



Pricing and the Condition Technique with SAP S/4HANA®

- › Use the condition technique for pricing and sales in SAP S/4HANA
- › Configure condition tables, condition types, access sequences, and more
- › Master condition exclusion and currency conversion

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Chapter 3

Pricing Reports and Price Lists

Like any other master data, condition records must also be maintained by the respective departments of the company. Efficient tools can select the relevant subset from a large population of condition records to assist in this task.

In addition to the different maintenance transactions, additional tools are provided to maintain and evaluate condition records to answer different questions. You can use pricing reports to get an overview of condition records or use price lists for price information.

In the following sections, we'll look at executing, configuring, and using pricing reports. We'll also explain the use and functionality of the net price list, the Sales Price API, and the price list.

3.1 Pricing Reports

To get an overview of the condition records in the system, you can use special pricing reports. For example, the condition records can be searched to answer the following questions:

- Which customer-specific price agreements exist in my sales organization for specific products?
- Which condition records are stored in the system for certain *incoterms*?
- What conditions have been created for a specific customer?

In the standard SAP system, there are several preconfigured pricing reports, such as pricing report 16 (**Individual Prices**). In addition, you can configure further pricing reports by a report generator within Customizing (see Section 3.1.2) to cover any customer requirements. Let's now look at how to handle pricing reports.

3.1.1 Execution of Pricing Reports

To call a pricing report, choose menu path **SAP Easy Access • Logistics • Sales and Distribution • Master Data • Conditions • List • Pricing Report** (Transaction V/LD). Let's look at this tool using the example of pricing report 16 (see Figure 3.1). Initially, after starting a pricing report, a selection screen appears to restrict the query. The number of selection

fields can be configured, as you'll also see in Section 3.1.2, when creating a pricing report in Customizing. You can also configure the default for the attributes in the **List Screen** field group.

After entering the selection criteria, you can start the pricing report by selecting **Execute** or using **F8**. The results will be displayed as shown in Figure 3.2. Within the possibilities offered, the appearance of the result list (e.g., positioning a field on the page header, group header, or item level) can also be configured in the Customizing of the pricing report.

From the results list, you can branch to the condition maintenance transactions: Transactions VK11 (Create), VK12 (Change), and VK13 (Display). In the case of display and change, you jump directly to the condition record marked in the list.

The screenshot shows the SAP 'Individual Prices' configuration screen. The header includes the SAP logo and the title 'Individual Prices'. Below the header, there are several input fields for selection criteria: Sales Organization, Distribution Channel, Customer, Material, Release Status, and Condition Type. Each field has a 'to:' field and a search icon. The 'Validity Period' section includes a 'Validity range' with 'from' and 'to' date fields (04.08.2025 and 31.12.9999) and checkboxes for 'at start of validity period' and 'at end of validity period'. The 'List Screen' section contains checkboxes for 'Scale quantity', 'Validity period', 'Additional cond. fields', 'Cond. marked for deletion', and 'Exclusive'. At the bottom, there is a 'Maximum No. of Hits' field set to 500 and an 'Execute' button.

Figure 3.1: The "Individual Prices" Pricing Report (Transaction V/LD)

| Customer | | ReSt | S | Scale | Quantity | UoM | Amount | Unit | Unit | UoM | Valid From | Valid To |
|---------------------------|------------------|-------|---|---------|----------|-----|----------|------|------|-----|------------|------------|
| PRND | ZMATERIAL_DUMAN3 | | | | | | 0,00 | EUR | 1 | EA | 13.04.2017 | 31.12.9999 |
| 312 SecureHome PLC | | | | | | | | | | | | |
| PPR0 | MM FOR 312 | | | | | | 50,00 | EUR | 1 | EA | 14.10.2021 | 31.12.9999 |
| PR00 | MM FOR 312 | | | | | | 50,00 | EUR | 1 | EA | 14.10.2021 | 31.12.9999 |
| PR00 | MM FOR 312 | A | | | | | 3,00 | EUR | 1 | EA | 06.05.2025 | 31.12.9999 |
| 856 Hypatia of Alexandria | | | | | | | | | | | | |
| ZLP1 | ZTABLE_2 | | | | | | 5,99 | EUR | 1 | EA | 07.04.2017 | 31.12.9999 |
| 886 Duman | | | | | | | | | | | | |
| PRND | ZMATERIAL_DUMAN3 | | | | | | 14,99 | EUR | 1 | EA | 13.04.2017 | 31.12.9999 |
| 5354 DelBont Industries | | | | | | | | | | | | |
| PR00 | MZ-FG-P001 | | | | | | 2.990,00 | USD | 1 | PC | 01.10.2018 | 31.12.9999 |
| PR00 | MZ-SR-P004 | | | | | | 19,00 | USD | 1 | EA | 01.10.2018 | 31.12.9999 |
| 111320 Test_AIS_01 | | | | | | | | | | | | |
| ZA01 | TES_AIS | | | | | | 100,00 | EUR | 1 | PC | 06.12.2021 | 31.12.9999 |
| ZA01 | TES_AIS_LIST | | | | | | 10,00 | EUR | 1 | PC | 07.12.2021 | 31.12.9999 |
| ZR01 | TES_AIS_LIST | To... | | 10,000 | PCS | | 0,000 | % | | | 07.12.2021 | 31.12.9999 |
| | | | | 30,000 | | | 10,000- | | | | | |
| | | | | 50,000 | | | 15,000- | | | | | |
| | | | | 100,000 | | | 20,000- | | | | | |

Figure 3.2: Individual Prices: Result List

3.1.2 Configuration of a Pricing Report

Configuring pricing reports is part of Customizing, so it can't be done in the end user's application menu. The settings for the pricing reports can be accessed via menu path **IMG • Sales and Distribution • Basic Functions • Pricing • Maintain Pricing Report** (Transaction V/LA).

To create a new pricing report, you first select a two-digit abbreviation from the customer namespace (these are, by definition, all two-digit combinations that begin with a letter) and enter a title. In our example report, we'll use the abbreviation **X0** and the title **Conditions per Customer** (see Figure 3.3).

The screenshot shows the SAP 'Create Pricing Report' screen. At the top, there is a navigation bar with the SAP logo and the title 'Create Pricing Report'. Below this, there is a search bar with a dropdown arrow and a 'More' button. The main area contains two input fields: 'List Report: * X0' and 'Title: Conditions per Customer'.

Figure 3.3: Create Pricing Report: Initial Screen

Next, a screen appears with all fields that are part of a condition table in the underlying development system (see Figure 3.4).

List Report: X0

Title: Conditions per Customer

Field Selection

| Field Name | Technical View |
|--|------------------------|
| <input type="checkbox"/> City Code | CITYC |
| <input type="checkbox"/> Commission Group | PROVG |
| <input type="checkbox"/> Commodity Code | STAWN |
| <input type="checkbox"/> Company Code | BUKRS |
| <input type="checkbox"/> Condition Agreement ID | CNDN_AGREEMENT_ID |
| <input type="checkbox"/> Condition Agreement Item ID | CNDN_AGREEMENT_ITEM_ID |
| <input type="checkbox"/> Condition Contract | COCO_NUM |
| <input type="checkbox"/> Condition agreement Source | CNDN_AGREEMENT_SOURCE |
| <input type="checkbox"/> Contract | OIU_CT |
| <input type="checkbox"/> Control Code | STEUC |
| <input type="checkbox"/> Country/Region Key | LAND1 |
| <input type="checkbox"/> County Code | COUNC |
| <input type="checkbox"/> Cross-plant grouping | PWGGR |
| <input type="checkbox"/> Customer | KUNNR |

Figure 3.4: Create Pricing Report: Field Selection

When selecting the fields, the challenge is to make a preliminary decision: Which condition tables and condition types are to be evaluated in the resulting pricing report? Here, a combination of the fields with AND or with OR is possible. Each option has an impact on the selection of the condition tables. We opt for the **Customer** (KUNNR) field. As a result, we receive a listing of all condition tables in which field KUNNR is included, as shown in Figure 3.5.

Name of list: X0

Title: Conditions per Customer

Key combinations

| Ta... | Short Description |
|------------------------------|--|
| <input type="checkbox"/> 005 | Customer/Material |
| <input type="checkbox"/> 007 | Division/Customer |
| <input type="checkbox"/> 030 | Customer/Material Pricing Group |
| <input type="checkbox"/> 114 | Tax Exemption: Customer |
| <input type="checkbox"/> 115 | Ser.agnt/Dep.ctr/Dep.PC /Ship-to party |
| <input type="checkbox"/> 116 | Tax Exemption - Customer/Tax Classification 2-Material |
| <input type="checkbox"/> 117 | Tax Exemption - Customer/Material |
| <input type="checkbox"/> 145 | Sales Deal - Customer/Material |
| <input type="checkbox"/> 152 | Sales Org./Dist. Channel/Plant/Material/Sales Unit/Customer |
| <input type="checkbox"/> 153 | Sales Org./Distribution Channel/Plant/Sales Unit/Customer |
| <input type="checkbox"/> 154 | SalesOrg./Dist.Channel/PriceList/Material/SalesUnit/Customer |

Figure 3.5: Create Pricing Report: Selection of Condition Tables

We select condition tables **005**, **007**, **305**, and **307** and come to the last screen in the generation sequence (see Figure 3.6). Here, we can influence the selection screen and the appearance of the result list.

List Report: X0
Title: Conditions per Customer

Field Positioning

| Field Name | Positioning | Sort | Text | Selection | Required In... |
|----------------------|---------------------|------|---------------------|-------------------------------------|-------------------------------------|
| Sales Organization | 1 Page Header of... | 2 | The key field an... | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Distribution Channel | 1 Page Header of... | 1 | Only the key fie... | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Customer | 3 Item Level of... | 3 | Only the corresp... | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Material | 3 Item Level of... | 3 | Only the corresp... | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Division | 3 Item Level of... | 3 | Only the corresp... | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Release Status | 3 Item Level of... | 3 | Only the corresp... | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Condition Type | 3 Item Level of... | 3 | Only the corresp... | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Validity Period | 3 Item Level of... | | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Default Values for Selection Screen

- Display Scales
- Display Validity Period
- Display Additional Condition Fields (e.g. Lower/Upper Limit)
- Conditions Marked for Deletion
- Exclusive

Figure 3.6: Create Price List Report: Appearance of the Result List

The system offers the key fields of all previously selected condition tables as selection fields. In the **Positioning** column, you can choose between three options:

- **1: Page Header of Pricing Report**
- **2: Group Header of Pricing Report**
- **3: Item Level of Pricing Report**

In the **Sort** column, the order of the fields in a level (page header, group header, or item level) can be set. The sort order doesn't affect the order of the page header, group header, and item level itself.

In the **Text** column, you also have three options available:

- **1: Only the key field is displayed**
- **2: The key field and the corresponding text are displayed**
- **3: Only the corresponding text is displayed**

These options apply only to the levels of group header and item level. In contrast, in the page header, the field name and description are always displayed. Due to lack of space, either the field name or the associated text should be displayed at the item level.

In the **Selection** column, you can deselect some of the selection fields, if necessary, though we haven't done so in our example. In the **Required input** column, the **Sales Organization** field has been marked as a required entry field. Click **Save** to generate the new pricing report X0. A first test run of the new pricing report shows the result displayed in Figure 3.7.

| Condition Type | | Customer | Material | ReSt | S | Scale | Quantity | UoM | Amount | Unit | per | UoM | Valid From | Valid To |
|-------------------|------------|-------------------|----------|------|------|-------|----------|-----|--------|------|-----|-----|------------|------------|
| Customer/Material | Customer 1 | Phone A | | | | | | | 2,00- | EUR | 1 | EA | 05.08.2025 | 31.12.9999 |
| Price | Customer 1 | T-Shirt Printed A | | | | | | | 1,00 | EUR | 1 | ST | 25.09.2024 | 31.12.9999 |
| Price | Customer 1 | T-Shirt Printed A | | | From | | 1 | EA | 1,00 | EUR | 1 | EA | 19.09.2024 | 31.12.9999 |
| Price | Customer 1 | Phone A | | A | | | | | 1,00 | EUR | 1 | EA | 28.07.2025 | 31.12.9999 |
| Price | Customer 1 | Phone A | | A | | | | | 1,00 | EUR | 1 | EA | 28.07.2025 | 31.12.9999 |
| Tolerance for EV | Customer 1 | Phone A | | | | | | | 5,00 | EUR | | | 05.03.2024 | 31.12.9999 |

| Condition Type | Customer | ReSt | S | Scale Qty | UoM | Amount | Unit | per | UoM | Valid From | Valid To |
|-------------------|------------|------|---|-----------|-----|--------|------|-----|-----|------------|------------|
| Customer Discount | Customer 1 | | | | | 2,000- | % | | | 01.01.2025 | 31.12.9999 |

Figure 3.7: Conditions per Customer: First Test Run

Because the appearance of the result list isn't completely in line with our expectations, we edit the pricing report again in change mode (Transaction V/LB) and replace the attributes in the **Text** column labeled **3 - Only the corresponding text is displayed** with the attribute **1 - Only the key field is displayed**. A new call of the pricing report X0 shows the result displayed in Figure 3.8.

| Condition Type | | Customer | Material | ReSt | S | Scale | Quantity | UoM | Amount | Unit | per | UoM | Valid From | Valid To |
|----------------|--------|------------------------|----------|------|------|-------|----------|-----|--------|------|-----|-----|------------|------------|
| K005 | CUST01 | BA23_PHONE_A | | | | | | | 2,00- | EUR | 1 | EA | 05.08.2025 | 31.12.9999 |
| PR00 | CUST01 | FKSCN_TSHIRT_A_PRINTED | | | | | | | 1,00 | EUR | 1 | ST | 25.09.2024 | 31.12.9999 |
| PR00 | CUST01 | FKSCO_TSHIRT_A_PRINTED | | | From | | 1 | EA | 1,00 | EUR | 1 | EA | 19.09.2024 | 31.12.9999 |
| PR00 | CUST01 | VD01_PHONE_A | | A | | | | | 1,00 | EUR | 1 | EA | 28.07.2025 | 31.12.9999 |
| PR00 | CUST01 | VD02_PHONE_A | | A | | | | | 1,00 | EUR | 1 | EA | 28.07.2025 | 31.12.9999 |
| ZDEV | CUST01 | VLA01_PHONE_A | | | | | | | 5,00 | EUR | | | 05.03.2024 | 31.12.9999 |

| CnTy | Customer | ReSt | S | Scale Qty | UoM | Amount | Unit | per | UoM | Valid From | Valid To |
|------|----------|------|---|-----------|-----|--------|------|-----|-----|------------|------------|
| K007 | CUST01 | | | | | 2,000- | % | | | 01.01.2025 | 31.12.9999 |

Figure 3.8: Condition per Customer: Second Test Run

3.1.3 Pricing Report for Condition Maintenance via the Area Menu

As described in Chapter 2, Section 2.2, the pricing reports play an important role in the condition maintenance via area menus. They act as filters, which are assigned to a node of the area menu in the form of a variant of a pricing report (e.g., in area menu COND_AV).

If you want to use a pricing report as a filter in an area menu, no specific settings are required when generating the report. However, the condition maintenance transactions (Transaction VK31 through Transaction VK34) provide an adapted selection screen that they control. Therefore, the selection screen shown earlier in Figure 3.1 of pricing report 16 (**Individual Prices**) looks slightly different when used as a filter in the condition maintenance (see Figure 3.9). Pricing reports are by themselves very useful and flexible tools made even more valuable by their use as a filter element in the condition maintenance via area menus.

Figure 3.9: Pricing Report as a Filter in the Condition Maintenance

3.2 Condition Information

We don't want to conclude the pricing lists without briefly mentioning the functionality of the *condition information*. The condition information is available to you in the condition maintenance via the condition type. On the entry screen of Transaction VK11 (see Figure 2.1 in Chapter 2, Section 2.1), Transaction VK12, and Transaction VK13, you'll see the **Condition Information** button at the top left. Using this button, you can display condition records across all tables of a condition type, send them via IDoc, or download them. Let's assume you want to download all currently valid condition records of the condition type PR00 for **Sales Organization 0001** and **Distribution Channel 01**. To do so, select the **Condition Information** for condition PR00 and restrict the desired records on the selection screen (see Figure 3.10).

Figure 3.10: Selecting PR00 Condition Records for Display

You can see the result in Figure 3.11. The very narrow columns in this table (listed here in order of appearance) contain the following:

- **S** = Release Status
- **D** = Deletion Indicator
- **Tx** = Tax Code
- **E** = Exclusion Indicator
- **S** = Scale Type
- **S** = Scale Base Type

From here, you have several options. For example, you can branch directly from the list into a condition record and modify it there. Alternatively, you can send marked condition sentences via IDoc to another system. By clicking the small table icon on the far right , you can access an SAP List Viewer (ALV) list. From there, you can download the desired data, for example, into a spreadsheet or HTML file (see Figure 3.12) using the **Export** button .

SAP List for Condition Type PR00 (Price)

Send Condition

Table 305 Customer/material with release status

| Sale | Di | Customer | Material | S | Amount | Unit | per | UoM | D | Tx | E | S | Valid From | Va | |
|--------------------------|------|----------|-----------|-------------------|--------|--------|-----|-----|----|----|---|---|------------|------------|----|
| <input type="checkbox"/> | 0001 | 01 | PLC_TEST2 | E-MA2731 | A | 109,99 | EUR | 1 | ST | | | A | C | 06.08.2025 | 31 |
| <input type="checkbox"/> | 0001 | 01 | PLC_TEST2 | E-MA3116 | | 949,99 | EUR | 1 | ST | | | A | C | 06.08.2025 | 31 |
| <input type="checkbox"/> | 0001 | 01 | PLC_TEST2 | E-MA3116 | A | 949,99 | EUR | 1 | ST | | | A | C | 06.08.2025 | 31 |
| <input type="checkbox"/> | 0001 | 01 | PLC_TEST2 | E-MA9765 | | 256,99 | EUR | 1 | ST | | | A | | 06.08.2025 | 31 |
| <input type="checkbox"/> | 0001 | 01 | PLC_TEST2 | E-MA9765 | A | 256,99 | EUR | 1 | ST | | | A | | 06.08.2025 | 31 |
| <input type="checkbox"/> | 0001 | 01 | SBC_CUST | TISSUE_PAPER_ROLL | | 30,00 | EUR | 1 | EA | | | A | | 18.01.2024 | 31 |
| <input type="checkbox"/> | 0001 | 01 | TESTCUST | A111FERT | | 10,00 | EUR | 1 | PC | | | A | | 01.08.2019 | 31 |
| <input type="checkbox"/> | 0001 | 01 | TESTCUST | ANJ4FERT | | 30,00 | SGD | 1 | PC | | | A | | 11.08.2019 | 31 |
| <input type="checkbox"/> | 0001 | 01 | TEST_CUST | RS_CHOCOLATE_BAR | | 14,00 | EUR | 1 | EA | | | A | | 15.01.2019 | 31 |
| <input type="checkbox"/> | 0001 | 01 | TUD-NICOK | TUD_YO_VOL_70 | | 45,00 | EUR | 1 | PC | | | A | | 13.03.2023 | 31 |
| <input type="checkbox"/> | 0001 | 01 | URA_BUYER | TEST_LI-KA3 | | 700,00 | RUB | 1 | PC | | | A | | 01.01.2020 | 31 |

Table 306 Price list category/currency/material with release status

| Sale | Di | PL | Crcy | Material | S | Amount | Unit | per | UoM | D | Tx | E | S | Valid From | Valid To |
|--------------------------|------|----|------|----------|--------------------------|--------|--------|-----|-----|----|----|---|---|------------|------------|
| <input type="checkbox"/> | 0001 | 01 | 01 | EUR | KHANHTRANSAPLABSVN | A | 150,00 | EUR | 1 | PC | | | A | 25.08.2025 | 31.12.9999 |
| <input type="checkbox"/> | 0001 | 01 | 01 | EUR | MG05_PHONE_A | | 0,80 | EUR | 1 | EA | | | A | 17.01.2024 | 31.12.9999 |
| <input type="checkbox"/> | 0001 | 01 | 01 | EUR | MM-PROD10 | | 25,00 | EUR | 1 | EA | | | A | 21.10.2022 | 31.12.9999 |
| <input type="checkbox"/> | 0001 | 01 | 01 | EUR | TMMRP_HEADER_STRAT60_VP4 | D | 1,00 | EUR | 1 | EA | | | A | 24.01.2025 | 31.12.9999 |

Table 304 Material with release status

| Sale | Di | Material | S | Amount | Unit | per | UoM | D | Tx | E | S | Valid From | Valid To |
|--------------------------|------|----------|--------------------|--------|-------|-----|-----|----|----|---|---|------------|------------|
| <input type="checkbox"/> | 0001 | 01 | 000000000000000675 | | 30,00 | EUR | 1 | EA | | | A | 01.01.2024 | 31.12.9999 |
| <input type="checkbox"/> | 0001 | 01 | 000000000000001821 | | 0,00 | EUR | 1 | EA | | | A | 28.06.2016 | 31.12.9999 |
| <input type="checkbox"/> | 0001 | 01 | 000000000000003065 | | 0,00 | EUR | 1 | EA | | | A | 03.04.2020 | 31.12.9999 |
| <input type="checkbox"/> | 0001 | 01 | 000000000000003433 | | 10,00 | EUR | 1 | EA | | | A | 16.07.2021 | 31.12.9999 |

Figure 3.11: Condition Information for PR00

More

Price (Price with Release Status)

Customer/material with release status

Price list category/currency/material with release status

Material with release status

Condition Table A305

| SOrg. | DChl | Customer | Material | ReSt | PS | S | ScBas | Amount | Unit | Unit | UoM |
|--------------------------|------|----------|----------|---------------|----|----|-------|----------|------|------|-----|
| <input type="checkbox"/> | 0001 | 01 | 312 | MM FOR 312 | | A | | 50,00 | EUR | 1 | EA |
| <input type="checkbox"/> | 0001 | 01 | 312 | MM FOR 312 | A | Z1 | A | 3,00 | EUR | 1 | EA |
| <input type="checkbox"/> | 0001 | 01 | 312 | MSB120_001 | | A | | 20,00 | EUR | 1 | EA |
| <input type="checkbox"/> | 0001 | 01 | 5354 | MZ-FG-P001 | | A | | 2.990,00 | USD | 1 | PC |
| <input type="checkbox"/> | 0001 | 01 | 5354 | MZ-SR-P004 | | A | | 19,00 | USD | 1 | EA |
| <input type="checkbox"/> | 0001 | 01 | 172098 | BECK-MATERIAL | A | A | C | 100,00 | EUR | 1 | PC |
| <input type="checkbox"/> | 0001 | 01 | 175358 | BECK-MATERIAL | A | 1 | A | 20,00 | EUR | 1 | PC |

Figure 3.12: Condition Information in SAP List Viewer

3.3 Net Price List

The net price list provides price information on a selected set of products for a specific customer. Net prices can't simply be read from a master data table but instead must be calculated. For this purpose, an invoice is simulated (using function module `GN_INVOICE_CREATE`), and a corresponding pricing run is performed. Therefore, in the selection screen of the net price list, all information must be entered that's necessary for a pricing procedure determination (see Chapter 4, Section 4.1.6): sales area, sales document type (from which the **Document Pricing Procedure** field is derived), and the customer (from which the **Customer Pricing Procedure** field is derived).

The net price list can be started with Transaction `V_NL`. A selection screen is displayed (see Figure 3.13), and the previously mentioned selection criteria must be entered for the pricing procedure determination.

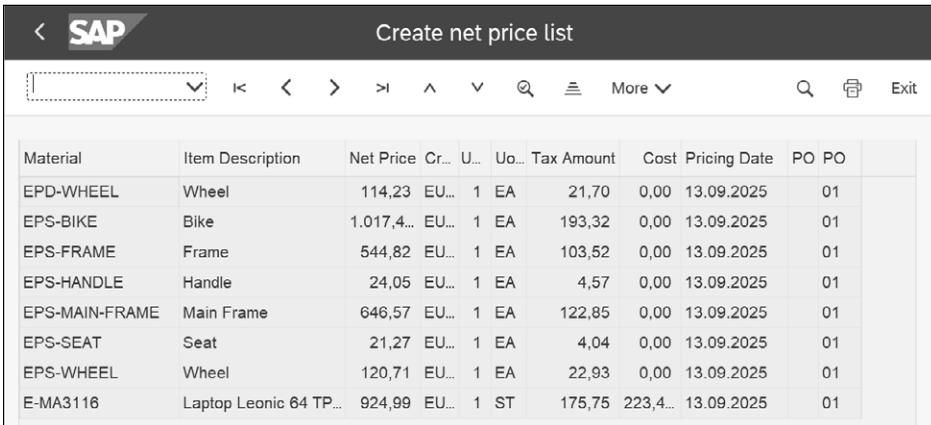
The screenshot shows the SAP 'Create net price list' selection screen. The interface includes a top navigation bar with the SAP logo and a title 'Create net price list'. Below the navigation bar is a toolbar with icons for search, refresh, back, help, and 'Display Variants'. The main content area is organized into four sections:

- Organizational Data:** Contains input fields for 'Sales Organization: *', 'Distribution Channel: *', and 'Division: *'.
- Customer Data:** Contains an input field for 'Sold-To Party: *'.
- Material Data:** Contains input fields for 'Plant: *', 'Material:', and 'to:'. There is also a small square icon with a right-pointing arrow next to the 'to:' field.
- Default Data:** Contains input fields for 'Pricing Date: *' (with the value '13.09.2025'), 'Billing Type: *' (with the value 'FX'), 'Order Type: *' (with the value 'OR'), and 'Item Category: *' (with the value 'IAN'). There is also a checkbox labeled 'Price Simulation'.

Figure 3.13: Net Price List Selection Screen

You also need to fill in the **Plant** field to identify the country of departure; otherwise, taxes can't be determined. The **Price Simulation** attribute controls whether conditions with release status **B – Released for price simulation** or **C – Released for planning and price simulation** are taken into account (see Chapter 5, Section 5.1).

As a result, an ALV list is displayed with a selected set of fields that can be edited with the usual procedure in the ALV (menu path **Settings - Layout**; see Figure 3.14).



The screenshot shows the SAP 'Create net price list' interface. At the top, there is a search bar and navigation icons. Below is a table with the following columns: Material, Item Description, Net Price, Cr..., U..., Uo..., Tax Amount, Cost, Pricing Date, PO, and PO. The table contains eight rows of data for various bicycle components and a laptop.

| Material | Item Description | Net Price | Cr... | U... | Uo... | Tax Amount | Cost | Pricing Date | PO | PO |
|----------------|------------------------|------------|-------|------|-------|------------|----------|--------------|----|----|
| EPD-WHEEL | Wheel | 114,23 | EU... | 1 | EA | 21,70 | 0,00 | 13.09.2025 | 01 | |
| EPS-BIKE | Bike | 1.017,4... | EU... | 1 | EA | 193,32 | 0,00 | 13.09.2025 | 01 | |
| EPS-FRAME | Frame | 544,82 | EU... | 1 | EA | 103,52 | 0,00 | 13.09.2025 | 01 | |
| EPS-HANDLE | Handle | 24,05 | EU... | 1 | EA | 4,57 | 0,00 | 13.09.2025 | 01 | |
| EPS-MAIN-FRAME | Main Frame | 646,57 | EU... | 1 | EA | 122,85 | 0,00 | 13.09.2025 | 01 | |
| EPS-SEAT | Seat | 21,27 | EU... | 1 | EA | 4,04 | 0,00 | 13.09.2025 | 01 | |
| EPS-WHEEL | Wheel | 120,71 | EU... | 1 | EA | 22,93 | 0,00 | 13.09.2025 | 01 | |
| E-MA3116 | Laptop Leonic 64 TP... | 924,99 | EU... | 1 | ST | 175,75 | 223,4... | 13.09.2025 | 01 | |

Figure 3.14: Net Price List Result Screen

3.4 Sales Price - Retrieve API

Another method to calculate list prices is the Sales Price - Retrieve API. Similar to the net price list, the Sales Price - Retrieve API simulates billing documents to calculate prices. Due to the simulation of billing documents, a copy control is required to calculate the prices. In the public cloud version, the copy control for external transactions can be used with the following settings: sales document type **E0X1**, sales document item category **EDX1**, and billing document type **CIX1**. Different from the net price list, the Sales Price - Retrieve API isn't implemented as a report; instead, it's directly available as an OData V4 service, accessible via SAP Business Accelerator Hub. Figure 3.15 demonstrates how the application programming interface (API) can be called.

The Sales Price - Retrieve API accepts as input parameters a table of customers and a table of products. The API calculates a price for each customer-product pair, so the resulting number is the product of customers and products.

A crucial aspect of the calculation is the inclusion of taxes, as the departure and destination country/region are essential. The departure country/region is derived from the product's plant, and the destination country/region is derived from the customer. The Sales Price - Retrieve API determines these factors in a manner similar to a sales order.

The screenshot shows the SAP API Explorer interface for the 'Sales Price - Retrieve API' test case. The HTTP request is a GET call to the endpoint `/sap/opu/odata4/aap/api_salesprice/srvd_a2x/sap/salesprice/0001/SalesPrice/com.sap.gateway.srvd_a2x.api_salesprice.v0001.RetrieveSalesPrice`. The response is a 200 OK status with a JSON body. The response body contains a `"@odata.context"` field, a `"@odata.metadataEtag"` field, and a `"value"` array. The array contains a `"SALESPRICEELEMENTS"` object and a `"SALESPRICERESULT"` object. The `"SALESPRICEELEMENTS"` object contains a `"SALESPRICERESULT"` object with the following fields: `"SALESORGANIZATION"`, `"DISTRIBUTIONCHANNEL"`, `"DIVISION"`, `"PRODUCT"`, `"PRODUCTUSEDBYCUSTOMER"`, `"SOLDTOPARTY"`, `"NETPRICEAMOUNT"`, `"NETPRICEQUANTITY"`, `"NETPRICEQUANTITYUNITSAPCODE"`, `"TAXAMOUNT"`, `"PRICINGHASERROR"`, and `"SYSTEMMESSAGES"`.

Figure 3.15: Sales Price – Retrieve API

3.5 Price List

The net price list described in Section 3.3 is easy to use and requires little preparation, but it also has several limitations. Therefore, SAP offers an alternative price list that we'll present in detail in this chapter.

Note

For the following section, we must assume a certain amount of technical knowledge such as Customizing options and entities, pricing enhancement concepts, table names, etc., that will only be described in later chapters, especially in Chapter 4, Chapter 11, and Chapter 12. If you're more of a novice in pricing, you may want to skip this section for now and continue with Chapter 4.

The price list is optimized for performance and offers improved flexibility, along with an expanded range of features. For example, it can process multiple customers simultaneously and provide various output options. Its purpose isn't so much to provide information to the department (although this is of course still possible) but to create lists that, for example, can be sent automatically and on a regular basis to your customers. The technical realization of this price list is quite different and no longer uses any document simulation. We'll comment on this later when discussing the various possibilities of customer enhancements in Section 3.5.2, Section 3.5.5, and Section 3.5.6. Let's begin with the creation of a price list and then take a closer look at the configuration and enhancement possibilities.

3.5.1 Creation of Price Lists

The price list can be accessed via menu path **SAP Easy Access · Logistics · Sales and Distribution · Master Data · Conditions · List · Creation of Price Lists** (Transaction V_NLN). At first glance, the upper part of the selection screen in Figure 3.16 looks very similar to the net price list from Figure 3.13 shown earlier. But if you have a closer look, you'll see that you can select several customers at once and that the selection of the products is more flexible. Prices are then calculated for each possible customer/material combination. The lower part of the selection screen offers several advanced options.

| | |
|-------------------------|---|
| Sales Area Data | |
| Sales Organization: * | 0001 Sales Org. 1 |
| Distribution Channel: * | 01 Distribution Channel |
| Division: * | 01 Product Division 01 |
| Customer Data | |
| Sold-To Party: | PLC_TEST1 to: <input type="text"/> |
| Material Data | |
| Material: | E-MA3116 to: <input type="text"/> |
| Product Hierarchy: | <input type="text"/> to: <input type="text"/> |
| Material Pricing Group: | <input type="text"/> to: <input type="text"/> |
| Control Data | |
| Pricing Date: * | 14.09.2025 |
| Sales Document Type: * | OR Standard Order |

Figure 3.16: Price List: Selection Screen (Part 1)

| | |
|--|--|
| Output | |
| Display List: | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Upload to FTP Server | <input type="text"/> |
| <input type="checkbox"/> Send by E-Mail | Data Format: A Microsoft Excel |
| Select E-Mail Addresses From: | |
| <input checked="" type="checkbox"/> Sold-To Party | |
| <input checked="" type="checkbox"/> Communication Data | |
| <input type="checkbox"/> Contact Persons | |
| <input type="checkbox"/> Related Partners by Function | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| <input type="text"/> Select E-Mail Addresses | <input type="checkbox"/> Save E-Mail Addresses in Variant |
| <input type="checkbox"/> Internal E-Mail Addresses | <input type="text"/> |
| Layout and Language | |
| Layout: | <input type="text"/> |
| Default Language: | EN <input type="checkbox"/> Dependent on Sold-To Party |
| Subject for E-Mails: | SAP_SCRIPT_SDPRICELIST_SUBJ |
| Text for E-Mails: | SAP_SCRIPT_SDPRICELIST |
| Prefix for Files: | <input type="text"/> <input checked="" type="checkbox"/> Column Headers in FTP Files |

Figure 3.17: Price List: Selection Screen (Part 2)

Advanced Settings

| | |
|---|---|
| <input type="checkbox"/> Filter Pricing Procedure <input type="checkbox"/> Display Pricing Elements <input type="checkbox"/> Display Scales <input type="checkbox"/> Price simulation <input type="checkbox"/> Consider Minimum Order Quantity <input type="checkbox"/> Hide Items When Price is Zero <input type="checkbox"/> Hide Items with Pricing Error <input checked="" type="checkbox"/> Display Message Log <input type="checkbox"/> Display Pricing Trace | Variant: <input style="width: 50px;" type="text"/> Variant: <input style="width: 50px;" type="text"/> Scale Level Limit: <input style="width: 50px;" type="text" value="0"/> Package Size: <input style="width: 50px;" type="text" value="0"/> |
|---|---|

Figure 3.18: Price List: Selection Screen (Part 3)

In the **Output** section of the selection screen, you can choose between three possibilities:

■ Display List

If you choose this button, the prices will be displayed on your screen in the form of one ALV list, including all calculated customer/material combinations. You can personalize the list to your needs, create different layouts, filter, and so on. You can enter an existing layout in the **Layout and Language** section. We'll describe later how to control and enhance the available fields and headings in the output list. A possible result could look like the one shown in Figure 3.19.

| SAP Creation of Price Lists | | | | | | | | | |
|-------------------------------------|-----------|----------|------------------------------|-----------|----------------|--------------|------------|----|--|
| Pricing Date | Customer | Material | Description | Net Price | Doc. Curren... | Pricing Unit | Unit of Me | | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST1 | E-MA2731 | E-Book Reader Tolstoi 5GTR-a | 110,99 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST1 | E-MA3116 | Laptop Leonic 64 TPX | 924,99 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST1 | E-MA9765 | Monitor Asilip 28 in AP54Z | 268,24 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST2 | E-MA2731 | E-Book Reader Tolstoi 5GTR-a | 109,99 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST2 | E-MA3116 | Laptop Leonic 64 TPX | 949,99 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST2 | E-MA9765 | Monitor Asilip 28 in AP54Z | 256,99 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST3 | E-MA2731 | E-Book Reader Tolstoi 5GTR-a | 119,99 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST3 | E-MA3116 | Laptop Leonic 64 TPX | 999,99 | EUR | | 1 | ST | |
| <input type="checkbox"/> 14.09.2025 | PLC_TEST3 | E-MA9765 | Monitor Asilip 28 in AP54Z | 289,99 | EUR | | 1 | ST | |

Figure 3.19: Displaying the Price List

■ Upload to FTP Server

Alternatively, you can upload the price list as a CSV file to an FTP server. The server address, user, and password are defined in the Customizing of the price list function (**IMG · Sales and Distribution · Basic Functions · Pricing · Price Lists · Selection and Result · Define FTP Settings**). Price lists for different customers are stored in different files, with the customer number being part of the filename. You may define a prefix for

the files in the **Layout and Language** section of the report. The system will then put the prefix in front of the filenames that are composed as follows: <Prefix>_<Customer Number>_<Timestamps>.

The files can be stored with or without the column headers (via the **Column Headers in FTP Files** checkbox in the **Layout and Language** section).

■ Send by E-Mail

It's also possible to send the price lists via email. The report allows you to select the email addresses from different sources such as, for example, the communication data of the customer or the contact person in the customer master data. You can also set the email addresses manually for each customer (the **Select E-Mail Addresses** button) and store them in a report's variant. You can also send all lists to one or several internal email addresses. SAP provides the `PROCESS_CUSTOMER_EMAIL` method in the business add-in (BAI) `BADI_PIQ_SDPRICELIST`, where you can program your own logic if necessary.

Price lists can be sent in CSV or Microsoft Excel format. For all output options, the system will take the denoted layout from the **Layout and Language** section into account and send one list per customer. You can specify a default language for all texts or decide to retrieve the language for each customer separately from the sold-to master data record. You can also create language-dependent SAPscript texts for the email header and body in Transaction SO10 and specify them on the selection screen. The texts can also be filled in using the method `PROVIDE_EMAIL_TEXT_NAME` of the BAI `BADI_PIQ_SDPRICELIST`.

The **Advanced Settings** section offers options to influence the result of the price list:

■ Filter Pricing Procedure

When creating a price list, you may not need all lines of your pricing procedure. Maybe you don't care about the freight cost or you're not interested in the cost conditions. The price list Customizing offers the definition of *filter variants* for pricing procedures where you can mark nonrelevant steps. These steps are then ignored or *skipped* during the price calculation, thus improving performance. You can maintain one or more filters for a pricing procedure here: **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Selection and Result • Define Filter for Pricing Procedure**. Just flag the rows in the procedure that you don't need in the price list calculation (see Figure 3.20). Don't forget to adjust your filter variant if you change your pricing procedure, for example, by shifting a line.

■ Display Pricing Elements

The net price list from Section 3.3 provides net price and tax information but no information about individual price elements or subtotal lines, such as the overall discount or a special sales deal. In a similar way to filtering some lines from the pricing procedure, you may define *display variants* where you mark those lines in the procedure that will be available for output in the price list result. The relevant Customizing is located in **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Selection and Result • Define Pricing Elements Display**. We'll explain the exact setting needed to make the flagged elements part of the output list in Section 3.5.6.

Procedure:

Filter Variant:

Skipped Conditions During Processing

| Step | Cntr | CnTy | Description | From | To | Man. | Mdt | Stat | S Reqt | AltCAMnt | AltCBV | Skip | |
|--------------------------|------|------|---------------------------|------|-----|-------------------------------------|--------------------------|-------------------------------------|--------|----------|--------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> | 11 | 0 | PR00 Price | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input type="checkbox"/> | |
| <input type="checkbox"/> | 12 | 0 | ZPRP Price | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input type="checkbox"/> | |
| <input type="checkbox"/> | 90 | 0 | PMP0 Manual Price | 0 | 0 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | 100 | 0 | Gross Value | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1 | 0 | 2 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 101 | 0 | K004 Material | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 110 | 0 | K007 Customer Discount | 100 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 115 | 0 | Z510 Customer Group Disc. | 100 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 300 | 0 | Discount Amount | 101 | 299 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 350 | 0 | AMIW Minimum SalesOrdrVal | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | D | 2 | 0 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 351 | 0 | AMIZ Minimum ValueSurchrg | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 13 | 0 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 800 | 0 | Net Value for Item | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 2 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 801 | 0 | NRAB Free goods | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 59 | 0 | 29 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 900 | 0 | Net Value 2 | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3 | 0 | 2 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 910 | 0 | PI01 Inter-company Price | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | B | 22 | 0 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 911 | 0 | PI02 Inter-company % | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | B | 22 | 0 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 914 | 0 | SKTV Cash Discount | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | D | 14 | 0 | 2 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 915 | 0 | MWST Output Tax | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 10 | 0 | 16 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 925 | 0 | Total | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A | 0 | 4 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 930 | 0 | SKTO Cash Discount | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9 | 0 | 11 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 932 | 0 | RL00 Factoring Discount | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 23 | 0 | 2 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 933 | 0 | MW15 Factoring Disc. Tax | 932 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 21 | 0 | 0 | 0 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 935 | 0 | GRWR Statistical value | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | C | 8 | 0 | 2 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 940 | 0 | VPRS Internal price | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | B | 4 | 0 | 0 | <input checked="" type="checkbox"/> |

Figure 3.20: Filter Variant That Skips Steps in the Pricing Procedure During the Price List Run

■ Display Scales

The price list supports the display of scale information in the result. If you flag the **Display Scales** checkbox, the system will evaluate all scales involved in the calculation of the price and will deduce the quantities where it expects the effective price to change. For these quantities, the system recalculates the price and adds corresponding lines to the result (see Figure 3.21). You can thereby inform your customer about the opportunity to get better prices if they purchase higher quantities.

The number of additional quantities can be limited by the **Scale Level Limit** field. If you leave it empty, the price list will calculate and display all relevant quantities. If you enter "5", for example, you'll receive up to five additional lines or six in total.

The price list supports any mixture of value, quantity, weight, and volume scales and has a from-scale notation in the output; that is, the listed price is valid from the indicated sales quantity upwards. Graduated scales aren't permitted because they result in different prices for each sales quantity. Scale-based formulas may interfere with the calculation of the sales quantities in an unpredictable way and also aren't allowed when displaying scales. However, BAdI BADI_PRC_NPL_SCALES enables you to overrule these restrictions and to give your own set of sales quantities to be calculated.

| <input type="checkbox"/> | Pricing Date | Customer | Material | Description | Quantity | Sales ... | Net Price | Doc. ... | Pricing ... | Unit ... |
|--------------------------|--------------|-----------|----------|------------------------------|----------|-----------|-----------|----------|-------------|----------|
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST1 | E-MA2731 | E-Book Reader Tolstoi 5GTR-a | 1 | ST | 110,99 | EUR | | 1 ST |
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST1 | E-MA3116 | Laptop Leonic 64 TPX | 1 | ST | 924,99 | EUR | | 1 ST |
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST1 | E-MA9765 | Monitor Asilip 28 in AP54Z | 1 | ST | 268,24 | EUR | | 1 ST |
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST2 | E-MA2731 | E-Book Reader Tolstoi 5GTR-a | 1 | ST | 109,99 | EUR | | 1 ST |
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST2 | E-MA2731 | E-Book Reader Tolstoi 5GTR-a | 100 | ST | 99,99 | EUR | | 1 ST |
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST2 | E-MA2731 | E-Book Reader Tolstoi 5GTR-a | 1.000 | ST | 79,99 | EUR | | 1 ST |
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST2 | E-MA3116 | Laptop Leonic 64 TPX | 1 | ST | 949,99 | EUR | | 1 ST |
| <input type="checkbox"/> | 14.09.2025 | PLC_TEST2 | E-MA3116 | Laptop Leonic 64 TPX | 100 | ST | 929,99 | EUR | | 1 ST |

Figure 3.21: Output of the Price List with Scales Displayed

■ Price simulation

This option controls whether conditions should be considered that have the release status **B - Released for pricing simulation** or **C - Released for planning and pricing simulation**. If set, these conditions are used in the calculation (see also Chapter 5, Section 5.1).

■ Consider Minimum Order Quantity

Usually, the price list will calculate the net price and value for quantity 1 in sales units of measure. If you mark this checkbox, the prices will be calculated for the minimum order quantity instead as defined in the material master.

■ Hide Items When Price is Zero

Customer/material combinations with a zero net price will be excluded from the result list.

■ Hide Items with Pricing Error

Customer/material combinations with errors in the price calculation will be excluded from the result list.

■ Display Message Log

We'll explain in the next section how the necessary data for the pricing call is gathered. Especially in the setup and test phases, the message log can give you valuable hints if the required Customizing settings for the data retrieval aren't complete.

■ Display Pricing Trace

Because the data determination process is different for the price list, providing a pricing trace is particularly helpful in the initial phase of implementing it. Note that for the selection data, you can only request a trace for a single item, meaning you may only enter one customer and one material. Additionally, you should leave the display variant blank. You can access the item condition screen (see Chapter 6, Section 6.1) and from there the pricing analysis screen by navigating back from the displayed price list **[F3]**.

■ Package Size

To prevent the storage capacity of the application server from being exceeded, you can use this parameter to package customers for the price list, for example, by processing them in blocks of 10. Note that this option isn't available for screen output. Incidentally, you can also reduce the memory requirement of the price list by implementing the `ACTIVATE_LEAN_KOMP` method of the BAdI `BADI_PIQ_PREPARE`.

3.5.2 Customizing and Customer Enhancements

We already mentioned that this price list doesn't use any kind of business document simulation. User exits or BADs, like those provided for the sales order or billing document processing, aren't called. Instead, the price list coding analyzes the access sequences, user exits, formulas, and requirements used in the relevant pricing procedures to determine the actual list of required fields for pricing communication structures KOMK and KOMP. Only these fields are then determined, with as few database accesses as possible.

While the system can identify fields needed in access sequences reliably, this isn't possible for fields used in formulas or requirements, which is why this information is stored in a dedicated Customizing table. To allow an effective and flexible bundling of database selects, the necessary table accesses for data retrieval are also stored in Customizing tables in the form of metadata.

If you use customer-specific fields in access sequences, user exits, formulas, or requirements, you need to include the same information (which fields are needed and how they are determined) in the dedicated customer areas in Customizing. You'll find all necessary activities under the node **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists**.

3.5.3 Registration of Fields

Let's assume that we've added the fields ZZPRAT1, ZZPRAT2, ZZSIZECAT, and ZZPROMO_ID to the item communication structure of pricing KOMP. ZZPRAT1 and ZZPRAT2 correspond to the fields PRAT1 (Product Attribute 1) and PRAT2 (Product Attribute 2) from the sales data in the material master record. In our example, ZZSIZECAT will be stored in our own table ZZTSIZECAT with the material number as the key field, and ZZPROMO_ID will be derived by some dedicated business logic. We assume that we use ZZPRAT1 in one of our condition accesses, while ZZPRAT2, ZZSIZECAT, and ZZPROMO only are used in our requirement 999 (see Figure 3.22) where ZZPROMO_ID is used inside our own function module Z_CHECK_RELEVANCE.

```

Include: RV61A999 Active
1  □ FORM ROBED_999.
2  | data: lv_subrc type sysubrc.
3  | sy-subrc = 4.
4  | □ if komp-kposn ne 0.
5  | | check: komp-prsfld ca 'BX'.
6  | | check: komp-zzprat2 ne 'A'.
7  | | check: komp-zzsizecat ne 'XL'.
8  | | CALL FUNCTION 'Z_CHECK_RELEVANCE'
9  | |   EXPORTING
10 | |     is_komk      = komk
11 | |     is_komp      = komp
12 | |   IMPORTING
13 | |     EV_SUBRC     = lv_subrc.
14 | |
15 | | check lv_subrc is INITIAL.
16 | |
17 | | sy-subrc = 0.
18 | | endif.
19 | | ENDFORM.
20 □ FORM ROBEV_999.
21 | ENDFORM.

```

Figure 3.22: Example Requirement 999 Using Fields ZZPRAT2, ZZSIZECAT, and ZZPROMO_ID

SAP tries to identify all needed fields for a specific price calculation. Therefore, it scans all access sequences of the pricing procedure involved and thus becomes aware of ZZPRAT1 automatically. However, fields required in the execution of user exits, customer-specific formulas, or requirements must be explicitly published in Customizing. To do so, choose the IMG activity **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Edit Fields Used in Pricing Enhancements**.

On the entry screen, we restrict the view to the relevant pricing procedure and decide that we want to see only customer-developed enhancements. We navigate to requirement **999**. A double-click on include **RV61A999** would lead us to the coding, but we double-click node **999** instead.

The system presents a list of fields that have been automatically found by means of a simple code scan: here, **ZZMVGR2** and **ZZSIZECAT**. Field **KOMP-ZZPROMO** is “hidden” behind a function module call, so it was missed. Therefore, we register it manually by clicking the **Add Field Manual**  button and entering the necessary data. You can see the result in Figure 3.23, where the found fields haven’t yet been confirmed (status **Not selected (found by using code scan)**), and the **ZZPROMO_ID** field has been added manually.

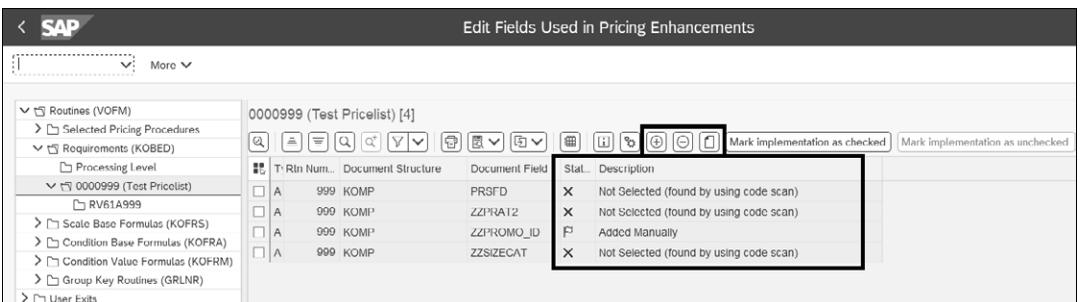


Figure 3.23: Result of Code Scan of Requirement 999 with Field KOMP-ZZPROMO_ID Added Manually

In the second step, we select all fields that must be filled in a price list run (there may be fields that aren’t relevant) and confirm them explicitly. For this, we select the field(s) and click the **Select Fields** button . The status of the fields then changes to **Selected** (see Figure 3.24).

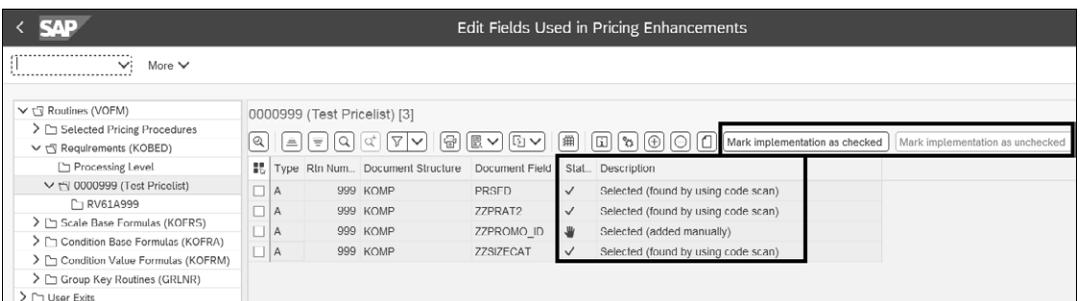


Figure 3.24: Showing That Relevant Fields Have Been Selected

You can remove fields that aren't relevant for the price lists calculation again with the **Deselect** button . Deselected manual fields will be deleted from the list after saving.

Because the automatic code scan is quite basic, you should always check the system's proposal for your routines and user exits.

After reviewing and completing all entries, you finalize and document your settings by clicking on the **Mark implementation as checked** button. Only now will the net price list take your settings into account.

In addition to specifying which fields are required in your pricing exits, you can also specify a *processing level* for your requirements (see Figure 3.25). If, for example, a requirement uses only fields from the header communication structure KOMK (i.e., header fields), it's usually sufficient to test it only once per pricing header and buffer the result for the following items.

The available processing levels are **Header, Item, Condition Type** (, , ) and **Standard Processing Level** (). The **Standard Processing Level** corresponds to an unmaintained processing level. Here, nothing is buffered, and the requirement is processed each time it's necessary. In simple cases, this is often faster than writing and reading a buffer. That is why SAP hasn't maintained levels for all standard requirements.

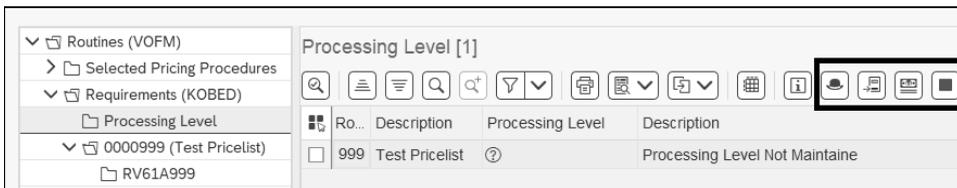


Figure 3.25: Setting the Processing Level of a Requirement

When setting the processing level, you need to be aware that, for performance reasons, the flow logic of pricing is slightly different in the price list processing. The condition accesses aren't performed on each item separately in the **Pricing** function module (see Chapter 11, Section 11.1), but for all items together prior to **Pricing**. Consequently, the call of the requirements is brought forward too and takes place outside of **Pricing**. So, if you do more in your requirement than simply check the relevance of a condition (access), you should assign the standard level or no level at all. By doing so, you ensure that the requirement is called again at the usual place. An example of such a routine is the standard requirement 62, which fills the internal table XKOMPLOOP.

3.5.4 Define the Data Determination

We've already mentioned that the new price list tries to bundle database accesses. This applies also to the filling of the communication structures for the pricing call. Thus, to enable the system to identify collectable accesses in a generic way, the necessary information is stored in the form of metadata. It's important that you understand how the price list determines its data because you must provide the same information for your own fields. For this

purpose, we'll take a closer look now at the definition of the table accesses and the corresponding source fields, including customer-specific fields.

Define Table Access

Setting up the metadata consists of two steps. First, you need to specify how a database table will be accessed. This happens in **IMG · Sales and Distribution · Basic Functions · Pricing · Price Lists · Price Inquiry · Define Table Access**.

In Figure 3.26, you can see that for the table containing the sales data of the customer master **KNVV**, three *DB aliases* or *table aliases* are defined: **KNVV**, **KNVV_RG**, and **KNVV_WE**. Each of them accesses the table with different fields.

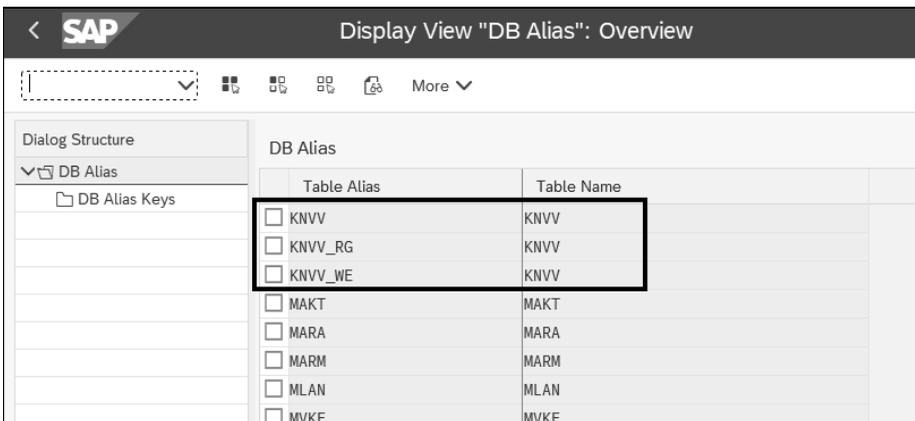


Figure 3.26: Definition of Table Alias

If we navigate to the **DB Alias Keys** node, we realize that the three aliases differ in their access fields. The alias **KNVV** accesses the table with the contents of the source fields **KUNNR**, **SPAKU**, **VKORG**, and **VTWKU**, reading data from the sold-to party. The alias **KNVV_RG**, on the other hand, reads data from the payer, accessing the same table but with **KUNRG**, **SPAKU**, **VKORG**, and **VTWKU** fields (see Figure 3.27). The **DB Alias** thus defines the table and the *Where* clause of the required *Select* statement.

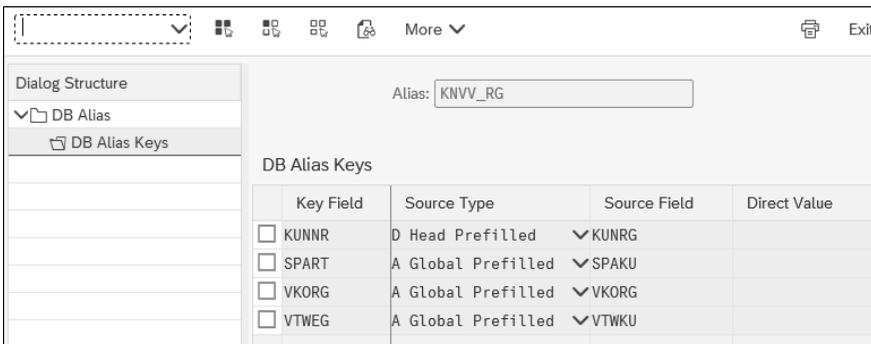


Figure 3.27: DB Alias KNVV_RG Used to Access the Sales Data of the Payer

The **Source Type** in Figure 3.27 defines where the source field comes from or, technically speaking, in what internal structure the field resides. We distinguish between the following types of sources:

- **Global**
This data is relevant for the whole price list, such as organizational data or the price date.
- **Head**
This data is usually derived from the customer and relevant for all products.
- **Item**
This data is usually derived from the material.
- **HeadItem**
This data depends on customer and material combination.
- **Direct Value**
This is a constant that can be set in Customizing.

The sources of the **Global**, **Header**, **Item**, and **HeadItem** fields are further divided into the following:

- **Prefilled**
Data that the price list inherently provides for database aliases.
- **Caller Data**
Data that you determine yourself in the BAdI `BADI_PIQ_SDPRICELIST` method `PREPARE_PRICING` or that you've added to the selection screen (see Section 3.5.5).
- **Additional Data**
Data that you determine yourself in the BAdI `BADI_PIQ_PREPARE` method `ADAPT_HEAD_ITEM_DATA`.

Simply put, prefilled fields comprise data that is always determined by the price list and can therefore be reliably used to determine other data, for example, via table aliases. Caller data and additional data comprise customer-specific data, whose filling must be programmed in the corresponding BAdIs. Caller data is additional data input into function `PIQ_CALCULATE`. We'll come back to this very technical detail in Section 3.5.8. For the moment, it's sufficient to know that the `F4` help on the source field will provide you with all possible standard fields for the selected source type.

To summarize, the **DB Alias KNVV_RG** can be translated into the following:

```
select ? from KNVV into ? where
      KUNNR = (Header Prefilled)-KUNRG and
      VKORG = (Global Prefilled)-VKORG and
      VTWEG = (Global Prefilled)-VTWEG and
      SPART = (Global Prefilled)-SPAKU.
```

In the next step, we determine which fields we want to read using the alias and where they will be written into.

Maintain Sources for Communication Structures

In **IMG · Sales and Distribution · Basic Functions · Pricing · Price Lists · Price Inquiry · Sources for Communication Structures**, we define how the fields relevant for pricing are determined in detail. In Figure 3.28, you can see some fields of the header communication structure **KOMK**. The distribution channel **VTWEG** is transferred from prefilled data.

Other fields, such as the payment terms **ZTERM**, are determined using a DB alias. Let's take a closer look at the **ZTERM** field. The line you see in Figure 3.28, together with the definition of the **DB Alias KNVV_RG**, means that the field **ZTERM** is filled from the field **ZTERM** from table **KNVV** using the payer **KUNRG** to access the table; that is, the payment terms are read from the sales area data of the payer.

| Target Structure | Target Field | Source Type | Source Alias | Source Field | Direct Value |
|-------------------------------|--------------|------------------------|--------------|--------------|--------------|
| <input type="checkbox"/> KOMK | VSBED | K Database Table Alias | ▼KNVV | VSBED | |
| <input type="checkbox"/> KOMK | VTWEG | A Global Prefilled | ▼ | VTWKO | |
| <input type="checkbox"/> KOMK | WAERK | K Database Table Alias | ▼KNVV | WAERS | |
| <input type="checkbox"/> KOMK | WERKS | M HeadItem Prefilled | ▼ | WERKS | |
| <input type="checkbox"/> KOMK | WKCOU | M HeadItem Prefilled | ▼ | COUNC | |
| <input type="checkbox"/> KOMK | WKCTY | M HeadItem Prefilled | ▼ | CITYC | |
| <input type="checkbox"/> KOMK | WKREG | M HeadItem Prefilled | ▼ | REGIO | |
| <input type="checkbox"/> KOMK | ZTERM | K Database Table Alias | ▼KNVV_RG | ZTERM | |
| <input type="checkbox"/> KOMP | ATTYP | K Database Table Alias | ▼MARA | ATTYP | |
| <input type="checkbox"/> KOMP | BONUS | K Database Table Alias | ▼MVKE | BONUS | |

Figure 3.28: Sources of the Fields for Pricing Communication Structures

Together with the database alias definition, the following `select` will therefore be performed:

```
select ZTERM from KNVV into KOMK-ZTERM where
      KUNNR = (Head Prefilled)-KUNRG and
      VKORG = (Global prefilled)-VKORG and
      VTWEG = (Global prefilled)-VTWEG and
      SPART = (Global prefilled)-SPAKU.
```

After evaluating all metadata, the price list can optimize the access and read all required fields from a database table together.

Available Fields with Standard Sources

The price list report doesn't yet support all fields from the communication structure. You can find out which fields are available by displaying the standard sources in **IMG · Sales and Distribution · Basic Functions · Pricing · Price Lists · Price Inquiry · Sources for Communication Structures · Display Standard Sources**. If the required

field isn't listed there, you need to add a corresponding entry in the customer section (**Define Customer-Specific Sources**). Customer entries will always overrule standard settings.

Add Customer Fields

It's time to come back to our example. With what we've just covered, we can now make the necessary settings to determine the fields.

ZZPRAT1 and ZZPRAT2 correspond to fields PRAT1 and PRAT2 from table MVKE. We quickly find a suitable DB alias in alias MVKE, which reads from table MVKE with material number and organizational data. Therefore, all you need to tell the system is that you want to select product attributes 1 (**PRAT1**) and 2 (**PRAT2**) and have them transferred into the fields **ZZPRAT1** and **ZZPRAT2** (see Figure 3.31 later in this section).

Table Alias

All data derived by the same table alias is selected together. You should therefore always check if you can reuse an existing DB alias to avoid additional, unnecessary database accesses.

We want to read table ZZSIZECAT from our own table, so we need to create a new DB alias first. Here, we define that we want to access table ZZTSIZECAT (see Figure 3.29) with the prefilled material number (see Figure 3.30).

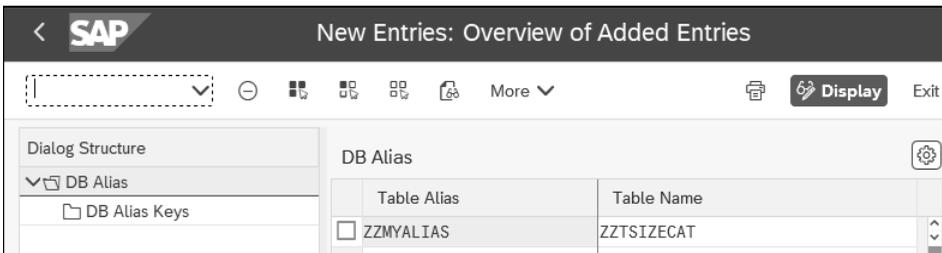


Figure 3.29: Creating a Table Alias to Access Table ZZTSIZECAT

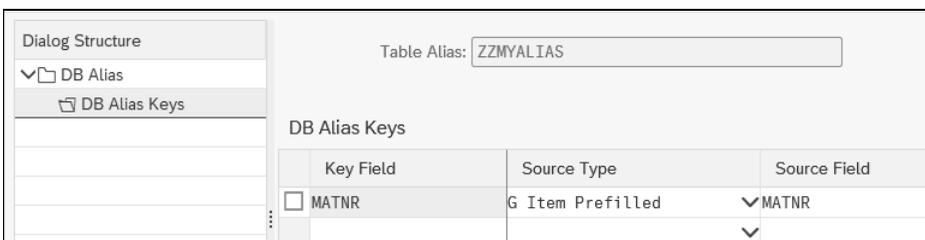
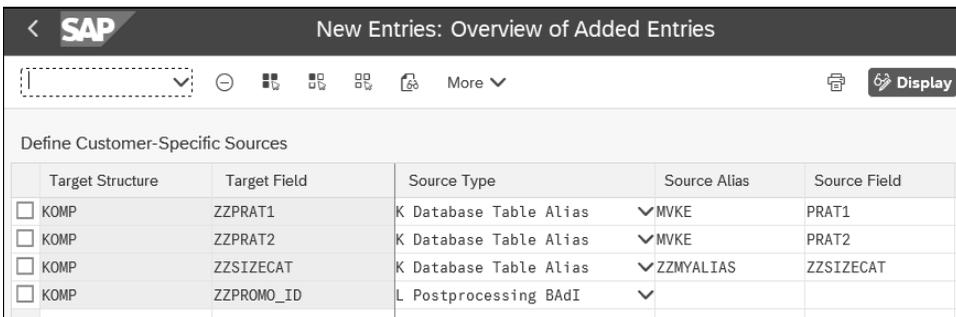


Figure 3.30: Defining How to Access Table ZZTSIZECAT

Next, we need to request the selection of field ZZSIZECAT. Go back to the activity **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Price Inquiry • Define Sources for Pricing Communication Structure**, and enter the third line shown in Figure 3.31.

We've assumed that our last field ZZPROMO can't be determined using a simple select. For such cases, SAP provides the BAdI BADI_PIQ_PREPARE, where you can program your own logic.

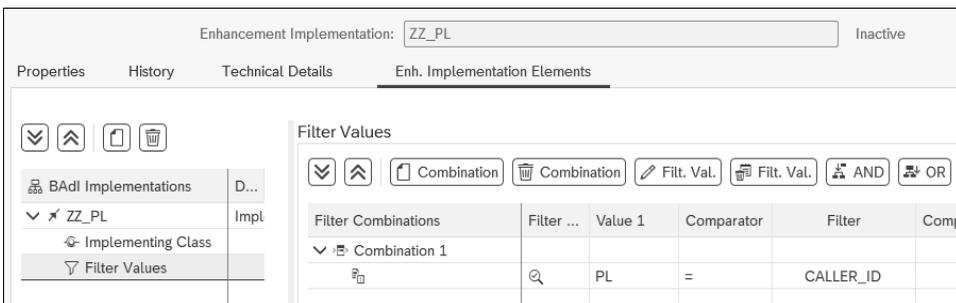
We nevertheless maintain an entry in Customizing for **ZZPROMO_ID** with the source type **Postprocessing BAdI** (see Figure 3.31). This will prevent the system from issuing warnings indicating that the source of the field is unknown.



| Target Structure | Target Field | Source Type | Source Alias | Source Field |
|-------------------------------|--------------|------------------------|--------------|--------------|
| <input type="checkbox"/> KOMP | ZZPRAT1 | K Database Table Alias | ▼ MVKE | PRAT1 |
| <input type="checkbox"/> KOMP | ZZPRAT2 | K Database Table Alias | ▼ MVKE | PRAT2 |
| <input type="checkbox"/> KOMP | ZZSIZECAT | K Database Table Alias | ▼ ZZMYALIAS | ZZSIZECAT |
| <input type="checkbox"/> KOMP | ZZPROMO_ID | L Postprocessing BAdI | ▼ | |

Figure 3.31: Defining Sources of Customer-Specific Fields

You find the BAdI BADI_PIQ_PREPARE in **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Business Add-Ins (BAdIs) • BAdI: Price Inquiry Preparation**. As mentioned, the underlying price inquiry function can run in different scenarios. Each scenario has a specific *caller ID* that defines which data to determine and how. You must therefore create your BAdI implementation with the filter value **PL** so that it's valid for the price list (see Figure 3.32).



| Filter Combinations | Filter ... | Value 1 | Comparator | Filter | Comp |
|---------------------|------------|---------|------------|-----------|------|
| ▼ Combination 1 | 🔍 | PL | = | CALLER_ID | |

Figure 3.32: Using Filter Value PL for Implementations in the Price List

The relevant method ADAPT_KOMK_KOMP_DATA substantially corresponds to the user exits in the various documents (see Chapter 4, Section 4.3.2) that allow you to change the content of the pricing communication structures. You'll find some tips on how to reuse your user exit

coding in SAP Note 2019242. Looking at the signature of the method, you can see that apart from the header and item table, there's also table CT_KOMP_HEADFIELDS. It contains all fields that simultaneously can depend on the customer and the material. The plant is a prominent example. The plant is therefore empty in CT_KOMK and filled in CT_KOMP_HEADFIELDS instead for each customer/material combination. So, if you've added fields (e.g., to KOMP whose content also depends on header data), you need to add these fields to KOMP_HEADFIELDS.

The BAdI interface has a second method called ADAPT_HEAD_ITEM_DATA. You can add fields to the already mentioned source **Additional Data** here. It's useful if you have fields you want to use in DB aliases because ADAPT_HEAD_ITEM_DATA is processed before the selects using the table aliases are carried out.

Like for user exits and formulas, you can request the determination of additional fields from KOMK and KOMP for your implementation of method ADAPT_KOMK_KOMP_DATA. To do so, go to **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Business Add-Ins (BAdIs) • Define Fields Used in BAdI: Price Inquiry Preparation**, and enter the required fields (see Figure 3.33).

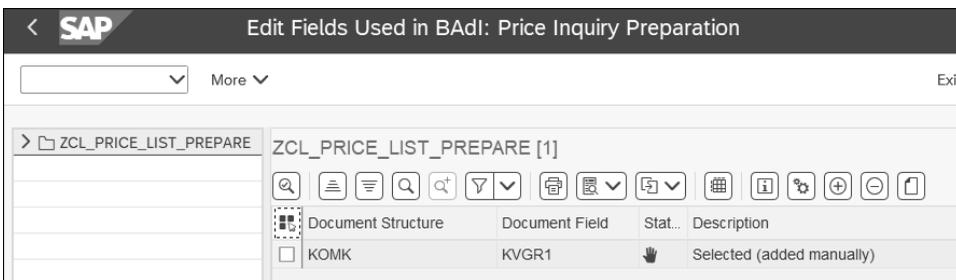


Figure 3.33: Requesting Fields Needed in Implementation of BADI_PIQ_PREPARE

The activity works very similarly to **Edit Fields Used in Pricing Enhancements**; however, there's no code scan. The system will fill the fields requested here, even if the price determination itself doesn't need them.

As you can see, the setup of the new price list function requires a certain amount of effort. However, you're usually rewarded with significantly shorter run times.

Checking the Settings

Because the price list doesn't simulate a document, the settings must be carefully checked, as you usually need the price list result to be consistent with, for example, the pricing in the sales order. Currently, there are two reports that allow you to review your settings. First, report SD_PRC_MULTI_ITEM_CHECK examines the bundled access to condition tables but not the data determination for KOMK and KOMP fields and is therefore of limited use to the end user. However, it can be helpful in narrowing down the cause if the price list result isn't as expected. It features a very detailed log, making it easy to find inconsistent conditions. Second, report SDPIQAPICOMPARE compares the price list result with that from an

order simulation or the net price list (see Section 3.3). However, the log isn't as detailed as that of report SD_PRC_MULTI_ITEM_CHECK.

We recommend using report SDPIQAPICOMPARE to detect discrepancies and then using the **Display Pricing Trace** option when starting the price list (refer to Figure 3.18). This allows you to view both the detail screen of the pricing (see Chapter 6, Section 6.1) and the associated pricing analysis (see Chapter 6, Section 6.1.6) and compare it, for example, with the sales order.

3.5.5 Enhancements of the Selection Screen

You can also extend the selection criteria and the result fields of the price list. Let's assume that we want to use the customer price group KONDA as additional selection criteria. Doing so, we can easily select all customers belonging to the price group but just entering the group. The price list will then find all relevant customers. To enhance the selection screen, we'll have to enhance the price list report SDPIQPRICELIST using enhancement spot ES_PIQ_SDPRICELIST. In enhancement point ES_PIQ_SDPRICELIST_EXT1, we add the field to the screen. We use enhancement point ES_PIQ_SDPRICELIST_EXT7 to add a field label and use enhancement point ES_PIQ_SDPRICELIST_EXT6 to transfer our selection option to the program using ABAP macro `transfer_select_option`. Listing 3.1 shows the necessary coding.

```
REPORT sdpiqpricelist.
...
ENHANCEMENT-POINT ES_PIQ_SDPRICELIST_EXT1 SPOTS
                    ES_PIQ_SDPRICELIST STATIC .
*$$$-Start: ES_PIQ_SDPRICELIST_EXT1-----
ENHANCEMENT 4 ZZ_NPLTEST.    "active version
*Add Customer Price Group as selection criteria
  Select-OPTIONS: konda for knvv-konda.
ENDENHANCEMENT.
*$$$-End:   ES_PIQ_SDPRICELIST_EXT1-----
...
* Customer extension: change of selection field texts
ENHANCEMENT-POINT ES_PIQ_SDPRICELIST_EXT7
                    SPOTS ES_PIQ_SDPRICELIST .
*$$$-Start: ES_PIQ_SDPRICELIST_EXT7-----
ENHANCEMENT 3 ZZ_NPLTEST.    "active version
* Add text to field KONDA
  loop at screen.
    if screen-name = '%_KONDA_%_APP_%-TEXT'.
      %_KONDA_%_APP_%-TEXT = 'Customer Price Group'.
      exit.
    endif.
  endloop.
```

```

ENDENHANCEMENT.
*$$$-End:   ES_PIQ_SDPRICELIST_EXT7-----
...
* transfer the search criteria of customer extension fields to
* price list API
ENHANCEMENT-POINT ES_PIQ_SDPRICELIST_EXT6 SPOTS ES_PIQ_SDPRICELIST .
*$$$-Start: ES_PIQ_SDPRICELIST_EXT6-----
ENHANCEMENT 2 ZZ_NPLTEST.    "active version
      transfer_select_option 'KNVV' 'KONDA' konda.
ENDENHANCEMENT.
*$$$-End:   ES_PIQ_SDPRICELIST_EXT6-----

```

Listing 3.1: Adding the Customer Price Group KONDA as the Selection Criteria

Finally, we make an entry in **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Selection and Results • Define Fields** because we need to tell the system where the field can be found (see Figure 3.34).

| Define Customer-Specific Fields | | | | | | | |
|---------------------------------|------------|--------------|--------------|--------------|-------------|--------------------------|-----------------|
| | Field Name | Select From | Source Table | Source Field | Table Alias | Output | Reference Field |
| <input type="checkbox"/> | KONDA | A Customers | ▼ KNVV | KONDA | KNVV | <input type="checkbox"/> | |
| | | Not Relevant | ▼ | | | <input type="checkbox"/> | |

Figure 3.34: Field KONDA to Be Selected from Table KNVV with Table Alias KNVV

Like the data determination for the pricing communication structure, the information for the generic selection of customers and materials is stored in the form of metadata. The table entry in Figure 3.34 tells the system that, for selecting the customer, it can find the relevant customer group information in field KONDA of table KNVV. The table alias KNVV is the DB alias you saw earlier in Figure 3.26. The KONDA field is now available under its field label **Customer Price Group** as selection criteria on the selection screen (see Figure 3.36) of the price list.

Additional Fields for Selection and Output

The price list report uses tables KNVV and MVKE to retrieve all necessary data for selection and output. You can only add fields from these or from related tables such as table KNA1 or table MARA if the relation is maintained in the table relations defined in **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Selection and Results • Define Table Mapping**. The program creates a generic select statement joining all necessary tables during runtime. BAdIs exist for more complex cases.

In a very similar way, you can extend the selection screen by your own input parameter. Let's assume you want to provide the price list currency from outside, while normally it's retrieved from the customer master data. In this case, you again must enhance report

SDPIQPRICELIST. The necessary coding and enhancement points used in the code are provided in Listing 3.2.

```
REPORT sdpiqpricelist.
...
* Customer extension: further criteria in control block
ENHANCEMENT-POINT ES_PIQ_SDPRICELIST_EXT3 SPOTS
                    ES_PIQ_SDPRICELIST STATIC .
*$$$-Start: ES_PIQ_SDPRICELIST_EXT3-----
ENHANCEMENT 8 ZZ_NPLTEST.    "active version
* Add price list currency
PARAMETERS WAERK like KOMK-WAERK OBLIGATORY.
ENDENHANCEMENT.
*$$$-End:   ES_PIQ_SDPRICELIST_EXT3-----
SELECTION-SCREEN END    OF BLOCK control.
...
* Customer extension: change of selection field texts
ENHANCEMENT-POINT ES_PIQ_SDPRICELIST_EXT7 SPOTS ES_PIQ_SDPRICELIST .
*$$$-Start: ES_PIQ_SDPRICELIST_EXT7-----
ENHANCEMENT 3 ZZ_NPLTEST.    "active version
...
* Add text to field WAERK
  loop at screen.
    if screen-name = '%_WAERK_%_APP_%-TEXT'.
      %_WAERK_%_APP_%-TEXT = 'Price List Currency'.
      exit.
    endif.
  endloop.
ENDENHANCEMENT.
*$$$-End:   ES_PIQ_SDPRICELIST_EXT7-----
...
* transfer the search criteria of customer extension fields to
* price list API
ENHANCEMENT-POINT ES_PIQ_SDPRICELIST_EXT6 SPOTS ES_PIQ_SDPRICELIST .
*$$$-Start: ES_PIQ_SDPRICELIST_EXT6-----
ENHANCEMENT 2 ZZ_NPLTEST.    "active version
...
  add_name_value 'WAERK' WAERK 'KOMK'.
ENDENHANCEMENT.
*$$$-End:   ES_PIQ_SDPRICELIST_EXT6-----
```

Listing 3.2: Adding the Document Currency as Control Parameter

To inform the price list that it has to read the currency from the caller data and not from the customer master data from now on, you add the entry shown in Figure 3.35 in **IMG • Sales**

and Distribution • Basic Functions • Pricing • Price Lists • Price Inquiry • Sources for Communication Structures.

| Define Customer-Specific Sources | | | | | | |
|----------------------------------|------------------|--------------|----------------------|--------------|--------------|--------------|
| | Target Structure | Target Field | Source Type | Source Alias | Source Field | Direct Value |
| <input type="checkbox"/> | KOMK | WAERK | B Global Caller Data | | WAERK | |
| | | | | | | |

Figure 3.35: Taking Over the Currency from the Caller Data

You might have noticed the addition of **OBLIGATORY** in Listing 3.2. This is necessary because with the entry from Figure 3.35, the currency is no longer read from the customer master. Therefore, you must require that the user supplies a currency on the selection screen. Alternatively, we could fill the currency in method `ADAPT_KOMK_KOMP_DATA` of `BAdI BADI_PIQ_PREPARE` if it hasn't been set by the user. You can see the result of these enhancements in Figure 3.36.

| Customer Data | |
|-------------------------|--|
| Sold-To Party: | <input type="text"/> to: <input type="text"/> <input type="button" value="→"/> |
| Customer Price Group: | <input type="text"/> to: <input type="text"/> <input type="button" value="→"/> |
| Material Data | |
| Material: | <input type="text"/> to: <input type="text"/> <input type="button" value="→"/> |
| Product Hierarchy: | <input type="text"/> to: <input type="text"/> <input type="button" value="→"/> |
| Material Pricing Group: | <input type="text"/> to: <input type="text"/> <input type="button" value="→"/> |
| Control Data | |
| Pricing Date: * | <input type="text" value="18.09.2025"/> |
| Sales Document Type: * | <input type="text" value="OR"/> <input type="text" value="Standard Order"/> |
| Price List Currency: * | <input type="text"/> |

Figure 3.36: Selection Screen Enhanced with Customer Price Group and Currency

In addition to enhancement spot `ES_PIQ_SDPRICELIST`, SAP provides `BAdI BADI_PIQ_SDPRICELIST` to influence the selection of the price list. Here, methods `GET_CUSTOMER_DATA` and `GET_MATERIAL_DATA` are particularly worth mentioning. They allow you to add or remove customers and materials from the price list processing. Method `PREPARE_PRICING` permits final changes to global, control, head, and item data before the underlying price inquiry API is called.

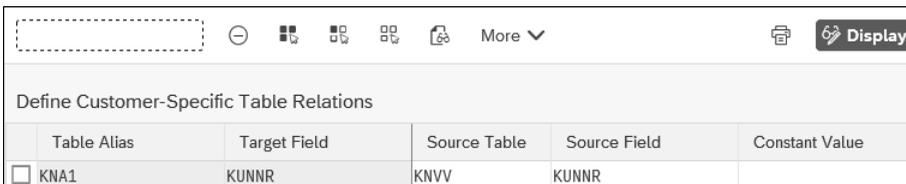
Calculation of Fixed Amount Group Conditions in the Price List

Group conditions with the calculation rule **B** (Fixed Amount) are typically calculated only in the cross-item price determination (see Chapter 7, Section 7.1). However, in the

price list, as all materials are intended to be calculated separately, no cross-item pricing takes place. If you want these conditions to be calculated in the price list as well, you need to implement BAdI `BADI_PIQ_SDPRICELIST` and method `PREPARE_PRICING`, and then set the parameter `CALC_FXD_AMNT_GRP_COND_ON_ITEM` in interface structure `CS_CONTROL` to X.

3.5.6 Enhancements of the Price List Result

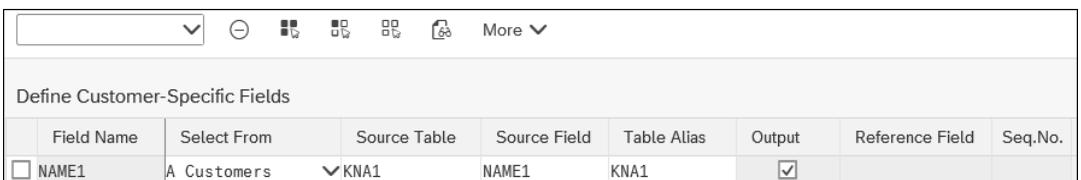
In the last step, we'll adjust and enhance the output. Suppose that in addition to the customer number, we also want to display the customer's name. We know that the customer's name is stored in field `NAME1` of customer master table `KNA1`. Selecting the path **IMG · Sales and Distribution · Basic Functions · Pricing · Price Lists · Selection and Results · Define Table Mapping**, we find that an access to table `KNA1` with the customer number is already available as the standard DB alias `KNA1`. Because only tables `KNVV` and `MVKE` (Sales Area Data for Customer and Material, respectively) are used for the selection and the output of the price list, we need to tell the system how table `KNA1` relates to table `KNVV`. The system can then select the data with one access by joining the two tables. We choose the activity **Define Customer-Specific Table Relations** using **IMG · Sales and Distribution · Basic Functions · Pricing · Price Lists · Selection and Results · Define Table Mapping** and then specify that the customer number `KUNNR` of `KNVV` must be equal to the customer number `KUNNR` of `KNA1` (see Figure 3.37).



| Table Alias | Target Field | Source Table | Source Field | Constant Value |
|-------------------------------|--------------|--------------|--------------|----------------|
| <input type="checkbox"/> KNA1 | KUNNR | KNVV | KUNNR | |

Figure 3.37: Specifying the Relation Between Two Tables

Next, we must define that the field `NAME1` is retrieved from table `KNA1`. We go to Customizing activity **IMG · Sales and Distribution · Basic Functions · Pricing · Price Lists · Selection and Results · Define Fields** and enter the line shown in Figure 3.38 in the customer section.



| Field Name | Select From | Source Table | Source Field | Table Alias | Output | Reference Field | Seq.No. |
|--------------------------------|-------------|--------------|--------------|-------------|-------------------------------------|-----------------|---------|
| <input type="checkbox"/> NAME1 | A Customers | ▼ KNA1 | NAME1 | KNA1 | <input checked="" type="checkbox"/> | | |

Figure 3.38: Selecting the Customer Name for Display in the Price List Result

Now the price list will read field **NAME1** from table **KNA1** with key field **KUNNR** being the same as in **KNVV**. We flag the **Output** checkbox to add the field to the output data.

In addition, we want to display a particular discount in the price list. As discussed earlier in this chapter, we need to create a display variant to make the selected lines of the pricing result available.

We create a variant and select the rows in the pricing procedure in IMG Customizing activity **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Selection and Results • Define Pricing Element Display** (see Figure 3.39).

| Step | Cntr | CnTy | Description | From | To | Man. | Mdt | Stat | S Req | AltCAmnt | AltCBV | Display |
|--------------------------|------|------|------------------------|------|----|-------------------------------------|--------------------------|--------------------------|-------|----------|--------|-------------------------------------|
| <input type="checkbox"/> | 11 | 0 | PR00 Price | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 12 | 0 | ZPRP Price | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 90 | 0 | PMP0 Manual Price | 0 | 0 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 100 | 0 | Gross Value | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1 | 0 | 2 | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | 101 | 0 | K004 Material | 0 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input type="checkbox"/> |
| <input type="checkbox"/> | 110 | 0 | K007 Customer Discount | 100 | 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 | 0 | 0 | <input checked="" type="checkbox"/> |

Figure 3.39: Making Lines in the Procedure Available in the Output of the Price List

Like the **NAME1** fields, we need entries in the customer-specific fields list to make the pricing element details available in the output. First, we must realize what fields we need. In our case, we want condition amount **KBETR** and its currency **WAERS** from the **K007** condition that is the second price element in our display variant (see Figure 3.39). Therefore, we add the two first lines shown in Figure 3.40. Price elements are always read from the price result (item condition details) and the corresponding source table is **PIQS_CALCULATE_COND_RESULT** (the exception to this rule is the description of a price element or subtotal line, which is stored in table **PIQS_CALCULATE_STEP_DESCR**). Because we need the second line of the variant, we add the **Seq.No.** (sequence number) **2**. To ensure the correct formatting of the amount, we also enter a **Reference Field** for **KBETR2**.

| Field Name | Select From | Source Table | Source Field | Table Alias | Output | Reference Field | Seq.No. |
|---------------------------------|-------------------------------|----------------------------|--------------|-------------|-------------------------------------|-----------------|---------|
| <input type="checkbox"/> KBETR2 | F Read from Pricing Result... | PIQS_CALCULATE_COND_RESULT | KBETR | | <input checked="" type="checkbox"/> | WAERS | 2 |
| <input type="checkbox"/> WAERS2 | F Read from Pricing Result... | PIQS_CALCULATE_COND_RESULT | WAERS | | <input checked="" type="checkbox"/> | | 2 |
| <input type="checkbox"/> REMARK | E BAdI | ZZPLDUMMY | VTEXT | | <input checked="" type="checkbox"/> | | |

Figure 3.40: Adding Fields to the Output

Inactive Price Elements in the Output

The price list filters out all inactive price elements by default before output. However, you can adjust this system behavior using **BAdI BADI_NPL_PRICING_MULTI_ITEM** and

therefore, for example, show a sales promotion price and the standard price that has been deactivated by it.

We also want to add a text field where we can give out a short notice. For more complex field determinations, SAP provides method `PROCESS_RESULTS` in BAdI `BADI_PIQ_SDPRICELIST` where you can fill your output fields dependent on other result data. We add the third line from Figure 3.40, indicating that we'll fill the field `REMARK` in the BAdI. Nevertheless, we must supply a source table and field to define the technical properties of our field. This can be a dummy table and field, but they need to exist.

We decide to add text only if the discount exceeds a certain limit (see Listing 3.3).

```
METHOD if_badi_piq_sdpricelist~process_result.
  FIELD-SYMBOLS: <ft_result> TYPE STANDARD TABLE,
                 <fs_result> TYPE any,
                 <fv_kbetr>  TYPE kbetr,
                 <fv_remark> TYPE vtext.
  DATA: lv_limit TYPE kbetr VALUE '-250.00'.
  DATA: comp1 TYPE komp_type VALUE 'KBETR2',
        comp2 TYPE komp_type VALUE 'REMARK'.
  ASSIGN cr_result->* TO <ft_result>.

  LOOP AT <ft_result> ASSIGNING <fs_result>.
    ASSIGN COMPONENT comp1 OF STRUCTURE <fs_result> TO
                                     <fv_kbetr>.

    CHECK <fv_kbetr> IS ASSIGNED.
    IF <fv_kbetr> LE lv_limit.
      ASSIGN COMPONENT comp2 OF STRUCTURE <fs_result>
                                     TO <fv_remark>.

      CHECK <fv_remark> IS ASSIGNED.
      <fv_remark> = 'Special Discount'.
    ENDIF.
  ENDLOOP.

ENDMETHOD.
```

Listing 3.3: Adding 'Remark' If the Discount Exceeds 25%

Finally, we'd like to adjust the labels of our new columns. To do so, we go to **IMG • Sales and Distribution • Basic Functions • Pricing • Price Lists • Selection and Results • Define Labels of Result Fields** and enter suitable descriptions (see Figure 3.41). We can define the labels in general or depending on the pricing procedure. However, be aware that procedure-related labels don't appear in the **Display List** option. This output option can combine several customers in one list, and there may be more than one pricing procedure involved. The column label needs to be unique, though.

| Field Name | L... | Description |
|------------|------|---------------|
| NAME1 | EN | Customer Name |
| KBETR2 | EN | Your Discount |
| REMARK | EN | Note |

Figure 3.41: Adjusting the Column Header of the Price List Result

After adjusting the layout of the price list report, we call the price list again and enter the newly created display variant “SHDC” in the **Display Pricing Elements** option. Your final list looks like Figure 3.42 (**Customer Name**, **Your Discount**, and **Note** columns have been added).

| Pricing Date | Customer | Customer Name | Material | Description | Net Price | Doc. Curre | Pricin... | Uni... | Your Discount | Currency | Note |
|--------------|-----------|---------------|----------|------------------------------|-----------|------------|-----------|--------|---------------|----------|------------------|
| 14.09.2025 | PLC_TEST1 | Adam Alpha | E-MA2731 | E-Book Reader Tolstol 5GTR-a | 107,99 | EUR | | 1 ST | 10,000- | % | |
| 14.09.2025 | PLC_TEST1 | Adam Alpha | E-MA3116 | Laptop Leonic 64 TPX | 899,99 | EUR | | 1 ST | 10,000- | % | |
| 14.09.2025 | PLC_TEST1 | Adam Alpha | E-MA9765 | Monitor Asilip 28 in AP54Z | 260,99 | EUR | | 1 ST | 10,000- | % | |
| 14.09.2025 | PLC_TEST2 | Berta Book | E-MA2731 | E-Book Reader Tolstol 5GTR-a | 81,39 | EUR | | 1 ST | 26,000- | % | Special Discount |
| 14.09.2025 | PLC_TEST2 | Berta Book | E-MA3116 | Laptop Leonic 64 TPX | 702,99 | EUR | | 1 ST | 26,000- | % | Special Discount |
| 14.09.2025 | PLC_TEST2 | Berta Book | E-MA9765 | Monitor Asilip 28 in AP54Z | 190,17 | EUR | | 1 ST | 26,000- | % | Special Discount |
| 14.09.2025 | PLC_TEST3 | Chris Cook | E-MA2731 | E-Book Reader Tolstol 5GTR-a | 119,99 | EUR | | 1 ST | 0,000 | % | |
| 14.09.2025 | PLC_TEST3 | Chris Cook | E-MA3116 | Laptop Leonic 64 TPX | 999,99 | EUR | | 1 ST | 0,000 | % | |
| 14.09.2025 | PLC_TEST3 | Chris Cook | E-MA9765 | Monitor Asilip 28 in AP54Z | 289,99 | EUR | | 1 ST | 0,000 | % | |

Figure 3.42: Price List Result with New Fields and Adjusted Column Headers

We don't want to finish this section without pointing out another BAdI. The method `PROCESS_OUTPUT` of BAdI `BADI_PIQ_SDPRICELIST_OUTPUT` allows you to program your own output options. You can, for example, decide to store the price list result in a database table for analytical purposes.

Note

SAP Note 1949280 provides some detailed descriptions if you want to engage more deeply in selection and output enhancements.

3.5.7 Customizing Overview

This section serves as a recap and brief overview of the Customizing and enhancement options of the performance-optimized price list. Figure 3.43 shows the relevant part of the IMG.

| | |
|---|---|
| ▼ | Price Lists |
| 🔍 | 🕒 Edit Fields Used in Pricing Enhancements |
| ▼ | Selection and Result |
| 🔍 | 🕒 Define Table Mapping |
| 🔍 | 🕒 Define Filter for Pricing Procedure |
| 🔍 | 🕒 Define Pricing Elements Display |
| 🔍 | 🕒 Define Fields |
| 🔍 | 🕒 Define Labels of Result Fields |
| 🔍 | 🕒 Define FTP Settings |
| ▼ | Price Inquiry |
| 🔍 | 🕒 Define Table Access |
| ▼ | Define Sources for Pricing Communication Structures |
| 🔍 | 🕒 Display Standard Sources |
| 🔍 | 🕒 Define Customer-Specific Sources |
| 🔍 | 🕒 Check Consistency of Customizing |
| ▼ | Business Add-Ins (BAdIs) |
| ▼ | Price Inquiry Preparation |
| 🔍 | 🕒 BAdI: Price Inquiry Preparation |
| 🔍 | 🕒 BAdI: Define Fields Used in BAdI: Price Inquiry Preparation |
| ▼ | Price List |
| 🔍 | Notes on Implementation |
| 🔍 | 🕒 BAdI: Price List Processing |
| 🔍 | 🕒 BAdI: Price List Output |
| 🔍 | 🕒 BAdI: Control of Calculation Regarding Scale Information |

Figure 3.43: IMG Activities for the Price List

It helps to understand the structuring, if you know that the price list technically has two layers. The outer one, the *price list layer*, processes the data from the selection screen and builds up the caller data we've seen before. It calls the inner layer, the *price inquiry layer*, and processes its result, for example, by sending the lists to the customers via email. The inner layer is responsible for taking the caller data, deriving from it all necessary information for pricing, performing the call to pricing, and passing the result back to the caller. The price inquiry layer can be called stand-alone and distinguishes its callers by their caller IDs. The price list has the caller ID PL (refer to Figure 3.32 earlier in this chapter).

The activities in Customizing are as follows:

■ Edit Fields Used in Pricing Enhancements

In this activity, you register fields you need in formulas, requirements, and user exits. With this information, the price inquiry will identify the relevant fields for the price calculation.

■ Selection and Result

– Define Table Mapping

You can either display the standard table aliases and relations or register your own tables for database `selects`. You need to define how they relate to table `KNVV` or table `MVKE`. Tables `KNVV` and `MVKE` are the core tables for the selection of customers and products for the price list processing. The defined relation allows a `Join` statement to select all necessary data.

- **Define Filter for Pricing Procedure**
In a filter variant, you select lines in a pricing procedure to be skipped during the pricing call. This reduces the runtime of the price list.
 - **Define Pricing Elements Display**
Lines selected in a display variant are available for output in the price list processing.
 - **Define Fields**
Displays standard fields or register additional fields for selection or output.
 - **Define Labels of Result Fields**
Adjusts the column labels in the output list.
 - **Define FTP Settings**
Registers the server address, user, and password for storing the price list result on an FTP server.
- **Price Inquiry**
 - **Define Table Access**
Displays the DB aliases of standard table accesses or defines new ones. DB aliases define how to access a database table.
 - **Define Sources for Pricing Communication Structure**
Displays the sources of standard fields or defines how your own fields can be determined.
 - **Check Consistency of Customizing**
Checks the consistency of Customizing.
 - **Business Add-Ins (BAdIs)**
 - **BAdI: Price Inquiry Preparation**
BAdI to fill fields in the pricing communication structures.
 - **BAdI: Define Fields Used in BAdI: Price Inquiry Preparation**
Registers fields you need in your BAdI implementation. The system will then provide the necessary information if possible.
 - **BAdI: Price List Processing**
Allows influencing parameters for the price inquiry call. Allows influencing the result.
 - **BAdI: Price List Output**
Allows you to program your own output options here.
 - **BAdI: Control of Calculation Regarding Scale Information**
Influences the standard algorithm and how the relevant quantities are calculated.

3.5.8 Important Programs and Function Modules

The most important programs and function modules of the performance-optimized price list are as follows:

■ Report SDPIQPRICELIST

This is the standard report for the creation of price lists. It has a dedicated selection screen allowing you to select customers and products, as well as choose from various options. You can enhance the report's screen by implementing enhancement spot `ES_PIQ_SDPRICELIST`.

■ Function module API_PIQ_SDPRICELIST

You can use this function module if you want to access the price list functionality from within another program. The interface corresponds more or less to the selection screen of the price list. SAP Note 1949280 provides a detailed description.

■ Function module BAPI_PIQ_SDPRICELIST

With this function module, you can call the price list functionality remotely. It's very similar to the function module `API_PIQ_SDPRICELIST` but allows you to disable the consistency check on the input table for performance reasons. In addition, SAP Note 1949280 gives a more detailed description of `BAPI_PIQ_SDPRICELIST`.

■ Function module PIQ_CALCULATE

This is an RFC-enabled function module that can be useful if you need to calculate prices outside of a document simulation with good performance. It requires some control data and a list of customers and materials. It reads metadata from Customizing to optimize the database accesses. Different callers can register different caller IDs in table `PIQC_API_CALLER` or use the standard ID `STD`. When using your own caller ID, you need to define the sources for the pricing communication structure for your fields and your new ID in table `PIQC_PREP_FLD_C`. Unlike the price list APIs, the price inquiry can trigger a group processing for items that belong together.

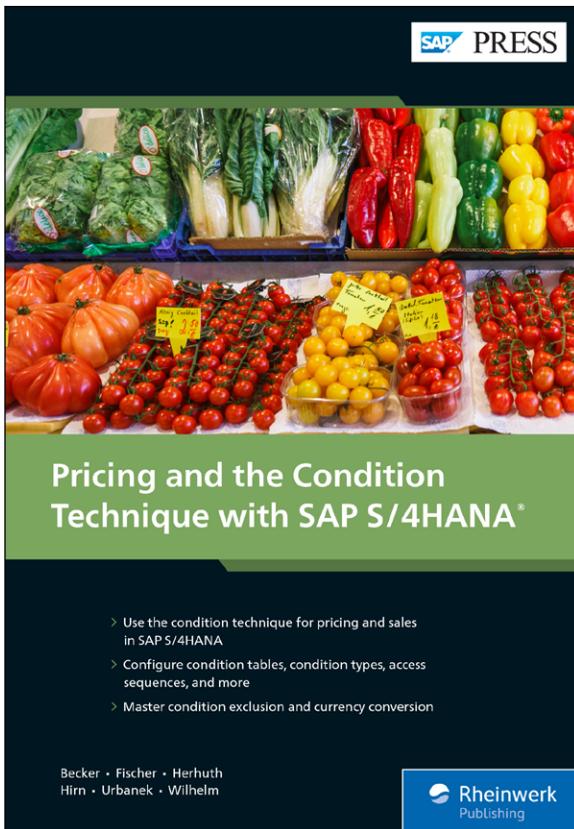
If you use function module `PIQ_CALCULATE`, keep in mind that it doesn't do any document simulation, so not all pricing-related functionality is available. Examples of not supported functionalities are free goods, product substitution, down payments, European Article Numbers (EANs), batch determination, and so on.

3.6 Summary

With the ability to configure pricing reports, you can ensure, for example, as department supervisor, that pricing reports are provided for your departments that are adapted to their specific information needs. Pricing reports can be created without programming by a kind of list generator in Customizing for pricing.

With the net price list and its big brother, the price list, you can give your customers individual price information for a large number of products.

This chapter marks the end of the first part of this book about the condition technique. We now move on to the second and central part of this book—standard pricing configuration.



Becker, Fischer, Herhuth,
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Ursula Becker, Jan Fischer, Werner Herhuth, Manfred Hirn, Markus Urbanek, and Moritz Wilhelm have many decades of combined experience with pricing and the condition technique in SAP system. Their experience spans the creation of the condition technique back in the SAP R/3 days to its development for SAP S/4HANA.

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