

MECANO - Operation

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 - KPI 2.08 Available capacity (K_CAPAV2)

General presentation

Objective of the application

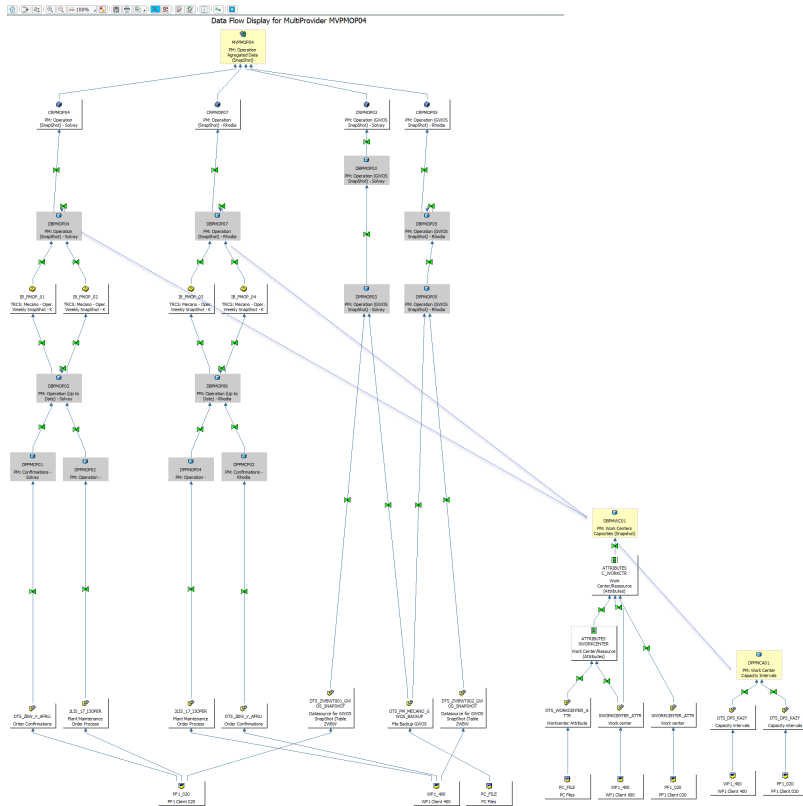
There are many KPI based on operation flow. To keep the number of hour for each operation

MVPMOP01 = PM: PM: Operation Detailed Data (Up to Date)

MVPMOP02 = PM: Operation Detailed Data (SnapShot), wich based on business layer(DSO)

MVPMOP04 = PM: Operation Agregated Data (SnapShot), which based on reporting layer (Cube)

Dataflow overview



Functional and Technical rules on Workbench + Reporting

Rules & Explanations

KPI 2.08 Available capacity (K_CAPAV2)

Tcode: IR03 to see capacity of a work center. It can be standard or shift .

Display Work Center Capacity: Intervals of Available Capacity												
Default Values		Only intervals										
Plant	CZS		SSPC-CN /CHANGSHU SXIS									
Work center	ME_MAINT		CHANGSHU SITE MECHANICAL MAINTENANCE									
Capacity category	002											
Version	1		Version 1 (default)									
Valid From	to	Standard...	L...	W.	W..	Shi...	Start Time	End Time	Length ...	Ca...	N...	Oper...
	28.03.2019	X					08:30:00	16:30:00	02:00:00	100	7	6.00
29.03.2019	11.04.2019		7									
				Mo	S1		08:50:00	16:08:00	01:00:00	100	5	6.30
				Tu	S1		08:50:00	16:08:00	01:00:00	100	5	6.30
				We	S1		08:50:00	16:08:00	01:00:00	100	5	6.30
				Th	S1		08:50:00	16:08:00	01:00:00	100	5	6.30
				Fr	S1		08:50:00	16:08:00	01:00:00	100	5	6.30
12.04.2019	14.04.2019		7									
				Mo	S1		08:50:00	16:08:00	01:00:00	100	5	6.30

On BW, it look up capacity from DSO **DBPMWC01 (snapshot capacity from DPPMCA01)** during loading to business layer (DBPMOP02 DBPMOP04 and DBPMOP06 DBPMOP07)

It will determine standard or shift on this transformation TRSF: IOBJ C_WORKCTR -> ODSO DBPMWC01 at call method oref_mecano_utils->calculate_weekly_capacity

Get date to consider by snapshot week from MAX snapshot week of DBPMWC01 (PM: Work Centers Capacities (Snapshot))

1.1 Standard work center

if there is no capacity in the interval and shift (standard flag is marked), we take the capacity of the work center capacity the header and take into account the factory calendar so here factory calendar FR mean we don't work Sunday and Saturday

so in case of capacity of this work center before 29 Mar 2019, the result should have been:

IR03: Capacity Tab and click on Capacity header Capacity / day = operating time x number = 6 x 7 = 42 hours

SCAL: to see working day of factory calendar number of working day / week = 5 on CN factory ID

Capacity / week = 42h * 5d (SCAL)= 210h / week

Display Work Center Capacity: Header

Intervals and Shifts Intervals Available Capacity Profile Reference Available Capacity Short Texts HRMS APO Resource

Plant CZS SSSP-CN /CHANGSHU SXIS
 Work center ME_MAINT CHANGSHU SITE MECHANICAL MAINTENANCE
 Capacity category 002

General data
 Capacity planner grp A IR03 Planner group A
 Pooled capacity Grouping CZ

Available capacity
 Factory calendar ID CN SCAL Factory calendar China Standard
 Active version 1 Version 1 (default)
 Base unit of meas. H Hour

Standard available capacity
 Start 08:30:00 Capacity utilization 100
 Finish 16:30:00 No. of indiv. cap. 7
 Length of breaks 02:00:00
 Operating time 6.00 Capacity 42.00

Planning details
 Relevant to finite scheduling Overload 100 %
 Can be used by several operations Long-term planning

Calendar Edit Goto Extras System Help
 Display Factory Calendar: Details
 Special rules ◀ Calendar ▶ Calendar
 Factory Calendar ID CN Factory calendar China Standard
 Valid From Year 1996 To Year 2025
 Holiday Calendar ID CN Holiday calendar China
 Special Rules exists
 Factory Date Start 0
 Workdays
 Monday
 Tuesday
 Wednesday
 Thursday
 Friday
 Saturday
 Sunday
 Public Holiday

$v_standard_capacity = /bic/mc_workctr-k_capav = \text{working day from factory cal} * \text{std capacity} = 5 * 42 = 210$

1.2 Shift operation When standard flag KKOPF <> X:

in case of capacity of this work center during 29 Mar 2019 - 11 Apr 2019, in the work center capacity we take the capacity of the interval and shift from **DP PMCA01**

Capacity / day = operating time x number = 6.5 x 5 (this case each day have operating time and number are the same) = 32.5 hours

Capacity / week = 32.5 x 5 = 162.5

On BW, we will get shift detail on **datasource DTS_DPS_KAZY**

$$\begin{aligned}
 V_opening_time &= \text{Finish}(\text{TC37A-ENDZT}) - \text{start}(\text{TC37A-BEGZT}) - \text{Break}(\text{TC37P-PADAUER}) \\
 &= (7*3600 + 20*60) - 3600 \text{ (convert to second)} \\
 &= 26400 - 3600 \\
 &= 22800 = (\text{TC37A-EINZT})
 \end{aligned}$$

$$\begin{aligned}
 \text{Capacity (KAPAZ)} &= V_opening_time * \text{No (KAPA-ANZHL)} / \text{Cap (KAPA-NGRAD)} / 100 \\
 &= 22800 * 7 / (100 / 100) \\
 &= 159600
 \end{aligned}$$

The screenshot displays four SAP Data Browser windows:

- Table /BIC/ADPPMCA0100 Select Entries:** Shows columns for LOGSYS, /BIC/C_PLANT, /BIC/C_WORKCTR, VALIDTO, /BIC/C_ANZ..., WEEKDAY1, /BIC/C_KKOPF, and /BIC/K_CAP... Values include PF1_020, CZS, ME_MAINT, 17.05.2020, 07, 1-7, and 159,600.000.
- Table TC37A Select Entries:** Shows columns for MANDT, SCHGRUP, KAPTPROG, ENDDA, BEGDA, BEGZT, ENDZT, EINZT, PAPLAN, and K... Values include 020, CZ, S1, 31.12.9999, 01.01.0001, 08:50:00, 16:10:00, 22,800, and B1.
- Table KAPA Select Entries:** Shows columns for MAN..., KAPID, VERSN, DATUB, TAG..., SCHNR, ANZHL, PROG NGR., and BEGZT. Values include 020, 10007343, 01, 17.05.2020, 001-007, 1, 7-8, S1, 100, and 0.
- Table TC37P Select Entries:** Shows columns for MANDT, SCHGRUP, PAPLAN, PAUNR, PAUBEG, PAUEND, STDAZ, PADAUER, and KTEXT. Values include 020, CZ, SCHGRUP, 01, 11:30:00, 12:30:00, 0.00, 3,600, and Lunch-11:30 to 12:30.

For shift information, it gets from datasource DTS_DPS_KAZY (FM Z_WBW_DTS_DPS_KAZY) to DPPMCA01, it was customize from

KAZY (Interval of Available Capacity) =

- kapid Capacity ID
- datub Valid-to date
- anztg Length of the interval cycle
- kkopf Ind.: standard available capacity is valid for this interval
- TPROG Shift definition

KAPA (Shift Parameters for Available Capacity)

- ngrad Capacity utilization rate (percent)
- anzhl Number of individual capacities
- tagnr Current weekday number within the available capacity cycle
- kapaz Capacity
- tprog Shift definition

CRHD (Work Center Header)

- arbpl Work center
- werks Plant
- kapid Capacity ID

KAKO (Capacity Header Segment)

- begzt Start time in seconds (internal)
- endzt Finish time in seconds (internal)
- mosid Grouping for Shift Definitions and Shift Sequences (30, PM = plant maintenance)
- kapid Capacity ID
- AZNR Number of individual capacities
- NGRAD Capacity utilization rate (percent)
- PAUSE Cumulative break time in seconds (internal)

TC37A (Shift definition)

- SCHGRUP Grouping for Shift Definitions and Shift Sequences = KAKO-MOSID

KAPTPROG Shift definition = KAPA-TPROG

ENDDA End Date

BEGDA Start Date

BEGZT Start time

ENDZT Finish time

EINZT Operating time in seconds (internal)

TC37P (Break schedule)

PAUBEG Start Time

PAUEND End Time

PADAUER Length of break in seconds (internal)