

BOM

SAP-IMG

SAP Production Planning Table

Demand Management

PBED Independent Requirements Data
PBIM Independent Requirements by Material

Repetitive Manufacturing

SAFK RS Header Master Data
S025 LIS -- Run Schedule Quantities
S026 LIS -- Material Usage
S028 LIS -- Reporting Point Statistics
CEZP Reporting Point Document Logs
CPZP Reporting Points - Periodic Totals

MRP Records

MDKP MRP Document Header Data
MDTB MRP Table Structure (no data)
PLSC Planning Scenario (Long-term Planning)
MDFD MRP Firming Dates
MDVM Planning File Entries
S094 LIS -- Stock/Requirements Analysis

Reservations

RESB Reservations/Dependent Requirements

Planned Orders

PLAF Planned Orders

Discrete Production

AFKO Order Header
AFPO Order Item Detail
AFVC Order Operations Detail
AFFL Order Sequence Details
AFFH Order PRT Assignment
AFBP Order Batch Print Requests
AFRU Order Completion Confirmations
AFFW Confirmations -- Goods Movements with Errors
AFRC Confirmations -- Incorrect Cost Calculations
AFRD Confirmations -- Defaults for Collective Confirmation
AFRH Confirmations -- Header Info for Confirmation Pool

AFRV Confirmation Pool
 AFWI Confirmations -- Subsequently Posted Goods Movements

Classification

KLAH Class Detail
 CABN Characteristic Detail
 AUSP Characteristic Values
 CAWN Characteristic Values
 CAWNT Characteristic Value Texts
 KSML Characteristic Allocation to Class
 KSSK Material Allocation to Class

SAP PP Transaction Codes

[Commonly Used Tcodes in PP Module Part 1](#)

[Commonly Used Tcodes in PP Module Part 2](#)

[Commonly Used Tcodes in PP Module Part 3](#)

Commonly Used Tcodes in PP Module Part 1

MATERIAL

CREATE-GENERAL	MM01	IMMEDIETELY
	MM11	SCHEDULE
CHANGE	MM02	IMMEDIETELY
	MM12	SCHEDULE
	MM13	ACTIVATE
FLAG FOR DELETION	MM06	IMMEDIETELY
	MM16	SCHEDULE
DISPLAY	MM03	DISPLAY CURRENT
	MM19	DISPLAY AT KEY DATE
DISPLAY CHANGES	MM04	ACTIVE CHANGES
	MM14	SCHEDULE CHANGES
	MM17	MASS MAINTENANCE
	MMAM	CHANGE MATERIAL TYPE
OTHER	MMBE	STOCK OVERVIEW
	MMPV	CLOSE PERIOD
	MMRV	ALLOW POSTING TO PREVIOUS PERIOD
	MM50	INSTANT MATERIAL VIEW
	MMSC	ENTER STORAGE LOCATIONS
	MM60	MATERIAL LIST
ARCHIVING (MATERIAL)	MM71	ARCHIVE/DELETE
	MM72	DISPLAY ARCHIVE

BILL OF MATERIAL (MATERIAL BOM)

	CS01	CREATE
	CS02	CHANGE
	CS03	DISPLAY
EXTRAS	CS28	ARCHIVING
	CS20	MASS CHANGES

EVALUATION/BOM	CS11	BOM MULTILEVEL
EXPLOSION/MATERIAL	CS12	STRUCTURE MULTILEVEL
BOM	CS13	SUMMURISED BOM
WORK CENTRES		
	CR01	CREATE
	CR02	CHANGE
	CR03	DISPLAY
	CA85	REPLACE
CAPACITY	CR11	CREATE
	CR12	CHANGE
	CR13	DISPLAY
HIERARCHY	CR21	CREATE
	CR22	CHANGE
	CR23	DISPLAY
LINE HIERARCHY	LDB1	CREATE
	LDB2	CHANGE
	LDB3	DISPLAY
REPORTING	CR60	W/C INFORMATION SYSTEM
	CR05	W/C LIST
	CR06	COST CENTRE ASSIGNMENT
	CR07	W/C CAPACITIES
	CR08	W/C HIERARCHY
WHERE USED	CA80	WORK CENTRE
	CR15	CAPACITY
	CR10	CHANGE DOCUMENTS
EXTRAS	CR09	STD. TEXTS TASK LIST
	CR41	ARCHIVING
ROUTING		
STAD. ROUTING	CA01	CREATE
	CA02	CHANGE
	CA03	DISPLAY
REF. OPERATION SETS	CA11	CREATE
	CA12	CHANGE
	CA13	DISPLAY
RATE ROUTING	CA21	CREATE
	CA22	CHANGE
	CA23	DISPLAY
REF. RATE ROUTING	CA31	CREATE
	CA32	CHANGE
	CA33	DISPLAY
EXTRAS	CA85	REPLACE W/C
MASS CHANGES	CA95	REPLACE REF. OP. SET
	CA75	REPLACE PRT
DELETE TASK LIST	CA99	WITH ARCHIVING
	CA98	W/O ARCHIVING
REPORTING	CA80	WORK CENTRE
WHERE USED LIST	CA90	REF. OP. SETS
	CA70	PRODUCTION RESORCE TOOLS
COST CENTRE		
	OKKP	MAINTAIN CONTROLLING AREA
	KS01	CREATE COST CENTRE
	KZS2	CREATE COSTING SHEET
	KA01	CREATE PRI. COST ELEMENT
	KA06	CREATE SEC. COST ELEMENT
	KL01	CREATE ACTIVITY TYPE
	KP26	ACTIVITY TYPE/PRICE PLANNING

Commonly Used Tcodes in PP Module Part 2

SALES AND OPERATIONS PLANNING

PRODUCT GROUP	MC84	CREATE
	MC86	CHANGE
	MC85	DISPLAY
GRAPHIC	MC91	PRODUCT GROUP
	MC92	OVERVIEW
PLANNING	MC81	CREATE
FOR PRODUCT GROUP	MC82	CHANGE
	MC83	DISPLAY
	MC75	TRANSFER PG TO PLANNING
FOR MATERIAL	MC87	CREATE
	MC88	CHANGE
	MC89	DISPLAY
	MC74	TRANSFER MATERIALS TO DM
	MC9K	MATERIAL AVAILABILITY
VERSION MANAGEMENT	MC78	COPY
	MC80	DELETE
FLEXIBLE PLANNING	MC93	CREATE
PLANNING	MC94	CHANGE
	MC95	DISPLAY
	MC9K	MATERIAL AVAILABILITY
TOOLS/PLANNING TYPE	MC8A	CREATE
MACRO	MC8B	CHANGE
	MC8C	DISPLAY
EVENT	MC64	CREATE
	MC65	CHANGE
	MC66	DISPLAY
ROUGH CUT PLANNING	MC35	CREATE
PROFILE	MC36	CHANGE
	MC37	DISPLAY
ENVIRONMENT	MC90	TRANSFER MATERIALS TO DM
ACTIVITY REQ.	KSP	TRANSFER TO COST CENTRE
	KSBL	COST CENTRE PLANNING REPORT
	KSOP	TRANSFER TO ACTIVITY BASED COSTING
	CPBL	PLANNING REPORT PROCESSES
	MC9C	REPORTING
SETTINGS	MC96	FORECAST PROFILE
DISSAGGRIGATION	MC76	BREAKDOWN PG PLAN
	MC77	DISPLAY PG PLAN
	MC75	TRANSFER PG TO PLANNING
	MC74	TRANSFER MATERIALS TO DM

FORECASTING

INDIVIDUAL FORECAST	MP30	EXECUTE
	MP31	CHANGE
	MP32	DISPLAY
TOTAL FORECAST	MP38	EXECUTE
	MP33	REPROCESS
	MP39	PRINT
	MPBT	EXECUTE BACKGROUND
	MPDR	PRINT BACKGROUND

DEMAND MANAGEMENT

PIR	MD61	CREATE
	MD62	CHANGE
	MD63	DISPLAY

	MD65	REQTS. FOR SCINARIO
	MD66	COPY SIMULATED DEPENDENT REQ.
	MD70	COPY TOTAL FORE CAST
EVALUATION	MD73	DISPLAY TOTAL REQ.
	MD79	EXCELL INTERFACE
	MD4C	ORDER REPORT
	MD72	CHARECTERISTICS PLANNING
CUSTOMER REQ.	MD81	CREATE
	MD82	CHANGE
	MD83	DISPLAY
REPETITIVE MANUFACTURING		
MASTER DATA	C223	PRODUCTION VERTION
PRODUCT COST PLANNING		
COSTING RUN	CKMATSEL	CREATE
SELECTION LIST	CKMATCON	Edit
	CK40N	EDIT COSTING RUN

Commonly Used Tcodes in PP Module Part 3

Material Requirement Planning

Menu Nodes

TransactionActivity

Master Data	MD25	Create planning calendar
	MD26	Change planning calendar
	MD27	Display planning calendar
	MDSA	Display BOM explosion number
	MDSP	Edit BOM explosion number
	MEQ1	Maintain quota file
	OPPP	Explode BOM by date
	MDUS	Display project assignment
	MDUP	Process project assignment
	MDL1	Create production lot
	MDL2	Change production lot
	MDL3	Display production lot
Planning	MD20	Create planning file entry
	MD21	Display planning file entry
	MDAB	Set up planning file entry in
background		
	MDRE	Check planning file entry
	MD01	Total planning online
	MDBT	Total planning in background
	MD03	Single-item, single-level planning
	MD02	Single-item, multi-level planning
	MD43	Interactive single-item planning
	MD50	Multi-level, make-to-order planning
	MD51	Multi-level project planning
	MF52	Display planning table
	MF50	Change planning table
	MF57	Planning table by MRP lists
	MF51	Planning table by production list
Evaluations	MD04	Stock/requirements list
	MD07	Collective access of stock/requirements
lis		
	MD05	MRP list
	MD06	Collective access of MRP lists
	MDLD	Print MRP list
	MD45	Planning result
	MD46	Collective access of planning result
	MD44	Planning situation for a material

	MD47	Planning situation for a product group
	MD48	Cross-plant planning situation
	MD4C	Order report
	MD09	Pegged requirements
	CO46	Order progress
Planned Order	MD11	Create planned order
	MD12	Change planned order
	MD13	Individual access of planned order
	MD16	Collective access of planned orders
	MD14	Individual conversion of planned order
into		
int	MD15	Collective conversion of planned orders
requisi	MDUM	Convert planned order into purchase
produ	CO40	Convert individual planned order into
int	CO41	Collective conversion of planned orders
into pr	CO48	Partial conversion of planned order
into	COR7	Individual conversion of planned order
int	COR7_PC	Collective conversion of planned orders
into pr	COR8	Partial conversion of planned order
	MDVP	Collective availability check
	MDAC	Execute action for planned order
LONG TERM PLANNING		
PALNNING SCENARIO	MS31	CREATE
	MS32	CHANGE
	MS33	DISPLAY
PLANNING RUN	MS01	ON LINE
	MSBT	SA BACKGROUND JOB
	MS02	SINGLE ITEM - MULTI LEVEL
	MS03	SINGLE ITEM - SINGLE LEVEL
	MS50	SINGLE ITEM - SALES ORDER
	MS51	SINGLE ITEM PLANNING, PROJECT
EVALUTIONS	MFSO	PLANNING TABLE
	MS05	MRP LIST MATERIAL
	MS06	MRP LIST COLLECTIVE DISPLAY
	MSLD	PRINT MRP LIST
	MS04	STOCK/REQUIREMENTS LIST
	MS07	STOCK/REQUIREMENT LIST COLLECTIVE
DISPLAY		
	MS44	PLANNING SITUATION MATERIAL
	MS47	SITUATION PRODUCT GROUP
MPS-MASTER SCHEDULE ITEMS		
TOTAL PLANNING	MD40	ON LINE
	MDBS	SA BACKGROUND JOB
	MD41	SINGLE ITEM - MULTI LEVEL
	MD42	SINGLE ITEM - SINGLE LEVEL
	MD43	SINGLE ITEM - INTERACTIVE
	MD50	SINGLE ITEM - SALES ORDER
	MD51	SINGLE ITEM PLANNING, PROJECT

*** EVALUTION IS SIMILAR TO MRP

PRODUCTION CONTROL		
ORDER - CREATE	CO01	WITH MATERIAL
	CO07	WITHOUT MATERIAL
	CO40	FROM PLANNED ORDER
	CO41	COLLECTIVE CONVERSION OF PLANNED ORDER
	CO08	FOR SALES ORDER
	CO10	FOR PROJECT
	CO02	CHANGE
	CO03	DISPLAY
CONTROL	MD04	STOCK/REQUIREMENTS LIST
	COHV	MASS PROCESSING
	COMAC	COLLECTIVE AVAILABILITY CHECK
	CO05N	COLLECTIVE RELEASE
	CO04N	PRINT
	CO09	AVAILABILITY OVER VIEW
GOODS MOVEMENT	MF65	STOCK TRANSFER FOR RESERVATION
MATERIAL STAGING	MF68	LOG
	MB1A	GOODS ISSUE
	MB31	GOODS RECEIPT
	COWBPACK	PACK MATERIAL
CONFIRMATION	CO1V	TIME TICKET
FOR OPERATION	CO14	DISPLAY
	CO13	CANCEL
	CO1L	REQUESTED CONFIRMATIONS
	CO1P	PREDEFINED PROCESSES
TOOLS-ARCHIVING	CO78	ORDER
	KOAA	SETTELMENT DOCUMENTS
CAPACITY PLANNING		
EVALUTION	CM01	LOAD
WORK CENTER VIEW	CM02	ORDERS
	CM03	POOL
	CM04	BACKLOG
	CM05	OVERLOAD
	CM07	VARIABLE
EXTENDED EVALUTION	CM50	WORK CENTER VIEW
	CM51	INDIVIDUAL CAPACITY VIEW
	CM52	ORDER VIEW
LEVELLING	CM21	PLANNING TABLE (GRAPHICAL)
WORK CENTER VIEW	CM22	PLANNING TABLE (TABULAR)
INDIVIDUAL CAPACITY	VCM27	PLANNING TABLE (GRAPHICAL)
	CM28	PLANNING TABLE (TABULAR)
ORDER VIEW	CM31	PLANNING TABLE (GRAPHICAL)
	CM32	PLANNING TABLE (TABULAR)
AVAILABLE CAPACITY	CR12	CHANGE
CAPACITY	CR13	DISPLAY
	OP4A	SHIFT SEQUENCE
	OP43	FACTORY CALENDER

Where shall we maintain number range for planned orders?

To maintain number range for planned order. Go to:

MM-->CBP-->NUMBER RANGE-->DEFINE NUMBER RANGE FOR PLANNING RUN.

Don't allow External Number Assignment.

SAP PP Master Data Tables

MASTER DATA

Engineering Change Management

AENR	Customer and priority
AEOI	Revision Numbers

Work Center

CRHD	Workcenter Header Data
CRCA	Workcenter Capacity Allocation
CRCO	Workcenter Cost Center Assignment
CRHH	Hierarchy Header
CRHS	Hierarchy Structure
CRTX	Workcenter Text
KAKO	Capacity Header
KAZY	Intervals of Capacity

Routing

PLPO	Routing Operation Details
PLKO	Routing Header Details
MAPL	Routing Link to Material
PLAB	Relationships - Standard Network
PLAS	Task List - Selection of Operations
PLMZ	Component Allocation
PLPH	CAPP Sub-operations
PLFH	PRT Allocation
PLWP	Maintenance Package Allocation
PLMK	Inspection Characteristics

Bill of Material

STPO	BOM Item Details
STPU	BOM Sub Items (designators)
STKO	BOM Header Details
MAST	BOM Group to Material
STZU	BOM History Records
STAS	BOM Item Selection
STPF	BOM Explosion Structure

Line Design

LDLH	Line Hierarchy Header
LDLP	Line Hierarchy Items
LDLT	Line Hierarchy Takt Times
LDLBC	Takts/No. Individual Capacities per Line
LDLBH	Line Balance Header

LDLBP Line Balance Items
LDLBT Line Hierarchy Entry and Exit Takts

PRT's

CRFH PRT Master Data
CRVD_A Link of PRT to Document
CRVD_B Link of Document to PRT
CRVE_A Assignment of PRT data to Equipment
CRVE_B Assignment of equipment to PRT data
CRVM_A Link of PRT data to Material
CRVM_B Link of Material to PRT data
CRVS_A Link of PRT Internal number to PRT External number
CRVS_B Link of PRT External number to PRT Internal number

Table of the Order Production Operation

Which is the table of the order production operation details? I need to get the activities for production order :

Setup, Labor, Machine, Confirmed and to confirm.

I can see look at this in CO02 / Operation Overview (f5) / Operation Details / Qty-Activities

That is probably the hardest information to piece together, I used 5 tables with multiple joins to get User Fields for operations in a production order. Maybe you can use something similar.

AFKO - this is for your basic production header info - order number, basic finish date etc

S022 - this is for your operation header details - operation number, Work centre etc if you are only after the header details such as setup time and execution time, you can probably stop here without going to AFVC or AUFV (you definitely need AUFK if you want order status)

AUFK - this is for your order master data - Order released flag, order complete flag, technically complete date, you'll need this to filter out closed orders

AFVC - this is to link to the detail table - however I used the control key field in it so I would know whether it was a MILE stone or GPP1 for confirmation's sake

AUFV - this is the user field table - you may want to replace this with whatever detail you are after

Delete all the automatic joins:

AFKO -> AUFK on:

AUFNR -> AUFNR

AFKO -> S022 on:
AUFNR -> AUFNR
PLNBEZ -> MATNR

AFKO -> AFVC on:
AUFPL -> AUFPL

S022 -> AFVC on:
WERKS -> WERKS
PLNFL -> PLNFL
VORNR -> VORNR

The join below is for user fields in operation detail, you will have to find your own relevant table, but I assume the two key fields will be the same??

AFVC -> AFVU on:
AUFPL -> AUFPL - Routing number of operations in the order APLZL -> APLZL -
General Counter for order

Tips by : Robert

MRP

Why used Planning tools like APO or I2?

APO and I2 are Finite PLANNING tools. When MRP runs with APO or I2 (or Red Pepper or Manugistics), it takes Capacity issues into consideration. MRP in SAP R/3 Core does not, it assumes infinite capacity available. (MRP only looks at material availability.)

However, SAP R/3 DOES do finite SCHEDULING, which is where the system 'dispatches' operations on a production order until it fills up the capacity available, then moves to the next time period and dispatches until that period is filled up. In SAP speak, that is called capacity leveling.

I believe APO should only be used in very large companies (billions) because of the amount of master data that must be maintained, and that data better be ACURATE, or you've wasted a heck of a lot of time. By the way, APO stands for Advanced Planner and Optimizer tool, obviously a German sort of name!

Differences between planning and scheduling, finite and infinite

R/3 does planning without consideration for capacity situations. So if MRP says you need 500 parts on 3/1/04, it schedules them all to be built at the same time, even though you can only do 100 at a time. Assume you have a fixed lot size of 100, you'll get 5 planned orders for 100 to start on the same day. This is "Infinite Planning". APO would recognize that constraint, and instead schedule out the 5 orders over time. The important part of that is that it also will schedule out the deliveries of the components for 5 different days. This is "Finite Planning".

Now, assume old fashion MRP. It schedules all 5 orders for the same day, and the buyers go out and get all of the components for the same day. Then the planner realizes he can't do all 5, and manually changes the schedule, and manually spreads out the 5 orders. The buyers will receive rescheduling notifications, but not until the scheduler does the manual rescheduling. You could call this "Infinite Scheduling", but that only means the same thing as Infinite Planning.

But, SAP has "Capacity Leveling". What that means is you run another program after MRP (CM27 and CM28), which can be run in batch mode overnight. (There is a ton of configuration and thinking that will be required to do this!). The capacity leveling program will recognize the constraint at the work center level, and fill up the first day, then re-schedule the next order to the next available capacity, then the next order searches for available capacity, and so on. This is called "Finite Scheduling". The problem with this is the opposite of Infinite Planning, which is it doesn't take Material availability into consideration! The system will re-schedule a production order without thinking about whether the materials will be available or not.

Finite Planning does Finite Scheduling at the same time. If there is no capacity available on the desired date, the system looks for when capacity IS available. Then it stops to see if Materials will also be available (usually based on the lead-time for those components). If there is a material problem, then the system figures out when the materials WILL be available, and then checks to see if capacity is available on THAT day, and if so, it blocks off capacity, and allocates the materials for that day.

[Do you have a SAP PP Question?](#)

Difference between MRP vs MPS

Explain the difference between MRP & MPS. Though both components give you the requirement list, what we gain out of MPS run rather than running MRP. What is the main idea behind this?

The following might help in explaining the difference between MPS and its counter part MRP.

Master Production Schedule (MPS) :

MPS operates within only one level of the BOM, While MRP can be utilized throughout

all levels of a material's BOM. If a MPS is run on a material, the necessary orders are planned at that level. Dependent requirements (if any) are placed on the next BOM level down, and then the process stops.

Main Idea : Master production scheduling (MPS) is a form of MRP that concentrates planning on the parts or products that have the great influence on company profits or which dominate the entire production process by taking critical resources. These items are marked as 'A' parts (MPS items) and are planned with extra attention. These items are selected for a separate MPS run that takes place before the MRP run. The MPS run is conducted without a BOM explosion so that the MRP controller can ensure that the Master schedule items (MSI) are correctly planned before the detailed MRP run takes place.

The master production schedule is a line on the master schedule grid that reflects the anticipated build schedule for those items assigned to the master scheduler. The master scheduler maintains this schedule, and in turn, it becomes a set of planning numbers that drives material requirements planning. It represents what the company plans to produce expressed in specific configurations, quantities, and dates. The master production schedule is not a sales item forecast that represents a statement of demand. The master production schedule must take into account the forecast, the production plan, and other important considerations such as backlog, availability of material, availability of capacity, and management policies and goals. Syn: master schedule.

Material Requirements Planning (MRP) :

A set of techniques that uses bill of material data, inventory data, and the master production schedule to calculate requirements for materials. It makes recommendations to release replenishment orders for material. Further, because it is time-phased, it makes recommendations to reschedule open orders when due dates and need dates are not in phase. Time-phased MRP begins with the items listed on the MPS and determines

(1) the quantity of all components and materials required to fabricate those items and

(2) the date that the components and material are required. Time-phased MRP is accomplished by exploding the bill of material, adjusting for inventory quantities on hand or on order, and offsetting the net requirements by the appropriate lead times.

MRP Interview Questions:

What is the need of mrp list if stock requirement list is already there?

The MRP list displays the result of the last planning run. Changes that have occurred between planning runs are ignored in the MRP list. In contrast to this, the system displays all changes in stock, receipts and issues, which have currently occurred, in the stock/requirements list.

Which tcode are used to run MRP?

- MD01 is generally used to run the MRP for all the materials in a plant normally just before go-live.
- MD02 is used to run MRP for materials which have a BOM i.e multi-level.
- MD03 is used to run MRP for materials which do not have a BOM i.e single level.

SAP Factory Calendar

Factory calendar contain company specific dates such as alternate working Saturdays, Plant shutdown etc.

You can create your company factory calendar via transaction code '**SCAL**'.

Assignment of the factory calendar by plant is done in transaction code '**SM30** - V_T001W'.

An example of a SAP application that uses the factory calendar is the SAP MRP modules.

Assuming that you have a specified an alternate working Saturday, MRP will postponed the planned orders to the next working day if it happened to falls on a non-working Saturday.

Best regards,

GR processing time in PP and MM

I have one material number that is procured externally but also produced inhouse. Now I have one problem with the GR processing time. As far as I can see the parameter on the material master on MRP2 view and Purchasing view is the same (MARC-WEBAZ). But in my case the GR processing time should be only used for goods receipts in MM (from purchase orders). This GR processing time must not be added to my lead time scheduled in production (when producing the material). How to solve this conflict?

We have a make to order enviroment, that means our production orders are created (and scheduled) directly from the sales order. The sales gets back a confirmed date and quantity from production order scheduling - and here this GR processing time is also added. Absolutely useless in this scenario, but MM needs this GR processing time for the external procurement of the material.

I'm hearing at least two problems here. Let me lumber through them as I see them.

#1 - We have a make to order environment, that means our production orders are created (and scheduled) directly from the sales order. The sales gets back a confirmed date and quantity from production order scheduling - and here this GR processing time is also added. Absolutely useless in this scenario, but MM needs this GR processing time for the external procurement of the material.

The GR processing time is quite legitimate, and needful. It represents the time it takes once a material is 'delivered', before it is usable. If that is instantaneous for you, then this field is blank. In fact if it is less than one day, the field should be blank. (MARC-WEBAZ) If you DO have to do testing or documentation or even just 'checking' to be sure the proper certificates have arrived with this material, then it's nice to have a day here for this. --- I may have overlooked one thing, if you are ONLY thinking of the FERT that your customer ordered, then maybe this field seems trivial. However, if your process requires that the FERT be purchased from some other company (or even supplied from within YOUR company), then there IS a receiving process that has to happen . . . it does take time to back a truck up, get a fork truck to unload it, the identification process, and then relocating the item to where it can be shipped to your customer.

Also, if you produce this item, then there are 'other' items that need to be 'built' into this item . . . THEY need the GR field, even if you produce the saleable item, it has to be 'received' from production into inventory for you to ship it out.

There is another field that should be considered. This is the procurement lead time. The time it takes for purchasing to "react" to the requirement. When the sales order is placed, the signal will come for 'purchasing' to occur (via MRP perhaps). Purchasing MAY take as long as a day to get that order to a vendor where the vendor can now react. This time is generally a 'standard' time for any given plant/purchasing org and is included using OMDT.

Thirdly, the vendor lead time has to be considered. This is what the field "Planned delivery time" (MARC-PLIFZ) is about. The vendor's turn around time - from the time they are notified of your intention (via a PO perhaps), until they can put it on your dock . . . that is what this field is about. And MRP knows the difference between this field and the others. Between the three fields mentioned, the 'purchased' item is properly planned for . . . except for the exceptions and the fact that this is all based on "norms" and averages which never seem to be exactly what is needed, but that's another discussion .

Next we think of the situation where the item requested is produced by us. In this case (as mentioned before), the GR is STILL legitimate - perhaps not needed if it takes less than a day for your company to receive material from production, inspect it, certify it, and load it up.

However, a "0" is a legitimate entry to this field.

What is also needed is a place to locate the time for "producing" this item. That is where there are options. One option in MRP 2 is the field "in-house production" (MARC-DZEIT). This is sometimes useful, but dangerous. It assumes that no matter how large an order is or how much of a material is needed, it can always be produced in the same period (in 'days', of course). The number of days fits in this field.

If that doesn't 'do it' for you, you can go to the "Work Scheduling" view of the Material Master and include the details for the fields under the "in house production time in days" grouping (Setup time; Interoperation; Processing time; and base quantity). At LEAST this gives the system a 'shot' at planning longer times for greater quantities. If you fill both data points in (in house production time and " in days, the 'in days' will supercede the other).

Now you've put in all the data that you HAVE to input to have the system plan the length of time needed for telling your customer when you will have their product ready for them.

In the case of your conflict where you produce OR source the item, then you MAY have a problem with GR - look at both scenarios and see what your entry should be. You CAN use the Total Replenishment Leadtime (MARC-WZEIT) field to be the TOTAL TIME when producing the material in-house, because the external replenishment does not look at this field. So MRP will run and depending on how you have it set, it will consider purchasing the material, or making the material, and the fields we've mentioned will impact the result as mentioned.

Related Links:

Production Planning - Extract data from MRP Table

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*+++++*
+
*
* A sample program to extract data from the MRP table.
*
*+++++*
+
REPORT ZMRPTABLE.

TABLES: MDKP, "Header Data for MRP Document
        MDTB, "MRP table
        MDTC, "Aggregated MRP table items
        T457T. "Description of MRP elements

DATA: BEGIN OF MDTBX OCCURS 0.
      INCLUDE STRUCTURE MDTB.
DATA: END OF MDTBX.

SELECT-OPTIONS: PLANT FOR MDKP-PLWRK OBLIGATORY,
```

MATNR FOR MDKP-MATNR OBLIGATORY.

```
CLEAR: MDKP, MDTB.
SELECT * FROM MDKP WHERE DTART EQ 'MD'
           AND MATNR IN MATNR
           AND PLWRK IN PLANT.
WRITE:/ MDKP-MATNR, MDKP-PLWRK.
IF MDKP-CFLAG EQ 'X'.
  CLEAR MDTBX. REFRESH MDTBX.
  IMPORT MDTBX FROM DATABASE MDTC(AR) ID MDKP-DTNUM.
  LOOP AT MDTBX.
    MOVE MDTBX TO MDTB.

    SELECT SINGLE * FROM T457T WHERE SPRAS = 'E'
           AND DELKZ = MDTB-DELKZ.

    IF MDTB-PLUMI = '-'. MULTIPLY MDTB-MNG01 BY -1. ENDIF.

    WRITE:/ MDTB-DAT00, T457T-DELB1, MDTB-VSTAT,
           MDTB-MNG01, MDTB-LGORT.

  ENDLOOP.
ELSE.
  SELECT * FROM MDTB
           WHERE DTNUM EQ MDKP-DTNUM
           ORDER BY PRIMARY KEY.
  SELECT SINGLE * FROM T457T WHERE SPRAS = 'E'
           AND DELKZ = MDTB-DELKZ.

  IF MDTB-PLUMI = '-'. MULTIPLY MDTB-MNG01 BY -1. ENDIF.

  WRITE:/ MDTB-DAT00, T457T-DELB1, MDTB-VSTAT,
           MDTB-MNG01, MDTB-LGORT.

  ENDSELECT.
ENDIF.
ENDSELECT.
```

Calculation to determine the delivery date and release date

There have been three parameters that SAP will take it into calculation to determine the delivery date and release date during material requirement planning. They are -

- 1) Planned Delivery Time which is the vendor-dependent lead time being measured from the time PO is outputted (for sending to the vendor) till the time the shipment is delivered at the warehouse.
- 2) GR processing time represents the necessary period of time being required for receiving the shipment into the warehouse. This period is, usually, for quality and quantity inspection.
- 3) Purchasing Processing Time. This is the internal required time for processing the purchasing document (Purchase Requisition) till Purchase Order. You can set it up plant-wise via Transaction OMI8.

With these three parameters, it is possible that you can set it up correctly in your system to enable the appropriate planning of your material requirement.

[Do you have a SAP PP Question?](#)

Purchasing processing Time - OPPQ

Please refer above subject and would like to do following. External Processing Time I have set in using OPPQ. My client want this time set differently for different Vendor. Is there any userexit or customization settings?

For MRP to take lead time by supplier, you need to have 3 settings:

- 1) The config in OPPQ - External procurement at plant level (or OPPR at MRP grp - Scheduling/doc. type) should have the check box marked to read SchedAgreem/Info record leadtime (T399D-GTERM)
- 2) You should have a contract/schedule agreement, or a purchase info record maintained for that plant-material-vendor combination
- 3) You should maintain source list (ME01) for the contract/schedule agreement, or info record. This changes the default behavior of MRP to use leadtime by supplier, rather than material master leadtime. When both contract and info record exist, the contract will take precedence.

Please watchout for the case if you're already using contracts/info records in procurement, but not using them for planning. In this case your leadtime data in these documents may be incorrect, or may be left blank - this will be interpreted as zero if you make this change implementation, as mentioned in the steps above.

Related Links:

Define Safety Stock Availability

The IMG can be set in **SM30 - V_438M_S**

You define per plant and per MRP group the percentage of the safety stock that is to be available for planning. This helps to avoid a situation where order proposals are created unnecessarily by the system to cover small shortage quantities.

For example:

	Mat. 1	Mat. 2	Mat. 3
Safety stock:	100 pc	100 pc	100 pc
available for planning:	0%	50%	50%
Shortage quantity	1 pc	1 pc	51 pc
Order proposal quantity for lot-for-lot order qty	1 pc	0 pc	51 pc

Best regards,

Questions on MRP Group and MRP Controller

MRP groups are used when the plant division for planning is not enough for the division of the different materials MRP requirements. You assign different groups according to the requirements to run MRP (different Settings). These settings will be taken in account when you run MRP for single item or total planning.

MRP controller is the person in charge of the MRP run for the materials. It is still a further division on your MRP. This is work load related. You can have one MRP controller for materials with different MRP groups.

On your MRP group, you will define the parameters for the MRP run. These parameters are calculated in accordance with the settings on your material master MRP views.

Available stock =
 Plant stock - safety stock +
 receipts of (purchasing orders + purchasing agreements + production orders) -
 required quantity.

This means that all the requirements are calculated in the bases of your material master settings and your MRP group settings.

What if nothing happens when you run MRP?

The reasons could be :-

- You have purchase requisitions that are delayed but the delivery time has not been updated on the system.

- The settings on your material MRP screens are not correct, i.e. your material have not yet entered the re-order point level.

- Your requirements have not been taken in account when running MRP.

Assuming that everything is well and the requirement has been calculated, go to transaction code **MD04** and verify that the different requirements are reflected in the MRP list and also if there is any purchase requisition scheduled by the system. Verify also if there is any other delivery schedule that will exceed the actual requirements.

If the purchasing requisition is there, the only thing that you have to troubleshoot is the message to tell you that the purchasing requirement was calculated.

If the requirement is not there, re-visit your material master and check your settings for the MRP group.

What is the real meaning and usage of the followings configured in PP:

- 1. MRP Controller;**
- 2. Schedule margin key;**
- 3. MRP group;**
- 4. MRP profile.**

1. MRP Controller;

This will help you to group the material for some controlling purpose. You can run mrp by mrp controller.

you can do evaluation by mrp controller. This will help us if have different people in one organisation involved in purchasing.

2. Schedule margin key;

This will help you to determine the floats. In case if you have production order you can see the impact of floats

3. MRP group;

This will help you for the material to react in terms of the settings made relevant to each group. To know more details on the group you can check the tcode oppr.

4. MRP profile

We can have some prefixed data in the profile and we can enter the profile for different material so the values will be copied as defaulted in the profile.

Guide To Mass Replace Work Center

On the work center I have defined an activity type for preparation, machine work, personal work. When I modify an activity type on a work center, the routings where these work center are employed are not automatically updated.

Use Tcode CA85 with same workcenter in New work center field. Change the new activity type in default values screen.

But if your activity types don't change in the routings where ever the workcenter is used, then check the reference indicator in the workcenter itself. So whenever you change the activity type in the workcenter, routing data will also get changed automatically.

The step by step guide below gave you a blow by blow account of the steps for CA85. Just ensure you only select a few materials initially, and change the mode of transfer so that it works like a BDC and you are sure that the data is correctly changed.

The screenshot shows the 'Replace Work Center: Selection' dialog box in SAP. It has a title bar with 'Replace Work Center: Selection' and two buttons: 'Choose overview var.' and 'Default values'. Below the title bar, there is an 'Extended log' checkbox which is unchecked. The main area contains two rows of input fields: 'Work center' with value '11001', a plant dropdown set to 'Pint', and 'VI81' with the label 'Auto Insertion Department'; and 'New work center' with value '11001', the same plant dropdown, and 'VI81' with the label 'Auto Insertion Department'. Below this is a 'Time' section with 'Change Number' (empty) and 'Key date' (18.11.2005). A 'Task list' section follows with 'Type from' (R) to (R), 'Status from' (empty) to (empty), 'Usage from' (empty) to (empty), 'Plant' (empty), and 'Planner group from' (empty) to (empty). The bottom 'Material' section has 'From material number' (384) to (403).

Default Values: Change

New work center: 11001 VI01 Auto Insertion Department

Key date: 18.11.2005

Operation default values

	Ref.	Transfer value
Control key	PP03	<input checked="" type="checkbox"/>
Standard text key		<input type="checkbox"/>
Wage type		<input type="checkbox"/>
Wage group		<input type="checkbox"/>
No. of time tickets		<input type="checkbox"/>
Suitability		<input type="checkbox"/>
Setup type key		<input type="checkbox"/>
No. confirm. slips	<input type="checkbox"/>	<input type="checkbox"/>

Standard value key	StdVal	Unit	Tr	ActTyp	Ref.	Tr
Setup			<input type="checkbox"/>			<input type="checkbox"/>
Machine		MIN	<input type="checkbox"/>			<input type="checkbox"/>
Labor			<input type="checkbox"/>			<input type="checkbox"/>
Conversion	1	EA	<input checked="" type="checkbox"/>	OH		<input checked="" type="checkbox"/>

Replace Wrk Cntr "11001" "VI01" with "11001" "VI01": Sel.Result

Default values Replace work center Choose Details Log

Work center: 11001 Auto Insertion Department Plant: VI01

PInt	Material	Gr	Valid From	Customer	Vendor
T PInt	Group		Valid From	Status Usage P16r	Task T1st description
Act			Valid From	Valid to	Ctr1 StTextK
	VI01 384		16.03.2005		
<input checked="" type="checkbox"/>	R VI01 50000021	1	16.03.2005	4 1	ASSY_PCB_MAIN_AI_MDC3DM0
<input checked="" type="checkbox"/>	Seq. 0		16.03.2005		
<input checked="" type="checkbox"/>	0010		16.03.2005	31.12.9999	PP03
	VI01 403		16.03.2005		
<input checked="" type="checkbox"/>	R VI01 50000022	1	16.03.2005	4 1	MAIN CHASSIS ASSEMBLY
<input checked="" type="checkbox"/>	Seq. 0		16.03.2005		
<input checked="" type="checkbox"/>	0010		16.03.2005	31.12.9999	PP03

Plant	Material	Valid From	Customer	Vendor
VI01	384	16.03.2005		
R VI01	50000021	16.03.2005	4	1
	Seq. 0	16.03.2005		
	0010	16.03.2005	31.12.9999	PP03
VI01	403	16.03.2005		
R VI01	50000022	16.03.2005	4	1
	Seq. 0	16.03.2005		
	0010	16.03.2005	31.12.9999	PP03

SAP PP Tips by : Raj

Planning separately via Storage Location or Vendor with MRP Area

Steps 1 :-

You must convert the existing planning file (table MDVM) to the new planning file (table DBVM) in order to be able to use MRP areas in materials requirements planning. Transaction **OM0F**.

1. During the conversion, the system creates a plant MRP area for every plant.
2. The existing planning file entries are copied from the planning file used up to now into the new planning file.
3. The system deletes the planning file that had been used up to now after the conversion has taken place.
4. At client level, the indicator Planning file entries for MRP area converted is set in a system table. This indicator causes material requirements planning to be carried out using planning file entries at MRP area level from this point onwards.
5. The report also converts the individual customer planning file entries at plant level to individual customer planning file entries at MRP area level.

Steps 2 :-

Activate MRP Area in **SM30 - T000MD**.
(Material requirements planning with MRP areas cannot be reversed once activated).

Steps 3 :-

During conversion in Steps 1, SAP will automatically create a MRP area for all your existing

Plants.

Now, you can start creating the MRP area for storage location or vendor to be planned separately. That's is the whole purpose for using MRP area.

Define MRP Area in **SM30 - V_MDLV**.

Here you define whether the MRP area type :-

- 01 - Plant
- 02 - Storage Location
- 03 - Vendor

Steps 4 :-

In Material Master MRP 1, **the MPR area section will appear** once you successfully complete the above Steps.

Assign MRP Areas to Materials

You assign the MRP areas to the materials by creating an MRP area segment for each MRP area in the material master. You can assign several MRP areas to one material.

MRP with MRP areas for the material is not activated until an MRP area has been assigned to a material. If you have not assigned an MRP area to a material, that is, you have not created an MRP area segment in the material master, the material will continue to be planned in the plant MRP area only. If you have assigned an MRP area to the material, the system can plan it in the plant MRP area and in the assigned MRP area.

You can display an overview for all materials in an MRP area. To do this, you go into Customizing for MRP and choose the IMG activity Define MRP areas. Call up an MRP area by double-clicking and choose Material overview for MRP area.

Steps 5 :-

Check Storage Locations

If you have already entered a storage location in the BOM (BOM item), in the work center (supply area) or in the production version, you should check whether this storage location is the storage location for the MRP area that you have assigned in the material master.

The materials are assigned to an MRP area via the storage location that the system determines during the planning run. You should therefore check the storage locations that

you have maintained in the material master. The storage location in the material master must be a storage location for the MRP area, for which you have created an MRP area segment in the material master. You can therefore ensure that material requirements planning will be carried out for the correct MRP area

The MRP area represents an organizational unit for which material requirements planning is carried out independently.

Basically, there are three types of MRP area:

Plant MRP Area

The plant MRP area initially contains the plant together with all its storage locations and stock with subcontractors.

When you have defined MRP areas for storage locations and for subcontractors and you have assigned the materials, **the plant MRP area is reduced by exactly this number of subcontractors and storage locations.** This is because they are now to be planned separately.

MRP Areas for Storage Locations

You can define an MRP area that consists of a particular storage location, by creating an MRP area and assigning the storage location to it. Material requirements for this storage location are then planned separately from the rest of the plant.

You can also **group several storage locations into one MRP area,** by creating an MRP area and assigning the storage locations to it. These storage locations are then planned together.

A storage location of a plant may be assigned to only one MRP area.

MRP Areas for Subcontractors

You can also define an MRP area for each subcontractor.

A subcontractor may be assigned to only one MRP area.

An MRP area of the subcontractor type may also only contain one subcontractor.

MRP areas of the storage location or subcontractor type are only suitable for:

1. **components that are planned and produced for stock**
2. **finished products that are planned and produced for stock.**

By assigning a storage location in a sales order or by entering an MRP area when creating the planned independent requirements, you can define whether a material is planned in the plant MRP area or in the MRP area of the storage location.

Material requirements planning for each MRP area allows you to have specific control over the staging and procurement of parts produced in-house and purchased parts for each shop floor and assembly area. If, for example, you define an MRP area for the production storage location of an assembly line, the system plans the material requirements for the assembly line separately from all other requirements.

Example: Subcontractor

You can also carry out planning for components to be provided in subcontracting using an MRP area by defining an MRP area for every subcontractor and assigning the components to be provided to the MRP area of the subcontractor. You therefore plan the requirements to be provided for these components for one subcontractor separately from all other requirements.

Depending on the requirements situation, the system creates either stock transfer reservations from the plant to the stock of material provided of the subcontractor or it creates purchase requisitions within subcontracting/third-party order processing, according to the special procurement key settings.

The planning run takes into account the planning with MRP areas as follows:

If you do not enter a separate scope of planning, the system plans the whole plant, that is, all MRP areas in the plant, during the total planning run. If you want to carry out a total planning run for a particular MRP area only, you must specify the required MRP area in the scope of planning.

During single-item, multi-level planning, the system plans the selected material in the MRP area entered. In addition, the system takes into account planning file entries from other MRP areas, for example, if the material is to be procured using stock transfer.

During single-item, single-level planning, the system plans the selected material in the

MRP area entered only.

You define the MRP areas in Customizing for MRP. You can thereby assign the following to an MRP area: one or more storage locations (example: you want to carry out planning for a particular assembly line and therefore assign a production storage location to the MRP area) a subcontractor.

You assign the various MRP areas to the materials in the material master. For this, you create an MRP area segment for a material for every MRP area, in which it is used. In this MRP area segment, you can define MRP parameters such as, for example, the lot size or MRP type. This allows you to plan the material differently in the MRP area from how you plan it in the plant MRP area.

MRP with **MRP areas for the material is not activated until the material has been assigned to an MRP area.** If you have not assigned a material to an MRP area, that is, you have not created an MRP area segment in the material master, the material will continue to be planned in the plant MRP area only. If you have assigned an MRP area to it, the system can plan it in the plant MRP area and in the assigned MRP area.

PP - The Common Planning Strategy used

The planning strategies are maintained in Customizing for Demand Management in **SM30 - V_T461S**.

Define the Planned Requirement Type and assign the requirement class in **OMP1**.

Define the requirement class in **OMPO**.

Check the independent requirement and consumption of requirement class in **OMPC**.

Maintain the message for invalid requirement type in **OMPJ**.

You define the strategy group in **SM30 - V_T461P**.

You define the Plant to MRP group in **SM30 - V_T438M_S**.

Maintain the consumption mode and period of adjustment in **SM30 - V_T438M_V**.

Listed here are some common used planning strategies :-

Strategy 10 in summary :-

1. Sales Order creation - no impact.
2. Goods Receipt - reduce the planned independent requirement during MRP run
For e.g. if PIR is 100, quantity remained as 100 in PIR, however during MRP run, 100 will not be included in the MRP planned as stock is available.
3. Delivery - minus the quantity for the oldest planned independent in demand management.
For e.g. if PIR is 100 and delivery 90, PIR becomes 10 (withdrawal 90).

10 LSF Make-to-stock production KSL Sale from stock without independent requirement reduction

Choose this strategy if you want production to be determined by a production plan (Demand Management) and if you do not want sales orders to influence production directly.

You must maintain the following master data for the finished product:

Strategy group 10 on the MRP screen.

Item category group (for example, NORM) on the Sales Organization screen.

Availability check field in Customizing so that you perform an availability check without replenishment lead times (in the standard system, you must enter 02 here).

In net requirements planning according to strategy 10, the order does not create a requirement; the sales order is displayed, but does not generate planned orders.

The planned independent requirement is reduced during processing of the goods issue. Old quantities can still be retrieved by using either

Goto -> Schedule line history in Demand Management, or by using the total requirements list

(Evaluations -> Display total requirements from the Demand Management menu).

The quantities issued are displayed in the Withdrawal quantity field.

The system always reduces the oldest planned independent requirements unless the consumption fields (Consumption mode, Fwd consumption per., Bwd consumption per.) are maintained in the material master or in the MRP group.

11 BSF Gross planned independent requirements KSL Sale from stock without independent requirement reduction

Strategy 11 in summary :-

1. Sales Order creation - no impact.
2. Goods Receipt - minus the quantity for the oldest planned independent in demand management.
For e.g. if PIR is 100 and delivery 90, PIR becomes 10 (withdrawal 90).
3. Delivery - no impact as delivery is issue from sales order.

This strategy is particularly useful if you need to produce, regardless of whether you have stock or not. For instance, steel or cement producers might want to use this strategy because they cannot shut down production; a blast furnace or a cement factory must continue to produce, even if this means having to produce to stock.

You need to maintain the following master data for the finished product:

- Maintain strategy group 11 on the MRP screen.**
- Set the Mixed MRP indicator to 2 on the MRP screen.**
- Maintain the item category group (for example, NORM) on the Sales Organization screen.**
- Maintain the Availability check field so that you perform an availability check without the replenishment lead time (checking group 02 in the standard system).**

Strategy	10	11
Stock is taken into account	Yes	No
Reduction of planned independent requirements takes place during goods issue for	... goods receipt for a production
production),	the delivery order (discrete	
		for a planned order (repetitive manufacturing), or for a purchase order (trading goods).

Why Planning file entry still Exists?

Does anyone know why a planning file entry would exist for NETCH or NETPL when there has been NO activity on the material since the last planning run? No

movements, no PO's created, no Orders taken, no activity whatsoever . . . and MRP ran, created a planned order, which was converted to a requisition and then a PO. This PO was converted for a date earlier than what MRP recommended.

Now each time MRP runs, we get exception #15 - delay the order until later (gives date). We don't change it and the planning file entry doesn't go away, even after the run.

Found a note that seemed to apply, but . . . I guess it doesn't really.

"If the planning run terminates for a material with planning file entry on account of an error message, the planning file entry is not deleted if this is not explicitly set in customizing. In transaction OMDY, you can set for which errors (message number) you want the planning file entry being deleted."

I thought this was my answer. However, after looking in OMDY - the message #015 = Dates incorrect (start date > finish date). And message #15 = Enter value for version number increment (VersNumIncr.).

Neither of these defines my MRP List exception message 15 = "Postpone process (28.06.2004/26.06.2004)" - on a current date of 03/06/2004. It's CLOSE, but not the first message.

So if I set the field for the deletion of the planning file entry, it still wouldn't affect my real problem - trying to get this entry to 'go away' after doing what it was supposed to do.

Please Check CS15 - where used list. May be this material has been added to a BOM of a product/Assy, which has caused an entry in planning file.

Check MD04 for the source of reqt.

Also check MD63, if a PIR exists.

If not, delete from planning file. Try report RMMDVM10 - consistency check.

Related Links:

Planning Strategy Selection

Selection priority for planning strategy is:

First material, second MRP group and last plant parameters. E.g. System first checks for material, if strategy is defined there, that is used, if it's not maintained there, then it checks if it's defined in MRP group.

That is the same for all MRP parameters, not only strategy.

If you wanna test how it works, try this:

1. create an mrp group, say 0001, and assign strategy group "40 - planning with final assembly" in the MRP group parameters.
2. create a material, say product1 and define planning strategy as "20 - make to order". And also enter the MRP group 0001 in material master.
3. Create a sales order and create an order item for product1.
4. In the sales order header, go to the Procurement tab. There, you will see the requirement type for product1, which is automatically selected by system according to the planning strategy it uses. That requirement type should be "KE" if strategy 20 is selected, or it should be "KSL" if strategy 40 is selected by system.
5. In my test, system selected KE requirement type, which indicates that system used strategy 20, and which I have entered in the material master. It didn't select KSL, which indicates that system uses strategy 40, which is entered in the mrp group. Finally, this test shows that system takes the planning strategy in material master (if it's entered), not the strategy in MRP group.

I think you can now make another test how system uses MRP group's planning strategy. (hint: Delete planing strategy from the material master and repeat the previous test steps. That would end up using strategy 40, which is selected using the MRP group parameters.)

With Compliment: Osman Kararlioglu

When do we use planning without final assembly strategy?

We have mainly MTS, MTO, planning with final assembly and planning without final assembly. Now when we are dealing with planning with final assembly, we would usually produce subassemblies (HALBs I guess) using make to stock, so do we use a planning strategy 70 for subassemblies and do a MRP run. To my knowledge I thought we run MRP only for final products (with final assembly) so in that case how would we plan for subassembly products.

I get to understand you are using strategy planning with final assembly. So you are using strategy 40 for the finished product.

Just to clarify certain things, MRP can be run for any material...be it finished or semi finished or raw material. Actually when you run a MRP for the finished product using MD02, you are doing a multilevel run.

Secondly, when you are using 40 for the finished product you may or may not use any strategy for the semi finished goods. It depends on your business. If you are going to produce semi finished goods independent of the finished goods, you may have a make to stock strategy 10 (one of the many options) and produce them independent of the finished good requirement. Now when a requirement will be generated for the finished good and a MRP run will be taken, it will show that the Semi Finished is either in stock or a planned/production order exists and thus only the remaining quantity will be planned for (there is a better strategy existing for this type of a scenario.....

However if you do not put any strategy for the Semi Finished, then planned orders will be created for the Semi Finished for the same quantity as the orders created for the Finished goods.

With Compliment: Arvind Khinvesra

MRP Monthly lot size

**Appreciated if some guide can be provided.
MRP lot size has been set to MB (Monthly lot size)**

It is known that with this setting, material are always bring in on the first working day of the month.

**Ex: Dep requirement 26-10-04 100 pcs
Dep requirement 30-10-04 190 pcs**

When MRP completion, the PR item shown 1-10-2004 290 pcs, is that any possible to bring in material just right before dependant requirement 26-10-04 say about 24 or 25 of the month.

Because. we dont tend to keep more stocks until actual requirement.

Any comment are welcome.

In that case you might like to consider lot size key WB (weekly). It will bring in material at the first working day of the week. In your case it is Oct 25, 2004

But in this case, I will have increase administrative cost on monitoring the material lot weekly.

I want to have monthly lot size that group all the requirement, but bring in material as close as possible on the first requirement.

Any comment are welcome..

How about manually change delivery date in PO item

**Check your config. in OMI4 - scheduling may by "1" for Lot size of MB.
Change to Blank.**

Friend PPS is correct, Schedule the "REQUIREMENTS DATE = DELIVERY DATE" option in Customizing for Lot Size MB (use Blank instead of 1) & your reqt 'll be met...

We have similar problem and when I applied your solution, the proposed requirement date is perfect.

Fast Links:

Reservation Not Created During MRP Run

I have created a planned order thro MRP run, but reservation for raw material is not created, even though stock is available. After conversion to Production order reservation is created. After confirmation and goods receipt MB31 final product is updated in storage location, but raw material quantity is not reducing.

Can any one give solution for this.

Gururaj Hebbbar

PART I

After MRP run, based on the demand Planned order will be created and for the BOM components system will create dependent requirement if stock is available. If stock is not available system creates a planned order or a purchase requisition. Once the planned order of the Header material is converted into a production order, then system converts the dependent requirement into reservations.

PART II

After confirmation and goods receipt if the item components are not consumed, it means you have not defined backflush process. If you want to issue manually to the order you can use T-CODE MB1A, for the same.

K. Prasobh

1. Check backflush indicator either in routing /workcenter or in material master.
2. In customization production control -operations-confirmation (general individual entry screen) check-- post open reservation . It will post open reservation while confirmation.

3. After doing this cross check failed goods movements. **How to Configure Range Of Coverage Profile**

I am trying to configure the range of coverage profile to provide a 6 months safety stock, in which the 'target cov' field should be populated with 180 days, but the that field only accepts 2 characters max. Is there another way of accomplishing this or am I doing something wrong. Please let me know. The current setup is:

- **Period Indicator = M (Month)**
 - **Type of Period = 1 (Workdays)**
 - **Range of coverage in the first period:**
 - **Min = blank; Target = 90; Max = blank**
- In this Target value accepts only digit numbers.**

Muthu Chinnadurai

Yes the system accepts only two digits. But since you want stock coverage for 180 days. Use target as say 60 and the number of periods as 3 . Try it and keep us posted. But the one other issue is the system calculates the dynamic safety stock. It easy to calculate the stock for the first period but for the later periods its difficult. So if later there is a problem with the quantity then its difficult to calculate or cross check what system has proposed.

Raj

Using target as 60 and number of periods as 3, only results in system maintaining safety stock for 60 days for first 3 periods. I found out that there is no way out of this. Strange that SAP wouldn't let the companies plan for inventory coverage more than 99 days. This is a pharmaceutical client whose procurement lead times are more than 5 months for some of the materials, where they want to maintain a 6 month coverage and SAP wouldn't allow to achieve it. Am I doing something wrong here. Is there another way of maintaining dynamic safety stock for 180 days requirements coverage? Please share your knowledge.

Muthu

Please let me know in details how the profile coverage works in SAP. In details means how it is being calculated and what is being considered. As I am figuring how I could make use of this function that my customer require us to keep 15 days inventory and customer forecast fluctuates drastically every week.

Thanking all in advance for your kind advice and help.

Alicia

In customizing in MRP calculation menu , you have Range of coverage. Define the range of coverage you want , as you said 15 days for a period of 3 months. Then in the profile first fill the Avg. daily req data and then the range of coverage data. Use this profile in the material master mrp II view(I think), in range of coverage. As far as calculation are concerned its very to calculate the Qty for the first period and then for the later periods its difficult. May be I am wrong, just try and keep us posted

Raj

The Range of Coverage profile is define specific to a plant in IMG and then assigned to materials in master data MRP 2 view. To define the profile, use menu path IMG->PP->MRP->MRP Calculation->Define Range of Coverage Profile. In the definition, there are two sections of data that you need to fill in.

1. Parameters for calculation of average daily requirements and Period indicator.
2. Minimum, Target, and Maximum stock calculation parameters.

PARAMETERS FOR AVERAGE DAILY REQUIREMENTS CALCULATION:

Choose the period indicator as Month, Period, or Week.

Specify the number of periods. This is used by system to calculate the average daily requirements.

Select the "Type of Period Length", ie. as workdays or calendar days or standard days (days per period). If the type of period length is selected as standard days, they you have to specify the "days per period". Using these three parameters, the system calculates average daily requirements using the formula:

average daily requirements = Sum of requirements in the number of periods / number of days in the number of periods.

PARAMETERS FOR TARGET STOCK AS DAY'S OF SUPPLY

Then you have to specify how many workdays of supply you want to maintain as target stock, in your case 15 workdays. If you wanted to maintain a constant 15 days of supply as inventory through out the planning horizon, just specify the target stock as 15 days and leave rest of the fields as blank, i.e min, max, and number of periods. The number of periods in this section simply maintains the target stock for that many periods from the date of MRP run. This way you can tell the system to maintain different target stock levels for three different period intervals. For example, if you wanted to maintain 15 days stock for first 3 periods, then specify the target stock as 15 days and number of periods corresponding to it as 3. The system then will maintain 15 days supply as inventory for first 3 periods from the date of MRP run and subsequent months zero inventory will be maintained. This will allow you to maintain your 15 days supply constantly for 3 periods.

Muthu Chinnadurai

Lose of link between sales order and production order

Issue with production order confirmation

Due to lose of link between sales order and production order due to credit check problem
The production order for higher level component lost link and was hanging out in limbo status.

Now the production order at lower level component also loose track and they were already released where as production orders at higher level were not released

So now lower level production orders were tecoed with BDC program as there were 1200 production orders to be tecoed at lower level .

So once I deleted lower level, I saw that there were planned orders for same component and same sales order and item, this was because MRP was running at same time .

So this MRP generated planned orders as the production orders at highrt level were still hanging there and to full fill those production orders lower level component planned orders were generated

So now cleared the production orders in top level and ran MRP in display mode and found that there were no planned orders for lower level component.

But still there were two more planned order created at higher level has I previously tecoed them and did zero confirmation due to some other reason, So I had to unteco them to delete these planned orders and also cancel confirmation to get the production order element on to MD04 screen. Once Iam done with that it show a message 26

So It should be clear that if the exception message is 20 ie cancel process then that production order must be deleted as there is no requirement to consume this order. As all this context was made in MTO stock product.

With Compliments from: Prashanth

Fast Links:

Batch Characteristics while Running MRP

Can batch characteristics be considered while running a MRP? I have a finished good that has acid value as its batch characteristics. Based on this acid value I am trying to pick up a certain batch of raw material that is also batch managed and has its characteristics as acid value.

While running MRP qty requirements are transferred and stock is reserved but the required batch qty (having the acid value required) of raw material is not picked.

MRP does NOT use batch data.

Because, while entering PIR, there's no field to enter batch number. When system creates planned order, also there's no field to enter batch number, both for the header material and planned order components.

There's one exception in PP-PI, where you can use batch specific unit of measure. That is, you can define batch level alternative unit of measure. For example, you may have a liquid, and it may have Liters as base unit of measure, and it may also have the percent

based active ingredient, that is Liters of the Active Ingredient can be an alternative unit of measure.

So, every movement of material in the system will be done using 2 unit of measures at the same time. e.g. goods receipt of 100 Lt liquid (which is also 80 Liters of Alcohol, because of 80% alcohol potency), for the first batch. also goods receipt of another 100 Lt liquid (which is 60 Liters of Alcohol this time, because of 60% alcohol potency) When you look at your stock, you will see 200 LT liquid, which is equivalent to 140 LT Alcohol ingredient.

What's the use of this active ingredient data during MRP?

When you define the batch unit of measure, you define limits for it. Say, our liquid in previous example can only be between 50% and 90%, therefore we define it like that. Every time we receive this material from vendor, we make the quality inspection and determine the Alcohol percentage. however, while running MRP, system will create purchase requisitions, but it doesn't know the percentage of the liquid our vendor will send.

How will it determine the correct quantity?

In this case, we define a percentage for MRP, and MRP will use that percentage for calculation. e.g. if there's an industry standard that all vendors of that liquid produce it at 75%, or if we are always working with a vendor who produces 68%, then we can enter this data (per material) and MRP will calculate with that percentage.

Jayant

Fast Links: What is Firming Type in the MRP Types

The firming type dictates the behavior of planning with PTR (Planning Time Fence), i.e whether the system should automatically firm the unfirmed planned orders and purchase requisitions, which are outside the PTF as they move to fall within PTF as days progress and also if new planning proposals are needed to be created to cover the shortage within PTF.

There are five firming types, viz. 0, 1, 2, 3, and 4.

Listed below are the characteristics of these four firming types:

0 - PTF has not effect on planning.

1 - All unfirmed planning proposals (planned orders/purch reqs) moving into PTF will automatically be firmed by the system, thus protecting them from anymore automatica changes due to subsequent planning runs). At the same time, if the MRP engine identifies

any shortage within PTF, the system will create new planned orders, but schedule them to lie JUST outside the end of PTF, thus leaving them as unfirmed elements.

2 - All unfirmed planning proposals (planned orders/purch reqs) moving into PTF will automatically be firmed by the system, thus protecting them from anymore automatic changes due to subsequent planning runs). BUT, the system will NOT create any new planning proposals to cover the shortages identified within PTF. The shortage is left as a -ve qty for the planner to deal with manually.

3 - No automatic firming of any unfirmed planned orders, even if they move into PTF. They will be moved out to lie JUST outside the PTF. The system will create new proposals to cover the shortage but schedule them outside the PTF and keep them as unfirmed.

4 - No automatic firming / No automatic creation of planning proposals to cover shortage.

Functions of Production Version

Can somebody enlighten me on the functions of production version and some tips on its configuration?

Production Versions are used to describe the production process to be used for planned / production order.

You can use the production versions based on:

1. Lot size qty
2. Bom explosion dates
3. Based on MRP Group

Why is it required?

Suppose you have 2/3 production lines and 2/3 alternative BOMs to produce one FG.

How system will come to know which BOM and Routing to be used. This is done thru Prod.Version.

In production version we maintain the combination of BOM and routing.

Also it can be designed with lot size or validity period.

Go to MM02--->MRP4 / Work scheduling view ----> Prod.Version.

Enter the validity period and lot size.

After entering the reqd. routing no. and BOM alternative , carry a check.

After getting the Green signals ,Continue.

Thus you have saved the prod. version.
Mass processing TCode- C223.

Does this mean that I have to activate all the BOM's if in case I have 3 alternative BOM's? if yes, then, will it these 3 BOM's be exploded in MRP? I'm just worried 'coz I might bloat our inventory if there are three active BOM's.

No. First of all need not worry about the BOM explosion.

As I told you earlier which BOM and which Routing is decided by Prod.Version.

So in MRP the active prod.version only will be considered. Thus active BOM and active Routing will be used for MRP.

The question comes: How to deactivate the alternative BOMs and Routing?

Two Ways:

1. You lock all other non-relevant Prod.Versions in MM02 of the FG/SFG material.(Every alternative BOM and routing forms a Prod.Version) Thus even if there are 2/3 prod.versions System will go and check for Unlocked prod. version and use it.

2. If you don't want to do this business of "Lock & Unlock" just place the required version at the first place in list of prod.versions in MRP4 view of the material. Once system finds the first prod.version it will not spend energy in searching other alternatives.

Also please.don't forget to maintain the selection value of "2" in MRP 4 view for BOM selection.

This will enable you to start the use of prod. version functionality in SAP-PP.(very good tool for practical purposes, costing and MRP).

*-- : Praveen

What is Discrete Manufacturing, REM and Demand Management?

- 1. What is Discrete Manufacturing?**
- 2. What is REM?**
- 3. What is Demand Management?**

Here are difference between Discrete and REM and small explanation about discrete and repetative manf.:

- A typical characteristic of discrete manufacturing is the frequent switching from one manufactured product to another. The products are typically manufactured in individually

defined lots, the sequence of work centers through production varying for each one of these. Costs are calculated on the basis of orders and individual lots.

- In Repetitive Manufacturing, products remain unchanged over a longer period and are not manufactured in individually defined lots. Instead, a total quantity is produced over a certain period at a certain rate.

- Discrete manufacturing typically involves varying the sequence of work centers through which the products can pass during production. The order of work centers is determined in routings, which can often be very complex. There can be waiting times between the individual work centers. Also, semi-finished products are frequently placed in interim storage prior to further processing.

- Repetitive Manufacturing, on the other hand, normally involves a relatively constant flow on production lines. Semi-finished products are usually processed further immediately without being put in interim storage. Routings tend to be relatively simple.

- In discrete manufacturing, component materials are staged with specific reference to the individual production lots. Completion confirmations for the various steps and processes document the work progress and enable fine-tune controlling.

- In Repetitive Manufacturing, components are often staged at the production line without reference to a particular order. Completion confirmations are less detailed, and the recording of actual data is simplified.

- The function of Demand Management is to determine requirement quantities and delivery dates for finished products assemblies. Customer requirements are created in sales order management. To create a demand program, Demand Management uses planned independent requirements and customer requirements.

To create the demand program, you must define the planning strategy for a product. Planning strategies represent the methods of production for planning and manufacturing or procuring a product.

Using these strategies, you can decide if production is triggered by sales orders (make-to-order production), or if it is not triggered by sales orders (make-to-stock production). You can have sales orders and stock orders in the demand program. If the production time is long in relation to the standard market delivery time, you can produce the product or certain assemblies before there are sales orders. In this case, sales quantities are planned, for example, with the aid of a sales forecast.

PP - Assign Multiple Planned Order to a Purchase Requisition

In order to assign multiple planned order to a single purchase requisition number, you need to make use of the external purchase requisition number range.

Define your external purchase requisition number range in **OMDN**.

Assign the external purchase requisition group number range to used in **OMI3**.

Once the IMG settings are completed, you can use **MD15** to assign the multiple planned order into a single purchase requisition number.

In **MD15**, select the planned order you want to convert to a purchase requisition.

Next, click the **Convert Online** button.

SAP will display the planned order in change mode.

Now, look for the **Purchase Requisition** fields and supply the **Purchase requisition** number.

For example, assuming that you assign the external number range 2000001.

In the planned order, you type the first number range 2000001 and item number 10 subsequently, copy and paste the number range but input the item number manually.

It would be like 2000001 10 and save
 2000001 20 and save.....

The disadvantage is that the user has to track and enter the external number range manually.

Therefore, there is a trade off, between

1. having a single planned order for a single purchase requisition number or
2. having multiple planned order to a single purchase requisition number.

Scheduling

Rescheduling date does not take into account the GR Processing Time

If you look at **MD04**, the rescheduling date is based on the Stocks Requirement date.

It does not take into account the parameters in Procurement and Scheduling in the Material Master.

In the net requirements calculation, the system checks whether warehouse stock or firmed receipts are available to cover requirements. If a material shortage exists, the system usually creates a new procurement proposal.

The rescheduling check is used to **change the dates of already existing firmed receipts not planned on the same day** as the requirement to **suit the requirement date**.

For this purpose, the system displays the appropriate exception messages with rescheduling proposals for these firmed receipts to be processed by the MRP controller.

You defined the rescheduling parameters in Customizing for MRP.

An important parameters is the **rescheduling horizon period** to be included.

1. **OPPQ** per plant to Carry out overall maintenance of plant parameters.
2. **OPPR** per MRP group to Carry out overall maintenance of MRP groups.

You can also **define tolerance values** for the **creation of exception messages**.

These values define a time period in which no exception message is to be created, despite the fact that a rescheduling proposal may exist.

The MRP controller can thus **avoid a situation where too many exception messages** are created if a certain buffer has already been planned for scheduling basis dates.

Rescheduling Exception Proposal

Bring process forward (reschedule in)

Within this rescheduling horizon, the net requirements calculation checks whether, after a

requirement, a firm receipt exists, which can be used to cover this requirement. Then the system displays a rescheduling date as well as the exception message Bring process forward for this receipt. The net requirements calculation then uses this receipt and the system will only create another procurement proposal if the receipt quantity is not sufficient to cover the complete requirement. Several firm receipts can be used to cover one requirement.

The rescheduling horizon is always **calculated from the MRP date**.

Postpone process (reschedule out), or cancel process

The net requirements calculation checks over the complete time axis whether availability could still be guaranteed without the receipt in question. If this is the case, the system checks whether the receipt planned here could be used to cover a future requirement. If the system can find such a requirement, it then displays a rescheduling date as well as the exception message Postpone process for this receipt.

If the system finds no future requirement, for which the receipt is required, the system displays the exception message **Cancel process**.

[Do you have a SAP PP Question?](#)

Schedule Margin Key in Production Scheduling

I want to know impact of schedule margin key in production scheduling in following changes in material master

1) if I have schedule key where all floats are zero but I enter in-house production time as e.g. 7 days .

2) if I have key where floats before production is 5 days and same values in next floats and in house production time as 1 day.

All above with MTO what is impact of above cases in scheduling.

While "Basic Scheduling" in MRP... Scheduling margin key is not considered. It takes the "In house production" days for fixing up the start date. This is only exact to "days".

Lead Time scheduling is carried out on request from the scope of MRP. Target dates are calculated from routing and Capacity requirement calculations are also done. The calculations are exact to the seconds (time).

SCHEDULING MARGIN KEY takes effect only for Lead Time Scheduling. For this you have to configure for "scheduling horizon" to limit the period for which lead time scheduling and capacity planning should be carried out. scheduling horizon is the period in working days. If a planned order has its basic start date within this period in future, lead time scheduling is carried out using the selected routing. The production times are calculated from the float times of the scheduling margin key in the material master record and the time from the individual operations. If the planned order has its basic start date

further in the future than this scheduling horizon, the basic dates are calculated from the in-house production times in the material master and are transferred to the production times.

Could you explain what's function of opening period in Sched Margin key.

Opening period is like a "release window". The length of the opening period is the window of opportunity a planner has to convert the planned order to a purchase req.

For example - Component A has a lead time of 14 days and opening period of 5 days.
Requirement on 12-22-03

Opening Date - 12-01-03

Start Date - 12-08-03

Finish Date - 12-22-03

Now the planner can convert the order starting Dec. 1st, instead of Dec. 8. It basically is a buffer in the lead time to get things on order a little sooner than needed.

What's the function for Plan order convert to production order?

**As your example,
Requirement on 12-22-03**

Opening Date - 12-01-03

Start Date - 12-08-03

Finish Date - 12-22-03

But I can convert plan order to production before 12-01-03 at random, so I wonder what is the opening period real function? it looks useless to restrict when to convert plan order to production order.

CO41 and MD15 are used for the conversion process. Here you enter the opening dates you wish to convert. Of course the opening period will not stop you from converting planned orders - hopefully your planner is not randomly converting orders or you have much bigger issues!!!!

The opening period is basically just to get the planned order to show up on the CO41 or MD15 lists in case you wish to convert it sooner than the lead time suggests.

Your answer make me clear to understand the opening period.

BTW,could you explain the release key ,float after production and float before

production parameter in SchedMargin key?

I know the parameter affection in production, but I am not sure why to define how many days in each parameter.

for example, release key defined for 10 workdays, but you can release production order out of the release period randomly. any way to stop release out of the release period?

For example - Component A has a lead time of 14 days and opening period of 5 days. Requirement on 12-22-03

Opening Date - 12-01-03 ???

Start Date - 12-08-03 (from requirement date - lead time ?)

Finish Date - 12-22-03 (from requirement date ?)

Why Opening date = 12/01/2003 how system calculate , Could you please explain to me..

I know that when we run MRP system will check if the opening date is out of open period system will generate Plan order instead of PR .

The times in the sch. margin key are in workdays. That's how it gets the dates. The component I was describing originally would have been a purchased part, where lead time is in calendar days.

The order start date and the order finish date form the framework within which a production order is to be executed. Since malfunctions and disturbances in the production process can never be fully prevented, the system uses particular floats in a production order. The system takes into account so-called "before and after production floats" when scheduling an order.

The float before production is a start float. It has two functions:

It can compensate for delays in the staging of the material components.

If there is a capacity bottleneck at the work centers involved, the production dates can be moved forward in the future. In this way it serves as a float for capacity leveling.

The float after production is a finish float. It is used to compensate for unexpected disturbances in the production process, so that they do not delay the scheduled finish date.

The floats before and after production are defined for each material using a scheduling margin key. This scheduling margin key is automatically transferred from the material master when an order is created. However, you can change the times in the order.

The system calculates the scheduled start of the order by adding the float before production to the order start date. It calculates the scheduled finish of the order by subtracting the float after production from the order finish date.

The system deducts the number of days defined in the release period from the scheduled start of the order and thus determines the scheduled release date of the order. This date can be used for collective release.

Work Scheduling View in Material Master

What is the importance of work scheduling view in material master and the standard values in Routing?

If I am maintaining Lot size dependent information such as set time, Interoperation time, Processing time in work scheduling view in material master and also Total in-house production time in MRP view under scheduling tab, what will effect on the system?

Means how will the system behave in this scenario?

In house production time in MRP2 view, specifies the time in workdays needed to produce the material in-house. In-house production time is independent of the order quantity. The system requires the in-house production time to determine the planned dates for planned orders in materials planning.

You can define work scheduling times in the material master record in one of two ways:
-Either you enter the in-house production time. If required, you can get the system to update this value from the routing.
-Or you enter the setup, teardown, processing, and interoperation times. If you maintain these values, the system determines the in-house production time on the basis of lot size.

SAP PP Tips by : Brajesh

What is the basic fundamental of "Independent lot size" and "Dependent lot size" in work scheduling view of a material master. I am jumbling a lot between this two to understand the basic requirement of my client.

Second thing is that you are saying that - You can define work scheduling times in the material master record in one of two ways:

-Either you enter the in-house production time. If required, you can get the system to update this value from the routing.

-Or you enter the setup, teardown, processing, and interoperation times.

But how the system update this first option.

I mean to say , is there any setting in configuration so that the system will update workscheduling time values from the routings?

You need scheduling data for 2 types of orders, planned orders and production orders.

And you can have the scheduling data in 3 ways:

1. Lot size independent in-house production time, in material master, MRP2 view. ex: if

in house production time is 2 days, it will schedule the order for 2 days, and it doesn't matter if the order size is 1 or 1000, they are both produced in 2 days. (I never met any case that fits this situation)

2. Lot size dependent in-house production time, in material master, Workscheduling view. ex: if you have 5 day setup time, and 1 day production time for lot size of 10, then your order will be scheduled according to the order size. if your order is for 10, then your total production time will be 5 day + 1 day x 10 / 10, which is 6 days. If your order is for 100, then your total production time will be 5 day + 1 day x 100 / 10, which is 15 days. 5 day setup time will not change when the order quantity changes, because you make the setup once at the beginning of the production, and use the same setup during whole production.

3. Lot size dependent in-house production time, in routing. The same calculation of above will be used for this.

So, which of these data is used for the 2 order types?

For the planned orders, for default, system uses the times in number 2 above. If that data is not entered, system will use the time in number 1 above. If you want the system to use the routing data, then you should use lead-time scheduling parameter in MRP run, then system will use data in number 3 above.

(The idea behind this is, MRP run always takes long time, and if you want it to use routing data, that will also increase this run time. Therefore, you can use routing but take results after long MRP run time, or you can use approximate times but take the results after short MRP run. This was very crucial before, because at those times hardware technology was not enough to process too much data in short time, when MRP run was taking days and days. But now is not that crucial, that's my personal opinion. As I said before, you can use routing data but take results after long MRP run time, or you can use approximate times but take the results after short MRP run, however, there's one other way which is a combination of these two: You can use the system to update the data in number 2 using the data in number 3, which is called the update of material master from routing. In that case, the approximate production times in material master will be as close as possible to the actual production times. In that case, not only MRP run will not take long time, but also we will get much better results.)

For the production orders, always the routing data is used for scheduling.

Now, I am cleared that what is independent and dependent lot size. but still there is one confusion in my mind that where did we mentioned this lot size i.e 10,100 as per your example in case 2.

Secondly, I didnt understand your second last sentence (i.e.the approximate production times in material master will be as close as possible to the actual production times). Can you please clear me this sentence with suitable example.

You enter the lot size on the Work scheduling view of material master, for the lot size dependent times, for my example you enter 10 as lot size.

And the approximation is like this: In the material master, you enter the production times as DAYS, but in the routing you can use MINUTES, even seconds. Therefore the most detailed and accurate production times can be entered in routing, in material master you can enter only days, which will be the approximate value.

If your routing is, for lot size of 10, setup time is 3 hours and production time is 50 minutes, when you update the material master from routing, system will write 3/24 days for the setup time, and 50/1440 minutes for the production time, because it has to convert it to days.

But still I dont understand that where I have to mentioned that lot size 10 or 100? And second thing is that, If I have to use routing data for planned order what should I have to do? Shall I have to mentioned lead time scheduling in MD02?

You enter lot size in material master, on workscheduling view.

and yes, you have to mention on md02 screen that you want lead-time scheduling.

You mean to say I have to enter that 10 or 100 in base quantity of work scheduling view of material master?

Yes.

Scheduling Background Jobs for MRP

Transaction code : **MDBT**

click Create Variant button (specified a variant name and click continue).

Then fill in the following fields :-

Scope of Planning : Optional (refer to Note if you want to specify a plant grouping)
Plant : Your company Plant
Processing Key : NETCH
Create PURchase Req. : 1
Schedule lines : 1
Create MRP lists : 1
Planning mode : 1
Scheduling : 1
Planning date : default date

Click the Back button and you will be prompt Save Values.

Type in a Description and click the Save button.

After creating the variant, park your cursor at the variant and click the Schedule job button.

Fill in the Date and Time value.

Click Schedule periodically and you are prompt to choose the period.

Click the Create button and you are done.

To check, you can click the Show Scheduling button.

Note :

Define Scope of Planning for Total Planning in '**OM0E**'.

1. Choose New entries.
2. Enter a key and a description for the scope of planning that you would like to define. Save your entries.
3. Select the scope of planning and choose Sequence of plants/MRP areas.
4. Choose new entries and enter the plants or the MRP areas in the sequence in which they are to be planned.
The counter determines the sequence.
5. Save your entries.

What is Finite and Infinite Scheduling

What is finite and infinite scheduling? How it is carried out? What is to be done for each one? What are their significance?

Differences between planning and scheduling, finite and infinite

Finite Scheduling

Scheduling type within capacity planning that takes account of the capacity loads which already exist. Finite scheduling calculates the start and finish dates for operations in the order. It is a detailed scheduling strategy with which you schedule orders and operations, taking into account the existing resource load. A resource overload cannot occur.

Infinite Scheduling

A detailed scheduling strategy with which you schedule orders and operations, without taking into account the existing resource load. It is therefore possible for resource overloads to occur.

R/3 does planning without consideration for capacity situations. So if MRP says you need 500 parts on 3/1/04, it schedules them all to be built at the same time, even though you

can only do 100 at a time. Assume you have a fixed lot size of 100, you'll get 5 planned orders for 100 to start on the same day. This is "Infinite Planning". APO would recognize that constraint, and instead schedule out the 5 orders over time. The important part of that is that it also will schedule out the deliveries of the components for 5 different days. This is "Finite Planning".

Now, assume old fashion MRP. It schedules all 5 orders for the same day, and the buyers go out and get all of the components for the same day. Then the planner realizes he can't do all 5, and manually changes the schedule, and manually spreads out the 5 orders. The buyers will receive rescheduling notifications, but not until the scheduler does the manual rescheduling.

You could call this "Infinite Scheduling", but that only means the same thing as Infinite Planning.

But, SAP has "Capacity Leveling". What that means is you run another program after MRP (CM27 and CM28), which can be run in batch mode overnight. (There is a ton of configuration and thinking that will be required to do this!). The capacity leveling program will recognize the constraint at the work center level, and fill up the first day, then re-schedule the next order to the next available capacity, then the next order searches for available capacity, and so on. This is called "Finite Scheduling". The problem with this is the opposite of Infinite Planning, which is it doesn't take Material availability into consideration! The system will re-schedule a production order without thinking about whether the materials will be available or not.

Finite Planning does Finite Scheduling at the same time. If there is no capacity available on the desired date, the system looks for when capacity IS available. Then it stops to see if Materials will also be available (usually based on the lead-time for those components). If there is a material problem, then the system figures out when the materials WILL be available, and then checks to see if capacity is available on THAT day, and if so, it blocks off capacity, and allocates the materials for that day.

SAP PP Tips by : Nagesh



What Is Mean By Schedule Lines

What is mean by schedule lines?

Explain the schedule lines in md02?

- 1. no schedule lines**
- 2. schedule lines in opening period**
- 3. schedule lines**

Schedule lines are created against schedule agreements. Say if you have a material which is procured from subcontract. If you want the delivery in particular days with schedule you can maintain schedule agreement. In source list you will maintain vendor, schedule agreement with validity dates and which agreement is relevant for mrp.

If you maintain 2 against the sch agreemtn mrp will generate schedule line which you can see in md04. Also this delivery schedules are updated in scheduling agreement (t cod ME33). When running mrp in initial screen delivery schedules--you have to maintain 3 create schedule line

Schedule line in opening period - Opening period is maintained in Configuration of "Schedule Margin Key" which is getting assigned to Material master in MRP2 view.

Your understanding of the result after MRP is needed.

Define Floats (Scheduling Margin Key)

In this step, you specify the floats for determining the basic dates of the planned orders. The floats are allocated to the material via the release period key in the material master record.

Opening period

The opening period represents the number of workdays that are subtracted from the order start date in order to determine the order creation date. This time is used by the MRP controller as a float for converting planned orders into purchase requisitions or into production orders.

Float before production

The float before production represents the number of workdays that are planned as a float between the order start date (planned start date) and the production start date (target start date). On the one hand, this float is intended to guarantee that delays in staging a material do not delay the production start. On the other hand, the production dates can be brought forward by means of the float to cope with capacity bottlenecks.

Float after production

The float after production should provide a float for the production process to cope with any disruptions so that there is no danger that the planned finish date will be exceeded. You plan the float after production between order finish date (planned finish date) and scheduled end (target finish date).

Release period

The release period represents the number of workdays that are subtracted from the order start date in order to determine the production order release. The release period is only relevant for production order management. Recommendation

The opening period should reflect the processing time the MRP controller needs to convert planned orders into purchase requisitions or production orders. The opening period should be at least as long as the interval between two MRP intervals, so that all planned orders can be taken into account during the conversion. *-- Dhananjay

Production Order

Production Setup Time

My client has a production setup where there is a particular activity which has a setup time of 8 hrs when it is executed for the first time, but if another production order is taken up for the same material then the set up rime is zero. That is if I produce a material x at a particular work center the for the first time the set up time is 8 hrs, but if another production order of same material x is executed right after this order then the setup time is zero. Now, if we give the setup time as 8 hrs in routing then the system will calculate total time taking 8 hrs as setup time each time. Is there any way in which the system takes the setup time as zero when a production order for a particular material as repeated.

Soumyadipta

Take a look at the functionality associated with the set up group and transition matrix, if I remember rightly though the setup times are only adjusted after production orders have been despatched in the planning table as this is the first time SAP is aware of the sequence of manufacture

Paul

If I am not wrong, setup matrix and transition matrix can be made use of when you go from one operation to the other in a particular routing. But, here there is only 1 operation in the routing and that operation is being repeated for different

production orders of the same material. Can this different setup times be given for this same operation.

Soumyadipta

If I remember if setup group key is defined in the operation in the routing and then the transition times between setup keys is maintained in configuration.

So it's possible to create something like the following:

From Key 1 To Key 1	30 mins
From Key 1 To Key 2	8 hours

So different the operations in orders for the same material should both have the same key and should have a setup time on 30 mins between them.

Then when a different material with a different setup key comes along in the manufacturing sequence it will pick up an 8 hour setup time

Paul

I am facing a much similar problem. We have 15 work stations and daily 50 - 60 production orders are printed. I am maintaining production time as well as set up time in the routings (There exists a separate routing for all the part no's). When a production order is printed it copies the setup time from routings. Suppose in one work station there happens has to be 2 production orders processed one by one then the setup is only once. but due to the fact that setup is present in the routings the production order shows a non-conformity of setup time for the 2nd production order. How to solve this problem.

Narendra S

We have a similar situation in the company I work for, we don't actually maintain routings at material level but use reference operation sets at an aggregate level to represent the different production footprints (the link to each material is then made through the production version in the material master).

We measure the actual setup time confirmed in each order belonging to each footprint / family over a rolling three month period and maintain an average setup time in the reference operation set. This gets copied to each production order, but is only to make sure that a time allowance is left in each production week for set up to create meaningful capacity planning data.

When the planners develop the manufacturing schedule using the graphical planning table they then update the setup time in each order automatically with the setup times maintained in the transition matrix so it's more accurate, as it takes account of the order

being made on the workcentre previously. So in our case two orders sharing the same footprint will have different setup times.

Paul

Material Stock in Production Order

I have the problem in stock against production order:

Our scenario is we don't want to create a sales order. I create a production order that has 5 operations. The first operation is sub contracting. Through control key (External operation) I create the purchase requisition and convert purchase order in that operation. Through the PO I can issue the ROH and received HALB. When I received the HALB the stock of ROH is automatically reduced. But HALB stock doesn't increase. In this case where is my HALB material for second operation?

In this case how to proceed?

Do you have a material code for HALB? if you have material code than you can have stock increased. I think there's some mistake with the process. the subcontracting in operation is only for the operation, not the material.

In your configuration, you subcontract the first operation of the FERT production. and there's no stock increase of FERT or HALB when the first operation is completed (confirmation by purchase order...)

And what you want could be possible like this:

You create the HALB material code, and you make it external procurement (F in standard) and with special procurement key subcontracting (30 in standard) (enter these fields in material master mrp2 view). Then you can create purchase order for the HALB material when needed, and send ROH material to the subcontractor for the purchase order and post goods receipt for HALB material and stock increases. And accordingly, since the production of HALB is a different process, not a sub process of FERT material, you should change the routing of FERT material to 4 operations, omitting the first operation, which is subcontracted production of HALB. And you should also change the BOM of the FERT material, and remove the ROH (which is used for producing HALB) and put the HALB material itself.

Automatic Conversion to Production Orders

Is there anyone out there who knows if it is possible to make an automatic change of planned orders to production orders right away - or perhaps even to skip the planned orders and create pp - orders instead?

I have a customer who want to do this (skip the manual conversion). Perhaps it is impossible?

To create production orders in MRP run without checking first the order proposals (planned orders) is not a recommended process at all. It is against the accepted norms in production/inventory management and its MRP-2 logic on which SAP software is also based on.

If you have complex production - you'd have a nightmare closing all the production orders with the errors not resolved at the prior to conversion stage. On the other hand, if it is too simple production with only a handful of operations and no strict requirement of production control (which seems to be your case, for me), then please do away with production orders, and use the repetitive manufacturing where planned orders are the final.

I am confident that a consultant who can see the need and benefit for the wisdom of planned order conversion as a separate manual process, should ALWAYS be able to convince customer.

As always, the question is, whether you want the right shoe to fit the foot, or cut the foot to fit the shoe.

Regarding Production Order Confirmation

Production order confirmation with future date is not allowed

Future dates can be configured in the confirmation configuration.

In configuration **OPK4**, define confirmation parameters.

When this configuration comes up, in the "**Checks**" Sections, the last parameter says

"Date in the future."

Check this box if you want your dates in the future.

It determines whether dates in the future can be used in a confirmation.

If the indicator is not set, you cannot make any confirmations using dates in the future.

If you try to do so, the system will issues an error message.

What is the importance of Production Order confirmation? Is there any specification to use type of confirmation ie., CO11 or CO15 or CO11N ?

A confirmation documents the processing status of orders, operations, suboperations and individual capacities.

You can enter a confirmation

- For an Operation (co11/co11n)

You have the following options:

- To confirm quantities, durations, activities or personnel data.

- To make a confirmation at a particular point in time (for example, at the start of setup or the finish of processing) enter a confirmation.

- When you confirm time events, the system calculates the required duration. For example, the setup duration is the time between setup start and setup finish.

- For an Order : CO15

If you enter a confirmation at order header level, the system confirms all the operations that have a control key in which

confirmation is optional or necessary. The quantities confirmed in the operations are proportional to the quantities confirmed in the order header. ***-- Rajesh**

I want to stop the confirmation of production order whenever there is no goods issue to the production order so that I can get the correct material accounting report. I can't set backflush indicator to the material at Routing level because we are handling the raw material in batches, so I have to assign the batches to issue the raw material.(tcode CO27).

We have set the criteria to release the production order is only availability of raw material in plant, so system checks only the availability of raw material & releases the order. Is it possible after issuing the raw material the release of order took place?

Goods issues before release of order is not possible in SAP.

You can think of following things.

1) In opj4, you can block release of order if it has missing parts.

2) By using 'user exit' it is possible to disallow confirmation if goods issues are not posted against each component.

***-- Shailendra**

How Costing takes place in Production Orders

Can anyone please explain me the how the Costing takes place for the Production Orders.

Actually, I am new to this package , In Other Package (RAMCO ERP)

(The Process is like follows:

a. Production Work-Order Resource Cost Posts to Finance directly

b. Material Consumption postings happens from OSV(Order Settlement Variance) of MAC Module(Management Accounting).

Please somebody explain me as above in SAP.

The following are considered in costing,

- 1) cost of materials that you have issued for order
- 2) activity you have performed in terms of labour hours that you entered while confirming the order (the rates for the labour are defined in the activity planning tables of controlling module)..which is generally associated with a formula key and attached to a workcenter that is linked to a cost center also
- 3) overhead as applicable with respect to that cost center based on a predetermined cost center planning and its rate...

Anil

Costing updation in production order

How is costing updated for production order?

After goods issue, conformation & GR, we do TECO.

Before closing the order, costing details should be updated. Is it not?

Could you please guide me as to how this is done?

Also, what is the transaction code to be used?

Planned cost is caculated if you click 'cost calculation' in production order. GI go production order will update actual material cost. Confirmation of production order will update actual activity cost. You can settle cost once production order has status TECO or DLV. From PP side, the transtion is CO02

In IMG we can define that when we calcu. the planned cost.

There are 3 ways.

- Determine planned costs when saving,
- Do not determine planned costs when saving,
- Determine planned costs when saving if released.

But the actual cost is posted when we draw the material, when we confirm the order.....We can use co02 and click the calcu. cost to update the cost in the prd order.

Error in Cost Calculation

I am using 4.7. When I was saving my production order, there was this error message that told me that there was an error in cost calculation. Do you have any suggestions what I couldn't have done? What can I do to fix this?

Check the log file in the Production Order -> Goto -> Logs -> For costing

Then take it from here....

Check whether the material for which you have created a production order has a price define in material master like Moving average price or Std price.

Fast Links:

SAP flow for REWORK activity

Question:

What is the SAP flow for REWORK activity in PP-PI.

Sample Scenerio:

- 1. Initial Process Order qty: 10pc**
- 2. Confirmed QTY.: 9 PCS.**
- 3. Rejection qty .: 1 pc.**
- 4. Now that one pc. is to be reworked in operation no.0020.**

How is it possible to understand later that, it is in this particular process order, so much of rework is carried out, and thats the reason the process cost has increased.

Rework during production depends on the client's decision. Like some companies want a separate process order to process this rejected quantity and some clients want to use the same process order, some even want to identify this rejected by assigning a new batch number.

But in some company, they do rework rarely but not as frequently as you do.

What they do is by inserting the new operation/phase after the actual operation/phase, and the operation quantity/base quantity, queue times, etc will be according to the users decision. in u r example down 1 pc will be the operation/phase quantity.

and one more thing is that remember to PCNF the 9 pc if you want to identify the 1 pc with the new batch.

With Compliments by: Sandeep

Additional comments::

You also need to remember the product costing aspect.

The primary costs of material should not be repeated while doing the rework. so, the generally accepted trend is that you create a separate order type for it and a common recipe with a rework operation and the materials you can assign while creating the process order.

Doing it in the same process order will have a problem of traceability of cost.

With Compliments by: **Anil**

Serial Number For Component

I have a FG (A/C) which has a serial number. This A/c has a compressor in its BOM.

The client requirement is to link the compressor to A/c using serial number. So, I maintain serial number profile for the compressor also. But when I do mfbf (backflush) for the A/c, the system asks only for the serial no. profile only for the A/c & not for the compressor. How do I link the two?

You can assign components (with serial nos.) to assembly (also with serial nos.) with COIB after goods receipt.(Menu path --Logistics -> Plant maintenance -> Management of technical objects -> Installed base -> Create (special) -> With reference to production data.)

Example: Say assembly sr. no. is 1
And components serial no. are- 1,5,10,20 and so on.

After assignment of components it can be viewed on right part of screen, You can have the assignment history--- ie for which assembly no. which components are assigned or vice versa. In production order i.e in discrete mfg. it can be directly done at the time of operation confirmation.

The following is the detail steps:

1. T code--COIB
2. Enter material code (Assembly). You can select specific serial no. of assembly --- by putting sr. no. in serial no. field.
3. Click on list tree- you will find all assembly with serial numbers.
4. Click on explode-- it will show the BOM (in bottom left corner of screen)
5. Select the assembly numbers for which you want to assign the components
6. Click on transfer
7. Select the component
8. Also select the assembly no. on right side screen.

9. Select the serial no. which you want to assign to an assembly
10. Click on assign
11. You will find all the components will get assigned to assembly with serial numbers.
12. Now on right side screen there is "save" button. (It will ask you create/ change as built in foreground or background?)
13. Select as foreground
14. Save
15. You will find a message at the bottom --- saved.
16. Now you will find tick mark (in front of assembly material) in right part of screen (indication of assignment of components)

Tips by : Avadhut

How To Delete Old Production Orders

How to delete old production orders (CO78)?

Note that CO78 is the start of the Archive process. We are not using Archiving yet but the initial process fits the bill for what we need to do as mentioned in the original note.

Decide the range of orders you want to delete. This range will be used in the program variant. Note that we will be running CO78 many times because of the number of orders involved.

Running CO78 calls program PPARCHP1 and this involves the use of a Variant where the parameters for selection etc. are set.

First of all, create the variant via SE38 for PPARCHP1.

Enter details for number range, order type, plant and set deletion flag. Flag Detailed log and set this to go to Spool when running. Save the variant. You can also force the job to run in background at this point (which I would recommend) via menu line Variant --> Attributes. Also here you can flag order number, order type and plant to be required fields.

For e.g.

Order number	100000000	to	100200000
Order type		to	
Plant		to	
MRP controller		to	
Production scheduler		to	
Selection profile status			
Exceeding of delivery date	90	Days	

Actions

- Set deletion flag
- Set deletion indicator

Options

- Maximum number of orders: 99,999
- Detailed log
- Test run

Run CO78

Press the first button - deletion flag/deletion indicator.

Choose the variant you have just created. Press "Maintain" to update the selection range on subsequent runs. Save changes and return to initial screen.

Press Start date to set date and time for job to run as per any background job. Icon will turn Green.

Press Spool Params to set save output in Spool Q rather than print immediately. Icon will also turn Green.

Press Execute and job can be tracked via SM37.

Details of deleted orders and errors will appear in the Spool.

Rerun as many times as you need with relevant order ranges till all required orders are deleted.

Checking Costs and Revenues from the Sales Order

This report is used when you used transaction **MD50** to convert the Sales Order to Production Planning.

On the Make-To-Order Planning - Multi-Level screen, enter the following data:

Field Data :- Sales order	Your sales order number
Sales ord. item	(The item number of your sales order)
Create pur.req.	2
Planning mode	3
Schedule lines	1
Scheduling	1
Also plan unchanged components	Select
Display material list	Select

Menu Path :-

Accounting -> Controlling -> Product Cost Controlling -> Cost Object Controlling -> Product Cost by Sales Order
-> Information System -> Reports for Product Costing by Sales Order -> Detailed Reports
-> For Sales Order -> Plan/Actual Comparison

Transaction code :- **S_ALR_87013105**

Enter your Sales Order Number

Choose :- The Plan/Actual Comparison and the selection screen will appear.

To display the various cost elements and revenues for one of the items, click the down arrow and you will see the report data.

Goods Movement

PP - Define the default components reservation movement type

During order creation, SAP will automatically creates reservations for the components that are kept in stock.

The reservations are assigned a movement type for the material issue with transaction **OPKA**.

You can control the material issue using the movement type.

Changes are only necessary if you do not wish to use the SAP default setting.

Movement types are predefined in the standard SAP R/3 System.

The default movement types used are:-

Dev. cl.	GR	GR-canc.	GI	GI canc.	GI-by-prod	GI-canc-by-prod
CO	101	102	261	262	531	532
IWO1			261	262		

Best regards,

Goods Receipt (101) for Process Order

We are currently working on SAP 4.7.

Currently experiencing a problem where the Goods Receipt (101) for Process order is taking place before a confirmation is done. This causes a recon variance during month-end, meaning the 101 movement takes place e.g. last month and the confirmation done in the current month.

Is there a way that I can customize/set the system NOT to process a 101 movement UNTIL a Process order is confirmed? So, whatever quantity was confirmed, the 101 movement should take place for that quantity and not more.

Note: I have set the control key to NOT process an automatic 101 movement.

Thanks in advance for your suggestions.

Poobie

You have 2 options.

1. You can use User Statuses for this. You define the Confirmed user status and this user status lets goods receipt to be done. If not active, you don't let goods receipt. And you set

this user status during confirmation, manually or you may use user exit to do this automatically. Settings for this option can be done in Customizing.

2. You should be careful for this option! You can edit the Standard statuses for this. The system has PCNF and CNF statuses for partially confirmed and fully confirmed. As far as you have explained, it seems that these statuses, when active, is configured that the system lets goods receipt done. You can edit these statuses, to not to allow goods receipt done, if inactive. Settings for this option is done through Status Editing transactions, BS23 for display, and BS22 for edit. I repeat, you should be careful, and extra careful if this is the first time you are using these transactions.

Hope it helps,

Osman.

That is one good TYPICAL problem of Production Planning. I would suggest not to go for big developments which will take long time to validate (may take even 3 or 4 months) because all other process related to settlement is also involved for your RECONCILIATION.

Development for sake of adjusting the quantities that you have calculated in EXCEL/Lotus - Can be considered. That is : you will be actually trying to upload the EXCESS Production Quantities or REDUCE Production Quantities in the existing Production Orders. Because - You will definitely be doing a reconciliation outside SAP once. This data need to be punched in to SAP. Typically by 3rd or 4th day of the Month you will be doing this - I believe.

After your adjustment/reconciliation for the last month - you have to give clearance for running the SETTLEMENT process.

Goods receipt and goods issue through a PI sheet

Can anyone explain to me how the goods issue and goods receipt are done through a PI sheet. What's the logic behind calling the functional module.

Vasudha

Process instructions contain information on:

1. The individual processing steps to be carried out
2. The process data needed for further processing in process management such as process parameter, process data calculation formula, inspection results request etc. During maintenance of PI sheet, the material quantity consumed in each phases and the actual quantity produced are entered (confirmed). Based on the confirmed quantity the system

generates GR for the process order for the finished product and a goods issue for the material withdrawal as soon as the process messages are sent.

Hope this may clear your doubt.

S.Arulselvan

Thanks Arulselvan, if the materials are warehouse managed, how does the goods receipt work, does it work as a normal transaction in the background...

Vasudha

In general scenerio of warehouse management, GR and GI takes in different stages. When you post the GR (both for purchased material and finshed goods) the material stored in entry storage type. Based on the transport order materials are picked and moved to the permanant storage type. This will be taken care by warehouse controller. After entering the material quantity in PI sheet and posting the process messages, transfer request will be generated and the warehouse controller then convert the transfer request into transfer order. Based on the transfer order material will be picked from the permanent storage type and moves to exit storage type and from there material moves to shop floor.I have no experience in this but this is the general procedure.

If this is not working, please reply.

S.Arulselvan

Steps for Subcontracting

Like to share with you my Subcontracting Steps:

1. Define all the materials in your plant (subcontracting and packaging etc).
2. In the material master MRP 4 view there is one field in which you can mention that this material is not relevant to MRP planning, use this field for subcontracting material so that it will not be planned in MRP runs (generally use this field for re-order point planning).
3. In the BOM for the subcontracting material put the special procurement key as Subcontracting and do not keep relevance for costing.
4. If you're using packaging material of your company and want to capture the cost of these materials in the subcontracting production order then put relevance for cost.

5. Define alternate BOMs for each customer.
6. Generally the routing will be the same but materials will change, define different production versions for each alternate BOM and assign to the routing.
7. Define the activity types for packing and mixing in the work center and assign them to the cost center, use these for your routing.
8. Whenever you receive a sub-contracting order, use the relevant production version depending on the customer.

In my place all the plants belong to the same client in SAP and they want to use the same material code in both plants, so I think my subcontracting scenario might be different from yours but it gives you some ideas to go about it.

SAP PP Tips by : Sandeep

Note: To Define Subcontracting Cost Center : Goto - ca02 - double click operation number. It is at the section called External Processing. (Subcontracting will be tick).

Stock in Transit - liquidation or remove the stock which is in transit

I am transferring a product from one plant (say 1000) to another plant (say 2000). By using MB5T, I could find the stock in transit. Unfortunately, the lorry met with a fire accident and all my goods destroyed. Now I have a scenario where I need to remove the stock which is in transit.

How do you wish to remove the stock? Are you going to scrap it or issue it to a specific GL account for insurance purposes?

It is for both scrap and for insurance purposes.

You have two options. Option number one being the simplest of the two. You will need to know the stock transport PO number or numbers. If you do not know them you can perform a search using transaction MB5T enter in the receiving plant, check the stock transfer order and the cross-company-code box and execute. All in transit PO's will be displayed for that plant. You can drill into document flow by double clicking on the PO number.

Option 1.

You complete the transactions into the intended plant and then perform the scrap transaction.

MB01 or MIGO (goods receipt against a purchase order) depending on which you use to perform goods receipts and LT06 bin put away,(if the plant is warehouse managed).

Scrap the goods using transaction MB1A movement type 551 or MB1A misc issue to a specific GL account. Use movement type 201. LT06 to remove the goods from the put away bin if the receiving plant is warehouse managed. If the receiving plant is not warehouse managed then MB1A is all that you need to do to complete the scrapping of the goods.

Option 2.

You wish to reverse the goods movement back into the supplying plant and then perform the scrap transaction.

VL09 reverse good movement. (You will need the delivery number in order to do this)

LT0G (if using warehouse management) to reverse the goods back into a bin.

VL02N to cancel the delivery

ME22N to cancel the PO.

MB1A choose the bin location in which you placed the goods when you performed the reversal. (again if you have warehouse management). If non warehouse managed MB1A is all that needs to be completed to remove the goods from inventory.

SAP PP Tips by : Christine Schantz

Restricting Good Receipt Unless Production Order Confirmed

SAP Production Planning Ticket:

Restricting good receipt in MB31 unless the production order is confirmed.

My client uses CO11N for activity confirmation. They are not using auto goods receipt for this transaction. Instead they are using MB31, 101 movement type. This 2 transactions are independent of each other. Now the user wants that unless the order is confirmed there should not any goods receipt. Means the system should not allow MB31-101 movement against the order if it is not confirmed through CO11N.

1. Use Tcode BS02 (Customising User status profile).
2. Select the order type which you want to configure (eg:PP000001) and choose "Details" button.
3. In the User status table do the following:
 - a. In the status no field type "1" , status field "Sta1" , short text "GR not allowed" , lowest no "1" , Highest No "2". Mark a tick in the initial stats check box.

b. Next line, type status no field "2", status field "sta2", short text "Gr allowed", lowest no "2", highest no "2".

4. Select the STA1 line and choose details. select the "create" button. select the "GR for prod order", mark "forbidden radio button" and "set radio button".

5. Select the STA2 line and choose details. Select the "create" button. select "confirm order", mark "permitted radio button" and "set radio button". Next choose "GR for prod order", mark "permitted radio button".

6. Save.

BOM

How to link BOM component to storage location?

If you have to issue a component for production order of main item always from a specific storage location (component is stored in multiple storage locations but for production of a top item reservations should be created only on a specific storage loc), where can you provide the link between BOM component and storage Loc??

Is it possible to provide that link in BOM? or while allocating BOM components to routing operations or else where?

You can use the issue storage location field on the MRP 2 screen in the material master

or

You have 3 ways of doing it - not including the material master since the components are stored in multiple locations.

1. BOM item - very flexible but very time consuming to maintain if you have lots of BOM's. In CS02 you can set st. loc. on each component, and SAP will take this st. loc. first.
2. from level above - you can set it up so that whatever st. loc. is the default prod. st. loc on the material master for the level above will be the issue st. loc for the components you choose, if the component exists in that st. loc. - kind of a champagne waterfall effect. If the st. loc. is not maintained on the component, it will take the material master default of the component.

3. using supply area and work center. create supply areas and link them to st. loc's. - then link the supply area to the work center on CR02. Then allocate components to operations going through those work centers.

Note:

Supply Areas are meant to be used in conjunction with Kanban. However you can just use them to link the work center to a storage location. You will never see an inventory balance in MMBE in a supply area. With Kanban you can set up automatic triggers to replenish stock to the supply areas from a main stock location.

When is a Material BOM Not Exploded?

A BOM is not exploded in the following situations:

- No BOM is effective:
 - On the explosion date and in the given area of validity
For the given effectivity parameters
- The BOM has a deletion indicator.
- The BOM is a multiple BOM, and has no alternative that matches the lot size for your required quantity.
- No BOM matches the selection criteria of the BOM application you selected.
- This is possible in the following situations, for example:
 - The application does not take all BOM usages into account.
For example, the application only takes BOMs that are relevant to production into account, so a BOM that is relevant to sales and distribution is not exploded.
 - The application selects a specific alternative on the explosion date you require. The material master record supports alternative determination by Explosion date.
If the specified alternative is not valid on the explosion date, the BOM is not exploded.
 - The application takes production versions in the material master record into account, but no production version has a BOM that is valid on the explosion date you require. The material master record supports alternative determination by Production version.
The system only explodes the BOM defined for the production version that matches the alternative and/or usage entered on the explosion date required.
 - The application only takes BOMs with certain status indicators into account.
For example, the application for MRP only explodes BOMs that have at least the status Explosion for MRP.

Further checks:

- Do the proper Scheduling in Routing (Backward/forward). In md61 give the requirement in next month.check your in-house production, planned delivery time in md02 give MRP Control parameter Rexplode BOM and Routing.

- Check BOM explosion data in MRP4 view of material master view (Individual/Coll data).

Creating a simple BOM

Transaction code : **CS01**

Material : Your Material code

Plant : Your Plant

BOM Usage : 1

Item	Category	Componment	Quantity
0010	L	Your Material code	Your required quantity

Save your entries

You can used **CS02** to changed the BOM and **CS03** to display the BOM.

Best regards,

Explode BOM

Transaction code :

CS11 to explode BOM level by level

CS12 to explode BOM Multi level

Material : Your Material code

Plant : Your Plant

Alternative BOM : if you have multiple BOMs

BOM application : PP01 if you follows SAP default for Production General

Valid from : date of BOM you want to change

Required qty : enter required quantity (optional)

Where used list for BOM

Transaction code : **CS15**

First screen :

Material : your material code

Type of where used list : Tick Direct

Valid from date : default system date (change if you want other dates)

Next screen :

Required qty : required qty of material

Resulting qty : resulting qty of the header material

Plant : restrict selection to a single plant

PP - Controlling data for your Bill of Materials

You define the default values for BOM in **OS28**.

- Based quantity
- BOM Status
- Size Unit
- Var-size item unit

You control the Material type allowed for the BOM header in transaction **OS24**.

In transaction **OS27**, you define the central settings for your BOM management system. This are one-time settings for BOM management, which should not be change after production.

Low date

When you create or process BOMs, the default date is the date defined in your system as the

earliest processing date (01/01/1900 in the standard system).

BOM validity maintenance

Tick if you want the user to specify a valid-from date when maintaining BOMs. If not tick the BOM created as of the current date or the system low date (1/1/1990).

EC management active

Tick if you want to make historical changes to BOMs with reference to a change number.

(This means that the status of the BOM both before and after the change is stored in

the system.) In this step, you only specify whether engineering change management can be

used for maintaining bills of material. In transaction OS25, Configure history requirement

for BOMs, you define whether you want to make the use of engineering change management a

requirement in certain cases.

Hist. reqmt variant

Use this indicator to control when history requirement applies to new variants or

alternatives in a BOM group.

Sub-item documentn

You use the Sub-item documentation indicator to define whether changes to sub-items are documented.

Header

Create BOM header with parameter validity

TECHINCAL TYPE

Mult. BOM inactive

Tick if no multiple BOMs can be maintained in this R/3 system.

Variant BOM inactive

Tick if no variant BOMs can be maintained in this R/3 system

BILL OF MATERIAL ITEM

BOM item explosion type

If you create a BOM item with reference to a change number and change the valid-from date

(in the change header or alternative date), then this can change the sequence of validity

periods of a BOM item. The indicator BOM item explosion type specifies whether and according to what rules,

the system determines a unique change status, when you display, evaluate or change a BOM to

a date in the overlap period.

Description variable-sized item

This indicator controls which text is displayed in BOM processing for a variable-sized item.

Repeated effectivity via external item ID

This indicator ensures that an item that already exists under an external item ID can be used.

General settings

Unit 'piece'

In the standard system, this field contains a unit of measure for "piece". You can change this unit. This unit is the base unit of measure (BOM header) or the component unit of measure.

Base unit of measure for:

Equipment BOM

Functional location BOM

Document structure

Standard BOM

Component unit of measure for:

Text item

Document item

Non-stock item without material master record

CAD active

If you want to maintain BOMs from a CAD system, set this indicator. This activates an additional field in the BOM header and BOM item, which tells you whether the BOM header or BOM item was maintained from a CAD system.

If you deactivate engineering change management, changes to bills of material are not recorded.

The modification parameters defined here apply to all BOM categories.

The following settings are made in the standard R/3 System:

1. Validity date maintenance and engineering change management are active.
2. The current system date is the default valid-from date.
3. CAD is active.
4. Explosion type for BOM item: blank.

Allocating BOM to Other Plant

Use Transaction **CS07** to link this BOM to the other plants.

This shall make the BOM available in the other plants.

Mass Change Bill of Materials

Use Transaction **CS20** to mass change your BOM.

In this transaction code, you can :-

1. mass change item data
2. mass delete items
3. mass add materials etc.

Multi-level configuration with variants

-----Original Message-----

Subject: Multilevelconfiguration with variants

Hi all,

Does anybody know a trick to use preconfigured variants in multilevel configuration ?

According to OSS note, it is not possible because of MRP and possible differences between sales order configuration and material master data configuration.

thanks in advance.

-----Reply Message-----

Subject: Multilevelconfiguration with variants

If you got a some material variants that you would like to keep in stock, the remaining variants are configurable materials.

If you only sell material variants and not configurable material's you can try this solution.

Kmat structure.

Level A - - - - - Design level - Used to make simulation/pricelist/deside which system the customer should use.

Level B - - - - Different systems depending on the selections made in level A.

Level C - - - - - At this level I have got the material variants and configurable mateial's all together.

Step 1:

To be able to select a material variant in level C, I use the classecification system. (class type 200).

This class has got one char. (ref to table marc and field matnr). It is not nessesary to make the reference to a table. I have done this because I hope to find a better solution at a later stage.

All my material varints are allocated to this class. Enter the material number in the class using c124N.

Remember to make the classecification of the material numbers.

Step 2:

Create a Variant table. (V)

Enter the chars that you have got in the class (300). We have got many configurable materials. I have created one class for each configurable material.

In this class you should allocate the char marc_matnr. All chars except from marc_matnr should be marked as key fields.

In the field marc_matnr you must enter the material variant according to the classification of the material variant. (if the combination that you have entered haven't got a material variant, you must / could enter the configurable material number.

Enter all combinations that's necessary to cover the material variants that you have got in your system. The largest variant tables that I have got, has aprox. 5000 positions.

Step 3:

Allocate the class(es) to the sales order bom. If you sell configurable material's you must enter 2 positions. One with the class, and one with the configurable material. This is because you can't allocate a configurable material to a class. (I could'nt make this work)

Then allocate a selection condition to the class. Level B component = 2000

Then allocate a procedure to the class.

```
table V ( a    = $parent.a ,  
         b    = $parent.b ,  
         c    = $parent.c ,  
         d    = $parent.d ,  
         marc_matnr = $self.marc_matnr )
```

This should do it you don't sell configurable materials.

Allocate this selection condition to the configurable material.

```
table V ( a    = a ,  
         b    = b ,  
         c    = c ,  
         d    = d ,  
         marc_matnr = '2000' )
```

This makes sure that you get a configurable material if there isn't a material variant.

The sales person don't have to worry about doing things right. In our case it work very well. We have got a very good performances.

It is possible to configure 2 - 20 items at the same time as it takes for our single level configurable materials.

I think SAP needs to implement a solution(this) so that we don't have to find/develop our own solutions.

Other solutions out there??

Best regards

What exactly is a Phantom item or Assembly means?

**Can anyone please tell me what exactly is a phantom item or assembly means?
How does it affect the MRP process?**

A phantom assembly is used when you want to be able to structure a BOM so it is easy to understand, but don't want to create too many production orders.

Assume an auto Engine. There are hundreds of components. You might structure them as: Engine block and parts, camshaft and parts, and 6 piston assemblies. But you don't want to create 3 production orders, too much hassle. So you want to issue the components for the piston assembly in the same production order as the Engine block. So you create a new material number for the Piston assembly, but you mark it as a phantom assembly. That means that when you create the bom for the Engine assembly, you only have two assemblies, the Engine block and the Camshaft. You add the phantom assembly for the Piston Assembly to the Engine block BOM, saying it requires 8 of the phantom assembly. When the production order is created for the Engine block, the picklist will also include all of the components of the 8 piston assemblies.

1) When to use, or not use a phantom assembly?

If you need to do cost accounting on how many hours it takes to assemble a piston assembly, it cannot be a phantom assembly, because as a part of the Engine block assembly, the labor costs are included in the Engine block production order, and therefore in the standard cost.

2) Can the assembly people pick out the parts for the phantom assembly from the all of the components in the Kit?

If the guy assembling the Engine Block gets confused because of all of the components for the Piston assemblies are there, then it cannot be a phantom assembly. But if they can separate them easily, go for it. A printed circuit board assembly should never be a phantom assembly, because all of those little parts for each type of PC board must be kept separate.

3) Do you usually build 100 piston assemblies, put them into stock, then issue 8 at a time to build an Engine Assembly?

If so, it is not a phantom assembly. If the Piston assembly is a phantom, you only build the 8 you need while you are building the Engine Block assembly. You normally do NOT store a piston assembly (phantom assembly) in stock.

4) However, sometimes a customer calls and wants you to send them all of the components for One Piston Assembly.

By having it set as a phantom assembly, even though you don't usually create separate production orders, in this case you CAN create a production order for one, pull the components, close the PO, and send the parts off to your customer.

5) You complete a Engine Assembly.

As you are walking it back to the stockroom, you drop it on the floor, and it breaks! Damn, but you can still save the piston assemblies. Since they do have a SAP material number, you CAN put those back into stock. Most MRP systems WILL recognize that you happen to have 8 piston assemblies in stock, and will issue those whole assemblies to the next order for a Engine Block.

Attachment Of Drawings in BOMs

How to attach a document to a BOM ?

Now one can attach a document to a BOM in one of the following three ways...

- 1) Attach document as an item in the item overview,
- 2) Attach document to an item and
- 3) Attach document to the header material.

1) Attaching document as an item in the item overview:

...go to the 'General Item Overview' screen
...select the tab page 'Document'
...enter item category 'D'
...dropdown and select the document you want to attach
...the system automatically selects the respective document type, document part, document version and document description
...the system also enters component quantity '1' and component unit of measure as 'PC' by default.

2) Attaching document to an item:

...go to the 'General Item Overview' screen
...select the particular item by F2
...the item all data screen appears
...go to tab page 'document assignment'
...dropdown and select the 'document type' you want to attach ...dropdown and select the document you want to attach
...the system automatically selects the respective document part, document version and document description

3) Attach document to the header material:

...go to header overview screen
...go to tab page 'document assignment'
...dropdown and select the 'document type' you want to attach

...the system automatically selects the respective, document part, document version and document description

Pre-requisites...

...create document by transaction CV01N

...Customizing settings...in document management customizing determines which objects can be assigned to documents per object type.

...go to IMG -> cross-application components -> document management -> control data -> define documents type

...select the document type for example `DRW`

...select the sub dialog `define object links`

...select new entries and enter following objects...

...`STPO_DOC` and screen `257` (linking document to BOM header) ...`STKO_DOC` and screen `258` (linking document to BOM item) ...now documents can be linked to BOM header as well as BOM item.

Tips by : Rakesh

Split In Routing / Difference Between Alternative And Parallel Seq

The term "Splitting" in SAP means having more than one person or machine working on an operation in a production order.

SAP assumes that only one person/machine will be working on a job at a time. If it takes one hour to make one, and the order is for 10, the system will schedule the job at that work center to take 10 hours. However, if in the operation in the routing, you select "Required Splitting", then you put in "number of splits" as 2, then the system will assume you are having two people/machines work on the job at the same time, hence it will only schedule the job to take 5 hours, not 10. If you put in splits as 4, then the system will assume 2.5 hours to get the job done.

Also, sometimes it might be ridiculous to split the job. For instance, if that previous example order was only for 2 pieces. Having two machines working on it would be dumb, because you would have to do two setups. So the system gives you a Minimum processing time, so if it's less than, say, 5 hours, do not split it.

What is the difference between alternative and parallel sequence. How these are used?

Generally in routing 3 types of sequence are present which are standard, parallel and alternate sequence.

Alternate sequences are linked to the standard sequence which is the main sequence. The place where alternate sequence starts from the standard sequence is called branch operation and again the place where it joins the standard sequence is called the return operation.

Parallel sequences are set of operation which run parallel to the standard sequence, for example in a chemical industry for analytical processes that occur parallel to the main production process.

Alternate sequence consists of set of operations other than the standard sequence so that either of the sequences can be run for a production process. Generally branch operations in the standard sequence are ignored in this process.

Tips by : Karteek

A basic SAP Engineering Change Management Setup

This are the basic IMG settings in order to used the engineering change management features.

x refers to a tick.

First setup the control data in **OS54**.

Revision sections

Fields :-

Revision level active	x
Ext. revision level	x
Higher revision level	x

Object Management Record sections

Fields :-

Object maintenance	x
Assign alternative date	x

Override value/assignment date sections

Fields :-

Only with leading change mst.	x
-------------------------------	---

Setting the Revision level active is to activate the engineering change management for material master. If you do not want the engineering change management for materials, remove the tick.

With a tick in "Higher revision level", the new revision level has to be always higher than the old revision.

Secondly, setup the external number range in **OS53**. If you use the internal number range, then remove the external number range.

Third, define the status for the change master records in transaction **SM30 - V_T419S**.

Change No.	Chg	Date Chg	Dist. Lock	Description
Status	Poss			
1	x	x	' '	Active
2	' '	' '	' '	Inactive
3	' '	' '	x	Locked

Fourth, define modification parameters for the BOM in **OS27**.

Fields :-

BOM Validty Maint.	x
EC Management Active	x
History Requirement	' '
Unit Piece	PC

The rest of the fields are blank.

If the History Requirement is tick, every time during creation of the BOM, SAP will prompt your for an ECN number as is compulsory.

Lastly, define fields selection for routing in **OP5A**.

PP task lists: initial screen -> Change number -> Transaction code -> Tick Req.

Setting the Transaction code fields Required indicate that you have make the ECN number compulsory when changing the routing.

Finally, do a test by making changes to the Material Master, BOM and Routing.

SAP PP-CRP-LVL - Capacity Leveling Profile Setup

Capacity leveling is used in various areas of a company and at different planning levels with the following objectives:

- High capacity load
- Adherence to dates
- Short lead times
- Low stocks

The objectives of capacity leveling include:

- Leveling overloads and under loads at work centers
- Achieving optimum commitment of machines and production lines
- Selection of appropriate resources

Show here is an example on how to customize the Capacity Leveling Profile.

Define time profile in OPD2.

Assuming you want to create a time profile for 2 months.

	Entry Type	Start Date	End Date
Database Read Period	J	-3	3

The database read period specifies the period in which capacity requirements are read from the database. All requirements are accessed which are partially or completely within the database read period.

Evaluation Period	G	-1	60
-------------------	---	----	----

The evaluation period specifies the period over which data is formatted and displayed. The evaluation period must lie within the database read period.

Planning Period	G	-1	60
-----------------	---	----	----

The planning period defines the period in which the SAP system can carry out planning. The planning period is smaller than or equal to the evaluation period. You cannot move operations outside the planning period. Equally, when automatic finite scheduling is carried out for an operation the system only searches for a new date within the planning period.

Dispatch of backlog	G	Backlog dispatch Date = 0
---------------------	---	---------------------------

The date for dispatching the backlog is of importance in period-related planning. You use the date for dispatching the backlog to determine the date backlogs are to be allocated.

The following types of entry are available:

Actual date specifications

These date specifications (for example, calendar day, calendar year) are only useful in the profiles in exceptional cases.

Relative date specifications

These date specifications (for example, number of calendar days, number of calendar years) are always calculated from the current day.

For every period, you can specify in what form you want to enter the date by using the respective field "Type of entry".

Define the strategy profile in OPDB.

In this menu option you define strategy profiles to control capacity leveling with the planning tables.

You can copy the standard strategy profile like SAPSFCVER1 or SAP_T001.

Assuming you copy the strategy profile to ZAPSFCVER1 ticking the followings:-

1. Dispatch at earliest point in time.
2. Change production version on error.
3. Cancel dispatching due to error.
4. Use operations floats.
5. Use float before production.
6. Use float after production.

and copy the strategy to ZAP_T001 ticking the Change Planning direction.

Define the Overall profiles in OPD0.

The overall profiles are used as follows to control capacity planning:

If you select the menu options:

Capacity planning -> Leveling -> Work center view -> Planning table, then the profile SAPSFCG001 is processed in the standard version.

You can change the profile, but the SAP sub-profiles should remain unchanged as far as possible.

You can define your own profiles and allocate them to particular users by means of user parameters. (See user parameters CYA -> CYX)

For example, when you access the planning table enter using the application menu "Capacity planning" -> Leveling -> Work center view -> Planning table the user parameter "CYA" is operative.

You can select any overall profile you like by entering via the application menu "Capacity planning" -> Leveling -> Variable.

Your details of the profile can be as follows:-

Profile	ZONLINE	ZBACKGRD
Selection profile	SAPSFCS005	SAPSFCS001
Control profile	SAP__C001	SAP__C002
Time profile	ZTIME	SAP__Z002
Evaluation profile	SAP__A001	SAP__A001
Strategy profile	SAP__T001	ZSTRATEGY
Period profile	SAP__P002	
Planning table profile		SAPSFCL010
Prof. Plan tab (tab)	SAPSF011	
List profile	SAPSF001	SAPSF001

Message / System Status

Changing warning msgs to error msg n vice-versa

In the customizing, for some of the modules, there are some transactions which allow us to change the type of the system messages, to warning, error, or no message at all. But they work only for some of the specific messages, not all of them! You should check the corresponding customizing menu and check if suits your needs..

Some examples:

OPJB for production messages

OBA5 for CO messages

OMT4 for material master messages

Otherwise, you have to find other work-arounds to meet the requirement to change the message type.

FYI:

Why is the need to restrict to only some of the messages? System divides the messages into 2 categories from business side. Some messages are issued by the processing ABAP program and they cannot be changed. Because the program cannot continue to run without correcting those errors. But some messages do not result in any contradictions for the processing program, but might affect the succeeding operations in that business process.

Here's the example:

For the first case,

When creating the production order, we have to enter the order quantity. There's no way that system can continue if we do not enter the quantity. So there's no doubt that we shouldn't be able to change the error type for this.

For the second case,

When i create a production order, i can create the batch number for the product in the order before saving the order. And the system checks whether i entered the batch number in the order or not. For the production order creation, it's not a must to enter product batch number beforehand. System can save the order. We can create the product batch separately, or even we can create it during goods receipt for order. Therefore, system could allow us to change the message type to error or warning. If our production process is designed, so that the person making the goods receipt shouldn't enter other batch number than that entered in production order, we should make the message type error, so that the planner should have to create the batch number during creation. If however, we only create the batch number during goods receipt, we should allow the planner not to enter batch number beforehand... (This was just a fiction example, do not question it, and don't look for this setting in the customizing)

Production Planning - Production Control System Messages

You can manage the production control system messages with transaction **OPJB**.

In this step you can specify whether the SAP System will :-

- suppress this information
- displays it as a warning
- displays it as an error message

In the case of the error message you can only process it further if you correct the entry.

You can also group the messages according to user classes by saving the messages in **different versions**.

Process the list of messages by assigning every message a message category.

If you have saved message categories under **different versions you can assign a version to specific users.**

This has the effect that the same message appears as an **error** for one user and a **warning** for another.

To do this you must assign the **parameter ID "MSV"** and the **version number** to the corresponding user master records in transaction **SU01**.

Production Order System Status

Tell the difference between TECO and CLOSED.

TECO means Technically completed order, means with out full completion of order. That production order stopped because of some reasons. CLOSED means after completion of confirmation and settlement the order is fully closed for further processing.

How to delete released production orders?

In the production order, select Functions --> Deletion flag -->Active to delete production order. This method can be used for production orders having CRTD (ie created) and REL (released) status. However, it is not possible to delete a production order with REL and GMPS (ie. after the withdrawal of materials for the order) status.

You can TECO the production orders with REL and GMPS status.

CO13 is used to cancel the confirmation of a production order.

Once Final Goods Receipt is post & Order is completed n it is Technically Completed it should not allow any goods movement against that order but this is not happening & one can issue goods even if the order is TECO.

When order status is Teco, system allow us to do the posting against the order. Once order status is closed, then only order treated as closed for execution.

In TECO status you can post the remaining activity/goods movement. Like if you have one order that contains the 5 operation and out of 5, 3 you are confirming in the current period and suppose, rest you are doing in the next period. So at the time of settlement for current period, order status should be Teco cause you will do some operation in the next period and cost for next period should be settle on next period. after that you have to close the order.

So TECO allows the postings.

If the requirement is not allowing any goods movement while system status TECO is active, pls try this approach in the config:

1. go to tcode BS22 (Maintain: System Status)
2. look for the system status TECO.
3. Double click the field "TECO".
4. in the transaction control tab look for the business transaction "RMWA" or goods movement (you can type it in the lower left corner button box).
5. select the radio button from "Allowed" to Disallowed".
6. save your changes. *-- **Ely**

Explain System and User Status In Production Order

What is System Status in PP?

A system status is a status set by the system. It informs the user that a particular function was carried out on an object. You cannot influence a system status in any way, that is, it cannot be directly deleted or changed. Example: When you release a production order, the system automatically sets the system status "released". You cannot influence this status unless you carry out a business transaction that leads to a change of the system status.

You can activate any number of statuses in a production order. It is possible for a production order to be simultaneously "released", "pre-costed", "printed" and "confirmed".

The Main system statuses which are in use at Netafim:

- CRTD = Created. This is the status given to each production order upon creation. As long as a production order has not been released, it cannot be printed or confirmed.
- REL = Released. Once a production order is created, it can be released for production either automatically or manually.
- PCNF = Partially Confirmed. This status is given to an order once the first confirmation had been received from the shopfloor. This status will change automatically to CNF when a final confirmation will be done.
- CNF = Confirmed. Confirmations of production progress and produced goods are reported to SAP from the shop floor. A final confirmation is given to an order when its production is complete.
- PDLV = Partially delivered. This status is given to production order that is partially delivered.
- DLV = Delivered. This status is given to production order that is fully delivered.
- TECO = Technically Complete. This status is given to production orders which had been given both CNF status (final production confirmation) as well as User Status of CHECK (see "User Status" section). TECO is set automatically by a daily job running in the background.
- DLFL = Deletion Flag. This status indicates that the order had been marked for

deletion, but was not erased from the information system.

What is User Status in PP?

A user status is activated by the user and can be created as an addition to the existing system status. You can define and activate any number of user statuses. To define a user status, you need to have created a status profile, which is created per order type in Customizing.

The Main user statuses which are in use at Netafim:

- Rel. = Released. This user status is given to the production order with its creation.
- Prod. = Production. Once a first production confirmation has been made, the Rel. status is changed to Prod.
- Clo. = Closed. User status given to a production order which was fully confirmed (system status CNF).
- Check = The controller marks a production order as "Check" after performing a thorough examination with the aid of "Work Order for Check" report (the report list all the production orders with CNF system statuses but with no TECO system status). Upon marking the production order as "Check", the system will automatically mark the production order as TECO. The status indicates that controlling can process the production order.

*-- Ashish Shivankar

PP Year End To Do List

Content Author: Debbie

We will do our first year end. What should I do for the PP module?

These are the activities we have defined for ALL areas including PP and they are in addition to your normal month end closing:

1. Create new material document number ranges for the new year.
2. Generate period rules for Asset Accounting.
3. Do Asset Accounting year end close and Fiscal year change.
4. Roll all A/R and A/P balances.
5. Close out all nominal / P&L accounts in accounting.
6. Enter all cost center budgets for the new year.
7. Enter new standard costs for your materials for January 1 of the new year.

8. Maintain the planning for your activity type used in your work centers for the new year
(otherwise you will not be able to do confirmations in the new year.)

9. Create calendar for new year.

SAP Production Planning and Control Frequently Asked Question

Bills Of Material

Q: We have a **BOM** - 'A' with two packing materials 'X' and 'Y'. For 1000 units of 'A', 1 packing material of 'X' is required and for 50 units of 'A', 1 packing material of 'Y' is required. **Base quantity** of 'A' is defined as 1000. How can I define 'X' & 'Y' or in fact 'A'?

A: Make the base quantity of 'A' as 5000. The resulting component quantities would be 5 of 'X' and 100 of 'Y'.

Work Centers

Q: Can we have **more** than 6 **standard values in standard value key**?

A: One way to achieve this is to create another operation step using the same work center. However this shall be with a control key that is not a milestone. When the milestone operation is confirmed, the previous operations up to the next milestone are automatically confirmed. To get the desired number of standard values, all the 'non milestone' steps can be built depending on the need.

Routing

Q: Can we use same routing for materials undergoing the same process/operations? Can we **avoid separate routing** for each and every material produced?

A1: Presume that there are 50 products and the fabrication shop uses a set of 10 machines. If all these products use the same settings of the machines, Reference Operation Sets (task list type S) can be setup for common processes that use the same work centers. However costing, scheduling and capacity will be affected if each product has different setup time and Reference Operation sets can not be used.

A routing for each material number (type N or R) has to be set up and within that routing, the Reference Operation Set can be used.

However you can by try utilizing the KMAT material and product variants invariant

configuration to avoid separate routing for each material.

A2: You may create a routing group. Go into routing creation and enter the plant and the group name. If you want you may name the group , else name is assigned by internal counter). Create the routing with the work centers, operation times, etc. Go to the "Header overview" screen and click on the "Mat Alloc" screen. Fill in the blanks with all the material masters that use this routing.

Q: **Scheduling times** can be defined in the material master record by;
entering the in-house production time. This value can be updated from the routing by the system.

entering the setup, tear down, processing, and interoperation times. If these values are maintained, the system determines the in-house production time on the basis of lot size. How do you get the system to **update this value from the routing?**

A: In routing, carry out scheduling. Go into the routing operation overview and follow Extras -> Scheduling -> Results. The pop-up window displays the scheduling data. At the bottom there is a pushbutton to copy the scheduling data to the material master Check this push button to update master data.

Q: We have deleted a group key in an operation in routing and the same does not appear for this routing (CA02). But we noticed that entries are maintained in table PLPO and the deletion indicator is not set. How does the system remember this **deletion of group key?**

A: You may look at the tables PLKO, MAPL and PLAS.

Sales & Operations Planning

Q: We defined SOP in months. However during **SOP transfer to demand management**, our independent requirements are appearing in weeks. How can we correct this from **weeks into months** ?

A: Check transaction OMPA for general split. OMPS - based on the MRP group. Ensure that MRP group assigned to the material. Delete any allocations in these tables. Then periods will be transferred to Demand Management with the same splits as in SOP. Also check whether the value of period is set as "month" at your plant level in Transaction 'OMP7'

Demand Management

Q: Sales quantities in SOP for certain days are transferred into Demand Management and are shown as planned independent requirements. We need to keep the settings in SOP and change the **periods in Demand Management?** We would like to have a **rolling horizon**, for ex: the following 4 weeks on a daily basis, after that on a monthly basis. What is the best way to do this?

A: Use the automatic period split function.

M R P

Q: We have a lot size procedure here which is creating more order proposals. How do you set the limit value for maximum number of MRP order proposals per date in IMG?

A: Under customization, try materials management->consumption based planning->maintain all plants

Q: What is the difference between "planned consumption" and "Unplanned consumption"? Can safety stock calculation be done on either of these?

A: While customizing movement types (OMJJ) it is defined as to which set of consumption values gets posted during the material movement. For some it may always be the total consumption and for some it is always the unplanned one and for some it is dependent on whether the issues were done with reference to a reservation i.e., a planned consumption. The way these consumption values are taken into account in MRP is defined in the customizing of MRP types.

For Reorder point planning (VM) the total consumption is used to calculate the safety stock and the reorder point.

For Forecast based planning (VV) the total consumption is used to build the forecast which will be used to compile the order proposals.

For Deterministic MRP (PD) the unplanned consumption is used to calculate the forecast which in turn is added to the actual demand.

Q: We want the system to run a single level MRP automatically on receipt of sales order. How to configure triggering event based MRP?

A: This can only be run if material master has planning strategy 41 (made-to-order) in the MRP2 view. We need to run for other MRP types. We have to create a user exit in the sales order processing (VA01) to start MRP based on data from our sales transaction.

Q: We have an assembly 'A' using a subassembly 'B'. 'B' in turn uses raw material 'C'. Item 'A' is an MPS and is duly marked in Material Master. Item 'B' and 'C' are marked as 'PD'. When demand for 'A' is entered and MPS is run, upto which level the requirements are taken care of?

A: MRP can be run depending on your requirement. For example:

1. Single Item / Single Level from MPS - Transaction Code MD42 - Only the top MPS item ('A' in this case) is planned and dependent requirements will be passed to MRP item ('B') . Run MRP, Transaction MD02 on 'B' to plan it and all MRP items below .
2. Single Item / Multi Level from MPS - Transaction Code MD41 - All levels are planned - A , B & C
3. Total Planning from MPS online or background - Transaction Code MD40 or MDBS

Without marking the checkbox " Process MRP materials" is like case (1) above and with the checkbox marked is like case (2).

Production Orders

Q: We get an **error message "Control parameters for scheduling not defined"** while creating test production Orders. Why?

A: **Before you attempt creating Production orders**, configure your
Order types- Transaction Code OPHJ
Order type Dependent parameters - Transaction Code OPL8
Backorder Scheduling - Transaction Code OMIH
Scheduling Levels - Transaction Code OMIF

Q: We are trying to create Purchase Requisition from MRP run. We have material , info Record, Source list , Demand in place. **MRP is always creating plan order**. Why?

A: Check the procurement type in MRP view of material master. Check 'Create Purchase requisition' indicator while running MRP. If you want purchase requisitions to be created in the opening period, select the for MRP control parameter 'create purchase requisitions' as '1'.

Q: what is the option "**Documented goods movements**" on Selection of Individual Object Lists (transaction code CO28)?

A: Use Transaction code OPL8 to customize by choosing the order type, select all the checkbox under "Documentation of goods movements" at the bottom of the page. Create a new Production order, make GI to it, and run the report.

Q: We would like to have a report/inquiry that would indicate variances (materials, material quantities) between material recipe and actual process orders. We tried ME2M but this gives us a list of purchasing documents and not the consumption deviation. Where can I get such **consumption deviation (master recipe Vs. Process> Orders)?**

A: Do a data collection first.

Menu Path - Accounting->Controlling->Product cost acctg->Process mfg->Information system->Cost object hierarchy->data collection

(If you are using order hierarchy you would select order hierarchy in place of cost object hierarchy in the menu path.)

Then,

Accounting->Controlling->Product Cost Accounting->Order Related Production->Information System

Choose Report Period Costing - Target/Actual production variance

Q: We have two components ('X' & 'Y') in a production order in a process oriented production process. When 50 numbers of component 'X' are issued, we need the system to automatically **issue** 100 numbers of component 'Y' based **on ratio of 1 to 2**. Where do I specify these ratios?

A: You can define the ratio in BOM and material may be issued with reference to BOM.

Q: We have two storage locations are '0001' and '0600'. **Default storage location** in Process order is always '0001' What determines this default location?

A: Look into OSS notes: 100757, 63493, 96262, 87843, 82033, 64946.

The Storage location as configured in the Supply area has the highest priority.

Q: We need to do GI of components to production order using Back-flush. The component stock is managed in Batches. The **Batch to be back-flushed** is selected by FIFO from the issue storage location. How can we set this up?

A: With the following settings, the batches are selected the moment the production order is released.

1: Set up batch determination the way that the batches in batch selection are sorted the right way. e.g. sorted by expiry date

2: Use automatic batch selection in disp view.

3: Ensure that the components are allowed to be back-flushed (material master / work center)

Q: We want to report on **several status combinations** like each order that has status 'Not deleted' and 'Not technically completed'. What set up is required?

A: Check transaction CO28. In the selection screen note the possible selection 'System Status'. You can select TECO for technically complete and DLT for deleted from the list. Select the Excl. indicator also.

You may also try transaction CO26 (Logistics -> Production -> Production control -> Control -> Information systems -> Order Info System -> Object overview). Before executing the transaction report, combinations of statuses can be selected or exclude them.

Q: How can we shut off the "automatic costing indicator" and the "automatic scheduling indicator" which go on when the production order is released?

A: For "no automatic costing" follow the IMG path

Production -> Production orders ->Master data -> Order ->Define order type dependent parameters

Select the order type for which u automatic costing is not required. In the controlling settings, select "no automatic costing"

For "no automatic scheduling" , follow the IMG path :

Production ->Operations ->Scheduling -> Define control parameters

Select the order type and go to details. Deselect " automatic dates "

Alternatively, you can find indicators in the control key, which is in the routing.

Transaction OPL8 gives you costing indicators (Order type dependent parameters), and OPJU (control table for scheduling) gives some scheduling options.

Variable Size

Q: How can I use **variable size items**?

A: For example, consider an item A with 'kg' as base Unit Of Measurement(UOM) and 'm3' as stock keeping/issue unit. Conversion factor is 1kg = 2.4 m3.
In the BOM of 'B' ,number of A required are specified (say 5).
Specify the 3 variable dimensions i.e. length, width & thickness- say 2000mm X 3000mm X 4mm = 0.024 m3
As per BOM - 'B' , the quantity of A required is 0.024 X 5 = 0.120 m3
If a production Order is released for 15 numbers of 'B' , the quantity of variable size unit will be 1.20 m3.
You can change the length, width or thickness in the production order & check the resulting variable size item quantity. At the same time this requirement can be seen in 'kg' in stock/requirement list.

Others

Q: How to **configure the planning calendar for the ATP** calculation where **goods** are **shipped** every other working day?

A: Use Transaction MD25 and define calculation rule for every other working day. Check the lot size settings in OMI4 and maintain relevant data in MMR.

Q: We have two different production lines with different operations. One production line works 5 days a week and the other 7 days a week. The factory calendar is assigned to the plant for 5 days a week. This calendar is checked when MRP is run. How can we **assign 5** day a week and 7 days a week against a **factory calendar** to the related resources? Is it possible to have two types of calendars?

A: Assign factory calendars to the work centers.

Q: What is the **difference between by-product and co-product** and how do you **differentiate** them in a **BOM**?

A: In case of Co-product costs are settled with a apportionment structure. In case of By-product the price of this by-product is credited to the order or the material stock account of the lead material being manufactured. Co-Product as well as by-product are defined as BOM Components/Items. Both of them have negative quantities. (Not all negative quantity items fall under these categories!). When BOM is created for FERT , you can see one indicator in COMPONENT DETAILS screen for co-product. You need to define the co-products with this special indicator .

Q: What are some **important tables** used in PP ?

A: For orders:

CUAFVD dialog structure for order headers and items

AFPO - Order item

AFFLD Order: Dialog table for order sequences (AFFL)

MOPER Operation for production order
KBED Capacity requirements
 AFRU Order completion confirmations
 RESB Reservation/Dependent
 Requirements
 AFFHD Structure of PRT's in orders
 SOPER Sub-operations
 SAFRU Sub-operation
 confirmations
 SKBED Capacity
 requirements for sub-
 operation

MRP table is MDTB.

For PI:

CAUFV - AFVC Operation within an order
 AFFT Order Process Instructions
 AFFV Order process instruction values

Some other tables of interest:

PLKO, MAPL , PLAS.

List of PP Transport Request and their IMG Path

1) Define Distribution Keys

IMG > Production Planning for Process Industries > Master Data > Material List > Item
Data > Item Data from related areas > Define Distribution Keys

2) Determine Person responsible for Resource –

IMG > Production Planning for Process Industries > Master Data > Resource > General
Data > Determine Person responsible

3) Define Planner Group-

IMG > Production Planning for Process Industries > Master Data > Master Recipe >
Define Capacity Planner

4) Define Capacity Planner –

IMG > Production Planning for Process Industries > Master Data > Resource > Capacity
Requirement Planning > Determine Capacity Planner

5) Determine Standard Value Parameter –

IMG > Production Planning for Process Industries > Master Data > Resource > General
Data > Standard Value > Define Parameter

6) Define Setup Groups and Setup Group Categories

Define set up groups and set up categories –

IMG > Production Planning for Process Industries > Master Data > Master Recipe > Data for operations and phases > Define set up groups and set up group categories

7) Define copy setting between plants-Process

IMG > Production Planning for Process Industries > Process Management > Tools > Define copy setting between plants

8) Define Set Up Control Recipe destination –

IMG > Production Planning for Process Industries > Process Management > Control Recipe/PI sheet > Set up control recipe destination

9) Define MRP controller –

IMG > Material Management > Consumption based Planning > Master Data > Define MRP controller

10) Special Procurement –

IMG > Material Management > Consumption based Planning > Master Data > Define Special procurement types

11) Define Floats (Scheduled Margin Key)-

IMG > Material Management > Consumption based Planning > Planning > Define Floats (Scheduled Margin Key)

12) Define Splitting of Forecast requirements for MRP-

IMG > Material Management > Consumption based Planning > Evaluation > Forecast > Define Splitting of forecast requirements of MRP

13) Maintain Correction Factors for Forecast

IMG > Material Management > Consumption based Planning > Planning > Procurement > Maintain Correction factors for forecast

14) Carry Out Overall Maintenance of Plant Parameters

Maintaining plant parameters in MRP –

IMG > Material Management > Consumption based Planning > Plant Parameters > Carry out overall maintenance of plant parameters

15) Define Planning Horizon

Define Planning Horizon –

IMG > Material Management > Consumption based Planning > Planning > MRP calculation > Define Planning Horizon

16) Activate Requirement Planning –

IMG > Material Management > Consumption based Planning > Planning > Activate Requirement Planning

17) Define Range of Coverage Profiles (Dynamic Safety Stock)

Range of coverage profile –

IMG > Material Management > Consumption based Planning > Planning > MRP calculation > Define range of coverage profile (Dynamic Safety Stock)

18) Define Stock in Transfer and Blocked Stock Availability

IMG > Material Management > Consumption based Planning > Planning > MRP calculation > Stocks > Define Stock in transfer and blocked stock

19) Define MRP Areas

IMG > Material Management > Consumption based Planning > Master Data > MRP areas > Define MRP areas

20) Carry out maintenance of MRP groups

IMG > Material Management > Consumption based Planning > MRP groups > Carry out maintenance of MRP groups

21) Define Scope of total Planning - MRP

IMG > Material Management > Consumption based Planning > Planning > Define Scope of total Planning

22) Define Order Types

Define Order Type-

IMG > Production Planning for Process Industries > Process Order > Master Data > Order > Define Order Type

23) Define Order Type Dependent parameters –

IMG > Production Planning for Process Industries > Process Order > Master Data > Order > Define Order Type Dependent parameters

24) Define Production Scheduler –

IMG > Production Planning for Process Industries > Process Order > Master Data > Bill of Material > Define Production Scheduler

25) Define Checking Control - Process Order

Define Availability Check – Define Checking Control –

IMG > Production Planning for Process Industries > Process Order > Operations > Availability Check > Define Checking Control

26) Define Checking Rule for backorder processing –

IMG > Production Planning for Process Industries > Process Order > Operations > Availability Check > Define Checking rule for back order processing

27) Define Stock and batch determination for good movement –

IMG > Production Planning for Process Industries > Process Order > Operations > Define Stock and batch determination for good movement

28) Specify Scheduling Parameters

Specify Scheduling Parameters –

IMG > Production Planning for Process Industries > Process Order > Operations > Scheduling > Specify Scheduling Parameters

29) Define Reduction Strategies

Define Reduction Strategy –

IMG > Production Planning for Process Industries > Process Order > Operations > Scheduling > Resource data > Define Reduction Strategy

30) Define Confirmation Parameters

Define Order Confirmation –

IMG > Production Planning for Process Industries > Process Order > Operations > Confirmation > Define Confirmation Parameters

31) Define Valuation of Goods Received

Define valuation of goods receive –

IMG > Production Planning for Process Industries > Process Order > Integration > Define Valuation of goods received

32) MRP creation indicator –

IMG > Material Management > Consumption based Planning > Planning > Define creation indicator

33) Define safety stock –

IMG > Material Management > Consumption based Planning > Planning > MRP calculation > Stocks > Define Safety Stocks

34) Define alternative determination of Production –

IMG > Production Planning for Process Industries > Process Order > Operations > BOM selection > Define alternate determination of production

35) Define no. ranges –

IMG > Production Planning for Process Industries > Process Order > Master data > Order > Number Ranges > Define number ranges for orders

The Overall Flow For SAP PP

What are the stages in PP?

The PP flow consists of planning and execution as described.

Here is the flow of PP in simple language:

First of all demand is generated for the product to be produced through demand management. It calculated the quantities to produce and the time for the final assembly.

The data from demand management is transferred to MRP. The data from demand mgt can come from Customer Sales Order (firm) or Planned Order (forecast).

The MRP checks for the availability of material at various stages of BOM. In case material is not available MRP generated planned order and Purchase requisition for production of components in house and procurement from vendor respectively.

The planned orders are converted into production order by the planner and the purchase requisition are converted into purchase order by the purchaser.

Production in charge converts the planned order to production order and carries out the production activities once the order is released for production. Production is carried out as per the operation steps provided in the routing. Work centers are also mentioned with each operation in the routings where these operations are to be carried out.

Once the production is completed production confirmation is done and goods movement (delivery created) takes place.

Capacity planning is yet another part of PP which planes the capacities for various work centers. MPS is another tool which is used to plan out the master products. If MPS is to be run the inputs are provided from demand management to MPS. And the out put from MPS is then feed into MRP.

This is the overall flow for PP.

*-- **Vicky**