

Filters

Configuring filters that process data during I/O operation (H5Z)

- [H5Z_FILTER_AVAIL](#) — Determines whether a filter is available.
- [H5Z_GET_FILTER_INFO](#) — Retrieves information about a filter
- [H5Z_REGISTER](#) — Registers a new filter with the HDF5 library
- [H5Z_UNREGISTER](#) — Unregisters a filter.

HDF5 supports a filter pipeline that provides the capability for standard and customized raw data processing during I/O operations. HDF5 is distributed with a small set of standard filters such as compression (gzip, SZIP, and a shuffling algorithm) and error checking (Fletcher32 checksum). For further flexibility, the library allows a user application to extend the pipeline through the creation and registration of customized filters.

The flexibility of the filter pipeline implementation enables the definition of additional filters by a user application. A filter

- is associated with a dataset when the dataset is created,
- can be used only with chunked data (i.e., datasets stored in the `H5D_CHUNKED` storage layout), and
- is applied independently to each chunk of the dataset.

The HDF5 library does not support filters for contiguous datasets because of the difficulty of implementing random access for partial I/O. Compact dataset filters are not supported because it would not produce significant results.

Filter identifiers for the filters distributed with the HDF5 Library are as follows:

<code>H5Z_FILTER_DEFLATE</code>	The gzip compression, or deflation, filter
<code>H5Z_FILTER_SZIP</code>	The SZIP compression filter
<code>H5Z_FILTER_NBIT</code>	The N-bit compression filter
<code>H5Z_FILTER_SCALEOFFSET</code>	The scale-offset compression filter
<code>H5Z_FILTER_SHUFFLE</code>	The shuffle algorithm filter
<code>H5Z_FILTER_FLETCHER32</code>	The Fletcher32 checksum, or error checking, filter

Custom filters that have been registered with the library will have additional unique identifiers.

See [HDF5 Dynamically Loaded Filters](#) for more information on how an HDF5 application can apply a filter that is not registered with the HDF5 library.