Total Performance Visibility

Bug Fixes / Optimizations in eG Enterprise v7.1.4

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Bug Fixes/Optimizations to the eG Manager

Version 7.1.4 is a minor release of eG Enterprise. This document includes key bug fixes and optimizations to that have gone into this release.

1.1 Admin Interface

- In earlier versions, if a user with no configuration management rights (e.g., MonitorwithNoConfig) logged into the eG admin interface, he/she was wrongly allowed to view/configure the configuration tests. This issue has been fixed now.

- Previously, the eG agent could not be downloaded by a user who was authenticated through SAML or a user who had logged in using their Active Directory login to the eG manager console. This issue has been fixed now.

- In versions before eG Enterprise v7, the eG admin interface was slow to load for the very first time after a user logged in and also when the user navigated from other tabs to the eG admin interface. This issue has been fixed now.

- Earlier, there was a mismatch in the total count of Named Users accessing the eG console in the **LICENSE INFORMATION** page of the eG administrative interface. This issue has been fixed now.

- In earlier versions, the license limit could not be updated for a LimitedAdmin user logged into the eG manager configured in SaaS mode using the **SET LICENSE LIMIT** pop up window. This issue has been fixed now.

- Previously, if the security filter was enabled (**the Enable Security Filters** option was set to **Yes** in the **SECURITY FILTERS** page) for the eG manager, the **AGENT STATUS** page failed to load. This issue has been fixed.

- Previously, a user could not be cloned using the **Clone User** page of the eG administrative interface. This issue has been fixed now.

- Earlier, when a CSV report was generated for zone-wise user license utilization from the **LICENSE INFORMATION** page, the generated report was empty even though users were associated with a zone. This issue has been fixed now.

- In earlier versions of eG Enterprise v7, if the security filters were enabled for the eG manager, when the **AUDITLOG REPORTS** were generated, sorting in descending order using the **DATE** column did not work. This issue has been fixed now.

- In earlier versions, if a VMware vCenter was used for discovering VMware vSphere ESX servers and the VMware vCenter server credentials were used to configure monitoring of the discovered VMware vSphere ESX servers, then, the eG Enterprise wrongly allowed users to delete the VMware vCenter from the **Discover vSphere/ESX Hosts** page. This is not the case any longer.

- Previously, when an eG manager was upgraded from a lower version, administrators did not receive License usage mail alerts even though the **License usage mail alert** flag was enabled and valid email IDs had been configured to receive these mail alerts. This issue has been fixed.

- In earlier versions, components could not be added through **Bulk Add/Modify** option if the nick names assigned to the components was prefixed with a blank space. This issue has been fixed.

- Earlier, when the **Enable automatic deletion of components that are not re-discovered** flag was set to **Yes** in the **COMMON SETTINGS – AUTO-DELETE** page, a discovered component was wrongly deleted instead of the component that was not re-discovered. This issue has been fixed now.

- In earlier versions, a new VMware vCenter server could not be added to discover the virtual platforms in the target environment. This was because of a wrong message that prompted to enable **IP range discovery** option in the **MANAGER DISCOVERY – ENABLE / DISABLE** page which need not be so. This is not the case any longer.

- Previously, when an unmanaged component of **Client Emulation** component type is managed using the **Components – Manage / Unmanage / Delete** page, the external agent of the newly managed component was wrongly set as the external agent for all other managed components of Client Emulation component type. This issue has been fixed now.

- In earlier versions, the descriptors of a test were wrongly shown as enabled in the eG administrative interface. This issue was noticed when the host name of the eG manager was different from that of the host name assigned to the default external agent. This issue has been fixed now.

- Earlier, a blank page appeared when administrators tried to exclude a test for multiple components at once. This issue has been fixed now.

- In earlier versions, the **Components at a Glance**, **Specific Test Configuration** and **EXPORT/IMPORT CONFIGURATION – INTEGRATION CONSOLE** pages were slow to load. This issue has been addressed now.

- Previously, when TCP ports are used for application discovery, a blank page appeared while administrators tried updating a TCP port against a component type in the **COMMON SETTINGS - TCP PORTS FOR APPLICATION DISCOVERY** page. This is not the case any longer.

- In environments where security filters were enabled for the eG manager, an empty page was returned when administrators tried to enable or disable descriptors using the **Enable/Disable Test Descriptor** page. This issue has been fixed now.

- In earlier versions, when a VMware vCenter server was added for discovering VMware vSphere ESX servers, this VMware vCenter was not listed in the **VIRTUAL CENTER** list in the test configuration page of the **VMware vSphere ESX** servers. This issue has been fixed now.

- Earlier, the status of the eG agents monitoring the VDI component types were wrongly reported as "Never Reported" in the **Agents status** column of the **Components at a Glance** page and the **AGENTS STATUS** page, even though the agents were reporting metrics. This issue has been addressed.

- In earlier versions, incorrect date format (the date and month columns were interchanged) was applied for the maintenance policies whenever date format was changed. This issue has been fixed now.

- Previously, if the name of a maintenance policy was modified, then, in the generated auditlog reports for activities performed in the eG administrative interface, the modified name did not appear and also the name of the maintenance policy was empty. This issue has been addressed.

- Now, an option has been provided where users logging on to the eG manager will not be able to modify their passwords. In the **Add User** page, a new **Allow user to modify password** check box has been introduced. Only if this box is checked, eG Enterprise users will be able to modify their

passwords by themselves.

- Previously, when a result set was obtained for a user pattern searched in the **Delete Users** page, selecting all the users displayed in the result set for deletion accidentally deleted all the users instead of deleting the result set alone. This issue has been fixed now.

1.2 Monitor Interface

- In earlier versions, some protocol specific panels of the **VIRTUAL DESKTOPS** dashboard were blank. This issue was noticed in environments where VMware Horizon Connection server was used to provision desktops to the users and the users accessed the desktops through different protocols such as Blast Extereme, PCoIP etc. Starting with this release, if a protocol was not used for accessing desktops, then, such protocol specific panels will not appear in the **VIRTUAL DESKTOPS** dashboard.

- Earlier, there were alignment issues in the **Sessions** panel of **the VIRTUAL DESKTOPS / VIRTUAL APPS** dashboard. This has been fixed.

- In earlier versions, the **Geo Map** in the **VIRTUAL APPS** dashboard did not load. The **Geo Map** has now been optimized to load faster.

- In earlier versions, the **Delivery Groups** section of the **VIRTUAL APPS** dashboard showed the overall count of Citrix XenApp Servers. To provide more granularity, starting with this release, if a Citrix XenApp server is managed by a Citrix Delivery Controller, the **Delivery Groups** panel will list the number of **Desktop OS machines** and **Server OS machines** separately.

- Earlier, clicking on an alert for a component that is part of a Service/Segment Topology in the **TOPOLOGY** page of the **VIRTUAL APPS** dashboard did not lead to the corresponding layer model. This issue has been fixed.

- In earlier versions, the **Desktop OS Machines** panel in the **DELIVERY GROUPS** page of the **VIRTUAL APPS** dashboard remained expanded even though there was no data in the panel. This panel is now minimized by default.

- Earlier, the **USER EXPERIENCE - REAL USERS** and **SERVER RESOURCES** pages of the **VIRTUAL APPS** dashboard took a long time to load. This issue has been fixed.

- Earlier, the **USER ALERTS** page that appears when the count of the user alerts was clicked from the **Unique Users** panel of the **VIRTUAL APPS** dashboard did not display the alerts. This issue has been fixed now.

- Earlier, the **Active Applications** panel in the **APPLICATIONS** page of the **VIRTUAL APPS** dashboard displayed a wrong value. This issue has been fixed.

- In earlier versions, mismatch was noticed in the **DURATION** of a session initiated by a user when the **USER EXPERIENCE DASHBOARD** of the user is accessed and when the same user details are obtained using the global Search capability offered by eG Enterprise. This issue has been fixed now.

- Previously, when user search capability was used, eG Enterprise wrongly showed the **LOGOUT** time of a user even though the user was currently logged on. This issue has been addressed now.

- In earlier versions, incorrect states were displayed in the graphical view of the logon process when a user logon is simulated on Citrix environments. This issue has been fixed.

- Earlier, the Citrix NetScaler through which the user accessed the target environment did not feature in the Session Topology of the **USER EXPERIENCE DASHBOARD**. This issue was noticed only when the **USER EXPERIENCE DASHBOARD** was accessed for a user through the global **Search** capability offered by eG Enterprise. This issue has been fixed.

- Previously, the **USER EXPERIENCE DASHBOARD OVERVIEW** page reported the state incorrectly for VDI users. This was because, only a few tests of the **Inside View of Desktops** layer of the virtual servers were considered for state computation. Now, all the tests pertaining to the **Inside View of Desktops** layer will be considered for computing the state of the user.

- Previously, the **LOGON TIME BREAKDOWN** section of the **USER EXPERIENCE DASHBOARD** did not display the relevant information and was empty. This issue was noticed only when the dashboard was accessed for a user through the global **Search** capability. This issue has been fixed now.

- In earlier versions, when there were there were many Citrix users being monitored, the **USER EXPERIENCE DASHBOARD** was slow to load. Starting with this release, the dashboard has been optimized to load faster.

- In earlier versions, the state of the Citrix Delivery Controller was not displayed in the **Session Topology** of a user in the **USER EXPERIENCE DAHSBOARD**. This issue has been fixed now.

- In earlier versions, when a user is drilled down to the **USER EXPERIENCE DASHBOARD**, the **SESSION – PROFILE DETAILS** section did not display the information although the relevant information was available in the eG database. This issue has been fixed now.

- In earlier versions, few panels of the **USER EXPERIENCE DASHBOARD** did not load when this dashboard was access through the **Search** capability. This issue has been fixed.

- In previous versions, unwanted characters were displayed in the **USER EXPERIENCE DASHBOARD** for the **CLIENT IP**, **Name** and **Version** columns if they could not be fetched. Now, these characters have been replaced by hyphen (-).

- Previously, if an IIS Web server and a Microsoft Windows server were managed for the same nick name, the detailed diagnosis for the measures relevant to these components did not load the relevant data. This issue has been resolved now.

- In earlier versions, the **CURRENT ALARMS** page did not filter the alarms based on the chosen Priority. This issue has been fixed.

- Earlier, if a user associated with a zone logged into the eG monitor interface, the **CURRENT ALARMS** page displayed alerts for components that were not part of the zone. This issue has been addressed.

- Earlier, the **HISTORY OF ALARMS** page displayed certain alarms that were closed in the previous measurement periods. This was because, the corresponding alarm details were not updated with the end time of the alarm in the database when the alarm was closed. This issue eventually resulted in showing outdated alarms in **USER EXPERIENCE DASHBOARD**, **VIRTUAL APPS** dashboard etc. This is not the case any longer.

- Earlier, sorting of alarms based on the start time of the alarm did not work as expected in the **CURRENT ALARMS** page. This issue has been fixed.

- In earlier versions, clicking on the measure for which alert was generated did not lead to **the ALARM DETAILS** pop up window in the eG layer model page. This issue has been fixed now.

- In earlier versions, if components such as Citrix Logon Simulator, VMware Horizon Logon Simulator etc were managed on an eG manager and a partitioned Microsoft SQL server was used as the backend database, images captured for success and failure events were not removed during the clean-up process. This caused space constraints on the eG manager host. This issue has been fixed.

- In earlier versions, during clean-up process, test tables would not be cleaned up if any exception occurred. This was because, eG Enterprise by default, cleaned up the tables sequentially and the table with exception was tried every time the clean-up process ran. Starting with this release, clean-

up process has been made more resilient and other tables will be cleaned up even after an exception occurs.

- In earlier versions, on an SQL partitioned eG backend database, database clean-up failed on some columns for e.g., **RUM_DETAILS** and **EXTERNAL_SERVICE_DETAILS**. This issue has been fixed.

- In versions before eG Enterprise v7, components could not be searched by typing the first few letters of the component from the **Components** list box in the eG layer model page. This issue has been fixed.

- In earlier versions, only the top 5 users/services/segments/virtual machines were listed out when searched from the global **Search** capability. This issue has been addressed to show all the relevant searches.

- Previously, the **COUNTRY**, **REGION** and **CITY** columns of the **User Search Details** page did not show the relevant location for the users. The user search capability has been optimized to show the relevant location of the users.

- In earlier versions, the **VDI Resource Usage Analysis** dashboard for Hypervisors resulted in an empty page when the **Resource Usage Analysis** icon was clicked against a Hypervisor component listed in the **COMPONENTS** page. This issue has been fixed now.

- In earlier versions, when searching for a component using its IP address, the results were displayed but clicking the **Click here for details** link returned an empty page. This issue has been fixed.

- Previously, the detailed diagnosis page did not appear in the eG Reporter interface whenever the **Detailed Diagnosis** icon was clicked from the generated report. This issue has been fixed now.

- In earlier versions, the Transaction flow graph did not appear for a Web App Simulation component. This issue has been fixed now.

- Previously, the graphical view of logon process did not show the failure screenshot for a Web App Simulation component even though the screenshot was captured. This issue has been fixed now.

- Starting with this release of eG Enterprise, detailed diagnosis is provided for the **Summary** descriptor of the Application Event Log Test.

- In earlier versions, the **Geo Map** of the **RUM Dashboard** was slow to load. This has been resolved now.

- Earlier, when Data view icon was clicked in the **Network Interfaces Summary** section of the **Cisco** dashboard, page navigation did not work as expected. This issue has been fixed now.

- In earlier versions, a mismatch was noticed between the measure value plotted in the Gauge Meter widget of **My Dashboards** and the corresponding layer model page. This issue has been fixed now.

- Previously, the **Topology** widget in the **My Dashboards** was empty when the dashboard was shared with other users. This issue occurred due to the incorrect encoding of the URL that was shared. This issue has been resolved now.

- In earlier versions of eG Enterprise v7, when a single zone existed and a **Zone Map** widget was added in the **My Dashboards**, the **Zone Map** widget did not load as expected. This issue has been fixed.

- Previously, user search did not show users logged into virtual desktops hosted on Nutanix servers. This has been fixed.

- Earlier, empty screenshots were returned if administrators initiated remote control actions such as **Get screenshot of a user session** and **View details of a user session** on a remote machine that was locked by the user or had a screensaver configured. This issue has been fixed now.

- In older versions, junk characters were returned in the output when remote control actions were executed on a server operating system that had a non-english locale. This issue has been fixed now.

1.3 Reporter Interface

- In previous versions, when the **Citrix XenApp Overview Report** was generated, the logons and logon duration shown in the **User Experience** tab reported incorrect values. This was because, the values of the 'Total' and 'Summary' descriptors too were considered while the report was being generated. This issue had been fixed.

- In earlier versions, whenever a user clicked on a value from the generated **Citrix XenApp Overview Report**, redirect to a corresponding report did not work as expected. For example, clicking on a bar in the **Top Applications by Average Launch Duration** graph did not automatically redirect the user to the **Applications – Launch** report. This issue has been fixed.

- In earlier versions of eG Enterprise v7, if a **Schedule** was set for **Comparison** reports, modifying the schedule by clicking the **Modify Selection** button in the **Save Schedules** page did not allow modification of the report configuration. This issue has been addressed now.

- Previously, the **Selected Combinations** and the **Selected Timeline** fields in the **Save Schedules** page were empty in some cases. This issue has been addressed to show the exact selection of the report configuration and the timeline of the report.

- In earlier versions, a report could not be scheduled to an existing Booklet. This was because of a wrong message that prompted the user to configure a valid email ID to schedule the booklet. This is not the case any longer.

- In earlier versions, while scheduling reports, a report could not be added to an existing Booklet. This was because of a wrong message that prompted the user to configure a valid email ID to add the report to the booklet. This is not the case any longer.

- In previous versions, a blank report was generated when an aggregate component was chosen for generating the **Applications - Top Applications** report. This issue has been fixed.

- Previously, when the **Data** option was chosen from the **Report Type** list to generate the **Applications – Launches** report, mismatch was noticed in the measurement units of the **Average Launch Duration** measure at different places in the same report. This issue has been addressed.

- In earlier versions, the **User** list in the **NetScaler - User Session** report did not list all the users logged in the Citrix NetScaler server. This issue has been fixed now.

- Earlier, the **Users - Logon Performance** report was slow to load. This issue has been fixed.

- Many reports that were slow to load in earlier versions have been optimized. These include:

  o **Users – Slow Logons** report

  o **Users – Top Users** report

  o **Users – ICS Virtual Channel Analytics** report

  o **Applications – Top Applications** report

- Previously, when the **Application – Launches** report was generated with **Data** as **Report Type**, the geographic location of the users logged in through Active Directory was not displayed in the report. This is not the case any longer.

- In earlier versions, the **Top System Resource Consumers** report saved as a **Favorite** could not be modified if the security filters were enabled for the eG manager. This issue has been fixed.

- Earlier, CPU spikes were noticed while the **Hypervisors – Resource Analytics** report was generated when the timeline included any date in the year 2020. This issue has been addressed.

- In earlier versions, connection leaks were noticed in the **Sessions – Sessions by Users** report while being redirected to the **VIRTUAL MACHINES VM DETAILS** report. This issue has been fixed now.

- The **NetScaler - Virtual Server Uptime** report could not be generated if **Detail** option was chosen from the **Report Type** list. This issue has been fixed.

- In earlier versions, when a Monitor user logged into the eG console accessed the eG Reporter interface and generated the **Capacity Analysis for Virtual Applications** Report by choosing the **Default** zone, the report was generated for the components that were not associated with that user. Now, the Default zone will not be displayed in the Zone list if the user is not associated with the components in that zone.

- Earlier, while generating the **Slow Logons** report and the **User Logon Performance** report, the logon time of the user was displayed in the time zone of the eG manager instead of the time zone of the users. This issue was noticed only when the eG manager and the users operated in different time zones.

- Support has now been provided to allow the data represented in the **Slow Logons** report to be exported as a CSV file.

- In older versions, the **Comparison Reports – Components** report could not be generated if **Single** option was chosen from the **Graph Type** list. This happened only when a user whose name contained blank space logged into the eG Reporter interface to generate the report. This has been fixed now.

- Earlier, panels with "No Measures Available" were being displayed in the Citrix XenApp Overview report. This happened when the tests pertaining to those panels were disabled in the target environment. Starting with this version of eG Enterprise, if the tests pertaining to any of the panels of this report is disabled, then, such panels will not be visible in the generated report.

- Previously, the **Comparison Reports – Tests** report was incorrect when used to compare specific descriptors of one/more tests. This was because, the **Auto-maximum** value set for each individual descriptor was not considered for plotting the graph of the report and instead, an overall Auto maximum value for the test was considered. This issue has been fixed now.

- In older versions, duplicate entries were noticed for a virtual machine in the generated the **Virtual Machines - Right Sizing** and the **Virtual Machines – Idle VMs** reports. This issue occurred only in virtual environments where VMware vSphere Distributed Resource Scheduler (DRS) feature was enabled. To generate the report in such environments, a **Show By** option has been introduced in report configuration page of this version. Selecting the **Only VMs** option from this list will ensure that the report is generated for unique virtual machines.

1.4 Configuration Management Interface

- In earlier versions of eG Enterprise v7, the **INVENTORY: SOFTWARE AVAILABILITY/UNAVAILABILITY** and the **INVENTORY : HOTFIX/PATCH AVAILABILITY/UNAVAILABILITY** pages took time to load in environments where many servers/hot fixes existed. Pagination has been introduced to optimize load time.

- In earlier versions, the **SEARCH INVENTORY** page hung and eventually killed the browser. This was because of absence of relevant indexes in the eG database. New indexes have been introduced

to fix this issue.

- In previous versions of eG Enterprise v7, the **CONSOLIDATED VIEW** page reported an empty page when Descriptors were chosen. This issue has been fixed.

1.5 Optimizations to the eG Manager

- Now, components that are part of a group can be unmanaged/deleted through the eG Command Line Interface.

- Earlier, when the eG manager was deployed in SaaS mode, even agents that were installed without a user ID (UUID) set were able to communicate with the eG manager. For improved security, now, only eG agents that have UUID values set will be allowed to communicate with the eG manager. Only if an agent is downloaded from the eG manager's console by a registered user will the UUID value be set for the agent.

- When the eG manager is configured in SaaS mode, when an agent is started, it automatically gets a nick name assigned from the manager and stores the assigned nick name locally. If an agent is deployed on a gold image, all VMs provisioned using this gold image would then use the same nick name, resulting in invalid metrics being reported. To address this issue, administrators now have two options:

    o Explicitly remove the eg_nick.ini file from the agent/config folder of each VM after provisioning it (through automated scripts that are executed at the time of provisioning a VM).

    o Alternatively, in the eG admin console, on the agent download page, a new flag has been introduced: **Download agent for: Installation on a golden image / VM template**. If this flag is checked, then, when the eG agent is installed, it does not start automatically and the eg_nick.ini is not configured with a nick name. VMs provisioned from this gold image will not have pre-configured nick names and they will contact the eG manager and get new nick names assigned to them. Note that if the agent on the gold image is explicitly started by an administrator prior to provisioning VMs, nick name conflicts will again occur and removing the eg_nick.ini file on the provisioned VMs is the only solution.

- Starting with this release of eG Enterprise, administrators are allowed to view the Top-N network interfaces in the **Network Interfaces Summary** section of the **Cisco** dashboard when **Data** view was chosen. To this effect, a **TopOptions** flag is introduced in the **[Cisco_router]** section of the **eg_serverdashboard.ini** file available in the **<eG_INSTALL_DIR>\manager\config\default** location. By default, the top 10 network interfaces are displayed.

- In earlier versions, the theme of My Dashboards was set according to the theme of the eG Monitor Interface. Now, **Dark** theme is set by default for My Dashboards.

- Earlier, when an IIS Web Server enabled with business transaction monitoring was reporting metrics to the eG manager, deadlocks were noticed on the eG manager. This was due to a delay noticed in data insertion where a single thread was uploading a large amount of data to the eG backend database. Starting with this version, multiple threads are used to simultaneously upload the data to the eG backend database.

- Previously, in environments where the eG manager was installed on a Linux operating system, the eGMon process was not started automatically. This has been fixed now.

- Previously, the eG manager was slow to start, taking more than a couple of minutes. This issue has been fixed now.

Bug Fixes/Optimizations to the eG Agent

2.1 Citrix Monitoring

Citrix Logon Simulator

- Sometimes, eG Enterprise wrongly reported a successful simulation as a failed simulation. This happened in environments where the window title of the launched browser was appended with a date and timestamp, whenever the simulation was performed. Starting with this version of eG Enterprise, the date and timestamp in the window title of the launched browser will not be considered while reporting the successful simulation.

Citrix Provisioning Servers

- Starting with this version of eG Enterprise, the version of vDisk is reported in the detailed diagnostics for the *Active vDisks* and *Inactive vDisks* measures reported by the **PVS Sites** test. To obtain the version of the vDisk, administrators need to set the **SHOW VDISK VERSION** flag to **Yes** while configuring the test.

- Earlier, the **PVS Default Store Path** and the **PVS Default Write Cache Paths** tests did not report metrics. This was because, the eG agent failed to execute the commands when the auto-discovered path to the MCLI.exe contained a backslash (\) at the end. Starting with this version of eG Enterprise, the backslash will be ignored by the eG agent while auto discovering the full path to MCLI.exe.

Citrix Virtual Apps (XenApp) Servers

- In earlier versions, eG manager restart was noticed when the **Citrix Applications** test was executed. This happened when the **SHOW PUBLISHED APPS** parameter was set to **Yes**. This issue was noticed in environments where multiple Citrix XenApp Servers are monitored by eG agents reporting to a single eG manager. This issue has been fixed.

- Previously, while monitoring the **Citrix Applications** test, the detailed diagnostics was reported for all the desktop OS processes. This issue was noticed even if the **SHOW ALL DESKTOP PROCESSES** parameter was set to **No** in the test configuration page. This is not the case any longer.

- Earlier, the detailed diagnostics of the *CPU usage for user's processes* and *CPU time used by user's sessions* measure of the **Citrix Users** test could not be sorted based on the *CPU (%)* column. This issue has been fixed now.

- Starting with this version of eG Enterprise, monitoring support is provided for Citrix WorkSpace Environment Management v1909.

- Starting with this version of eG Enterprise, the Citrix XenApp Servers that are discovered in the target environment are automatically managed using the host name in the IP address field (this is done to support provisioned environments where the IP address can change but the hostname can be the same). This is applicable to both Enterprise and SaaS models of eG Enterprise.

Citrix Delivery Controller and Site

- In older versions, when an eG manager was configured in SaaS mode, the Citrix XA/XD Site 7.x component could not be monitored. This is not the case any longer.

- In older versions, in a Citrix XenApp 7 environment, the eG agent on the Citrix Delivery Controller failed to discover all the instances of the Microsoft SQL server. This is not the case any longer.

- In older versions, false alerts were raised for the *Machines deregistered* measure pertaining to the **Delivery Groups** test of the Citrix Delivery Controller component. This was because, historical data of the machines that were deregistered were captured and reported as part of the detailed diagnosis. To avoid such false alerts, starting with this version of eG Enterprise, the detailed diagnosis of this measure is disabled, by default.

- In older versions, the tests pertaining to the **Citrix Cloud Site** did not report on time when the target infrastructure had thousands of users connected and hundreds of applications. This issue has been fixed now.

- In older versions, when a descriptor of the **Server OS Machines** test pertaining to the Citrix XA/XD Site 7.x component contained a hyphen (-), eG Enterprise wrongly reported the hyphen (-) as a separate descriptor of the test. This issue has been fixed now.

- Previously, the tests pertaining to the Citrix XA/XD Site 7.x component did not report metrics in virtual environments where Citrix Virtual Apps and Desktops 7 version 2003 was installed. This issue has been fixed now.

Citrix NetScaler

- Starting from this version of eG Enterprise, when monitoring Citrix NetScaler appliances in a high availability setup, the *Network metric exchange connection status* and the *Site metric exchange connection status* measures of the **GSLB Sites** test will be reported only if the target NetScaler appliance is the **Primary** node and the type of the Site being monitored is **REMOTE**.

- In older versions, when users had initiated sessions through VPN, the **NetScaler Sessions** test reported '0' as the value for all the measures. This issue has been fixed.

- In older versions, when the eG agent and the eG manager operated in different time zones, timestamp (date/time) in the detailed diagnostics of the **NetScaler Sessions** test was reported in the time zone of the eG agent. This caused inconsistencies across all the modules of the eG Enterprise. To avoid this, starting with this version of eG Enterprise, a **REPORT USING MANAGER TIME** flag has been introduced in the test configuration page. By default, this flag is set to **true** indicating that the test will report metrics in the time zone in which the eG manager operates.

- Earlier, unwanted alerts were raised for the *Expiry monitor status* measure of the **NetScaler SSL Certificates** test. This happened whenever eG Enterprise reported a value of 'disabled' for the measure when the Certificate Expiry Monitor was actually disabled in the target appliance. To avoid such unwanted alerts, starting with this version of eG Enterprise, an **EXPIRY MONITOR BASED** parameter has been included in the test configuration page. By default, this flag is to **True** indicating that the alerts will not be raised for this measure if the Certificate Expiry Monitor was disabled in the target appliance.

Citrix License Server

- In older versions, the *Licenses installed* measure of the **Citrix Licenses** test was wrongly reported with decimal digits. This issue has been fixed now.

Citrix StoreFront

- In older versions, to measure the logon experience of the users connecting via the Citrix StoreFront, the eG agent on Citrix StoreFront emulated accesses to specific applications/desktops published on StoreFront. In the process, the eG agent downloaded an ICA file if the application/desktop was accessed successfully. Though this process reported the exact availability of the application/desktop, a Connection timeout error was recorded in the event logs of the Citrix Delivery Controller and the

Citrix XA/XD Site components whenever the ICA file was downloaded. This issue has been fixed.

2.2 Virtual Desktop Monitoring (XenDesktop and Horizon)

- Earlier, an **ADMIN USER** could not be configured in the test configuration page of the **Citrix App Layering – VM** test pertaining to the VDI environments. This issue has been fixed now.

- In older versions, the **User logon Details** test and the **User logon Details – VM** test did not report metrics. This issue has been fixed now.

- Previously, the detailed diagnosis of the **Browser Activity – VM** test associated with a VDI component-type reported negative values for the *CPU Utilization* column. This issue has been fixed.

- Earlier, the **Citrix Session Start-up Details** test pertaining to the **Citrix XenApp 7.x** component and the **Virtual Desktop Session Start-up Details** associated with a VDI component type were reporting metrics in the eG agent time zone which resulted in delayed alerts. Starting with this version of eG Enterprise, the metrics of these tests will be reported in the time zone in which the eG manager operates.

- In older versions, inside view monitoring could not be performed on all Linux guests when Key-Based Authentication is enabled. Starting with this version of eG Enterprise, the eG agent has been optimized to collect inside view metrics from the Linux VMs irrespective of the authentication technique (key-based or password-based).

2.3 Virtualization Monitoring

VMware vSphere ESX

- When a VMware vSphere ESX server was being monitored with the hostname of the server, then, the *Connection status* measure of the **ESX Server Status** test wrongly reported that the server was not available (i.e., Down). This issue has been fixed now.

- Previously, if the password included the pipe symbol ('|'), the eG agent could not monitor the target application/hypervisor correctly. This has been fixed.

VMware vCenter

- Previously, the *License utilization* measure of the **vCenter Licenses** test reported a value greater than 100. This was because, eG Enterprise wrongly displayed the *Licenses installed* measure. This is not the case any longer.

RHEV Hypervisors

- Earlier, the *Interface status*, *Network data transmitted*, *Network data received*, *Errors during transmission* and *Errors during transmission* measures were not reported by the **Network – RHEV** test. This issue has been fixed now.

- Previously, the *VMs with users assigned* and *VMs without users assigned* measures were not reported by the **RHEV VM Status** test. This issue has been fixed now.

- In older versions, the **VM Connectivity** test pertaining to the RHEV Hypervisor did not report metrics. This issue has been fixed now.

- Previously, the *VM power state* measure was not reported for the **RHEV VM Details** test pertaining to the RHEV Hypervisor component. This issue has been fixed.

- In older versions, the *Hypervisor status*, *Is this server a storage pool manager?* and *Supported version* measures were not reported by the **Host Details – RHEV** test pertaining to the RHEV Hypervisor component. This issue has been fixed now.

IBM HMC Server

- In older versions, detailed diagnosis of the tests pertaining to the IBM HMC server was not reported if the IBM HMC server was managed in an agentless manner. This issue has been fixed.

Others

- In older versions, the **App-V Application**s test pertaining to the **VMware App Volumes Manager** did not report metrics. This issue has been fixed now.

- While performing inside view/outside view monitoring, eG Enterprise reported metrics for all the virtual machines discovered in the target environment. However, administrators did not wish to monitor a few virtual machines. Earlier versions of eG Enterprise did not have an option to exclude the virtual machines that are not of the administrator's interest. To cater to the needs of such administrators, starting with this version of eG Enterprise, an **EXCLUDE IP** parameter has been included in the test configuration page. Specifying a comma-separated list of IP addresses will ensure that the virtual machines corresponding to the IP addresses will be excluded from the scope of monitoring.

- In older versions, the tests pertaining to the **Nutanix Acropolis** and **Nutanix Acropolis VDI** components did not report metrics. This happened only when the target servers were managed using the Fully Qualified Domain Name of the server as the host name. This is not the case any longer.

- Previously, incorrect values were reported for the *Virtual CPU utilization* measure of the **VM Details – Acropolis** test pertaining to the **Nutanix Acropolis – VDI** component. This issue has been fixed now.

- Earlier, many users were not discovered by the **User Logon Details** test was executed in a VMWare Horizon infrastructure. This issue has been fixed now.

- Previously, when discovery was enabled on the eG agent, the eG agent wrongly discovered the Oracle instances (SIDs) that were not on the target Oracle Database servers. Those Oracle instances were part of different Oracle Database servers. This is not the case any longer.

2.4 .Net Business Transaction Monitoring and Real User Monitoring

- In older versions, the Cross-Application Transaction flow of the eG .Net Business Transaction Monitor did not render the topology if HTTP or WEBSERVICE CALLS were made to the server. This issue has been fixed now.

- In earlier versions, memory leaks and handle leaks were noticed in some environments when transaction monitoring was enabled on IIS Web Servers. This issue has been fixed.

- Previously, SQL queries were wrongly displayed in the detailed diagnosis of the **.Net Business Transaction** test. This happened whenever the SQL queries contained the '+' symbol. This issue has been fixed.

- In older versions, the detailed diagnosis of the **.Net Business Transactions** test could not be loaded. This was because, deadlocks occurred on the eG backend database (Microsoft SQL database Server) while the eG agent executed a single thread to upload large volume of data. The eG agent has now been optimized to upload the data in multiple threads.

- Earlier, in environments where the eG Real User Monitor and the eG BTM are configured for monitoring the accessed URLs, administrators could not drill down into the server side issues from the RUM Transaction flow diagram. This issue happened when the query that is used to retrieve the server side details from the eG BTM contained unwanted special characters. This issue has been fixed now.

- In older versions, the Java Business Transactions test did not report metrics when the configured URL for monitoring was SSL-enabled. This issue has been fixed now.

2.5 Container Monitoring

- In older versions, the detailed diagnosis of the *CPU utilization* measure reported by the **Kube Cluster Nodes** test pertaining to the Kubernetes component reported incorrect values. This issue has been fixed now.

2.6 Web and Java Monitoring

- In older versions, the **HTTP Post** test pertaining to the IIS Web component did not report metrics. This issue has been fixed now.

- In earlier versions, the **Apache Server Status** test pertaining to the **Apache Web Server** component did not report metrics if the target Apache Web Server was SSL-enabled. This issue has been fixed now.

- In older versions, the **Apache Web Transactions By Site** test did not report metrics. This happened when the eG agent did not have appropriate permission to access a few log files from which metrics were to be retrieved. Starting with this version of eG Enterprise, the eG agent is by default, vested with permissions to retrieve metrics from the relevant log files.

- Previously, the *Memory Utilization* measure of the **Application Pool Workers** test pertaining to the **IIS Web** component was reported as '0' even if the application pools used the memory resources. Starting with this version of eG Enterprise, the exact memory utilized by the application pools will be reported against this measure.

- Earlier, the thread related metrics such as *Running threads*, *Initialized threads*, *Ready threads* etc were incorrectly reported in the **Application Pool Workers** test pertaining to the **IIS Web** component. This issue has been fixed now.

2.7 Microsoft Windows and Unix Server Monitoring

- Earlier, when the **NFS Mounts** test was executed on a Unix host, the mounted NFS drive was wrongly reported as inaccessible (*Is the NFS mount available?* measure) if the *Used Space* measure reported a value of zero. This issue has been fixed.

- Earlier, the **TCP** test pertaining to the **Microsoft Windows** component did not report metrics when the target server was configured with German locale. This issue has been fixed now.

- In older versions, metrics were not reported for the **Summary** descriptor of the **System Details** test when the target Microsoft Windows server was monitored in an agentless manner. This issue has been fixed now.

- In older versions, the **Domain Time Sync** test did not report metrics when the test was executed on a Unix/Solaris server. This issue has been fixed now.

- Earlier, alerts were not generated for the **Domain Time Sync** test for the **NTP Offset** measure. This issue has been fixed now.

- In older versions, the **Windows Scheduled Tasks** test did not report metrics when the monitored Microsoft Windows server was installed on a machine with Chinese Locale. This issue has been fixed.

- Earlier, the **Windows Scheduled Tasks** test failed to capture a few tasks that were running on the server and failed to report the count of tasks against the *Running Tasks* measure. This issue has been fixed now.

- In older versions, the **Drives Capacity** and the **Drives** configuration tests did not have an option to exclude the drives that were not of administrator's interest. To cater to the needs of such administrators, starting with this version of eG Enterprise, an **EXCLUDE DRIVES** parameter has been included in the test configuration page of these tests. Administrators can provide a comma-separated list of drives that are to be excluded from the scope of monitoring.

2.8 Application Server Monitoring

Oracle WebLogic Application Server

- Earlier, the tests pertaining to the Oracle WebLogic Application Server did not report metrics. This was because the eG agent timed out since the server was unresponsive. This issue has been fixed now.

- Previously, in some environments, both performance and configuration tests pertaining to the Oracle WebLogic Application Server did not report metrics when the target Oracle WebLogic Application Server was SSL-enabled. This issue has been fixed now.

Active Directory Servers

- In older versions, the **Active Directory Replications**, **Auditing Group Policy Changes** and the **User Account Lockouts** tests did not report metrics. This issue has been fixed.

- Earlier, the **Active Directory Access** test did not report metrics when the target Active Directory server was SSL-enabled. This issue has been fixed now.

JBoss Application Servers

- In older versions, the **WildFly JBoss** and **JBoss AS/EAP** components failed to report metrics when the eG agent monitoring the servers was started before the target servers were booted. This issue has been fixed.

- Previously, in some environments, the **JBoss EJBs** and **JBoss Servlet** tests contained too many descriptors which could not be listed out by the eG Enterprise. To consolidate such large volumes of descriptors and display them in the eG layer model, starting with this version, administrators are allowed to group the descriptors. For these tests, eG Enterprise will henceforth report metrics for each newly created descriptor group.

Tomcat

- Earlier, the **Max threads** and **Min spare threads** measures of the **Tomcat ThreadPools** test reported incorrect metrics when the *Max Threads* parameter is set to "unlimited" (-1) in the **server.xml** file available in the target Tomcat server. Starting with this version, these measures will report a value of 'Not Applicable'.

2.9 Database Monitoring

Oracle Database Server

- In older versions, incorrect values were reported for the **Redo log buffer misses** measure of the **Oracle SGA** test. This issue has been fixed now.

- Previously, sometimes, the **Oracle Object Growth** test did not report metrics. This issue was noticed when the query executed to collect the metrics contained a specific combination of special characters. This issue has been fixed.

- In older versions, errors were noticed in the error log file when the **Oracle Jobs** test was executed. This issue happened only when versions below Oracle Database server 12 c was being monitored. This is not the case any longer.

- In older versions, CPU spikes were noticed on the target Oracle Database server when the **Oracle ASM Disk Space** (Oracle Database server component) and **Oracle RAC ASM Disk Space** tests (Oracle Cluster component) were executed. The tests have now been optimized to consume minimal CPU while execution.

- Earlier, the measures of the **Oracle RAC Datafile Activity** test pertaining to the **Oracle Cluster** component were reported as "Unknown" for a few descriptors. This issue has been fixed.

- Earlier, the *Broken Oracle Jobs* measure of the **Oracle Jobs** test reported incorrect values. This issue has been fixed.

Microsoft SQL Database Server

- In older versions, the detailed diagnostics of the *Number of Blocked processes* measure reported by the **SQL Blocker Processes** test did not report the complete query that was being executed by the blocker processes. This issue has been fixed.

- Starting with this version of eG Enterprise, if the **SQL Error Log** test is executed on a **Microsoft SQL Cluster**, detailed diagnostics will be reported for the test.

Others

- In older versions, the tests pertaining to the SAP HANA database server did not report metrics when the database server operating system was configured with an European locale (German, Italian, etc). This issue has been fixed now.

- Earlier, incorrect values were reported for the *InnoDB current locks* measure reported by both the **MySQL InnoDb Lock** (MySQL component) and the **MySQL Cluster InnoDb Lock** (MySQL Cluster component) tests. This issue has been fixed.

- Starting with this version of eG Enterprise, the **PostGreSQL on Cloud** and **Maria on Cloud** components will be monitored in an agentless manner.

2.10 Microsoft Office 365/Microsoft Teams Monitoring

- Previously, sudden CPU spikes were noticed in environments where a single eG agent was collecting metrics from multiple Microsoft Office365 components. This was because, the eG agent executed many PowerShell scripts simultaneously to collect metrics. The eG agent has now been optimized to minimize the parallel execution of PowerShell scripts, thereby reducing CPU spikes.

- Earlier, the **Teams Inventory**, **Call Quality Check** and **Calls Summary** tests pertaining to the **Microsoft Teams** component did not report metrics. This was because, the tests were using an outdated API URL to extract the required metrics. This issue has been fixed now.

2.11 Microsoft Exchange Server Monitoring

- In previous versions, the **POP3 Service Performance** test pertaining to the Microsoft Exchange Server 2013/2016 did not report metrics. Starting with this version, this test has been optimized to report metrics for each POP3 Service.

- Earlier, the **Mailbox Databases** test did not report metrics for a few mailbox databases. This was because, those mailbox databases were not discovered by the test. This issue has been fixed.

- In older versions, the **Exchange Email Traffic** test pertaining to the **Microsoft Exchange 2010** component did not report metrics. This issue has been fixed.

2.12 SAP Monitoring

- In earlier versions, if the **SAP ABAP Instance** and the **SAP ABAP System** components were installed on Unix operating system, the **Processes** test failed to discover the process patterns that were relevant to the operating system and hence failed to report metrics. This issue has been fixed now.

- Previously, the **SAP WAS Standalone Connector Services** test pertaining to the **SAP ABAP Instance** component did not report metrics. This issue has been fixed now.

- Earlier, a few tests pertaining to the **SAP ABAP Instance** test did not report metrics. This was because, the eG agent used an older version of the SAP JCO library to collect metrics. This issue has now been fixed.

- In older versions, the **RFC Calls** test pertaining to the **SAP ABAP Instance** component did not report metrics. This happened when the **INSTANCE NAME** parameter was set to *none*. This issue has been fixed now.

- Earlier, incorrect records were displayed in the detailed diagnosis of *CPICERR queues* measure reported by the **QRFC Queues** test pertaining to the **SAP ABAP Instance** component. This issue has been fixed now.

- Earlier, the **HTTP** test pertaining to the **SAP Business One** component did not report metrics. This was due to the configuration of incorrect **Control Centre URL**. This issue has been fixed now.

- In earlier versions, the *Session duration* of each user was not reported in the detailed diagnosis of the **New sessions** and **login failures** measures reported by the **SAP B1 User Sessions** test of the **SAP Business One** component. This issue has been fixed.

- Earlier, in environments where hundreds of process chains were discovered for monitoring, the **BW Process Chains** test did not report metrics. This was because, the test did not complete the discovery of all the process chains and hence timed out. Starting with this version, this test will report metrics only for those process chains from which metrics were collected.

- In older versions, incorrect values were reported for the *Total queues* measure of the **Trex Queues** test pertaining to the **SAP TREX** component. This was because, the value reported by the *Idle queues* measure was not considered while computing the Total queues measure. This issue has been fixed now.

2.13 Network Elements Monitoring

- In older versions, the VPN Throughput test pertaining to the Peplink WAN Router did not report metrics. This issue has been fixed now.

- Previously, in some environments where network devices were monitored, metrics could not be reported for a few descriptors. This was because, those descriptors could not be discovered in the

target environment. This issue was noticed whenever descriptors were within "double quotes" in the output that was returned when the command to retrieve the descriptors was executed. This issue has been fixed now.

- In older versions, while monitoring a network device installed on Unix environments, the *Usage of storage area* measure of the **Host Storage** test reported incorrect values. This was because, the buffer memory and cache memory were not considered while computing the measure. To report the exact value, eG Enterprise has introduced a **Host Memory** test which when executed will report the exact memory utilized (including buffer and cache memory).

- In previous versions, while monitoring the **Fortigate Firewall** component, alerts were wrongly raised when the *Total Uptime of the System* measure reported a value of more than a year. This issue has been fixed.

- In older versions, the **Power Supply Status** test of a **Dell EMC S-Series Switch** did not report metrics. This issue has been fixed now.

2.14 Self-Monitoring of eG Agent

- Earlier, column mismatches were noticed in the detailed diagnosis of the **VM Monitors** test of the **eG Agent** component. Such a mismatch no longer exists.

- Previously, a wrong component name was displayed in the detailed diagnosis of the **VM Monitors** test of the eG Agent component. This is not the case any longer.

2.15 Others

- Previously, when an eG manager was configured in SaaS mode, components that were auto discovered by the eG agents were wrongly managed in the eG console using IP address. This is not the case any longer.

- Scalability has been improved for monitoring syslog entries. The number of records that would be processed per minute has been increased to 2 million records.

Known Issues

After BTM-enabling the IBM WebSphere Application Sever, the target IBM WebSphere Application Server could not be restarted. To restart the server, do the following:

1. Edit the **autodiscovery.props** file. If the target server is monitored in an agent-based manner, then, this file will be in the following location: **<eg_agent_Home_dir>\lib\apm\Java\default.** If the target server is monitored in an agentless manner, then, this file will be available in the location where the BTM Profiler is downloaded and installed.

2. Locate the following entry:

```
ServerName_WebSphere=com.ibm.ws.runtime.WsServer
```

3. Comment the entry as shown below:

```
#ServerName_WebSphere=com.ibm.ws.runtime.WsServer
```

4. Save the file and then restart the server.