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Format Handlers

Format handlers are a key component of Derafu Spreadsheet that enable the library to work with different file formats. Each format handler implements the `FormatHandlerInterface` and knows how to read and write a specific format.

Supported Formats

Derafu Spreadsheet supports the following formats in the core package:

Format	Extension	Handler Class	Dependencies
Excel XLSX	.xlsx	XlsxHandler	PhpSpreadsheet
Excel XLS	.xls	XlsHandler	PhpSpreadsheet
OpenDocument	.ods	OdsHandler	PhpSpreadsheet
CSV (League)	.csv	CsvLeagueHandler	League/CSV
CSV (PhpSpreadsheet)	.csv	CsvPhpSpreadsheetHandler	PhpSpreadsheet
JSON	.json	JsonHandler	PHP built-in
XML	.xml	XmlHandler	PHP built-in
YAML	.yaml	YamlHandler	Symfony/Yaml
HTML	.html	HtmlHandler	PhpSpreadsheet

Format	Extension	Handler Class	Dependencies
PDF	.pdf	<code>PdfHandler</code>	PhpSpreadsheet + PDF renderer

How Format Handlers Work

Each format handler is responsible for:

1. Loading data from a file into a `SpreadsheetInterface` object.
2. Dumping data from a `SpreadsheetInterface` object to a file or string (memory).
3. Providing metadata like the file extension and MIME type.

The `Factory` class manages the format handlers and automatically selects the appropriate handler based on the file extension.

Using Format Handlers

Most of the time, you don't need to interact with format handlers directly. The `Loader` and `Dumper` classes handle this for you:

```
$loader = new Loader();
$spreadsheet = $loader->loadFromFile('data.xlsx');

$dumper = new Dumper();
$dumper->dumpToFile($spreadsheet, 'output.csv');
```

However, if needed, you can access format handlers directly through the `Factory`:

```
$factory = new Factory();
$xmlHandler = $factory->createFormatHandler('filepath.xml');

// or with explicit format
$csvHandler = $factory->createFormatHandler('filepath.csv', 'csv');
```

Format-Specific Options

Some format handlers support additional options in the constructor.

CSV Options (`CsvLeagueHandler`)

```
$csvHandler = new CsvLeagueHandler(
    delimiter: ',', // Column delimiter.
```

```

        enclosure: '"',          // Field enclosure character.
        escape: '\\',           // Escape character.
        sheetName: 'Sheet'      // Default sheet name when loading CSV.
    );

```

OpenDocument/Excel Options (OdsHandler, XlsHandler, XlsxHandler)

```

$xmlHandler = new XlsxHandler(
    readDataOnly: true // Read values only, ignore formatting.
);

```

PDF Options (PdfHandler)

```

$pdfHandler = new PdfHandler(
    writerType: 'Mpdf' // Can be 'Mpdf', 'Dompdf', or 'Tcpdf'.
);

```

JSON Options (JsonHandler)

```

$jsonHandler = new JsonHandler(
    encodeOptions: JSON_PRETTY_PRINT | JSON_UNESCAPED_UNICODE,
    decodeOptions: JSON_OBJECT_AS_ARRAY,
    depth: 512,
    sheetName: 'Sheet'
);

```

YAML Options (YamlHandler)

```

use Symfony\Component\Yaml\Yaml;

$yamlHandler = new YamlHandler(
    parseFlags: Yaml::PARSE_EXCEPTION_ON_INVALID_TYPE,
    dumpFlags: Yaml::DUMP_MULTI_LINE_LITERAL_BLOCK,
    sheetName: 'Sheet'
);

```

Custom Format Handlers

You can create your own format handlers by implementing the `FormatHandlerInterface`:

```

use Derafu\Spreadsheet\Contract\SpreadsheetFormatHandlerInterface;

class MyCustomHandler implements FormatHandlerInterface
{

```

```
// Implement required methods.
}

// Register with the factory.
$factory = new Factory();
$factory->registerFormatHandler('custom', MyCustomHandler::class);

// Now you can use it.
$loader = new Loader($factory);
$spreadsheet = $loader->loadFromFile('filepath.custom');
```

Format Detection

The `Factory` class detects the format based on the file extension. If the file doesn't have an extension or if you want to override it, you can explicitly specify the format:

```
$loader = new Loader();
$spreadsheet = $loader->loadFromFile('filepath', 'xlsx'); // Treat as XLSX.
```

You can also check which formats are supported:

```
$factory = new Factory();
$supportedFormats = $factory->getSupportedFormats();
// ['csv', 'xlsx', 'xls', 'ods', 'xml', 'json', 'yaml', 'html', 'pdf']
```

Alternative Format Handlers

For some formats like CSV, Derafu Spreadsheet provides multiple handlers. For example:

- `CsvLeagueHandler` - Uses League/CSV (recommended for most cases).
- `CsvPhpSpreadsheetHandler` - Uses PhpSpreadsheet.

You can choose which handler to use by registering it for the format:

```
$factory = new Factory();
$factory->registerFormatHandler('csv', CsvPhpSpreadsheetHandler::class);

$loader = new Loader($factory);
// Now CSV files will use PhpSpreadsheet handler.
```

Format Handling and Type Casting

When loading a file, the process works like this:

1. Format handler reads the raw data from the file.
2. Data is converted to a SpreadsheetInterface object.
3. Caster processes all values to convert them to the appropriate PHP types.

When saving a file:

1. Caster converts PHP types to appropriate string representations.
2. Format handler writes the data to the file in the correct format.

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