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Capacity leveling

Introduction

In CAT model, you will find different alternatives to evaluate the capacity load and make some decisions avoiding overloads or scheduling the production in a better way.

For instance, in standard SOP, a rough-cut planning profile can be used to carry out a first capacity evaluation. In the flexible planning it was shown how a planning type can be created to take into account capacity requirements coming from different products using the same resource.

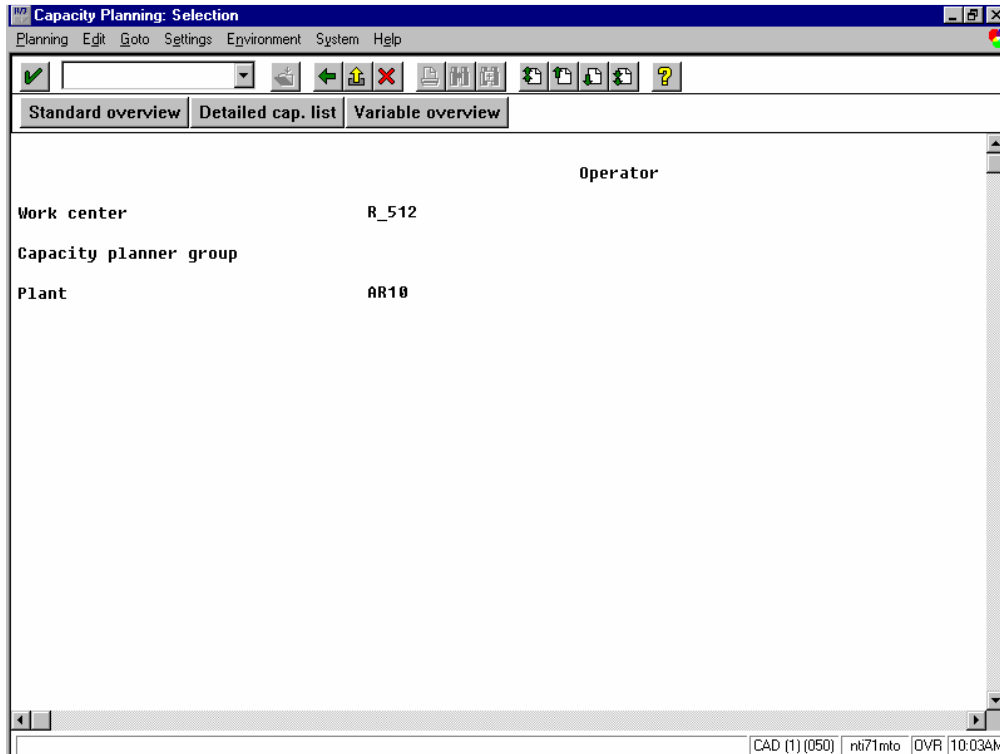
In this manual, we will refer to a detailed capacity evaluation, which is carried out on the basis of planned/process orders.

These orders are generated by the master recipes. The resources and operation times included in a recipe are the key dates in the capacity planning.

Firstly, a capacity evaluation for a given resource will be presented, and we will see how the planned (process) orders are impacting on a given resource.

Then we will make the capacity leveling for the resource, which is a process of dispatching the planned orders, i.e., allocating them to the resource at a given date/time.

Capacity evaluation




From the menu go ➤ logistic ➤ production-process ➤ process planning ➤ evaluation ➤ resource view ➤ load.

We can take a look at the resource R_512 for example.

Fill in the fields:

Work center Resource that you want to evaluate the usage

Plant

Press  and you will see an overview of the capacity usage as shown on the next page.



HELPFUL HINTS:

Transaction CM01 – capacity planning selection

Capacity evaluation

Capacity Planning: Standard Overview

Work center: R_512 Dispersion Reactor R-512 Plant: AR10
Capacity cat.: 008 Processing unit

Week	Requirements	AvailCap.	CapLoad	RemAvailCap	Unit
<input type="checkbox"/> 52.1997	30,00	104,00	29 %	74,00	H
<input type="checkbox"/> 01.1998	34,35	104,00	33 %	69,65	H
<input type="checkbox"/> 02.1998	7,50	128,00	6 %	120,50	H
<input type="checkbox"/> 03.1998	11,35	128,00	9 %	116,65	H
<input type="checkbox"/> 04.1998	15,00	128,00	12 %	113,00	H
<input type="checkbox"/> 05.1998	0,00	128,00	0 %	128,00	H
<input type="checkbox"/> 06.1998	0,00	128,00	0 %	128,00	H
<input type="checkbox"/> 07.1998	11,35	128,00	9 %	116,65	H
<input type="checkbox"/> 08.1998	0,00	128,00	0 %	128,00	H
Total >>>	109,55	1.104,00	10 %	994,45	H

This view shows the requirements in hours per week.

You have the following information available:

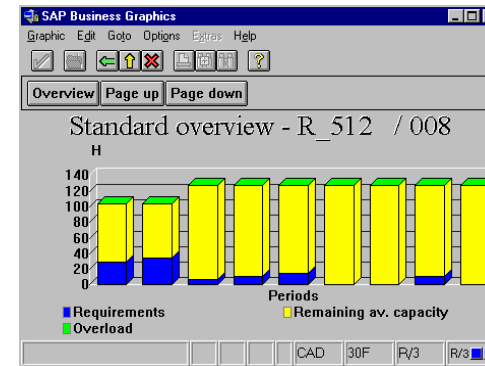
Requirements

AvailCap Available capacity

CapLoad Capacity load (% of usage)

RemAvailCap Remaining available capacity

If click on the system will display a chart as follows:



You can see details of a week for example. Select week 01.1998 and click on

Cap. details/period

HELPFUL HINTS:

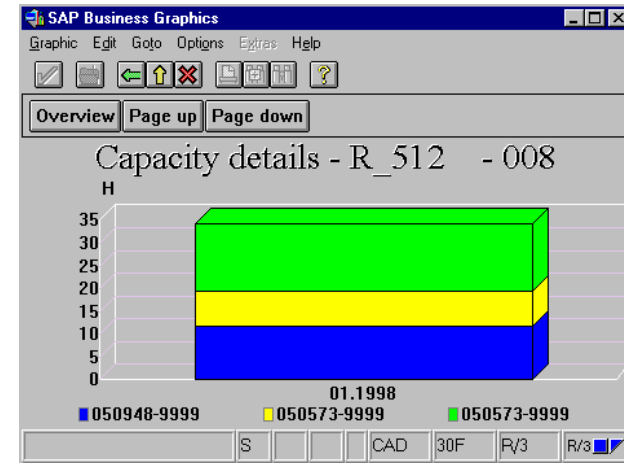
Capacity evaluation

Capacity Planning: Standard Overview: Details


Plant AR10 Planta General Lagos
 Work center R_512 Dispersion Reactor R-512
 Capacity category 008 Processing unit

Week	PeggedRqmt	PgRqmtQt	Op.	Material	Material short text	Rqmts	Earl.
Total						34,350	
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0021 050948-9999	ACRONAL U-206	0,500	H 02.01
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0022 050948-9999	ACRONAL U-206	0,100	H 02.01
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0023 050948-9999	ACRONAL U-206	0,500	H 02.01
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0031 050948-9999	ACRONAL U-206	1,500	H 02.01
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0041 050948-9999	ACRONAL U-206	4,000	H 02.01
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0042 050948-9999	ACRONAL U-206	2,000	H 02.01
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0043 050948-9999	ACRONAL U-206	2,500	H 02.01
<input type="checkbox"/> 01.1998	200000064	20.000	KG	0044 050948-9999	ACRONAL U-206	0,750	H 02.01
<input type="checkbox"/> 01.1998	200000344	17.500	KG	0030 050573-9999	Acronal 290 D	7,500	H 03.01
<input type="checkbox"/> 01.1998	200000385	17.500	KG	0030 050573-9999	Acronal 290 D	15,000	H 02.01

You can see a chart as well. Click on :



You can customize your report. Let's say you want to see first the material and material short text instead of the pegged requirements. Click on **Choose fields...** and the dialog box shown on the next page will appear.



HELPFUL HINTS:

Capacity evaluation

You will use four buttons basically on this dialog box:



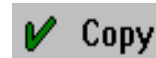
To select a field (to be deleted or moved, for example)



To allocate the field into a new position



To delete a field from the sequence



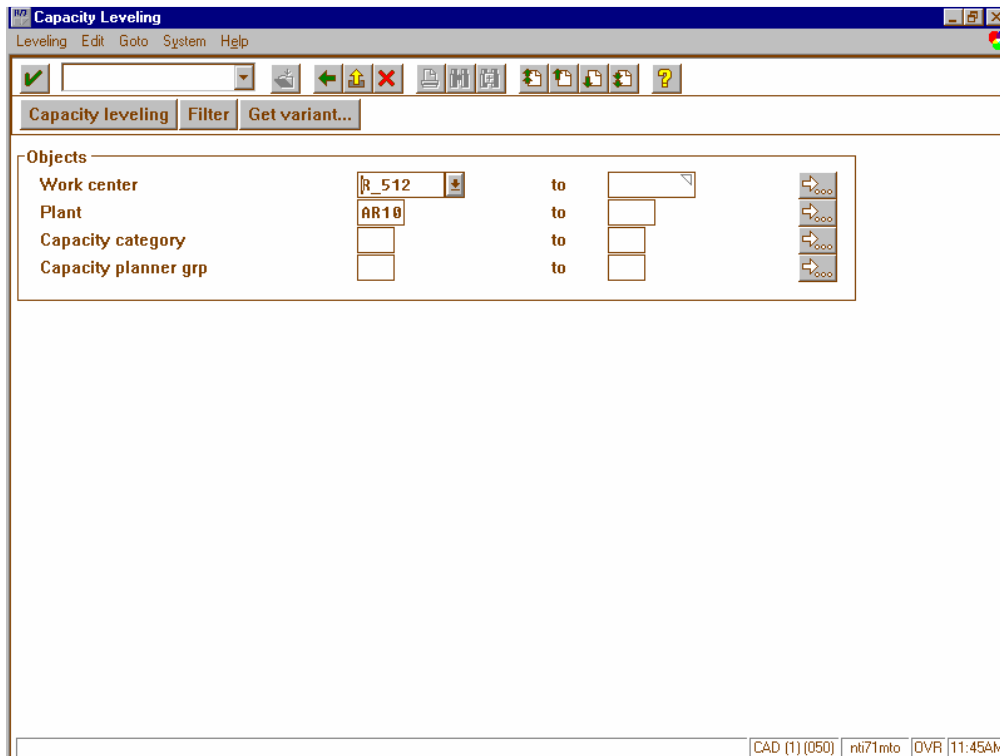
To update the sequence as you have chosen

So, first select material by clicking on . Then click on the field Pegged requirements and click on . Do the same with material short text. Now press and you have a more customized report.

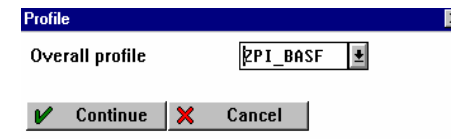
The next step is to check the schedule according to the capacity.

HELPFUL HINTS:

Capacity leveling



From the menu go > logistic > production-process > process planning > capacity leveling > variable > overall profile. A dialog box appears asking for a capacity profile (In CAT model was developed the ZPI_BASF):




Click on and you will be taken to the screen shown at the left.

You must specify the work center and the plant. Then, click on and you will see a chart like the one below:

				Resources		
Resource	Description	Cap.	Desc.	Jan '98		
R_512	Dispersion Reac	008		W 52	CW 53	CW 01
				Pool		
Material	Order	Oper.	Operatio	Jan '98		
050948-9	30003203	0020	20.00	W 52	CW 53	CW 01
050948-9	30003203	0030	20.00			
050948-9	30003203	0040	20.00			
050573-9	30003400	0010	17.50			
050948-9	30003204	0020	20.00			
050948-9	30003204	0030	20.00			
050948-9	30003204	0040	20.00			
050573-9	200000383	0010	17.50			Acronal 290 D
050573-9	200000384	0010	17.50			Acronal 290 D

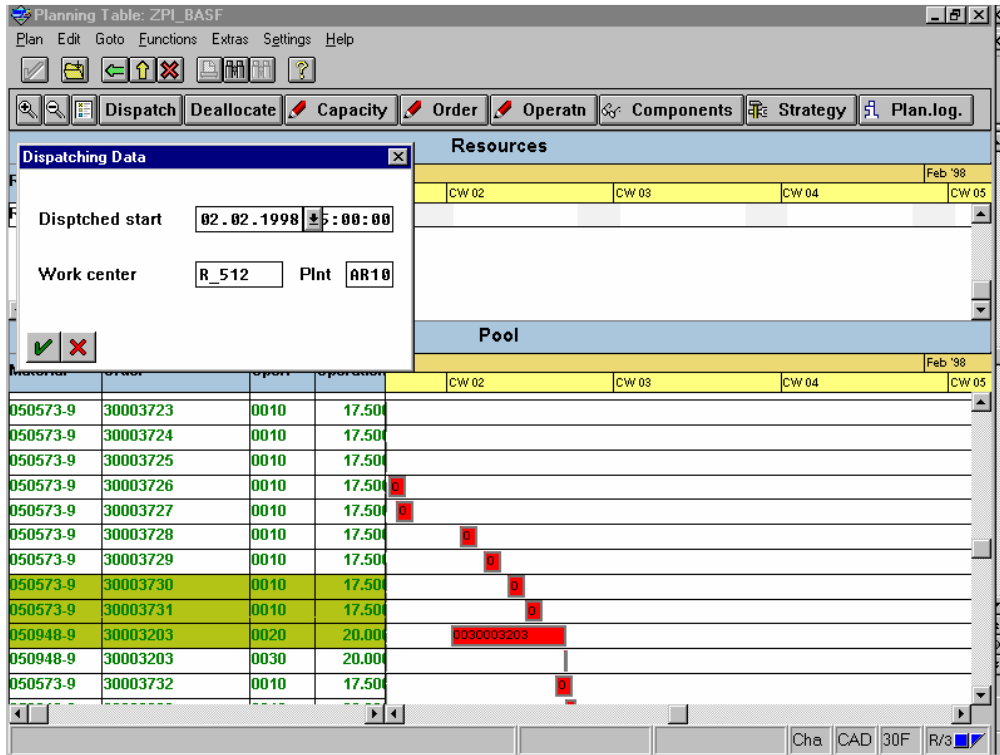
Here you can see planned, created and released planned orders. Select the planned orders created (click on one of them and then keeping the key <SHIFT> pressed click on the other



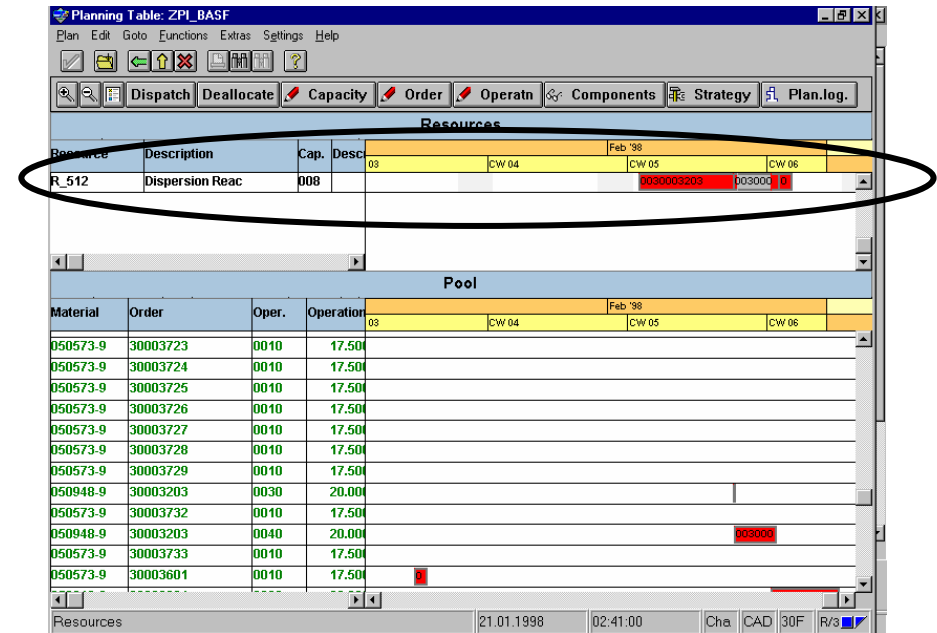
HELPFUL HINTS:

Transaction CM29 – Capacity leveling


one) and click on **Dispatch** to plan a schedule for them. You see the window shown on the next page asking for dates to be considered in the scheduling.



You enter the date to start the dispatch and click on . The dispatch will be carried out and the result will be displayed as follows:



You can see details of the orders and the materials. If you are interested in a particular order click twice on it and the order will appear showing details like the quantities to be produced.



Capacity leveling

HELPFUL HINTS:

Capacity leveling

The screenshot shows the SAP Planning Table interface for SAPPI_G001. It features a menu bar (Plan, Edit, Goto, Functions, Extras, Settings, Help) and a toolbar with icons for Dispatch, Deallocate, Capacity, Order, Operatn, Components, and Strategy. Below the toolbar are two main tables:

Resources			
Resource	Description	Cap.	Desc.
R_512	Dispersion Reac	008	Jan '98

Pool			
Material	Order	Oper.	Operatio
050948-9	30003203	0020	20.00
050948-9	30003203	0030	20.00
050948-9	30003203	0040	20.00
050573-9	30003400	0010	17.50
050948-9	30003204	0020	20.00
050948-9	30003204	0030	20.00
050948-9	30003204	0040	20.00

The capacity leveling is based on an overall profile. The overall profile of CAT model is named ZPI_BASF (customizing view – item 1). This profile is a combination of a set of parameters for the system so as to define needs of selection, filtering and grouping data for capacity leveling.

In order to do the scheduling you must select a strategy. CAT model does the scheduling based on the strategy profile ZAP_T001 (customizing view – item 2). Click on the button

Strategy

The screenshot shows the 'Strategy profile' configuration dialog in SAP. It lists several profiles:

Profile Name	Description
SAPMPST002	MPS/MRP: Fin.sched.backw.wth termination
SAPMPSVER1	MPS/MRP: Capacity availability check
SAPPD_T001	Fin.sched.forw./earliest point in time

The 'Strategy prof.' is set to ZAP_T001 with the description 'Finite scheduling forw./all functs.activ'. The 'Planning control' section includes:

- Finite scheduling
- Plan. direction forwards
- Dispatch at earliest point in time
- Overall capacity load
- Insert operation
- Close gaps
- No closing of the
- Date entry when dispatching
- Cancel dispatching due to error

The 'Transaction control' section includes:

- Use operation floats
- Use float bef. prod.
- Use float aft. prod.

The 'Treatment of queue time' is set to '1 After reduction level'. The 'Reduction level' is set to '1'. The 'Dispatch internal production' is set to '4 User decides betw. earliest and latest start'. The 'Dispatching control' section includes:

- Sort operations to be dispatched
- Operation date check

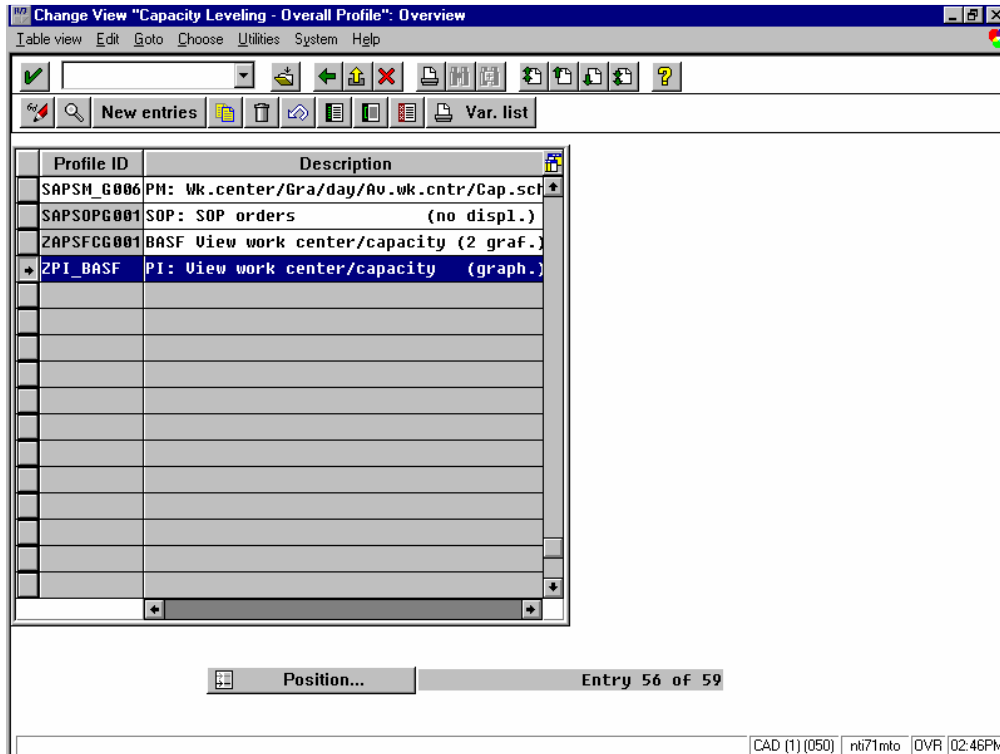
The choice of this strategy is very important to define the dispatch sequence.

There is a discussion of the following profiles in the customizing view:

HELPFUL HINTS:

Capacity leveling – Customizing view

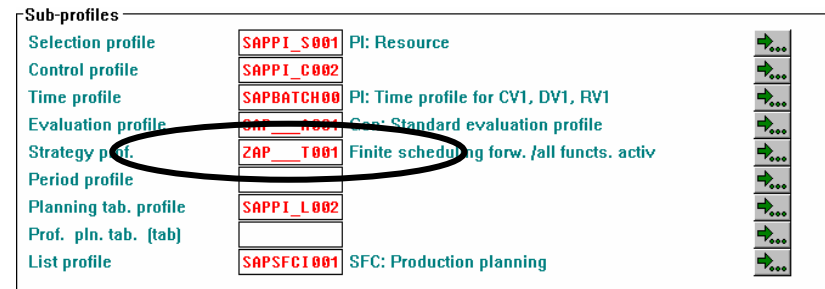
1. Capacity leveling



The main purpose of the capacity leveling is to dispatch operations in order to optimize the resources usage.

So as to achieve this target CAT model developed a system to dispatch the operations taking into account setup considerations. So setup classes were created and during the capacity leveling the SAP tries to join operations with the same class of setup. This should minimize the time wasted in setups due to product changes.

The first step is to choose an overall profile for the capacity leveling. The CAT model profile is ZPI_BASF. Click on and you will be taken to a screen with the detail shown below:



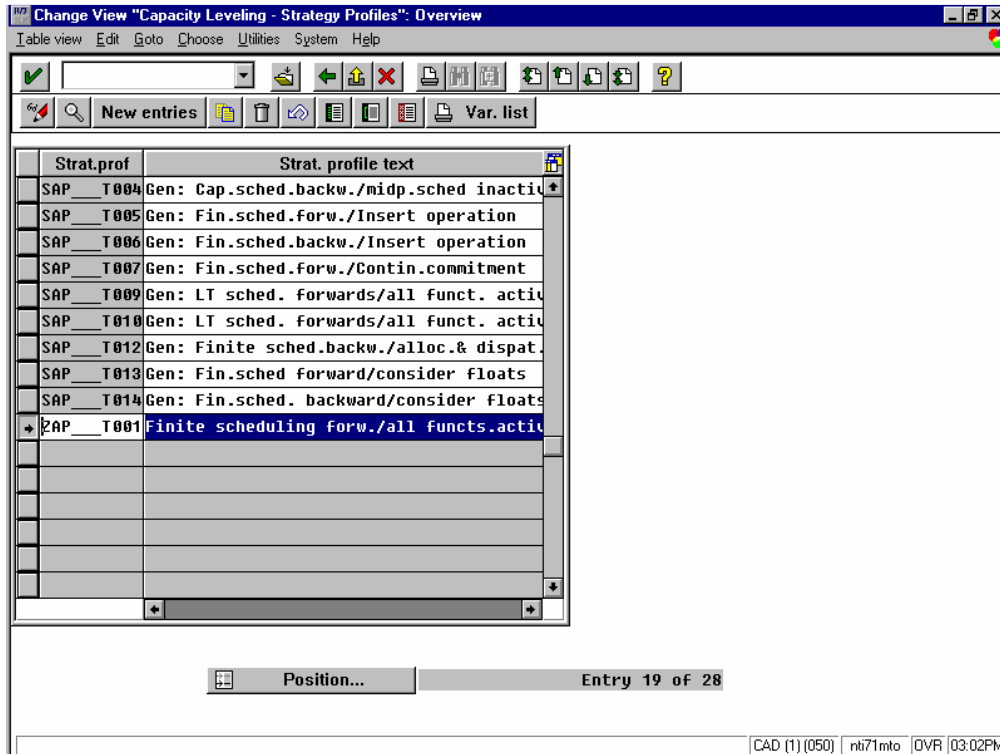
There are keys to define structures to select, to filter, to group data, to control and to evaluate the capacity leveling for example. Now let's give a special attention to the strategy profile. The strategy profile is where you are going to specify the dispatch sequence. This is shown on the next screen.



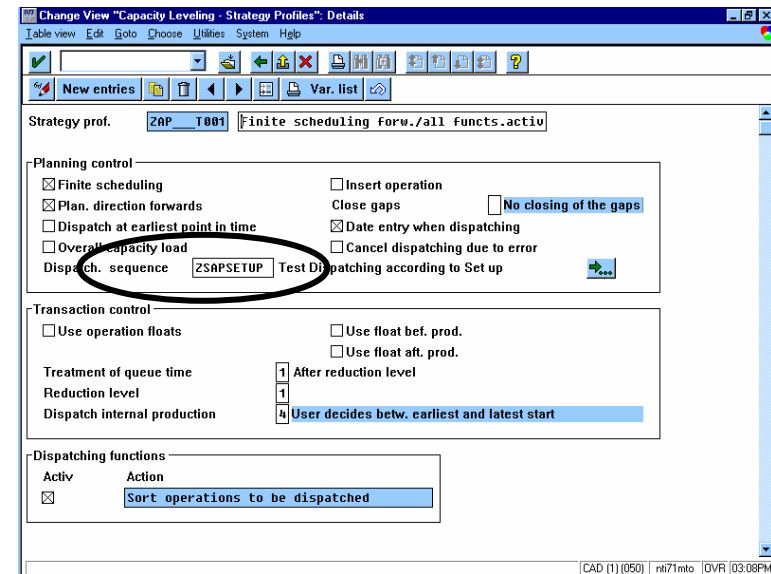
HELPFUL HINTS:

Transaction OPD0 – change view capacity leveling overall profile: overview

2. Capacity leveling – strategy profile



CAT model uses ZAP_T001 as strategy profile. Click on and you will see the screen below:



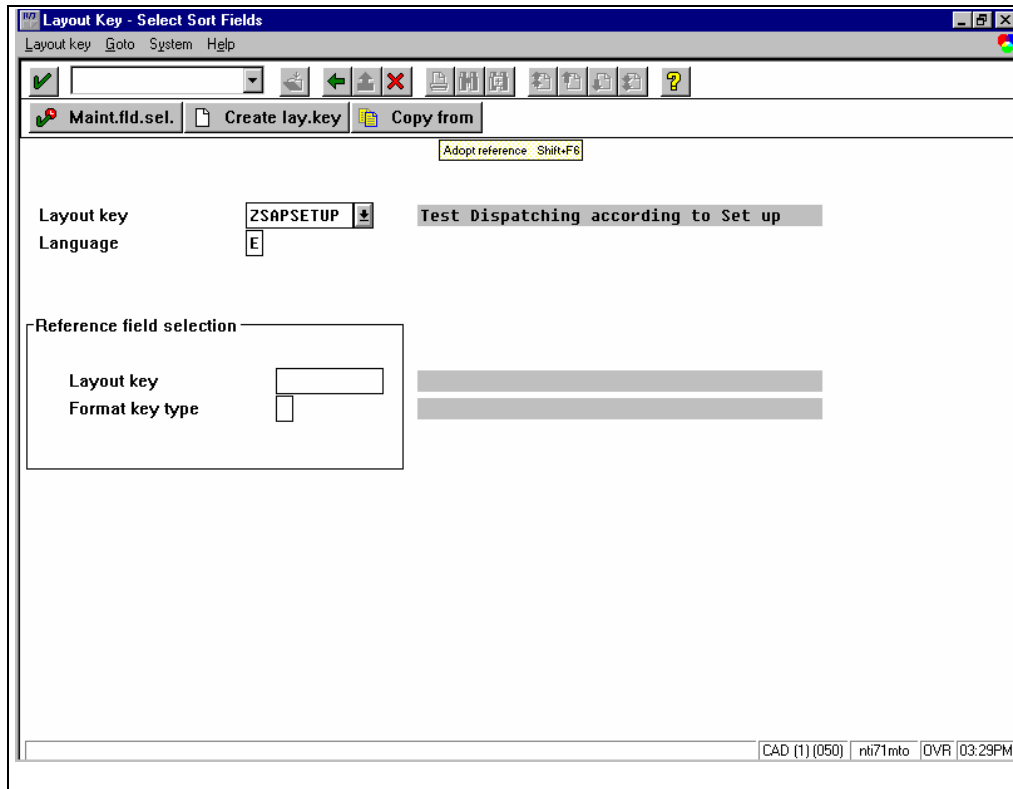
The field dispatch sequence is the one that specifies the dispatch sequence. The sequence ZSAPSETUP is shown on the next page.



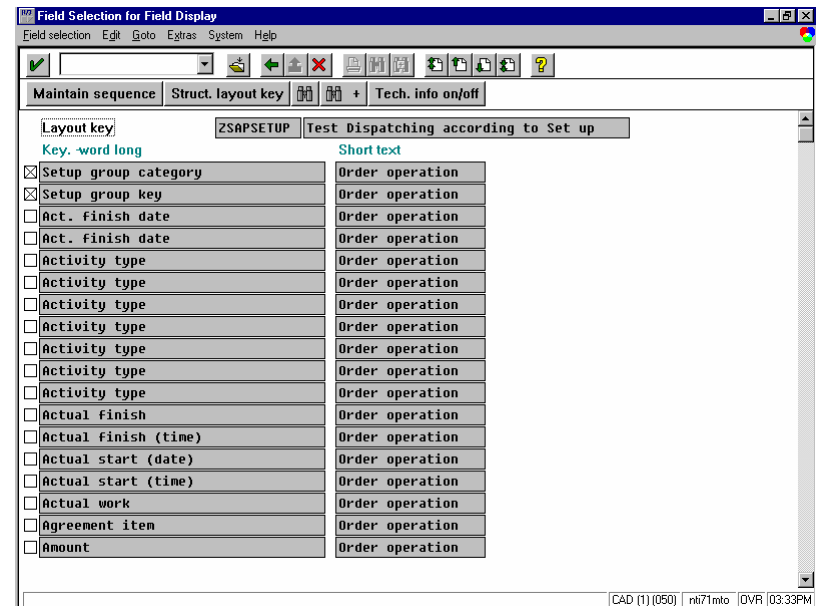
HELPFUL HINTS:

Transaction OPDB – change view capacity leveling – strategy profile: overview

3. Capacity leveling – setup category



The setup sequence is defined based on a layout. So select the layout (ZSAPSETUP) and click on **Maint.fld.sel.** and you see a screen as follows:



HELPFUL HINTS:

Transaction CY39 – change view “Layout key”: overview

Now you specify the factors to be considered in the schedule sequence.

In this case, only setup group category and setup group keys (see manual: Master recipe) are considered for dispatching. In order to define which field has the highest priority, click on **Maintain sequence** and then select the desired field.