**Converting Stations from EMS to DMS**

**Abstract:**

This guide will go through the steps of batching out a station residing in the EMS Psa views to convert them into the DMS views and batched into a DMS system.

This guide does NOT go through batching in the circuits for the substation into the system.

**Version:**

V1 – 8/2018 – Created first version of guide

V2 – 3/14/2018 – Updated guide with new procedures. Consolidated the scripts into 1 location. Processes can be run from EMS system only. Included feature to process multiple busses at a time.

**Setup:**

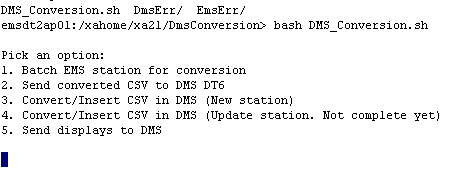
You should have a copy of the ‘DMS Conversion’ folder stored locally on your computer/jumpbox.

Because of the risk of files on the jumpbox being deleted without warning, make sure you back up any files you save on a local machine.

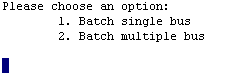
**Procedure:**

**The procedure will batch out and convert the following buses:**

**BORREGO – 3286  
ESTRELLA – 3318  
MORRO – 3300  
MOULTON – 4202  
NIGUEL – 3478  
SANTIAGO - 1536**



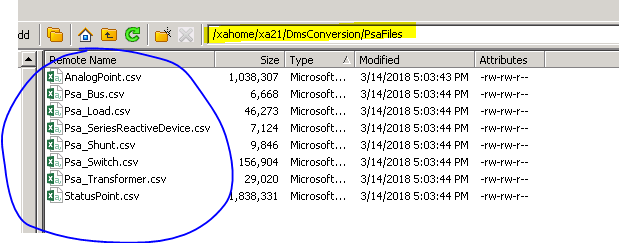
**Figure 1:** Log into emsdt2 and enter the directory /xahome/xa21/DmsConversion and run the script DMS\_Conversion.sh. You will be presented with a menu, from which you can select option 1 to batch out a station for the DMS.



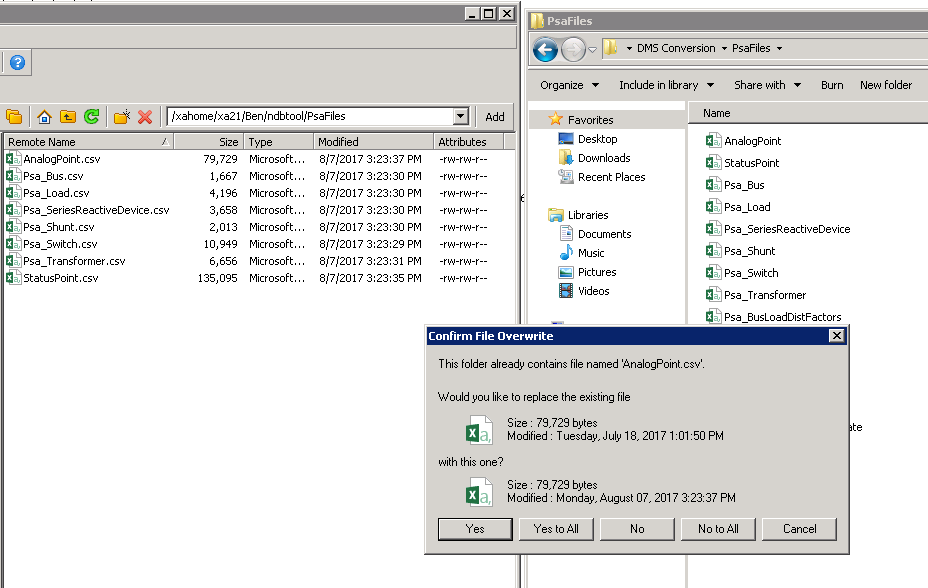
**Figure 1a:** For this example, we will pick option 2 to process multiple buses.



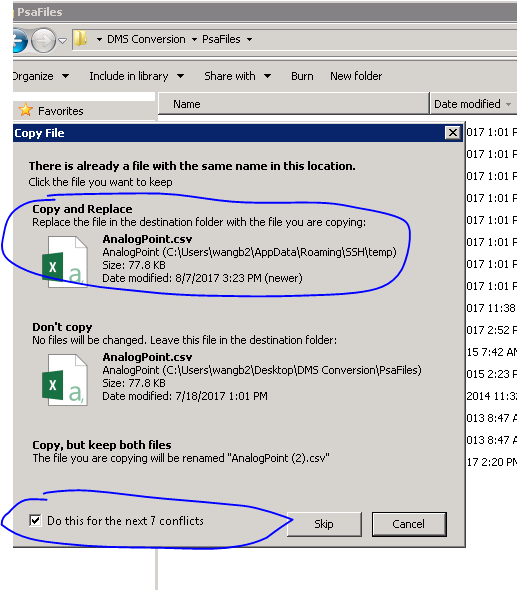
**Figure 1b:** Enter the list of buses you want to batch out for conversion and wait for the process to complete. Try to limit the number to no more than 8-10 buses as the batch and conversion will take a very long time.



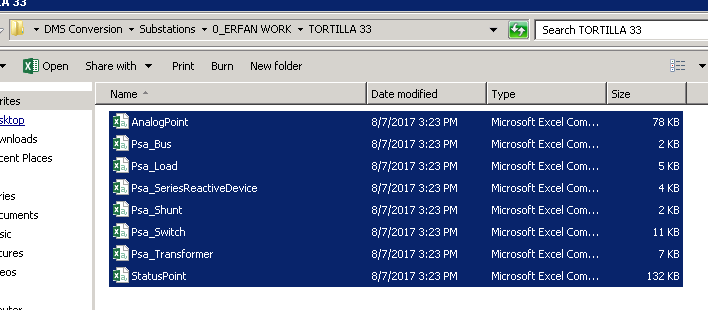
**Figure 2:** Open the file explorer in terminal and navigate to the circled location. Inside you should see the substation files in csv format. Verify the timestamp is recent.



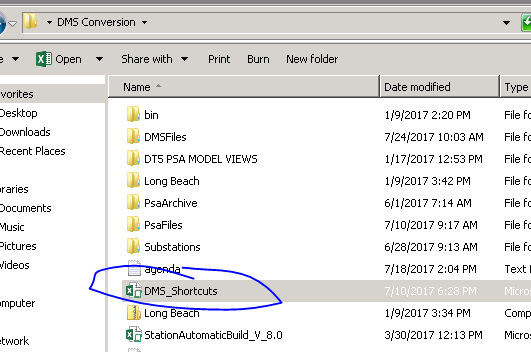
**Figure 3:** Drag and drop the files from emsdt2 into the ‘PsaFiles’ folder in the ‘DMS Conversion’ folder. Select ‘Yes to All’ to overwrite the previous files.



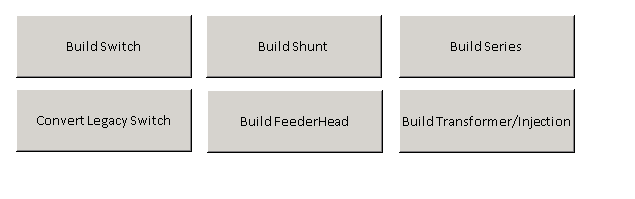
**Figure 3a:** After you select ‘Yes to all’, select the checkmark circled above, and select ‘Copy and Replace’ as the option.



**Figure 4:** For backup purposes, you may also want to create a folder somewhere to store the substation files locally so you do not have to repeat the batch out process again.



**Figure 5:** Once all of the files have been copied over into the ‘PsaFiles’ folder, open the ‘DMS\_Shortcuts’ file.

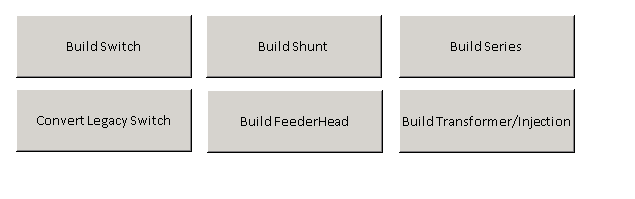


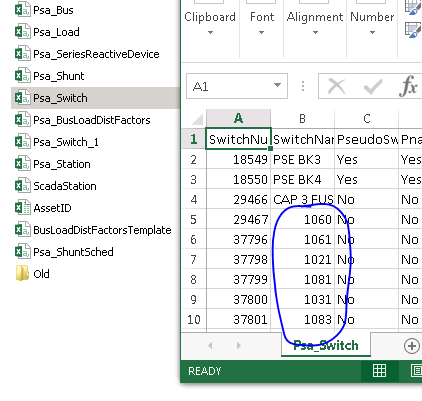


**Figure 7:** You should see the above buttons on the ‘LAUNCHER’ sheet.

Technical explanation (Can skip reading and go to figure 8):

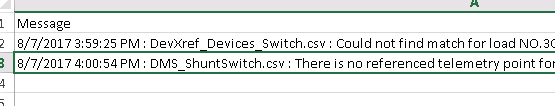
* **Build Switch** – Converts switches from EMS -> DMS and retains the same name that was used in the EMS. This function is only used for newer substations which have devices named based on the Rack # of the substation. (Outputs: DMS\_Switch.csv, DevXref\_Devices\_Switch.csv)
* **Build Shunt** – Converts the shunt (Outputs: DMS\_Shunt.csv, DMS\_ShuntSwitch.csv, DevXref\_Devices\_Shunt.csv, DevXref\_Devices\_ShuntSwitch.csv)
* **Build Series** – Converts any Psa\_SeriesReactiveDevice to DMS\_Series (Outputs: DMS\_Series.csv, DevXref\_Devices\_Series.csv)
* **Build Transformer/Injection** – Converts Psa\_Transformer data into the DMS\_Transformer view. If a single transformer is being converted, then a SRD is also created to store the analog measurements of the transformer. (Outputs: DMS\_Transformer.csv, DMS\_SeriesTransformer.csv, DMS\_Injection.csv, DevXref\_Devices\_Transformer.csv, DevXref\_Devices\_SeriesTransformer.csv, DevXref\_Devices\_Injection.csv)
* **Build FeederHead** – This will take the Psa\_Load’s load name and search the local file ‘AssetID’ under the ‘PsaFiles’ folder to find a name match. If a name match is found, then a DMS\_Cable instance is created which connects the substation and circuit together. If a name match is not found, the user will have to investigate on the cause (Possible naming error, or new circuit).
* **Convert Legacy Switch** – This function does the same thing as the ‘Build Switch’ function, however instead of copying over the name of the Psa\_Switch, the name of the SCADA point stored within the switch is used instead. This function is used on older substations which had their names arbitrarily assigned with no way to easily identify them on the oneline.

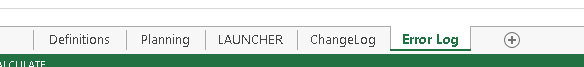




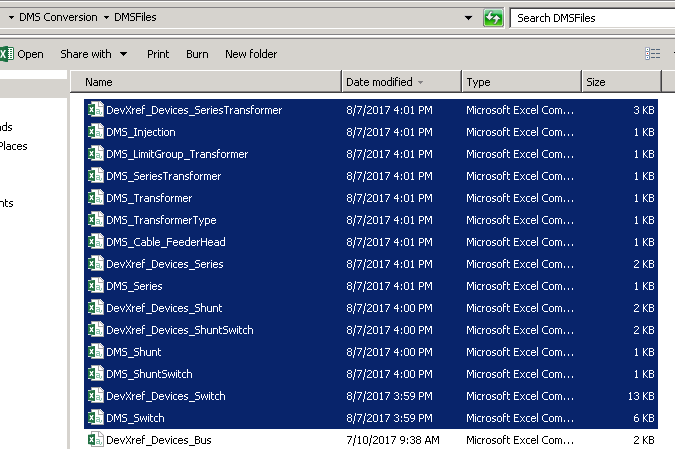
**Figure 8:** Because these are all older substations, we will use the ‘Convert Legacy Switch’ function instead of the ‘Build Switch’. We can figure out how to identify the naming convention is bad in the appendix. Before batching out buses, you should check that all of them are the same switch format.

After running that command, also press the Shunt, Series, Transformer/Injection, and FeederHead buttons.

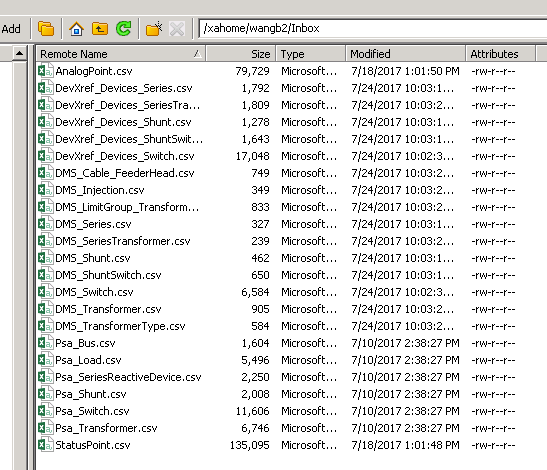




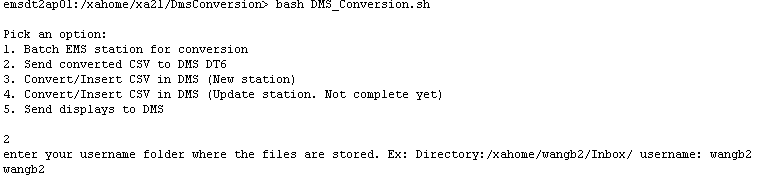
**Figure 9:** When an error occurs, you will be moved to the ‘Error Log’ sheet. You can review all of the errors afterwards. Some error messages are just warnings which can be disregarded. It is up to the user to determine which needs to be investigated. Some error messages will be covered in the Appendix.



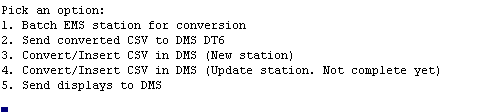
**Figure 10:** Once all of the files have been converted, you can check the ‘DMSFiles’ folder and copy all of the files with an updated time stamp.



**Figure 11:** Within your own home folder on EMS DT2, if you do not already have a folder named ‘Inbox’, please create one and drop all of the updated DMS CSV files into this folder.



**Figure 12:** Run the DMS\_Conversion.sh script shown above after you have copied the files into your ‘Inbox’ folder. You will be prompted for your username, type it in and hit enter. All of the files should be processed over to DMS DT6.



**Figure 13:** After transferring the files over, run option 3 if it is a new station you are processing into the DMS. You will be prompted for a username. This will convert and batch in your files into the DMS. Log into the DMS DT6 box to commit your job.



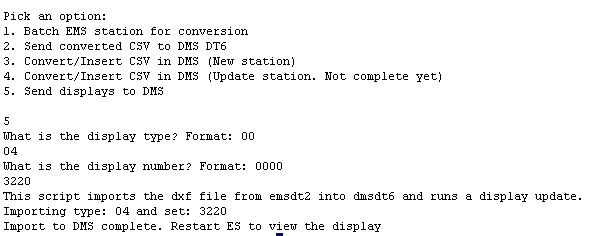


Figure 14: Once the station has been committed, run option 5 in DMS\_Conversion.sh to bring over the display of the station. You can see the type and set number from looking up the substation display on EMS DT2. In the example above, MOULTON 12KV is type 04 and set 3220. A set with less than 4 numbers should be padded with 0s. Example: 4.16 would be type 04 and set 0016.

Once all jobs are committed into the system and the display has been brought over, check the oneline on DMS DT6 to verify you are receiving a pop-out for DPF by hovering your mouse over a device. If you see the pop-out, then the devices have been successfully added and linked across to GENe DMS.