Google earth enterprise — Release Notes

This document includes information about new features and issues that were fixed in this release. It also identifies the latest issues that have not been sufficiently resolved in this release and will be addressed in a future release of Google Earth Enterprise.

The latest version is 4.4.1

Upgrade notes

New Features

Changes

Issues Resolved

Known Issues

Upgrade Notes for Version 4.4.1

We have tested the upgrade process to version 4.4.1 from versions 4.4, 4.3, 4.2, 4.1 and 4.0. If you are currently using an older version of Google Earth Enterprise, upgrade to 4.0 before installing 4.4.1.

New Features for Version 4.4.1

Version 4.4.1 is a bug-fix release only. If you are upgrading to 4.4, use this release. Features that were also included in version 4.4:

- **Fusion**. Improved polyline simplification algorithm for more accurate polygon boundaries at lower resolution levels.
- **Portable globe**. Improved cutter infrastructure for upcoming Google Maps Engine compatibility.

Changes in Version 4.4.1

Google Maps Javascript Maps API V3 updated to 3.9.19

As part of the update to Maps API 3.9.x, GEE is phasing in a simplified directory structure. In the new structure, the latest version of Maps API will always reside in `/maps/api`.

The 3.9.x version of Maps API will reside in both `/maps/api` and the version-specific directory `/maps/309`. To upgrade to 3.9.19, change your code to upload from either directory.

To load the new Maps API from the `/maps/api` directory, preface your code with these lines:

```
<script type="text/javascript" src="http://your_gee_server.com/maps/api/bootstrap_loader.js"></script>
<script type="text/javascript" src="http:/your_gee_server.com/maps/api/fusion_map_obj_v3.js"></script>
<script type="text/javascript" src="http://your_gee_server.com/default_map/query?request=Json&var=geeServerDefs"></script>
```

To view or download sample code that loads Maps API 3.9.x, see http://code.google.com/p/gee-samples/source/browse/gee_maps_polyline_sample.html.

Third-party Library Updates

The following third-party package upgrades are included in this release:
- Apache httpd 2.2.23
- Tomcat 6.0.36
- Tomcat connectos 1.2.36
- libattr 2.4.46
- libcap 2.19
- libmng 1.0.10
- libjpeg 6.2

Issues Resolved in Version 4.4.1

Number	Issue	Resolution
7486643	When trying to view `examples/maps/marker.html`, you receive a *Failed (404) Request* for the marker named `marker_sprite.png`. Google Maps Javascript Maps API 3.9 requests `marker_sprite.png` from the `markers2` directory, but it is located inside the `markers` directory.	The missing icon `marker_sprite.png` is now in the correct `markers2` directory.
8070176	The browser plugin fails to load 3D databases (globes) in Internet Explorer.	Fixed in Fusion vector fuse pipeline.
8011878	Missing icons in Maps API: • `maps/apis/icons/cb/mod_cb_scout/cb_scout_sprite_api_003.png` • `maps/apis/icons/maps/apis/icons/szc4.png`	Added missing icons to Maps API.

7959521	When trying to run `geecheck`, some users encounter this error:
	
	`Can't open /opt/google/share/support/geecheck/`
	`fusion_permissions_4_4_0.csv: No such file or directory.`
		To prevent access errors and reduce file clutter, GEE stores version permission information more efficiently.

7288960	On startup, Earth Plugin v6.2.2 loads 3D globes with KML layers, even layers that you didn't select in the **isInitiallyOn** checkbox.	Earth Plugin v6.2.2 no longer loads any KML layers on startup. See Known Issue 8133214 below.
8121867	When loading `default_map`, the browser displays a `jQuery is not defined` error, and some browsers don't render the map.	Fixed in GEE 4.4.1.

Known Issues in Version 4.4.1

Number	Description and workaround
7239735	If libc.so.6 is located in a directory other than /lib, the installer and uninstaller display a message that /lib/libc.so.6 is missing. No known problems are associated. Ignore the message and continue to install or uninstall.
7442639	GEE supports only one field per custom Search tab in EC 6.2 and later. If your Search tab requires multiple fields, use EC 6.1. Future GEE releases will support multiple fields for Search tabs in all versions of EC.
8133214	On startup, EC and in Earth Plugin v6.2.2 doesn't load any KML layers, even the layers that you selected in the **isInitiallyOn** checkbox. After startup, select the parent layer for the KML layer you want to load, and then select the child layer to load it.

New Features for Version 4.4

Fusion

Improved polyline simplification algorithm for more accurate polygon boundaries at lower resolution levels.

Portable globe

Improved cutter infrastructure for upcoming Google Maps Engine compatibility.

Changes in Version 4.4

Google Maps Javascript Maps API V3 updated to 3.9

As part of the update to Maps API 3.9, GEE is phasing in a simplified directory structure. In the new structure, the latest version of Maps API will always reside in `/maps/api`.

The 3.9 version of Maps API will reside in both `/maps/api` and the version-specific directory `/maps/309`. To upgrade to 3.9, change your code to upload from either directory.

To load the new Maps API from the `/maps/api` directory, preface your code with these lines:

```
<script type="text/javascript" src="http://your_gee_server.com/maps/api/bootstrap_loader.js"></script>
<script type="text/javascript" src="http:/your_gee_server.com/maps/api/fusion_map_obj_v3.js"></script>
<script type="text/javascript" src="http://your_gee_server.com/default_map/query?request=Json&var=geeServerDefs"></script>
```

To view or download sample code that loads Maps API 3.9, see http://code.google.com/p/gee-samples/source/browse/gee_maps_polyline_sample.html.

Third-party Library Updates

The following third-party package upgrades are included in this release:

- Apache httpd 2.2.22
- Tomcat 6.0.35
- Tomcat connectos 1.2.36
- libattr 2.4.46
- libcap 2.19
- libmng 1.0.10
- libjpeg 6.2

Issues Resolved in Version 4.4

Number	Issue	Resolution
5969498	Gaps between Collada models when connecting to kh.google.com. No gaps when using other GEE servers.	In Fusion, switched from the Google Earth-defined mean radius to the radius specified by WGS84 to be consistent with kh.google.com and Google Maps Engine.
6400310	Fill color disappears in polygons at certain zoom levels.	Fixed in Fusion vector fuse pipeline.
6342576	The gemodifyvectorresource command returns an error when run with the `--ignore_bad_features` flag.	In Fusion, fixed in gemodifyvectorresource and genewvectorresource.
1255395	Fusion logic internal error when super-sampling terrain in a database build.	In Fusion, switched off terrain super-sampling because this is already performed by the client. Existing databases that contain super-sampling terrain will be rebuilt.
3192536	If there is insufficient space for the installer to make a backup, or if a previous installation failed, the installation of GEE Server fails with the following error: Cannot make a full backup; So exiting installation.	If backup fails during an installation, Fusion displays a "continue" option instead of exiting.

| 7297163 | At certain zoom levels, the 2D map tile generator renders the wrong color for tiles whose pixels are all the same color. | Fixed in Fusion |

Known Issues in Version 4.4

Number	Description and workaround
7239735	If libc.so.6 is located in a directory other than /lib, the installer and uninstaller display a message that /lib/libc.so.6 is missing. No known problems are associated. Ignore the message and continue to install or uninstall.

New Features for Version 4.3

Polygons with Holes support

Fusion's vector processing algorithm has been improved to correctly handle layers with 2D and 2.5D polygons containing 'donuts' or holes in their geometries. Such datasets include many types of common administrative and geographic features such as islands or parks with lakes in the interior, buffer zones, protected areas within certain borders, etc. Previously, inner holes in polygons were filled in with the surrounding top-level polygon when the vector project was built. Now, layers with inner boundaries will render correctly, provided the vector project is rebuilt in 4.3.0.

Recommendations on *Efficient Resolution Levels*

These values appear in the Asset Log, and aid in setting appropriate Visibilty and Max Resolution Levels in the Vector Project.

New checks on polygon geometries

Zero length edges and edges that encompass no area ('spikes') can be removed when this option is set (enabled by default) in a Vector Resource. Best efforts are used on invalid geometries. For example, invalid holes, such as those that extend beyond the containing polygon, are ignored, but the containing polygon is kept.

Optimizations to 2D Maps Cutter

Cutter performance is noticeably improved with 2D Maps, especially in areas where the imagery is non-uniform. The speed increase corresponds to more compact glm sizes.

Mercator map support for Portable Cutter and Server

Mercator 2D Maps may now be cut from the Cutter UI, and the resulting glm files served from Portable Server.

Multi-polygon support for Portable Cutter

The Cutter now interprets mutiple polygons (corresponding to different regions of interest) within the KML. You can make use of this through the Cutter UI by pasting in KML containing multiple polygons.

Advanced Cutter Page

An alternate cutter UI is available with additional globe-cutting options, namely *Polygon Resolution*. This setting is useful when using large polygons; e.g. use 12 for a country-sized polygon and 18 for a city-sized polygon.

Integration of Python Imaging Library (PIL) in Portable Server

This open-source library adds image processing capabilities to Portable Server. Code samples are available. For documentation, refer to: http://www.pythonware.com/products/pil/.

***Draw as Roads* option in Map Layers**

Provides additional styling options for representing road data, similar to those available in Vector Projects.

Improved label placement in 2D Maps

Extraneous labels are removed along some sub-paths.

Changes in Version 4.3

Google Maps Javascript Maps API V3 updated to 3.6.11

Third Party Library Updates

The following third-party package upgrades are included in this release:

- Apache httpd 2.2.21
- Tomcat 6.0.33
- libcurl 7.22.0

Issues Resolved in Version 4.3

Number	Issue	Resolution
3045489	Failed build of Mercator resources spanning anti-meridian	Fixed in Fusion Pro
3130612	Console mode Fusion installer checks for X11 and fails to proceed when X11 is not configured	Fixed in Fusion Pro Installer
4558999	Google Imagery was not being rendered in Mercator Map Database (V3)	Fixed Mercator Map Databases when *Use Google Geo Database* box is checked and /opt/google/gehttpd/htdocs/maps/maps_google.html is loaded
5330291	Flat Map Database builds (gemaptilegen) fail in some cases with Segmentation Fault (Signal 11)	Fixed in Fusion Pro
5796464	Missing virtual servers in Cutter UI	Fixed in GEE Server
5949165	Zero line widths were not rendered in 2D Maps	Fixed in Fusion Pro
6031085	Vector layers are clamped to ground even if Absolute elevation mode is selected	Fixed in Fusion Pro
6045934	Some point data disappears at different zoom levels in Mercator 2D Maps	Fixed in Fusion Pro

Known Issues in Version 4.3

Number	Description and workaround
3192536	In some cases, installation of GEE Server fails with following error: *Cannot make a full backup; So exiting installation.* This can occur if: 1. There is insufficient space for the installer to make a backup of /opt/google/gehttpd in /var/opt/google/fusion-backups 2. A previous installation failed The workaround is: (1) ensure there is enough space for the backup, and (2) uninstall the current GEE Server, re-run the 4.3 installer, and accept option #2 *(Continue)* to allow the installation to proceed.

New Features in Version 4.2

Support for serving glbs via Earth Server

A new Apache module has been added that can serve glbs. Please contact Google Enterprise Support for more information on using this feature.

Improved Installer for Windows Portable Server

The Windows Portable Server installer supports more options for admin and non-admin installations.

Changes in Version 4.2

Third Party Library Updates

The following third party package upgrades are included in this release:

- Apache HTTPD 2.2.20
- libcurl 7.21.6
- libtiff 3.9.5
- Mesalib 7.5.1
- openldap 2.4.23
- openssl 0.9.8r

Updated Portable Servers for Large Glbs

The Portable Server solution is extended to support very large glbs, which were previously limited to about 2 billion packets.

Improved KML/KMZ Vector Ingest

KML ingest better supports ingesting of vectors with or without elevation data. It also improves support of KMZ ingestion.

Updated Google Earth Plugin Loader

The loader javascript that is compatible with the latest version of Google Earth Plugin was added.

Issues Resolved in Version 4.2

Number	Issue	Resolution
5090716	Portable was not serving all tiles in very large glbs.	This issue has been fixed in the Mac and Windows Portable servers.
5069896	Search results not displaying correctly in IE.	Changed the float rules to be more compatible with IE.
4986868	Maps from glm failing to load in IE.	Fixed json so that map loads properly for served glms.
4101017	Missing Maps API v3 javascript libraries.	We reintroduced kml.js, onion.js, and overlay.js
3368789	Fusion fails to ingest vectors from KMZ files.	This issue has been fixed in Fusion.

New Features in Version 4.1

2D Map Cutting and 2D Map Portable Serving

The Portable Server solution is extended to support 2D maps. Maps can be cut from the same interface as globes; the resulting map is saved to a `.glm` file, which can be served by a portable server and is displayed using the Google Maps API v3.

> **Note:** Cutting of Mercator maps is not yet supported.

Changes in Version 4.1

Maps API v3

2D map tiles that are built and published on the Earth Server can now be accessed using the Google Maps API v3, allowing developers to leverage the additional v3 features for their Maps applications. The Portable Server also now uses v3 to display 2D maps.

The Google Maps API v2 is deprecated, but is currently still supported. Maps API v2 and v3 documentation is included with the Fusion installation media.

Improved Search Options in the Portable Server

Search services in the Portable Server can be extended beyond POI search by writing custom scripts in Python that are loaded when the server is started. Examples and base classes are provided to minimize the effort needed to introduce new search functionality.

A custom Python web server handler can also be added to the Portable Server. This enables dynamic web serving capabilities, without the need for a separate web server.

Known Issues in Version 4.1

Disconnected publishing

A resolution for disconnected publishing data duplication, first found in GEE version 4.0, is not yet available. Please see [Known Issues in Version 4.0](#) for more information.

Changes in Version 4.0

Globe Publishing Simplification

Globe publishing with 4.0 has been simplified. It is now possible to mix disconnected and HTTP globe publishing, and as a result `gedisconnectedreceive` and `gedisconnectedpublish` are deprecated.

Third-Party Library Upgrades

Third-party libraries have been updated to the latest stable versions.

New Features in Version 4.0

Portable Earth Globes and Server

Portable globes are cut from a full database, and contain information about a polygon-defined 'region of interest.' The Google Earth Enterprise globe cutter tool extracts the vector, terrain, and imagery information, as well as data for search tabs, and creates a single `.glb` file that can be viewed on a local machine without access to the network. The Portable Earth Server is available for Windows and Mas OS X machines.

The portable globe can also be shared with others on the same local-area network and secured with a shared key.

Polygon-based Imagery Masking

`gepolymaskgen` is a new command-line tool for imagery mask generation. It accepts KML polygons, GeoTIFFs, and `.shp` files for customization of masks.

Android Google Earth Client

An Android Google Earth Client with support for Earth Server databases has been developed.

BBOX-based Globe Creation

On globe creation, boundary restrictions can be used to limit the resulting size and coverage of the globe, and decrease the processing time required to create it. These restrictions can be specified at the command line or from within the Fusion UI.

Parallelized `geraster2kml`

An example implementation of using multiple CPUs for a faster `geraster2kml` is being released in GEE 4.0 as a sample Perl script.

Issues Resolved in Version 4.0

Number	Issue	Resolution
1037761	Google Earth client was over-simplifying polygons at some zoom levels; polygons appearing as triangles, or not at all.	These issues have been fixed.
2500947	The `--srs` option was not being recognized by `gerasterimport` and `gevirtualraster`.	
2375552	Cleaning a Mercator project forced rebuild of unchanged assets.	

1973774	`gedisconnectedsend` was unable to create disconnected databases for 2D Mercator databases.	
2524507	`gevectorfuse` failed with a 'signal 11' error for vector labels visible in a single zoom level.	
2314098	The `genewimageryproject` command added a `.kiproject` extension to Mercator project.	
2154573	`geaddtoimageryproject` and `geaddtoterrainproject` required a project (`.kiproject`) extension.	
1962424	The help text displayed by `gedropfrommapproject --help` was incorrect.	The help text has been updated.
936927	The 'Powered by Google' icon did not link to the correct page.	The link has been disabled.
2153279	Unable to import GML files due to a bug in GDAL 1.6.1.	The version of GDAL bundled with Google Earth Enterprise has been updated to 1.7.2.
1990954	The Server uninstaller deleted all files and directories under `/opt/google` (even those not related to Fusion or Server).	The uninstaller no longer uninstalls unrelated files.
1987164	The Fusion uninstaller could be run by non-root users.	Access to the uninstaller is restricted to root only.
2378064	The default installation options were overwritten with the values from the previous installation.	These issues have been fixed.
2553875	Uninstaller was deleting contents of `/etc/init.d` on Red Hat Enterprise Linux 5.3, and deleting the `/etc/init.d` directory itself on CentOS 5.2.	
2462160	Uninstaller was not removing all Google Earth Enterprise-related files.	
2596150	"No locales file found" error message was appearing for all publishes without multiple locales.	The error message has been removed at the default notification level. It will still appear at the debug or higher notification levels.
2886533	A security vulnerability was discovered in Apache httpd 2.2.9 through 2.2.15.	The version of Apache httpd bundled with Google Earth Enterprise has been updated to 2.2.16.

Known Issues in Version 4.0

Number	Description and workaround
	Disconnected publishing advisory *Customers who work extensively with multi-terabyte disconnected databases, disconnected publishing, and load-balanced GEE Server systems are encouraged to review the following advisory prior to upgrading to GEE version 4.0.0. Customers who only work with over-the-wire publishes between Fusion Pro and Server may safely skip this message.*ect The disconnected publishing architecture and workflow was changed in version 4.0.0 to streamline the publishing process, including removing the need for a "mock asset root" and including the ability to specify the name of the Fusion system that built the globe. This new disconnected publishing architecture makes it possible to store the disconnected database anywhere on local or external storage for the disconnected GEE Server to read during publishes. A bug was discovered in the GEE version 4.0.0 disconnected publishing workflow which copies each disconnected database into the publish root when both the publish root and disconnected databases are on the same volume or mount point. Systems which store the publish root and

	disconnected databases on separate volumes will not encounter this publish error. Customers with large, multi-terabyte disconnected databases for disconnected GEE Servers -- whether for individual GEE Servers or multiple GEE Servers in a load-balanced serving configuration -- will be the most adversely affected by this scenario. Customers hosting disconnected databases and publish roots on separate volumes (ex: `/gevol` and `/data`) can proceed with upgrading to GEE version 4.0.0. Customers hosting disconnected databases and publish roots on the same volume (ex: `/gevol`) are encouraged to contact Google Enterprise Support to discuss best practices for publishing the databases prior to upgrading to GEE version 4.0.0.
2320165	Filled polygons with a specific Draw Level and which include a Label are displaying multiple labels at certain zoom levels. This is because of overlap between the coarse and fine polygon rendering at different levels. To avoid this problem with labeled polygons, use the following workaround: 1. Export your display rule for the polygons. 2. Create a layer group with the same name as the original single layer. 3. Add the same vector to the layer group, twice. 4. For the first vector, import the display rule and deselect the **Draw Label** checkbox. 5. For the second vector, import the display rule and select **Draw Features as Points**.

Changes in Version 3.2

The following important changes have been made to Google Earth Enterprise Fusion and Server, version 3.2:

- Google Earth Enterprise Fusion and Server are now 64-bit only.
- Additional Asset name restrictions are now included in Fusion, version 3.2:
  - Certain characters in Fusion asset names caused problems with the Publisher and Server. Fusion 3.2 prevents the creation and use of assets with invalid characters in their names.
  - The following characters are no longer allowed in Fusion asset names: & % ' \ " * = + ~ ` ? < > : ; and the space character.
  - If any assets have a name containing any of the characters mentioned previously, rename the asset (and path) to a valid name that does not include and of those characters. This requires you to rebuild the assets, as well as the projects and databases that contain them.
  - The Fusion 3.2 installer checks the current asset root (if any) to detect, and subsequently warn, if invalid asset names exists before installation will continue.
  - In cases where creating new copies of the assets requires too much effort or expensive rebuilding of resources, a script is available from Google Earth Enterprise Support that will rename the assets automatically. This script requires using great care, and that is why it is not run automatically.

New Features in Version 3.2

This version includes the following new features and enhancements:

New Features

Mercator Maps Imagery Support

- With Fusion, version 3.2, you can create imagery layers for Maps in the Mercator projection, that is compatible with map layers from maps.google.com. When creating maps you have the following choices:
  - Mercator Map
    - Includes Google Maps Layers, and uses the Maps API JavaScript from google.com.
    - Local Mode that uses the local copy of Maps API JavaScript and has no communication to google.com.

  - Flat Projection Map (local mode) that uses the local copy of Maps API JavaScript and has no communication to google.com.

    Note: The Flat Projection Map is not compatible with the maps.google.com layers that are in the Mercator projection. The Flat Projection Map is useful since the imagery layers for Google Earth and Maps can share the same database if a Flat Projection Map is used, while a Mercator Map and Earth DB require separate copies of the imagery to work side-

by-side.

- To support Mercator Maps Imagery, the following new asset types have been added:

  - Mercator Imagery Resource
  - Mercator Imagery Project
  - Mercator Map Database.

- In the Fusion Asset Manager UI, you can select a workflow mode that shows only the toolbar buttons appropriate for the assets, projects, databases you are manipulating. Your can choose:
  - Earth
  - Mercator Map
  - Flat Projection Map

- To create Mercator maps, you must create Mercator Imagery resources and a Mercator Imagery project. If you are supporting both Google Earth and Mercator Maps databases, this will roughly double your imagery file size, as the Mercator and Flat projectiopn imagery are completely separate copies.
- The command line tools for map resources/projects/databases have been updated so the entire process can be created from the command line.

Historical Imagery Support

- With Google Earth, version 5.0, you can browse imagery over time, using a date slider control.
- Google Earth Enterprise, version 3.2 now supports the creation and displaying of historical imagery that works just as the Google Earth 5.0 historical imagery. To create an imagery layer that supports historical imagery, you need to:
- Include an Acquisition Date in all imagery resources. See the Imagery Acquisition Date feature description, for more details on date formats.
- Open your imagery project and check the Support Historical Imagery check box.
- Rebuild your imagery project.

- Some build and storage overhead exists with using historical imagery, but it is related to how many copies you have of the tiles for the various dates that are supported (for example, if you have the whole world imaged for two dates, you will have double the imagery data).
- The base imagery resource of the project (regardless of acquisition date) does not show up in the browsable date list.
- The Fusion command line tools have been updated to support historical imagery:
- genewimageryproject, geaddtoimageryproject, gemodifyimageryproject now support the following options:
  - --historical_imagery, --no_historical_imagery
  - genewimageryproject: default is no historical imagery.
  - geaddtoimageryproject: if either --historical_imagery or --no_historical_imagery are specified then the project is changed, otherwise the project is left as is.
  - gemodifyimageryproject: defaults to no historical imagery. The value is reset unless --historical_imagery is specified.

Google Earth Plug-in Support

- Google Earth Enterprise supports the Google Earth plug-in and its APIs.
- The Google Earth Plug-in (code.google.com/apis/earth) now supports connecting to non-Google databases.

  > **NOTE:** When upgrading databases to use the Google Earth Plugin API and Maps API be aware that in version 3.2, Fusion and Server now use JSON requests for browser-based Earth and Maps support. In order to use these, the database needs to be rebuilt and published. If the database is otherwise up-to-date, this rebuild will be minimal (simply copying a few files into place for the publisher). If you are simply using the Earth Client for viewing the database, then there's no need for a rebuild.

- Google Earth Enterprise 3.2 adds out-of-the box support for the Google Earth plug-in and includes the example /opt/google/gehttpd/earth/earth_local.html. By default, virtual servers point to earth_local.html when accessed through a web browser. For older virtual servers, you might need to modify the default_ge.location file to point to the HTML file (See the /opt/google/share/gehttpd/examples/default_ge.location for examples).
- Google Earth (and Maps) databases now respond to the following requests with JSON, that can be used by JavaScript web or other applications:
  - http://localhost/default_ge/query?request=Json
  - A variation of the JSON request (adding a variable name) for example: http://localhost/default_ge/query?request=Json&var=myVarName

    creates an equivalent JSON object assigned to a global variable named "myVarName". This request is then loaded as a JavaScript file that automatically assigns the JSON object to the variable. This is more flexible than pure JSON because you can load the JavaScript request from a server other than the host of the HTML (for example, if the static html/javascript code is hosted on a server other than the GEE Server).

    This is a summary of the database info (server, search tabs, authentication) needed to bootstrap the plug-in JavaScript.

- All JavaScript utilities used by the example earth_local.html file are installed in: /opt/google/gehttpd/htdocs/js

  This JavaScript is shared by the new Maps example HTML also. The two main JavaScript files are:
  - fusion_earthplugin.js
  - fusion_maps.js

 These two files contain the code that differs between the Earth and Maps APIs.

- The example application displays a default error page if the Plug-in fails to load. This error page will redirect to:

     /opt/google/gehttpd/htdocs/earth/error.html, which you can customize.

       This page links to /opt/google/gehttpd/htdocs/earth/plugin/install.html that links to the two latest installers you should copy to your /opt/google/gehttpd/htdocs/earth/plugin directory and rename as follows:

         - /opt/google/gehttpd/htdocs/earth/plugin/GoogleEarth-Mac-Plugin-Latest.dmg
         - /opt/google/gehttpd/htdocs/earth/plugin/GoogleEarth-Windows-Plugin-Latest.msi

       You can define as many tabs as you want for a Google Earth Database. The Google Earth client will only see the first three, but the Google Earth Plug-in example page will see all of them.

    Note: if you have KML Layers inside Fusion Layer folders, the example application checkboxes on the folders and KML layers behave unexpectedly in some instances. The unexpected behavior is that clicking the folder checkbox will enable a different copy of the KML layer than when checking the checkbox for the KML layer itself. This is **known issue** with the Earth Plug-in API that will be fixed in a future release.

Fusion Maps Updates
- Google Maps API has been upgraded to 2.140.
- The sample Maps HTML and JavaScript has gone through a major revision to share as much code as possible between the Google Maps API and Google Earth Plug-in API examples.
- All HTTP requests from the local Maps API that route to google.com have been removed.
- Four example HTML files are installed in /opt/google/gehttpd/htdocs/maps: maps_local.html, maps_google.html, example_local.html, and example_google.html.
- By default, Maps virtual servers will respond with maps_local.html (was fusionmaps_local.html previously). You need to edit /opt/google/gehttpd/conf.d/virtual_servers/default_map.location to redirect the server to another html file.

> **Note**: These do not use LayerDefs/SearchTabs requests that are still supported by the server but considered deprecated. This information is now accessible through a query? request=Json request that is usable with both Google Earth and Maps databases and can be used for other applications like Google Flash Maps API pages.

- You can now publish Mercator Imagery layer with Google Layers. A clickable button will appear on the map to allow you to toggle the base layer to your imagery layer.
- The maps example JavaScript has example code (that is commented out by default) for creating a simple control to adjust the opacity of a Fusion Map layer.
- The search functionality in the JavaScript is improved and can be extended via javascript to add additional tabs/functionality.

Zoomable Maps Support

- When zooming in on maps from a Google Earth Enterprise Server, the server will fill in imagery tiles beyond the max zoom level of the existing imagery database. You no longer see empty grey tiles when the Google Earth Enterprise Imagery layer is the base layer.
- This feature can also be used with a script to emulate WMS support for imagery layers. Contact Google Earth Enterprise support for this script.

Improved Google Earth Vector Display Rules

- Vector Display Rules for Lines/Roads/Polygons includes a "Max Resolution Level" setting. This setting caps the level at which vector packets are built for a particular display rule.

  For example, if you want to see Roads to level 24, set the "End Level" to 24 and "Max Resolution Level" to 18. This builds the roads at level 18, but those roads are visible down to level 24 (the maximum level displayed in the Google Earth Client). "Max Resolution Level" defaults to 18 because beyond level 18, the number of packets and subsequent build time and database size quickly become unwieldy. If you set the "Max Resolution Level" beyond 18, monitor the vector fuse build to determine how many packets will be built and how long this will take. A warning message is displayed if you try to set both "Max Resolution Level" and the max visibility level to greater than 18.

Imagery Acquisition Dates Support

- Imagery Acquisition Date is now visible in the Google Earth Client when hovering the cursor over a tile. This requires that the imagery resource has acquisition dates recorded with it (see the imagery resource dialog) AND will require a rebuild of the imagery project (since for this feature the date needs to be encoded in the jpeg tiles).
- Imagery and Vector Resource dialogs now support an improved acquistion date format:

  - unspecified days and months are now supported, for example:
    - 2008-01-00 indicates January 2008
    - 2008-00-00 indicates 2008
    - 0000-00-00 indicates undefined.
    - Leading 0's are not necessary in specifying dates.

  - The tab order of the controls in this dialog was fixed as part of this update.

Layer Group Properties Support

- Layer Group Properties exposes a checkbox to make a Layer Group folder expandable (default) or not. This can be used to group layers and make them appear as a single layer in the client.
- Layer Properties and Layer Group Properties expose "Required Client Version" as a property. This property is optional and can be used to indicate specific versions of Google Earth that the layer will support. For example:

"5.0.11733" indicates that the layer is included if the Google Earth client version is 5.0.11733 or newer.

- "5.0.11733-4.0.2291" indicates that the layer is included if the Google Earth client version is between versions 4.0.2291 and 5.0.11733.
- "-4.0.2291" indicates to exclude the layer if the Google Earth client version is 4.0.2291 or earlier.

Custom Co-branded Logos Support

- Support for custom co-branded logos has been added to DbRoot Snippet Manager:
- Enter a directive like below directly into the dbRoot template:

> <etStruct> [export.cobrandInfo] {
> <etCobrandInfo> [top-center] {
> "http://demo2.keyhole.com/icons/earth-enterprise-logo-http1.jpg" 0.5 0.95 true true top-center 0.25
> }

Other New Features

- Previews of polygon fill
- Polygon labeling has been greatly improved. Labels/icons in non-convex polygons will now appear inside the polygon.
- User can now specify "No Data" values for imagery resources.
- Publish dialog remembers the most recent virtual server used for that database and selects that server by default.
- Fusion Map layers now support:
  - Feature Duplication
  - Empty Layers
  - Thematic Filter

- Restart option now available in /etc/init.d/gefusion.

Package Upgrade Support

The following package upgrades are included in this release:
- Apache HTTPD 2.2.11
- Apache Tomcat Connectors 1.2.27
- gdal 1.6.1
- libcurl 7.19.3
- libjs 1.7 and Firefox libjs support to 2.0.0.20
- openldap 2.4.11
- openssl 0.9.8j
- xerces 3.0.1
- Google Maps API 2.140

Issues Resolved in Version 3.2

The following issues have been addressed and fixed in this release:

Number	Issue	Resolution

1001461	Need a comprehensive document about Task rules and examples of how and when to use them.	README.txt doc and examples of each task added and installed in /opt/google/share/taskrules.
1407034	A gemaptilegen error occurs when trying to create a map layer.	This issue has been fixed in this version and an appropriate error message displays. An allow empty layer check box is available for each layer to ensure that the layer is processed correctly.
1492487	Need instrumentation for Fusion log files.	• Added system performance statistics in the Fusion logs. • Added logging of input and output file sizes (to give the an approximation of thedata sizes being processed) for the majority of data intensive Fusion worker executables.
1630313	Include updated geecheck script in installer,	The geecheck script is now available in /opt/google/share/support/geecheck.pl.
1637371	2D gemaptilegen failure with command exits with non-zero status 255 error message.	The root cause was a parallelization issue. This issue has been fixed in this version.
1638263	Preserve custom settings in fontlist are not saved during Fusion upgrades.	This issue has been fixed in this version and the custom setting are saved.
1462286	A Google Earth Enterprise Server installation error occurs. (Out of Memory Error)	This issue has been fixed in this version.
1582131	An error occurs with genewimageryresource when user tries to create resources from pre-processed imagery files.	This issue has been fixed in this version.
1455729	The gemaptilegen process is unresponsive after long period of time.	This issue has been fixed in this version.
1650974	An error occurs indicating the uninstall for Fusion and Google Earth Enterprise Server was not completed successfully, even though all files and directories were removed.	This issue has been fixed in this version. Root cause was a Java parameter issue.
1336303	Add *allow feature duplication* function to 2D Map layers.	A new user interface feature has been added that allows feature duplication.
1673173	Add *allow empty layer* check box in Fusion Map layers.	A new user interface feature has been added that allows empty Fusion Map layers.
1688669	Need support for thematic filters in Fusion Map layers.	Fusion Maps layers support for thematic filters is now supported..
1691255	Preview in Fusion does not	This issue has been fixed in this version.

	render polygon fill.	
1587251	Point labels do not center in small polygons.	This issue has been fixed in this version.
1705221	Deprecated options included in gerasterimport --help menu.	These options have been removed from this version.
1705199	Need restart option for the /etc/init.d/gefusion script.	This option has been added in this version.
1724942	A NoData value for imagery resources is not supported.	The Imagery Resource dialog has been updated in this version and the user can enter a NoData value for the mask (have mask) option. Only one range/value is used.
1796853	Publish dialog does not remember previously published server.	The last publish dialog is now remembered ans automatically selects this database when opening.
1750400	Google Earth Enterprise Server error occurs during remote installation.	This issue has been fixed in this version.
1812855	Need to update GSA hostname in the GSA Plug-in default settings.	The GSA hostname has been updated to gsa15.enterprisedemo-google.com in the GSA Plug-in default settings.
1492412	The sample maps file, Example_Local, directs users incorrectly to the example_google page.	This issue has been fixed in this version.
1643219	An error displays when a user clicks the Google icon in the fusionmaps_local.html example.	This issue has been fixed in this version and the terms of use link also directs users to a local page.
1364954	Layers in Fusion Maps get reordered if toggled in bottom to top order.	This issue has been fixed in this version.
1410169	Disable Google Maps API calls that direct to google.com domain.	This issue has been fixed in this version.
913170 **884142**	Gray tiles appear when displaying 2D maps at high zoom levels. "No imagery available at this zoom" error appears on tiles when user is zoomed in too closely.	These issues have been fixed in this version with the new zoomable maps feature. When possible, empty tiles are filled in using parent tile imagery.
1638610	LayerDefs output JavaScript instead of JSON.	This isue has been fixed in this version. Both Google Earth and Maps databases provide JSON and JavaScript queries that return the database and layer information needed to initialize the Earth and Maps API's. These queries are made with a simple form that can be used by other applications, such as a Google Flash Maps API application. For more details, see the new feature information for Google Earth Plug-in API support.
847253	Publisher needs to respect	This issue has been fixed in this version.

Number	Description	Resolution
	additional query parameters in the Search tab when the plug-in type is set to URL.	
1579992	2D POI search does not show changed tab label or search field label in published map.	Altering the search tab properties in 2D map project will display the edits in the 2D-browser-based maps when they are published.
1182281	Special characters can be used in Resource, MapLayer, Project, and Database names and this causes problems with the Fusion Publisher.	Fusion no longer allows the graphical user interface or batch commands to accept invalid asset names. The following special characters are not allowed: & % ' \ " * = + ~ ` ? < > : ; and the space character
1847903	Snap to level feature is not working in Fusion interface.	Snap-o-zoom level mode now keeps the zoom level in the preview window at integral intervals(0...24).
1709534	Gracefully ignore the 4th band of RGBA impagery during import.	This issue has been fixed in this version.
825923	Process single band panchromatic source as single band imagery asset.	Prior to version 3.2, when single band images were imported, they took three times the disk space (and computation time) to ingest. In this version, single band imagery is stored as one band rather than wasting the processing and disk space to store the band three times.
1909490	The fill tolerance option (of Mosaic Options) specified in Imagery Resource is not being respected.	This issue has been fixed in this version.
1913235	Fusion icon dialog displays icons in random order.	The icon dialog now displays icons in sorted, alphabetic order.
826044	Fusion confuses line .shp files for polygons and points and subsequently, fails.	This issue has been fixed in this version.
1914430	The title in the main Fusion window shows "host=" with no host	This issue has been fixed and users can now specifiy the FUSION_HOSTNAME env variable to override the system hostname displayed in the main window title.
1914460	Modify vector pop-up balloon configuration and hide directions by default	In the Display Rules Configuration dialog, the user previously chose from Default, Basic, and Advanced. This has been simplified to Default and Advanced, where Default includes the same behavior as Basic in the previous version.
1948808	Fix Search servlets to filter requests for XSS attacks.	In GEE Fusion 3.1.1 and earlier, our search plugin when used with a Maps page was vulnerable to XSS (Cross Site Scripting) attacks. This vulnerability is now removed in 3.2.

Known Issues in Version 3.2

The following issues have not been addressed in this release:

Number	Description	Resolution
	When upgrading a terrain database from 2.4.x	After successfully building this project in 3.2, the

	and 3.0.X, users will need to make sure the terrain project contains at least one terrain resource with worldwide coverage.	worldwide terrain resource may be removed and the project can be rebuilt without a worldwide terrain resource from then on.
1460315	If you upgrade a 3.1.1 database with invalid asset names, attempts to build these assets may fail. See the note on strict enforcement of legal asset names in Fusion in the Changes in Version 3.2 section above.	Run the scripts in console mode with an input file such as: ./InstallGEServer.sh < /tmp/prompt_server.txt where prompt_server.txt contains a line for each prompt in the Console version of the installer with \n for return or text as requested. Contact Google Earth Enterprise Support for an example.
1549799	If you upgrade a 3.1.1 database with invaliid assets names, attempts to publish with these assets may fail. See the note on strict enforcement of legal asset names in Fusion in the Changes in Version 3.2 section above.	Run the scripts in console mode with an input file such as: ./InstallGEServer.sh < /tmp/prompt_server.txt where prompt_server.txt contains a line for each prompt in the Console version of the installer with \n for return or text as requested. Contact Google Earth Enterprise Support for an example.
1650974	An uninstall message erroneously reports that Google Earth Entperise was not completely uninstalled. The Fusion 3.2 uninstaller displays following message after uninstallation is completed: Uninstallation Completed ----------------------- The uninstallation was not completed. The backup configuration files are located in: /var/opt/google/fusion-backups/20090212.083613	This is an InstallAnywhere tool issue and this message can be ignored. If Fusion and Fusion Server are both installed on the same machine, and **if you uninstall one, you need to reinstall the other**, as there are some shared files and the uninstaller does not currently enforce keeping those files.
1772769	GML import is not stable because of a bug in GDAL 1.6.1. **Note**: This issue does not exist in the version of GDAL used in Fusion 3.1.1.	Use GDAL 1.5.X to convert GML to some other format for importing into Fusion 3.2.

New Features in Version 3.1.1

This version includes the following new performance enhancements:

New Features

- gevectorquery is now 25% faster.
- gemaptilegen is now 2 times faster.
- Map tile .PNG file's are now 40% smaller on average.
- gecombineterrain will run from 2 to 10 times faster than version 3.1.0. It does so by taking advantage of multiple CPU cores on a machine and optimizing I/O bandwidth usage. To take advantage of this you will need to create a task rule file and place it in your asset root config directory, for example,

/gevol/assets/.config/CombinedTerrain.taskrule
which specifies the min and max number of CPUs to use for this process. For a quad core machine, the following is recommended:

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<TaskRule>
<taskname>CombinedTerrain</taskname>
<inputConstraints/>
<outputConstraints/>
<cpuConstraint>
<minNumCPU>2</minNumCPU>
<maxNumCPU>4</maxNumCPU>
</cpuConstraint>
</TaskRule>
```

Issues Resolved in Version 3.1.1

The following issues have been addressed and fixed in this release:

Number	Issue	Resolution
1421077	Google Earth Enterprise Fusion and Server are not added to start up daemon list on Goobuntu. Fusion failure to be added on RedHat, version 5. • Once installed, the /etc/init.d/gefusion and /etc/init.d/geserver are not properly added to the system init lists (bootup daemon list) on Ubuntu OS machines. It was reported that gefusion was not added properly for RedHat 5, while geserver was added.	The gefusion and geserver daemons are now added to the system init lists for all supported operating systems when installed.
1420618	• geserveradmin command needs extra libraries when installed as geserver only (no gefusion present on the system) • When installing GEE Fusion Server only (i.e., no GEE Fusion), geserveradmin was installed while a few libraries it depends on were not installed. Thus making geserveradmin unusable on a server only machine.	geserveradmin is now installed with its dependencies so that is usable on a server only machine.
1410939	• Add Search tab in Fusion might cause a system error.	Fix is in progress
1409030	• When creating map tiles using non-English characters, the map tiles render solid blocks rather than the correct non-English characters.	Fix is in progress
1407034	• For large vector maps projects, gemaptilegen occasionally cause a system error.	Fix is in progress
1394532	• Fusion timer is not always correct • Fusion's internal timing mechanism (used for predicting time remaining, and so on) does not accurately account for power saving feature found on modern CPUs. This would	The timer is now accurate regardless of power saving behavior.

	randomly increase the computed times within Fusion, sometimes by up to 50%.	
1393454	• Fusion fails to run on Ubuntu 8.04 because of the use of **dash,** as the default shell instead of **bash**.	Fusion command scripts have been revised to use **bash** explicitly.
1389593	• Some customers reported their gecombineterrain builds taking several days and up to weeks for large projects.	gecombineterrain has been reimplemented to better manage I/O and to take advantage of multiple processors, resultiing in up to 10 times improvement in build times.
1306219	• When given an especially large vector data set, the gevectorquery would sometimes crash after exhausting memory.	gevectorquery will now run in a limited footprint and should not crash.

Known Issues in Version 3.1.1

The following issues have not been addressed in this release:

Description
When upgrading a terrain database from 3.0.X, users will need to make sure the terrain project contains at least one terrain resource with worldwide coverage. After successfully building this project in 3.1.1, the worldwide terrain resource may be removed and the project can be rebuilt without a worldwide terrain resource from then on.

New Features in Version 3.1

This version includes the following new functionality. In addition, several issues, mentioned in the next section, were also addressed in this release.

New Features
Negative elevation support
Note - Bathymetry, or negative elevation, data is supported in Google Earth Enterprise Fusion version 3.1. While Fusion can support ingesting negative elevation data, Google does not have a production-ready method of viewing this data in the Google Earth Client. Do not use this feature in production environments.
Lower resolution terrain
Google Earth Enterprise Fusion now generates true terrain for all viewing levels including very low resolutions.
2D POI search framework
You can now create POI search tabs for MapDatabases that search on the ingested vector data, as was possible in version 3.0 for the 3D databases.

Maps support improvements
 	
• Maps are now rendered as overlays, resulting in faster and smoother maps.
• New point plotting feature available for 2D maps. Users can choose from a broad range of point markers, icons, and styles.
• Updated JavaScript API
    ○ updated to version 109 of Maps API
    ○ overview pane working correctly

- new Fusion wrapper object GFusionMap wrapper object which gives a JavaScript API access to the Fusion map and layers added

- Improved examples provided
  - *fusionmaps_local.html*
    - uses a Fusion base layer (imagery)
    - includes search tabs, layer list, and Google Maps look and feel

  - *fusionmaps_google.html*
    - uses Google's base layers
    - includes search tabs, layer list and Google Maps look and feel

  - *example_local.html*
    - shows how to embed a Fusion Map in a web page
    - uses a Fusion base layer (imagery)

  - *example_google.html*
    - shows how to embed a Fusion Map in a web page
    - uses Google's base layer

Search framework improvements

- New search plug-ins are now included with Google Earth Enterprise Fusion 3.1, all of which have customizable properties:

  - ExamplePlugin, GEPlacesPlugin , GSAPlugin, GeocodingFederatedPlugin , PoiPlugin, CoordinatePlugin

- Better default icons and cleaner returned KML that mimics very closely what the public client search tabs return
- GeoFederatedPlugin is enabled in 3.1. This plug-in uses a one box to run the following queries: GEPlacesPlugin, CoordinatePlugin
  The query is run in the order the plug-ins are specified in the plug-ins preference in the GeocodingFederatedPlugin.properties file and if a valid return is found, the search returns immediately and does not run all the queries and return all of the results. Users can take this code and extend it to support other types of one-boxes.

- Example properties files for the customizable plugins are in /opt/google/search/plugins
- Users may create property files by the same name (for example, GEPlacesPlugin.properties) and modify the values as desired and place these files in /opt/google/getomcat/conf and after restarting the geserver, those properties will override the built in defaults.
- Users can specify overrides in the Search tab dialog in Fusion by adding the variables to the "Additional Query Parameters" box. For example, use balloonStyle.bgColor=7fff0000 to turn the pop-up balloons red in the result KML returned to Google Earth Client by the search query.
- Additional query parameters will override any properties files in the /opt/google/getomcat/conf/ directory.

Additional operating systems supported

RedHat Linux (RHEL) versions 5.0, 32- 64-bit operating systems

Installer and Uninstaller improvements

- GUI and command line installer available
- Silent installation supported
- Uninstallation is complete and thorough
- Customizable user and group names supported

Security updates

- Apache and mod_ssl: 2.2.9
- OpenSSL 0.9.8h
- mod_jk 1.2.26
- Tomcat 6.0.18
- OpenLDAP 2.3.39
- Expat: 2.0.1

64-bit Mr SID support

Publisher performance and scalability improvements

- Publishing terrain databases using NAS is now roughly as fast as publishing to a local disk
- Publishing in general is several times faster for large databases (not counting the actual data upload time---final phase of publishing)

GECombineTerrain performance improvements

Auto-resume of canceled builds when building a parent project or database

Support for 2GB+ vector resource files in 32-bit Fusion

Known Issues in Version 3.1

The following issues have not been addressed in this release:

Description
When upgrading a terrain database from 3.0.X, users will need to make sure the terrain project contains at least one terrain resource with worldwide coverage. After successfully building this project in 3.1, the worldwide terrain resource may be removed and the project can be rebuilt without a worldwide terrain resource from then on.

Issues Resolved in Version 3.1

The following issues have been addressed and fixed in this release:

Number	Issue	Resolution
1074337	The postgres port used by the SearchPublisherServlet and StreamPublisherServlet is hard coded to "5432" and not customizable.	Users can now customize the port used by the servlets by placing a postgres.properties file in /opt/google/getomcat/conf/postgres.properties and include the line: port=XXXX where XXXX is a port number.
1090364	The geocodingFederated.gestd has an incorrect label of "Street, City, Country"	The label now reads City, Country or lat, lng (for example 40, -90)
1127000	Search framework KML output does not match public Google Earth Client	The default search plug-in output looks as similar as possible to the output of searches using the public-facing Google Earth client.

		search output.
1073666, 1088699 : security updates	Server components not at correct version.	The following server components have been upgraded: • TomCat: apache-tomcat-6.0.16 and tomcat-connectors-1.2.26 • Apache: httpd-2.2.9 • Added Apache configuration "/opt/google/gehttpd/conf.d/security.conf" to eliminate TRACE vulnerabilities.
867475	The SetHandler gedb-handler is not called correctly.	/opt/google/gehttpd/conf.d/examples/location_based_map_vs_example.location now correctly calls SetHandler gedb-handler. This is only needed for Google Maps virtual servers.
825859	Building a project or database sometimes blocks the sub-pieces that have been canceled.	Asking for a build of a project or database automatically resumes any of its sub-pieces that have been canceled.
825989	Information about supported .DGN files not included in documentation.	Microstation (.DGN) files prior to version 8 are supported as input files to Fusion. Version 8 and beyond are not supported. This has been added to the documentation.
826397	The no-data values in terrain and imagery source files are not handled correctly..	Two new input parameters, -srcnodata and -dstnodata, have been added to the command-line program gereproject, to help handle no-data values in terrain and imagery source files.
826673	The gecombineterrain is very slow when writing to a NAS.	In this version, gecombineterrain operates at approximately the same speed when writing to a NAS as when writing to local disk.
954561	Publishing a database fails if the user's umask was not set a certain way.	In this version, publishing should be independent of the user's umask setting.
1170605	User has to manually add a volume to use the tutorial data.	The Fusion 3.1 installer creates the tutorial (source) volume automatically. The user can also add volumes on the command line using: geconfigureassetroot --addvolume tutorial:/opt/google/share/tutorials --noprompt
1090721	Several Fusion command line scripts need option to work without prompts (for installer).	The "--noprompt" option has been added. The user is no longer prompted for input (requires that some commands have arguments specified on the command line): ○ /opt/google/bin/geconfigurepublishroot ○ /opt/google/bin/geconfigureassetroot ○ /opt/google/bin/geupgradeassetroot ○ /opt/google/bin/geselectassetroot
1073508	Google Search Appliance plug-in options are not customizable.	Google Search Appliance plug-in options are customizable using the properties file (see the Search Framework Improvements above)
1223714	Need various improvements for GeServer digest	Added default_ge_digest.location and the /opt/google/gehttpd/auth directory for placing digest password files.
1110445	Publisher performance needs improvement.	Much faster performance for large publishes.

1080329	Correct any relevant error message when raster resources cannot be read in because its resolution is even higher than the supported max resolution (18.6 mm x 18.6 mm per pixel).	This issue has been fixed in this version and an appropriate error message displays.
1233999	Degenerate polygon (polygons with 3 points) can exist because of: - bad inputs. - result of cutting (splitting at a boundary). These can cause assertion later if left as is.	A check has been added to ignore all such polygons while simplifying packets (for sending to clients). Some lines might be missing. Converting polygons to lines might cause other side effects as well.
1274210	If anything is saved on maplayerwidget, and then further changes are made, the Save button is disabled. If you click the File menu at the beginning, further changes cannot be saved.	Close the window and re-click for maplayerwidget.
1009415	Different home directory assignment for ge* system accounts .	The ge* accounts are now created in /opt/google/.users/gefusionuser. rather than in /home or /.
1188328	HTTPS search tab URL settings not respected in dbRoot unless specified (port 80 used when 443 should be used), workaround was to specify port number explicitly in search tab URL.	This is handled automatically (no longer need to specify port 443 for https search tab URLs) in this version.
1306229	The Javascript Editor created four ampersand characters "&&&&" even though the user clicks only the button for two ampersands "&&" once.	This issue has been fixed in this version.
1347238	The geconfigurepublishroot command does not default to allow_symlinks "Y".	The geconfigurepublishroot command defaults to allow_symlinks "Y" in this version.
1340922	The Google Earth Server returns empty packets for	geserver now responds (consistent with maps.google.com expected behavior) as follows:

	missing map tiles. This does not match the maps.google.com behavior and results in missing image icons on the map and does not display a warning for missing tiles when zoomed in too far.	Empty map vector tiles return a transparent PNG. Empty map imagery tiles return 404 (HTTP_NOT_FOUND) status
1348185	A large publish fails during synchronize database task.	This issue has been fixed in this version and the publish no longer fails even with large databases.
1354991	The default log rotation for gehttpd is incorrect in /etc/logrotate.d/gehttpd.	This issue has been fixed in this version and rotation is now correct.
1325573	In a Fusion map, if a label or an icon crosses tile boundary, it gets clipped at the tile boundary.	This issue has been fixed in this version.
1340408	In a Fusion map, if multiple layers are there, then the order of layers is not being respected in the overlayed rendering.	This issue has been fixed in this version.
1347487	In Fusion interface, the Save button is enabled even when there are no input changes.	This issue has been fixed in this version.
1348005	In Fusion Maps, there are problems with anti-aliased rendering. The intensity of anti-aliased points are getting lower.	This issue has been fixed in this version.