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# **Capacity Requirement Planning Cockpit**



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# 1 Overview

In addition to the material availability, the limited capacity is often a bottleneck in production planning. Therefore, planning and evaluating this limited capacity is one of the production planner's main tasks. For this, the planners need transparency with regard to the current capacity situation since they have to answer the question of whether there is enough machine or personnel capacity to be able to produce the future orders in the system on time.

The **capacity requirement planning cockpit (CRP)** provides a central overview of the capacity utilization in production, and enables users to recognize and react to bottlenecks and overcapacities early on. This enables overload situations to be identified rapidly and easily. The CRP cockpit displays the current and planned utilization of resources such as machines, work centers, and labor, and allows users to simulate alternative scenarios to evaluate the impact on capacity utilization.

In addition to the evaluation and analysis functionality as in CM01/02/0X transactions, the **capacity** requirement planning cockpit can be customized, using editable charts and a customer select functionality, for example.

The **CRP** can be called via transaction /SAPLOM/CRP, or in the transactions SE38, SA38, or SE80, via the program name /SAPLOM/CRP.

#### i Note

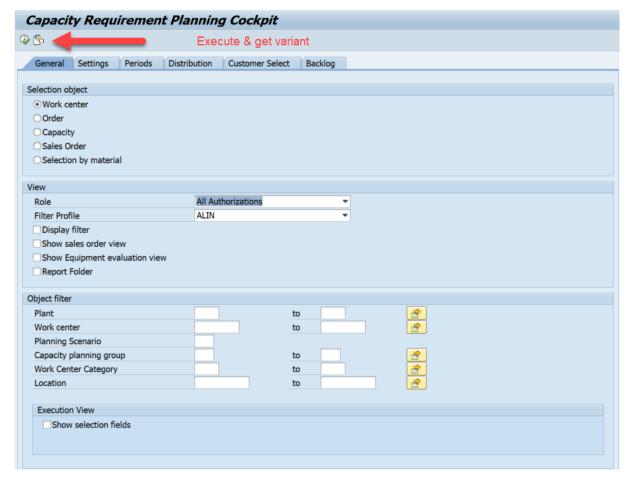
Note that executions of **SCM consulting solutions** require the prefix /n/SAPLOM/ before each transaction (/n/SAPLOM/transaction number).

The following SAP Note is available for this SCM consulting solution: 1907791

In the event of error messages, please create a customer message under the component XX-PROJ-CON-CRP.

# 2 Selection Screen

The **selection screen** is usually the first window that the user sees when opening the CRP cockpit. Here, various filter options are provided to restrict the data to be displayed in the cockpit and to focus on the relevant information. Using the save icon in the top bar, you can save the parameters entered as a variant. You can select a saved customer select on the *Settings* tab. This selection is also saved when you save a variant. This means that if the safety stock and buffer simulation are executed for the variant, the selected customer select is taken into account. To select the variant later, choose the "Get Variant" button. Clicking on the "Execute" button takes you to the results screen.



Overview of Selection Screen

Subdivided into the tabs *General*, *SettingsPeriods*, *Distribution*, *Customer Select*, and *Backlogs*, various **selection criteria** are made available to the user, such as the planning period, the plant, or the production order type. The selection screen therefore gives the user some flexibility and control over the displayed data in the **CRP cockpit**.

For detailed information about the different filter and sorting options, see the following pages.

### 2.1 General

On the General tab, you first define basic settings for the analysis with the CRP.

The various functions are explained in detail in the subsections.

## 2.1.1 Selection Object

In **CRP**, work centers and capacities are analyzed that can be selected in different ways. The selection of the work centers and capacities to be analyzed is controlled by the selection object, which defines which **input parameters** are to be used for selection. Since the object to be analyzed is always the work center or its capacity load, the program logic **always determines work centers** based on the selection objects.

Five different selection objects are available:

- 1. Work center
- 2. Order
- 3. Capacity
- 4. Sales order
- 5. Selection by material



Overview of Available Selection Objects

Depending on the selection object selected, the object filter in the lower area of the tab adapts dynamically.

#### Program Logic Using Selection by Material As an Example

For example, if you choose the *Select by Material* button, work centers are selected using one or more material numbers. The process is as follows:

- 1. Multilevel BOM explosion of all selected materials (the selected materials form the top level)
- 2. Filtering out of all materials without a production version
- 3. Determination of routings assigned to the production versions
- 4. Selection of all work centers used in the routings

In detail: For the selected materials, the system first determines all components in a multi-level BOM explosion. All materials in the multilevel structure that have at least one production version are considered relevant for the determination of the applicable work centers. The work centers are now selected using the routing assigned to the production version. During this process, the system selects all work centers used in the routing.

#### Note on selection by material:

You can also use the Settings tab to control how the BOM explosion is performed and whether only the first production version is relevant for each material. The BOM explosion takes into account cross-plant special

procurements (using SOBSL or SOBSK), which may mean that production versions from other plants may also be relevant that were not selected on the selection screen.



Settings Options for BOM Usage When Selecting Selection Object Material

#### Note on selection option "Sales Order":

If the selection is made using a sales order, the system first selects sales documents and their corresponding requirement coverage elements (planned or production orders). The assignment of sales requirements to planned orders and production orders is performed using the relevant account assignment  $\rightarrow$  make-to-order production. If the system is unable to determine a replenishment element for a material through the account assignment, it performs the assignment using a special logic that assigns the earliest receipt to the earliest requirement. All work centers used in the selected planned order and production order operations are evaluated in the **CRP**.

If you make a selection using the *Sales Order* path, the system automatically displays the *Sales Order View* tab on the result screen.

### 2.1.2 View

The section View on the General tab allows the user to configure the results display.



View

#### **Role Selection:**

Depending on the selected role, different tabs with different functions are available to the user later on the results screen.

The following roles are available by default:

- All Authorizations
- Backlog View
- Capacity evaluation
- Display Capacity Evaluation
- Execution
- Execution (Cannot Be Changed)
- Execution (Cannot Be Changed, Confirmations Only)

In addition, authorizations can be used to control which of the available roles can be displayed and used. For more information, see the CRP Configuration Guide, under Role Concept and Authorization.

#### **Filter Profiles:**

In the Filter Profiles selection field, you can select the predefined Object Filter Profiles for the **detail view of the results display**. The filter profiles can be created in Customizing, in transaction /SAPLOM/CRP\_Filter. For more information about creating and managing filter profiles, see the CRP configuration guide at Maintain ALV Grid Filter Profiles.

#### **Additional Display Methods:**

The user can also define the type and scope of the display that can be used on the CRP results screen.

The following selection fields are available to the user:

- 1. *Display Filter* Filters are initially displayed or hidden (if the filter is hidden, it can be displayed again in the monitor by choosing *Expand Menu*).
- 2. Display Sales Order View Sales orders that are related to the work center are displayed on the results screen, under the Sales Orders tab (selection field is hidden once the Sales Order selection object is selected in the area above).
- 3. *Equipment Utilization View* On the results screen, the equipment belonging to the work center and its utilization are displayed on the *Equipment Utilization* tab.
- 4. Optional: Calculation of estimated equipment service life: If the *Equipment Utilization View* field was selected, the user can use the selection of this field to display the estimated service life of the equipment on the *Equipment Service Life Estimation* tab on the results screen.

#### Report Folder:

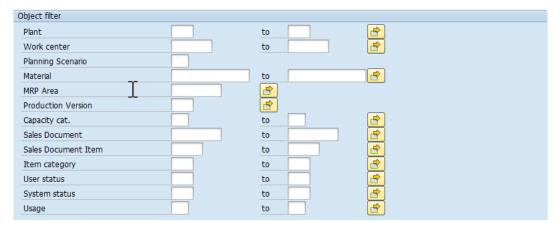
You can also use the *Report folder* checkbox to generate an Excel report and download it automatically or send it by e-mail. If the checkbox is selected, an additional area appears for selecting the report folder. For more information on the report folder, see General Report Folder.

#### Related Information

Documentation on the consulting solution **capacity requirement planning**Role Concept and Authorization
General Report Folder
General Report Folder
Maintain ALV Grid Filter Profiles

# 2.1.3 Object Filter

You can use the *Object Filter* to further restrict the work centers to be analyzed. Depending on the selection object you choose, different selection criteria are available.



Object Filter

# 2.1.4 Execution View

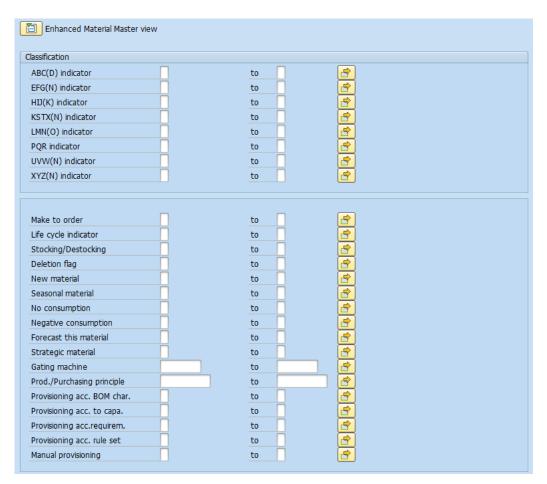
In the *Execution View* area, you can display further selection fields by selecting the corresponding checkbox. These selection fields refer to the *Execution View* of the results screen and restrict the data displayed in it.



Selection Fields for Execution View

### 2.1.5 Enhanced Material Master View

The Enhanced Material Master View pushbutton also makes the fields of the enhanced material master view available for the selection. The enhanced material master view is part of the comprehensive functions. For more information, see Enhanced Material Master View.



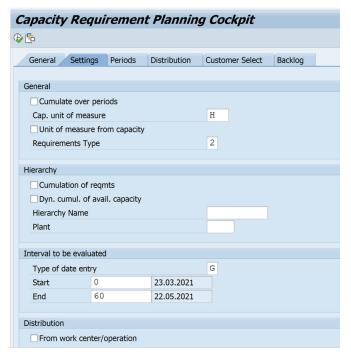
Selection Fields: Enhanced Material Master View

### **Related Information**

**Enhanced Material Master View** 

# 2.2 Settings

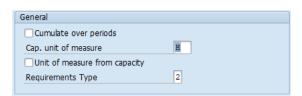
The Settings tab maps all setting options available in the CM01/02/0X transactions.



Settings

### 2.2.1 General

In this section, you make general settings for the display of requirements, availability capacity, and capacity load. You can use a checkbox to select whether these are to be displayed in cumulated form over the course of time, or displayed individually for each period and capacity type. You can still change the capacity unit of measure and the demand type (planned requirements vs. remaining requirements).



Settings - General

# 2.2.2 Hierarchy

You can use the settings in the *Hierarchy* block to specify whether the **CRP** evaluation is to be performed for a hierarchy and whether the capacity requirements and the available capacity are to be summarized across this hierarchy.



Settings - Hierarchy

### 2.2.3 Period of Evaluation

By entering a date, you specify how the evaluation period is to be defined. The values are preassigned by the *Options Profile* used (to be defined in the *Profiles* section).



Settings - Period of Evaluation

### 2.2.4 Distribution

If this field is selected, capacity requirements are distributed using the distribution key maintained for this work center. In the case of networks and maintenance orders the system will first look for a distribution key in the operation. If no key has been maintained here, the system will use the distribution key "internal processing" in the work center.

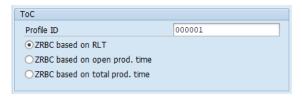


Settings - Distribution

### 2.2.5 ToC

In this section, you can maintain parameters for using the CRP in the Theory of Constraints (ToC) approach.

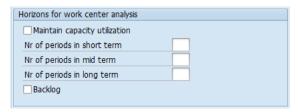
For more information about using **SCM consulting solutions** in the context of **ToC**, see the documentation for ToC, which is available on the delivery platform. The parameters in this section are only relevant if you have implemented the ToC approach.



Settings - ToC

# 2.2.6 Horizons for Work Center Analysis

The *Work Center Analysis* is a function of the consulting solution **SLM – stocking level monitor**. As a preparatory step for executing this analysis, it is necessary to maintain the short-term, medium-term, and long-term horizons in the section *Horizons for Work Center Analysis*. The utilization key figures determined for the horizons are stored in a table and can then be used by the **SLM**. This section is therefore only relevant if you are also using the **SLM**. For more information on the SLM, see Capacity Characteristics



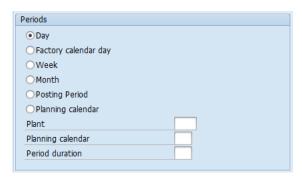
Settings - Horizons for Work Center Analysis

### **Related Information**

Capacity Characteristics

### 2.2.7 Periods

By defining *Periods*, you specify the periodicity in which the available capacity and the capacity requirements are prepared in **CRP**. Various periodicities are available for selection.



Settings - Periods

# 2.2.8 Available Capacity

Here, you determine the version of available capacity that is to be taken into account when determining the available capacity for the selected capacities.

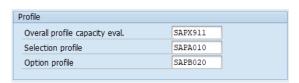
If you do not specify a version then the version of available capacity that is defined as the active version in the capacity header is used. If no active version is specified in the capacity header then the standard available capacity of the capacity category is used.



Settings - Available Capacity

### 2.2.9 Profiles

The *Profiles* are used to control various settings for the capacity evaluation. The overall profile is the central profile that contains all settings for the capacity evaluation. The overall profile contains various subprofiles. The selection profile defines the settings for the selection of capacity requirements and available capacities. The option profile combines various settings of capacity planning transactions. Depending on which overall profile you select, the selection and options profile is adjusted accordingly.



**Profile Settings** 

# 2.2.10 Traffic Light Switches for Capacity Load

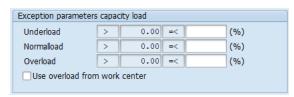
Freely definable exception parameters are provided to enable the individual classification of all types of capacity situations (such as underloads, normal loads, and overloads).

You can find these on the Settings tab on the selection screen in the lower screen area.

You can use these fields to specify at which capacity utilization levels you want the traffic lights to switch to green, yellow, or red. You must, however, ensure that the lower limit of one load is not less than the upper limit of the next smallest load level. The system also performs a validation check for this.

If you use the *Use Overload from Work Center Capacity* selection option, the system uses a different procedure as a basis. In this case, the system considers the overload value for work centers for which this value is defined in the work center master data for a specific capacity category. For these work center capacities, the system overwrites the overload value in the exception parameters of the selection screen with the maintained value. On the selection screen, the value for the normal load is also always overwritten with 100.00%.

The value is overwritten due to consistency checks during subsequent processing.



Settings - Traffic Light Switches

# 2.2.11 Scheduling

You can use the settings for *Scheduling* to specify on which of the scheduling levels of fine, rate-based, and rough a capacity requirements calculation is to be performed.



Settings - Scheduling

# 2.2.12 Order Categories

In this section, you specify which order types are taken into account when determining the capacity utilization. You can choose from work order (umbrella term for production order, process order, maintenance order, inspection order, and network) and planned order. You can select either one or both checkboxes.



**Settings - Order Categories** 

# 2.2.13 Operative Planned Orders in LTP Scenarios

If the CRP analysis is based on a planning scenario, only planned orders of the scenario are displayed in the later capacity overview by default. If the area has been activated in Customizing (see Activation of Enhanced Selection Options for LTP Scenarios), the user can now set whether operational planned orders are to be taken into account in long-term planning (LTP). You can evaluate and display firmed and non-firmed planned orders individually or together by selecting the checkbox.



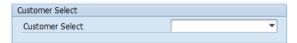
Operative Planned Orders in LTP - Scenarios

#### **Related Information**

Activation of Enhanced Selection Options for LTP Scenarios

### 2.2.14 Customer Select

You can use the dropdown to select a *Customer Select* that is displayed in the **CRP** results overview. For more information about the *Customer Select*, see the section Customer Select [page 18].



Settings - Customer Select

#### **Related Information**

Customer Select [page 18]

# 2.2.15 Layout

In this area, you can define a *Layout* for the overview and detail tables, which is applied after the **CRP** has been executed.

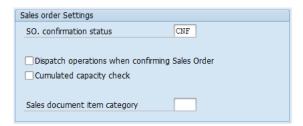


Settings - Layout

## 2.2.16 Sales Order Settings

The settings in this section are relevant for displaying the *Sales Order View* on the **CRP** results screen. The *Sales Order View* is displayed as an extra tab as soon as you select the selection object *Sales Order* or the checkbox *Display Sales Order View* (both on the *General* tab of the selection screen). You can make the following settings in this section:

- Confirmation Status: The capacity of a sales order can be deemed confirmed via a user status. To enable this, a corresponding user status must be created in Customizing for status management. This user status can then be defined in the selection area.
- Dispatch operations when confirming Sales Order: When a sales order is confirmed in the sales order view, the system sets the corresponding user status in the sales order and sets a green traffic light for the capacity check. In addition to setting the user status, you can also schedule a capacity requirement that belongs to the sales order (or to the assigned planned/production order) (a system status of EIGP is set). If dispatching is to take place, the corresponding flag must be set.
- Cumulated capacity check: In addition to the period-oriented capacity check, the system can also perform a cumulative capacity check. Instead of evaluating the available capacity per period, this check considers the total availability per work center capacity in the evaluation period. Rather than simply evaluating the overloads within a period, this check provides a cumulative overview of the entire evaluation period. The cumulative capacity check for the sales order view can be activated using a flag.
- Sales document item category: You use this parameter to specify which networks are relevant for the network check. These are all networks that refer to a sales order item with the item categories defined here.



Settings - Sales Order

# 2.2.17 BOM Application

The settings in this section are only relevant if you have selected *Material* as the selection object. You use the parameters *Application* and *Only First Valid Production Version* to define how the BOM explosion is to take place and whether only the first valid production version is relevant for each material.



**Settings - BOM Application** 

### 2.3 Periods

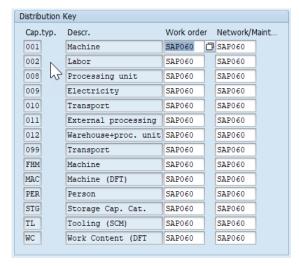
The periods for the database selection and for the evaluation provide a clear overview of the periods for which data is to be selected and evaluated in the **CRP monitor**. They depend on the selected *Option Profile* on the previous tab. An option profile defines the exact time limits with regard to the "from-to" database selection period, the "from-to" evaluation period, and the date for dispatching the backlog. As a maximum, the evaluation period can be the same as the database selection period.



Periods

### 2.4 Distribution

On this tab, you can specify *Distribution Keys*. In this way, you can specify how capacity requirements that are distributed over several periods are to be handled, for example, an equal distribution over the periods or consideration in only one of the periods. You can define this here for each capacity type and order type.



Distribution

### 2.5 Customer Select

You can use the *Customer Select* function to display individual additional fields on the results screen of the **CRP**. You can include standard SAP tables or customer-specific Z tables and link them using a join condition.

The basic idea behind a customer select can be described as an individually structured select statement that is fully integrated into **CRP** and is executed there. In contrast to standard enhancements, which usually involve adding include or append structures into a result structure, the customer select scenario follows a different approach. The system determines and selects the required additional information at runtime (that is, after you start the cockpit). This is followed by a dynamic modification of the result structure. This means that all fields of the basic structure and all additional fields are inserted in a new structure that is entirely dynamically generated. This structure does not exist in the ABAP Dictionary and is known only at runtime of the cockpit.

For the **CRP cockpit**, you can define customer selects for the pegged requirements table/capacity details table. This also means also that all data columns from this basis structure are available for the specification of a database select. Each field can therefore be used for a join with another table.

You can define and load a customer select on the selection screen. The system then displays the fields linked thus as additional columns in the detailed capacity view.



Customer Select Overview of Available Fields and Options

To create a new customer select, you first select the relevant database table under point 1. You can select predefined database tables or choose Expert Mode to integrate your own database tables.

Now select 'Choose table fields' to select the desired additional fields from the table.

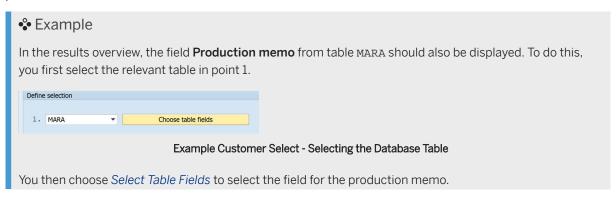
Once you have selected the desired fields, they appear in a separate table at the bottom of the *Customer Select* tab.

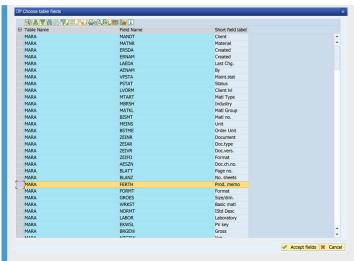
In point 2., you start to specify the actual join. You must first select a suitable join type. When you select the *Suggest join fields* indicator, the system suggests fields with the same names from the two join tables as join fields.

Once this step is complete, choose the *Choose join fields* button to select the fields used for the join connection. The system opens a new window with a selection table.

In the case of the join specification for the first table, the system offers up all fields from the basic structure </SAPLOM/CRP\_S\_CAPDET>. These are set against all fields from the selected join table (in this example, the table MARC). You can specify fields or fixed values. You can link a maximum of four fields using a join.

After the customer select has been created, it can be saved or transferred to the user master as a user parameter.





Example: Customer Select - Selection of Table Field

In the lower screen section, the field to be read is displayed in a table, including further information.



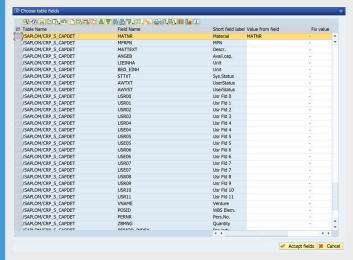
Example: Customer Select - Overview of Fields To Be Read

In the example, the join type is also defined as inner join.

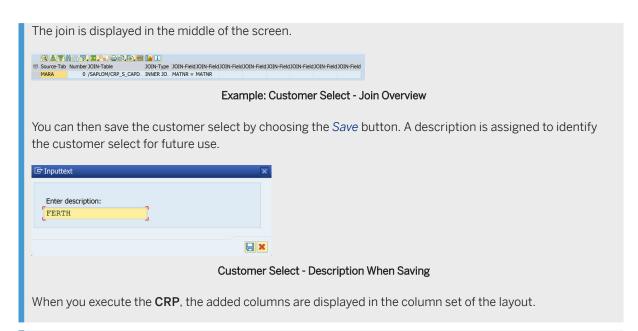


Example: Customer Select - Defining the Join Type

The relevant fields for the join are then determined by choosing the *Choose join fields* pushbutton. In this example, the material number is chosen.



Example: Customer Select - Join Field Selection



#### i Note

The system performs only limited validation checks for the customer select. If the select statement encounters errors, the system simply does not read the additional fields.

You can select all saved customer selects in the *Load Customer Select* area. In addition to performing deletion or load operations, you can also add the selected customer select to the user parameters. To do this, choose the *Set as User Parameter* button.

This command enters the currently selected customer select in the user parameter /SAPLOM/X\_SELECT. Each time that you call the **CRP**, the system loads this customer select in the background and executes it by default. As a result, you do not have to manually specify a customer select. The processing is performed automatically in the background.

# 2.6 Backlogs

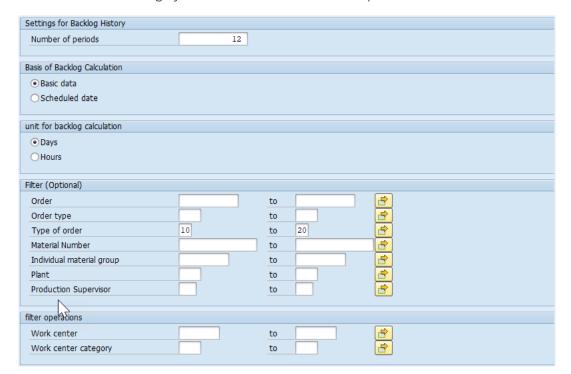
On the Backlogs tab page, you define the settings for the evaluation of backlogs.

You can subdivide the period in the past that is under consideration into 4 subperiods for which the number of backorders is detailed in each case. The fields for the periods 1 through 4 define evaluation intervals on the result screen. The *System State/System Time* fields contain the current system time by default. This time serves as the starting point for the retrospective evaluation calculated from periods 1 through 4.



Backlogs - Period

The number of periods (period = calendar month) determines the entire selection period for which the system reads the backlog history. You can determine the backlog based on basic dates or scheduled dates. You can select either days or hours as the unit for calculating the backlog and you can use the selection options to specify which orders are to be analyzed. You can either select specific orders, for example, using the order number or the order category, or make a selection based on the plant or work center.



**Backlogs - Further Settings Options** 

In the *Status Connections and Limitations* area, you can include or exclude certain order statuses for the evaluation.



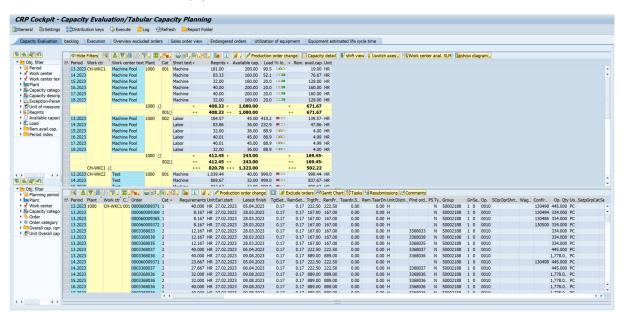
Consideration of Order Status

# 3 Results Screen

In the same way as for the selection screen, the results screen is also divided into several tabs.

Which tab pages are displayed depends partly on the settings on the selection screen. Some of the tabs are only displayed if certain checkboxes are selected. At its maximum value, the results screen has nine tabs:

- Capacity evaluation
- Backlog
- Execution
- Overview of Excluded Orders
- Sales Order View
- Orders at Risk
- Equipment Utilization
- Service Life Estimation for Equipment



Results Screen Overview

# 3.1 Capacity evaluation

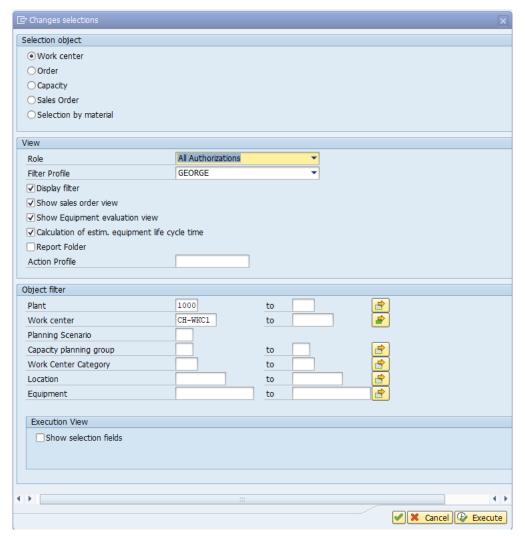
The Capacity Evaluation tab is divided into different areas.

#### Menu bar: Selections and settings from the selection screen

You can use the menu bar to control and use various selection tabs on the selection screen.



If, for example, you choose the *General* button in the menu bar to access the general settings, the system displays a dialog box with the relevant selection options. If you change one or more parameters, you can choose *Execute* in the dialog box to execute and update the evaluation directly. Choosing the green checkmark in the dialog box initially saves the relevant parameter changes on a temporarily basis.



Menu Bar - General

You can then change other parameters in the distribution keys or in the object filter selection as necessary. To update the **CRP** with the changed parameters, choose the *Execute* button in the menu bar to the right. You also have the option of generating a *Report Folder* using the menu bar.

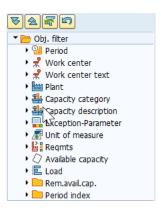
### Tree structure: For applying filter operations to the Aggregated Capacity Overview result table

The tree structure brings together all data columns from the relevant results table and their individual values in dedicated categories that are displayed in descending order (for technical reasons, periods are displayed in ascending order). It includes only values from data columns that are not empty or equal to zero. If a data column is completely empty and does not have any values, it is not included in the navigation tree. You can use the "Expand" and "Collapse" buttons to easily expand and collapse the elements in the tree structure.

Double-clicking a single value for a node applies the filter EQ | = | Equals to the result table. This means that the system performs filtering on the corresponding column with the condition "column = value". You can right-click

a single value to select between additional filter operations. If you double-click or by right-click and apply a filter to a single value of a specific node, this deletes the existing filter condition for this node in the results table.

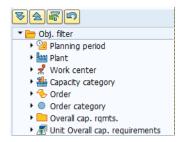
You use the "Step Back" button to jump to the previous filter state of the table. Choose the "Reset Filter" button to delete all active filters and reset the result table to its original state.



Object Filter Aggregated Capacity Overview

# The second tree structure: For applying filter operations to the Detailed Capacity Overview/Pegged Requirement Overview result table

The explanation of how to use the tree structure and its associated functions applies to both the upper and lower tree structure on the result screen. The only difference between the two tree structures is the underlying data table, which results in different values for the nodes and individual values.



Object Filter Detailed Capacity Overview

### The result table: For insight into the aggregated capacity overview data

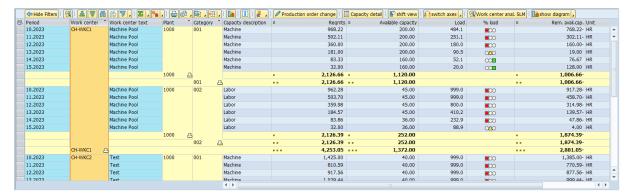
The capacity overview table corresponds to the standard overview from the transactions CM01/02/0X.

In the table, you can see:

- The time period
- Name of the work center
- Work center text
- Plant
- The type of capacity
- The description of the capacity category
- Capacity requirements
- · Available capacity offer
- Percentage capacity load

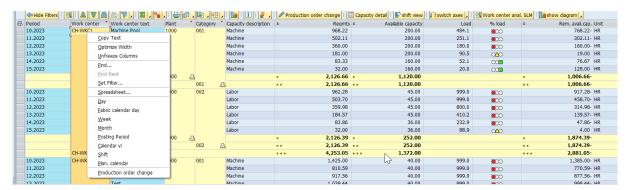
It also shows the capacity load in percent by means of traffic lights. This is intended to provide a better and faster overview of critical/noncritical load situations.

- Free capacity (difference between offer and requirement)
- Unit of measurement (for example, HRS)



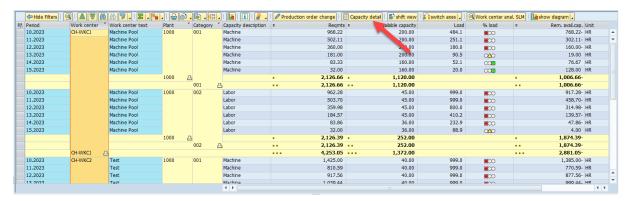
Aggregated Capacity Overview

Right-clicking in the results table enables you to perform multiple operations. You can select various periodicities. The change occurs online and the system recreates the results table.



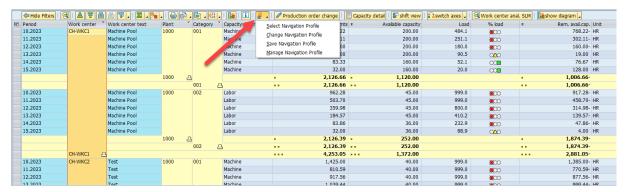
Aggregated Capacity Overview - Right-Click Options

When you double-click a row, the system identifies pegged requirements that exist for this period and displays them in the results table below. Alternatively, you can select one or more rows and choose the Capacity Details pushbutton. The pegged requirements are collated and displayed in the lower results table. The system updates the lower tree structure each time that you select one or more pegged requirement(s).



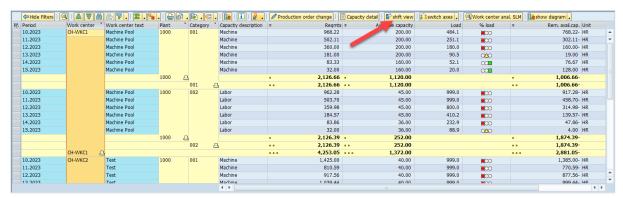
Capacity Detail

You can also use the layout function to adjust and save the layout to meet your individual requirements. You can also use the standard SAP navigation profile. You can use this to insert additional functions or transactions into the application toolbar or context menu of an ALV Grid control or ALV tree control. You can create, change, save, and manage user-specific and non user-specific navigation profiles. In navigation profiles, you can define which functions, transactions, class calls, or menus are displayed in the application toolbar or context menu. You can also transport or import navigation profiles.



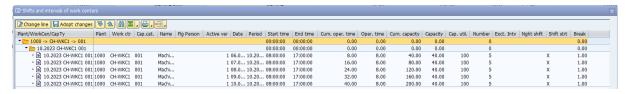
**Navigation Profile** 

You can call the shift view to obtain an overview of the shift structure, working times, and availability of a work center. To do this, choose the *Shift View* button in the upper toolbar: For this, a work center (for which you want to display the shift overview) is selected in the top part of the screen before you choose the Shift View button.



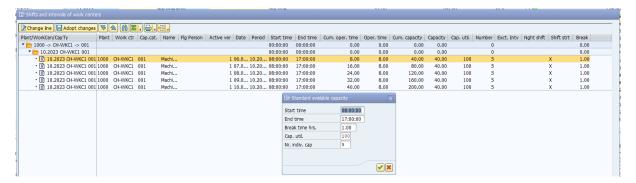
Call Shift View

When you choose the pushbutton, the shift information and working times are displayed in a separate window. You can also right-click to branch to the shift overview.



Overview Shift View

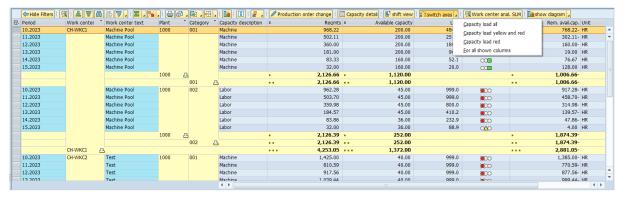
The **CRP** enables you to simulate a changed capacity availability situation by changing the shifts in the shift view. The simulated changes are reflected in the capacity overview and show what effect a change to the available capacity would have on the overall capacity and load situation. Simulated changes to the available capacity are not saved to the database. They are retained only at runtime. When you exit the **CRP**, the system resets all simulated changes to the initial state (as maintained in the standard transaction; for example, CR02 ). You use the *Change line* pushbutton to make simulated changes to the available capacity.



Simulative Change of Available Capacity

The system displays a window containing the current settings for the selected shift. You can change the fields <Start Time>, <Finish Time>, <Break Time Hours>, >Capacity Utilization>, and <Number of Individual Capacities> for the relevant shift. You must choose the green checkmark to confirm your changes. After you confirm the changes, they are copied to the selected row: Using this process, you can change several shifts in succession. All changes are taken into account in the totals columns (<Operating Time> and <Capacity>). Once you have made all required changes, you can choose the diskette button *Apply Changes* to transfer them to the capacity overview.

You can also use the Switch axes button to switch the axes.



Switch Axes

The "Period" column plays a particular role here. This column is switched from the y-axis to the x-axis. That is, you can now read the time gradient of the capacity key figures on a column-by-column basis. The indicator tables are intended to provide an easily interpreted and meaningful overview of the capacity situation.

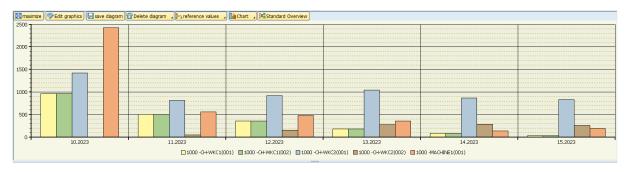
The switch axes function offers four predefined views:

- 1. Capacity Load All: This view displays all traffic light colors, regardless of whether they are green/yellow or red.
- 2. Capacity Load Yellow and Red: This view displays only capacity loads in the normal or overload range.
- 3. Capacity Load Red: This indicator table displays only the capacity situations with a critical overload.
- 4. For All Shown Columns: This option checks which value columns are displayed in the output table and also integrates them in the indicator table. If, for example, the columns for the requirement, available capacity, capacity load, free capacity, pegged requirement, or total requirement are displayed, they are integrated into the indicator table on a row-by-row basis. If certain columns are not required, you can easily remove them from the axis switch by right-clicking and choosing Hide.



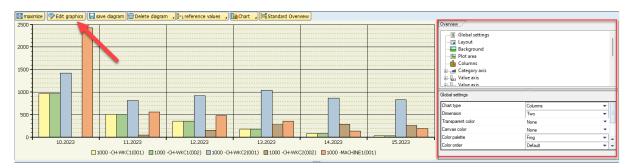
Example: Switched Axes in Yellow and Red

You can use the *Show diagram* option to obtain a graphical overview of the capacity situation. This function is located in the options bar of the capacity overview. Depending on the user parameters, the system then displays a graphical evaluation in the lower screen section instead of the detailed capacity list.



**Graphical Overview** 

You can also edit the graphic. To do this, choose the *Edit Graphic* pushbutton. This opens a new menu to the right of the chart area. You can use the options and settings provided to manipulate all of the chart properties. Each change to a parameter has a direct influence on the chart. The changes can also be saved. If you make changes to the chart but do not save them, the chart is only available in this state on a temporary basis. This means that the changes are no longer available the next time you call the cockpit.



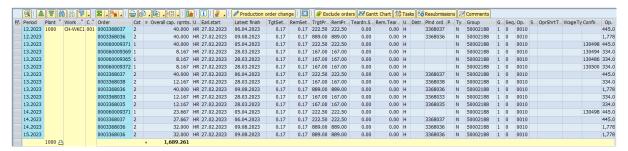
**Edit Graphic** 

A saved chart can also be set as the default setting for one or more users. For the settings for this, see the CRP configuration guide, under Set Chart Templates as User Parameters.

Various options are available for maximizing or minimizing a chart. The *Maximize* option hides the capacity overview and expands the chart to cover the entire right-hand section of the cockpit. The *Minimize* option reverses this action and displays the capacity overview again. If you want the chart to cover the entire cockpit, you can hide the tree structure prior to maximizing the chart.

#### Results table: For insight into the detailed pegged requirement data

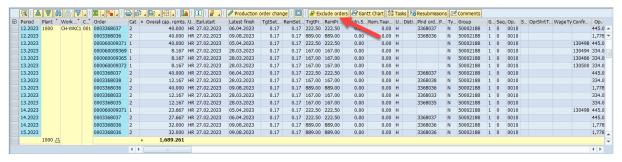
When you call the **CRP**, the system loads all pegged requirements for the specified selection to the Pegged Requirement Overview table. Pegged requirements can be production orders, planned orders, maintenance orders, or process/project orders. You can use the *X button* in the options bar to hide the pegged requirement overview. For example, this may be necessary if you focus primarily on the aggregated view of the capacity situation and the detailed view is only of secondary importance.



**Detailed Information on Capacity Requirements** 

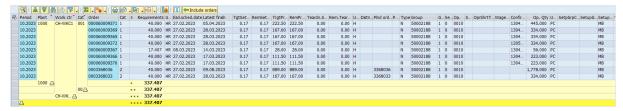
All data columns from the capacity detail lists of the standard CMO1/O2/OX evaluations are available and can be shown. You can do this using the layout function. Other data columns may also be displayed depending on your use of customer selects. The number and scope of the additional columns are dependent on the defined customer select. For various objects, you can also jump to the master data in change mode. This is done by right-clicking in a corresponding column.

You can manually exclude individual orders from the capacity load. This causes them to disappear temporarily from the pegged requirement overview. The capacity load of the excluded orders is also deducted from the calculated total load per period (in the upper overview subscreen). To exclude orders (or the associated capacity requirements) from the load, select them and choose the *Exclude Order* button.



**Exclude Orders** 

After you choose the *Exclude Order* button, the selected capacity requirements are moved to the Excluded Orders tab and the capacity requirement is subtracted from the total load in the capacity overview. The Overview of Excluded Orders view collates and lists all excluded orders (or their capacity requirements): You can reintegrate the excluded orders into the total load by choosing the *Include Order* pushbutton.



Overview of Excluded Orders

You can use the **CRP** to display the operation structure for an order graphically as a Gantt chart. To do this, select an order operation or capacity requirement in the pegged requirement subscreen and choose the *Gantt Chart* button. The Gantt chart displays all operations for the selected order.

From the detail view, you can also branch to other transactions. To do this, either double-click or right-click on a field. Double-clicking opens the relevant transaction in display mode. If you right-click Maintain Object, on the other hand, you can open the transaction in edit mode. The jumps can be configured. For more information

on the configuration options, see the CRP configuration guide, under Jump to Other Transactions from the Capacity Detail View.

In this section, you can also use the task function. The *Tasks, Resubmission, and Comment* pushbuttons are available for this purpose. These functions are part of the **comprehensive functions** that you can use to document and coordinate objects to be processed. For more information about the comprehensive functions, see *Tasks*, *Resubmissions*, and *Comments on the Results Screen*.

### **Related Information**

Set Chart Templates as User Parameters
Tasks, Resubmissions, and Comments on the Results Screen
Jump to Other Transactions from the Capacity Detail View

### 3.2 Backlog

The *Backlog Overview* shows selected production/process orders that are backlogged. The system date ('system status'/'system time') on the selection screen (tab: Backlog is decisive for determining the backlog. The backlog overview displays the total number of backorders and the number of orders in the individual backlog periods 1-4.



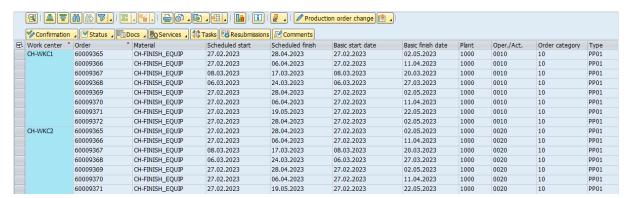
**Backlog Overview** 

If you double click on a cell in the backlog overview, the system displays a table with the backlogged orders in the respective period. In addition, the distribution of the backlogged orders to the individual backlog periods is displayed graphically. You can display more information about the quality of the backorders/operations by double-clicking on a node in the tree structure on the left, for example, the distribution of the orders to different order types or process statuses.

### 3.3 Execution

The selected plant orders are displayed in the *Execution View*. These can be edited using various pushbuttons. You can use the pushbuttons to implement confirmations and to display and change order statuses. For

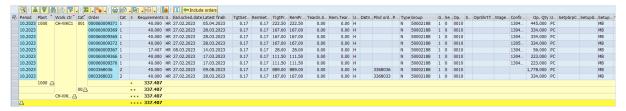
network orders, it is also possible to manage documents that are attached to the corresponding orders and to define services that can be attached to the order. As with other areas in the **CRP**, you can also use the task function here.



**Execution View** 

### 3.4 Overview of Excluded Orders

The Overview of Excluded Orders view collates and lists all excluded orders (or their capacity requirements). Select a capacity requirement and choose the *Incl. Orders* button to include the orders in the total load once more. The exclusion of orders is performed only as a simulation and is retained only at runtime of the CRP. When you exit or update the CRP, the system recalculates the total load, with the result that no orders are excluded.



Overview of Excluded Orders

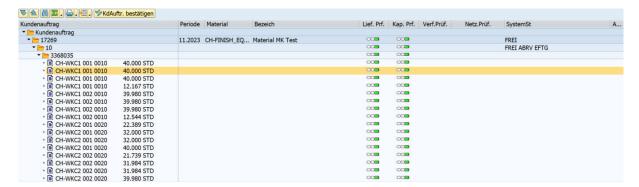
### 3.5 Sales Order View

The Sales Order View displays all selected sales orders in a tree structure:

Document Header Document Item Planned/Production Order Header Capacity Requirement with Work Center Capacity and Operation .

The system performs various checks for the individual objects when it loads the sales order view:

- Vendor check
- Capacity check
- Availability check
- Network check



Sales Order View

### 3.5.1 Vendor Check

The **vendor check** checks all externally procured components in the planned/production order for deliverability. The delivery restrictions are maintained in a separate Customizing transaction. For more information, see the CRP configuration guide, under Maintenance of Delivery Restrictions for Sales Order View.

The vendor restrictions function checks the requested quantity for a date against the restrictions from the maintenance table. The query is performed either per material or per product group. When performing a query by material, the system determines the corresponding product group (if more than one exists, this is always the first one found) and determines the total quantity as the sum of all materials in the product group. Existing purchase orders and open procurement proposals are taken into account.

The check covers the following objects:

- Planned orders
- Purchase requisitions
- Purchase orders
- SA schedule lines

If the total quantity of the above objects plus the requested quantity exceeds the maximum quantity or a defined threshold, the system issues a message, depending on the use case.

### **Related Information**

Maintenance of Delivery Restrictions for Sales Order View

# 3.5.2 Capacity Check

The **capacity check** performs a check of each individual capacity requirement within the relevant period for free capacity. To do this, it totals the individual capacity requirements for each period on an incremental basis and compares them with the available capacity within the period. If a capacity requirement fits completely within the period and the associated sales order is confirmed, the system displays a green traffic light. If a capacity requirement fits in the relevant period and the related sales order is not yet confirmed, the system

displays a yellow traffic light. If a capacity requirement no longer fits in the relevant period, the system displays a red traffic light. Capacity requirements for a confirmed sales order are generally displayed with a green traffic light.

Depending on the settings on the selection screen, the capacity check is either period-oriented or cumulated. When you choose *Confirm Sales Order* to confirm a sales order on the sales order view of the **CRP**, the system sets the corresponding user status in the sales order and sets a green traffic light for the capacity check. Depending on the settings on the selection screen, the capacity requirement can then be dispatched directly. For more information, read Sales Order Settings [page 16].

#### **Related Information**

Sales Order Settings [page 16]

# 3.5.3 Availability Check

The **availability check** ensures that all components of an order are available in addition to the capacity. Technically, the check is based on one or more system statuses that are checked in the production order. The availability check in the sales order view can therefore be performed only for production orders (not for planned orders).

The result of the availability check is displayed using a traffic light (red/yellow/green). You can use a table to set the conditions for the individual traffic light colors on a customer-specific basis. For details on configuration, see the CRP configuration guide, under Availability Check Sales Order View.

### **Related Information**

Availability Check Sales Order View

### 3.5.4 Network Check

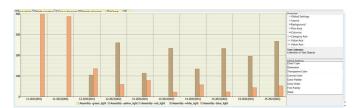
If networks are assigned to a sales order in addition to production orders, you can check them separately. The check result is displayed in the *Network Check* column using a traffic light color. All networks that refer to a sales order item with the item types defined in the settings for **CRP** are relevant to the check: For more information, see Sales Order Settings [page 16].

#### **Related Information**

Sales Order Settings [page 16]

### 3.6 Orders at Risk

The *Visualizing Orders at Risk* view provides a graphic representation of the relative share of the red, yellow, and green capacity requirements (the colors reflect the result of the capacity check) in the total available capacity. This enables the capacity load to be analyzed in a clear manner with regard to its material availability. In the upper screen area, the periods displayed in the graphic are broken down with the orders they contain. The layout of the graphic can be changed and the changed layout can be saved.



Overview of Orders at Risk

# 3.7 Utilization of Equipment

If you set the *Utilization of Equipment* indicator on the **CRP** selection screen, the results screen shows the *Utilization of Equipment* tab. This view enables you to perform a capacity evaluation of the equipment used to produce the selected orders.

The table contains the following columns:

- Planning Period
- Name of Equipment
- Requirement
- Available Capacity Offer
- Capacity Load in Percent
- Traffic Light (visualization of the degree of loading)
- Free Capacity



Utilization of Equipment

The load placed on an item of equipment by an order operation is calculated using the duration or capacity load of the operation to the equipment is assigned. The available capacity of a piece of equipment per period (day/week/month) is maintained in a separate table. For more information on this, see the CRP configuration guide, under Maintenance of Available Equipment Capacity.

In the program logic, the routing used is determined from the production version assigned to the orders. This is then used to determine the equipment assigned to the load operation. The *Utilization of Equipment* now shows the total load for all operations that relate to the equipment compared to the period availability for the equipment (from the availability table /SAPLOM/X\_EQ\_CAP).

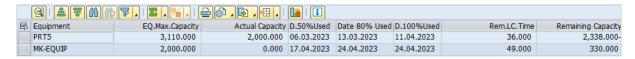
#### Related Information

Maintenance of Available Equipment Capacity

# 3.8 Estimated Life Cycle Time for Equipment

To display the *estimated life cycle time for equipment* in the **CRP cockpit**, set the corresponding indicator on the selection screen.

The estimated life cycle time for equipment calculates the future life cycle of the loaded equipment (that is, the equipment used in the operations for the capacity load). This function always proceeds on the assumption that the equipment used has a limited life cycle time and therefore also a maximum capacity (based on the unit of measure for the material produced in the equipment-relevant operation from the order).



#### Preparation for Use

#### Estimated Life Cycle Time for Equipment

The total capacity (in the unit of measure of the material produced) is maintained in a separate table for each piece of equipment. For more information on this, see the CRP configuration guide, under Maintenance of Equipment Lifetime. The life cycle time calculation deducts the capacity already consumed in the past

from the total capacity. The capacity already consumed for an item of equipment is determined using the last measurement document. To enter measurement documents, a corresponding measuring point must be assigned in the equipment master.

The following steps are required in preparation for using the estimated life cycle time:

- Create an equipment master (→ as a production resource/tool in transaction IE01/IE02)
- Create a measuring point and assign it to the equipment master (transaction IE01/IE02)
- Assign the production resource/tool to the routing operation for which you want to evaluate the capacity in the **CRP cockpit**
- Enter the equipment wear using measurement documents for the measuring point

#### **Table**

The results of the estimated life cycle time for equipment are displayed in different columns:

- Equipment: Name of equipment
- . Equ. Max Capacity: Maximum total capacity in the unit of measure of the produced material
- Capacity Used: Capacity that has already been consumed/used from the most recent measurement document
- D. 50% Consumed: Date on which the total capacity is expected to be used up by 50% on the basis of the orders imported in **CRP**. If 50% of the total load is not reached by the end of the planning period, the system displays the end date of the last order.
- D. 80% Consumed: Date on which the total capacity is expected to be used up by 80% on the basis of the orders imported in the **CRP cockpit**. If 80% of the total load is not reached by the end of the planning period, the system displays the end date of the last order.
- D. 100% Consumed: Date on which the total capacity is expected to be used up by 100% on the basis of the orders imported in the **CRP cockpit**. If 100% of the total load is not reached by the end of the planning period, the system displays the end date of the last order.
- Rem.LC.Time: Number of days from today to the date on which 100% of capacity has been consumed.
- Remaining Capacity: Remaining capacity in the unit of measure of the produced material

#### **Related Information**

Maintenance of Equipment Lifetime

# 4 Background Processing

**CRP** can also be run in background mode. It generates a spool file that can be viewed in the relevant job result in transaction SM37. You can then export the result to different formats or process it further.



Spool Output Background Processing

# **5 CRP Consulting Support**

If you want to report errors for the CRP consulting solution, you can do so via the SAP ticket system.

- First check that you have imported the current build / current transport of your CRP version in the system. New builds/transports for the respective CRP cycle appear at regular intervals. The last build/transport contains all previous error corrections. It is possible that an error that you want to report has already been resolved. It is then sufficient to download and import the latest build/transport of CRP from the delivery platform.
  - You can find your currently imported **CRP** transport in the SCM Infocenter under transaction /n/SAPLOM/ X TRD.
  - First compare the version in your system with the version that is available for download on the delivery platform.
- 2. Create an OSS incident under the component XX-PROJ-CON-CRP. For the **priority of tickets**, refer to the SAP Note.67739
- 3. Make sure that the **system connection** is open and that **credentials** for logging on to the system are provided in the **secure area** of the incident. Check that it is possible to log on to the **client** of your choice. Also check that the provided user name has **authorization for the CRP transactions and debugging** in the system.
- 4. Open the SCM Infocenter under transaction /n/SAPLOM/X\_TRD and copy the output to the OSS incident.
- 5. Describe the issue: What is the system behavior and what would you have expected?
- 6. Provide a **step-by-step description** with an example of how to reproduce the error. An example includes:
  - · System name
  - Client
  - Variant
  - Plant
  - Work center
  - Sample order number

Describe the example in a document and attach it to the incident.

- 7. If an import error occurs, attach a screenshot of all imported SCM Consulting Solutions transports and the import sequence to the OSS incident, as well as a screenshot of the import error that occurred.
- 8. In the case of a short dump, attach it to the OSS incident (for example, from transaction ST22).

Create an incident for each topic. Please do not mix topics in the incidents. See SAP Note 50048/2.

#### → Remember

CRP consulting support only checks for errors in the source code of the solution. CRP consulting support does not provide support for the correct configuration of the solution. Therefore, CRP consulting support does not check Customizing in the customer system.

If you have questions about the settings of functions in the system, or require support with testing, contact CRP Consulting.

If you experience problems with the CORE setup, open an incident under the component XX-PROJ-CON-MCF.

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