

Optimize Your Resources (Technician & Tools) During Maintenance, Repair & Project Work by Using Multi Resource Scheduling (MRS).



Applies to:

Release MRSS 610 SP05 For more information, visit the [Supply Chain Management homepage](#).

Summary:

This article deals with real-time challenges in optimize the resource utilization effectively in plant maintenance/customer service, projects, c-Projects and DBM.

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Author Bio



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Introduction

MRS provides the resource planner with an intuitive graphical interface that contains information about the open demands, the utilization of resources, and any possible conflicts with the current resource planning. It supports your field employees by integrating geographical information systems and reconciling them using mobile devices.

This business process allows you to find and assign suitable resources for requirements from the areas of service, maintenance, projects, or Dealer Business Management (DBM). The sources of demand are therefore networks, service orders, maintenance orders, or DBM orders. The MRSS 610 Add-On described here is based on SAP ERP 2005.

Key challenge in resource management

How to plan complex resource pool across multiple jobs?

How to carry out the automatic job assignment based on the skill sets?

Can I borrow resources from other supervisors on the same shift and schedule work to them?

Can I plan, approve & schedule overtime work?

Do I really need vendor force or use internal force to perform repair or maintenance work?

How to utilize vendor resources more effectively?

Can I have central overview of demand and availability of all resources?

Missing planning, forecasting, and optimization of resource deployment.

Multi resource scheduling (MRS) overview

Multi Resource Scheduling (MRS) is a solution for Resource Management for service and project businesses.

It is graphical tool that contains information about the open demands & availability of resources for planning by using drag & drop (or optimization) features.

MRS runs fully integrated as "Add-On" to the SAP ERP system

Integration with different demand objects (e.g. Project System Network, Customer Service Order)

Powerful Web User Interfaces

MRS runs fully integrated in the ERP System

HR Integration

PM/CS Integration

PS Integration & c Projects Integration

Application Scenarios for Multi Resource Scheduling

Field Service

Integration with SAP ERP Customer Service (CS)

Integration with SAP CRM Service possible with a Custom develop project

Scheduling of Human Resources and Tools

Optimization of schedule according to e.g. travel times and SLA dates

Plant Maintenance

Integration with SAP ERP Plant Maintenance (EAM) and/or SAP ERP Project System (PS)

Scheduling on work center level and/or human resource level

Project Staffing

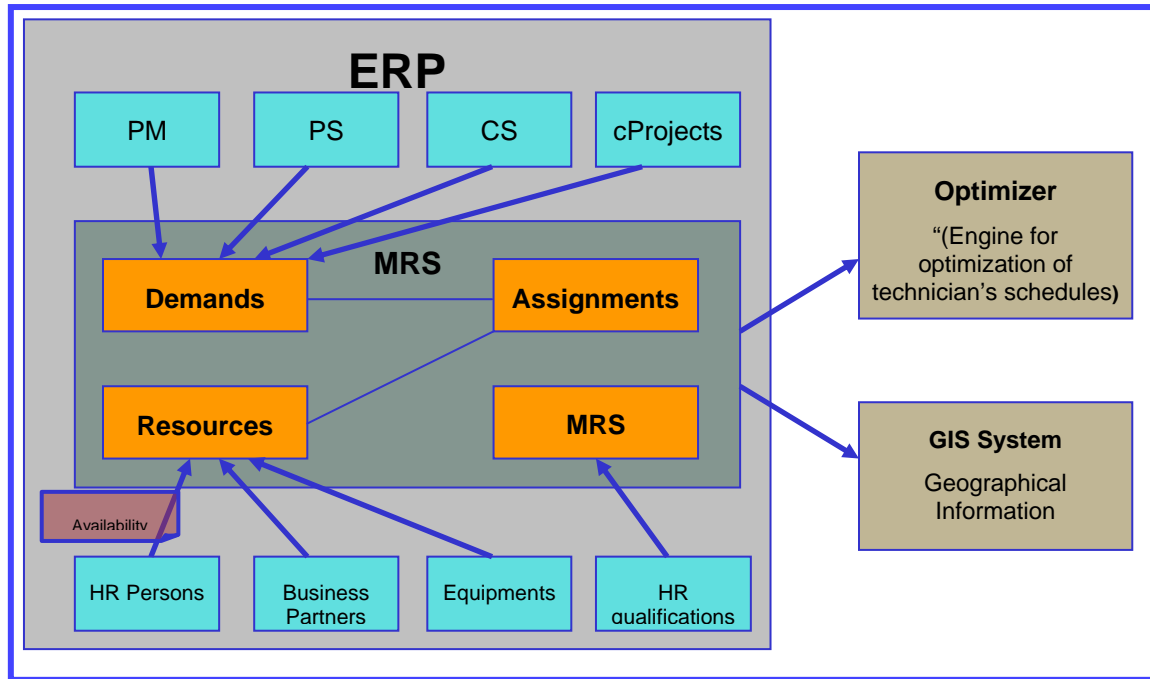
Integration with SAP ERP Project System (PS) or Collaboration Projects (c Projects)

Web based User Interfaces

Workshop Planning

Integration with SAP for Automotive Dealer Business Management (DBM)

MRS Architecture



MRS-Specific master data

MRS provides separate master data that you can use to optimize the functions of Multi Resource Scheduling:

Resource planning structure

Qualifications, qualification catalogs, and qualification matrixes

Employee and requirements profiles

Transfer program for qualifications

Roles and authorizations

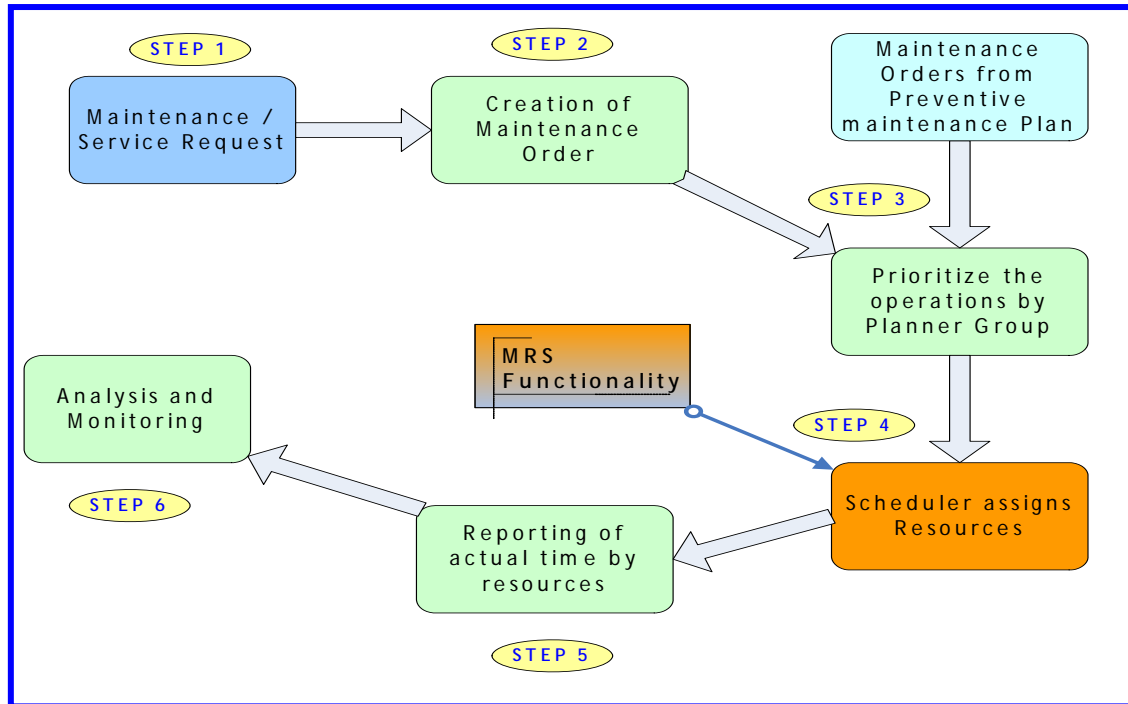
Integration with SAP HCM

The Multi resource scheduling scenarios can be performed with or with out integration in to SAP HCM

	Integration into SAP HCM	No integration into SAP HCM*
Employee Master Data	Existing HR employees	Employees are created as Business Partners in the role "Employee"
Employee Availability Data	Detailed availability data from the employee HR calendar can be displayed in Scheduler's Workplace	Basic availability data (work schedule) can be created for the employee

Employee Qualification Data	Existing HR employee qualifications or MRS qualifications	Employee qualifications and qualification catalogs can be maintained
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Maintenance process with Multi Resource Scheduling



Step1: The customer/Operator calls the service/Maintenance organization to request the service.

Step2: Planner estimates the work steps, permits, material and resources required to execute and complete the work. This creates the demands for MRS scheduler.

Step3: Planner also checks the work required for preventive maintenance and planned maintenance. Based on type and requirements, prioritize the work.

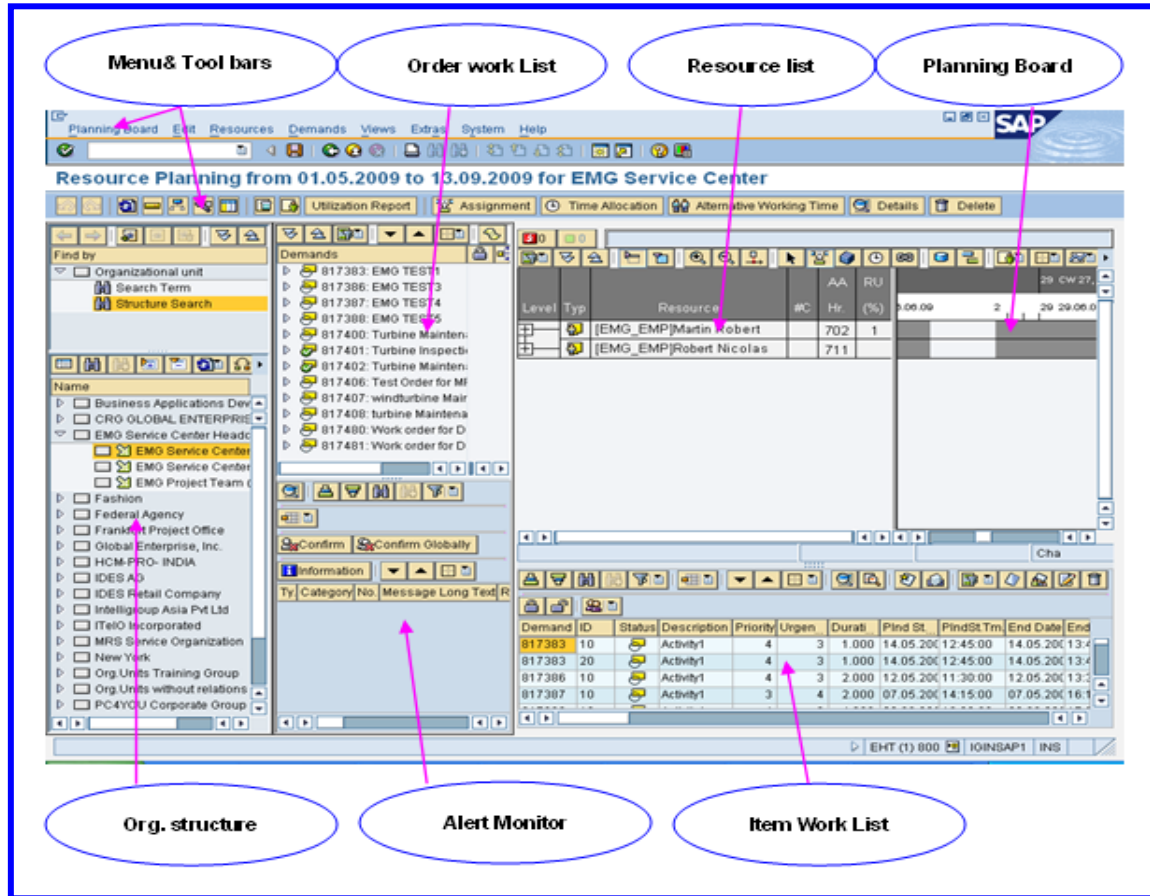
Step4: The MRS scheduler monitors the maintenance/ service demands and matches them with available resources and their qualifications. Scheduler then assigns/ adjusts the time intervals as per the priorities of the operation to individual resource.

Step5: Work center technician receives the detailed work steps and execute them. After completion of work, Technician confirms the work performed and records the results.

Step6: Maintenance manager can now analyze the accuracy of planning and scheduling by comparing planned date and time with actual date and time analyze and monitoring of resource utilization.

MRS Planning board / scheduler work place

The graphical screen areas and tools that schedulers can use to plan tasks and employee assignments and to monitor their execution



Order Work List: The order work list displays all the service orders together with their associated service order items.

Item Work List: The item work list lists all the service order items that are relevant for resource planning.

Planning Board: The planning board contains all the resources that a scheduler is permitted to plan, the availability of these resources, and the allocated assignments. Only the days that have been defined as the planning horizon in Customizing or by the scheduler are displayed. The resources are personnel resources, teams, or tools (for example, a service bay is also described as a tool). In the planning board, schedulers can create, move, and delete assignments using drag and drop.

Alert Monitor: An alert monitor gives schedulers information about any conflicts and errors that occur during planning. On the basis of these alerts, schedulers can check, and, if necessary, correct their planning.

Resource planning for an order

Resource planning allows you to carry out detailed planning to execute an order. In resource planning, a suitable resource (personnel or tool) that covers the demand is assigned to the demand from the order operation. There is a separate user interface for resource planning – the Scheduler Workplace. Each scheduler can configure the workplace as required. The main features of the interface are:

Work list

Item Work list

Planning Board

Alert Monitor

Prerequisites

Configure all of the required settings in Customizing for Multi Resource Scheduling. Call Customizing for MRS using transaction /MRSS/IMG.

Create MRS-specific master data for qualifications if you want to work with this.

Define the objects (for example, organizational units) that you want to use for your resource planning structure.

Maintain the necessary authorizations for resource planning.

Create an order with the associated operations and production resources and tools.

Process

Resource planning is a dynamic process that does not always run in the same way. Moreover, depending on the requirements of the task and the complexity of the data, this is not required or even possible. The steps described below apply to all aspects of resource planning. However, the sequence may change and the resource planner may skip or repeat some of the steps with certain assignments. Depending on the source of the demand (for example, service order or network), additional steps may be possible or required. These are described in the corresponding sections (for example, Resource Planning in the Service). The following process contains the steps that may be relevant regardless of the source of the demand.

The process begins after you or the person responsible has created an order that is relevant for planning and this has been transferred to SAP MRS.

Open Scheduler Workplace. Depending on the nature of business, the resource planner can use various transactions.

The planning horizon is the period for which you plan assignments. It is configured automatically by the selected transaction or you can enter it manually.

Once you have opened the Scheduler Workplace, overview of the scope of your work list and the available resources are displayed.

Check the item work list to determine whether there are any items classed as urgent. During the resource planning, processing of item is also advisable which are of high priority.

Check whether there are personnel resources with a suitable qualification profile to carry out the order operations. The system displays the result of the qualification comparison as a ranking list sorted in decreasing suitability of qualifications and time availability.

Check the utilization at the Resource level and Organization unit level.

Add personnel resources from other resource planning nodes to the planning board if own resources do not have the required qualifications or overloaded.

Link demands to other resource planning nodes if you want to assign them to another resource planner.

Check whether you have suitable tool resources and material to carry out the order.

Add tool resources from other resource planning nodes to the planning board if your own resources are not sufficient.

Create time allocations for unscheduled absences or attendances of resources. If a personnel resource is absent during normal working time, the resource planner can note this in a time allocation on the planning board. The same applies to tools that require maintenance or repair.

Create assignments for your personnel resources, taking into account the above criteria. Copy the dates for the assignments automatically from the order or enter them yourself.

The system checks whether the resource type is suitable for the assignment. If a resource does not have the necessary requirements profile, the system generates an alert.

Split assignments, if an assignment exceeds the normal working time (plus overtime) of a personnel resource.

Split demands, if you want to distribute them across different resources or resource planning nodes.

Assign several personnel resources to a demand. In this case, the system does not calculate the duration automatically. Instead, you enter the duration of the respective assignments based on your experience.

Provided that you do not save your data, you can undo any planning steps you have made and repeat them if required.

In case of conflicts and errors, Alert monitor indicates the discrepancies. It generates alerts if errors occurred during the checks and indicates the type of error and its cause in the Alert Monitor.

Correct the cause of the alert. To do so, you must check the data (for example, availability) and process assignments again.

Note: Confirm alerts without having corrected their cause.

Save Planning Board. Once the planning is saved, changes are displayed when it is open at next occurrence or other Resource planner/Scheduler.

Working with Scheduler Workplace, data can be changed in other applications (for example, new assignments or new order operations), which can affect resource planning. To include this data, update the Scheduler Workplace regularly.

If you want to create an assignment for an order operation or resource, the order or resource may be locked. This is because another resource planner is creating assignments for the order or resource at the same time. In this case, wait and update the data in the Scheduler Workplace or contact the other resource planner. Assignments and time allocations are locked as long as they are being processed by another resource planner.

Result

You have created assignments for suitable resources to carry out planning-relevant operations or sub operations. Your planning is on schedule and free of conflicts.

Multi resource scheduling: Graphical view

The screenshot displays the SAP Resource Planning interface for the period 01.05.2009 to 13.09.2009 for the EMG Service Center. The main window shows a Gantt chart with demands and resource assignments. Resources listed include [EMG_EMP]Martin Robert and [EMG_EMP]Robert Nicolas. A table at the bottom provides a detailed view of the demands:

Demand ID	Status	Description	Priority	Urgen.	Duratl.	Plnd St.	PlndSt.Tm	End Date	End Time	Assgrmnts	Perso.	Mod.	Lock
817400	50	Inspect ther		4	1.500	12.05.200	17:00:00	12.05.200	18:30:00	0	1		
817400	60	Inspect first		4	2.000	12.05.200	11:30:00	12.05.200	13:30:00	0	1		
817400	70	Inspect com		4	2.000	13.05.200	11:45:00	13.05.200	13:45:00	0	1		
817401	10	Inspection o		4	3	2.000	14.05.200	14:45:00	14.05.200	16:45:00	1	1	
817401	20	Inspection o		4	3	1.000	14.05.200	13:45:00	14.05.200	14:45:00	1	1	
817402	10	inspect com		2	4	1.000	14.05.200	17:30:00	14.05.200	18:30:00	1	1	

Ranking List

A ranked list of suitable employees for an operation can be displayed. The ranking is based on the service qualifications and availability for the time period specified.

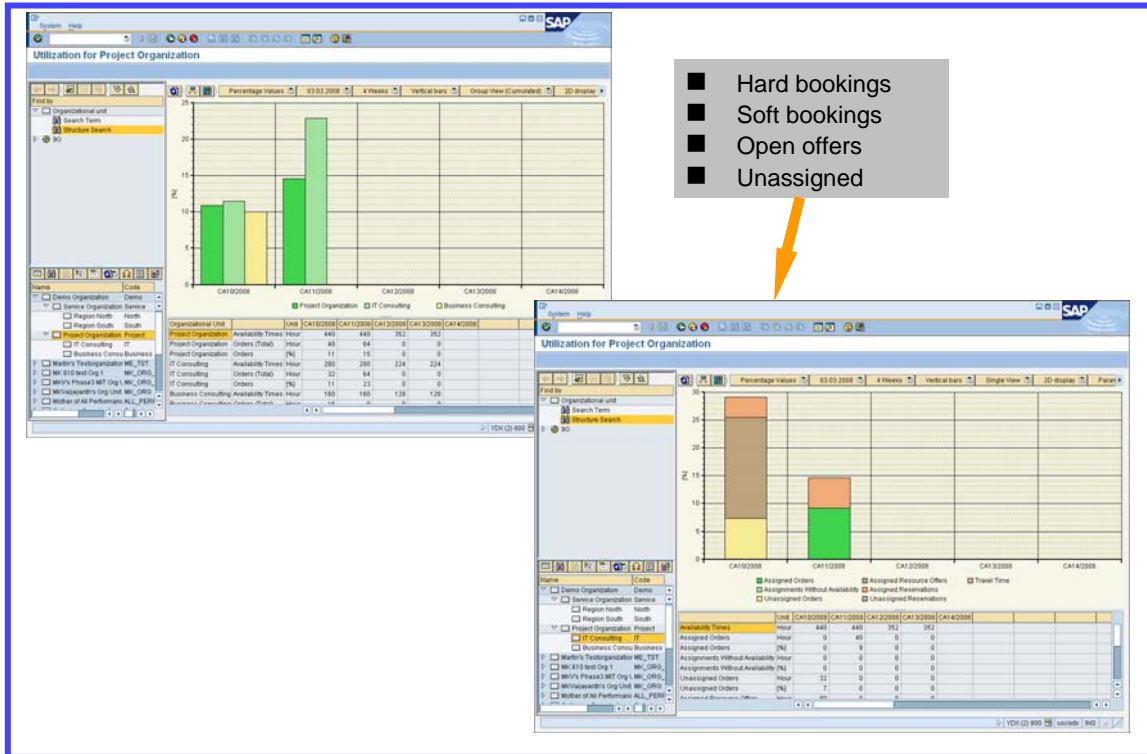
The screenshot shows the 'Suitable Resources for 8000009261/10: Labour' dialog box. It includes filters for time period (From: 21.04.2004 08:00, To: 21.04.2004 09:00) and duration (Dur.: 1,00 H Hours). The list of resources is as follows:

Name	Total	Avail.	Qualifctn	MandQualOK
Kathy Woolfe	100	100	100	<input checked="" type="checkbox"/>
Michael Danlund	75	100	50	<input checked="" type="checkbox"/>
Christian Carter	75	100	50	<input type="checkbox"/>
Gary Hunter	50	100	0	<input type="checkbox"/>
Jeff Bush	50	100	0	<input type="checkbox"/>
Ron Smith	50	100	0	<input type="checkbox"/>

MRS capacity management

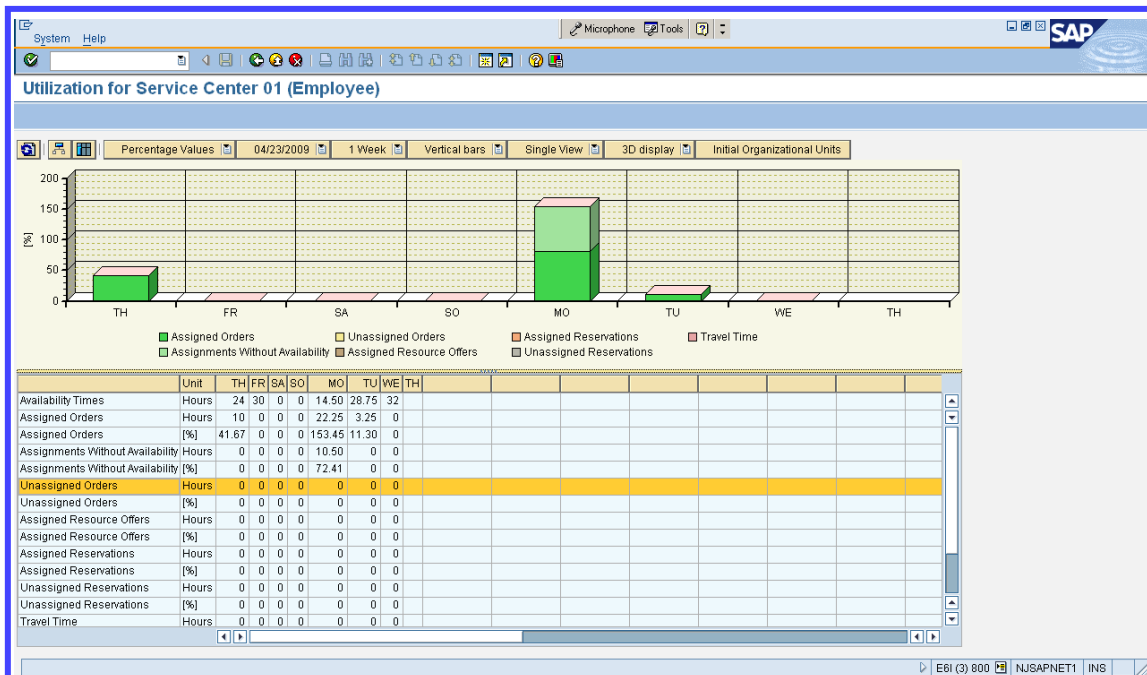
In the capacity view, the planning board displays the available capacity of the current capacity planning nodes (work centers) and the capacity required by the order and network operations assigned to them. To calculate the capacity used, the system considers all work-center operations that have been integrated into MRS (not only those currently displayed in the planning board). The system calculates the available work-center capacity from

the master record of the work center, and takes into account the factory calendar, the start and end time, the length of breaks, and the number of resources.



Resource utilization view

To obtain an overview of the utilization of individual personnel resources or teams, choose the employee whose utilization you want to view and choose Resource Utilization from the context menu



Benefits of implementing MRSS

Improve average time to execute the standard maintenance work.

Increase transparency of resource utilization across organization.

Improve response rate to cross regional resource requests.

Reduce deviation between forecast and actual by effective utilization of MRS.

Optimize & minimize the vendor resources by effective utilization of internal resources.

Increase in revenue and profitability due to effective utilization of resources

Related content

Application Help Multi Resource Scheduling (MRSS 610 SP05)

[Multi Resource scheduling at glance](#)

[Advanced Multi resource scheduling](#)

[Service order with resource scheduling](#)

[Project with network order and resource scheduling \(MRS\)](#)

[Lorillard's Planning and Scheduling Process Using MRS](#)

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