

Managing the Engineering Dashboard search indexes

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Summary: This page explains how to manage the **Search indexes** used in the [Engineering Dashboard](#).

Introduction

The CAST Engineering Dashboard has two search options available for use:

- **Basic search**, providing search on items in the Assessment Model (i.e. rules) and on object names. Results are dependent on the location the search is made.
- **Advanced search**, providing search for objects based on a list of violations. Results are not location dependent.

Each search option is governed by a separate index which produces the results. An explanation of the indexes for each search option is provided below.

Basic Search

The **Basic Search** feature in the [Engineering Dashboard](#) uses the open source [Lucene search software](#). Lucene relies on the existence of an **index** which is generated automatically when the application server is started.

Where is the index located?

The Lucene search index is generated automatically in the following location on disk - the folder and its contents will not exist until the web application server is started for the first time:

```
WAR 1.x / 2.x
CATALINA_HOME\webapps\
```

What governs whether the search index is generated?

By default the Engineering Dashboard is set to automatically generate the search index every time the web application server is started. This is governed by the `rebuildComponentsSearchIndexesOnStart` setting in the following file:

```
WAR 1.x
CATALINA_HOME\webapps\CAST-Engineering\WEB-INF\web.xml

WAR 2.x
CATALINA_HOME\webapps\
```

The setting is set to **true** by default:

```
web.xml

<context-param>
  <param-name>rebuildComponentsSearchIndexesOnStart</param-name>
  <param-value>true</param-value>
</context-param>

application.properties

# Rebuild Lucene components index on start if outdated (true or false)
rebuildComponentsSearchIndexesOnStart=true
```

How to disable the automatic search index generation

To disable the automatic search index generation, edit the following file:

```
WAR 1.x
CATALINA_HOME\webapps\CAST-Engineering\WEB-INF\web.xml

WAR 2.x
CATALINA_HOME\webapps\<dashboard>\WEB-INF\classes\application.properties

ZIP 2.x
<unpacked_zip>\configurations\application.properties
```

Change the setting from **true** to **false**:

```
web.xml

<context-param>
  <param-name>rebuildComponentsSearchIndexesOnStart</param-name>
  <param-value>false</param-value>
</context-param>

application.properties

# Rebuild Lucene components index on start if outdated (true or false)
rebuildComponentsSearchIndexesOnStart=false
```

Following any changes you make, **save the file** and then **restart** your application server so that the changes are taken into account. The index will no longer be generated when the web application is started.

How to manually generate the search index

If you have chosen not to have the search index generated automatically when the web application is started, or you want to update the search index without stopping the Engineering Dashboard, you can do so as follows:



- all methods described below require the **ADMIN** role - see [User authentication](#).
- the index will only be updated if the data in it is not up-to-date (e.g. a new snapshot has been computed since the last index build)

RestAPI PUT request

Use the RestAPI client:

```
WAR 1.x / 2.x
http://<server>:<port>/<dashboard>/static/default.html

ZIP 2.x
http://<server>:<port>/static/default.html
```

You can run the following **PUT** request to update the index, where **My_Domain** is equal to the domain you have defined when **installing and configuring the Engineering Dashboard** - in most circumstances the domain will be "AED" or "AED1":

```
My_Domain/components-index
```

Using the Diagnostic page

Browse to following location:

```
WAR 1.x / 2.x  
http://<server>:<port>/<dashboard>/static/diagnostic.html  
  
ZIP 2.x  
http://<server>:<port>/static/diagnostic.html
```

Click the **Create/Update Index** button for the **Components index status** option (click to enlarge) - If the button is greyed out, then the index is already up-to-date:

REST API, HD and ED Diagnostic page

1. Login

Logged as cast [Logout](#)

2. Diagnostic area

Server information

Server status: READY
War Version: X.X.X-XXX
Recommended DB Version: 8.3.3

Available domains

Domain name	Type	Version	Components index status	Action	Violations index status	Action
AAD	Measurement	8.3.24	N/A	Create/Update Index	N/A	Create/Update Index
AED1	Central	8.3.31	upToDate	Create/Update Index	toCreate	Create/Update Index

Advanced search


Enabling the Advanced Search feature

"Out of the box", the Advanced Search feature is **not enabled** and the following message will be displayed:


No index created for Advanced search

Please contact system administrator

This indicates that a "**violations index**" (on which the feature relies) has not yet been generated. To generate the index the following methods are available:

 Note that following the generation of a new snapshot, the violations index status will change to **toUpdate**, therefore CAST recommends regenerating the index to take into account the data available in the new snapshot.

Using the "Diagnostic" GUI

 This method requires that the **user** has the **ADMIN** role.

Use the following URL to access the Diagnostic page:

```
WAR 1.x / 2.x
http://<server>:<port>/<dashboard>/static/diagnostic.html

ZIP 2.x
http://<server>:<port>/static/diagnostic.html
```

This provides an indication of the violations index status based on the "domain":

- **N/A** - the domain is mapped to a Measurement Service schema or the Dashboard Service schema was installed with CAST AIP < 8.3.3)
- **toCreate** - no index has ever been created for this domain
- **toUpdate** - an index exists for this domain, but it is outdated because a new snapshot has been computed since the index creation
- **upToDate** - an index exists and is up-to-date. When this status is shown, the index for the Advanced Search feature is ready and available.

In the following example the index has never been generated since the status is set to "**toCreate**":

Click to enlarge


Available domains						
Domain name	Type	Version	Components index status	Action	Violations index status	Action
AAD	Measurement	8.3.7	N/A	Create/Update Index	N/A	Create/Update Index
AED	Central	8.3.7	upToDate	Create/Update Index	toCreate	Create/Update Index

To generate the index, click the **Create/Update Index** button. During generation the status "**Indexing**" will be displayed and on completion, the status will change to "**upToDate**":

Click to enlarge

Available domains						
Domain name	Type	Version	Components index status	Action	Violations index status	Action
AAD	Measurement	8.3.7	N/A	Create/Update Index	N/A	Create/Update Index
AED	Central	8.3.7	upToDate	Create/Update Index	upToDate	Create/Update Index

Using the RestAPI

 This method requires that the **user** has the **ADMIN** role.

Use the RestAPI client:

```
WAR 1.x / 2.x
http://<server>:<port>/<dashboard>/static/default.html

ZIP 2.x
http://<server>:<port>/static/default.html
```

Using the following URI with a **PUT** will **generate the index** (where **<domain>** is more than likely set to **AED**, unless you have custom domains):

```
<domain>/violations-index
```

Then use the same URI with a **GET** will show the index status:

RESPONSE STATUS	ELAPSED TIME (MS)	RESPONSE SIZE (BYTES)
200 OK	29	239

Response (Pre-view)	Response (Raw)	Request Payload	Request	Bookmarks	Help
---------------------	----------------	-----------------	---------	-----------	------

href	Violations search index for applications of AED	
status	upToDate	
date	time	2018-10-24T16:04:02+01:00
	isoDate	2018-10-24
lastSnapshotDate	time	2018-10-22T20:59:50+01:00
	isoDate	2018-10-22
size	68211	

Generating the index when the web application starts

This method will force the violations index to be generated if its status is **toUpdate** (i.e. the index exists but is out-of-date because a new snapshot has been computed since the index creation) every time the web application is started.



CAST only recommends using this option if your Dashboard Service schema is **small** - since the index is generated during web application startup, this can impact performance.

Edit the following file with a text editor:

```
WAR 1.x
CATALINA_HOME\webapps\CAST-Engineering\WEB-INF\web.xml

WAR 2.x
CATALINA_HOME\webapps\<dashboard>\WEB-INF\classes\application.properties

ZIP 2.x
<unpacked_zip>\configurations\application.properties
```

Set the following configuration to **true**:

```
web.xml

<context-param>
<param-name>rebuildViolationsSearchIndexesOnStart</param-name>
<param-value>>false</param-value>
</context-param>

application.properties

# Rebuild Lucene components index on start if outdated (true or false)
rebuildViolationsSearchIndexesOnStart=false
```

Save the file. Next time the web application is started the index will be generated.

Using custom batch files



This method requires that the **user** has the **ADMIN** role.

This method is to be used when you have a configuration in the **domains.properties** file - i.e. multiple "domains". The custom batch will generate the violations index for **all the domains** configured in the **domains.properties** file. Create the following batch files in the **CATALINA_HOME\webapps\<dashboard>\WEB-INF** (WAR file deployment) folder or the **<unpacked_zip>** (ZIP file deployment) folder and then run the **launch.bat** file to start the index generation:

launch.bat

```
@echo off
@echo Computing Violations Indexes ...

util.bat > util.log
@echo -----
```

util.bat

```
@echo off
setlocal enableDelayedExpansion
@echo Automated Violations Indexes Creation
@echo -----

for /F "delims== eol=#" %%D in (domains.properties) do (
    @echo Process %%D/violations-index
    start /B util2.bat %%D
    @echo.
)
```

In the following file (util2.bat), you need to modify the line starting **curl** to match your environment:

- Replace **user:pwd** with a user that has the **ADMIN** role and their password.
- Replace **http://localhost:8080/CAST-Health-Engineering/rest/%domain%/violations-index** with the URL to your dashboard.

util2.bat

```
@echo off
prompt $_
setlocal enableDelayedExpansion
set "domain=%-1"

@echo Start %domain% !DATE!_!TIME!
curl -s -u user:pwd -X PUT http://localhost:8080/CAST-Health-Engineering/rest/%domain%/violations-index
@echo is the response from %domain%
@echo Finish %domain% !DATE!_!TIME!
```