Introduction:

The trigger for this development was the fact that a Synology Hyperbackup logfile is hardly readable. This is very understandable as Hyperbackup is and needs to be a multitasking tool.
This tool provides insights for the perfect settings of as well as a sound understanding of the performance and behavior of your Hyperbackup configuration.

What does the tool actually do?

The tool parses the Hyperbackup logfile and generates a number of output sheets.
- An overview sheet ("TOC & Instructions for use") with a clickable summary of all "Backup tasks" including some counters. Here you also can find the buttons to start the analysis, change the settings, read the documentation, etc.
- An overall sheet ("All Events - All Tasks") with all "Tasks" in which the related start "Event" and the finished (or failed) "Event" are put into one row. Also the messages in the log file are parsed and added to the row of the event.
- An individual task sheet for each for each "Backup task", again with one row per "Task".

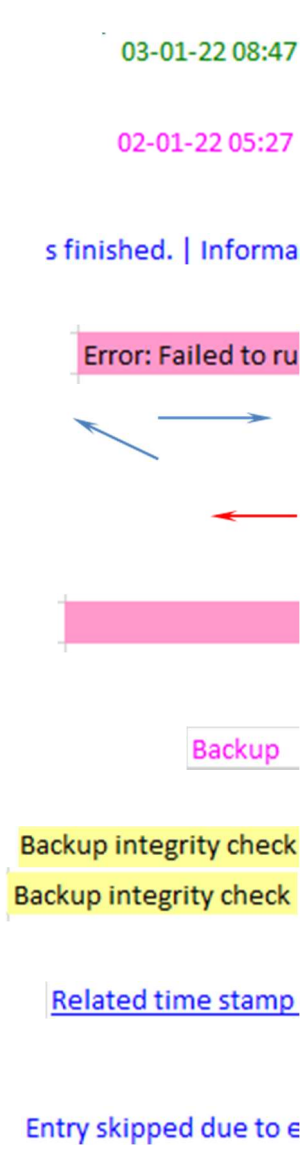
Which output is generated?

- The overview sheet is the first sheet in the Excel workbook.
  - A table with all sheets is shown with a hyperlink to each sheet.
  - The status of each task is shown, plus a summary of the events of the task.
- The provided Hyperbackup log file is added as the second sheet in the Excel workbook.
  - Non-recognized events will be highlighted red.
  - If selected, hyperlinks will be added to the related events in the overall sheet and the individual tasks sheets.
  - If an end date and/or an exclusion date period was entered before the analysis was started the skipped events will get a remark next to them.
- Task sheets (overall sheet plus all individual task sheets).
  - All events of that task are shown, including
    - The timestamp of the start and the finish or failure events.
    - The duration of the event.
    - Some information regarding the event (see column "Reason").
    - If available, some additional information regarding the event (see column "Comment").
    - In case more information is made available in the log file, the different texts are concatenated with a "|" and the text is made with a blue font.
    - Sometimes several finished or failed events occur. In that case a red (instead of a blue) arrow is shown, plus the concatenated information with a blue font.
  - If selected, a timeline is shown in which order the events took place.
  - Errors are highlighted red.
  - Events not triggered by "SYSTEM" are highlighted yellow.
  - On the top of the sheet a summary of the events of the task is collected.
    - Counters of different events.
    - Worst case durations.
    - If selected, some error types are collected plus a counter of how often that error was encountered.
  - If selected, hyperlinks will be added
    - From the (start of finished/failed) timestamp to the related line in the Hyperbackup log file (and back).
    - From the taskname in the overall sheet ("All Events - All Tasks") to the name of the event in the individual task sheet (and back).
  - See legend for more details.

Usage:
- The buttons on the overview sheet (“TOC & Instructions for use”) should be self-explanatory.
- See also the brief explanation next to the buttons.
- In case of an empty tool, you will be prompted for the Hyperbackup logfile that you want to analyze. A brief check will be done whether the format of the file is recognized.
- Be aware that you can set an end date until which the analysis should be done (for example until the time you had recently changed the settings).
- You also can exclude a certain period from the analysis (for example in case the external harddisk was corrupted).
- Those dates have to be within the timeframe in the provided Hyperbackup logfile.

Duration of macro execution:
It takes about 30 seconds just to set-up and finalize all sheets.
Depending on your machine and how intensely you are using it for other tasks during the execution of the macro, it could take up to 30 minutes to process a Hyperbackup logfile with some 11k lines.

Legend:



- A successfully finished “Event” (in case of a “Backup”) or “Check” (in case of a “Backup integrity check”) is marked with the font color is set to green.
- In case of a failed “Event” (in any case) is marked with the font color is set to red.
- Sometimes additional information is provided both with the start “Event” as well as the finish or failed “Event”. In that case the information is concatenated (separated by a “|” character) and the font color is set to blue.
- Some of the “Tasks” fail due to a variety of different reasons. The explanation why a “Task” failed is highlighted with dim red.
- In case you opted for the generation of a timeline the flow of the “Events” will be shown with blue arrows.
- Some of the tasks finish or fail several times. In that case sometimes the younger time stamps of an “Event” will be overwritten. This is indicated by a red (instead of blue) arrow of the timeline.
- In case a task is finished but no start-”Event” is recorded in the Hyperbackup logfile, the missing start-“Event” is highlighted with dim red.
- Sometimes even “Backup” “Tasks” and “Backup integrity check” “Tasks” are interwoven within the execution of an individual “Backup task”. If this occurs, the font color of the name of the task is set to red.
- The majority of the “Tasks” is triggered by the user “SYSTEM”. If a “Task” is triggered by another user (e.g. Admin or user) the related information is highlighted with a dim yellow.
- The “Events” hold hyperlinks (if this option is selected in the settings) to the source line in the Hyperbackup logfile. There you find the possibility to go to the related entry in the overall sheet or the individual sheet of the “Backup task”.
- In case you opted for not analyzing the complete Hyperbackup logfile, you can find a remark which events in the Hyperbackup logfile have been skipped.

Additional explanations:
- Some “Tasks” are not related to a dedicated “Backup task”. Those tasks are only added to the overall sheet (“All Events - All Tasks”).
- In case you opted to execute the additional error analysis a summary of 8 types of errors is added to the overall sheet (“All Events - All Tasks”) including counters. (Remark: there is space on the sheet for 2 more types of errors, if further use of the tool would reveal additional types of errors.)
- On the overall sheet one can clearly see the multitasking of Hyperbackup as the timeline sometimes jumps heavily.

Development:
- The development of this analysis tool took place on a Windows 10 machine with Excel 2016Pro. The source for the Hyperbackup logfiles that were used for testing is a DS213j NAS with DSM 6.2.4-25556 Update 5.
- Some error handling has been built-in in case unknown messages would be encountered in your Hyperbackup logfile.

Definitions:
- “Backup task”: This is the task you established in Hyperbackup. It runs according to your schedule and backs your data up in the backup file that you defined.
- “Task”: This is a certain activity that is executed based on the settings of the “Backup task”. Examples could be the execution of a “Backup” of a “Backup integrity check”.
- “Event”: This is a certain time stamp. Examples could be the start of a “Backup” of the finish of a “Backup integrity check”.

Settings:
- Generate Timeline: turn the generation of the timeline ON or OFF.
- Execute Additional Error Analysis: turn the additional error analysis ON or OFF.
- Add Hyperlinks for Events: turn the generation of bidirectional hyperlinks between the Hyperbackup logfile and the events and also the All Tasks - All Events sheet and the dedicated task sheets ON or OFF
- Ignore “Trigger version rotation”: this is a “Task” that happens pretty often, and does not really provide insights for the analysis. You can choose to skip these particular “Tasks” (ON) or add them to the analysis (OFF).
- Ignore Non-“Backup Task” Related Events”: You can choose to ignore all “Tasks” that are not related to a dedicated “Backup task” (ON) or add them to the analysis (OFF).
(Hover over a setting to see the help information.)

How to generate a Hyperbackup logfile:
- Log into the Synology DSM environment and open the Hyper Backup app
- On the bottom left of the Hyper Backup app you can find three buttons
- Click on the right button (“log”)
- An actual log file will be generated by DSM
- In the log window that pops up you can find an “Export” button on the top left corner
- Click on the arrow next to “Export” and choose “CSV”
- Save the log file at a convenient location
- It is not needed to rename the filename
- After you click in the button “Go And Analyze” on the overview sheet (“TOC & Instructions for use”) you will be prompted for the Hyperbackup logfile you want to analyze
- Select the file you just generated (or any another file, obviously)

Overview of errors messages collected by the additional error analysis:

Error message (column Reason)	Shown at	Error code	Explanation (column Comment)
Error: Failed to run backup task OR Error: Failed to start backup task	finishedfailed start	BUTbusy	The backup destination is busy. Please try again later. OR Scheduled backup has been skipped because of timeout waiting for integrity check.
Also covers the error messages: Error: Failed to run backup task. Error: Failed to run backup task. Error: Failed to run backup task. | Error: Failed to backup data. | Error: Exception occurred while backing up data. | Error: Failed to access the backup destination.			Also covers the explanations: (Scheduled backup has been skipped because of timeout waiting for integrity check.) (The backup destination is busy. Please try again later.) (The backup destination is busy. Please try again later.) | (The backup destination is busy. Please try again later.)
Error: Failed to run backup task.	finishedfailed start	BUTcorrupted	The data stored in backup destination [usbshareXXX] was corrupted.
Also covers the error messages: Error: Failed to run backup task. | Error: Failed to backup data. | Error: Exception occurred while backing up data. Error: Failed to run backup task. | Error: Failed to backup data. | Error: Exception occurred while backing up data. | Error: Failed to access the backup destination.			Also covers the explanations: (The data stored in backup destination [usbshareXXX] was corrupted. Please contact Synology Technical Support.) [User: admin, Path: Pool/chunk_index:123456789, Reason: destination file [Pool/chunk_index:123456789] was not existed or had invalid content] (The data stored in backup destination [usbshareXXX] was corrupted. Please contact Synology Technical Support.) | (The data stored in backup destination [usbshareXXX] was corrupted. Please contact Synology Technical Support.)
Error: Failed to run backup task.	start	BUTnotexist	The backup destination does not exist. [Path: usbshareXXX]
Warning: Backup task was partially completed. | Warning: Backup folder [FolderName] failed.	finishedfailed	BUTfoldermissing	The folder does not exist. Please check the backup task config.
Error: Failed to start integrity check.	finishedfailed	BICbusy	Destination is busy performing backup. OR The backup destination is busy. Please try again later.
			Also covers the explanation: (The backup destination is busy. Please try again later.)

Error message (column Reason)	Shown at	Error code	Explanation (column Comment)
Error: Failed to start OR run backup integrity check | Backup OR Data integrity check is finished	finishedfailed	BICcorrupted	The data stored in backup destination [usbshareXXX] was corrupted.
Also covers the error messages: Error: Backup integrity check is finished. | Information: Data integrity check finished. Error: Failed to start integrity check. | Error: Backup integrity check is finished. | Information: Data integrity check finished. Error: Failed to start integrity check. | Error: Failed to run backup integrity check. Error: Failed to start integrity check. | Error: Failed to run backup integrity check. | Information: Data integrity check finished. Error: Failed to start integrity check. | Error: Failed to start integrity check. | Error: Backup integrity check is finished. | Information: Data integrity check finished. Error: Failed to start integrity check. | Error: Failed to start integrity check. | Error: Failed to run backup integrity check.			Also covers the explanations: The backup target is found broken. (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | 266.9 GB data checked this time, accounting for 100.0% of the total data (266.9 GB data in total, 100.0% checked already). (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | The backup target is found broken. (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | XXXXX GB data checked this time, accounting for 100.0% of the total data (XXXXX GB data in total, 100.0% checked already). (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | | 813.7 GB data checked this time, accounting for 100.0% of the total data (813.7 GB data in total, 100.0% checked already). (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | The backup target is found broken. (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | 162.9 GB data checked this time, accounting for 100.0% of the total data (162.9 GB data in total, 100.0% checked already). (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) | (The data stored in backup destination [usbshare1-2] was corrupted. Please contact Synology Technical Support.) |

Error message (column Reason)	Shown at	Error code	Explanation (column Comment)
Error: Failed to run backup task OR Failed to backup data OR Exception occurred while backing up data OR Failed to start | run (backup) integrity check	finishedfailed	BUTBICnocomment	No comment was provided
Also covers the error messages: Error: Failed to start backup integrity check Error: Failed to run backup integrity check. Error: Failed to start integrity check.			
Incredible: This Backup event was started but never finished!	start	BUTBICnotfinished	No comment was provided
Also covers the error messages: Incredible: This Backup event was started but never finished! Incredible: This Backup integrity check event was started but never finished!			
The sheet still has space for another type of error message.	To be defined	Available	And the related explanation
Also covers the error messages:			Also covers the explanations:
The sheet still has space for another type of error message.	To be defined	Available	And the related explanation
Also covers the error messages:			Also covers the explanations: