System and access problems

There are three system related message that may appear when an analysis is run:

> Unable to open temp file

> Unable to open <FILENAME> for reading|writing

> Unable to write. Full disk?

The first two messages are used in two different functions:

- "Unable to open temp file" only deals with temp file (or "scratch file" in HLM terms).

- "Unable to open <FILENAME> for reading | writing" deals with reading input data and writing non-temporary output files.

When a user does not have write access to a folder (for example the root of the c:\ drive) HLM will produce the message

> Unable to open <FILENAME> for reading|writing

Unless otherwise specified, HLM will write all output to the same folder the MDM and MLM files are in. While the folder it is in may allow read access, it may not necessarily support write access to that folder. To resolve this, change the paths to output files to point to a folder where write access is allowed.

For the temp file, HLM uses the CRT function_tempnam(NULL, NULL) to get the temporary file path. HLM reports "Unable to open temp file" in two situations:

1. when _tempnam(NULL, NULL) returns NULL.
2. when _tempnam(NULL, NULL) returns a valid name but fopen() fail.

This is the documentation for _tempnam():

https://docs.microsoft.com/en-us/cpp/c-runtime-library/reference/tempnam-wtempnam-tmpnam-wtmpnam?view=vs-2019

The documentation is for several similar functions that behave in different ways. Please refer to the parts that are relevant only to _tempnam().

Note that if the environment TMP is not set, _tempnam(NULL, NULL) will use the current working directory (CWD), and if this is not writable, attempt to open a file in CWD will failed.

When the message

Unable to write. Full disk?

appears, it usually indicates that there is not enough space to run a very large model on that system. However, the message also occasionally appears for smaller models with problem data. When very large or small numbers are encountered during the iterative process, for example during matrix inversions, storing of these very large/small numbers may trigger the same message. In that case, inspection of the data and model is indicated.

In the case of large models, the system may not have enough temporary space (tmp) for creating temporary files used during the iterative process. This can be changed. Windows Server has a Quota Management service, and the NT file system in general supports disk quotas. In general, the temp folder will just use whatever disk free space is available. Note that the temp folder can be "mapped" to another drive and thus depends on that drive's quota or free space.