

Digital Map Data Format (DMDF) Reader

The Digital Map Data Format (DMDF) Reader module allows the Feature Manipulation Engine (FME) to read DMDF files. DMDF files are in ASCII format.

DMDF Quick Facts

Format Type Identifier	DMDF
Reader/Writer	Reader
Licensing Level	Base
Dependencies	None
Dataset Type	File
Feature Type	Geometry type
Typical File Extensions	.dd1
Automated Translation Support	Yes
User-Defined Attributes	No
Coordinate System Support	No
Generic Color Support	No
Spatial Index	Never
Schema Required	No
Transaction Support	No
Geometry Type	dmdf_type

Geometry Support			
Geometry	Supported?	Geometry	Supported?
aggregate	no	point	yes
circles	no	polygon	no
circular arc	no	raster	no
donut polygon	no	solid	no
elliptical arc	no	surface	no
ellipses	no	text	no
line	yes	z values	no
none	no	grid	yes

Band Interpretations	Real64
Palette Key Interpretations	not applicable
Palette Value Interpretations	not applicable
Interleave Type	not applicable
Nodata Value	none

Cell Origin	0.0
Multi-Band	No
Multi-Palette	No
World File Support	No
TAB File Support	No

Overview

The DMDF allows transmission of digital map data in a format that is hardware independent, which holds the minimum amount of information needed to convert the data to graphics files. Features in this format are divided into four basic types: points, curves, line strings, and annotation. Every feature has an alphanumeric code (derived from the *CCSM National Standards for the Exchange of Digital Topographic Data*), and contains information concerning the location, rotation, text sizes, scale factors and angles. Some feature codes designate point features to be a part of a regular raster of DEM values. These can be interpreted in FME as either distinct point features or collected as a single DEM raster feature.

Curves and annotation are not currently used in DMDF files.

Reader Overview

FME considers a single DMDF raster file to be a dataset. The DMDF reader then extracts features from the file one at a time, and passes them on to the rest of the FME for further processing.

Reader Directives

The suffixes shown are prefixed by the current `<ReaderKeyword>` in a mapping file. By default, the `<ReaderKeyword>` for the DMDF reader is `DMDF`.

DATASET

Required/Optional: *Required*

The value for this keyword is the name of a single DMDF file. The extension for DMDF files is `.ddl`.

Example:

```
DMDF_DATASET /usr/data/dmdf/input.ddl
```

AS_DEMRASTER

Required/Optional: *Optional*

A Boolean value indicating whether to read point data as a set of points or a single raster feature. You must also specify a feature code using `RASTER_POINT_FEATURE_CODE` in order to read a raster.

DMDF files can be interpreted by FME as a group of associated point features or as a single raster feature. The `AS_DEMRASTER` keyword is used to specify which way FME will

handle the raster data. Raster files can be translated much more efficiently as raster features than as many point features.

An `AS_DEMRASTER` value of `NO`, for instance, results in the handling of elevation values in a raster file as individual point features. A value of `YES`, conversely, results in the handling of each raster file as a single raster feature.

Vector data such as line features and point features that do not have a raster point CCSM feature code are unaffected by the `AS_DEMRASTER` setting.

Value: *yes (read as raster) | no (read as points)*

Default: *yes (read as an FME raster feature)*

RASTER_POINT_FEATURE_CODE

Required/Optional: *Optional*

DMDF files can be interpreted by FME as a group of associated point features or as a single raster feature. If the `AS_DEMRASTER` keyword is used, some point features may be interpreted as a part of a DEM raster feature instead of as distinct features.

The `RASTER_POINT_FEATURE_CODE` specifies points are to be interpreted as part of a raster feature, based on a common feature code that is derived from the *CCSM National Standards for the Exchange of Digital Topographic Data*.

Default: none

Example:

```
DMDF_RASTER_POINT_FEATURE_CODE HA35000000
```

FME Raster Features

FME raster features represent raster data and use several concepts that are unlike those used in the handling of vector data. See *About FME Rasters* on page 13.

BMP files can only be written with square pixel dimensions.

Feature Representation

In addition to the generic FME feature attributes that FME Workbench adds to all features (see *About Feature Attributes* on page 7), this format adds the format-specific attributes described in this section.

There are four basic types in DMDF: points, curves, line strings and annotation. Curves and annotation are not currently used by DMDF files.

Features read from DMDF are either 3D points with a feature type of `point`, lines with a feature type of `line`, or 3D rasters with a feature type of `raster`.

DMDF raster point features specify a matrix of x, y, and z coordinates. The other point and line features may specify spot heights, and break lines.

Each DMDF element, regardless of its geometry type, shares a number of other parameters, as described in the following tables. Subsequent subsections will describe parameters specific to each of the supported element types. If any of these are missing,

the default value will be taken. However, the feature will not be processed if there is no default value.

Attribute Name	Contents
dmdf_type	The DMDF geometric type of this entity. Range: dmdf_point dmdf_line dmdf_curves dmdf_annotation Default: No Default
dmdf_feature_code	An alphanumeric feature code derived from the CCSM National Standards for the Exchange of Digital Topographic Data. Range: Maximum 10 characters Default: No Default

Points

dmdf_type: dmdf_point

DMDF point features specify a coordinate in addition to its feature code. Additional attributes includes the following:

Attribute Name	Contents
dmdf_symbol_rotation	The rotation of the symbol measured counterclockwise from a west to east UTM grid line. Range: Floating point number Default: No Default
dmdf_horizontal_scale	The multipliers of a symbol's x-axis default size which is applied to the symbol prior to any rotation. Range: Floating point number Default: No Default
dmdf_vertical_scale	The multiple of a symbol's y-axis default size which is applied to the symbol prior to any rotation. Range: Floating point number Default: No Default

Each DMDF point is given an FME feature type of "point".

Lines

dmdf_type: dmdf_line

DMDF line features specify a coordinate in addition to its feature code. There are no attributes specific to this type. Each DMDF line is given an FME feature type of "line".

Rasters

dmdf_type: dmdf_raster

DMDF raster features are constructed from a series of DMDF point features with a common feature code that is specified in the `DMDF_RASTER_POINT_FEATURE_CODE` keyword.

Each DMDF raster is given an FME feature type of "raster".

Curve

dmdf_type: dmdf_curve

This is not supported by the DMDF Reader.

Annotation

dmdf_type: dmdf_annotation

This is not supported by the DMDF Reader.

