



User Nuggets

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Correct Path References

At the top of SATURN batch files we often change the 'path' parameter to be the SATURN installation folder, so that we can run the batch file outside of SATURN

Be aware that this has the effect of removing all the existing paths, and in occasional circumstances can result in the batch file not running

Example 1 bad, example 2 good!

Command Promit licrosoft Windows [Version 10.0.19044.2486] c) Microsoft Corporation. All rights reserved. :\Users\DAVI1428>path PATH=C:\Program Files\Python Community\Python 2.7.8\;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\WINDOWS System32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenSSH\;C:\Program Files\Intel\WiFi\bin\;C:\Program Files\Common iles\Intel\WirelessCommon\;C:\GroupIS\Utilities\CMTrace;C:\Program Files\Microsoft SQL Server\110\Tools\Binn\;C:\Program Files (x86)\Sennheiser\Sennheiser Updater Headset Software 2.1.2701\;C:\WINDOWS\system32;C:\WINDOWS\System32;C \Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenSSH\;C:\Program Files (x86)\Intel\Intel(R) Mar agement Engine Components\DAL;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\Windowsk owerShell\Scripts\HP.ClientScriptLibrary;C:\Program Files\Microsoft SQL Server\150\Tools\Binn\;C:\Program Files\dotnet\ :\Users\DAVI1428\AppData\Local\Microsoft\WindowsApps::C:\Users\DAVI1428\AppData\Local\Programs\Microsoft V5 Code\bin :\Users\DAVI1428>path="C:\Program Files (x86)\Atkins\SATWIN 11.XX\XEXES 11.5.05N MC X9" \Users\DAVI1428>path \TH="C:\Program Files (x86)\Atkins\SATWIN 11.XX\XEXES 11.5.05N MC X9" Command Prompt Microsoft Windows [Version 10.0.19044.2486] (c) Microsoft Corporation. All rights reserved. :\Users\DAVI1428>path PATH=C:\Program Files\Python Community\Python 2.7.8\;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\WINDOWS 5ystem32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenSSH\;C:\Program Files\Intel\WiFi\bin\;C:\Program Files\Common iles\Intel\WirelessCommon\;C:\GroupIS\Utilities\CMTrace;C:\Program Files\Microsoft SQL Server\110\Tooľs\Binn\;C:\Program Files (x86)\Sennheiser\Sennheiser Updater Headset Software 2.1.2701\;C:\WINDOWS\system32;C:\WINDOWS\CSystem32;C:\WINDOWS\System3 \Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenS5H\;C:\Program Files (x86)\Intel\Intel(R) Mar agement Engine Components\DAL;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\Windows| verShell\Scripts\HP.ClientScriptLibrary;C:\Program Files\Microsoft SQL Server\150\Tools\Binn\;C:\Program Files\dotnet\ \Users\DAVI1428\AppData\Local\Microsoft\WindowsApps;;C:\Users\DAVI1428\AppData\Local\Programs\Microsoft V5 Code\bin \Users\DAVI1428>path="C:\Program Files (x86)\Atkins\SATWIN 11.XX\XEXES 11.5.05N MC X9";%path% :\Users\DAVI1428>path PATH="C:\Program Files (x86)\Atkins\SATWIN 11.XX\XEXES 11.5.05N MC X9";C:\Program Files\Python Community\Python 2.7.8\;(\\UINDOWS\system32;C:\\UINDOWS\C:\\UINDOWS\System32\\UindowsPowerShell\v1.0\;C:\\UINDOWS\System32\\UindowsPowerShell\v1.0\;C:\\UINDOWS\System32\\UindowsPowerShell\v1.0\;C:\\UINDOWS\System32\\UindowsPowerShell\v1.0\;C:\\UINDOWS\System32\\UindowsPowerShell\v1.0\;C:\UindowsPowerShell\v1.0\;C:\\UindowsPowerS penSSH\;C:\Program Files\Intel\WiFi\bin\;C:\Program Files\Common Files\Intel\WirelessCommon\;C:\GroupIS\Utilities\CMTra e;C:\Program Files\Microsoft SQL Server\110\Tooľs\Binn\;C:\Program Files (x86)\Sennheiser\Sennheiser Updater Headset So tware 2.1.2701\;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\ INDOWS\System32\OpenSSH\;C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\Intel\ ntel(R) Management Engine Components\DAL;C:\Program Files\WindowsPowerShell\Scripts\HP.ClientScriptLibrary;C:\Program F les\Microsoft SQL Server\150\Tools\Binn\;C:\Program Files\dotnet\;C:\Users\DAVI1428\AppData\Local\Microsoft\WindowsApp C:\Users\DAVI1428\AppData\Local\Programs\Microsoft VS Code\bin



XFILEs

Anyone used an XFILE? It's a separate text file used to define extra input data > Unlike an include file its used to define only certain data fields in addition to the 1s coding See manual section 6.13 for more detail

Under &PARAM's define XFILE = 'XXX.DAT' Link data - TAX, RBKS, Capacity Index, Flare-X, Flare-F and/or APRESV Turn data – TAX

Caveat – There is an issue with SFCs being read from an XFILE, to be fixed for 11.7



OMX

Open Matrix Format that can be used to transfer data to TUBA and Cube (amongst others)

- In your TUBA control file just reference the OMX file instead of a text file
- > Cube its an accepted input matrix format
- See manual section 10.2.8 for more detail

Relative to a text file:

- > File size smaller
- > Quicker to export
- Greater accuracy Text files include a limited number of decimal places, OMX has greater accuracy



LoHAM P4	DHAM P4.3 OMX Test		
Test	Text File	OMX File	
File size	7GB	700MB	
Export time	6 minutes	2 minutes	
Accuracy	Worse 😕	Better ©	

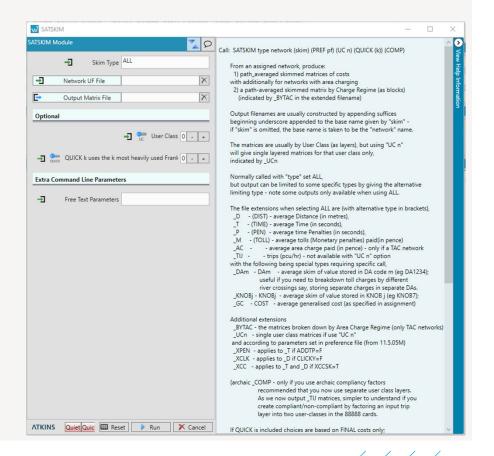
SATSKIM

Previously used SKIMDIST / SKIMTIME etc to export a UFM, or SATTUBA1 / SATTUBA2 etc to export to a text file

- ...But area charging networks won't work with these
- Won't give you separate results for routing with / without going through a TAZ etc
- > Still exist for backward compatibility

Use SATSKIM in all cases going forward

- Exports a UFM file, can then use UFM2OMX, UFM2TBA* etc if another format is required
- > 'Skim Type' allows just a single option type to be selected
- > Can do just specific user classes





SATURN Intermediate Training - Convergence

P1XDUMP

The easiest way to export link based data from SATURN is P1XDUMP

- > Doing this manually in P1X is weaker for QA
- If you are using a key file to do this via SATDB, it will work but why bother?
- DBDUMP does a similar thing using DB codes, but P1XDUMP is easier!

Data field codes come from Appendix I

Options help to select specific link types, making the output file simpler

- > E.g. \$SL simulation link only
- > See Section 15.46.1 for the full list

PIXDUMP Module	Call: P1XDUMP net (textfile) code1 (code2) (\$OPTION1) Function: Dump data from a ufs network to an ascii/text file based on internal codes used within P1X.
C+ Output TXT File	based on internal codes used within P1X.
	See Section 15.46.2 in the Saturn Manual
P1X Menu Parameters	Files: net.UFS - Input ufs network file.
- P1X Menu #1	textfile - Output text (ascii) file pathname (i.e., with extension included) Optional: If omitted, output is net.TXT
P1X Menu #2	If CSV extension provided, output exported in CSV format (e.g. TEXT.CSV) Except textfile must be given if code1 is of form 40U2
-D P1X Menu #4	net.LPP - Output Ip file Parameters: code1 - One or more P1X internal codes code2 e.g., 6 for distance,
P1X Menu #6	23 for (tota))demand flows, etc See Appendix 1.1 for a full list. Note some codes can be used for different User classes, e.g., 40 UC n Flow (Demand)
P1X Menu #7 SOptions	where using 40 defaults to user class 1, but using 40U2 will give user class 2 etc. or different Vehicle classes (eg 88V2) or different bus Companies (eg 157C5) - the extension letter must match what you need to se
-D Options	Options: \$OPTION1 - Optionally, none, one or more options* to control the output,
Extra Command Line Parameters Free Text Parameters	e.g. \$SL - simulation links only \$XCC - exclude all centroid connectors See 15.46.1 for a full list of options
	*Note the number of codes and options are limited by the total number of words passed in the command line. After P1XDUMP this batch file is set up to accept 12 words, so if textfile is not specified and no options given, a maximum of 11 codes can be selected.

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P1X_SLA, P1X_DUMP and P1X_JOY

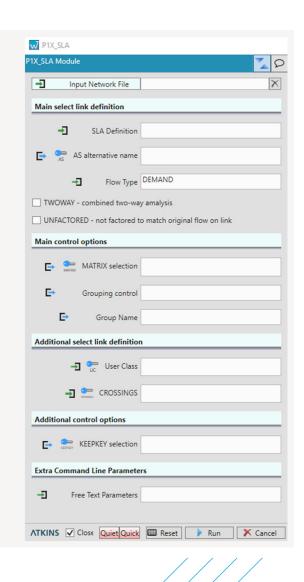
Don't forget that there are three modules to batch run processes in P1X without opening it or needing your own KEY file

Why use them?

- > Can be batched more easily
- > Better for QA
- > Quicker than doing it manually

P1X_SLA

- > Has all the same options as doing it within P1X yourself
- > Can either export a matrix with the flows and/or a UFS with the extra DA code fields for reading into SatView
- > Cannot directly view the results in P1X





P1X_SLA, P1X_DUMP and P1X_JOY

P1X_DUMP

- > P1XDUMP only for links, P1X_DUMP does turns and nodes too
- Parameters are slightly different to P1XDUMP due to the need to define if its link or turn or node data
- > Only available from 11.6

P1X_JOY

- > Should be used instead of SATLOOK JoyRides which are out of date
 - > Out of date assumptions and issues with area charging
- > Uses the same KEY file format, so an easy switch

Open a command prompt and type the name in to see the parameters

::	\Users\DAV Call:	/I1428\AppData\Local\Atkins\SATWIN>p1x_dump P1X_DUMP net LINKS/TURNS/NODES CODES p1xcodes TO dumpfile	
	Function:	DUMP data using P1X	
	Files:	net.UFS - Input SATURN UFS file net.LPP - Output line printer file	
		dumpfile - the output file	
	Clauses:	LINKS/TURNS/NODES - type of data - defaults to LINKS CODES codes list of data codes to dump TO dumpfile - defaults to net_LINKS.txt	
	Options:	KEEPKEY keyfile TOO/ONLY - self evident	
	Examples:	call P1X_DUMP enet LINKS 12,13,14	
:\Users\DAVI1428\AppData\Local\Atkins\SATWIN>p1x joy			
		P1X_JOY net SATLOOKKEY lookfile	
	Function:	Run Joyride in P1X	
	Files:	net.UFS - Input SATURN UFS file net.LPP - Output line printer file	
		Output line printer file also stored like: net.JOY.node1-node2-node3.LPP or net.JOY.lookfile.LPP	
		Joyride tables extracted from output in: net.JOY.node1-node2-node3.TXT or net.JOY.lookfile.TXT	
	Clauses:	NODES node1 node2 SATLOOKKEY lookfile - eg as generated by P1X Joyride "Dump SATLOOK Key file"	
		AS name - replaces nodelist with descriptive name	
		UC uclass - defaults to UC 1 (for banned turns and penalties etc) and no CLICKS (setting 1 gives clicks for UC 1)	



Packed Network Data

Certain data fields aren't directly available using a DA code, may be available via the 'packed network data' in SATDB

> Don't directly have a DA code associated with them

How to get to it:

- > Open SATDB via P1X
- > 6 Misc Data Input
- > 8 Packed Turn Data or 9 Packed Link Data

I find this useful for getting bus lanes locations

0 - RETURN 2 - (BUS) ROUTES 3 - RESTRICTED TURNS AND/OR LINKS 4 - STREET NAMES FROM THE GIS FILE 5 - READ DATA FROM AN INPUT ASCII (E.g. .txt) DATA FILE 6 - X,Y CO-ORDINATES PER A-NODE AND B-NODE 7 - READ COSTS FROM THE .UFC FILE 8 - PACKED TURN DATA 9 - PACKED LINK DATA 10 - TOLL MATRIX DATA (FOR A SINGLE ORIGIN) 11 - BUS FLOWS (INCLUDING BUS LANES) 12 - COBA NETWORK LINK NUMBERS 13 - ALL KNOBS DATA 14 - UNDER OPTIONS 1 TO 5, 12 AND 13 AUTOMATICALLY SELECT POSITIVE VALUES ONLY; UNDER 8/9 SELECT TURNS/LINKS ONLY. 16 - USER CLASS 1 UNDER OPTIONS 3 AND 7 0 - RETURN 1 - DISTANCE (METRES) 2 - 1 - LINK CAPACITY RESTRAINT; ELSE 0 3 - 1 - BUS-ONLY ROAD; ELSE 0 4 - 1 - LANE MIXING; ELSE 0 5 - MAJOR = 1; MINOR = 06 - LANES - TOTAL NUMBER OF LANES 7 - BUS LANES - TOTAL 8 - BUS LANES - NEARSIDE 9 - BUS LANES - OFFSIDE 11 - MERGE INDICATORS **13 - JUNCTION TYPE DOWNSTREAM 14 - JUNCTION TYPE UPSTREAM** 15 - NEARSIDE BUS LANE - B/S/T 16 - OFFSIDE BUS LANE - B/S/T 17 - NEGATIVE STACK CAPACITY = 1 **18 - NO OF OFFSIDE FLARED LANES 19 - NO OF NEARSIDE FLARED LANES** 20 - LANES WITH A NEGATIVE FOR BUS ONLY



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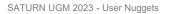
Deleting LP Files

LP* files are your audit trail of what you've done, don't dare delete them

Obviously be aware of these files often being overwritten
I've seen batch files which say DEL *.LP* in them

Yes the CTL, LOG and VDU files etc can be deleted periodically (in my opinion!)





Do you have any User Nuggets?

