

Importing and Exporting Data Using MATLAB

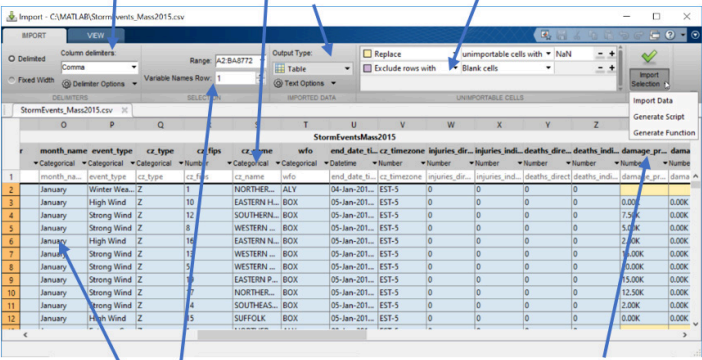
MATLAB® provides functionality to read and write data in many forms. This reference shows common use cases, but is not a comprehensive list of available functionality.

To see the relevant MATLAB documentation, click the [»»](#) icon below or visit mathworks.com/import-export-data.

Import Tool



Select **Import Data** to launch the Import Tool [»»](#)



Specify file formatting Select output data type Define rules for missing data

Select data to import Generate code to automate import steps

Low-Level I/O

Low-level functions such as `fgetl` and `fscanf` allow the most control over I/O. [»»](#)

```
fid = fopen('myfile.txt');
data = fscanf(fid,'%f %q');
fclose(fid);
```

Format Specs

Type	Specifier	Output Class
Signed int	%d,%d8,...	int32,int8
Unsigned int	%u,%u8,...	uint32,uint8
Floating point	%f %f32	double single
Text array	%s, %q 'TextType'	string
Datetime	%D,%{fmt}D	datetime
Duration	%T,%{fmt}T	duration
Category	%C	categorical
Pattern	%[...]	string
Skip field	%*k	

Standard File Formats

Type	Single File	Multiple Files	Write	Advanced
Text	<code>readtable</code>	<code>tabularTextDatastore</code>	<code>writetable</code>	<code>detectImportOptions</code> <code>textscan</code>
Spreadsheet	<code>readtable</code>	<code>spreadsheetDatastore</code>	<code>writetable</code>	<code>detectImportOptions</code>
.mat	<code>load</code> <code>matfile</code>	<code>fileDatastore</code>	<code>save</code>	Custom datastore
Image	<code>imread</code>	<code>imageDatastore</code>	<code>imwrite</code>	Custom datastore
Video	<code>VideoReader</code>	<code>fileDatastore</code>	<code>VideoWriter</code>	Custom datastore
Audio	<code>audioread</code>	<code>fileDatastore</code>	<code>audiowrite</code>	Custom datastore
NetCDF	<code>ncread</code>	<code>fileDatastore</code>	<code>ncwrite</code>	<code>netcdf</code>
CDF	<code>cdfread</code>	<code>fileDatastore</code>	<code>cdfwrite</code>	<code>cdflib</code>
HDF5	<code>h5read</code>	<code>fileDatastore</code>	<code>h5write</code>	H5, H5F, ...
XML	<code>xmlread</code>	<code>fileDatastore</code>	<code>xmlwrite</code>	Custom datastore
Binary	<code>fread</code>	<code>fileDatastore</code>	<code>fwrite</code>	Custom datastore

Use datastores for large or multiple files. `fileDatastore` can be used with any type of file. Use a custom datastore for more advanced control over read behavior. [»»](#)

Specialized I/O support can be found in several add-on products ([Simulink®](#), [Database Toolbox™](#), [Vehicle Network Toolbox™](#), and [others](#)). See the [File Exchange](#) and [GitHub](#) for additional functionality.

Web Data

RESTful Web Service

<code>webread</code>	Read data
<code>webwrite</code>	Write data
<code>websave</code>	Save data to file
<code>weboptions</code>	Specify options such as authentication and timeout

JSON

<code>jsondecode</code>	<code>jsonencode</code>
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HTTP Messaging

Use the HTTP interface for more complex web communication: [»»](#)

```
body = ...
    matlab.net.http.MessageBody(x);

request = ...
    matlab.net.http.RequestMessage ...
    (method,header,body);
```