



HYPACK 2024 Q1 PC Requirements

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We are often asked to provide recommendations for computers that would be best for HYPACK® operations. At the time of this writing (Q1 2024), we have the following recommendations on computer equipment that should be considered to collect, process, and store/archive multibeam data properly. The items are broken up into their respective uses. The primary focus should be on data acquisition and processing computers, and while data backup and archiving are important, a fully implemented data backup solution can be implemented at a later date.

ACQUISITION COMPUTERS

The following specifications are recommended for the acquisition PC on board the vessels. These computers should be able to last several years with proper care. To increase their service life, an option of a fan-less PC or laptop that can be removed from the vessel would be best. This PC does not have to be as powerful as the processing PCs but should be able to open some data for field assessment. The following are the recommended specifications for an acquisition PC.

- Intel i7 minimum
- 16GB of RAM minimum, 32GB of RAM recommended
- 1TB SSD minimum
- Gigabit ethernet
- Wi-Fi
- USB A 3.2, USB C 3.2, or Thunderbolt ports
- Multiple monitor outputs

Additionally, we recommend several dedicated data transfer drives for moving data between the vessel and the office. These should be SSD drives preferably with USB 3.2 or Thunderbolt for faster transfers. Below are a few manufacturers of fanless PCs as examples:

<https://www.onlogic.com/computers/industrial/fanless/>

<https://www.stealth.com/littlepcs/fanless-mini-pcs/>

<https://www.cappuccinopc.com/>

PROCESSING COMPUTERS

The following are the recommended specifications for the processing PC. If a laptop is equipped with the following specifications, it may also be used for processing. The drawback of using a laptop is the difficulty in upgrading components. Regardless of the form factor, the following specifications are recommended for a processing PC.

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- Intel i7 minimum
 - 64GB of RAM minimum, 128GB of RAM recommended
 - 1TB SSD as primary drive
 - Additional SSD drive dedicated to data
 - Gigabit ethernet
 - Wi-Fi
 - USB A 3.2, USB C 3.2, or Thunderbolt ports
 - 6GB graphic card (not required at this time for most HYPACK® processes but will be utilized more in future updates)
 - Multiple monitor outputs
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DATA BACKUP AND ARCHIVAL

The important thing about data backup and archival is redundancy. This requires that the backup option supports RAID array options at a minimum support for RAID 1. This will allow for data retrieval even if a drive fails. The preferred setup would be a proper server, however they can be expensive and may require a full-time IT support person to implement properly. A less costly NAS (Network Attached Storage) is available that a single user can implement and maintain. The size of the storage is limited only by the budget. For more information about NAS storage, the article by BestReviews may be helpful.

(<https://bestreviews.com/computer/accessories/best-nas-devices>)

Below are several NAS manufacturers that offer NAS devices that can be implemented without the cost of a full server. This list is by no means comprehensive.

<https://www.qnap.com/en-us/>

<https://www.buffalotech.com/products/for-business>

<https://www.synology.com/en-global/dsm>