

Capacity Planning in the Project System



HELP.PPCRPPS

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, SAPPHIRE, 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 the Project System	5
Capacity Leveling in the Project System	6
Capacity Requirements in Projects	8
Executing Capacity Leveling (PS).....	10
Capacity Leveling in the Capacity Planning Menu.....	11
Capacity Leveling in Scheduling or Structure Planning.....	12
Accessing Capacity Leveling in the Project Planning Board	13
Checking Capacity Availability in Networks	14
Workforce Planning	15
Distributing Work in the Project View	17
Distributing Work in the Work Center View	18
Using Display Options for Workforce Planning	19
Changing Settings for Workforce Planning	20

Capacity Planning in the Project System

Capacity Leveling in the Project System

Purpose

Use this component to compare the capacity requirements of a project with the available capacity of the work centers assigned to the project. As a result, you can schedule the capacity requirements optimally.

Features

You can perform capacity leveling:

- In a tabular planning board, in which the available capacity and capacity requirements are presented in a period split
- In a graphic planning board that allows continuous capacity planning.

The main function of capacity leveling is the [dispatching of activities \[Ext.\]](#). For information about further functions, see [Functions in Capacity Leveling \[Ext.\]](#).

For information about how to handle these functions in the planning boards refer to [The Tabular Planning Board \[Ext.\]](#) or [The Graphic Planning Board \[Ext.\]](#).

The possible views of capacity leveling, depending on the responsibilities of the user, are listed below.

Project View

The project manager can view capacity leveling in the *Project view* and see a particular WBS hierarchy.

In the Project System the project manager can call up capacity leveling:

- In the project planning board
- In scheduling and structure planning. He or she can also call up the standard overview of capacity planning in both of these transactions

Network View

The planner who is responsible for a network can call up the *Order view* of capacity leveling from the capacity planning menu. The system only takes into account activities from specific networks.

The planner can also check the availability of capacities in a network.

Work Center View

The person responsible for a work center can call up the *Work center view* of capacity leveling from the capacity planning menu.

Other Views

You can call up other views specific to your company from the variable overview. You edit and update variable overviews in Customizing.

To use views that you have entered in Customizing instead of those in the standard system, you can change the view selection in the user parameters.

Capacity Requirements in Projects

Capacity Requirements in Projects

Definition

Internal resources required to carry out a project at a particular time

Use

You generate capacity requirements in projects by

- Assigning internally processed network activities to a work center
- Entering a value for work
- Scheduling the network.

Scheduling determines the earliest and latest start and finish dates for performing activities in the network and calculates the required capacity requirements as well as the slack time or “floats” (see [Network Scheduling \[Ext.\]](#))

The system calculates the capacity requirements for networks using the [formula \[Ext.\]](#) that you have entered in the capacity detail screen of the work center. Generally, the system uses the value you entered for **work** in the network activity in the formula; however, you can specify other formula parameters.

You must schedule the network in order to have the system calculate the capacity requirements.

To carry out scheduling and to determine capacity requirements the system requires the following data from the work center:

- Operating time
- Formula for the duration of internal processing
- Calendar
- Formula for the capacity requirements of internal processing activities



If you do not enter a formula for the capacity requirements, the system does not calculate capacity requirements.

You can create work elements for activities, for instance, if you require several resources to carry out an activity. You enter the same data in work elements as in activities. You specify the date for the work element requirements as an offset to the start or finish date of the activity.

Reduction of Capacity Requirements

As well as partial and final confirmation, the status “technically complete” also affects capacity requirements. When this status, like a final confirmation, is set, the system removes all capacity requirements for a network.

In the case of partial confirmations, the system calculates the remaining capacity requirements by subtracting the actual value for work from the capacity requirements. Alternatively you can enter a forecast value for the remaining work, from which the system can re-calculate the capacity requirements using formulas.

Available Capacities

You define available capacities in the work center using [capacity categories \[Ext.\]](#). Available capacity is the output that a capacity category can generate per work center.

You can link a [work center or a capacity with objects in the personnel system \[Ext.\]](#) and use [Workforce Planning \[Page 15\]](#).

For more information on work centers and the data you enter there for capacity planning, see [Work Centers \[Ext.\]](#).

Executing Capacity Leveling (PS)

Executing Capacity Leveling (PS)

Prerequisites

In order to use scheduling and to reduce capacity requirements, you have to make the necessary settings in Customizing for *Production* → *Capacity Requirements Planning* → *Capacity leveling and extended evaluation* (see [Settings and Profiles for Capacity Leveling \[Ext.\]](#)). The overall profile for capacity leveling is saved in the project profile.

Accessing Capacity Leveling

Access capacity leveling in one of the following ways:

- [Capacity Leveling in the Capacity Planning Menu \[Page 11\]](#)
- [Calling up capacity leveling from scheduling \(date planning\) or structure planning \[Page 12\]](#)
- [Accessing Capacity Leveling in the Project Planning Board \[Page 13\]](#)

Executing Capacity Leveling Functions


If you have called up the tabular or graphic planning board, you can dispatch capacity requirements or use several other [Functions in Capacity Leveling \[Ext.\]](#). These are described in detail in [Functions in the Graphic Planning Board \[Ext.\]](#) or [Functions in the Tabular Planning Board \[Ext.\]](#).

Capacity Leveling in the Capacity Planning Menu

Procedure

1. Choose one of the following options:
 - *Logistics or Accounting* → *Project System* → *Resources* → *Capacity planning*
or
 - *Logistics* → *Production* → *Capacity planning*

The [Capacity Planning Menu \[Ext.\]](#) appears in which you can call up the following functions:

 - In **Evaluation** you can access capacity evaluation and the shop floor information system.
 - In **Leveling** you can access capacity leveling for different applications and with different views.
 - In **Available capacity** you can maintain capacities, shift sequences, and factory calendars.
 - In **Requirements** you can maintain the requirements sources production orders, maintenance orders, networks, and planned orders.
 - In **Environment** you can maintain, work centers, capacities, and hierarchies as well being able to call up the stock/requirements list for MRP (material requirements planning) and MPS (master production scheduling).
2. Choose *Leveling* and then the required view and the planning board with which you want to carry out capacity leveling. (For information on the various views, see [Capacity Leveling in the Project System \[Page 6\]](#).
The selection screen for capacity leveling appears.
3. According to the view, enter either the work centers, networks or WBS elements for which the capacities are to be leveled.
4. If required, restrict the selection additionally by using filters. Choose .


Result

The chosen planning table appears, showing available capacities and capacity requirements according to the selection criteria you entered.

Capacity Leveling in Scheduling or Structure Planning

Capacity Leveling in Scheduling or Structure Planning

1. Choose one of the following options:
 - To call up scheduling, choose *Logistics* or *Accounting* → *Project System* → *Dates* → *Change basic dates* or *Change forecast*.
 - To call up structure planning, choose *Logistics* or *Accounting* → *Project System* → *Basic data* → *Project* → *Special maintenance functions* → *Structure planning* → *Change project*

You proceed in the same manner for scheduling and structure planning.
2. Enter a project definition or a WBS element and choose .
3. Select the required WBS elements and choose *Goto* → *Capacity planning* and the required function:
 - You can call up *Capacity leveling* or *Leveling of individual capacities*
 - You can call up leveling in either the tabular or the graphic planning board
 - You can display the load caused by the WBS element only by choosing *Load only from WBS element* or the *Total load* from other orders, networks and WBS elements
4. To call up the standard overview of capacity evaluation, choose *Goto* → *Capacity Planning* → *Run capacity report*.


The [standard overview \[Ext.\]](#) lists the following data according to periods:

 - Capacity requirements
 - Available capacity
 - Capacity load
 - Remaining available capacity

Accessing Capacity Leveling in the Project Planning Board

1. *Logistics or Accounting* → *Project System* → *Basic data* → *Project* → *Project planning board* → *Change project*.


The initial screen of the project planning board appears.

2. Enter the relevant data and choose .

The project planning board appears.

3. Select the required WBS elements and choose *Goto* → *Capacity leveling* and the required function:
 - *Load only from WBS element* to call up capacity leveling, in which only the load that is caused by the selected WBS elements is displayed
 - *Total load* to call up capacity leveling, in which the load from other orders, networks and WBS elements is displayed.
 - *Individual capacity load from WBS element* to call up individual capacity leveling, in which only the load that is caused by the selected WBS elements is displayed
 - *Individual capacity total load* to call up individual capacity leveling, in which the load from other orders, networks and WBS elements is displayed



You can also display a chart with the capacity load in the project planning board by choosing .


Here you can call up various functions via the [context menu \[Ext.\]](#), for instance, you can display the capacity load in list form.

To close the chart afterwards, choose *Close chart* in the context menu.

Checking Capacity Availability in Networks

Checking Capacity Availability in Networks

Procedure

1. *Logistics or Accounting* → *Project System* → *Basic data* → *Project* → *Special maintenance functions* → *Network* → *Change*.
2. Enter the relevant data on the initial screen and choose .
3. In the network header, choose *Edit* → *Availability* → *Capacity*.

Result

You are informed if there are work centers in the network that are overloaded. You can then display detailed information or call up finite scheduling.

For more information about the procedure for checking capacity availability, see [View of Shop Floor Control \(PP-SFC\) \[Ext.\]](#), in the *Capacity Planning (PP-CRP)* component.

Workforce Planning

Use

Use this function to distribute work in internally processed activities of a project to personnel resources according to periods. The personnel resources that you can assign to activities are **persons**, **positions**, and **organizational units** in *human resources* (HR).

You can carry out workforce planning with a project view or a work center view, depending on your responsibilities. In reporting you can analyze workforce planning from project, work center, and personnel resource views.

The work distributed to a person can be used as a default by the system for the [Time Sheet \[Ext.\]](#) (CATS), when entering personal working times.

Prerequisites

For workforce planning you require the HR mini-master record (infotypes 0001 and 0002). In addition you need infotype 0315 for the time sheet (CATS), and infotype 007 to be able to display the availability of personnel resources.

In Customizing for the *Project System*, you must have defined profiles for workforce planning in *Resources*. However you can change the [settings \[Page 20\]](#) for the current working environment from those of the profile, when you call up workforce planning.

You must have also:

- Assigned work centers to the internally processed activities.
- Entered [Formulas \[Ext.\]](#) in the work center to determine capacity requirements.
- Scheduled the activities to generate capacity requirements.
- Assigned only one labor capacity to a work center.



Although it is possible from Release 4.6A to distribute work to a personnel resource that is not assigned to the relevant work center, it is particularly useful for shift planning on a work center basis to link the work center or labor capacity with [objects in the personnel system \(HR\) \[Ext.\]](#).

Features

Project View

When you call up workforce planning in project view, you select *projects*, *WBS elements*, or *networks*. The project view displays all the activities that are assigned to the selected networks or WBS elements.

You assign personnel resources to these activities. The system proposes the personnel resources that are assigned to the [project team \[Ext.\]](#) for the relevant WBS element of its superior WBS element. However, you can assign personnel resources from the work center or, if the relevant indicator has been set in the profile, other personnel resources.

Workforce Planning

Work Center View

When you call up workforce planning in the work center view you can select *work centers*, *plants*, or *personnel resources*. You can also restrict the selection of activities by choosing *Filter*. In the top section of the work center view you can see all the selected personnel resources or the personnel resources assigned to the selected work centers. In the lower section you see the network activities that are assigned to the work centers and that meet the filter conditions.

You can assign the displayed activities to the displayed personnel resources, the personnel resources of the relevant work center, or – if the corresponding has been set in the profile – other personnel resources.

Reporting

Reporting lets you display and evaluate workforce planning for projects, work centers, or personnel resources. To use reporting for workforce planning, you do **not** require **change authorization** and the objects you examine are **not locked**.




Reporting is based on the ABAP List Viewer (ALV). Using standard ALV functions it is possible in reporting to print the work distribution, to send it to another user, or to save it in a local file, for example.

Rescheduling Distributed Work

In case you have distributed work and then the network dates change, you can determine in Customizing for the *Project System (Dates → Scheduling → Specify Parameters for Network Scheduling)* how the work that has been distributed but no longer is within the activity dates is rescheduled. The system can:


- Distribute the work in the new activity period according to the old distribution
- Delete the work
- Distribute the work to the start or finish of the new activity period

Distributing Work in the Project View

1. Choose *Logistics* or *Accounting* → *Project System* → *Resources* → *Workforce planning* → *Project view*.
2. Enter a project, WBS element, network or a range on the *Project selection* screen.
3. Enter a profile and choose  (*Enter*) to use its settings.
4. If necessary, change the planning period, or the other [settings \[Page 20\]](#) by choosing .
5. Choose .

The project view of workforce planning appears.

The table displays the network activities that meet the selection criteria. You can see all work from the activities and, depending on your settings, either the work to be distributed or the work that has already been distributed.


6. Select the activities that you want to assign personnel resources, and choose .

The *Personnel resources from <WBS element or work center>* screen appears.

7. Select one or more personnel resources and choose .

The system assigns the selected activity the selected personnel resources and lists the personnel resources under the activity.

In the rows for the personnel resources those periods are available for entry that are within the scheduled latest dates for the activity.




8. Place the cursor on such a period and enter the work the personnel resource should carry out for the activity in this period. The unit for work, which is taken from the labor capacity of the work center, is in the column before the periods.
9. Save the work distribution by choosing .



There are additional functions in the project view of workforce planning. See [Functions in the Project View \[Ext.\]](#).

Distributing Work in the Work Center View



Distributing Work in the Work Center View

1. Choose *Logistics* or *Accounting* → *Project System* → *Resources* → *Workforce planning* → *Work center view*.
2. Enter a work center, plant, personnel resource, or a range for one of these items on the *Work center selection* screen.
3. To further restrict the selection of activities, enter a network, activity, or a range in the *Filter* section of the screen.
4. Enter a profile and choose  (*Enter*) to use its settings.
5. If necessary, change the planning period, or the other [settings \[Page 20\]](#) by choosing .
6. Choose .

The work center view of workforce planning appears.

The personnel resources that meet the selection criteria are listed in the top part of the screen, the “planning section”.

In the lower section is the “worklist, a list of all the activities (that fit the filter criteria) which are processed at the selected work center.

7. Select the activities and the personnel resources that you want to assign, and choose .
The system assigns the selected activities to the relevant personnel resources and lists the activities under the names of these resources. In the rows for the activities those periods are available for entry that are within the scheduled latest dates for the activities.
8. Place the cursor on such a period and enter the work the personnel resource should carry out for the activity in this period. The unit for work, which is taken from the labor capacity of the work center, is in the column before the periods.
9. Save the work distribution by choosing .



There are additional functions in the work center view of workforce planning. See [Functions in the Work Center View \[Ext.\]](#).

Using Display Options for Workforce Planning

The following options are available in the planning table for workforce planning.

Displaying the Available Capacity and the Total Load

- To display the available capacity and the total load for persons, select the required person(s) and choose *Edit* → *Person availability* → *Show*.
- To display the available capacity and total load for the relevant work center (only in work center view), choose *Edit* → *Work center availability* → *Show*.

In both cases the system inserts two new lines that display the available capacity and the total load.

According to your [settings \[Page 20\]](#), the total load consists of either the work from the selected activities or the work from all the projects it is assigned to.

Calling Up the Network Activity Overview

Select an activity and choose *Goto* → *Display activities*.

The activity overview appears, from which you can access the activity detail screens. However, you are not able to see newly created work assignments, since the system reads this data directly from the database.

Work Center View: Filtering and Sorting the Pool (List of Activities)

- To display only those activities in the pool that meet particular **filter criteria**, choose *Edit* → *Filter*.
In the dialog box that appears, choose *Select fields*, to select the fields for the filter criteria. Choose *Continue*. On the first dialog box, enter values for the filter criteria.
- To **sort** the pool according to one (or more) columns, select the required column(s) and choose *Edit* → *Sort* → *Ascending* or *Descending*.

Work Center View: Displaying either the Planning Section or the Pool in Full Screen

In the work center view you can display just one of the two sections, hiding the other. Choose *Goto* → *Zoom in* → *Assignments* or *Pool*.

To display both sections again, choose *Goto* → *Zoom out* → *Assignments* or *Pool*.

Changing Settings for Workforce Planning


Changing Settings for Workforce Planning

Use

Use this procedure to change the settings for workforce planning that the system reads from the profile entered on the initial screen for workforce planning before you call up the function. Apart from the planning period, you can also change these settings in workforce planning itself.

Prerequisites

In Customizing for the *Project System*, you have defined profiles for workforce planning in *Resources*.

You have entered one of these profiles on the initial screen of workforce planning, in the *project view*, *work center view*, or *reporting* in *Settings* and confirmed with . The system reads the data from the profile and displays the planning period on the initial screen.

Procedure

1. Choose .

A dialog box appears in which you can change the *General* settings and the settings for the *Period split*, for both the *project view* and the *work center view*. For reporting you can also define *Exceptions*.

2. Change the required settings on the individual tab pages:

- *General*

Here you can change the *planning period* by entering the *Date type*, the *Start* and *Finish dates*. You cannot change the planning period in workforce planning itself, as the system has already read the data for this period. |

- *Period split*

Here you can define or change a period split. However, the system only uses the period split you define here, if you have set the *Mixed period types* indicator on the *General* tab page.

- *Exceptions*


In *reporting* for workforce planning you use traffic lights for personnel resources and activities. In the case of activities, you can define different color lights for different percentages of work distributed; for personnel resources the percentage load. You use the *Display* indicator to determine which traffic lights are shown (for example, only red lights).

3. Check your entries by choosing  and apply them by choosing  *Copy*.

Result

The system uses the new settings for the current workforce planning session. The profile itself remains unchanged.

Changing Settings for Workforce Planning

If you change the period unit or the period split, the system marks rows that have work distributed with a . This is to alert you to the fact that detailed information may be lost.