-	-	-	-	-	-	-
egin\xdadmin_on_SUPT-WIN10-D...	Linux_monitor	eBay	Chennai	-	-	-	-	-	-	-
testing-srv-1\administrator_on_TE...	Linux_monitor	-	-	-	-	-	-	-	-	-
win-c5et395q1hk\egremote_on_D...	Linux_monitor	-	-	-	-	-	-	-	-	-
win-ft2n074k9k8\administrator_o...	Linux_monitor	-	-	-	-	-	-	-	-	-

Figure 6 : The default view of the User Experience Dashboard in an Active Directory environment

- **Enhancements to My Dashboards:**

  - **One Click Dashboard:** The My Dashboards capability of eG Enterprise allows users to build completely customizable dashboards from scratch! For administrators who prefer not to invest the time and effort to build a dashboard from scratch, eG Enterprise v6.3.7 provides the One Click Dashboard. This is a custom-built, ready-made dashboard that displays metrics in a single click based on a ready-to-use template.
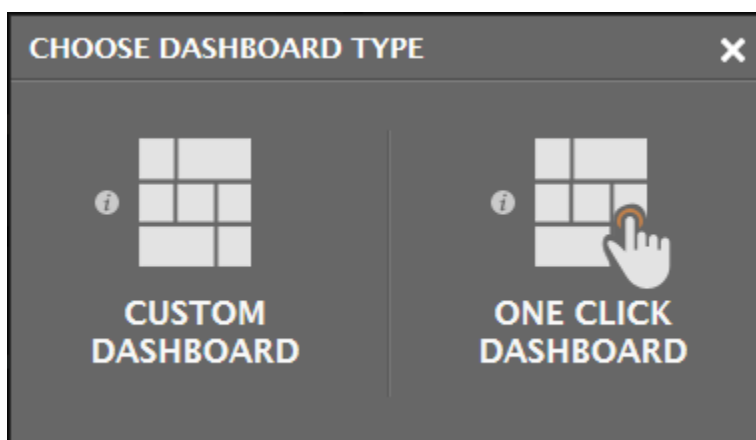
Figure 7 : Choosing the One Click Dashboard

By default, eG Enterprise v6.3.7 is bundled with a wide range of dashboard templates, covering mission-critical servers/domains such as Citrix XenApp, Microsoft SQL, VMware Virtualization, and so on. These templates are pre-configured with key performance metrics collected from the corresponding server/domain. By simply choosing any of these ready-to-use templates, administrators can, within minutes, have a fully-functional dashboard up and available for their use.
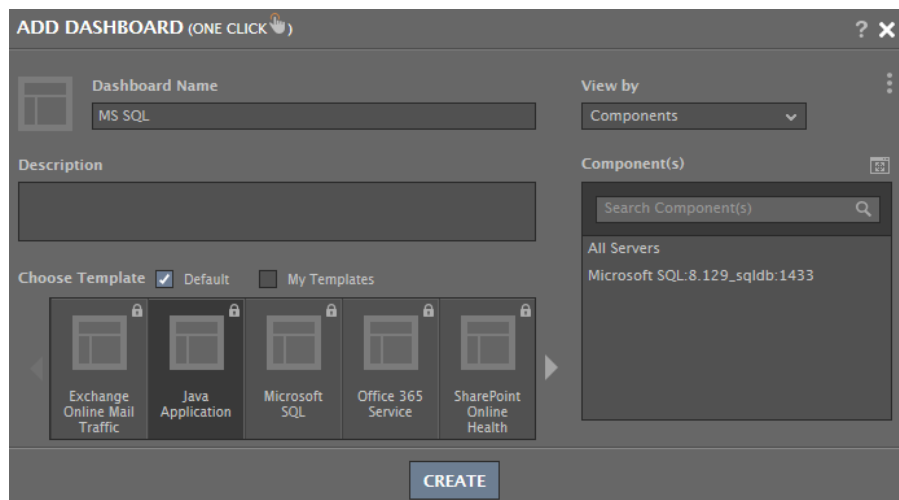
Figure 8: Adding a One Click Dashboard by choosing a default template
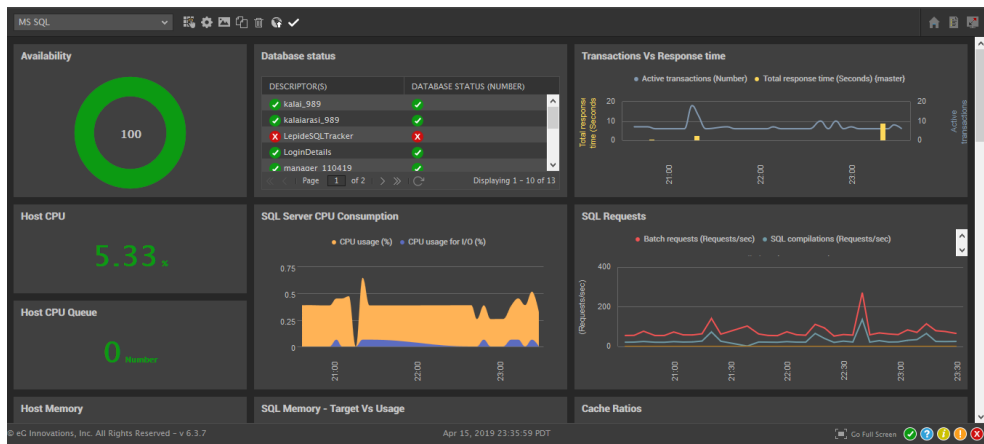
Figure 9: A sample One Click Dashboard

Users can create any number of One Click Dashboards in no time and can even share them with other users. Any of the created dashboards can also be published to Microsoft SharePoint.

Users are even allowed to create their own templates. Templates can be built for a single or multiple applications/systems managed in the target environment.

Figure 10: Creating a new Template

▪ **New Widgets:** From v6.3.7, any custom dashboard that is built can include two new widgets, namely - a Zone map widget and a Topology widget. With the Zone Map widget, you can have your dashboard display a zone map, using which you can figure out where exactly your zones operate, and what their current state is. The Topology widget can be used to display the real-time topology of your business-critical services, so that you can instantly determine service health and accurately isolate the root-cause of service slowdowns (if any).

• **Disabling the name of the tests from the subject of alarm mails:** In older versions, the name of the tests for which alerts were generated were by default appended to the subject of the alert mails. This was because, the **Test** and **Description** options in the **MAIL/SMS ALERT PREFERENCES** section of **the MAIL/SMS ALERT PREFERENCES** page were earlier disabled by default. To stop appending test names to the subject of the alert mails, starting from eG Enterprise v6.3.7, administrators are allowed to deselect the **Test** and **Description** options.

1.2.3 eG Reporter

• **Inbound Domain Details report:** Administrators of an organization may often wish to know the domains from which most email messages were received, and the size of messages received from each domain. The Inbound Domain Details report helps administrators in this regard. With the help of this report, administrators can identify the individual domains from which the mails were received, the number of mails received from each individual domain and the total size of the mails. Using this report, administrators can rapidly figure out if mail correspondence by the users were from legitimate domains only or if the mail activity was suspect - i.e., were many mails received from domains that seem phony? Was the size of the mail received unusually large? This way, the report points to probable mail server abuse/hacking, based on which administrators can fine-tune firewall policies.
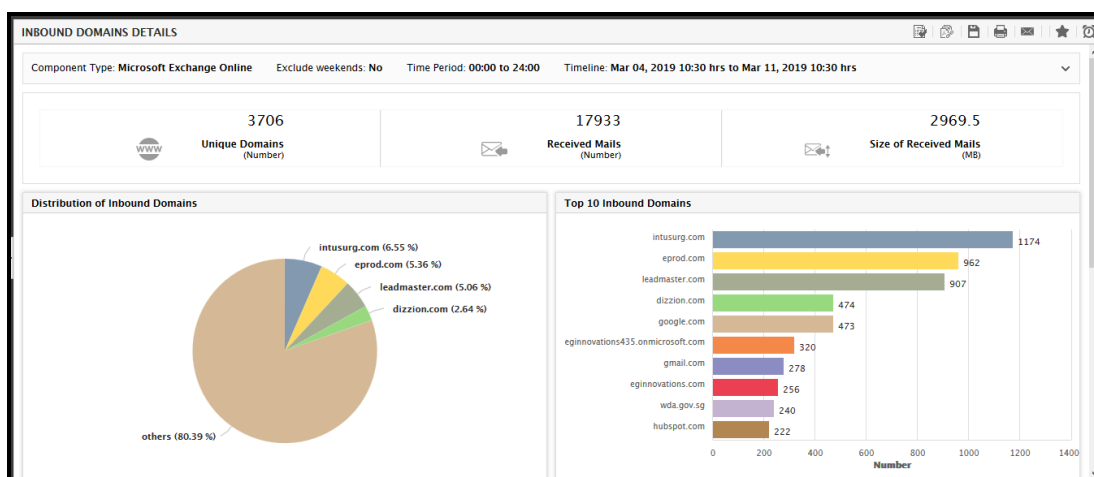
Figure 11: A generated Inbound Domain Details report

- **Enhancement to Uptime/Downtime Analysis report:** High server uptime is not always a healthy sign! If a server has not rebooted for a long time, it is probably running an OS that is outdated or is missing critical hot fixes/patches. This can adversely impact server performance. To avoid this, administrators manning large environments should be able to quickly identify those servers that have been running without a reboot for an unusually long time, investigate the reasons for the same, and promptly initiate remedial measures. To help with this, the Uptime/Downtime Analysis report has been enhanced in v6.3.7. The **Detail** view of the report now includes a **Running Since** filter. By default, the **Greater than** option is chosen against this filter. Once administrators specify a value (in days/hours) against this filter, the report will list all those servers that have been running without a reboot for a duration beyond the days/hours configured. Likewise, by picking the **Lesser than** option from **Running Since** and providing a duration alongside, administrators can also identify those servers that have been down for too long. Problematic servers in your environment thus come to light.
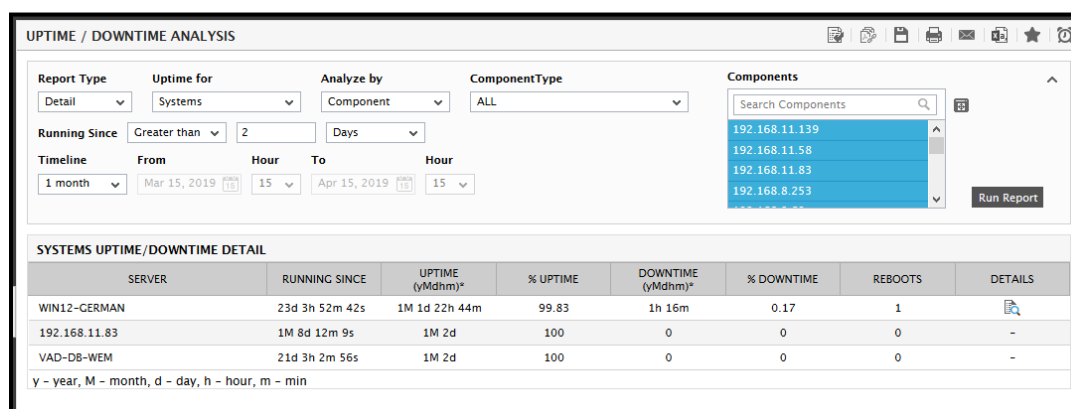
Figure 12: The Uptime / Downtime Analysis report showing the last reboot time of the servers

- **Enhancements to User Session Details report**: In v6.3.7, if the **User Session Details** report is generated for Active Directory groups with the **Show Details** flag set to *Yes*, a **Summary** is newly reported for every AD group. This summary provides an overview of resource usage, logon experience, and access times across all Citrix/VDI user sessions associated with an AD group. By comparing the summary values across AD groups, administrators can quickly identify which AD group's users are utilizing resources excessively. Those AD groups whose

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users are experiencing undue logon delays or have been idle for too long a time are also highlighted. A quick glance at this report will now also point you to the precise user and session that is responsible for the anomaly.

- **Enhancements to VDI Resource Usage report:** Previously, the **VDI Resource Usage** report was generated to report the overall resource consumption of all the desktops in the target VDI environment. In large VDI environments where multiple desktop pools are provisioned, administrators may want to generate the **VDI Resource Usage** report for individual desktop pools. This can provide them with useful insights on how the desktops in a pool use the available resources and can help them accurately identify the desktop that is hogging the resources in the pool. To cater to this need, the VDI Resource Usage report in eG Enterprise v6.3.7 allows administrators to choose the desktop pools for which the report is to be generated. By default, the generated **VDI Resource Usage** report will display a series of distribution pie charts for the virtual desktops (in the chosen pools) based on how they have been utilizing the different resource components (e.g., physical/virtual CPU resources, memory, disk I/O etc.). If you want to analyze usage using bar charts instead of pie charts, then specify **bar** against the **chartType** parameter in the **[Desktop_Insight_Resource_Usage]** section of the **eg_report.ini** file that is available in the **<eG_INSTALL_DIR>\manager\config** folder.

- **Enhancement to Business Transaction Health Vs Time report**: Starting with eG Enterprise v6.3.7, the **Business Transactions Health Vs Time** report includes an additional **Summary** section. By merely glancing at this section, administrators can understand the total number of business transactions occurred on the target website during a given period and the rate of transactions. These historical transaction metrics are very useful when you want to assess the level of transaction activity on a web site during a designated period and also understand how well your site handled the transaction load – say, when there are special offers on the items sold on your shopping web site and you expect the load on your web site to be high until the offers are alive. Besides this, a heat map chart is also provided to view the distribution of the healthy, slow, error-prone and stalled transactions. The overall error transactions are also displayed in this section so that the administrators can figure out if error prone transactions are hogging their business. This section is useful for the administrators to analyze and compare the overall performance of their website during a normal day and during days when the website is promoted with special offers.
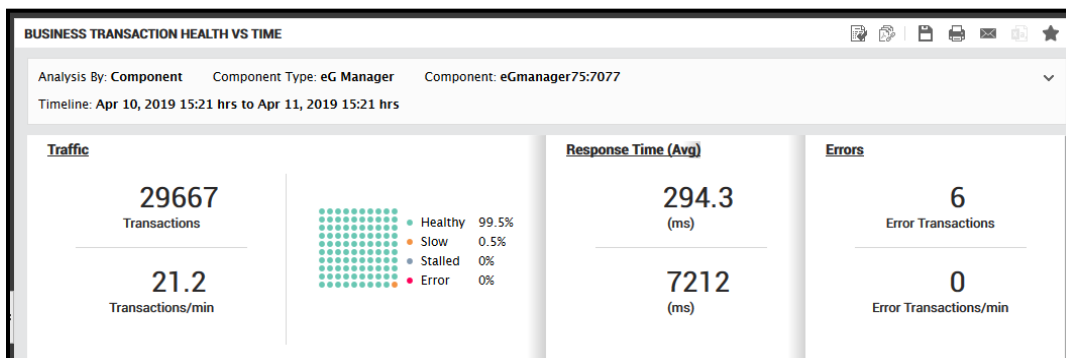

Figure 13: The Summary section of the Business Transaction Health Vs Time report

- **Other reporting enhancements:**

  ▪ In older versions, whenever administrators chose to generate a report in the background, they could not save the report specifications if the **Report Name** was less than or equal to 32 characters. From v6.3.7, administrators are allowed to specify a Report Name upto 64 characters.

  ▪ Previously, when a report was generated in the background and downloaded as PDF, the resulting PDF file was named randomly by eG Enterprise. Because of this adhoc naming, administrators found it difficult to identify the report that they want to view, particularly when multiple reports were downloaded at around the same time. To ease the pain of the administrators, starting with eG Enterprise v6.3.7, the PDF will be named based on the **Report Name** provided by the administrators while generating the report in the background.

1.2.4 eG Configuration Management

➢ **Improved Search capability:** Earlier, where hundreds of components were managed, administrators found it difficult to scroll down the list of Components in the **CONFIGURATION** and the **CONFIGURATION CHANGE : DETAILED - COMPONENT NAME** pages and select the components of interest to them. To alleviate this pain, a new **Search Component** list has now been introduced in these pages. By providing the whole/part of a component name here, you can easily narrow-down your component search, and rapidly choose the components you want. Similarly, to simplify the search for specific software or hotfixes/patches, a **Search Software** option and a **Search Hotfix/Patch** option have been introduced in the **INVENTORY : SOFTWARE AVAILABILITY/UNAVAILABILITY** and the **INVENTORY : HOTFIX/PATCH AVAILABILITY/UNAVAILABILITY** pages, respectively.

1.2.5 eG CLI

- **Additional information related to managed components:** Starting with eG Enterprise v6.3.7, if the **ShowComponents** CLI command is used to query the list of components in the target environment, , the zones that contain these components and the external agents that have been assigned to the components will also be listed.

1.2.6 Others

- **Support for database partitioning:** The use of database partitioning in the eG database is now supported when the eG manager is installed using a Microsoft SQL 2016 backend (both Web and Standard editions).

- **Automatic addition/removal of components in dynamic cloud environments:** The eG Enterprise architecture has been modified to support dynamic addition and removal of components in dynamic cloud environments (e.g., auto-scaling in Amazon AWS). In such environments, when auto-discovery by agents is turned on and the auto-manage option is enabled, eG Enterprise will auto discover applications and automatically start to monitor them. When a cloud instance is removed, administrators may want the applications running on that instance to be automatically removed. Two new flags must be configured on the eG manager for this functionality to be effective:

  o **IsCloudInfraAgent** – this flag in eg_tests.ini determines if the eG agent will discover if it is installed on Amazon AWS when it starts up. If this flag is yes, the eG agent will

determine if it is installed on an AWS instance, and for this instance, it will discover the AWS instance ID. Based on this information, the eG manager maintains a mapping of component monitored and AWS instance ID.

- o **AutoDeleteCloudComponent** – this flag in eg_services.ini determines if eG Enterprise will auto delete cloud components or not. If this flag is set to true, when AWS monitoring determines that an instance has been removed, based on the instance ID that has been removed eG Enterprise will automatically remove the corresponding components from being monitored. The components thus removed are logged in the audit.

1.3 Bug Fixes/Optimizations to the eG Manager

1.3.1 Admin

- Earlier, a wrong value was computed and displayed against **Total Agents** in the **Configured Agents Summary** section of the eG Admin Home Page. This was because, the agents consuming user licenses were not considered when calculating the total number of eG agents. This issue has been fixed now.

- Previously, a zone listed in the **ZONES** page could not be renamed. This issue has been fixed now.

- In older versions, the special character "hyphen (-)" could not be used while naming a maintenance policy. This is no longer the case.

- Earlier, when setting thresholds for specific patterns of descriptors, the descriptor patterns could not support 'white spaces'. Also, the length of the descriptor pattern was restricted to 32 characters. Both these issues have now been fixed.

1.3.2 Monitor

- Prior to v6.3.7, in large environments, the eG Monitor home page was slow to load when thousands of components were in Unknown state. This issue has been fixed now.

- In older versions, when a user logged into the eG monitoring console and navigated to the eG layer model, the user was logged out of the session. This is not the case any longer.

- Prior to v6.3.7, whenever a service topology was accessed from an external tool using a URL (without logging into the eG console), the relevant service topology was not displayed.

- In prior versions, when time zone is set for the user and the user attempts to view the data plotted in a trend graph (in the eG monitoring console), the trend data was displayed in the eG manager's time zone and not the user's time zone. This issue has been fixed now.

- Previously, when alerts were raised for one or more descriptors of a test, the problematic descriptors were displayed in the eG layer model, but not in the **Descriptor Comparison Selection** window. This issue was noticed when the test was configured with a long term alarm policy. This issue has been fixed now.

- In earlier versions, when a component was under maintenance, the **Reboot Summary – Last 24 hours** section in the **Uptime** subsystem of the **System** dashboard failed to report metrics. This issue has been fixed now.

- Prior to v6.3.7, the Timeline Chart in My Dashboards did not load if the chart timeline was more than a week. The query to fetch the data for the Timeline chart has been optimized in v6.3.7 to resolve this issue.

- In older versions, the User Experience Dashboard for VDI environments did not refresh to display the current data and instead displayed the data retrieved in the earlier measurement period. This issue has been fixed now.

- In previous versions, if the User Experience Dashboard was configured to report the latency of the users/desktops, administrators could not sort the users/desktops based on the **LATENCY** column. This issue has been fixed now.

1.3.3 eG Reporter

- In older versions, if the **TOP EVENTS** report was generated for critical alerts alone (by selecting the **Severity** check box and the **Critical** check box), the resulting report wrongly displayed the alerts of Major/Minor priorities too. This issue has now been fixed.

- Earlier, the **Search** option in the **Descriptor** text box available in the **TOP-N-ANALYSIS** report did not work as expected when there were a few hundreds of descriptors for the chosen component. This is not the case any longer.

- Previously, when an **APPLICATION ACTIVITY** report was generated in the Data format, incorrect values were reported in the columns for which metrics could not be retrieved. This issue has now been fixed.

- In older versions, if a report was scheduled to be generated and sent out at a specific time – i.e., by choosing **Anytime** as the **Schedule Type** - the scheduled report was sent out after a delay of few minutes from the designated time. This issue has been fixed now.

- Drilling down on a component type in the **KPI HEALTH** report leads one to the **PROBLEMS AFFECTING THE HEALTH OF <COMPONENT TYPE>** window, where the problems affecting the chosen type are displayed. In versions prior to v6.3.7, the details in this window could not be saved. This issue has been resolved now.

- In older versions, the components listed in the **Component** list box of the **USER ACTIVE / IDLE TIME ANALYSIS** report was not sorted alphabetically. This is not the case any longer.

- Earlier, if a scheduled report was set to be merged (**Yes** option chosen from the **Need to Merge** list) with other reports to form a single booklet, the reports were not merged. Instead, they were scheduled and sent as separate PDFs. This issue has been fixed now.

- Previously, when the **HISTORY OF UNKNOWNS** report was exported in the **CSV** format, the Measure column in the report displayed the internal name of the measures. This issue has been fixed.

- Earlier, if the **VM RIGHT SIZING REPORT** revealed that a VM was allocated more than 50 vCPUs, then the **REMARKS** column of such a VM provided incorrect sizing recommendations. In other words, the remarks suggested that the number of **vCPUs** allocated to the VM be

reduced by a number greater than the total **NUMBER OF VCPUS** assigned to that VM. This issue has been fixed now.

1.3.4 eG Configuration Management

- Earlier, when a report from the eG configuration management was scheduled to be emailed, empty reports were sent. This issue occurred when the date format of the user accessing the eG configuration management was different from the date format of the eG manager. This issue has been resolved now.

1.3.5 Others

- In older versions, when **Named User Licensing** was in use, **VDI/Citrix** components wrongly consumed a **Premium Monitor** license. This is not the case any longer.

- Prior to version 6.3.7, email alerts did not carry detailed diagnostics, even though the eG manager was configured to send detailed metrics via email. This issue has now been fixed.

- In older versions, mail/SMS alerts were sent for even those host-level tests that were excluded from alerting by the application of MAIL/SMS FILTERS. This issue has been fixed.

- Earlier, thresholds were wrongly computed for each descriptor of a test to which global thresholds were applied. This issue has been fixed.

- Previously, performance issues were noticed during database cleanup when the database partitioning feature was enabled. This issue has been resolved.

- Earlier, where eG Enterprise was configured to send eG alerts to a third-party monitoring tool via custom scripts, normal alerts were not routed to the tool. This issue has been fixed now.

- Earlier, in a redundant manager setup, if the threshold or test configuration was changed for tests that supported a large number of descriptors, it took a long time for the secondary manager to be updated with these configuration changes. Moreover, CPU usage on the secondary manager also increased during this process. To address these issues, the secondary manager has been optimized in eG Enterprise v6.3.7.

- Earlier, in a redundant manager setup, if the secondary eG manager was down and was not reachable, the primary eG manager kept trying to connect to the secondary manager and eventually restarted. This issue has been addressed now.

- Previously, in a redundant manager setup, whenever failover occurred, the secondary manager could not send measure graphs in email alerts to users. This issue has been fixed now.

- Where the eG TT CLI is used by the eG manager to integrate with a Trouble Ticketing (TT) system, the eG manager typically groups closely-related problem events into a single alarm and routes each 'clubbed' alarm to the TT system by running CLI commands. The TT system will auto-generate a trouble ticket for the clubbed alarm.

- Earlier, if only a few problem events in a 'clubbed alarm' were resolved, administrators could not distinguish the closed events from the open events. This is why, in v6.3.7, the eG TT CLI has been re-engineered to transmit each problem event as a separate alarm to the TT system This way, administrators can identify the open problem events and those that are resolved with ease!

- The eG manager can be configured to send alerts of only a sub-set of priorities (e.g., Critical and Major, Major and Minor, etc.) to a third-party Trouble Ticketing system via SNMP traps. In this case, earlier, the eG manager wrongly sent normal alerts to the TT system for every alarm that was closed, disregarding the alarm priority settings for the TT integration. For example, an eG manager that was configured to send Critical alerts alone to the TT system (as SNMP traps), wrongly sent a normal alert to the TT system when a Major problem was closed. This issue has been fixed now.

1.3.6 eG CLI

- In older versions, if a component belonging to a component group was deleted using the eG CLI, the deleted component still appeared as part of the group in the **COMPONENT GROUPS** page. This is not the case any longer.

- Earlier, maintenance policies could not be added using the eG CLI when the **timefrequency** parameter was specified in the CLI command. This issue has been fixed.

- In older versions, the eG (DB) CLI could not query on a descriptor containing a '+' symbol. This issue has been fixed now.

- Previously, when the eG manager was installed on a Linux operating system, the database queries could not be executed using the eG (DB) CLI. This is not the case any longer.

1.4 Bug fixes/Optimizations to the eG Agent

1.4.1 Citrix Monitoring

Citrix Logon Simulator

- Prior to v6.3.7, if a disclaimer was included, the **Citrix Logon Simulator** did not consider the correct keystroke to proceed beyond the disclaimer. This issue has been fixed.

Citrix Provisioning Servers

- In older versions, if the **TFTP Performance** test was enabled for a Citrix Provisioning Server, connection leaks occurred on the server, which caused the server to crash. This issue has been resolved.

- Prior to v6.3.7, the *Database server availability* measure of the **PVS Farm** test (mapped to the Citrix Provisioning Server component type) wrongly reported that the database server was unavailable, when in fact, it was available. This issue happened if the database server associated with the PVS farm was configured with more than one IP address. This issue has been fixed.

Citrix Virtual Apps (XenApp) Servers

- In older versions, when browser monitoring was configured, the CPU usage on the XenApp server increased when browser monitoring executed. This behaviour was observed only when a large number of browser instances were active on a XenApp server. Starting with eG Enterprise v6.3.7, this test has been optimized. Sessions that do not have browser instances running are not included for analysis. Monitoring is done only for the specific browser type (instead of all browser types) used in a session. These changes result in a greatly reduced resource usage on the XenApp servers.

- Earlier, the **Citrix Users by Browsers** test did not report metrics if user sessions on the target Citrix XenApp server used Google Chrome browser v70 or higher. This issue has been fixed.

- Earlier, the **Citrix Users by Browsers** test did not report metrics if the browser being used was minimized in a session. This issue has been fixed.

- Resource usage of the XenApp server spiked when application launch monitoring executed. This has been fixed.

- Sometimes the number of application launches and detailed diagnosis for this metric for the **Application Process Launches** test incorrectly reported a large number of launches. This was because launches from previous periods were also counted. This has been fixed.

- When hundreds of processes are executing concurrently, the eG agent's resource usage level was higher than expected in earlier versions. The performance of the eG agent has been optimized in this release.

Citrix Delivery Controller and Site

- Previously, metric collection from a **Citrix Site** was slow when the site supported tens of thousands of users. Starting from v6.3.7, the eG agent uses the latest OData APIs and provides greatly improved performance and scalability.

Citrix XenMobile

- In older versions, when **Citrix XenMobile** v10.8 was monitored, occasionally, a hyphen (-) was displayed as a descriptor for the **XM App Launches By Users** test. This issue has been fixed.

1.4.2 Virtual Desktop Monitoring (XenDesktop and Horizon)

- Previously, the **Virtual Desktop EDT Performance – VM** test did not report for Citrix Virtual Desktops v7.18. This issue has been resolved.

- Earlier, the **Browser Activity – VM** test associated with a VDI component-type did not report metrics for those user sessions where Google Chrome browser v70 or higher was used. This issue has been fixed.

- Earlier, the **Browser Activity – VM** test associated with a VDI component-type did not report metrics for those user sessions where the browser being used was minimized. This issue has been fixed.

- Sometimes the number of application launches and detailed diagnosis for this metric reported by **Application Process Launches – VM** test incorrectly reported a large number of launches. This was because launches from previous periods were also counted. This has been fixed.

- Earlier, the **Crash Details – VM** tests pertaining to the virtual desktop infrastructures component types did not report the detailed diagnosis for the measures. This issue is now fixed.

- In older versions, the **TCP – VM** test did not report metrics when the eG agent is installed on a Windows operating system with Chinese locale. This issue has now been resolved.

- The resource usage of the VM agent has been minimized. Previously, the VM agent relied on libraries available on the local system to interface with Windows performance monitor. This caused memory leaks and resource spikes on some systems. To address this, the VM agent has been modified to now include the necessary libraries.

- When hundreds of processes are executing concurrently inside a desktop, the eG VM agent's resource usage level was higher than expected in earlier versions. The performance of the eG VM agent has been optimized in this release.

- Resource usage of the VM spiked when application launch monitoring executed. This has been fixed.

- When a VMware vSphere ESX server was being monitored, the **VDI Logins – ESX** test incorrectly reported that a user had logged out in the *Sessions Logging out* measure while the user was still logged in. This issue is now fixed.

- In older versions, the *Total memory* measure of the **Memory Usage - VM** test pertaining to the VDI environments reported a value that was less than the actually configured value by 1MB. This issue has been fixed.

1.4.3 VMware Horizon Monitoring

- Earlier, the **Blast Session Details** test and the **PCoIP Session Details** test associated with the VMware Horizon View RDS component and the **Blast Session – VM** test and the **PCoIP Session – VM** tests associated with virtual desktop infrastructures reported incorrect values for the measures. This issue has been fixed.

- Earlier, the detailed diagnosis of the *New disconnects* and *Quick reconnects* measures were not reported for the **RDS Disconnects** test associated with the VMware Horizon View RDS component. This issue has been addressed in this version.

- In earlier versions, the inside view of desktops was reported based on the desktop name instead of the user name in all cases – i.e., even though the user was logged on to the virtual desktop. This issue has been resolved.

1.4.4 Virtualization Monitoring

VMware vSphere ESX

- In older versions, the *Capacity used* measure of the **Storage LUNs – ESX** test associated with a VMware vSphere ESX component type reported a value greater than that of the *Capacity* measure. This issue has been resolved.

- Earlier, the **Grid GPUs – ESX** test associated with the VMware vSphere ESX component type reported incorrect metrics if the user specified in the **ESX User** specified did not have access to login to the ESX server. This issue is now resolved.

- Sometimes, the eG agent failed to collect metrics from VMware vSphere servers that were managed using their host names (instead of their IP address). This issue is fixed.

- Prior to v6.3.7, the configuration tests pertaining to the VMware vSphere ESX component type reported many invalid changes in the eG Configuration console when a connection to vCenter or the ESX server failed. This issue has been fixed.

- In some cases, when VMware ESX servers in a cluster were monitored and VM migration happened, the same VM was reported in the eG Enterprise console on both the ESX servers for several hours/days after the migration. This issue has been resolved now.

VMware vCenter

- Previously, the **ESX Server Status in vCenter** test pertaining to the VMware vCenter component type did not report metrics. This issue is now fixed.

- In older versions, the *Datastore availability* measure of the **Datastores** test corresponding to the VMware vCenter component type reported availability problems correctly but failed to detect when the datastore again became available. This issue is now fixed.

- Prior to v6.3.7, the *Outstanding tasks* measure of the **vCenter Tasks** test pertaining to the VMware vCenter component type reported incorrect values. This issue has been fixed.

- In older versions, in some virtual environments, the tests pertaining to the VMware vCenter component type did not report metrics consistently. This issue has been fixed.

1.4.5 Microsoft Office 365/ SharePoint Online/Exchange Online Monitoring

- Prior to v6.3.7, the **Site Collections** test pertaining to the **Microsoft SharePoint Online** component did not report metrics for certain descriptors. Starting with v6.3.7, metrics will be reported for all the descriptors of the test.

- Earlier, the distinct mailbox locations were reported incorrectly in the detailed diagnosis of the *Unique mailbox locations* measure of the **Mailbox/User Location** test associated with the Microsoft Exchange Online component. This issue has been fixed.

- Prior to v6.3.7, the *License usage* measure reported by the **License Usage** test associated with the Microsoft Office 365 component reported more than 100% if all the allocated licenses were exhausted. Starting with v6.3.7, if such license exhaustion is detected, then, this measure will show a standard value of 100%.

- Previously the *Usage by Service* test of the Microsoft Office 365 component reported incorrect values for its metrics. This is no longer the case.

- In older versions, an unnecessary folder was created in the <EG_AGENT_INSTALL_DIR>, whenever the eG agent collected metrics from a Microsoft Office 365 component. This issue has been fixed.

- Prior to v6.3.7, the **API Logon Status** test mapped to the Microsoft Office 365 component, the **Logon Status** test mapped to the Microsoft Exchange Online component and the **Logon Status** test mapped to the Microsoft SharePoint Online component did not report metrics in countries like China and Germany, and in US government organizations. This was due to a mismatch in the **Host** parameter. In these environments, the default host (portal.office.com) was used to collect metrics instead of the country-specific hosts for China and Germany, and a specialized host used by US government organizations.

1.4.6 Microsoft Windows Server and Application Monitoring

- In older versions, the **Windows Scheduled Tasks** test pertaining to the Microsoft Windows component type did not report metrics to the manager. This issue has been addressed.

- Prior to v6.3.7, the eG agent failed to collect metrics on some Windows servers installed with a Dutch or French language pack. This issue has been resolved.

- Previously, when several hundred processes executed on a server, the eG agent's CPU usage was high when process monitoring was done. At other times, the resource usage was low. During these periods, the agent incorrectly reported that the server's overall resource usage was high and this generated false alerts. This issue has been resolved now.

- In v 6.3.3, process monitoring for Microsoft DFS component type raised a false alert even though the application process was running. This has been fixed now.

- In some environments, **Windows Service Status** test caused java heap dumps and did not report measures. This issue has been fixed in v6.3.7.

1.4.7 Database Monitoring

- In earlier versions, the detailed diagnosis of the *SQL server availability* measure of the **SQL Network** test (associated with the Microsoft SQL component type) wrongly reported that the server was unavailable. This issue was noticeable only when the eG agent was restarted. This issue has been fixed now.

- Prior to version 6.3.7, the **Oracle Instance Status** test did not report metrics for Oracle Database servers installed on Unix platforms, if an alias name was configured for the monitored Oracle instance. This issue has now been resolved.

- Earlier, a few tests - e.g., **Oracle Instance Status** and **Oracle Listeners** tests - mapped to the Oracle Database component type did not report metrics when the eG agent was unable to detect the *Oracle_Home* value. This was because, the eG agent queried the Oracle installation

directory only once to detect the version – when it started. From v6.3.7, the eG agent does not require that the database instance be running when it first comes up.

- In versions before v6.3.7, the **SQL TempDB Usage** test (mapped to a Microsoft SQL Server component) was reporting an incorrect value for the *Usage as % of max size* measure. Instead of reporting what percentage of max size was actually 'used' by tempDB, this measure wrongly reported the percentage of max size that was 'allocated' to tempDB. This issue has now been resolved.

- When monitoring a PostgreSQL database server v 8.4, the PostgreSQL Long Running Query did not function. This has been fixed.

1.4.8 Web and Java Monitoring

- Earlier, the eG agent was consuming high CPU resources when executing the **Application Pool Workers** test on IIS Web servers. This issue is now fixed.

- In older versions, the *Web availability* measure of the **HTTP** test (associated with the IIS Web component type) reported a value of *0* for a URL even when it was available. This issue has been fixed.

- Earlier, the **HTTP** test did not report metrics when the URL configured for monitoring contained special characters. This issue is now resolved.

- Previously, **SSL Certificate** monitoring did not work when the URL configured for monitoring only worked when SSL connections were established using TLS v1.2. This issue has been fixed by allowing the administrator to provide the Java startup parameters that are included when certificate validity is checked.

- In older versions, while real user monitoring was enabled on an environment where the eG agent is installed on a machine with European language, the eG agent failed to convert the fixed decimal separator from dot (.) to comma (,). This issue has now been fixed.

- **WAS Transactions** test for an IBM WebSphere server reported response time values even when there were no active transactions. This issue has been fixed now.

1.4.9 SAP Monitoring

- Prior to v6.3.7, if multiple jobs were aborted/cancelled, the detailed diagnosis of the *Aborted or cancelled jobs* measure of the **ABAP Job Statistics** test (associated with the SAP ABAP Instance component type) reported only the last job that was aborted or cancelled. This issue is now fixed.

- In older versions, the **RFC Destinations** test mapped to the SAP ABAP Instance component type could not retrieve all the destinations since the destinations could not be wrapped within the time period of test execution. Starting with v6.3.7, the retrieval of the destinations has been optimized so that the test is able to collect as many destinations as possible and report relevant metrics.

- Earlier, the **Syslog Errors** test associated with the SAP ABAP Instance component type reported incorrect metrics. This issue has been fixed.

- In older versions, the **SAP tRFC** test associated with the SAP ABAP Instance component type reported incorrect metrics. This issue is now fixed.

1.4.10   Others

- Earlier, **Performance Rating** tests did not take into account the port number of the components associated with these tests. This resulted in errors in computation when multiple applications used the same component name but a different port number. This issue has been addressed.

- If agent discovery was enabled, the eG agent on Windows would take up 100% CPU sometimes. This issue has been resolved now.

- In older versions, if an eG Agent component was monitored, the *Tester Busy* measure of the **Tests** test (mapped to that component) wrongly reported that testers were busy, when actually, the testers were free. This issue is now fixed.

- In v6.3.3, when an agent had a lot of detailed diagnosis to upload to an SSL-enabled manager, detailed diagnosis would stop being uploaded all of a sudden. This is due to a JRE bug. In v 6.3.7, we have provided a workaround for this problem. All detailed diagnosis communication between the agent and manager happens over a time-bound socket, so that the agent can recover gracefully from communication failures. A similar scenario was observed with download of thresholds from the manager to the agents. Such a failure can result in alerts not being generated in a timely manner by the agents. V 6.3.7 fixes both of these issues.

- When HP P2000 storage monitoring was enabled using a remote agent that communicates using SSL/TLSv1.2 with the eG manager, the agent stopped reporting. This was because the SSL package used for HP P2000 monitoring was not compatible with what the rest of the eG agent is using. This issue has been resolved now.

- Previously, when the eG agent was installed on a provisioned VM, the current configuration of the system was incorrectly reported. This is because the agent stores the currently discovered configuration in a temporary file on the system being monitored. If the temporary file is reverted back to an old configuration after the system reboots (because it is provisioned), the agent reported configuration changes and current configuration incorrectly. To fix this, the eG agent has been modified in such a way that when it starts, it contacts the manager to discover the current configuration, instead of relying on the local temporary file.

- If a test parameter's value started with hyphen ('-'), in earlier versions, the agent did not support this. This issue has been corrected now.