GE Oil & Gas

(Undefined variable: Other.GE Business Level 2)

System 1 Fleet Management

User Guide

v2.0

Publication Number: DEE-636e

Contents

1. Getting Started

GE's System 1 Fleet Management is a web-based dashboard providing a single and secure access point for monitoring asset health from the asset to fleet levels across industrial users. System 1 Fleet Management imports hierarchy, alarm and advisory data from System 1 and SmartSignal systems. These systems collect and store data from sensors installed on your monitored assets, and System 1 Fleet Management consolidates the data into views where you can observe and analyze machine and instrument health at all levels of your fleet asset hierarchy.

Your application administrator provides the URL for the application, as well as your user name and password. If you have trouble logging in, contact your administrator. Before you begin, ensure that you have a compatible browser installed.

1.1 Recommended Browsers

GE recommends using one of the following browsers (minimum versions cited):

- Google Chrome, v47+
- Apple Safari, v5.1.7??
- Internet Explorer, v11
- Mozilla Firefox, v38.2.1+

1.2 Thumbnail Images

This Online Help system contains thumbnail images that can be expanded and collapsed.

- Click the image to expand it to full size.
- Click the image again to collapse it to thumbnail size.

You must collapse an expanded image before you can expand another.

1.3 User Roles and Permissions

The application administrator assigns your user role, which controls your access permissions. User roles in System 1 Fleet Management are standard users (reliability engineers, machine operators, site managers) who can view the data and use the application tools for data analysis, and application administrators, who manage users and enterprises.

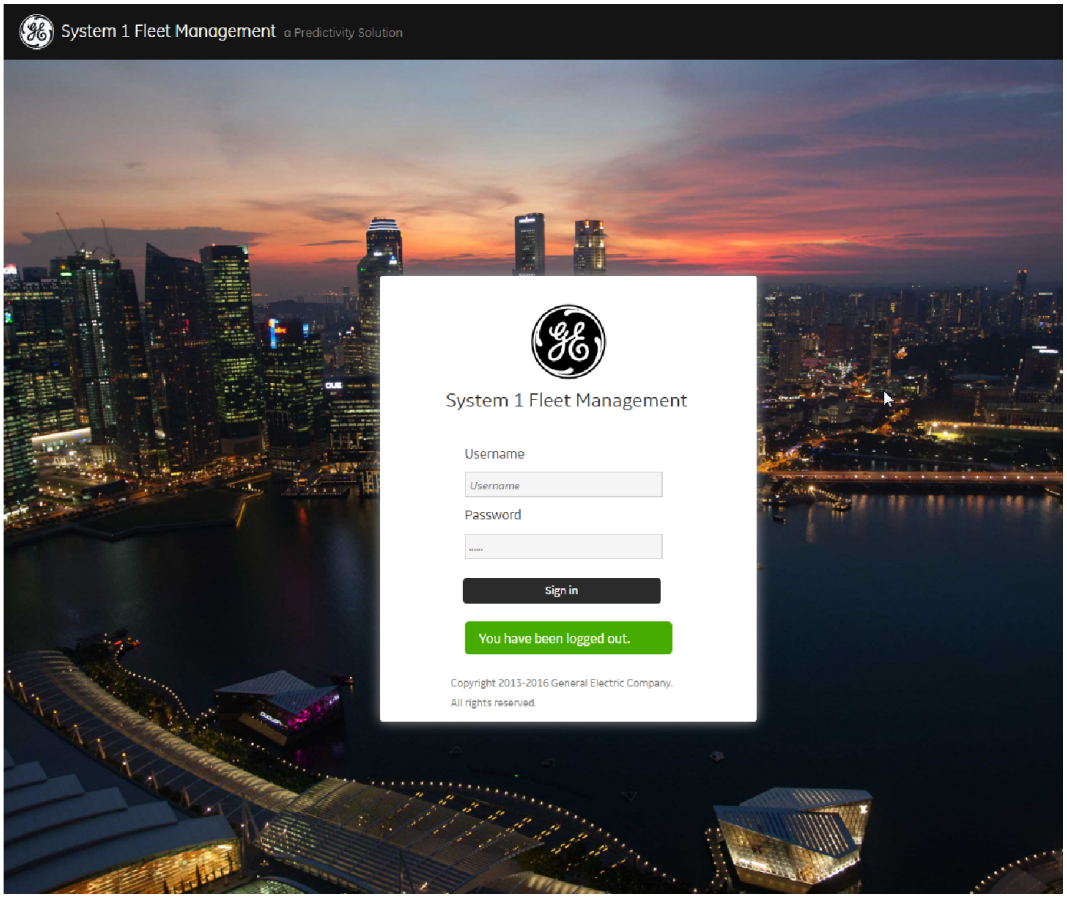
An application superadministrator role is also defined. The superadministrator is responsible for installing System 1 Fleet Management in the customer environment, and adding administrators.

1.4 Accessing System 1 Fleet Management Dashboard

To log on to System 1 Fleet Management, follow these steps:

1. Open a Web browser window, and enter the System 1 Fleet Management URL provided to you by the system administrator:

   The log on page is displayed.



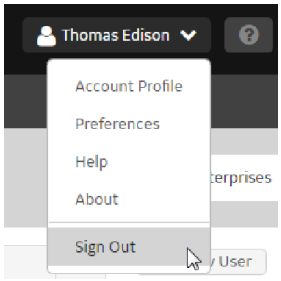
2. At the Username field, enter your user name.
3. At the Password field, enter your password.
4. Click Sign in.

   The Dashboard tab is displayed, and opens to the Overview page / Grid Table.

Logging out of System 1 Fleet Management

To log out of System 1 Fleet Management, follow these steps:

1. Go the upper right corner of the screen.
2. Click the down arrow to the right of your user profile name.
3. Click Sign Out.

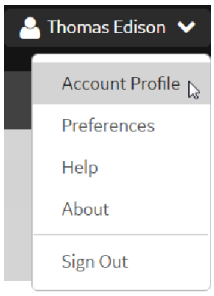


You are logged out of the system and the application displays the log on page.

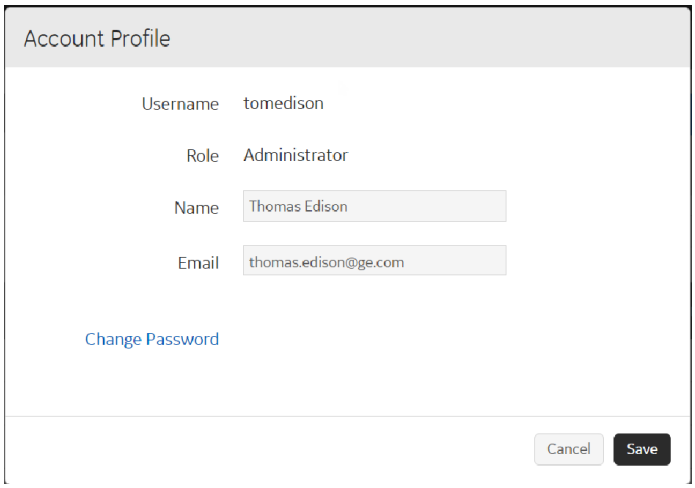
1.5 Editing Your Account Profile

Your account profile is initially populated when your application administrator sets up your account. You can change your name as it appears in the application masthead, your email address, and your password, at any time. GE strongly recommends that, at a minimum, you change your default password immediately after logging in.

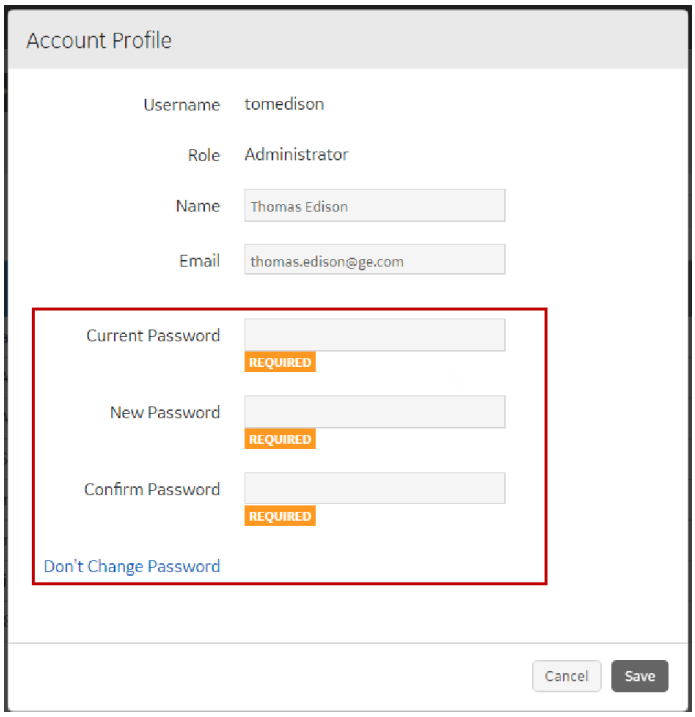
1. In the application masthead, click the arrow next to your name to open the menu.



2. Select **Account Profile**.
3. Do any of the following:
   - Change your name as it is displayed in the application masthead.
   - Change your email address.



- Change your password. Click **Change Password** and follow the prompts to enter and confirm a new password.

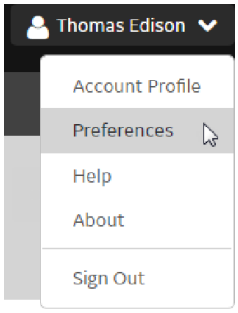


4. Click **Save**.

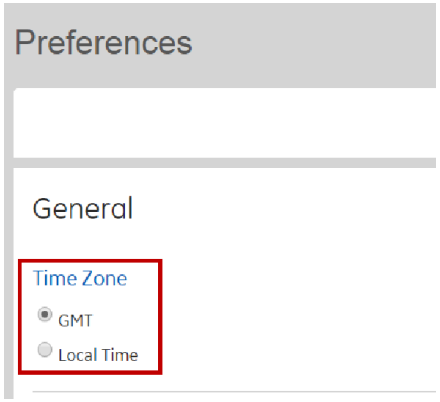
1.6 Setting Your Application Preferences

Your application preferences control how asset data and alarms appear on your dashboard.

1. In the application masthead, click the arrow next to your user name to open the menu, then select **Preferences**.

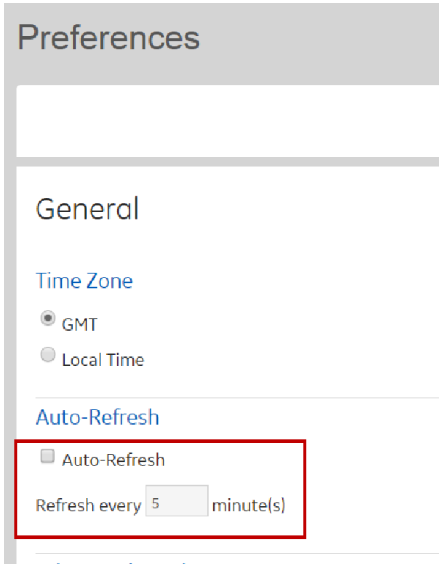


2. In your General preferences, under Time Zone, select GMT (Greenwich Mean Time) or Local Time (Time where the browser is open) if you want to change how timestamps appears in all Fleet tabs.

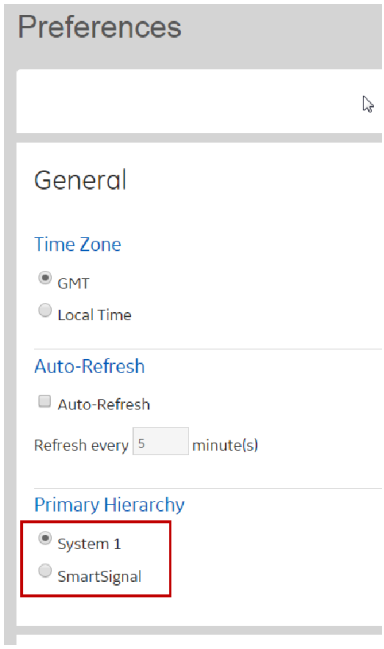


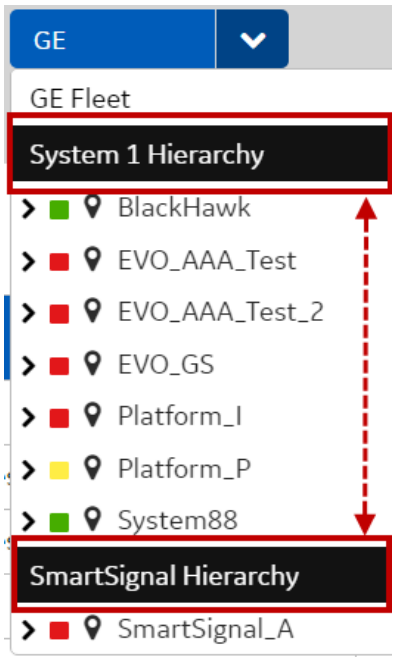
3. In your General preferences, select the **Auto-Refresh** check box and select an interval to enable auto-refresh, or leave the check box blank to restrict refreshes to manual only. If you select the Auto-Refresh check box, a timer appears in the refresh icon ( ) on the Overview and Alarms tabs only, The refresh on the Analysis tab is always manual.

   Even with Auto-Refresh enabled, you can manually refresh the data at any time.

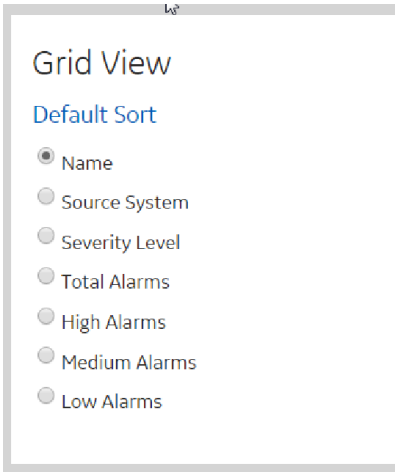


4. In your General preferences, under Primary Hierarchy, select System 1 or SmartSignal in order to change which hierarchy group will be displayed first in the hierarchy drop down list.

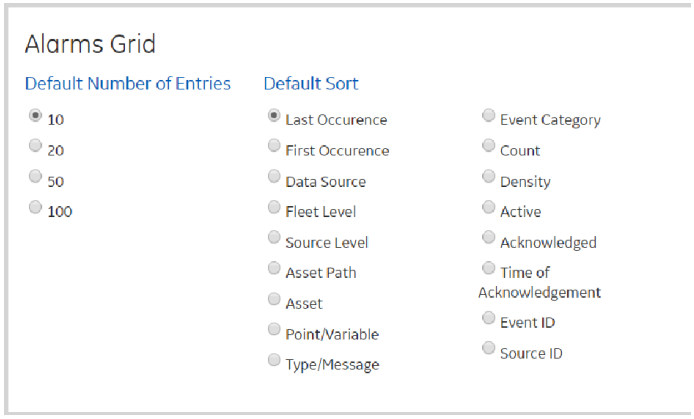




5. In your Grid View preferences, to sort the table (in ascending order) by a particular column, select one of the columns listed on the right.



6. In your Alarms Grid preferences, to change your Alarms preferences, select the number of entries to display on the page by default, and sorting priorities (in descending order).



7. Click **Save Changes** to save your new settings.

8. Click **Restore Default Settings** to restore preferences defaults.

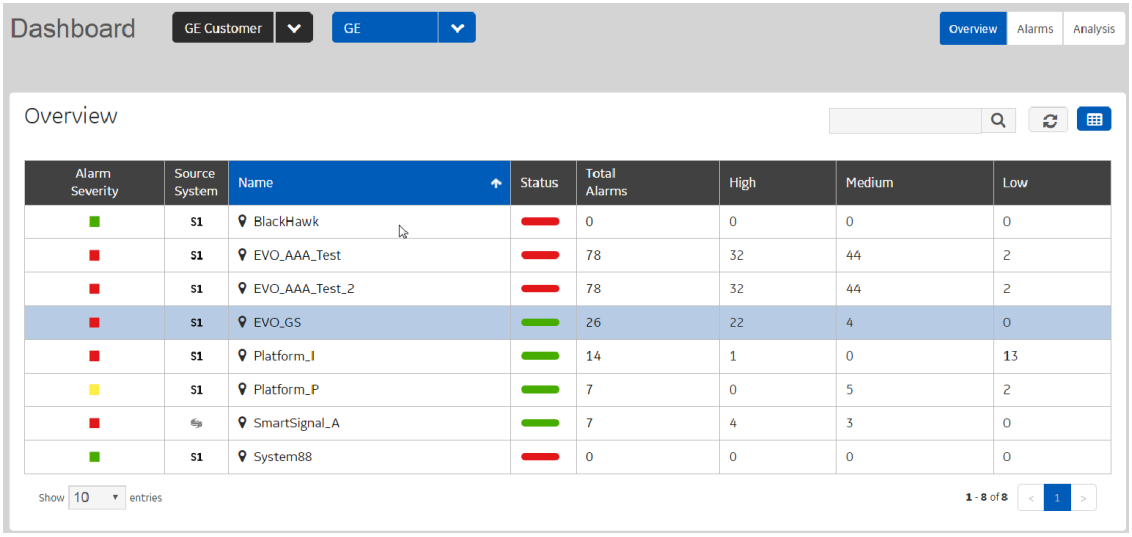
2. Dashboard Tab

The Dashboard tab is displayed by default after you log on to System 1 Fleet Management. The default view of the dashboard is the overview grid. The grid displays health data about enterprises, folders, trains, or machines in a selected customer's fleet. You can navigate to an asset either from the asset hierarchy drop-down or from the overview grid table by clicking on the asset name.

In the upper right corner of the dashboard, are three tabs:

- Overview - The default view when you log on to the application. Displays the overview grid.
- Alarms - Click the tab to go to the Alarms page.
- Analysis - Click the tab to go to the Analysis page.

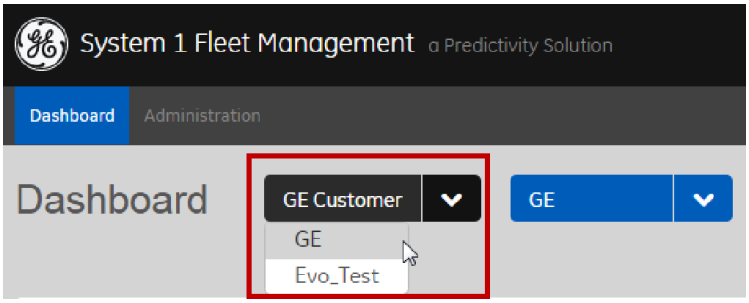
The following is an example of a typical Dashboard module that appears after you log on to the application.



2.1 Customer Hierarchy

Below the Dashboard tab, is a customer selection drop-down and an asset hierarchy selection drop-down. The customer names displayed in the list are defined by the system administrator during installation of the proxies on the System 1 and SmartSignal servers. Customer can be used to designate a region or a group of data source systems.

The following is an example:



To select a customer follow these steps:

1. Click the down arrow on the right to open the customer hierarchy.

   A list of all available customers appears in the drop-down

2. Select a customer in the list.

The name of the selected customer appears in the asset hierarchy.

2.2 Asset Hierarchy

During the installation of System 1 and SmartSignal proxies, the administrator assigns each enterprise to a customer. When the user selects a customer from the customer hierarchy, all enterprises associated with the selected customer appear in the asset drop-down.

The asset hierarchy is organized by the following asset classifications:

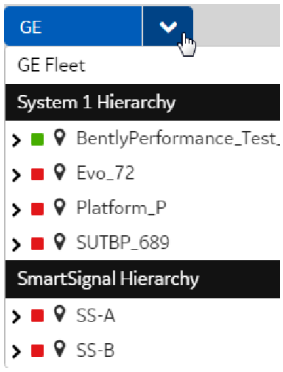
Icon	Level	Description
	Enterprise	Organizational location (site).
	Folder	Category layer, where assets are organized into separations that make sense in the structure, such as process or utility systems.
	Train	A group of machines that function interactively.
	Machine	An individual piece of equipment, such as a motor, gearbox, compressor, pump, and so forth.

NOTE: In this document, each hierarchy level is called an "asset" but the data is always derived from the associated machines and consolidated for the selected level.

To select an asset follow these steps:

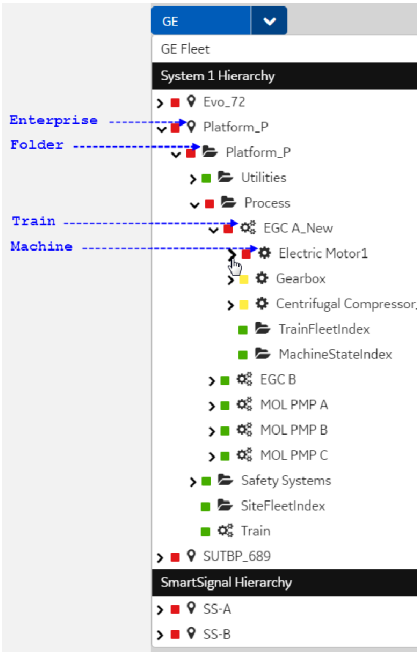
1. Click the drop-down arrow on the right to open the asset hierarchy.

   A list of enterprises associated with the selected customer appear in the drop-down.

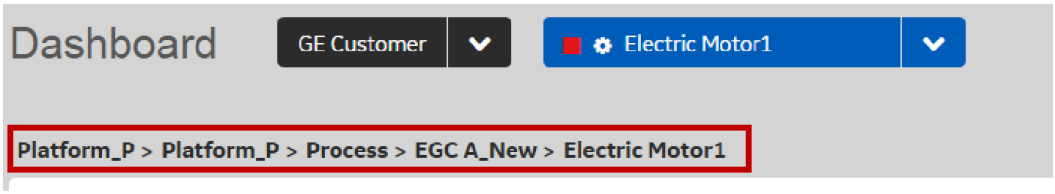


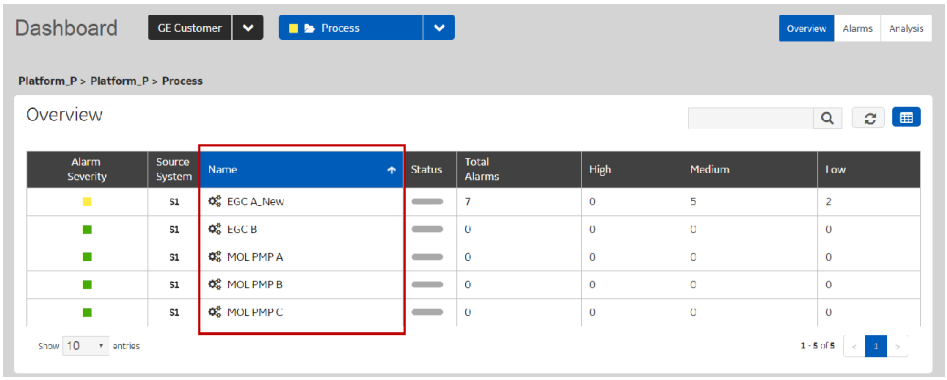
2. Click an › icon to expand and display that asset level. Continue clicking the › icons until you reach the level to view.

The names of first level folders, trains, and machines within the selected enterprise appear.



When you select an asset at *any* level, the path to your selected asset in the hierarchy is displayed in breadcrumbs under the customer and asset hierarchies.




Dashboard
GE Customer
Process
Overview
Alarms
Analysis
Platform_P > Platform_P > Process
Overview
Alarm Severity
Source System
Name
Status
Total Alarms
High
Medium
Low
S1
EGC A_New
7
0
5
2
S1
EGC B
0
0
0
0
S1
MOL PMP A
0
0
0
0
S1
MOL PMP B
0
0
0
0
S1
MOL PMP C
0
0
0
0
Show 10 entries
1 - 5 of 5
1

2.3 Alarm Severity Levels

In the Overview Grid table and the asset hierarchy, alarm severity (colored square) indicates the highest severity among the active alarms on the asset. In the native systems, System 1 produces alarms at different *severities*, while SmartSignal produces advisories at different *priorities*. In System 1 Fleet Management, the two scales are normalized and each alarm or advisory is displayed as a high-, medium-, or low-severity alarm.

Each severity is illustrated by a different colored icon, as shown in the following table, where the System 1 Fleet Management severities are correlated with System 1 and SmartSignal native system scales during installation. During System 1 Fleet Management installation the superadministrator can change how source system alarm levels are mapped to System 1 Fleet levels. The following table shows the default mapping.

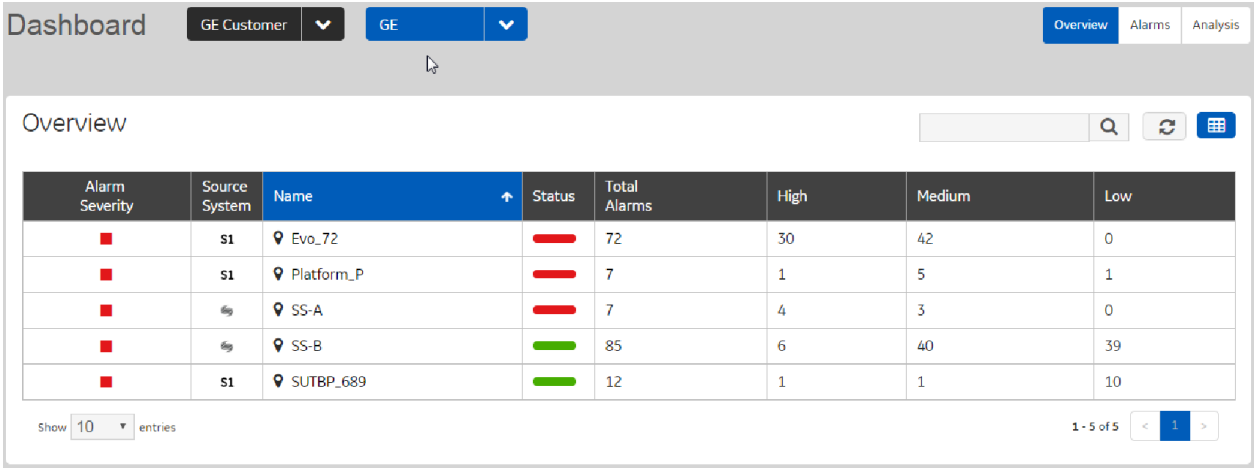
Color	Severity	System 1 Alarm Scale	SmartSignal Advisory Scale
■	High	S4	P1
■	Medium	S3	P2, P3
■	Low	S1, S2	P4, P5
■	None	N/A	N/A

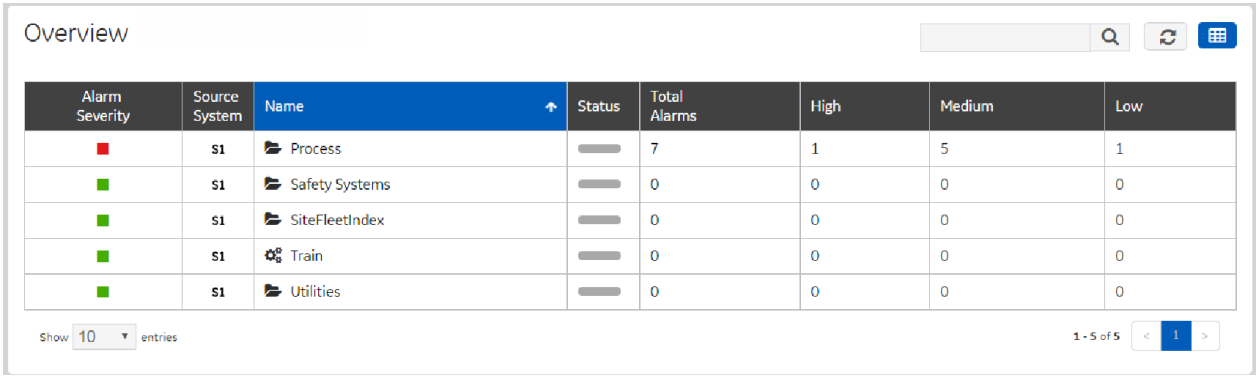
A green icon indicates that no alarms or advisories are active for the asset.

2.4 Overview Page

2.4.1 Grid View Table

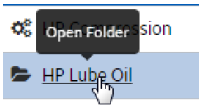
The Grid table provides a snapshot of the asset health (highest active alarm severity level), along with alarm count breakdowns and the communication status. The communications status applies to enterprises only.

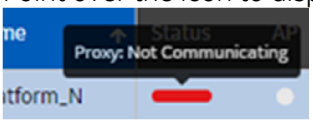


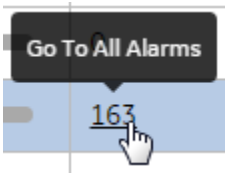


NOTE: An asset can be an enterprise, folder, train, or machine. The use can select it from the asset hierarchy or navigate to it from the grid table. For information, see Asset Hierarchy.

The following table describes the columns in the overview grid:

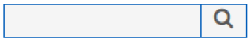
This column	Provides this information
Alarm Severity	Indicated the highest active alarm severity level. Alarm severity is identified by a colored square icon (■).The icon color corresponds to the highest level alarm triggered on the selected asset. For information, see Alarm Severity Levels.
Source System	The source system the data is from. The source system is System 1 **S1** or SmartSignal . Point over the icon to display the name of the source system.
Name	The name of the enterprises, folders, trains, or machines under the selected asset. Click the name to drill down without having to use the asset hierarchy drop-down.  When you select an asset at *any* level, the assets at the child level appear in the table
Status	Displays a red, green, or gray oblong icon to indicate the status of an asset. **Asset** / **Status** / **Means this**

<table>
<tr><th>This column</th><th>Provides this information</th></tr>
<tr><td></td><td>
<table>
<tr><td>Enterprise</td><td></td><td>The agent, proxy, system, or data acquisition server(s) (DAQ or DHP) is not communicating</td></tr>
<tr><td>Enterprise</td><td></td><td>All SW components are communicating</td></tr>
<tr><td>Folder/Train/Machine</td><td></td><td>Unknown</td></tr>
</table>
Point over the icon to display the status message of the asset.
 

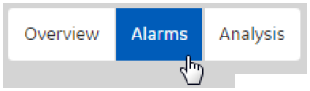
</td></tr>
<tr><td>Total Alarms</td><td>Total number of active alarms.
Click a Total Alarms hyperlink to navigate to the corresponding Alarms page.
 

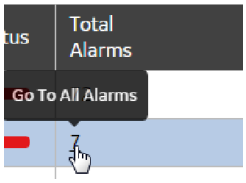
</td></tr>
<tr><td>High</td><td>Total number of high severity alarms.</td></tr>
<tr><td>Medium</td><td>Total number of medium severity alarms.</td></tr>
<tr><td>Low</td><td>Total number of low severity alarms.</td></tr>
</table>

Above the table are the following options:

- **Search field** -  - Enter text to filter the overview grid by any column. As you type in the search field, the application will search all the columns and starts to return results in the overview grid.
- **Refresh icon** -  or  - Click to refresh the data in the overview grid.

2.5 Alarms Page

To get to the Alarms page click the **Alarms** tab 

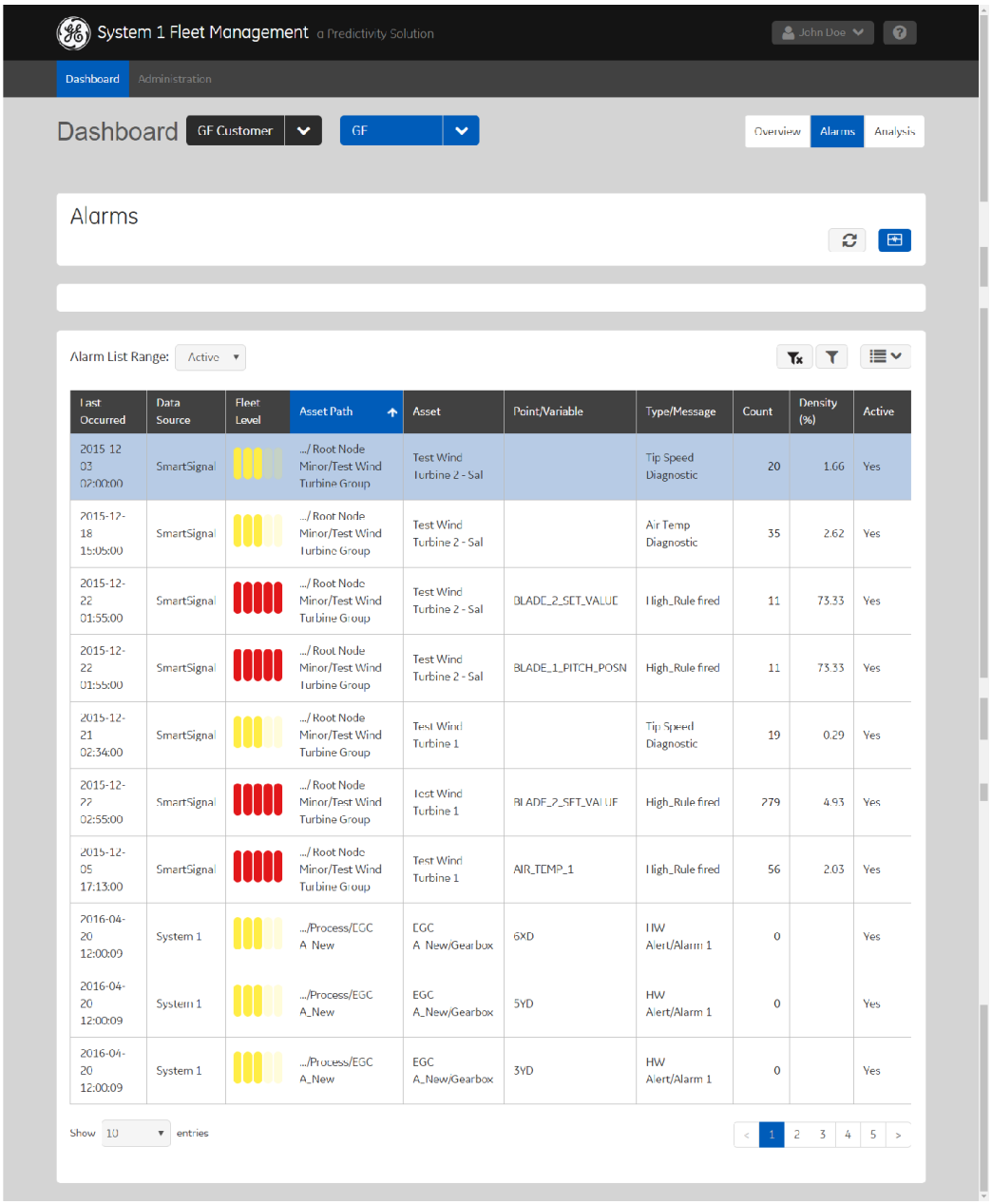
or from the Overview / Grid View table click the number hyperlink in the **Total Alarms** column 

. The Alarms page opens, displaying the alarms table containing the active alarms or advisories on the selected level in the hierarchy.

2.5.1 Alarms Table

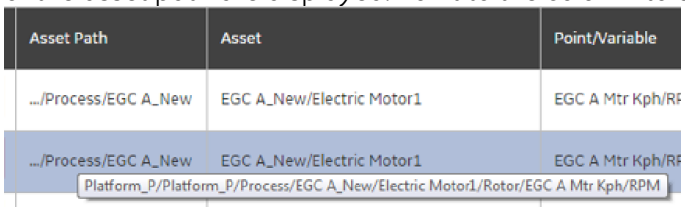
The alarms table contains alarms triggered by System 1 or advisories triggered by SmartSignal. The alarms table displays the alarms and/or advisories under the selected asset in asset hierarchy.

The following is an example for alarms and advisories displayed at the customer (or fleet) level:



The following table describes the available columns:

This Column	Indicates this information
Last Occurred	The date and time when this alarm was last recorded.
First Occurred	The date and time when this alarm was first recorded.
Data Source	The source system where the alarm occurred. The source can be System 1 or SmartSignal.

This Column	Indicates this information
Fleet Level	Fleet normalized severity level for this alarm. Severity levels are Low, Medium or High. For information, see Alarm Severity Levels. • High - shown in red with 5 bars  • Medium - shown in yellow with 3 bars  • Low - shown in orange with 1 bar 
Source Level	Original source system severity level for this alarm. For System 1, it is 1 to 4. For SmartSignal, it is 1 to any value (normally 5)
Asset Path	Displays the path for the asset from the asset hierarchy. Only the first two levels of the asset path are displayed. Point to the column to display the full path. 
Asset	The name of System 1 train/machine or SmartSignal asset which this alarm occurred on. • If the alarm is on a System 1 train, then the train name is displayed. • If the alarm is on a System 1 machine under a train, then the train name and the machine name is displayed otherwise the machine name is only displayed. • If the alarm is on a SmartSignal asset, then the asset name is displayed.
Point/Variable	The name of the System 1 point/System 1 variable, or the SmartSignal model tag creating this alarm. • If the alarm is from a SmartSignal tag rule or advisory, then the tag is displayed. • If the alarm is from a SmartSignal diagnostic advisory, then nothing (blank) is displayed. • If the alarm is from a System 1 point, then the point name is displayed. • If the alarm is from a System 1 variable under a point, then the point name and the variable name is displayed.
Type/Message	For System 1, the column displays the alarm type, for example, SW Over Alarm A. For SmartSignal, the column displays the message of the advisory.

This Column	Indicates this information
Category	The category of the alarm (Asset Protection, Asset Management, Instrument Protection, Instrument Management]). For SmartSignal, it is always equal to Asset Management.
Count	The number of times this alarm got fired since it occurred the first time. For SmartSignal this count will reset to zero (0) when the user dismiss the alarm in SmartSignal applications. For System 1 this count is always equal to zero (0).
Density (%)	For SmartSignal, density is the number of advisory events divided by the number of observations since the first advisory event occurred. For System 1 alarms, the Density column is always blank.
Active	Displays the alarm condition status. The status is either YES or NO.
Acknowledged	Status of the acknowledgment action. The status is either YES or NO.
Time of Acknowledgement	Last date and time when this event was acknowledged. Depending on user preference settings, time can be local time or GMT.
Event ID	Original source system event identification.
Source ID	Original source system identification of the System 1 point, System 1 variable, or SmartSignal asset creating this alarm.

The Show/Hide Columns icon allows you to select what data columns to display in the alarms grid

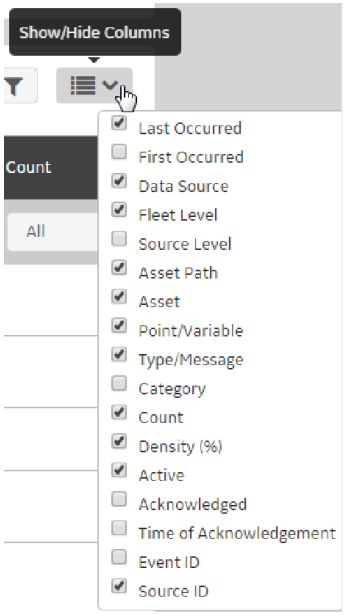
Above the table are the following options:

- **Show Filters icon** - - click to add the filter row to the table, then select or enter your filter criteria for each applicable column. The content filters accordingly.

  Click the icon again to hide the filters.

- **Clear Filters icon** - - click to remove any filtering that you applied to the alarms grid

- **Show/Hide Columns icon** -  - click to change the column array by including more or fewer columns



NOTE: The new display overrides the default for the session, but is not persistent for future sessions.

2.5.2 Alarms Plots

Alarm plots are useful when investigating machine issues at measurable points or tags, which can range from temperature spikes to vibrations that exceed established thresholds.

When you open the Alarms page and select a System 1 or SmartSignal alarm, the corresponding alarm plots appear. You can select different plot parameters from the drop-down lists to customize the plots and tailor the data to fit your diagnostic needs.

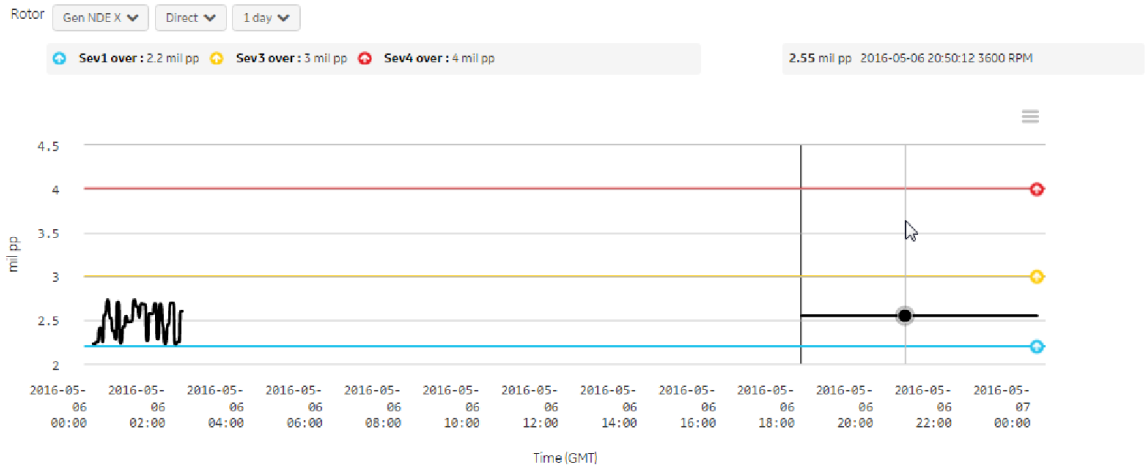
2.5.2.1 System 1 Alarm Plots

System 1 alarms are triggered when the installed sensors deviates from defined ranges, triggering alarm severities ranging from 1 (lowest) to 4 (highest).

When you navigate to the Alarms page you can click on a System 1 alarm from the list to generate default plots illustrating alarm data.

Last Occurred	Data Source	Fleet Level	Asset Path	Asset	Point/Variable	Type/Message	Count	Density (%)	Active
2016-04-22 15:04:35	System 1		.../Utilities/MPG A Test	MPG A Test/LM2500 Test	FWD Vel GG Speed/Direct	SW Over Alarm A	0		Yes
2016-04-22 15:04:35	System 1		.../Utilities/MPG B	MPG B/Power Turbine	Aft Vel GG Speed/Direct	SW Out-of-Band Alarm B	0		Yes
2016-04-22 15:04:35	System 1		.../Utilities/MPG B	MPG B/LM2500	FWD Vel PT Speed/Direct	SW Over Alarm A	0		Yes
2016-04-22 15:04:35	System 1		.../Utilities/MPG B	MPG B/Generator	Gen DE Y/Direct	SW Over Alarm A	0		Yes
2016-04-22 15:04:35	System 1		.../Utilities/MPG A Test	MPG A Test/Power Turbine	Aft Vel PT Speed/Direct	SW Over Alarm A	0		Yes
2016-04-22 15:04:35	System 1		.../Utilities/MPG A Test	MPG A Test/Power Turbine	Aft Vel GG Speed/Direct	SW Over Alarm A	0		Yes
2016-04-22 15:04:35	System 1		.../Platform_I/Utilities	MPG A Test	Gen DE Y/1X	SW Over Alarm A	0		Yes

The top chart, which is shown below, illustrates the trend (captured data over time) in black over a defined interval. If data is not available the application displays a **NO DATA AVAILABLE** message. The chart also contains a black vertical line representing the last time the alarm occurred on the timeline, with a 75/25 illustrated division so you can see the data points going back for 75% of the entire timeline, and 25% forward.

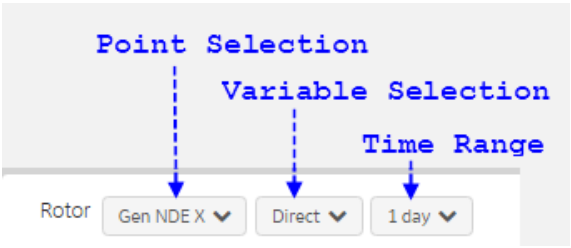


For alarms on variables, the trend chart will display the trend for this variable. The initial chart displays the default time span, but you can re-plot by selecting a different interval from the drop-down list on the right.

For alarms on points, the trend chart will display by default the 'Direct' variable if available otherwise it will display the first available variable in Fleet Database under this point.

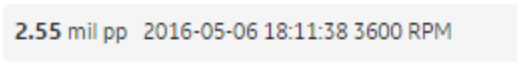
If setpoints have been configured for the trended variable, they also appear in the plot. The latest configured setpoints will be displayed, not the historical ones. For information, see Setpoints.

You can change the trend plot parameters using the following drop-down lists:



- **Point Selection** - Select a different point under the asset to view. The option that is selected is also the option in the waveform plot. If you select another point, the waveform plot will also be updated. What you select in this drop-down determines the available values in the variable (measurement) selection drop-down field.
- **Variable Selection** - Select a different measurement to view for that point.
- **Time Range** - Select a time range (1 day, 1 week, 1 month, 3 months, or 6 months) to set how much data to display.

After a trend plot is generated, move the pointer over a location in the plot to view the value of the data, the unit, the date and time, and the machine speed for that location. The information appears in a text box above the alarm plot. The following is an example:

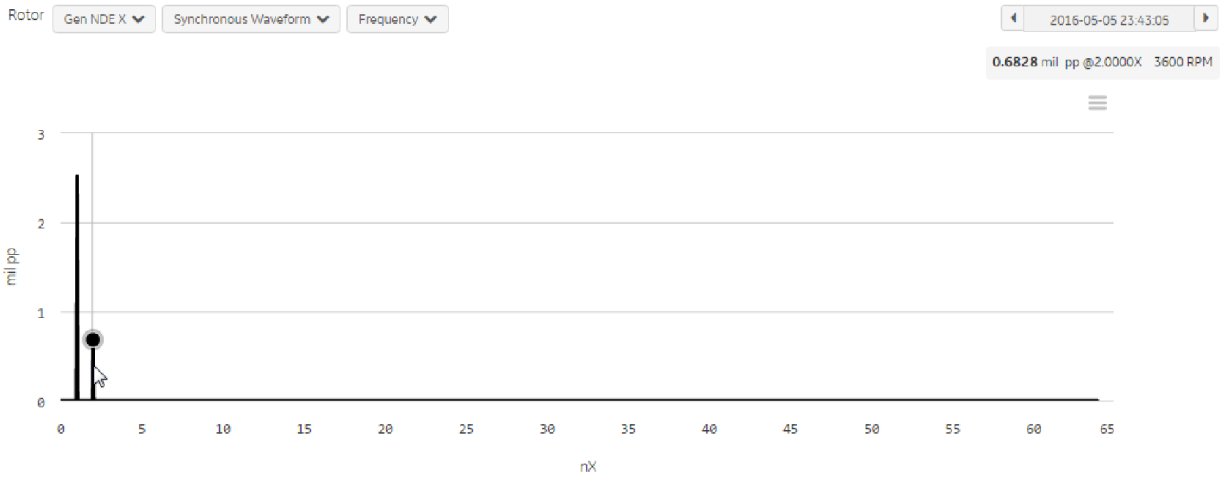


For alarms on points with high resolution dynamic data available, a waveform chart appears below the trend chart as shown below, which illustrates displacement distances in different formats. The waveform displayed is the closest (less than or equal) to the time of the alarm. The time at which the waveform was captured and saved is displayed of the top right corner of the plot. If no waveform is available for the point (such as, data is not available or the type of point does not have waveform data), the system displays **NO WAVEFORM FOR THIS POINT** message.

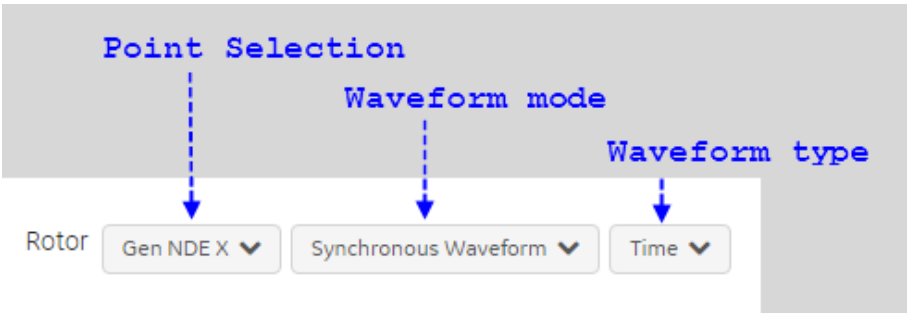
Timebase (time) chart:


Rotor
Gen NDE X
Synchronous Waveform
Time
2016-05-05 23:43:05
Wf Amp: 2.6474 mil pp 3600 RPM; 1.1425 mil@ 204.8177 ms
2
1
0
-1
-2
mil
0
25
50
75
100
125
150
175
200
225
250
275
ms

Spectrum (frequency) chart:



You can change the waveform plot parameters in either chart using the following drop-down lists:



- **Point Selection** - Select a different point under the asset to view. The option that is selected is also the option in the top trend plot. If you select another point, the top trend plot will also be updated. What you select in this drop-down determines the available values in the other drop-downs fields.
- **Waveform Mode Selection** :
    - **Synchronous:** synchronous vibration is typically used for collecting vibration data correlated to running speed using a keyphasor.
    - **Asynchronous:** asynchronous data is typically used for machines with higher order vibration frequencies or machines without a speed reference; For example, gearboxes or rolling element bearings where a broader frequency span and higher resolution spectrums are required.
- **Waveform Type Selection:**

- **Frequency:** frequency type presents a spectrum, where you can identify major fault frequencies of your equipment. For asynchronous frequency, the x-axis is in Hz. For asynchronous frequency, the x-axis is in nX
- **Time:** illustrates dynamic waveform amplitude. For both asynchronous and synchronous time, the x-axis is in milliseconds (ms).

After a waveform plot is generated:

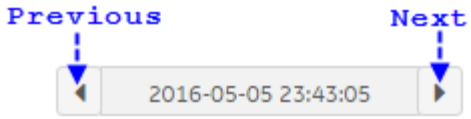
- For a frequency type plot, move the pointer over a location in the plot to view the value of the data, the unit, the frequency, and the average machine speed for that waveform. The information appears in a text box above the alarm plot. The following is an example:

  0.8431 mil pp @2.0000X 3600 RPM

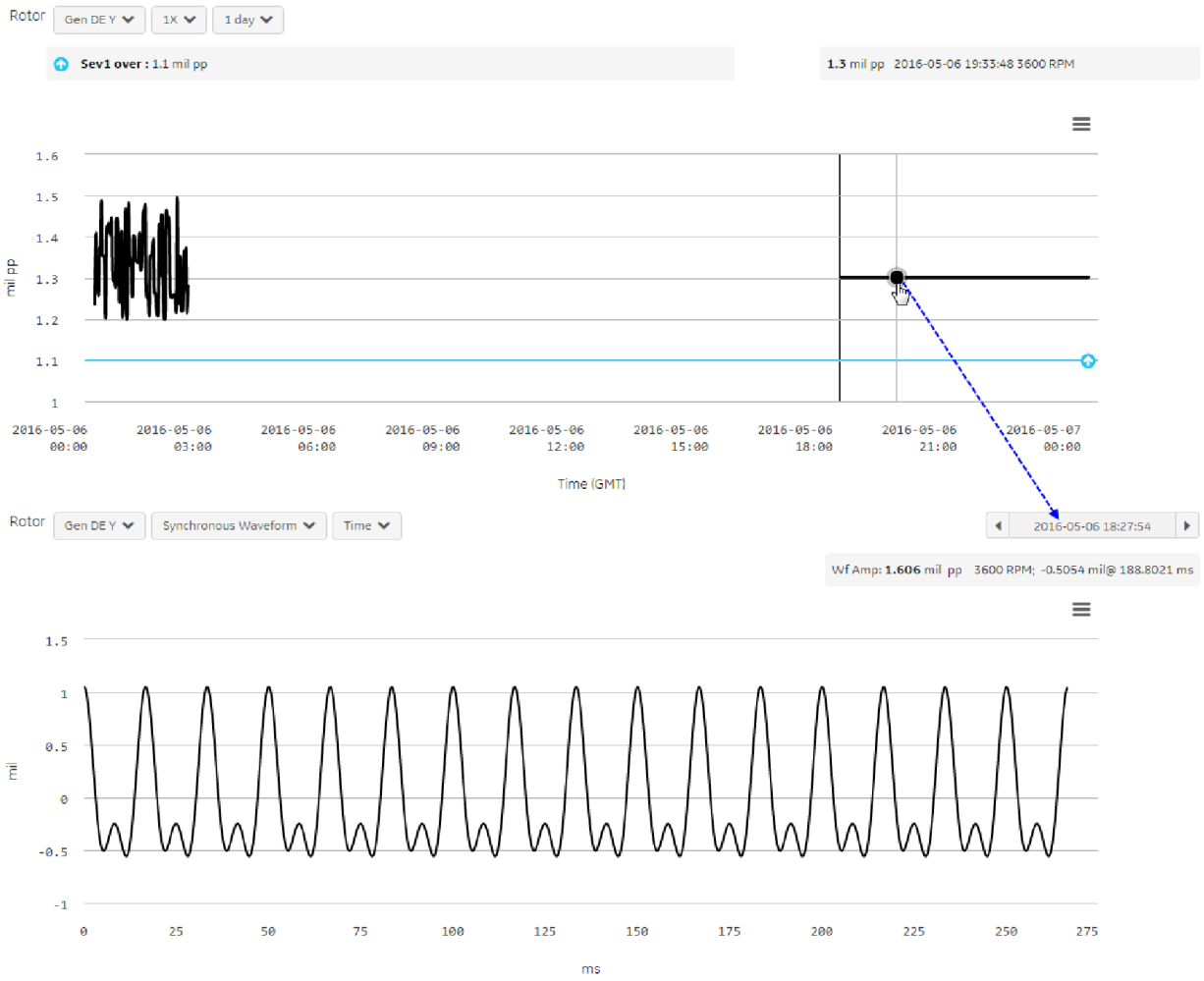
- For a time type plot, move the pointer over a location in the plot to view the waveform amplitude (Max value - Min value), the unit, the average machine speed for that waveform, the value of the data, the unit, and the time for that location. The information appears in a text box above the alarm plot. The following is an example:

  Wf Amp: **1.6747** mil pp 3600 RPM; -0.2518 mil@ 41.9271 ms

After a waveform plot is generated, you can click on the Next or Previous buttons to get and display the next or the previous available waveform in the System 1 Database for the selected points.



After a trend plot and a waveform plot are generated, you can click on a data point (on the black line) in the trend in order to update the waveform plot with the closest dynamic data available (less than or equal) to the time for that location on the trend plot.



2.5.2.2 System 1 Setpoints

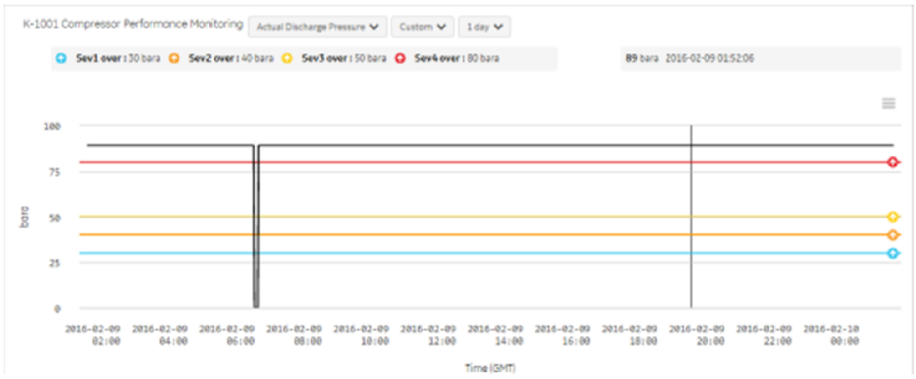
A setpoint is a defined threshold for machine health data collected by a System 1 sensor installed on the machine. Setpoints are configured as over, under, in-band, out-of-band, or acceptance region, and alarms are triggered when data points are outside of the defined thresholds.

Setpoint severity is identified by color, as follows:

This color	Means this
Red	Severity 4
Yellow	Severity 3
Orange	Severity 2

This color	Means this
Blue	Severity 1

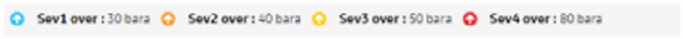
In the following example, setpoints have been defined for each severity:



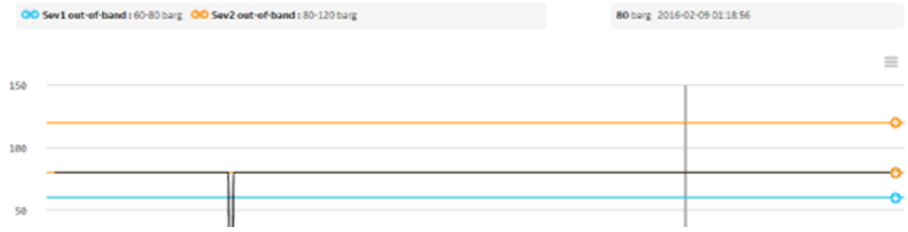
The above plot represents the data for the following high-severity alarm:

2016-02-09 19:01:39	System 1		.../Building 1/Compressor, Pump, ST Group	Compressor Train	Actual Discharge Pressure/Custom	SW Over Alarm D	0		Yes

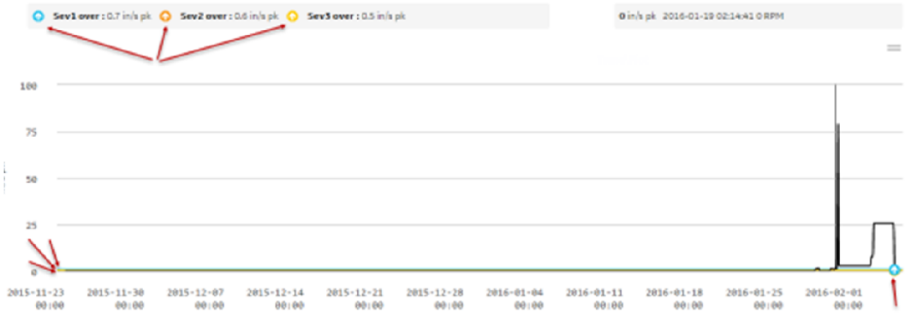
Each configured setpoint line displays a ⬆ or ⬇ arrow on the right to indicate if the threshold is over or under the setpoint. Each arrow is identified in a legend above the chart.



Simple over and under configurations are indicated by ⬆ or ⬇ arrows. However, for in-band, out-of-band, acceptance region configurations, at least one ⬆ arrow and one ⬇ arrow appear on the right to indicate the range, but ⬆⬇, ⬇⬆, and ⬌ appear in the legend, as shown below:



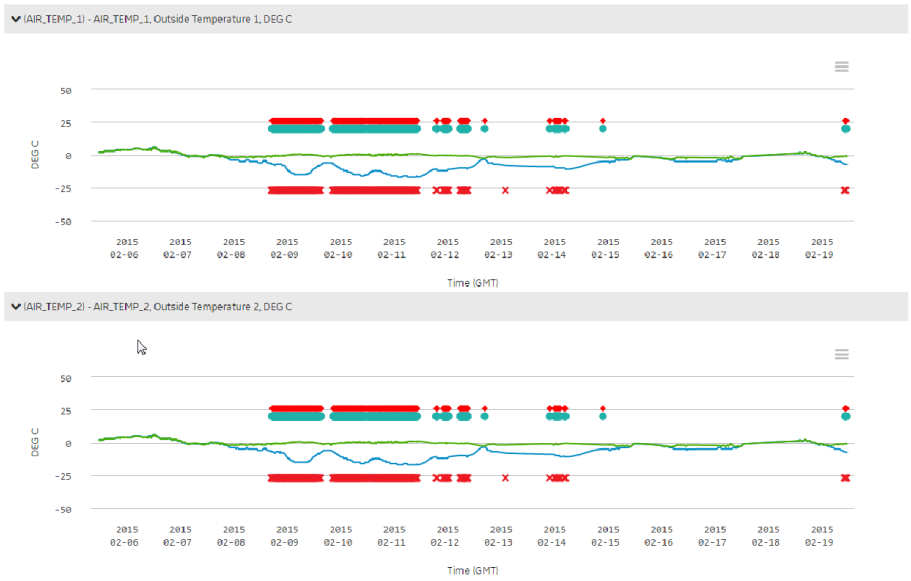
If setpoints are configured at values that are very close, one arrow appears on top, obscuring the other arrows. However, each configured setpoint is identified in the legend.



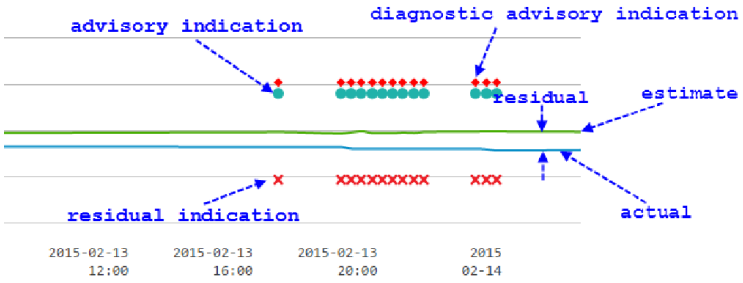
2.5.2.3 SmartSignal Alarm Plots

SmartSignal alarms (advisories) are based on Similarity Based Models relating to asset conditions such as temperature, pressure, speed, and so forth. Alarms (advisories) are triggered when a significant amount of deviation has occurred between the Actual and the Estimate values and the deviation has persisted for a period of time, usually for a specific tag. The deviation and persistence can also be based on Actual values.

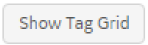
SmartSignal data for the selected alarm (advisory) is displayed in one or more time series trend graphs for the all contributing tags to the selected advisory, as shown below.



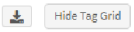
SmartSignal plots show the *actual* data line in blue, and an *estimated* data line in green. Estimations are calculated from historical data that represents how the machine *should* be operating. The chart also displays circle and diamond icons to illustrate the data points where an advisory or diagnostic advisory were triggered. Residual indications are illustrated by × icons above and below the data lines indicating that there is difference between the actual and estimate readings that exceed a positive or negative threshold.



When you pause on a data point, the actual and estimated values are displayed in a tooltip, along with a residual calculation, which is the difference between the actual and estimated values at the data point.

Below the graph is a Show Tag Grid button 

. Click the button to display a table of all contribution tags to the selected advisory. The table displays the name or the tags, the data source tag name, the unit of the tag, the actual and estimate values of the tag and the rules fired at the last occurrence time of the advisory. The following is an example of a table.



Contributing Tag Name	Tag Datasource	Units	Actual	Estimate	Rule
AIR_TEMP_1	AIR_TEMP_1	DEG C	-7.1467	-1.1801	(Lo)
AIR_TEMP_2	AIR_TEMP_2	DEG C	-7.5583	-1.1856	(Lo)

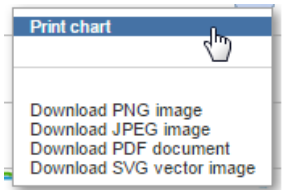
You can download the table into Microsoft Excel by clicking the Download Tag Grid icon  .

2.5.2.4 Printing and saving an alarm plot

In the System 1 Fleet Management application, you can save or print an alarm plot.

To print a chart directly from the Alarms page, follow these steps:

1. In the right corner of the top line of the plot, click the plot context menu icon  .
2. Select Print. A Print Preview page appears.



3. Enter the print parameters required for your location.
4. At the Print Preview page, click the Print button.

To save a plot as a .png, .jpeg, .pdf, or .svg file directly from the Alarms page, follow these steps::

1. In the right corner of the top line of the plot, click the plot context menu icon .
2. Select Download PNG image, or JPEG image, or PDF document, or SVG vector image.

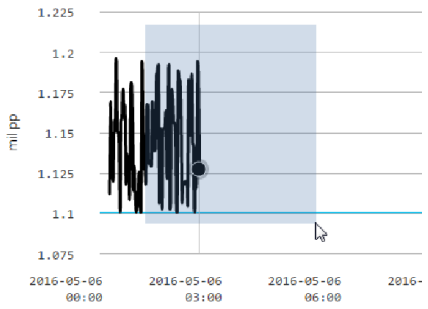
   By default, the file is saved in the Downloads folder on your computer. The default name of the saved file is **download**.

2.5.2.5 Zooming in on a Plot

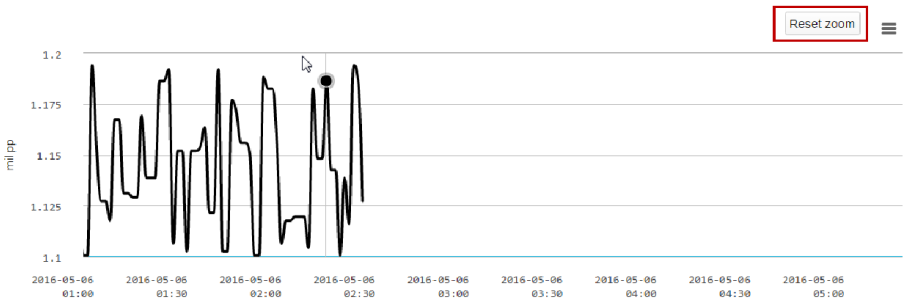
In the System 1 Fleet Management application, you can zoom in on an area of an alarm plot to view the data at a more granular level.

To zoom in on a plot, follow these steps:

1. Holding down the left mouse button, drag your pointer over an area on the plot and then release the left mouse button.



   The area you selected appears and a Reset zoom button appears.



2. To undo the zoom, click the Reset zoom button again.

2.6 Analysis Page

The Analysis module allows you to select and trend any System 1 variable or SmartSignal tag across your Fleet to illustrate machine operational data over different intervals, to compare machines across enterprises, or to correlate measurement with different data types.

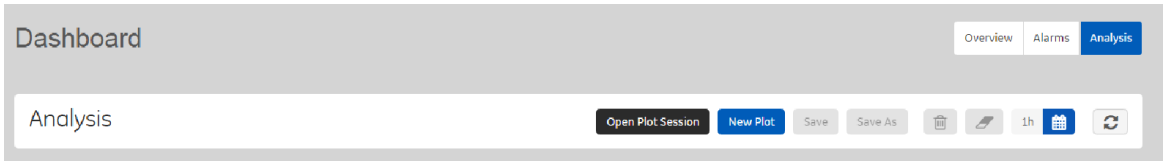
For parameters that you examine frequently, you can save any custom plots you create as plot sessions for future use. You can restrict your plot sessions to your own view (private), or you can share them with other users (public).

You can also save your plots in a graphics format to include in presentations or discussions.

2.6.1 Creating a new plot

You can create analysis plots for one or more System 1 variables or SmartSignal tags

1. Select the Analysis module from the menu bar. The blank landing page appears.

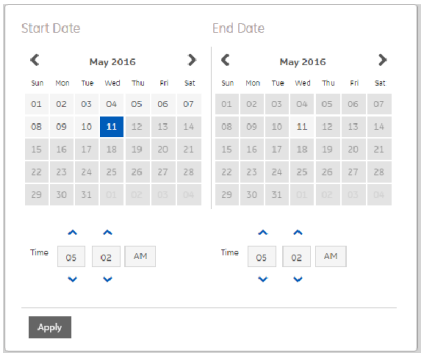


2. The default time span for the plot session is one hour (1h). You can use that time span or select a new one:

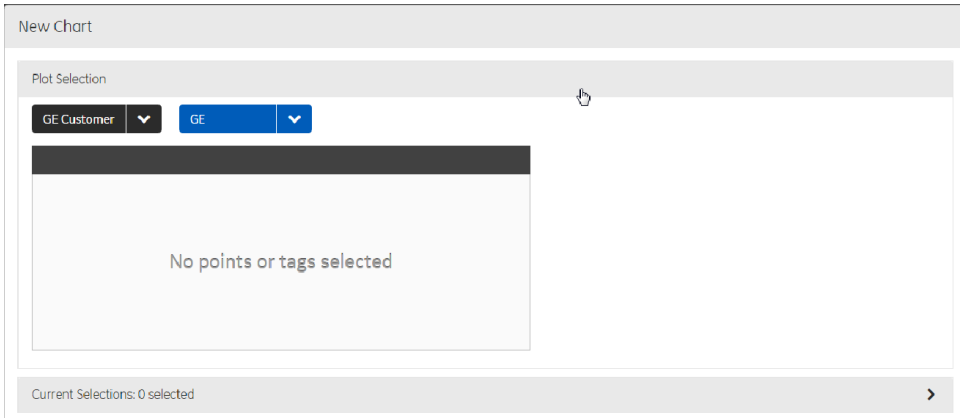
   - Click the calendar icon and select an established time span from the list.

or

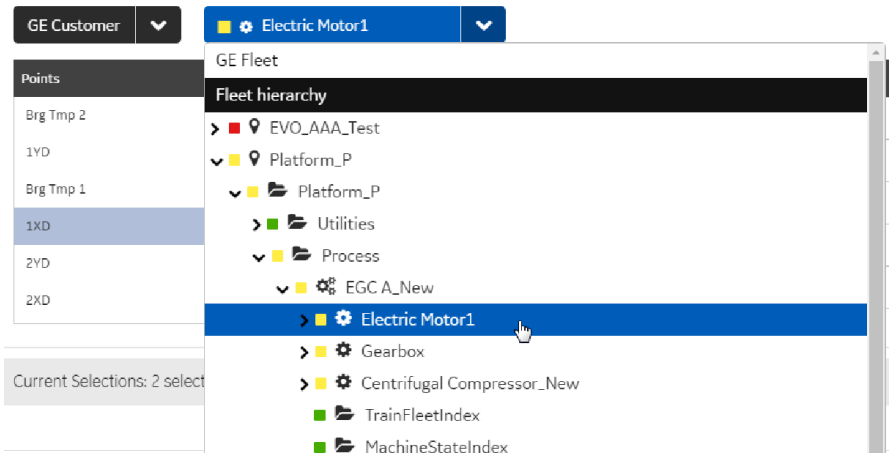
- Click **Custom** to open the calendars, then select start and end dates and times from the Start Date and End Date calendars and click **Apply**.



3. Click **New Plot**. A blank New Chart screen opens.

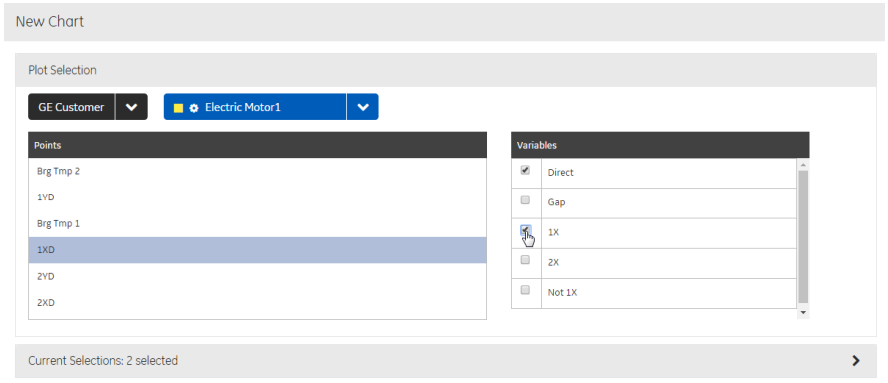


4. Click the drop-down arrow for the asset hierarchy and navigate to an asset.

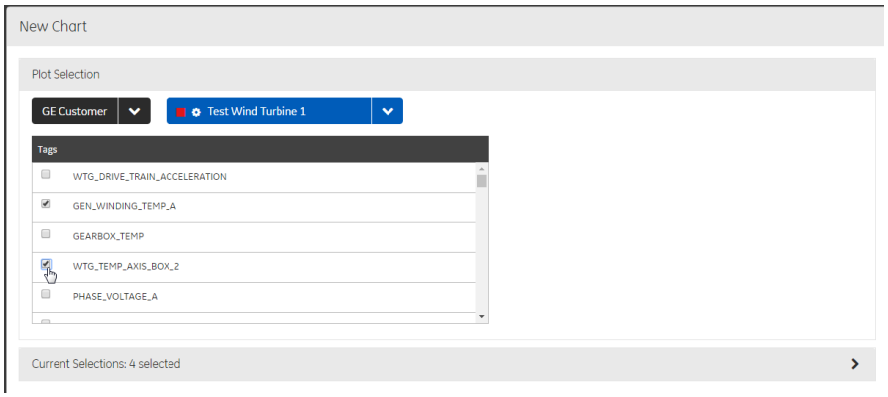


5. In the **Points/Tags** section:

   For System 1 select a point and then select one or more variables from the list on the right:

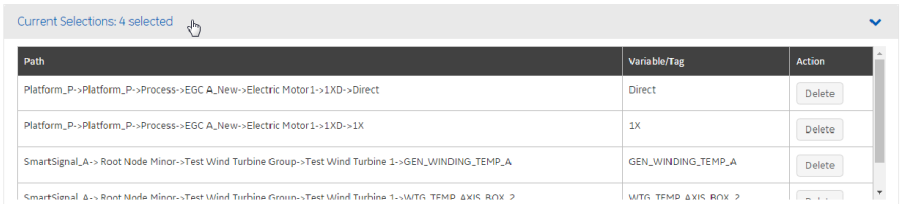


   For SmartSignal select only a tag:



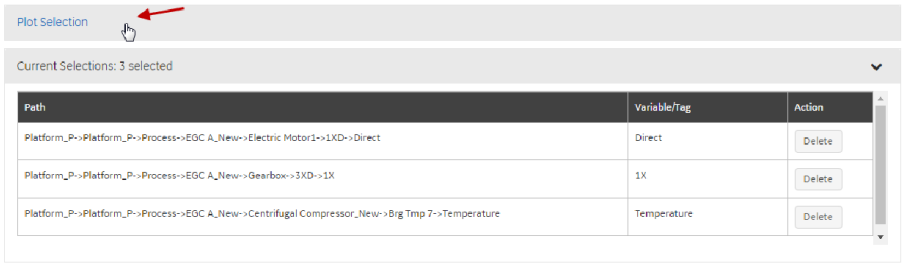
6. Repeat for each point or tag to be analyzed. As you add variables /tags, the number next to **Current Selections** at the bottom of the page increases.

7. Click the **Current Selections** hyperlink to display a table containing each selected point/tag and associated variable.

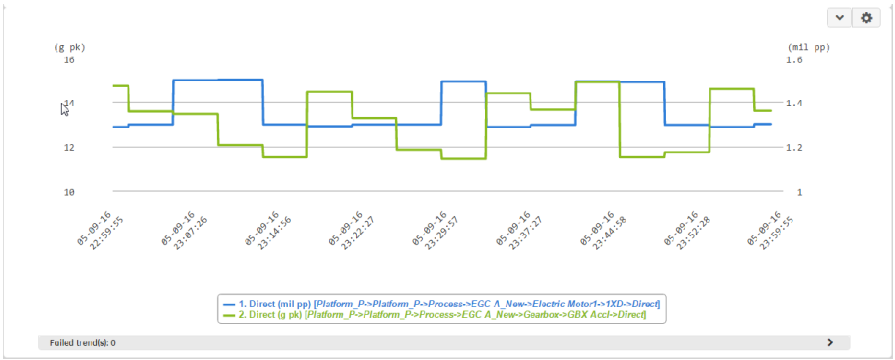


To remove a point or tag, click the Delete button on the right. Otherwise, continue to step 8.

NOTE: if you cannot see all the selected variables/tags because of lack of space on the screen, click on the **Plot Selection** hyperlink to minimize the selection window. Click again to maximize the window.



8. Click **Plot new chart**. Each selected variable appears as a separate line in the resulting plot. The illustrated variables/tags are identified in a legend at the bottom. The legend will display the name, the unit, and the full path of the variable/tag.



NOTE: If for any reason the webserver was not able to pull the trend from the data sources and send it to the browser, the number next to **Failed trends** at the bottom of the plot increases. Click the **Failed trends** hyperlink to display a table containing each variable/tag which were not trended.

Repeat as desired to create different plot combinations.

NOTE: In order to synchronize all plots to the same time range, either change to time span or click the refresh button

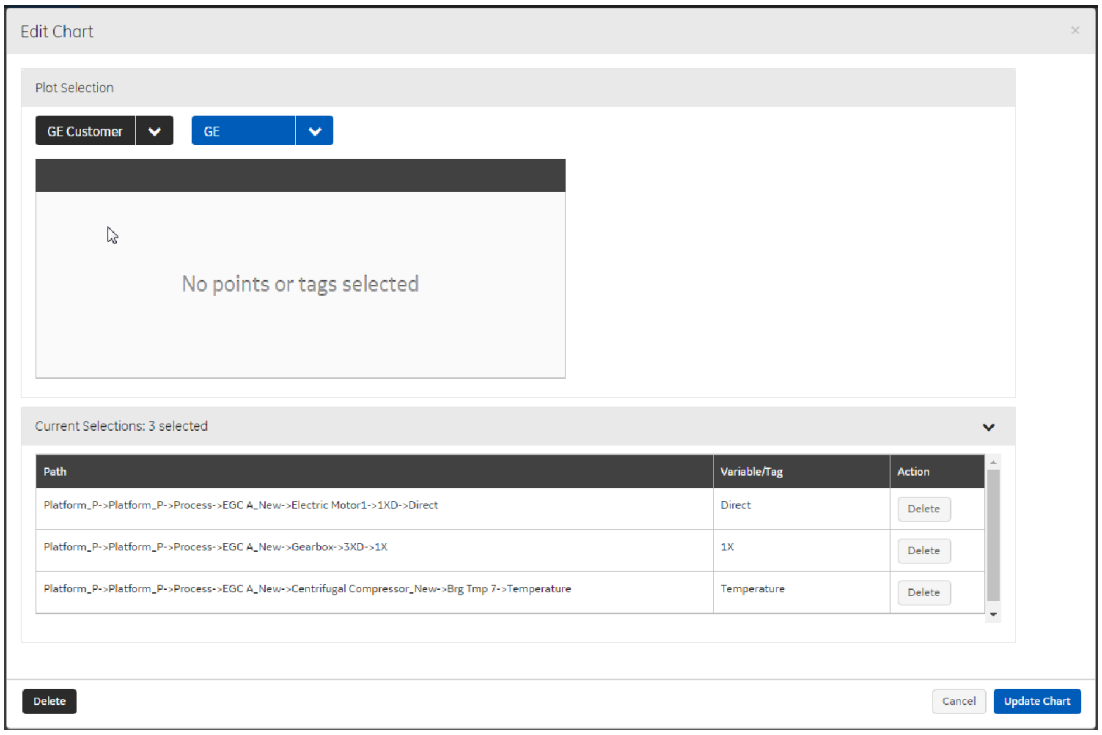
9. To refresh your plot(s) at any time, click the icon.

NOTE: The current release supports up to 5 variables/tags per plot and up to 10 plots per plot session.

2.6.2 Editing a plot

You can edit a plot at any time after the plot is created and the trend(s) appear in the chart area:

1. To edit a plot, click the icon on the far right.



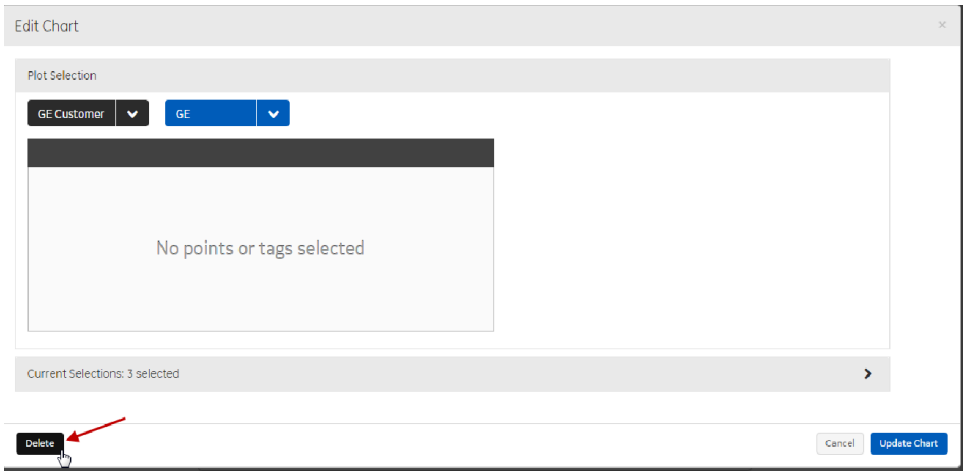
2. Add new variables / tags from the asset hierarchy in the **Plot Selection** window, or deleted variables/tags from the **Current Selections** window. For more information, see 'Creating a new plot' section.

3. When your selections are complete, click Update Chart in the bottom-right corner to view the updated chart. Your revised selections are identified in the legend on the bottom.
4. To refresh the data at any time, click the icon.

2.6.3 Deleting a plot

To delete a plot:

1. Click the icon on the far right.
2. In the Edit Chart window. Click Delete in the bottom-left corner

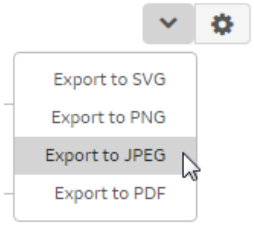


3. A confirmation warning will appear, click **Yes** to delete the plot and get removed from your plot session or **No** to cancel.

2.6.4 Exporting a plot

You can save any plot you create to your local drive in .pdf, .png, .jpeg, or .svg format. From your local directory, you can print the file for use it in a presentation or document.

1. To save your plot as a compatible file type, click the down arrow as shown below..

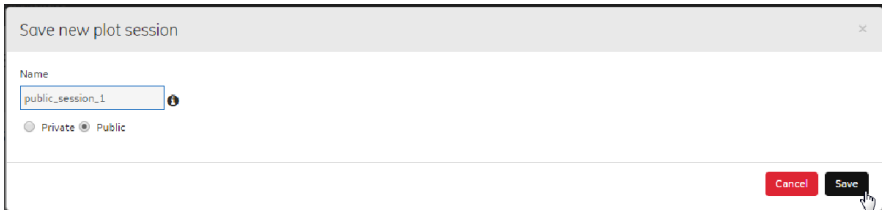


By default, the file is saved in the Downloads folder on your computer. The default name of the saved file is **chart**.

2.6.5 Saving As a plot session

You can save the plot session as a private or public plot session so you can reopen it in the future or share it with other users. Plot sessions are saved in System 1 Fleet Database.

1. To save as your plot session or to save a public session, click **Save As**.
2. In the Save new dialog box, enter a name for your plot session. Use alphanumeric characters only.
3. Select one of the following:
   - **Private**, to restrict the plot session to your own use.
   - **Public**, to make the plot session available for all users.
4. Click **Save** to save your plot session in the database.

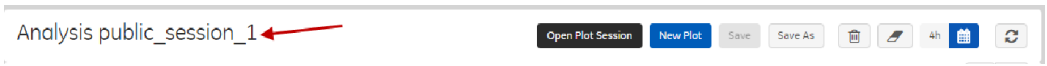


5. If a plot session with the same entered name exists in the database, a popup window will appear asking you if you want to override the existing plot session or not.

NOTE: the user can override his private sessions or any public sessions.

NOTE: A success or error message should appear after clicking the Save button. The plot session get saved with the start and end dates and times of each plot in the plot session.

6. If the plot session is successfully saved in the database, its name will appear in the header.

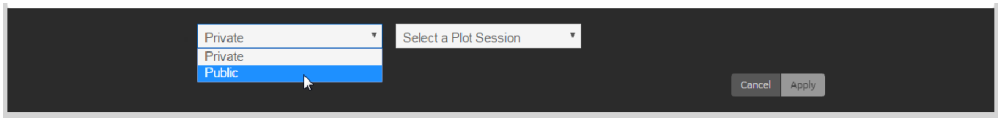


2.6.6 Opening a saved plot session

You can open saved private and public plot sessions.

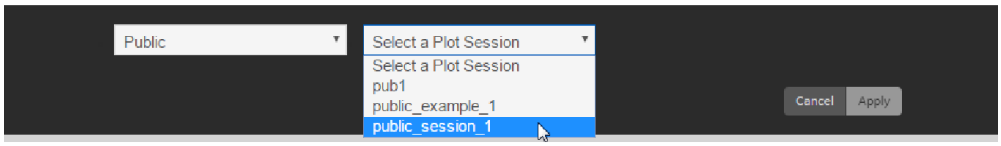
1. To open a plot session, **click Open Plot Session**

2. From the session type drop- down list, select **Public** or **Private**



A public preset is available to all users. Private presets are available only to the user who created them.

3. From the Select a Plot Session type drop- down list, select the plot session that you want to open and click **Apply**.

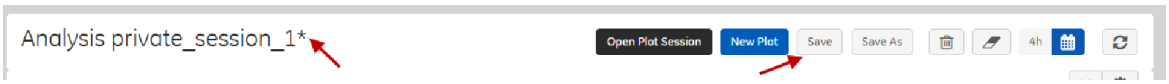


The plot(s) saved as part of the selected plot session will be displayed with the saved start date and time and end date and time equal. To view the data over a different time span, click the calendar icon and select established or custom time span.

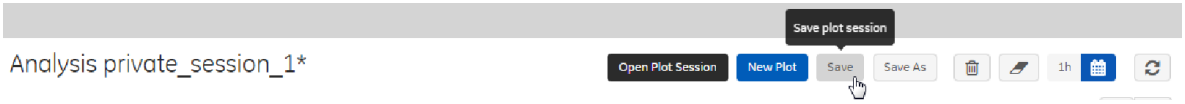
2.6.7 Saving an existing plot session

The analysis module gives the ability for users to save their private sessions without being asked to enter the name again.

1. Open a private plot session using **Open Plot Session**
2. Edit, add, or delete plot(s) in the session, an asterisk (*) will appear beside the name of the plot indicating a change happened in the plot session and the **Save** button get enabled



3. Click **Save** to save changes to the database and remove the asterisk

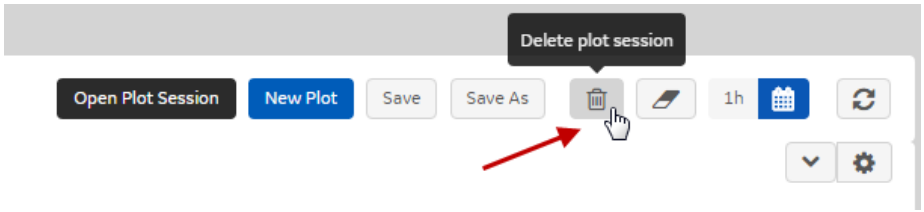


2.6.8 Deleting a plot session

Users with "User" roles can delete their private plot sessions only. Users with "Administrator" or "SuperAdministrator" roles can delete their private sessions and any public sessions.

To delete a plot session:

1. Open a plot session using **Open Plot Session**
2. When the plot(s) appears, click the icon in the options row.



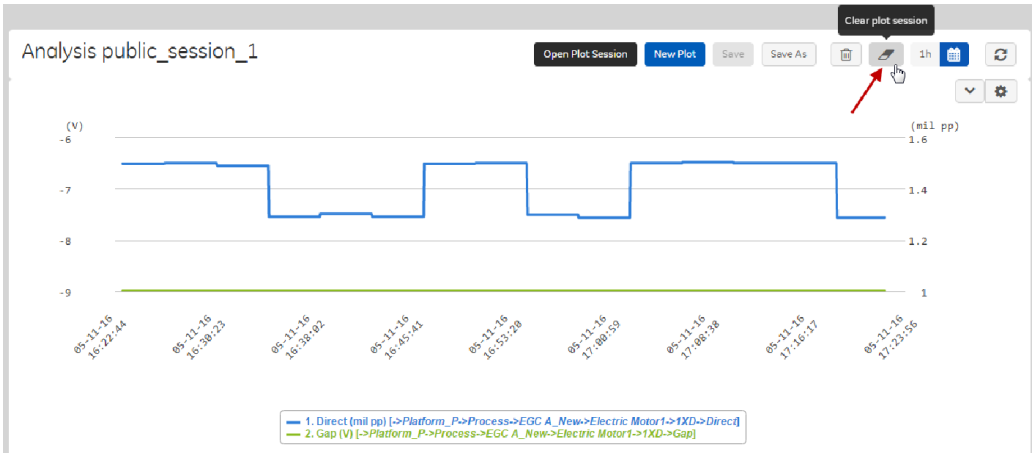
3. When the confirmation screen opens, click **Delete** to confirm the deletion.

2.6.9 Clearing a plot session

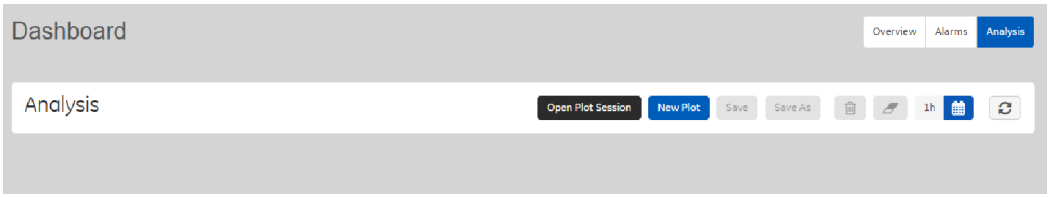
The analysis module give the user the capability to erase all the plots in his plot session in one action instead of deleting every plot separately.

To clear a plot session:

1. Open a plot session using **Open Plot Session** or create a new plot session
2. When the plot(s) appears, click the  icon in the options row



All the plots get deleted and the analysis module resets the page to the initial view.



NOTE: if you open an existing plot session and you clear, the original saved plot session will not be affected and you can still open it again.

3. Application Administration

During System 1 Fleet Managmenent installation, the user is prompted to create two superadministrator accounts. These accounts cannot be deleted and these are only superadministrator in the system.

The superadministrator should create at least one application administrator role when completing the installation and configuration. The application administrator is responsible for:

- Creating users.
- Assigning customers to users
- Editing users.
- Deleting users.
- Activating or deactivating enterprises.
- Change enterprise display name.
- Deleting enterprises.

3.1 Managing Users

As an application administrator, you can create, modify, and delete user accounts.

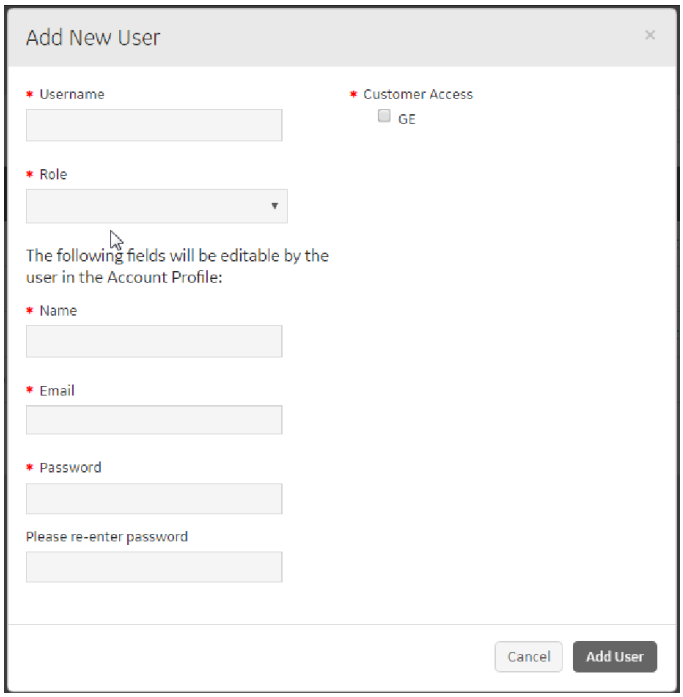
3.1.1 Creating users

To add a user:

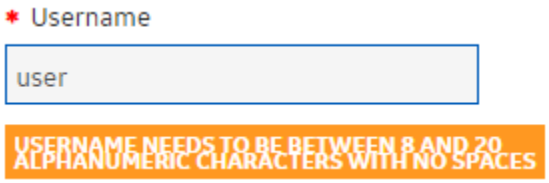
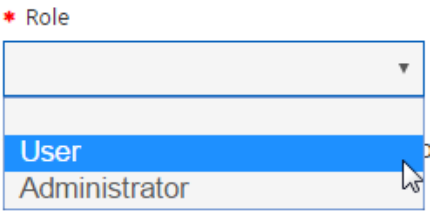
1. From the dashboard, click the **Administration** tab. The **Users** page appears by default.

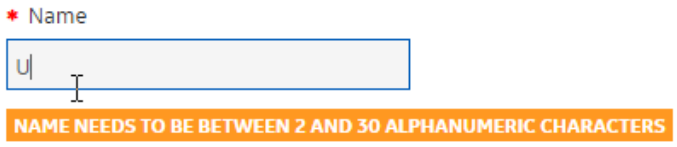
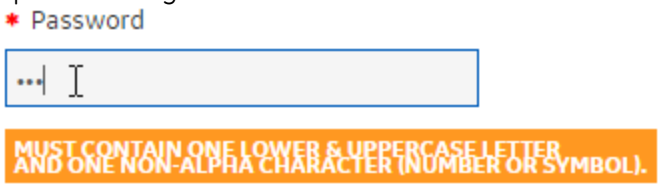
2. Click **Add New User** 

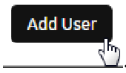
to open the following screen. All fields are required.



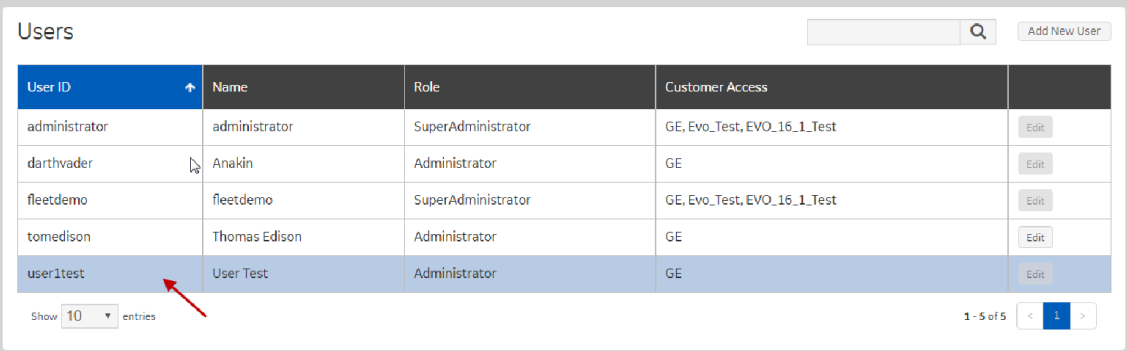
3. Enter the following information in each field:

In this field	Enter or select this
Username	The user's login identifier. 
Role	Select one of the following:  User: Can access the Dashboard features only. Administrator: Can manage users and enterprises. An administrator can add other administrators, but only the superadministrator can delete them.

In this field	Enter or select this
	NOTE: A superadministrator role is assigned during the initial installation. The superadministrator can see and access all customers and tenants in a multi-tenant configuration. The superadministrator access the **Administration** module and perform all tasks associated with the administrator role.
Name	The user's display name. The user can modify the display name in the account profile. 
Email	The user's email address. The user can modify the email address in the account profile.
Password	Enter a temporary password for the user. The user can change the password in the account profile, and should be advised to do so upon initial login. 
Customer access	select one or more check boxes to change the customer(s) that the user can access.

4. Click **Add User**. 

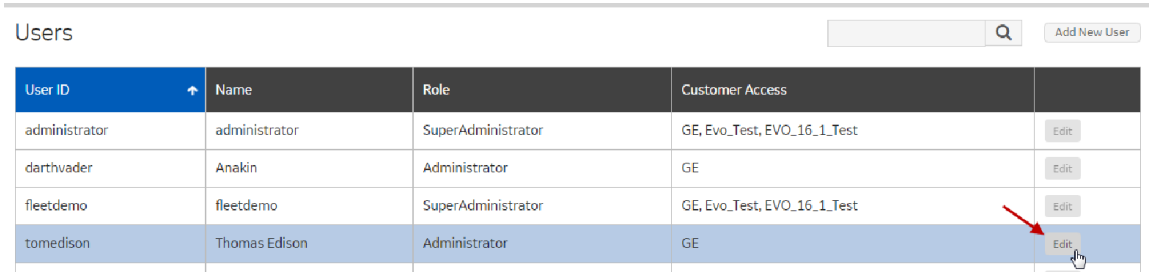
The user should appear in the users table.



3.1.2 Editing a User

To edit a user:

1. Click the **Administration** tab. The Users page opens by default.
2. Select a user from the list and click the **Edit** button on the far right.



3. Modify the fields as necessary, follow the same steps as in Creating users, then click **Save**.

Changes made to the user's account take effect immediately

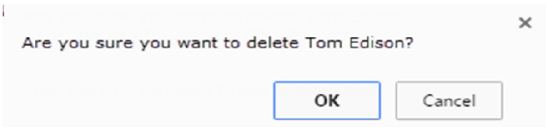
NOTE:

1. Superadministrator cannot change other superadminatrators roles but can reset their passwords.
2. Superadministrator can edit administrators and users.
3. Adminstrator cannot edit other administrators but can edit users.

3.1.3 Deleting a User

To delete a user:

1. Click the **Administration** tab. The Users page opens by default.
2. Select a user from the list and click the **Edit** button on the far right.
3. Click **Delete User**.
4. When the confirmation screen appears, click **OK** to confirm the deletion.



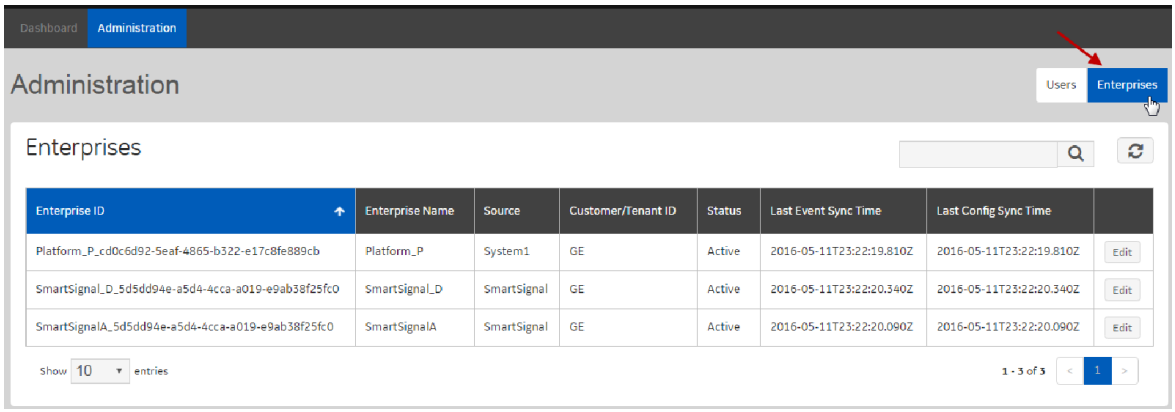
NOTE:

4. Superadministrator cannot delete himself or other superadminatrators but can delete administrators and users.
5. Adminstrator cannot delete himself or superadministrators or administrators but can delete users.

3.2 Managing enterprises

As an administrator you can view, edit enterprise information, activate or inactivate enterprises, and delete enterprises.

To view enterprise information Click the **Administration** tab, then click **Enterprises**.



The following table describes the columns on the Enterprises page:

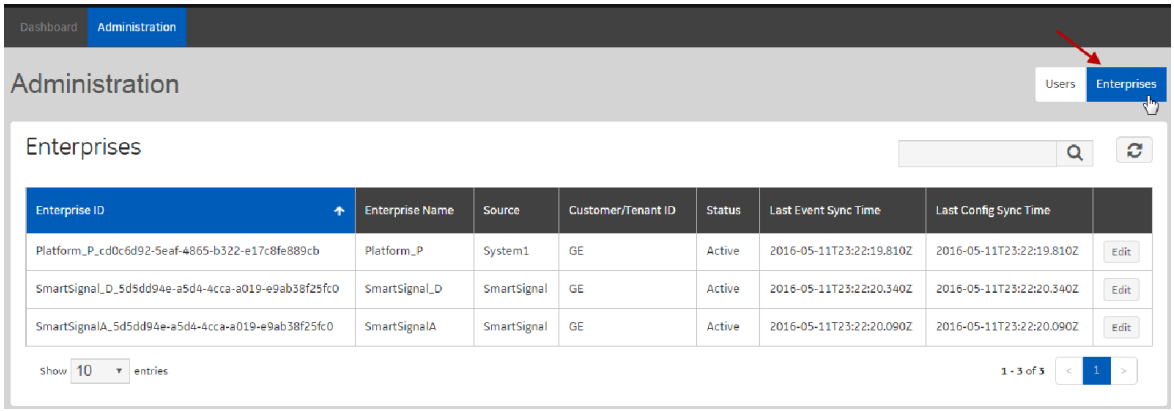
This column	Provides this information
Enterprise ID	Identification assigned automatically by the system to the enterprise when the proxy is installed on the enterprise server. The ID is equal to the enterprise name pushed by the proxy and GUID.
Enterprise Name	Name assigned to the enterprise. It is equal to the one pushed by the proxy but is can be changed by editing the enterprise.

This column	Provides this information
Source	Type of enterprise. Either System 1 or SmartSignal
Customer/Tenant ID	Customer or Tenant or Region or Group ID to which the enterprise belongs to. It is pushed by proxy during its installation.
Status	The enterprise has an **Active** or **Inactive** status. Inactive enterprises will not be displayed in the System Hierarchy. After first time synching the enterprise, the status will be Inactive. You can set the status to Active or Inactive by clicking on **Edit**.
Last Event Sync Time	Alarms and Events are continually being pushed to the portal, and the information displayed is only as current as the last time the events and the portals were synchronized. This column contains the time of the latest synchronization.
Last Config Sync Time	The last time the configuration (asset hierarchy) was synchronized between the enterprise and System 1 Fleet.
Edit button	Allows you to edit the enterprise information and status.

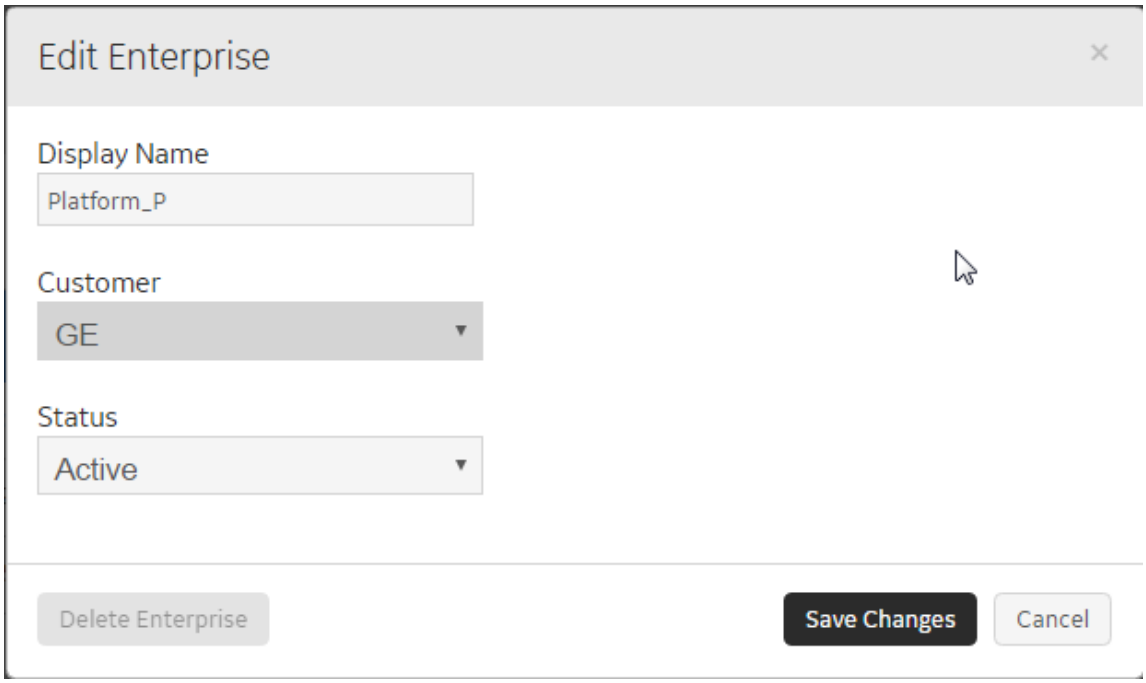
3.2.1 Editing an enterprise

To edit, change activation status, or delete an enterprise:

1. Click the **Administration** tab, then click **Enterprises**.



2. Select an enterprise from the list and click **Edit**, then do one of the following:



3. Complete one or more of following:
   - Modify the enterprise name,
   - Select a different status (**Activate** or **Inactivate**)
4. Click Save Changes.

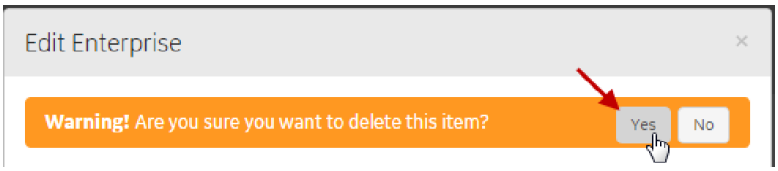
   Your changes should take effect immediately in the enterprise list.

3.2.2 Deleting an enterprise

As an administrator, you can delete enterprises in the application.

1. Click the **Administration** tab, then click **Enterprises**.
2. Select an enterprise from the list and click **Edit**.

   The Delete Enterprise button will be disabled until you shut down the enterprise proxy on the enterprise server and you change the enterprise status to **Inactive**.
3. Once the Deleted Enterprise button is enabled (proxy stopped and enterprise inactive), click Delete Enterprise. When the confirmation note appears at the top of the screen, click Yes to delete the enterprise.



The application will delete the enterprise from the database and will not appear in the enteprise list.

Copyright Information

System 1 Fleet Management is pre-release software provided as part of a closed beta test by GE Digital. It is being made available only to selected users and use of this code is only permitted under the following terms:

The software is NOT licensed for production use - DO NOT USE THIS SOFTWARE IN PRODUCTION ENVIRONMENTS.

This software is under continuing development and is provided for testing purposes only.

This software may not be transferred or distributed by you to any third party.

This software may contain defects and comes without any warranty of any kind.

GE Global Research will not be liable for any damages, direct or indirect, resulting from the use, misuse, or malfunction of this software. You agree to release GE Digital from any claims or causes of action that may arise from your use of this software.

Copies of this code, screen shots, and all documentation associated with this software are confidential and may not be shared with anyone not participating in this beta test.

This beta test may be discontinued and this license to this copy revoked by GE Digital at any time. Upon notice of termination of the beta test period, your right to use this code will cease and all copies of the code must be destroyed and all installations removed.

Technical Support Information

For technical support, call (800) 488-1915 or (775) 782-3611. You can also visit www.bntech.com.

More About GE

For more information regarding GE and its products, please visit:

www.ge.com

www.geoilandgas.com

www.geglobalresearch.com

To provide feedback on the documentation for this software, send an email to feedback.documentation@ge.com.

Publication Number: DEE 636e

Release Date: February 2, 2016