

Capacity Planning in Shop Floor Control



HELP.PPCRPSFC

Release 4.6C



Copyright

© Copyright 2001 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft[®], WINDOWS[®], NT[®], EXCEL[®], Word[®], PowerPoint[®] and SQL Server[®] are registered trademarks of Microsoft Corporation.

IBM[®], DB2[®], OS/2[®], DB2/6000[®], Parallel Sysplex[®], MVS/ESA[®], RS/6000[®], AIX[®], S/390[®], AS/400[®], OS/390[®], and OS/400[®] are registered trademarks of IBM Corporation.

ORACLE[®] is a registered trademark of ORACLE Corporation.

INFORMIX[®]-OnLine for SAP and Informix[®] Dynamic Server[™] are registered trademarks of Informix Software Incorporated.

UNIX[®], X/Open[®], OSF/1[®], and Motif[®] are registered trademarks of the Open Group.






HTML, DHTML, XML, XHTML are trademarks or registered trademarks of W3C[®], World Wide Web Consortium, Massachusetts Institute of Technology.

JAVA[®] is a registered trademark of Sun Microsystems, Inc.

JAVASCRIPT[®] is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

SAP, SAP Logo, R/2, RIVA, R/3, ABAP, SAP ArchiveLink, SAP Business Workflow, WebFlow, SAP EarlyWatch, BAPI, SAPHIRE, Management Cockpit, mySAP.com Logo and mySAP.com are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other products mentioned are trademarks or registered trademarks of their respective companies.

Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Contents

Capacity Planning in Shop Floor Control	5
Scheduling and Capacity Requirements Calculation	6
Splitting Capacity Requirements in Production Orders.....	7
Reducing Split Capacity Requirements.....	8
Deleting Capacity Requirements.....	10
Executing Capacity Leveling (SFC)	11
Capacity Leveling on the Capacity Planning Table (tabular form).....	12
Capacity Leveling on the Capacity Planning Table.....	13
Settings in Customizing (SFC)	14

Capacity Planning in Shop Floor Control

Shop floor control converts the planning data in material requirements planning into actual production orders and coordinates the production process with all the resources involved.

The main tool for carrying out production is the production order. The production order generates capacity requirements at the detailed planning level and these are dispatched during capacity leveling.

You specify the following in a production order:

- What is produced
- On what date production should take place
- How much production costs
- To which work centers capacity requirements should be dispatched

Please refer to the guide *PP - Production Orders* for more detailed information on production orders.

Scheduling and Capacity Requirements Calculation

Scheduling and Capacity Requirements Calculation

Pegged requirements are the individual operations in production orders that are carried out at work centers. Work centers are allocated to the operations of the production order or routing.

When you create a production order the system carries out lead time scheduling automatically. It generates capacity requirements records for the individual operations if the indicators *Scheduling* and *Capacity planning* are set in the control key of the operation.



Capacity requirements are only generated if the indicator *Capacity reqmts* is set on the screen *Master data* in the production order, independently of whether a control key is set for capacity planning.

To carry out scheduling you must have entered the capacity in the work center on the screen *Scheduling*. Scheduling is carried out using this capacity. You should also enter formulas to calculate the duration of the operation segments. When calculating the dates the standard values entered by you or calculated by the system are taken into account.

To write capacity requirements records, you must enter formulas in the work center/capacity on the screen *Capacity Overview* to calculate capacity requirements. When calculating capacity requirements the system takes into account the standard values entered by you or calculated by the system.

You can find more information on work center maintenance and capacity maintenance in the document *PP - Work Centers*.

You can find more information on scheduling in the production order in [Scheduling \[Ext.\]](#) and in the document *PP - Production orders*.

Splitting Capacity Requirements in Production Orders

Use

In the production order on the operation detail screen *Splitting* you can split the total requirements of the operation into partial requirements (so-called splits). Two types of split are possible: a quantity split or a standard value split.

You can distribute the operation quantity or standard values over the **individual capacities** or **people** created for the capacity category and specify when the individual splits are to start.



The operation quantity for an operation is 100 pieces. The operation is processed at the work center XYZ. You specify that 40 pieces are to be processed on machine 001 and 60 pieces on machine 002. This is a quantity split. Machine 001 and machine 002 must be allocated as individual capacities to the machine capacity in the work center XYZ.



If you have an operation quantity of 100 pieces and employee A and employee B process the same 100 pieces on one machine one after the other then the split quantity for employee A and employee B is 100 pieces each. However, since each employee only requires half of the standard time to process each piece, the standard values must be reduced accordingly. This is a quantity split. Employee A and employee B must be assigned as people to the labor capacity in work center XYZ or to the work center XYZ.

You can display a **ranking list** for the capacities to which people are allocated using the function key Ranking list. The system displays the suitability of people, who are assigned to the work center and the capacity category, in the ranking list. This ranking list depends on the overall requirements profile, which is made up of the work center, capacity and operation.

The allocation of partial requirements to individual capacities or people only constitutes dispatching if the indicator *D (split dispatched)* is set. If this is the case, the splits that have been created are given the status "dispatched" once the allocation has taken place and the production order saved. If you have not set the indicator then you can dispatch the splits on the planning tables.

You can find more information on splitting capacity requirements in [Splitting and allocating \[Ext.\]](#).

Reducing Split Capacity Requirements

Reducing Split Capacity Requirements

Use

Generally capacity requirements are reduced in a (partial) confirmation of an operation or of the splits.

Splits are partial capacity requirements of an operation, that are assigned to individual capacities or people. Capacity requirements can be split in:

- Production orders
- Maintenance orders
- Networks

Scope of functions

The confirmation can take place for a capacity category for individual splits using the split number. You should take the following points into consideration:

- Summary confirmation of splits is possible in percentage terms. However, that is only the case for splits that have not already been partly or wholly confirmed. If a split has been partly confirmed manually then a further confirmation can only take place manually. If you cancel the confirmation of the manually partly or wholly confirmed splits then they can be confirmed again using a summary confirmation.
- The capacity requirements of the splits that have not been partly or wholly confirmed are reduced when the operation is finally confirmed. This is useful, for example, for splits with very small capacity requirements where a confirmation would mean too much work.
- If the requirements of the operation are only partly distributed on splits then the reduction of capacity requirements of the splits occurs when the split is confirmed. The remaining requirements that were not distributed to splits are only reduced when the operation is confirmed.



If an operation has capacity requirements of 10 hours and if 4 hours each are allocated to two individual capacities then the capacity requirements (2 hours) that have not been allocated are reduced when the operation is confirmed. The reduction of the capacity requirements of the individual capacities (2 times 4 hours) takes place when the individual capacities are confirmed.

- In Customizing for work centers you can specify, depending on the capacity category, whether the capacity requirements of the operation are to be reduced when the splits are confirmed. To do this use the indicator “Actual values not updated when confirming ind. capacity”. If the indicator is set then only the capacity requirements of the splits are reduced. If it is not set then both the capacity requirements of the splits and the requirements of the operation are reduced.
- If the indicator “Actual values not updated when confirming ind. capacity” is not set, then when the splits are confirmed both the actual values of the split as well as those of the operation are updated. You should take account of the fact that in this case with **standard value splits** the quantity

Reducing Split Capacity Requirements

- should either be confirmed only for one split or
- is not confirmed for any of the splits, but instead there is an additional confirmation of the operation for the quantity.

When the quantity is confirmed both in the individual splits and in the operation, the confirmed quantities are added together. That has the following consequences:

- because the quantity confirmed was too large, the capacity requirements were reduced too much
- too many components were taken during the backflush
- Too many items were posted as inward stock movement during automatic goods receipt posting

Deleting Capacity Requirements

Deleting Capacity Requirements

Use

The capacity requirements of operations in the production order are deleted when the following functions are carried out:

- The production order is set to “technically complete”
- The deletion flag is set for the production order
- The production order is locked
- The indicator *Capacity requirements* in the screen *Master data* for the production order is reset and the order is rescheduled.
- The capacity requirements are reset with *Functions* → *Availability check* → *Reset cap. stock*.



On reversing the functions mentioned the capacity requirements are automatically regenerated.

Executing Capacity Leveling (SFC)

If you want to carry out capacity leveling in shop floor control, you can choose between different procedures.

- Choose *Logistics* → *Production* → *Capacity planning*.

You reach the central capacity planning menu from which you can call up the planning tables for the following views:

- work center view: you use work centers as criteria to limit the selection. work centers and capacities are displayed on the planning tables.
 - individual capacity view: you use work centers as criteria to limit the selection. you can dispatch operations not only to work centers or capacities, but also to the individual capacities as well.
 - order view: You use orders as criteria to limit the selection. The system displays all the work centers and capacities affected for one or more orders.
- Select *Logistics* → *Production* → *Production control* and then *Control* → *Capacity planning*.

You reach the central capacity leveling menu.

- You can call up capacity leveling directly from production order maintenance. Choose *Goto* → *Capacity planning* → *Capacity leveling* either on the screen *Central Header* or *Operation Overview*. You reach one of the two planning tables, depending on the overall profile that has been specified.

You define the overall profile in Customizing for shop floor control. There you can enter an overall profile depending on the production controller or order type for the parameters in shop floor control. This overall profile is used when calling up capacity leveling from the production order. You can specify another overall profile in the production order with *Settings* → *General...*

If you have not saved an overall profile for the production controller in Customizing, then the system uses the predefined overall profile SAPSFCG001 with which you get to the planning table.

You can find more details in:

[Capacity leveling on the capacity planning table \(tabular form\) \[Page 12\]](#)

[Capacity leveling on the capacity planning table \[Page 13\]](#)

Capacity Leveling on the Capacity Planning Table (tabular form)

Capacity Leveling on the Capacity Planning Table (tabular form)

To execute capacity leveling using the planning table (tabular form), proceed as follows:

1. If you accessed capacity leveling, for example, via the work center view then enter the work center(s) and the capacities for which you want to execute capacity leveling. You can use sets in Customizing to define the objects (in this case work centers and capacities) for which you want to execute capacity leveling.

For example, if you specify the capacity category "machine", then the system only takes into account the available capacity and capacity requirements of the work center for this capacity category.
2. Press the function key `Continue`. You reach the capacity planning table (tabular form).

Limit selection

If you want to limit the selection of an object using certain criteria, proceed as follows:

1. Press the function key `Filter` on the selection screen for capacity leveling.

You reach a screen where you can enter the criteria according to which objects are to be filtered. For example, you can limit the selection of a work center by entering the following criteria:
 - order category
 - order
 - order typeYou define the criteria for filtering using sets in Customizing.
2. Press the function key `Continue` if you want to get to the capacity planning table (tabular form).

Press the function key `Objects` if you want to go back to the selection screen for capacity leveling.

Please consider the following points:

- If you have specified an order as a selection criterion, the system displays **all** the requirements that affect the selected work centers of the order, not just those for this particular order.
- If you have not stated in the filter for which order categories and scheduling levels the system is to read capacity requirements, then the system uses the setting in the selection profile in Customizing.

You can find information on dispatching of operations in the capacity planning table (tabular form) in [Capacity planning table \(tabular form\) \[Ext.\]](#).

Capacity Leveling on the Capacity Planning Table

Accessing capacity leveling with the capacity planning table and filtering the selection data works the same way for the planning table as for the capacity planning table (tabular form) (see [Capacity leveling on the capacity planning table \(tabular form\) \[Page 12\]](#)).

After accessing the selection screen, if you press the function key `Continue` you reach the planning table for SFC with the predefined overall profile. The work center view, for example, contains two charts:

- A chart with all the capacities for the work centers
- A chart with the orders/operations that are in the pool.

The changes (operations dispatched) are written to the database when you save the planning table.



You should note that when the system dispatches an operation it dispatches to all the various capacities at the relevant work center.

You can find information on dispatching operations in the capacity planning table in [Capacity planning table \[Ext.\]](#).

You can find information on the time when the operations are dispatched in [Dispatching operations \[Ext.\]](#).

Settings in Customizing (SFC)

Settings in Customizing (SFC)

You can find information on settings in Customizing necessary for carrying out capacity leveling in MRP and MPS in [Settings and profiles for capacity leveling \[Ext.\]](#).