# OpenAir

## Performance Tuning Guide

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# Table of Contents

# Introduction

OpenAir performance tuning refers to the steps a user can take to improve the responsiveness of OpenAir to their specific requests.

There are a number of factors a user can alter to improve the speed of responses from OpenAir:

1. Speed of Web Browser / Client
2. Speed of Internet Connection
3. Volume of data transferred
4. Amount of processing required

If you are experiencing a performance problem, the Processes Which Can Help Identify Performance Issues section provides advice on what to do before contacting Support.

## How to Use This Guide

This guide is organized by type of issue. There are three main issue types to consider: Hardware and network-related issues, general performance issues, and application specific issues (i.e. with the Reporting module, or the Invoices module).

The first section of this guide, Processes Which Can Help Identify Performance Issues, contains a series of questions and processes to help you identify what kind of issue you are experiencing.

The next chapter, Hardware and Network-Related Issues, contains information on diagnosing whether your hardware is slowing performance. This chapter includes OpenAir's minimum hardware requirements and describes common hardware-related issues.

The third section, OpenAir Tuning, contains specific settings, hints, and recommendations for improving your performance within OpenAir. Once you have ruled out hardware or network issues, this chapter may be the best place for you to start.

If the solutions in this guide still do not improve your performance, you can contact OpenAir Support to get even more help diagnosing and correcting the issue. Performance Troubleshooting and Contacting Support describes the troubleshooting process you should perform before contacting OpenAir Support for further assistance, and includes instructions for contacting OpenAir Support. When contacting Support, please provide as much information on the performance issue as possible.

## Processes Which Can Help Identify Performance Issues

### Using Page Build and Load Times

The first step in identifying performance issues is to find out how long it takes a page to build and load. To find this information, click the Tips button on the page which is loading slowly, and note the **Page Build Time** and **Load Time** at the bottom of the window.



Page Build Time: 0.11s, Load Time: 1.77s at 2013-09-12 03:39:43
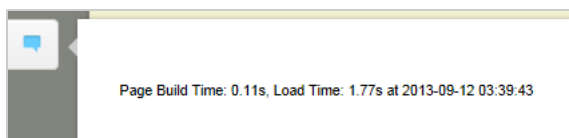
- The **Page Build Time** measures the time taken for OpenAir to process the request. A long page build time indicate extensive application processing and / or database activity. See Amount of processing required.

- **Load Time** — Measures the time taken for data to travel across the Internet and be displayed in the browser. A long load time indicate a large page size, a slow network or a slow browser. See Using a Trace Route, Identifying Client Performance Issues, and Volume of data transferred.

- **at** — Shows the exact time the request was processed by OpenAir. This is an important detail required should you need to report the problem to OpenAir support.

Excessively long build times indicate an issue with the OpenAir application itself. If this is the case, see OpenAir Tuning for ways to potentially improve build times.

## Using a Trace Route

The next piece of information you should gather comes from running a trace route. You can perform a trace route (tracert) to determine if the performance issues you are experiencing are due to your Internet connection.

### To perform a trace route on a PC:

1. In Windows XP/Vista/7/8, click the Start button on the Windows Taskbar, and select Run. In Windows 10, click the 🔍 icon in the Windows Taskbar.

2. Type *cmd* and press **Enter**.

3. At the command prompt type *tracert –4 –d www.openair.com*, and press Enter.

> ✔ **Tip:** Type *tracert* at the command prompt to see all the tracert options.

```
C:\>tracert

Usage: tracert [-d] [-h maximum_hops] [-j host-list] [-w timeout]
               [-R] [-S srcaddr] [-4] [-6] target_name

Options:
    -d                 Do not resolve addresses to hostnames.
    -h maximum_hops    Maximum number of hops to search for target.
    -j host-list       Loose source route along host-list (IPv4-only).
    -w timeout         Wait timeout milliseconds for each reply.
    -R                 Trace round-trip path (IPv6-only).
    -S srcaddr         Source address to use (IPv6-only).
    -4                 Force using IPv4.
    -6                 Force using IPv6.
```

### To perform a trace route on a Mac:

1. Open the Network Utility application.

> ⓘ **Note:** By default, this application is located in the Utilities folder (Hard Drive > Applications > Utilities > Network Utility).

2. Click the Traceroute tab

3. Enter *www.openair.com* in the network address box, and click Trace.

The results of this command will show the path taken from your computer and every step on the path taken to reach OpenAir. Look for "Timed Out" or any result over 100 ms. The first line which reads Timed Out or is over 100 ms may indicate a connection problem.

- If the first problematic line is **within the first three lines**, this usually indicates a connectivity issue within your own network. Please contact your network administrator, and provide the results of your trace route.

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- If the first problematic line appears **after the first three lines and before the last three result lines**, this indicates there may be a problem with a router you travel through prior to reaching OpenAir's servers. Please contact your Internet Service Provider (ISP) with the results of the trace route so they can further investigate any connection problems.

- If you are getting timed out **within the last three result lines**, this may point to a performance problem with OpenAir's network providers. Contact OpenAir Support for assistance.

```
C:\>tracert -4 -d www.openair1.com

Tracing route to bigbang.openair1.com [67.154.101.91]
over a maximum of 30 hops:

  1    <1 ms    <1 ms    <1 ms  172.22.23.1
  2    <1 ms    <1 ms    <1 ms  172.22.20.253
  3     1 ms     1 ms     1 ms  80.188.29.57
  4     *        *        *     Request timed out.
  5     7 ms     6 ms     6 ms  80.188.33.1
  6     7 ms     7 ms     7 ms  194.228.190.153
  7     6 ms     7 ms     7 ms  194.228.190.193
  8     6 ms     6 ms     7 ms  5.53.0.25
  9    26 ms    29 ms    26 ms  94.142.121.34
 10   120 ms   109 ms   105 ms  94.142.126.89
 11   113 ms   109 ms   110 ms  94.142.119.2
 12   115 ms   114 ms   114 ms  213.140.55.2
 13   126 ms   131 ms   131 ms  207.88.14.170
 14   131 ms   120 ms   120 ms  216.156.0.26
 15   140 ms   119 ms   119 ms  216.156.1.14
 16   125 ms   126 ms   126 ms  209.117.103.98
 17   119 ms   118 ms   119 ms  67.154.101.91

Trace complete.
```

## Identifying Client Performance Issues

There are no universal requirements for the amount of Random Access Memory (RAM) or how fast a computer must be to run NetSuite OpenAir. The requirements depend on the way your computer is being used and on the other applications running on your computer.

### To troubleshoot client performance issues:

1. Close all the applications you are not using. If you need to run more than one application consider increasing your computer resources.

2. Check your firewall application. Some of these applications check the page before loading it in your browser, which can cause a delay.

3. Update and run your anti-virus and anti-malware software to ensure that your computer is free of viruses, malware, or spyware.

4. Test on different browsers. You can install the Mozilla Firefox browser on your computer for free. Load the page using Mozilla Firefox, then load the page using Internet Explorer. Use the browser which displays the page faster.

5. Determine whether there are add-ons running on your browser, like anti-virus or anti-phishing software, or anti-spam filters. Eliminate browser add-ons, one by one, to identify the cause of the issue.

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# Hardware and Network-Related Issues

## Overview
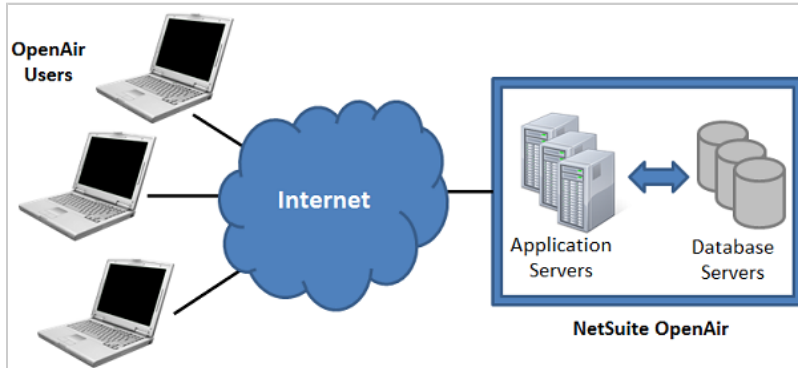


## General Recommendations

### Client

Once a response has been received from OpenAir, your computer needs to parse and display the page. If you experience any of the following, your hardware may not be able to process the response and you may need to upgrade some or all of your hardware's components:

- Your hard disk is making loud noise while loading the page
- Your hard disk is silent, but pages take a long time to load
- Your computer's temperature is higher than normal when working within OpenAir, or your computer's fans sound like they are working harder to control the temperature

Possible upgrades to boost your computer's performance include:

- Faster processor
- More memory
- Faster hard disk
- Faster graphics card

See Identifying Client Performance Issues.

> ⓘ **Note:** Running other applications on your computer at the same time as accessing OpenAir may result in a noticeable reduction in performance.

You should refer to your computer's documentation or IT Helpdesk for details on tuning your computer.

### Web Browser

Your web browser is a critical component in working with NetSuite OpenAir. The selection and correct configuration of your web browser will have a major influence on the performance and user experience with OpenAir.

- Use the newest version of your browser
- Use browsers with a JavaScript V8 engine to speed up transformations
- Use a minimum screen resolution of 1280px x 800px for the best experience
- Remove any unnecessary extensions and plugins
- Avoid excessive use of tabs.

See Identifying Client Performance Issues.

## Caching Pages

### Caching pages in Internet Explorer

1. In your browser header, go to Tools > Internet Options.
2. On the General tab, in the Temporary Internet Files or Browsing history section, click Settings.
   a. In the Check for newer versions of stored pages section, select Automatically.

   > ⊗ **Warning:** Do not choose the Never option. The Never option does not significantly improve performance but can create security issues by delivering Web pages that contain expired data.

   b. In the Temporary Internet files folder section, set Amount of disk space to use: to a high recommended value e.g. 250MB.
3. Click the Security tab.
   a. Click the Trusted Sites icon, and then click the Sites button.
   b. Enter the address https://www.openair.com and click Add.
   c. Click Close.
4. Click the Privacy tab.

   The Settings section should not require any changes.

   - We recommend setting the slider to Medium or Medium High.

   > ⓘ **Note:** Setting privacy to High will require that you manually enter https://www.openair.com as an allowed site by clicking the Sites button.
5. In the Pop-up Blocker section, if the Block pop-ups box is checked, click Settings.
   a. Enter the address www.openair.com, and click Add.
   b. Click Close.

   > ✔ **Tip:** You can eliminate the need for pop-ups in OpenAir by using the **In-form popups** OpenAir feature.
6. Click the Advanced tab.
   a. Under the HTTP 1.1 section ensure that both the Use HTTP 1.1 and Use HTTP 1.1 through proxy connections boxes are checked. These settings guarantee that all content on a page is delivered as rapidly as possible.
   b. Under the Security section, clear the box for Do not save encrypted pages to disk. If you must ensure that none of your cached content is ever accessible, check the Empty Temporary Internet Files folder when browser is closed box instead. This will cause NetSuite to perform more slowly upon login, but all subsequent pages will perform well.

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7.  Click Apply, and then click OK.

## Clearing Browser Cache

Sometimes you may experience temporary performance issues due to the contents of your browser cache (temporary internet files).

If you have never cleared cache before, it may take five minutes or longer. Subsequent attempts to clear cache should take less than one minute if done on a regular basis. You may want to clear cache whenever you notice slow performance while working in OpenAir.

For detailed instructions on how to clear your browser cache, visit www.wikihow.com/Clear-Your-Browser's-Cache.

# Internet Connection

The speed of your Internet connection is a significant factor for performance. The faster the connection the better.

The smaller the volume of data you need to exchange with NetSuite OpenAir the faster will be the response. See Volume of data transferred.

> ✔ **Tip:**  Be aware that other applications running on your computer can also use your Internet connection and impact performance.

See Using a Trace Route for details on troubleshooting Internet connection problems.

## Firewalls

A firewall is generally set up to protect your network or computer from unwanted Internet traffic. The primary function of a firewall is to let good traffic pass through while bad traffic is blocked. If your company uses a firewall to monitor Internet traffic, your network administrator may need to modify the firewall to use NetSuite OpenAir successfully.

If you are experiencing performance issues, pages that load slowly, or frequent time-outs, try accessing OpenAir from a location outside of the firewall. If you determine that the firewall may be a problem, contact your network administrator.

## Proxy Servers

A proxy server is not recommended for use with OpenAir.

When your company uses a proxy server for Internet traffic, and you visit a Web page from your work station, a request is sent to the proxy server for that page. The proxy server retrieves the page from the Internet and forwards the page to your computer. The page is then cached, or saved, on the proxy server's disk drive for future use. For subsequent requests of the same page, the proxy server returns the cached version of the page stored on its drive instead of accessing a current version of the page from the Internet.

Cached pages returned by a proxy server can cause problems when using OpenAir, because you need to view accurate and up to date information about your company, but the proxy server shows cached pages with stale data.

## Volume of data transferred

Reducing the volume of data requested from OpenAir will have a dramatic affect on performance. Filter Sets are the primary means of limiting data. You should also be aware of drop-down lists containing thousands of entries. A number of large drop-down lists on a page will have a noticeable affect on performancè.

> ✔ **Tip:** Rather than navigating through a series of forms, use the **global create list** to get straight to the form you need.

See OpenAir Tuning for specific recommendations.

## Amount of processing required

Reducing the amount of processing required by OpenAir will also improve performance. You can, for example, batch a set of API requests into a single request, avoid creating excessive processing load from frequently running reports, or avoid creating complex dashboard displays.

> ✔ **Tip:** If you discover that a report takes a long time to return results, you can schedule the report to run during a quieter period and to automatically send the report by email to yourself (and other recipients).

See OpenAir Tuning for specific recommendations.

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# OpenAir Tuning
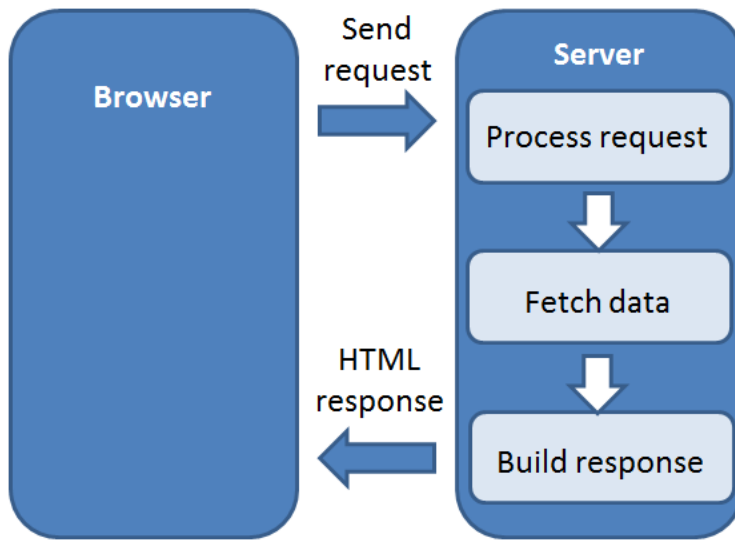


This chapter is a cookbook of solutions to common performance issues in OpenAir organized by area.

- General
- Projects
- Timesheets
- Charge/Revenue Projections
- Reports

Each solution has the follow sections:

- **Scenario** — A description of a potential performance issue.
- **Best Practice** — A suggestion or suggestions on how to improve your performance in the given scenario.

Some solutions also include one or both of the following:

- **Note** — Information which is good to know, and provides extra information or background for the best practice.
- **Warning** — Very important information which you should be aware of if you implement the best practice.

# General

## Scenario

OpenAir displays 'Script running too long - want to stop script?' errors and pages with large drop-down lists load slowly. This happens when you want to see all the records, but several thousand records in a drop-down list make it unusable.

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## Best Practice

## Limit Entries in Drop-down Lists

Limit customer/project/user drop-down lists and using the search feature will ensure the best performance for all browsers by following these steps:

1. Open the User Center by pointing to your user name in the top right corner of the user interface.
2. Click Personal settings.
3. In Display Options, set any of the "Number of entries to display in …" drop-down lists to any value other than "All".



## Scenario

Lists, including project lists, booking lists, or time entry lists, return large amounts of data, resulting in slow performance.

## Best Practices

## Use Advanced Filters

Users should first apply an advanced filter before opening a large list, so that the list loads less data. Advanced filters are 'server-side' filters which do not return data which is filtered out. Column filters are not server-side and will not give the same performance boost as advanced filters.

Create a new Advanced filter by following these steps:

1. In any list view, click the dropdown in the upper left corner of the list view and select "New filter …".
2. Name the filter in the "Filter name" field.
3. In the first dropdown, select the list column or columns you would like to filter by.
4. In the second dropdown, select the parameter definition or definitions for the filter. Enter appropriate values for the type of parameter you have chosen.
5. In the third dropdown, select the appropriate values for the filter parameters.

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6. You can add additional filter parameters by clicking "Add row".

7. Click **Save**.

With this filter in effect, the list will only load records which match the filter's parameters.

> **Note:** You do not have to name the first Advanced filter which you create. If you do not name it, it will be saved as "(unnamed filter)" in the filter drop-down list. If you are creating more than one filter, we recommend that you give each filter a descriptive name.
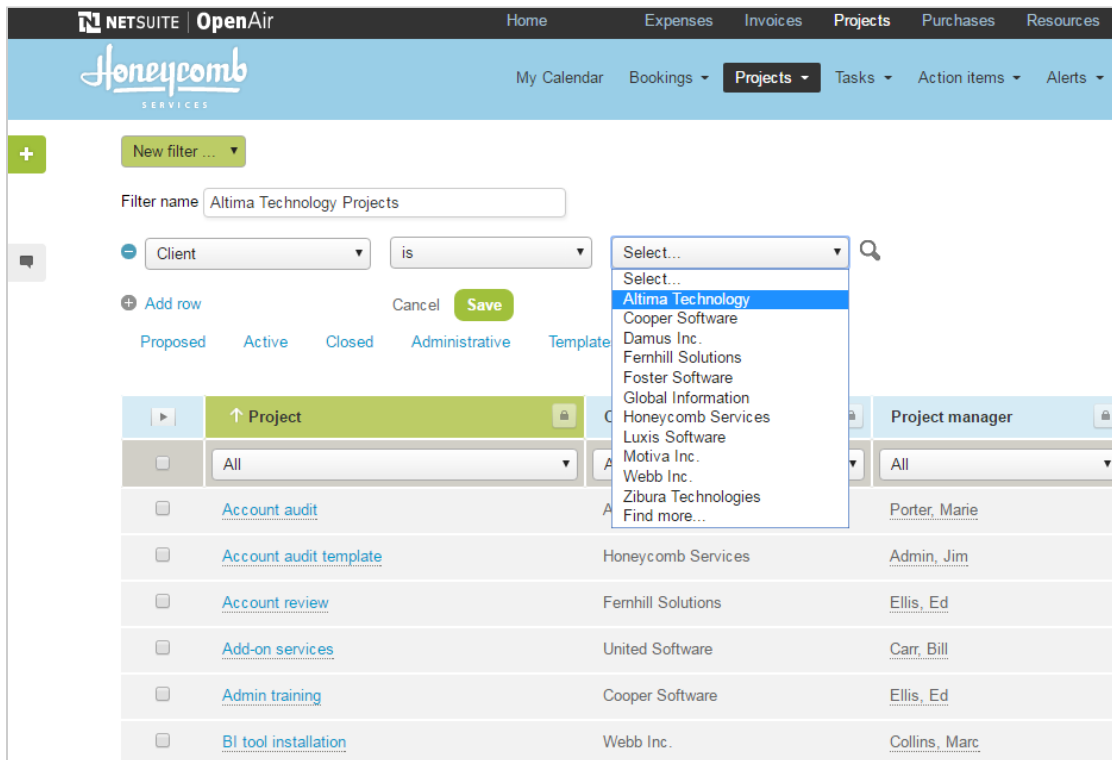


## Scenario

Administrators and other All Access users experience slow performance in accounts with very large amounts of data, especially when loading lists.

## Best Practice

### Change Filter Sets

Give users with All Access filter sets access to more than one filter set. You can assign multiple filter sets to a user by following these steps:

1. Navigate to Administration > Global Settings [Users] > Employees and select an employee ID to assign multiple filter sets to.

2. Click the **Filter sets** link.

3. Add selected filter sets from the "Available Filter sets list".

4. Click **Save**.

Users should have access to filter sets which show the data which they need for their current work. You can change their filters to "All Access" or others as needed.

> ⓘ **Note:** Using this practice, transactional lists such as "Bookings" will load more quickly; however, to see a noticeable effect, the combination of filter sets must return significantly less data than the "All Access" option.



## Scenario

Data growth is degrading performance as the number of completed or inactive projects increases.

## Best Practice

## Create an Archived Project Stage for Completed or Inactive Projects

Create a project stage which no employees can access through their filter sets. You can then assign this project stage to projects which are closed or inactive. When employees use OpenAir, the system will avoid processing projects assigned to the archived project stage. Performance may improve as less data is being processed for each employee.

### To create an "archived project" project stage:

1. Navigate to Administration > Application Settings > Projects Settings > Project Stages.

2. Click the **Create** button and click "Project stage" under "New".

3. Name the project stage with a unique name in the "Project stage" field.

4. Leave all other options or fields cleared.

5. Click **Save**.

6. Navigate to Administration > Global Settings > Users > Filter set.

7. Click on each filter set and click "Project Stage access".

> ⓘ **Note:** You cannot edit the Project Stage access for the "All Access" Filter set.

8. Ensure that the archived project stage which you created is excluded from each filter set except "All Access".

Most users will not be able to see archived projects with the new project stage.

## Scenario

A list with many columns won't load or produces script errors in the web browser.

## Best Practice

### Access the List Using a Limited Filter Set, Create an Advanced Filter, and Then Adjust the Number of Columns

Create or select a filter set which loads a limited set of data to the list which is causing errors. Then, apply this filter set and open the list. Next, create an Advanced Filter for the list which limits the processed data. Finally, select the original filter set and open the list.

#### To create a new filter set:

1. Navigate to Administration > Global Settings > Users > Filter set.

2. Click the **Create** button and click "Filter set" under "New".

3. In the "New filter set" screen, enter a name for the Filter set in the "Filter set name" field.

4. Click **Save**. The filter set's "General" page opens, where you can change the Filter set name, add Notes, or make this filter set the default set for new or imported employees.

5. Click "Employee filter set".

6. Select the employees who can access this filter set.

7. Click "Access Control".

8. Select an Access control type which is closest to what you want to filter.

9. Select which data you would like to include or exclude in your filter set.

10. Click **Save**.

#### To create and apply an Advanced filter:

1. When in a list view, click the "All" dropdown list to the right of the **Create** button and click "New filter …".

2. Enter a name for the filter in the "Filter name" field.

3. Define criteria to filter your list.

   1. Select the related record type in the first dropdown list.

   2. Select an operator in the second dropdown list.

   3. Select the record to filter against in the third dropdown. Click the 🔍 icon to search for specific records.

   4. Click the "Add row" link to add additional filter criteria.

   5. In the dropdown list at the bottom left of the filter criteria, select whether you want to "Match any" or "Match all" of your filter's criteria.

4. Click **Save** to apply the Advanced filter to your list.

# Projects

## Scenario

Auto-billing and auto-recognition are delayed, or project recalculation slows down your system usage substantially.

## Best Practice

### Configure the Performance Console

The timing of auto-billing and auto-recognition jobs can be delayed when too many of these jobs are scheduled to run at the same time. Project recalculation on completed projects which have not been inactivated in the system can also use substantial system resources.

The Performance Console allows you to configure OpenAir to avoid running auto-billing, auto-recognition, and project recalculation for projects which are complete. With this feature, the criteria you set in OpenAir determines whether to run auto-billing, auto-recognition, and project recalculation on each of your projects or not. With this feature, projects which have not created billing or revenue recognition transactions for several months will have their auto-billing and auto-recognition alerts run less frequently or will be deactivated by OpenAir.

The Performance Console is always active and its default settings are always in effect; however, you can adjust its settings to better fit your organization's needs.

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> ℹ **Note:** Administrators and users with the "Perform company maintenance functions" role permission can access the Performance Console.

> ⊗ **Warning:** The Performance Console may cause OpenAir to not run auto-billing, auto-recognition, and project recalculation for projects which experience very long downtime periods between billing milestones or other recalculation points, as these projects can appear to be inactive to the system, even when not marked as such.
>
> In addition, project recalculation should not be disabled for projects which require further updates to their percent complete status, assignment utilization, or for which dates of tasks may need to be changed.



## To Adjust Thresholds to Stop Auto-Billing, Auto-Recognition, and Project Recalculation:

1. Go to Administration > Global Settings > Account > Performance.

2. Set the thresholds for when to stop auto-bill and auto-recognition in the Auto-bill and Auto-rec screens. Click **Save** on each screen to save the settings.

   ▪ You can set the **rescheduling** threshold between 7 and 180 days. The default is 120 days.

   ▪ You can set the **deactivation** threshold between 30 and 500 days. The default is 400 days.

   Select the **Apply also to projects with no project billing transactions** to apply the rule to projects which have never created billing transactions. This feature may disable auto-billing for

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Template projects, and copy that setting to new projects created from those templates. If you enable this setting, we recommend reviewing your Template projects the day after selecting this setting. This setting does not affect projects using the duplicate_from_project custom field setting.

3. Set the thresholds for when to skip project recalculation. If you select more than one threshold condition, all of the selected conditions must be satisfied before OpenAir will skip recalculation on a project. Click **Save** to save your settings.

   ▪ You can set the **skip project recalculation** threshold between 1 day and 500 days. The default is 90 days.

## Scenario

The Task form takes a long time to save when a project has many tasks or assignments.

## Best Practice

### Allow Users to Initiate Project Recalculation

OpenAir has a feature which enables project managers to change many tasks at once before OpenAir recalculates the project plan and reloads the project outline screen. Follow these steps to use this feature:

1. Navigate to Projects > Projects and select a project.
2. Click "Properties".
3. Navigate to "General" and select "Allow the employee to initiate the project recalculation".
4. Click **Save**.

When this feature is enabled for a project, project managers can change the planned hours in one or several tasks without recalculating the timeline of the project. After saving all changes to tasks, a "Click here to recalculate now." link will appear above the task list.

> **Note:** If you cannot see the "Allow the user to initiate project recalculation" checkbox on the Project properties page, please contact Support for further assistance. This feature and the "Click here to recalculate now" link can only be used when editing tasks in the Phases/Tasks: List view, and not with Outline, Gantt, or Task Views.



# Timesheets

## Scenario

Timesheet approvals are slow when particular projects, especially internal tracking projects with many or all users assigned, appear in the timesheet.

## Best Practice

### Skip task recalculation for timesheet approval

Create a custom checkbox field on projects called **skip_task_recalc** which will allow you to select specific projects on which to skip task recalculations. Follow these steps to create this checkbox:

1. Go to Administration > Global Settings.
2. Click **Custom fields**.
3. Click the Create button and select New Custom field.

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4. Select "Project" from the "Add a custom field to:" dropdown list.

5. Select "Checkbox" from the "Type of field to add" dropdown list.

6. Click **Continue**.

7. Enter **skip_task_recalc** in the "Field name" field. You must write the name exactly as written here.

8. Enter any other details for the custom field, including position and display name.

9. Click **Save**.

If you select this checkbox on the Project properties form, the system will skip calculation of daily hours and task duration when a task is modified.

> ⊗ **Warning:** This feature is useful if the project is only used internally for assignment for task-tracking purposes, and when task recalculation is not critical for project management. If the project is used for utilization, planning, or billing, this feature should not be used.

# Charge/Revenue Projections

## Scenario

Global charge projection transaction generation takes several hours to run no matter when it is scheduled to take place.

## Best Practices

### Set Up Charge Projection Filters

Set up additional filters for global charge projections which can effectively reduce the number of generated entries. Follow these steps:

1. Navigate to Administration > Application Settings > Projects Settings > Charge projections.

2. In the "Projections filter" section, click the **> Create** or **> Edit** link to select Project stages to filter by.

3. Select which Project stages you want to filter by and click **OK**.

4. Clear "Include inactive projects" to apply your filters only to active projects.

5. Click **Save**.

These filters are only applied when global projections are run, and are ignored when projections are generated for a single project in the project properties form.
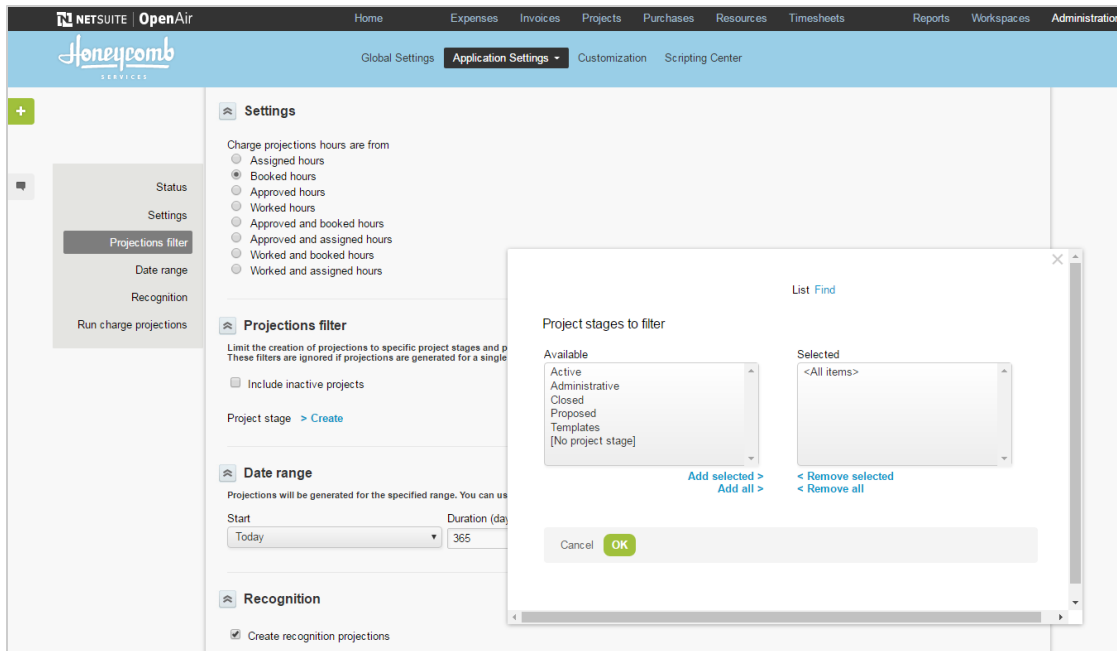
In addition to Project stage filtering, you can set a date range filter by entering specific start and end dates or a relative date range such as "Tomorrow" or "This week" and a duration in days. Longer date ranges increase the amount of data which must be processed, which increase the length of time it takes to run projections. To set date range filtering, follow these steps:

1. Go to Administration > Application Settings > Projects Settings > Charge Projections.

2. In the "Date range" section, select whether you want projections to be generated for a relative or absolute date range.

   ■ To change between a relative and absolute range, click the "relative" or "absolute" link in the "Projections will be generated for the specified range. You can use a relative or an absolute range" note in the Date range section.

3. For a relative date range, select a start date and the number of days to run the projection for. For an absolute date range, enter start and end dates or select them using the calendar icons next to each date field.



# Exclude Projects from Charge and Revenue Projections

Create a custom field which allows you to exclude specific projects from charge projections. To create this field, follow these steps:

1. Contact OpenAir Support and ask them to enable the "Enable the feature to exclude specific projects from projections using custom field exclude_from_projections" feature.

2. Navigate to Administration > Global Settings > Custom Fields > Custom fields.

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3. With the Custom fields list view open, click the **Create** button, and click "Custom field" under "New".

4. In the "Add a custom field to" dropdown list, select "Project".

5. In the "Type of field to add" dropdown list, select "Checkbox".

6. Click **Continue**.

7. In the "Field name" field, enter **exclude_from_projections**.

> ⓘ **Note:**  The "Field name" must be entered exactly as above.

8. You can enter a description in the "Description" field if you would like a description of the custom field to appear in the Custom field list view (not on the Project form).

9. In the "Display name" field, enter **Exclude This Project from Charge and Recognition Projections**.

10. Leave the other fields and options on the form blank.

11. Click **Save**.

Once you've created the custom field, navigate to Projects > Projects > [select a project] > Properties. Scroll down to the "Exclude This Project from Charge and Recognition Projections" option and select it to exclude that project from charge or recognition projections.

# Reports

## Scenario

A report runs for an excessively long time due to it's size. Before the run is completed, the browser times out and the connection is reset.
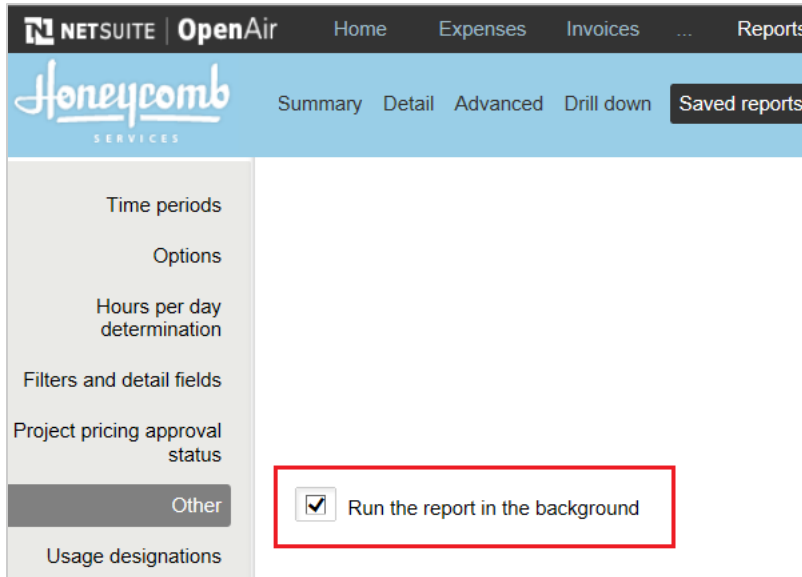
## Best Practice
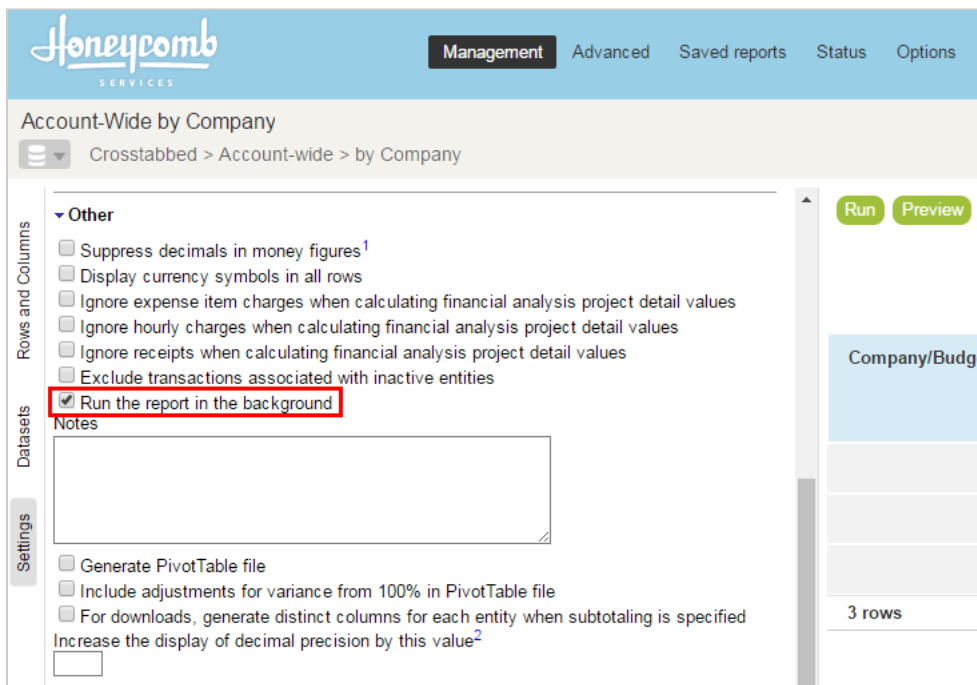
### Run Reports in the Background

Select "Run the report in the background" on the report form. If using the Next Generation Report Management and Editor, go to the Settings tab in the Report Editor and select "Run the report in the background". If you select this box and then run a report, a message will appear indicating that the report is running in the background and that you can click **OK** to continue working in OpenAir. You will receive a notification email with a link to the report results when the report has finished running.

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> ℹ️ **Note:** You must maintain an active session in the web application to use the email link. If the session is not in the primary browser on the computer, the link should be opened in the browser with the currently active session.
>
> As an alternative, you can download reports directly from the list of saved reports or schedule the report (see Share Reports for instructions to set up a scheduled report).





## Scenario

The Report form loads very slowly when an account has many currencies enabled though not all of them are used for reporting. The extra values from the unused currencies slow the system.

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# Best Practice

## Reduce Number of Currencies Used in Reporting

Some accounts may have a large number of currencies enabled; however, for many occasions, you only need to report on a limited number of currencies. Because these extra currencies can affect the load time for Report forms, reducing the number of currencies used in reporting can increase performance.

To reduce the number of currencies used in reporting, follow these steps:

1. Go to Reports > Options > Multiple Currencies.
2. Select only the currencies which you need to report on.



> **ⓘ Note:** Reporting currencies are set **per user**. This solution is especially useful if you use many calculated fields based on money.

> **✖ Warning:** If a report uses a data value which is set in a particular currency, and you disable this currency in reporting using this method, this data value will not appear in the report anymore. For example, if you have a data field called "Estonian income" with values always presented in Estonian krooni, and you disable Estonian krooni in reporting, you will not see the "Estonian income" data at all in the report.

## Scenario

Report form loads slowly due to many values being loaded for pickers.

> **ⓘ Note:** This issue does not affect Next Generation Reporting; only the traditional reporting UI.

# Best Practice

## Use Find Instead of List in Report Filters

Click on the filter in the report form and change the display from 'List' to 'Find'.

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> **ⓘ** **Note:**  Performance gains will be most noticeable in Reporting in situations where you
> previously had multiple filters trying to load 20,000 or more records.

## Scenario

Scheduled reports in an account are delayed due to having too many scheduled reports at once.

## Best Practice

### Scheduled Reports Queue Cleanup

OpenAir only allows one scheduled report per account to be run at any given time. Check the Status
page in the Reports module to see the frequency of scheduled reports. Remove or re-schedule report
times.

The Status page is available directly from the Reports module. From this screen, an administrator can
view all saved and running reports, and modify their frequency using the icons in the "Action" column.
To improve performance, first go to the **All** list view in the Status page, and either delete unnecessary
reports, remove them from the schedule, or change their report owner. Then, go to the Running list
view in the Status page and stop any unnecessary reports.

In addition, an administrator can change the owner of Saved reports from the "Report owner" section.

> **ⓘ** **Note:**  Users performing these steps need the "View status of all running reports" and "Stop
> any running reports" roles.

> **ⓧ** **Warning:**  Cleaning up and rescheduling reports can be difficult and is not a cure-all for this
> class of issue.

## Scenario

Multiple users running a large report at the same time causes it to run slowly.

## Best Practice

### Share Reports

When multiple users run the same report, the reports fight each other for locks in the database, which
causes them to slow each other down. To avoid this, one user can run the report and copy other users
on the scheduled run so that they receive the report results automatically. To set this up, follow these
steps:

1. Go to Reports > Saved reports > My reports.
2. Click the Schedule icon .
3. In the "Schedule [report name] form, select "Run the report at the following time", enter the
   Day, Hour, and Minute, and select the file format for the report.
4. Under Email options, select "All the employees who share the report".

5. Click **Save** to schedule the report.

## Scenario

Reports run slowly when tag group filters are used. Reports which include filtering on tag groups can take a long time to generate.

## Best Practice

### Optimize User Tag Group Filtering Algorithm

Reports which include filtering on tag groups can take a long time to generate. You may see an improvement in performance by modifying the filters; however, depending on your company's reporting needs, this isn't always the best solution. If modifying the filters is not an option, please contact OpenAir Support and ask them to enable the "Optimize user tag group filtering algorithm" feature for your OpenAir account.

## Scenario

Reports take a very long time to run when a large volume of data needs to be processed.

## Best Practice

### Use Filters to Reduce the Volume of Data Used in Reports

When a report is run, the data used for the results is gathered using corresponding database queries in the background. The more entities or transactions which must be processed, the longer the report takes to build.

You can speed up report processing by using appropriate filters for your reporting needs, but which also reduce the data flowing into the report. You could, for example, exclude "Internal" project stages on a "Billed/Billable hours" report. Different reports use different filters, so you should focus on the filters available in the report you are working with and decide if all of the input data which you are using for a particular report is actually necessary for that report.

## Scenario

Reports with large numbers of columns and subtotals take a long time to run.

## Best Practice

### Use Only Necessary Report Columns and Subtotals in Reports

Each column and subtotal in a report can increase the time it takes to run the report. In many cases, some of these columns or subtotals are unnecessary and can be removed from the report. In some

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reports, detail fields, which affect performance less, are a suitable replacement for a subtotal with the same detail.

## Scenario

Complex reports take a long time to run because they include many custom calculations.

## Best Practice

### Simplify Custom Calculations

A custom calculation is a combination of at least two reporting values, and are generally more performance-expensive than a single reporting value. Custom calculations can use other custom calculations as input values. The more custom calculations used, the more performance-expensive the report is.

Where possible, reduce the number of values used in a custom calculation to the minimum necessary. Additionally, decide if custom calculations which include other custom calculations are necessary, as simplifying these calculations can have a significant effect on how quickly the report runs.
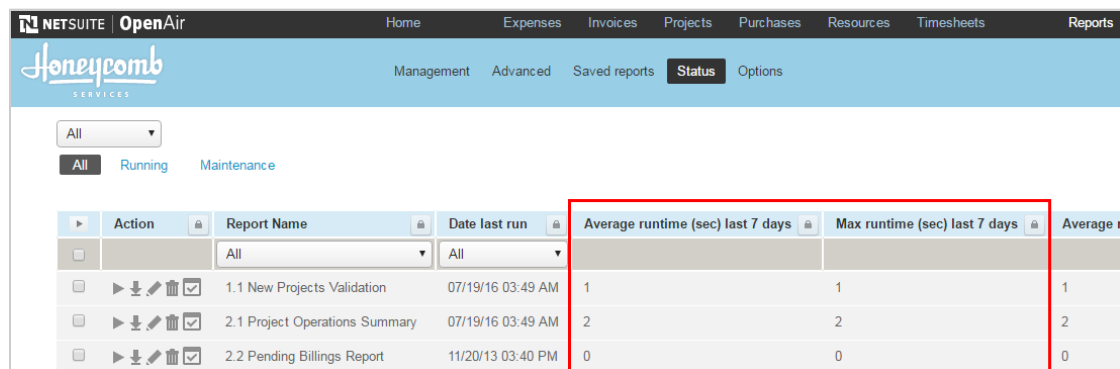
## Scenario

You want to improve report run times for users.

## Best Practice

### Use the Report Module's Status List to Determine the Longest Running Reports

Very long-running reports can cause performance to degrade across the account. Additionally, since OpenAir only allows 1 scheduled report to run at a time per account, a long-running scheduled report can delay the start of other scheduled reports.

The Status list in the Reports module shows the maximum and average run times for reports for several different time periods, including the last 24 hours, the last 7 days, or the last month.

**Open**Air

# Performance Troubleshooting and Contacting Support

If you've tried all of the performance improvement best practices in the previous chapters and still are experiencing slower performance, you can contact OpenAir Support for help diagnosing any issues. Before you contact Support, please walk through the following troubleshooting section to gather as much information on the issue as possible.

## Performance Troubleshooting

If you are facing ongoing concerns related to OpenAir performance or would like to ask for more assistance, please create a support case and submit it through your OpenAir account (see Create a Support Case). Remember that the more details you provide to our Support department, the more personalized and account-specific assistance you will receive.

Providing details for each of the items listed below will help our Support teams best diagnose and improve your performance. This information, together with a properly tagged online case or reported issue, will help our specialists to distinguish between different performance issue scenarios and focus our assistance.

1. Determine the frequency of the performance concern.
   - Is this a one-time performance issue, or does the performance issue repeat?
   - For repeat concerns, how often does the performance issue occur and does it occur in particular intervals (every hour or every month, for example)
   - When was the first time you noted the performance issue. Please be as exact as possible, and include a date and time.
2. Note which product feature or area is affected.
   - Which module or modules are affected? Is it only with major OpenAir modules, for example, the Projects, Resources, or Reports module?
   - Did you notice any dependency between modules which impacted performance? For example, if you are in Project A's project properties form (in the Projects module) and you change an assignment for John Smith, your Daily Burnout saved report in the Reports module runs much slower.
3. Is this a global issue or one which affects a specific user?
   - Does this issue only occur for specific users or all users?
   - Can you reproduce the performance issue using different filter sets?
4. What are the steps to reproduce the performance issue?
   - Provide step-by-step instructions which directly relate to the performance issue. For example:
     a. We run a report called "Timesheet Compliance" each week which takes an average of 1 minute to run, according to Reports > Status > All.
     b. We modified the report and added a filter where we excluded a Project Stage called "Pending Go Live".
     c. The report now takes 10 minutes to run.
5. Are there any network connectivity issues?

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- Try accessing OpenAir from a different Internet connection, for example, from home rather than the office. Do you get the same response times?

- Check the page build and page load times for the affected pages. Screenshots of the build and load times with a date and time stamp are very helpful for our Support team. See Using Page Build and Load Times for information on where to find page build and page load times.

- If your page build time is several seconds, please make a copy of the URL for the page so that our Engineering team can debug the page and better understand why it is loading slowly.

- If the page build time is reasonable, but the page load time is slow, there may be a network problem. Please do the following:

    a. Run a traceroute (see Using a Trace Route). Paste the results into an email to our Support specialists.

    b. Try loading the page from another Internet connection, for example, from home but outside of the corporate network. If the issue does not occur from the alternate Internet connection, we recommend that you request that your IT department investigate the corporate connection.

# Create a Support Case

If you are experiencing difficulties with OpenAir or would like to enable an internal switch, please create a support case and submit it through your OpenAir account.
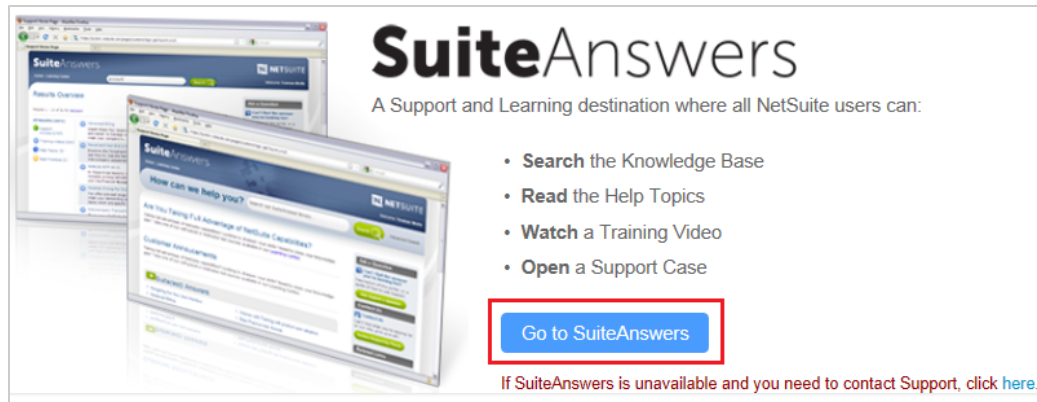
> ⚠️ **Important:** As a part of the support case creation process you will be presented with existing answers that may solve your problem. Take a moment to view the available answers before proceeding to create a support case.
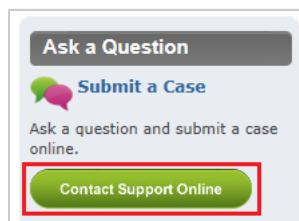
### To create a support case

1. Log in to your OpenAir account and select **Support** from the User Center menu.
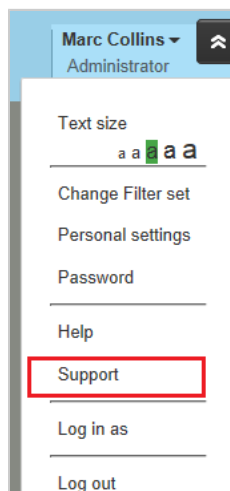


2. Click on the **Go to SuiteAnswers** button.

3. From the **SuiteAnswers** site home page, click **Contact Support Online**.



4. Enter your question keywords and click **Search**.



> ℹ **Note:** If you do not have a question, i.e. you need a switch enabled, just click **Search**.

5. Very often the answer to your question will be displayed. If you still want to create a support case click **Continue to Create Case**.



6. Fill out the **Create Case** form and then click the **Submit**. You will receive an email confirmation with **Your OpenAir Customer Care #**.

> **ⓘ  Note:**  An asterisk * displays after required fields.

Our support staff and engineers will work with you to find a solution to your problem.