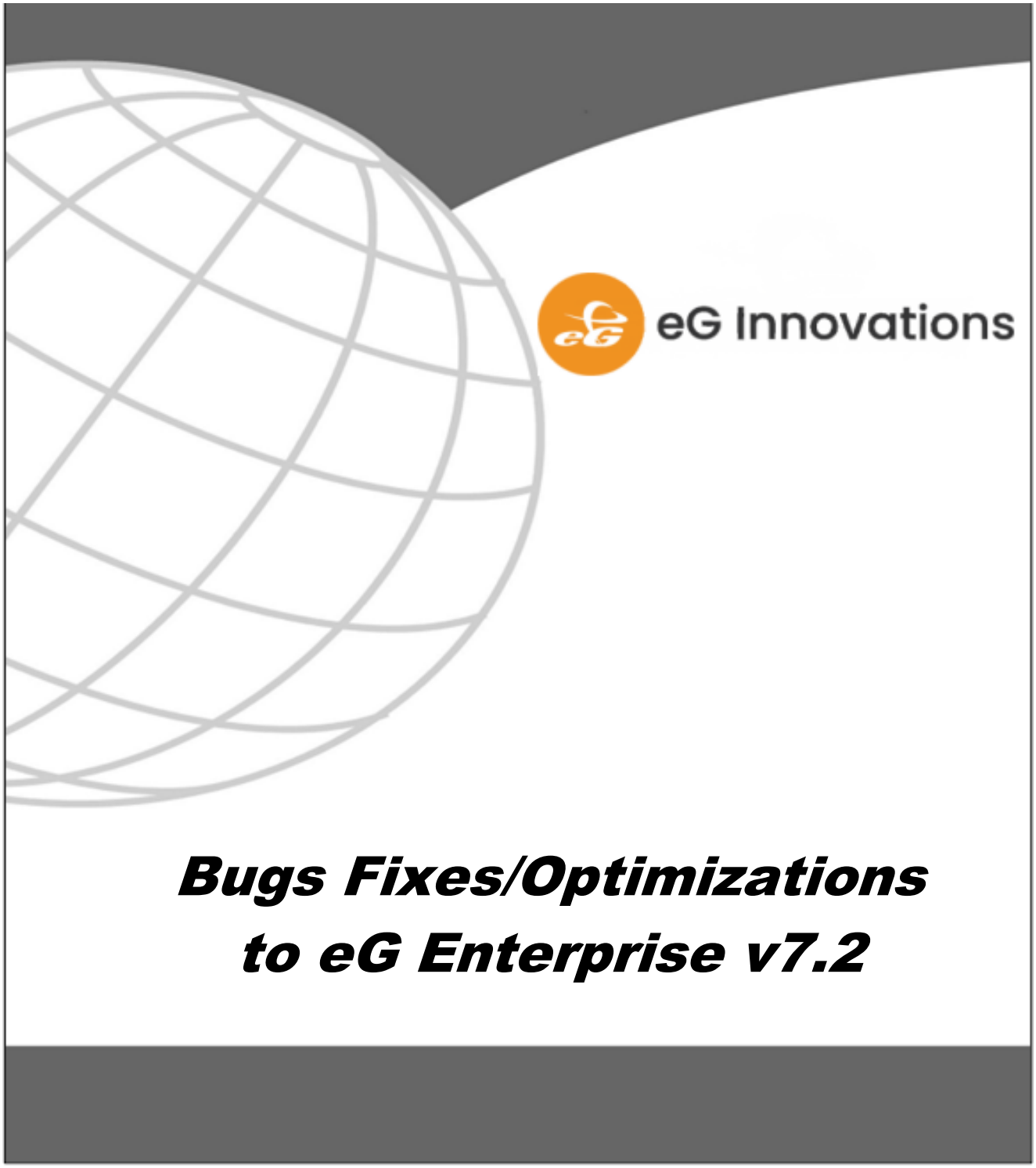

Bugs Fixes/Optimizations to eG Enterprise v7.2

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1. Bug Fixes/Optimizations to the eG Manager

Version 7.2.4 is a major release of eG Enterprise. This document includes key bug fixes and optimizations that are part of this release.

1.1 Admin Interface

- Previously, dark theme was not applied properly for the **ORGANIZATIONAL UNITS AND SECURITY GROUPS** window (that appears when you click **Configure OUs and Security Groups** icon in the **AD USER REPORTS** page) and the **Domain Groups** window (that appears when you click the **Domain Groups** icon against the **Groups** field in the **BASIC INFORMATION** tab page of the **Add User** page). This issue has been fixed now.
- In prior versions, the **Password Profile** parameter was not displayed in the **Specific Test Configuration** page of the Citrix Delivery Controller component type even if administrators had configured password profiles for the target component type. This issue has been fixed now.
- In older versions, administrators were unable to configure the **HTTP** test of the **External Web** component. This issue has been fixed now.
- Earlier, the **USER PROFILE** page did not display all the email IDs and mobile numbers configured in the **Escalation mail ID / mobile number** section. This issue has been fixed now.
- In earlier versions, users with Limited Admin privileges were wrongly allowed to view threshold rules that were created by other users in the **Threshold Component Group** page. This issue has been fixed now.
- Earlier, administrators encountered errors when they tried to modify the pre-configured policies by clicking the **Modify** icon in the **ADD/MODIFY EVENT POLICY** window (that appears when administrators click an encircled plus icon provided against the **FILTER** parameter in the **Specific Test Configuration** page of the **Application Event Log** test). This happened because the name of modified policy contained special characters that were not allowed by the security filter (if enabled, the security filter can be enabled by setting the **Enable Security Filters** option to **Yes** in the **SECURITY FILTERS** page of the eG admin interface). This issue has been fixed now.
- In previous versions, the **2-Step Verification** settings of a user provided in the **USER PROFILE** page could only be modified/disabled by that particular user. Users with Admin/LimitedAdmin roles were not allowed to modify/disable these settings even if the concerned user was a member of an organizational unit managed by Admin/LimitedAdmin users. Starting with this version, Admin/LimitedAdmin users will also be allowed to modify/disable 2-Step Verification settings of their organization's users.
- In older versions, activities related to importing/updating the SSL certificate of the eG manager and modifications done in the domain settings were not logged in the audit logs. Due to this, administrators were unable to track such activities and troubleshoot issues (if any). This is not the case any longer.
- Previously, the **Password Profiles** list box in the **Specific Test Configuration** page wrongly exposed the password profiles created by Admin users to LimitedAdmin users. This issue has been fixed now.
- Earlier, administrators were not allowed to search multiple users at a time using the **Search** box provided in the **User Information** page. Starting with this version, administrators can search for multiple users simultaneously by specifying usernames in a comma-separated list against the **Search**

box.

- In older versions, all component types – both managed and not managed - were displayed in the **Component Type** list box (that appears when you choose **Application** from the **Category Type** list box) in the **DEFAULTS REPORTS** page. Users had to scroll down a long list of component types to pick the one of interest to them. To hasten this search, starting with this version, this page has been optimized to list only the managed component types in the **Component Type** list box.
- Prior to eG v7.2.4, when a user was cloned to create a new user, the reports saved as favorites (in the **Personal Favorites** page of the eG reporter console), background reports and the default dashboard templates created by the original user were not automatically cloned. This issue has been fixed now.
- In previous versions, in infrastructures where two-factor authentication was enforced, users did not receive One Time Password (OTP) through email for logging into the eG console even if the valid email IDs were configured. This issue has been fixed now.
- Before eG v7.2.4, in environments where two-factor authentication was enabled on the eG manager, when a user tried specifying the One Time Password (OTP) after the expiry of the login session, the login screen became unresponsive. This issue has been fixed now.
- Previously, in environments where two-factor authentication was enforced, if a username was specified in mixed cases in the eG login page, the page where the OTP should be specified did not appear. This issue has now been resolved.
- In older versions, sometimes, administrators were unable to configure proxy settings in the **Configure Proxy Server Details** section of the **USER PROFILE** page. This was noticed when the administrators wanted to configure the proxy details using the Fully Qualified Domain Name (FQDN). Starting with this version, administrators will be able to configure the proxy settings using FQDN.
- Earlier, administrators were unable to disassociate a test from Global threshold category using the **ENABLE/DISABLE GLOBAL THRESHOLDS** page. This issue has been resolved now.
- In previous versions, the **TEST DETAILS** window (that appears upon clicking the **Info** button in the eG layer model page) wrongly displayed the options for accessing the **CONFIGURE THRESHOLDS** page for users who had no privileges to configure/modify global thresholds settings of a test. This issue has been fixed now.
- Prior to eG v7.2.4, in SaaS deployments, email alerts were not automatically sent to the email ID configured for receiving OTP during self-registration. Users had to change their profile and explicitly that problem notifications needed to be sent to this email ID. This has been fixed.
- In older versions, the **SNMP UTILITY** feature did not work when administrators specified host name against the Host IP/Name field in the **SNMP UTILITY** page instead of IP address. Starting with this version, this page has been optimized to allow administrators to use host name for configuring **SNMP UTILITY**.
- Earlier, administrators did not have options to view the password profiles that they configured for tests in the eG admin console. Starting with this version, the **TEST CONFIGURATION** page will display the password profiles in the **PASSWORD PROFILE** column for the chosen test.
- In previous versions, in environments where two-factor authentication was enforced, sometimes, users were unable to login to the eG console via a browser using the OTP generated by the Google Authenticator app on their mobile phones/desktops. This issue was noticed only when the time zone of user's system using which the users accessed the browser was different from the time zone of the mobile device on which the Google Authenticator was installed. To avoid this, eG Enterprise recommends that the users should use devices that operate in the same time zone.
- Earlier, when the eG manager was deployed in the SaaS mode, sometimes, users were unable to self-register with the eG manager using the **Register** tab in the eG Enterprise's sign in page. This

issue was noticed only when the company name specified by the user contained a special character ampersand (&). This issue has been fixed now.

- In prior versions, errors were noticed in the threshold computation for generating alerts. This happened if thresholds were configured for multiple descriptor patterns of the same test. This issue has been fixed now.
- Previously, when an eG manager was upgraded from a lower version to v7.1.8, a few components stopped reporting metrics. This happened because, those components were managed using the host IP and random nick names. This issue has been fixed now.
- Earlier, administrators were unable to configure the **HTTP Posts** test using the **Specific Test Configuration** page. This issue has been addressed now.
- In older versions, sometimes, administrators were unable to browse and upload the SNMP MIB file while configuring the **SNMP UTILITY** feature in the eG admin console and the SNMP test in the eG integration console. This issue was noticed only when the name of use SNMP MIB file to be uploaded contained special characters. This issue has been fixed now.
- Prior to eG v7.2.4, in environments where thousands of components were being monitored, the **THRESHOLD VIEW** page (that appears upon clicking the **View** option under the **Thresholds** node in the **Alerts** tile of the eG admin console) failed to load. This page has now been optimized to load faster.
- Previously, in environments where thousands of components were being monitored, the **Specific Test Configuration** page failed to load if the corrective script was updated. As a result, the eG manager was not updated with the changes done in the corrective script. The **Specific Test Configuration** page has now been made more scalable, to load properly and accept corrective script changes.
- Earlier, when administrators searched for a user using the **Search** box provided in the **USER INFORMATION** page (that appears when you follow, *Admin -> User Management -> Reports -> User Details*), the search results were displayed while keying in every character in the **Search** box. Due to which, the user experience on this page was very poor. To avoid this, starting with this version, the search results will be displayed only after the administrators pressed **Enter** key or **Search** icon provided in the **Search** box.
- In previous versions, administrators could not search multiple users at a time using the **Search** box in the **USER INFORMATION** page (that appears when you follow, *Admin -> User Management -> Reports -> User Details*). Starting from eG v7.2.4, administrators can search multiple users by specifying usernames as a comma-separated list in the **Search** box.
- Earlier, in environments where **Microsoft Windows Cluster Node** component was being monitored, the users encountered errors when they tried to exclude a descriptor of the **Windows Service Status** test for filtering alerts on email using the **Mail/SMS Alerts Filtering** page. This issue has been fixed now.
- In older versions, status of the eG agent was wrongly shown as "*Agent not running*" in the **STATUS** column of the **AGENTS - STATUS** page when the tests that the agent was configured to run were in the maintenance mode. This issue has been fixed now.
- Previously, options for configuring settings for SMS alerts were displayed in the eG admin interface even if the SMS alerting capability was not enabled in the eG license. This does not happen any longer.
- Earlier, administrators were sometimes unable to exclude descriptors while configuring email filtering settings in the **MAIL/SMS ALERTS FILTERING** tab page. This issue impacted only those descriptors with names containing open ('(')and close (')') parentheses. This issue has been fixed

now.

- In prior versions, users did not receive correct email alerts when the email alerts were sent by executing the commands provided in the **Command to be executed for alerts** specified in the **ADD USER** page. This was because of a mismatch between the "|" symbol in the alert description and the command. This has been fixed.
- Before v7.2.4, sometimes, alerts were not generated for the tests that were added using the Integration Console (IC) module. This issue was noticed only when administrators added a new measure to the test via IC. This issue has now been fixed.
- Earlier, the **Log file name** drop-down list in the **AGENTS – LOGS** page (that appears upon clicking on the **Agent logs** icon in the **AGENT – STATUS** page) displayed invalid file types such as zip, .bak type of files. Starting with this version, the **Log file name** drop-down list has been optimized to discard such invalid file types from listing.
- In older versions, the *Auto indexing status* of the **eG Database Auto Indexing** test mapped to the **eG Manager** component wrongly reported a value indicating that the auto-indexing process performed in the eG backend database was running when the auto-indexing process was stopped temporarily because the time configured for performing the process in a day expired. This issue has been fixed now.
- Earlier, the **SAVE SCHEDULE** page (that appears upon clicking the schedule name in the **SCHEDULES** page which can be accessed when you follow the menu sequence: *Admin -> Miscellaneous -> Schedules*) failed to load due to script errors. This page has now been optimized to load without any errors.
- In prior versions, in environments where the performance rating test was configured, the eG manager crashed unexpectedly. This happened because the eG agents continuously read the *eg_agents.ini* file that caused serious resource deficit on the eG manager. This has been fixed now.
- Earlier, the port number was not displayed in alert descriptions for the component types that were added using the **Integration Console** plugin. This issue has been fixed now.
- Earlier, when the eG manager was deployed in SaaS mode, a few components were displayed in both **Managed components** and **Unmanaged components** lists in the **Components – Manage / Unmanage / Delete** page. This issue has been addressed now.
- In previous versions, sometimes, users were unable to associate hosts to an external agent using the **Assign - External Agents** page (that appears upon clicking on the **Associate/Disassociate Hosts** button in the **External Agent Configuration** page). This issue was noticed when the users tried to disassociate the hosts assigned to one external agent and associate those hosts to a new external agent. This issue has now been fixed.
- In previous versions, administrators were wrongfully allowed to configure the same nick name to two components. This is not the case any longer.
- Earlier, in large environments where several remote/external agents were used to monitor thousands of components, the **AGENTS – STATUS**, **External Agent Configuration** and **Remote Agent Configuration** pages were slow or failed to load when administrators searched for an agent using the **Search** box in the respective pages. This was because the pages displayed the search results while keying in every character in the **Search** box. To overcome this slowness, starting with this version, keying a few characters in the **Search** field will not display the results. Instead, the results will be displayed only after the administrators specify the search term of their interest and click the **Search** icon.
- In older versions, when a set of components were added through **Bulk Add/Modify** option, components could not be added with nicknames that were earlier assigned to unmanaged

components. This is not the case any longer.

- Previously, in large environments where thousands of components were being monitored, administrators were unable to export/import tests that were configured using the Integration console (IC) within the timeout period. This happened whenever the administrators chose multiple IC tests for exporting/importing operation in the **EXPORT/IMPORT CONFIGURATION - INTEGRATION CONSOLE – TEST** page. This issue has been fixed now.
- Earlier, in environments where eG Enterprise was configured to route its alarms to OTRS (Open-Source Ticket Request System), sometimes, the tickets were not created correctly. This happened when the component (for which the alarm was raised) was moved from one service to another service. This issue has been fixed now.
- In previous versions, administrators would not be allowed to create maintenance policies with names that contained more than 32 characters. Starting with this version, administrators can name the maintenance policies as per their requirement.
- In older versions, in some environments where the eG Enterprise was integrated with a third-party trouble ticketing (TT) system using Webhook, alarms generated for the **Network** test were being forwarded to the trouble ticketing system even if ticket/incident filtering was enabled for the **Network** test. Starting with this version, alerts will be forwarded to the TT system based on the filter settings (if configured).
- In earlier versions, **My Dashboard** was slow to load because due to synchronization issues in the eG backend database while retrieving the metrics to display in the dashboard. Starting with this version, queries executed to perform synchronization have been optimized to load the dashboard faster.
- Prior to eG v7.2.4, sometimes, the **UserConnectionFailures** and **FailedMachines** widgets were not loaded in the **My Dashboard** due to script errors. This issue has been fixed now.
- Earlier, the user credentials provided to configure an eG backend database when setting up the eG manager was captured in clear text in the error logs. This is not the case any longer.
- Previously, in large environments where thousands of components were being monitored and there were thousands of descriptors for tests, the **Timeline Chart** widget of the **My Dashboard** was slow to load when the chart was being plotted for a broad timeline. Also, high CPU utilization was noticed in the manager while the widget was being loaded. Starting with this version, the query executed to populate this widget has been optimized to consume minimal CPU during execution and load the widget faster.
- In prior versions, alerts were not generated for the **Network Interfaces** test when the *Is the Network Interface Operationally? (%)* measure reported any value other than "*No*". This issue has been fixed now.
- Earlier, in environments where eG Enterprise was integrated with **ServiceNow** platform, impact and urgency of an incident was removed from description of the incident ticket once the incident was resolved and the incident ticket was closed. Due to this, administrators were unable to track impact that an issue caused. Starting with this version, the eG manager has been optimized to retain the impact and urgency of the incident even after the ticket was closed.
- In older versions, sometimes, the **Enable logging** and **Send graph in trouble ticket** fields were not displayed in the **Settings** page (that appears when you click on the **Settings** node in the **ITSM/COLLABORATION INTEGRATION** page). This happened
    - only under the following conditions:
    - The Google Chrome browser was used to connect to the eG web console, and;

  The eG manager was being integrated with a third-party trouble ticketing system that accepts

incoming web hooks. This issue has been fixed now.

- Previously, the **ITSM/COLLABORATION INTEGRATION** page of the eG manager console was wrongly displayed even if the eG license did not enable the trouble ticketing integration capability. This does not occur any longer.
- Earlier, in environments where eG Enterprise was integrated with **SNOW ITOM**, tickets were not created in **SNOW ITOM** for alarms forwarded by the eG manager. This happened because **SNOW ITOM** took a long time to respond to REST API requests made to create the tickets. This issue has been fixed now.
- In previous versions, false alerts were raised for the components that were put under maintenance. This issue was noticed when the eG manager was migrated to a host operating on a different time zone. To suppress such false alerts, when administrators tried to reconfigure the maintenance policies that were earlier created on the eG manager in accordance with the new time zone, they could not do so. This issue has been fixed now.
- Earlier, when a maintenance policy created for a component is modified by associating a component of a different component type, administrators noticed that the component that was earlier associated with that maintenance policy was disassociated automatically. This issue has been fixed now.
- Previously, in environments where hundreds of components/VMs/desktops were being monitored, the eG manager failed to suppress the alerts of certain components in maintenance. This was noticed only in those components that matched the wildcard pattern specified in the **Associate Policy for** list in the **Quick Maintenance Policy Creation** page.
- In older versions, sometimes, administrators were unable to upload the **Asset Management** template to the eG manager. This happened because the values specified in any of the columns of the template contained more than 32 characters. To avoid this, the query used to insert those values has now been optimized.
- In previous versions, while a maintenance policy set for a descriptor of a test was modified, administrators could not disassociate one/more descriptors from the configured maintenance policy because those descriptors were wrongly listed in the **Elements Available** section instead of **Elements Associated** section of the **Quick Maintenance Policy Creation** page. This issue has been fixed now.

1.2 Monitor Interface

- Earlier, in a **My Dashboard** configured for an Oracle database server, the **Table widget** did not display SID name of that server. This issue has been fixed now.
- In older versions, a script error was noticed when users clicked on the **Network Health** pie chart of the **My Dashboard**. This pie chart has now been optimized to load details without any error.
- In older versions, in large environments, the **Trend Graph** took a long time to load in **My Dashboard**. This happened whenever the graph was plotted with thousands of descriptors for a broad timeline. Starting with this version, the **Trend Graph** has been optimized to load quickly.
- In older versions, the **Zone Details** widget of the **My Dashboard** did not display complete details such as sub-zones, groups, segments, etc., in a zone. This happened when administrators retrieved zone details using REST API. Starting with this version, the API queries used to fetch the zone details have been optimized to retrieve complete details of the zone.
- In previous versions, the **SESSION INFO** section of the **USER EXPERIENCE DASHBOARD** for Nutanix Acropolis VDI users showed incorrect client IP addresses. This issue has been fixed now.
- In previous versions, administrators could not drill down to the **User Experience** dashboard from

the **VIRTUAL APPS** dashboard. This issue has been fixed now.

- In older versions, alignment issues were noticed in the **User Experience** dashboard. This issue has been fixed now.
- In prior versions, when administrators drilled down the **USER EXPERIENCE** dashboard to view the user experience of a Citrix user, the **SESSION TOPOLOGY** page failed to load and threw an error message. The **SESSION TOPOLOGY** page has now been optimized to load without any errors.
- In previous versions, the **User Experience** dashboard for a user was not loaded completely when the users drilled down from the search results displayed while searching the user using the global search capability. This issue has been fixed now.
- Previously, in VDI environments where users logged into their virtual desktops on Nutanix Acropolis hypervisors, the Client IP was wrongly displayed as 0.0.0.0 for a user in the **User Experience Overview** dashboard. This issue has been fixed now.
- In prior versions, pagination issues were noticed in the **User Experience Overview** dashboard when the number of available records was lesser than the configured records limit for that dashboard. This is not the case any longer.
- Prior to v7.2.4, the **User Experience Overview** dashboard was taking too long to load when thousands of users were logged in to the target Citrix/VDI environment. Starting with this version, the queries executed to load the dashboard have been optimized to load it faster.
- In older versions, the **Session Topology** section of the **USER EXPERIENCE DASHBOARD** sometimes failed to load. This happened whenever administrators searched for a user using the **Global Search** capability and drilled down to the **USER EXPERIENCE DASHBOARD** for that user. This issue has been fixed now.
- In older versions, the **SESSION INFO** section of the **USER EXPERIENCE** dashboard did not include geographical location of the desktop users. This was observed only for those users who were logged into virtual desktops on Nutanix Acropolis. Starting with this version, the **SESSION INFO** section will also include location details of the desktop users, regardless of which hypervisor hosts the desktops.
- In prior versions, the legends in the **Admin Users** widget in the **Users** page of **Exchange Online** node of the **Office 365 Dashboard** were displayed using random colors. They should have used the colors representing the count of the users in the doughnut chart. This issue has been fixed now.
- In older versions, the value displayed for **Storage used across site** legend in the **Storage Used/Allocated(GB)** widget in the **Sites** page of the **OneDrive** node of the **Office 365 Dashboard** was incorrect. This issue has been fixed now.
- Previously, a few widgets of the **Office 365/Exchange Online Dashboard** were empty. This happened because, the tests reporting measures to those widgets were not running. Starting from this version, if any Office 365 test does not report metrics, then the **Office 365 Dashboard** will not display the widget relevant to that test.
- In previous versions, in environments where thousands of users logged in to Microsoft Office 365, the **Office 365 Dashboard** took too long to load. The dashboard has now been optimized to load faster.
- Earlier, after an auto-refresh, the **License Usage** page of the **Office 365 Dashboard** failed to load. This happened if the page had been idle for a long time. This issue has been fixed now.
- Prior to v7.2.4, the metrics revealing health of the operating system were not displayed in the **Top Server By** section of the **Summary** tab page of the **Virtual Dashboard** when **VMware vSphere VDI** was chosen as the **Component Type**. This issue has been fixed now.
- Starting from this version, a user can share **DASHBOARD VIEWS** which he/she created for **Virtual**

Apps dashboard with other users of the eG manager.

- In older versions, the Microsoft EDGE and Google Chrome browsers were unable to load the **Geo Map** of the **VIRTUAL APPS** dashboard. This was later attributed to a flaky/latent internet connection. This issue has been fixed.
- Earlier, the **Virtual Dashboard** took a long time to load in environments where hundreds of virtual machines were being monitored. The dashboard has now been optimized to load faster.
- In previous versions, in some environments, the **Netflow** dashboard took too long to load. The dashboard has now been optimized to load faster.
- In prior versions, the **Top-N** chart of the **Netflow** dashboard did not load when the name of the network interface contained single quote (') as a special character. This issue has been fixed now.
- Earlier, the **Netflow** dashboard was wrongly displayed for the Fortigate Firewall/Wireless Controller component even though the tests related to Netflow monitoring were not enabled for the target component. Starting with this version, the **Netflow** dashboard will be displayed only for the components that are Netflow-enabled.
- In prior versions, the **SAP Monitoring Dashboard** did not display values for metrics listed in the **Job Statistics** widget even if the valid metrics were available in the layer model page. This happened in environments where the oracle database was used as the eG backend database. This issue has been fixed now.
- In older versions, in some environments, the **SYNTHETIC MONITORING** dashboard was empty even though valid data was available in the eG backend database. This issue has been fixed now.
- In prior versions, in some environments, the digital charts failed to load in the **System**, **Network** and **Application** dashboards. This issue was noticed only on Linux installations of the eG manager, where font set was not installed/updated properly. This issue has been fixed now.
- In older versions, negative values were displayed at random in the **Split of Duration (ms)** column of the **Resource Details** tab page in the **RUM Dashboard**. This was because of an incorrect calculation of the values displayed in the **ACTUAL WORK** and **BLOCK/WAIT** columns. This issue has been fixed now.
- Earlier, the **NetScaler Load Balancing Flow** section of the **NetScaler Request Flow** dashboard did not display the load balancing flow topology. This dashboard has now been optimized to display the load balancing topology.
- Previously, script errors were noticed in the **Network** dashboard of the Cisco ASR Router component when the **Traffic Analysis** tab page is accessed. This issue has been fixed now.
- Earlier, when a template created using a custom layout was used to create a **One click dashboard**, the custom layout of the template was not applied on the generated **One click dashboard**. This is not the case any longer.
- In previous versions, in large environments where a large volume of alerts was generated, a few alarms were not displayed in the **History of Alarms** page. This issue was noticed whenever connections between the eG manager and the backend database failed. Starting with this version, the eG manager has been optimized to retain those alerts that were generated during database connection failure and display the same in the **History of Alarms** page once the connection is restored between the eG manager and the backend database.
- In prior versions, the **CURRENT ALARMS / UNKNOWNS** window was closed at every 60 minutes interval that was when the **Home** page of the eG Monitor console was refreshed. This issue has been fixed now.
- In older versions, the alerts were generated for the descriptors that were excluded from monitoring.

Starting with this version, alerts will be generated only for the descriptors that are being monitored.

- Prior to this version, the eG layer model page did not appear when users tried to access the page by clicking a particular measure in the **Measures-At-A-Glance** section of the **Details** page of the **Zones** dashboard. This issue was noticed whenever the descriptor of the chosen measure contained a forward slash (\). This issue has been fixed now.
- Earlier, in environments where **Citrix Virtual Apps 7.x/Citrix Hypervisor-VDI** and **IGEL** component types were being monitored together, the layer model page of the Citrix Virtual Apps/Citrix Hypervisor - VDI component took a long time to load. This issue has been fixed now.
- In previous versions, in environments flooded by alerts, the percentage of Critical, Major, Minor, and Unknown alerts was incorrectly reported in the **Current Status** section of the eG Monitor home page. This issue has been fixed now.
- Previously, in large environments where hundreds of components were monitored, the tests took a long time to switch to "unknown" state when the agents stopped reporting the metrics. This issue has been fixed now.
- In prior versions, where the Nutanix Acropolis components were monitored, the global search capability could not be used to locate users logged into virtual desktops on Nutanix Acropolis. This issue has been fixed now.
- Earlier, by default, the index rebuilding process was disabled for a few tables in the eG backend database in environments where the Database Partitioning feature was enabled. Starting with this version, administrators will be allowed to enable index rebuilding process for such tables even if the Database Partitioning is enabled. To achieve this, administrators need to set the **PartitionDbIndexRecreation** flag in the **eg_services.ini** file available in the **<eG_INSTALL_DIR>/manager/config** folder to **Yes**.
- Earlier, the measurement time reported in the email alerts was incorrect. This issue happened only when the user was operating in a different time zone from that of the eG manager. This issue has been fixed now.
- Earlier, the eG layer model page for the **Microsoft Windows** component type did not appear when administrators drilled down from the **Current Alarms / Unknowns** window. This issue has been fixed now.
- Previously, users noticed slowness when they tried to view **History of Alarms** page. This was because queries executed to fetch the alarm history from eG backend database were slow. Starting with this version, the database query has been optimized to load the page faster.
- In prior versions, the separator ("/") used to separate the details such as component type, component name etc., in the alert descriptions that were sent as SMS alerts was missing after the target component name. Due to this, the users were unable to read the description clearly. This issue has been fixed is now.
- In older versions, Normal email alerts sent after an issue was resolved, did not include the resolution date/time. In fact, all details that administrators will find useful when assessing the efficiency of administrative staff were missing in the normal alerts. To fill this void, starting with this version, the Normal email alerts will include the start time of alert, time of resolution, and alert duration.
- Earlier, in large VDI environments characterized by numerous virtual desktops and VMs, searching for a user or a VM using the **Global Search** capability. This was due to the slowness of the database query executed to fetch the results. This query has now been optimized to return results quickly.
- In previous versions, the threshold manager was unable to compute thresholds for the descriptors that contained colon (:) in their names. Due to this, alerts were not generated for those descriptors. This issue has been fixed now.
- In older versions, the **Url Accessed** field in the **TEST DETAILS** page was wrongly displayed for the

HTTP test pertaining to the **Oracle Weblogic** component type. This issue has been fixed now.

- Earlier, in environments where users were configured to receive daily reports via email using **Daily Report Emailer** settings, users were unable to open the daily reports that were attached as PDF files in the emails. This issue has been fixed now.
- In previous versions, in some environments, users did not receive daily reports that were sent as emails. This issue was noticed in environments where users were configured to receive daily reports on a set of key performance metrics pertaining to a specific zone. This issue has been fixed now.
- Earlier, detailed diagnosis could not be captured and reported for tests mapped to the eG Business Transaction Monitor. This issue was noticed when the transaction URL contained "=" that was not allowed by the security filter (if enabled, the security filter can be enabled by setting the Enable **Security Filters** option to **Yes** in the **SECURITY FILTERS** page of the eG admin interface). This issue has been fixed now.
- Previously, the email alerts sent for the **Custom** tests that were added using the **Integration Console** were not clear and did not provide required details to users. This issue was noticed when administrators did not define alarm strings to be sent in email alerts while configuring the **Custom** tests. Starting with eG Enterprise v7.2.4, the email alerts to be sent to the users will, by default, include the names of tests and measures even if the alarm strings are not predefined.
- Earlier, frequent restarts were noticed the eG manager was restarted more frequently. This was because the connections in the database connection pool were not released in a timely manner, causing numerous connections to the database to remain alive for long time periods.
- Previously, the **Include Measure Details in Mail Alert** flag in the **USER PROFILE** page was set to **Yes**, by default. This indicated that the mail alerts, by default, would include the details of the measures (for which the alarms were generated) in the alert description. This significantly processing overheads in environments where a large volume of alarms was raised. To avoid this, starting with this version, this flag is set to **No** by default. However, administrators can override this default settings, if required.
- In earlier versions, it was noticed that the priority and ID of an alarm were not included in the subject of an email alert, though the eG manager had been explicitly configured to include these details in the subject (via the **Contents of mail subject** flag in the **MAIL/SMS ALERT PREFERENCES** panel of the **Mail Alert Settings** page). This issue has been resolved now.
- Before version 7.2.4, alignment issues were noticed in the **CONFIGURING DAILY REPORT EMAILER** window. This issue has been fixed now.
- Previously, the **Acknowledge** button was sometimes not displayed in the **Current Alarms / Unknown** page for a *Monitor* user even though he/she had the right to acknowledge the alarms. This issue was noticed only when the user was associated with VMs/desktops along with other components. This issue has been fixed now.
- In older versions, the measure graph appeared empty for the **Simulated Web Transactions** test pertaining to the **Web App Simulation** component type when users drilled down from the **View historic metrics** link in the eG layer model page. This is not the case any longer.
- In prior versions, in environments where database partitioning was enabled, the automatic database cleanup process did not cleanup the tables that were data compressed. The cleanup process has now been optimized to address this issue.
- In previous versions, in environments where more than one component of **Microsoft RDS License** component type was being monitored, the **Metrics View** page for the Microsoft RDS License component displayed incorrect values in the **Licenses in use** column. This issue has been fixed now.
- Earlier, in large environments where thousands of components were being monitored, the eG Monitor

Home page was taking too long to load. Starting with this version, this page has been optimized to load faster.

- In prior versions, it was noticed that the **Daily Emailer Report** sent for the Citrix Virtual Apps 7.x component displayed an incorrect value for the *Total sessions* measure. This is not the case any longer.
- Previously, some tables that stored alarms/details relevant to the alarms in the eG backend database were not cleaned up during cleanup process. Due to this, the tables were unable to store the details of new alarms. As a result, users did not receive alarms about abnormalities in the environment. The cleanup process has now been optimized to clear all the tables to avoid such issues.
- In older versions, the eG manager was unable to send email alerts to the eG Mobile application as push notifications. This issue has been fixed now.
- Previously, in redundant eG manager configurations, changes done on the primary manager were sometimes not updated to the secondary manager. This happened whenever the queries executed on the database of the secondary manager failed due to connection failure between the secondary manager and the database. As a result, the changes updated on the primary manager during the failure period were not synchronized to the secondary manager. This caused mismatch between the data stored in the eG managers in the redundant setup. Starting with this version, the eG manager has been optimized to avoid this mismatch.
- In older versions, when the eG manager was accessed using the Firefox browser, the **Measure Graph** (that appears upon clicking on the **Graph** icon provided against a measure) did not display the correct time value while changing the **Timeline** slide bar. This issue has been fixed now.
- Before eG v7.2.4, eG Enterprise sometimes failed to report the detailed diagnosis for the *Root blockers* measure of the **Oracle Root Blockers** test mapped to the **Oracle Database** component. This happened whenever a root blocker was identified in a test period and cleared before the test reported the measure in next test period. This issue has been fixed now.
- Earlier, users were sometimes unable to drill down to the **eG layer model** page from the **Measure-At-A-Glance** section of the **Details** page of the **Zones** dashboard. This issue has been fixed now.
- In prior versions, in environments where concurrent user license was enabled, the database migration failed. This was because a few records from some tables that contained single quotes failed to be migrated. This issue has been fixed now.
- Previously, in some environments whenever the eG manager was restarted, the start time of the alarms reset to the time at which the manager was restarted, though the **State_Maintain** flag was set to "*Yes*". This bug has now been fixed.
- Prior to v7.2.4, in large environments where the **HISTORY OF ALARMS** page contained thousands of alarm records, it was taking too long to save the alarm history as PDF. This issue has been fixed now.
- Earlier, in large environments, it took a while for a newly configured service to appear in the eG Monitor home page. This issue has been fixed now.
- In older versions, the graphs in the email alerts were wrongly plotted based on the time zone in which the eG manager was operating instead of users' time zone. This issue has been fixed now.
- Previously, the measure value obtained during the last measurement period was not included in the alerts that were sent as email and SMS even if the **Show last measure value in mail alerts** and **Show measure value in SMS alerts** flags in the **MAIL/SMS ALERTS PREFERENCES** page were set to **Yes**. This is not the case any longer.
- In earlier versions, in eG redundant configurations, administrators noticed mismatch between the details stored in the primary and secondary managers. This happened because of synchronization overheads due to the lack of threads required to execute the synchronization process. To avoid this

and optimize the synchronization, starting with this version, eG Enterprise allows users to configure the number of threads required for synchronization using the **maxThreadCountForDataXfer** parameter in the **[MANAGER_SETTINGS]** section in the **eg_managers.ini** file available in the **<eG_INSTALL_DIR>/manager/config** folder host.

- Earlier, an incorrect value was displayed in the **Total Measurements** section of the eG Monitor Home page. This was because the value was not calculated considering the measures reported by all descriptors of a test. Starting from this version, the **Total Measurements** section will show the count of measures reported by all descriptors of tests that are executed in the target environments.
- In prior versions, the *Trap details* column of the detailed diagnosis reported for the **Number of messages** measure of the **Network Traps** test was in unreadable format. This column has now been optimized to display the details in a readable and clear format.
- In older versions, the **Measure graph** showed future timeline in X-axis labels. For example, let's say, the timeline for plotting the **Measure graph** was set to 10 hours but the metrics reported only for 6 hours. In this case, the x-axis of the graph showed timeline up to 10 hours even if the values available only for 6 hours. Starting with this version, the **Measure graph** will show the timeline for which the measures are available.
- Earlier, in environments where a component was associated with numerous users/services/segments/zones, the **COMPONENT DETAILS** page of that component was not displaying details of the users/services/segments/zones to which the component was associated. This page has now been optimized to display complete details for the components that are associated with multiple users/services/segments/zones.
- Previously, when the **Trouble Ticketing** option was chosen from the **Send Traps for** drop-down list in the **SNMP trap settings** tab page of the **SNMP MANAGER CONFIGURATION** page, the components could not be excluded/included for sending/receiving traps using the **SNMP Traps Filters** page. This issue has been fixed now.
- Earlier, the user credentials provided for the SMS gateway were not encrypted and were displayed in plain text in the configuration file. This is not the case any longer.
- Prior to v7.2.4, the **Quick Alerts** window did not show the alerts raised for the non-descriptor-based tests associated with the Operating System layers of the target components. This issue has now been resolved.
- In older versions, email notifications were not sent to administrators when the primary mail server was down or failed. This happened because the failure was not logged in the error log of the eG manager. This issue has been fixed now.
- Previously, in large environments where hundreds of components were being monitored, the tests and components took a long time to switch to "Normal" state when the components and tests were under maintenance. This issue has been fixed now.
- Typically, once the **Process Details** icon in the detailed diagnosis of the *Running processes* measure (pertaining to **SQL User Processes** test) is clicked, the **PROCESS DETAILS** window appears. In older versions however, this window hung and did not load. Starting with this release, the page has been optimized to load faster.
- In previous versions, administrators were unable to configure the **Alternative mail sender IDs** in the **Mail Server** tab page of the **MAIL SERVER SETTINGS** page. This issue was noticed when user's email address specified against the **eG Administrator mail ID** filed contained plus (+) symbol. This is not the case any longer.
- Previously, a mismatch was noticed between the format of dates in detailed diagnostics published in the eG monitoring console for a **Real User Monitor** component, and the date format of detailed

metrics sent along with email alerts for the same component. This issue has now been resolved.

- In prior versions, alignment issues were noticed in the **DETAILED DIAGNOSIS** window (that appears upon clicking the **Analysis** icon in the **Detailed Diagnosis** tab page) of the **DNS delegations** measure reported by the **DNS Server Health** test pertaining to the **Active Directory** component type. This issue has been fixed now.
- In older versions, sometimes, no data was displayed in the **Logons by Delivery Group** and **Logon Duration by Delivery Group** widgets in the **Logon** page of the **Virtual Desktops** dashboard of a Citrix Hypervisor-VDI component. This issue was noticed whenever the value '0' was reported for the *Logons* measure of the **Logon Performance by Delivery Groups** Test mapped to the Citrix Virtual Apps/Desktops Site 7.x component. Starting with this version, these widgets have been optimized to display zero values if the value of the *Logons* measure is zero.
- Previously, if security filters were enabled (i.e., the **Enable Security Filters** option was set to **Yes** in the **SECURITY FILTERS** page of the eG admin interface) for the eG manager, administrators were unable to configure the mail server settings if Microsoft O365 was set as the **SMTP mail host**. This happened because the Microsoft Office 365 user's password contained special characters which were blocked by the security filters. This issue has been fixed now.

1.3 Reporter Interface

- Prior to version 7.2.4, the details of a few applications were not included in the **Top Applications** report. It was later found that the applications that were excluded were the ones with names that were longer than what eG permitted. To plot the report for all applications, the report has now been reengineered to support application names that are wider in length.
- In older versions, when the **Sessions by Users** report was generated, the **CLIENT IP ADDRESS** column of the **Session Details** table in the report displayed no values, though valid values were available in the eG database, and the **Show Client Details** flag in the **More Options** pop-up window of the report was set to **Yes**. This issue was noticed in environments where desktop sessions were not brokered by a Citrix broker, but by other brokers. This report has now been optimized to provide client IP addresses for all desktop sessions, regardless of which type of broker actually brokered those sessions.
- Earlier, in environments where the eG backend database was configured on an Oracle database server, administrators were unable to generate the **Business Transaction Monitoring** report. This is not the case any longer.
- Previously, in a SaaS deployment of eG Enterprise, users of an organization/organizational unit were wrongly allowed to view users of other organizations/organizational units. This anomaly was observed in the **Available Users** list box that appears after selecting the **Share** option from the **Sharing** list in the **SAVE AS FAVORITES** window. This issue has been fixed now.
- In previous versions, when the **Web App Simulation** report was generated and exported as a PDF, alignment issues were noticed in the PDF. This issue has been fixed now.
- Earlier, when the **Top-N Analysis** report was generated and exported as a PDF, the data labels in the graphs in the PDF were overlapping and hence could not be read by the users. This is not the case any longer.
- In older versions, in environments where hundreds of components were managed, the **Top System Resource Consumers** report was slow to load. Starting with this version, the query executed to generate this report has been optimized to load the report faster.
- In previous versions, the **Heat Map** widget of the custom report displayed incorrect values. This issue has been fixed now.
- In older versions, in digital workspace environments with thousands of users, sharp CPU and memory

spikes were noticed on the eG manager when administrators tried to generate any report revealing user's experience in the environment. Starting with this version, the eG manager has been optimized to generate such reports without excessive resource utilization.

- Earlier, sometimes, reports scheduled to be emailed were not sent out to users when the users modified the pre-configured settings of the existing schedules. This happened because the **Details of Your Selection** table in the **Save Schedules** page was not updated with the details that were recently modified by the users. This issue has been fixed now.
- In prior versions, when the **Sessions by Users** report was generated, the **Session Activity** graph failed to load in the *Summary of a user's session* pop up window (which appears upon clicking the **Details** icon) for the VDI component types. This issue has been fixed now.
- Previously, alignment issues were sometimes noticed in the **System Analysis By Component** report. This happened when users customized the metrics to be displayed in the generated report using the configuration file. This issue has been fixed now.
- Earlier, significant CPU and memory spikes were noticed every time the **Distributed Pie Chart** widget was added to a custom report. Starting with this version, this widget has been optimized to minimize CPU and memory consumption.
- Starting with this version, users have the option to exclude data collected during weekends while generating the **Virtual Machines – Right Sizing** report, using the **Exclude weekends** drop-down in the **More Options** pop-up window. Previously, this capability was not available for this report.
- In previous versions, in double-byte environments, when a report booklet was downloaded as a PDF file, the booklet name in the title page and the table of contents was blank. This issue has now been resolved.

1.4 eG CLI

- In older versions, sometimes, administrators were unable to add components in bulk using the eG CLI. This happened only when a CSV file was used for the bulk addition. This is not the case any longer.
- In prior versions, alignment issues were noticed in the **License Overview - Total License Usage Graph** window. This issue has been fixed now.
- In earlier versions, if a test was configured using eG CLI, administrators were unable to configure test period (i.e., how often should the test be executed). Starting with this version, eG CLI commands have been optimized to address this issue.
- Before v7.2.4, if a **Log Monitor** test was configured using eG CLI, administrators were unable to configure the **SEARCHPATTERN** parameter with multiple search patterns (as a comma-separated list). Starting from v7.2.4 however, this is supported.
- In earlier versions, if the **System Event Log** test was configured using the eG CLI, the value defined for the **FILTER** parameter in the command was wrongly updated to the **POLICY BASED FILTER** parameter. This issue has been fixed now.
- In previous versions, when administrators tried to create incident tickets using REST API, alarm description of the API response contained HTML tags. Due to this, administrators could not read the alarm descriptions clearly. This issue has been fixed now.

1.5 eG REST API

- Previously, administrators were unable to retrieve the historical data of the measures using eG REST

API due to an exception. This issue has been fixed now.

- In prior versions, when administrators tried to retrieve details of zones in the target environment using REST API, sub-zone was wrongly displayed as a server. This issue has been fixed now.
- Earlier, administrators would not be able to configure the performance rating tests via eG REST API. Starting from eG 7.2.4, administrators can also configure the performance rating tests using eG REST API.

1.6 eG Super Manager

- Previously, in some environments, the super manager was unable to communicate with the eG managers when the version of the eG managers was lower than that of the super manager. This is not the case any longer.

1.7 Database Optimization

- Earlier, in environments where Microsoft SQL Server was being used as eG backend, it was noticed that many indexes were missing. In this version, these missing indexes have been identified and added, so that the queries executed on the eG backend for data retrieval execute quickly.
- Earlier, the auto-indexing process performed on the eG backend database got stuck and failed due to connection failures. In addition, the auto-indexing process did not resume even after the connection was re-established. Starting with this version, the eG manager has been optimized to handle such connection failures without affecting the auto-indexing process.
- In previous versions, administrators were sometimes unable to configure the eG backend database during eG manager installation. This was because a domain mismatch error occurred while validating the eG database configuration. This issue has been addressed now.
- Earlier, in environments where the database partitioning feature was enabled for the eG backend database, the purging/cleanup operation dropped the partitions for days greater than the period configured for deleting the partitions (this can be set using the **Database Purge Periods** section in the **DATA MANAGEMENT – DATABASE SETTINGS** page). This issue has been fixed now.
- Earlier, in environments where database partitioning was enabled, the regular cleanup process was unable to identify and delete the unused and empty partitions. Due to this, the empty/unused partitions kept growing in the database and unnecessarily occupied the space which led to serious space crunch on the database. As a result, the database was unable to store the newly received data due to space crunch. Starting with this version, the clean process has been optimized to identify and drop those empty/unused partitions.
- In previous versions, the automatic cleanup operation performed on the eG backend database failed to delete the screenshots of simulation failures captured by the VMware Horizon Logon Simulator. This has been fixed.

1.8 Manager Operations

- Previously, in some environments, administrators were forced to restart the eG manager manually, after the manager remained unresponsive for a long time. This was necessitated because the eG manager's self-monitoring daemon failed to restart the eG manager even after multiple attempts. The issue with the daemon has now been resolved, so that it auto-restarts the manager whenever required.
- In older versions, more number of errors were logged in in the manager log when the users tried to modify any settings on the eG manager and eG backend database. This issue was noticed only when the eG manager and eG backend database were inactive. Starting from this version, the eG manager

has been optimized to prevent such errors.

- In versions prior to v7.2.4, the eG manager was slow or crashed unexpectedly when the code was executed for closing the used database connections in the connection pool. The eG manager code has now been optimized to prevent such anomalies.
- Earlier, in large environments where thousands of agents monitored thousands of components, the eG manager restarted frequently due to lack of memory and several blocked threads. This was because the manager logs kept growing whenever administrators made changes in the eG manager. This issue has been fixed now.
- Before version 7.2.4, by default, the eG manager's self-monitoring process automatically restarted the eG manager whenever the older connections in the database connection pool tried to establish connection to the eG manager (the older connections are nothing but the connections in the connection pool that were not released in a timely manner). Due to this, the eG manager could not establish a new database connection from the pool. In such cases, a few administrators, however, may not want the manager to be restarted every time. To cater to the needs of such administrators, starting with this version, a *SkipInvalidStateConnection* flag has been introduced in the **eg_services.ini** file available in the **<eG_INSTALL_DIR>/manager/config** folder. Setting this flag to **false** will ensure that the eG manager's self-monitoring process will not restart the eG manager if it finds older connections in the connection pool.
- In earlier versions, in environments where Microsoft Office 365 was configured as a mail server to deliver email alerts, the eG manager was unable to deliver all the email alerts due to lack of processing threads. To make sure that administrators do not miss any problem notifications, starting with this version, administrators will be allowed to configure the count of threads required to send emails as per their requirement.

1.9 eG Mobile App

- Prior to eG v7.2.4, users were unable to login to the eG Mobile app if the user password contained the special character 'hash' (#). This issue has been fixed now.
- Earlier, push notifications were not sent for users who were accessing the eG Mobile application from a mobile device that ran on Android version 12 (Snow Cone). Starting with this version, the eG Mobile application has been optimized to send push notifications to the mobile devices that run on Android 12 operating system.

1.10 Security

- Earlier, in some environments, HTTP Header security vulnerabilities were noticed in the eG RUM Collector. Starting with this version, the **eG RUM Collector** has been optimized to prevent such vulnerabilities.
- In older versions, if security filters were enabled (the **Enable Security Filters** option was set to **Yes** in the **SECURITY FILTERS** page) for the eG manager, administrators were unable to upload the asset management template using the **Upload Asset Details** pop up window. This issue has

been addressed now.

2. Bug Fixes/Optimizations to the eG Agent

2.1 Citrix Monitoring

Citrix Logon Simulator

- Previously, the **Citrix Logon Simulator** failed to report metrics when logon process was simulated through Citrix Gateway ADC v12.1 (and above). This issue has been fixed now.
- Earlier, in some Citrix environments where hundreds of applications/desktops were hosted, the **Citrix Logon Simulator** took too long to enumerate those applications/desktops. This is not the case any longer.
- In older versions, in some environments, the **Citrix Logon Simulator** failed to perform simulation when the browser failed to detect the installed Citrix WorkSpace App automatically. This issue has been fixed now.
- In prior versions, in Citrix environments where Featured App Groups were created and managed, the **Citrix Logon Simulator** failed to launch applications/desktops enumerated on the Featured App Group tile from the Welcome page of Citrix StoreFront. Starting with this version, the logon simulator can directly launch the applications/desktops enumerated on the Featured App Groups tile.
- Previously, logon simulation failures were noticed in environments where Citrix logon simulations were performed through Citrix VPN Gateway. This was due to an additional **Client Choices** page that appeared whenever the user attempted to login. Starting with this version, Citrix logon simulator can perform the simulation on endpoints where the **Client Choices** page appears.
- Earlier, the **Citrix Logon Simulator** test did not report metrics if the **Tab Name** specified while configuring published resources contained a white space within. This issue has been fixed now.
- In older versions, the **Citrix Logon Simulator** abruptly stopped the simulation process when an error page appeared due to lack of trusted certificates on the simulation endpoint. Starting with this version, the eG Citrix Logon Simulator bypasses/ignores such error pages that appear due to untrusted certificates on the simulation endpoint.
- In older versions, the Citrix Logon Simulator failed to perform simulation when the logon process was simulated through Citrix WorkSpace App v2209. This issue has been fixed now.

Citrix Virtual Apps Servers

- Previously, the **Citrix Users EDT Performance** test did not report metrics when the latest version of VDA was installed on the virtual desktops on which users logged in through EDT protocol. This issue has been fixed now.
- In older versions, the **Citrix Printing Performance** test did not report metrics even though valid metrics were collected and stored in the eG backend database. This issue has been fixed now.

Citrix Director 7.x

- In older versions, the **User Connection Failures** test mapped to the **Citrix Director 7.x**

component type reported incorrect measure values. This issue has been fixed now.

Citrix Hypervisors

- In previous versions, when a user disconnected from the virtual desktop on which he/she was earlier logged in, the eG VM agent failed to identify that the user had disconnected and still reported metrics for the user on virtual desktop (discovered descriptor) for the **HDX Channel from Desktop** test. This issue has been fixed now.

Citrix ADC VPX/MPX

- In older versions, false alerts were generated for the *Has the master role been changed?* measure (i.e., this measure wrongly reported a value of *Yes*) reported by the **High Availability** test. This issue has been fixed now.
- Previously, the *License allowed maximum throughput* and *License throughput* measures of the **Interfaces** test were wrongly reported. This issue was because eG Enterprise considered the Model ID of the interfaces too while displaying the *License allowed maximum throughput* measure. Starting with this version, the Model ID of the interfaces will not be considered while computing the metrics for these measures.
- Earlier, in environments where a single remote agent monitored multiple Citrix ADC VPX/MPX components, metrics were reported inconsistently for all the components. This was because, when the eG agent took too long to collect metrics from a Citrix ADC VPX/MPX component, the eG agent hung and failed to collect metrics from the rest of the components. This issue has been fixed now.

Citrix Delivery Controller

- Earlier, false alerts were generated for the *Domain time synchronization status* measure of the **Domain Controller Time Check** test at random measurement periods. This issue has been fixed now.

Citrix Cloud Control Plane

- In previous versions, in some environments, the **CVAD License Usage – Cloud** test abruptly stopped reporting metrics if network/cloud connectivity issues were encountered. To ensure that metrics are collected for this test, starting with this version, the eG agent has been optimized to execute the Cloud API calls for a maximum limit of 5 times in a single measurement period. The test will fail to report metrics only when the eG agent has exhausted the maximum limit to execute the API calls.

Citrix Virtual Apps/Desktops Site 7.x

- Earlier, false alerts were raised for the *Pending image update machines* measure reported by the **Desktop OS Machines** test. This issue was noticed in environments where maintenance mode was enabled on the machines in a delivery group. Starting with this version, the count of *Pending image update machines* measure will not include those machines on which maintenance mode is enabled.
- In older versions, in Citrix environments where thousands of users logged in, metrics were inconsistently reported for the users discovered by the User Logon Performance test. This was because, the eG agent failed to connect to all users to collect metrics within the measurement period. This issue has been fixed now.

Citrix StoreFront

- Previously, false alerts were generated for the *Availability* measure of the **NetScaler Gateways** test for a few descriptors i.e., NetScaler Gateways. This issue was noticed only for those descriptors that were unavailable while they were removed from the target Citrix StoreFront. This was because, eG Enterprise auto discovered the NetScaler Gateways only once a day. To avoid false alerts for those NetScaler Gateways that are not integrated with the target Citrix StoreFront, starting with this version, the NetScaler Gateways will be auto-discovered once in every hour.

Citrix Provisioning Servers

- Earlier, in some environments, the **PVS Servers** test failed to report metrics. This issue has been fixed now.

2.2 Virtual Desktop Monitoring (Citrix /VMware Horizon/ Nutanix AHV)

- In older versions, the detailed diagnosis of the **Disk Activity – VM** test did not report the full path to the applications that were executing on a virtual machine installed on Windows operating system. This issue has been fixed now.
- Earlier, when an alarm was raised for the *Average input delay* measure of the **User Input Delay – OS** test mapped to VDI component types, clicking the magnifying glass icon against the alarm from the **CURRENT ALARMS/UNKNOWNS** page led to an empty detailed diagnosis page. This issue has been fixed now.
- Previously, the **NVIDIA GPU - OS** test pertaining to the **Nutanix AHV VDI** component type failed to discover the users logged into the virtual desktops as descriptors. This was because, the **REPORT BY USER** parameter was missing in the test configuration page. This issue has been fixed now.
- Earlier, in some environments, inside view metrics were not reported for the VMs by the **Grid GPUs – AHV** test pertaining to the **Nutanix AHV VDI** component. This was because, the eG remote agent failed to collect metrics via SSH due to a connection failure. To ensure that the inside view metrics are reported, starting with this version, a **HIGH SECURITY** flag has been introduced in the test configuration page. By default, this flag is set to **No**. Setting this flag to Yes will ensure that all the metrics relevant to the test are collected.
- In older versions, the *VMs with users* measure of the **Virtual Machines – ESX** test mapped to the **VMware vSphere VDI** component incorrectly reported the value '0' even when valid user sessions were active on the virtual machines. This happened in environments where the virtual machines being monitored were case-sensitive. This issue has been fixed now.
- In environments where virtual desktops hosted on Linux operating system were brokered via Citrix, the **VM Details – ESX** test pertaining to the **VMware vSphere VDI** component type wrongly discovered the descriptors and displayed the same in the eG layer model. This issue has been fixed now.
- Earlier, in some environments, the **VDI Applications** test mapped to the **VMware vSphere VDI** component type did not report metrics. This issue has been fixed now
- Previously, in some environments where Citrix VDA v21.0.3 is installed on the virtual desktops, the eGVMagent failed to collect metrics relevant to a few sessions initiated by the users on the virtual desktops and report the same in the **Desktop Session Start-up Details** test. This issue has been fixed now.

VMware Horizon Connection Server

- In previous versions, in environments where VMware Horizon Connection Server v8.x and above were monitored, the **Horizon View Desktop Pools** test failed to auto-discover all the desktop pools configured on the target server. This was because, the eG agent used an outdated VMware PowerCLI to pull out the required metrics from the target server. This is not the case any longer.

VMware Horizon Cluster/Pod

- In previous versions, in environments where hundreds of desktop pools were configured on the target VMware Horizon Cluster/Pod server, the **Horizon Desktop Pools** failed to report metrics. This was because, the eG agent took too long to collect the detailed diagnosis of the Total entitled

users in pool measure for all the desktop pools discovered and eventually timed out. To ensure that this test reports metrics in such environments, starting with this version, a **SHOW ENTITLEMENTS** flag (set to **No**, by default) has been introduced in the test configuration page.

VMware App Volumes Manager

- Previously, the tests pertaining to the **VMWare App Volumes Manager** failed to report metrics if a user belonging to a domain/active directory group was specified against the **APPVOL USER** parameter while configuring the tests. This is not the case any longer.
- In previous versions, false alerts were generated for a few descriptors of the **App Volumes – Storage** test. This was because, the eG agent wrongly discovered the datastores that are deleted/absent along with the datastores that were available during the current measurement period. To ensure that only the datastores that are available are discovered by the eG agent, starting with this version, a **SHOW ALL** flag has been introduced in the test configuration page with a default value set to **No**.

2.3 Virtualization and Container Monitoring

VMware vSphere ESX

- Previously, in environments where VMs were periodically migrated among hosts through VMware DRS, false alerts were noticed for the *Has the system been restarted?* measure of the **Uptime – OS** test. These alerts were raised soon after a VM was migrated from one host to another. This issue has been fixed now.
- In previous versions, the **VMware vSphere ESX** component did not report metrics in environments where the target component was configured using a Public IP. The eG agent was therefore unable to connect the target VMware vSphere host and collect the required metrics. Starting with this version, the eG agent has been optimized to resolve the IP address of the VMware vSphere ESX server and connect to the target server.

Nutanix Prism Element

- Prior to eG v7.2.4, in environments where hundreds of virtual machines were provisioned by the Nutanix AHV, while monitoring the Nutanix Prism Element components, the eG agent unnecessarily collected the operating system of the virtual machines during every measurement cycle. This caused multiple blocked threads on the eG agent due to which the eG agent failed to collect metrics for the **Nutanix Prism Connection Status** test. Subsequently, administrators noticed multiple alerts for the *Prism availability* measure. To avoid such alerts, starting with this version, the eG agent has been optimized not to collect the operating system of the virtual machines provisioned by the Nutanix AHV servers while collecting metrics from the Nutanix Prism Element.
- In previous versions, in some environments where Nutanix Prism Elements were monitored, frequent agent restarts were noticed. This was because, the eG agent hung while collecting a large volume of data as part of detailed diagnostics for the **Nutanix Cluster Details** test. This is not the case any longer.

Microsoft Hyper-V

- Earlier, a few metrics grouped under the *Network* category of the **Hyper-V VM Details** test were reported as '0'. This was noticed only for those VMs that were installed on Windows 2019 servers. This is not the case any longer.
- Prior to eG v7.2.4, in environments where the **Microsoft Hyper-V** component was being monitored, administrators noticed traffic on the port (i.e., 60001, using which the eG VM agent collects OS information of a VM) even when the inside view monitoring was disabled. This issue has been

addressed now.

Oracle LDoms

- In previous versions, when an additional physical memory was included to the target Oracle LDoms server, the *Total memory* measure of the **LDoms System Details** test failed to include the newly added memory. This issue has been fixed now.

Kubernetes

- In older versions, in some environments, Kubernetes Cluster configuration failed and hence the Kubernetes Cluster could not be monitored. This was because, there was a mismatch in the default namespace of the service account (that was to be created) in the *eginnovations.yaml* file and the target environment. This issue has been fixed now.

2.4 Cloud Monitoring

AWS Cloud and **AWS Region**

- Earlier, in some environments, the tests pertaining to the **AWS Cloud** failed to report metrics. This was because, the eG agent failed to parse a few JAR files while collecting the required metrics. Starting with this version, the eG agent has been optimized to collect metrics from AWS Cloud seamlessly.
- Previously, the AWS Web Application Firewall (WAF) test failed to report metrics. This issue has been fixed now.

Microsoft Azure Subscription

- Earlier, either '0' or an incorrect value was reported for the *Used storage* measure of the **Azure Storage Details** test even though valid values could be ascertained from the Microsoft Azure portal. To accurately provide the storage capacity, starting with this version, the eG Monitor for Microsoft Azure Subscription reports additional metrics relevant to the storage capacity of blob, table, queues and file shares
- Previously, abnormal values were reported for a few measures of the Recovery Service Vaults test. This has been fixed now.

vCloud Director Cell

- In prior versions, the tests pertaining to the **vCloud Director** Cell component failed to report metrics only in environments where vCloud Director v3.0 and above was monitored. This is not the case any longer.

2.5 Business Transaction Monitoring and Real User Monitoring

- In older versions, the detailed diagnosis was not displayed for the **Page Groups** test of the Real User Monitor component even though valid values were available in the eG backend database. This issue was noticed when the page group names (reported as descriptors) contained more than 128 characters. This issue has been fixed now.
- Previously, in an environment where the eG manager was deployed on a Windows Cluster, if a single eG agent monitored more than 15 Real User Monitor components, several pages were slow to load on the eG manager. The CPU and RAM of the eG manager too increased abnormally while several blocked threads were noticed on the eG manager. This forced the administrators to restart the eG manager once in a day. To address this issue, starting with this version, the eG manager has been

optimized to consume less resources while avoiding threads from being blocked.

- Prior to eG v7.2.4, in environments where a single eG agent monitored multiple Real User Monitor components, sometimes, the tests mapped to the Real user Monitor component inconsistently reported metrics. This was because, the eG agent was unable to handle the data collected from the configured URLs. The eG agent has now been optimized to avoid such inconsistencies.
- Earlier, in environments where a Real User Monitor component was monitored, when a user accessed the configured URL using Microsoft Edge browser, the browser was wrongly identified and reported as 'Chrome' in the **Browser** column of the detailed diagnostics of all tests. This is not the case any longer.
- In previous versions, in a double-byte environment, when a Real User Monitor component was monitored, a few 'non-English' descriptors of the **Cities** and **Regions** tests were displayed in the eG layer model in an unreadable format. This issue has been fixed now.
- Prior to eG version 7.2.4, in environments where a Real User Monitor component was monitored, if a user accessed the configured URL from a specific version (v84) of Chrome browser, the **RUM Transaction Details** page failed to load. This was because, one of the resources on the configured URL reported an abnormal value which could not be processed by the eG agent. Starting with this version, the RUM Transaction Details page will load by ignoring the resource that retuned an abnormal value.
- Prior to eG v7.2.4, in environments where a BTM-enabled Tomcat server was monitored, detailed diagnosis was not reported for the **Java Business Transactions** test even though valid metrics were collected by the eG agent. Also, the detailed diagnostics was not reported when the eG Java BTM jar considered the IP address to be masked (specified when **MASK PRIVATE IP** and **MASK PUBLIC IP** parameters are set to **Yes**) along with the port on which the IP address listened to. These issues have been fixed now.
- Previously, in environments where Java Business Transaction Monitor was enabled on the **Wildfly JBoss** component, slowness was noticed when the applications running on the target Wildfly JBoss server were accessed. This issue happened because, abnormal resource requests were dumped for the /javax.faces.resource/* URL pattern. Starting with this version, upon execution, the test the test will ignore the resource requests of this URL pattern. To this effect, the /javax.faces.resource/* URL pattern has been included by default, in the **EXCLUDED URL PATTERNS** text box available in the test configuration page of the **Java Business Transactions** test.
- Earlier, sometimes, the tests pertaining to the Real User Monitor component did not report metrics. This issue has been fixed now.

2.6 Web and Java Monitoring

- In prior versions, a few irrelevant descriptors were unnecessarily auto discovered by the eG agent for the **JVM Memory Pool Garbage Collections** test and displayed in the eG layer model. Starting with this version, the eG agent has been optimized to discover those descriptors that are relevant to the test alone.
- Earlier, the **Web Service** test of the **Wildfly JBoss component type** did not report metrics. This issue was noticed only in environments where valid user credentials were specified to login to the Web Service i.e., the **WSDL URL** in the **CONFIGURATION OF WEBSERVICE URL** pop up window. This issue has been fixed now.
- Previously, slowness was noticed in environments where Java BTM-enabled **Wildfly JBoss** component was monitored. This was because, static resource requests were continuously made to the configured URL group. Starting with this version, by default, this test does not track those

requests to the URL pattern which causes slowness in the environment.

- In older versions, in some environments, the tests of the **Wildfly Jboss** component type abruptly stopped reporting metrics if the target Wildfly JBoss server was upgraded to the latest version. This is not the case any longer.
- Earlier, in some environments, false alerts were generated for the *Availability* measure of the **IIS Websites** test associated with the **Microsoft IIS Web** component. This issue was noticed only for those FTP sites that were discovered by this test as descriptors. This issue has been fixed now.
- In older versions, the **HTTP** test failed to report metrics when an SSL enabled web page was configured for monitoring. This issue was noticed only when the eG agent used the cURL utility to execute the test. This was because the eG agent failed to consider the Private Key File Path and System Properties configured in the test configuration page. This issue has been fixed now.

2.7 Microsoft Windows and Unix Server Monitoring

- Previously, detailed diagnosis was not reported for the *Recent service crashes* measure pertaining to the **Crash Details** test of the Microsoft Windows component type and the **Crash Details – OS** test mapped to VDI component types even though valid metrics were available in the eG backend database. This issue has been fixed now.
- In older versions, the **System Details** test executing on **Microsoft Windows** failed to discover a few processors (i.e., descriptors) on the target host and hence metrics were not reported for those processors. This issue was noticed only on hosts that contained more than 64 processors. This issue has been fixed now.
- In earlier versions, the **File Status** and **File Changes** test mapped to the **Microsoft Windows** component type reported wrong value for *Is modified?* measure. This is not the case any longer.
- Earlier, the **Network Traffic** test executing on a Linux host failed to report metrics when being monitored in an agentless manner. This issue was noticed soon after the Linux hosts were rebooted in the target environment. This issue has been fixed now.
- In older versions, the **Memory Usage** test executing on a **Solaris** server failed to report the *Physical memory utilized* measure. This issue was noticed in environments where the *Free memory* measure included the cache memory and hence was larger than the *Total memory* measure. To avoid this issue and ensure that the metrics are reported correctly, starting with this version, the *Free memory* measure will not include the cache memory.
- Previously, the **Disk Space** test executing on a **Solaris** server failed to report metrics. This issue was noticed only in some environments where the eG agent could not retrieve metrics from one of the auto-discovered drives (descriptors) that was in a 'hung' state. This issue has been fixed now.
- Earlier, while an **AS400** server was being monitored and metrics were collected by the eG agent, multiple QNPSERVS jobs were created and accumulated on the server with TIMW status. These jobs were not terminated automatically after a certain wait period and hence resulted in serious resource contention on the server. To overcome this issue, starting with this version, the eG agent has been optimized to terminate the jobs with TIMW status automatically when the tests are executed on the server.
- Previously, when a Microsoft Windows component installed on Chinese locale was monitored, false alerts were raised for the Failure audits measure reported by the **Security Log** test. This was because the test wrongly reported all successful audits as security log audits that failed. This issue has been fixed now.

2.8 Microsoft Applications Monitoring

- Previously, the **Data MCU Details** test mapped to the **Microsoft Skype for Business** component

type did not report metrics even though valid data was available in the eG backend database. This issue has been fixed now.

- In older versions, the **Exchange ActiveSync Device Commands**, **Exchange ActiveSync User Agents** and **Exchange ActiveSync Device Errors** tests of the **Microsoft Exchange** component type failed to report metrics. This was because the eG agent failed to parse the log file of the Client Access server, read the ActiveSync related errors/warnings/messages and write them to the Activesynclog.log file by creating the file. This issue has been fixed now.
- In prior versions, the **HTTP Proxy** test mapped to the **Microsoft Exchange** component type did not report metrics. This issue has been fixed now.
- Earlier, the tests pertaining to the **Microsoft SCVMM** component type did not report metrics. This was because the eG agent used outdated Powershell scripts to collect the required metrics and hence failed execution. This issue has been fixed now.
- In previous versions, the **Active Directory Access** test associated with the **Active Directory** component type did not report metrics. This issue was noticed only in environments where an SSL-enabled Active Directory server was monitored. This is not the case any longer.
- Previously, false alerts were raised for the *DNS availability* measure of the **Name Resolutions** test pertaining to the **Active Directory** component type. This issue has been fixed now.
- In older versions, the **Active Directory DFS Replication Backlog** test of the **Active Directory** component type failed to report metrics at random measurement periods. This issue has been fixed now.
- Earlier, the detailed diagnostics of the **Group Policy Details** test pertaining to the **Active Directory** component type took too long time to load. This is not the case any longer.
- Previously, the **Active Directory Users** and **Active Directory Computers** tests associated with the **Active Directory** component type did not report metrics. This issue was noticed only in environments where the cmdlets of Microsoft .NET v3.5 was not enabled. This issue has been fixed now.
- Earlier, the **DHCP Utilization** test associated with the Active Directory component type failed to report metrics. This happened in environments where the *DHCP Server* service was not running on the target DHCP server. To ensure that the test reports valid metrics, starting with this version, the status of the DHCP Server service installed on the target DHCP server is reported.

2.9 Application Server Monitoring

JEUS

- Earlier, in environments where JEUS application server was deployed in an Active-Active cluster setup, performance metrics could not be collected by the eG agent from the secondary node/server. This was because the eG agent was not configured with the details of the secondary node/server in the cluster. Starting with eG v7.2.4, to collect performance metrics from the JEUS application servers in an Active-Active Cluster setup, a **LISTENER ADDRESS** parameter has been included in the test configuration page of the performance tests. Administrators are required to add the JEUS application servers as a separate component with the Management Console IP address and then configure the tests with the **LISTENER ADDRESS** corresponding to each server.
- In previous versions, the tests pertaining to the JEUS application server did not report metrics when a fix pack offered by JEUS was applied on the monitored server. This was because, the version of the monitored server could not be ascertained by the eG agent after the fix pack was applied. This is not the case any longer.
- Previously, the **JEUS Applications** test did not report metrics when the discovered applications did

not contain a *.jsp* page. This is not the case any longer.

- Prior to eG v7.2.4, the **JEUS Server Status** test was wrongly reporting the *Is running?* measure as *Yes* when the JEUS application server was actually down. This issue has been fixed.

Siebel Application

- Previously, when the tests of the **Siebel Application (7.x)** server were executing, multiple processes were spawned on the eG agent which resulted in significant CPU spikes and excessive resource utilization. To address this issue, in eG v7.2.4, command execution for running the tests has been optimized on the eG agent.

2.10 Database Monitoring

Oracle Cluster

- Previously, metrics were not reported for a few temporary tablespaces of the **Oracle RAC Temp Tablespaces** test. This was because the eG agent failed to discover those temporary tablespaces on the target Oracle cluster. This issue has been fixed now.
- In older versions the *Percentage of maximum size used* measure reported by the **Oracle RAC Database Growth** test exceed 100% and hence false alerts were raised. This was because the eG agent wrongly reported an incorrect value for the *Space used in maximum size* measure. This issue has been fixed now.
- Prior to version 7.2.4, the **Oracle RAC Scans** test failed to report metrics. This was because, the query executed by the eG agent to fetch the detailed diagnostics of the *Full table scans* measure took too long to complete. Starting with this version, the query has been optimized to execute faster.
- In prior versions, the **Oracle RAC User Connections** test failed to report metrics. This was because, the query executed by the eG agent to collect metrics took too long to complete. Starting with this version, the query has been optimized to execute faster.
- Previously, false alerts were raised for the *Free space usage* measure of the **Oracle RAC Tablespaces** test. This was because, the *Used size* measure of this test included the space utilized by the recycle bin of the tablespace. Starting with this version, to display an accurate *Free space usage* measure, the *Used space* measure will not include the recycle bin size. To this effect, an additional *Recycle bin size* measure will be reported to assess the current size of the recycle bin.

Microsoft SQL Database Server

- Previously, when the descriptors of the **SQL Applications** and **SQL Session Activity** tests were displayed in the eG layer model, a few junk characters tagged along with certain descriptors which made it harder for the users to recognize those descriptors. Starting with this version, such junk characters will be removed, and the descriptors will be displayed in a readable format.
- Earlier, incorrect values were reported for the *CPU usage*, *CPU usage for I/O* and *CPU idle time* measures of the **SQL Engine** test. This issue has been fixed now.
- In older versions, in some environments, the **Replication Agents** test associated with the **Microsoft SQL** component did not report metrics even though valid metrics were available in the eG backend database. This issue has been fixed now.
- In prior versions, in large environments where a single remote agent monitored multiple Microsoft SQL database instances or Microsoft SQL Clusters, sometimes, whenever a query executed for a longer duration, then, the tests pertaining to all those component types failed to report metrics. To ensure that the metrics for all those components are collected without interruption, starting with this version, the queries have been handled with a timeout period.
- In older versions, the **SQL Long Running Queries** test failed to report the *Avg elapsed time*

measure of those queries that were running for a longer duration on the target database instance. This was because, the test failed to ascertain the exact execution time above which the queries were considered as long running. To ensure that the test reports valid metrics, starting with this version, an **ELAPSED TIME** parameter has been introduced in the test configuration page using which the test can consider the execution time of those queries that were running for over 10 seconds by default.

- Prior to v7.2.4, sudden spikes in bandwidth utilization were noticed on the eG agent while the **SQL Backup Details** test of the Microsoft SQL Cluster component was executed. To maintain the bandwidth utilized by the eG agent within an optimal range, the query used to execute this test has been optimized.
- Previously, in environments where the Microsoft SQL database server was monitored in an agentless manner, the detailed diagnostics was not reported for the *Number of Unused Indexes* measure of the **SQL Unused Indexes** test. This was because, the query executed to fetch the detailed diagnosis took too long to complete. Starting with this version, the query has been optimized to fetch the results faster.
- Earlier, false alerts were generated for the *Recently executed queries* and *Max elapsed time* measures of the **SQL Cached Queries** test executing for the Microsoft SQL on Cloud. This issue has been fixed now.
- In older versions, the Total number of jobs measure of the **SQL Job Details** test reported an incorrect value and a few jobs that were executing on the target database server were not auto discovered as descriptors for the **SQL Job Status** test. This issue was noticed only in environments where administrators externally executed those jobs using Powershell commands on the target database server. To fix this issue, starting with this version, the jobs that are executed using PowerShell commands will be discovered and valid metrics will be reported.

Oracle Database server

- In older versions, in environments where Oracle database servers enabled with Oracle Data Guard was monitored, none of the tests reported metrics at random measurement periods. This issue was noticed whenever one of the standby databases maintained by the Oracle Data Guard was switched over as a production database. During this switchover, multiple threads were spawned to collect metrics and eventually the eG agent hung. To set right this issue, the connections used by the eG agent to fetch metrics from the target database server has been optimized.
- In previous versions, in environments where the target Oracle database instance was installed on a Linux operating system, false alerts were raised for the *Oracle instance availability* measure reported by the **Oracle Instance Status** test. This was because of a case mismatch between the name of the database instance specified while adding the target instance and the name of the database instance. This is not the case any longer.
- Earlier, the **Oracle Archive Area** test stopped reporting metrics soon after the administrators deliberately changed the location of the Oracle archive log file on the target Oracle database server. This issue has been fixed.
- Earlier, the **Oracle Long Running Queries** test failed to report metrics. This was because, the query execution hung while sorting the long running queries obtained as the result set. Starting with this version, the query has been optimized to seamlessly collect metrics.
- In earlier versions, the **Oracle SQL Wait Events** test did not report metrics in environments where the target Oracle instance was being monitored in an agentless manner. This issue has been fixed now.
- Previously, the *SGA usage* measure of the **Oracle SGA** test was incorrectly reported. This issue was noticed in environments where administrators were able to collect valid Total SGA size. This issue

has been fixed now.

- In previous versions, in some environments, the tests pertaining to the **Oracle Database** component did not report metrics. This was because the eG agent was inconsistent in collecting the metrics from the target server. Starting with this version, the eG agent has been optimized to collect metrics consistently from the target Oracle Database servers in all environments.

Maria Database

- Earlier, in some environments, the **Maria Connection Errors**, **Maria Files**, **Maria Locks**, **Maria Execution Statistics**, **Maria Event Stages**, **Maria Event Statements**, **Maria Thread Statistics** and **Maria Wait Events** tests did not report metrics. This was because administrators failed to enable the *performance_schema* parameter on the target Maria Database server. This is not the case any longer.
- Prior to version 7.2.4, when there were no long running queries recorded during a measurement period, the **Maria Long Running Queries** test was not displayed in the eG layer model. Starting with this version, in such a case, the measures for this test will be reported as '0' and hence the test will be retained in the eG layer model.

SAP HANA

- In prior versions, the *Statement count* measure of the **HANA Expensive Statements** test was unusually high and remained constant for more than 3 weeks. This was because, the count of all the expensive statements recorded since the start of the database server was displayed against this measure instead of the number of expensive statements recorded during the current measurement period. This is not the case any longer.

Hadoop

- Prior to v7.2.4, metrics could not be collected from an SSL-enabled Hadoop cluster. This issue has been fixed now.
- Earlier, the tests pertaining to the **Hadoop Data Nodes** layer did not report metrics. This was because data retrieved for those tests could not be parsed when the latest version of Hadoop cluster was being monitored. This issue has been fixed now.

Microsoft Azure SQL

- In prior versions, the eG agent consumed abnormally high CPU while executing the queries to retrieve metrics from the **Azure SQL Unused Indexes** and **Azure SQL Query Plans** tests. Starting with this version, the queries for these tests have been optimized so that the CPU consumption of the eG agent remains optimal.

PostGreSQL

- By default, the *Number of Indexes* measure of the **PostgreSQL Unused Indexes** test reports the number of unused indexes in the target environment. However, in previous versions, eG Enterprise wrongly computed the value of this measure by including a few indexes that were partially used. This issue has been fixed now.

Progress Database

- In previous versions, the **Progress Users** test did not report metrics in environments where the version of the target Progress Database was 11.5 and above. This issue has been fixed now.

MaxDB

- Previously, the **Db Session Cache** test did not report metrics. This hiss has been fixed now.

2.11 Unified Communications Monitoring

Microsoft Office 365

- Earlier, in some environments, the **License Details by Usage** test stopped reporting metrics whenever the data collected by the eG agent could not be inserted into the eG backend database due to length issues. This issue has been fixed now.
- Previously, in some European environments, the **Groups Activity** test did not report metrics. This happened due to improper parsing of the collected data. This issue has been fixed now.
- In previous versions, the **O365 Service Health** test failed during execution and hence metrics were not reported for this test. This issue has been fixed now.
- In previous versions, detailed diagnosis was not reported for a few users discovered as descriptors of the **O365 Users** test. This is not the case any longer.
- In older versions, the detailed diagnosis of the **Security Groups** test mapped to the **Microsoft Office 365** component type reported the same information for all measures. This issue has been fixed in this version.

Microsoft Exchange Online

- Earlier, in some environments, the **Users** test stopped reporting metrics whenever the data collected by the eG agent could not be inserted into the eG backend database due to length issues. This issue has been fixed now.
- In earlier versions, in large environments where mail traffic was high, overheads were noticed on the eG backend database when detailed diagnosis was reported for the tests executed on the target **Microsoft Exchange Online**. To avoid database overheads, starting with this version, **REPORT TOP N DD** and **SHOW N PAGES** parameters to limit the records displayed in the detailed diagnosis.
- Previously, the **Malware Detections** test stopped reporting metrics whenever the eG agent tried to insert a lengthy **FILE NAME** (reported in the detailed diagnostics) into the eG backend database but eventually failed to do so. This issue has been fixed now.
- In older versions, values in many columns of the detailed diagnostics were incorrectly reported for the **Mail Traffic Statistics** test. This issue has been fixed now.
- Previously, a few measures of the **Mail Deliverability** test were reported as '0' in the eG layer model even though valid metrics were available in the eG backend database. This issue has been fixed now.
- In prior versions, the **Users by Outlook Versions** reported '0'as the value for all the metrics even though valid metrics were available in the eG backend database. This issue has been fixed now.
- Earlier, the **User MAPI Connectivity** tests failed to report metrics. This issue has been fixed now.

- **Microsoft SharePoint Online**
  - In older versions, in environments where thousands of users logged into the target Microsoft SharePoint Online, though metrics were promptly reported for the target Microsoft SharePoint Online, abnormal disk space consumption was noticed on the host on which the eG agent was installed. Starting with this version, the eG agent has now been optimized to utilize minimum space on the disk.
  - Previously, the **Site Collections** test failed to report metrics. This issue has been fixed now.
  - Earlier, in some environments, the **SharePoint File operations**, **SharePoint Site Connectivity** and **SharePoint Online Users** tests failed to report metrics. This was because, the O365 Password specified while configuring these tests contained an ampersand (&) symbol. This issue has been fixed

now.

Microsoft OneDrive for Business

- In older versions, the **OneDrive Sites Usage** test failed to report a few metrics such as *Storage used* and *Active sites percent* even though valid metrics were available in the eG backend database. This issue has been fixed now.
- In earlier versions, the **OneDrive File Operations** and **File Activities Summary** tests failed to report metrics. This issue has been fixed now.

Microsoft Teams

- In older versions, the **Audio Streams**, **Video Streams** and **VBBS Streams** tests failed to report metrics even though valid metrics were collected by the eG agent. This issue has been fixed now.
- In previous versions, a few metrics were reported as '0' in the eG layer model for the **Teams Call Quality Check** test even though valid metrics were collected by the eG agent. This issue has been fixed now.
- Earlier, the *Average call duration* measure of the **Calls Summary** test was reported as '0' even though valid metrics were collected by the eG agent. This issue has been fixed now.

Postfix

- In previous versions, in some environments, metrics were not reported for the tests pertaining to the **Postfix** server when monitored in an agentless approach using SSH. To collect relevant metrics from such environments, starting with this version, administrators can set the newly introduced **HIGH SECURITY** flag to **Yes** in the test configuration page.

Salesforce

- Earlier, false alerts were generated for the Instance Status measure of the **Salesforce Instance** test. This was because the eG agent failed to discover the instances available in the target application. To ensure that the eG agent discovers all the instances, starting with this version, an **INSTANCE NAME** parameter has been included in the test configuration page. By default, this parameter is set to *none* indicating that the eG agent automatically discovers all the instances in the target application. To monitor one/more specific instances, administrators can specify a comma-separated list of instances against this parameter.

2.12 SAP Monitoring

- Earlier, the **Instance Connection** test mapped to the **SAP ABAP Instance** component type took a long-time to report metrics in Linux environments. This issue has been fixed now.
- In prior versions, detailed diagnostics were not reported for the *Long running jobs* and *New jobs with start delays* measures of the **ABAP Job Statistics** test pertaining to the **SAP ABAP Instance** component type. This issue has been fixed now.
- In older versions, the **SAP Application Log** test of the **SAP ABAP System** component type disappeared from the layer model during a measurement period whenever log entries were not recorded for the descriptors of the test in the application log. Starting with this version, in such case, the test has been modified to report '0' for all the measures of the *ALL* descriptor.
- In previous versions, the **SAP System status** test pertaining to the **SAP ABAP System** component type reported an incorrect value for *Status* measure. This issue has been fixed now.
- In earlier versions, the **SAP WAS Garbage Collections** test mapped to the **SAP Web Application** component type disappeared from the eG layer model when none of the garbage collection types discovered as descriptors of the test were triggered during a measurement period. Starting with this version, if the garbage collection types were not triggered during a measurement period, the

Collections measure for each garbage collection type will be reported as '0' ensuring that the test does not disappear from the eG layer model.

2.13 Storage Monitoring

- Earlier, unnecessary log entries were recorded in the error log file of the eG agent while the tests associated with the **Pure Storage** component type were executed. This issue was noticed only in environments where the latest Pure Storage REST API was used to collect metrics and the eG agent failed to collect the measures for the *Last_Failed* and *Last_Eva_completed* columns reported as part of the detailed diagnostics of the **Status** measure for the **Pure Storage Drives** test. Starting with this version, if the eG agent is unable to collect those metrics, the corresponding columns in the detailed diagnosis will be marked with a hyphen and the log entries will not be populated.
- Earlier, while monitoring the target IBM Storewize Storage System, for each enclosure slot with NVMe drive, eG Enterprise wrongly reported the *Port1 status* and *Port2 status* measures of the **Storwize Enclosure Slots** test which should not be the case. Starting from eG v7.2.4, these measures will not be reported for such enclosure slots.
- In previous versions, in environments where SSL-enabled HP 3PAR Storage system was monitored, metrics were not reported for all the tests pertaining to the **HP 3PAR Storage** component type. This issue was noticed only in environments where CIM Server of the target storage system was updated to the latest version. To alleviate such issues, starting with this version, the eG agent collects metrics using the **sbliCIMClient.jar** from such environments. To this effect, administrators are required to set the newly introduced JAR flag to **sblim** option in the test configuration page.
- Earlier, the **Volume Performance** test of the **NetApp Cluster** component type was wrongly reporting the *Read latency*, *Write latency* and *Average latency* measures. This has been fixed now.
- In versions prior to eG v7.2.4, the *Average latency*, *Average read latency* and *Average write latency* metrics of the **LUN Performance** test pertaining to the **NetApp Cluster** component type were wrongly reported. This has been fixed now.
- In previous versions, though metrics were collected during all measurement periods for the **FCP Port Performance** test reported for the **NetApp Cluster** component type, the metrics of a few measures remained unchanged in the eG layer model after the first measurement period. This issue has been fixed now.
- Previously, when **EMC Clariion** storage system was being monitored, multiple **NaviSphere CLI** processes were spawned in the background and could not be killed resulting in serious resource consumption and slowness of the eG agent. Hence, metrics could not be collected from such environments. This issue was noticed only in environments where the **Verification Level** was set to *Medium* while installing the **NaviSphere CLI**. This issue has been fixed now.

2.14 Network Elements Monitoring

- Earlier, the **Host Memory** test pertaining to the **F5 BIG-IP Traffic Manager** component type reported an incorrect value for the *Free memory* measure. This issue has been fixed now.
- Previously, the **Fortigate Sensor Details** test pertaining to the **Fortigate Firewall** component type wrongly reported the value of the *Sensor status* measure as *Disabled* even though the sensor was in *Enabled* state. This issue has been fixed now.
- In previous versions, the **Cisco IP SLA Operation Status**, **Cisco IP SLA Operations** and **Cisco IP SLA Operation Types** tests mapped to the **Cisco Nexus Switch** component type did not report metrics. This issue has been fixed now.

- Earlier, a few Trap OIDs were not translated into a readable text while being displayed in the Trap Type column of the detailed diagnosis reported for the *SNMP traps received* measure of the **Network Traps** test pertaining to the **Network Node** component. This has been fixed now.
- Prior to eG v7.2.4, the *Disk status* measure of the **Disks** test executed for the **Data Domain** component type was wrongly reported. This issue was noticed only in environments where multiple disks were mounted in multiple enclosures. This issue has been fixed now.
- Previously, the **UPS Inputs** test associated with **UPS** component type did not report metrics. This issue was noticed in only environments where the eG agent failed to collect one of the metrics reported by this test. This issue has been fixed now.
- Earlier, in some environments, the eG NetFlow Collector intermittently stopped collecting metrics and hence, the tests of the **NetFlow Device** component failed to report metrics consistently. Starting with this version, the eG NetFlow Collector has been optimized to collect metrics consistently.

2.15 Self-Monitoring of eG Agent/eG Manager

- Earlier, in some environments where database partitioning was enabled on the eG backend database, the **eG Database Cleanup** test of the **eG Manager** component type reported incorrect values for the *Total tables that failed cleanup* measure i.e., failed to capture and report the tables on which cleanup failed. Starting with this version, the cleanup process of the eG manager has been optimized to capture the tables that failed cleanup.
- In older versions, the detailed diagnostics of the **eG Manager Error Log** test mapped to the eG Manager component type displayed only the information related to the errors/warnings logged in the *error_log* (available in the **<eG_INSTALL_DIR>/manager/logs** folder). However, many administrators wanted the detailed diagnostics to include the informational messages recorded in the *error_log* file. In this regard, starting with this version, this test has been optimized to display the informational messages too as part of the detailed diagnostics.
- In older versions, in an environment where VMware vSphere ESX servers and VMware vCenter components were monitored, several blocked threads were noticed in the **JVM Threads** test reported by the eG agent. This was because, the threads failed to timeout automatically soon after collecting the metrics from the target VMware vSphere ESX servers and VMware vCenter components and hence created an overhead. Starting with this version, the eG agent has been optimized to automatically close the threads soon after the required metrics are collected.
- Prior to eG version 7.2.4, sometimes, a few tests mapped to the eG manager component type did not report metrics. This issue has been fixed now.

2.16 Optimizations Made to the eG VM Agent/eG Agent

- Previously, in some environments, handle leaks were observed on the eG VM agent. This lead the eG VM agent to be restarted frequently. This issue has been fixed.