Event Replicator for Adabas

Using the Data Mapping Tool

Version 4.1.0

September 2026

ADABAS & NATURAL

This document applies to Event Replicator Target Adapter Data Mapping Tool Version 4.1.0 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Preface

This document describes how to use the Event Replicator Target Adapter Data Mapping Tool to generate a global format buffer (GFB) and field table (GFFT) for use with the Event Replicator and the Event Replicator Target Adapter.

This document covers the following topics:

Data Mapping Tool Overview	Provides an overview of the Data Mapping Tool.
Release Notes	Describes the updates to Data Mapping Tool since the last release.
Installing the Event Replicator Target Adapter Data Mapping Tool	Describes how to install the Data Mapping Tool.
Data Mapping Tool User Interface and Mechanics	Describes the Data Mapping Tool interface as well as how to start and shut down the Data Mapping Tool.
Setting Preferences	Describes how to set Data Mapping Tool interface preferences.
Locating and Selecting Input Data	Explains how to select a source Natural Data Definition Model (DDM) to use with the Data Mapping Tool.
Flattening Fields for Replication	Describes how to request that MU and PE fields be flattened during replication.
Maintaining the Target Relational Database List	Describes how to select and remove target relational database tables from the Data Mapping Tool.
Creating and Maintaining the GFB Schema	Describes how to create a GFB schema, review the GFB schema layout, and remove the schema and user tables from the Data Mapping Tool.
Generating the GFB and Field Table Using the Data Mapping Tool	Describes how to generate an Event Replicator for Adabas global format buffer (GFB) and corresponding field table (GFFT) from a GFB schema in the Data Mapping Tool.
Uploading a Generated GFB/GFFT to a Replicator System File	Describes how to upload a generated GFB/GFFT to a Replicator system file on the mainframe.
Saving a Generated GFB/GFFT for the RPLOD Utility	Describes how to save a generated GFB/GFFT for use with the Event Replicator RPLOD utility.
Supported Relational Databases	Explains which relational databases are supported.
Advanced Options	Describes advanced options in the context of subtables and MU/PE index fields.

1 About this Documentation

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Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format *`folder.subfolder.service`*, APIs, Java classes, methods, properties.
`Italic`	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Product Documentation

You can find the product documentation on our documentation website at **https://documentation.softwareag.com**.

Product Training

You can find helpful product training material on our Learning Portal at **https://learn.softwareag.com**.

Tech Community

You can collaborate with Software GmbH experts on our Tech Community website at **https://tech-community.softwareag.com**. From here you can, for example:

- Browse through our vast knowledge base.
- Ask questions and find answers in our discussion forums.
- Get the latest Software GmbH news and announcements.
- Explore our communities.
- Go to our public GitHub and Docker repositories at **https://github.com/softwareag** and **https://hub.docker.com/publishers/softwareag** and discover additional Software GmbH resources.

Product Support

Support for Software GmbH products is provided to licensed customers via our Empower Portal at **https://empower.softwareag.com**. Many services on this portal require that you have an account. If you do not yet have one, you can request it at **https://empower.softwareag.com/register**. Once you have an account, you can, for example:

- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

2 Data Mapping Tool Overview

The Data Mapping Tool is a graphical user interface that allows you to generate a global format buffer (GFB) and field table (GFFT). Using the interface you can drag and drop a Natural *data definition module (DDM)* or Predict XML definition (XML) onto a target RDBMS, adjust the resulting GFB schema, and generate the GFB and GFFT. In addition, you can drag and drop individual fields from a DDM/XML onto existing RDBMS columns to create or modify a GFB schema that maps data to existing RDBMS tables.

If Event Replicator Target Adapter is being used to replicate Adabas data to a Terracotta cache, there is no need to connect to the cache to create a GFB/GFFT for replication, nor does that functionality currently exist in Data Mapping Tool. Rather the GFB/GFFT can be created in the same way you would create one for a target RDBMS. In this case, configuring a “dummy” RDBMS target is all that is required. Once the DDM/XML is dropped to the dummy target and the GFB/GFFT is created and edited for replication, it can be uploaded to the Adabas Event Replicator for replication to Terracotta. For more information on replication to a Terracotta target, please see the product documentation for Event Replicator Target Adapter.

Natural DDMs provide a logical definition of a physical database and can be generated using Natural's SYSDDM utility or from Predict. DDMs allow convenient and transparent access of the Adabas data to different database management systems. For each physical file in a database, one or more DDMs can be defined. For complete information on generating a Natural DDM, refer to your Natural or Predict documentation.

Predict XML definitions provide the same information as the DDM, but also contain additional information like number of occurrences of multiple fields and periodic groups or redefine structures.

3 Release Notes

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This chapter provides release notes for the current version of Event Replicator Target Adapter Data Mapping Tool.

It covers the following topics:

Final Release and Transition

This version 4.1 is the last release of Event Replicator Data Mapping Tool (AMT) as a standalone product.

Going forward, this functionality will be available as part of Adabas Manager (AMN).

Enhancements

There are no specific functional enhancements in this release. It is released to conform to the newest version of Event Replicator Target Adapter.

Fixes to Event Replicator Target Adapter Data Mapping Tool are delivered using the Software AG Update Manager. For more details, see the section ***Installing the Event Replicator Target Adapter Data Mapping Tool*** in this documentation.

End of Maintenance

For information on how long a product is supported by Software GmbH, access Software GmbH's Empower web site at ***https://empower.softwareag.com***.

Log into Empower. Once you have logged in, you can expand **Products** in the left menu of the web page and select **Product Version Availability** to access the Product Version Availability application. This application allows you to review support information for specific products and releases.

4 Installing the Event Replicator Target Adapter Data Mapping Tool

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This chapter describes the installation and uninstallation of Event Replicator Target Adapter Data Mapping Tool.

It covers the following topics:

Installation Overview

This product is installed using the Software AG Installer, which you can download from the Empower website at *https://empower.softwareag.com/*.

The Software AG Installer offers typical development installations of Software GmbH products. When you select a typical development installation, the installer automatically groups and selects the Software GmbH products and components that make up that installation.

- The Event Replicator Target Adapter Administration is part of the Event Replicator Target Adapter product suite. It is installed separately from Event Replicator Target Adapter Data Mapping Tool and the Event Replicator Target Adapter.
- The Event Replicator Target Adapter Data Mapping Tool is part of the Event Replicator Target Adapter product suite. It is installed separately from Event Replicator Target Adapter Administration and the Event Replicator Target Adapter.
- The Event Replicator Target Adapter installation is part of the Event Replicator Target Adapter product suite. It is installed separately from the Event Replicator Target Adapter Administration and the Event Replicator Target Adapter Data Mapping Tool. Included in the installation of the Event Replicator Target Adapter is the installation of an internal component called the Software AG ERTA Administration Service. This service enables running the Event Replicator Target Adapter as a system service and also allows communication with a remote administration console (for example on platforms, such as HP and zLinux, where the Event Replicator Target Adapter Administration tool cannot be installed)

  The **Infrastructure** entry in the Software AG Installer includes the installation of Java. Java should be installed so it can be accessed by all products in the Event Replicator Target Adapter product suite and by the Software AG Installer.

You cannot ungroup installations that have been paired or grouped. However, you can select multiple installation configurations for installation at the same time. To configure your installation of these products and create effective production environments, work with your system administrators and Software GmbH Global Consulting Services.

System Requirements

This section describes the system requirements of Event Replicator Target Adapter Data Mapping Tool.

- Supported Operating System Platforms
- Supported Hardware
- Supported Browsers
- Supplied Third-Party Software
- Space Requirements
- Memory Requirements
- Windows Requirements
- Firewall Requirements

Supported Operating System Platforms

Software GmbH generally provides support for the operating system platform versions supported by their respective manufacturers; when an operating system platform provider stops supporting a version of an operating system, Software GmbH will stop supporting that version.

For information regarding Software GmbH product compatibility with IBM platforms and any IBM requirements for Software GmbH products, please review the ***Product Compatibility for IBM Platforms*** web page.

Before attempting to install this product, ensure that your host operating system is at the minimum required level. For information on the operating system platform versions supported by Software GmbH products, complete the following steps.

1. Access Software GmbH's Empower web site at ***https://empower.softwareag.com***.
2. Log in to Empower. Once you have logged in, expand **Products & Documentation** in the left menu of the web page and select **Product Version Availability** to access the Product Version Availability screen.
3. Use the fields on the top of this screen to filter its results for your Software GmbH product. When you click the **Search** button, the supported Software GmbH products that meet the filter criteria are listed in the table below the filter criteria.

   This list provides the following information for the supported operating systems:

   - the general availability (GA) date of the product;
   - the date the operating system platform is scheduled for retirement (OS Retirement);
   - the end-of-maintenance (EOM) date for the product; and
   - the end-of-sustained-support (EOSS) date for the product.

Note: Although it may be technically possible to run a new version of your Software GmbH product on an older operating system, Software GmbH cannot continue to support operating system versions that are no longer supported by the system's provider. If you have questions about support, or if you plan to install this product on a release, version, or type of operating system other than one listed on the Product Version Availability screen described above, consult technical support to determine whether support is possible, and under what circumstances.

This release of the Event Replicator Target Adapter Administration tool is supported in Windows and Linux environments that also support Eclipse.

The Event Replicator Target Adapter Administration and the Event Replicator Target Adapter Data Mapping Tool are not supported in AIX, HP-UX, Solaris or zLinux environments because the Eclipse RCP port is not available in those environments. You will need to have a Windows or Linux installation of the Administration Tool and Mapping Tool to use them. The Administration Tool can remotely manage Event Replicator Target Adapter installations on those platforms where the Eclipse RCP is not supported.

Supported Hardware

For general information regarding Software GmbH product compatibility with other platforms and their requirements for Software GmbH products, visit ***https://documentation.software-ag.com/systemrequirements/#/***.

Supported Browsers

For information on supported browsers, see *System Requirements* on the documentation website.

Supplied Third-Party Software

Event Replicator Target Adapter Data Mapping Tool uses Eclipse RCP Kepler (Version 4.5.2) and Eclipse RCP DeltaPack (Version 4.3.2). The Software AG Installer manages the installation of this third-party software.

Note: If a third-party vendor drops support for a version of one of their products or even for an entire product, Software GmbH automatically drops support for that version or product as well.

Space Requirements

A minimum of 100 MB disk space (assuming all components are selected for installation) is required to run all of the following products: Event Replicator Target Adapter Administration, Event Replicator Target Adapter Data Mapping Tool, and the Event Replicator Target Adapter.

Note: Additional space is needed to store log files. The amount of space needed depends entirely on the level of logging you select.

Memory Requirements

At least 2GB system memory is required to run this software.

1024 MB or more random access memory (RAM) may be needed, depending on the size of your transactions.

Windows Requirements

In Windows environments, be sure to install Microsoft Visual Studio 2008 Redistributable Package.

Firewall Requirements

If you attempt to install and use this software in a system with a firewall in place, be sure that your system administrator has set up the firewall so that the component applications can access the ports they need. For more information about port usage, read the *Port Number Reference* found elsewhere in this documentation.

Prerequisite Products

This section describes prerequisite products for Event Replicator Target Adapter Data Mapping Tool.

- JRE Requirements
- Natural DDM Requirement
- Event Replicator for Adabas Requirements
- Entire Net-Work Administration Requirements
- X-Windows Graphical Environment Requirement
- Relational Database Requirements

Note: If a third-party vendor drops support for a version of one of their products or even for an entire product, Software GmbH automatically drops support for that version or product as well.

JRE Requirements

The Software AG Installer installs the appropriate Java Runtime Environment (JRE) along with its infrastructure. This JRE does not interfere with any other JRE that might already exist on the same host machine on which Event Replicator Target Adapter Data Mapping Tool is installed.

Natural DDM Requirement

A data definition module (DDM) of your Adabas database must be generated from Software GmbH's Natural or Predict products. For more information, read your Natural or Predict documentation. A sample DDM of the Adabas Employees demo file is included in the Data Mapping Tool installation.

Event Replicator for Adabas Requirements

You must have Event Replicator for Adabas Version 3.3 SP2 or later installed to use the redefines and **composite key** features of the Data Mapping Tool.

Entire Net-Work Administration Requirements

Software GmbH's Entire Net-Work Administration Version 6.2 SP1 or later is required only if you intend to upload GFBs directly from the Data Mapping Tool.

X-Windows Graphical Environment Requirement

UNIX and LINUX installations require an X-Windows graphical environment to run the Data Mapping Tool.

Relational Database Requirements

Java Database Connectivity (JDBC) drivers are required to communicate with an RDBMS to display existing table and column information in the Data Mapping Tool's middle pane. However, it is possible to use the Data Mapping Tool without communicating with an RDBMS. The following table lists the relational databases supported by the Data Mapping Tool as well as the required JDBC drivers for each.

Note: The official and complete list of supported RDBMS versions can be found in the *ReadMe* file for this release. However, the list of relational databases supported at the time of the release of this product is provided in ***Supported Relational Databases***, elsewhere in this guide.

Download the appropriate JDBC driver files from your relational database vendor or obtain them from an installation package and copy them to the appropriate Data Mapping Tool subdirectory:

Note: This location is different from previous versions of Event Replicator Target Adapter Mapping Tool.

Platform	Directory
Windows	**C:**`<installation-directory>`**EventReplicatorTargetAdapterMappingTool\JDBC_Libraries**. By default, the `<installation-directory>` is "SoftwareAG".
UNIX	**$SAG/EventReplicatorTargetAdapterMappingTool/JDBC_Libraries**.

Before You Begin

Before you begin installing this product, ensure that the following prerequisites have been met:

1. Software GmbH strongly recommends that you create an installation image of your existing Software products and store the image on your internal network. You should create an image for each operating system on which you plan to run the installation (for example, 32-bit, 64-bit, or both). This will help you reduce WAN traffic and speed up installation and will ensure consistency across installations over time, since the Software AG Installer provides only the latest release of each product.
2. Close (stop) all open applications, especially those applications interacting with or depending on your Adabas databases. This includes Natural, Adabas Manager, the Adabas DBA Workbench, and prior releases of any other Adabas products. To be on the safe side, also shut down all Software AG services.

   Important: For some Software GmbH products, the Software AG Uninstaller will not be able to remove key files that are locked by the operating system if the associated Software GmbH products are not shut down.

3. Disable any antivirus software.
4. Ensure the target computer is connected to the network.
5. If this product requires a license key file, verify the license key file is copied somewhere in your environment . Products requiring license key files will not run without valid license keys. For more information, read *The License Key*, elsewhere in this section.
6. Verify your environment supports the system requirements for this product, as described in *System Requirements*, elsewhere in this section.

Installation Steps

Event Replicator Target Adapter Data Mapping Tool is installed using the Software AG Installer. It does not require a license key.

You can download the Software AG Installer from ***https://empower.softwareag.com/***.

This installation documentation provides a brief description on how to install the Event Replicator Target Adapter Data Mapping Tool directly on the target machine using the installer wizard. For detailed information on the installer wizard, read the *Software AG Installer* guide.

Note: Read the *Software AG Installer* guide also if you want to use console mode, or if you want to install using an installation script or installation image.

To install Event Replicator Target Adapter Data Mapping Tool, complete the following steps:

1. Start the Software AG Installer as described in the *Software AG Installer* guide.
2. When the first page of the Software AG Installer wizard (the Welcome panel) appears, choose the **Next** button repeatedly, specifying all required information on the displayed panels, until the panel containing the product selection tree appears.

   All Adabas-related products (including Adabas Directory Server) can be selected for installation within the **Adabas Family** product selection tree.

   In addition to the **Adabas Family** product selection tree, two other trees, **Event-Driven Architecture** and **Infrastructure** (which includes the System Management Hub installation) are available for installation. The **Infrastructure** tree must be selected for all Software AG products; it provides the necessary Java runtime environment for the Software AG Installer as well as Event Replicator Target Adapter Data Mapping Tool.
3. To install Event Replicator Target Adapter Data Mapping Tool, select (check) the Event Replicator Target Adapter Data Mapping Tool entry from the **Adabas Family** product selection tree.
4. On the License panel, read the license agreement and select the check box to agree to the terms of the license agreement and then click **Next** to continue. If you do not accept the license agreement, the installation will stop.
5. On the last panel, review the items you have selected for installation. If the list is correct, choose the **Next** button to start the installation process.

After Event Replicator Target Adapter Data Mapping Tool has been installed, you will need to manually start it. For more information, read ***Starting the Data Mapping Tool*** under the section entitled ***Data Mapping Tool User Interface and Mechanics***, elsewhere in this guide.

Uninstall Steps

You uninstall this product using the Software AG Uninstaller. For information on how to use the uninstaller, read the *Software AG Installer* guide.

Installing Fixes Using Software AG Update Manager

Event Replicator Target Adapter Data Mapping Tool is updated using the Software AG Update Manager (SUM).

You can download the Software AG Update Manager from ***https://empower.softwareag.com/***.

This SUM installation documentation on Empower provides a brief description on how to update Software GmbH products directly on the target machine using the Update Manager wizard. The SUM documentation also includes instructions on how to apply updates in console mode or using scripts.

To update Event Replicator Target Adapter Data Mapping Tool, complete the following steps:

1. Download and install Software AG Update Manager for your platform from Empower.
2. Shut down any running instances of the product. Updates cannot successfully apply if the application is active.
3. From a console prompt in the SUM */bin* directory, enter `UpdateManagerGUI.bat` (`UpdateManagerGUI.sh` on UNIX/Linux).
4. On the opening page of the SUM tool, select **Install Fixes from Empower**, enter your SAG product directory root location and provide your Empower User ID and password. Click **Next**.
5. Expand through the **Adabas Family** product selection tree to find the entry for this product.

   Tip: If the product is not shown in the tree, there is either no update available or the product is not installed in the location you specified.

6. Select (check) the **Event Replicator Target Adapter Data Mapping Tool** entry in the product selection tree. Click **Next**.

   Tip: You can select more than one product to update before proceeding.

7. The next screen presents a summary of products that are about to be updated. If any of them require manual pre-installation steps, they will be highlighted in red and you will be directed to read the update readme file for that product before proceeding.

Complete any pre-installation steps outlined in the readme file and check the box next to **Pre-installation steps have been completed**. Click **Next**.

Note: If any pre-installation steps are required, the **Next** button will be unavailable until you confirm these steps have been completed.

8 The tool will apply updates to all selected products and present you with a final screen confirming updates have been applied. Click **Close** to exit SUM or **Home** to return to the tool's starting panel.

Uninstalling Fixes Using Software AG Update Manager

To remove an installed update, complete the following steps:

1 Shut down any running instances of the product.

2 Start Software AG Update Manager.

3 On the opening page, select **Uninstall Fixes** from the selection panel. Click **Next**.

4 If any product selected for uninstall requires manual steps, you will be directed to review the update readme and confirm you have performed any pre-uninstallation steps. Click **Next**.

5 The fix(es) you selected for uninstall will be removed and the product(s) returned to their previous state. Click **Close** to exit SUM or **Home** to return to the tool's starting panel.

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Data Mapping Tool User Interface and Mechanics

This section describes how to start and shut down the Data Mapping Tool and provides an overview of the Data Mapping Tool interface.

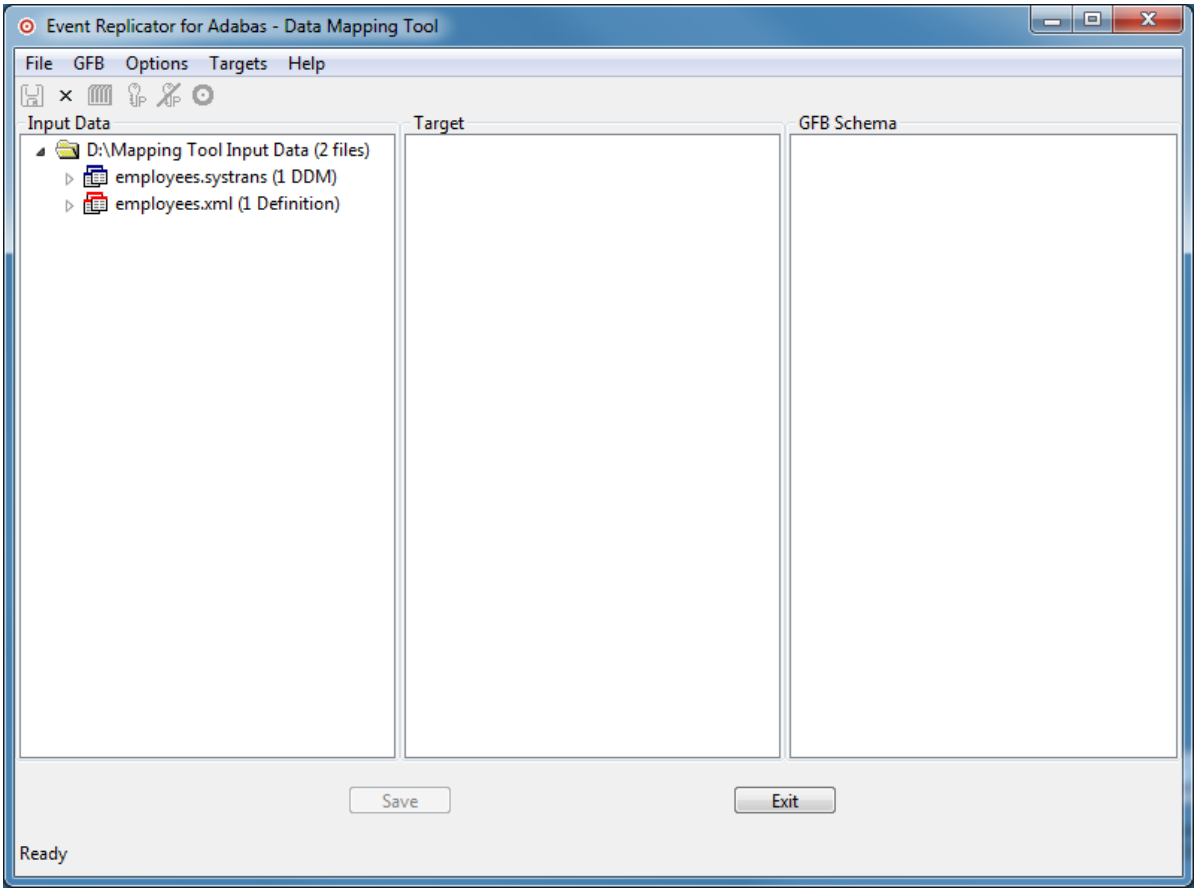
- Starting the Data Mapping Tool
- Shutting Down the Data Mapping Tool
- The Data Mapping Tool Interface

Starting the Data Mapping Tool

To start the Data Mapping Tool in Windows environments, complete the following steps:

1. From the Windows Start menu, select **All Programs**.
2. Select **Software AG**.
3. Select **Administration**.
4. Select Event Replicator Target Adapter.
5. Select **Start Mapping Tool**.

   The Data Mapping Tool starts up and the Data Mapping Tool main window appears.



To start the Data Mapping Tool in UNIX environments, complete the following steps:

- Run the *mappingtool.sh* file in the installation directory.

  The Data Mapping Tool starts up and its primary window appears.

Shutting Down the Data Mapping Tool

To shut down the Data Mapping Tool:

- Click the **Exit** button on the Data Mapping Tool window.

  The Data Mapping Tool shuts down.

The Data Mapping Tool Interface

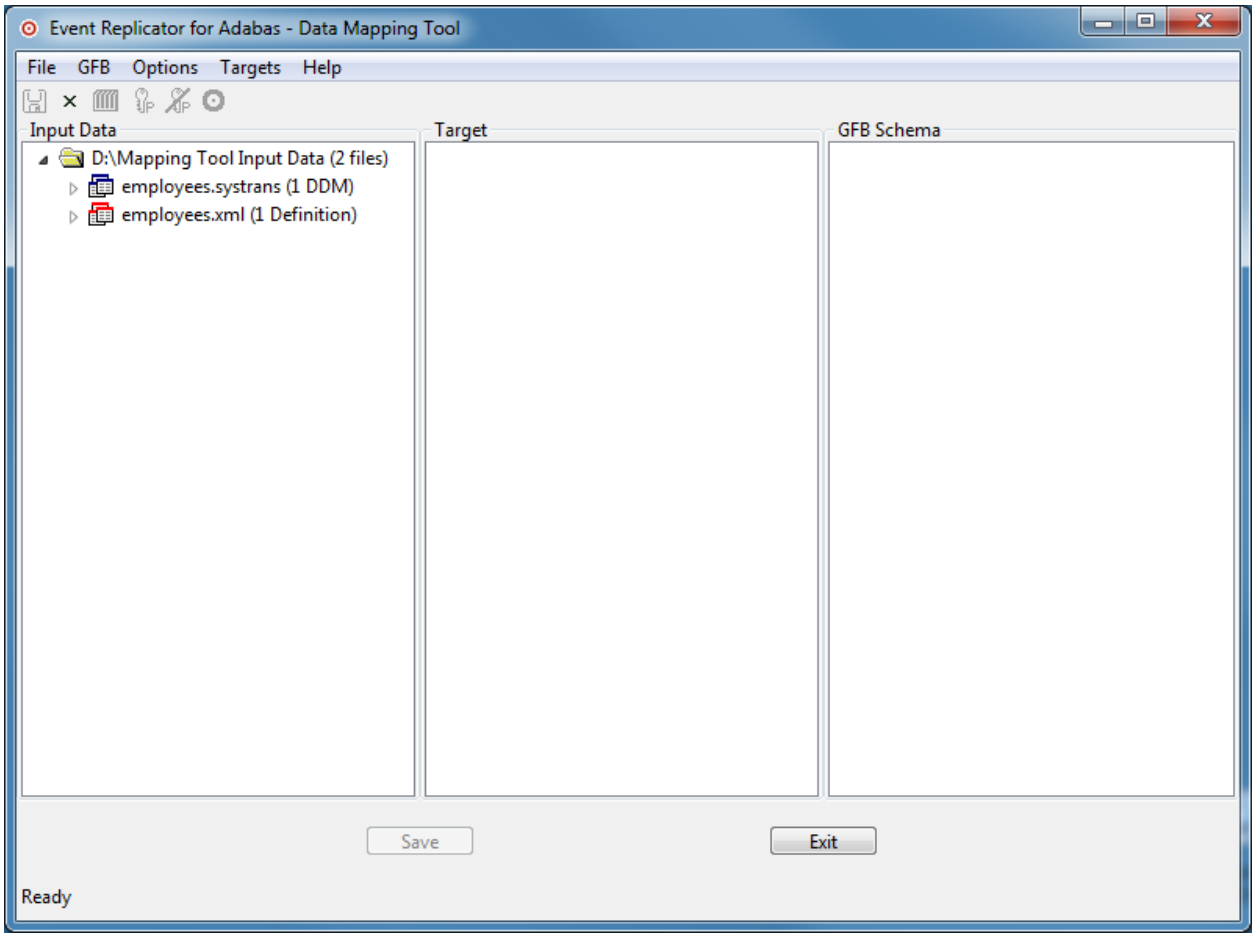
This section describes the Data Mapping Tool window, menus, and buttons.

It covers the following topics:

- Data Mapping Tool Main Window
- Menus
- Buttons
- Icons

Data Mapping Tool Main Window

The Data Mapping Tool main window is divided into three columns.



The far left column, **Input Data**, lists available DDMs and Predict XML Definitions. Once you have identified a directory containing DDMs and Predict XML Definitions, the DDMs/Predict XML Definitions in that directory get listed in this column. For information on identifying the directory containing your DDMs/Predict XML Definitions, read *Locating and Selecting Input Data*.

The middle column, **Target RDBMS**, lists the target relational database tables to which you will map fields from your DDM/Predict XML Definition. To add and remove target relational databases from this list, read *Adding a Target Database*, elsewhere in this guide.

The right column, **GFB Schema**, displays the GFB schema that is created when you drag a DDM/Predict XML Definition onto an RDBMS. A GFB and field table (GFFT) can be generated from this schema.

Menus

The Data Mapping Tool main window includes five menus. The options available from these menus are described in this table.

Menu	Menu Option	Description
File	**Save Mapping**	Allows you to save the RDBMS target table and GFB schema listed on the screen. The next time you start up the Data Mapping Tool, this table and GFB schema will automatically appear.
	Exit	Allows you to shut down the Data Mapping Tool.
GFB[1]	**Redefine**	Allows you to redefine a field in the schema. For more information, read *Redefining Schema Fields*, elsewhere in this guide.
	Set Primary Key	Allows you to specify that a field selected in the schema is the primary key or is part of a composite key. For more information, read *Specifying Keys*, elsewhere in this guide.
	Remove Primary Key	Allows you to specify that a field selected in the schema is no longer the primary key or part of a composite key. For more information, read *Specifying Keys*, elsewhere in this guide.
	Generate GFB/GFFT	Allows you to generate the GFB and field table, based on the selected GFB schema. For more information, read *Generating a GFB and Field Table*, elsewhere in this guide.
Options	**Preferences**	Allows you to set the preferences for Data Mapping Tool processing. For more information, read *Setting Preferences*, elsewhere in this guide.
Targets	**Add RDBMS Target..**	Allows you to add and link to a target RDBMS. Once added, the RDBMS is listed in the middle column of the Data Mapping Tool main window. For more information, read *Adding a Target Database*, elsewhere in this guide.
Targets	**Add Analytics Target..**	Allows you to add and link to an Analytics target.
Help	**Help Contents**	Allows you to access the online help for the Data Mapping Tool
	About Event Replicator Target Adapter Data Mapping Tool	Lists version information about this installation of the Data Mapping Tool.

Note: The options on the **GFB** menu only become available once a GFB schema appears in the GFB Schema column of the screen.

Buttons

The Data Mapping Tool main window includes the following buttons:

Note: Some of these buttons only become useable if specific items are selected in the Data Mapping Tool screen.

Button	Description
	Saves the current mappings shown in the Data Mapping Tool. Target definitions in the target list, GFB schemas, and source DDMs are saved.
	Exits the Data Mapping Tool.
	Allows you to redefine the selected GFB schema field. For more information, read *Redefining Schema Fields*, elsewhere in this guide.
	Allows you to specify that a field selected in the schema is the primary key or is part of a composite key. For more information, read *Specifying Keys*, elsewhere in this guide.
	Allows you to specify that a field selected in the schema is no longer the primary key or part of a composite key. For more information, read *Specifying Keys*, elsewhere in this guide.
	Allows you to generate the GFB and field table, based on the selected GFB schema. For more information, read *Generating a GFB and Field Table*, elsewhere in this guide.
Exit	Exits the Data Mapping Tool.
Save	Saves the current mappings shown in the Data Mapping Tool. Target definitions in the target list, GFB schemas, and source DDMs are saved.

- The **Save** button allows you to save the RDBMS target table and GFB schema listed on the screen. The next time you start up the Data Mapping Tool, this table and GFB schema will automatically appear.
- The **Exit** button allows you to shut down the Data Mapping Tool.

Icons

The Data Mapping Tool main window uses the following icons:

Icon	Description
	Identifies a DDM file in the leftmost pane.
	Identifies a DDM in the leftmost pane, an RDBMS table in the center pane, and a GFB schema table in the rightmost pane. In addition, this icon precedes the **Show Tables** and **Refresh Tables** options on the right-click menu of an RDBMS or table in the center pane.
	Identifies a simple field in the leftmost pane and an RDBMS column in the center pane. In addition, this icon precedes the **Show Columns** and **Refresh Columns List** options on the right-click menu of a table in the center pane.
	Identifies a multiple value (MU) field in the leftmost pane.

Icon	Description
	Identifies a flattened multiple value (MU) field in the leftmost pane.
	Identifies a periodic group (PE) field in the leftmost pane.
	Identifies a flattened periodic group (PE) field in the leftmost pane.
	Identifies a redefined field in the leftmost pane.
	Identifies a simple group field in the leftmost pane.
	Identifies a subfield or superfield with occurrences in the leftmost pane.
	Identifies a flattened subfield or superfield with occurrences in the leftmost pane.
	Identifies a subfield or superfield with MU or PE occurrences in the leftmost pane.
	Identifies a flattened subfield or superfield with MU or PE occurrences in the leftmost pane.
	Identifies an RDBMS database in the center and rightmost panes. This icon also precedes the **Add RDBMS Target** option on the **Targets** menu.
	Identifies a GFB schema in the rightmost pane. In addition, this icon: ■ Precedes the **Generate GFB/GFFT** option on the right-click menu of a GFB schema in the rightmost pane. ■ Precedes the **Generate GFB/GFFT** option on the **GFB** menu. ■ Appears on a button on the main screen that allows you to generate the GFB and field table, based on the selected GFB schema. For more information, read *Generating a GFB and Field Table*, elsewhere in this guide.
	Identifies a GFB schema field in the rightmost pane.
	Identifies an RDBMS or GFB schema key field -- either the primary key or a field included in a composite key. In addition, this icon: ■ Precedes the **Set Primary Key** option on the right-click menu of a GFB schema field in the rightmost pane. ■ Precedes the **Set Primary Key** option on the **GFB** menu. ■ Appears on a button on the main screen that allows you to identify a GFB schema field as a primary key or composite key field. For more information, read *Specifying Keys*, elsewhere in this guide.
	Precedes the **Set Composite Key Order** option on the right-click menu of a GFB schema composite key field in the rightmost pane.
	Precedes the **Remove Primary Key** option on the right-click menu of a GFB schema key field in the rightmost pane. This icon also: ■ Precedes the **Remove Primary Key** option on the **GFB** menu. ■ Appears on a button on the main screen that allows you to specify that a field selected in the schema is no longer the primary key or part of a composite key.

Icon	Description
	Identifies a GFB schema foreign key in the rightmost pane.
	Precedes the **Flatten** option on the right-click menu of a DDM field in the leftmost pane. For more information, read *Flattening Fields for Replication*, elsewhere in this guide.
	Precedes the **Unflatten** option on the right-click menu of a DDM field in the leftmost pane. For more information, read *Flattening Fields for Replication*, elsewhere in this guide.
	Precedes the **Rename** option on the right-click menu of a GFB schema or GFB schema field in the rightmost pane.
	Precedes the **Redefine** option on the right-click menu of a GFB schema field in the rightmost pane. This icon also: ■ Precedes the **Redefine** option on the **GFB** menu. ■ Appears on a button on the main screen that allows you to redefine the selected GFB schema field. For more information, read *Redefining Schema Fields*, elsewhere in this guide.
	Identifies a child field of a redefined (split) field in the rightmost pane.
	Appears on a button that allows you to save the current mappings shown in the Data Mapping Tool. This icon also precedes the **Save Mapping** option on the **File** menu.
	Appears on a button that allows you to specify the directory in which data definition modules (DDMs) can be found. This icon also precedes the **Find SYSTRANS DDM Directory** option on the **File** menu.
	Precedes the **Properties** option on the right-click menu of a screen element.
	Appears on a button that allows you to exit the Data Mapping Tool. This icon also precedes the **Exit** option on the **File** menu.
	Precedes the **Delete** option on the right-click menu of a screen element.
	Precedes the **Help Contents** option on the **Help** menu. This option allows you to access the online help for the Data Mapping Tool.

Setting Preferences

Preferences can be set for your use of the Data Mapping Tool. This section describes the preferences you can set.

- Specifying Defaults
- Default Character Set for Binary Fields
- Managing Input Data
- Managing Logging
- Managing Replication System File

- Managing Save Location

Specifying Defaults

In this panel you can specify the default values for occurrences of PE/MU fields and binary fields.

Default Occurrences for PE/MU fields

When you create a GFB schema, you can specify the number of multiple-value (MU) and periodic group (PE) field occurrences for each MU or PE field in the DDM. However, you can also set a default number of occurrences to be applied to the MU and PE fields prior to creating the GFB schema. This section describes how to set this default. You can override this default if you decide to flatten the MU and PE fields in the resulting RDBMS table or when you create the GFB schema using the Data Mapping Tool.

Using the preferences described in this section, you can control the default number of MU and PE field occurrences for each MU or PE field in the DDM.

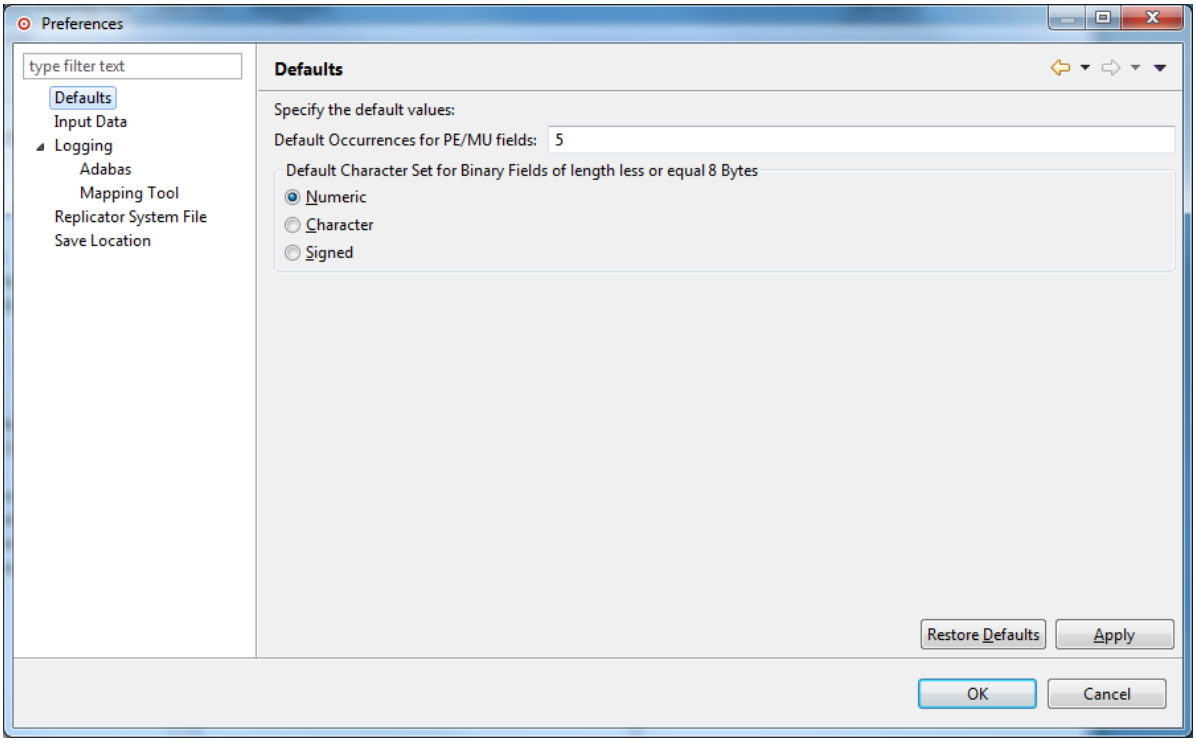
To manage your MU and PE field preferences, complete the following steps:

1. Access the preferences area of the Data Mapping Tool by selecting **Preferences...** on the **Options** menu.

   The **Preferences** dialog appears.

2. Select **PE/MU Occurrences** on the left side of the dialog to display the MU and PE field preferences.

   The right side of the dialog displays the MU and PE field preferences under the heading **Defaults**.



3 In the **Default Occurrences** field, specify the *default* number of repeating elements for each MU or PE field that can be expected in the DDM.

4 When you have specified a default number of MU and PE field occurrences, select (check) the Rescan DDM Directory option. When you click **OK** or **Apply** in the next step, this option will cause the Data Mapping Tool to rescan the DDM directory you have specified, adjusting the MU and PE fields in the listed DDMs to reflect this occurrence setting.

5 When all preferences have been set, click one of the following buttons:

- Click **Apply** to apply the preference settings and keep the Preferences dialog open.
- Click **Cancel** to cancel the preference settings and close the Preferences dialog.
- Click **OK** to apply the preference settings and close the Preferences dialog.
- Click **Restore Defaults** to restore the factory defaults for the preference settings and keep the Preferences dialog open.

Default Character Set for Binary Fields

For binary fields with a length less or equal 8 bytes the character set can be specify by the user. With this option you can set the default value.

Managing Input Data

The leftmost Input Data column of the Data Mapping Tool main window may or may not display any DDMs/Predict XML Definition, depending on whether the file extensions and locations of your DDM/XML files match the DDM/XML file extensions and locations specified in the Data Mapping Tool preferences.

Using the preferences described in this section, you can control the default location and file extensions of the data definition module (DDM)/Predict XML definition files used in the Data Mapping Tool main window. When you start up the Data Mapping Tool, the DDMs/XML that match these criteria are automatically listed in the leftmost pane of the Data Mapping Tool main window.

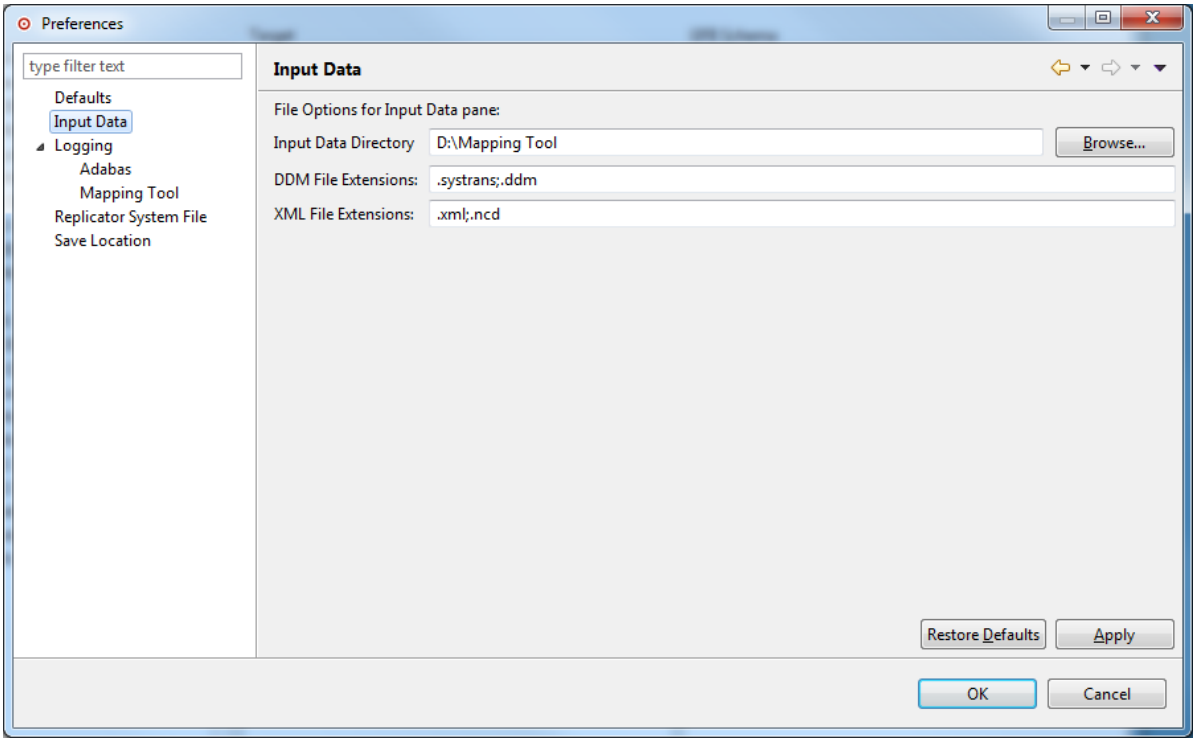
To manage your DDM/XML file preferences, complete the following steps:

1. Access the preferences area of the Data Mapping Tool by selecting **Preferences...** on the **Options** menu.

   The **Preferences** dialog appears.

2. Select **Input Data** on the left side of the dialog to display the Data Mapping Tool DDM/XML file preferences.

   The right side of the dialog displays the DDM/XML file preferences under the heading **Input Data**.



3 Use the **Input Data Directory** field to specify the default location of your DDMs/XML. Use the **Browse** button to locate a directory location for the DDMs/XML.

4 Use the **DDM/XML File Extensions** fields to list all of the file extensions of your available DDMs/XML files. Separate the file extension specifications with a semicolon (;).

5 When all preferences have been set, click one of the following buttons:

- Click **Apply** to apply the preference settings and keep the Preferences dialog open.
- Click **Cancel** to cancel the preference settings and close the Preferences dialog.
- Click **OK** to apply the preference settings and close the Preferences dialog.
- Click **Restore Defaults** to restore the factory defaults for the preference settings and keep the Preferences dialog open.

Managing Logging

- Adabas
- Mapping Tool

Adabas

You can request that a log be kept of your attempts to upload a generated GFB/GFFT to a mainframe Replicator system file. Upload log files have file names in the format `jnnnnnnn.log`, where *nnnnnnn* is a sequential number. If you request that such logs be kept, a new log is created for each upload attempt.

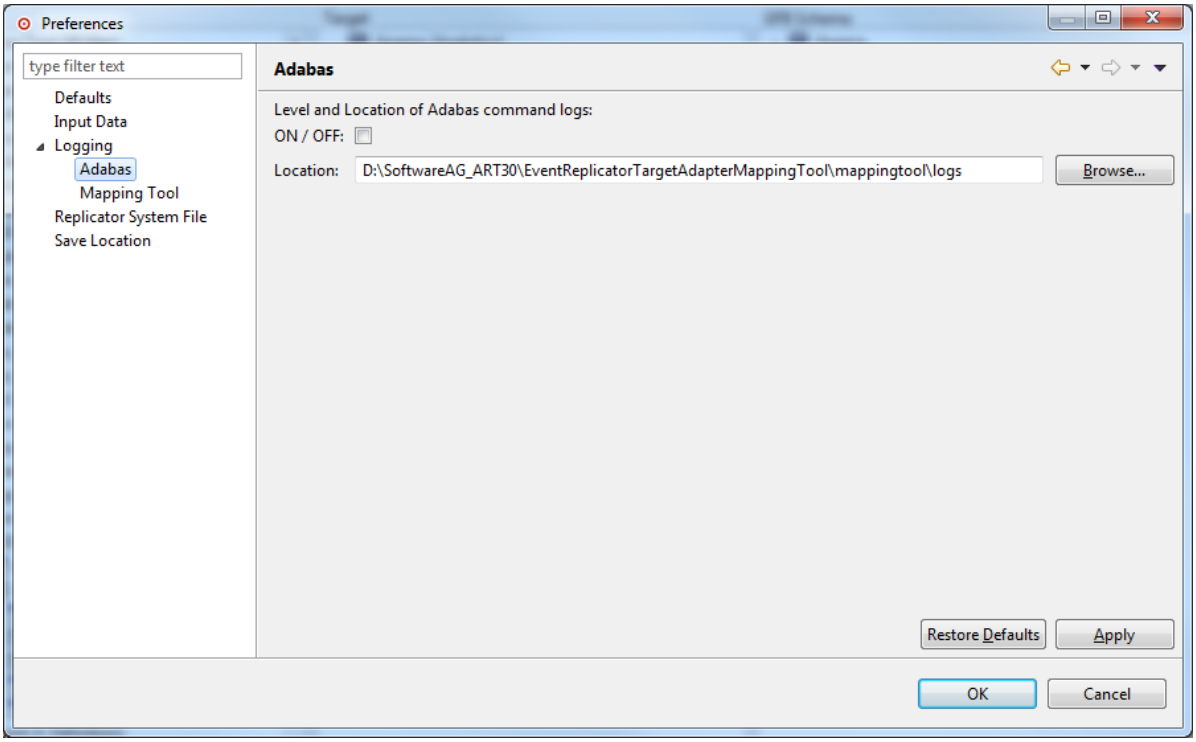
The log files can be reviewed using a text editor. You can control whether these log files should be created and the location in which the logs should be stored.

To manage your upload logging preferences, complete the following steps:

1. Access the preferences area of the Data Mapping Tool by selecting **Preferences...** on the **Options** menu.

   The **Preferences** dialog appears.
2. Expand the **Logging** node.
3. Select **Adabas Logging** on the left side of the dialog to display the upload log preferences.

   The right side of the dialog displays the upload log preferences under the heading **Adabas**.



4 Specify the upload log preferences you want to use for the Data Mapping Tool, as described in the following table:

Preference	Description
ON/OFF	Check this check box if you want upload logs to be created. If you do not want them created, leave this check box unchecked.
Location	Specify the location where the upload logs should be stored. The default location (*<path>\MappingTool\logs*) is shown the first time you access these preferences. Use the Browse button to locate a directory location for the log files.

5 When all preferences have been set, click one of the following buttons:

- Click **Apply** to apply the preference settings and keep the Preferences dialog open.
- Click **Cancel** to cancel the preference settings and close the Preferences dialog.
- Click **OK** to apply the preference settings and close the Preferences dialog.
- Click **Restore Defaults** to restore the factory defaults for the preference settings and keep the Preferences dialog open.

Mapping Tool

When the Data Mapping Tool is installed, all Data Mapping Tool messages are automatically written to a Data Mapping Tool log file. The log file contains all current log messages, including statistics about the Data Mapping Tool session processing. If you have a problem, please keep this log file.

Data Mapping Tool log files have file names in the format `MT-Log.txt.[nn]`, where *nn* is the sequential number of the log file (newest log files have the lowest or no number). If you request that such logs be kept, a new log is created each time you start up the mapping tool.

The log files can be reviewed using a text editor.

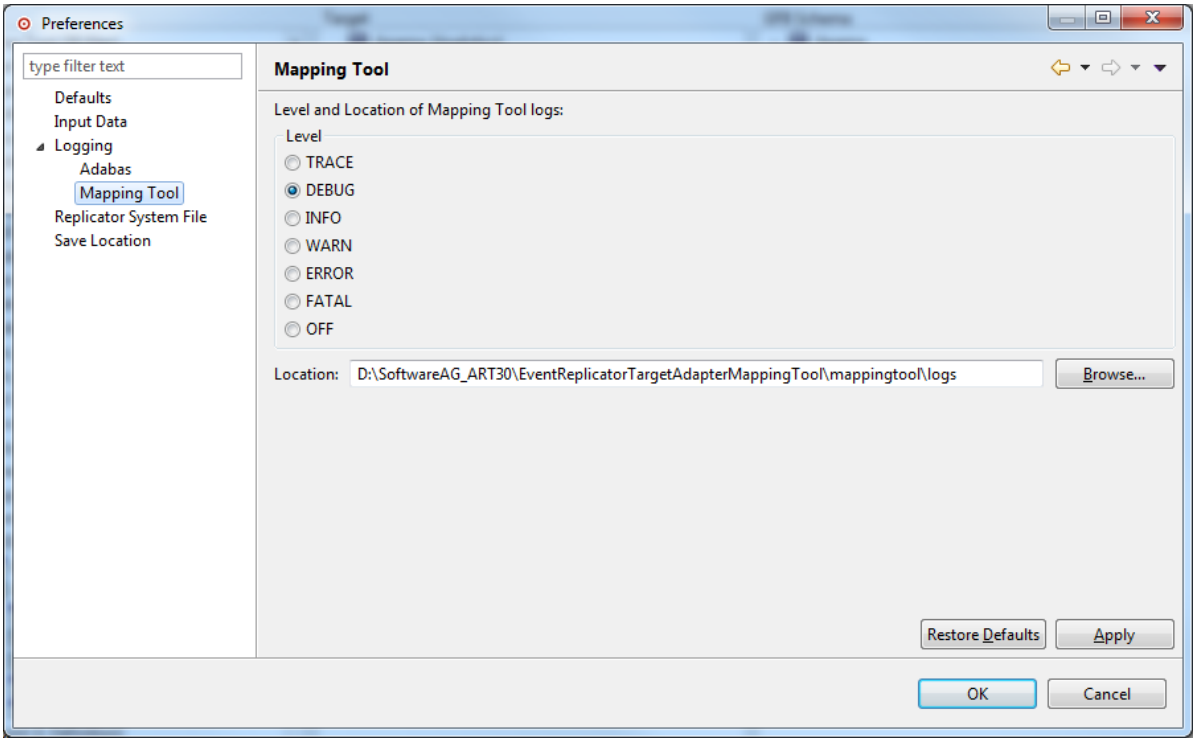
You can control the level (severity) of log messages written to these logs as well as the location in which the logs are stored.

To manage your Data Mapping Tool logging preferences, complete the following steps:

1. Access the preferences area of the Data Mapping Tool by selecting **Preferences...** on the **Options** menu.

   The **Preferences** dialog appears.
2. Expand the **Logging** node.
3. Select **Mapping Tool Logging** on the left side of the dialog to display the Data Mapping Tool log preferences.

   The right side of the dialog displays the Data Mapping Tool log preferences under the heading **Mapping Tool**.



4 Use the **Level** field to set the log level of messages written to the Data Mapping Tool log files. Seven log levels are available (listed in order of settings that result in the most logging to those resulting in the least logging):

Log Level	Description
TRACE	All messages are logged or displayed. **Note:** Setting this log level can impact performance.
DEBUG	Only debugging, informational, warning, error, and fatal messages are logged or displayed. **Note:** Setting this log level can impact performance.
INFO	Only informational, warning, error, and fatal messages are logged or displayed.
WARN	Only warning, error, and fatal messages are logged or displayed.
ERROR	Only error and fatal messages are logged or displayed.
FATAL	Only fatal messages are logged or displayed.
OFF	No logging occurs.

5 Click on the level you want to use.

6 Use the **Location** field to specify the location where the Data Mapping Tool logs should be stored. The default location (*<path>\MappingTool\logs*) is shown the first time you access these preferences. Use the **Browse** button to locate a directory location for the log files.

7 When all preferences have been set, click one of the following buttons:

- Click **Apply** to apply the preference settings and keep the Preferences dialog open.
- Click **Cancel** to cancel the preference settings and close the Preferences dialog.
- Click **OK** to apply the preference settings and close the Preferences dialog.
- Click **Restore Defaults** to restore the factory defaults for the preference settings and keep the Preferences dialog open.

Managing Replication System File

The GFBs and field tables (GFFTs) that you generate using the Data Mapping Tool can be uploaded to a Replicator system file or saved to at text file that can be used in an Event Replicator RPLOD utility run.

Using the preferences described in this section, you can control where the text files are saved and you can specify the information necessary for the Data Mapping Tool to access and upload the GFB/GFFT to the correct Replicator system file.

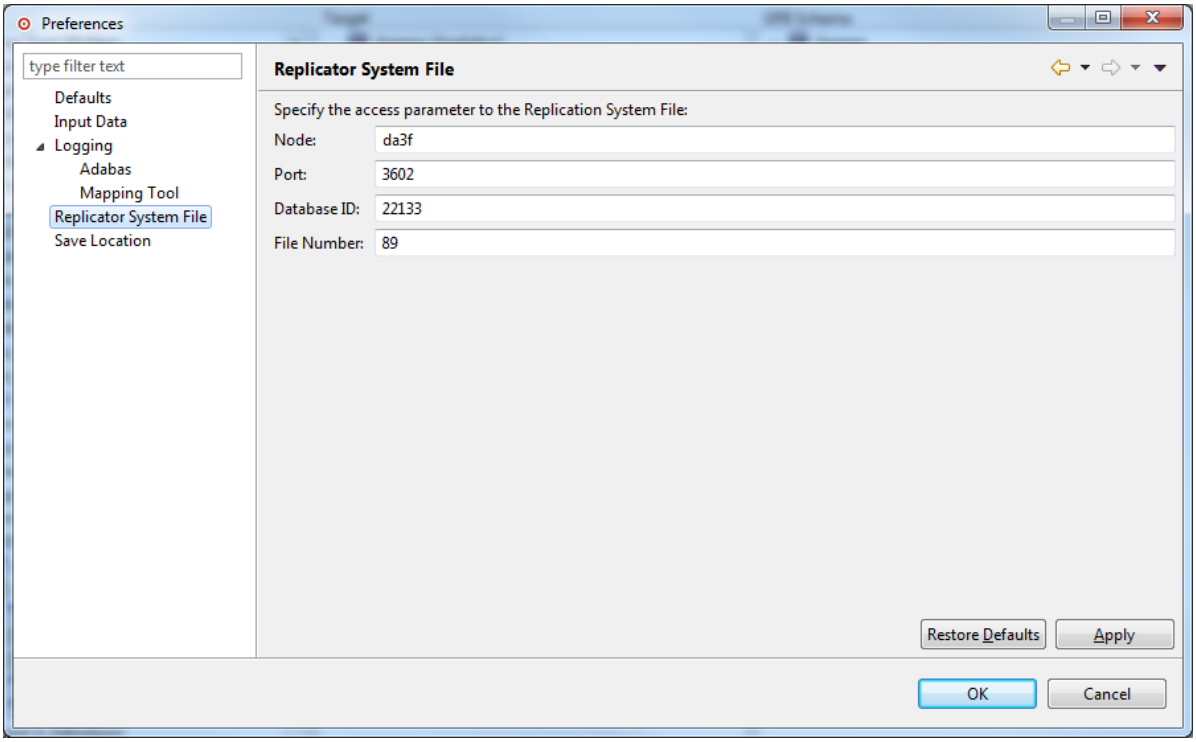
To manage your GFB/GFFT upload preferences, complete the following steps:

1. Access the preferences area of the Data Mapping Tool by selecting **Preferences...** on the **Options** menu.

   The **Preferences** dialog appears.

2. Select **Replicator System File** on the left side of the dialog to display the Data Mapping Tool GFB/GFFT upload preferences.

   The right side of the dialog displays the GFB/GFFT preferences under the heading **Replication System File**.



3 Use the remaining fields on this panel to identify the location of the Replicator system file that should be used if you choose to upload the generated GFB/GFFT. These fields are described in the following table:

Field	Description
Node	Specify the network node where the Replicator system file can be found. This is the TCP/IP host or IP address where the Event Replicator Server nucleus resides.
Port	Specify the port number where the Replicator system file can be found. This is the TCP/IP port number used by the Entire Net-Work TCP/IP Option on the mainframe.
Database ID	Specify the database ID of the database containing the Replicator system file. This is the database ID of the Replicator nucleus.
File Number	Specify the file number of the Replicator system file.

4 When all preferences have been set, click one of the following buttons:

- Click **Apply** to apply the preference settings and keep the Preferences dialog open.
- Click **Cancel** to cancel the preference settings and close the Preferences dialog.
- Click **OK** to apply the preference settings and close the Preferences dialog.
- Click **Restore Defaults** to restore the factory defaults for the preference settings and keep the Preferences dialog open.

Managing Save Location

Before you can use the Data Mapping Tool to generate a GFB and field table, you must create a schema from which the GFB and field table will be generated. For complete information on creating and maintaining a schema, read *Creating and Maintaining the GFB Schema*. During the creation of the schema you have options to save it.

The GFBs and field tables (GFFTs) that you generate using the Data Mapping Tool can be uploaded to a Replicator system file or saved to at text file that can be used in an Event Replicator RPLOD utility run.

Using the preferences described in this section, you can control where your schema and GFB/GFFT files are saved.

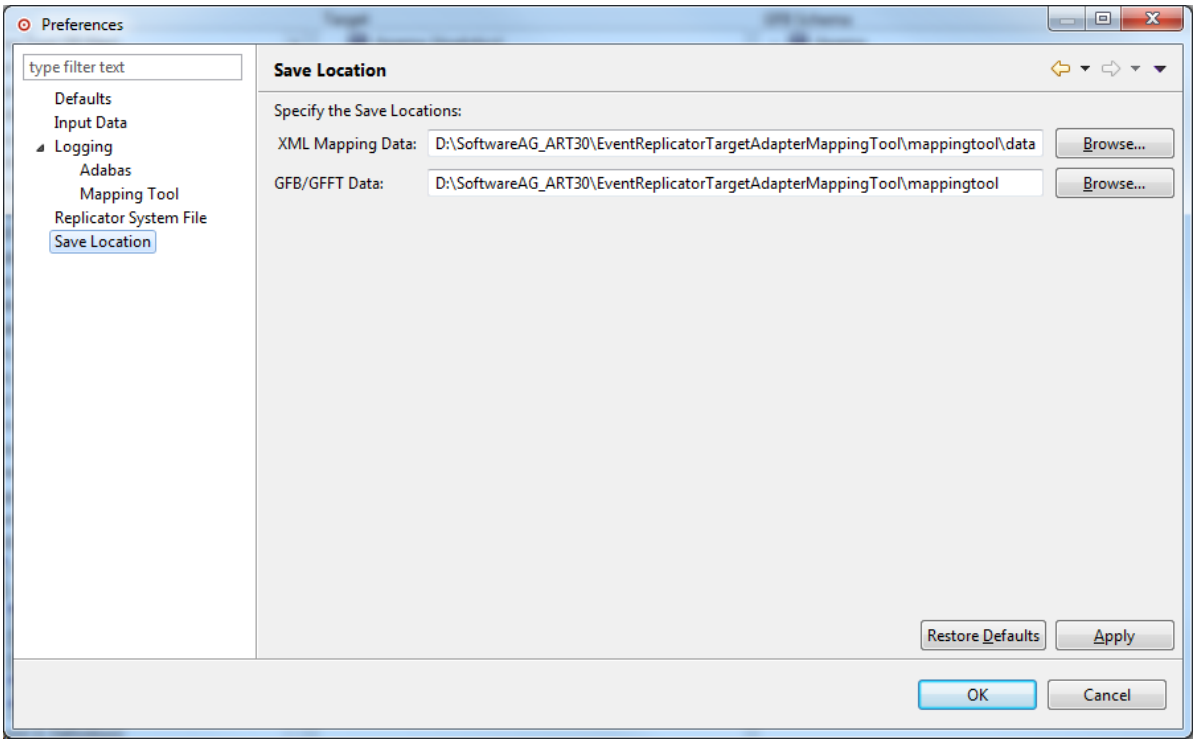
To manage your mapping file preferences, complete the following steps

1 Access the preferences area of the Data Mapping Tool by selecting **Preferences...** on the **Options** menu.

The **Preferences** dialog appears.

2 Select **Save Location** on the left side of the dialog to display the mapping (schema) file preferences.

The right side of the dialog displays the mapping (schema) file preferences under the heading **Save Location**.



3 Use the **XML Mapping Data** field to specify the directory path in which schema files should be stored.

4 Use the **Save Location** field to specify the location where the generated GFB/GFFT text files for the RPLOD utility should be stored.

   Use the **Browse** button to locate the directory if needed.

5 When all preferences have been set, click one of the following buttons:

   - Click **Apply** to apply the preference settings and keep the Preferences dialog open.
   - Click **Cancel** to cancel the preference settings and close the Preferences dialog.
   - Click **OK** to apply the preference settings and close the Preferences dialog.
   - Click **Restore Defaults** to restore the factory defaults for the preference settings and keep the Preferences dialog open.

Locating and Selecting Input Data

A source data definition module (DDM) or Predict XML Definition is required for Data Mapping Tool processing. A DDM can be generated and saved using Software GmbH's Natural or Predict products. A Predict XML Definition can be created using a Natural User exit.

The leftmost **Input Data** column of the Data Mapping Tool main window may or may not display any DDMs, depending on the file extensions and locations of your DDM files. If all of your DDMs are shown, you are finished. If only some or none of your DDMs appear, you need to verify that the Data Mapping Tool has an accurate list of your DDM file extensions as well as the correct location of the DDMs. For information on specifying the DDM file extensions and file locations, read *Managing Input Data*, elsewhere in this guide.

Even if the Data Mapping Tool main window does not show any DDMs, you can locate and select one from the Data Mapping Tool. This section describes how to do this.

To locate and select a DDM/XML file to use, complete the following steps:

Be sure you have generated and saved a DDM/XML input file using Software GmbH's Natural or Predict products.

- Start up the Data Mapping Tool and examine the list of available input files in the leftmost pane of the Data Mapping Tool main window (Input Data).

  If your DDM/XML is listed in the Input Data pane of the Data Mapping Tool main window, select it by clicking on it to highlight it.

If your DDM/XML input file is not listed in this column, you may need to set your preferences to the location where you placed the saved definition, follow the procedures above under **Setting Preferences**.

- Predict XML Definition Requirement

Predict XML Definition Requirement

A Predict XML definition (XML) of your Adabas database must be generated from Software GmbH's Predict product using the user exit USR3005N. For more information, read your Predict documentation. A sample XML of the Adabas Employees demo file is included in the Data Mapping Tool installation.

Here is an example program. Make sure that SYSEXT is set as steplib.

```
DEFINE DATA LOCAL
  1 FILENAME(A32) INIT <'EMPL*'>
  1 REQUEST-RESULT(A) DYNAMIC
  1 #WORK (A) DYNAMIC
  1 #OFF (I4)
END-DEFINE
DEFINE WORK FILE 1 TYPE 'UNFORMATTED'
PRINT 'With this program you can unload Predict File definitions'
-     ' to be used by the Mapping Tool.'
/
INPUT (AD=MILT) 'Please enter the Filename: ' FILENAME
COMPRESS
'<Predict>'
  '<Request>'
    '<Select>'
**
** Search Adabas-File having a name which starts with entered file name
**
      '<Search>'
        '<Object-type value=''FILE-A'' value2=''FILE-U''/>'
        '<Attribute name=''ID'' value=''' FILENAME ''' />'
      '</Search>'
**
** Return the following attributes
**
      '<Return>'
        '<Field name=''ID''/>'
        '<Field name=''ELEMENT-LIST-TAB''/>'
      '</Return>'
    '</Select>'
  '</Request>'
'</Predict>'
*
TO REQUEST-RESULT LEAVING NO
*
```

```
*
CALLNAT 'USR3005N' REQUEST-RESULT
*
REPEAT
  EXAMINE REQUEST-RESULT FOR '><' GIVING POSITION #OFF
  IF #OFF NE 0
    MOVE SUBSTR(REQUEST-RESULT,1,#OFF) TO #WORK
    #OFF := #OFF + 1
    MOVE SUBSTR(REQUEST-RESULT, #OFF ) TO REQUEST-RESULT
  ELSE
    #WORK := REQUEST-RESULT
  END-IF
  WRITE WORK 1 VARIABLE #WORK
  IF #OFF = 0
    ESCAPE BOTTOM
  END-IF
END-REPEAT

PRINT 'Data written to workfile 1'
STOP
*
END
```

Flattening Fields for Replication

By default, when MU and PE fields and subfields and superfields are included in the replicated data, additional tables are created, as described in . However, you can request that individual MU fields, PE fields, subfields, and superfields be *flattened* in the replicated data instead. This process of *flattening* fields will replicate them as columns in the main table, rather than as separate subtables.

If you want to flatten a field in the resulting RDBMS table, you must trigger it in the DDM specification for the field. If you do not explicitly trigger a field to be flattened in DDM, it will not be flattened in the resulting RDBMS tables.

Note: You can flatten an MU field within a PE group without flattening the entire PE group.

- Triggering Field Flattening

- Removing the Field Flattening Trigger

Triggering Field Flattening

To trigger field flattening for a field, you must edit the field in your DDM. This section describes this process.

To trigger field flattening for a field:

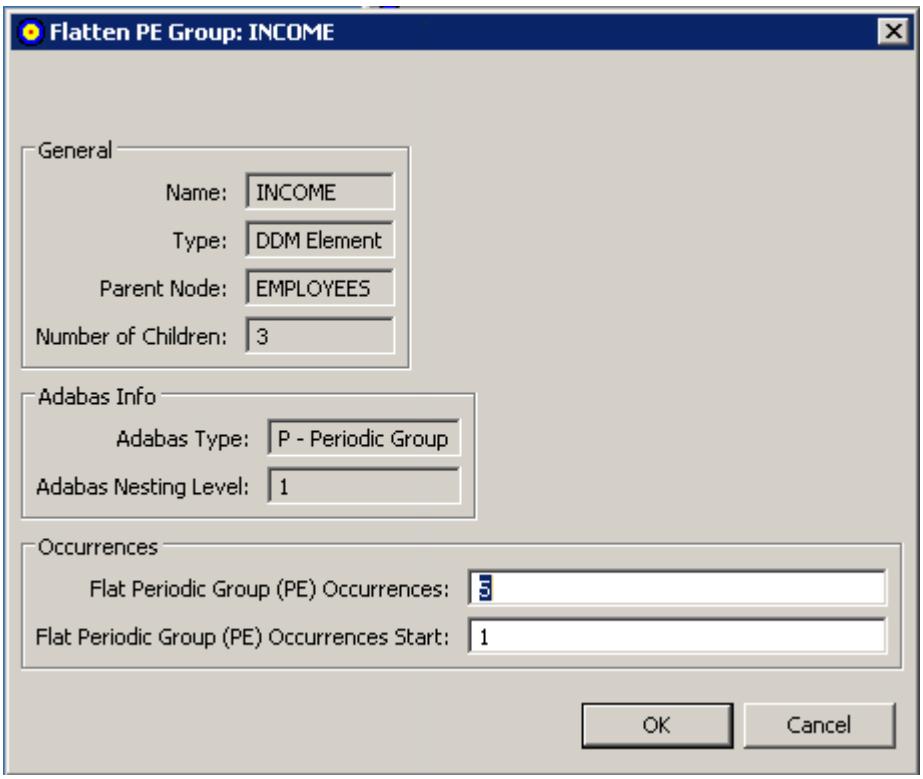
1 Expand the DDM/XML in the **Input Data** column of the Data Mapping Tool main window.

DDM/XML files contain one or more DDMs/XML files. DDM files are prefixed with the icon ; XML are prefixed with the icon .

2 Scroll through the fields in the DDM and locate the MU field, PE field, subfield, or superfield for which you want to trigger flattening. MU fields are identified with the icon, PE fields are identified with the icon, and subfields and superfields are identified with the icon.

3 Right-click on the field and select **Flatten (Replicate to Columns)** from the drop-down menu.

A **Flatten** dialog appears. For example, the following is a **Flatten** dialog for a PE field.



The **Occurrences** area of the dialog contains two editable fields:

- **Flat Multiple Value (MU) Occurrences** or **Flat Periodic Group (PE) Occurrences**
- **Flat Multiple Value (MU) Occurrences Start** or **Flat Periodic Group (PE) Occurrences Start**

4 Optionally, in the **Flat Multiple Value (MU) Occurrences** or **Flat Periodic Group (PE) Occurrences** field, specify the number of repeating elements for the field. Valid values must be positive integers.

> **Note:** A default number is supplied for this field. To specify what this default value should be, read *Specifying Defaults*, elsewhere in this section.

5 Optionally, in the **Flat Multiple Value (MU) Occurrences Start** or **Flat Periodic Group (PE) Occurrences Start** field, specify the starting occurrence number. For example, if you want to start with occurrence 15 rather than occurrence 1 (the default), you would specify "15" here.

6 Click **OK** when finished.

The fields will be marked for flattening when the GFB schema is created. In addition, the DDM/XML will expand with additional occurrences of the flattened fields as specified. You can use this updated DDM/XML then when creating and maintaining the GFB schema.

Removing the Field Flattening Trigger

If, after you have specified that flattening should occur for a field, you decide not to flatten it, you need to remove the flattening trigger defined for the field in the DDM. This section describes this process.

To remove the field flattening trigger for a field:

1 Expand the DDM/XML in the **Input Data** column of the Data Mapping Tool main window.

2 Scroll through the fields in the DDM/XML and locate the MU field, PE field, subfield, or superfield for which you want to trigger flattening. Flattened MU fields are identified with the EM icon, flattened PE fields are identified with the EP icon, and flattened subfields and superfields are identified with the ES icon.

3 Right-click on the field and select **Unflatten (Replicate to Sub-tables)** from the drop-down menu.

The DDM/XML will remove the additional fields created by the flattening trigger. You can use this updated DDM/XML then when creating and maintaining the GFB schema.

Maintaining the Target Relational Database List

This section describes how to manage the list of target RDBMS databases in the Data Mapping Tool.

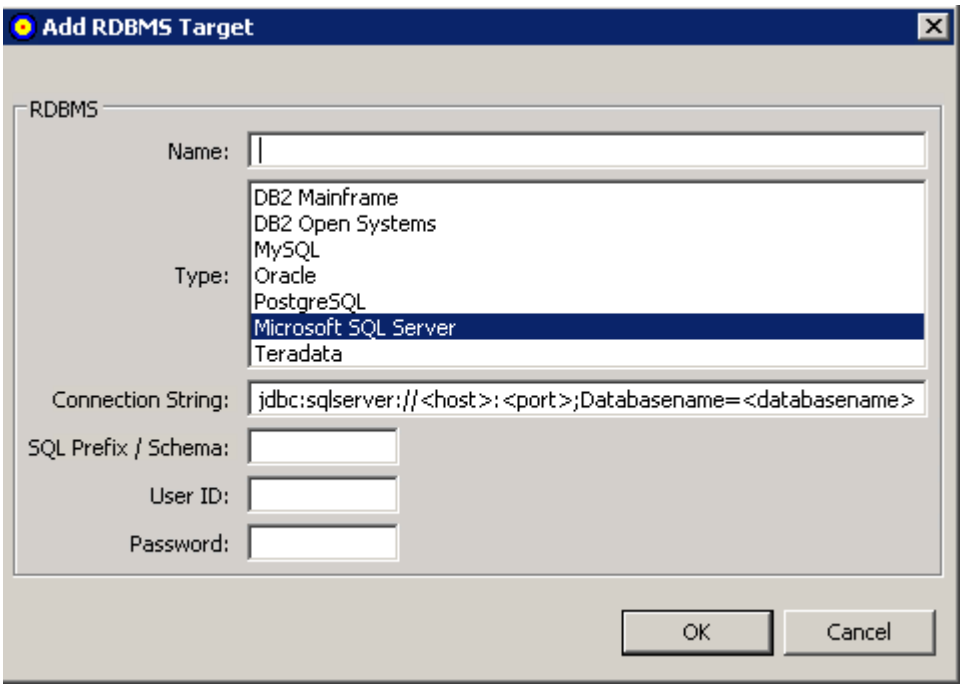
- Adding a Target Database
- Removing a Target Database
- Showing and Refreshing RDBMS Tables
- Showing and Refreshing Columns
- Maintaining RDBMS Connection Properties
- Reviewing RDBMS Table and Column Properties

Adding a Target Database

To add a target relational database (RDBMS):

1 Select the **Add RDBMS Target..** menu option from the **Targets** menu.

The **Add RDBMS Target** window appears.



2 Fill in the fields on the **Add RDBMS Target** window as described in the following table:

Field Name	Description	Required?
Name	Specify the name of the target database.	Yes
Type	Scroll through the list of RDBMS types and select any of the listed database types.	Yes
Connection String	Edit the connection string that appears, based on the type of database you have selected. .	Yes
SQL Prefix / Schema	Specify the SQL prefix or schema for the target database, if necessary. This specification is case-sensitive and is required for Oracle and DB2 databases.	No
User ID	Specify a user ID authorized to access and update the RDBMS.	Yes
Password	Specify the password of the user ID with authorization for the RDBMS.	Yes

3 When all fields have been supplied as required, click the **OK** button to save the connection to the RDBMS.

The Data Mapping Tool main window reappears and the RDBMS is listed in the **Target RDBMS** column.

Removing a Target Database

To remove a target database from the list in the Target RDBMS column of the Data Mapping Tool main window:

1 Right-click on the RDBMS in the **Target RDBMS** list that you want to remove.

2 Select the **Delete** menu option from drop-down menu.

The target database is removed from the list. The RDBMS itself is not removed; it is removed only from the list in the **Target RDBMS** column. To remove the tables from the RDBMS, you must do so using the management tools provided with the RDBMS.

Showing and Refreshing RDBMS Tables

You can optionally show the RDBMS tables and refresh the list of tables, as needed.

To show the tables in an RDBMS listed in the Target RDBMS column of the Data Mapping Tool main window:

1 Right-click on the RDBMS in the **Target RDBMS** list whose tables you want to show.

2 Select the **Show Tables** menu option from drop-down menu.

The list of tables in the RDBMS appears.

To refresh the table list for an RDBMS listed in the Target RDBMS column of the Data Mapping Tool main window:

1 Right-click on the RDBMS in the **Target RDBMS** list whose tables you want to refresh.

2 Select the **Refresh Tables** menu option from drop-down menu.

The list of tables for the RDBMS is refreshed.

Showing and Refreshing Columns

You can optionally show the columns in an RDBMS table and refresh the list of columns in a table, as needed.

To show the columns in an RDBMS table listed in the Target RDBMS column of the Data Mapping Tool main window:

1 Expand the RDBMS in the **Target RDBMS** column to see the tables included in it. If you cannot expand the RDBMS, verify that you have requested that the tables be shown for that RDBMS. Read *Showing and Refreshing RDBMS Tables* for more information.

2 Right-click on the RDBMS table in the **Target RDBMS** list whose columns you want to show.

3 Select the **Show Columns** menu option from drop-down menu.

The list of columns in the RDBMS table appears.

To refresh the column list for an RDBMS table listed in the Target RDBMS column of the Data Mapping Tool main window:

1 Right-click on the RDBMS table in the **Target RDBMS** list whose columns you want to refresh.

2 Select the **Refresh Columns** menu option from drop-down menu.

The list of columns for the RDBMS table is refreshed.

Maintaining RDBMS Connection Properties

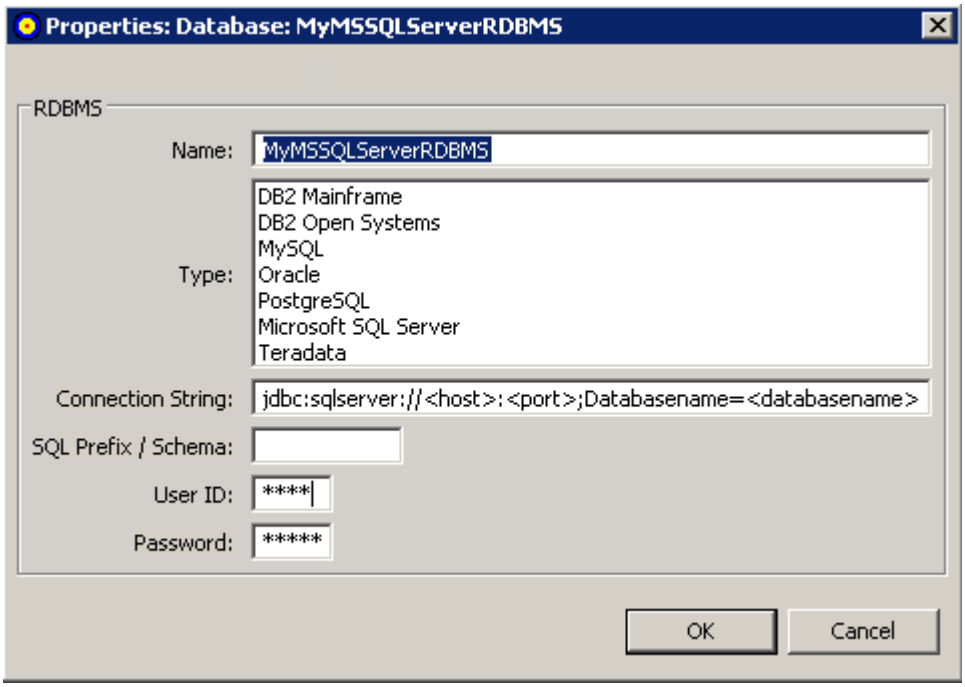
You can maintain the connection properties for any RDBMS listed in the **Target RDBMS** column of the Data Mapping Tool main window.

To review connection properties for an RDBMS:

1 Right-click on the RDBMS in the **Target RDBMS** list whose properties you want to review and maintain.

2 Select the **Properties** menu option from drop-down menu.

The properties are displayed in a **Properties** dialog.



3 Alter the fields on the **Properties**, if necessary, as described in *Adding a Target Database*, earlier in this section.

Reviewing RDBMS Table and Column Properties

You cannot alter RDBMS table and column properties using the Data Mapping Tool. However, you can review them.

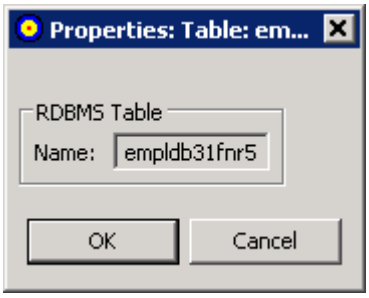
To review RDBMS table properties:

1 Right-click on the table name in the **Target RDBMS** pane of the Data Mapping Tool main window.

A drop-down menu appears.

2 Select **Properties** from the drop-down menu.

The **Properties:Table:***tblname* dialog appears.



This dialog identifies the name of the RDBMS table.

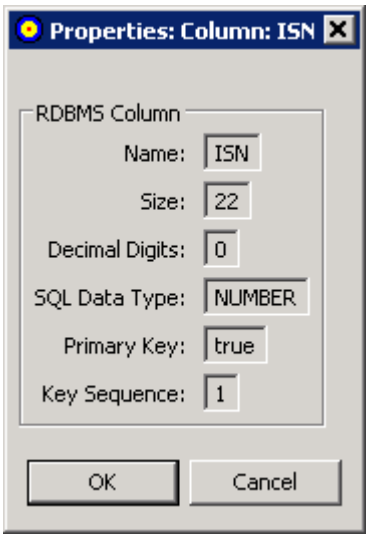
To review RDBMS column properties:

1 Right-click on the column name in the **Target RDBMS** pane of the Data Mapping Tool main window.

A drop-down menu appears.

2 Select **Properties** from the drop-down menu.

The **Properties:Column:***colname* dialog appears.



This dialog identifies:

- The name of the RDBMS column.
- The size of the RDBMS column.
- The number of decimal digits of the RDBMS column.
- The data type of the RDBMS column.

- Whether the column is a primary key column. Valid values are "true" (it column is a primary key column) or "false" (the column is not a primary key column).
- The sequence number of the column if it is part of a composite key. If the column is a primary key and no composite key is used, the **Key Sequence** will always be "1". If the column is not a primary key or part of a composite key, the **Key Sequence** will always be "0".

Creating and Maintaining the GFB Schema

This section describes the creation and maintenance of GFB schema using the Data Mapping Tool.

- Creating the Schema from an Entire DDM
- Creating the Schema from Individual Fields in the DDM/XML
- Renaming Schemas
- Renaming Schema Subtables
- Renaming Schema Fields
- Reviewing GFB Schema Field Properties
- Redefining Schema Fields
- Specifying Keys
- Reviewing GFB Schema Properties
- Saving the GFB Schema
- Removing a GFB Schema

Note: If you want to use UTF-8 character encoding, you must verify that your GFB field lengths are increased as required to accommodate the character set referenced by the code page you select and the data requested in the GFB. You can increase these field lengths manually by editing the Predict file or data definition module (DDM) used when the GFB is generated.

Creating the Schema from an Entire DDM

You can create a GFB schema that maps all the fields in the DDM to tables in your RDBMS. One table is created with the same name as the DDM and additional tables are created for each MU or PE field within the DDM.

Once a GFB schema is created, you can use it to generate a global format buffer (GFB) and associated field table (GFFT) for use by the Event Replicator for Adabas and the Event Replicator Target Adapter. For more information, read *Generating a GFB and Field Table*, elsewhere in this guide.

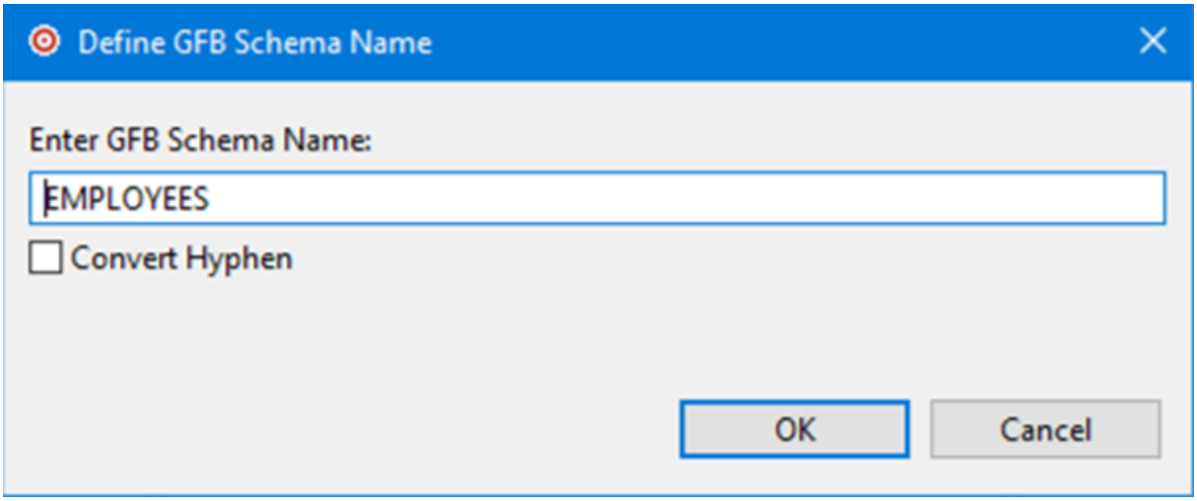
To create the GFB schema from an entire DDM, complete the following steps:

1 Drag and drop a DDM from the **SYSTRANS DDMs** (leftmost) pane onto a target RDBMS in the **Target RDBMS** (middle) pane. For complete information on listing DDMs in the **SYS-**

TRANS DDMs column and target relational databases in the **Target RDBMS** pane, read *Locating and Selecting Input Data* and *Maintaining the Target Relational Database List*, elsewhere in this guide.

Note: If you want to use UTF-8 character encoding, you must verify that your field lengths are increased as required to accommodate UTF-8 character encoding

A **Define GFB Schema Name** dialog appears.



Note: When the option **Convert Hyphen** is checked, all hyphens in the field names are converted to underscores in the GFB Schema.

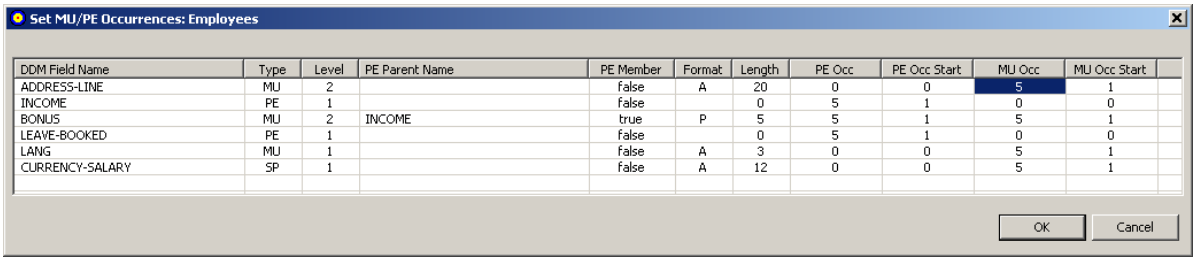
2 Specify the name you want to use for the RDBMS table on the **Define GFB Schema Name** dialog. The name can be up to 32 characters long. The name you specify is used for the RDBMS table and its subtables.

Note: This is not the same as the name of the global format buffer (GFB) definition used by the Event Replicator for Adabas.

In addition, once you have selected a name here, you can always rename it in the **GFB Schema** area of the Data Mapping Tool. For more information on renaming tables, the GFB Schema, read *Renaming Schema Tables*, elsewhere in this guide.

3 Click **OK**.

The **Set MU/PE Occurrences** dialog appears, allowing you to specify the number of occurrences for MU and PE fields for which no flattening has been triggered. The following is an example of this dialog:



DDM Field Name	Type	Level	PE Parent Name	PE Member	Format	Length	PE Occ	PE Occ Start	MU Occ	MU Occ Start
ADDRESS-LINE	MU	2		false	A	20	0	0	5	1
INCOME	PE	1		false		0	5	1	0	0
BONUS	MU	2	INCOME	true	P	5	5	1	5	1
LEAVE-BOOKED	PE	1		false		0	5	1	0	0
LANG	MU	1		false	A	3	0	0	5	1
CURRENCY-SALARY	SP	1		false	A	12	0	0	5	1

4 Optionally, adjust the MU or PE occurrence counts (**MU Occ** and **PE Occ** fields) and the MU or PE starting occurrence number (**MU Occ Start** and **PE Occ Start** fields) for the unflattened MU and PE fields listed in this dialog. Valid values must be positive integers.

5 Click **OK** when finished.

When all MU and PE fields have been accounted for, the GFB schema is created in the **GFB Schema** (rightmost) pane of the Data Mapping Tool main window.

The GFB schema consists of one or more tables. One table is created for the DDM; an additional table is created for each unflattened MU field, PE field, subfield, or superfield in the DDM.

Creating the Schema from Individual Fields in the DDM/XML

You can create a GFB schema that maps individual fields in a DDM/XML to existing tables in your RDBMS. You can also create a GFB schema that maps all the fields in a DDM/XML to previously undefined tables in your RDBMS. For more information, read *Creating the Schema from an Entire DDM/XML*, elsewhere in this guide. Once a GFB schema is created, you can use it to generate a global format buffer (GFB) and associated field table for use by the Event Replicator for Adabas and the Event Replicator Target Adapter. For more information, read *Generating a GFB and Field Table*, elsewhere in this guide.

Note: By default, if the table you are mapping to was not originally created by the Event Replicator Target Adapter, it may not contain the field ISN. If this is the case, replication to this target will likely fail with an error indicating that the RDBMS does not contain an ISN column. Even if the ISN field is not defined as a primary key, its value in each Adabas record is always replicated to the target base (parent) table. To resolve this problem, we recommend that you alter the table in your target RDBMS, adding a column named "ISN" and defined as type integer. Alternatively, you could set the Event Replicator Target Adapter **Adabas-RDBMS Synchronization Level** field to "apply" in the target database option definition for replication to your RDBMS. For more information about target database option definitions in Event Replicator Target Adapter, read *Specifying Target Database Processing Option Definitions*, in the *Event Replicator Target Adapter Administrator's Guide*.

To create the GFB schema from individual fields in the DDM/XML, complete the following steps:

1 Be sure that you have expanded the tables and table columns in the **Target RDBMS** pane of the Data Mapping Tool main window.

2 Drag and drop a single field from the DDM/XML in the **Input Data** (leftmost) pane onto an existing field (table column) name in a table in the target RDBMS listed in the **Target RDBMS** (middle) pane.

The following general rules must be followed:

- For MU (multiple occurrence), PE (periodic group), SB (subfield), or SP(superfield) fields, the target table name must conform to the primary/foreign key naming relationships used by the Event Replicator Target Adapter.
- The length of the field being mapped must not exceed the length of the field (column) in the RDBMS table.
- Consideration should be given to matching data types of the fields in the DDM/XML and the fields in the target table. Do not attempt to map fields of different data types.
- If you want to use UTF-8 character encoding, you must verify that your field lengths are increased as required to accommodate UTF-8 character encoding.
- Duplicate mappings in the same target table are not allowed. You cannot map the same field to the same target RDBMS table and column combination.
- If the ISN is not the primary key of your existing RDBMS table, you must change the primary key assignment. Likewise, if your RDBMS table uses multiple primary keys, you must set each composite key field and then specify the composite key order. For more information on maintaining primary and composite keys in your GFB schema, read *Specifying Keys*, elsewhere in this guide.

Note: In addition, if ISN is not the primary key, you must also manually add a dummy ISN column into the target table with integer as its data type. This will ensure that replication occurs successfully.

For complete information on listing DDMs/XML in the **Input Data** pane and target relational databases in the **Target Table** pane, read *Locating and Selecting Input Data* and *Linking to a Target Database*, elsewhere in this guide.

The GFB schema is partially created in the rightmost (**GFB Schema**) pane of the Data Mapping Tool main window.

3 Repeat step 1 until all fields are mapped.

The GFB schema is updated in the **GFB Schema** (rightmost) pane of the Data Mapping Tool main window.

4 Optionally, rename the GFB schema in the **GFB Schema** pane. By default, schemas created from individual fields in the DDM have the same name as the name of the RDBMS table to which they are mapped. For complete information on renaming a GFB schema, read *Renaming Schemas*, elsewhere in this guide.

5 Click **Save** when finished.

The GFB schema has been created in the **GFB Schema** (rightmost) pane of the Data Mapping Tool main window. You can now use the Data Mapping Tool to generate a GFB and field table from the GFB schema.

Renaming Schemas

Once a GFB schema is created, you can rename it if necessary.

To rename a GFB schema once it is created:

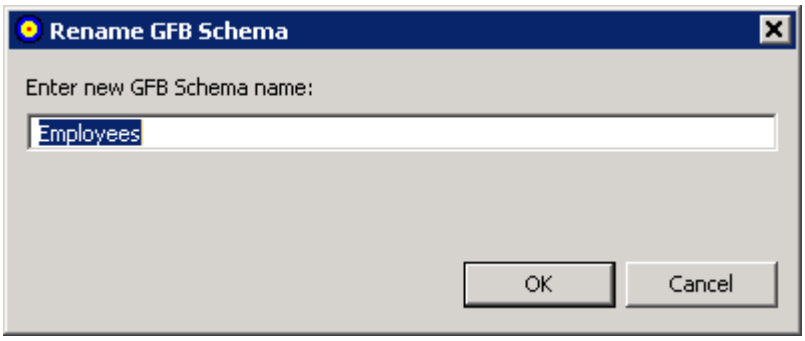
1 Right-click on the name of the schema you want to rename in the **GFB Schema** column of the main Data Mapping Tool window.

GFB schema names (which will result in the main table name of your RDBMS table) are shown in the list prefixed by the icon .

A drop-down menu appears.

2 Select **Rename** from the drop-down menu.

A **Rename GFB Schema** dialog appears.



3 Specify a new name for the GFB schema in the dialog box and click **OK.**

The GFB schema is renamed.

Renaming Schema Subtables

Once a GFB schema is created, you can rename any of the schema subtables produced for un-flattened PE groups or MU fields.

To rename a GFB schema subtable in a GFB schema:

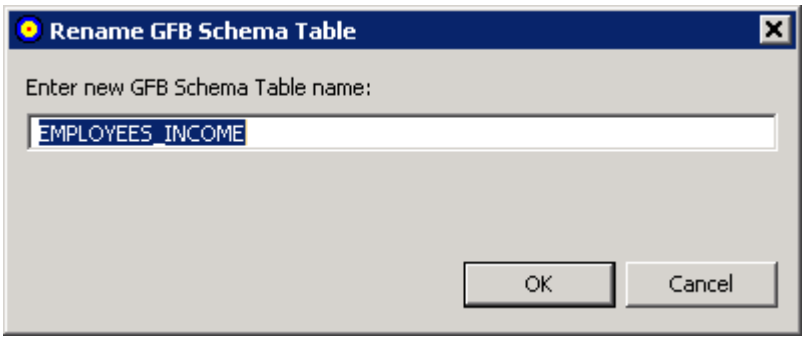
1 Right-click on the name of the schema subtable you want to rename in the **GFB Schema** column of the main Data Mapping Tool window.

GFB schema subtable names (which will result in the name of a subtable in your RDBMS table) are shown in the list prefixed by the icon .

A drop-down menu appears.

2 Select **Rename** from the drop-down menu.

A **Rename GFB Schema Table** dialog appears.



3 Specify a new name for the GFB schema subtable in the dialog box and click **OK.**

The GFB schema subtable is renamed.

Renaming Schema Fields

Once a GFB schema is created, you can rename any of the schema fields in the table if necessary.

To rename a GFB schema field in an GFB schema:

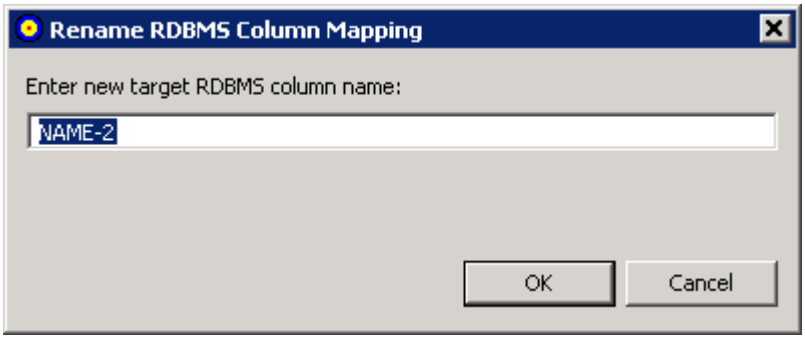
1 Right-click on the name of the schema field you want to rename in the **GFB Schema** column of the main Data Mapping Tool window.

GFB schema field names (which will result in the name of a column in your RDBMS table) are shown in the list prefixed by the icon .

A drop-down menu appears.

2 Select **Rename** from the drop-down menu.

A **Rename RDBMS Column Mapping** dialog appears.



3 Specify a new name for the GFB schema field (RDBMS table column) in the dialog box and click **OK.**

The field is renamed.

Reviewing GFB Schema Field Properties

You can review the proprieties of a GFB schema field.

To review a GFB schema field's properties:

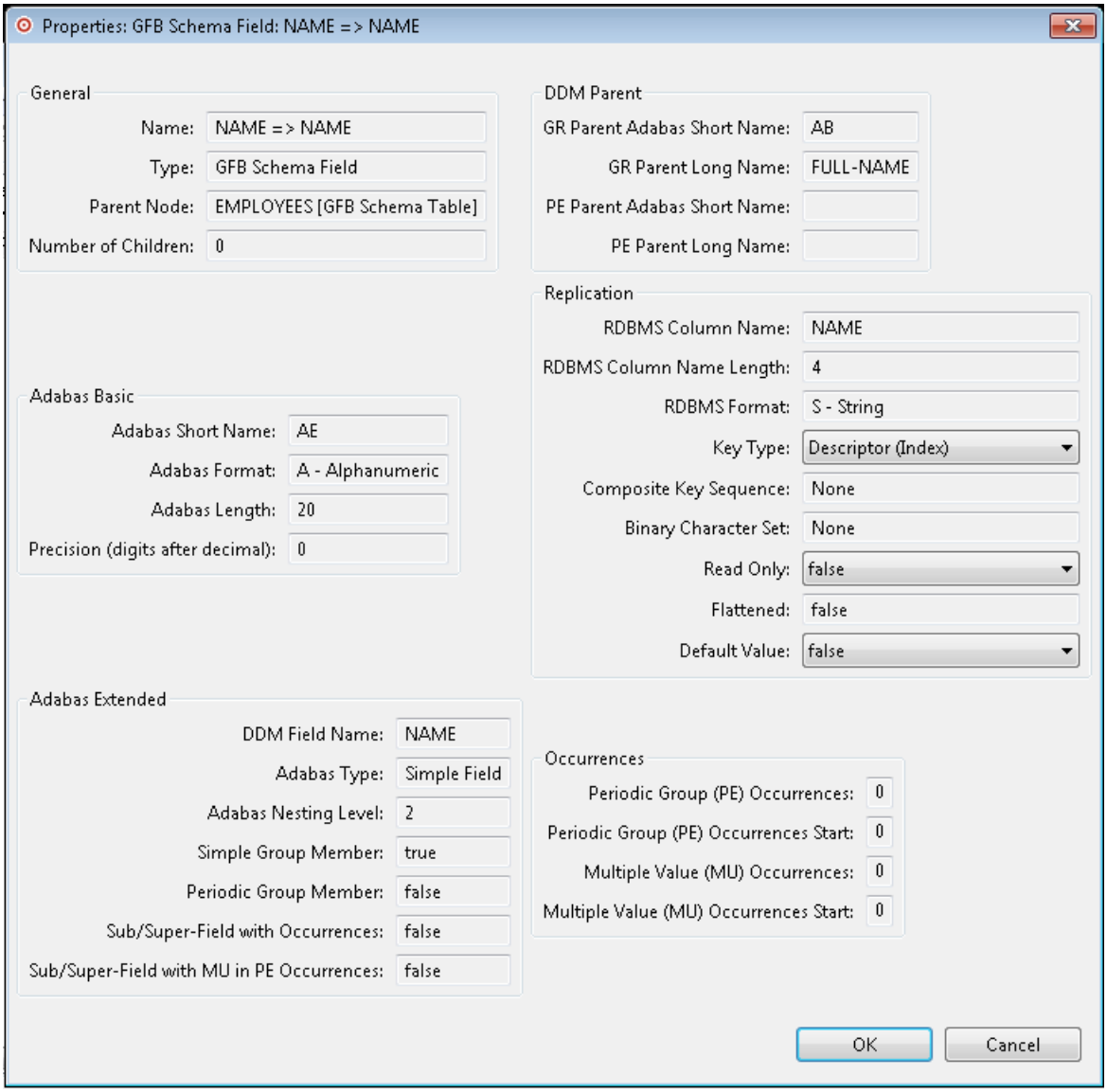
1 Right-click on the name of the schema field whose properties you want to review in the **GFB Schema** column of the main Data Mapping Tool window.

GFB schema field names are shown in the list prefixed by the icon .

A drop-down menu appears.

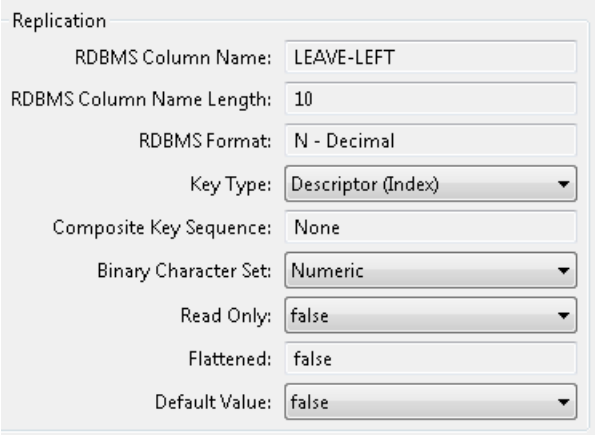
2 Select **Properties** from the drop-down menu.

The **Properties: GFB Schema Field:** *fieldname* dialog appears, listing the GFB schema field properties.

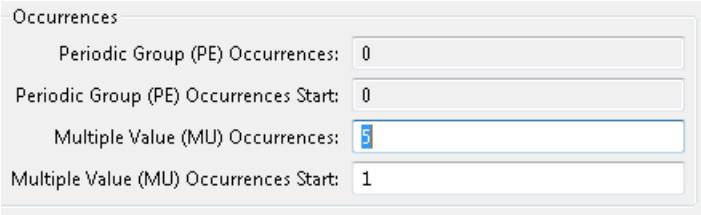


Most of the fields in this dialog are read-only.

- The key type, and read-only and default value settings of any field can be modified. In addition, for some fields you can alter the binary character set specification.



- If the field is an MU field, a PE field, a subfield, or a superfield you can modify the settings in the **Occurrences** section of this dialog. The following example shows the **Occurrences** section of a field properties dialog for an MU field:



3 Optionally, alter the following properties:

- Click on the arrow associated with the **Key Type** property to alter the key type. Valid specifications are "No Key", "Descriptor (Index)", and "UQ Descriptor (Unique Index)".
- Click on the arrow associated with the **Read Only** property to alter the read-only status of the field. Valid specifications are "true" and "false".
- Click on the arrow associated with the **Default Value** property to alter the property. Default Value options are true and false. Setting this option to "true" will cause Event Replicator to send zeroes in place of null for numeric fields with no value in Adabas, and a space in place of null for empty string fields. The use of this option requires Event Replicator for Adabas Version 3.6 SP1 and required zaps. Please consult the Event Replicator for Adabas documentation and consult with your support representative for the latest zap requirements.
- If allowed for the field, click on the arrow associated with the **Binary Character Set** property to alter the binary character set for the field. Valid specifications are "Numeric", "Character", and "Signed".

4 If the field is an MU field, a PE field, a subfield, or a superfield, optionally modify the occurrence count or starting occurrence number in the **Occurrences** section of the dialog.

5 Click **OK** when you are done reviewing the properties.

Redefining Schema Fields

Once you have created a GFB schema, you can redefine a schema field. This is especially useful if you want to split a field into multiple smaller fields (column) in the resulting RDBMS table. In a Data Mapping Tool schema, you can redefine a field into multiple fields unless it is:

- a key field (primary or composite key field)
- a descriptor field (superdescriptor, subdescriptor, hyperdescriptor, phonetic, or collation descriptor)

Note: Installations wishing to redefine schema fields must have Event Replicator for Adabas 3.2.1 or later installed.

Multiple value fields (MU fields) and periodic groups (PE fields) are supported.

In addition, you can redefine fields into combinations of the following data types: alphanumeric, binary, date, floating point, integer, logical, numeric, packed decimal, and time.

Finally, a field that is redefined cannot be expanded beyond its original field length unless it is first expanded in the original record and associated DDM. Once a GFB schema is created, you cannot increase the overall size of a field; so the sum of the sizes of the child fields that comprise a redefined field (the parent) must be less than or equal to the size of the original parent field. Note that you can also leave spaces between child fields of a redefined field; the Data Mapping Tool detects these spaces and fills them with read-only filler fields when you generate the GFB and associated field table (GFFT) entries. Filler fields appear in the GFFT with column names of **FILLER**.

Note: Fields that have been redefined cannot become primary keys and cannot be included in composite keys for the table.

To redefine a schema field:

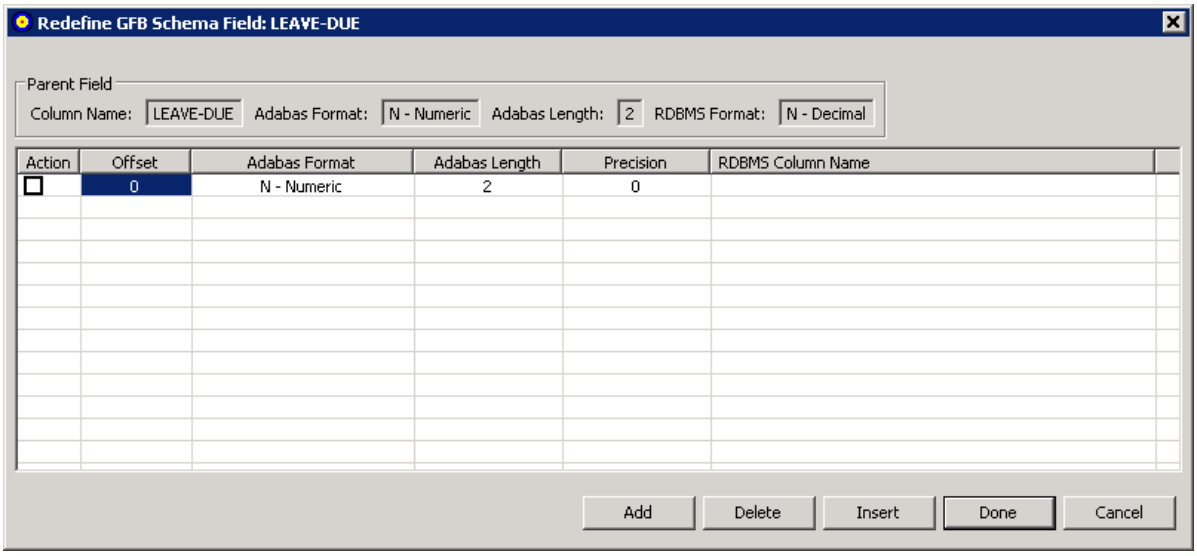
1 Right-click on the name of the schema field whose properties you want to redefine in the **GFB Schema** column of the main Data Mapping Tool window.

   GFB schema field names are shown in the list prefixed by the icon .

   A drop-down menu appears.

2 Select **Redefine** from the drop-down menu.

   The **Redefine GFB Schema Field:** *fieldname* dialog appears, listing the GFB schema field you can split and its child entries (if any have been defined yet). In the following sample, the parent field has not yet been split, so when this dialog appears, it shows only a single child field, which has the exact length and specifications of the parent field.



You can tab or click in the cells of this table of child fields, as needed, to alter the child field settings.

3 In the table, change the length of the first child field in the associated **Adabas Length** field, to accommodate additional child fields. If you do not do this, you can only specify a single child field (since the lengths of the child fields cannot exceed the length of the parent field). In addition, you must specify the column name for the child field in the **RDBMS Column Name** field.

   Optionally, adjust the format (**Adabas Format** field) and offset (**Offset** field) of the child field in the table.

4 If the field is numeric or packed, use the **Precision** field to adjust the number of digits that appear to the right of the decimal point for the field.

5 Maintain additional child fields, as necessary, in the table of child fields.

   For every child field you define, you must specify a length and an RDBMS column name. If you do not specify an offset for a child field, the Data Mapping Tool automatically calculates it based on the lengths of the other child fields. If you do not specify a field format for a child field, the format of the parent field is assumed.

   - To add a child field, click the **Add** button. A new blank child line becomes editable in the table.
   - To insert a new child field between two fields already in the table, select the **Action** box (check it) of the lower child field and then click the **Insert** button. A new blank child line is inserted between the two existing child fields and becomes editable in the table.
   - To delete a child field from the table, select the **Action** box (check it) of the child field and then click the **Delete** button. The child field is removed from the table.

6 When all child fields have been specified in the table, click **Done**.

The field appears as redefined (split) in the GFB schema. When the GFB and associated field table are generated, the redefined field will appear as multiple columns in the resulting RDBMS table.

To undo a schema field redefinition:

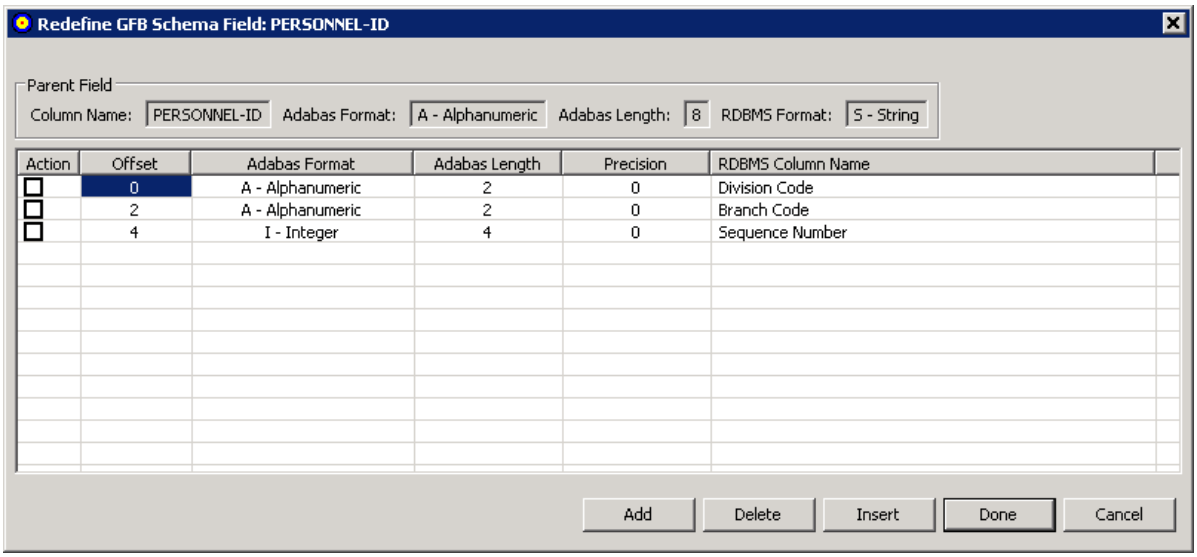
1 Right-click on the name of the schema field whose redefined properties you want to undo in the **GFB Schema** column of the main Data Mapping Tool window.

GFB schema field names are shown in the list prefixed by the icon .

A drop-down menu appears.

2 Select **Redefine** from the drop-down menu.

The **Redefine GFB Schema Field:** *fieldname* dialog appears, listing the GFB schema field you can redefine and its child entries. In the following sample, the parent field, PERSONNEL-ID, has been split into three child fields: Division Code, Branch Code, and Sequence Number.



3 For each child field, select the **Action** box (check it) and then click the **Delete** button. The child field is removed from the table.

4 Click **Done**.

The child fields are removed from the GFB schema and the parent field is no longer redefined (split). When the GFB and associated field table are generated, the parent field will appear as a single column in the resulting RDBMS table.

Specifying Keys

By default, the ISN (internal sequence number) is the primary key of every record in the GFB schema. However, the Data Mapping Tool allows you to change the primary key of the table in the schema and it allows you to select multiple keys to be used as a composite key for the table.

Key fields in the schema are prefixed by the icon .

Notes:

1. Split (redefined) columns cannot become primary keys and cannot be included in composite keys.
2. The Event Replicator Target Adapter will not process updates for a field that is the primary key for an RDBMS table or for any fields that comprise a composite key for the table.
3. At this time, the Event Replicator Target Adapter does not support the use of MU or PE fields as primary keys or in composite keys.

This section covers the following topics:

- Changing the Primary Key
- Creating a Composite Key
- Changing the Composite Key Order
- Removing Primary Key Specification

Changing the Primary Key

To change the primary key:

1 Right-click on the name of the schema field that you want to make a primary key in the **GFB Schema** column of the main Data Mapping Tool window.

GFB schema field names are shown in the list prefixed by the icon .

A drop-down menu appears.

2 Select **Set Primary Key** from the drop-down menu.

The schema field you selected becomes the primary key for the table. If the ISN field was the primary key prior to this change, it is no longer listed in the schema.

Creating a Composite Key

A composite key is key that is comprised of multiple fields in the schema. Any field except the ISN field and redefined (split) fields can be used in a composite key.

Note: Installations wishing to create composite keys must have Event Replicator for Adabas 3.2.1 or later installed.

To create a composite key:

1 Right-click on the name of a schema field that you want to make part of a composite key in the **GFB Schema** column of the main Data Mapping Tool window.

   Note: At this time, the Event Replicator Target Adapter does not support the use of MU or PE fields as primary keys or in composite keys.

   GFB schema field names are shown in the list prefixed by the icon .

   A drop-down menu appears.

2 Select **Set Primary Key** from the drop-down menu.

   The schema field you selected becomes a key for the table. If the ISN field was the primary key prior to this change, it is no longer listed in the schema. The ISN field cannot be used in a composite key.

3 Repeat steps 1 and 2 for any additional fields you want to included in the composite key.

   All fields you have identified as key fields are combined to create a composite key and are prefixed by the icon in the schema.

   Read *Changing the Composite Key Order*, next in this section, for information on how to specify the order of the fields in the composite key.

Changing the Composite Key Order

By default, the order of the fields in a composite key is the same as the order of the original primary key selection.

To change the order of the fields in a composite key:

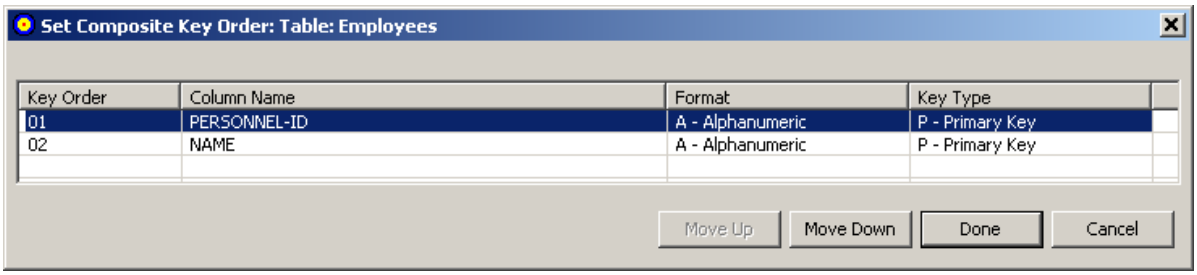
1 Right-click on the name of any of the schema fields that comprise the composite key in the **GFB Schema** column of the main Data Mapping Tool window.

   Key field names are shown in the list prefixed by the icon .

   A drop-down menu appears.

2 Select **Set Composite Key Order** from the drop-down menu.

The **Set Composite Key Order** dialog appears.



3 You can reorder the fields in the composite key using the **Set Composite Key Order** dialog. Simply select the field you want to move (click on it) and click the **Move Up** or **Move Down** buttons until it is placed where you want it.

4 When all composite key fields are in the order you want, click **Done**.

The dialog closes and the composite key order is logically updated. Any subtables containing foreign and primary key references are updated to show the new composite key order.

Removing Primary Key Specification

To remove the primary key specification for a field in the table:

1 Right-click on the name of the schema field that you want to remove as the primary key or remove from a composite key in the **GFB Schema** column of the main Data Mapping Tool window.

Key field names are shown in the list prefixed by the icon .

A drop-down menu appears.

2 Select **Remove Primary Key** from the drop-down menu.

The schema field you selected is no longer a primary key for the table. If no other primary key is defined for a table, the ISN field appears as the primary key.

Reviewing GFB Schema Properties

You can review the proprieties of a GFB schema.

To review a GFB schema's properties:

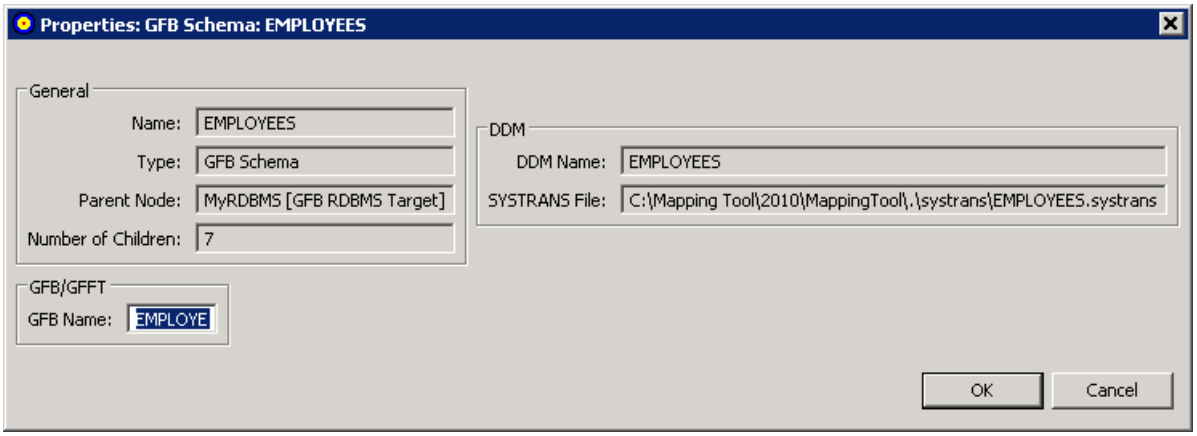
1 Right-click on the name of the schema whose properties you want to review in the **GFB Schema** column of the main Data Mapping Tool window.

GFB schema names are shown in the list prefixed by the icon .

A drop-down menu appears.

2 Select **Properties** from the drop-down menu.

The **Properties: GFB Schema:** *schemaname* dialog appears, listing the GFB schema properties.



Most of the fields in this dialog are read-only. However, you can specify the name of the GFB that should be used if you upload a GFB/GFFT that has been generated from this schema to a Replicator system file. By default, the GFB name is the first seven characters of the GFB schema. You can change it on this screen or when you perform the upload.

For more information about uploading generated GFBs/GFFTs to a Replicator system file, read *Uploading a Generated GFB/GFFT to a Replicator System File*, elsewhere in this guide.

3 Click **OK** when you are done reviewing the properties.

Saving the GFB Schema

At any time that you are working with the GFB schema, you can save it.

To save the GFB schema:

- Select the **Save Mapping** option on the **File** menu.

  Or:

  Click on the button on the Data Mapping Tool main window.

  The schema is saved in the location identified in the Data Mapping Tool preferences. For more information, read *Managing the Mapping File Location*, elsewhere in this guide.

Removing a GFB Schema

You can remove a GFB schema from the Data Mapping Tool (for example, if you want to start over).

To rename a GFB schema once it is generated:

1. Right-click on the name of the schema you want to remove from the **GFB Schema** column of the main Data Mapping Tool window.

   GFB schema names are shown in the list prefixed by the icon .

   A drop-down menu appears.
2. Select **Delete** from the drop-down menu.

   The GFB schema is removed.

Generating a GFB and Field Table Using the Data Mapping Tool

Once you have created a GFB schema, you can generate a GFB and field table (GFFT). The generated GFB and field table file can be uploaded to a Replicator system file or saved as input to an Event Replicator RPLOD utility run. Additional information on saving or importing the generated GFB/GFFT is provided elsewhere in this section.

To generate a GFB and field table, complete the following steps:

1. Create a GFB schema as described in *Creating and Maintaining the GFB Schema*, elsewhere in this guide.

2 If desired, save the GFB schema by clicking on the Save button or the button on the Data Mapping Tool main window or by clicking on the **Save Mapping** option on the **File** menu.

3 Right-click on the name of the GFB schema in the **GFB Schema** column of the Data Mapping Tool main window.

The GFB schema name is prefixed by the icon .

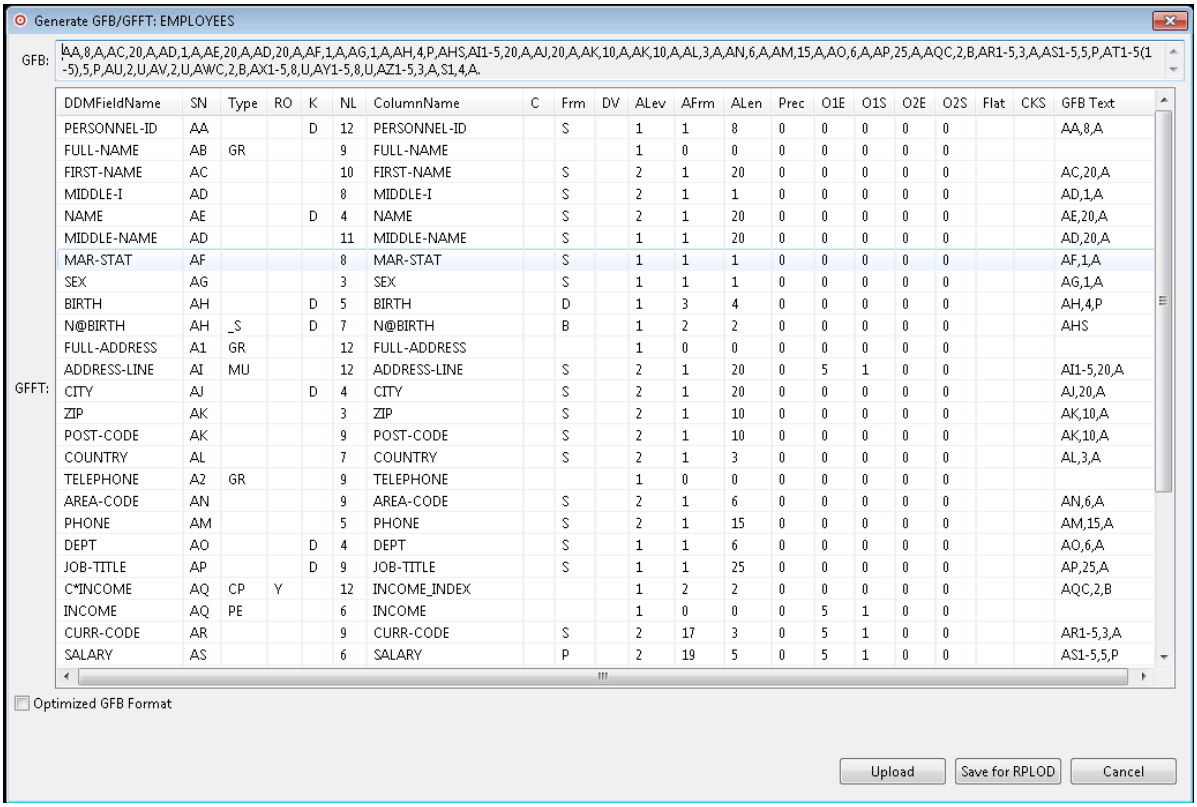
A drop-down menu appears.

4 Click on the **Generate GFB/GFFT** option on the drop-down menu.

Or:

You can also select the **Generate GFB/GFFT** option on the **GFB** menu.

The GFB and field table (GFFT) are generated and the **Generate GFB/GFFT** dialog appears.



DDMFieldName	SN	Type	RO	K	NL	ColumnName	C	Frm	DV	ALev	AFrm	ALen	Prec	O1E	O1S	O2E	O2S	Flat	CKS	GFB Text
PERSONNEL-ID	AA			D	12	PERSONNEL-ID		S		1	1	8	0	0	0	0	0			AA,8,A
FULL-NAME	AB	GR			9	FULL-NAME				1	0	0	0	0	0	0	0			
FIRST-NAME	AC				10	FIRST-NAME		S		2	1	20	0	0	0	0	0			AC,20,A
MIDDLE-I	AD				8	MIDDLE-I		S		2	1	1	0	0	0	0	0			AD,1,A
NAME	AE			D	4	NAME		S		2	1	20	0	0	0	0	0			AE,20,A
MIDDLE-NAME	AD				11	MIDDLE-NAME		S		1	1	20	0	0	0	0	0			AD,20,A
MAR-STAT	AF				8	MAR-STAT		S		1	1	1	0	0	0	0	0			AF,1,A
SEX	AG				3	SEX		S		1	1	1	0	0	0	0	0			AG,1,A
BIRTH	AH			D	5	BIRTH		D		1	3	4	0	0	0	0	0			AH,4,P
N@BIRTH	AH	_S		D	7	N@BIRTH		B		1	2	2	0	0	0	0	0			AHS
FULL-ADDRESS	A1	GR			12	FULL-ADDRESS				1	0	0	0	0	0	0	0			
ADDRESS-LINE	AI	MU			12	ADDRESS-LINE		S		2	1	20	0	5	1	0	0			AI1-5,20,A
CITY	AJ			D	4	CITY		S		2	1	20	0	0	0	0	0			AJ,20,A
ZIP	AK				3	ZIP		S		2	1	10	0	0	0	0	0			AK,10,A
POST-CODE	AK				9	POST-CODE		S		2	1	10	0	0	0	0	0			AK,10,A
COUNTRY	AL				7	COUNTRY		S		2	1	3	0	0	0	0	0			AL,3,A
TELEPHONE	A2	GR			9	TELEPHONE				1	0	0	0	0	0	0	0			
AREA-CODE	AN				9	AREA-CODE		S		2	1	6	0	0	0	0	0			AN,6,A
PHONE	AM				5	PHONE		S		2	1	15	0	0	0	0	0			AM,15,A
DEPT	AO			D	4	DEPT		S		1	1	6	0	0	0	0	0			AO,6,A
JOB-TITLE	AP			D	9	JOB-TITLE		S		1	1	25	0	0	0	0	0			AP,25,A
C*INCOME	AQ	CP	Y		12	INCOME_INDEX				1	2	2	0	0	0	0	0			AQC,2,B
INCOME	AQ	PE			6	INCOME				1	0	0	0	5	1	0	0			
CURR-CODE	AR				9	CURR-CODE		S		2	17	3	0	5	1	0	0			AR1-5,3,A
SALARY	AS				6	SALARY		P		2	19	5	0	5	1	0	0			AS1-5,5,P

You can use this dialog to review the generated GFB/GFFT.

5 **Optimized GFB Format**: Check this box to generate the GFB/GFFT in optimized format.

6 Once the GFB/GFFT is generated, you can perform any of the following actions.

- You can upload the generated GFB/GFFT to a mainframe Replicator System file. For more information, read *Uploading a Generated GFB/GFFT to a Replicator System File*, elsewhere in this section.
- You can save the generated GFB/GFFT to a text file for use with the Event Replicator RPLOD utility. For more information, read *Saving a Generated GFB/GFFT for the RPLOD Utility*, elsewhere in this section. For information on using the RPLOD utility, read

Uploading a Generated GFB/GFFT to a Replicator System File

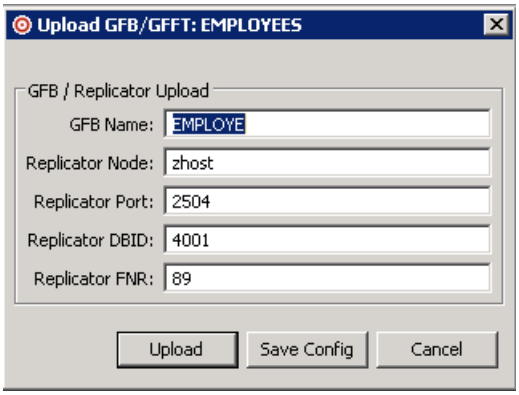
You can upload the generated GFB/GFFT to a Replicator system file. To do this, you must have an active Entire Net-Work running with a TCP/IP driver (Entire Net-Work TCP/IP Option) running on the mainframe node where the Event Replicator Server is located.

To upload the generated GFB/GFFT to a Replicator system file, complete the following steps:

Verify that the Event Replicator Server with the Replicator system file you want to upload the GFB/GFFT to is started.

1 Click on the **Upload** button on the **Generate GFB/GFFT** dialog.

The **Upload GFB/GFFT** dialog appears:



Note: This dialog is initially filled with values specified for it in the **GFB/GFFT options** of your Data Mapping Tool preferences.

2 Supply valid values for all fields on the **Upload GFB/GFFT** dialog, as described in the following table. Values are required for all fields on the dialog.

Field Name	Description
GFB Name	The seven-character name of the generated GFB. If the name you select for the generated GFB already exists in the Replicator system file, you will be prompted to change it before it is overwritten. **Note:** By default, this is the first seven characters of the GFB schema name used to generate the GFB/GFFT. You can override the name here as well as in the **GFB schema properties**.
Replicator Node	The network node where the Replicator system file can be found. This is the TCP/IP node or IP address where the Event Replicator Server nucleus resides.
Replicator Port	The port number where the Replicator system file can be found. This is the TCP/IP port number used by the Entire Net-Work TCP/IP Option on the mainframe.
Replicator DBID	The Event Replicator Server database ID. This is the database containing the Replicator system file to which you want to upload the generated GFB.
Replicator FNR	The Replicator system file number within the Event Replicator Server.

3 When values have been supplied for all fields on the **Upload GFB/GFFT** dialog, click on the **Upload** button to perform the upload. To cancel the upload, click on the **Cancel** button.

Use the **Save Config** button to save the Replicator upload parameters you have specified. This will override the parameters you have specified in the Data Mapping Tool preferences. For more information about setting GFB/GFFT preferences, read *Managing Your GFB/GFFT Upload Definition*, elsewhere in this guide.

If the **Save Config** button was selected, the parameters are saved as your new preferences and the **Upload GFB/GFFT** dialog remains open.

If the **Upload** button was selected, a progress dialog appears showing the progress of the upload. You can click on the **Cancel** button on the progress dialog to cancel the operation at any point. Canceling the operation will remove any partially stored GFB/GFFT and will restore any existing GFB/GFFT being overwritten.

When the upload is complete, the status bar of the main window will show confirmation of the upload, including statistics regarding the number of records uploaded and the duration of the upload.

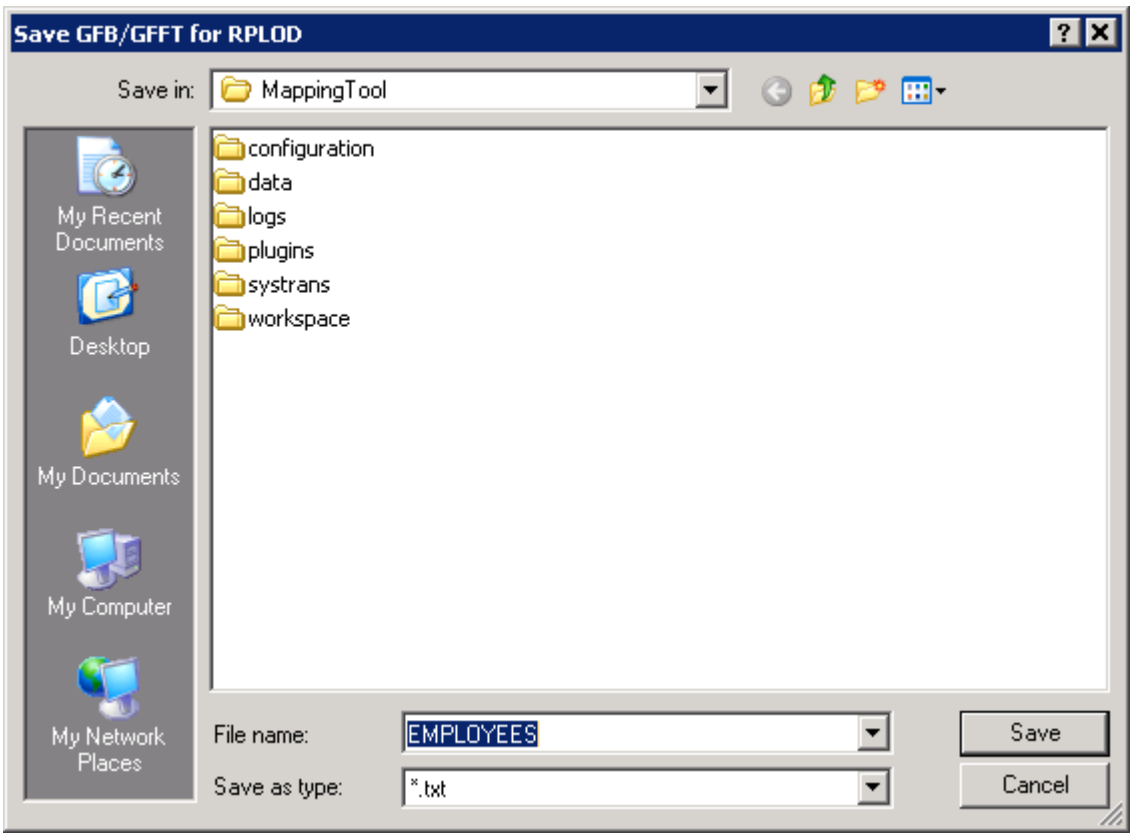
Saving a Generated GFB/GFFT for the RPLOD Utility

You can create a text file of the generated GFB/GFFT that can be used as input to the Event Replicator RPLOD utility. For more information about the utility, read .

To save the generated GFB/GFFT to a text file for the RPLOD utility, complete the following steps:

1 Click on the **Save for RPLOD** button on the **Generate GFB/GFFT** dialog.

A **Save GFB/GFFT for RPLOD** dialog appears, allowing you to specify the name of the GFB text file and its directory location.



2 Using this dialog, navigate to the correct directory, specify a file name and click **Save**. If you want to cancel the operation, click **Cancel**.

If the **Save** button was clicked, the GFB/GFFT text file is saved at the specified location.

3 Once the text file has been saved, you can move the file to the mainframe using traditional FTP or directly using products such as Software GmbH's Entire Connection. Once it is transferred to the mainframe, you can set up an RPLOD utility run using the statements in the text file.

6 Supported Relational Databases

The following relational databases (RDBMS) are supported by Event Replicator Target Adapter Data Mapping Tool:

RDBMS Support	Required JDBC Driver
DB2 9.1 for open systems, or later	*db2jcc4.jar*
DB2 Universal Database (UDB) version 9 for z/OS, or later	*db2jcc4.jar*, *db2jcc_license_cisuz.jar*
Microsoft SQL Server 2005 and later	*sqljdbc4.jar*
MySQL 5.0.17, or later	*mysql-connector-java-v.r.s-bin.jar*, where `v.r.s` represents the MySQL release number.
Oracle 10g or later	*ojdbc7.jar*
PostgreSQL 9.2 or later	*postgresql-v.r-1002.jdbc4.jar*, where `v` and `r` represent the first two parts of the PostgreSQL version number. `v.r.s`
Teradata Version 2 Release 1.2 for open systems, or later	*tdgssconfig.jar*, *terajdbc4.jar*

* The versions represented here are the minimum required target RDBMS and driver versions tested with Event Replicator Target Adapter. In general, when a vendor drops support for a particular product or version, our support will also be dropped. You should use the latest appropriate driver from your vendor for the target you are replicating to.

7 Advanced Options

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- Renaming MU/PE Index Fields 72
- Suppressing PE Table Pseudo Compound/Composite Primary Key Columns 73
- Renaming Base Table ISN 73
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This chapter covers the following topics:

Renaming Subtables

The Event Replicator Target Adapter Data Mapping Tool already allowed users to rename the base schema main table and subtables. There was a restriction regarding what new subtable names are allowed.

This restriction no longer applies and users can freely rename subtables to any string value. The new name does not require any schema prefix. This feature is particularly useful when mapping Adabas data to relational targets where tables already exist, and where those tables may not conform to how the Event Replicator Target Adapter creates tables.

Example

Schema and base table name are "EMPLOYEES". All PE/MU subtables can have any string value:

- "FOOMU" for MU field ADDRESS-LINE
- "FOOPE" for PE group INCOME
- "FOOMUPE" for MU BONUS in PE INCOME

Renaming MU/PE Index Fields

In earlier versions, the Event Replicator Target Adapter Data Mapping Tool did not allow users to rename any MU or PE or MU in PE index columns.

This restriction no longer applies and users can freely rename MU/PE index field names to any string value. The new name can be completely unrelated to the schema prefix or table name. Examples:

- "FOOMUIX" for MU ADDRESS-LINE line index field
- "FOOPEIX" for PE group INCOME
- "FOOMUPEIX" for MU BONUS in PE INCOME

Suppressing PE Table Pseudo Compound/Composite Primary Key Columns

The Event Replicator Target Adapter Data Mapping Tool is meant to provide visualizations for the processing done by the Event Replicator Target Adapter. It shows a mapping of mainframe Adabas files and fields to target RDBMS tables and columns. With MU/PE fields, this is especially important because mainframe fields with multiple values per record will by default map to multiple tables and rows on a target RDBMS.

When the Event Replicator Target Adapter processes PE groups, by default it will create a separate subtable for all fields in the PE group. It will also create an additional pseudo compound/composite primary key column in the target table containing a combination of the ISN from the base table and the index/occurrence value for the PE group. An example of this for EMPLOYEES PE group LEAVE-BOOKED would be column "ISN_LEAVE-BOOKED_INDEX". The Event Replicator Target Adapter Data Mapping Tool will show this primary key column in the GFB schema so users understand and can see what will happen in the target RDBMS.

In earlier versions of Event Replicator Target Adapter Data Mapping Tool, users could not change this processing in Event Replicator Target Adapter. So when doing a right click context menu on this primary key column, the only context menu action available was **Properties**. This restriction no longer applies. Users will see a new context menu item **Remove Primary Key**. This action allows users to suppress the creation of this pseudo compound/composite primary key column. This action is always available for PE groups that do not contain any MU fields. If the PE group contains any MU fields, this action will only be enabled after the user performs the Split Foreign Key Index action on all the MU fields in the PE group.

Renaming Base Table ISN

By default Event Replicator Target Adapter creates an additional ISN column in the base table and makes it the primary key. This ISN column then becomes a foreign key in all the MU/PE subtables, in order to connect the subtable rows to the associated base table row.

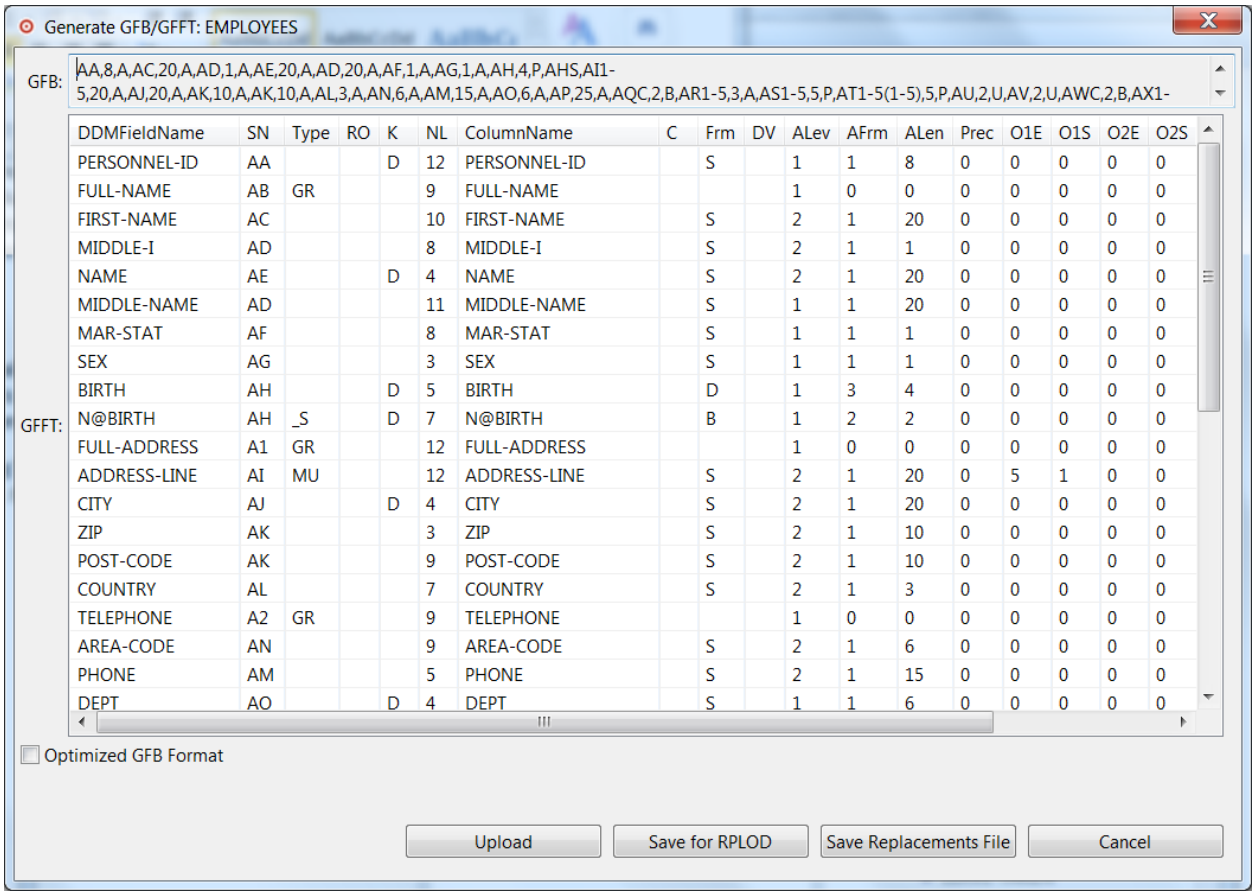
In earlier versions of Event Replicator Target Adapter Data Mapping Tool, users could not change the name of this ISN column. Users could choose to use a different column for the primary key, or even multiple columns to form a compound/composite primary key. But when users chose to keep the ISN column as the primary key, they could not change the ISN column name.

This restriction no longer applies. Users can now change the name of this ISN column in the base table. When doing a right click context menu on this ISN column in the base table, users will now see a **Rename** action. The new name can be any string value. When this action completes, the new column name will ripple through all the MU/PE subtables, changing the ISN foreign key column name to match the new base table ISN primary key column name.

Saving the Replacements File

The mechanism used to communicate all of these advanced options to Event Replicator Target Adapter is via a special text file containing various directives. By default this file is named *replacements.txt*.

The Event Replicator Target Adapter Data Mapping Tool will determine whether any advanced options have been used that require the use of a replacements file. If a replacement file is needed, an extra button named **Save Replacements File** will appear on the **Generate GFB/GFFT** dialog. An example using EMPLOYEES is shown below.



DDMFieldName	SN	Type	RO	K	NL	ColumnName	C	Frm	DV	ALev	AFrm	ALen	Prec	O1E	O1S	O2E	O2S
PERSONNEL-ID	AA			D	12	PERSONNEL-ID		S		1	1	8	0	0	0	0	0
FULL-NAME	AB	GR			9	FULL-NAME				1	0	0	0	0	0	0	0
FIRST-NAME	AC				10	FIRST-NAME		S		2	1	20	0	0	0	0	0
MIDDLE-I	AD				8	MIDDLE-I		S		2	1	1	0	0	0	0	0
NAME	AE			D	4	NAME		S		2	1	20	0	0	0	0	0
MIDDLE-NAME	AD				11	MIDDLE-NAME		S		1	1	20	0	0	0	0	0
MAR-STAT	AF				8	MAR-STAT		S		1	1	1	0	0	0	0	0
SEX	AG				3	SEX		S		1	1	1	0	0	0	0	0
BIRTH	AH			D	5	BIRTH		D		1	3	4	0	0	0	0	0
N@BIRTH	AH	_S		D	7	N@BIRTH		B		1	2	2	0	0	0	0	0
FULL-ADDRESS	A1	GR			12	FULL-ADDRESS				1	0	0	0	0	0	0	0
ADDRESS-LINE	AI	MU			12	ADDRESS-LINE		S		2	1	20	0	5	1	0	0
CITY	AJ			D	4	CITY		S		2	1	20	0	0	0	0	0
ZIP	AK				3	ZIP		S		2	1	10	0	0	0	0	0
POST-CODE	AK				9	POST-CODE		S		2	1	10	0	0	0	0	0
COUNTRY	AL				7	COUNTRY		S		2	1	3	0	0	0	0	0
TELEPHONE	A2	GR			9	TELEPHONE				1	0	0	0	0	0	0	0
AREA-CODE	AN				9	AREA-CODE		S		2	1	6	0	0	0	0	0
PHONE	AM				5	PHONE		S		2	1	15	0	0	0	0	0
DEPT	AO			D	4	DEPT		S		1	1	6	0	0	0	0	0

Clicking on the **Save Replacements File** button opens a file save dialog appropriate for the operating system. The default file name will be *replacements.txt*.

The Event Replicator Target Adapter will by default look for the existence of a file of this name at *<install_root>\EventReplicatorTargetAdapter\art\data* on Windows and *<install_root>/EventReplicatorTargetAdapter/art/TargetAdapter* on UNIX/Linux. If the file exists, it will be used in processing replicated data.

We recommend keeping and saving your generated file as *replacements.txt* at this default location. However if the user prefers saving the file as a different name or to a different location, the environment variable `ART_REPLACEMENTS_FILE` for the Event Replicator Target Adapter environment must be set. A convenient place to set this environment variable is in the Event Replicator Target Adapter installation script *installArtPath.bat* or *installArtPath.sh* respectively, by adding a setting to the environment variable, e.g. for Windows:

```
set ART_REPLACEMENTS_FILE=<full path to file>
```

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