Datasets Files Reference

Import and manage dataset files.

Datasets Files (Reference) enable reading and writing text-based data files for recipe management, configuration settings, and data exchange with external applications. DatasetFile provides:

- cipe file management
- Configuration import/export
- Tag value persistence
- XML data structures
- Dynamic file naming
- Batch data transfer

Files support ASCII, Unicode, and XML forma

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Configuration Properties

Property	Description	Required
Name	Unique file identifier (no spaces)	Yes
FileName	Full file path (supports tag embedding)	Yes
FileType	Format: ASCII, Unicode, XML	Yes
Objects	Tags to read/write	Yes
XMLSchemaType	XML structure type	For XML only
Description	Documentation text	No

Creating Dataset Files

1. Navigate to **Datasets Files**
2. Click **Plus icon**
3. Configure:
    - **Name**: Unique identifier
    - **Description**: Documentation
4. Click **OK**
5. Set properties:
    - **FileName**: Target file path
    - **FileType**: Select format
    - **Objects**: Map tags

File Types

ASCII Files

Plain text, single-byte encoding:

```
Tag1=100
Tag2=200.5
Tag3=Active
```

Unicode Files

Multi-byte character support:

```
??=25.5
??=101.3
??=???
```

XML Files

Structured data with schemas:

xml

```xml
<Tags>
  <Tag Name="Temperature" Value="25.5"/>
  <Tag Name="Pressure" Value="101.3"/>
  <Tag Name="Status" Value="Running"/>
</Tags>
```

File Path Configuration

Static Path

```
C:\Recipes\Recipe001.txt
\\Server\Share\Config.xml
```

Dynamic with Tags

```
C:\Recipes\Recipe{{Tag.RecipeNumber}}.txt
C:\Data\{{Tag.Year}}\{{Tag.Month}}\Data.csv
\\Server\{{Tag.Department}}\Settings.xml
```

Using Macros

```
{{ExecutionPath}}\Recipes\Current.txt
{{SolutionPath}}\Data\Config.xml
```

XML Schema Types

Tag List XML

Simple name-value pairs:

xml

```xml
<TagList>
  <Tag Name="Tank1_Level" Value="75.5"/>
  <Tag Name="Tank1_Temp" Value="22.3"/>
  <Tag Name="Pump1_Status" Value="1"/>
</TagList>
```

Tag Object XML

Complete tag hierarchy:

xml

```xml
<TagTree>
  <Folder Name="TankFarm">
    <Folder Name="Tank1">
      <Tag Name="Level" Value="75.5" Type="Double"/>
      <Tag Name="Temp" Value="22.3" Type="Double"/>
    </Folder>
  </Folder>
</TagTree>
```

Object Mapping

Configuration

1. Click **Objects** ellipsis (...)
2. Select tags to include:
    - Check individual tags
    - Select entire folders
    - Use search filter

Mapping Behavior

- **Read**: File values Tags
- **Write**: Tags File values
- **Automatic type conversion**
- **Preserves tag structure**

Execution Methods

Reading Files

csharp

```
// Load recipe file
@Dataset.File.Recipe001.Load();

// Check if successful
if (@Dataset.File.Recipe001.Status == "OK")
{
    // Tags now contain file values
    double temp = @Tag.Temperature;
}
```

Writing Files

csharp

```
// Set tag values
@Tag.Temperature = 25.5;
@Tag.Pressure = 101.3;
@Tag.Status = "Running";

// Save to file
@Dataset.File.Recipe001.Save();
```

Dynamic File Operations

csharp

```
// Change filename at runtime
@Tag.RecipeNumber = 5;
@Dataset.File.RecipeFile.FileName =
    string.Format(@"C:\Recipes\Recipe{0}.txt", @Tag.RecipeNumber);

// Load specific recipe
@Dataset.File.RecipeFile.Load();
```

Recipe Management Example

Recipe Structure

```
# Recipe_001.txt
ProductCode=WIDGET-A
Temperature=185.5
Pressure=25.0
MixTime=300
Speed=1500
```

Load Recipe

csharp

```
public void LoadRecipe(int recipeNumber)
{
    // Set dynamic filename
    @Tag.CurrentRecipe = recipeNumber;

    // Load file
    @Dataset.File.RecipeFile.Load();

    // Verify loading
    if (@Dataset.File.RecipeFile.Status == "OK")
    {
        @Tag.RecipeLoaded = true;
        @Display.MessageBox("Recipe loaded successfully");
    }
}
```

Save Recipe

csharp

```
public void SaveRecipe()
{
    // Current values saved to file
    @Dataset.File.RecipeFile.Save();

    // Create backup
    string backup = string.Format(
        @"C:\Recipes\Backup\Recipe_{0}.txt",
        DateTime.Now.ToString("yyyyMMdd_HHmmss")
    );

    File.Copy(@Dataset.File.RecipeFile.FileName, backup);
}
```

Configuration Exchange

Export Settings

csharp

```
// Export current configuration
@Dataset.File.ConfigExport.FileType = "XML";
@Dataset.File.ConfigExport.XMLSchemaType = "TagObject";
@Dataset.File.ConfigExport.Save();
```

Import Settings

csharp

```
// Import from external system
@Dataset.File.ConfigImport.Load();

// Apply imported values
if (@Dataset.File.ConfigImport.Status == "OK")
{
    // Values automatically mapped to tags
    ApplyConfiguration();
}
```

Enabling Dataset Files

If Dataset Files menu is not visible:

1. Click **Home** icon
2. Under **Solution Explorer Preferences**
3. Set **Filter** to **Show All Modules and Features**

Alternative:

- Use **Filter** selector in sidebar
- Select appropriate visibility level

Best Practices Checklist

- [ ] **Use absolute paths** - Avoid relative paths in production
- [ ] **Validate data** - Check values after loading
- [ ] **Handle errors** - Check Status property
- [ ] **Backup files** - Before overwriting
- [ ] **Use appropriate format** - XML for structure, TXT for simple
- [ ] **Document mappings** - Clear tag-to-file relationships
- [ ] **Test thoroughly** - All file operations

Error Handling

csharp

```csharp
try
{
    @Dataset.File.MyFile.Load();

    if (@Dataset.File.MyFile.Status != "OK")
    {
        string error = @Dataset.File.MyFile.ErrorMessage;
        LogError(error);
    }
}
catch (Exception ex)
{
    // Handle file system errors
    @Tag.FileError = ex.Message;
}
```

Troubleshooting

File not found:

- Verify path exists
- Check tag values in dynamic paths
- Confirm permissions
- Review network access

Load/Save fails:

- Check file format matches FileType
- Verify file not locked
- Confirm write permissions
- Review tag mappings

Data corruption:

- Validate file encoding
- Check decimal separators
- Verify date formats
- Review special characters

Missing menu option:

- Change Solution Explorer filter
- Enable all modules and features
- Restart Designer if needed

In this section...
