



ATKINS

Member of the SNC-Lavalin Group

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 Prompt
Microsoft Windows [Version 10.0.19044.2486]
(c) Microsoft Corporation. All rights reserved.

C:\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 Files\Intel\WirelessCommon\;C:\GroupIS\Utilities\CMTTrace;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;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenSSH\;C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\WindowsPowerShell\Scripts\HP.ClientScriptLibrary;C:\Program Files\Microsoft SQL Server\150\Tools\Binn\;C:\Program Files\dotnet\;C:\Users\DAVI1428\AppData\Local\Microsoft\WindowsApps;;C:\Users\DAVI1428\AppData\Local\Programs\Microsoft VS Code\bin

C:\Users\DAVI1428>path="C:\Program Files (x86)\Atkins\SATWIN 11.XX\XEXES 11.5.05N MC X9"

C:\Users\DAVI1428>path
PATH="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.

C:\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 Files\Intel\WirelessCommon\;C:\GroupIS\Utilities\CMTTrace;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;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenSSH\;C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\WindowsPowerShell\Scripts\HP.ClientScriptLibrary;C:\Program Files\Microsoft SQL Server\150\Tools\Binn\;C:\Program Files\dotnet\;C:\Users\DAVI1428\AppData\Local\Microsoft\WindowsApps;;C:\Users\DAVI1428\AppData\Local\Programs\Microsoft VS Code\bin

C:\Users\DAVI1428>path="C:\Program Files (x86)\Atkins\SATWIN 11.XX\XEXES 11.5.05N MC X9";%path%

C:\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\;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 Files\Intel\WirelessCommon\;C:\GroupIS\Utilities\CMTTrace;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;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\WINDOWS\System32\OpenSSH\;C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\WindowsPowerShell\Scripts\HP.ClientScriptLibrary;C:\Program Files\Microsoft SQL Server\150\Tools\Binn\;C:\Program Files\dotnet\;C:\Users\DAVI1428\AppData\Local\Microsoft\WindowsApps;;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 P4.3 OMX Test

Test	Text File	OMX File
File size	7GB	700MB
Export time	6 minutes	2 minutes
Accuracy	Worse ☹️	Better 😊



SATSKIM

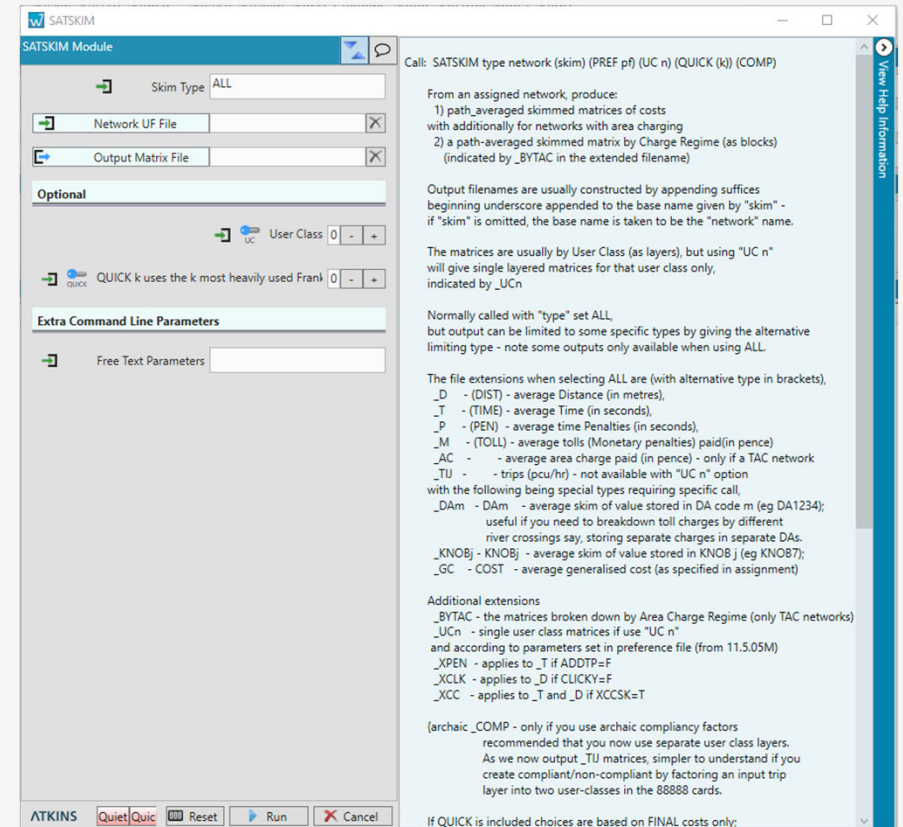
Previously used SKIMDIST / SKIMTIME etc to export a UFM, or SATTUBA1 / SATTUBA2 etc to export to a text file

...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



P1XDUMP

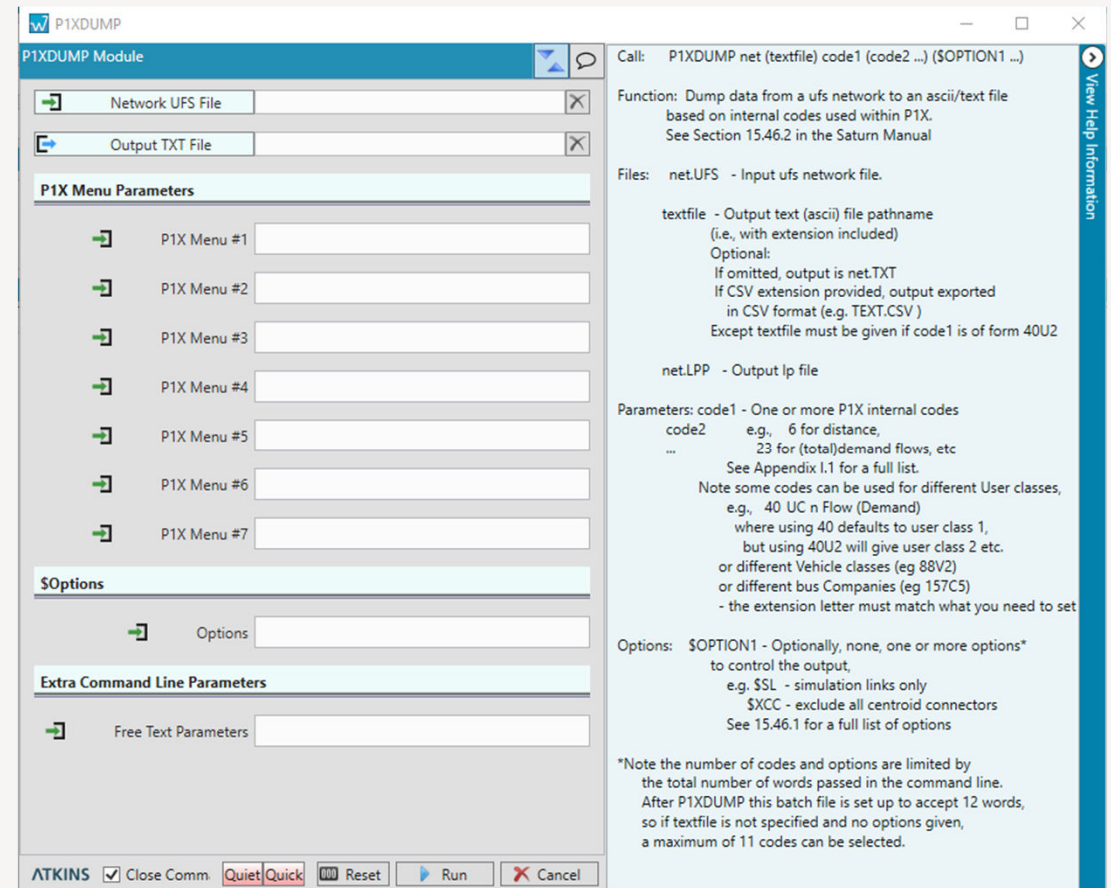
The easiest way to export link based data from SATURN is P1XDUMP

- › 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



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

The screenshot shows the P1X_SLA Module dialog box. It is titled "P1X_SLA" and "P1X_SLA Module". The dialog has a "P1X_SLA Module" title bar with a close button. Below the title bar is an "Input Network File" field. The main content is organized into several sections:

- Main select link definition:** Includes a "SLA Definition" field, an "AS alternative name" field, and a "Flow Type" dropdown menu set to "DEMAND". There are also checkboxes for "TWOWAY - combined two-way analysis" and "UNFACTORED - not factored to match original flow on link".
- Main control options:** Includes a "MATRIX selection" field, a "Grouping control" field, and a "Group Name" field.
- Additional select link definition:** Includes a "User Class" field and a "CROSSINGS" field.
- Additional control options:** Includes a "KEEPKEY selection" field.
- Extra Command Line Parameters:** Includes a "Free Text Parameters" field.

At the bottom of the dialog, there are buttons for "ATKINS", "Close", "Quiet/Quick", "Reset", "Run", and "Cancel".



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 = 0
6 - LANES - TOTAL NUMBER OF LANES
7 - BUS LANES - TOTAL
8 - BUS LANES - NEAR SIDE
9 - BUS LANES - OFFSIDE
11 - MERGE INDICATORS
13 - JUNCTION TYPE DOWNSTREAM
14 - JUNCTION TYPE UPSTREAM
15 - NEAR SIDE 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 NEAR SIDE FLARED LANES
20 - LANES WITH A NEGATIVE FOR BUS ONLY
```



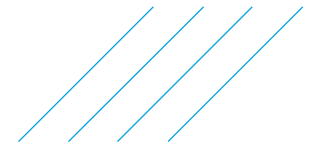
Deleting LP Files

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?