Creating Demand Record using FORGE and Vignette Consolidated Data

The Demand records are one of the inputs required to run MARATHON simulations. This Executable Jar File was developed to automate the process of creating the demand files used by MARATHON. This Executable Jar File produces the final Demand file by utilizing data from the Vignette mapping, Vignette consolidated, and FORGE output files. This Executable program requires the input files to be specifically formatted in order to properly run. This tutorial provides step-by-step instructions on how to run the program from start to finish. Follow the steps presented below to learn how to create the final Demand Record using FORGE and the Vignette consolidated data input files.

Step 1: Gathering Files in Centralized Location

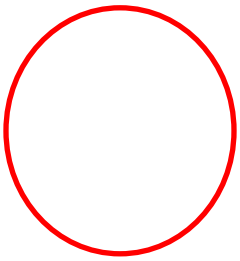
1. In order for this process to work correctly, you will need to place all your input files into one single folder. The name of the folder does not matter. The location of where you store this folder also does not matter, as long as all of the required files are centrally located.
2. Commonly, the input files in this directory should contain a vignette map file, vignette consolidated file, and all the FORGE output files for each scenario being used (this could be multiple files). For example, in the TAA 20-24 iteration, the names of the files were:

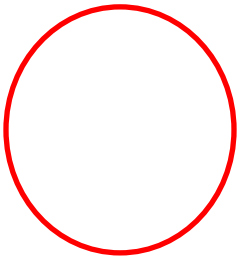
   TAA 20-24 Vignette consolidated list_20161122
   TAA 20-24 Vignette Mapping new format
   Results TAA 20-24_Surge-A_D041-2016_11_14
   Results TAA 20-24, SurgeB, A027 2016_10_12
   Results TAA 20-24 Surge B-1 LO F006 2016_11_17

Step 2: Verifying Vignette Inputs

1. Next, open both Microsoft Excel Vignette files; ***Vignette consoliated list*** and ***Vignette Mapping new format.***
2. Check to make sure each Force Code (ID) in the ***Vignette Mapping new format file*** matches the Event Code in the ***Vignette consolidated list file***. The classification labels (U) and (S) do not have to match between files. Vignettes that are in the ***consolidated list file*** but not the ***Mapping new format file*** will not be modeled, meaning there is no demand.
3. In order to easily compare the Force Code Lists derriving from the ***Vignette consoliated list*** and the ***Vignette Mapping new format files***, you can filter on both columns. To filter, click A2 from these lists, then under the Data Tab, click Filter. Arrows will appear at the top in the Force Code List block. Click down on both files to compare the two lists.

Here is a visual example of filtered list of Force Codes (**Deleted Example)**:





Case 1: Shows different Force Code and Event Code names, which must be corrected.

Case 2: Shows corrected Force Code and Event Code names to match.

4. You may notice that there are some different names for the same event.
   In this example, Force Code HLD Enhanced 1 in the ***Vignette Mapping new format files*** does not match the Event Code HLD (1) in the ***Vignette consolidated list file***.
   If this is the case, change the ***Vignette Mapping new format file*** name to match the name in the ***Vignette consolidated list file***. You can do this by manually typing in the new value. Then save the changes.

Step 3: Formatting Inputs as Tab Delimited Text Files

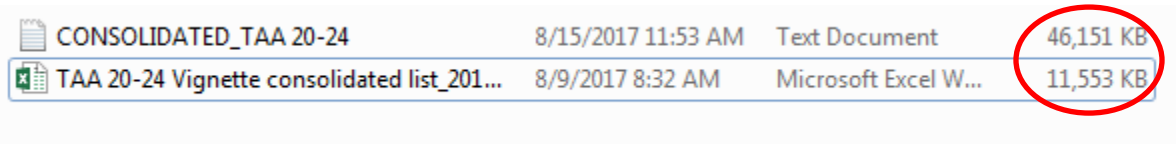
There are two ways to save the inputs as ***Tab delimited text files***. ***Step 3 Option A*** uses ***Excel*** to export the data to a ***Tab delimited text*** file, and ***Step 3 Option B*** uses ***Notepad***. Using either Option A or B will produce the same results. In order to check if the tab delimited text file (.txt) was formatted correctly, check to make sure the tab delimited text file (.txt) is smaller than the Excel file.

Deleted Example

In this case, because the Text Document (.txt) file is smaller (53 KB) then the Excel file (8,888 KB) , it was correctly formatted (using Option A).

When the Text Document (.txt) file is larger than the Excel file, it was not correctly formatted using Option A, and it should be re-done using Option B.

In the example below, the CONSOLIDATED Text Document is larger than the Excel file, and must be re-done because Excel incorrectly exported the data.

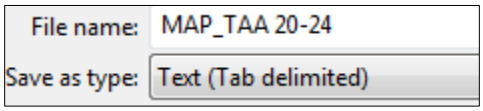


Step 3 Option A: Saving Inputs as Tab Delimited Files using Excel

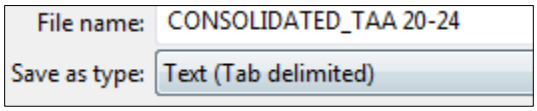
1. Create a new folder called ***Final Inputs***. The location of this folder does not matter. This is where all of the final Demand file and formatted inputs to the Demand files will be stored.
2. Each of the input files need to be converted form an Excel file to a Tab delimited text file. For both the ***Vignette Mapping new format file*** and the ***Vignette consolidated list file,*** click on File then select Save As, then the Browse folder icon. Under ***Save as type*** search for the ***Text (Tab delimited)*** option, then select Save.

3. It is important to keep the naming conventions consistent. Save each input file as a Tab delimited text file using the following naming convention:
   Vignette Mapping new format file will now be called MAP_
   Vignette consolidated list file will now be called CONSOLIDATED_

Vignette Map: MAP_[filename]



Vignette Consolidated: CONSOLIDATED_[filename]



4. Now that the ***Vignette Mapping new format file*** and ***Vignette consolidated list file***s are saved, you will also need to save the FORGE inputs.

   Each of the input files need to be converted from an Excel file to a Tab delimited text file. For each FORGE input (in TAA 20-24 called *Results TAA 20-24_Surge-A_D041-2016_11_14, Results TAA 20-24, SurgeB, A027 2016_10_12, Results TAA 20-24 Surge B-1 LO F006 2016_11_17)*, click on File then select Save As, then the Browse folder icon. Under ***Save as type*** search for the ***Text (Tab delimited)*** option, then select Save.

5. It is important to keep the naming conventions consistent. The naming convention for the FORGE input files must be identical to Force Code list with respect to the scenarios of the TAA iteration.
   For example, in TAA-20-24: Scenario B.1 and Scenario A were modeled. Because of this, we re-name the FORGE files: FORGE_SE-A, FORGE_SE-B.1, and FORGE_SE-B.1. Conduct the same process for each FORGE file that will be included in your current model.

   Here is an example of the list of FORGE force codes and FORGE file names (**Deleted Example)**:

Note: **Before moving forward, check the sizes of these newly saved files! Ensure the Text Document (.txt) file size is smaller than the Excel file size.** You can check the file size by simply looking at the number of KB in the size column where you saved the file. For more clarity, please refer to ***Step 3***.

Step 3 Option B: Formatting Inputs using Notepad

1. Create a new folder called ***Final Inputs***. The location of this folder does not matter. This is where all of the final Demand file and formatted inputs to the Demand files will be stored.

2. You will be converting each Excel file into a Tab delimited text file using Notepad. The easiest way to complete this is to open each input file **separately**. Start with the ***Vignette Mapping new format file*** then proceed to convert all inputs using the following method:

    1. Use ***ctrl+a*** to select all the data in the Excel sheet.
    2. Use ***ctrl+c*** to copy the selected data
    3. Open Notepad
    4. Use ***ctrl+v*** to paste the data into Notepad.
    5. In Notepad, click File then Save As.
    6. It is important to keep the naming conventions consistent. Save each input file as a text file (.txt) using the following naming convention:
       Vignette Mapping new format file will now be called MAP_
       Vignette consolidated list file will now be called CONSOLIDATED_

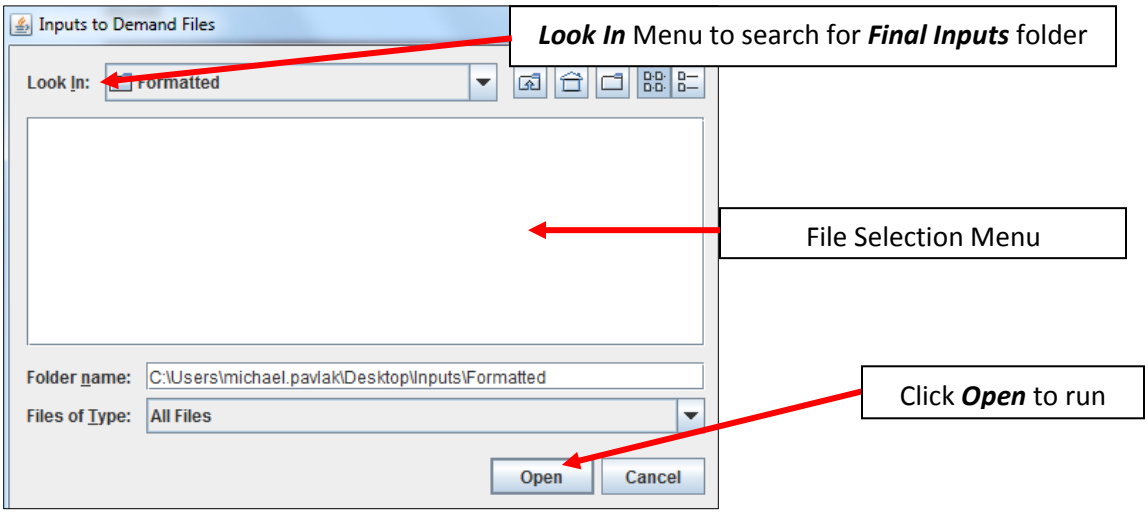
       The naming convention for the FORGE input files must be identical to Force Code list with respect to the scenarios of the TAA iteration.
       Note: For each FORGE file conversion, only copy the data from the worksheet ***SRC_By_Day*****.**

Visual example of saving FORGE Scenario A as a Text Document(.txt) file using Notepad:

(**Deleted Example**)

Step 4: Running the Demand file Creation Script

1. Once all the input files have been formatted and moved into the ***Final Inputs*** directory, the script can be run.
2. If any of the input files are opened in either Excel or Notepad, **close them** before running the script. The script will fail if the inputs are open with the script running.
3. Open the Executable Jar file called ***BuildDemand*** from located in the ***V:_Study Files\BuildDemand*** folder. Open the Jar file by either double clicking on it or by right clicking and selecting open with JRE (Java Runtime Environment).
4. Once the Jar file is opened, a file selection menu will pop up. In the menu, locate ***Final Inputs*** directory using the arrow on the ***Look In*** menu, where all the input files are stored and click open. (No text files will appear in the menu window, once in the ***Final Inputs*** directory).



5. Inside of the ***Final Inputs*** directory, if there are no errors in the input file formats, a Demand file with the name "Final Inputs_DEMAND.txt" will be created located within the ***Final Inputs*** folder. To check the output for the new demand record, look in the ***Final Inputs*** folder.
6. If no errors occurred, a window will appear confirming that the file was created using the inputs found in the input directory (FORGE files not included and assumed to exist given no errors).
7. If there was an error in the way the files were formatted or the required files were not found, an error window will appear detailing the error.
8. The new file will be a text file. To view the Excel output, right click and press Open with Excel.

Visual example of what final text file output; Open with Excel for final Demand Record product:

(**Deleted Example**)