

# Geoprocessor Programming Model

ArcGIS 9.2

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### arcgisscripting / GpDispatch

**Properties**

- MaxSeverity
- MessageCount
- OverwriteOutput: Boolean
- ParameterCount
- Toolbox

**Methods**

- AddError (Message)
- AddMessage (Message)
- AddReturnMessage (Index)
- AddToolbox (Toolbox)
- AddWarning (Message)
- ClearEnvironment (Environment)
- Command (CommandLineString)
- CopyParameter (fromIndex, toIndex)
- CheckExtension (ExtensionCode)
- CheckInExtension (ExtensionCode)
- CheckOutExtension (ExtensionCode)
- CheckProduct (ProductCode)
- CreateObject (ObjectName, ExtraArg): Object
- CreateRandomValueGenerator (Seed, Algorithm)
- CreateScratchName (Prefix, Suffix, dataType, workspace)
- CreateUniqueName (InputValue, workspace)
- Describe (InputValue): Object
- Exists (InputValue): Boolean
- GetMessage (Index)
- GetMessages (severity)
- GetParameter (Index)
- GetParameterAsText (Index)
- GetParameterCount (ToolName)
- GetParameterValue (ToolName, Index)
- GetReturnCode (Index)
- GetSeverity (Index)
- GetSystemEnvironment (envName)
- IsSynchronous (ToolName)
- ListFields (InputValue, wildCard, fieldType): Object
- ListIndexes (InputValue, wildCard): Object
- ListDatasets (wildCard, featureType): Object
- ListFeatureClasses (wildCard, featureType): Object
- ListRasters (wildCard, rasterType): Object
- ListTables (wildCard, tableType): Object
- ListWorkspaces (wildCard, workspaceType): Object
- ListEnvironments (wildCard): Object
- ListToolboxes (wildCard): Object
- ListTools (wildCard): Object
- LoadSettings (XMLFile)
- ParseFieldName (FieldName, Workspace)
- ParseTableName (TableName, Workspace)
- ProductInfo ()
- QualifyFieldName (FieldName, Workspace)
- QualifyTableName (TableName, Workspace)
- RefreshCatalog (InputValue)
- RemoveToolbox (Toolbox)
- ResetEnvironments ()
- SetParameterAsText (Index, Argument)
- SetParameter (Index, Argument)
- SaveSettings (XMLFile)
- SetProduct (ProductCode)
- InsertCursor (InputValue, SpatialReference): Object
- SearchCursor (InputValue, WhereClause, SpatialReference, FieldList, SortFields): Object
- UpdateCursor (InputValue, WhereClause, SpatialReference, FieldList, SortFields): Object
- TestSchemaLock (inputValue): Boolean
- Usage (method)
- ValidateFieldName (FieldName, Workspace)
- ValidateTableName (TableName, Workspace)

**Dynamic Methods and Properties**

- Environment
- Tool (tool parameters)

### SpatialReference

**All Coordinate Systems**

- Type
- Name
- Abbreviation
- Remarks
- Longitude
- FactoryCode
- HasMTPrecision
- HasXYPrecision
- HasZPrecision
- FalseOriginAndUnits
- MFalseOriginAndUnits
- ZFalseOriginAndUnits
- Domain
- MDomain
- ZDomain
- IsHighPrecision
- XYTolerance
- MTolerance
- ZTolerance
- XYResolution
- MResolution
- ZResolution
- Usage
- CreateFromFile (prjFile)

**Geographic Coordinate System only**

- SemiMajorAxis
- SemiMinorAxis
- Flattening
- Longitude
- RadiansPerUnit
- GCSName
- GCSCode
- SpheroidName
- SpheroidCode
- DatumName
- DatumCode
- PrimeMeridianName
- PrimeMeridianCode
- AngularUnitName
- AngularUnitCode

**Projected Coordinate System only**

- CentralMeridian
- CentralMeridianInDegrees
- LongitudeOfOrigin
- LatitudeOf1st
- LatitudeOf2nd
- FalseEasting
- FalseNorthing
- CentralParallel
- StandardParallel1
- StandardParallel2
- LongitudeOf1st
- LongitudeOf2nd
- ScaleFactor
- Azimuth
- Classification
- PCSName
- PCSCode
- ProjectionName
- ProjectionCode
- LinearUnitName
- LinearUnitCode

### FieldMappings

- FieldValidationWorkspace (Workspace)
- FieldCount
- Fields: Object
- AddTable (inputTableName)
- AddFieldMap (FieldMap: Object)
- GetFieldMap (Index): FieldMap: Object
- ReplaceFieldMap (Index, FieldMap: Object)
- RemoveFieldMap (Index)
- FindFieldMapIndex (FieldName)
- RemoveAll ()
- ExportToString ()
- LoadFromString (inputString)

### FieldMap

- MergeRule (String)
- JoinDelimiter (String)
- OutputField (Field: Object) \*
- InputFieldCount (Long)
- SetStartTextPosition (Index, Long)
- GetStartTextPosition (Index)
- SetEndTextPosition (Index, Long)
- GetEndTextPosition (Index)
- AddInputField (inputTableName, FieldName, StartTextPosition, EndTextPosition)
- FindInputFieldIndex (Table, FieldName)
- GetInputTableName (Index)
- GetInputFieldName (Index)
- RemoveInputField (Index)
- RemoveAll ()

### Field\*\*

- Name
- AliasName
- Domain
- Editable: Boolean
- HasIndex: Boolean
- IsNullable: Boolean
- IsUnique: Boolean
- Length
- Scale
- Precision

### ValueTable\*\*\*

- Count
- RowCount
- ColumnCount
- AddRow (optional value)
- GetRow (RowIndex)
- GetValue (RowIndex, ColumnIndex)
- LoadFromString (value)
- ExportToString
- RemoveRow (RowIndex)
- SetRow (RowIndex, value)
- SetColumns (value)
- SetValue (RowIndex, ColumnIndex)

### FieldInfo

- Count
- AddField (FieldName, NewName, Visible, SplitRule)
- ExportToString ()
- FindFieldByName (FieldName)
- FindFieldByNewName (NewName)
- GetFieldName (Index)
- GetNewName (Index)
- GetSplitRule (Index)
- GetVisible (Index)
- LoadFromString (inputString)
- RemoveField (Index)
- SetFieldName (Index, FieldName)
- SetNewName (Index, NewName)
- SetSplitRule (Index, SplitRule)
- SetVisible (Index, Visible)

### Array

- Count
- Reset
- Next: Object
- Add (Object)
- Insert (Index, Object)
- Remove (Index)
- RemoveAll ()
- Replace (Index, Object)
- GetObject (Index): Object

### Point

- ID
- X
- Y
- Z
- M

### NetCDFFileProperties\*\*\*

- GetAttributeNames (VariableName): Array
- GetAttributeValue (VariableName, AttributeName)
- GetDimensionIndex (DimensionName, Value)
- GetDimensions: Array
- GetDimensionsByVariable (VariableName): Array
- GetDimensionSize (DimensionName, Index)
- GetDimensionValue (DimensionName, Index)
- GetFieldType (Name)
- GetSpatialReference (VariableName, XDimension, YDimension): SpatialReference: Object
- GetVariables: Array
- GetVariablesByDimension (DimensionName): Array

### FeatureSet

- Load (InputValue)
- Save (OutputValue)

### RecordSet

- Load (InputValue)
- Save (OutputValue)

### Result\*\*\*

- Status
- ResultID
- MessageCount
- MaxSeverity
- OutputCount
- GetMessages (severity)
- GetMessage (index)
- GetSeverity (index)
- GetInput (index): Object
- GetOutput (index): Object
- GetMapImageURL (ParameterList, Height, Weight, Resolution)
- Cancel ()

\* Use either a read-only or read-write Field object to set the property. The returned object is read-write.

\*\* Create and populate a Field object to set the properties of the Output field within a FieldMap object.

\*\*\* When using CreateObject to create ValueTable, NetCDFFileProperties and Result objects, an extra argument is used.

CreateObject ("ValueTable", columnCount)  
CreateObject ("NetCDFFileProperties", NetCDFFile)  
CreateObject ("Result", toolName + " + ResultID)

### Fields

- Next: Object
- Reset

### Indexes

- Next: Object
- Reset

### Enumeration (featureclasses, rasters, tables, datasets, workspaces, environments, toolboxes tools)

- Next: (String)
- Reset

### Field

- Name
- AliasName
- Domain
- Editable: Boolean
- HasIndex: Boolean
- IsNullable: Boolean
- IsUnique: Boolean
- Length
- Type
- Scale
- Precision

### Index

- Name
- IsAscending: Boolean
- IsUnique: Boolean
- Fields: Object

### Rows (SearchCursor, InsertCursor, UpdateCursor)

- SearchCursor
  - Next: Object
  - Reset
- InsertCursor
  - Reset
  - NewRow: Object
  - InsertRow (Object)
- UpdateCursor
  - Next: Object
  - Reset
  - UpdateRow (Object)
  - DeleteRow (Object)

### Row

- FieldName
- GetValue (fieldName)

### Row

- FieldName
- Next: Object
- GetValue (fieldName)
- SetValue (fieldName, Value)

### Geometry

- Type
- Extent
- Centroid
- TrueCentroid
- LabelPoint
- FirstPoint
- LastPoint
- Area
- Length
- IsMultipart: Boolean
- PartCount
- HullRectangle
- GetPart (Index): Object

A Field returned from a Fields object is almost equivalent to a Field object that can be created using the CreateObject method. The only difference is their read/write capabilities.

An Index Object can create a Fields object for that index.

Use List functions to create an enumeration object of the data type.

Each row will dynamically support the field name as a property.

Using the Geometry field, a geometry object may be created. It is used to describe the properties of the geometry for each row in a feature class.

### FeatureClass Properties

- FeatureType
- HasM: Boolean
- HasZ: Boolean
- HasSpatialIndex: Boolean
- RelationshipClassNames
- ShapeFieldName
- ShapeType
- TopologyName

### Table Properties

- HasOID: Boolean
- OIDFieldName
- Fields: Object
- Indexes: Object

### Relationship Class Properties

- IsVersioned: Boolean
- Fields: Object

### Table Properties

- IsVersioned: Boolean
- Fields: Object

### Table Properties

- IsVersioned: Boolean
- Fields: Object

### Raster Catalog Properties

- RasterFieldName

### Dataset Properties

- DatasetType
- Extent
- SpatialReference: Object

### Dataset Properties

- Extent
- SpatialReference: Object

### Table Properties

- Extent
- SpatialReference: Object

### Coverage FeatureClass Properties

- FeatureClassType
- HasFAT: Boolean
- HasTopology: Boolean

### Table Properties

- Table
- FIDSet
- FieldInfo: Object
- WhereClause
- NameString

### Table Properties

- Table
- FIDSet
- FieldInfo: Object
- WhereClause
- NameString

### Raster Dataset Properties

- BandCount
- CompressionType
- Format
- Permanent: Boolean
- SensorType

### Raster Band Properties

- BandCount
- CompressionType
- Format
- Permanent: Boolean
- SensorType

### Layer Properties

- FeatureClass
- FIDSet
- FieldInfo: Object
- WhereClause
- NameString

### FeatureClass Properties

- FeatureClass
- FIDSet
- FieldInfo: Object
- WhereClause
- NameString

### Workspace Properties

- Connection Properties
- ConnectionString
- Domains
- WorkspaceFactoryProgID
- WorkspaceType

### Workspace Properties

- Connection Properties
- ConnectionString
- Domains
- WorkspaceFactoryProgID
- WorkspaceType

### Raster Band Properties

- Height
- IsInteger: Boolean
- MeanCellHeight
- MeanCellWidth
- NoDataValue
- PixelType
- PrimaryField
- TableType
- Width

### Raster Band Properties

- Height
- IsInteger: Boolean
- MeanCellHeight
- MeanCellWidth
- NoDataValue
- PixelType
- PrimaryField
- TableType
- Width

### Describe Object Properties

- DataType
- CatalogPath

### Coverage Properties

- Tolerances

### Dataset Properties

- Tolerances

An Object is created with all of the properties of the data being described. The specific properties listed apply to all types of data.

Red text indicates a property set.

Each type of data has unique properties. Depending on their relationship, properties of other data types may also be available.

All properties and method parameters are either a string or a long data type, unless otherwise stated. Some properties and parameters may be objects or boolean values.

**Object key**

- Property Get
- Property Get/Put
- Method

Any tool from a referenced toolbox may be called as a method, while environment settings are properties.