



Education and Culture DG

Lifelong Learning Programme



Multinational  
Undergraduate  
Team Work

# ErasmusLine The **Orange** Team

## EIS Installation and User Manual

P8-STATS Package Team  
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## **Introduction**

This manual contains basic instructions on how the Systems Administrator can install the Erasmusline P8-STATS package application on a Linux system and to setup the Executive Information System.

This manual will also demonstrate how a regular user can consult the Executive Information System by using it's online User Interface.

## Installation

The Erasmusline application may be distributed as an archive download or the System's Administrator can simply clone the SourceForge Git repository, as explained in the Erasmusline Project Report.

Here are the instructions to make an installation in a Linux system using the Git repository – for this example we will use the Ubuntu Linux distribution.

1. First it is necessary to have a basic LAMP stack installed – Linux, Apache, MySQL and PHP. Enter the following command in an opened terminal window:

```
sudo apt-get install lamp-server^
```

This command will install all the servers needed for the Erasmusline application to run.

2. If you don't have Git, curl or php related libraries installed in the system use the following command:

```
sudo apt-get install git curl php-pear php5-mcrypt phpunit
```

3. Next clone the SourceForge Git repository to your machine with this command:

```
git clone git://mutworange.git.sourceforge.net/gitroot/mutworange/mutworange
```

You will notice a newly created directory called **mutworange/**. This directory contains all the documentation and the Erasmusline application itself.

The example form now on will be executed from the user's home directory.

If there is a particular release version to use, you can issue the following commands:

```
cd $HOME/mutworange/  
git tag -l      # lists all tags  
git checkout release-1.0      # example release version
```

Before executing the automatic install script, the Administrator needs to setup the database user. This can be done by executing the following command:

```
cd $HOME/mutworange/erasmusline/scripts/  
mysql -uroot -p***** < create_user.sql # creates the default db user for the #  
application. Needs root user permissions.
```

After this step the Administrator can use the automated installation to create databases and run the ErasmusLine P8-STATS master and slave servers:

```
cd $HOME/mutworange/erasmusline/bin/  
./install.sh
```

Now the administrator need to run the application on the Apache Server. The Administrator create a symbolic link to the default Apache Server *www documents* directory:

```
cd /var/www  
sudo ln -s $HOME/mutworange/erasmusline/WEBSITE/ erasmusline
```

The ErasmusLine application can now be accessed through the url:

```
http://localhost/erasmusline
```

After logging in as Administrator you can access the EIS through the interface or directly through this url:

```
http://localhost/erasmusline/index.php?module=stats
```

## ***Setting up communication with the Master Server***

If the machine's installation is not meant for the Master server, the administrator will need to remove the master daemon installation and configure the slave server to communicate with a remote master server.

1. Let's start by removing the master server in the machine by typing these commands in the terminal window:

```
rm -rf $HOME/mutworange/erasmusline/stats/daemons/statsd_master
```

2. To configure the slave daemon to communicate with the remote master, the Administrator needs to edit the slave configuration file:

```
cd $HOME/mutworange/erasmusline/stats/daemons/statsd_slave
cp config.json config.inc.json    # do not alter the main config file for backup
                                   # purposes
vim config.inc.json               # use vim, nano or emacs to edit the file
```

The relevant part of the configuration file will look like the following:

```
"master_serverconfig" : {
  "sockType" : "unix",
  "sockFile" : "/tmp/erasmusline/statsd_master/statsd_master.sock",
  "serverIP" : "0.0.0.0",
  "serverPort" : "8118"
},
```

Alter the socket type and server ip to look like the following example:

```
"master_serverconfig" : {
  "sockType" : "tcp",
  "serverIP" : "95.136.101.157",
  "serverPort" : "8118"
},
```

Save the file and restart the slave daemon:

```
cd $HOME/mutworange/erasmusline/bin
```

```
./restart_stats_daemons
```

If the server address is correct, the local EIS installation will communicate with the proper Master Server.

## ***Daemons Monitoring***

### **Application Logs**

The Master and Slave server logs are organized in the /tmp directory can be changed to another directory by editing each daemon's configuration files (see previous example).

To consult the logs, the Administrator can use the following commands in the terminal window:

```
tail -f /tmp/erasmusline/statsd_master/statsd_master.log  
tail -f /tmp/erasmusline/statsd_slave/statsd_slave.log
```

To alter the verbosity of the logs, the Administrator can edit each daemon's configuration file and for example, reduce the log verbosity level:

```
"daemonconfig" : {  
    "appName" : "statsd_slave",  
    "logVerbosity" : 7  
},
```

### **Crash control**

To assure the daemons are constantly running, the Administrator can install and configure a *process supervision tool* like Monit<sup>1</sup>:

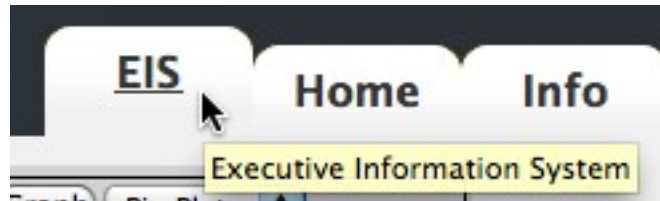
```
sudo apt-get install monit  
sudo vim /etc/monit/monitrc
```

---

<sup>1</sup> <http://mmonit.com/monit/>

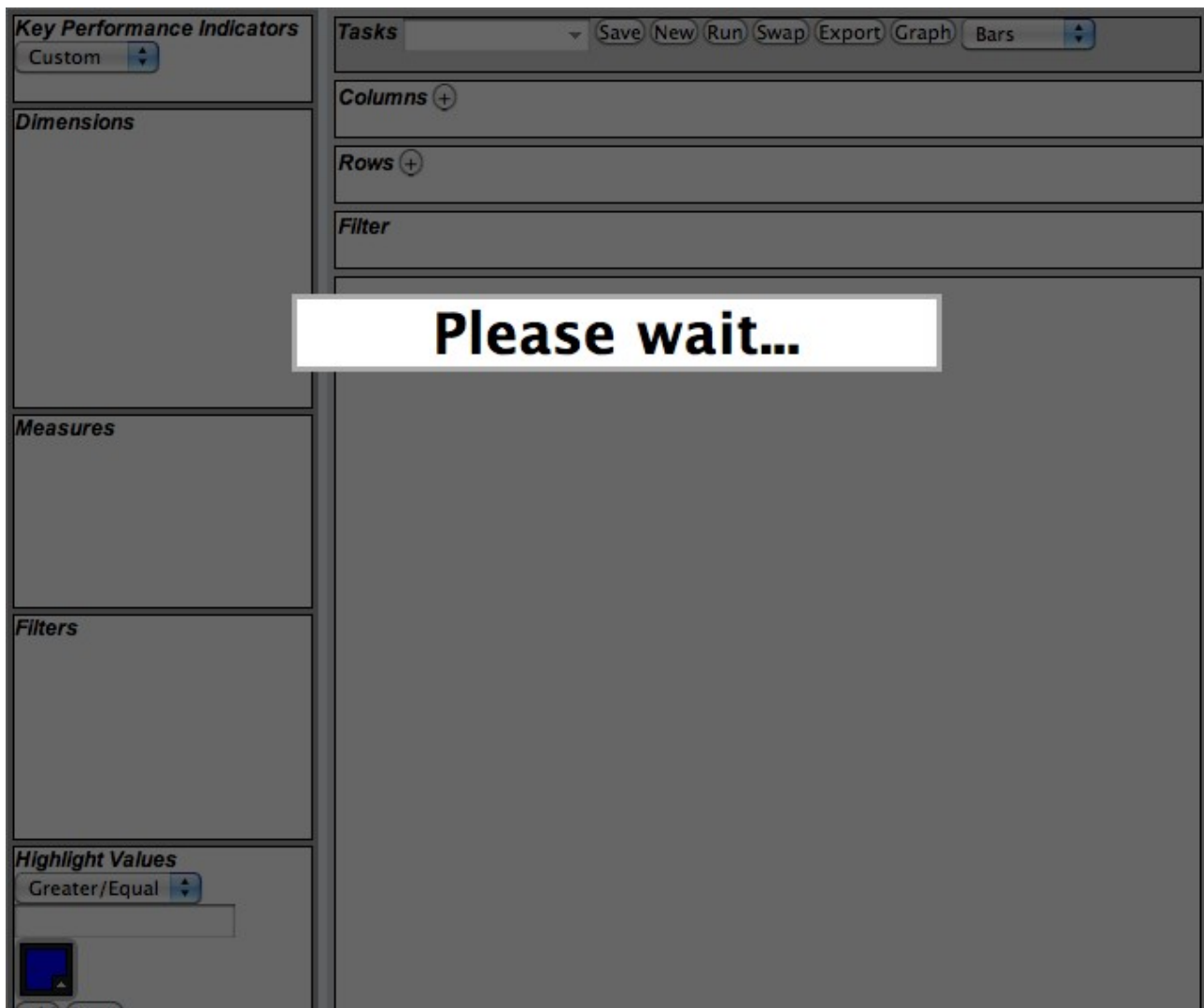
## User Manual

After the installing and setting up the Erasmusline application, the users need to login by registering a new user or logging in as an Administrator for example. After logging in, select the EIS tab in the Erasmusline Interface.



*The EIS tab on the top-right of the screen*

The EIS interface will start by loading the application's libraries, taking a few seconds to be ready.



*The EIS interface loading screen*


When the loading is completed, the users have access to the EIS interface and can begin creating new analysis scenarios right away.

**Key Performance Indicators**  
Efficacy

**Dimensions**  
Gender  
Lodging  
Mobility  
Academic Date  
Institution  
All  
Country  
Institution  
Host Institution  
All  
Host Country

**Measures**  
Applications  
Applications (Homologous)  
Applications (Relative)  
Avg. Applications  
Max. Applications  
Min. Applications  
Avg. ECTS

**Filters**  
Host Institution  
Equals  
Kiel Uni.  
Gent Uni.  
ISEP Uni.  
Glasgow Uni.  
Add Cancel

**Highlight Values**  
Greater/Equal  
  
  
Add Reset

**Tasks** query1 Save New Run Swap Export Graph Pie Plate

**Columns** + Residence Type (F) Institution (F)

**Rows** + Gender (F) Host Institution (F)

**Filter** Host Institution Institution

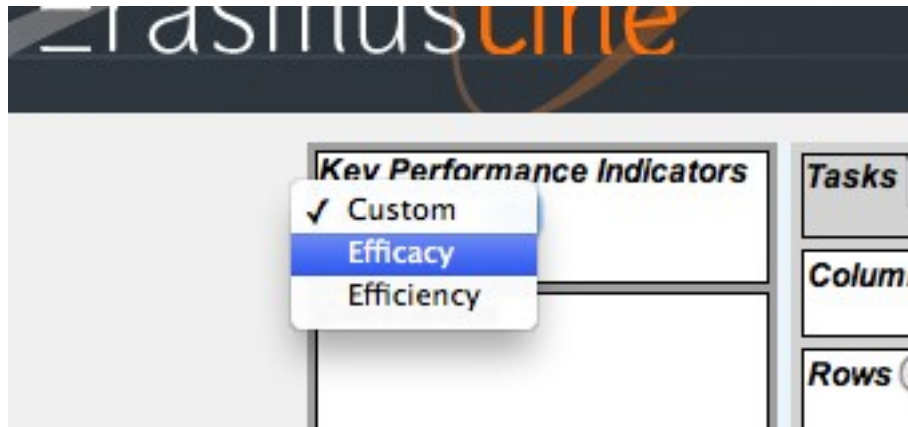
Gender	Host Institution	campus   fkl   Applications	house   fkl   Applications
M	isep	655	601
F	isep	372	478

*The EIS interface in action*

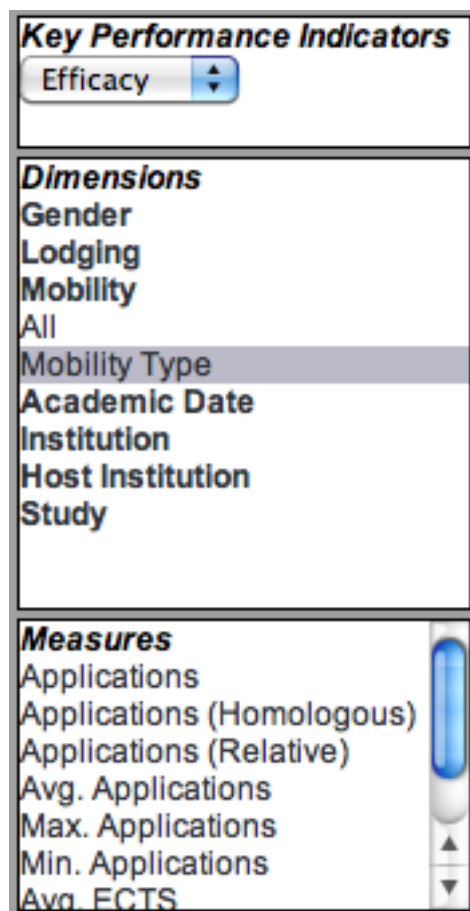


## The Sidebar

The sidebar on the left of the screen enables the users to select which **Key Performance Indicators** to measure and analyze. To begin, select the KPI to load the available Dimensions and Measures.

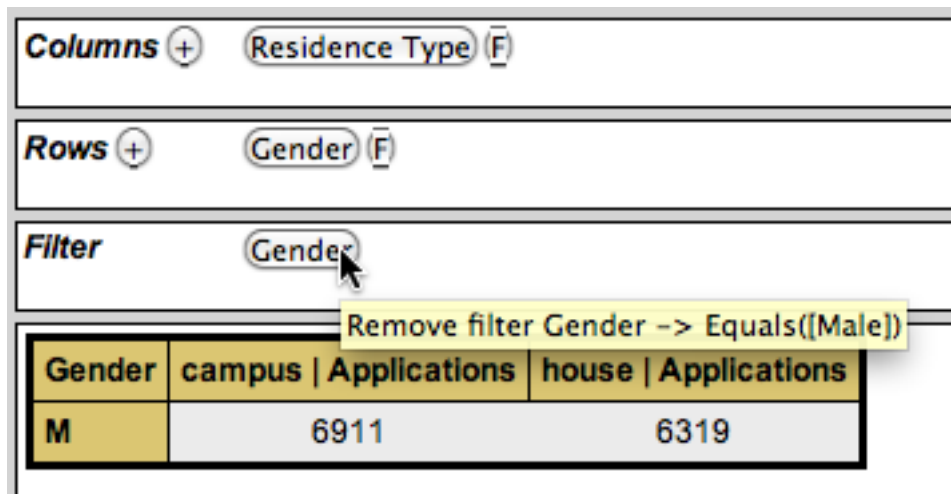


*Selecting the preferred Efficacy*



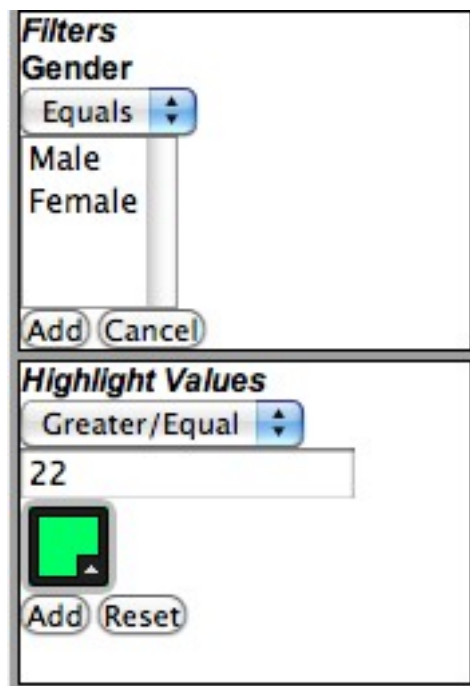
*Sidebar displaying KPI's,  
Dimensions and Measures*

To generate an output Pivot Table<sup>2</sup>, the users must select the **Dimensions** and **Measures** they wish to add to the **Columns** and **Rows** in the middle Toolbar. If a Measure is not selected, the default is always the first item in the Measure list.



*The middle Toolbar, displaying Columns and Rows with the selected attributes*

If the **Dimensions** have an available filter option, press the 'F' button to display the filter options in the left sidebar:



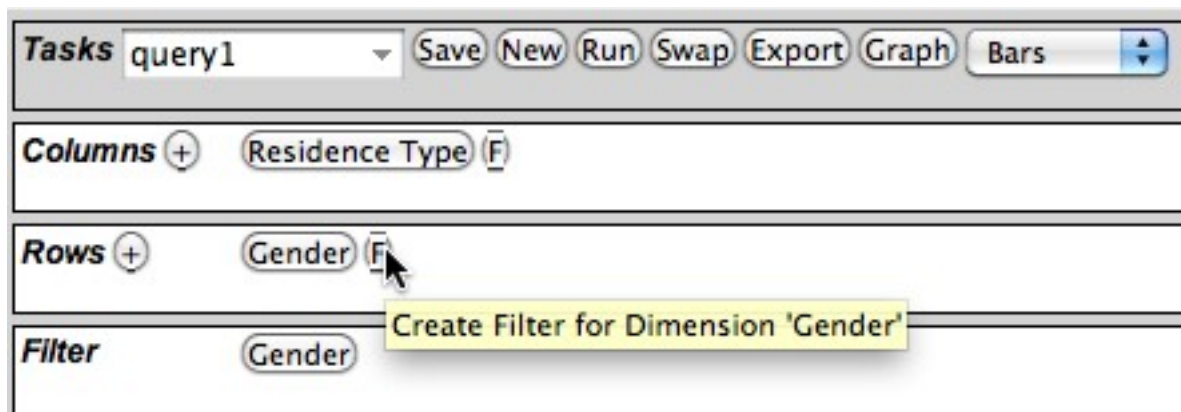
*The filter options for the Gender Dimension*

Another option in the sidebar is the possibility to **highlight values** from the result Pivot Table. The users select the numeric values, the color and the condition in which to paint

<sup>2</sup> [http://en.wikipedia.org/wiki/Pivot\\_tables](http://en.wikipedia.org/wiki/Pivot_tables)

the table cells' background. This allows the users a better comprehension of large Pivot Tables.

## The Toolbar



*The middle Toolbar running a previously saved Scenario called 'query1'*

The toolbar consists of four functional elements: the Tasks bar, the Columns bar, the Rows and Filter bar.

In the previous example, the users select Dimensions and Measures and distributes them between Columns and Rows. Pressing the **'Run'** button in the Tasks bar generates a Pivot Table below the main Toolbar. The user can swap Column elements by Rows using the **'Swap'** button, a new table is then generated.

The user can alter the table's Columns and Rows by pressing the selected Dimension and Row buttons, thus removing them from the toolbars – “Drill-down and Roll-up” operations - or create a new filter as previously shown in the previous section.

To load this Scenario next time the users' login, the users can enter a description on the select box in the Tasks bar and press the **'Save'** button. The scenario will be available to be loaded – the Columns, the Rows, the Filters and the Highlighted values – by choosing it from the select box.

Gender	Host Institution	campus   fkl   Applications	house   fkl   Applications
M	isep	655	601
F	isep	372	478

*Pivot Table with Highlighted values superior to 500*

## Other Outputs

In the Tasks bar, the users can press the **'Export'** button to generate a downloadable version of the pivot table in CSV<sup>3</sup> file format. In this format the users can open these files in any modern spreadsheet application available in every Office software suite.

	A	B	C	D
1	Gender	Host Institution	campus   fkl   Applications	house   fkl   Applications
2	M	isep	655	601
3	F	isep	372	478

*CSV file displayed in a spreadsheet tool*

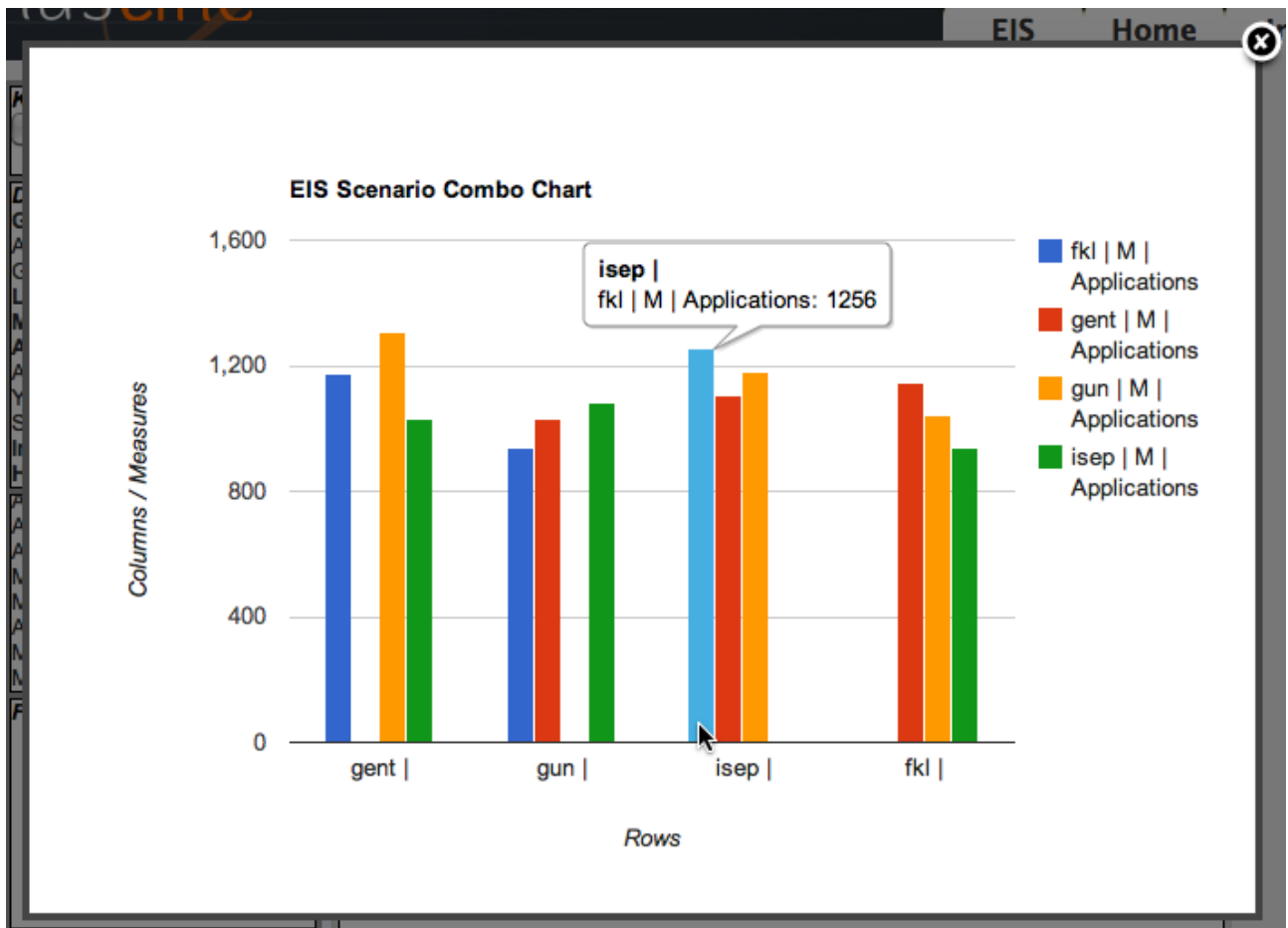
## Charts

The Google Chart Tools API<sup>4</sup> provides a series of tools to generate various types of Charts and Graphs suited for the EIS interface.

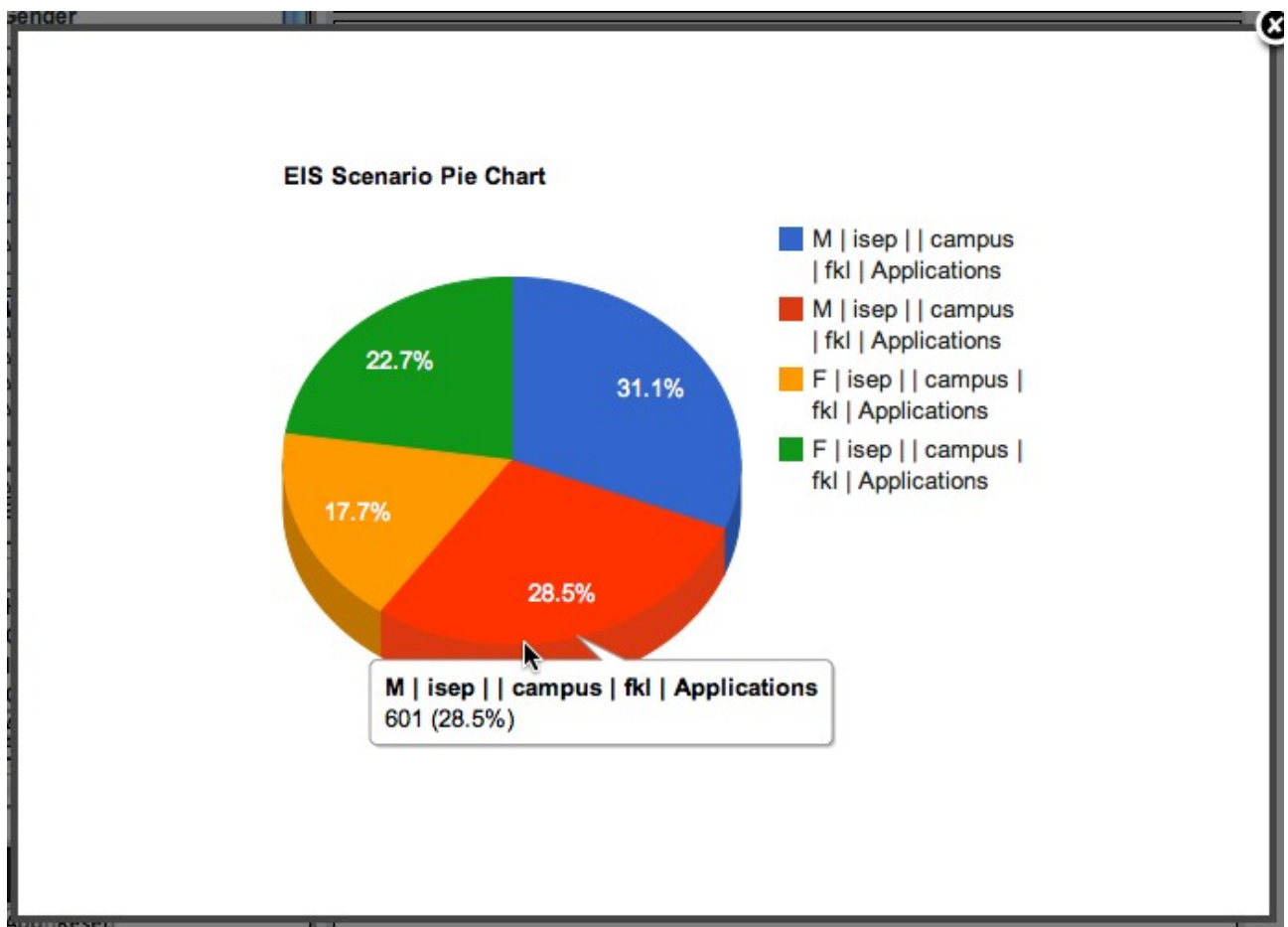
The EIS interface can generate **Bars**, **Lines** and **Pie Charts** based on the loaded scenario settings and can extend to other types of Chart using the Chart Tools API. Users can choose the preferred graph from the select box on the Tasks bar and press the **'Graph'** button to display a screen with the generated.

<sup>3</sup> [http://en.wikipedia.org/wiki/Comma-separated\\_values](http://en.wikipedia.org/wiki/Comma-separated_values)

<sup>4</sup> <http://code.google.com/apis/chart/>



Generated scenario Bar Chart output



*Pie Chart generated graphic*