Dynamic Item Hierarchy

Quick Guide

LS Retail NAV 6.1

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Contents

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1 Introduction

1.1 The Purpose of This Document

The purpose of this document is to give an overview of the Dynamic Item Hierarchy function. It is intended for technical users to set up and configure the function and for consultants to learn how to use it.

1.2 Overview

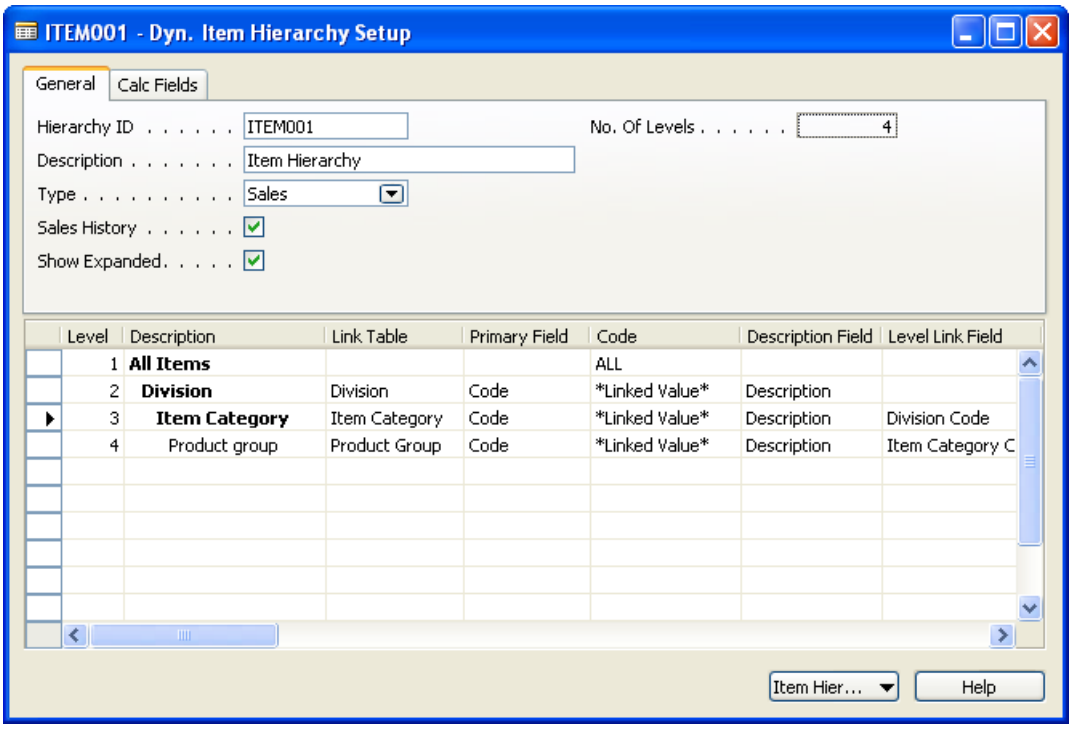
The Dynamic Item Hierarchy is used to set up and maintain an item hierarchy in as dynamic way as possible. The purpose of the dynamic hierarchy is to enable users to structure and analyze the Item Master according to their needs. Even though this hierarchy has the potential for multipurpose use, the main focus in this document will be on using it as part of the Item Sales History.

In the Dynamic Item Hierarchy setup form, the user defines a multi-level hierarchy that describes the item hierarchy to use. Then he synchronizes the hierarchy, which is a process of creating the actual hierarchy based on the setup. After the hierarchy has been synchronized it can be viewed. Hierarchies can be added to the Sales History form by placing a check mark in the the Sales History box on the Dyn. Item Hierarchy Setup card. One of these hierarchies can be check marked as Show Expanded which means that the hierarchy in question will be the expanded one in the sales history form.

A report is provided for printing the hierarchies either as a whole or in part.

2 Setup

Item Hierarchies are set up in the Dyn. Item Hierarchy Setup form Click on **BackOffice, Setup, Item, Dyn. Item Hierarchy**. In this form you can define the hierarchies you want to use. The setup process will be explained using an example that is almost a replication of the normal hierarchy Item Category/Product Group except that the Division level has been added on top.



The above hierarchy is of the type Sales and has been made available for the sales history form. The hierarchy has been selected as the one that will be expanded when the Sales History is opened (**Back Office, Sales History, Sales Analysis, Ledger Entries, Sales History**).

This Demo Hierarchy (among others) is included as an example in the demo company CRONUS LS 2009 (6.1) W1 Demo distributed with the system. To get similar results as shown in the following demo screenshots the Work Date should be set to August 15th, 2007. Other examples will be discussed in later sections.

When a hierarchy of the type Sales is created, as in this case, the Calc Fields (see tab Calc Fields) are created automatically:

Field No.	Type	Caption	Formula
1	Field	Sales (Qty.)	
2	Field	Sales (LCY)	
3	Field	COGS (LCY)	
4	Formula	Profit	F2-F3
5	Formula	Profit %	F4/F2*100

If no type is selected, the user must select preferred columns to display on the hierarchy.
In our example we have five predefined columns for the hierarchy, three of which are actual columns in a table and two calculated from those columns.

Description	Sales (Qty.)	Sales (LCY)	COGS (LCY)	Profit	Profit %
All Items	**1.760.055,98**	**140.291.992,50**	**94.670.607,76**	**45.621.384,74**	**32,52**
Food Items	**461.850,98**	**2.106.383,25**	**821.845,50**	**1.284.537,75**	**60,98**
Beverages	**77.349,00**	**71.921,93**	**35.960,16**	**35.961,77**	**50,00**

As you can see, you are defining the type, caption and calculation formula for each field (column).

The level setup is used to define the structure of the hierarchy. Here we define which tables to use in which order and how they must be linked together. It is important to define for each table in the hierarchy where its corresponding analyzing field is located. So the process is in general to structure the data and link analyzing data to its corresponding column. In our example we have a four level hierarchy All Items (sums), Division (table), Item Category (table) and Product Group (table). Each level is linked to the level above (except the top level):

Level	Description	Link Table	Primary Field	Code	Description Field	Level Link Field
1	**All Items**			ALL		
2	**Division**	Division	Code	*Linked Value*	Description	
3	**Item Category**	Item Category	Code	*Linked Value*	Description	Division Code
4	Product group	Product Group	Code	*Linked Value*	Description	Item Category Code

The locations of the three calc. fields are defined for the table levels. If fields are not defined for a table level then the level is calculated as the sum of all its sub-levels, so in general you only need to define the fields at the lowest level. It is recommended to define the corresponding fields of higher level because it will improve the performance of calculating the hierarchy. In our case the fields have been defined for Item Category and Product Group, but will be calculated for Division:

Sales (Qty.) Field	(+/-)	Sales (LCY) Field	(+/-)	COGS (LCY) Field	(+/-)	Profit (Formula)
Qty. Sold		Sales (LCY)		COGS (LCY)		
Sale (Qty.)		Sale (LCY)		COGS (LCY)		

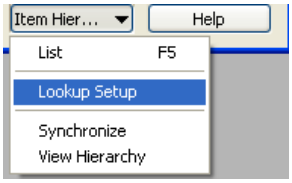
To be able to apply the basic filters (Location, Date and Global Dim 2) you have to define the location of these filters in each table with the calc. fields defined. In our case for Item Category and Product Group:

Profit % (Formula)	Location Filter Field	Date Filter Field	Global Dim 2 Filter Field
	Location Filter	Date Filter	Global Dimension 2 Filter
	Location Filter	Date Filter	Project Filter

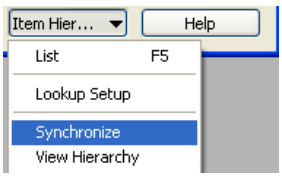
Finally the links between each linked table and the item master must be defined. By doing so, the hierarchy is able to filter and show items for a given hierarchy line. This would normally be done at the same time you define the level, but is shown here as a separate step for clarification. In this example Division, Item Category and Product Group are all linked to corresponding fields in the item table:

Item Field	Switch T...
Division Code	
Item Category Code	
Product Group Code	

Most of this setup work can be done automatically by using the Table Lookup module included with the Item Finder module. Defaults can be set for fields in a table in the Table Lookup module. For each table the primary and description fields and most of the calculation and filtering fields can be defined. Refer to the Table Lookup documentation for details. Table Lookup setup can be accessed from the Dynamic Hierarchy setup form: see the menu button command *Lookup Setup* on the hierarchy setup form:



After setting up the hierarchy it is ready to be synchronized (created): see the menu button command *Synchronize* on the hierarchy setup form:

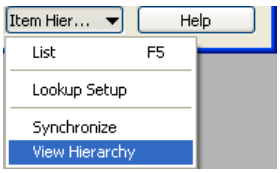


Note that a hierarchy has to be resynchronized if the data that it is based on is changed. If in our case a Division, Item Category or a Product Group is added, changed or deleted the hierarchy must be synchronized again. A hierarchy must also be resynchronized if links between the groups are changed. If in doubt resynchronize it will not damage anything.

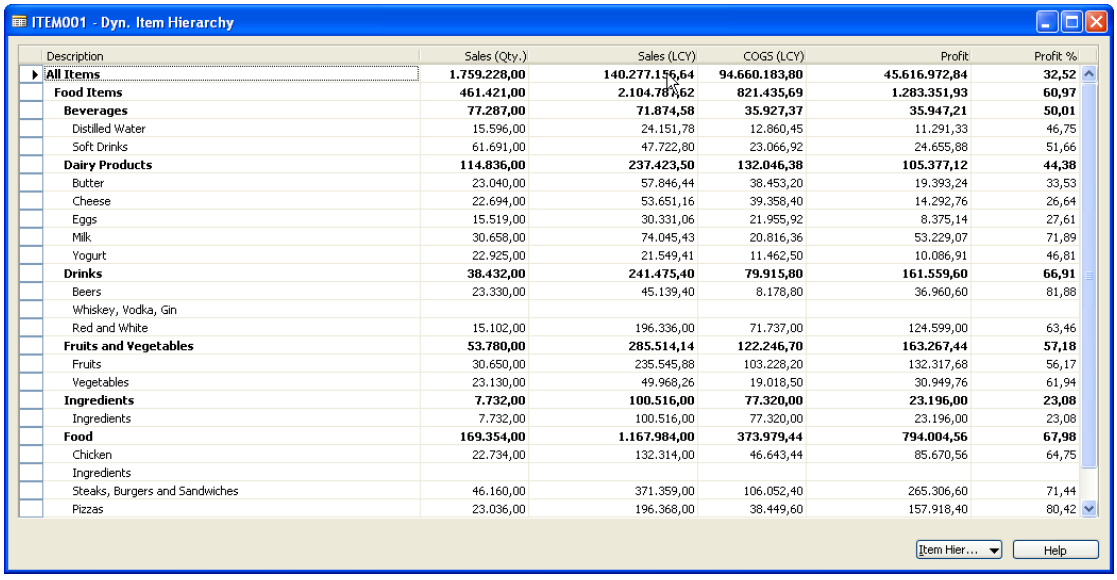
Note that table Item can be added to our example as level 5 for the listing of all items in every product group. But since items are frequently changed (added, deleted or changed) in most organizations the resynchronization must almost be done every time the hierarchy is viewed.

A scheduled job can be set up to synchronize all dynamic item hierarchies. The job should run codeunit 10000730 (Dyn. Item Hierarchy Mgt). For details see the Scheduler Job 'DYNITEMHIERSYNCALL' in the demo company.

To view the synchronized hierarchy: see the menu button command *View Hierarchy* on the hierarchy setup form:



If you run this hierarchy in the demo company you will get this result:


ITEM001 - Dyn. Item Hierarchy

Description	Sales (Qty.)	Sales (LCY)	COGS (LCY)	Profit	Profit %
All Items	**1.759.228,00**	**140.277.155,64**	**94.660.183,80**	**45.616.972,84**	**32,52**
Food Items	**461.421,00**	**2.104.787,62**	**821.435,69**	**1.283.351,93**	**60,97**
Beverages	**77.287,00**	**71.874,58**	**35.927,37**	**35.947,21**	**50,01**
Distilled Water	15.596,00	24.151,78	12.860,45	11.291,33	46,75
Soft Drinks	61.691,00	47.722,80	23.066,92	24.655,88	51,66
Dairy Products	**114.836,00**	**237.423,50**	**132.046,38**	**105.377,12**	**44,38**
Butter	23.040,00	57.846,44	38.453,20	19.393,24	33,53
Cheese	22.694,00	53.651,16	39.358,40	14.292,76	26,64
Eggs	15.519,00	30.331,06	21.955,92	8.375,14	27,61
Milk	30.658,00	74.045,43	20.816,36	53.229,07	71,89
Yogurt	22.925,00	21.549,41	11.462,50	10.086,91	46,81
Drinks	**38.432,00**	**241.475,40**	**79.915,80**	**161.559,60**	**66,91**
Beers	23.330,00	45.139,40	8.178,80	36.960,60	81,88
Whiskey, Vodka, Gin					
Red and White	15.102,00	196.336,00	71.737,00	124.599,00	63,46
Fruits and Vegetables	**53.780,00**	**285.514,14**	**122.246,70**	**163.267,44**	**57,18**
Fruits	30.650,00	235.545,88	103.228,20	132.317,68	56,17
Vegetables	23.130,00	49.968,26	19.018,50	30.949,76	61,94
Ingredients	**7.732,00**	**100.516,00**	**77.320,00**	**23.196,00**	**23,08**
Ingredients	7.732,00	100.516,00	77.320,00	23.196,00	23,08
Food	**169.354,00**	**1.167.984,00**	**373.979,44**	**794.004,56**	**67,98**
Chicken	22.734,00	132.314,00	46.643,44	85.670,56	64,75
Ingredients					
Steaks, Burgers and Sandwiches	46.160,00	371.359,00	106.052,40	265.306,60	71,44
Pizzas	23.036,00	196.368,00	38.449,60	157.918,40	80,42

Item Hier... Help

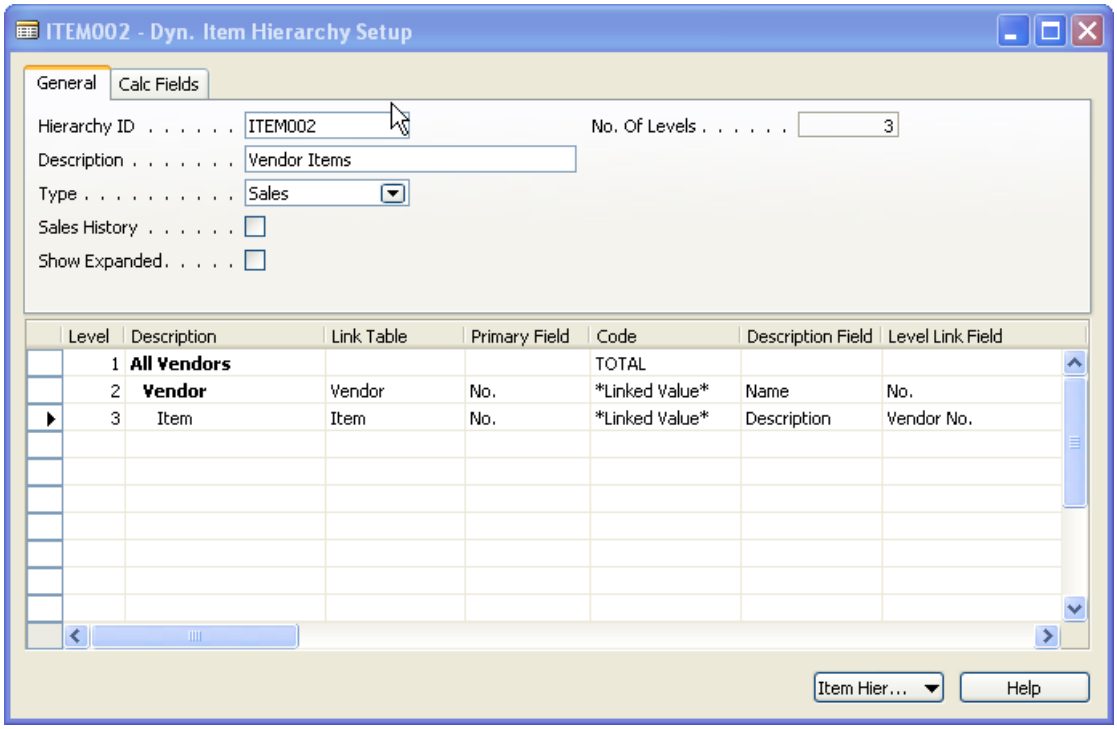
3 Use Cases

In this version of LS Retail NAV (6.1) the main focus of usability is on the sales history. Five hierarchy templates have been created and are accessible in the demo company (CRONUS LS 2009 (6.1) W1 Demo). The first one ITEM0001 was examined in the previous setup chapter. The other four hierarchy templates will be further explained in this chapter:

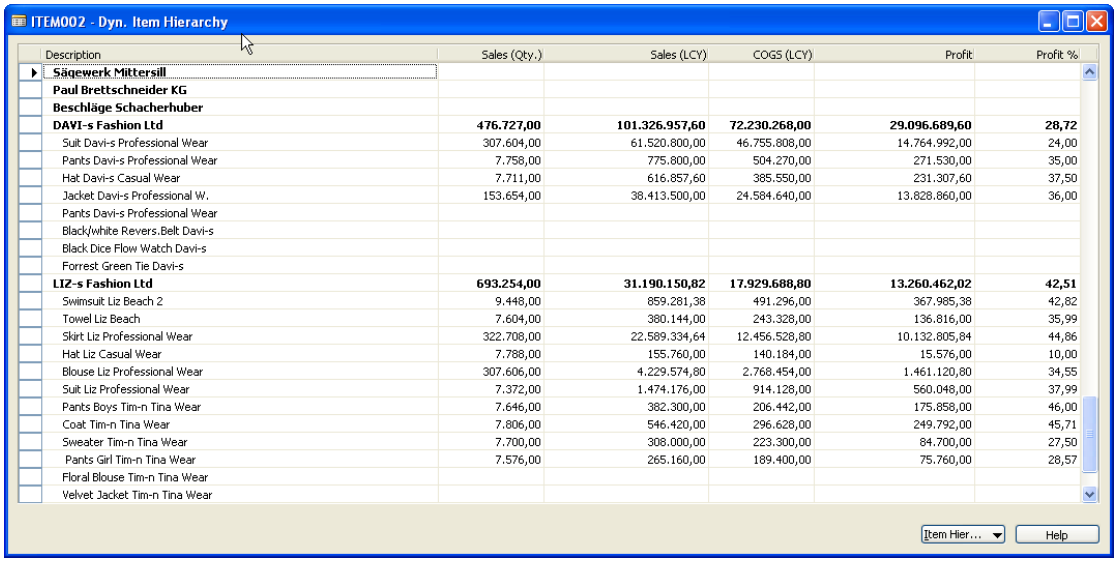
1. ITEM001 – Item Hierarchy (see setup)
2. ITEM002 – Vendor Items
3. ITEM003 – Seasons
4. ITEM004 – Life styles
5. ITEM005 – Special Groups

3.1 Vendor Items

This hierarchy lists all vendors and items that are related to them. The type is Sales so the calc fields are set automatically:



Note that since the lowest level is Item, the hierarchy must be synchronized frequently.
If you view this hierarchy in the demo database the result is as follows:

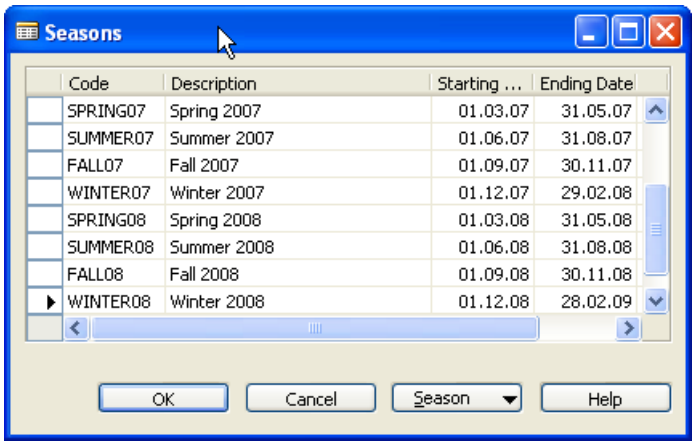


Description	Sales (Qty.)	Sales (LCY)	COGS (LCY)	Profit	Profit %
Sägewerk Mittersill					
Paul Brettschneider KG					
Beschläge Schacherhuber					
DAVI-s Fashion Ltd	**476.727,00**	**101.326.957,60**	**72.230.268,00**	**29.096.689,60**	**28,72**
Suit Davi-s Professional Wear	307.604,00	61.520.800,00	46.755.808,00	14.764.992,00	24,00
Pants Davi-s Professional Wear	7.758,00	775.800,00	504.270,00	271.530,00	35,00
Hat Davi-s Casual Wear	7.711,00	616.857,60	385.550,00	231.307,60	37,50
Jacket Davi-s Professional W.	153.654,00	38.413.500,00	24.584.640,00	13.828.860,00	36,00
Pants Davi-s Professional Wear					
Black/white Revers.Belt Davi-s					
Black Dice Flow Watch Davi-s					
Forrest Green Tie Davi-s					
LIZ-s Fashion Ltd	**693.254,00**	**31.190.150,82**	**17.929.688,80**	**13.260.462,02**	**42,51**
Swimsuit Liz Beach 2	9.448,00	859.281,38	491.296,00	367.985,38	42,82
Towel Liz Beach	7.604,00	380.144,00	243.328,00	136.816,00	35,99
Skirt Liz Professional Wear	322.708,00	22.589.334,64	12.456.528,80	10.132.805,84	44,86
Hat Liz Casual Wear	7.788,00	155.760,00	140.184,00	15.576,00	10,00
Blouse Liz Professional Wear	307.606,00	4.229.574,80	2.768.454,00	1.461.120,80	34,55
Suit Liz Professional Wear	7.372,00	1.474.176,00	914.128,00	560.048,00	37,99
Pants Boys Tim-n Tina Wear	7.646,00	382.300,00	206.442,00	175.858,00	46,00
Coat Tim-n Tina Wear	7.806,00	546.420,00	296.628,00	249.792,00	45,71
Sweater Tim-n Tina Wear	7.700,00	308.000,00	223.300,00	84.700,00	27,50
Pants Girl Tim-n Tina Wear	7.576,00	265.160,00	189.400,00	75.760,00	28,57
Floral Blouse Tim-n Tina Wear					
Velvet Jacket Tim-n Tina Wear					

If the type is cleared, it is easy to select other columns to analyze, for example purchase quantities and amounts.

3.2 Seasons

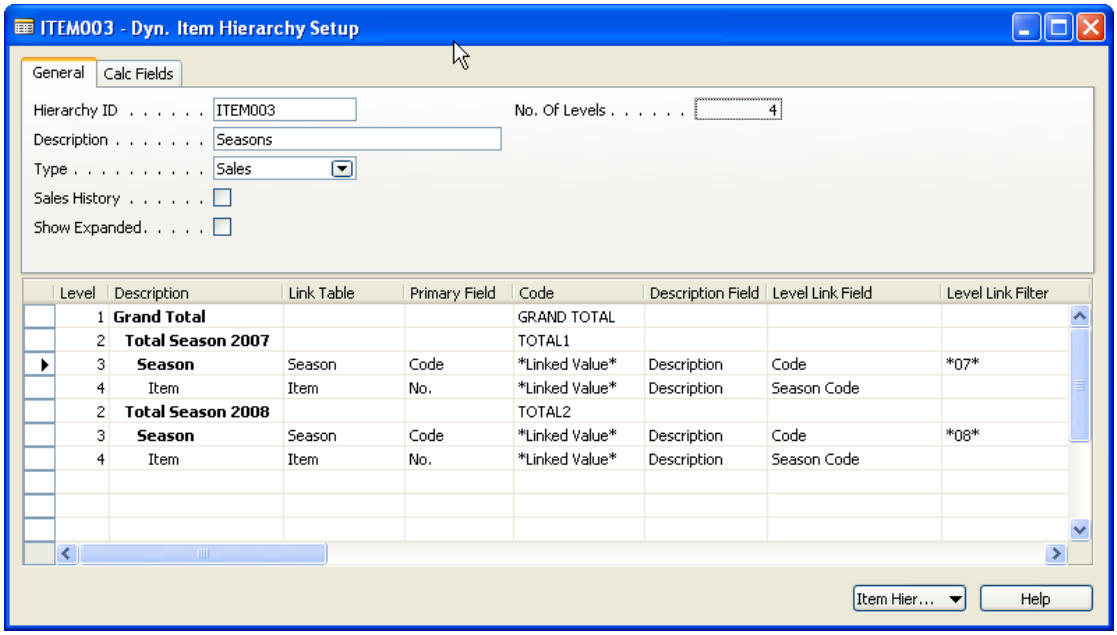
The Dynamic Hierarchy function can be used to group items for different seasons defined in the season table and attached to items. In this example we have defined these seasons for the years 2007 and 2008:



Code	Description	Starting ...	Ending Date
SPRING07	Spring 2007	01.03.07	31.05.07
SUMMER07	Summer 2007	01.06.07	31.08.07
FALL07	Fall 2007	01.09.07	30.11.07
WINTER07	Winter 2007	01.12.07	29.02.08
SPRING08	Spring 2008	01.03.08	31.05.08
SUMMER08	Summer 2008	01.06.08	31.08.08
FALL08	Fall 2008	01.09.08	30.11.08
WINTER08	Winter 2008	01.12.08	28.02.09

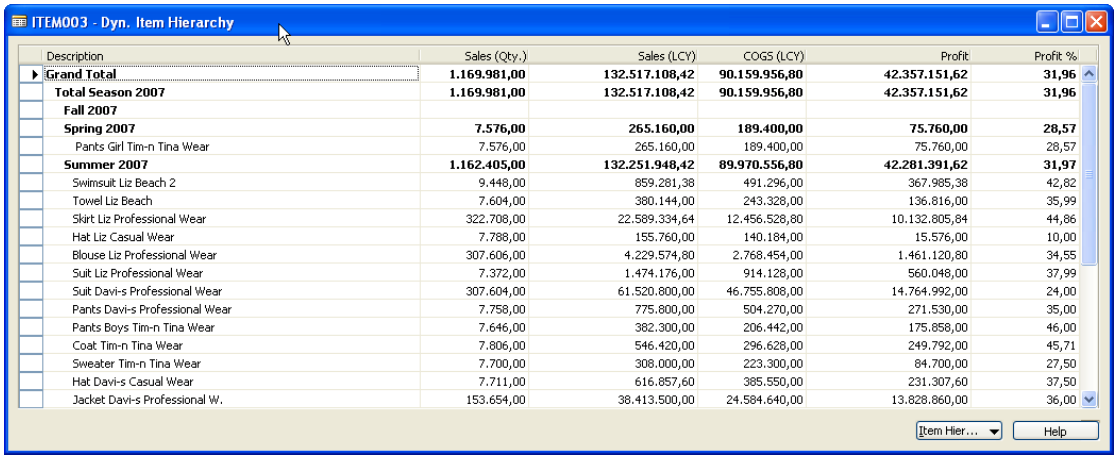
We have marked some clothing items in our demo company with these season codes and want to display sales information for those items.

First we create the Dynamic Hierarchy by linking the Item table to the Season table. In our example we want to analyze seasons for years 2007-2008:



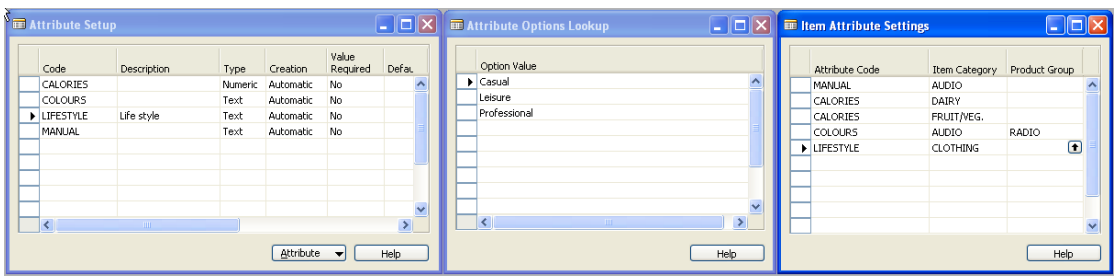
The hierarchy is grouped by years on level 2 by using the Level Link Field and Level Link Filter. The first group is for season codes containing the string 07 and the second for season codes containing the string 08. Groups or years can then be changed in the future or years added.

Here we have the hierarchy view from the demo company:

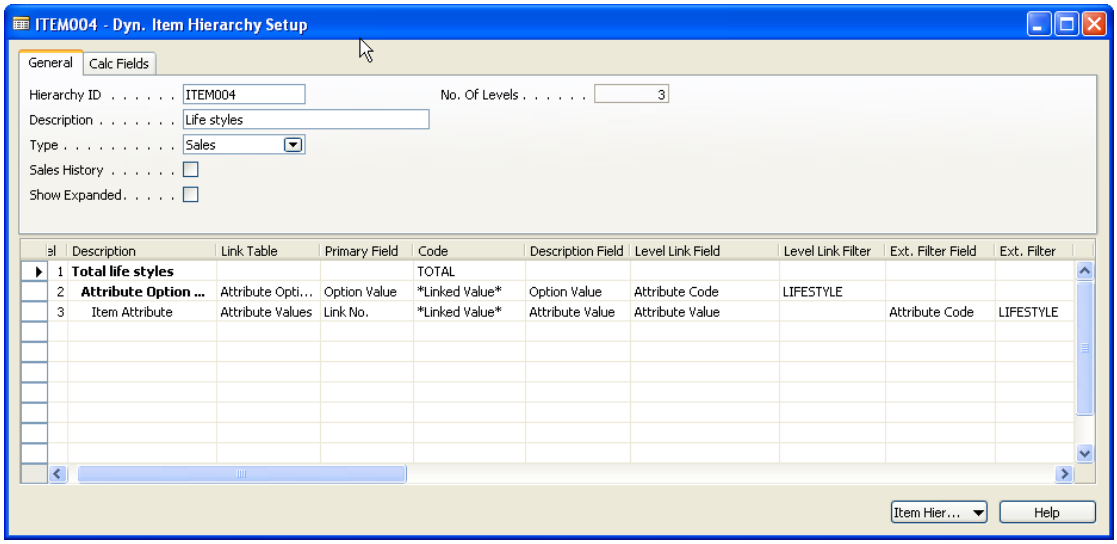


3.3 Item Attributes

In this demo we use Item Attributes to group clothing items by lifestyles. First we create new attribute LIFESTYLE and then Attribute Options (Attribute button) Casual, Leisure and Professional. Finally we add the Item Attribute Settings – LIFESTYLE, CLOTHING so that we can add these attributes to Items in Item Category Clothing.

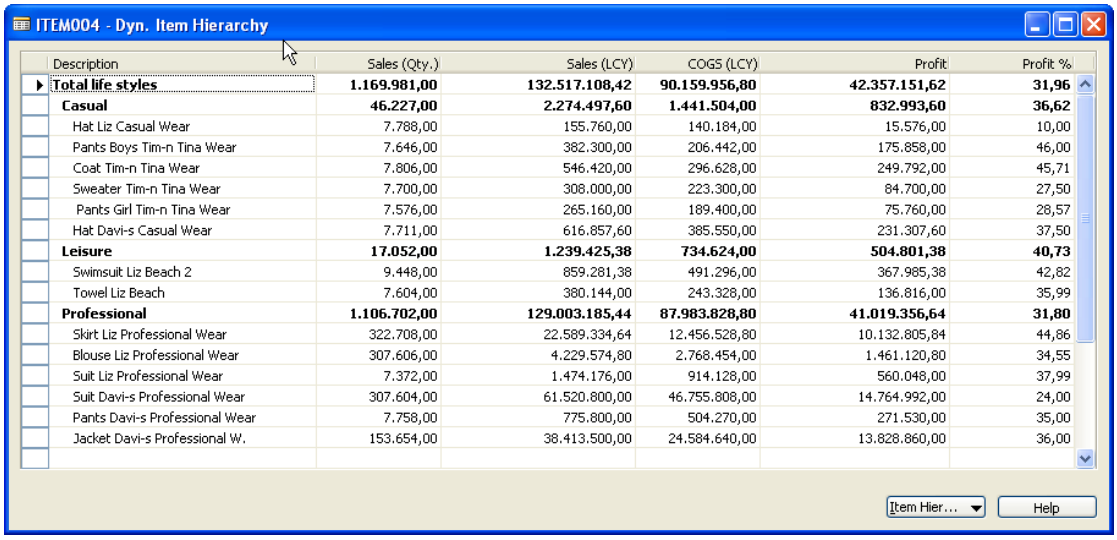


Now we can add these lifestyle attributes to Items. Now data is ready for the hierarchy that we create like as follows:



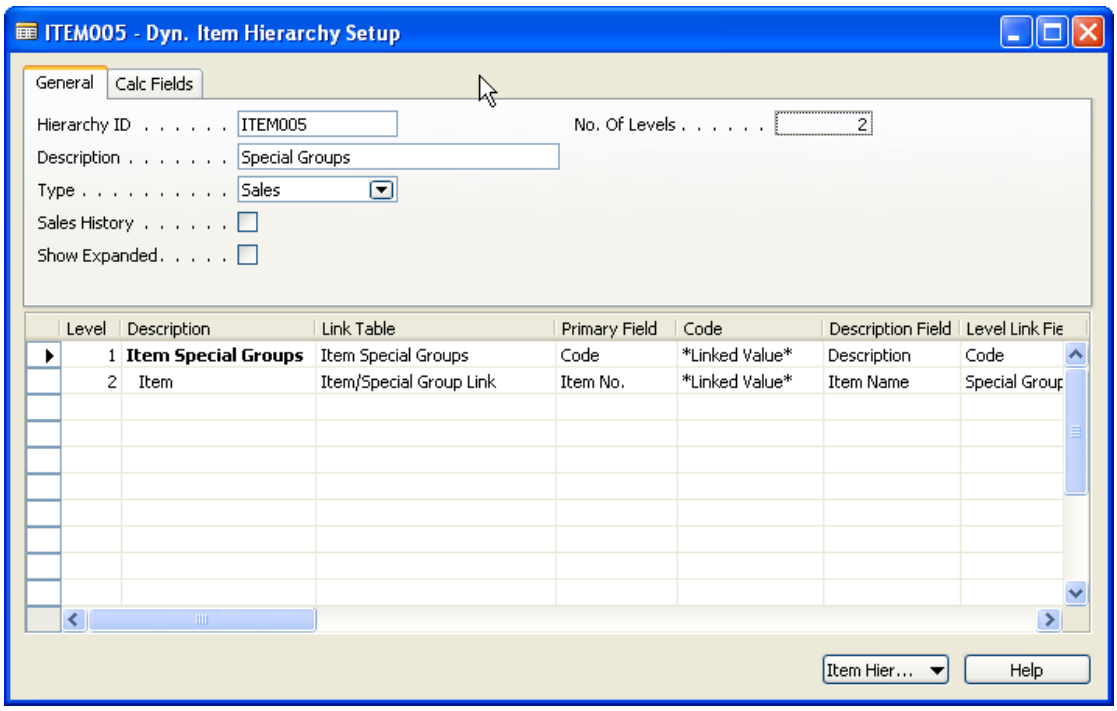
This one is a bit more complicated than the others since we have two fields as a key between the tables. We use the Level Link Filter and the Ext. Filter in this example.

The result will look like this in our demo database:



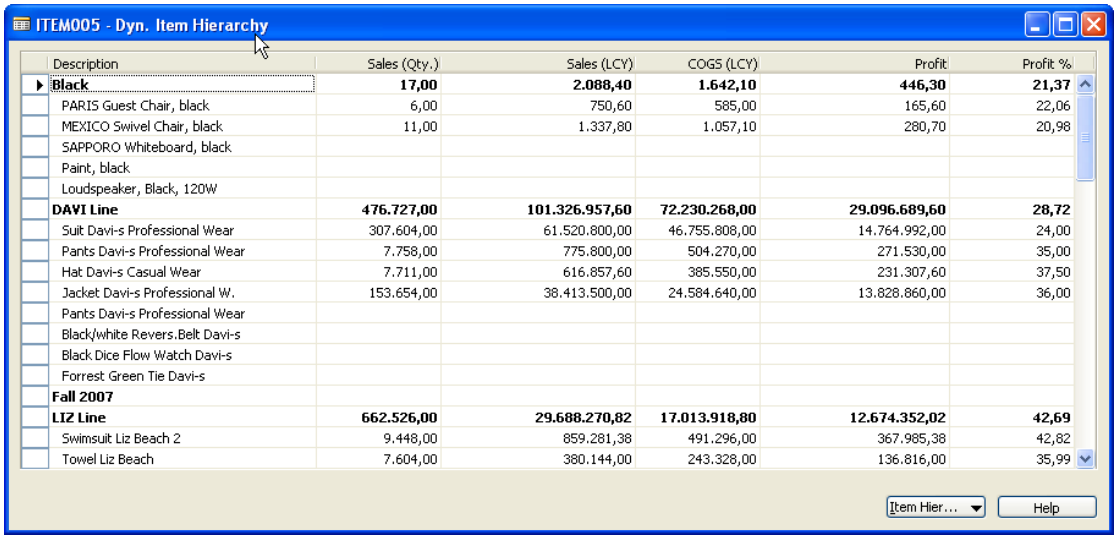
3.4 Special Groups

Finally we have a demo of hierarchy to print out Special Groups with Items:



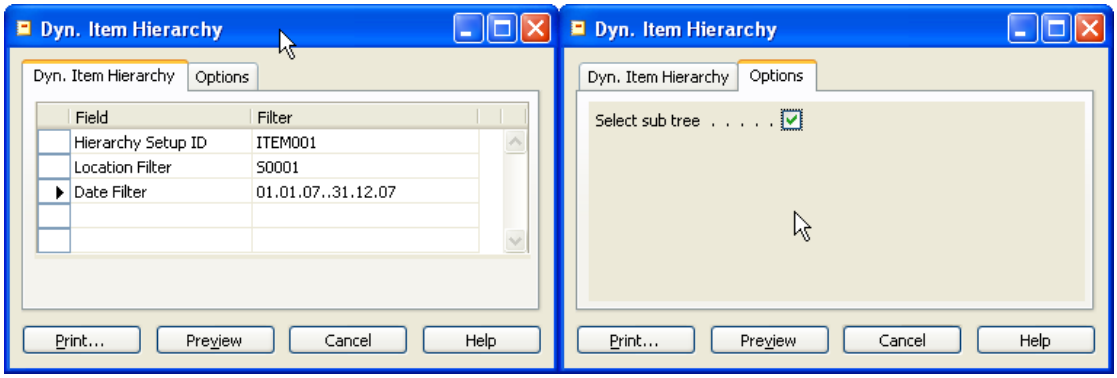
Here we actually link three tables; that is, Item Special Groups, Item/Special Group Link and Item. The link to Item is done by placing a check mark the **Switch To Item** field in the level 2 line.

Here we have the result if run from the demo company:

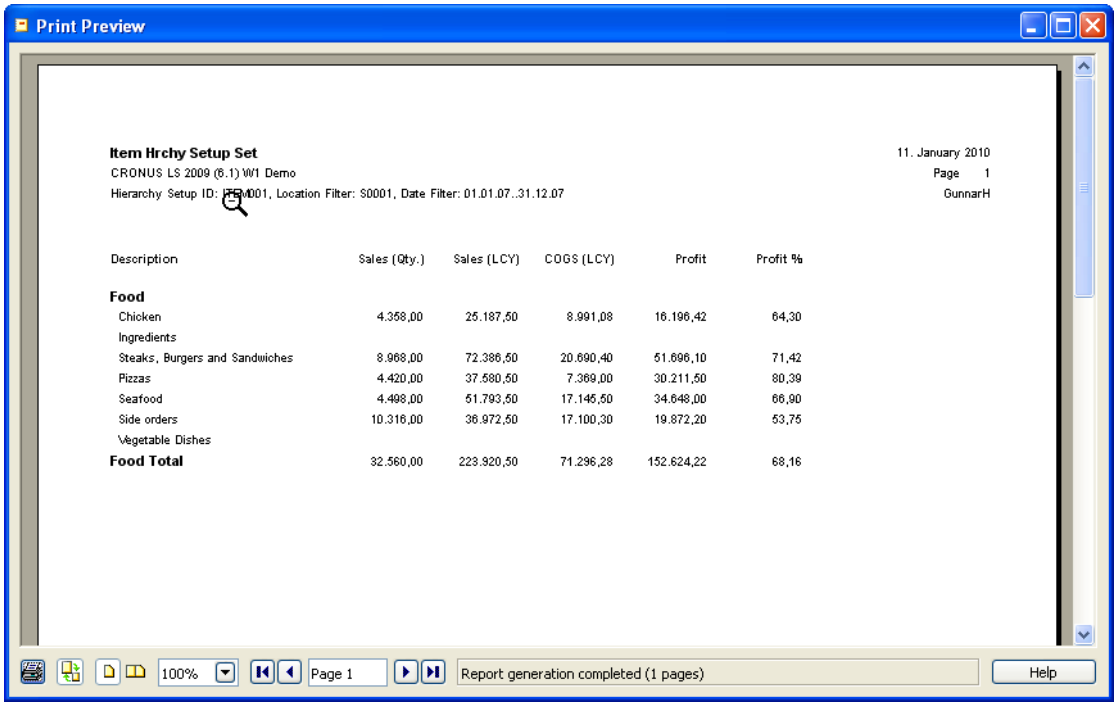


3.5 Dynamic Item Hierarchy Report

For all the hierarchies that we have examined and that you might create in the future they can be printed or viewed as print preview from the Dyn. Item Hierarchy report (Click on **BackOffice, Reports, Item, Dyn. Item Hierarchy**). All defined hierarchies can be selected, filtered and then printed:

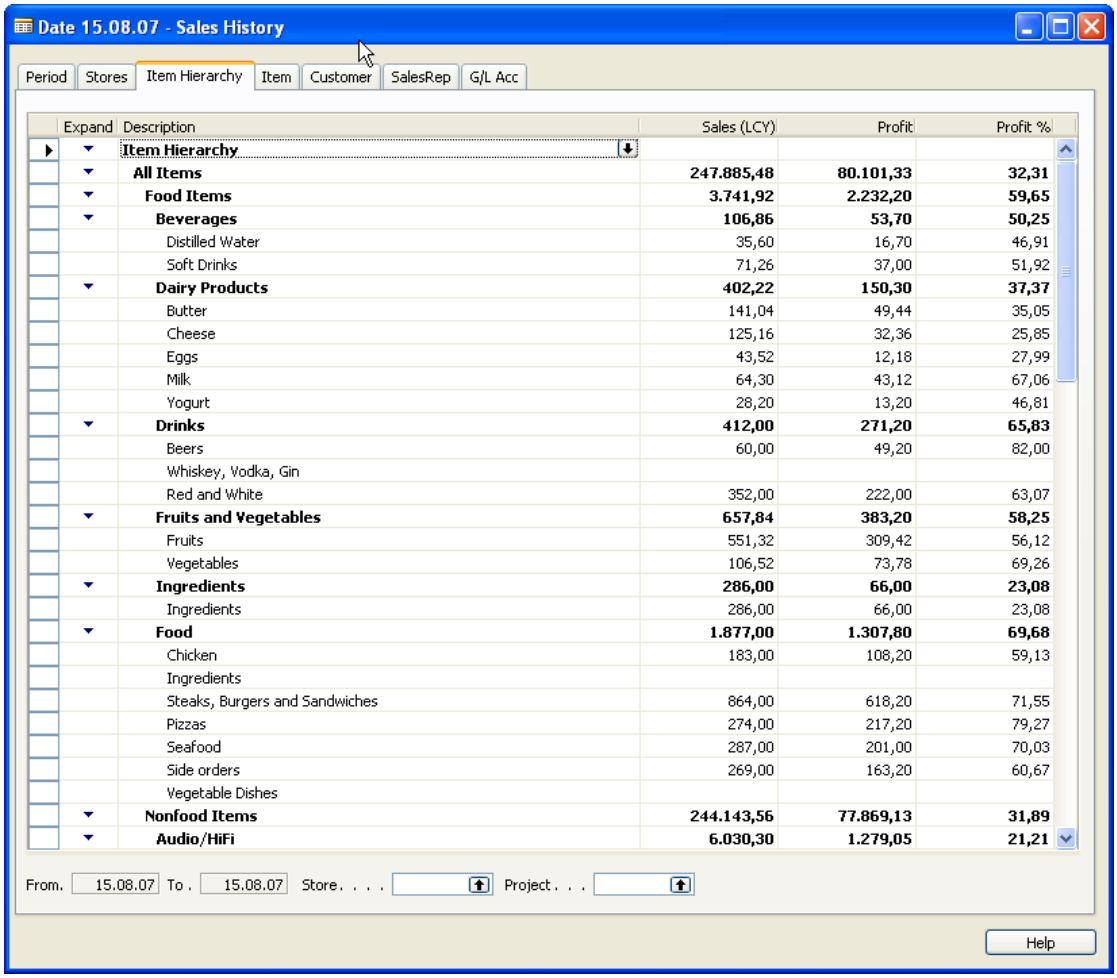


Note that you have the option to select a sub-node (tree) of the hierarchy while printing. If selected, the user is asked to select sub-tree after the report starts. In the example below the Item Category Food was selected:

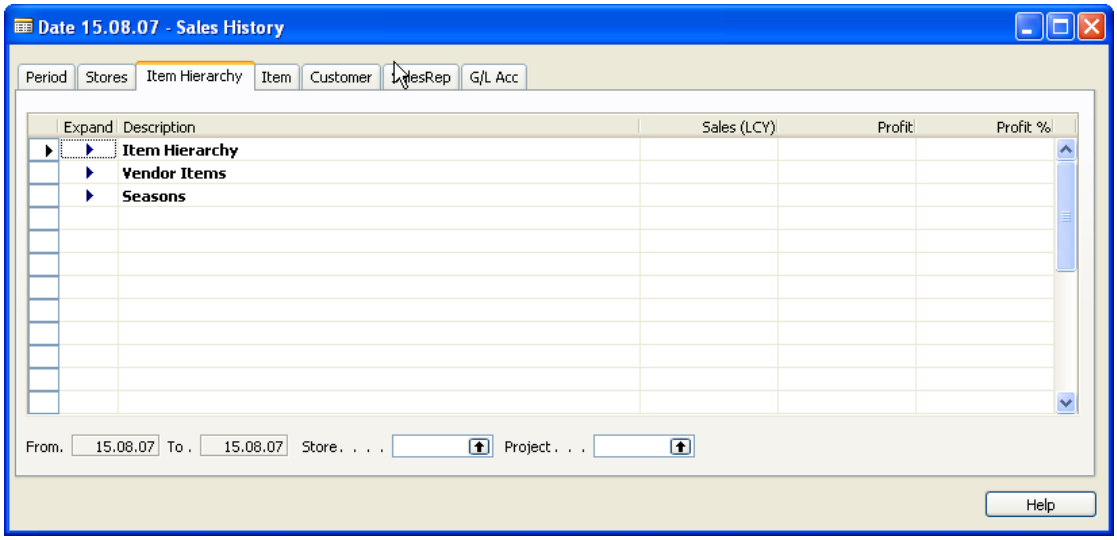


3.6 Sales History

Hierarchies that have the field Sales History check marked are accessible through the Sales History form (Click on **BackOffice, Sales History, Sales Analysis – Ledger Entries, Sales History**). In our demo data hierarchy ITEM001 is check marked and it is also check marked as Show Expanded. Add the marking to hierarchies ITEM002 and ITEM003. Then open the Sales History form and open Item Hierarchy tab:



The selected item hierarchy with the Show Expanded check marked is shown fully expanded. If you collapse the top level of the Item Hierarchy, you will see the other two Sales History hierarchies collapsed:



Now you can expand the other sales history hierarchies as you like.

If no Dynamic Item Hierarchy is check marked as Sales History hierarchy, the functionality of the Sales History is unchanged from previous versions.