Global Aviva
Anaplan Centre of Excellence

Model size Analysis Report and online backups

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Note : data shown in these slides is dummy data

INTRODUCTION

While developing different scalable applications, I came across a series of challenges :

- Model size was fluctuating quite a lot during design and implementation and when scaling up application. Model size can have a big impact over the running costs and it became evident this area had to be looked further.
- Some estimated model sizes are over 20Gb (this means up to 60Gb across environments, if they were all up and running). [Note: we have 3 environments: Dev, Test and Prod]
- Due to requirements/design, some models have over 80 modules. Keeping multiple live copies of the model as backup/reference wasn't an option, particularly during the first phase of development
- Sometimes we had to look back on archived models to retrieve specific formula on specific modules, comparing them or restoring them back.
- Often the model owners (contributors, not model builders) do not appreciate the impact of model size increase as model size analysis isn't available (only the total size is available)
- A dynamic report that can be published on a dashboard could highlight opportunities to reduce model size and optimise model sparsity

THE IDEA

Model size Reports

- Model size Dashboard created
- Developers & Administrator able to easily report on model size, by date and module
- Intuitive graphical layout

Model size Analysis

- Easily compare and analyse increase in size
- Identify trends/spikes
- Identify area of improvements
- Set and report model size threshold/allowance vs Current usage

Live backups, Comparison & Assessment

- Highlight vital health checks (eg unused/unrequired modules)
- Facilitate formula/settings comparison over time periods
- Facilitate restore of specific settings without the need of rolling back/affecting data or having to refer to full backups

Further opportunities & Developments

- Syncing process is very easy and straightforward, but can be further automated
- Provide additional features eg what-if scenarios on key lists predicting model size increase/de-crease
- Easily deploy as a standard “add-on” across all applications
- Utilise HL MI in central model (eg use to retrieve charging info?)

Model size Dashboard Screen

High level analysis/comparison on dates eg model growth in Gb and %

Export/Import to .csv and .xls (for admins and developers)

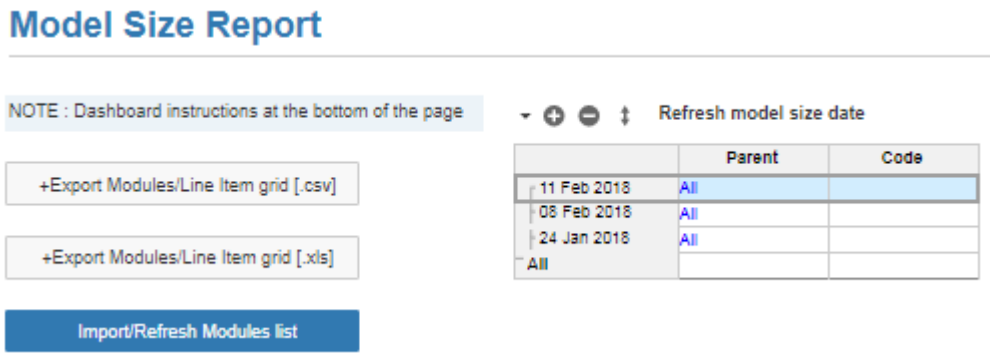
Full module report ordered by size

Graphical display of top 20 heavier modules

Graphical display of total size vs agreed/expected model allowance

Features - Zoom in 1

- End user and/or administrator to easily sync the dashboard content and extract to .csv and .xls



Features - Zoom in 2

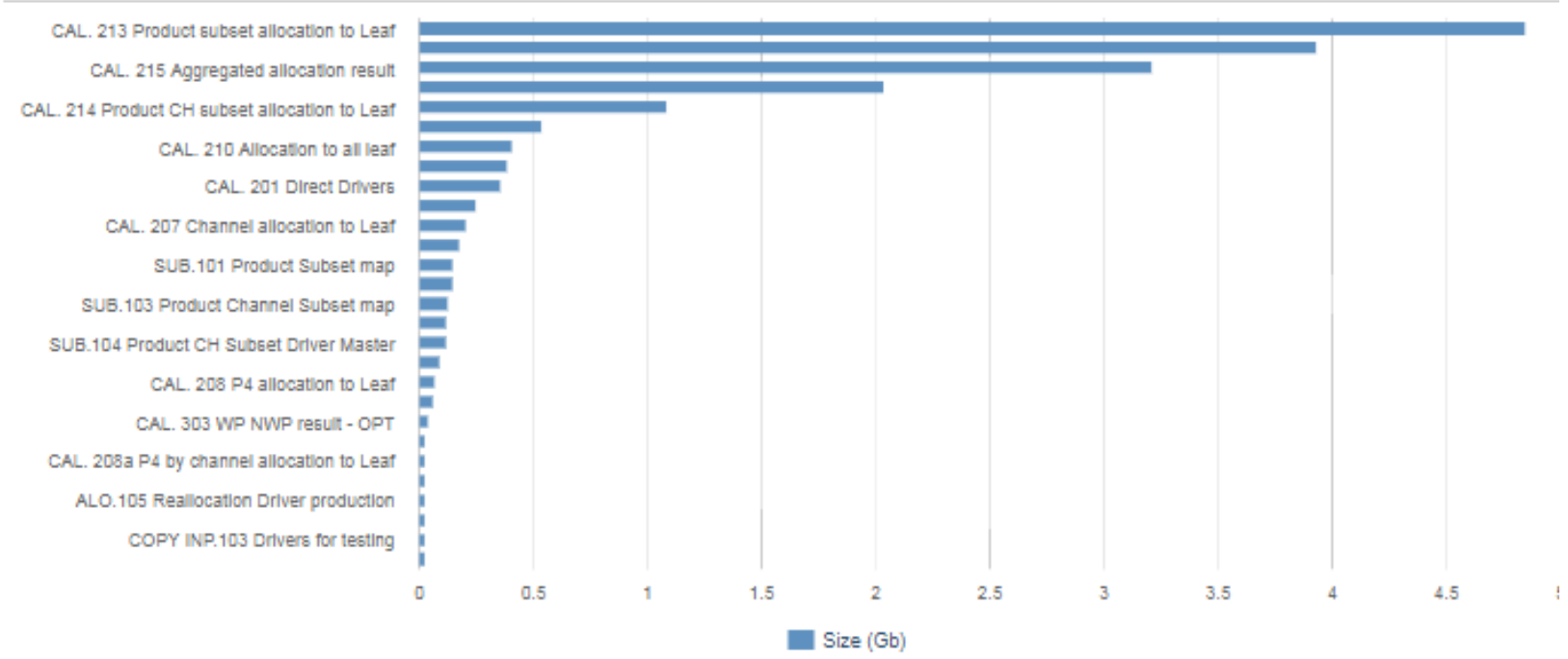
- End user and/or administrator to easily check full list of modules, ordered by size, highlighting anything that is above a specific threshold.
- Perform quick assessment on unused modules that could/should be deleted
- Support/Developers can easily use the report to compare specific settings and formula across multiple dates. This allow to restore specific portions of a model and/or quickly identify/assess changes


Select date to Report on : 08 Feb 2018

Module	Is Referenced by	Size (Gb)
		18.715540 Gb
CAL. 213 Product subset allocation to Leaf	'CAL. 215 Aggregated allocation result'	4.849761 Gb
CAL. 401 Traceback result OPT	'ALO.101 Allocation to Activities', 'ALO.1	3.933520 Gb
CAL. 215 Aggregated allocation result	'ALO.108 CC by ACT after reallocation',	3.212976 Gb
CAL. 205 Fund allocation to Leaf	'CAL. 215 Aggregated allocation result'	2.037600 Gb
CAL. 214 Product CH subset allocation to Leaf	'CAL. 215 Aggregated allocation result'	1.087616 Gb
CAL. 202 P1 allocation to leaf	'CAL. 215 Aggregated allocation result'	0.543248 Gb
CAL. 210 Allocation to all leaf	'CAL. 215 Aggregated allocation result'	0.413093 Gb
CAL. 204 Entity allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.388975 Gb
CAL. 201 Direct Drivers	'CAL. 209 Direct allocation to leaf'	0.356981 Gb
CAL. 203 P2 allocation to leaf	'CAL. 215 Aggregated allocation result'	0.250466 Gb
CAL. 207 Channel allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.207422 Gb
CAL. 209 Direct allocation to leaf	'CAL. 215 Aggregated allocation result'	0.179827 Gb
SUB.101 Product Subset map	'SUB.102 Product Subset Driver Master'	0.152037 Gb
SUB.102 Product Subset Driver Master	'CAL. 213 Product subset allocation to L	0.151919 Gb
SUB.103 Product Channel Subset map	'SUB.104 Product CH Subset Driver Mas	0.127086 Gb
CAL. 206 P5 allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.124419 Gb
SUB.104 Product CH Subset Driver Master	'CAL. 214 Product CH subset allocation	0.122704 Gb
CAL. 206a P5 by channel allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.097288 Gb
CAL. 208 P4 allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.069952 Gb
CAL. 200 Drivers	'SUB.101 Product Subset map', 'SUB.10	0.061908 Gb
CAL. 303 WP NWP result - OPT	'ALO.108 CC by ACT after reallocation'	0.046253 Gb
CAL. 203a P2 by channel allocation to leaf	'CAL. 215 Aggregated allocation result'	0.032179 Gb
CAL. 208a P4 by channel allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.032179 Gb
CAL. 211 Test Region allocation	'CAL. 215 Aggregated allocation result'	0.031304 Gb
ALO.105 Reallocation Driver production	'ALO.106 Reallocation Driver Master'	0.031063 Gb
ALO.106 Reallocation Driver Master	'ALO.102 Reallocation Assignment', 'ALO	0.029216 Gb
COPY INP.103 Drivers for testing		0.027700 Gb
INP.103 Drivers	'CAL. 200 Drivers', 'CAL. 201 Direct Driv	0.025721 Gb
CAL. 212 Admin re allocation	'CAL. 215 Aggregated allocation result'	0.016624 Gb
CAL.108 Product Subset allocation	'CAL. 213 Product subset allocation to L	0.012877 Gb
CAL. 301 WP NWP split - CC ACT	'CAL. 215 Aggregated allocation result', '	0.011641 Gb
CAL.109 Product Channel Subset allocation	'CAL. 214 Product CH subset allocation	0.010404 Gb
CAL.100 Assignment to Product Channel Fund	'CAL.101 P1 allocation', 'CAL.102 P2 all	0.009929 Gb
CAL.105 P5 allocation	'CAL. 206 P5 allocation to Leaf', 'CAL. 2	0.007779 Gb
ALO.107 Reallocation to CC	'ALO.108 CC by ACT after reallocation',	0.007153 Gb
CAL 107 P4 allocation	'CAL. 208 P4 allocation to Leaf', 'CAL. 2	0.003899 Gb
ALO.109 CC ACT traceback		0.003576 Gb
CAL.106 Channel allocation	'CAL. 207 Channel allocation to Leaf'	0.001769 Gb
ALO.101 Allocation to Activities	'ALO.100 Expense', 'ALO.102 Reallocatio	0.000736 Gb

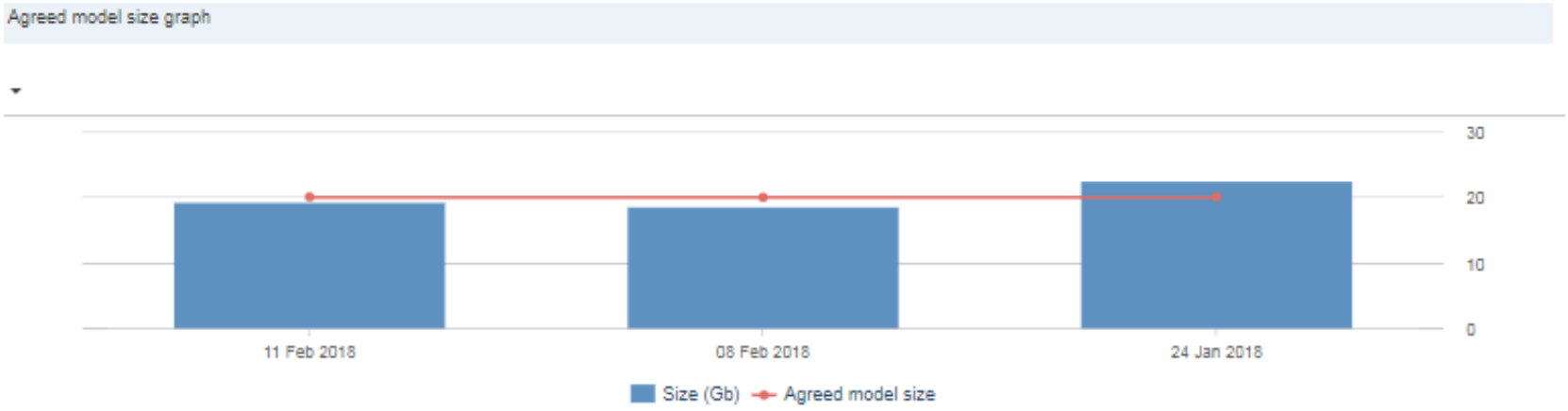
Features - Zoom in 3

- Visual display of top xx (eg 20) modules to highlight potential abnormalities/model size opportunities



Features - Zoom in 4

- Visual display of model size growth over time vs agreed/expected model size (based on threshold that can be set as required eg 20Gb)



Questions

&

Answers

TECHNICAL DETAILS

This section is only relevant to Model Builders and provides :

- Technical Instructions to create/enable this functionality
- Demo app which can be used as guidance/reference/quick analysis : DEV DEMO Model Size Report [Alessio]

Technical implementation details

Create the following functional area :

- MNT. Model Maintenance

Create the following lists (tagging them as Production data):

- Standard list *Refresh model size date* (with value All as top parent)
- Numbered list *Line Item ID#* (with Total as Top Level) and create property called *Module Description*, TEXT type

Create the following modules :

- MNT. 101 Model size — Dimensions : Refresh model size date, Line Item ID#
- MNT. 102 Model size Agreement — Dimensions : Refresh model size date
- MNT. 103 Model size Checks — Dimensions :
- REP. Model Sanity Checks — Dimensions :

And assign them to the above functional area

Consider the use of subsets on *Refresh model size date* to keep MNT. 101 small or delete old/unrequired extracts

Module REP. Model Sanity Checks

Purpose : this module is used to monitor the model size threshold level. eg usually this could be the expected size provided in the Business Case (eg 20Gb)
Create a line item called *Agreed Model size*, number formatted with custom unit Suffix “Gb”

Module MNT. 101

Purpose : This is the key module which holds all the information used in the main report.
Create the module referencing the attached LIs and Blueprint files.
Note : Currently it’s not possible to import the full blueprint from an extract, do not attempt doing this as it could lead to module corruption.
An enhancement request has been logged with Anaplan so that it will be possible to import an entire module structure via Blueprint.
Currently the recommendation, for larger modules is to Import the full list of LIs and then CTRL+C and CTRL+V Formulas and properties from the blueprint in .csv into the Anaplan Blueprint


MNT.101 LIs


MNT.101 Blueprint

Module MNT. 102

Purpose : This module was intended to be used to highlight the contracted workspace size, by date (not actively used and might/might not be used in the future for recharging purposes)
Create the following LIS :
Fixed standard size
Agreed model size

Module MNT. 103

Purpose : This module is mainly used to provide comparison/stats on model size between two dates
The creation process is very similar to MNT.101, please reference the LIs and Blueprint with formula and Settings.

Set model size threshold as required (eg 20Gb) and Day B selection to any values.

MNT.103 LIs

MNT.103
Blueprint

Note: due to an Anaplan bug the exported format of this blueprint is not showing the right settings for :
Day A selection
Day B selection
Which should be set to Type: List selecting list : Refresh model size date
Please set these manually to avoid errors

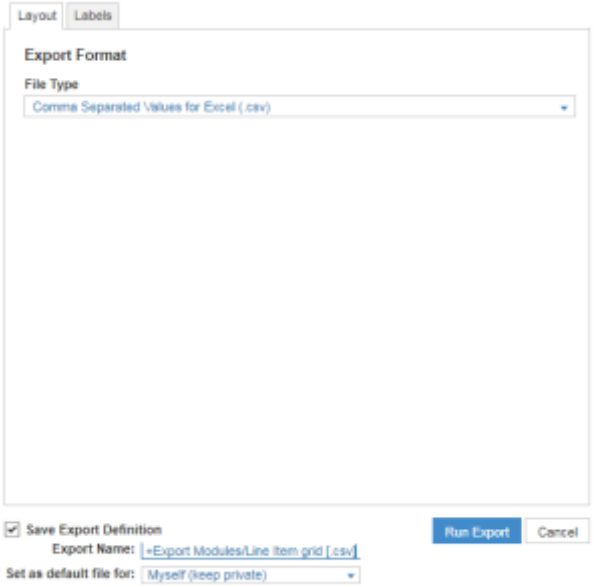
Create Main Export Process

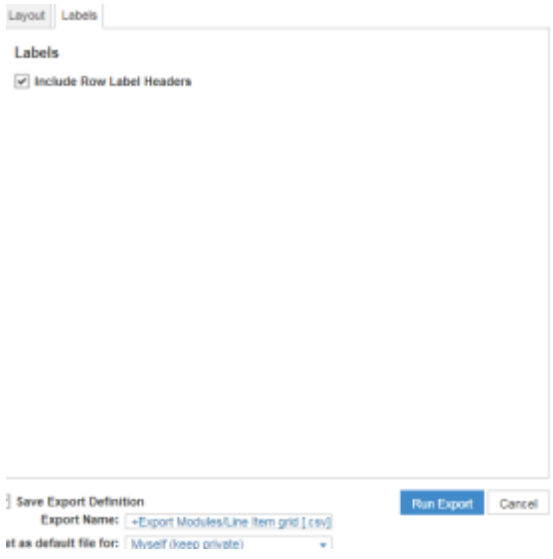
Purpose : This process is going to export the entire list of modules and line items, which is what needs to be imported back and analysed.

Select Modules > Line Items > Export

Make sure the correct File Type is selected, tick save Export Definition with Export Name :*+Export Modules/Line Item grid [.csv]*

In the Labels tab, ensure the box Include row Label headers is selected





Your extract will look similar to this sample

Create a process called “+Export Modules/Line item grid [.csv]” which runs the above export action.

Create Main Import Process

Purpose : This process is going to import back what's been extracted, before it can be analysed in the main module.

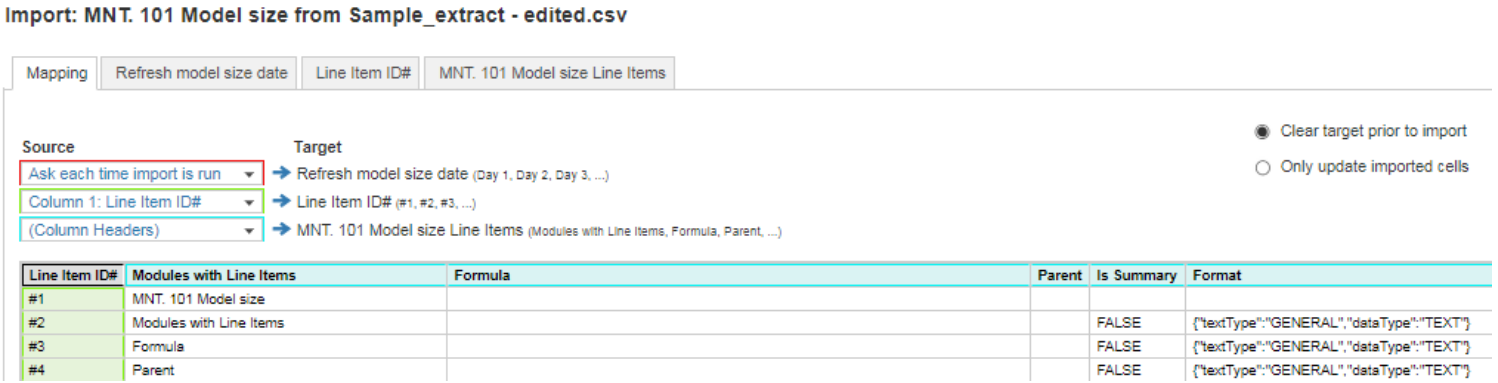
NOTE1 : A small manual process is required to create the Line Item ID# counter. This will be documented later in the dashboard, but for the creation of the import process it needs to be done once.

- Open the extract
- Add a column in Column A called "Line Item ID#" and amend each record so that it will have a counter(eg #1, #2, #3, etc)

Create the import process by opening MNT. 101 in Regular view > Select Data > Import

Everything should be mapped, except Refresh model size date which must be set to "Ask each time import is run". This will therefore be a user selection.

The mapping should therefore look like the following



Create Main Import Process - Continued

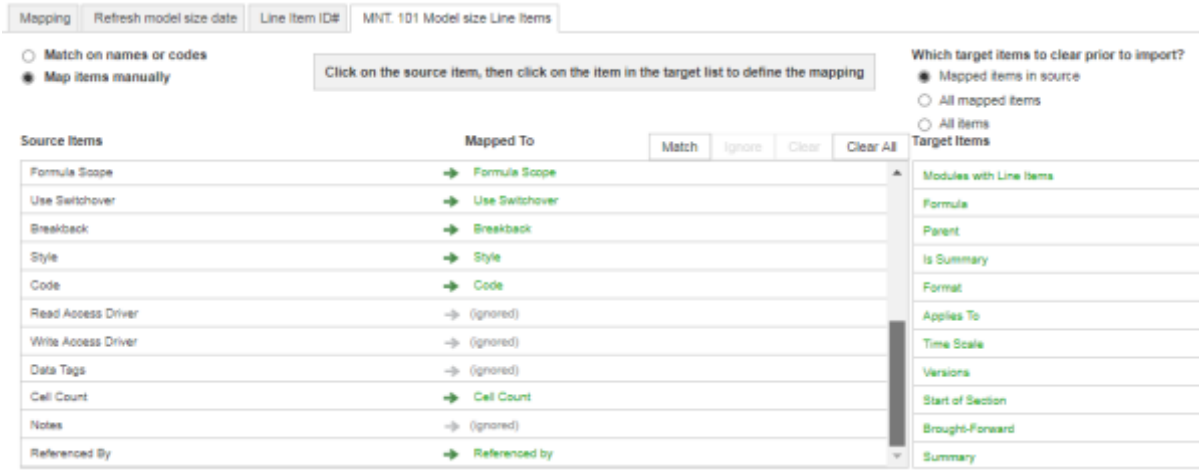
NOTE2 : Please note that this process could be impacted by further Anaplan releases. As such the execution could display some alerts, which are likely to relate to new properties released by Anaplan. As these would appear as new columns, the import will reject these.

The solution would be to either ignore these new columns, or create relevant new LIs in the target module.

Example : in Q1 2018 release Anaplan added : Time range, Read Access Driver, Write Access Driver, Data Tags, Notes, Code.

In the DEMO app, the process has been created to ignore these so that the import completes without any warnings (recommended approach).

This is to be done in the LI tab, example below



Open the Actions tab and rename this new import action to : “+Import/Refresh Modules list”

Complete Line Item ID# setup

Purpose : Line Item ID# is a numbered list and requires a final setup in order to display the requied descriptions in both the list and the module.
Open List *Line Item ID#* , edit *Module Description* Formula to:

'MNT. 101 Model size'.Modules with Line Items[LOOKUP: 'MNT. 103 Model size Checks'.Day B selection]

Open List from General list and set Model Description as Display Name Property

Create Saved and Default Views for the Dashboards

Purpose : We now need to create some default/saved views/graphs that will be used in the reporting dashboard

- Open MNT. 101 and Pivot the module :

  Pages : Refresh model size
  Columns : Line Items
  Rows : Line Item ID#

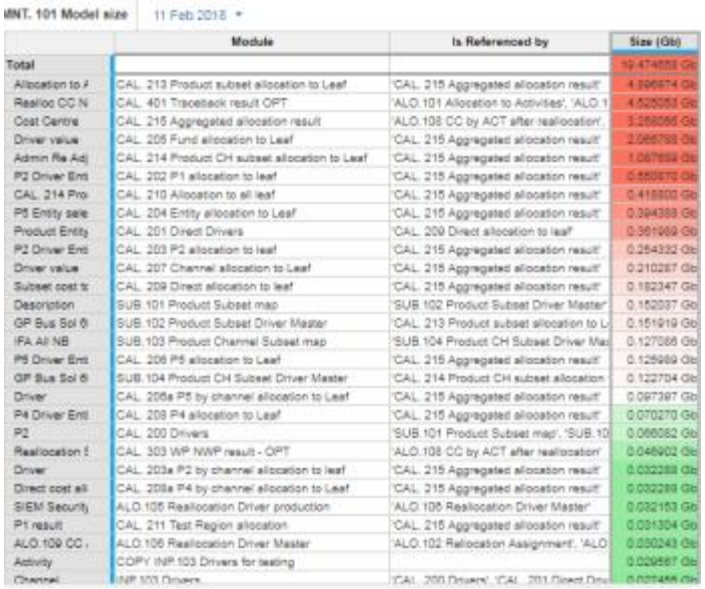
- In the columns show only : Module, Is Referenced by and Size (Gb)

- Create filter by Selecting Size (Gb), clicking on the filter icon and selecting “Greater than” 0.001 (amend as required)
- Set LIs order Highest to Lowest, select both levels with Group at start
- Create Color coding rule with :
  LI to format : Size (Gb)
  Based on the values : same as LI to format
  Values and colors : 3 colors scale, green, white, red (min. 0, mid-point 0.1, max 0.5)

Create Saved and Default Views - Continued

The report will look like the below.

Note : Filters and colour coding could be amended to fit the expected model size. Module size could also be amended to calculate and display in Mb, if it makes more sense



INT. 101 Model size | 11 Feb 2018

	Module	Is Referenced by	Size (Gb)
Total			19.474655 Gb
Allocation to F	CAL. 213 Product subset allocation to Leaf	'CAL. 215 Aggregated allocation result'	4.896574 Gb
Realloc CC N	CAL. 401 Traceback result OPT	'ALO.101 Allocation to Activities', 'ALO.1	4.520053 Gb
Cost Centre	CAL. 215 Aggregated allocation result	'ALO.108 CC by ACT after reallocation',	3.258065 Gb
Driver value	CAL. 205 Fund allocation to Leaf	'CAL. 215 Aggregated allocation result'	2.066788 Gb
Admin Re Adj	CAL. 214 Product CH subset allocation to Leaf	'CAL. 215 Aggregated allocation result'	1.087899 Gb
P2 Driver Ent	CAL. 202 P1 allocation to leaf	'CAL. 215 Aggregated allocation result'	0.650670 Gb
CAL. 214 Pro	CAL. 210 Allocation to all leaf	'CAL. 215 Aggregated allocation result'	0.418800 Gb
P5 Entity sele	CAL. 204 Entity allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.394388 Gb
Product Entity	CAL. 201 Direct Drivers	'CAL. 209 Direct allocation to leaf'	0.361989 Gb
P2 Driver Ent	CAL. 203 P2 allocation to leaf	'CAL. 215 Aggregated allocation result'	0.254332 Gb
Driver value	CAL. 207 Channel allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.210287 Gb
Subset cost to	CAL. 209 Direct allocation to leaf	'CAL. 215 Aggregated allocation result'	0.162347 Gb
Description	SUB.101 Product Subset map	'SUB.102 Product Subset Driver Master'	0.152037 Gb
GP Bus Sol 6	SUB.102 Product Subset Driver Master	'CAL. 213 Product subset allocation to L	0.151919 Gb
IFA All NB	SUB.103 Product Channel Subset map	'SUB.104 Product CH Subset Driver Mas	0.127086 Gb
P5 Driver Ent	CAL. 206 P5 allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.125989 Gb
GP Bus Sol 6	SUB.104 Product CH Subset Driver Master	'CAL. 214 Product CH subset allocation	0.122704 Gb
Driver	CAL. 206a P5 by channel allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.097397 Gb
P4 Driver Ent	CAL. 208 P4 allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.070270 Gb
P2	CAL. 200 Drivers	'SUB.101 Product Subset map', 'SUB.10	0.066082 Gb
Reallocation t	CAL. 303 WP NWP result - OPT	'ALO.108 CC by ACT after reallocation'	0.046902 Gb
Driver	CAL. 203a P2 by channel allocation to leaf	'CAL. 215 Aggregated allocation result'	0.032288 Gb
Direct cost all	CAL. 208a P4 by channel allocation to Leaf	'CAL. 215 Aggregated allocation result'	0.032289 Gb
SIEM Security	ALO.105 Reallocation Driver production	'ALO.106 Reallocation Driver Master'	0.032153 Gb
P1 result	CAL. 211 Test Region allocation	'CAL. 215 Aggregated allocation result'	0.031304 Gb
ALO.109 CC -	ALO.106 Reallocation Driver Master	'ALO.102 Reallocation Assignment', 'ALO	0.030243 Gb
Activity	COPY INP.103 Drivers for testing		0.029587 Gb
Channel	INP.103 Drivers	'CAL. 200 Drivers', 'CAL. 201 Direct Dri	0.027486 Gb

For this specific application it made more sense :

- Report in Gb
- Set Size (Gb) to 6 decimal places, with Zero format set to Zero
- Set the filter to display anything greater than 0.000001

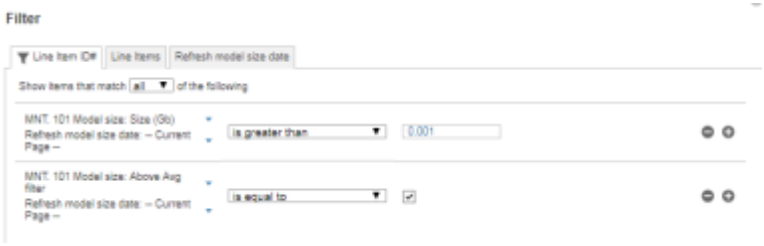
Add : Check/report on is Referenced by as potentially unrequired module ?

Save this view as Default view and always open on current page.

Create Saved and Default Views

As an additional example, this demo app is also going to display a bar chart reporting all modules with size above average. This is for demo only and might not apply to other builds, where other visualisations are likely to be more appropriate.

1) A view has been created and saved as “MNT. 101 Modules_above_avg”. Using the default view as a starting point a further filter has been applied filtering data based on the LI filter



2) Another view has been created and saved as “Model_size_Growth_Graph” to monitor model size growth over time.

Model_size_Growth_Graph | Total

	Size (Gb)	Agreed model si
LATEST	25.730849 Gb	20 Gb
09 Mar 2018	25.115123 Gb	20 Gb
08 Mar 2018	19.681273 Gb	20 Gb
28 Feb 2018	19.207125 Gb	20 Gb
11 Feb 2018	19.474658 Gb	20 Gb
08 Feb 2018	18.715540 Gb	20 Gb
24 Jan 2018	22.671035 Gb	20 Gb

Create Final dashboard

The final step in the process is to create the final dashboard called “MNT.000.D Model Size Report” which includes the following key objects :

- Import and Export processes
- Refresh model size date and selection for variance analysis
- Selection Date for table/graphs (Page selector : Refresh model size date)
- Create and publish charts based on previously saved views “MNT. 101 Modules_above_avg” and “Model_size_Growth_Graph” [amend as required]

AVIVA

Thank you