



Infor LN Exchange User Guide

Release 10.7.x

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Contents

About this guide.....	7
Contacting Infor.....	7
Chapter 1: Introduction.....	8
Exchange compared to Database Management.....	8
Designing a data exchange.....	9
Activating the data exchange.....	9
Exchange modules.....	10
Chapter 2: Master data.....	11
Data exchange based on audit.....	11
Setting up a data exchange.....	12
Master Data sessions.....	12
Exchange Schemes (daxch0501m000).....	13
ASCII Files (daxch0102m000).....	13
ASCII File Fields (daxch0503m000).....	14
Batches (daxch0104m000).....	14
Conditions (daxch0114m000).....	15
Parameters by Condition (daxch0113m000).....	16
Advanced file handling using common directories.....	16
Advanced file handling for regular exports.....	16
Advanced file handling for regular imports.....	17
Chapter 3: Export module.....	18
Setting up an export process.....	18
Export module sessions.....	19
Table Relations (Export) (daxch0531m000).....	19
Field Relations (Export) (daxch0532m000).....	20
Ranges (daxch0112m000).....	20

Create Export Programs (daxch0228m000).....	21
Export Data (on a Regular Basis) (daxch0234m000).....	22
Export Data (Non-Regular) (daxch0233m000).....	22
Checking the results.....	23
Chapter 4: Import module.....	24
Regular and non-regular data exchange.....	24
Using the Data Access Layer (DAL).....	25
Setting up an import process.....	26
Import module sessions.....	27
Table Relations (Import) (daxch0521m000).....	27
Field Relations (import) (daxch0522m000).....	27
Conversion Tables (daxch0105m000).....	28
Conversions per Field (daxch0106m000).....	29
Create Import Program (daxch0227m000).....	29
Import Data (on a Regular Basis) (daxch0224m000).....	30
Import Data (Non-Regular) (daxch0223m000).....	32
Start and end date and time.....	33
During the data exchange.....	34
Chapter 5: Multisite control.....	35
Audit trail.....	35
About multisite exchange in LN.....	35
Export process.....	36
Export Done message.....	36
File transport specifications.....	37
Import process.....	37
Import Done message.....	38
Setting up a multisite exchange.....	38
Prerequisites.....	38
Setting up a multisite exchange.....	39
Multisite Control sessions.....	40
Environments (daxch4100m000).....	40
Exchange Links (daxch4501m000).....	41
Activate/Deactivate Exchange Links (daxch4201m000).....	42
Resend Rejected Messages (daxch4203m000).....	43

Subscriptions (daxch4502m000).....	46
Receive Remote Procedure Calls (daxch4200m000).....	47
Chapter 6: Miscellaneous.....	48
Logging sessions.....	48
Print Log File (daxch0215m000).....	49
Remove Log Files (daxch0216m000).....	50
Log Table (Batch Level) (daxch0508m000).....	50
Log Table (Batch Line Level) (daxch0509m000).....	52
Clear Log Table (daxch0208m000).....	53
Tools sessions.....	54
Copy Exchange Scheme (daxch0201m000).....	54
Delete Exchange Scheme (daxch0222m000).....	56
Rename ASCII File (daxch1202m000).....	57
Create ASCII File Fields and Relations (daxch0203m000).....	57
Create Definition Files (daxch0204m000).....	58
Print ASCII File (daxch0202m000).....	60
Remove ASCII Files (daxch2202m000).....	60
Check Syntax of Conditions (daxch0206m000).....	61
Predefined Functions/Variables (daxch0510s000).....	62
Print Exception Report for Table Fields (daxch0423m000).....	63
Generate Audit Configuration (daxch1201m000).....	64
Export/import sessions.....	65
Export Exchange Schemes (daxch5201m000).....	65
Import Exchange Schemes (daxch5202m000).....	66
Export Exchange Schemes for Delivery (daxch5203m000).....	66
Import Delivered Exchange Schemes (daxch5204m000).....	68
Chapter 7: Generating an exchange scheme.....	70
Creating an exchange scheme.....	70
Regenerating parts of an exchange scheme.....	71
Chapter 8: Using audit trail in the Exchange module.....	72
Prerequisites.....	72
Export.....	72
Import.....	73
Limitations of the Exchange (XCH) module based on audit.....	73

Introduction.....73

Restrictions on exchange models.....74

Export.....74

Import.....74

Chapter 9: Exchange scheme delivery.....76

Installation.....76

Creating export/import programs.....76

About this guide

This document is a User's Guide that is intended to assist developers who want to transfer data in and out of Infor LN applications.

This document assumes that users have a thorough knowledge of the data model structure of the LN system and of the LN application. Users must also be familiar with the basic programming concepts of 3GL programming, ASCII files, and applications such as Microsoft Excel.

This document fully describes the Exchange module in LN and how to use the functionality that this module offers. Each module in Exchange is described in this document. A description of the module, followed by sections that describe the sessions in each module is provided. Each session description contains:

- An overview of the session
- The procedure for using the session

You can refer to the session online help for an explanation of the fields in the session and the use of each of the parameters.

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Chapter 1: Introduction

You can use the Exchange (XCH) module to import and export data to and from LN.

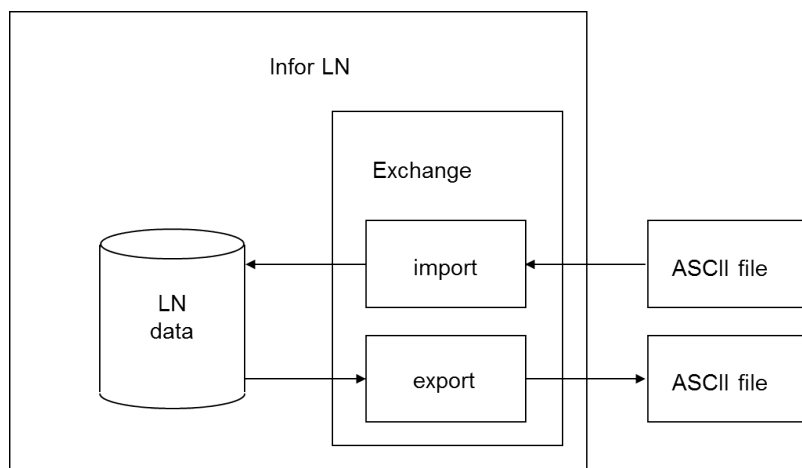
Data is imported and exported by writing to and reading from information contained in ASCII files, which can be in various formats to support exchange of data between third-party applications, databases, and spreadsheets.

The exchange module has these primary purposes:

- To import data for conversions from other systems and from prior releases of LN
- To exchange data with other applications
- To interchange data between LN companies to support multisite organizations

Exchange is not recommended. However, if you are only transferring small numbers of records, or transferring entire tables on which you do not need to perform any data manipulation.

This diagram shows the Exchange module in LN:



Exchange compared to Database Management

The Database Management module of LN Tools also enables you to create ASCII files from LN data and to load data from an ASCII file into LN. You can use these tools for basic data exchanges that do not require any special handling. These tools are contained in the **Create Sequential Dump of Table**

(ttaad4226m000) and **Create Table from Sequential Dump (ttaad4227m000)** sessions. You can also activate these tools from the UNIX prompt (bdbpre6.2 and bdbpost6.2).

If you use both tools one after the other, then you can transfer data from one LN company to another.

The main difference between the Database Management and Exchange modules is that the Exchange module provides more flexibility. You can specify which data must be read or written and in which format. In the Database Management module, you must import or export entire tables. The advantages of using the Exchange module in stead of the database tools include the ability to:

- Specify the exact data to be exchanged by table and field.
- Convert and calculate data during an exchange.
- Export based on an audit only the data that has changed since the last exchange.
- Specify the order in which fields are imported.
- Read data from other tables.

Designing a data exchange

The way that you design your exchange scheme depends on how often you want to run the process and which data you want to have at each site.

If your data changes often and must be kept up-to-date, you must schedule frequent updates so that you have a near real-time environment. On the other hand, you might want to schedule less frequent updates if keeping communication costs down is important to you.

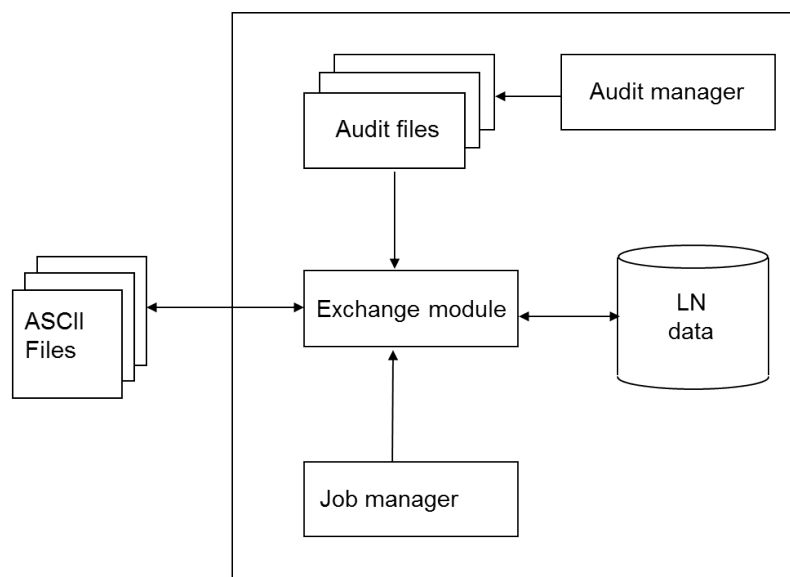
If your data only needs to be updated in the event of predictable changes, you can schedule the exchange accordingly. For example, if the stock data only changes when an inventory control is done at the end of the month, you only need to run an exchange after the inventory control is performed.

For less frequent changes, or if the changes are not predictable, you can also perform the exchange on demand instead of on a fixed schedule.

Not all sites require updates of all data, and you can minimize your communication costs by exactly specifying the data to be exchanged. For example, all bank sites must have up-to-date currency exchange rates, but not all sites must have all the customer data for the entire bank.

Activating the data exchange

After the exchange information is set up, you can manually activate the actual import or export process or the job manager can update this information. You can also create an export file based on audit information. This diagram shows the relation between the Exchange module, the job manager, and the audit manager:



Exchange modules

Exchange contains these modules:

- Master Data module
- Import module
- Export module
- Multisite Control module
- Miscellaneous

You can enter the general characteristics of the exchange process in the Master Data module. This information contains parameters and directories. The Master Data module also defines the layout of the ASCII file.

In the Import module and the Export module, you specify the structure of the ASCII files and the relationship to the LN tables. These modules contain the actual import and export processes, as well.

Use the Multisite Control module to set up a batch-driven replication server. This enables you to transfer data from one system to another in one process.

The Miscellaneous module provides particular utilities and informative sessions, such as utilities to copy or delete particular master data. You can use the Miscellaneous module to query the results and status of previous export and import processes.

Chapter 2: Master data

You can use the Exchange module to import and export data to and from LN and to import and export data between LN and other applications.

The procedure consists of setting up the exchange scheme and file layout for the exchange, and then performing the actual import and/or export of data to and from ASCII files.

An exchange scheme defines the general parameters used during an import or export such as the location of files, use of an audit trail, and other default settings. The exchange scheme contains all definitions of data that must be imported or exported. The ASCII files, conditions, batches, table and field relations, ranges, and conversions are grouped together in an exchange scheme.

The result of an import process is the data imported into LN tables, and the result of an export process is the LN data exported to ASCII files. You can then use these ASCII files in various applications to import data that originated in LN.

Data exchange based on audit

An exchange scheme can be based on audit trail. In an export, this means that only changes in the table are exported, as opposed to the entire table. The export provides information on insertions, updates, and deletions. If import is based on an audit, the insertions, updates, and deletions are processed in the importing company.

To export based on an audit, the audit must be turned on for the table. To generate the audit settings for the tables in an exchange scheme, you can run the **Generate Audit Configuration (daxch1201m000)** session.

For more information, refer to Using audit trail in the Exchange module.

Multisite data exchanges are always based on audit trail.

For details, refer to Multisite control.

Setting up a data exchange

Both the export and import procedures begin by setting up an exchange scheme. After the exchange scheme is ready, you set up table relations, field relations, and export or import data parameters.

To set up an exchange scheme:

- 1 Define an exchange scheme.
- 2 Define an ASCII file.
- 3 Define the fields for the ASCII file.
- 4 Create a batch.
- 5 Add conditions, if required.

To export or import LN data, to begin, you can set up an exchange scheme using the **Exchange Schemes (daxch0501m000)** session in the Master Data module.

Because other applications store data in different formats, LN cannot always directly exchange data with these other applications. The best way to perform a data exchange is to convert data into ASCII text, which is readable both by LN and other applications. The Exchange module handles the conversion of data between LN and ASCII, the selection of the data, and the sequencing of the data in the ASCII file.

After you create an exchange scheme, you must define the ASCII file to which your exchange scheme will export or import data. To define this ASCII file, you can use the **ASCII Files (daxch0102m000)** session.

The ASCII file consists of fields. To define the fields contained in the ASCII file, you can use the **ASCII File Fields (daxch0503m000)** session.

After you define the ASCII file fields, run the **Batches (daxch0104m000)** session to define the batch for the export or import. Each exchange scheme can contain more than one batch. A batch is a group of related table operations. After you define the batches, you can run the export or import by batch, instead of running the entire exchange scheme at once.

If required, you can write scripts to further customize the exchange, and add these scripts to your exchange scheme as conditions.

Master Data sessions

The Master Data module includes these sessions:

- **Exchange schemes (daxch0501m000)**
- **ASCII files (daxch0102m000)**
- **ASCII file fields (daxch0503m000)**
- **Batches (daxch0104m000)**
- **Conditions (daxch0114m000)**
- **Parameters by Condition (daxch0113m000)**

Exchange Schemes (daxch0501m000)

Use the **Exchange Schemes (daxch0501m000)** session to view and maintain exchange schemes. An exchange scheme is the basis for every import and export. All import procedures and export procedures are related to an exchange scheme, which is identified by a unique exchange-scheme code.

To set up an exchange scheme:

- 1 Select **New** from the **File** menu to start the **Exchange Schemes (daxch0101s000)** details session.
- 2 Specify the name and description of the exchange scheme you are creating.
- 3 Specify the full path of the directories where Exchange files are to be stored.
- 4 Set up the ASCII file configuration to indicate whether the exchange is to be based on audit, based on indicators, and how the fields in the ASCII file are separated.
If this exchange scheme is copied from an existing exchange scheme, complete the next step.
- 5 Specify the parent exchange scheme on the **Special** tab.
To use the same directory for import and export on a regular basis, complete the next steps.
- 6 Specify the names of the subdirectories that must override the default subdirectory.
- 7 Specify the settings for text, multibyte, float, and log.
- 8 To add more information, click **Edit Text** on the toolbar to start the text editor.

ASCII Files (daxch0102m000)

Run the **ASCII Files (daxch0102m000)** session to maintain logical ASCII files in an exchange scheme. You can maintain these files automatically or manually.

If you use the name of an LN table for the ASCII file name, LN can automatically enter the fields for that table when you use the **ASCII File Fields (daxch0503m000)** session.

The **Specific** menu includes these options:

- **ASCII File Fields (Ctrl+Shift+1):**
Starts the **ASCII File Fields (daxch0503m000)** session.
- **Create ASCII Files (Ctrl+Shift+G):**
Starts the **Create ASCII File Fields and Relations (daxch0203m000)** session. Use this option to create ASCII files automatically.

To create an ASCII file manually:

- 1 Define a unique logical ASCII file name with a description.
- 2 In the **Definition File** field, define a definition file from which used to copy the ASCII file fields.
- 3 To add more information, click the **Edit Text** button on the toolbar to start the text editor.

ASCII File Fields (daxch0503m000)

After you define the ASCII file, you must define the ASCII file fields. Run the **ASCII File Fields (daxch0503m000)** session to show the available ASCII file fields in a logical ASCII file.

The ASCII file fields define the layout of the ASCII file and are identified by a unique number and name.

The **Specific** menu contains these options:

- **Create ASCII File** (Ctrl+Shift+G):
Starts the **Create ASCII File Fields and Relations (daxch0203m000)** session. For most exports and imports, you can choose this option to enable LN to generate the ASCII file fields. You might, however, be required to modify the file formats manually if you convert data or upgrade to a new release.
- **Recalculate Start Positions**:
Changes all the start positions in an ASCII file with variable-length fields.

To define the ASCII file fields:

- 1 Select **New** on the **File** menu to start the **ASCII File Fields (daxch0103s000)** details session.
- 2 Specify a new field number, and give this field number a logical sequence number.
- 3 Specify the name and description of the ASCII file field you are creating.
- 4 Select the field type. If you select **Numeric**, then specify also the numeric formatting.
- 5 Specify the start position and length of the fields in **Field Dimensions**.
- 6 Specify additional details of the *ASCII file* field in **Numeric Format**.
- 7 Click **Edit Text** on the toolbar to start the text editor to add more information.

Batches (daxch0104m000)

Use the **Batches (daxch0104m000)** session to create the available batches for an exchange scheme. A batch is used to group operations on related tables and is identified by a unique code. An exchange scheme can contain one or more batches. The exchange process can run by batch, so the entire exchange scheme does not have to run at once.

The *appropriate* menu contains these options:

- **Table Relations (Import)** (Ctrl+Shift+1):
Starts the **Table Relations (Import) (daxch0521m000)** session.
- **Table Relations (Export)** (Ctrl+Shift+2):
Starts the **Table Relations (Export) (daxch0531m000)** session.
- **(De)activate Table Relations** (Ctrl+Shift+g):
Starts the **(De)activate Table Relations (Import) (daxch1221m000)** session.

To create a batch:

- 1 Define a unique code, sequence number, and description for the batch.

- 2 Specify the company number that contains the data to be exported during an *export procedure*. Or specify the company number to which the data must be written during an import procedure.
- 3 If the exchange process is based on audit logs, then select the **Exchange Based on Auditcheck** box.
- 4 Click **Edit Text** on the toolbar to start the text editor to add more information.

Conditions (daxch0114m000)

Use the **Conditions (daxch0114m000)** session to list the available conditions for an exchange scheme. Conditions are used to affect the import or export of data.

Conditions are used in the generated scripts to guard an action to supply a value for a table field during an import. For example the action to **Add Record** or **Stop Condition**. Or to supply a value for an ASCII field during an export.

To write conditions in LN 3GL code, you must use the LN text editor. You only must write the body of the function because the script generators add the function header and enclosing braces automatically. To learn more about the LN 3GL code, see the *Programmers Manual*.

If you use a condition as a guard action, then the return value is expected to be a Boolean true or false. This type of condition is used at the table-relation level to control actions in regard to the entire record. It is used at the field level to control the concept of overwrite. Five such conditions are available, all of which control aspects of the import process. Four of these conditions are included in the **Table Relations (Import) (daxch0521m000)** session and the fifth is included in the **Field Relations (Import) (daxch0522m000)** session.

The **Specific** menu contains these options:

- **Check Syntax of Conditions** (Ctrl+Shift+G):
Performs a syntax check. If the condition script is written and the check is successfully completed, then **Script** and **Syntax OK** check boxes are automatically selected.
- **Parameters by Condition** (Ctrl+F1):
Starts the Parameters by Condition (daxch0113m000) session.

Predefined functions and variables are available in the **Predefined Functions/Variables (daxch0510s000)** session.

Conditions are used in the table and field relations:

- Set the conditions at table level with the **Table Relations (Import) (daxch0521m000)** session and the **Table Relations (Export) (daxch0531m000)** session.
 - Set the conditions on field level with the **Field Relations (Import) (daxch0522m000)** session and the **Field Relations (Export) (daxch0532m000)** session.
- 1 Define a unique condition code, description, and condition type.
 - 2 Define the corresponding domain for conditions with the Enumerate and Set condition type.
 - 3 Click **Edit Text** on the toolbar to write the condition script.
 - 4 On the *appropriate* menu, click **Check Syntax of Conditions...** to perform a check.

Parameters by Condition (daxch0113m000)

Run the **Parameters by Condition (daxch0113m000)** session to show the parameters used in a condition script of an exchange scheme.

The **ASCII File** fields of a record to be imported or exported are not automatically defined in a condition script. To use the value of an **ASCII File** field, you must use that field as a parameter in the condition script. The parameter name must be the same as the **ASCII File** field name in the record to which parameter name refers. The data type of the parameter must also be the same as that of the ASCII file field.

To create a parameter:

- 1 Define a unique parameter name.
- 2 Select a parameter type.

Advanced file handling using common directories

Advanced file handling for regular exports

In the **Exchange Schemes (daxch0501m000)** details session, in the **ASCII Files** field, you define the directory to store the files of your exchange scheme's regular exports. LN stores the files of each run of the regular export in a separate subdirectory identified by the run number.

To exchange data between various exchange schemes in LN, or an external application, the other LN exchange scheme or the external application cannot access the subdirectories in which the files of the regular export runs are stored.

In LN, to enable other LN exchange schemes, and external applications to access the files of a regular export, you had to do one of the following:

- Program a session or a script to copy the files to a common directory. Other LN exchange schemes, and external applications could then access (import) the files from the common directory.
- Define in the **Regular Import Directory** field in the **Exchange Schemes (daxch0501m000)** session a common directory to copy the export files, which resulted in the previous regular import's files being overwritten.

In Infor Baan 5.2a and later, in the **Exchange Schemes (daxch0501m000)** details session, in the **Copy Files After Regular Export to** field, you can specify a common directory to which LN copies the files of an exchange scheme's regular export runs. Other LN exchange schemes and external applications can then access (import) the files from the common directory. This enables you to import data from a directory used for data from an external application.

Advanced file handling for regular imports

In the **Exchange Schemes (daxch0501m000)** details session, in the **ASCII Files** field, you specify a directory for LN to store the files of your exchange scheme's regular imports. LN stores the imported files of each regular import in a subdirectory identified by the regular import's run number.

In Infor Baan 5.0c, if you wanted to import the files of another exchange scheme's regular exports into your exchange scheme's regular import directory, you had to do either of the following:

- Write a script for your importing exchange scheme to access the subdirectory that contains the export files of the exporting exchange scheme's regular export.
- Define in the **Exchange Schemes (daxch0501m000)** session's **Regular Export Directory** field, a common directory to copy the files to, which resulted in overwriting the files of the previous regular export's run.

In Infor Baan 5.2a and later, in the **Exchange Schemes (daxch0501m000)** details session, in the **Copy Files before Regular Import from** field, you can specify the common directory from which you want to import your data from.

To import the regular export data of another LN exchange scheme, in the Copy Files before Regular Import From field, you specify the export exchange scheme's common directory for regular exports. You define the common export directory for an exchange scheme in the **Copy Files After Regular Export to** field, as described in the previous section, of the **Exchange Schemes (daxch0501m000)** session. Your exchange scheme's regular export data for each run is still stored in the separate subdirectory you specify in the **ASCII Files** field.

Chapter 3: Export module

Often you must export data from LN to another application, for example, in these situations:

- Data must be displayed in a specific way, such as in a spreadsheet.
- Text is to be maintained through a word processor.
- The data and procedures in a company are handled partly by LN.

The result of the export process is an ASCII file, which other applications, including other LN environments, can read.

To exchange data between two LN companies, you export the LN data to ASCII files, and then import the data into the LN database. Exchange can use the same master data information for import that it uses for export, because the ASCII file format is the same.

Setting up an export process

To export data, you start by setting up an exchange scheme as described in Master data. Next, you go on to define the details of the tables to be exported.

To begin, you must create the relationship at the table level between the LN tables and the ASCII files by using the **Table Relations (Export) (daxch0531m000)** session in the Export module. You then create the relationship at the field level by setting up the relations between logical ASCII file fields and LN table fields. To set up these relations, you must run the **Field Relations (Export) (daxch0532m000)** session.

To control which records are exported, you can use operators to create range limitation expressions. To do this, you must run the **Ranges (daxch0112m000)** session.

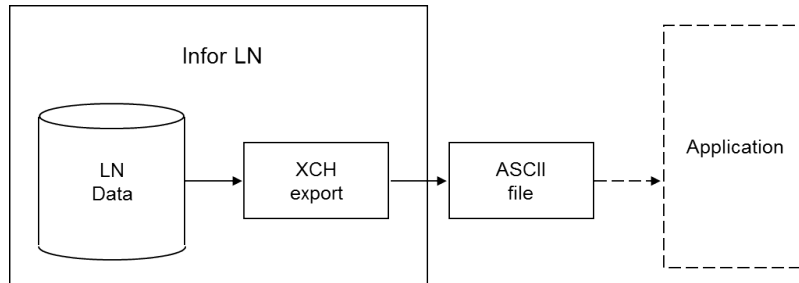
After you define the table relations, field relations, and conversions, you must compile an object that Exchange can use to run the export. To compile these objects, you can run the **Create Export Programs (daxch0228m000)** session.

You then test your export by running the **Export Data (Non-Regular) (daxch0233m000)** session. When you are satisfied that everything is working, you can set up exports to run as often as your business requires by running the **Export Data (on a Regular Basis) (daxch0234m000)** session.

The Export module includes the following sessions:

- **Table Relations (Export) (daxch0531m000)**
- **Field Relations (Export) (daxch0532m000)**

- **Ranges (daxch0112m000)**
- **Create Export Programs (daxch0228m000)**
- **Export Data (on a Regular Basis) (daxch0234m000)**
- **Export Data (Non-Regular) (daxch0233m000)**



Export module sessions

Table Relations (Export) (daxch0531m000)

Start the **Table Relations (Export) (daxch0531m000)** session. Check that the exchange scheme and batch are correct.

After you finish with the **Table Relations (Export)** session, you can zoom from the **Choice** field to the next step in creating an exchange scheme, the field relations.

The **Specific** menu contains these options:

- **Field Relations (Export) (Ctrl+Shift+1):**
Starts the **Field Relations (Export) (daxch0532m000)** session.
- **(De)activate Table Relations (Ctrl+Shift+G):**
Starts the **(De)activate Table Relations (daxch1221m000)** session.

To create a table relation:

- 1 On the **File** menu, click **New** to start the **Table Relations (Export) (daxch0131s000)** details session.
- 2 Specify a number in the logical sequence for the table relation.
- 3 Specify logical ASCII file code and LN table.
- 4 Specify the physical ASCII file name. Select the **Use bdbpre** check box to use the standard `bdbpre` program.
- 5 Specify the number of the index to use to export data from the ERP LN table. The ASCII file field is based on increment.

- 6 Select the **Range Active** check box if the table relation must use the range for the LN table, as specified in the **Field Relations (Import) (daxch0122s000)** session.
- 7 If necessary, select the Active check box to make the relation active and define an execute condition.

Field Relations (Export) (daxch0532m000)

After you define the table relations using the **Table Relations (Export) (daxch0531m000)** session, you must define the field relations.

Use the **Field Relations (Export) (daxch0532m000)** session to list the available relations between logical ASCII files fields and LN table fields by batch in an exchange scheme. Use the details session to specify which data must be passed to the physical ASCII files.

The **Specific** menu contains the **Create Default Field Relations** option.

(Ctrl+Shift+1): Creates the field relations automatically. Ensure that the code of the LN table is the same as the code of the ASCII file table. Use this option if the definition file of the LN table is not available.

To create a field relation:

- 1 On the **File** menu, click **New** to start the **Field Relations (Export) (daxch0132s000)** details session.
- 2 Specify a serial number and give this number a logical sequence number.
- 3 Specify the name of the ASCII field for which you are creating field relations.
- 4 Define the table field, condition script name, or constant, on which this field is based.
- 5 Specify the array element number if the ASCII field is based on a table field that is defined as an array in the data dictionary.
- 6 Click **Edit Text** on the toolbar to start the text editor to add more information.

Ranges (daxch0112m000)

Usually, even if the entire table is not required, all the data is exported and only the desired records are read in during import. This control is achieved by writing conditions that are used at the table relation (import) level.

LN provides also a tool to limit which records are exported to begin with. The **Ranges (daxch0112m000)** session enables you to use relational and logical operators to create range-limitation logic expressions that control the export process. Only active records that match the condition are exported, which enables you to transfer a smaller file between systems. The drawback is that the filter cannot be as complex, because the range limitation logic is not as powerful as conditions.

To start this session, select the **Range Active** check box in the **Table Relations (Export) (daxch0531m000)** session.

In the LN table field, these are the data type restrictions per data type:

- Date data type:

- The **Entered Date** field must be of the default date format.
- The plus (+) or minus (-) signs enable you to change the current date. For example, +2 adds two days to the current date.
- The number sign (#) can be used for the current date.
- String/multibyte data type:
The domain of the LN table field determines whether a field is justified to the left, right, or center, or is converted to uppercase or lowercase.
- Numeric data type:
Only numeric values can be entered.

For the operators in or not in, specify the value as follows:

- The set of values must be placed in parentheses.
- For string data type, each item in the set of values must be placed in double quotation marks ("").

Examples

For a numeric field, place the values in parentheses: (1,2,5,7).

For a string or multibyte string, add double quotes: ("a","b").

To create a range:

- 1 Specify a serial number in the logical sequence order.
- 2 Specify the rule that specifies the range of table fields to be checked.
- 3 Specify a relational or logical operator to create range-limitation logic expressions to control the export.
- 4 Specify the **From** and **To** values that apply to the table field.

Create Export Programs (daxch0228m000)

To use an exchange scheme, you must pull together all the data in the sessions you have specified. Place the data into one program script, and compile the program script into an executable object. The **Create Export Programs (daxch0228m000)** session performs all of these actions for export scripts.

Before you create the export programs, check the syntax of the condition scripts that are used in the table and field relations.

Syntax errors in the condition script cause compilation errors. You can check the syntax with the **Check Syntax of Conditions (daxch0206m000)** session.

To create an export program:

- 1 Select a range of exchange schemes and batches.
- 2 Select the check boxes in the **Compile Options** to specify how the import program must be created.
- 3 Click **Create** to start the creation of the export program.
- 4 Click **Export Data** to start the **Export Data (Non-Regular) (daxch0233m000)** session that runs the export program that is created in this session.

Export Data (on a Regular Basis) (daxch0234m000)

After you have set up and tested the exchange schemes by running the **Export Data (Non-Regular) (daxch0233m000)** session. You can set up a regular export to facilitate the recurring exchange of data. An export on a regular basis is especially useful in a multisite environment, in which no run must be lost or overwritten. The export can also run as part of a batch job.

Run the **Export Data (on a Regular Basis) (daxch0234m000)** session to run the export program to transfer data on a regular basis from LN tables to sequential ASCII files.

All of the input fields in the **Export Data (on a Regular Basis) (daxch0234m000)** session are also contained in the **Export Data (Non-Regular) (daxch0233m000)** session. In a regular export you cannot enter a range for batch and batch lines, which prevents you from running part of an exchange scheme. This ensures that one period of audit information is not missed for one batch line when the rest of the batch lines are complete.

If you use the regular export session, then pay extra attention to your directory management. If you use the **Export Data (on a Regular Basis) (daxch0234m000)** session to export data, then the ASCII file is placed in an additional directory. In the sequential file directory the various runs are kept separate. The name of this additional directory is `<exchange scheme name>.<run number>.e`.

The **Import Data (on a Regular Basis) (daxch0224m000)** session uses a similar directory naming convention to search for incoming data. The only difference is the last letter, which is an `i` for imports.

To create a regular export:

- 1 Select a range of exchange schemes.
- 2 Select the processing type.
- 3 Specify the start and end time of the audit range if the export is based on audit.
- 4 Select the **Override Batch Company** check box if the data is exported from a company other than the batch company.
- 5 Specify another company if the current company is overruled.
- 6 Define the details of the export procedure in the **Processing Details** group box.
- 7 Click **Export Data** to start the export procedure.
- 8 Click **Log Table** to view the contents of the log table. A log table provides an overview of the results of the export procedure.
- 9 The export can also run as part of a batch job. Click **Add to Job** to start the Job Manager.

Export Data (Non-Regular) (daxch0233m000)

Use the **Export Data (Non-Regular) (daxch0233m000)** session to run the export program to transfer data from LN tables to sequential ASCII files. This process is useful for one time only exports and to test exchange schemes that are run on a regular basis. This is to ensure the correct function of the export procedure.

All of the input fields in the **Export Data (on a Regular Basis) (daxch0234m000)** session are also contained in the **Export Data (Non-Regular) (daxch0233m000)** session. In a non-regular export you can specify a range for Batch and Batch Lines, which enables you to run part of an exchange scheme.

You cannot run a part of an exchange scheme in a regular export. This is because you can miss one period of audit information for one batch line when the rest of the batch lines are complete.

To run the export program:

- 1 Select a range of exchange schemes, batches, and batch sequence numbers.
- 2 Select the processing type.
- 3 Select the **Override Batch Company** check box if the data is exported from a company other than the current company. In this case, define that company in the next field.
- 4 Select the **Wait for <CR> with Messages** check box if the export program must stop after a message.
- 5 Specify the start and end time of the audit range if the export is based on audit.
- 6 Click **Export Data** to start the export procedure. The screen changes and a status window displays the progress of the export. For each batch line that completes, LN displays the exchange scheme, the batch, and the batch line. The numbers of records read, processed, rejected due to error, and rejected due to conditions also appear.
- 7 Click **Log Table** to view the contents of the log table. A log table shows an overview of the results of the export procedure.
- 8 The export can also run as part of a batch job. Click **Add to Job** to start the Job Manager.

Checking the results

After you create the ASCII file, you can use the **Print ASCII File (daxch0202m000)** session to print the contents of this file.

You can use the **Log Table (Batch Level) (daxch0508m000)** session to check whether the export process completed successfully. This session shows the number of records successfully processed and exported. This session also shows whether records were rejected due to an error, which happens if the write statement to the sequential file is unsuccessful.

Chapter 4: Import module

To exchange data between two LN companies, you export the LN data to ASCII files, and then import the data into the LN database.

Exchange can use the same master data information for import as for export, because the ASCII file format must be the same.

If you must modify data during an import, you can use a conversion. The Exchange module includes three options:

- Condition scripts
- Conversion tables
- Constant values

You can include a formula with the script to calculate new values based on the contents of the ASCII file or data from other LN tables.

Regular and non-regular data exchange

You can import and export data in LN on either a regular or a non-regular basis. A regular data exchange refers to a run that is scheduled on a regular basis. A non-regular data exchange is one that you run on demand, on an as-required basis. The results of both types are the same, but are used differently, depending on the situation and your business needs.

The sessions that you use for regular or non-regular data exchange are the following:

- **Import Data (on a Regular Basis) (daxch0224m000)**
- **Import Data (Non-Regular) (daxch0223m000)**
- **Export Data (on a Regular Basis) (daxch0234m000)**
- **Export Data (Non-Regular) (daxch0233m000)**

Non-regular data exchange is useful when critical data has changed that must be updated, or if not all of the data has changed and you want to update only the changed data. You can also use Non-regular data exchange if you want to test an exchange scheme before you approve the scheme for regular data exchange. For a non-regular data exchange, you can select a range of batches or a range of batch sequence numbers to import. The data exchange is restricted to these ranges.

You can use Regular data exchange if you want to maintain several sites whose data changes periodically. Regular data exchange is also useful in multisite situations in which it is critical that no

run is lost, overwritten, imported twice, or imported in the incorrect order. Only complete exchange schemes can be imported and exported in a regular run, which ensures that no part is missed.

Regular data exchange uses the run number. The run number is unique and consecutive for a combination of exchange scheme and exchange type and is based on the contents of the log table. Each redo is stored under a new run number, which is unique within a run number, exchange scheme, and exchange type combination.

Regular and non-regular data exchange differ in where they place the physical ASCII files. A non-regular data exchange places the data in the sequential file directory, named at the exchange scheme level, in a file named in the **Table Relations (daxch0531m000)** session.

A regular data exchange builds an extra directory for each run of an export to retain a history of all exported files.

Using the Data Access Layer (DAL)

During an Exchange import, you can use all the functionality programmed into the Data Access Layer (DAL). If you use the DAL, Exchange carries out all the constraint checks, integrity checks, and side effects, for example, updates on other tables, that are programmed into the DAL. Database integrity is guaranteed automatically.

Using the DAL reduces the costs of interface development. You can use the DAL to import standard interfaces developed by Infor for partner products, as well as for specific interfaces built by customers, for example, to integrate LN with legacy systems. You can use the DAL in both single site and multisite environments.

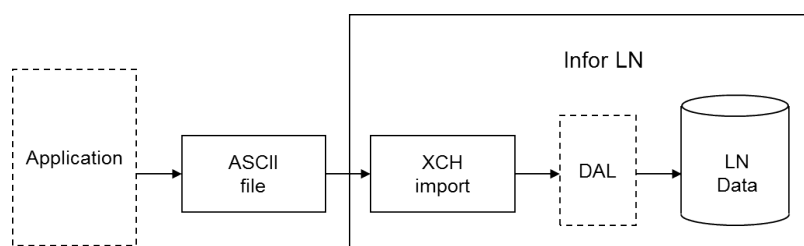
The checks or additional actions specified in the DAL are carried out for each row that is imported. Database errors are logged in the same way for DAL and non-DAL import. DAL hook errors are also logged. You can specify whether the DAL property checks are or are not carried out.

If you specify the use of the DAL for a table relation for an import, the `dal.new`, `dal.update`, and `dal.destroy` functions are used instead of `db.insert`, `db.update`, and `db.delete`. You can choose to use DAL for particular tables and not for other tables, therefore, an import batch can contain both types of table relations simultaneously. The import through DAL works for both the import based on audit or indicators (inserts, updates, deletes), and the full import (inserts only).

DAL settings are run time aspects, which means you can change these aspects without having to regenerate the import program. DAL settings are also logged in the log table at batch line level, to enable you to find out what the DAL settings were when the import was run.

Important to realize is that an update through the DAL can result in a number of side effects. Actions performed by the DAL must not be carried out twice. For example, if the DAL updates the available to promise (ATP) quantity for an item when importing order data, the ATP quantity must not be updated in a condition script as well.

For this reason, you must not add any actions in condition scripts, or import additional data, that are already handled in the DAL.



Setting up an import process

To import data, you start by setting up an exchange scheme, as described in Master data. Next, you go on by defining the details of the tables to be imported.

To begin, you must use the **Table Relations (Import) (daxch0521m000)** session to create the relationship at the table level between the LN tables and the ASCII files. You then create the relationship at the field level, by setting up the relations between logical ASCII file fields and LN table fields. To set up the relations, you can use the **Field Relations (Import) (daxch0522m000)** session.

Often, you must convert data from one system for use by another. In this case, you can use the **Conversion Tables (daxch0105m000)** and **Conversions per Field (daxch0106m000)** sessions to set up the conversions.

After you define the table relations, field relations, and conversions, you must run the **Create Import Programs (daxch0227m000)** session to compile an object that Exchange can use to run the import.

You then run the **Import Data (Non-Regular) (daxch0223m000)** session to test your import. When you are satisfied that everything is working, in the **Import Data (on a Regular Basis) (daxch0224m000)** session, you can set up imports to run as often as your business requires.

The Import module contains the following sessions:

- **Table Relations (Import) (daxch0521m000)**
- **Field relations (import) (daxch0522m000)**
- **Conversion Tables (daxch0105m000)**
- **Conversions per Field (daxch0106m000)**
- **Create Import Program (daxch0227m000)**
- **Import Data (on a Regular Basis) (daxch0224m000)**
- **Import Data (Non-Regular) (daxch0223m000)**

Import module sessions

Table Relations (Import) (daxch0521m000)

To create a relation between LN tables, logical ASCII files, and physical ASCII files by batch in an exchange scheme, run the **Table Relations (Import) (daxch0521m000)** session. In the table relation, you define the logical ASCII files to which the data from the LN table must be transferred. Assign a name to the physical ASCII file.

You can also run an external program or a LN session as part of an exchange scheme, instead of using the exchange import functionality for a table relation.

You can create the relations at field level in the **Field Relations (Import) (daxch0522m000)** session.

The **Specific** menu contains these options:

- **Field Relations** (Import) (Ctrl+Shift+1):
Starts the Field Relations (Import) (daxch0522m000) session.
- **(De)activate Table Relations** (Ctrl+Shift+G):
Starts the (De)activate Table Relations (daxch1221m000) session.

To create a table relation:

- 1 Specify the sequence number, LN table, logical ASCII file, and the physical ASCII file name.
- 2 Select the **Active** check box to make the relation active and define an execute condition.
- 3 Select in **Permitted Operations**, the action check boxes that are permitted for this table relation, and the appropriate conditions.
- 4 Select **Stop Condition** to activate the stop mechanism and define the appropriate stop condition.
- 5 Select **Import via Data Access Layer** to use the functionality programmed into the Data Access Layer (DAL).
- 6 Select **External Program** check box and specify the program name in the **Program Name** field to use an external program. To run an LN session, clear the **External Program** check box and specify a session or object code in the **Program Name** field.
- 7 Specify the number of the index if one of the ASCII file fields is based on increment.
- 8 Click **Edit Text** on the toolbar to start the text editor to add more information.

Field Relations (import) (daxch0522m000)

After you run the **Table Relations (Import) (daxch0521m000)** session to define the table relations, you define the field relations.

Run the **Field Relations (Import) (daxch0522m000)** session to set up the relations between logical ASCII file fields and LN table fields by batch in an exchange scheme. Use the details session to specify the data to be passed to the physical ASCII files.

After you import data using Exchange, for best results, enter a record in this session to represent all the fields in the table.

LN fills in the value in the **ASCII** field automatically, using the logic from the **Table Field**, **Condition**, and **Context** fields.

The **Specific** menu contains this option:

- **Create Default Import Field Relations** (Ctrl+Shift+G):
Creates the field relations automatically. Ensure that the code of the ASCII file is identical to the LN table code. Use this option if the definition file of the ASCII file is not available.

To create field relations:

- 1 On the **File** menu, click **New** to start the **Field Relations (Import) (daxch0122s000)** details session.
- 2 Specify a serial number, and give this number a logical sequence number.
- 3 Select the name of the field for which to create field relations. If the field is defined as an array in the data dictionary, then specify the array element number.
- 4 Define the field value, condition script name, constant and increment if this field uses these values.
- 5 Click **Text/Conditions** tab to define text parameters and to set update or overwrite permissions and the appropriate condition.
- 6 In Text Settings, you can specify the language of the text and additional parameters.
- 7 In Permitted Operations, you can specify the update and overwrite permissions and the appropriate conditions, if required.
- 8 Click **Edit Text** on the toolbar to start the text editor to add more information.

Conversion Tables (daxch0105m000)

Data from other systems does not always match the data on the local LN system. For example, the local LN system can refer to the English language with the code EN, where other systems use the code ENG, GB, or US. Before you use Exchange to load data into LN, you must synchronize the data on the two systems.

You can use the **Conversion Tables (daxch0105m000)** session to store the relationships between the old and new values of fields of data. Using these relationships when importing data, LN converts the old to new before writing the rows.

You can use the code you set up here in these sessions:

- **Field Relations (Import) (daxch0122s000)**
- **Field Relations (Export) (daxch0132s000)**
- **Conversions per Field (daxch0106m000)**

To set up conversion tables:

- 1 On the **File** menu, click **New** to create a conversion relation.
- 2 Specify the relation's name and description.
- 3 Double-click the existing conversion relation to change a conversion relation.

- 4 On the **File** menu, click **Print** to print the conversion relations.

Conversions per Field (daxch0106m000)

After you use the **Conversion Tables (daxch0105m000)** session to define a conversion code, you can use the **Conversions per Field (daxch0106m000)** session to assign the conversion code to an LN table and field.

The **Specific** menu contains this option:

Load Conversions per Field:

Conversions per Field (daxch0106m000) session, which you can use to convert data in LN table fields, according to a conversion table.

To create a conversion:

- 1 On the **File** menu, click **New** to create a new conversion for an LN table.
- 2 Specify the exchange scheme for which you want to create conversions.
- 3 Specify the names of the LN table, field, and conversion relation.
- 4 Double-click an existing conversion for a LN table field to change an existing conversion.

This table shows the fields in the **Conversions per Field (daxch0106m000)** session:

Field	Description
Table	Specify the name of the table whose contents are to be converted. This overrides the rule in the Field Relations (Import) (daxch0522m000) session.
Table Field	Specify the field whose contents are to be converted. This overrides the rule in the Field Relations (Import) (daxch0522m000) session.
Conversion	Specify the field to be used during data exchange.

Create Import Program (daxch0227m000)

To be able to use an exchange scheme, you must pull together all the data in the sessions you have just filled, put the data into one program script, and compile the program script into an executable object. The **Create Import Programs (daxch0227m000)** session does all of that for import scripts.

To print the actual data contained in the ASCII file to be imported, you can use the **Print ASCII File (daxch0202m000)** session. This enables you to ensure, for example, that separators are correct and to see whether any data must be converted.

To create an import program:

- 1 Specify the range of exchange schemes and batches for which you want to create import programs.
- 2 Specify the compile options.

This table shows the fields in the **Create Import Programs (daxch0227m000)** session:

Field	Description
Selection Range	
Exchange Scheme	Specify the exchange scheme to be compiled.
Batch	Specify the exchange scheme's batch number.
Compile Options	
Compile in Debug Mode	Select to go through a condition script step by step.
Compile with Profiler	Select to compile with the profiler. After the import runs, the Profiler generates a report that provides information about the performance time required for each function.
Display Errors	Select this check box to view a detailed list of errors that show the exact problem with each line of code.

Import Data (on a Regular Basis) (daxch0224m000)

Use the **Import Data (on a Regular Basis) (daxch0224m000)** session to run the import program to transfer data on a regular basis from sequential ASCII files to LN tables. The import can also run as part of a batch job.

To run the import program, take the following steps:

- 1 Select a range of exchange schemes.
- 2 Select the processing type.
- 3 Select the **Override Batch Company** check box if the data is imported from a company other than the batch company.
- 4 Specify another company if the current company is overruled.
- 5 Define the details of the import procedure in the **Processing Details** group box.
- 6 Click **Import Data** to start the import procedure.
- 7 Click **Log Table** to view the contents of the log table. A log table provides an overview of the results of the import procedure.

This table shows the fields in the **Import Data (on a Regular Basis) (daxch0224m000)** session:

Field	Description
Selection Range	
Exchange Scheme	Specify the name of the exchange scheme.
Processing Settings	

Field	Description
Processing Type	<p>Choose the type of run for this data exchange:</p> <ul style="list-style-type: none"> • New run. • Restart previous run: This option enables you to reuse the last run number to import data. You usually use this field in the Import Data (on a Regular Basis) (daxch0224m000) session, in which each run number provides different data sets. This session affects only the log files, because the data to be loaded into LN is the same for both the last run number used and the first free run number. • Reprocess rejected records: When records are rejected during an import process, LN creates two additional files to hold the rejected records. Records that are rejected due to index or domain errors (database problems) are placed in the Rejected due to Error file and records that are rejected due to a condition returning a false status are placed in the Rejected due to Condition file. LN places these files in the same directory as the data file that was read in and appends the suffixes .e01 or .c01 to them. If more records are rejected during reprocessing, LN creates new files with the next sequential number. When you choose this option, you can use the next two fields to choose which records to reprocess. • Continue interrupted run: If an exchange scheme run stops during the run, you can restart the import, but only if more than one batch line exists and if the restart can begin at the start of the batch line that was not completed. If only one batch line exists, this option is the same as a complete restart of the import.
Reprocess rejected due to errors	This check box is only available if you choose Reprocess Rejected Records from the Processing Type list.
Reprocess rejected due to Conditions	This check box is only available if you choose Reprocess Rejected Records from the Processing Type list.
Override Batch Company	Select this check box to override the value in the Company field in the Batches (daxch0104m000) session.
Company	Specify the company to be used during this session instead of the batch company. You can only specify a value in this field if the Override Batch Company check box is selected.
Processing Details	
Really Quit on Stop Condition	Select this check box to quit if the return value of a stop condition is true. Clear this check box if you want the import to continue to run and write a message to the log file. You define the stop condition in the Table Relations (Import) (daxch0121s000) session.
Wait for <CR> with Messages	Select this check box to specify that messages must remain on screen until you press enter. Clear this check box if you want the import program to continue without any interaction from you. You can use this option for an import that runs overnight.

Field	Description
Ignore Batches to Import	<p>Select this check box if you want the import to finish without checking for other import batches. You can use this option to test or run the import without using data that is awaiting import at the export site. This option is useful if you test an import in a multisite environment.</p> <p>If you clear this check box and an active exchange link exists for a batch, that batch will only run if data is awaiting import. For example, if no batch exists to import.</p> <p>This field is only relevant if you use multisite control, and the batch is used in one or more exchange links.</p>
Uncompress ASCII Files	<p>Select this check box if you want to restore compressed ASCII files to their original format before the import procedure.</p> <p>Only use this check box if the ASCII files that will be imported were compressed using the LN compression program.</p>

Import Data (Non-Regular) (daxch0223m000)

Use the **Import Data (Non-Regular) (daxch0223m000)** session to run the import program to transfer data on a non-regular basis from sequential ASCII files to LN tables. You can use this session to test exchange schemes that will be run on a regular basis, to make sure that the import procedure functions properly.

You can define the details of an exchange scheme in the master data and import Business Objects.

To run the import program:

- 1 Select a range of exchange schemes, batches, and/or batch sequence numbers.
- 2 Select the processing type.
- 3 Specify the start and end time of the audit range if the import is based on audit.
- 4 Select the **Override Batch Company** check box if the data is imported from a company other than the current company.
- 5 Specify another company if the current company is overruled.
- 6 Select the **Wait for <CR> with Messages** check box if the import program must stop after a message.
- 7 Click **Import Data** to start the import procedure.
- 8 Click **Log Table** to view the contents of the log table. A log table provides an overview of the results of the import procedure.

This table shows the fields in the **Import Data (Non-Regular) (daxch0223m000)** session:

Field	Description
Selection Range	
Exchange Scheme	Specify the exchange scheme.
Batch	Specify the batch in the exchange scheme.

Field	Description
Batch Sequence Number	Specify the batch sequence number.
Processing Settings	
Processing Type	<p>Choose the type of run for this data exchange:</p> <ul style="list-style-type: none"> • New run. • Restart previous run: This option allows you to import data using the last run number over again. This field is usually used in the Import Data (on a Regular Basis) (daxch0224m000) session, where each run number provides different data sets. Only the log files are affected in this session, because the data to be loaded into LN is the same for both the last run number used and the first free run number. • Reprocess rejected records: When records are rejected during an import process, LN creates two additional files to hold the rejected records. Records that are rejected due to index or domain errors (database problems) are placed in the Rejected due to Error file and records that are rejected due to a condition returning a false status are placed in the Rejected due to Condition file. LN places these files in the same directory as the data file that was read in and appends the suffixes .e01 or .c01 to them. If more records are rejected during reprocessing, LN creates new files with the next sequential number. If you choose this option, you can use the next two fields to choose which records to reprocess. • Continue interrupted run: If an exchange scheme run stops in the middle of the run, you can restart the import if there is more than one batch line and the restart can begin at the start of the batch line that was not completed. If there is only one batch line, this option is the same as a complete restart of the import.
Override Batch Company	Specify Yes to override the value in the Company field in the Batches (daxch0104m000) session.
Company	Specify the company to be used in the Company field in this session.
Processing Details	
Really Quit on Stop Condition	Select to quit on a stop condition, or clear if you want the import to continue running and only return an error message if it meets the stop condition.
Wait for <CR> with Messages	Select this check box to have messages remain on screen until you press enter.

Start and end date and time

For regular data exchange, the start date and time are taken from the log table and you usually cannot specify this information. If the start date and time are the same for all selected Exchange Schemes,

the data and time appear in all the schemes. You can only fill in the start date and time yourself the first time you export an Exchange Scheme using audit files.

For non-regular data exchange, you can specify whether the start date and time is based on the contents of the log table, which is useful if not all selected exchange schemes have the same latest end date and time.

You can fill in the end date and time for both regular and non-regular data exchange.

During the data exchange

After you complete the data exchange session and choose **Import Data** or **Export Data**, a status window appears and displays the progress of the data exchange. For each batch line that completes, LN displays the exchange scheme, the batch, and the batch line. The numbers of records read, processed, rejected due to error, and rejected due to conditions are also displayed. To view the imported or exported data, start the **Display Log Tables (Batch line level) (daxch0509m000)** session. This session shows the number of records processed from the ASCII file, the number of records imported successfully, and the number of records rejected due to an error or a condition.

If records are rejected due to validation checks or errors, LN writes these records to a log file. You can repeat the data exchange for those rejected records alone. To print the rejected records stored in the log file, you can use the **Print Log File (daxch0215m000)** session.

LN verifies the imported values according to the referential integrity and validation rules, such as field type, length, range, and format. This information is available in the data dictionary.

Chapter 5: Multisite control

With LN, you can now use the Exchange module to set up a batch-driven replication server. This enables you to maintain the same data at multiple sites.

Data replication can be synchronous or asynchronous. In synchronous replication, data is sent from one system to another as soon as the data changes. Asynchronous replication is batch-driven, that is, occurs at set time intervals or on demand.

In LN, data replication is asynchronous and can be accomplished as follows:

- The source system runs an export process.
- The source system sends a message to the target system or systems that notifies them that new data is available.
- The target system runs an import process to assimilate the new data received from the source system.

In Exchange, a site is defined as an application server on which one or more exchange schemes for exporting or importing data are stored.

Audit trail

Optionally, you can define a multisite Exchange that is based on audit, so that only the updates in a specific period are exchanged, which leads to an improvement in performance.

If the export is based on audit, the corresponding import must be based on audit as well.

Before you can begin an exchange process that is based on audit, you must activate audit trail for the tables in your exchange schemes, which you can do by means of the **Generate Audit Configuration (daxch1201m000)** session. For more details, refer to Using audit trail in the Exchange module.

About multisite exchange in LN

If you set up a multisite exchange, you can link the export and import processes to be performed as one process. These links are not tightly coupled, however, and are controlled at each site. You can run the export and import within one process, so that one process is based on the results of the other.

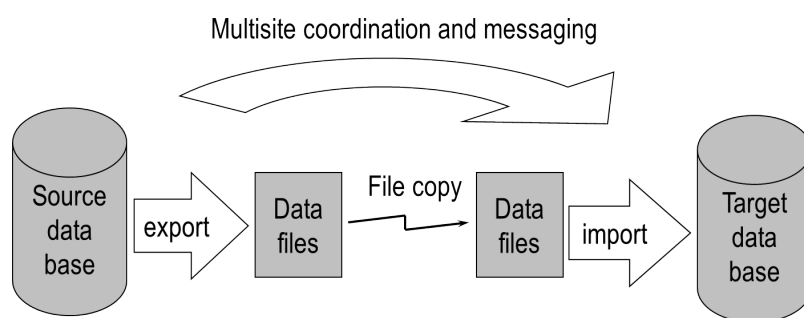
Alternatively, you can run the export at the source system, copy the resulting ASCII files to, and run the import from, the target system. Other configurations are also possible, depending on your company's business needs.

Each source can have multiple targets and each target can have multiple sources.

Multisite exchange works by setting up exchange links between the source and target sites. The exchange links are created at the target site and point to the export batches at the source site. If you define an exchange link, LN stores a subscription at the source site, which points to the import batch at the target site. The link is active when both, the exchange link at the target site and the subscription at the source site, are available.

If you run a regular export, Exchange checks whether any subscriptions are present. During a regular export, Exchange sends a message to the target site to specify which files have been exported and where the files are stored. The target site stores this information.

If you run a regular import, Exchange checks to see if any data is awaiting import. If so, LN copies the files from the source site to the target site and then imports these files. Afterward, the target site reports to the source site that the data has been imported.



Export process

Whenever an export batch has been completed, Exchange checks whether any subscriptions exist for that batch. If subscriptions exist, the source site sends an “Export Done” message to each target that has subscribed to the batch. These messages are stored at the source site.

Export Done message

Exchange only sends and stores an “Export Done” message if the batch contains at least one active table relation (export). To create and send an “Export Done” message, Exchange requires this information:

- Source environment, company, exchange scheme, and batch
- Run and try number of the export process: required for the sequence order at the target site
- Target environment, company, exchange scheme, and batch

- Separator and enclosing character of the source exchange scheme
- Whether the ASCII files were compressed after export
- Batch line and file name, including the directory, for each batch line completed

At the target site, Exchange checks whether an exchange link that specifies the source environment, company, exchange scheme, and batch exists. If so, Exchange stores the information in Batches to Import and Batch Lines to Import.

File transport specifications

With regular export, you can choose whether to compress the ASCII files. After Exchange copies the files to the target site, the files are decompressed.

Exchange does not provide additional security; that is, the files to be transported are not encrypted.

When copying the files, any previously existing files are overwritten. This does not often happen, however, because usually you would use a separate subdirectory for each run for the regular export and the regular import.

Import process

A batch to import refers to a target batch that you can run because the source batch has already been run.

Before you run a regular import batch, Exchange checks whether an active exchange link exists for that batch at the target site. If no exchange link exists, Exchange runs an ordinary import. If an active exchange link is available, Exchange checks the batches to import. If no batches await import, Exchange does not perform an import. If a batch is awaiting import, Exchange performs the following functions, and repeats the process for subsequent batches to import:

- Copies the files from the source site.
- Removes the run from the batches to import and deletes the run's batch lines to import.
- Runs the import.
- Sends an Import Done message to the source site.

The import process takes some time to complete, which means that while Exchange is busy processing one batch to import, new batches to import can arrive. Exchange continues to check for new batches until all the batches are imported.

Exchange usually runs a regular import only if no exchange link exists or if one or more batches are awaiting import. You can overrule this, however, and initiate an import batch without having Exchange perform these checks.

Note: Each batch to import is processed in order of the run number and the try number within each run. The run number refers to the sequence order of a process within an exchange scheme. The try number is the number of attempts made for each run. If Exchange cannot process one import batch,

Exchange stops and does not continue processing subsequent batches. If required, you can delete the problematic batch so that Exchange can continue with the subsequent batches.

Import Done message

The Import Done message reports to the source site that the data has been successfully imported at the target site. The files at the export site are deleted only after all of the target sites that need those files have copied and imported the files.

If you send the Import Done message, Exchange checks whether any rejected Import Done messages exist, and if so, sends these messages, as well. The sequence in which the Import Done messages are delivered to the source site is not relevant.

If the files were successfully imported but the Import Done message could not be delivered to the source site, Exchange writes the Import Done message to the rejected Import Done messages and logs an error message.

To create and send an Import Done message, Exchange must have the following information:

- Source environment, company, exchange scheme, and batch
- The run number and try number of the export
- Target environment, company, exchange scheme, and batch

When Exchange receives the Import Done message at the source site, Exchange removes the stored current Export Done message to which the Import Done message refers.

When you are ready to clean up the ASCII files, the **Remove ASCII Files (daxch2202m000)** session checks whether all targets that have subscribed to the source have already processed the files. A file is only deleted if the run and try that created the file do not occur in the current Export Done messages.

Setting up a multisite exchange

Prerequisites

To set up a multisite exchange, you must have an export exchange scheme on the source system and an import exchange scheme on the target system.

In addition, to prepare the multisite exchange, you must take the following steps:

Preparation steps on the source system

- 1 Run the **Systems (ttaad0550m000)** session to define the target system as a remote system. You must specify the target system's name and BSE path. The BSE path is the directory (on the target system) on which the LN software is installed, for example, /usr2/bse.
- 2 Run the **Remote User Data (ttaad2501m000)** session to create (for the user account that will run the export scheme on the source site) a remote user account that provides access to the target system.

Preparations on the target system

- 1 Run the **Systems (ttaad0550m000)** session to define the source system as a remote system. You must specify the source system's name and BSE path. The BSE path is the directory on the source system on which the LN software is installed, for example, /usr4/bse.
- 2 Run the **Remote User Data (ttaad2501m000)** session to create, for the user account that will run the import scheme on the target site, a remote user account that provides access to the source system.

Setting up a multisite exchange

- 1 Create a target environment:
On the source system, create a multisite target environment through the **Environments (daxch4100m000)** session. You can define this environment by the name and BSE path of the target system.
- 2 Create a source environment:
On the target system, create a multisite source environment in the **Environments (daxch4100m000)** session. This environment is defined by the name and BSE path of the source system.
- 3 Create an exchange link:
On the target system, create an exchange link to define the relation between source and target site: in the **Exchange Links (daxch4501m000)** session, link the target exchange scheme and target batch to the source environment, source company, source exchange scheme and source batch.
- 4 Start receiving – source system:
On the source system, start the **Receive Remote Procedure Calls (daxch4200m000)** session and click **Start Receiving**.
- 5 Start receiving – target system:
On the target system, start the **Receive Remote Procedure Calls (daxch4200m000)** session and click **Start Receiving**.
- 6 Activate the exchange link:
On the target system, activate the exchange link by means of the commands on the **Specific** menu in the **Exchange Links (daxch4501m000)** session.
- 7 Check for the subscription:

On the source system, run the **Subscriptions (daxch4502m000)** session to check whether a subscription was generated.

The multisite setup is now ready for use: to start to exchange data between source and target system, you can run the export/import scripts of the exchange schemes on the source and target system.

Note: For details on the sessions described in the previous procedure, refer to [Multisite Control sessions](#) on page 40, and to the online Help.

Multisite Control sessions

The Multisite Control Business Object contains the following sections:

- **Environments (daxch4100m000)**
- **Exchange Links (daxch4501m000)**
- **Activate/Deactivate Exchange Links (daxch4201m000)**
- **Resend Rejected Messages (daxch4203m000)**
- **Subscriptions (daxch4502m000)**
- **Receive Remote Procedure Calls (daxch4200m000)**

Environments (daxch4100m000)

To set up a multisite exchange, you must define all the source environments and target environments that are used in the multisite exchange. Use the **Environments (daxch4100m000)** session to find, list, and maintain sites to be used to exchange data between various sites.

Although this session is especially designed for data exchanges between separate sites, you can also use this session if you use multisite exchange in a single BSE environment. The target environment and source environment are then the same.

To set up an environment:

- 1 Specify the name of the environment.
- 2 Specify the system on which the environment resides, and the path for the directory of the environment.

This table shows the fields in the **Environments (daxch4100m000)** session:

Field	Description
Environment	Specify the name of the environment.
System	Specify the system on which the environment resides.
BSE Path	Specify the path for the directory of the environment.

Exchange Links (daxch4501m000)

After you define the source environments and target using the **Environments (daxch4100m000)** session, you must define the exchange links and subscriptions so that you can link the target environment and source environment.

Run the **Exchange Links (daxch4501m000)** session to view a list of the exchange links you have already defined. Use the details session to create new links. The exchange link code defined at the target site must be the same as the subscription defined at the source site.

You can only delete an exchange link if the link's status is inactive at both the source and target sites.

For more information on how to activate and deactivate exchange links, see [Activate/Deactivate Exchange Links \(daxch4201m000\)](#) on page 42.

The **Specific** menu contains the following:

- **Activate** (Ctrl+Shift+A):
Activates a single exchange link.
- **Deactivate** (Ctrl+Shift+D):
Deactivates a single exchange link.
- **Activate/Deactivate Exchange Links:**
Activates or deactivates a range of exchange links.
- **Batches to Import:**
Enables you to view or delete the batches to import.
- **Rejected Import Done Messages:**
Enables you to view the Rejected Import Done messages.

To set up an exchange link:

- 1 On the **File** menu, click **New** to start the **Exchange Links (daxch4101s000)** session.
- 2 Specify a name and description for the link that you want to create.
- 3 Specify the target exchange scheme and batch.
- 4 Specify the source information.
- 5 Click **Edit Text** on the toolbar to start the text editor if you want to add more information.

This table shows the fields in the **Exchange Links (daxch4101s000)** session:

Field	Description
Exchange Link	Specify the name of the link you want to create.
Description	Specify a description for this exchange link.
Target Exchange Scheme	Specify the name of the target exchange scheme.
Target Batch	Specify the batch number of the target exchange scheme.
Source Environment	Specify the source environment.

Field	Description
Source Company	Specify the number of the source company.
Source Exchange Scheme	Specify the name of the source exchange scheme.
Source Batch	Specify the batch number in the source exchange scheme.
Exchange Link Status	This field is unavailable until links at both the target and source sites are set up, and you activate this exchange link.
Exchange Link Text	Indicates whether this exchange link includes text.

Activate/Deactivate Exchange Links (daxch4201m000)

After you use the **Exchange Links (daxch4501m000)** session to create exchange links, you must activate the links before you can use the links in a multisite exchange. To activate and deactivate a range of exchange links between the source and target batches, you can use the **Activate/Deactivate Exchange Links (daxch4201m000)** session. The link must be active to make the exchange link available at the target site and the subscription available at the source site. If the link is not active, you cannot use the multisite functionality.

When you activate an exchange link, the target site sends a Subscribe message to the source site. The subscription is checked and stored at the source site. Subsequently, whenever the batch defined in the subscription is carried out, the source site sends an Export Done message to the target site. If this message is not processed successfully, the link is stored at the target site, but the status changes to Inactive.

If you deactivate an exchange link at the target site, Exchange sends an Unsubscribe message to the source site. The subscription is then deleted and the target batch can no longer automatically process data from the source site. The Current Export Done messages are also deleted.

You can only delete an exchange link if the link's status is Inactive at both the source and target sites.

This process can also run as part of a job.

To activate or deactivate an exchange link:

- 1 Under **Action Type**, choose whether to activate or to deactivate the link.
- 2 Under **Selection Type**, choose how to make a selection of links.
- 3 Define a range of exchange links, or click the **Detailed** tab, where you can make a more detailed selection.
- 4 Click **(De)activate** to start the process.

This table shows the fields in the **Activate/Deactivate Exchange Links (daxch4201m000)** session:

Field	Description
General tab	
Action Type group box	

Field	Description
Activate	Select this check box to activate a range of exchange links. Specify the range in the Selection by Exchange Link area.
Deactivate	Select this check box to deactivate a range of exchange links. Specify the range in the Selection by Exchange Link group box.
Only Links Having Status "Inactive (Target Only)"	Select this check box to deactivate only the links in the specified range with the status Inactive (Target Only).
Selection Type group box	
Selection by Exchange Link	Select this check box to be able to enter a range of links in the Exchange Link field in the Selection by Exchange Link group box.
Detailed Selection	Select this check box to be able to make a more detailed selection of exchange links on the Detailed tab.
Selection by Exchange Link group box	
Exchange Link	Specify a range of exchange links. This field is only available if the Selection by Exchange Link check box is selected.
Detailed tab	
Detailed Selection group box	
Target Exchange Scheme	Specify a range of target exchange schemes for which you want to activate or deactivate the exchange links.
Target Batch	Specify a range of target batches for which you want to activate or deactivate the exchange links.
Source Environment	Specify a range of source environments for which you want to activate or deactivate the exchange links.
Source Company	Specify a range of source companies for which you want to activate or deactivate the exchange links.
Source Exchange Scheme	Specify a range of source exchange schemes for which you want to activate or deactivate the exchange links.
Source Batch	Specify a range of source batches for which you want to activate or deactivate the exchange links.

Resend Rejected Messages (daxch4203m000)

The **Resend Rejected Messages (daxch4203m000)** session is relevant at both the source site and the target site. You can use this session to resend these rejected messages:

- Current Export Done
- Import Done

- Subscription Destroyed

Messages can be rejected for these reasons:

- The target system does not use LN Exchange.
- The target system is not operational.
- Network connections are slow.
- No remote user is present in the target environment or in the source environment.
- The **Receive Remote Procedure Calls (daxch4200m000)** session did not run in the source environment or target environment.

If a message cannot be delivered to the receiving site, the message is stored at the sending site and receives the status Rejected.

To resend the rejected message:

- 1 Select one or more message types in the **Messages to Resend** group box. This opens the relevant tab.
- 2 Use the check boxes in the **Selection Type** group box to make either a global or a detailed selection of messages to resend.
- 3 Define the range on the appropriate tab.
- 4 Click **Resend** to start the process.

After the messages are successfully sent, the messages are removed.

This process can also run automatically as part of a job. As a result, if you perform this procedure regularly, you do not have to check manually for rejected messages.

This table shows the fields in the **Resend Rejected Messages (daxch4203m000)** session:

Field	Description
Selection tab	
Messages to Resend group box	
Current Export Done Messages	Select this check box to activate the fields contained on the Current Export Done Messages tab.
Import Done Messages	Select this check box to activate the fields contained on the Import Done Messages tab.
Subscription Destroyed Messages	Select this check box to activate the fields contained on the Subscription Destroyed Messages tab.
Selection Type group box	
Global Selection	Select this check box to activate the global selections on each tab and see everything for each exchange link or subscription.
Detailed Selection	Select this check box to specify the exchange scheme, batch, company, and environment for which to see rejected messages.
Current Export Done Messages tab	
Global Selection group box	

Field	Description
Subscription	Specify a range of subscriptions.
Target Environment	Specify a range of target environments.
Target Company	Specify a range of target companies.
Detailed Selection group box	
Source Exchange Scheme	Specify a range of source exchange schemes.
Source Batch	Specify a range of source batches.
Target Environment	Specify a range of target environments.
Target Company	Specify a range of target companies.
Target Exchange Scheme	Specify a range of target exchange schemes.
Target Batch	Specify a range of target batches.
Import Done Messages tab	
Global Selection group box	
Exchange Link	Specify a range of exchange links.
Detailed Selection group box	
Target Exchange Scheme	Specify a range of target exchange schemes.
Target Batch	Specify a range of target batches.
Source Environment	Specify a range of source environments.
Source Company	Specify a range of source companies.
Source Exchange Scheme	Specify a range of source exchange schemes.
Source Batch	Specify a range of source batches.
Subscription Destroyed Messages tab	
Global Selection group box	
Subscription	Specify a range of subscription from the source sites.
Target Environment	Specify a range of target environments.
Target Company	Specify a range of target companies.
Detailed Selection group box	
Source Exchange Scheme	Specify a range of source exchange schemes.

Field	Description
Source Batch	Specify a range of source batches.
Target Environment	Specify a range of target environments.
Target Company	Specify a range of target companies.
Target Exchange Scheme	Specify a range of target exchange schemes.
Target Batch	Specify a range of target batches.

Subscriptions (daxch4502m000)

Run this session to view, list, or delete subscriptions.

Subscriptions are stored on the source system. The subscriptions are not created manually, but are generated when you activate exchange links on the target system.

The subscription code is the same as the corresponding exchange-link code at the target site.

If you delete a subscription, the source site sends a Subscription Destroyed message to the target site, which deactivates the exchange link.

The **Specific** menu contains these options:

- **Current Export Done Messages:**
Enables you to view the Export Done messages.
- **Rejected Subscriptions Destroyed Messages:**
Enables you to view the rejected Subscription Destroyed messages.

This table shows the fields in the **Subscriptions (daxch4502m000)** session:

Field	Description
Subscription	The subscription code. This code is identical to the code of the corresponding exchange link on the target site.
Source Exchange Scheme	The code of the (export) exchange scheme on the source site.
Source Batch	The source batch.
Target Environment	The target environment.
Target Company	The target company.
Target Exchange Scheme	The target exchange scheme.
Target Batch	The target batch.

Receive Remote Procedure Calls (daxch4200m000)

Run the **Receive Remote Procedure Calls (daxch4200m000)** session on the target site to read the remote procedure calls. You can use remote procedure calls to indicate that messages have been received in regard to the export or import.

To receive remote procedure calls:

- 1 Click **Start Receiving** to read the messages.
- 2 Click **Stop Receiving** to stop the end reading the messages.
- 3 Click **Clean Up** to remove the messages that were not automatically removed after reading the messages.

This table shows the commands in the **Receive Remote Procedure Calls (daxch4200m000)** session:

Command	Description
Start Receiving	Select this check box to begin to receive remote procedure calls.
Stop Receiving	Select this check box to stop receiving remote procedure calls.

Chapter 6: Miscellaneous

The sessions in the Miscellaneous Business Object provide useful utilities and sessions related to the status of the export and import processes that are performed. The utilities do not belong to a specific procedure, but can be used at any time in the Exchange Module.

The functions in the Miscellaneous module are divided into these groups:

- **Logging:**
The Logging functions enable you to set up and maintain a log table, so that you can monitor what happens during the exchange process.
- **Tools:**
The Tools functions enable you to perform administrative activities on these objects:
 - Exchange schemes
 - ASCII files
 - ASCII file fields and relations
 - Table fields
 - Definition files
 - ConditionsYou can also view a list of predefined functions and variables.
- **Export/Import:**
You can use the export/import sessions to export and import exchange schemes from/into LN.

Logging sessions

The Logging functions enable you to track the activities during an exchange by maintaining and monitoring a log table. The Logging sessions consist of the following:

- **Print Log File (daxch0215m000)**
- **Remove Log Files (daxch0216m000)**
- **Log Table (Batch Level) (daxch0508m000)**
- **Log Table (Batch Line Level) (daxch0509m000)**
- **Clear Log Table (daxch0208m000)**

Print Log File (daxch0215m000)

During the import process, you have the option of printing a detailed log file. This file is located in the same directory as the exchange scheme. Run the **Print Log File (daxch0215m000)** session to print the log file that is created during processing of the **Import Data (Non-Regular) (daxch0223m000)** or the **Import Data (on a Regular Basis) (daxch0224m000)** session. Using this session, the log file is printed for the run number selected, which is useful in locating errors.

The print process can also run as part of a job.

To print the log file:

- 1 Specify the type of exchange.
- 2 Specify a range of exchange schemes.
- 3 Specify a range of batches.
- 4 Specify a range of run numbers.
- 5 Specify a range of try numbers.
- 6 Specify a range of table relations.
- 7 Specify the error type.
- 8 Specify a range of error codes.
- 9 Select one of the check boxes to print the error report. You have the option to print either a short description or a complete description of the error message.
- 10 Use the check box to suppress messages for non-existing files.
- 11 Click **Print** to start the process.

This table shows the fields in the **Print Log File (daxch0215m000)** session:

Field	Description
Selection Range group box	
Type of Exchange	Specify whether this is a regular or non-regular export or import.
Exchange Scheme	Specify the exchange scheme to be logged.
Batch	Specify the batch number of the exchange scheme.
Run Number	Specify the run number of this batch.
Try Number	Specify the try number of this batch.
Batch Line	Specify the batch line.
Error Type	Use this field to specify a type of error, if preferred.
Error Code	Specify the error code, if known.
Print Options group box	
Print Short Error Descriptions	Select this check box if you want to see an overview of all the errors that show only the first 30 characters of the error message. This option is easy to read but might not display sufficient information, for example, referential errors. To be sure that you have a complete error report, select the Print Long Error Descriptions check box.

Field	Description
Print Long Error Descriptions	Select this check box to see the entire error description.
Suppress Messages for Non-existing Files	Select this check box if you do not want to see messages in regard to log files that you have already deleted or that no longer exist. Clear this check box if you want to see an error message for each log file in the specified range that no longer exists.

Remove Log Files (daxch0216m000)

Use the **Remove Log Files (daxch0216m000)** session to remove log files that you no longer need, which helps you clean up your system. This session removes the log files that are created in the **Import Data (Non-Regular) (daxch0223m000)** and the **Import Data (on a Regular Basis) (daxch0224m000)** sessions. This process can also run as part of a job.

To remove the log files:

- 1 Define the type of exchange.
- 2 Specify a range of exchange schemes.
- 3 Specify a range of batches.
- 4 Specify a range of run numbers.
- 5 Specify a range of try numbers.
- 6 Click **Remove** to start the process.

This table shows the fields in the **Remove Log Files (daxch0216m000)** session:

Field	Description
Selection Range group box	
Type of Exchange	Specify whether the log files of regular or non-regular exports or imports must be removed.
Exchange Scheme	Specify the exchange scheme whose log file you want to remove.
Batch	Specify the batch number of the exchange scheme.
Run Number	Specify the run number of this batch.
Try Number	Specify the try number of this batch.

Log Table (Batch Level) (daxch0508m000)

Run the **Log Table (Batch Level) (daxch0508m000)** session to view the log table that contains the results of the exchange process at the batch level.

The **Specific** menu contains this option:

Log Table (Batch Line Level):

Starts the **Log Table (Batch Line Level) (daxch0509m000)** session.

To view the log table at batch level:

- 1 On the **Edit** menu, click **Find**.
- 2 Specify the type of exchange: regular or non-regular import or export.
- 3 Specify the exchange scheme name and run number.
- 4 Confirm that the remaining information is correct.

This table shows the fields in the **Log Table (Batch Level) (daxch0508m000)** session:

Field	Description
Type of Exchange	The type of exchange: a regular or non-regular export or import.
Exchange Scheme	The code of the exchange scheme.
Run Number	The run number of the batch.
Try Number	<p>You can use this sequence number for identification in case of multiple tries per run. The try number is required for logging purposes.</p> <p>A new try number is created if you use one of the following options to perform an export or import:</p> <ul style="list-style-type: none"> Restart previous run Reprocess rejected rec's Continue interrupted run
Batch	The code of the batch.
Sequence Number	<p>The sequence number of the batch in an exchange process.</p> <p>Batches are processed in a sequential order. Batches with identical sequence number are processed in alphabetical order.</p>
Processing Type	<p>The type of exchange process, which can be:</p> <ul style="list-style-type: none"> New run Restart previous run Reprocess rejected records, or Continue interrupted run.
Control Type	<p>The control type depends on the exchange scheme as at the moment the export or import was run, which can be:</p> <ul style="list-style-type: none"> Full exchange Based on indicators Based on audit
User Name	The name of the user who ran the exchange program.

Field	Description
Company	The number of the LN company involved in the exchange process. During an export process, this field represents the company that exports data. During an import process, this field represents the company that receives data.

Log Table (Batch Line Level) (daxch0509m000)

Run the **Log Table (Batch Line Level) (daxch0509m000)** session to view the log table that contains the results of the exchange process at the batch line level.

To view the log table at batch line level, take the following steps:

- 1 On the **Edit** menu, click **Find**.
- 2 Specify whether this export or import is regular or non-regular.
- 3 Specify the exchange scheme of the log file. Specify the batch information.
- 4 For each table relation, Exchange displays the import or export information.

This table shows the fields in the **Log Table (Batch Line Level) (daxch0509m000)** session:

Field	Description
Type of Exchange	The type of exchange: a regular or non-regular export or import.
Exchange Scheme	The code of the exchange scheme.
Run Number	The run number of the batch.
Try Number	The try number of this batch.
Batch	The code of the batch.
Batch Start Date	The date the batch of an exchange process starts.
Table Relation	A sequential number that identifies the table relation and the relation's processing order. This number makes the table relation unique in the batch.
Sequence Number	The sequence number of the table relation in the batch during an import process. The sequence number of the table relation does not have to be unique. If two relations have the same sequence number, the relation with the lowest sequence number is processed first.
Table	The code of the LN table from which data was exported, or in which the data is imported. The LN table is defined by a package code, module code, and a table number, for example, tccom001.
ASCII File	The code of the logical ASCII file from which data was read during an import, or to which data was written during an export.

Field	Description
Records Read	<p>The number of records read from the ASCII file during an import procedure or from the LN table during an export procedure.</p> <p>The number of records read is the same as the number of processed records, plus the number of error rejected messages, plus the number of condition rejected records, plus the number of skipped records.</p>
Records Processed	The number of records processed successfully.
Error Rejected	The number of rejected records due to errors. These records are written to the log file
Conditions Rejected	<p>The number of records rejected due to an add, update, overwrite, or delete condition with the return value, false.</p> <p>These records are written to the log file.</p>
Records Skipped	<p>The number of skipped records.</p> <p>A record can be skipped during an import for the following reasons:</p> <ul style="list-style-type: none"> • The table relation is not active. • The record was already imported during a previous try. • The options Add, Overwrite, Update, or Delete were not selected in the Table Relations (Import) (daxch0121s000) session. <p>A record can be skipped during an export if the function "do.not.export.record()" is used in a condition.</p>
Batch Line End Date and Time	The date and time, according to Coordinated Universal Time , that the table relation in a batch of an exchange process ended.
Use DAL	The import process has used the Data Access Layer (DAL) scripts of the involved tables. That is: the import process carried out all the constraint checks, integrity checks and side effects, such as updates on other tables, that are programmed into the DAL. This guarantees database integrity, saves programming time, and avoids the errors that can occur in condition scripts.
DAL Checks	The import process has used the property hooks that are defined in the DAL scripts of the involved tables. Property hooks contain logical integrity rules for table fields. For example: the net weight of an item cannot be less than the gross weight.

Clear Log Table (daxch0208m000)

To delete the result of export and import runs, run the **Clear Log Table (daxch0208m000)** session. Because the data of the last run is sometimes used later, retain the highest run number of both the import and export.

This process can also run as part of a job.

To clear the log tables of a specified range:

- 1 Define the type of exchange.
- 2 Specify a range of exchange schemes.
- 3 Specify a range of run numbers.
- 4 Specify a range of batch end dates.
- 5 Select the check box if you want to clear the log data of the last run.
- 6 Click **Clear** to start the process.

This table shows the fields in the **Clear Log Table (daxch0208m000)** session:

Field	Description
Selection Range group box	
Type of Exchange	Specify whether this export or import is regular or nonregular.
Exchange Scheme	Specify the exchange scheme of the log table.
Run Number	Specify the run number of the batch.
Batch End Date	Specify the date of the end of this batch.
Options group box	
Also Clear Last Run	Select this check box to clear the last run, as well as the log table.

Tools sessions

The Tools functions enable you to work at a more detailed level and fully customize the Exchange module to meet your business needs. The Tools sessions consist of the following:

- Copy Exchange Scheme (daxch0201m000)
- Delete Exchange Scheme (daxch0222m000)
- Rename ASCII File (daxch1202m000)
- Create ASCII File Fields and Relations (daxch0203m000)
- Create Definition Files (daxch0204m000)
- Print ASCII File (daxch0202m000)
- Remove ASCII Files (daxch2202m000)
- Check Syntax of Conditions (daxch0206m000)
- Predefined Functions/Variables (daxch0510s000)
- Print Exception Report for Table Fields (daxch0423m000)
- Generate Audit Configuration (daxch1201m000)

Copy Exchange Scheme (daxch0201m000)

If you run the **Copy Exchange Scheme (daxch0201m000)** session, you can copy an exchange scheme, as well as the full structure such as the following:

- Conditions
- ASCII files
- ASCII file fields
- Ranges
- Table relations
- Field relations for import or for export

You can also selectively copy particular elements of the structure and copy these elements to another scheme within the same company or to another company.

Rather than use this session to copy existing exchange schemes, you can also use parent exchange schemes in multilevel exchange schemes. The process can also run as part of a job.

To copy exchange schemes:

- 1 Select how to copy the exchange schemes in the **Copy** field.
- 2 Specify the company number to where you want to copy the exchange schemes.
- 3 Select the exchange schemes, batches and table relations for import or export, depending on the chosen option.
- 4 Click **Copy** to start the process

This table shows the fields in the **Copy Exchange Scheme (daxch0201m000)** session:

Field	Description
Copy	<p>Select the object type to be copied:</p> <ul style="list-style-type: none"> • Complete Exchange Scheme: The complete exchange scheme is processed. All conditions, ASCII files, ASCII file fields, batches, table relations, and field relations will be processed. • Batch: Only the structure of the batch including, table and field relations are processed. • Relations: Only the table and field relations are processed. <p>If you copy an exchange scheme, the existing target exchange schemes are deleted and overwritten.</p> <p>If the conditions codes or relation codes used in the relations are not already present in the new exchange scheme, the condition code/conversion relation code is initialized as empty.</p>
Copy to Company Number	<p>Specify the company number to which you want to copy this exchange scheme. The default is the current company number.</p> <p>You can also copy part of the exchange scheme.</p>
Selection group box	
Exchange Scheme	Specify the source and target exchange schemes.
Batch	If you specify Batch in the Copy field, you can enter the batch name here.
Table Relation (Import)	If you specify Relations in the Copy field, you can enter the table relation name here.

Field	Description
Table Relation (Export)	If you specify Relations in the Copy field, you can enter the table relation name here.

Delete Exchange Scheme (daxch0222m000)

The **Delete Exchange Scheme (daxch0222m000)** session deletes a selected range of exchange schemes for the current company. If files, batches, and relations are still defined in an exchange scheme, you cannot use the **Exchange Scheme (daxch0501m000)** session to delete the exchange scheme. The Delete Exchange Scheme session offers you the option to delete selected elements of the exchange structure or to delete the entire exchange scheme with all components. The process can also run as part of a job.

To delete the exchange scheme, or part of the exchange scheme, take the following steps:

- 1 Select, in the **Delete** field, how to delete the exchange scheme.
- 2 Select the exchange schemes, batches, and table relations for import or export, depending on the chosen option.
- 3 Click **Delete** to start the process.

This table shows the fields in the **Delete Exchange Scheme (daxch0222m000)** session:

Field	Description
Delete	<p>Select the object type to be deleted:</p> <ul style="list-style-type: none"> • Complete Exchange Scheme: The complete exchange scheme is processed. All conditions, ASCII files, ASCII file, fields, batches, table relations, and field relations will be processed. • Batch: Only the structure of the batch, including table and field relations, are processed. • Relations: Only the table and field relations are processed.
Selection Range group box	
Exchange Scheme	Specify a range of exchange schemes.
Batch	If you specify Batch in the Delete field, you can enter the batch name here.
Table Relation (Import)	If you specify Relations in the Delete field, you can enter the table relation name here.
Table Relation (Export)	If you specify Relations in the Delete field, you can enter the table relation name here.

Rename ASCII File (daxch1202m000)

Run the **Rename ASCII File (daxch1202m000)** session to rename logical ASCII files, if required, in an exchange scheme. The codes of the logical ASCII files are replaced in the ASCII files, the ASCII file fields, and the table relations (export and import).

The process can also run as part of a job.

To rename logical ASCII files:

- 1 Specify the exchange scheme.
- 2 Specify the old ASCII file code and the new ASCII file code.
- 3 Click **Rename** to start the process.

This table shows the fields in the **Rename ASCII File (daxch1202m000)** session:

Field	Description
Exchange Scheme	Specify the exchange scheme to be renamed.
Selection	
ASCII File	Specify the old name of the ASCII file and enter the new name you desire.

Create ASCII File Fields and Relations (daxch0203m000)

ASCII file definitions are representations of the structure of an ASCII file. Before you import data, this definition file is loaded. You can use the **Create ASCII File Fields and Relations (daxch0203m000)** session to generate ASCII file fields and relations for an exchange scheme automatically. Using this session, you can skip the **Table Relations (Import) (daxch0121m000)** and **Field Relations (Import) (daxch0122m000)** sessions.

You can copy ASCII file fields from definition files and LN table definitions, however, the definition files have precedence over the LN table definitions.

During an import procedure, if a LN table field and an ASCII file field do not match, the LN table field receives the value based on default. For example, if the ASCII file contains fewer fields than the LN table, the value specified in the data dictionary is used for this field.

During an export procedure, if the ASCII file and LN table do not match, the LN table field remains empty.

This process can also run as part of a job.

To generate ASCII file fields and relations, take the following steps:

- 1 Specify the code of the exchange scheme.
- 2 Select a range of ASCII files.
- 3 Use the check boxes to define how to create the ASCII file fields.
- 4 Use the check boxes to define how to create the table and field relations.
- 5 Click **Create** to start the process.

This table shows the fields in the **Create ASCII File Fields and Relations (daxch0203m000)** session:

Field	Description
Exchange Scheme	Specify the exchange scheme.
Selection Range group box	
ASCII File	Specify the range of ASCII files for which you want to create file fields and relations.
ASCII File Fields group box	
Overwrite ASCII File Formats	If you select this check box, the existing ASCII file fields will be overwritten.
Create from Definition Files	If you select this check box, the ASCII file fields are copied from the definition file.
Create Based on Table Definitions	<p>If you select this check box, ASCII file fields and relations are generated based on LN table definitions, if a definition file is not available.</p> <p>If an LN table with a name identical to the name of an ASCII file exists, the ASCII file fields are copied from the data dictionary.</p>
Table and Field Relations group box	
Create Batch	<p>If you select this check box, a batch is created. You can define the batch code and description in the following fields.</p> <p>You can only create import and export relations if this check box is selected. The import and export relations are created in the defined batch.</p>
Create Import Relations	<p>If you select this check box, table and field relations for import of data will be created.</p> <p>Relations are only created if the ASCII file codes are the same as existing LN table names.</p>
Create Export Relations	<p>If this check box is selected, table and field relations for export of data will be created.</p> <p>Relations are only created if the ASCII file codes are equal to existing LN table names.</p>
Overwrite Existing Relations	If this check box is selected, existing relations are overwritten.

Create Definition Files (daxch0204m000)

Run the **Create Definition Files (daxch0204m000)** session to create definition files automatically. This session dumps the ASCII file structure into sequential files. The sequential files are specified in the ASCII file code table in the **ASCII Files (daxch0102m000)** session. To use definition files in other environments where you copy these files, you can use the **Create ASCII File Fields and Relations (daxch0203m000)** session.

The created definition file is entered in the definition file field in the ASCII Files (daxch0102m000) session. If the absolute path is not entered in that field, the path is taken from the **Path for Definition Files** field in the **Exchange Schemes (daxch0101s000)** session. If the **Definition File Field** is empty, the definition file is identified by a code that consists of the letter d followed by the ASCII file code.

The created sequential dump has the following fields:

Column 1 - 4	Field Number
Column 5 - 12	Field Name
Column 13 - 42	Description of field
Column 43 - 46	Start position of field
Column 47 - 50	Length of field
Column 51 - 51	Type of Field Indicator: <ul style="list-style-type: none"> • 1 - Alphanumeric • 2 - Numeric
Column 52 - 53	Date Format
Column 54 - 54	Floating Decimal: <ul style="list-style-type: none"> • 1 – Yes • 2 - No
Column 55 - 56	Position of Decimal Point

Note:

- The exporting site generally uses this session. The created definition files are transferred to the importing site.
- Existing definition files are overwritten.
- This process can also run as part of a job.

To create definition files:

- 1 Specify the code of the exchange scheme.
- 2 Specify the code of the ASCII files.
- 3 Click **Create** to start the process.

This table shows the fields in the **Create Definition Files (daxch0204m000)** session:

Field	Description
Selection Range group box	
Exchange Scheme	Specify a range of exchange schemes for which you want to create definition files.
ASCII File	Specify a range of ASCII files whose structure you want to copy into sequential files.

Print ASCII File (daxch0202m000)

Run the **Print ASCII File (daxch0202m000)** session to print an ASCII file with ASCII file fields of an exchange scheme. You can use this session to test the readability of an ASCII file prior to importing. You can also use this session to view the contents of a file created by the Export module.

This session uses the ASCII file format of the exchange scheme. Therefore, you must set up the Master Data module before you can use this session.

The table and field relations are not required to run this session. If an ASCII file is being examined prior to import, the table relations (import) can be useful but are not required. Because table relations are not required, you must specify the physical ASCII file name.

If the field numbers to be printed are not specified, all the fields in the ASCII file are printed.

This process can also run as part of a job.

To print the ASCII file and ASCII file fields:

- 1 Specify the code of the exchange scheme and ASCII file. The physical ASCII file is automatically entered.
- 2 Specify a range of field numbers with a valid range of values if you want to print part of the physical ASCII file.
- 3 Define the field numbers that must be printed.
- 4 Click **Print** to start the process.

This table shows the fields in the **Print ASCII File (daxch0202m000)** session:

Field	Description
Exchange Scheme	Specify the exchange scheme to be printed.
ASCII File	Specify the ASCII file in that exchange scheme.
ASCII File Name	LN automatically enters the ASCII file name.
Selection Range group box	
Field Number	To print only part of the physical ASCII file, enter a range of field numbers.
Print What group box	
Field Numbers	To print only part of the ASCII file, enter a field number of the ASCII file.

Remove ASCII Files (daxch2202m000)

Run the **Remove ASCII Files (daxch2202m000)** session to delete the physical ASCII files an exchange process uses. This does not affect the log files that were created by the exchange process.

The physical ASCII files used or created by the selected exchange runs are deleted. To delete the log files, however, you can use the **Clear Log Table (daxch0208m000)** session.

This process can also run as part of a job.

To remove the physical ASCII files:

- 1 Define the type of the exchange.
- 2 Specify a range of exchange schemes.
- 3 Specify a range of run numbers.
- 4 Specify a range of try numbers.
- 5 Specify a range of batch codes.
- 6 Specify a range of table relations.
- 7 Specify a time period between two dates.
- 8 Click **Remove** to start the process.

This table shows the fields in the **Remove ASCII Files (daxch2202m000)** session:

Field	Description
Exchange Type	The type of exchange: a regular or non-regular export or import.
Exchange Scheme	Specify a range of exchange schemes whose ASCII files must be removed.
Run Number	Specify a range of run numbers.
Try Number	Specify a range of try numbers.
Batch	Specify a range of batch codes.
Batch Line	Specify a range of batch lines (table relations).
Date	Specify a range of creation dates of the ASCII files to be removed.

Check Syntax of Conditions (daxch0206m000)

Run the **Check Syntax of Conditions (daxch0206m000)** session to check the syntax of a range of condition scripts used in an exchange scheme. You can use this session rather than compile the conditions individually in the **Conditions (daxch0111m000)** session. If errors occur during compilation, this session displays the errors.

The errors found in the condition script are stored in the path condition errors specified in the **Exchange Schemes (daxch0101s000)** session. The error file name is structured as *e<condition>*. The errors found in the condition script also appear onscreen.

Due to the limitations of this session, and because the conditions are checked individually, irrelevant errors might be reported.

If an error is reported on a specific condition in this session, but the **Create Import Programs (daxch0227m000)** and **Create Export Programs (daxch0228m000)** sessions do not report any errors with this condition, the syntax of the condition is correct.

This table shows the fields in the **Check Syntax of Conditions (daxch0206m000)** session:

Field	Description
Exchange Scheme	Specify the name of the exchange scheme.

Field	Description
Selection Range group box	
Condition	Specify the range of conditions for which you want to check the syntax.
Options group box	
Display Errors	Select to display the syntax errors.

Predefined Functions/Variables (daxch0510s000)

The LN Tools programming language is used in condition scripts. Particular functions and variables are also available to write condition scripts in Exchange that overrules generated condition scripts.

You can use the **Predefined Functions/Variables (daxch0510s000)** session to display these predefined functions, variables, and libraries.

Note that, with the exception of `import.company`, `export.company` and `startup.company`, the variables are implemented as a define, and cannot directly be used in queries. For example, do not write: `where daxch008.runn = :run.number`, but write instead: `where daxch008.runn = :1 wherebind (1, run.number)`

For more information about a particular function, variable, or library, click **Help** in this session. In the session Help text, click **Functions**, **Variables**, or **Libraries**, and then click on the name of the individual function, variable or library.

The online Help provides information on these functions, variables, and libraries:

- Functions
 - `get.xch.scheme`
 - `get.batch`
 - `get.batch.line`
 - `get.default.dateformat`
 - `qdb.search`
 - `read.table`
 - `read.table.once`
 - `read.table.company`
 - `log.mess`
 - `do.not.log.condition`
 - `do.not.export.record`
- Variables
 - `triton.table`
 - `triton.field`
 - `element.no`
 - `ascii.file`
 - `ascii.file.name`
 - `run.number`

- try.number
- xch.type
- redo.type
- cntl.type
- import.company
- export.company
- startup.company
- no.rec.read
- no.rec.write
- no.err.rejects
- no.cond.rejects
- no.rec.skip
- Main Libraries
 - dadllcommon
 - dadlldate-line
 - dadlldate_time
 - dadllfile_path
 - dadlllink_com
 - dadlllink_def
 - dadlllink_file
 - dadlllink_run
 - dadlllogging
 - dadllmultiline
 - dadll_predefine
 - dadllxch2

Print Exception Report for Table Fields (daxch0423m000)

You can use the **Print Exception Report for Table Fields (daxch0423m000)** session to print an exception report and to compare the data dictionary (table fields) to the import field relations. You can use this list to check the table fields that do not occur in the exchange scheme. Undefined fields remain empty if a new record is added, and old values are retained in case of overwriting.

This process can also run as part of a job.

To print the exception report, take the following steps:

- 1 Specify a range of exchange schemes.
- 2 Specify a range of batches.
- 3 Specify a range of table relations (import).
- 4 Click **Print** to start the process.

This table shows the fields in the **Print Exception Report for Table Fields (daxch0423m000)** session:

Field	Description
Selection Range group box	
Exchange Scheme	Specify a range of exchange schemes.
Batch	Specify a range of batch numbers.
Table Relation (Import)	Specify a range of table relations to import for which you want to print exception reports.

Generate Audit Configuration (daxch1201m000)

You can use the **Generate Audit Configuration (daxch1201m000)** session to activate audit trail for the tables in one or more exchange schemes. Use this session only for exchange schemes that are based on an audit procedure.

To generate an audit configuration:

- 1 Specify the range of exchange schemes whose tables must be included in the audit configuration.
- 2 Specify the name of the audit profile in which the generated audit configuration will be stored. You can select whether you want to generate a new audit profile or to overwrite an existing one.
- 3 Optionally, specify an audit category in which the audit profile will be included.
- 4 Click **Generate**.

This table shows the fields in the **Generate Audit Configuration (daxch1201m000)** session:

Field	Description
Selection Range group box	
Exchange Scheme	Specify a range of exchange schemes.
Audit Settings group box	
Audit Profile	Specify the audit profile in which the generated audit configuration will be stored. From this field, you can zoom to the Audit Profiles (ttaud3110m000) session, which, however, is not intended to select an audit profile, unless you want to overwrite an existing profile.
Replace existing profile	If this check box is selected, and you specify an audit profile name that already exists, the existing profile is overwritten after you confirm. If this check box is cleared, and you specify an existing profile, the audit configuration cannot be created.
Audit Category	Optionally, you can specify an existing audit category.

Note: You must convert the new audit settings to runtime through the **Create Runtime Audit Definitions (ttaud3200s000)** session.

Export/import sessions

You can use the export/import sessions to export and import exchange schemes from/into LN.

The Logging sessions consist of the following:

- **Export Exchange Schemes (daxch5201m000)**
- **Import Exchange Schemes (daxch5202m000)**
- **Export Exchange Schemes for Delivery (daxch5203m000)**
- **Import Delivered Exchange Schemes (daxch5204m000)**

Export Exchange Schemes (daxch5201m000)

You can use the **Export Exchange Schemes (daxch5201m000)** session to export exchange schemes to an XML file.

To export exchange schemes:

- 1 Specify the range of exchange schemes that must be exported.
- 2 Specify whether log data must be included in the XML file.
- 3 Specify the path and name for the XML file to be generated.
- 4 Specify whether an existing XML file must be overwritten.
- 5 Click **Export Schemes**.

This table shows the fields in the **Export Exchange Schemes (daxch5201m000)** session:

Field	Description
Selection Range group box	
Exchange Scheme	Specify a range of exchange schemes.
Include Log Data	<p>If this check box is selected, the log data is also exported.</p> <p>To view the log data, use the following sessions:</p> <ul style="list-style-type: none"> • Log Table (Batch Level) (daxch0508m000) • Log Table (Batch Line Level) (daxch0509m000)
Target group box	
File	The name of the export file, including the path.
Overwrite if Existing	If this check box is selected, and a file with the same name as specified in the File field already exists, that file is overwritten. Before the file is overwritten, you are prompted to confirm whether you want to continue.

Note:

- The exchange schemes are exported as XML files.
- Multisite exchange links are not included.
- Texts that are linked to the configuration are included in the exchange scheme. If a text is present in several languages, these texts are all included.

- Use the **Import Exchange Schemes (daxch5202m000)** session to import the exchange schemes.
- Use the **Export Exchange Schemes for Delivery (daxch5203m000)** session instead of the current session if you want to export exchange schemes to deliver as additional files, which you can do from LN and later.

Import Exchange Schemes (daxch5202m000)

You can run the **Import Exchange Schemes (daxch5202m000)** session to import exchange schemes, from an XML file, into LN.

To import exchange schemes, take the following steps:

- 1 Specify the path and name of the XML file that contains the exchange schemes to be imported.
- 2 Specify whether existing exchange schemes must be overwritten.
- 3 Click **Import Schemes**.

This table shows the fields in the **Import Exchange Schemes (daxch5202m000)** session:

Field	Description
Source group box	
File	The path and name of the file that contains the exchange schemes.
Target group box	
Overwrite if Existing	If this check box is selected, and the imported exchange schemes already existed, the existing schemes are overwritten. The user is asked to confirm when a scheme is overwritten.

Note:

- The exchange schemes that are imported are XML files.
- The contents of exchange schemes are not checked. For example, if a scheme for sales order tables from Baan IVc is imported into LN, the specified sales order tables might be changed or might no longer exist. This problem will not be detected.
- The files that contain the exchange schemes were exported using the **Export Exchange Schemes (daxch5201m000)** session.
- To import exchange schemes that are delivered as an additional file, you must use the **Import Delivered Exchange Schemes (daxch5204m000)** session instead of the current session.

Export Exchange Schemes for Delivery (daxch5203m000)

You can use the **Export Exchange Schemes for Delivery (daxch5203m000)** session to export exchange schemes that must be delivered as an additional file. These additional files are XML files that are stored in a specific package, module, and package VRC. These files are delivered with the LN software.

If you install a package, all delivered exchange schemes for that package are installed as well. However, to install exchange schemes manually, you can run the **Import Delivered Exchange Schemes (daxch5204m000)** session, which enables you to select and import a specific additional file into your current company.

For more information, refer to [Exchange scheme delivery](#) on page 76.

To export exchange schemes for delivery:

- 1 Specify the range of exchange schemes to be exported.
- 2 Specify the module for which the exchange schemes are delivered.
- 3 Specify the path and name for the additional file in which the exchange schemes are delivered.
- 4 Specify the description for the additional file.
- 5 Specify whether an existing additional file must be overwritten.
- 6 Click **Export Schemes**.

This table shows the fields in the **Export Exchange Schemes for Delivery (daxch5203m000)** session:

Field	Description
Selection Range group box	
Exchange Scheme	The range of exchange schemes to be exported.
Target group box	
Package	<p>The package code of your current package VRC. The additional file will be delivered with this package.</p> <p>You can select another package VRC in the Change Current Package VRC of User (ttadv0140m000) session. Click Refresh pVRC to display the new current package VRC if you changed the VRC after the current session started.</p>
Current VRC	<p>Your current package VRC. The additional file will be delivered with this package VRC.</p> <p>You can select another package VRC in the Change Current Package VRC of User (ttadv0140m000) session. Click Refresh pVRC to display the new current package VRC if you changed the VRC after the current session started</p>
Module	The module for which the exchange schemes are delivered.
Additional File	The additional file in which the exchange schemes are delivered.
Additional File De- scription	The description of the additional file.
Overwrite if Existing	If this check box is selected, the additional file that is generated overwrites an existing file with the same name.

Note:

- The additional files are XML files with the extension .xch.
- Multisite exchange links are not included.
- Texts that are linked to the configuration are included in the exchange scheme. If a text is present in several languages, these texts are all included.

- The additional files functionality is only available in LN and later.
- If you want to export exchange schemes that are not delivered as additional files, you must run the **Export Exchange Schemes (daxch5201m000)** session instead of the current session.

Import Delivered Exchange Schemes (daxch5204m000)

In some cases, predefined exchange schemes for specific integrations are delivered as additional files with the LN software. These additional files are XML files that belong to a specific package, module, and package VRC.

You can use the **Import Delivered Exchange Schemes (daxch5204m000)** session to select a specific additional file and import the file into your current company.

Note: The additional files are already imported, in the base data company (050), during the installation of LN: when you install a package, all delivered exchange schemes for that package are installed as well. Therefore, you only have to use the **Import Delivered Exchange Schemes (daxch5204m000)** session if you want to import one or more additional files in another company.

For more information, refer to [Exchange scheme delivery](#) on page 76.

To import delivered exchange schemes:

- 1 Specify the package to which the delivered exchange schemes belong.
- 2 Specify the module to which the delivered exchange schemes belong.
- 3 Specify the path and name of the additional file that contains the exchange schemes to be imported.
- 4 Specify whether existing exchange schemes must be overwritten.
- 5 Click **Import Schemes**.

This table shows the fields in the **Import Delivered Exchange Schemes (daxch5204m000)** session:

Field	Description
Source group box	
Package	The package for which the exchange schemes are delivered.
Module	The module for which the exchange schemes are delivered.
Additional File	The additional file in which the exchange schemes are delivered.
Target group box	
Overwrite if Existing	If this check box is selected, the exchange schemes that are imported overwrite existing exchange schemes with the same name.

Note:

- The additional files are XML files with the extension .xch.
- The contents of exchange schemes are not checked. For example, if a scheme for sales order tables from Baan IVc is imported into LN, the specified sales order tables might be changed or might no longer exist. This problem will not be detected.
- The files that contain the exchange schemes were exported using the **Export Exchange Schemes for Delivery (daxch5203m000)** session.

- To import exchange schemes that are not delivered as an additional file, you must use the **Import Exchange Schemes (daxch5202m000)** session rather than the current session.

Chapter 7: Generating an exchange scheme

This chapter describes an easy way to create a new exchange scheme.

Creating an exchange scheme

To generate an exchange scheme:

- 1 Select **Exchange > Master Data > Exchange Schemes** to start the **Exchange Schemes (daxch0501m000)** session. Click the **New** (📄) icon, to start the **Exchange Schemes (daxch0101s000)** details session.
Refer to Master data, for details about these sessions.
- 2 Define the necessary details of your new exchange scheme. If you want your exchange scheme to be based on the audit trail, select the **Based on Audit** check box.
- 3 Save your new scheme, close the details session, and return to the **Exchange Schemes (daxch0501m000)** overview session.
- 4 In the **Exchange Schemes (daxch0501m000)** overview session, select your new exchange scheme, and on the **Specific** menu, click **ASCII Files** to start the **ASCII Files (daxch0102m000)** session.
- 5 Click the **New** icon to define a new ASCII File for your exchange scheme. In the **ASCII File** field, you must enter the name of the table you want to export. LN fills the **Description** field with the description of the table. Define all of your exchange scheme's required files.
- 6 Click **Create ASCII Files...** on the **Specific** menu to start the **Create ASCII File Fields and Relations (daxch0203m000)** session.
- 7 In the fields of the **Selection Range** group box, define the range of your exchange scheme's ASCII files for which you want to create table relations, and field relations.
- 8 In the **ASCII File Fields** group box, select the **Create Based on Table Definitions** check box.
Note: You can use definition files to exchange file formats between exchange schemes.
- 9 In the **Table and Field Relations** group box, select the **Create Batch** check box.
- 10 Click **Create**.

Note:

- This procedure does not make use of the multiline text feature. To use multiline texts, you must change the **Field Type** of the involved fields in the **ASCII File Fields (daxch0503m000)** session, and on the **Specific** menu, click **Recalculate Start Positions** to recalculate the start positions of the file fields.

- If your exchange scheme is based on audit, you must activate the audit trail for the involved tables through the **Generate Audit Configuration (daxch1201m000)** session. You can start this session from the **Specific** menu in the **Exchange Schemes (daxch0501m000)** session. Subsequently, you must convert the new audit settings to runtime through the **Create Runtime Audit Definitions (ttaud3200s000)** session.
- Before you can run the new exchange scheme, you must generate the export and/or import scripts through the **Create Export Programs (daxch0228m000)** session and/or the **Create Import Programs (daxch0227m000)** session.

Regenerating parts of an exchange scheme

You can use the **Create ASCII File Fields and Relations (daxch0203m000)** session to regenerate parts of an existing exchange scheme. If you do so:

- The **ASCII File Fields** group box contains the following check boxes, which, if you click, has the following results:
 - **Overwrite ASCII File Formats:** If you click **Create**, LN overwrites any of your exchange scheme's previously defined ASCII file formats.
 - **Create From Definition Files:** LN creates your exchange scheme's ASCII file's fields from the definition files of the directory you specify in the **Definition Files** field of the **Exchange Schemes (daxch0501m000)** details session.
 - **Create Based on Table Definitions:** LN creates your exchange scheme's ASCII files, based on the tables you defined for your exchange scheme in the **ASCII File** fields of the **ASCII Files (daxch0102m000)** session.
- In the **Table and Field Relations** group box, if you select the:
 - **Create Batch** check box: In the adjacent fields, you can define a batch for your exchange scheme's ASCII files. If you do not use the check box, and adjacent fields to define a batch for your exchange scheme's ASCII files, you must use the **Batches (daxch0104m000)** session to define a batch manually.
 - **Create Import Relations** check box: If you click **Create**, for each of your exchange scheme's ASCII files, LN creates a table relation in the **Table Relation (Import) (daxch0521m000)** session, and for each of your exchange scheme's ASCII file fields, a file field relation in the **Field Relations (Import) (daxch0522m000)** session. If you do not select this check box, you must manually create your exchange scheme's import table relations, and import field relations manually in the **Table Relations (Import) (daxch0521m000)** session, and the **Field Relations (Import) (daxch0522m000)** session respectively.
 - **Create Export Relations** check box: If you click **Create**, for each of your exchange scheme's ASCII files, LN creates a table relation in the **Table Relation (Export) (daxch0531m000)** session, and for each of your exchange scheme's ASCII file fields, a file field relation in the **Field Relations (Export) (daxch0532m000)** session. If you do not select this check box, you must manually create your exchange scheme's export table relations, and export field relations manually in the **Table Relations (Export) (daxch0531m000)** session, and the **Field Relations (Export) (daxch0532m000)** session respectively.
 - **Overwrite Existing Relations** check box: If you click **Create**, LN overwrites any table relations, and field relations previously defined for your exchange scheme.

Chapter 8: Using audit trail in the Exchange module

The audit server logs all database actions that change the contents of a table in so-called audit files. The Exchange module can use these audit files, which are useful in a multisite environment because the databases on all sites must have identical data. These audit files can also be used in data conversions.

Only the updates in a specific period are exchanged, which leads to an improvement in performance. Specify this period in the **Export Data (Non-Regular) (daxch0233m000)** and **Export Data (on a Regular Basis) (daxch0234m000)** sessions. Changes such as insert, update, and delete are processed and written into the ASCII files. Actions such as drop, clear, and create tables are ignored.

Audit control data is added to the resulting ASCII file. This data consists of a batchline ID, transaction ID, sequence ID, and an indicator. The control data is added at the beginning of each line and is formatted like other data fields such as the enclosing and separator characters.

An update writes two lines to the ASCII file. One line contains the key fields and old values of the updated fields. The other line contains the new values of the key fields and updated fields, even if a key field does not change.

The batchline ID is used for recognition when processing the ASCII files. The transaction and sequence IDs are used to ensure that the transactions are replayed in the same order as on the exporting site. The indicator defines the type of action that is executed on the table. Use the letter I to insert; use the letter D to delete; use the letter U to update with old values; and use the letter N to update with new values.

Prerequisites

Export

Before you can export data based on audit trail, you must make sure of the following:

- The exchange scheme and the batches that contain the tables that use the audit procedure are based on audit: Select the **Based on Audit** check box in the **Exchange Schemes (daxch0101s000)** details session and the **Exchange Using Audit** check box in the **Batches (daxch0104m000)** session.

Refer to Master data, for a detailed description of these sessions.

- Audit trail is activated for the involved tables. Use the **Generate Audit Configuration (daxch1201m000)** session to generate the audit settings for the tables in your exchange scheme. Refer to Miscellaneous, for a detailed description of this session. You can start this session from the **Specific** menu in the **Exchange Schemes (daxch0501m000)** session.

To be sure that all changes made in the database are audited, a transaction notification is created in the database for each database transaction being audited. The transaction notification is inserted within the user transaction, and used by Exchange to collect the audit data, to ensure that all changes are processed.

Import

Before you can import data based on audit trail, you must make sure of the following:

- The exchange scheme and the batches, that contain the tables that use the audit procedure, are based on audit: Select the **Based on Audit** check box in the **Exchange Schemes (daxch0101s000)** details session and the **Exchange Using Audit** check box in the **Batches (daxch0104m000)** session.

For a detailed description of these sessions, refer to Master data.

- Sufficient space is available in the \$BSE_TMP directory because all ASCII files are merged into one file during an import. This file contains the audit control data and is sorted on transaction ID and sequence ID.

Limitations of the Exchange (XCH) module based on audit

Introduction

If exchange is based on audit, the sequence in which the database actions are imported must be the same as the sequence in which users performed those database actions on the original database. The Exchange module based on audit guarantees that the sequence of the transactions and the sequence of the database actions in each transaction are preserved. This is also the case for transactions in which multiple tables are involved.

Restrictions on exchange models

The batchline IDs must be identical on the export and import sites. Do not use conditions for updates that integrate two fields into one field. The audit server only logs key fields and changed fields. Therefore, if only one field changes the other value will not be present in the ASCII field.

Be careful when you use conditions in the import part of exchange models that are used for auditing. These conditions can create unsolvable problems. For example, you cannot use a condition that integrates two fields into one field for updates. The audit server only logs key fields and changed fields, therefore, if only one field has changed, the other value will not be present in the ASCII field.

Export

- The table and ASCII file definition do not have to match. Table fields that are not attached to an ASCII field are ignored and ASCII fields that are not attached to a table field are left empty.
- The names do not have to match anymore (as in earlier releases), the data maintained in **Field Relations (Export) (daxch0132s000)** session is used to link table fields with ASCII fields.
- Conditions cannot be used.
- Constants cannot be used (at this moment).

Import

- The names no longer must match, as in earlier releases. The data maintained in the **Field Relations (Import) (daxch0122s000)** session is used to link table fields with ASCII fields.
- For inserts the full functionality is available, such as constants, conditions, and relations.
- Full functionality is also available for overwrite (inserting an already existing record), as long as the **Condition** field returns true.
- Full functionality is also available for deletes, however, note that only the key fields are assigned their values. For this reason, conditions, that are attached to non-key-fields and that have side effects, will most likely not work correctly.
- Note that relations based on **Increment** are meaningless for deletes.

Providing the full functionality for updates is extremely difficult:

- Relations for which the **Based On** field is defined as **Default**, **Fixed Value**, or **Increment** are ignored because these relations are not useful.
- Relations based on **Field Value** or **Conv. Table** can be used without any restrictions. However, these relations will only be applied on key-fields (old values) and changed fields (new values).
- Because the audit server only logs key-fields and changed fields for an update, the other fields are not known. As a result, many fields in the ASCII file will remain empty. If conditions are used, you cannot see whether all accessed fields have valid values. If not, you most likely must not run the condition. To ensure flexibility of conditions, even if you use audit, you can use the **Condition** field condition to guard conditions. It is assumed that this condition decides whether the condition (at field value level) can return a proper value. For this the function changed (<ascii_file>_<field>) can be used in your condition.

- Note that, by the introduction of parameters by condition, all accessed ASCII fields are known and, as a result, you can determine whether all ASCII fields have valid values. However, this knowledge has not been explored in the current version.
- You can access the former value of the ASCII field by means of `not.curr(<ascii_file>_<field>)`
`old.value = <ascii_file>_<field> not.curr(<ascii_file>_<field>) | restore new value!` The former value of the tablefield is in the table field itself (first the condition is executed, and only on returning the value is assigned to the tablefield).

Note: You are not required to configure the auditing manually. Instead, the required audit profile can be generated using the **Generate Audit Configuration (daxch1201m000)** session, which you can start from the **Specific** menu of the **Exchange Schemes (daxch0501m000)** session.

Regarding the logging of values that have not been changed, the behavior of the audit server can be adapted. By changing the audit profile, you can force the audit server to log values for one or more table fields even if the fields have not been changed in an update action. For more information, refer to the Audit Configuration Management topic in the LN Tools section in the Web Help.

Chapter 9: Exchange scheme delivery

This chapter describes how to import exchange schemes in LN.

Note: To access sessions related to export and import of exchange schemes, on the **Exchange** menu, select **Miscellaneous > Export/Import**.

For a detailed description of these sessions, see Miscellaneous.

Installation

Exchange schemes created by Infor are distributed as additional files.

To import these exchange schemes:

- 1 Start the **Import Delivered Exchange Schemes (daxch5204m000)** session.
- 2 Select the additional file to import into your current company.
- 3 Click **Import Schemes**.

Creating export/import programs

After the installation, the imported schemes are available, but the programs are not yet generated. Therefore, after you copy the exchange schemes to the company from which you want to use them, complete these steps:

- 1 Optionally, run the **Exchange Schemes (daxch0501m000)** session to check whether all options for the schemes, including the correct paths, are properly set.
- 2 Run the **Create Import Programs (daxch0227m000)** session and/or the **Create Export Programs (daxch0228m000)** session.