

# ESRI ArcGIS Map (.mxd) Reader

## FORMAT NOTES:

- To use FME's ESRI ArcGIS Map Reader, you must also install ESRI® ArcGIS® 9. It is not available with ArcGIS 8.

The ESRI ArcGIS Map reader allows FME to retrieve data from ESRI's ArcMap Document.

## ArcGIS Map Quick Facts

|                               |                                    |
|-------------------------------|------------------------------------|
| Format Type Identifier        | ARCGISMAP                          |
| Reader/Writer                 | Reader                             |
| Licensing Level               | ESRI Edition                       |
| Dependencies                  | ESRI ArcGIS 9                      |
| Dataset Type                  | File                               |
| Feature Type                  | Layer name (Table name for tables) |
| Typical File Extensions       | .mxd                               |
| Automated Translation Support | Yes                                |
| User-Defined Attributes       | Yes                                |
| Coordinate System Support     | Yes                                |
| Generic Color Support         | Yes                                |
| Spatial Index                 | Always                             |
| Schema Required               | No                                 |
| Transaction Support           | N/A                                |
| Enhanced Geometry             | Yes                                |
| Geometry Type                 | geodb_type                         |

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

## Overview

Since the ArcGISMap Reader is based on the same technology as FME's Geodatabase Reader, **any** feature that the Geodatabase Reader supports is also supported by the ArcGISMap Reader.

With FME's ArcGIS Extension or the ESRI ArcGIS Data Interoperability Extension installed, it is possible to create an ArcMap document containing data from formats that are not natively supported by ESRI. This ArcMap document can then be read using the ArcGISMap Reader.

The ArcGISMap module provides the following capabilities:

- **Fully Automatic Import:** FME's Geodatabase support provides fully automated import of data through the FME's Graphical User Interface (GUI). This is ideal for quick data imports.
- **Mapping File/Workspace Customization:** FME's ability to generate mapping files/workspaces for user customization allows greater and more precise control over Geodatabase translations.
- **Enhanced Geometry Model Support:** This reader supports the enhanced geometry model. The addition of enhanced geometry model support allows lines and polygons containing arcs to be maintained, rather than stroked or the geometry split up into multiple segments.

## Reader Overview

### Reader Directives

The suffixes listed are prefixed by the current `<ReaderKeyword>` in a mapping file. Unless otherwise specified, the `<ReaderKeyword>` for the ArcGISMap reader is the same as the `<ReaderType>`.

#### **DATASET**

**Required/Optional:** *Required*

The file from which data is to be read.

**Workbench Parameter:** [<WorkbenchParameter>](#)

#### **IDs**

**Required/Optional:** *Optional*

Specifies the layers/tables from which features are to be retrieved. This directive is used in conjunction with the `DEF` keyword. If both `DEF` and `IDs` are specified, then the intersection is taken from both of these directives. The layers that are read are subject to use of the `READ_INVISIBLE_LAYERS` keyword. If the layer name is blank for a particular layer, then the feature class name must be used instead.

[Workbench Parameter: <WorkbenchParameter>](#)

## DEF

**Required/Optional:** *Optional*

Describes layers/tables. Normally these lines are automatically generated within a mapping file using FME. This directive is used in conjunction with the `IDS` directive. If both `DEF` and `IDS` are specified, then the intersection is taken from both of these directives. The layers that are read are subject to use of the `READ_INVISIBLE_LAYERS` directive. If the layer name is blank for a particular layer, then the feature class name must be used instead.

[Workbench Parameter: <WorkbenchParameter>](#)

## IGNORE\_MAP\_EXTENTS

**Required/Optional:** *Optional*

Specifies whether to read only those features that are within the extents of the ArcMap document, or to ignore the extents and read all the features in the layer. (This directive does not affect the reading of features from tables.)

**Value:** *YES | NO*

**Default Value:** *NO*

[Workbench Parameter: <WorkbenchParameter>](#)

## READ\_INVISIBLE\_LAYERS

**Required/Optional:** *Optional*

Specifies whether to read features from an invisible layer. (This directive does not affect the reading of features from tables.)

**Value:** *YES | NO*

**Default Value:** *NO*

[Workbench Parameter: <WorkbenchParameter>](#)

## USE\_SELECTION\_SET

**Required/Optional:** *Optional*

Specifies whether or not to only read the selected features. It is used in conjunction with the directives `READ_INVISIBLE_LAYERS` and `IGNORE_MAP_EXTENTS` since it is possible that some of the selected features are currently invisible and/or outside the current extents of the map. If set to `YES` and there are no features in the selection set, all the features from the specified layers will be read. When the layer name of a layer is blank, the feature type is set to the feature class name of the layer, rather than using the blank layer name. When using the `IDS` directive, the name of the feature class should be specified when setting up to read from the layer with the blank layer name. (This directive does not affect the reading of features from tables.)

**Value:** *YES | NO*

**Default Value:** *NO*

**Workbench Parameter:** [<WorkbenchParameter>](#)

## RESOLVE\_DOMAINS

**Required/Optional:** *Optional*

This directive specifies whether to resolve attributes that have a default coded value domain (i.e., the domain was not set up through a subtype) associated with them. This means that when an attribute of a feature has a coded value domain associated with it, another attribute will also be added that represents the textual description of the coded attribute. The new attribute will be `<attribute-name>_resolved`, where `<attribute-name>` is the name of the attribute containing the code. This attribute will only be added when `<attribute-name>` contains a non-NULL value.

**Value:** *YES | NO*

**Default Value:** *NO*

**Workbench Parameter:** [<WorkbenchParameter>](#)

## 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.

The ArcGISMap modules make use of the following special attribute names.

| Attribute Name                               | Contents  |
|--|---|
| <code>geodb_type</code>                      | The type of geometric entity stored within the feature. The valid values are listed below:<br><code>geodb_table</code><br><code>geodb_point</code><br><code>geodb_multipoint</code><br><code>geodb_polyline</code><br><code>geodb_arc</code><br><code>geodb_ellipse</code><br><code>geodb_polygon</code><br><code>geodb_annotation</code><br><code>geodb_dimension</code><br><code>geodb_simple_junction</code><br><code>geodb_simple_edge</code><br><code>geodb_complex_junction</code><br><code>geodb_complex_edge</code><br>For a description of the attributes belonging to each of the different <code>geodb_type</code> 's, please see the chapter <i>ESRI Geodatabase Reader/Writer</i> on page 655. |
| <code>&lt;attribute-name&gt;_resolved</code> | When reading, if <code>RESOLVE_DOMAINS</code> is set to <code>YES</code> , then the description corresponding to the domain code is stored in this attribute.   |

| <b>Attribute Name</b>   | <b>Contents</b>   |
|-------------------------|---|
| fme_color               | A normalized RGB triplet representing the fill color of the feature, with the format r,g,b.<br><b>Range:</b> 0,0,0 to 1,1,1<br><b>Default:</b> No default   |
| geodb_feature_is_simple | Indicates whether or not the geometry is simple.  |
| geodb_measures          | This is present for features that have measures. This is a comma-separated list of floating values that correspond to the vertex measures. The first value is for the first vertex, second for the second, and so on. |

Features read from an ArcMap document also have an attribute for each attribute in a layer.

