

Production Planning and Execution (PP)

This case study explains an integrated production planning and execution process in detail and thus fosters a thorough understanding of each process step and underlying SAP functionality.

Product

S/4HANA 2020
Global Bike

Fiori 3.0

Level

Undergraduate
Graduate
Beginner

Focus

Production Planning and Execution

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Version

4.1

Last Update

June 2022

MOTIVATION

The data entry requirements in the production planning exercises (PP 1 through PP 6) were minimized because much of the data already existed in the SAP system. This stored data, known as master data, simplifies the processing of business transactions. Examples for this, are material master data, bills of materials, and routings.

In this case study, we will create consumption values for a finished product to plan and process a complete manufacturing cycle.

PREREQUISITES

Before you use this case study, you should be familiar with navigation in the SAP system.

In order to successfully work through this case study, it is not necessary to have finished the PP exercises (PP 1 through PP 6). However, it is recommended.

NOTES

This case study uses the Global Bike data set.



Process Overview

Learning Objective Understand and perform a manufacturing process cycle.

Time 200 min

Scenario In order to experience a complete manufacturing process you will take on different roles within the Global Bike Group, e.g., production supervisor, shop floor worker and plant manager. Overall, you will be working in the Materials Management (MM) and the Production Planning and Execution (PP) departments.

Employees involved

- Jun Lee (Production Manager)
- Hiro Abe (Plant Manager)
- Lars Iseler (Shop Floor Worker 2)
- Susanne Castro (Goods Receipt Clerk)
- Sanjay Datar (Warehouse Employee)
- Michael Brauer (Shop Floor Worker 4)
- Jamie Shamblin (Controller)

Before you can start forecasting demand for your touring bike product group, changes in the material master record of the bikes need to be maintained.

Afterwards you will create a 12-month sales and operations plan (SOP) for your product group, receive the production relevant goods from the warehouse storage location and issue them to the production order.

To conclude the process, the production is confirmed as complete, the finished goods are received into the warehouse and costs assigned to the production order are analyzed.

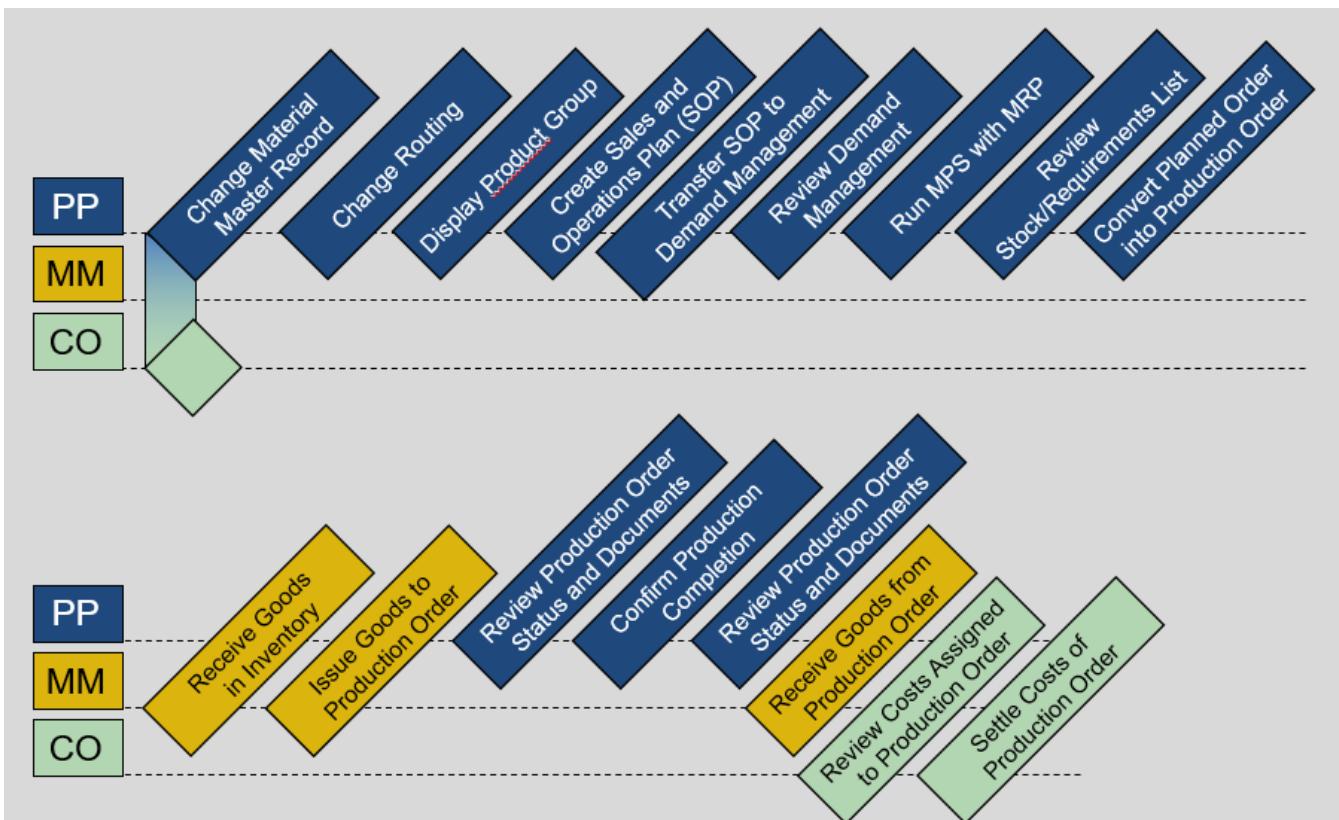


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Step 1: Change Material Master Record

Task Prepare a material master record for Demand Planning.

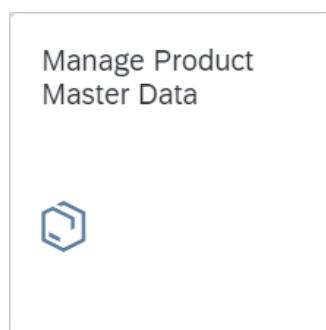
Time 20 min

Short Description In order to plan Global Bike's deluxe touring bikes (black, silver and red) prepare their material master records by adding planning-relevant data to these records.

Name (Position) Jun Lee (Production Manager)

To change the views of a material, use the *Manage Product Master Data* app in the *Production Planning and Execution* area.

Manage Product Master Data



In the search screen, enter **DXTR*###** (replace **###** with your three-digit number) in the search field.

DXTR*###

Press **Go**. Your various Deluxe Touring Bikes will be displayed.

Products (3)		Create	Copy	Mass Processing	Show in Hierarchy	Hide Draft Values	Delete	Import	Export
<input type="checkbox"/>	Image	Description / ID	Group / Type	GTIN	Product Category	Last Changed			
<input type="checkbox"/>		Deluxe Touring Bike (black) DXTR1100	Finished Bikes (BIKES) Finished Product (FERT)		Product	08/23/2021, 12:36:14 Chris Reich	>		
<input type="checkbox"/>		Deluxe Touring Bike (silver) DXTR2100	Finished Bikes (BIKES) Finished Product (FERT)		Product	08/23/2021, 12:36:58 Chris Reich	>		
<input type="checkbox"/>		Deluxe Touring Bike (red) DXTR3100	Finished Bikes (BIKES) Finished Product (FERT)		Product	08/23/2021, 12:37:40 Chris Reich	>		

Click the line of **Deluxe Touring Bike (red)** (DXTR3##) to open the details of the product.

Product Type: Finished Product (FERT) Base Unit of Measure: Each (EA) Revision Level:
 Product Category: Product GTIN:
 Product Group: Finished Bikes (BIKES) GTIN Category:

General Information Product Compliance Components Texts Sales Storage Warehouse Management

Basic Data

Division: Bicycles (BI) Created By: Chris Reich
 Old Product Number: Created On: 08/19/2021, 11:51:26
 Batch Management Required: No Last Changed By: Chris Reich
 Marked for Deletion: No Last Changed On: 08/23/2021, 12:37:40

Press **Edit** to switch to the edit mode.

Use the pull-down menu to select the *Plants* section. The window automatically scrolls to the correct position.

Plants

Attachments - Generic Object Services

General Information

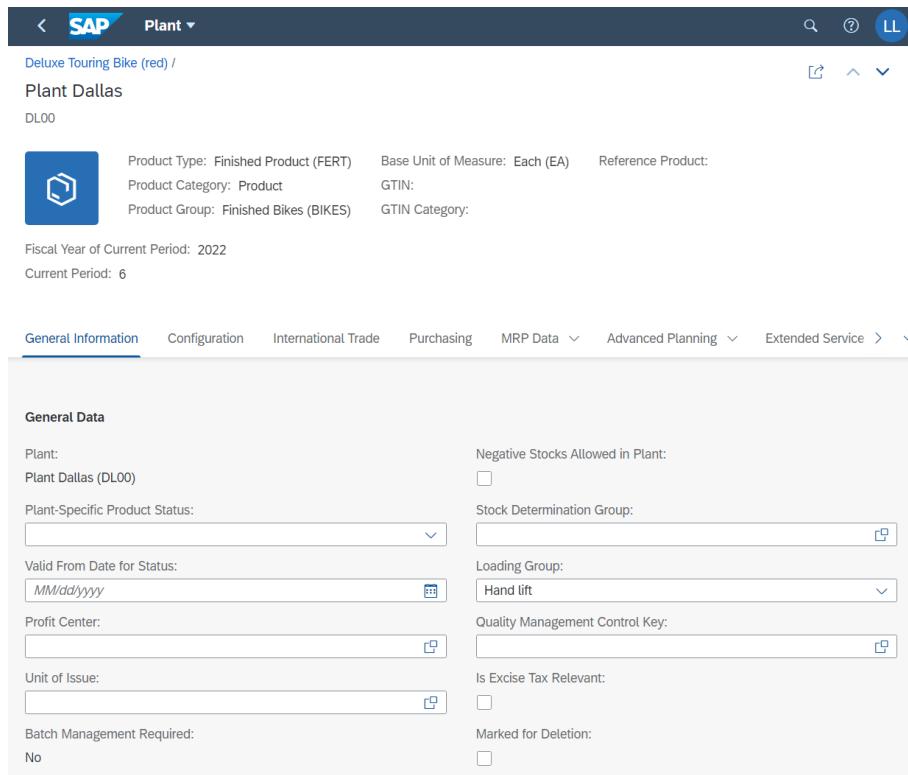
- Basic Data
- Descriptions
- Base Unit of Measure
- ...
- Extended Service Parts Planning
- Distribution Chains
- Plants**
- Valuation Areas
- Attachments - Document Management Services

You will see a list of all plants for which the product has been defined.

Plants

Plant	MRP Type	MRP Controller	Availability Check	Marked for Deletion	
DL00	M1	000	02	<input type="checkbox"/>	>
HD00	M1	000	02	<input type="checkbox"/>	>
HH00	M1	000	02	<input type="checkbox"/>	>
MI00	M1	000	02	<input type="checkbox"/>	>
SD00	M1	000	02	<input type="checkbox"/>	>

Press  at the end of the line with the DL00 plant to open the plant-specific product master data.



General Information

General Data

Plant: Plant Dallas (DL00)

Plant-Specific Product Status:

Valid From Date for Status: MM/dd/yyyy

Profit Center:

Unit of Issue:

Batch Management Required: No

Negative Stocks Allowed in Plant:

Stock Determination Group:

Loading Group: Hand lift

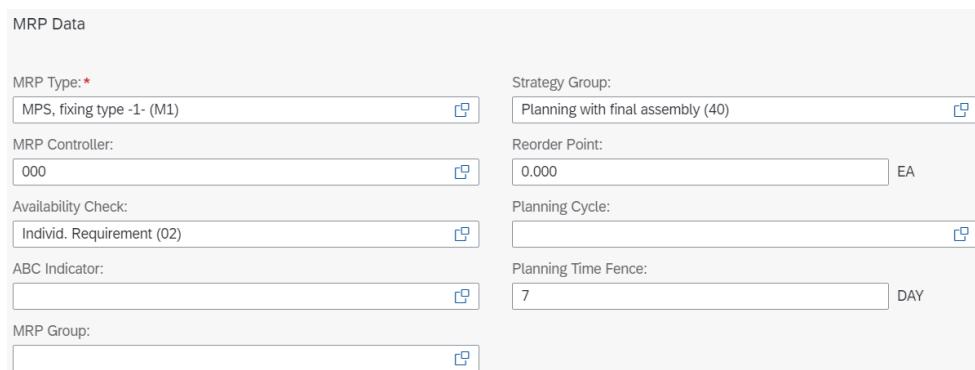
Quality Management Control Key:

Is Excise Tax Relevant:

Marked for Deletion:

Select the *MRP Data* area. The window automatically scrolls to the correct position. Enter **40** in the *Strategy Group* field (Planning with final assembly).

MRP Data
40



MRP Data

MRP Type: * MPS, fixing type -1- (M1)

MRP Controller: 000

Availability Check: Individ. Requirement (02)

ABC Indicator:

MRP Group:

Strategy Group: Planning with final assembly (40)

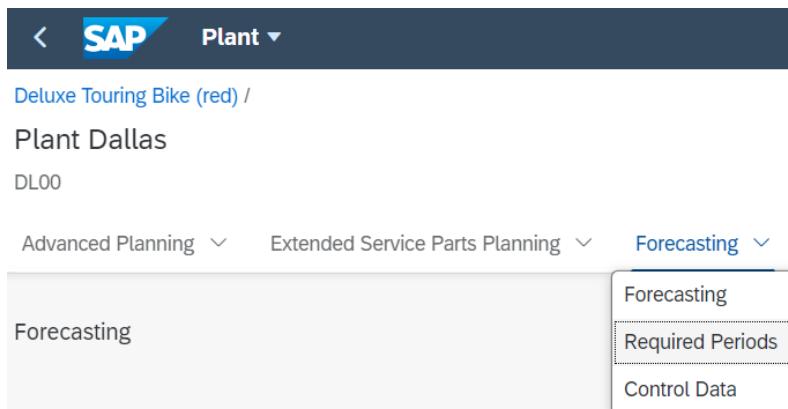
Reorder Point: 0.000 EA

Planning Cycle:

Planning Time Fence: 7 DAY

Select the *Forecasting ► Required Periods* area. If the tab is not visible, you can use the pull-down menu  again.

Forecasting → Required Periods



In the *Periods for Initialization* field enter **12**. Scroll down to the next area *Control data*.

12

In the *Control Data* area below, click on the value help icon of the *Optimization Level* field and select the optimization level **F - Fine** (high optimization level). Then select **Parameter Optimization**.

F

Parameter Optimization

Now assign the smoothing factors. Enter **0.20** for the *Alpha Factor* (base value), **0.10** for the *Beta Factor* (trend value), **0.30** for the *Gamma Factor* (seasonal index) and **0.30** for the *Delta Factor* (MAD).

0,20
0,10
0,30
0,30

Required Periods

Historical Periods:	120	Periods for Initialization:	12
Forecast Periods:	12	Fixed Periods:	0
Periods per Seasonal Cycle:	12		

Control Data

Initialization Indicator:	Initialization by system (X)	Parameter Optimization:	<input checked="" type="checkbox"/>
Model Selection Indicator:		Correction Factors:	<input type="checkbox"/>
Optimization Level:	Fine (high optimization level) (F)	Alpha Factor:	0.20
Tracking Limit:	4.000	Beta Factor:	0.10
Model Selection Procedure:	Analytical model selection procedure (2)	Gamma Factor:	0.30
Weighting Group:		Delta Factor:	0.30
Reset Forecast Model Automatically: <input type="checkbox"/>			

Select **Apply** to save the plant-specific data for plant DL00.

Click **Save** to save your changes to the red Deluxe Touring Bike.

The SAP system updates the master data record for material DXTR3### and displays a corresponding message.

Master data record saved.

Select  to return to the Manage Product Master Data screen.

Repeat the same procedure for the silver and black Deluxe Touring Bike. Start with the silver one (**DXTR2###**) and then change the black bike (**DXTR1###**).

DXTR2###
DXTR1###

Click  to return to the SAP Fiori Launchpad.



Step 2: Change Routing

Task Change a routing for a finished good.

Time 15 min

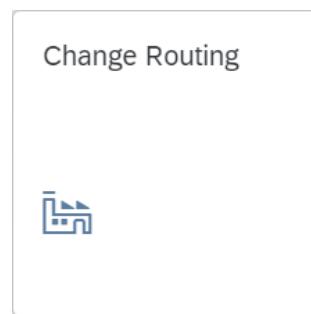
Short Description Change the routing for your red Deluxe Touring bike.

Name (Position) Jun Lee (Production Manager)

After the operational steps are laid out, the components must be allocated to the individual operations. This is a progressive process where each operation builds off the materials that entered production in the previous operations.

To change the routing, use the *Change Routing* app in the *Production Planning and Execution* area.

Change Routing



Enter the material number of your red Deluxe Touring bike (**DXTR3###**). In the *Plant* field, enter the Global Bike plant number in Dallas (**DL00**).

DXTR3###

DL00

SAP Change Routing: Initial Screen

◀ Routings Sequences Operations More ▾

Material:	DXTR3100
Plant:	DL00
Sales document:	
	Sales Document Item:
WBS Element:	
Group:	

Also make sure that the *Planner Group* field is empty. Then press Operations.

SAP Change Routing: Operation Overview

Group: 1804 Group Counter: 1
Material: DXTR3100 Deluxe Touring Bike (red)

Operation Overview

Op...	SOp	Work cen...	Plant	* C...	Standard...	Description	Lo...
<input type="checkbox"/> 0010		ASSY1000	DL00	ASSY		Material staging	<input type="checkbox"/>
<input type="checkbox"/> 0020		ASSY1000	DL00	ASSY		Attach seat to frame	<input type="checkbox"/>
<input type="checkbox"/> 0030		ASSY1000	DL00	ASSY		Attach handle bar assembly	<input type="checkbox"/>
<input type="checkbox"/> 0040		ASSY1000	DL00	ASSY		Attach derailleur gear assm. to wheel	<input type="checkbox"/>
<input type="checkbox"/> 0050		ASSY1000	DL00	ASSY		Attach front and rear wheels to chain	<input type="checkbox"/>
<input type="checkbox"/> 0060		ASSY1000	DL00	ASSY		Attach brakes	<input type="checkbox"/>
<input type="checkbox"/> 0070		ASSY1000	DL00	ASSY		Attach peddles	<input type="checkbox"/>
<input type="checkbox"/> 0080		INSP1000	DL00	ASSY		Test bike	<input type="checkbox"/>
<input type="checkbox"/> 0090		PACK1000	DL00	ASSY		Disassemble	<input type="checkbox"/>
<input type="checkbox"/> 0100		PACK1000	DL00	ASSY		Pack bike	<input type="checkbox"/>
<input type="checkbox"/> 0110		PACK1000	DL00	ASSY		Move to storage	<input type="checkbox"/>

Note A routing is defined by the routing group and the routing group counter. Moreover, the routing contains a reference to the material whose production is described by the routing.

Besides the standard sequence, it can also have parallel or alternative sequences. Alongside the standard values, the routing also contains time elements that are relevant for scheduling operations. Each operation in the routing may contain its own base quantity, to which these time elements may refer.

Select **Allocation** to display a list of all components. If this is not displayed, you will find the entry in the pull-down menu under **More ▶ Allocation**.

Select the rows Touring Frame-Red (**TRFR3##**) and Touring Seat Kit (**TRSK1##**).

TRFR3##
TRSK1##

Item Overview

Ph...	Le...	Path	It...	Component	Quantity
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0010 TRWA1100	2
<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	0	0020 TRFR3100	1
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0030 DGAM1100	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	0	0040 TRSK1100	1
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0050 TRHB1100	1
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0060 PEDL1100	1
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0070 CHAN1100	1
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0080 BRKT1100	1
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0090 WDOC1100	1
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0100 PCKG1100	1

Press **New Assignment**. In the popup that appears, enter **0020** for *Activity* and confirm the entry with .

0020

New Assignment X

Assign to

Activity: Sequence:

✓ Oper./act. list 🔍 ✖

Back in the *Material Component Overview* you can see that both components have now been assigned to **Activity 0020**.

Item Overview

Ph...	Le...	Path	It...	Component	Quantity	Sort String	Un...	It...	Ba...	Activity	Seq.
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0010 TRWA1100	2		EA	L			
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0020 TRFR3100	1		EA	L	<input type="checkbox"/>	0020	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0030 DGAM1100	1		EA	L			
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0040 TRSK1100	1		EA	L	<input type="checkbox"/>	0020	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0050 TRHB1100	1		EA	L			
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0060 PEDL1100	1		EA	L			
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0070 CHAN1100	1		EA	L			
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0080 BRKT1100	1		EA	L			
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0090 WDOC1100	1		EA	L			
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0100 PCKG1100	1		EA	L			

Repeat this process for all other components and assign them to the operations below.

Component	Operation
TRHB1### (touring handlebar)	0030
TRWA1### (touring aluminum wheel assembly)	0040
DGAM1### (derailleur gear assembly)	0040
CHAN1### (chain)	0050
BRKT1### (brake kit)	0060
PEDL1### (pedal assembly)	0070
WDOC1### (warranty document)	0100
PCKG1### (packaging)	0100

TRHB1### - 0030
TRWA1### - 0040
DGAM1### - 0040
CHAN1### - 0050
BRKT1### - 0060
PEDL1### - 0070
WDOC1### - 0100
PCKG1### - 0100

Item Overview

Ph...	Le...	Path	It...	Component	Quantity	Sort String	Un...	It...	Ba...	Activity	Seq.
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0010 TRWA1100	2		EA	L	<input type="checkbox"/>	0040	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0020 TRFR3100	1		EA	L	<input type="checkbox"/>	0020	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0030 DGAM1100	1		EA	L	<input type="checkbox"/>	0040	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0040 TRSK1100	1		EA	L	<input type="checkbox"/>	0020	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0050 TRHB1100	1		EA	L	<input type="checkbox"/>	0030	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0060 PEDL1100	1		EA	L	<input type="checkbox"/>	0070	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0070 CHAN1100	1		EA	L	<input type="checkbox"/>	0050	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0080 BRKT1100	1		EA	L	<input type="checkbox"/>	0060	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0090 WDOC1100	1		EA	L	<input type="checkbox"/>	0100	0
<input type="checkbox"/>	<input type="checkbox"/>	0	0	0100 PCKG1100	1		EA	L	<input type="checkbox"/>	0100	0

Apply your changes with **Save**. The system issues a message that the routing has been saved.

 Routing was saved with group 1804 and material DXTR3100.

Click  to return to the SAP Fiori Launchpad.



Step 3: Display Product Group

Task Display a product group.

Time 5 min

Short Description Display the product group (product family) for all your Deluxe Touring bikes.

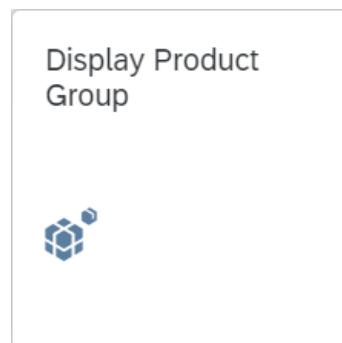
Name (Position) Jun Lee (Production Manager)

A product group (product family) supports high-level planning. This way, it is not necessary to delve into the minutia of creating planning forecasts for every material in the company.

Product group

To view the Deluxe Touring bike product group, use the *Display Product Group* app in the *Production Planning and Execution* area.

Display Product Group



In the *Display Product Group: Initial Screen*, in the *Product group* field find and select your group for deluxe touring bikes. In order to do so, press the search icon (or pressed F4), enter **###*** in the *Material description* field. Remember to replace **###** with your three-digit number, e.g., enter **009*** if your number is **009**. Enter **DL00** as *Plant*.

###*

DL00

Name of the product group (1)	
<input type="checkbox"/> Find product group via MRP controller <input type="checkbox"/> Find product group via description <input type="checkbox"/> Find product group via plant	
MRP Controller:	<input type="text"/>
Material description:	<input type="text" value="000*"/>
Language Key:	<input type="text" value="EN"/>
Product group:	<input type="text"/>
Plant:	<input type="text" value="DL00"/>
Maximum No. of Hits:	<input type="text" value="500"/>
<input type="button" value="Find"/> <input type="button" value="Multiple Selection"/> <input type="button" value="Close"/>	

Then, press Enter or click on **Find** to display the search results.

Name of the product group (1)

> Find product group via MRP controller Find product group via description Find product group via plant

MRP Controller	Material description	Language
<input type="radio"/>	000 PRODUCT GROUP BICYCLES	EN
<input checked="" type="radio"/>	000 PRODUCT GROUP DELUXE TOURING BICYCLE	EN
<input type="radio"/>	000 PRODUCT GROUP OFFROAD BICYCLES	EN
<input type="radio"/>	000 PRODUCT GROUP PROFESSIONAL TOURING	EN
<input type="radio"/>	000 PRODUCT GROUP TOURING	EN

5 Entries found

You will see a list of all your product groups, e.g., for mountain bikes or touring bikes. Select the group of Deluxe Touring Bikes (**PG-DXTR##**). Then click  to apply the selection.

PG-DXTR##

Now that the correct *Product group* (**PG-DXTR##**) is filled in, make sure that *Plant DL00* is entered.

DL00

< SAP Display Product Group: Initial Screen

More ▾

Product group:	PG-DXTR000
Plant:	DL00

Then, press Enter to display the product group details.

On this screen, you can see that this product group defines proportions for three different bikes: the black, silver and red deluxe touring bike. For the black bike, a share of 40% will be considered and 30% for the silver and the red bikes each.

<  Display Product Group: Members (Materials)

Next Level Hierarchy Graphic Versions... Master Data... Product Group Graphic More ▾

Product group: PG-DXTR000

000 Product Group Deluxe Touring Bicycle

Plant: DL00 : Plant Dallas

Base Unit: EA

Member number	Plant	Unit conv.	Aggr.fact.	Proportion	UoM	V	M	Fx	Short Text
DXTR1000	DL00	1	1	40	EA			<input type="checkbox"/>	Deluxe Touring Bike (black)
DXTR2000	DL00	1	1	30	EA			<input type="checkbox"/>	Deluxe Touring Bike (silver)
DXTR3000	DL00	1	1	30	EA			<input type="checkbox"/>	Deluxe Touring Bike (red)

Click  to return to the SAP Fiori Launchpad.



Step 4: Create Sales and Operations Plan (SOP)

Task Create a sales and operations plan for a product group.

Time 20 min

Short Description Create a 12-month sales and operations plan (SOP) for your product group.

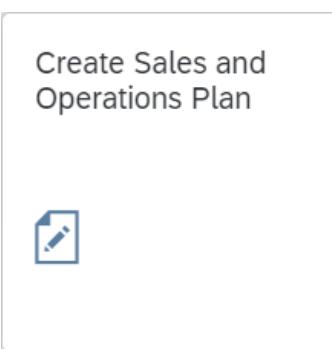
Name (Position) Jun Lee (Production Manager)

A sales and operations plan (SOP) is a planning tool that is used to consolidate data for forecasting future sales and production levels as well as the methods needed to meet those requirements. In this task, our SOP will be based on historical consumption values taken from a fixed period. This is in contrast to forecasting within a real-life system which would base the prediction on previous periods and their respective consumption.

Sales and operations plan

To create an SOP, use the *Create Sales and Operations Plan* app in the *Production Planning and Execution* area.

Create Sales and Operations Plan



Make sure that **Product group PG-DXTR###** and **Plant DL00** are entered.

PG-DXTR###
DL00

Then, select **Active version**.

Record the version number: _____

In the menu bar, select:

More ▶ Edit ▶ Create sales plan ▶ Forecast...

Select **Period intervals**, *Forecast* from **current period/current year** to **previous period/next year**, **Historic Data** from **06/2017** to **03/2021**, **Forecast execution Aut. model selection**. Compare your screen with the one below before clicking on **Historical...** to view the historical values.

Period intervals
current period/current year
previous period/next year
04/2017
03/2021
Aut. model selection

Forecast: Model Selection

Periods

Period intervals

Forecast	* Fr... : 06/2022	* To: 05/2023
Historical data	* Fr... : 04/2017	* To: 03/2021

No. of periods

No. of forecast periods:	0
No. of historical values:	60

Forecast execution

<input type="radio"/> Constant models	<input type="radio"/> Seasonal models
<input type="radio"/> Trend models	<input type="radio"/> Season, Trend Models
<input checked="" type="radio"/> Aut. model selection	<input type="radio"/> Historical

Forecast parameters

Profile:	SAP
----------	-----

[Forecasting](#) [Historical...](#) [Forecast profile...](#) [Version...](#) [X](#)

You will get an overview of the passed periods in the specified time range.

Forecast: Historical Values

Historical values

Period	Val. fld	Corr.value	F	C
M 03/2021	333	333	<input type="checkbox"/>	<input type="checkbox"/>
M 02/2021	340	340	<input type="checkbox"/>	<input type="checkbox"/>
M 01/2021	363	363	<input type="checkbox"/>	<input type="checkbox"/>
M 12/2020	310	310	<input type="checkbox"/>	<input type="checkbox"/>
M 11/2020	276	276	<input type="checkbox"/>	<input type="checkbox"/>
M 10/2020	283	283	<input type="checkbox"/>	<input type="checkbox"/>
M 09/2020	306	306	<input type="checkbox"/>	<input type="checkbox"/>
M 08/2020	283	283	<input type="checkbox"/>	<input type="checkbox"/>

[Forecasting](#) [Correct](#) [X](#)

Click on [Forecasting](#).

In the next Popup the system selected *Trend and season*. Click on [Forecasting](#) again.

In the next pop-up you can see that the system tested and found Seasonal and Trend tendencies in the past consumption data and has applied a Seasonal Trend Model.

Forecast: Results X

Basic value:	319.978	Trend value:	5
MAD:	17	Error total:	58

Forecast results

Period	Orig. HV	Corr. HV	Ex-post FV	Orig. FV	Corr. FV	Season	F	C
M 04/2021				317	317	0.97	<input type="checkbox"/>	<input type="checkbox"/>
M 05/2021				342	342	1.03	<input type="checkbox"/>	<input type="checkbox"/>
M 06/2021				291	291	0.87	<input type="checkbox"/>	<input type="checkbox"/>
M 07/2021				307	307	0.90	<input type="checkbox"/>	<input type="checkbox"/>
M 08/2021				344	344	0.99	<input type="checkbox"/>	<input type="checkbox"/>
M 09/2021				383	383	1.09	<input type="checkbox"/>	<input type="checkbox"/>
M 10/2021				347	347	0.97	<input type="checkbox"/>	<input type="checkbox"/>

No forecast error messages exist

✓ Forecasting User exit

Press , the sales forecast has been transferred to the SOP.

Look at the planning table. Note that your values may differ from the screenshot.

Change Rough-Cut Plan 🔍

Characteristic More ▾

Product group:	PG-DXTR000	000 Product Group Deluxe Touring Bicycle
Plant:	DL00	
Version:	A00	Active

SOP: plan individual product group

Planning Table	Un	M 06/2022	M 07/2022	M 08/2022	M 09/2022	M 10/2022	M 11/2022
Sales	EA	346	364	407	452	408	395
Production	EA						
Stock level	EA	-346	-710	-1118	-1570	-1979	-2375
Target stock level	EA						
Range of Coverage							
Target days' supply							

As *Target day's supply* enter **5** for each forecasted period.

5

SOP: plan individual product group

Planning Table	Un	M 08/2022	M 09/2022	M 10/2022	M 11/2022	M 12/2022	M 01/2023
Sales	EA	407	452	408	395	459	505
Production	EA						
Stock level	EA	-1117	-1569	-1977	-2372	-2831	-3336
Target stock level	EA						
Range of Coverage							
Target days' supply		5	5	5	5	5	5

In a production plan, you plan the quantities you need to produce in order to meet your sales plan. The system then calculates stock levels and days' supply for each period on the basis of the sales and production quantities and any target data. There are several different planning strategies available, which differ in the production values and the stock levels proposed.

As the SOP is a high-level planning, discrete production values are not necessary. The SAP system calculates discrete numbers once the SOP is transferred to the Demand Management.

In the menu bar, select:

More ► Edit ► Create production plan ► Synchronous to sales

Note the change in the *Production* and in the *Stock* level rows. The production plan is created to match the sales forecast.

SOP: plan individual product group

Planning Table	Un	M 08/2022	M 09/2022	M 10/2022	M 11/2022	M 12/2022	M 01/2023
Sales	EA	407	452	408	395	459	505
Production	EA	407	452	408	395	459	505
Stock level	EA						
Target stock level	EA						
Range of Coverage							
Target days' supply		5	5	5	5	5	5

In the system menu, select

More ► Edit ► Create production plan ► Target day's supply

Note the impact on the production plan and stock levels. Production levels are generated to match the sales plus the amount needed to be put into stock to meet the target days' supply specifications.

Review the Planning Table (your numbers may be different).

SOP: plan individual product group

Planning Table	Un	M 08/2022	M 09/2022	M 10/2022	M 11/2022	M 12/2022	M 01/2023
Sales	EA	407	452	408	395	459	505
Production	EA	413	461	398	395	467	512
Stock level	EA	65	75	65	65	74	81
Target stock level	EA						
Range of Coverage		5	5	5	5	5	5
Target days' supply		5	5	5	5	5	5

Note Although the screen displays integer production values, the SAP system calculates with decimal precision. You can display the decimal places of a series by pressing F8. Then create the production plan.

Accept the SOP with **Save**. A system message appears and you return to the initial screen.

 Plan saved under version number A00

Click  to return to the SAP Fiori Launchpad.



Step 5: Transfer SOP to Demand Management

Task Transfer SOP to Demand Management.

Time 10 min

Short Description Transfer the Sales and Operations Plan to Demand Management.

Name (Position) Jun Lee (Production Manager)

Demand Management is the tool used to disaggregate planning data from high-level plans down to the detailed planning level. For this task, planning for the Deluxe Touring Product Group will be broken down into the individual components that belong to this group.

Demand Management

To transfer sales/rough planning to Demand Management, use the *Transfer Planning Data to Demand Management* app in *Production Planning and Execution* area.

Transfer Planning Data to Demand Management

Transfer SOP to
Demand Manage-...
Transfer the Sales a...



Enter *Product group PG-DXTR###*, *Plant DL00*, and the version saved in the previous task (**A00**).

PG-DXTR###
DL00
A00

Select **Prod.plan for mat. or PG members as proportion of PG** and **Active**. Then, deselect the **Invisible transfer** indicator to present the disaggregation results on another screen allowing the planner to modify the results before saving them manually to Demand Management.

Prod.plan for mat. or PG
members as prop. of PG
Active
Invisible transfer

SAP Transfer Planning Data to Demand Management

Transfer now More ▾

* Product group: PG-DXTR000
000 Product Group Deluxe Touring Bicycle

* Plant: DL00 Plant Dallas

Version: A00

Transfer strategy and period

Sales plan for material or PG members

Sales plan for mat. or PG members as proportion of PG

Production plan for material or PG members

Prod.plan for mat. or PG members as proportion of PG

From: 06/26/2022 To: []

Invisible transfer

Independent requirement specifications

Requirements type: []

Version: []

Active

Select **Transfer now** and examine the Planned Independent Requirements generated for **DXTR1###**.

SAP Plnd Ind. Reqmts: Planning Table

Compare Delete History More ▾

Planning start: 06/26/2022 Planning End:

Table Items Schedule Lines

Material MRP ... V A BU Reqmnt Segment M 06/2022 M 07/2022 M 08/2022 M 09/2022 M 10/2022

DXTR1000 00 AG EA 161 146 165 184 159

Then click on **Save** to save the demand for the DXTR1###.

After saving, the system jumps to the independent requirement of the next material (DXTR2###). Now examine the independent requirement generated for DXTR2###.

Material MRP ... V A BU Reqmnt Segment M 06/2022 M 07/2022 M 08/2022 M 09/2022 M 10/2022

DXTR2000 DL00 AG EA 121 110 124 138 119

Continue with **Save**. Finally, examine the planned independent requirement of material DXTR3###.



Material	MRP...	V	A	BU	Reqmnt Segment	M 06/2022	M 07/2022	M 08/2022	M 09/2022	M 10/2022
DXTR3000	00	AG	<input checked="" type="checkbox"/>	EA		121	110	124	138	119

Also save this requirement with **Save**.

Note DXTR1### makes up 40%, DXTR2### makes up 30% and DXTR3### another 30% of the production plan created in your Sales and Operations Plan.

You will automatically return to the initial screen. The system also provides you with a message that the requirement has been saved. You can also see this in the other materials in advance.

 Requirement saved

Click  to return to the SAP Fiori Launchpad.

Step 6: Review Demand Management

Task Review the requirements for a product group.

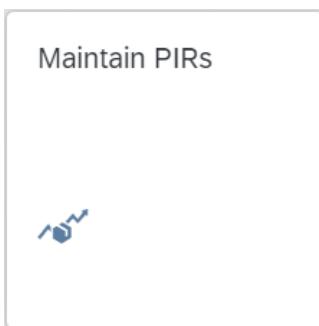
Time 10 min

Short Description Review the requirements for the product group to ensure that there are production requirements for the individual production items.

Name (Position) Hiro Abe (Plant Manager)

To view planned requirements, use the *Maintain PIRs* app in *Production Planning and Execution* area.

Maintain PIRs



A welcome message is displayed informing you that you do not yet belong to any area of responsibility. Confirm this with **OK**. You will be forwarded automatically.

The *My Area of Responsibility* screen appears with a list of existing plants. Set your responsibility for the plant **DL00**.

DL00

Plant / MRP Controller Combinations (7)				
<input type="checkbox"/> Plant	Plant Name	MRP Controller	MRP Controller Name	AOR Status
<input type="checkbox"/>	0001	001	PERSON 1	
<input type="checkbox"/>	0003	001	PERSON 1	
<input type="checkbox"/>	DL00	000	DL MRP Controller	
<input type="checkbox"/>	HD00	000	HD MRP Controller	

Then click to return. In the *Maintain PIRs* screen expand the search by pressing .

Material	Plant	Reach	Accuracy - Current Period	Accuracy - Last Week	Version Active	Last Modified Date
DGRB2000	Plant Dallas (DL00)	0 Months	100 %	0 %	Yes	09/03/2021 >
DGRW2000	Plant Dallas (DL00)	1 Months	100 %	0 %	Yes	09/16/2021 >
DXTR1000	Plant Dallas (DL00)	11 Months	99999 %	0 %	Yes	09/13/2021 >

The plant in Dallas (DL00) is already preselected. Now enter **DXTR*###** as the *search term* and change the *Version Active* field to **No** and select **Yes**.

DXTR*###
No
yes

Material: DXTR*110

Plant: Plant Dallas (DL00)

MRP Area:

Accuracy: Current Period:

Last Modified Date:

Period Indicator:

Reach:

Version Active:

Yes (selected)

No

Yes

Go

Press **Go** to run the search with the new criteria. You will now be shown your three Deluxe Touring Bikes.

Material	Plant	Reach	Accuracy - Current Period	Accuracy - Last Week	Version Active	Last Modified Date
DXTR1000	Plant Dallas (DL00)	11 Months	99999 %	0 %	Yes	06/26/2022 >
DXTR2000	Plant Dallas (DL00)	11 Months	99999 %	0 %	Yes	06/26/2022 >
DXTR3000	Plant Dallas (DL00)	11 Months	99999 %	0 %	Yes	06/26/2022 >

Select all three lines and click **Edit (3)**.

View planned independent demands for the Deluxe Touring Bike product group for all 3 materials.

Material (Plant / MRP Area / Version / ReqType)	Version is Ac...	ReqPlan	UoM	M06.2022	M07.2022	M08.2022	M09.2022	M10.2022	M11.2022	M12.2022	M01.2023	M02.2023	M03.2023	M04.2023	M05.2023
DXTR1000 (DL00 / DL00 / AG / VSF)	Yes	Yes	EA	161	140	105	184	159	158	187	206	184	174	177	190
DXTR2000 (DL00 / DL00 / AG / VSF)	Yes	Yes	EA	121	110	124	138	119	119	140	154	138	131	133	143
DXTR3000 (DL00 / DL00 / AG / VSF)	Yes	Yes	EA	121	110	124	138	119	119	140	154	138	131	133	143

Click  to return to the SAP Fiori Launchpad.

Step 7: Run MPS with MRP

Task Run Master Production Scheduling (MPS).

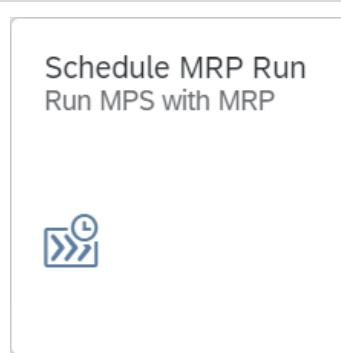
Time 10 min

Short Description Run Master Production Scheduling (MPS) to generate a series of planned orders that satisfy the requirements from SOP and demand management. Concurrently with MPS, the MRP materials will be processed leading to the generation of planned orders for dependent requirements that have been created by the BOM explosion process.

Name (Position) Jun Lee (Production Manager)

To start Master Production Scheduling, use the *Schedule MRP Run - Run MPS with MRP* app in the *Production Planning and Execution* area.

Schedule MRP Run



Enter your *Material* **DXTR3###**, and as *Plant* **DL00**.

DXTR3###
DL00

The control parameters can be adopted and should be filled in by the system as follows:

- *Processing Key:* **NETCH** (Net-Change in Total Horizon)
- *Create Purchase Req.:* **2** (Purchase requisition in opening period)
- *SA Deliv. Sched. Lines:* **3** (Schedule lines)
- *Create MRP List:* **1** (MRP list)
- *Planning mode:* **1** (Adapt planning data (normal mode))
- *Scheduling:* **1** (Determination of Basic Date for Planned)

NETCH
2
3
1
1
1

Then, select **Display material list**.

Display material list

Press Enter. A warning message will appear asking you to check input parameters. Press Enter to confirm and bypass the warning message.

Note In MRP, a net requirements calculation is executed in the planning run to determine whether a material shortage exists for a certain material. In addition, stock and fixed receipts that currently exist (for example, purchase orders, production orders, fixed purchase requisitions and planned orders) are compared with the safety stock and requirements. The result of this comparison is the quantity available for planning.

If the quantity available for planning is lower than zero, a material shortage exists. MRP reacts to material shortages by creating new procurement proposals (purchase requisitions and planned orders). The suggested procurement quantity results from the lot-sizing procedure that is set in the material master.

As soon as the planning run is completed, a result overview is displayed. Check the planning details of the result overview.

SAP Single-Item, Multi-Level	
Materials	More ▾
Statistics	
Materials planned	17
Materials with New Exceptions	17
Materials with Termination MRP List	
Parameters	
MRP Area	DL00
Plnt	DL00
Processing Key	NETCH
Create Purchase Requisition	2
SA Schedule Line	3
Create MRP List	1
Planning Mode	1
Scheduling	1

Scroll down further, there you will see a detailed listing of all materials considered.

Ranking List of Materials with Highest CPU Times (in ms)						
Material	Runtime	Read	Net Calc.	MRP Area	Plnt	Update
	BOM	LdTmeSched				
DXTR3000	9,868	993	579	DL00	DL00	
	411	0	1,206			
BRKT1000	1,353	8	1,233	DL00	DL00	
	0	0	36			
BOLT1000	421	2	15	DL00	DL00	
	0	0	402			
TRWA1000	285	2	11	DL00	DL00	
	140	0	131			
TRWH1000	77	2	10	DL00	DL00	
	0	0	64			
TRTR1000	60	2	10	DL00	DL00	
	0	0	47			
LWSH1000	59	2	9	DL00	DL00	
	0	0	47			
PEDL1000	56	2	21	DL00	DL00	
	0	0	32			
HXNT1000	54	2	9	DL00	DL00	
	0	0	42			
CHAN1000	51	2	16	DL00	DL00	
	0	0	32			

Click  to return to the SAP Fiori Launchpad.



Step 8: Review Stock/Requirements List

Task Review the Stock/Requirements List.

Time 10 min

Short Description Review the Stock/Requirements List for your deluxe touring bike.

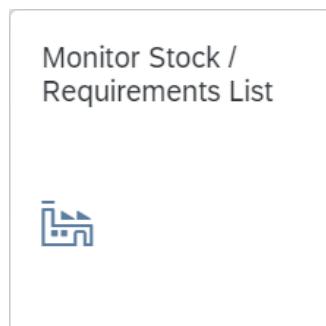
Name (Position) Lars Iseler (Shop Floor Worker 2)

The Stock/Requirements List is a list which dynamically changes whenever a transaction occurs using the given material. Display and review the Stock/Requirements List for all materials of the red deluxe touring bike on hand and the demand that exists against these products. The report shows that there is no stock and therefore nothing is available for use at this time.

Stock/Requirements List

To display the stock/requirements list, use the *Monitor Stock/Requirements List* app in the *Production Planning and Execution* area.

Monitor Stock/Requirements List



On the *Individual access* tab, enter *Material DXTR3###* and *Plant DL00*.

DXTR3###
DL00

Click on **Continue** to display the associated stock/requirements list.

Stock/Requirements List: Initial Screen

More ▾

Individual access Collective access

* Material:
 Description:
 MRP Area:
 Plant: Plant Dallas

With filter:

Currently, the system lists all entries as single rows.

Material: <input type="text" value="DXTR3000"/>	Description: <input type="text" value="Deluxe Touring Bike (red)"/>	MRP Area: <input type="text" value="DL00"/> Plant Dallas	Ex. manuf.: <input type="text"/>		
Plant: <input type="text" value="DL00"/>	MRP type: <input type="text" value="M1"/>	Material type: <input type="text" value="FERT"/>	Unit: <input type="text" value="EA"/>		
Date	GR	ST On	On		
Vendor	Cust.				
A... Date	MRP e... MRP element data	Rescheduling... E...	Receipt/Reqmt	Available Qty	Pro...
06/26/2022 Stock				121-	0
06/01/2022 IndReq	VSF			121-	
07/01/2022 IndReq	VSF			110-	231-
07/03/2022 ----> End of Planning Tim...					
07/03/2022 PldOrd 000000001/STCK	06/01/2022 30			121	110- 0001
07/03/2022 PldOrd 000000002/STCK				110	0 0001
08/01/2022 PldOrd 000000003/STCK				124	124 0001
08/01/2022 IndReq VSF				124-	0
09/01/2022 PldOrd 000000004/STCK				138	138 0001
09/01/2022 IndReq VSF				138-	0
10/01/2022 PldOrd 000000005/STCK				119	119 0001
10/01/2022 IndReq VSF				119-	0
11/01/2022 PldOrd 000000006/STCK				119	119 0001
11/01/2022 IndReq VSF				119-	0
12/01/2022 PldOrd 000000007/STCK				140	140 0001
12/01/2022 IndReq VSF				140-	0
01/01/2023 PldOrd 000000008/STCK				154	154 0001
01/01/2023 IndReq VSF				154-	0
02/01/2023 PldOrd 000000009/STCK				138	138 0001
02/01/2023 IndReq VSF				138-	0
03/01/2023 PldOrd 000000010/STCK				131	131 0001
03/01/2023 IndReq VSF				131-	0

Choose (Switch to Period Totals). This will allow you to see the planned independent requirements, planned receipts, and ATP quantities based on time - days, weeks, or months.

Days	Weeks	Months				
Date	GR	ST On	Page	1 / 1		
Stock				0	0	26.0
06/01/22	121-	0	0	121-	0	33.0
07/01/22	110-	0	0	231-	0	3.0
07/03/22 End of Planning Tim...	0	0	231	0	231	0.0
08/01/22	124-	0	124	0	124	0.0
09/01/22	138-	0	138	0	138	0.0
10/01/22	119-	0	119	0	119	0.0
11/01/22	119-	0	119	0	119	0.0
12/01/22	140-	0	140	0	140	0.0
01/01/23	154-	0	154	0	154	0.0
02/01/23	138-	0	138	0	138	0.0
03/01/23	131-	0	131	0	131	0.0
04/01/23	133-	0	133	0	133	0.0
05/01/23	143-	0	143	0	143	0.0

Select to go back to the individual rows.

To view the details of the first planned order (PldOrd), select (Element Details).

Additional Data for MRP Element X

Plnd Order: <input type="text" value="0000000001"/> Make-to-stock	Order End Date: <input type="text" value="07/03/2022"/>	GR pr.time: <input type="text" value="0"/>
Order Qty.: <input type="text" value="121"/> EA	Order Start: <input type="text" value="06/29/2022"/>	Proc. Type: <input type="text" value="E"/>
Scrap: <input type="text" value="0"/>	Opening Date: <input type="text" value="06/28/2022"/>	Order Type: <input type="text" value="LA"/>
Exception: <input type="text" value="30"/> = Plan process according to schedule (06/01/22)		

Select  to display the pegged requirements.

Plnd order 000000001/STCK		Deluxe Touring Bike (red)	
Material	DXTR3000	Plant	Plant Dallas
MRP Area	DL00	Receipt Date	07/03/2022
Plant	DL00	PO Quantity	121 EA
Receipt Date	07/03/2022	Quantity Without Source	0 EA

You can see that this planned order is to fulfill our Safety Stock and the first planned independent requirement that was created when we disaggregated our SOP.

Click to return to the SAP Fiori Launchpad.



Step 9: Convert Planned Order into Production Order

Task Convert a planned order into a production order.

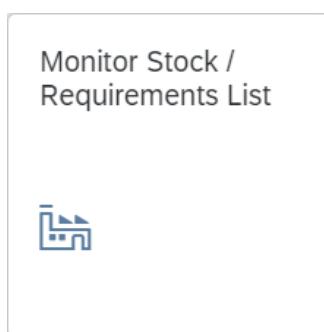
Time 10 min

Short Description Convert a planned order generated in the MPS/MRP run to a production order. The stock requirements list displays the suggested planned orders from the MPS run.

Name (Position) Lars Iseler (Shop Floor Worker 2)

To convert planned orders into production orders, use the SAP Fiori app *Monitor Stock / Requirements List* in the *Production Planning and Execution* area.

Monitor Stock / Requirements List



Enter Material **DXTR3###**, Plant **DL00**, and click on **Continue**

DXTR3###
DL00

	Material: <input type="text" value="DXTR3000"/>
Description: <input type="text" value="Deluxe Touring Bike (red)"/>	
MRP Area: <input type="text" value="DL00"/>	Plant Dallas
Plant: <input type="text" value="DL00"/>	Ex. manuf.: <input type="text"/>
	MRP type: <input type="text" value="M1"/> Material type: <input type="text" value="FERT"/> Unit: <input type="text" value="EA"/> <input type="text"/>

Choose  at the beginning of the **third** planned order. A popup opens with details about the order.

Additional Data for MRP Element

Plnd Order:	<input type="text" value="0000000003"/>	Make-to-stock	Order End Date:	<input type="text" value="08/01/2022"/>	GR pr.time:	<input type="text" value="0"/>
Order Qty.:	<input type="text" value="124"/>	EA	Order Start:	<input type="text" value="07/28/2022"/>	Proc. Type:	<input type="text" value="E"/>
Scrap:	<input type="text" value="0"/>		Opening Date:	<input type="text" value="07/27/2022"/>	Order Type:	<input type="text" value="LA"/>

The planned order should now be converted into a production order. To do this, press [-> Prod.Ord.](#). The system creates a temporary production order, identified by the generic order number, and releases it automatically.

Order: %0000000001

Material: DXTR3000 Deluxe Touring Bike (red)

Status: REL MACM SETC

General Assignment Goods Receipt Control Dates/Quantities Master Data Long Text Administration Items Fast Ex

Quantities

* Total Qty: 124 EA Scrap Portion: 0.00 %

Delivered: 0 Short/Exc. Rcpt: 0

Total quantity

Note At this point, please note down the total quantity in your production order. You will need it later when confirming your order.

Determine the status of your order by clicking on .

Status Business processes

Syst. Status

X	Stat...	Text
<input checked="" type="checkbox"/>	REL	Released
<input checked="" type="checkbox"/>	MACM	Material committed
<input checked="" type="checkbox"/>	SETC	Settlement rule created

Note When you converted the planned order to a production order, scheduling took place, an availability check was automatically carried out and a reservation was placed on the materials specified within the bill of materials.

Click on to go back to the *Production order Create: Header* screen and save your production order with .

Note When you save the production order the system will automatically calculate the planned costs for the production order.

The system assigns a unique number to the production order. Please make a note of the production order number.

Order number 1000000 saved

Production order number

You will automatically return to the requirements/inventory list. Select to refresh the list. The planned order **PldOrd** that you had selected is now available as a production order **PrdOrd**.

Material: **DXTR3000**

Description: **Deluxe Touring Bike (red)**

MRP Area: **DL00** Plant Dallas

Plant: **DL00** MRP type: **M1** Material type: **FERT**

SAP Fiori Launchpad

A...	Date	MRP e...	MRP element data	Rescheduling...	E...	Receipt/Reqmt
	06/26/2022	Stock				
	06/01/2022	IndReq	VSF			
	07/01/2022	IndReq	VSF			
	07/03/2022	----->	End of Planning Tim...			
	07/03/2022	PldOrd	0000000001/STCK			
	07/03/2022	PldOrd	0000000002/STCK			
	08/01/2022	PrdOrd	000001000000/PP01/Re	06/01/2022	<u>10</u>	

Click to return to the SAP Fiori Launchpad.

Step 10: Receive Goods in Inventory

Task Receive goods in the Dallas plant.

Time 10 min

Short Description Receive enough goods in the Dallas storage locations to start the production process.

Name (Position) Susanne Castro (Goods Receipt Clerk)

Usually, at this point the purchasing department in Dallas would take over and procure enough raw materials from vendors to fill the inventory so that the production process can be initiated. In this case study, we are bypassing this procurement process (this process is explained in the MM unit in detail). Because the inventory for all DXTR3### components is empty, we will assume that we find 500 pieces each in the storage location.

Goods receipt

To receive goods in the inventory, use the app *Post Goods Receipt without Reference* in the *Production Planning and Execution* area.

Post Goods Receipt without Reference



The document and posting date are already defaulted with the current date and can thus be transferred.

Goods Receipt without Reference

General Information	Items	Attachments
Printing: <input type="button" value="No print"/> Note: <input type="text"/> Document Date: <input type="text" value="06/26/2022"/> Delivery Note: <input type="text"/> Posting Date: <input type="text" value="06/26/2022"/>		

Directly below you will find the *Item* section. The table there is ready for input and offers **item 01** in advance.

Items

Items

					Copy	Delete	Create
<input type="checkbox"/>	Item	Material	Quantity / Unit	Plant	Storage Location		
<input type="checkbox"/>	01		<input type="button" value="0.000"/>				
	Stock Type:						

Click on the line of **item 01**, you will switch to a separate input window.

Enter your *Material TRWA1###* and press Enter.

TRWA1###
500
EA

Now you can enter the *Quantity 500* with *Unit EA*.

DL00
SF00

Next, choose **Plant DL00**. When choosing the *Storage Location* your storage for semi-finished goods is will be proposed. You can check the status directly in the selection screen.

Select Storage Location

Search	
--------	-----------------------------------------------------------------------------------

Standard

Semi-Fin. Goods	Unrestricted... 0.000 EA
SF00	Quality 0.000 EA
	Blocked 0.000 EA

Choose the *Storage Location SF00*. The *Stock Type* is automatically set to **Unrestricted-Use**, and the *Special Stocks* is **None**.

Unrestricted-Use
None

Item 01

Material	Storage Location / Stock Type	Additional Information
Material:*	TRWA1000 	
Quantity / Unit:*	500.000	EA 
Storage Location / Stock Type		
Plant:*	Plant Dallas 	
Storage Location:*	Semi-Fin. Goods 	
Stock Type:	Unrestricted-Use 	
Special Stocks:	None 	
Supplier:		

Click on **Apply and New** to accept your entries and, at the same time, to be able to specify a new item. The system confirms the transfer of the item.

Item 01 is applied.

Now repeat the procedure for the other components of the bike DXTR3###.

Material	Quantity	Unit	Plant	SLoc
TRFR3### (Touring-Frame-Red)	500	EA	DL00	RM00

TRFR3###

DGAM1### (Derailleur Gear Assembly)	500	EA	DL00	RM00
TRSK1### (Touring Seat Kit)	500	EA	DL00	RM00
TRHB1### (Touring Handlebar)	500	EA	DL00	RM00
PEDL1### (Pedal Assembly)	500	EA	DL00	RM00
CHAN1### (Chain)	500	EA	DL00	RM00
BRKT1### (Brake Kit)	500	EA	DL00	RM00
WDOC1### (Warranty Document)	500	EA	DL00	RM00
PCKG1### (Packaging)	500	EA	DL00	RM00

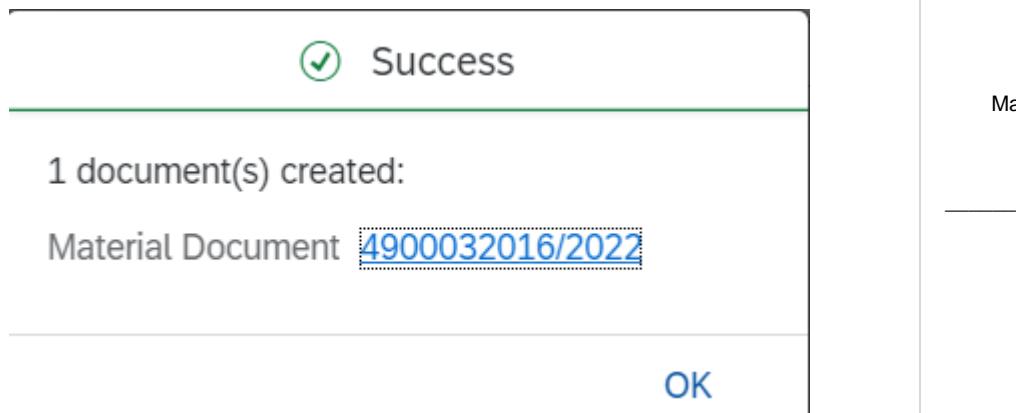
DGAM1###
TRSK1###
TRHB1###
PEDL1###
CHAN1###
BRKT1###
WDOC1###
PCKG1###

As soon as you create the last item, confirm it with **Apply** to automatically return to the goods receipt posting. There you will see all created items.

Items						
	Item	Material	Quantity / Unit	Plant	Storage Location	Stock Type
01	TRWA1000		500.000	EA	Plant Dallas	Semi-Fin. Goods
02	TRFR3000		500.000	EA	Plant Dallas	Raw Materials
03	DGAM1000		500.000	EA	Plant Dallas	Raw Materials
04	TRSK1000		500.000	EA	Plant Dallas	Raw Materials
05	TRHB1000		500.000	EA	Plant Dallas	Raw Materials
06	PEDL1000		500.000	EA	Plant Dallas	Raw Materials
07	CHAN1000		500.000	EA	Plant Dallas	Raw Materials
08	BRKT1000		500.000	EA	Plant Dallas	Raw Materials
09	WDOC1000		500.000	EA	Plant Dallas	Raw Materials
10	PCKG1000		500.000	EA	Plant Dallas	Raw Materials

Note If you have forgotten an item, you can add further items by clicking on **Create**. Furthermore, you can also correct entries if necessary.

Secure your goods receipt with **Post**. The SAP system will assign a unique number to the goods receipt and issue an associated message.



Confirm the success message with **OK**.

Click  to return to the SAP Fiori Launchpad.



Step 11: Issue Goods to Production Order

Task Issue goods to a production order.

Time 10 min

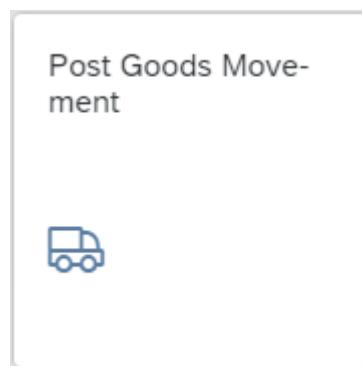
Short Description Now that all necessary components are on stock issue them to your production order in precise quantity.

Name (Position) Sanjay Datar (Warehouse Employee)

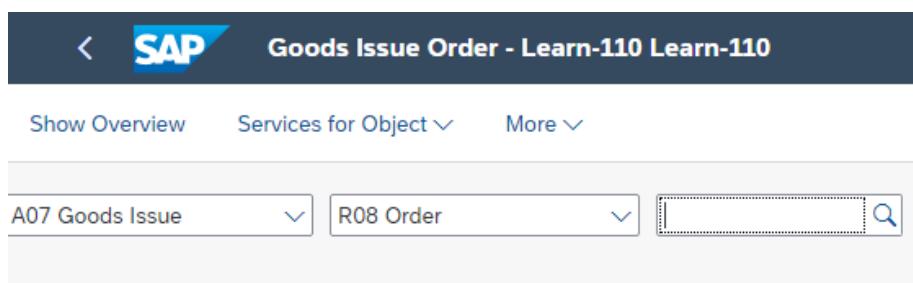
The goods issue process is fully defined in the production order, BOM, and routing. The quantities and the materials are reserved for this specific production order, they will be withdrawn with reference to the order number and will be used to assign actual costs to the production order for managerial accounting purposes.

To issue goods to a production order, use the app *Post Goods Movement* in the *Production Planning and Execution* area.

Post Goods Movement



Make sure that **Goods Issue** and **Order** are selected in the drop-down menus.



The *Document Date* as well as the *Posting Date* should be already set to the current date. The *Movement Type* should be set to 261 (GI for order).

Enter your noted **production order** number.

Alternatively, click the value help icon in the order field. In the Order Number popup (1), use the icon on the far right to display a list of all tabs. Select the tab *Process Orders using the Info System*. On this tab, enter your material **DXTR3###** in the *Material* field and click . Select your order and accept it with .

Process Orders using
the Info System
DXTR3###

Once you have found or entered your production order number, press to load the order details.

Note Goods issues posting for the required components is another milestone in the production order process. The following functions are performed when a GI for the components of the production order is posted:

- Storage-location-specific update of the stock and consumption fields
- Reduction of the reservation (for planned withdrawal)
- Update of costs for unplanned withdrawals
- Determination of actual costs (valuation) and order update
- Consumption update
- Generation of material and accounting documents (FI and CO documents)
- Creation of material document.
- Creation of accounting document
- Creation of controlling document
- Printing of GI document

The goods issues posting is controlled through a movement type (261), to which each posting refers. This can take place manually or automatically.

An itemized list will appear. It lists all the materials and their respective quantities that need to be issued to your order. You need to tell the system what Storage Location the materials should be withdrawn from. For the Touring Aluminum Wheel Assembly (TRWA1###), enter **SF00** (Semi-finished goods) and for all other materials **RM00** (Raw materials) in the SLoc fields. Before pressing Enter compare your screen with the one shown below. Notice that your quantity could be different.

SF00

RM00

OK

Flag each item with **OK**. If you can't flag the first item please close the detail view with a click on  under the line item list.

Line	Mat. Short Text	Wa...	OK	Qty in UnE	EUn	S...	SLoc
1	Touring Frame-Red	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
2	Derailleur Gear Assembly	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
3	Touring Seat Kit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
4	Pedal Assembly	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
5	Touring Handle Bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
6	Chain	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
7	Brake Kit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
8	Warranty Document	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
9	Packaging	<input type="checkbox"/>	<input checked="" type="checkbox"/>	124	EA		RM00
10	Touring Aluminum Wheel Assembly	<input type="checkbox"/>	<input checked="" type="checkbox"/>	248	EA		SF00

Click on  and record the material document number.

 Material document 4900032017 posted [View Details](#)

Material Document Number

Click  to return to the SAP Fiori Launchpad.



Step 12: Review Production Order Status

Task Review the production order status.

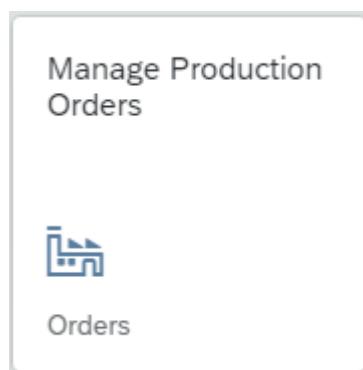
Time 10 min

Short Description Review the current production order with respect to the status of the order.

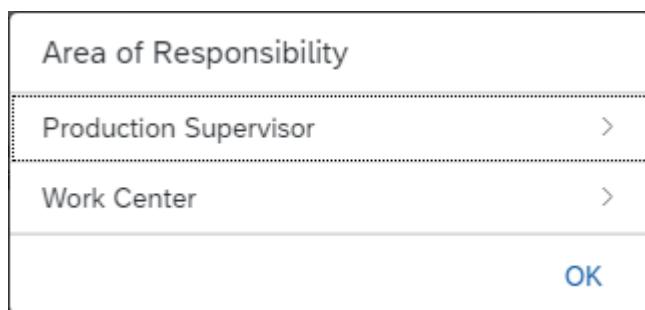
Name (Position) Michael Brauer (Shop Floor Worker 4)

To display the production order, use the app *Manage Production Orders* in the *Production Planning and Execution* area.

Manage Production Orders - Orders



When you open the app for the first time, you will see a welcome message telling you to select an area of responsibility. Confirm this with **OK**, another popup will appear.



Choose *Production Supervisor*. No Plant is currently assigned. Click on **Select** and choose the **Plant Dallas**. Confirm your selection with **OK**.

Area of Responsibility (Supervisor)

Add Plant and Production Supervisor +

Plant Dallas (DL00)

DL Production Scheduler (000) X

OK Cancel

Confirm your selection with  now click on *Work Center*.

Click on  again and choose the **Work Center DL Assembly (ASSY1000)**, **DL Inspection (INSP1000)** and **DL Packaging (PACK1000)** from your Plant Dallas and click on .

Area of Responsibility (Work Center)

Add Plant and Work Center +

Plant Dallas (DL00)

DL Assembly (ASSY1000) X

Plant Dallas (DL00)

DL Inspection (INSP1000) X

Plant Dallas (DL00)

DL Packaging (PACK1000) X

OK Cancel

Confirm your selection with  and press  to leave the selection or the area of Responsibility.

You will receive an overview of all existing orders. Depending on the progress of your course, there may be several production orders with different processing statuses.

The screenshot shows a table of production orders. The columns include Order, Material, Open Quantity, Status, Start, End, Progress of Operation, and Issues. One order is highlighted: 10000000, Material: DXTR3000 (Deluxe GPS Bike Computer Silver White), Status: Delivered, Start: Tue, Sep 21, 2021 04:06, End: Wed, Sep 22, 2021 03:50, Progress: Move to transport (0000) 1 of 2, Issues: 0. Another order is shown: 10000001, Material: DXTR3000 (Deluxe Touring Bike (red)), Status: Delivered, Start: Wed, Sep 21, 2021 03:53, End: Wed, Sep 21, 2021 04:12, Progress: Move to storage (0110) 100 of 100, Issues: 0.

In the field *Material* enter your material **DXTR3###** and choose  to display your order.

DXTR3###

The screenshot shows a table of production orders. The columns include Order, Material, Open Quantity, Status, Start, End, Progress of Operation, and Issues. One order is highlighted: 10000000, Material: DXTR3000 (Deluxe Touring Bike (red)), Status: Released, Start: Sun, Oct 24, 2021 14:09, End: Sat, Oct 30, 2021 17:00, Progress: Material imaging (0020) 1 of 1, Issues: 0.

The tabular overview already provides you with various information about your order, such as the current status and the current processing status.

For further information select the entry. You will be forwarded to the details of the production order.

The screenshot shows the details of production order 10000000. The top bar shows the SAP logo and 'Manage Production Orders'. The order number is 10000000. The status is **Released**. There are buttons for 'Edit Order' and 'Display Configuration'.

Material: DXTR3000 (Deluxe Touring Bike (red)) **Status:** Released **Person Responsible:** DL MRP Controller **Quantity:** 124 EA

Below the main details, there are tabs for **Issues**, **Order Information**, **Components**, **Order Schedule**, **Confirmation**, and **Inspection**. The **Order Information** tab is selected.

Order Information

General	Dates/Times	Quantities
Production Plant: DL00	Scheduled Start: Sat, Jul 23, 2022, 10:12	Total Quantity: 124
MRP Area: DL00 Plant Dallas	Scheduled End: Sat, Jul 30, 2022, 17:00	Confirmed Yield: 0
Planning Plant: DL00 Plant Dallas	Planned Start: Fri, Jul 22, 2022, 00:00	Confirmed Scrap: 0
Production Version: 0001 Generated Version 0001	Planned End: Mon, Aug 1, 2022, 00:00	GR Quantity: 0
MRP Controller: 000	Scheduled Release: Fri, Jul 22, 2022	Open Quantity: 124
Processing: Sequential		

Click on the status **Released** for more information. You can see that your production order is precosted and a settlement rule has been created.

1000000

Material: **DXTR3000** (Deluxe Touring Bike (red))

Status: **Released**

Status Overview

- Released
- Precosted
- Settlement Rule Created

Issues Order Information Components Order Schedule Confirmation Inspection

Now click on the *Components* tab. The screen scrolls to the corresponding position.

Components

Material	Quantity	Coverage	Backflus h	Component Scrap	Requirement Date/Time	Storage Location
TRFR3000 Touring Frame-Red	Total Quantity: 124 EA Open Quantity: 0 EA	124 EA	No	0.00 %	Sat, Jul 23, 2022 11:45	
TRSK1000 Touring Seat Kit	Total Quantity: 124 EA Open Quantity: 0 EA	124 EA	No	0.00 %	Sat, Jul 23, 2022 11:45	
TRHB1000 Touring Handle Bar	Total Quantity: 124 EA Open Quantity: 0 EA	124 EA	No	0.00 %	Sat, Jul 23, 2022 14:05	
DGAM1000 Derailleur Gear Assembly	Total Quantity: 124 EA Open Quantity: 0 EA	124 EA	No	0.00 %	Sun, Jul 24, 2022 09:44	

In the last task, you posted the goods issue for the production order. In the production order, you now see that there are no more open quantities for this order.

Click  to return to the SAP Fiori Launchpad.

Step 13: Confirm Production Completion

Task Confirm production order completion.

Time 10 min

Short Description Confirm completion for your production order.

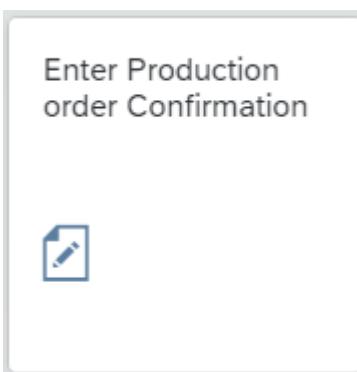
Name (Position) Michael Brauer (Shop Floor Worker 4)

When the assembly has been completed for the current production order, we need to confirm that certain procedures and activities have been completed and record the quantity of the finished product that has been manufactured.

Production completion

To confirm production completion, use the app *Enter Production order Confirmation* in the *Production Planning and Execution* area.

Enter Production order Confirmation



Enter your **production order** number and click on **Continue** or Enter.

Production order number

Alternatively, use the Input-Help-Symbol  and switch in the popup with  to the tab *production orders by material and routing*, enter your material number **DXTR3##** there and search for your order.

Check if **Final Confirmation** and **Clear Open Reserv.** is already checked in the *Confirmation Type* section.

Final Confirm.
Clear Reservation
Amount

Order: 1000000 Status: REL PRC GMPS MACM SETC

Material: DXTR3000

Material Descr.: Deluxe Touring Bike (red)

Confirmation Type

Partial confirmation: <input type="radio"/>	Clear Open Reserv.: <input checked="" type="checkbox"/>
Final Confirmation: <input checked="" type="radio"/>	
Autom. Final Conf.: <input type="radio"/>	

Furthermore, in the *Actual Data* tab, the quantity of bicycles that you should produce for this order should already be entered in the *Yield Quantity* field. Change the *Start Execution* to **1 hour earlier** than the pre-set time.

1 hour earlier

Actual Data

Curr. t/b Conf.	Unit	Confirmed to Date	Planned t/b Conf. Unit
Yield Quantity: 124	EA	0	124 EA
Scrap Quantity:		0	0
Rework Quantity:		0	
Reason for Var.:			
Personnel no.: <input type="text"/>			
To Be Confirmed		Confirmed to Date	Planned t/b Conf.
Start Execution:	06/26/2022 08:30:04		07/23/2022
Finish Execut.:	06/26/2022 09:30:04		07/30/2022
Posting Date:	06/26/2022		
Confirm. Text: <input type="text"/>		Long Text exists: <input type="checkbox"/>	

Save your entries with **Save**. You will get a confirmation from the system.

 Confirmation of order 1000000 saved

Note When the confirmation is saved, labor costs for the order are calculated automatically. The quantity yield also establishes the parameters for the goods receipt into Inventory.

Click  to return to the SAP Fiori Launchpad.



Step 14: Review Production Order Status

Task Review the production order status.

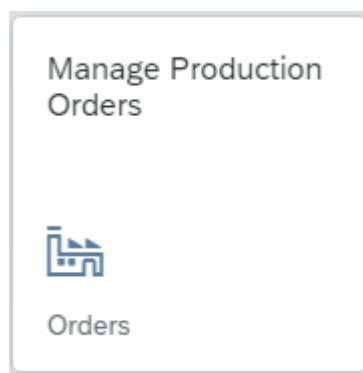
Zeit 10 Min.

Short Description Review the current production order with respect to the status of the order.

Name (Position) Michael Brauer (Shop Floor Worker 4)

To display the production order, use the app *Manage Production Orders* in the *Production Planning and Execution* area.

Manage Production Orders



In the field *Material* enter your material **DXTR3###** and choose **Go** to display your order.

DXTR3###

Order	Material	Open Quantity	Status	Start	End	Progress of Operation	Issues
1000000	DXTR3000	124 EA	Confirmed	Sun, Jun 26, 2022 08:30	Sun, Jun 26, 2022 09:30	Move to storage (0110)	124 of 124

As you can see, the status of your production order has changed from *Released* to *Confirmed*. Furthermore, the processing status is now at *Move to storage*.

For more information, select the entry, you will be redirected to the details of the production order. Click on the *Confirmation* tab to go to the related area.

Confirmation

Order Confirmations							
Confirmation	Confirmation Count	Reversed	Reversal	Reversed Count	Operation	Confirmed By	Confirmed
116	1	No	No		LEARN-400	Sun, Jun 26 09:30	>
Final Confirmation: No							
Quantity: 124 EA							
Yield: 124 EA							
Scrap: 0 EA							
Rework: 0 EA							

An order confirmation is now available. You can see that the complete quantity of your production order has been confirmed and that there is no scrap.

After the confirmation, the goods receipt now needs to take place to complete the order.



Click [SAP](#) to return to the SAP Fiori Launchpad.



Step 15: Receive Goods from Production Order

Task Post a goods receipt from production order.

Time 15 min

Short Description Post a goods receipt from your production order.

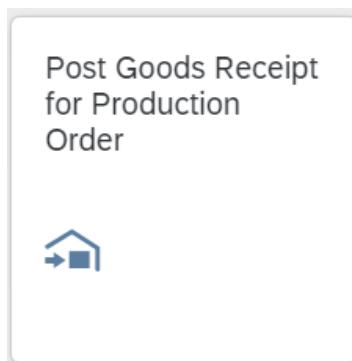
Name (Position) Susanne Castro (Goods Receipt Clerk)

Receive the completed products into finished goods inventory. Check the quantity proposed against the quantity specified in the production order and the quantity specified during confirmation. If there are any discrepancies, the system will decide if an error or warning message should be generated, depending upon the deviation identified.

Goods receipt

To post the goods receipt, use the app *Post goods receipt for production order*.

Post goods receipt for production order



Enter your noted **production order** and press Enter.

Production order

As an alternative use the Input-Help-Search and enter your material

DXTR3### and click . Then select your production order from the result list.

DXTR3###

Your production order is loaded and displayed.

Production Order: 1000000

General Information Items Attachments

Printing: No print Note: Document Date: 09/29/2022

Delivery Note: Posting Date: 09/29/2022

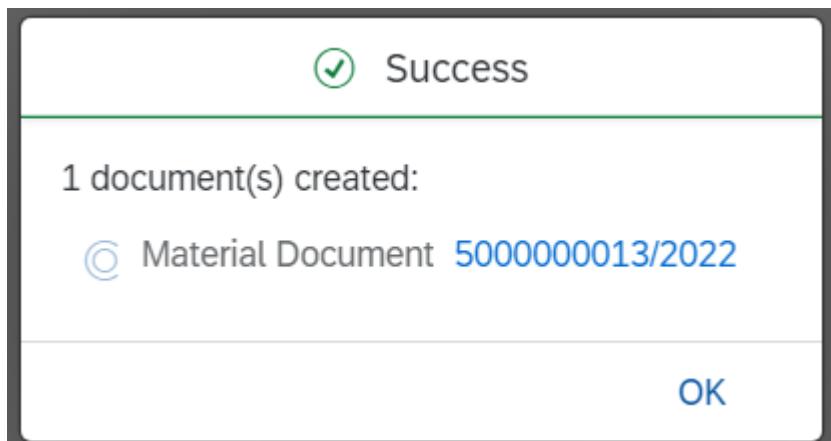
Items (1)

Material	Open Quantity	Delivered	Distribution	Plant	Storage Location	Stock Type
Deluxe Touring Bike (red) DXTR3000	124.000 EA	124.000 EA	+	Plant Dallas	FG00	Unrestricted Use

Add the storage location **FG00** for end products, all other settings can be accepted.

A screenshot of the SAP Fiori interface. At the top, there is a search bar and some navigation icons. Below the search bar, there is a table with columns: Material, Open Quantity, Delivered, Distribution, Plant, Storage Location, and Stock Type. One row is visible, showing 'Deluxe Touring Bike (red)' with an open quantity of '101.000 EA'. The 'Stock Type' is 'Finished Goods'. A blue button labeled 'Post' is located in the top right corner of the table area.

Save your goods receipt with **Post**. The SAP system will assign a unique number to the goods receipt and issue a corresponding message.



Material Document Number

Furthermore, this updates the current value of the material produced to the production order.

Confirm the success message with **OK**.

Click  to return to the SAP Fiori Launchpad.



Step 16: Review Costs Assigned to Production Order

Task View the corresponding costs assigned to your production order.

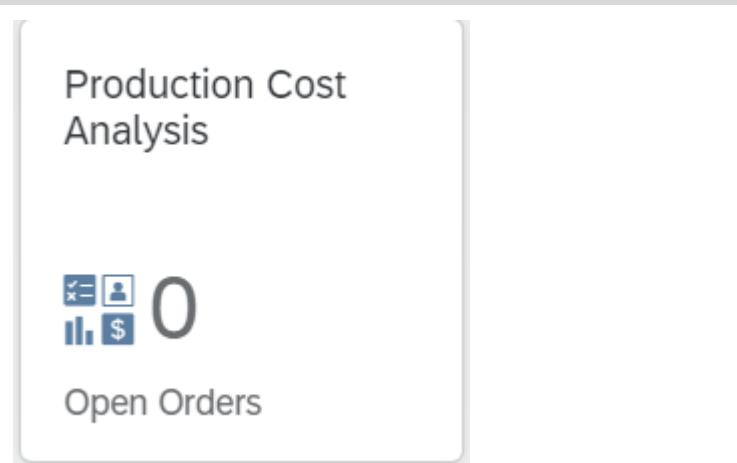
Zeit 5 Min.

Description Review all costs associated with your production order.

Name (Position) Jamie Shamblin (Controller)

To view the cost of a manufacturing job, use the *Production Cost Analysis* app.

Production Cost Analysis



In the *Material* field enter **DXTR3###** and change the *Order Status* from **Open** to **Closed**

DXTR3###

Closed

Click on **Go** to start the search. Your recently completed production order will be displayed.

Order Analysis		Cost Component Group					
Order List (1) Standard		Orders					
Exception Status	Order	Material	Tgt DR/Act DR Varc. ▾	Target Cost Debit	Actl Cost Debit	Total Actl Cost	Order Status
(1)	1000000	DXTR3000 (Deluxe Touring Bike ...)	-17,484.10 USD	108,067.65 USD	90,563.55 USD	-190.65 USD	Closed >
			-17,484.10 USD	108,067.65 USD	90,563.55 USD	-190.65 USD	

This overview lists the summed target and actual costs and shows any variances. Click on **>** at the end of the entry to open the cost details.

Order Cost Detail ▾

PP01: 1000000

Exception Status Order Balance
No Defined Exception Rule **-190.65 USD**

GENERAL INFORMATION COST DETAILS

Material: DXTR3000 (Deluxe Touring Bike (red))	Planned Quantity: 124 EA	From Period: 006/2022
Plan Category Production Order Standard Cost	Total Actual Quantity: 124 EA	To Period: 011/2022

COST DETAILS

Standard ▾ Target/Actual by G/L Account

G/L Account	Total Target Cost	Total Actl Cost	Tgt/Act CostVar	Actual Quantity	Origin
7520000 (Settle.)	-90,774.20 USD	-90,774.20 USD	0.00 USD	-124 EA	DL00/DXTR3000
8000000 (Labor)	3,089.25 USD	3,101.55 USD	12.30 USD	62.031 HR	NAPR1000/LABOR
8015000 (Material...)	17,496.40 USD	0.00 USD	-17,496.40 USD	0	NAPR1000
5001000 (RM Con...)	8,680.00 USD	8,680.00 USD	0.00 USD	124 EA	DL00/BRKT1000
5001000 (RM Con...)	1,240.00 USD	1,240.00 USD	0.00 USD	124 EA	DL00/CHAN1000
5001000 (RM Con...)	9,300.00 USD	9,300.00 USD	0.00 USD	124 EA	DL00/DGAM1000
5001000 (RM Con...)	434.00 USD	434.00 USD	0.00 USD	124 EA	DL00/PCKG1000
5001000 (RM Con...)	5,580.00 USD	5,580.00 USD	0.00 USD	124 EA	DL00/PEDL1000
5001000 (RM Con...)	24,800.00 USD	24,800.00 USD	0.00 USD	124 EA	DL00/TRFR3000
5001000 (RM Con...)	3,100.00 USD	3,100.00 USD	0.00 USD	124 EA	DL00/TRHB1000
	17,293.45 USD	-190.65 USD	-17,484.10 USD	1,302.031 *	

Now that the finished products have been received in the Inventory, the Manufacturing Output Settlement Variance has been added. How is this figure calculated by the system?

Click  to return to the SAP Fiori Launchpad.

Step 17: Settle Costs of Production Order

Task Settle costs of your production order.

Time 20 min

Short Description Settle the costs of your production order. The costs are temporarily captured in the production order and they need to be assigned to an appropriate cost object. Compare the actual costs to the planned costs to identify any deviations or potential problems in this regard.

Name (Position) Jamie Shamblin (Cost Accountant)

To settle costs of a production order, use the app *Run Actual Settlement - Order - Single* in the *Production Planning and Execution* area.

Run Actual Settlement - Order - Single



If you have to input the Controlling Area, enter **NA00**, and click on

NA00

Continue

Enter your **production order number**, alternatively search for it with your material DXTR3### in the Input-Help. In the *Parameters* section enter *Settlement- and posting period* as **current month** (e.g., 006 for June). Enter as *Fiscal Year* the **current year**. Make Sure that **Test Run** is checked in the *Processing Options* section.

Order number

current month

current year

Test Run

Controlling Area: NA00

* Order:

Parameters

* Settlement Period: <input type="text"/>	Posting period: <input type="text"/>
* Fiscal Year: <input type="text"/>	Asset Value Date: <input type="text"/>
* Processing Type: 1 Automatic	

Processing Options

Test Run

Check Trans. Data

Click on **Execute** to proceed. Confirm any occurring pop-ups with enter. You enter the screen *Actual Settlement: Order Basic list*.

Actual Settlement: Order Basic list

Selection

Selection Parameters	Value	Name
Order	1000000	Deluxe Touring Bike (red)
Period	006	
Posting Period	006	
Fiscal Year	2022	
Processing Type	1	Automatic
Posting Date	06/30/2022	
Controlling Area	NA00	Global Bike North America
Currency	USD	United States Dollar
Value Date	06/30/2022	

Processing Options

Selection Parameters	Value
Execution Type	Settlement Executed
Processing Mode	Test run

Processing completed with no errors

Statistics

Processing Category	Number
Settlement Executed	1
No Change	
Not Relevant	
Inappropriate Status	
Error	

Click on  to open the detail lists.

Detail list - Settled values

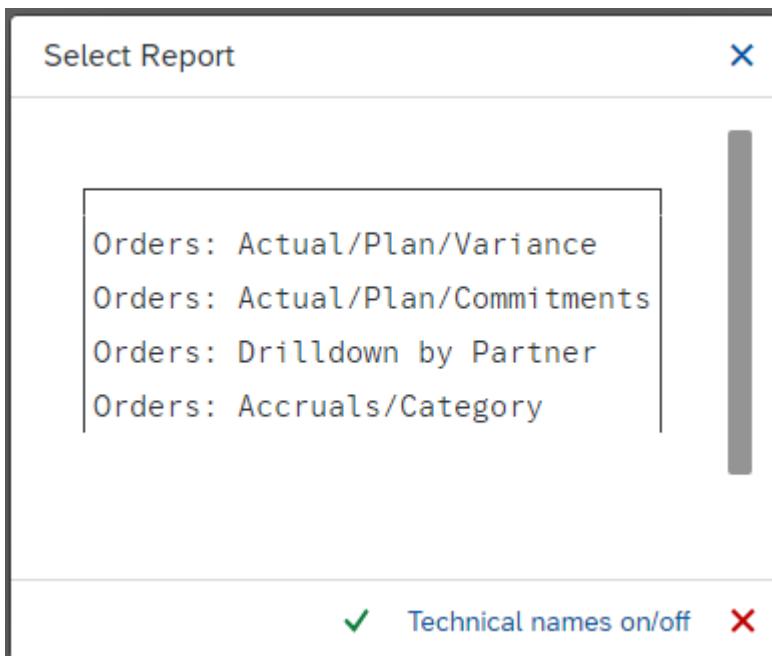
Senders	Short text: Sender	Receiver	Val/COArea Crcy	Additional information
ORD 1000000	Deluxe Touring Bike (red)	MAT DL00/DXTR3000	190.65-	190.65-

From the Menu bar choose:

Menu Bar

More ▶ Environment ▶ Report

The *Select Report* pop-up will appear.



Click on **Actual/Plan/Variance** and confirm your selection with . A corresponding report group is generated and displayed.

Actual/Plan/Variance

Orders: Actual/Plan/Variance		Date: 06/26/2022 16:41:43	Page: 2 / 2
Order/Group	1000000	000001000000	
Fiscal year	2022		
Period	1 - 6		

Cost Elements	Actual	Plan	Var.(Abs.)	Var. (%)
5001000 RM Consumpt Expense	59,458.00		59,458.00	
5004000 SF Consumpt Expense	28,024.00		28,024.00	
8000000 Labor	3,101.55		3,101.55	
8015000 Material Overhead				
* Costs	90,583.55		90,583.55	
7520000 Settle. Manuf Output	90,774.20-		90,774.20-	
* Deliveries to Stock	90,774.20-		90,774.20-	
** Balance	190.65-		190.65-	

The test run is now complete and the *actual settlement* should now be performed.

Click on to go back. Confirm the Message to leave the report with . Afterwards press two times to get back to the entry screen.

Deselect Test Run and again click on **Execute**. In contrast to the previous run, you can now see in the *Processing Options* area that this was an update run that was *completed with no errors*.

Processing Options

Selection Parameters	Value
Execution Type	<u>Settlement Executed</u>
Processing Mode	<u>Update run</u>
Processing completed with no errors	

Open the report **Actual/Plan/Variance** again by clicking on  first and then use the menu bar path **More ▶ Environment ▶ Report** and select the option **Actual/Plan/Variance**.

Actual/Plan/Variance

Orders: Actual/Plan/Variance		Date: 06/26/2022 16:42:52	Page: 2 / 2
Order/Group	1000000	0000001000000	
Fiscal year	2022		
Period	1 - 6		
<hr/>			
Cost Elements	Actual	Plan	Var.(Abs.)
5001000 RM Consumpt Expense	59,458.00		59,458.00
5004000 SF Consmpt Expense	28,024.00		28,024.00
8000000 Labor	3,101.55		3,101.55
8015000 Material Overhead			
* Costs	90,583.55		90,583.55
7520000 Settle. Manuf Output	190.65		190.65
* Settled Costs	190.65		190.65
7520000 Settle. Manuf Output	90,774.20-		90,774.20-
* Deliveries to Stock	90,774.20-		90,774.20-
** Balance			

You can see that the costs have now been settled.

Click  to return to the SAP Fiori Launchpad.

PP Challenge

Learning Objective Understand and perform an integrated manufacturing process.

Time 60 min

Motivation After you have successfully worked through the *Production Planning and Execution* case study you should be able to solve the following challenge on your own.

Scenario In this challenge you should create sales and operations plan (SOP) for the product group (product family) Mountain bikes. Take into consideration that the materials of the product group have to be assigned to the strategy group. Therefore, enter manually the following sales figures:

Period	Sales (volume)
Current month + 2	150
Current month + 3	175
Current month + 4	200
Current month + 5	85
Current month + 6	90
Current month + 7	115

In addition, you must post the correct goods for Material ORMN1### in the storage location in order to be able to produce and settle costs afterwards.

Task Information Since this task is based on the *Production Planning and Execution* case study you can use it as guidance. However, it is recommended that you solve it without any help in order to test your acquired knowledge.

