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This sample chapter provided step-by-step instructions for configuring available to promise (ATP) checks and requirements transfers. It also walks you through product availability checks, segmentation strategies, product allocation, and rule-based ATP.

-  **“Available to Promise and Transfer of Requirements”**
-  **Contents**
-  **Index**
-  **The Author**

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Chapter 7

Available to Promise and Transfer of Requirements

When processing sales documents that involve the physical movement of tangible goods, you'll need to verify their availability. This verification takes place using a system functionality called the available to promise (ATP) check.

An ATP check is not a simple stock check; the functionality verifies several other system variables (in addition to on-hand inventory) to determine when you should expect inventory to be ready for logistics operations, including picking, packing, shipping, and transportation steps until the product is ultimately delivered to the customer's ship-to address.

An ATP check includes incoming purchase orders (POs) from vendors, stock transfer orders from other plants, production orders from manufacturing, and more. You can control competing demands and other backorder scenarios based on theoretical availability with an ATP check.

Since SAP S/4HANA 1809, advanced ATP has been available. This functionality encompasses the legacy ATP check that was part of SAP ERP, now referred to as the "product availability check." SAP S/4HANA for advanced ATP refers to four components:

- The product availability check
- Product allocation
- Backorder processing
- Supply assignment

In this chapter, we'll provide a lot of details about the product availability check functionality, also known as ATP check, in Sections Section 7.1 through Section 7.4. We'll also cover product allocation in Section 7.5 and rule-based ATP checks in Section 7.6.

7.1 Product Availability Check

Backward and forward scheduling are important to understand ATP check results and to avoid misinterpretation and operational mistakes that may impact your customers. We'll look at the role of scheduling in product availability checks in the following sections.

7.1.1 Backward Scheduling

Backward scheduling is used when a customer requests a delivery date that is achievable. You would schedule what must happen before that date in order for the product to be delivered on that date, by subtracting lead times from the requested delivery date to determine when each logistics task (picking, packing, shipping, and transportation) must be completed and ultimately when material needs to be available for each stage.

In the diagram shown in Figure 7.1, a sales order has a requested delivery date far enough in the future to successfully perform backward scheduling and to define the dates on which each logistic tasks must be completed.

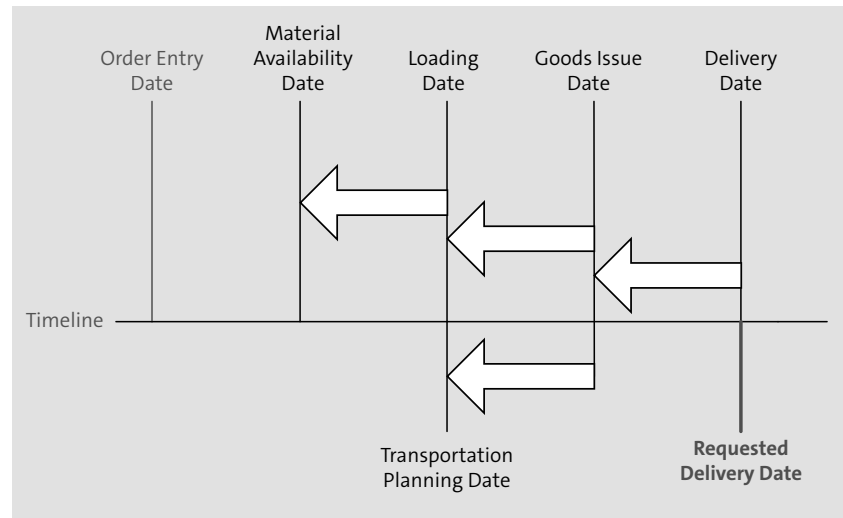


Figure 7.1 Backward Scheduling

In this scenario, the requested delivery date and the expected delivery date are the same, so we'll measure on-time delivery by comparing the requested delivery date with the actual delivery date.

The product availability check always performs backward scheduling and assign its results to the sales. We'll review this functionality in more detail in Section 7.2.2.

7.1.2 Forward Scheduling

Forward scheduling is used when a customer requests a delivery date you cannot achieve. In these circumstances, you'll use already configured input parameters to determine when the earliest date on which you can commit to delivery of this product.

In the diagram shown in Figure 7.2, a sales order has a requested delivery date that is too near, and we don't afford have enough time for all the estimated logistics tasks to be completed before that requested delivery date. This scenario also arises if you don't have enough inventory and still want to make commitments based on theoretical availability, i.e., incoming procurement (purchase, production, transfers, etc.).

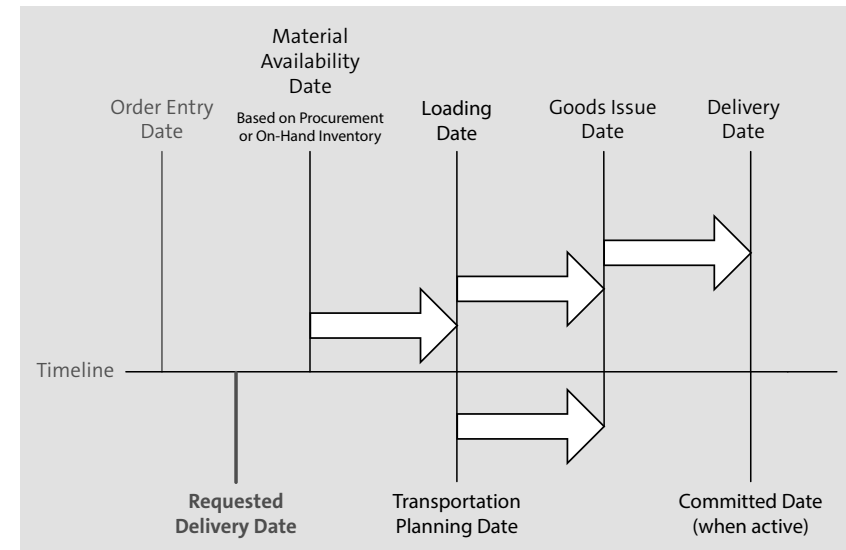


Figure 7.2 Forward Scheduling

In this scenario, you could use the commitment date to control on-time delivery, as configured on the sales order type (Transaction VOV8, see Chapter 6 for more details). All three dates (the requested delivery date, the commitment date, and the actual delivery date) are considered when evaluating on-time delivery key performance indicators (KPIs) to allow for the analysis of warehouse speed as well as of customer experience.

7.2 Available to Promise Checks

An ATP check runs whenever you need to check for inventory availability; in this section, we'll focus on using ATP checks for sales orders. An ATP check can also affect delivery documents, stock transfer orders, production orders, etc.

In the following sections, we'll highlight the moments during the sales order entry process when the ATP check will run and describe the related configuration steps in detail.

7.2.1 Process Overview

When a sales order is entered, as shown in Figure 7.3, your first experience with the ATP check will be the **Availability Control** window, shown in Figure 7.4, which appears right after you enter a new line. This window will appear whenever you can't deliver the product to the customer by the requested delivery date (forward scheduling).

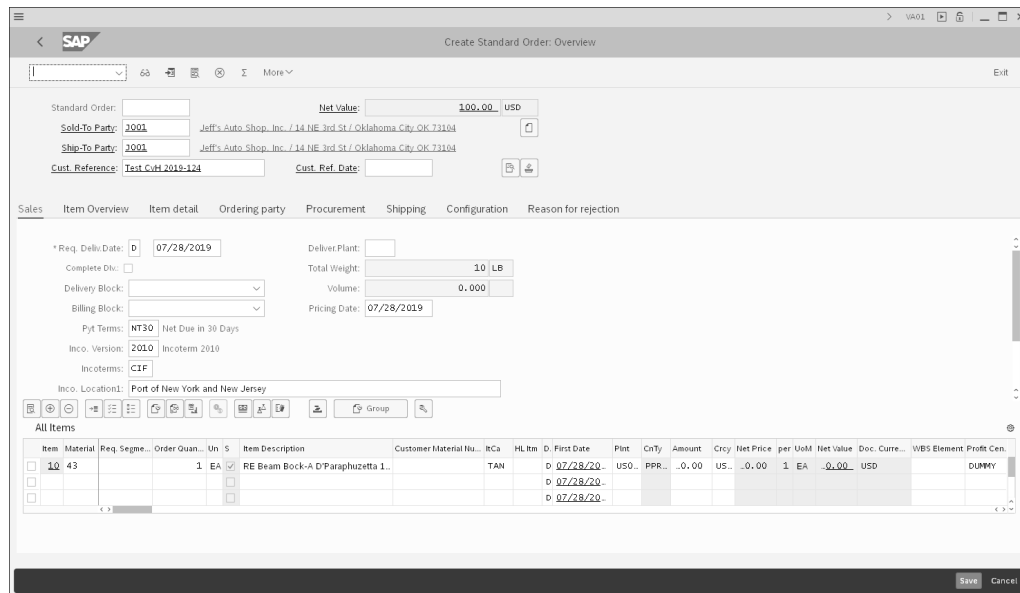


Figure 7.3 Sample Sales Order Entry Screen

The **Availability Control** window may offer several options for delivery, such as partial delivery, complete delivery, and system-proposed delivery. Even if these options are the same, this window would still appear to inform the user that the requested delivery cannot be fulfilled, and the customer needs to be informed of the situation.

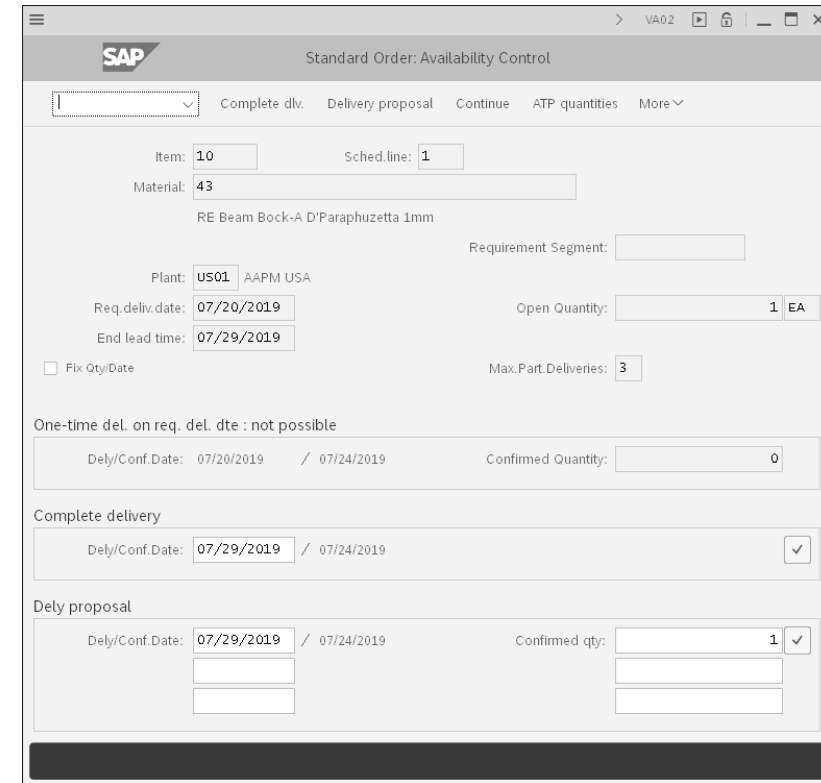



Figure 7.4 Availability Control Window

Once you select the customer-selected forward scheduling delivery mode (**Complete delv.**, **Delivery proposal**, **Continue**, **ATP quantities**, etc.) in the **Availability Control** window, the system will return to the screen shown earlier in Figure 7.3.

You can suppress the **Availability Control** window via configuration as described in the **Configuring Default Settings by Sales Area** section in Section 7.2.3. Note, however, that this configuration is defined at the sales area level and will affect all order types.

Some companies don't validate requested delivery dates and find this notification inconvenient every time they perform forward scheduling. We do not recommend turning this notification off for any reason; a more appropriate approach would be to define a default number of days to push the default requested delivery date forward when configuring the sales order type (Transaction VOV8). With this method, you could always perform backward scheduling, and the **Availability Control** window will not appear unless an exception arises. During forward scheduling, your customer

service reps must notify customers of potential issues to achieve any level of customer satisfaction. You can run ATP checks as many times as necessary by clicking the  button as indicated.

The results of the ATP check are stored in schedule lines, and you can consult and make changes on these lines by selecting the desired order line and clicking the **Schedule Lines for Item** button as indicated. Under the **Schedule Lines** tab, shown in Figure 7.5, you can change the requested delivery date, which affects each line only. You may also split the total quantity into multiple requested delivery dates and quantities.

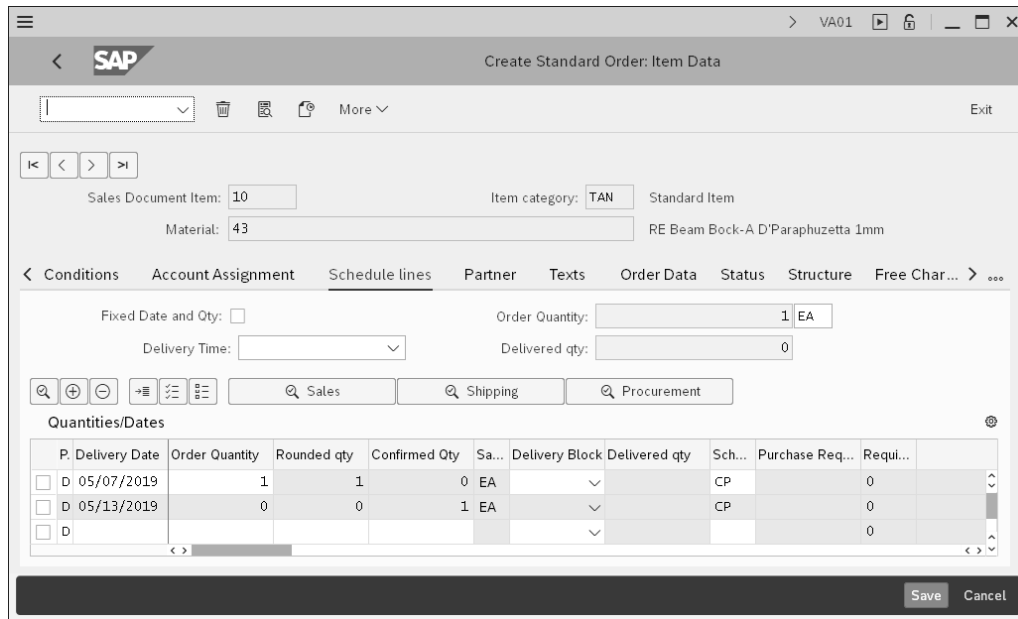



Figure 7.5 Sales Order Line: Schedule Line Tab

The lines with a gray background are generated by the ATP check after forward scheduling to indicate when the expected delivery date does not match the requested delivery date. In backward scheduling scenarios, confirmed quantities are displayed on the same line as ordered quantities because the expected delivery date matches the requested delivery date.

You can identify whether a schedule is using forward scheduling when the corresponding line with a gray background appears. Note also that the confirmed quantity is zero for backward planning schedule lines but populated for forward planning schedule lines.

7.2.2 Schedule Line Details

After the ATP check runs, schedule lines are created that contain a lot more detail you can consult, which we'll describe in this section.

You can consult the **Scheduling Line Details** (as shown earlier in Figure 7.5) by selecting a schedule line and clicking the details icon  on the left or clicking on the one of the detail buttons (**Shipping**, **Sales**, and **Procurement**), which will take you straight to the corresponding tab.

Each schedule line is assigned a delivery date (also known as a *schedule line date*). All the details we're going to describe refer to events taking place on that date, in the **Delivery Date** field. For our first task, select the **05/07/2019** date.

By clicking on **Sales**, as shown in Figure 7.5, you'll be taken to the **Sales** tab, shown in Figure 7.6.

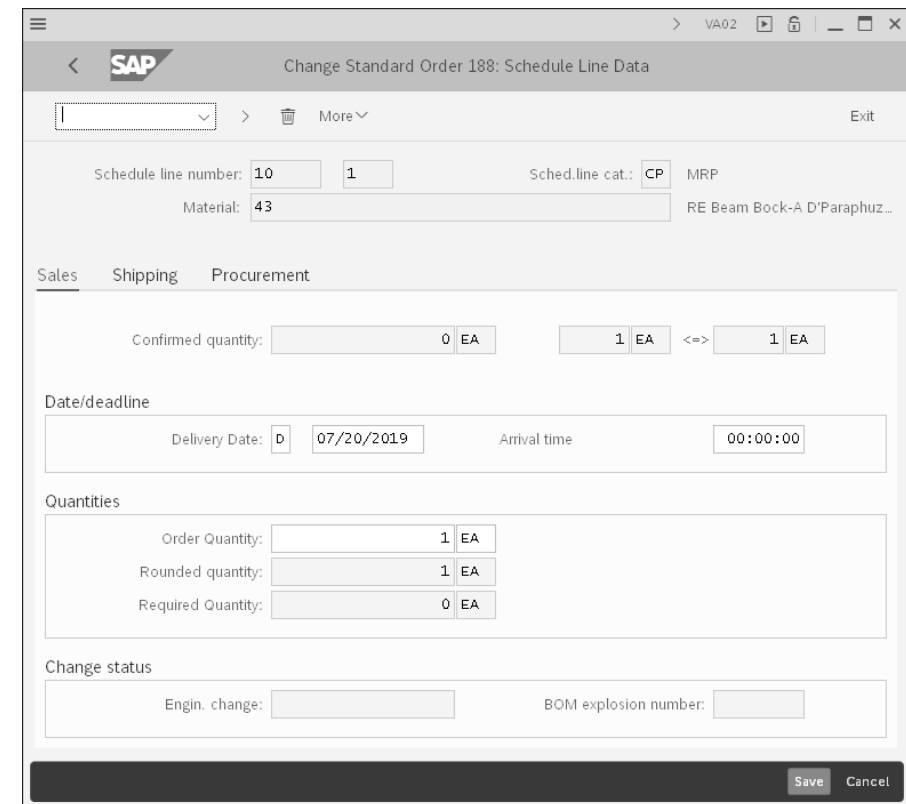


Figure 7.6 Sales Details Tab for the Schedule Line

This tab has the following important fields:

- The **Confirmed quantity** field and the quantity conversion details indicate the available stock earmarked for consumption by this sales order once delivered on the delivery date for this schedule line. Note this depends on the ATP check rules that we'll configure under Configuring the Scope of the Availability Check in this section.
- When a schedule line for which we're displaying sales details has a white background, that line contains an **Order Quantity** requested to be delivered on the requested **Delivery Date**. You may specify a date type (week, month, etc.) and an **Arrival Time**.
- Based on rounding rules, the system calculates and displays a **Rounded quantity**.
- Based on the transfer of requirements configuration, which we'll discuss in detail in Section 7.3, you may consult the **Required Quantity** that is transferred to material requirements planning (MRP) as demand.
- If you set the **Commitment Date** indicator during sales order type configuration (Transaction VOV8, as described in Chapter 6), the system would also display a **Committed qty** on this screen, as shown in Figure 7.7, documenting the fact that, on this date, you committed to delivering this quantity to the customer. Many companies have this requirement and would benefit from controlling this option.

Quantities	
Order Quantity:	1 EA
Rounded quantity:	1 EA
Required Quantity:	0 EA
Committed qty:	0 EA

Figure 7.7 Committed Quantity Field (When Enabled)

- You'll also see material details regarding engineering changes (**Engin. change**) and bill of materials (BOM) explosion (**BOM explosion number**), when applicable.

Returning to the screen shown in Figure 7.5, by clicking on **Shipping**, you'll be taken to the **Shipping** tab, shown in Figure 7.8.

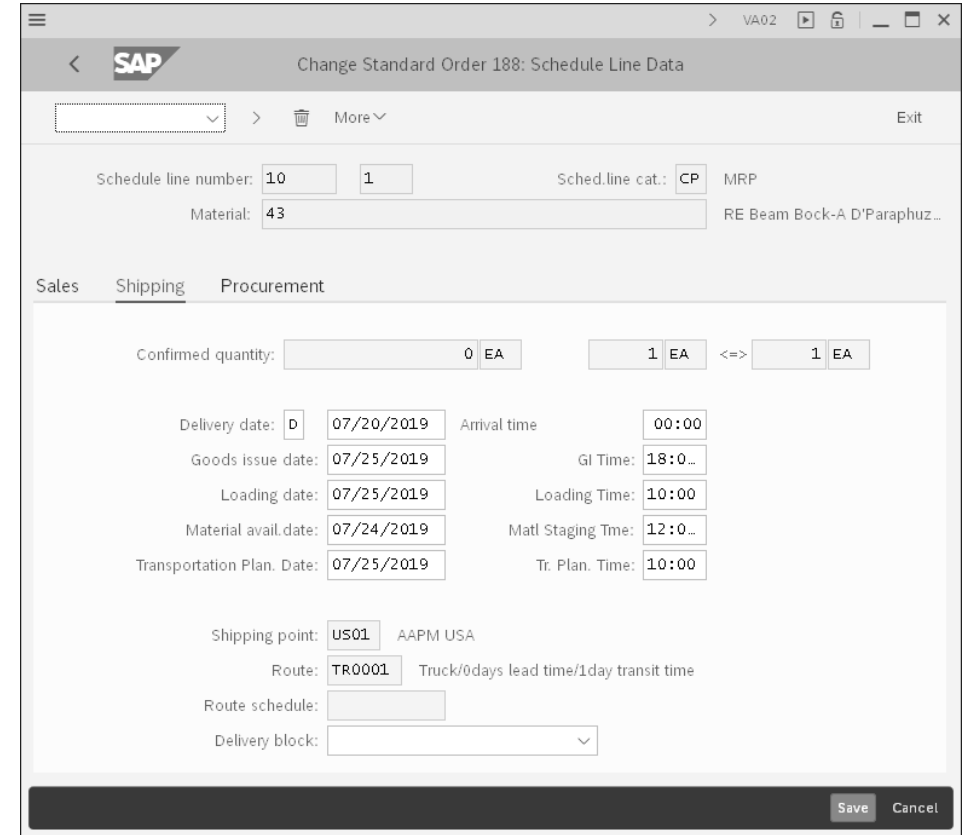


Figure 7.8 Schedule Line Data: Shipping Tab

This tab has the following important fields:

- You'll again see the **Confirmed quantity** field and quantity conversion details, as shown earlier under the **Sales** tab.
- The date type, **Delivery date**, and **Arrival time** fields are also shown under the **Sales** tab. Schedule lines with white backgrounds involve *backward planning*, and this date represents both the requested and the expected **Delivery date**.
- The expected **Goods issue date** and **GI Time** fields are calculated based on the requested/expected **Delivery date** minus the total transportation time assigned to the route.
- The expected **Loading date** and **Loading Time** fields are calculated based on the **Goods issue date** minus the packing and loading time assigned to the shipping point and/or route.

- The expected material availability date (**Material avail date**) and material staging time (**Matl Staging Tme**) fields are calculated based on the **Loading Date** minus the picking time assigned to the shipping point.
- The expected transportation planning date (**Transportation Plan. Date**) and transportation planning time (**Tr. Plan. Time**) fields consider the time configured on each route that is required for the team to arrange (plan) transportation and subtracts this time from the **Goods issue date**. This task is expected run in parallel with picking, packing, and loading.
- The **Shipping point**, **Route**, and **Route schedule** fields displayed derive from the sales document item for quick reference so you can determine the source of the lead times used in the ATP calculation. Note that, if you only use days instead of hours when you configure shipping points and routes, time-related fields would be suppressed on these screens.
- The **Delivery block** field affects this schedule line only. Note that, when you have this block assigned, a delivery date will not be fulfilled unless the block is removed before the logistics tasks restricted by it (as detailed in the configuration) are about to be executed.


Returning to the screen shown in Figure 7.5 again, by clicking on **Procurement**, you'll taken to the **Procurement** tab, as shown in Figure 7.9.

This tab has the following important fields:

- The **Schedule line date** field is the expected and/or requested delivery date (depending on whether this schedule line is for forward or backward scheduling, as indicated by the gray or white background). This date is also shown and described under the **Sales** and **Shipping** tabs. The term schedule line date is often used on other transactions and reports.
- The **Order Quantity** and **Rounded quantity** fields are shown under the **Sales** tab.
- The plant/storage location fields (**Plant/Stge. Loc.**) on this screen are copied from the sales document item, and displayed here for quick reference.
- The value in the **Movement type** field on this screen derives from the schedule line category configuration. This movement type will be used during the post goods issue operation to consume or transfer inventory.
- If this order is a third-party order, such as a drop shipment order from your vendor direct to you customer, the system creates and assigns a **Purchase Requisition** document and line number to this schedule line. You can click the **Edit** button to modify this purchase requisition.

The screenshot shows the SAP interface for 'Change Standard Order 188: Schedule Line Data'. The 'Procurement' tab is active. Key fields include: Schedule line number (10, 1), Sched. line cat. (CP), Material (43), Schedule line date (07/20/2019), Order Quantity (1 EA), Rounded quantity (1), Plant/Stge loc. (US01 / AAPM USA), and Movement type (601). The 'Materials management' section is also visible.

Figure 7.9 Schedule Line Data: Procurement Tab

For our next task, again consult the **Scheduling Line Details** by selecting it and clicking the details icon  on the left or clicking one of the detail buttons (**Shipping**, **Sales**, and **Procurement**), which takes you straight to the corresponding tab. This time, select the checkbox next to **05/11/2019**.

Under the **Sales** tab, you'll see the same fields shown earlier in Figure 7.6. Let's look at how these fields differ with a forward scheduling line:

- Once **Confirmed Quantity** contains the quantity expected on forward schedule lines. If no confirmed quantities exist, the system would not add the forward schedule line and leave the order unconfirmed.
- Once a schedule line has a gray background (indicating forward planning), the **Order Quantity** fields should be empty.
- On this screen, the **Committed Quantity** field indicates that what we promised to the customer by the date in the **Delivery date** field. This information can be used later to measure performance.

Under the **Shipping** tab, note the following fields:

- The **Confirmed Quantity** and quantity conversion details fields are the same as under the **Sales** tab.
- The **Date Type**, **Delivery Date**, and **Arrival Time** fields are also shown under the **Sales** tab. Schedule lines with a gray background involve *forward planning*, which means the expected **Delivery Date** is calculated based on the expected **Goods Issue Date** plus the total transportation time assigned to the route.
- The expected **Goods Issue Date** and **GI Time** fields are calculated based on the expected **Loading Date** plus the packing and loading time assigned to the shipping point and/or route.
- The expected **Loading Date** and **Loading Time** fields are calculated based on the expected **Material Availability Date** plus the picking time assigned to the shipping point.
- The expected **Material Availability Date** and **Material Staging Time** fields determine when you can expect the material to be available in stock.

Note

If you have on-hand inventory available, you may still need to perform forward planning if the total warehouse and transportation lead time prevents you from meeting the requested delivery date.

If you don't have inventory available, the ATP check uses the expected delivery date from incoming purchase orders/stock transfer orders, expected confirmed dates from production order, fixed lead times from the material master, and other dimensions as configured under Configuring the Scope of the Availability Check in Section 7.2.3.

If the scope of check configuration and relevant incoming documents do not allow for the ATP check to determine when the stock will be available, there no confirmed quantity will be determined, and no forward scheduling line will be created. Orders in this state require you to run the ATP check again before the order can be processed by logistics (starting with delivery document creation) using a transaction that we'll describe in Section 7.2.4. Note that orders with forward planning are also considered backorders.

- The expected transportation planning date (**Transportation Plan. Date**) and transportation planning time (**Tr. Plan. Time**) fields consider the time each route requires for the team to arrange (plan) transportation and subtracts this time from the **Goods issue date**. This task is expected run in parallel with picking, packing and loading.

- The **Shipping Point**, **Route**, **Route Schedule**, and **Delivery Block** Fields on this screen have the same values as shown earlier in Figure 7.8.

The fields under the **Procurement** tab have the same values, as shown in Figure 7.9.

7.2.3 Availability Overview and Scope of ATP Check

Depending on the material master availability check group (discussed under Defining the Availability Check Group in this section), you can determine the behavior of the ATP check and specify which system components should be considered and which should be ignored (as defined under Configuring the Scope of the Availability Check in this section). In this section, we'll describe how you can view the scope of the check and the parameters that the ATP check considers.

Navigation

Under the **Sales Order Schedule Line** tab, you'll see the ATP check in action by following the menu options **More • Environment • Availability**. You can also consult the scope of the check being used by clicking on the corresponding button on the command bar, as shown in Figure 7.10.

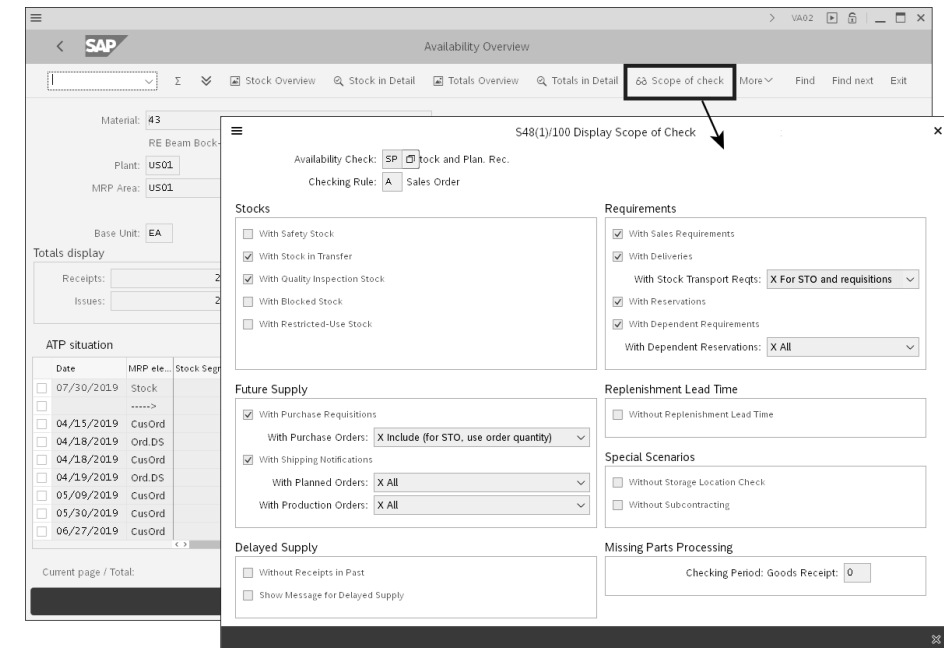


Figure 7.10 Availability Overview and Scope of Check

On the **Availability Overview** screen, you'll see the on-hand inventory on the first line indicated by the **MRP Element** column value **Stock**.

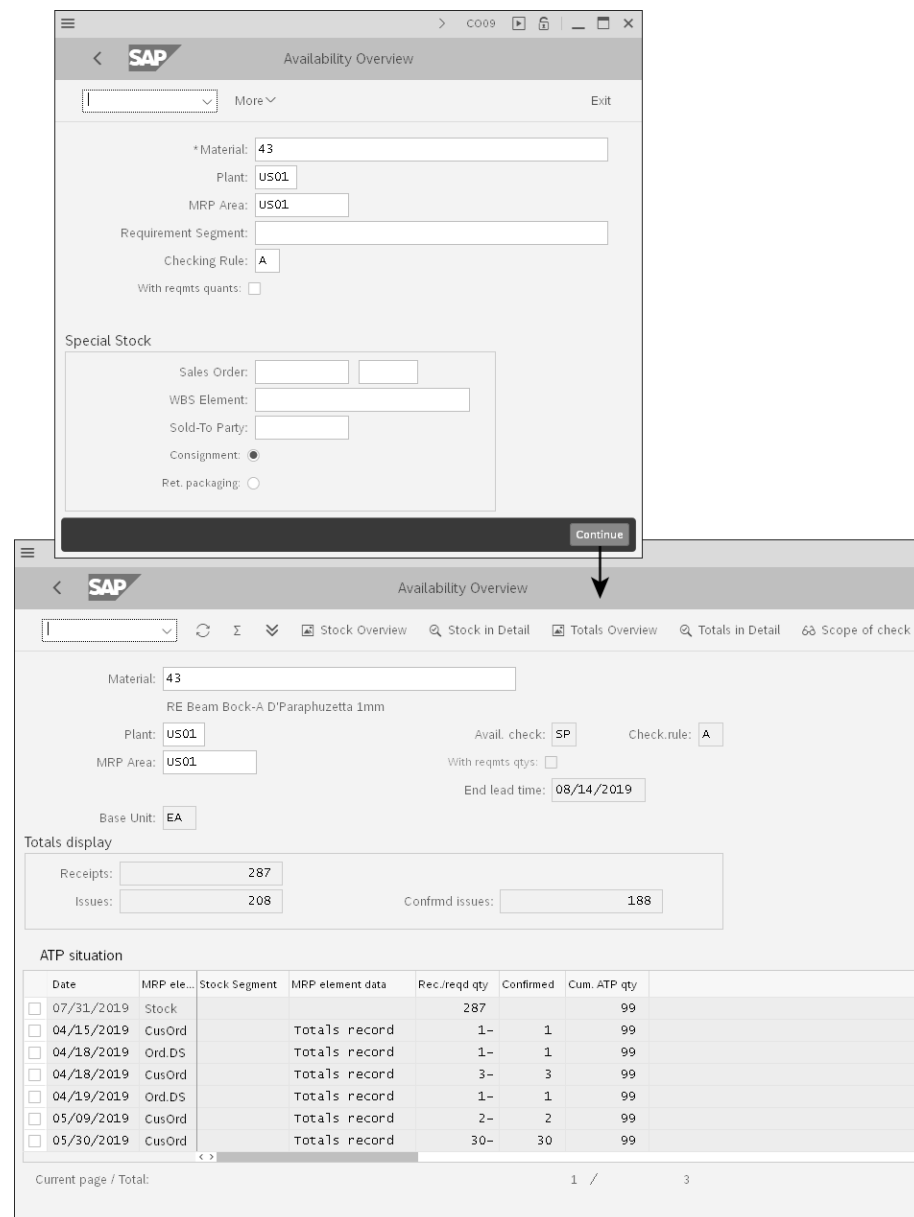


Figure 7.11 Accessing Availability Overview via Transaction CO09

The subsequent lines show the consumption of stock by sales orders (**MRP Element** column value **CusOrd**).

If you have incoming purchase orders, requisitions, planned production orders, production orders, reservation, etc., and these elements are included in the scope of the check, these values would also appear as lines on this screen.

You may also see an indication of the material master replenishment lead time here. If replenishment lead time is being used, you will find the value -----> in the **MRP Element** column.

Using the **Stock Overview**, **Stock in Detail**, **Totals Overview**, and **Totals in Detail** command bar buttons, you can control how much detail is displayed, thus allowing you to more quickly understand the ATP check results.

You can also access the **Availability Overview** screen by opening Transaction CO09, as shown in Figure 7.11.

Configuring the Scope of the Availability Check

To configure the scope of the ATP check, open Transaction OVZ9 or follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Availability Check • Availability Check with ATP Logic or Against Planning • Configure Scope of Availability Check**.

As shown in Figure 7.12, two important fields appear at the top of the screen:

- The **Availability Check** group is a material master attribute, which we'll configure under Defining the Availability Check Group in this section. This group allows you to use different rules depending on the material ordered. Most companies use the same group for all materials to reduce complexity. One exception is for make-to-order materials; for those materials, you'll need to use a different group. Out of the box, you also have access to availability check group ST, which is configured to use only on-hand inventory, ignoring any other incoming stock.
- The **Checking Rule** field is a code that represents the type of document/functionality to which these ATP check rules apply. In our example, enter "A" in the **Checking Rule** field to specify the rules that govern the scope of the sales order ATP check scope. For delivery documents, enter "B" in the **Checking Rule** field.

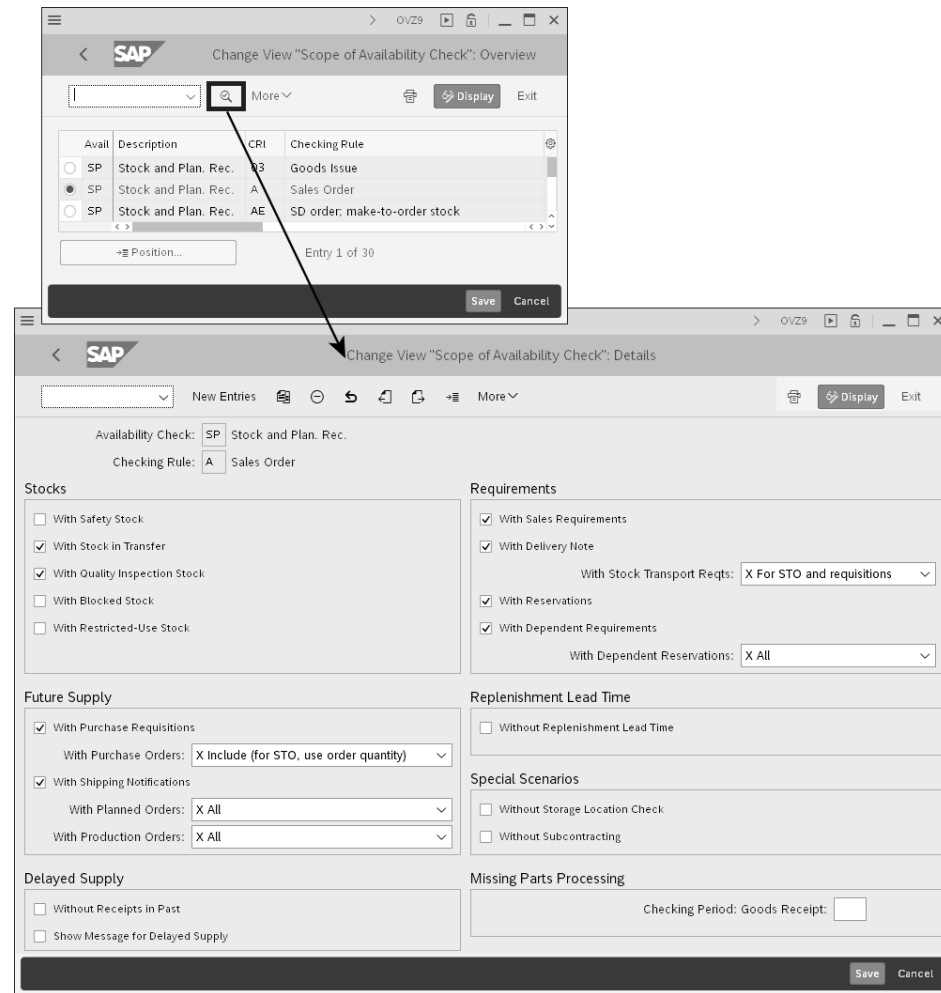


Figure 7.12 Configuring Scope of Availability Check

In the following sections, we'll discuss each section of this screen in more detail.

Stock

The **With Safety Stock** flag indicates that you want to allocate stock even if the material master indicates that several units of an item should be reserved as safety stock. If you select this flag, you'll consume all inventory to the last available item, ignoring safety stock.

The **With Stock in Transfer** flag indicates that you want to allocate stock that is in the process of being transferred from other plants. Once the transfer is complete, this stock would already be allocated and ready for shipment to customers.

The **With Quality Inspection Stock** flag indicates that you want to allocate stock currently flagged for quality inspection. Note, however, that usually you would not allow shipments of this type of stock, but by selecting this flag, you can allocate this stock and ship this stock once available. Note also that, if inspection takes a long time, the ATP check dates could be missed. If your company has a time-consuming inspection process, you may not want to consider this type of stock for ATP purposes on sales orders.

The **With Blocked Stock** flag indicates that you want to allocate stock even if this stock is blocked by inventory management. We do not recommend selecting this flag, which could invalidate ATP check results. Blocked stock may not be released for several days after an order is entered, and by selecting this flag, you're saying that the ATP check should simply consider this stock as available right now.

The **With Restricted-Use Stock** flag indicates that you want to allocate stock belonging to batches (lots) that are flagged as **Restricted**. We do not recommend selecting this flag because the stock may not be available until several days after the order is entered, and by selecting this flag, you're saying that the ATP check should simply consider this stock as available right now.

Requirements

The **With Sales Requirements** flag indicates that stock already allocated to other sales orders must no longer be considered available for other orders. Selecting this flag is important; otherwise, you could end up allocating the same stock on multiple orders, but only one order will be delivered. The others would result in customer experience problems.

The **With Delivery Note** flag indicates that stock already allocated to a delivery document must no longer be considered available for new sales orders. Once you create a delivery document, the allocation is transferred from the order and is allocated to the delivery. This flag is very important; deliveries are usually processed quickly by the warehouse, and the stock will be reduced at the end of the process (at the time of the post goods issue operation). If you remove this flag, you could end up allocating to new orders product that is already in process at the warehouse, meaning these orders would never be delivered, resulting in customer experience issues.

The **With Stock Transport Reqts** flag indicates that stock already is allocated to stock transfer orders and/or requisitions must no longer be considered available on other orders. This flag is important to keep selected; otherwise, you could end up allocating

products that are already in the process of being transferred to other plants, and the sales order would not be delivered as promised, resulting in customer experience issues. If the order is processed before the pending stock transfer orders are received, a short pick (i.e., an order shipped with less than the requested quantity) could occur when processing the stock transfer orders, which should be avoided.

The **With Reservations** flag indicates that stock reserved using an MM functionality called the *material reservation functionality* must no longer be considered available for sales orders. Removing this flag indicates that material reservation must not affect sales orders. With other checking rules, you can still keep this controlling the material reservation functionality. Unless the inventory management team is answerable for high levels of on-hand inventory, it doesn't make sense for them to control whether sales orders can use available inventory.

The **With Dependent Requirements** flag indicates that stock that being used as a component, a subassembly, or a raw material in in-process production orders must no longer be considered available for sales orders. Removing this flag indicates that you can "steal" stock from production, which is not advisable in particular in complex production scenarios with multiple components. You could cause serious problems for the production team.

The **With Dependent Reservations** flag indicates that stock reserved by the production team for use in the future as a component, a subassembly, or a raw material on a production orders must no longer be considered available for sales orders. You'll need to collaborate with the production team to ensure these reservations are used in a responsible manner. Ideally, production stock included on reservations should impact their bottom line and not sales, which is not often the case. Sometimes, production makes large stock reservations without realizing the impact on the sales side. Often, companies resolve this conflict by using separate storage locations for production stock versus sellable stock, but then transferring stock is like "stealing" stock from storage locations with no control because inventory management lacks an ATP check for transfer posting stock movements.

Future Supply

The **With Purchase Requisitions** flag indicates that, for purchase requisitions created to procure more stock, the system can consider that product as available for allocations on sales orders. Be aware, however, that often the expected delivery date on the purchase requisition is not reliable at all. When activated, this flag would in turn make the ATP check promise unreliable dates to your customers, thus causing cus-

tomers experience issues. Thus, many companies remove purchase requisitions from the scope of the ATP check.

The **With Purchase Orders** indicator controls whether, for incoming purchase orders procuring more stock (including stock transfer orders), that product should be considered available for allocation to sales order. Be aware, however, that often the expected delivery date on the purchase requisition is not very reliable. When this flag is activated, the ATP check may promise somewhat unreliable dates to your customers, thus causing customer experience issues. Thus, many companies remove purchase orders from the scope of the ATP check. However, doing so will also exclude stock transfer orders from the ATP check, which is a problem. The expected delivery dates for stock transfer orders are often more reliable than delivery dates from external vendors.

The **With Shipping Notifications** flag controls whether advanced shipping notifications (ASNs), represented as inbound deliveries in the system, should be considered available stock for allocation to sales orders. ASNs are sent by the external vendors after products leave their warehouse and usually can be trusted more than the expected delivery dates found on purchase orders or purchase requisitions. For stock transfer orders, inbound deliveries can be created automatically by a background job. This flag is commonly used.

The **With Planned Orders** indicator controls whether planned production orders created automatically by the MRP background job (part of production planning [PP]) should be considered available stock for allocation to sales orders. This approach is sometimes used, but you should only use firmed planned production orders, which are often manually modified and rescheduled after MRP creates them. Once production "firms" these production orders, the planned confirmation date can usually be trusted, but the reliability of these dates depends on the definition of the production process and how realistic planning has been observed to be historically.

The **With Production Orders** indicator controls whether production orders created from planned production orders should be considered available stock for allocation to sales orders. This option is often used especially released production orders, which are usually quite accurate and are rarely missed.

Replenishment Lead Time

The **Without Replenishment Lead Time** flag controls whether the lead time maintained in the material master (a volume-independent fixed amount of days required to replenish inventory once fully allocated) is ignored. Companies that are serious about promising dates usually activate this flag to ignore the lead time entered on

sales orders. The main reason is the fact that we would commit to delivering any quantity after this amount of days. Other companies that don't promise delivery dates tend to like this information to get a ballpark idea of when stock may be available and generally don't suffer negative consequences when these dates are missed.

Another serious issue with using a fixed lead time is that the system will attempt to fulfill the promise date as this date is the rule. If product is received before the promised date, the system would prevent immediate shipment to avoid premature, early delivery. To bypass this issue, you can schedule background jobs to create delivery documents with a date interval far enough in the future. The system will then perform a delivery ATP check (rule "B") and only create the delivery document if stock is available. Note that we don't advise considering the promise dates as important in some orders but not in others, which is just too complex to manage. You could gain this flexibility, however, by adding different shipping points, one for planned shipping and the other for shipping "whenever."

Special Scenarios

The **Without Storage Location Check** flag indicates that you want to ignore the storage location field on the sales order line when performing an ATP check. If not selected, the ATP check will check all storage locations when the field on the sales order line is left blank; when populated, the ATP check will only look for stock at the selected storage location level. If selected, we would always perform the ATP check at the plant level. Doing so means that stock available across all MRP-relevant storage locations would be considered available to be allocated this sales order. This would be the case even if the **Storage Location** field on the sales order line is populated with a valid storage location code.

If this flag is not checked, we would check all MRP-relevant storage locations only if the **Storage Location** field in the sales order line is left blank. If the user makes a selection than only stock under the selected storage location would be considered.

When a delivery is created, the storage location is copied from the order, and when you perform the post goods operation, you'll need to reduce inventory at the storage location level and may need to manually change the storage location on the delivery by indicating the storage location where stock is available.

The **Without Subcontracting** flag indicates that you want to ignore stock that is being processed by a third-party vendor who is contracted to work on our products. If you don't select this flag, the subcontracting stock would be considered as available for allocation to sales orders. The decision about whether to ignore this stock depends on the nature of the work that your vendors perform for you.

Delayed Supply

The **Without Receipts in Past** flag indicates that incoming stock with an expected delivery date in the past should be considered as a missed receipt and is not expected to be received anymore. This situation is rather unusual since, unlike a simply delayed delivery, you're not expecting a delivery at all.

The **Show Message for Delayed Supply** flag indicates that you want the system to inform you of delayed receipts.

Missing Parts Processing

The **Checking Period: Goods Receipt** flag is used for scenarios where the replenishment lead time should be used when planning the components of a production order. This flag allows you to proceed with processing production orders and notifies the MRP controller (as defined on the material master) about the missing parts, for remediation. This functionality is part of production planning and does not affect sales.

Defining the Availability Check Group

To configure ATP check groups, open Transaction OVZ2 or follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Availability Check • Availability Check with ATP Logic or Against Planning • Define Availability Check Group**.

When creating new entries, as shown in Figure 7.13, click the **New Entries** button to add new lines, and then specify a two-character availability check group code (**Av**) and add a description (**Description**).

The important indicators on this screen are as follows:

- Displayed for reference, the **TotalSales** field controls how sales order demand (i.e., requirements) are transferred to MRP (which is part of PP). The PP team will need to be involved in this configuration.
- Displayed for reference, the **TotDivReqs** field controls how delivery document demand (i.e., requirements) are transferred to MRP (which is part of PP). The PP team will need to be involved in this configuration.
- Displayed for reference, the **Block QtRq** flag indicates that the material must be blocked while the ATP check runs to avoid competing ATP checks considering available quantities and running in parallel. Companies that use the same material in several orders, stock transfer orders, production orders, MRP, etc., may have issues with this flag activated. When a competing ATP check finds a blocked material, the check returns no result, and the order is not processed until you run the

ATP check again when the material is no longer blocked. If your company has a large list of materials, you can keep this flag activated to ensure consistency and to manage exceptions as they occur.

- The **No PAC** flag indicates that you want to turn off the regular ATP check when running advanced ATP check.
- The **Accumul.** field controls whether planned incoming inventory (from production, purchasing, transfer, etc.) should be considered, along with order demands, to determine the available stock on future orders. This flag controls the behavior of committed quantities, when configured on the sales order type (using Transaction VOV8, as described in Chapter 6).
- The **RelChkPlan** field affects the ATP check on components of production orders, rather than the planned date that defined when the product should be available. You can specify that the ATP check uses the planned dates as truth without further checks. This decision is made by the PP team.
- The **Advanced ATP** is where you'll indicate whether to make use of the advanced ATP check functionality (also called *rule-based ATP*, which we'll cover in Section 7.6).

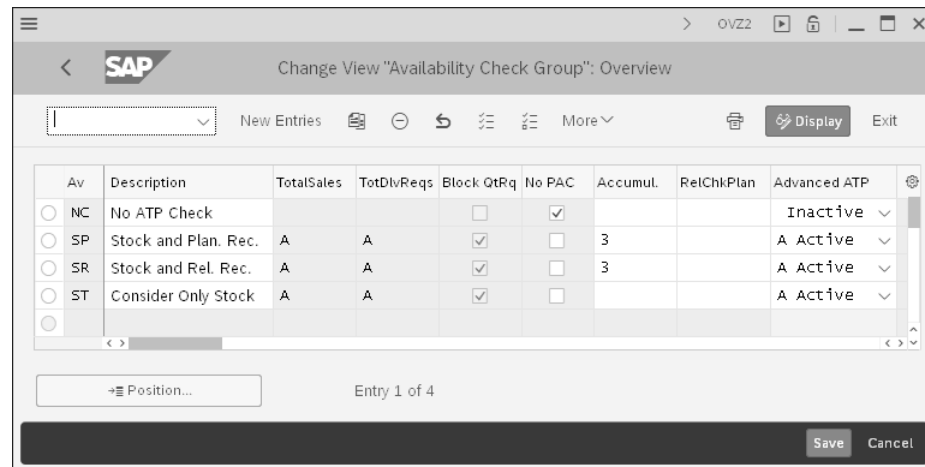


Figure 7.13 Defining Availability Check Groups

Configuring Default Settings by Sales Area

To configure the default settings for sales area ATP checks, follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Availability Check • Availability Check with ATP Logic or Against Planning • Configure Default Settings by Sales Area**.

As shown in Figure 7.14, find the desired sales area (**Sales Org.**, **Distr. Chl**, and **Division**) and assign the default **Fixed Date and Qty** flag (checked or unchecked) and the availability check rule (**Avail.check rule**), which controls the behavior of the **Availability Control** window that appears whenever you're performing forward scheduling.

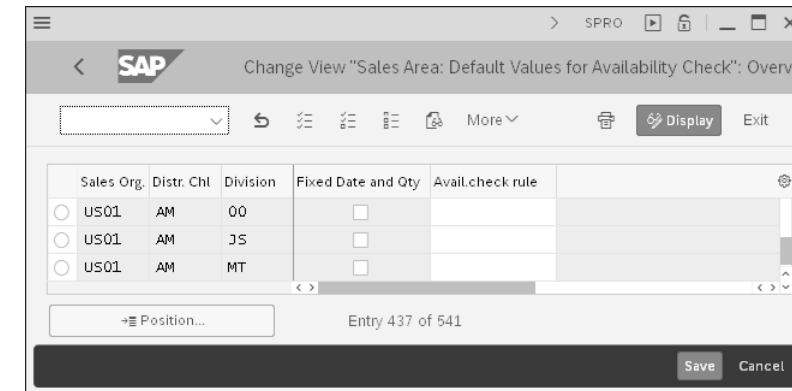


Figure 7.14 Configuring Default ATP Check Settings by Sales Area

7.2.4 Backorder Rescheduling

In SAP S/4HANA, the term “backorder” describes a sales order in which you're unable to deliver the ordered products by the requested delivery date. In other words, backorders are sales orders containing lines where you cannot successfully perform backward planning ATP checks. The resulting material availability date would be in the past, causing the system to perform forward planning.

When forward planning cannot determine a material availability date, the resulting schedule lines will contain no confirmed quantity. This scenario is most obvious type of backorder, which we'll refer to as *unconfirmed orders*.

Every company sells products will encounter backorder situations, and sales orders in this state may require ATP checks to be executed again before they can be delivered.

Forward planning can reduce the amount of rework required to process backorders. A confirmed backorder is a sales order with a confirmed quantity on a future date based on the theoretical availability of the product based on incoming procurement and/or lead times considered during forward planning. The system, by default, expects forward planning to be true. Deviations need to be monitored and handled as exceptions.

Unconfirmed orders always require further action before they can be processed. Unconfirmed orders are not considered relevant for further processing until a new ATP check is executed and confirmed quantities are assigned.

In other words, unconfirmed backorders don't have enough stock allocated to them—that's what made them backorders. Once new stock is received from purchasing, production, stock transfers, etc., the backorders would not automatically allocate the newly available stock. For backorders to allocate new stock, we need to run the ATP check again for all backorders.

Running the ATP check again, order by order, using Transaction VAO2 is not a practical way to manage backorders because of the amount of time required. We may still do it for specific high priority orders, but it is not a scalable solution for a higher volume of transactions. One way to run an ATP check on several orders is to use the backorder rescheduling Transaction V_V2, as shown in Figure 7.15.

Figure 7.15 Backorder Rescheduling Transaction V_V2

Note that running an ATP check against a large number of orders is time consuming. SAP S/4HANA has better performance than SAP ERP, but the process is still a significant drain to system resources and relatively slow due to the amount of processing and database updating that must be performed. So, companies tend to schedule this task to run in the background and keep the number of orders to be processed to the necessary minimum.

The important fields on this screen are as follows:

- When running in the foreground, we recommend restricting which orders should be rescheduled by **Material** and **Plant** whenever possible. Background job variants usually run without selections in these fields.
 - The **Process sales documents** flag indicates that you want to process sales orders in this execution.
 - The **Process stock transfer docs** flag indicates that you want to process stock transfer orders in this execution.
 - The **At item level** and **At schedule line level** radio buttons control whether you want to reschedule the order line as a whole based on the order quantity or if you want to respect multiple order dates and quantities as requested at the schedule line level. This approach may be considered important when processing scheduling agreements; however, once you're processing backorders, you're already not fulfilling the requested quantities on the selected dates. If you consider this process to be a remediation on a "as soon as possible" basis, you can use the **At item level** selection.
 - The **Unconfirmed Documents Required** flag indicates that you only want to process backorders that are unconfirmed sales orders. Orders with confirmed quantities based on forward planning dates are also considered backorder but would not be included because they have confirmed quantities.
- Once this process finds a record matching the selection made on this screen, the system looks at all pending orders with a material and reschedules them all following the priority described further down on this screen to allocate stock.
- The **Simulation** flag indicates you don't want to update any sales documents. Instead, this transaction will issue a report detailing what changes would be made. If you aren't sure how this behaves, we recommend run the check on simulation mode, reviewing the reports, and then running the check again without this flag activated to update the orders.

- The **Sort Order** section is where you'll set the criteria you must use when not enough stock is available for all orders. Documents that are on the top of the sorted list of orders according to the **Priority** number assigned to each criteria:
 - The **Document Category** allows you to **Prioritize Sales Documents** or **Prioritize Stock Transfer Documents**. By default, the priority is 1, with the sales order first, meaning that you would assign available stock to all open sales orders before checking the first stock transfer order.
 - The **Delivery Priority** is a sales order header field defaulted from the customer master. By default, the priority is 2, meaning that the sales order with the smallest value in the **Delivery Priority** field would be allocated available stock first. Then, if any stock is left, you would then start assigning stock to orders with higher delivery priority values.
 - The **Date** field has two options: **Sort item by date of creation** or **Sort by Delivery Date of earliest schedule line**. By default, the priority is 3 and uses creation date, meaning the sales orders entered first would be fully allocated before attempting to allocate stock to other orders. If you select the earliest schedule line date, you would allocate stock to orders that are due first even if these orders were entered after other orders (scheduled to be delivered in the future). This approach would avoid having inventory sitting in the warehouse allocated on planned sales order that would only ship on a future date.
 - The **Document number** is the sales order or stock transfer order number and is usually the second to last criteria.
 - The **Document item** is the last criteria and only affects stock allocation when the same material appears more than once on the same sales order.

Note

SAP S/4HANA also allow you to define more complex rules to automatically resolve backorders using the SAP HANA rules framework.

7.3 Transfer of Requirements

Sales orders are one of many ways in which you can allocate inventory. The need for product represents a *demand* or *requirement* that must be fulfilled. Stock *requirements* are transferred into material requirements planning (MRP), which considers

demand/requirements from various sources (including sales) and compare against available inventory and incoming procurement sources. When identifying shortages, MRP creates purchase requisitions, planned production orders, etc., based on its configuration, to start the stock replenishment process.

MRP need details about the kind of requirements it is receiving to define whether and how the existing inventory availability will be consumed (consumption strategy) and the appropriate replenishment action to be taken. MRP is controlled by a code called the *requirement class*, which we'll cover in Section 7.3.1.

Next, for sales, the *requirement class* is based on a different code called the *requirement type*, which assigned to the sales order line (as shown on the **Procurement Overview** tab of the sales order). The requirement type is assigned automatically and is determined from on the item category and a material master data field called **MRP Type**.

You can also turn off the transfer of requirements, by schedule line category, as described in Section 7.3.4. This decision is relevant to sales, to logistics, and to customer, but not important to MRP and the areas responsible for procurement.

You could make changes to the requirement type and class after discussions with your production planning team, who are responsible to setting up MRP. The configuration activities described in this section are often conducted by the PP team, not the sales team.

7.3.1 Configuring Requirement Classes

To configure requirement classes, open Transaction OVZG or follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Transfer of Requirements • Configure Requirement Classes**.

Figure 7.16 shows what you'll see following the menu path and screen commands as specified. On this screen, when creating new codes, the production planning team can specify a three-character requirements class code (**Reqmts Class**) and add a description (**Description**).

This configuration is often a cross-functional, time-consuming activity for companies that follow make-to-order scenarios, when the manufacture or assemble products only occurs after a customer makes an order.

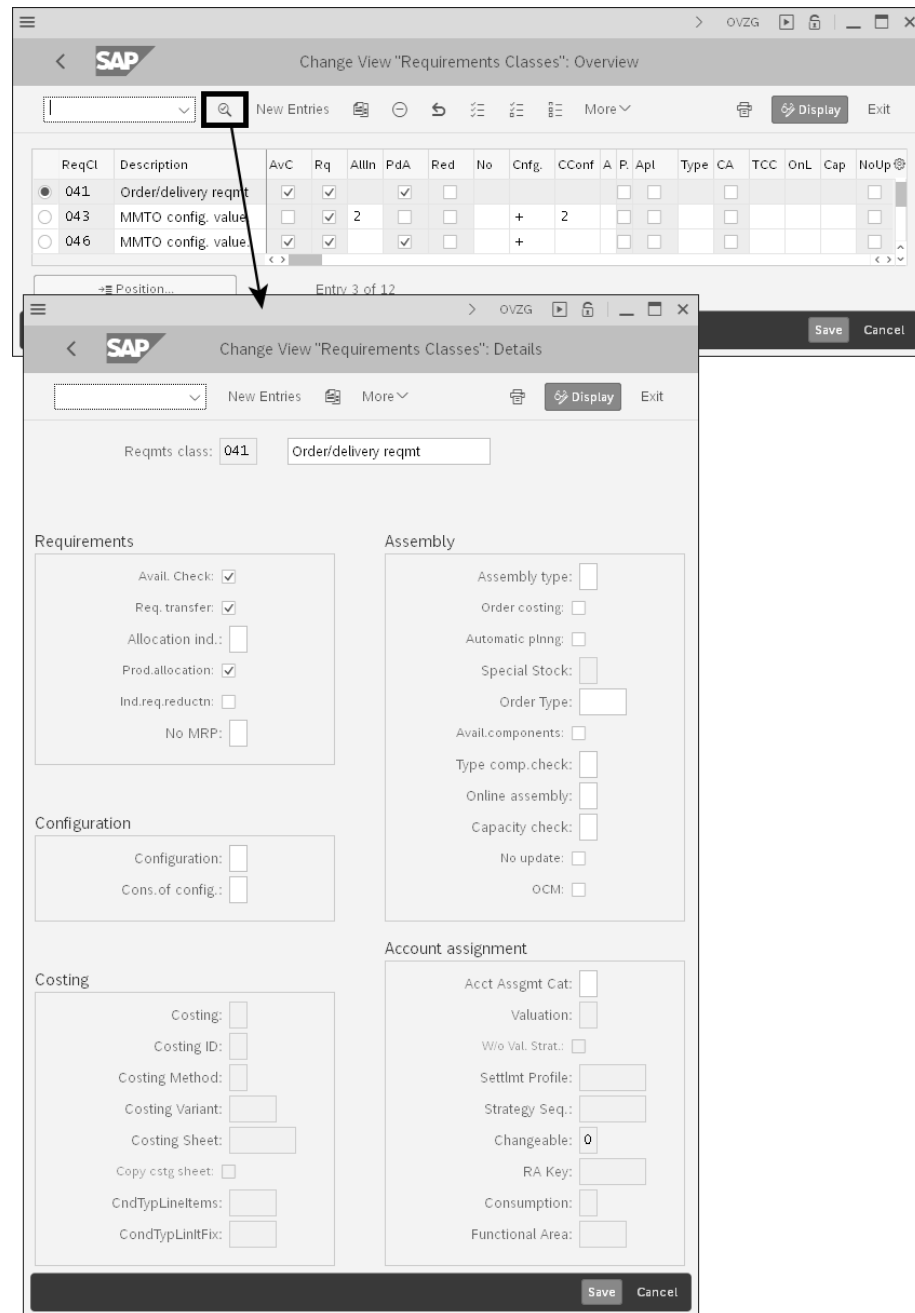


Figure 7.16 Configuring Requirement Classes

The following areas on this screen are important:

■ Requirements

- The **Avail. Check** flag indicates that this requirement class requires an ATP check run.
- The **Req. transfer** flag indicates that this requirement class is relevant for the transfer of requirements.
- The **Allocation ind.** indicator is part of the consumption strategy of independent requirements.
- The **Prod.allocation** flag indicates that this requirement class is relevant for production allocation (which we'll discuss in more detail in Section 7.5).
- The **Ind.req.reductn** flag indicates that, in a make-to-stock scenario, this order must be considered part of independent requirements planning. This type of planning is called *independent requirements planning*, because in make-to-stock scenarios, you plan to replenish stock without specifying a sales document that will be used to consume it.
- The **No MRP** indicator is used by MRP to identify whether this requirement class is part of a plan or an unplanned requirement. You would usually start an ad hoc procurement process for unplanned requirements, not for planned ones.

■ Assembly

- The **Assembly type** indicator indicates the type of assembly to be used for requirements of this class.
- The **Order costing** flag indicates that costs are calculated at the order level.
- The **Automatic Plnng** flag indicates that, in make-to-order scenarios, the production planning process must start automatically once the sales document is saved.
- The **Special Stock** indicator is a stock qualifier that allows you to use customer stock, order stock, etc. instead of the unrestricted use stock and indicates the storage location level for planning purposes.
- The production **Order Type** is the type of document to be used on make-to-order scenarios.
- The **Avail.components** is used on make-to-order scenarios with assembly requirements to indicate that you want to perform an availability check on the component level of the production order. This method is relevant because, if any components are missing, you cannot fulfill the requirement by the planned completion date.

- The **Type comp.check** field is used to dictate the type of ATP check to be conducted on the component level.
 - The **Online assembly** field is used when creating the assembly order and encountering a component shortage. This indicator determines whether messages are issued or not in this case.
 - The **Capacity check** field indicates whether you want, in make-to-order scenarios, to consider production capacity when planning for estimated production times or whether you want to use lead times regardless of capacity for planning.
 - The **No update** field indicates, in make-to-order scenarios, whether changes made to the assembly production order must be replicated to the sales order, which may result in changes to the expected dates. If you activate this flag, you want to manually manage assembly order updates on sales orders.
 - The **OCM** field, standing for “order change management,” indicates that you want to control order changes.
- **Configuration**
 - The **Configuration** indicator is used for materials that are configurable (have multiple variant configurations). In this field, you’ll indicate whether configuration is allowed, mandatory, not relevant, etc.
 - The **Cons.of config** indicator controls whether you want to consume components based on the selected configuration.
 - **Costing**

The **Costing**, **Costing ID**, **Costing Method**, **Costing Variant**, **Costing Sheet**, **Copy cstg sheet**, **CndTypLineItems**, and **CondTypLintFix** fields are used by controlling and affect how costs are calculated for this requirement class.
 - **Account assignment**
 - The **Acct Assgmt Cat** indicator controls the usage of auxiliary accounting elements such as cost centers, work breakdown structure (WBS) elements, etc.
 - The **Valuation**, **W/o Val. Strat.**, **Settlmt Profile**, **Strategy Seq.**, **Changeable**, **RA Key**, **Consumption** and **Functional Area** fields used by SAP S/4HANA Finance to control how activities under this requirement class are accounted.

7.3.2 Configuring Requirement Types

To configure requirement types, open Transaction OVZH or follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions •**

Availability Check and Transfer of Requirements • Transfer of Requirements • Configure Requirement Types.

As shown in Figure 7.17, specify a three-character requirement type code (**RqTy**) and add a description (**Requirements Type**). Then, enter the requirement class (**ReqCl**) that corresponds to this requirement type (**RqTy**).

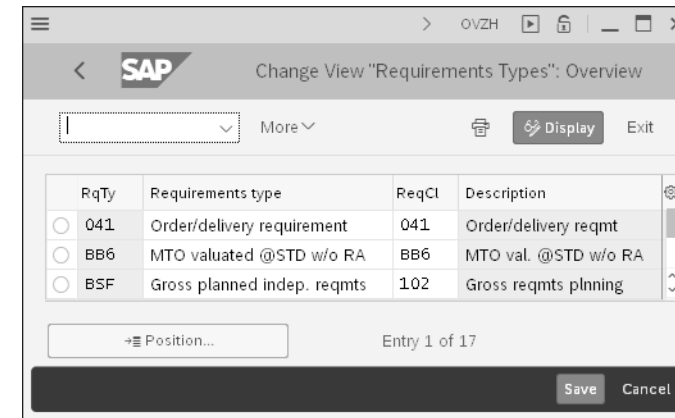


Figure 7.17 Configuring Requirement Types

7.3.3 Determining Requirement Type by Item Category and MRP Type

To assign requirements types to item categories and MRP types, follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Transfer of Requirements • Determine Requirement Type by Item Category and MRP Type**.

Figure 7.18 shows what you’ll see following the menu path and screen commands as specified.

When adding entries to this configuration, you’ll need to take the desired item categories (**ITCA**) and then consider all material master data that you want to allow for these entries, focusing on the MRP type (**TYP**) assigned to them (MRP types are defined by the production planning [PP] team).

You may want a different requirement type (**RQTY**) for each possible MRP type (**TYP**) or always use the same value for all types. This decision can only be made after analyzing the material master.

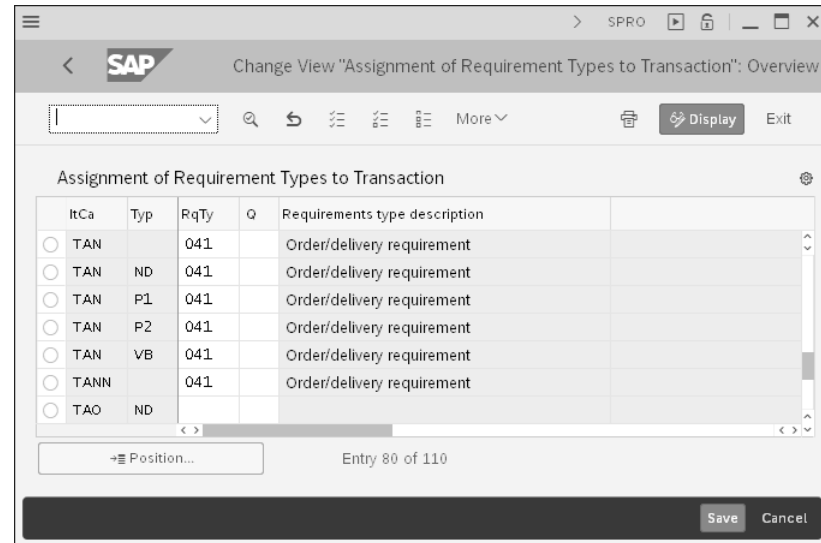


Figure 7.18 Determining Requirement Type by Item Category and MRP Type

Alternatively, you can also indicate the origin of the requirement type in a requirement type determination (Q) to modify the method used to determine the requirement type.

If you use Q code 0, then the assignment made on this screen would not be used. Instead, the system would use the MRP strategy group maintained on the material master and the corresponding PP configuration to define which requirement type is appropriate to use.

The entries defined on this screen with a blank MRP type (Typ) are the default assignments to be used when the specific MRP type on the material master can't be found in this configuration table.

7.3.4 Defining Procedure for Each Schedule Line Category

To define the applicable procedures (ATP check, transfer of requirements, product allocation) for each schedule line category, follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Transfer of Requirements • Define Procedure For Each Schedule Line Category**.

On the screen shown in Figure 7.19, you'll see the desired schedule line category (SLCa). Select the corresponding flags to activate the ATP check (AvC), the transfer of requirements (Rq), and the product allocation (All).

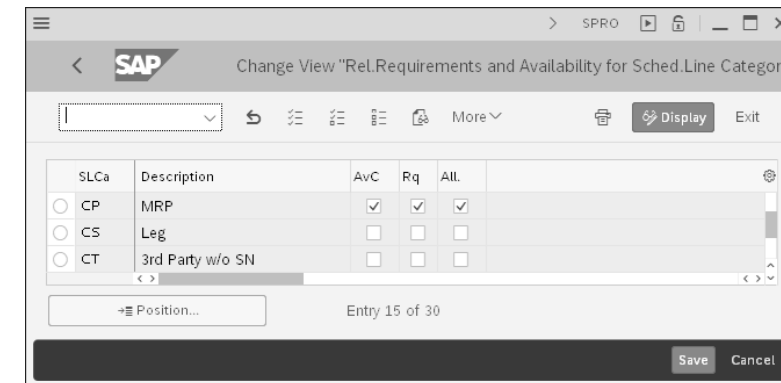


Figure 7.19 Defining Procedure for Each Schedule Line Category

7.4 Segmentation Strategy

Materials management (MM) uses an inventory segmentation feature to segregate inventory quantities for specific purposes. This feature is usually implemented to assist with procurement planning.

Companies often debate over how best to implement this common requirement, in particular, if materials are sourced from multiple vendors using the same material number. To implement this feature, the MM team must define the relevant segments on the material master.

On the sales order, you can then choose a *requirement segment* at the line level (as described in Chapter 6, Section 6.2.2), which would restrict the inventory that may be allocated to an order during ATP check.

One way to populate the requirement segment automatically would be to implement ABAP code in a BADI (Business Add-In) called BADI_SD_SPEC_SEG, enhancement spot ES_SGT_APPL_SPEC_SEGMENT.

Using the SAP HANA rules framework, you can also define rules to automate the choice of requirement segment to used based on flexible rules that may be maintained by the user. The SAP HANA rules framework evolved from BRF (Business Rule Framework) and BRFplus, which had been available in previous versions.

7.5 Product Allocation

Product allocation allows you to set buying limits on customers or groups of customers, which is sometimes required by companies that have new releases in high demand in the market. The goal is usually to allow for proportional supply across different regions, thus enabling a broad, but solid, market presence and high customer satisfaction regardless of region.

In some cases, a customer tries to purchase most or all of your inventory and then distribute these products to their customers with an upcharge, thus compromising the success of your new releases. In these cases, you may end up with large returns coming from these middleman customers if they themselves are unable to distribute all the stock they took from you.

This functionality was changed substantially in SAP S/4HANA 1809, and the older functionality that shares the same name and purpose still appears on the configuration menu. In this book, we'll focus on the new functionality, which is available using SAP Fiori apps. The following sections contain the applicable configuration steps for product allocation.

7.5.1 Activate Product Allocation

To activate the product allocation functionality, follow the menu path **SAP Customizing Implementation Guide • Cross-Application Components • Advanced Available-to-Promise (aATP) • Product Allocation (PAL) • Activate Product Allocation**.

As shown in Figure 7.20, you can activate the product allocation functionality by changing the value of the **Activate** column to **1 Yes**.

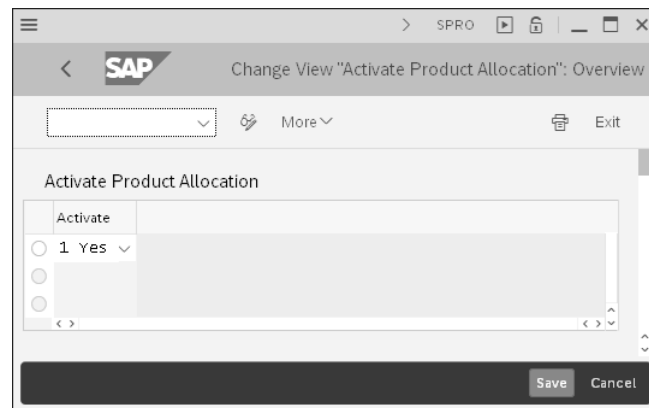


Figure 7.20 Activating Product Allocation

7.5.2 Configure Product Allocation Object

The product allocation functionality in SAP S/4HANA is available through the SAP Fiori app **Configure Product Allocation**, as shown in Figure 7.21.

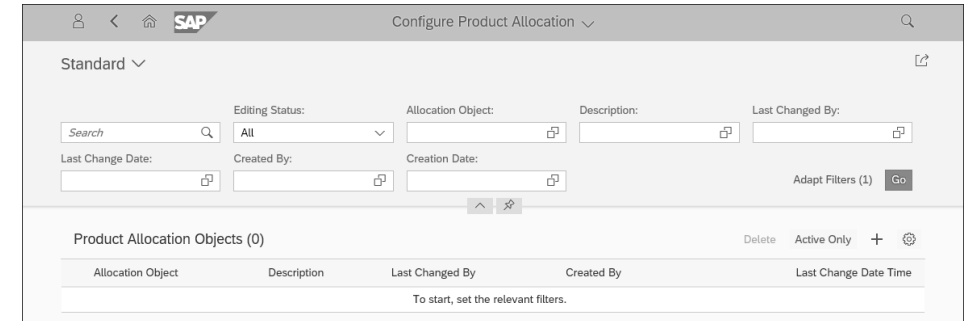


Figure 7.21 Configuring Product Allocation Parameters

Upon opening this SAP Fiori app, you can search for existing product allocation objects. To create a new entry, click the plus (+) icon, which will open the screen shown in Figure 7.22.

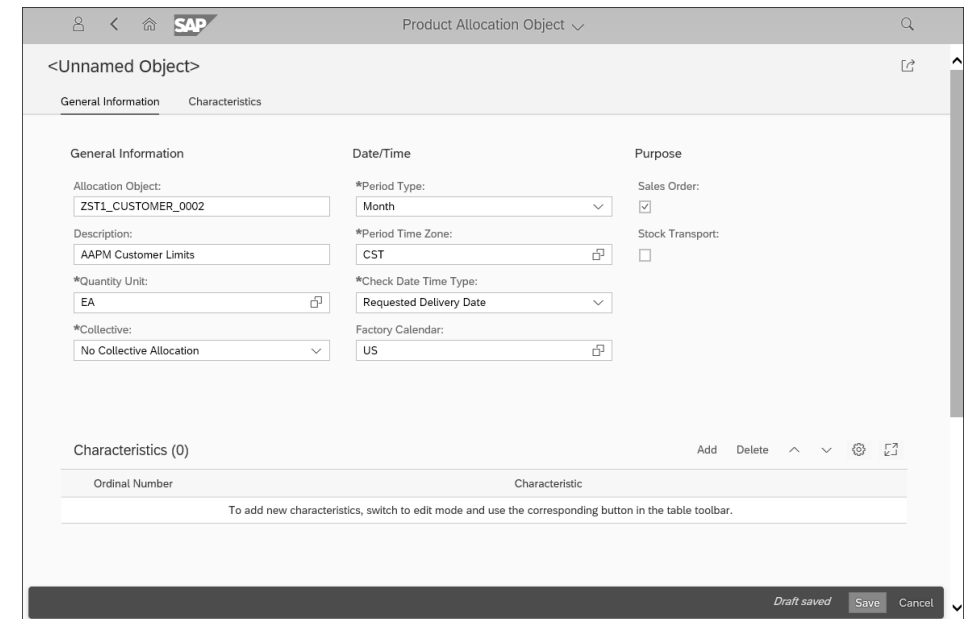


Figure 7.22 Creating Product Allocation Objects

Next, specify an 18-character product allocation object code (**Allocation Object**) and add a description (**Description**).

On this screen, you'll maintain the following fields under the **General Information** tab:

- The **Quantity Unit** field indicates the unit of measurement when defining planning data with limits on how much the customer can buy.
- The **Collective** control indicator determines whether a customer's buying limits are cumulative using portions of the key characteristics you define. For instance, if you select **Sales Organization** and **Customer Number** from the **Characteristics** and select **Collective Allocation Managed by System**, the system would define a collective limit by sales organization whenever you enter a limit for the full key (which is a combination of sales organization and customer).
- The **Period Type** field is the unit of time during which a customer accumulates buying volume to compare against the planning data limit control (monthly, weekly, etc.)
- The **Period Time Zone** is the time zone used to control the period, which will affect when one day ends and the next begins.
- The **Check Date Time Type** specifies which sales order date field is compare against the planning data.
- The **Factory Calendar** is used to define working dates and holidays.
- The **Purpose** (**Sales Order** or **Stock Transfer**) indicates whether this product allocation object is applicable for sales orders (typically to third-party customers) and/or stock transfer orders between plants configured in the system, i.e., inter-/intra-company sales within the same global corporation.

Next, click **Add** to include new characteristics to be used as planning data keys to define limits and to determine allocation success/failure. The screen shown in Figure 7.23 will open.

Select the desired characteristic, in our case the sold-to **Customer Number**, and click **Ok**. Then, click **Save** to save the new product allocation object. The system displays a confirmation page, shown in Figure 7.24. Click the back arrow icon.

Now, after clicking the **Go** button, the system will display the production allocation object we just created.

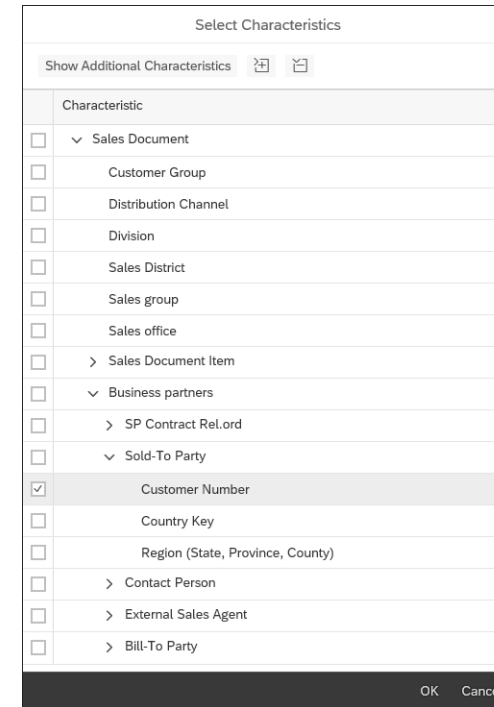


Figure 7.23 Selecting Characteristics

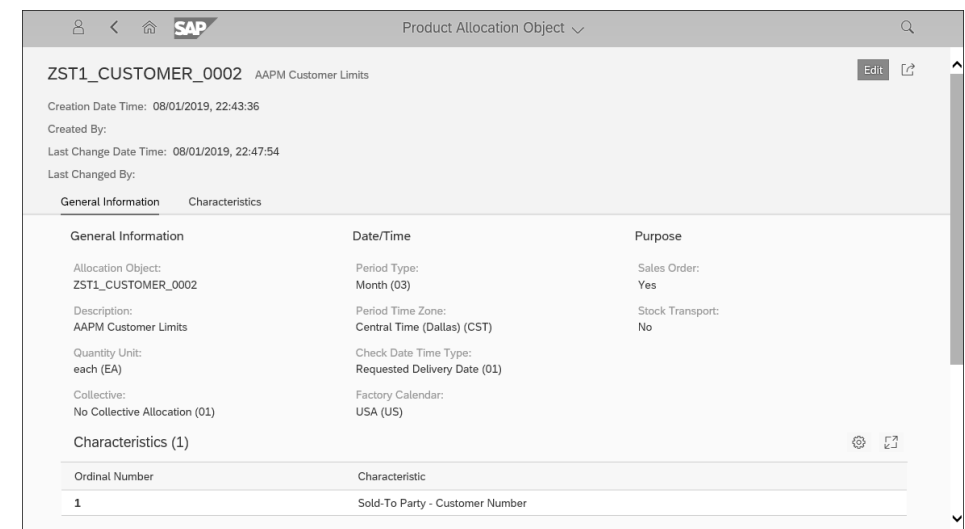


Figure 7.24 Reviewing Product Allocation Object

7.5.3 Manage Product Allocation Planning Data

The next SAP Fiori app we'll explore is the Manage Product Allocation Planning Data app, shown in Figure 7.25. This app limits customers in terms of the product quantities they may purchase over time, as defined during configuration.

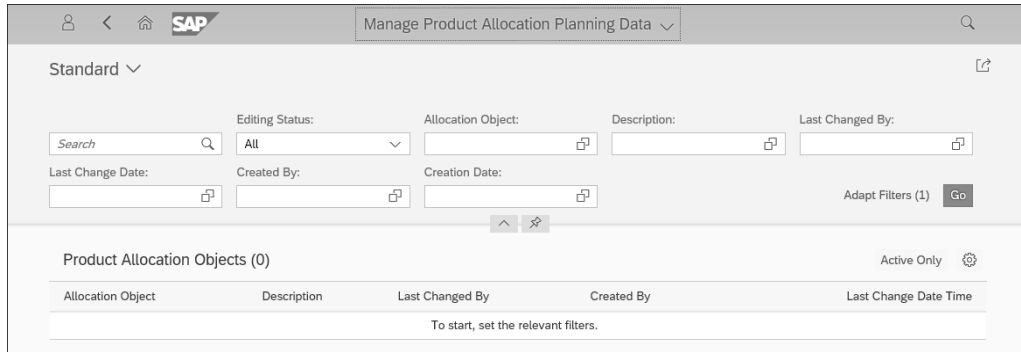


Figure 7.25 Maintaining Product Allocation Planning Data

In this app, you'll use the filters and click **Go** to find the desired product allocation object. Then, you'll click on the forward arrow icon on the corresponding line to display the current planning data. To make changes, click **Edit** on the screen shown in Figure 7.26.

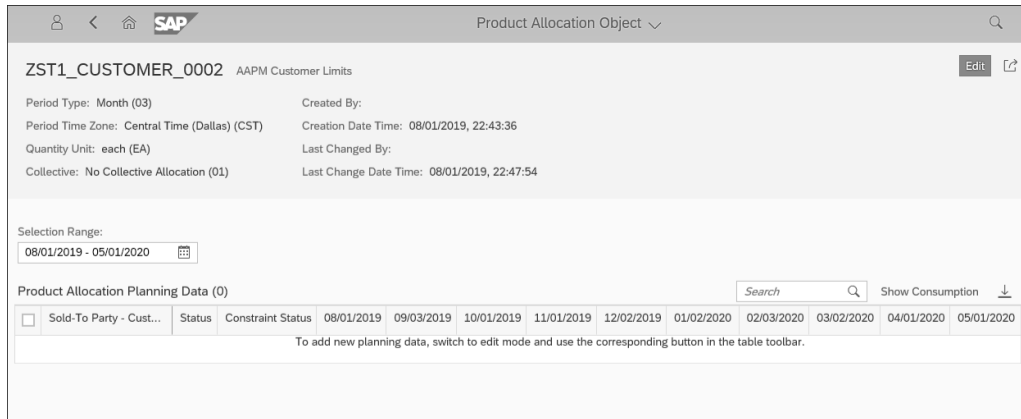


Figure 7.26 Displaying Existing Planning Data per Product Allocation Object

On the next screen, shown in Figure 7.27, click **Add** to include the new data.

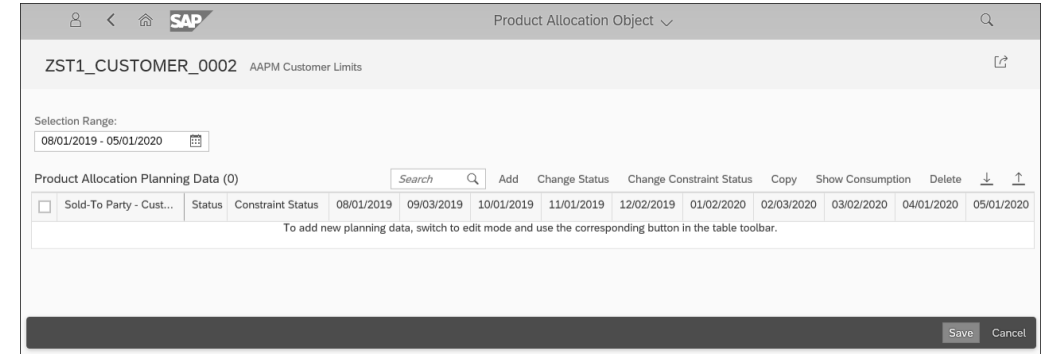


Figure 7.27 Adding Planning Data per Product Allocation Object, Part 1

On the line that appears, shown in Figure 7.28, enter the sold-to customer number (**Sold-to Party Cust**) and the quantity they are allowed to buy in each period (in this case, months as defined on this product allocation object) and click **Save**.

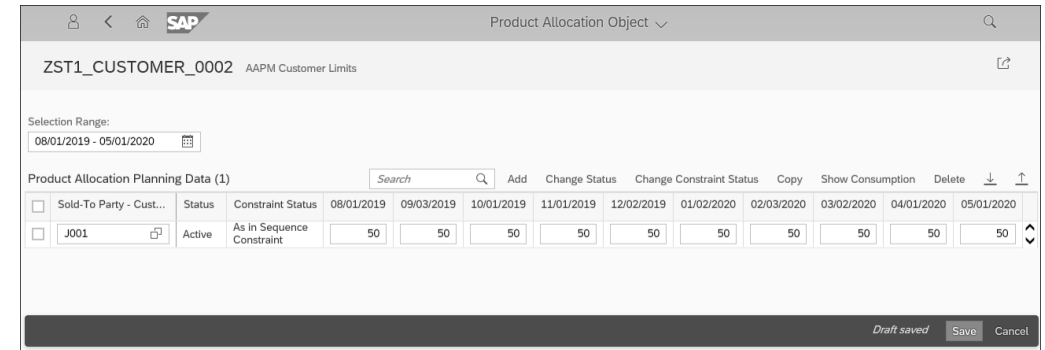


Figure 7.28 Adding Planning Data per Product Allocation Object, Part 2

7.5.4 Manage Product Allocation Sequences

The Manage Product Allocation Sequences app, shown in Figure 7.29, allows you to indicate the relevant object that must be verified and the sequence in which objects must be checked.

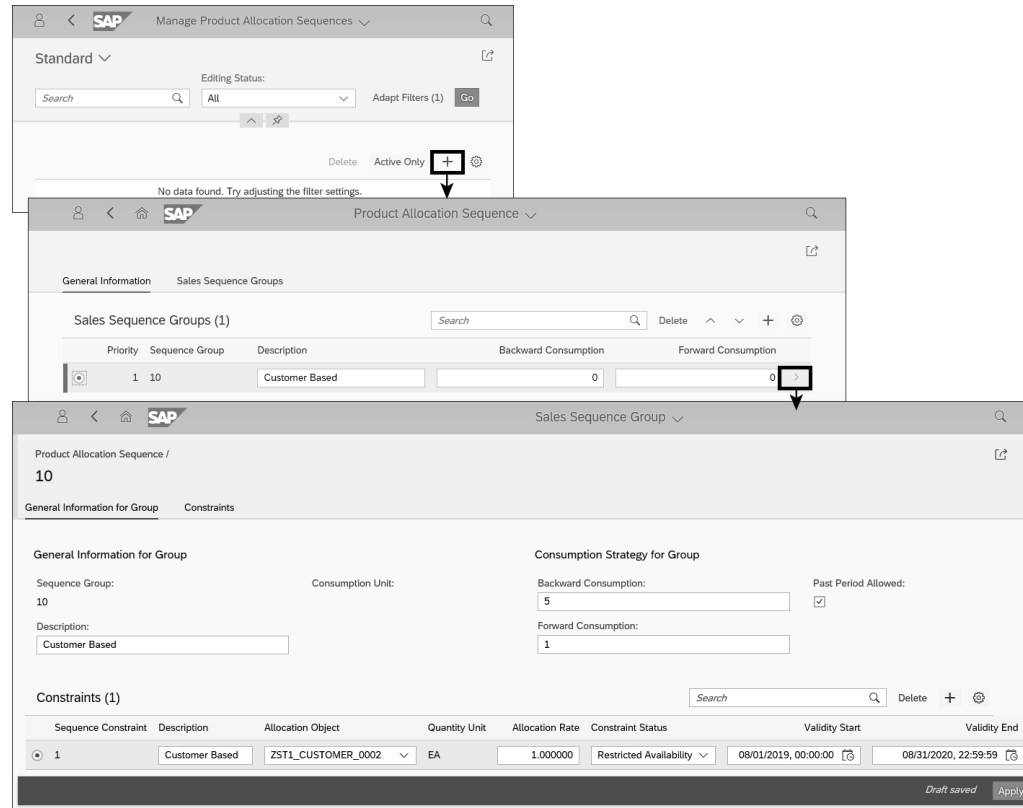


Figure 7.29 Managing Product Allocation Sequences

In the Manage Product Allocation Sequences app, follow these steps:

1. Click the plus (+) icon to add new sequence.
2. Click on the forward arrow icon on the first sequence generated by the system.
3. Enter sales sequence group general information:
 - Add a description (**Description**) for this sequence group.
 - Assign a **Backward** and **Forward Consumption** number of periods to check when authorizing sales order quantities.
 - Decide whether unused quantities from past periods are allowed (roll-over quantities) with the **Past Period Allowed** flag.

- Define constraints by adding a description (**Description**); specifying the product (**Allocation Object**); maintaining the **Allocation Rate**, **Constraints Status**, **Validity Start**, and **Validity End** fields.
- Click **Apply**.

7.5.5 Assign Product to Product Allocation

The Assign Product to Production Allocation app, shown in Figure 7.30, is where you'll assign the product allocation to a material to indicate that the material is a restricted product as per configured rules.

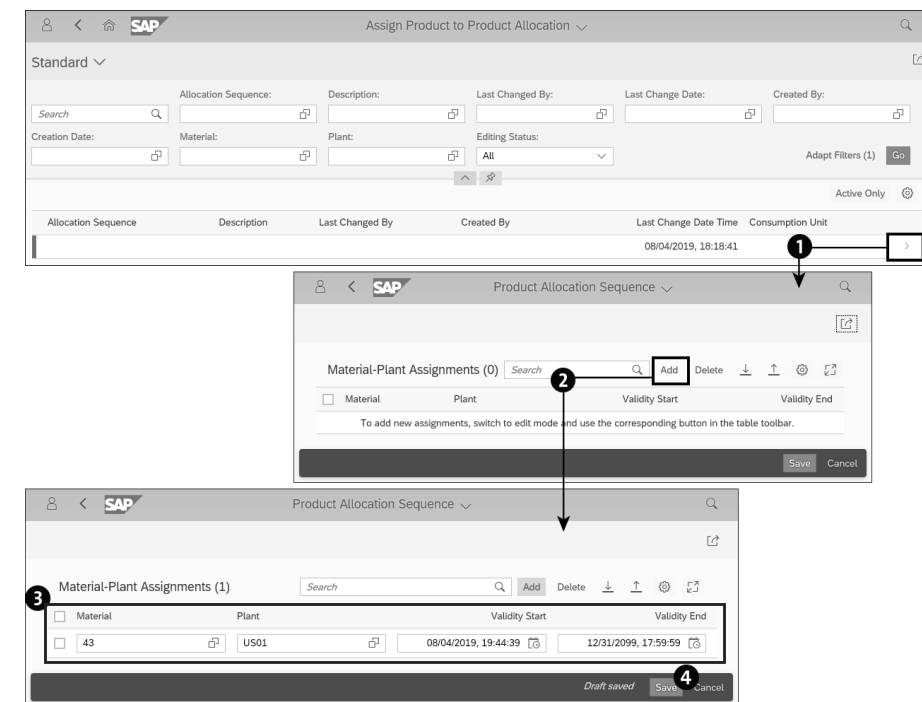


Figure 7.30 Assigning a Product to Product Allocation

In the Assign Product to Production Allocation app, follow these steps:

1. Click the forward arrow icon on the desired allocation sequence.
2. Click **Add**.
3. Enter the desired **Material**, **Plant**, **Validity Start** date, and **Validity End** date.
4. Click **Save**.

7.6 Rule-Based ATP

A rule-based ATP check is an SAP Advanced Planning and Optimization (SAP APO) feature that is now part of SAP S/4HANA. The sales team participates in setting up these rules by defining different business transactions that generate different types of demand. In this way, demand can be classified so that SAP S/4HANA can handle different kinds of demand in different ways.

The following section contain the sales configuration steps required to enable rule-based ATP checks.

7.6.1 Business Transactions

To configure rule-based ATP check business transactions, follow the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Availability Check • Rule-based Availability Check • Define Business Transaction**. On the screen that opens, click on the **New Entries** button or press **F5**.

As shown in Figure 7.31, specify a four-character business transaction code (**BT**) and add a description (**Business Transaction: Text**).

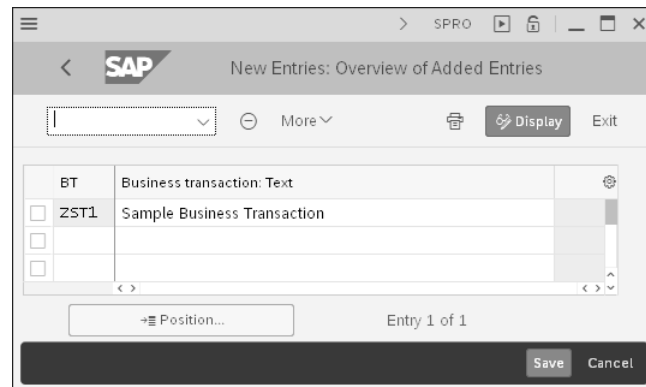


Figure 7.31 Defining New Business Transaction

Note

Rule-based ATP check business transactions are assigned at the sales order level in Transaction VOV8, as described in Chapter 6.

7.6.2 Sales Order Level

In addition to assigning rule-based ATP check business transactions to sales order types, you can also assign business transactions to sales order types by following the menu path **SAP Customizing Implementation Guide • Sales and Distribution • Basic Functions • Availability Check and Transfer of Requirements • Availability Check • Rule-based Availability Check • Assign Business Transaction to Sales Order Type**.

This configuration menu path leads to the same transaction described in Chapter 6 for configuring order types (Transaction VOV8). The rules-based ATP check business transaction can be maintained at the bottom of the detail screen when configuring sales order types.

7.6.3 Item Level Rules

You also need to allow the rule-based ATP check to make changes to the sales orders by setting the **RBA Control** indicator when configuring item categories, as described in Chapter 6, using Transaction VOV7.

The following options are available:

- **<Blank>: Subitems Allowed, Plant Substitution in Item Not Allowed**
The default setting for item categories, the rule-based ATP check is not allowed to change the plant on the sales order line itself. Instead, the rule-based ATP check process will create a new subitem for that line with the new plant, keeping the original line for future reference.
- **C: Subitems and Plant Substitution in Item Not Allowed**
The rule-based ATP check is neither allowed to change the plant on the sales order line nor to create new subitems. The rule-based ATP check is only allowed to change the confirmed quantity, the ATP check outcome.
- **D: Subitems Not Allowed, Plant Substitution in Item Allowed**
The rule-based ATP check can change the plant on the sales order line but is not allowed to create new subitems.
- **E: Subitems and Plant Substitution in Item Allowed**
The rule-based ATP check can change the plant on the sales order line and also allowed to create new subitems.
- **N: Rules-Based ATP Check Not Allowed**
The rule-based ATP check is not allowed to make any changes to the ATP check (product allocation) outcome.

7.7 Summary

An ATP check is a mandatory component of SAP S/4HANA, and you can set it up as to be simple or as complex as needed, using different features to fulfill automation requirements. In this chapter, we covered several elements of SAP S/4HANA for advanced ATP, including product availability checks, ATP checks, transfer of requirements, and segmentation strategies. We also covered product allocation and rule-based ATP.

In the next chapter, we'll discuss drop shipments and special orders.

Contents

Preface	19
1 Organizational Structure and General Settings	35
1.1 Company Codes	35
1.2 Sales Areas	38
1.2.1 Designing the Sales Hierarchy	38
1.2.2 Sales Organizations	41
1.2.3 Distribution Channels and Distribution Chains	46
1.2.4 Divisions	51
1.2.5 Sales Areas	55
1.2.6 Plant Assignment	58
1.2.7 Credit Control Area Assignment	60
1.3 Sales Offices and Sales Groups	62
1.3.1 Sales Offices	64
1.3.2 Sales Groups	67
1.4 Shipping Points and Loading Points	68
1.4.1 Shipping Points	70
1.4.2 Loading Points	74
1.5 Transportation Planning Points	75
1.6 Summary	78
2 Business Partner Master Data	79
2.1 Creating New Business Partners	80
2.1.1 Business Partner Creation Overview	81
2.1.2 Main Business Partner Attributes	84
2.2 General Data	100
2.2.1 Address	100

2.2.2	Address Overview	104
2.2.3	Identification	105
2.2.4	Control	109
2.2.5	Payment Transactions	112
2.2.6	Status	112
2.2.7	Legal Data	113
2.2.8	Customer: General Data	115
2.2.9	Customer: Tax Data	119
2.2.10	Customer: Additional Data	122
2.2.11	Customer: Unloading Points	124
2.2.12	Customer: Texts	127
2.3	Sales Information	128
2.3.1	Orders	129
2.3.2	Shipping	136
2.3.3	Billing	140
2.3.4	Documents	144
2.3.5	Partner Functions	145
2.3.6	Additional Data	150
2.3.7	Status	151
2.3.8	Customer: Texts	158
2.4	Customer Hierarchy	162
2.4.1	Define Customer Hierarchy Types	163
2.4.2	Assign Account Groups for Customer Hierarchy	163
2.4.3	Assign Sales Areas for Customer Hierarchy	164
2.4.4	Assign Customer Hierarchy	165
2.5	Summary	167
3	Material Master Data Elements	169
3.1	Sales Organization Data: Sales View 1	170
3.1.1	Base Unit of Measure	171
3.1.2	Unit of Measure Group	172
3.1.3	Material Status	173
3.1.4	Delivery Plant	174
3.1.5	Material Group	174

3.1.6	Cash Discount and Conditions	175
3.1.7	Tax Data	176
3.1.8	Quantity Stipulations	176
3.2	Sales Organization Data: Sales View 2	176
3.2.1	Material Statistics Group	177
3.2.2	Material Price Group	178
3.2.3	Material Volume Rebate Group	179
3.2.4	Material Account Assignment Group	179
3.2.5	Item Category Group	180
3.2.6	Pricing Reference Material	181
3.2.7	Product Hierarchy	181
3.2.8	Commission Group	185
3.2.9	Material Groups 1 through 5	186
3.2.10	Product Attributes	188
3.3	Sales: General/Plant Data	189
3.3.1	General Data	190
3.3.2	Shipping Data	190
3.3.3	Packaging Material Data	192
3.3.4	General Plant Parameters	193
3.4	International Trade: Export	194
3.5	Sales Text	196
3.6	Customer-Material Information Records	197
3.7	Summary	200
4	Pricing and the Condition Technique	201
4.1	Pricing	202
4.1.1	Pricing Condition Records: Master Data	203
4.1.2	Pricing Condition Tables	206
4.1.3	Pricing Access Sequences	208
4.1.4	Pricing Condition Types	211
4.1.5	Pricing Procedures	220
4.2	Free Goods	225
4.2.1	Free Goods Condition Records: Master Data	225

4.2.2	Free Goods Condition Table	228
4.2.3	Free Goods Access Sequence	230
4.2.4	Free Goods Condition Type	232
4.2.5	Free Goods Procedure	232
4.3	Material Determination	234
4.3.1	Material Determination Condition Records: Master Data	235
4.3.2	Material Determination Condition Tables	239
4.3.3	Material Determination Access Sequences	240
4.3.4	Material Determination Condition Types	242
4.3.5	Material Determination Procedures	243
4.4	Cross-Selling	245
4.4.1	Cross-Selling Condition Records: Master Data	245
4.4.2	Cross-Selling Condition Tables	248
4.4.3	Cross-Selling Access Sequences	250
4.4.4	Cross-Selling Condition Types	251
4.4.5	Cross-Selling Procedures	251
4.4.6	Cross-Selling/Dynamic Product Proposal Profiles	255
4.4.7	Special Item Category Determination	258
4.5	Dynamic Product Proposals	261
4.5.1	Dynamic Product Proposal Condition Records: Master Data	262
4.5.2	Dynamic Product Proposal Procedures and Access Sequences	265
4.5.3	Procedure Determination for Product Proposals	268
4.6	Listing/Exclusion	269
4.6.1	Listing/Exclusion Condition Records: Master Data	270
4.6.2	Listing/Exclusion Condition Tables	272
4.6.3	Listing/Exclusion Access Sequences	274
4.6.4	Listing/Exclusion Condition Types	276
4.6.5	Listing/Exclusion Procedures	276
4.7	Output Determination and Management	279
4.7.1	Output Determination Condition Records: Master Data	279
4.7.2	Output Determination Condition Tables	283
4.7.3	Output Determination Access Sequences	285
4.7.4	Output Determination Condition Types	287
4.7.5	Output Determination Procedures	290
4.8	Bonus Buy	293
4.8.1	Bonus Buy Material Categories	293

4.8.2	Bonus Buy Master Data	294
4.8.3	Maintaining the Bonus Buy Application	297
4.8.4	Bonus Buy Profiles	297
4.8.5	Bonus Buy Number Ranges	298
4.8.6	Bonus Buy Condition Types	300
4.8.7	Bonus Buy Access Sequences	301
4.8.8	Bonus Buy Condition Tables	303
4.8.9	Bonus Buy Pricing Schemas	304
4.9	Summary	306
5	Sales Contract and Agreement Management	307
5.1	Master, Value, and Quantity Contracts	307
5.1.1	Master Contracts	309
5.1.2	Quantity Contracts	315
5.1.3	Value Contracts	317
5.2	Customer Rebate Agreements	320
5.2.1	Manage Customer Condition Contracts App	322
5.2.2	Settle Customer Condition Contracts App	340
5.3	Summary	347
6	Sales Order Management	349
6.1	Creating Sales Documents	350
6.1.1	Sales Order Types	353
6.1.2	Assigning Sales Area to Sales Document Types	364
6.1.3	Sales Orders Number Ranges	367
6.2	Creating Standard Orders: Overview	369
6.2.1	Sales	369
6.2.2	Item Overview	374
6.2.3	Item Detail	375
6.2.4	Ordering Party	377
6.2.5	Procurement	378

6.2.6	Shipping	379
6.2.7	Configuration	381
6.2.8	Reason for Rejection	383
6.2.9	All Items	385
6.2.10	Defining Item Categories	388
6.3	Creating Standard Orders: Header Data	395
6.3.1	Sales	396
6.3.2	Shipping	399
6.3.3	Billing Document	402
6.3.4	Electronic Payments	405
6.3.5	Billing Plan	406
6.3.6	Accounting	409
6.3.7	Conditions	411
6.3.8	Account Assignment	412
6.3.9	Partner	412
6.3.10	Texts	416
6.3.11	Order Data	423
6.3.12	Status	426
6.3.13	Additional Data	428
6.4	Creating Standard Orders: Item Data	430
6.4.1	Sales A	430
6.4.2	Sales B	433
6.4.3	Shipping	436
6.4.4	Billing Document	443
6.4.5	Conditions	445
6.4.6	Account Assignment	446
6.4.7	Schedule Lines	448
6.4.8	Partner	453
6.4.9	Texts	453
6.4.10	Order Data	454
6.4.11	Status	455
6.4.12	Structure	456
6.4.13	Free Characteristics	457
6.4.14	Additional Data	458
6.5	Incompletion Procedure: Log of Incomplete Items	459
6.6	Rush Orders	464

6.7	Cash Sales (Retail)	464
6.8	Summary	466
7	Available to Promise and Transfer of Requirements	467
7.1	Product Availability Check	468
7.1.1	Backward Scheduling	468
7.1.2	Forward Scheduling	469
7.2	Available to Promise Checks	470
7.2.1	Process Overview	470
7.2.2	Schedule Line Details	473
7.2.3	Availability Overview and Scope of ATP Check	479
7.2.4	Backorder Rescheduling	489
7.3	Transfer of Requirements	492
7.3.1	Configuring Requirement Classes	493
7.3.2	Configuring Requirement Types	496
7.3.3	Determining Requirement Type by Item Category and MRP Type	497
7.3.4	Defining Procedure for Each Schedule Line Category	498
7.4	Segmentation Strategy	499
7.5	Product Allocation	500
7.5.1	Activate Product Allocation	500
7.5.2	Configure Product Allocation Object	501
7.5.3	Manage Product Allocation Planning Data	504
7.5.4	Manage Product Allocation Sequences	505
7.5.5	Assign Product to Product Allocation	507
7.6	Rule-Based ATP	508
7.6.1	Business Transactions	508
7.6.2	Sales Order Level	509
7.6.3	Item Level Rules	509
7.7	Summary	510

8	Drop Shipments and Special Orders	511
8.1	Drop Shipments	512
8.1.1	Process Overview	512
8.1.2	Schedule Line Category	515
8.2	Special Orders	516
8.3	Purchase Requisitions and Purchase Orders	519
8.4	Vendor Interfaces	525
8.5	Statistical Goods Receipt	525
8.6	Vendor Invoice Receipt	526
8.7	Drop Shipment Billing	526
8.7.1	Sales Order Types	526
8.7.2	Billing Copy Control for Drop Shipment Billing	527
8.7.3	Item Categories	529
8.8	Summary	530
9	Shipping and Delivery	531
9.1	Shipping Points	532
9.2	Delivery Documents	534
9.2.1	Create Delivery: Overview	534
9.2.2	Defining Delivery Document Types	540
9.2.3	Number Ranges for Delivery Documents	545
9.2.4	Assigning Picking Locations	546
9.2.5	Item Categories for Deliveries	547
9.3	Create Delivery: Header Details	552
9.3.1	Processing	552
9.3.2	Picking	554
9.3.3	Loading	556
9.3.4	Shipment	558
9.3.5	International Trade	561
9.3.6	Financial Processing	563

9.3.7	Administration	563
9.3.8	Partner	565
9.3.9	Texts	566
9.3.10	Conditions	567
9.3.11	Dates	568
9.3.12	Parcel Tracking	569
9.4	Create Delivery: Item Details	570
9.4.1	Processing	570
9.4.2	Material	571
9.4.3	Batch Split	573
9.4.4	Picking	576
9.4.5	Loading and Shipment	577
9.4.6	Financial Processing	578
9.4.7	Texts	580
9.4.8	Conditions	580
9.4.9	Predecessor Data Tab	581
9.4.10	Administration	582
9.5	Decentralized Warehouse Integration	584
9.5.1	Basic Decentralized WMS Integration Set Up	585
9.5.2	Batch Determination	587
9.6	Picking/Transfer Orders	590
9.7	Packing	592
9.8	Transportation Planning	595
9.8.1	Shipment Document	596
9.8.2	Defining Routes	601
9.8.3	Maintaining Transportation Relevance	603
9.8.4	Number Ranges for Shipment Documents	604
9.8.5	Defining Shipment Types	605
9.8.6	Defining and Assigning Activity Profiles	610
9.9	Post Goods Issue	614
9.10	Proof of Delivery and Valuated Stock-in-Transit	614
9.10.1	Proof of Delivery	615
9.10.2	Valuated Stock-in-Transit	617
9.11	Document Flow	618

9.12 Inbound Deliveries	619
9.13 Summary	620
10 Billing and Invoicing	621
<hr/>	
10.1 Creating Billing Documents	621
10.1.1 Initial Document Selection and Document Overview	622
10.1.2 Header Details	630
10.1.3 Item Details	636
10.1.4 Partners	644
10.1.5 Conditions	645
10.1.6 Texts	646
10.1.7 Purchase Order Data	648
10.2 Invoice Lists	650
10.3 Milestone Billing, Periodic Billing, and Down Payments	653
10.3.1 Billing Plans	653
10.3.2 Defining Billing Plan Types	656
10.4 Accounting Documents and Revenue Recognition	657
10.4.1 Revenue Account Determination	658
10.4.2 Cost Centers for Goods Movement	667
10.5 Intercompany Billing	669
10.5.1 Intercompany Billing Transactions	670
10.5.2 Assigning Organizational Units by Plant	672
10.5.3 Defining Internal Customer Number by Sales Organization	672
10.5.4 Billing Copy Control for Intercompany Documents	673
10.6 Proforma Invoices	675
10.7 Summary	676
11 Stock Transfer Orders and Intercompany Sales	677
<hr/>	
11.1 Stock Transfer Orders	677
11.1.1 Shipping Data for Plants	679

11.1.2 Delivery Type and Availability Check by Plant	681
11.1.3 Stock Transfers between Storage Locations	684
11.2 Intercompany Sales	685
11.3 Summary	687
12 Customer Consignment	689
<hr/>	
12.1 Standard Customer Consignment	689
12.1.1 Process Overview	690
12.1.2 Consignment Fill-Up	692
12.1.3 Consignment Issue	693
12.2 Reverse Customer Consignment	694
12.2.1 Process Overview	694
12.2.2 Consignment Pickup	695
12.2.3 Consignment Return	696
12.3 Summary	697
13 Customer Complaint Management	699
<hr/>	
13.1 Customer Returns: Advanced Returns Management	701
13.1.1 Creating with Reference	702
13.1.2 Creating without Reference	704
13.1.3 Defining Return Reasons for Customer Returns	710
13.1.4 Defining Returns Refund Codes	710
13.2 Customer Returns: Lean Returns	711
13.2.1 Defining Order Reasons	713
13.2.2 Assigning Sales Document Types and Sales Organizations to Order Reasons	714
13.3 Credit/Debit Requests	715
13.4 Free of Charge Orders	719
13.5 Customer Inquiries	723

13.6 Status Profiles	725
13.7 Summary	728

14 Reporting and Analytics 729

14.1 ABAP List Viewer	729
14.2 SAP Fiori Workflow	730
14.3 SAP Fiori Operational Reports	732
14.3.1 Manage Business Partner Master Data	732
14.3.2 Manage Sales Orders	733
14.3.3 Product Allocation Overview	734
14.3.4 Manage Billing Documents	735
14.3.5 Display Business Volume – Condition Contracts	735
14.3.6 Sales Order Items – Backorders	737
14.4 SAP GUI Operational Reports and Due Lists	737
14.4.1 List of Sales Orders	737
14.4.2 Incomplete Orders	739
14.4.3 Sales Documents by Object Status	740
14.4.4 Duplicate Documents	741
14.4.5 Display Backorders	742
14.4.6 Billing Document Due List	743
14.4.7 Log of Collective Run	744
14.4.8 Delivery Document Due List	745
14.5 Analytics	747
14.6 Summary	748

The Author	749
Index	751

Index

A

ABAP Dictionary	208
ABAP List Viewer	729
Access sequence	204
Account assignment	412, 446, 496, 579
Account assignment category	450, 515
Account assignment group	143, 179
<i>define</i>	180
Account determination	
<i>access sequence</i>	660
<i>condition tables</i>	664
<i>condition types</i>	662
Account determination procedure	
<i>control data</i>	660
<i>define</i>	659
Account groups	88, 115, 163
Account keys	658, 666
<i>assign</i>	659
<i>define</i>	658
Accounting	409
Accounting documents	657
Accruals account	663
Activity profiles	610
<i>attributes</i>	612
<i>create</i>	610
Activity reasons	347
Add-on products	245
Advanced returns management	701
Advanced shipping notification (ASN)	138, 451, 485, 518, 525, 592
Aftermarket retailers	40
Allocation run	545
Analysis	729
Application codes	279
ASC 606	617
Assembly	495
Assign Product to Production Allocation	
<i>app</i>	507
ATP check	23, 125, 155, 364, 452, 467, 470, 518, 549, 690, 734
<i>blocked material</i>	487

ATP check (Cont.)	
<i>components</i>	488
<i>configure scope</i>	481
<i>expected delivery date</i>	478
<i>groups</i>	487
<i>multiple orders</i>	490
<i>navigation</i>	479
<i>overview</i>	470
<i>results</i>	472
<i>sales area settings</i>	488
<i>scope</i>	479
Authorization group	132
Automatic settlement	340
Availability check	190
Availability check group	481
Availability control	470
Availability overview	481

B

Background jobs	745
Backorders	737
<i>display</i>	742
<i>priority</i>	492
<i>rescheduling</i>	489
Backward planning	475
Backward scheduling	468
Base unit of measure	171
Batch determination	551, 587
<i>activate</i>	588
<i>automatic</i>	589
<i>overview</i>	588
Batch management	190
Batch number	572
Batch search procedures	589
Batch split	550, 573–574
<i>subitems</i>	574
Bill of materials (BOM)	392
<i>explosion number</i>	432
Billing	140, 360, 621
<i>category</i>	625
<i>copy control</i>	527, 529, 673

Billing (Cont.)	Bonus buy (Cont.)
date 553, 631	<i>maintain</i> 297
plan 406	<i>master data</i> 294
quantity 529	<i>material categories</i> 293
relevance 530	<i>number range</i> 298
type 526	<i>organizational data</i> 295
Billing block 156, 361, 373, 563, 579, 712	<i>pricing schema</i> 304
assign 157	<i>profiles</i> 297
configure 157	<i>types</i> 301
Billing document 140, 402, 443, 621	Branch 626
account assignment 628, 641	BRFplus 279
accounting 640	Business partner 86
accounting data 631	<i>address</i> 100
billed quantity 637	<i>attributes</i> 83–84
cancellation 626, 636	<i>central block</i> 112
conditions 645	<i>control</i> 109
configure number range 629	<i>create new</i> 80
document numbers 622	<i>create type</i> 110
due list 743	<i>creation overview</i> 81
general control 625	<i>customer number</i> 115
general information 636	<i>data origin</i> 111
header details 630	<i>data quality</i> 733
item details 636	<i>de-duplication</i> 80
number range 625	<i>define role</i> 88
output determination 628	<i>duplication</i> 79
partners 644	<i>grouping</i> 85, 91
pending 743	<i>groups</i> 93
price data 633	<i>identification codes</i> 105
pricing 628	<i>legal data</i> 113
purchase order 648	<i>marketing data</i> 117
texts 646	<i>master data</i> 79, 83
type 623	<i>multiple addresses</i> 104
types 624	<i>number</i> 85, 91, 93, 95
Billing plan 308, 653	<i>number ranges</i> 91, 93
define types 656	<i>payment transactions</i> 112
reference number 657	<i>predefined roles</i> 86
usage category 657	<i>role</i> 85, 88
Bill-to party 146	<i>role categories</i> 90
Blocked stock 483	<i>role code</i> 89
Bonus buy 293	<i>role position</i> 90
access sequence 301	<i>standard number ranges</i> 94
condition tables 303	<i>statuses</i> 112
condition types 298, 300	<i>type</i> 109
details 296	Business volume 322, 324
header data 295	<i>selection criteria</i> 327

C	Configure Product Allocation app 501
Capacity check 496	Confirmed quantity 477
Cash discounts 175	Confirmed stock 155
Cash sales 464	Consignment 689
Cash settlement 628	<i>fill-up</i> 692
Characteristic code 383	<i>issue</i> 693
Chart of accounts 663	<i>pickup</i> 695
Collective control 502	<i>return</i> 696
Collective requirements 511	Contact person 87, 147
Commercial rounding 215	Contract selection 342
Commission group 185	Contract settlement execution log 346
<i>define</i> 185	Contract type 332
Commitment date 474	<i>control data</i> 335
Committed quantity 477	Contracts 307, 363
Common distribution channel 46	<i>validity period</i> 325
<i>define</i> 50	<i>workflow</i> 308
Common divisions 51	Control codes 195
<i>define</i> 54	Copy control 313, 568, 682
Company codes 35, 342, 632, 679	Core data services (CDS) views 747
<i>assign sales organization</i> 45	Cost center accounting 722
<i>composition</i> 37	Cost centers 579, 641
Condition amount 211, 216	<i>assign</i> 668
Condition base value 211, 222	<i>goods movement</i> 667
Condition class 214	<i>per order reason</i> 667
Condition contract 342	Cost of goods sold (COGS) 139, 614, 617, 679
<i>header text types</i> 339	Country of origin 195
<i>number range intervals</i> 337	County code 635
Condition contract settlement	Create Condition Records (Sales) app 203
<i>selection criteria</i> 341	Create Sales Order app 349
Condition group 122	Create Sales Rebate app 322, 324
<i>define</i> 123	<i>administration</i> 326
Condition index 218	<i>basic data</i> 325
Condition records 202, 214, 663, 666	<i>business volume</i> 327
<i>maintenance</i> 217	<i>command bar</i> 325
Condition table 202, 204, 331, 663	<i>header texts</i> 327
Condition technique 201	<i>sales information</i> 326
Condition types 202, 204, 331, 446, 658, 663	<i>settlement</i> 328
<i>maintain</i> 334	<i>settlement calendar</i> 329
<i>master data</i> 217	<i>status</i> 327
Condition value 205, 211, 223	Credit control 143
Conditions 175, 324, 330, 411, 445	Credit control areas 60
Configurable material 392	<i>assign to sales area</i> 61
Configurable material characteristics 381	Credit management 162
Configurable parameters and formulas	Credit memo 25
(CPF) 219	Credit/debit memo requests 715, 718
	<i>billing document</i> 718

- Credit/debit requests 700
 - Cross-distribution chain status 174
 - Cross-docking operation 557
 - Cross-selling 133, 245
 - values 259
 - Cross-selling access sequences 250
 - maintain 250
 - Cross-selling condition records 245
 - create 246
 - delivery control 247
 - material numbers 247
 - multiple add-ons 247
 - sales order entry 248
 - validity dates 247
 - Cross-selling condition tables 248
 - database table 249
 - display 249
 - Cross-selling condition types 251
 - Cross-selling procedures 251
 - assign procedures 254
 - define customer procedures 253
 - define document procedures 254
 - maintain 252
 - Cross-selling profile 255
 - assign 257
 - define 255
 - pricing procedure 257
 - Currency 133, 332, 631
 - Currency conversion 219
 - Custom CDS Views app 747
 - Customer 87
 - account assignment group 664
 - attributes 124
 - blocks/holds 151
 - classification 118
 - freeform text 127
 - groups 131
 - levels 166
 - status 151
 - texts 158
 - unloading points 124
 - Customer complaints 699
 - workflow 700
 - Customer condition contract 322, 324
 - types 332
 - Customer consignment 689
 - process overview 690
 - standard 689
 - Customer groups 150, 435
 - Customer hierarchy 119, 162
 - assign 165
 - assign account groups 163
 - assign sales areas 164
 - types 163
 - Customer inquiries 700, 723
 - Customer master data 38
 - Customer material 455
 - Customer number 115
 - Customer purchase order type 425
 - Customer reference 355, 424, 648
 - Customer returns 701
 - accelerated returns 705
 - create with reference 702
 - create without reference 704
 - follow-up actions 705
 - item selection 702
 - next follow-up 707
 - product condition 709
 - reasons 705, 710
 - refunds 708
 - replacements 709
 - Customer stock 691
 - Customer-material information records 197
 - customer 198
 - delivery quantity 200
 - material numbers 199
 - plant 200
 - Customs material codes 194
- ## D
- Dangerous goods 400, 557, 559
 - Decentralized warehouse 554, 572
 - activate 586
 - integration 584
 - integration setup 585
 - Deferred revenue 617
 - Delayed supply 487
 - Delivery 465, 531
 - create 534
 - status 538

- Delivery block 153, 359, 373, 449, 476, 565
 - configure 154
 - order-by-order 154
- Delivery date 553
- Delivery document 531, 534, 677, 682
 - administration 563, 582
 - backorder rescheduling 544
 - conditions 567, 580
 - content 543
 - dates 553, 568
 - due list 745
 - financial processing 563, 578
 - item categories 547
 - item category 540, 588
 - material 571
 - number range 542, 545
 - partner 565
 - predecessor data 581
 - pricing 567
 - processing 552, 570
 - status 554, 571
 - texts 566, 580
 - transaction flow 544
 - without reference 542
- Delivery document type 540, 696
 - display 541
- Delivery group 379, 394
- Delivery item categories 616
- Delivery item status 539
- Delivery note 483
- Delivery plant 138, 174
- Delivery priority 136, 492
 - configure 137
- Delivery quantity 550
- Delivery split 543, 608
- Delivery time 430
 - configure 398
- Delivery type 359, 681
 - by storage location 684
- Delivery unit 176
- Demand 487, 492
- Departure country 441
- Dependent requirements 484
- Determination procedures 144
- Discounts 227
- Display Business Volume – Condition
 - Contracts app 735
- Distribution chains 46
 - assign plant 59
 - create 49
- Distribution channel 46, 642
 - create 48
 - intercompany 51
 - pricing condition records 50
- Distribution model 586
- Divisions 51, 434, 638
 - assign to sales organization 53
 - create 53
 - pricing condition records 55
- Document category 549, 605
- Document category code 542
- Document flow 618
- Document number 563
- Document type 626
- Down payments 407, 653
- Drop shipment 511–512
 - billing 526
 - invoice 529
 - item category 528
 - locations 146
 - process overview 512
- Due lists 737
- Dunning 444, 632
- Duplicate documents 741
- Dynamic product proposal 256, 261
 - maintain procedure determination 268
 - table of origin 266
- Dynamic product proposal access
 - sequence 265
 - determine 266
- Dynamic product proposal condition
 - records 262
 - data source 264
 - document number 265
 - proposed lines 263
 - sales area 262
 - target quantity 262
 - validity dates 262
- Dynamic product proposal procedures 266

E

Electronic Data Interchange (EDI)	691
Electronic payments	405
Embedded EWM	69, 534, 584
Engineering controls	432
European Article Number (EAN)	105, 171, 431
Exchange rate	133, 326, 631, 639
External capacity planning	450
External number range	92
External sales agent	147

F

Factory calendar	72, 502
Field offices	62
Field selection group	186
Final settlement	322
Financial services business partner	87
Fiscal address	121
Fixed value date	632
Forward planning	478, 489
Forward scheduling	469, 472
<i>delivery mode</i>	471
Forwarding agent	147
Free goods	225
Free goods access sequence	230
<i>enter table</i>	230
<i>maintain</i>	230
Free goods condition records	225
<i>category</i>	227
<i>distribution chain</i>	226
<i>material</i>	226
<i>quantity</i>	227
<i>quantity level</i>	227
Free goods condition table	228
<i>create</i>	228
<i>fields</i>	230
Free goods condition types	232
<i>maintain</i>	232
Free goods procedure	232
<i>determination</i>	234
<i>maintain pricing procedure</i>	232
Free of charge orders	24, 700, 719–720
<i>inventory account</i>	722

Freeform texts	158
Freight	75

G

General ledger accounts	662, 664
Goods issue	156, 475
Goods movement	540
Goods receiving hours	126

H

Handling unit	537, 555, 593
---------------	---------------

I

IDocs	145
IFRS 15	617
Immediate delivery	359
Implementation	20
Inbound deliveries	531, 619
Incomplete orders	739
Incomplete pricing	639
Incompletion check	23, 358
Incompletion log	459, 638
<i>configure</i>	461
<i>procedure codes</i>	462
<i>sequence</i>	464
<i>status</i>	463
<i>table</i>	462
Incompletion procedure	459, 583
Incoterms	142, 373, 559, 634
<i>codes</i>	142
Independent requirements planning	495
Individual requirements	511
Industry sector	107
Intercompany billing	220
<i>condition type</i>	671
<i>document</i>	687
<i>master data impact</i>	670
<i>price</i>	671
<i>transactions</i>	670
Intercompany customer numbers	672
Intercompany pricing	687
Intercompany sales area	41

International Chamber of Commerce (ICC)	142
International Location Numbers (ILNs)	105
International trade	561
<i>transport border</i>	562
<i>transport inland</i>	562
Intrastat code	562
Intrastat group	194
Inventory management (IM)	69, 576
Invoice correction	718
Invoice lists	142, 219, 636, 650
<i>billing document</i>	653
<i>processing log</i>	650
<i>updating options</i>	650
<i>worklist</i>	650, 652
Invoicing	621
Invoicing dates	142
Item category	379, 515, 529, 547
<i>assign</i>	260
<i>billing</i>	389
<i>business data</i>	389
<i>define</i>	388
<i>general control</i>	391
<i>pricing</i>	390
<i>requirement types</i>	497
<i>transaction flow</i>	391
Item category group	180, 512, 516
<i>define</i>	181
Item category usage	259
Item condition	217
Item number	542
Item usage	200

L

Language	423, 551
Lean returns	711
Legacy System Migration Workbench (LSMW)	443
Letters of credit	143
Line number interval	535
Listing/exclusion	269
Listing/exclusion access sequences	274
<i>assign</i>	275
<i>code</i>	274
<i>enter table</i>	275
<i>maintain</i>	274

Listing/exclusion condition records	270
<i>condition tables</i>	271
<i>condition type</i>	270
<i>customer group</i>	271
<i>material group code</i>	272
Listing/exclusion condition tables	272
<i>create</i>	274
Listing/exclusion condition types	276
Listing/exclusion procedures	276
<i>activate</i>	278
<i>maintain</i>	277
<i>sales order type</i>	278
Intercompany billing	669
Intercompany sales	685
Loading	537, 553, 556, 577
Loading date	475
Loading group	191, 533
<i>define</i>	192
Loading points	68–69, 74
<i>BAPI</i>	74
<i>define</i>	74
Log of collective run	744
Logistics execution	69
Logistics Information System (LIS)	177

M

Maintain Contract – Condition Contracts	
<i>app</i>	322
Maintenance, repair, and overhaul (MRO)	701
Make-to-order	493
Manage Billing Documents app	735
Manage Business Partner Master Data	
<i>app</i>	82, 732
Manage Customer Condition Contracts	
<i>app</i>	322
Manage Product Allocation Planning Data	
<i>app</i>	504
Manage Product Allocation Sequences	
<i>app</i>	505
Manage Sales Orders app	733
Manual invoice maintenance	402
Manual shipping point	533
Master contracts	308–309, 316
<i>creation</i>	313
<i>customer reference</i>	314

Master contracts (Cont.)	
<i>document types</i>	310
<i>fields</i>	311
Match code search	715
Material account assignment group	443, 641, 664
Material availability date	476, 576
Material category	294
Material determination	234
Material determination access	
sequences	240
<i>create</i>	242
<i>enter table</i>	242
<i>maintain</i>	241
Material determination condition	
records	235
<i>fast entry screen</i>	236
<i>material substitution</i>	237
<i>replace material</i>	236
UoM	237
Material determination condition tables	239
<i>application code</i>	239
<i>create</i>	239
Material determination condition types	242
Material determination procedures	243
<i>assign</i>	244
<i>maintain</i>	243
Material document text type	551
Material groups	174, 186, 434
<i>authorization group</i>	175
<i>define</i>	186
Material master	169
<i>field selection</i>	186
<i>general/plant view</i>	189
<i>international trade/export</i>	194
<i>Sales org. 1</i>	170
<i>Sales org. 2</i>	176
<i>sales text</i>	196
<i>views</i>	169
Material master data	512, 516
Material number	549
Material packaging groups	193
Material price group	178, 435
<i>define</i>	178
Material requirements planning (MRP)	137, 378, 492
Material reservation functionality	484
Material statistics group	177
Material statuses	173
Material tax classifications	640
Material variant	392
Materials management (MM)	499, 514
Milestone billing	406, 653
Mill products	395
Minimum order quantity	550
Missing parts processing	487
Movement type	450, 476, 677
<i>qualifier</i>	583
MRP type	453, 497–498

N

Negative posting	626
Negative stock	194
Net value	222
Net weight	401
Nielsen indicator	117
Note pay account	655
NR status	96, 368, 630
Number range	92, 545
<i>internal</i>	629
<i>intervals</i>	96
<i>limits</i>	546
<i>manual</i>	368
<i>status</i>	99
<i>transport</i>	96, 98, 299

O

Object status	726
One-time customers	99
On-hand inventory	478
Operational reports	737
Order combination	138
<i>printing</i>	155
Order quantity	477
Order reason	374, 643
Order reasons	712, 718, 720
<i>assign sales document types</i>	714
<i>assign sales organizations</i>	714
<i>define</i>	713
<i>list</i>	714

Order reference	542	Output determination condition types	287
Order type	350, 396, 515	<i>email</i>	289
All Items area	385	<i>general data</i>	287
<i>assign</i>	365	<i>processing routines</i>	290
<i>billing</i>	361	<i>sort order</i>	289
<i>characteristics</i>	382	<i>time</i>	289
<i>commitment date</i>	356	Output determination procedures	290, 543
<i>configure</i>	353	<i>assigning</i>	292
<i>contracts</i>	358, 363	<i>control data</i>	291
<i>credit</i>	355	<i>details</i>	292
<i>division</i>	355	<i>maintain</i>	290
<i>general control</i>	354	<i>output type</i>	292
<i>increment</i>	354	Output message determination	144
<i>new vs. existing</i>	351	Overdelivery tolerance	140
<i>number range</i>	354		
<i>partial shipments</i>	373		
<i>pricing date</i>	362		
<i>reference</i>	354		
<i>requested delivery date</i>	361		
<i>SAP-provided</i>	352		
<i>scheduling</i>	359		
<i>status profile</i>	358		
<i>transaction flow</i>	356		
Orders	129		
Organizational structure	35		
<i>workshops</i>	39, 62		
Organizational units			
<i>assign to plants</i>	672		
Original equipment manufacturers (OEMs)	40		
Outbound deliveries	531		
Output determination	279		
Output determination access sequences	285		
<i>enter table</i>	287		
<i>maintain</i>	285		
Output determination condition			
records	279		
<i>communication</i>	282		
<i>create</i>	280		
<i>message medium</i>	281		
<i>output type</i>	280		
<i>partners</i>	281		
<i>printing</i>	283		
<i>sales order type</i>	281		
Output determination condition tables	283		
<i>create</i>	283		
Packaging material	192, 559		
Packing	550, 592		
<i>automatic</i>	544		
<i>control</i>	550		
<i>delivery document</i>	593		
<i>medium</i>	593		
<i>partial quantity</i>	594		
Parallel processing	345		
Parcel tracking	569		
Partial settlement	330		
Partial shipments	139		
Partner	412, 453		
Partner determination procedure	414, 544		
Partner functions	145, 412, 565		
<i>assign new</i>	149		
<i>configure</i>	147		
<i>sequence</i>	416		
Partner header text types	339		
Payer	146, 402		
Payment Card Industry Data Security Standards (PCI DSS)	405		
Payment guarantee	579		
Payment method	632		
Payment terms	143, 320, 325, 373, 634		
Payments	112, 116		
Periodic billing	308, 407, 653		
Pick list	72		
Picking	156, 535, 550, 553–554, 573, 576, 590		
<i>status</i>	555		

P

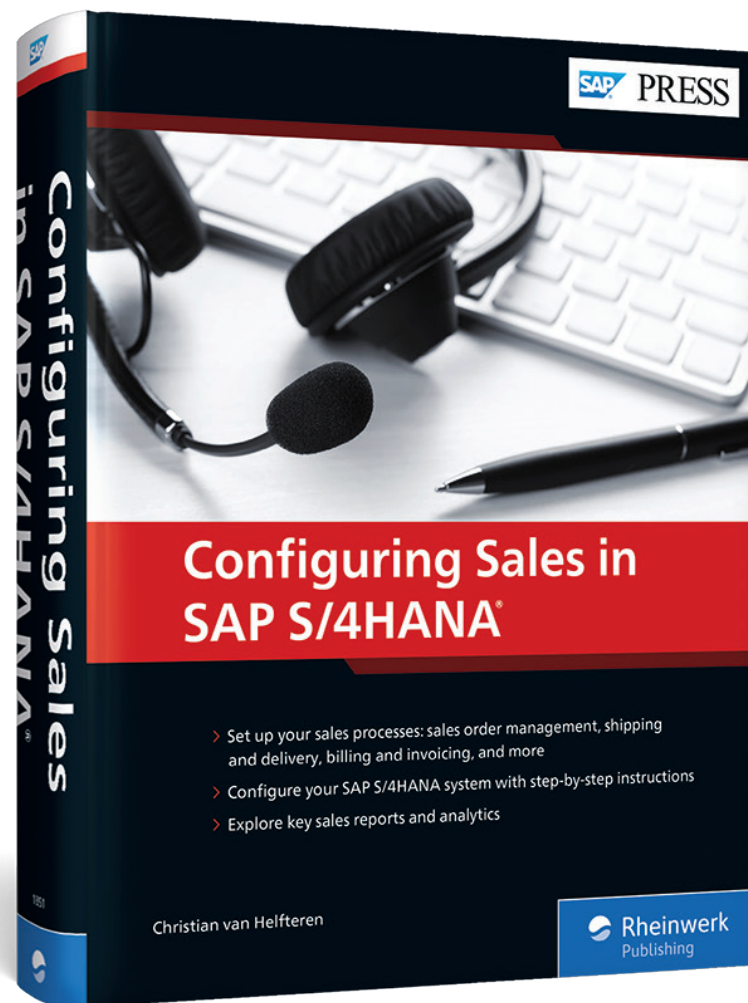
Picking locations	546	Pricing condition types (Cont.)	
Planned goods issue	553	<i>control data</i>	214, 219
Planned orders	485	<i>generatl information</i>	214
Plants	58, 371, 638, 679	<i>group condition</i>	216
<i>assign to distribution chains</i>	59	<i>reference</i>	218
<i>availability check</i>	681	Pricing procedures	134, 202, 217, 220,
<i>parameters</i>	193	628, 634	
<i>shipping data</i>	679	<i>condition types</i>	222
<i>shipping points</i>	73	<i>configure</i>	220
Post accruals	322	<i>determination</i>	224
Post goods issue	23, 614, 693	<i>manual</i>	222
<i>intercompany sales</i>	686	<i>order</i>	221
Post goods receipt	697	<i>subtotal</i>	223
Posting block	625	Pricing reference material	181, 433
Posting period	443	Print parameters	289
Posting status	632	Procurement	378, 476, 520
Post-processing framework (PPF)	336	Product allocation	500
Price group	134, 435, 634	<i>activate</i>	500
Price lists	135, 435	<i>characteristic</i>	502
Pricing	142, 201, 638	<i>configure object</i>	501
<i>date</i>	373	<i>period</i>	502
<i>overview</i>	202	<i>planning data</i>	504
Pricing access sequence	208	<i>planning data keys</i>	502
<i>code</i>	209	<i>quantity unit</i>	502
<i>enter table</i>	210	<i>restricted material</i>	507
<i>exclusive</i>	210	<i>sequences</i>	505
<i>maintain</i>	208	<i>sold-to party</i>	505
<i>source fields</i>	210	Product attribute check	358
Pricing condition record	203	Product attributes	133, 188
<i>maintain</i>	204	Product availability check	468
<i>release status</i>	204	Product hierarchy	181, 434
Pricing condition records		<i>configuration</i>	183
<i>fixed value date</i>	206	<i>levels</i>	184
<i>payment terms</i>	206	<i>obsolete entries</i>	182
<i>pricing unit</i>	205	<i>structure</i>	182
<i>processing status</i>	204	Production Allocation Overview app	734
<i>selection indicator</i>	205	Production planning (PP)	138, 485
Pricing condition table	206	Production priority	137
<i>condition number</i>	206	Profit center	193, 447, 579, 642
<i>validity period</i>	208	Profit segment	447
Pricing condition tables		Profitability analysis	642
<i>create</i>	206	Proforma invoices	674
Pricing condition types	211	<i>delivery-based</i>	675
<i>accruals</i>	219	<i>order-based</i>	675
<i>calculation type</i>	214	Project systems (PS)	407, 579
<i>changes</i>	216	Proof of delivery	139
<i>configure</i>	212	<i>date</i>	616
		<i>delivered quantity</i>	615

Proof of delivery (POD)	614	Rejection reason	708, 724
<i>assign</i>	616	Repair orders	25
Proposed shipping point	533	Replacement parts	190
Purchase order	485, 519, 648	Replenishment lead time	485
<i>automatic</i>	524	Reporting	729
<i>interfaces</i>	525	Requested delivery date	468–469
<i>number</i>	522	Requirement class	493
<i>type</i>	425	<i>configure</i>	493
Purchase order item	454	Requirement segments	386, 499
Purchase requisition	156, 484, 519	Requirement type	378, 493
<i>details</i>	520	<i>assign</i>	497
<i>number</i>	519	<i>configure</i>	496
Purchasing document	678	Requirements	483, 495
Purchasing group	343	Reserved fields	150, 428
Purchasing master data	522	Restricted-use stock	483
		Retroactive accruals	330
		Return credit memo	712
		Return merchandise authorization	
		(RMA)	25, 701
		<i>material received</i>	707
		Return reason	643, 710
		Returns	440
		<i>refund codes</i>	710
		Revenue account determination	143, 658
		Revenue recognition	390, 657
		Reverse customer consignment	694
		<i>process overview</i>	694
		Rounding profile	176
		Rounding rule	215
		Route	437, 559
		<i>assignment</i>	537
		<i>define</i>	440, 601
		<i>determination</i>	441, 543
		<i>processing</i>	602
		Rule-based ATP	488, 508
		<i>assign to sales order type</i>	509
		<i>business transactions</i>	508
		<i>item-level rules</i>	509
		<i>subitems</i>	509
		Rush orders	464
		S	
		Safety stock	482
		Sales area	38, 55, 129, 374, 680
		<i>assign to order type</i>	364

Status profiles (Cont.)		Sales order (Cont.)	
<i>components</i>	39	<i>quantity</i>	386
<i>credit control area</i>	61	<i>requested delivery date</i>	371
<i>customer hierarchy</i>	164	<i>reschedule</i>	491
<i>diagram</i>	56	<i>schedule line</i>	386
<i>levels</i>	38	<i>shipping</i>	379
<i>sales offices</i>	66	<i>ship-to party</i>	371
<i>set up</i>	57	<i>sold-to party</i>	371
Sales contracts	24	<i>status</i>	426, 455
Sales data	324	<i>structure</i>	456
Sales district	131, 435	<i>texts</i>	416, 453
<i>define</i>	131	<i>usage code</i>	398
Sales document block	353	<i>value contracts</i>	320
Sales document types	350, 526	<i>version</i>	397
Sales groups	62–63, 132, 643	Sales order block	152
<i>assign to sales offices</i>	68	<i>assign</i>	152
<i>create</i>	67	<i>define</i>	152
Sales hierarchy	38	Sales Order Items – Backorders app	737
Sales Information Systems (SIS)	177	Sales order types	526, 692–693, 695
Sales inquiries	25	<i>billing blocks</i>	157
Sales offices	62–63, 132, 643	<i>rule-based ATP</i>	509
<i>address</i>	65	<i>sales order block</i>	152
<i>assign to sales area</i>	66	Sales organization	41–42, 642, 663, 685
<i>create</i>	64	<i>assign to company codes</i>	45
<i>sales groups</i>	68	<i>code</i>	42
Sales order	349	<i>create</i>	42
<i>additional data</i>	428, 458	<i>currency</i>	44
<i>batch processing</i>	155	<i>edit address</i>	44
<i>create</i>	369, 395, 430	Sales quotes	24
<i>data</i>	642	Sales rebate agreement	330
<i>delivery plant</i>	371	Sales requirements	483
<i>delivery time</i>	397	Salesforce	145, 699
<i>document flow</i>	522	Sales-relevant company codes	35, 42
<i>entry screen</i>	470	SAP Activate	33
<i>free characteristics</i>	457	<i>phases</i>	33
<i>item description</i>	386	SAP Apparel and Footwear	545
<i>item detail</i>	375	SAP Business Warehouse (SAP BW)	747
<i>item overview</i>	374	SAP BusinessObjects BI	729
<i>list</i>	737	SAP Contract Lifecycle Management	307
<i>material number</i>	385	SAP Customer Relationship Management (SAP CRM)	699
<i>number</i>	369	SAP Environment, Health, and Safety Management	400, 557
<i>number range</i>	367	SAP Event Management	568
<i>order data</i>	423, 454	SAP Fiori	82, 730
<i>ordering party</i>	377	<i>apps</i>	29
<i>predefined characteristics</i>	381	<i>navigation</i>	731
<i>procurement</i>	378		

SAP Fiori (Cont.)		Shipment document	596–597
<i>operational reports</i>	732	<i>number ranges</i>	604
<i>workflow</i>	731	<i>selection criteria</i>	599
SAP Fiori launchpad	27, 732	<i>transportation relevance</i>	603
SAP Global Trade Services	561, 675	Shipment types	605
SAP GUI	25	<i>change document</i>	609
<i>SAP Fiori visual theme</i>	26	<i>control</i>	607
<i>themes</i>	730	<i>deadlines</i>	608
SAP HANA rules framework	499	<i>document content</i>	607
SAP S/4HANA Cloud .. 29, 42, 45, 48–49, 53, 57,		<i>external description</i>	609
59, 64, 66–67, 70, 73		<i>legs</i>	607
SAP S/4HANA embedded analytics	747	<i>number range</i>	606
SAP S/4HANA Finance	219, 716	<i>proposal</i>	608
SAP S/4HANA for advanced ATP	467	<i>selection variant</i>	609
SAP S/4HANA Retail	293	<i>status update</i>	610
Scale base value	216, 218	Shipping	136, 190, 359, 379, 399, 436, 474,
Scales	218, 332	531, 558, 577	
Schedule line	448, 472, 514	<i>conditions</i>	138, 359, 442, 534
<i>date</i>	473, 476	<i>department</i>	399
<i>define procedure</i>	498	<i>export</i>	592
<i>delivery date</i>	473	Shipping instructions	566
<i>details</i>	473	Shipping points	68, 437, 476, 532, 535, 619
Schedule line categories	449, 515	<i>assign</i>	532
<i>assign</i>	452	<i>assign to plants</i>	73
Scheduling	359, 553	<i>create</i>	70
Segmentation	545	<i>determination</i>	438
Segmentation strategy	499	<i>fields</i>	72
Serialized materials	194, 536	Shipping type	401
Server group	345	<i>configure</i>	401
Service management	394	Ship-to partner	691
Settle Condition Contracts – Customer		Ship-to party	146, 578
Contracts app	340	Simulations	491
<i>default data</i>	343	Sold-to party	146
<i>program run control</i>	343	Special item category determination	258
Settlement	129, 328	<i>process</i>	259
<i>control</i>	341	Special orders	511, 516
<i>documents in parallel</i>	345	Special pricing conditions	316
<i>material</i>	328	Special processing indicator	560
<i>UoM</i>	328	Special stock partner	147
Settlement calendar	322, 324, 329	Statistical analysis reporting	549
<i>elements</i>	329	Statistical goods receipt	514, 525, 530
<i>entry type</i>	329	Statistics currency	42
Shipment		Status	537
<i>create</i>	598	<i>codes</i>	538
<i>deliveries</i>	601	Status profiles	113, 335, 358, 725–726
<i>due list</i>	600	<i>assign to sales order type</i>	728

-
- Transportation planning point (Cont.)
 configure 77
 office addresses 77
Transportation relevance 603
Transportation type 400
Transportation zones 103–104, 441
 regions 104
- U**
-
- Unconfirmed backorders 490
Unconfirmed orders 489
Undesirable customer 100
Unique item identifier (UII) 194
Unit conversion 375
Unit of measurement (UoM) 171
 alternative 173
 conversions 171
 group 133, 172
Universal Product Code (UPC) 171, 431
Unloading points 124, 126, 377, 559
- V**
-
- Valuated stock-in-transit (VSIT) 139, 451,
 614, 617
Value contracts 308, 317, 394
 master contract 318
 payment terms 319
Value items 389
Value-Added Tax (VAT) 121
Variant attributes 612
Vendor 115
Vendor interfaces 525
Vendor invoice receipt 526
Vendor rebates 332
Vendor-managed inventory 690
VOFM routine 210, 216, 223, 423, 609, 627,
 655, 671
Volume rebate group 179
 define 179
- W**
-
- Warehouse control 550
Warehouse lead time 69, 568
Warehouse lead time calculation 192
Warehouse management system (WMS) 677
Warehouse number 543, 586
Weights and volumes 557
Work breakdown structure (WBS)
 element 579, 642
Workflow, report, interface, conversion,
 enhancement, and forms (WRICEF) 74
World Trade Organization (WTO) 142



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