Multi-Resource Scheduling (MRS)
An Implementation Success Story at Evergreen Packaging

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Angus McIntosh, President, Vesta Partners
About Evergreen Packaging

On February 1, 2007, Beverage Packaging Division of International Paper was divested to create Evergreen Packaging Inc. On July 31st, 2007, Evergreen Packaging Inc. and Blue Ridge Paper Products Inc. joined to form Evergreen Packaging Group. Evergreen Packaging is headquartered at Memphis TN.

Evergreen Packaging is the largest supplier of total gable top packaging solutions in North America and one of the largest in the world. In fact, more than 700 customers in North America count on us for total carton packaging solutions.
About Evergreen Packaging

Evergreen Packaging is part of Rank Group. Rank is a private group of companies headquartered in New Zealand and wholly owned by Graeme Hart. Rank Group’s business interests include packaging, consumer products, auto parts and building supplies. The Group generates annual revenues of US 18 billion and employs approximately 48,000 people.
Project Background

- Two leading manufacturer of the Gable top carton merged.

- Conflicting processes, Culture, and KPIs, etc..

- Both companies had disparate systems –
  - Two ERP Systems (SAP and JDE)

- Decision made to implement SAP and retire JDE
Project Background

• The scope of the project was to migrate 700 users from JDE to SAP ECC, Open Text for Document Archiving, Sabrix for Tax and MRS for scheduling craftsman (Technician)

• The impacted business processes were
  - Purchasing and Payables
  - Finance and Accounting
  - Plant Maintenance and Store Room
    + Notification, Work Order Management
    + Scheduling with MRS
    + Preventive Maintenance, etc..

“User Productivity identified as a critical success factor for implementing SAP solution”
User Productivity – System Usability

SAP Usability defined by user group

- Ease of Use
- Ease of Navigation
  - Knowing where information is
  - Knowing how to get to it
- Ease of recall etc..

User Productivity = \( f(\text{System Usability} \times \text{Quality of Data} \times \text{User Acceptance}) \)
User Productivity – Quality of Data

- Focused on master data conversion and ongoing master data maintenance
- Updating transactions timely and accurately

\[ \text{User Productivity} = f (\text{System Usability} \times \text{Quality of Data} \times \text{User Acceptance}) \]

Image Source: www.freshinternational.com
User Productivity – User Acceptance

\[ \text{User Productivity} = f (\text{System Usability} \times \text{Quality of Data} \times \text{User Acceptance}) \]

Image Source: www.freshinternational.com
Scheduling – Key Challenges at Evergreen

• The existing scheduling tool was clunky and lacks effectiveness.
  - The system did not facilitate the ability to easily schedule craftsman from other crews for outages.
  - The planners have to place a large number of names in the crew to be selected which results inefficiencies during the normal scheduling.

• Existing tools didn’t provide visibility of available resources.
  - The planners do not have the ability to schedule around vacation, off days, training, etc.. in SAP. Two separate schedules are currently utilized which reduces the efficiency of clearly seeing an employees committed time.
Scheduling – Key Challenges at Evergreen

• The system did not facilitate the ability to easily schedule from other crews for outages.
  - If the planner/scheduler sends an employee to another area to assist on an outage, the planner/scheduler doesn’t have the ability to see that on the crew schedule. This creates confusion and extra work for the planner and scheduler to manage two sets of information.

• Process Inefficiencies
  - The planners do not have the ability to provide the hourly employee with a “hard copy” useable schedule and prioritized work list.

• Lack of functionality in the current tool
  - there is no ability to schedule equipment (cranes, broderson’s, etc..) If equipment usage is included in the timeline of the schedule, it can easily be seen if there are any conflicts.
Requirements for Scheduling Tool

The Scheduling tool should have ability to

- provide overview of demand and availability of all craftsmen and tools.
- Plan across complex (Multiple Crews, Contractors and Vendors) resource pool across multiple jobs.
- Easily borrow resources from another crew (Supervisor) on the same shift and schedule work without conflict.
- Carry out job assignments based on skills set (Certification required)
- Easily identify, plan and schedule overtime work
- Identify missing parts and run material availability for planned work order in mass
- Track work order status (real time) – work assigned, work completed etc.
Why MRS?

- **Right tool for the job**
  - The ability to plan, execute and monitor the maintenance jobs from a graphical scheduling board would provide the scheduler an ability to have full control of rescheduling, optimizing, and monitoring of any planning situation.

- **Flexibility in resource scheduling and simulation**
  - MRS allows planner to have the visibility of the impact of break-in in the schedule on resources and plan.

- **Integration with existing Infrastructure**
  - MRS is a bolt on SAP solution. As such, it allows EPI to leverage existing investments in SAP ERP, SAP Business Objects and Kronos.
Why MRS?

- **Opportunity to reduce cost**
  - MRS tool features and graphical user interface is far superior to the existing tools in use, this tool would improve the resource utilization. As such, reducing the cost.

- **Real time confirmations of tasks (work order)**
  - Confirmations are visible in the planning board resulting in timely and accurate availability of resource utilization and availability data without the current, substantial manual effort.

- **Leverage Optimization Engine**
  - EPI could leverage MRS optimization engine to automatically create an optimized schedule when the usage of the tool matures.

“The lack of real-time resource availability information, impact analysis of emergency work orders, and impact analysis of incompletion of work orders on the overall schedule is hampering management’s ability to make decisions. Without good operational data, improvements can only be anecdotal.”
Resource Availability Visibility

Integrated SAP HCM (HR) with Kronos System

**Employee Master Data**
- Crew Assignment
- Work Center Assignment etc..

**Employee Availability Data**
- Shift Schedule
- Holiday and Vacation etc..

**Employee Skill Data**
- Qualifications
- Certification
- Skills Catalogue etc.
Good fit with standard MRS Organization / Resource structure

- New HR Org Nodes established specifically to support MRS functions
- Employee Mini Masters assigned to lowest level
- Mini Master also established for Generic Contractors

Organization Structure for MRS defined as:
- EPI Maintenance
  - Maintenance at Plant
    - Zone (Superintendent)
    - Crews (Work Center)
Resource Master Data

Planned Working Time (Info Type 0007)

- Daily Work Schedules maintained based on Kronos data
Exceptions (Absences) Maintained (Info Type 2001)
- Exceptions maintained based on Kronos data
- Full days of part days
Resource Master Data

Positions and Employees assigned to lowest level (Crews)

- Crew Org Structure code set to match Work Centers
Resource Master Data

PM Work Centers Linked to Org Nodes (Crews)

- Crew Org Structure code set to match Work Centers

Employees linked to both HR Organization Node and Maintenance Work Center
Resource Master Data

PM Work Center Capacity

Standard Operating Hours and Capacities defined on Work Center.
Resource Master Data

Info Transfer to MRS using Standard MRS Batch Transfer Reports

HR Interface -> MRS: Availability Interface

Objects
- Plan version
- Object type: Organizational Unit
- Object ID
- Search Term
- Object status: All existing

Reporting period
- Options: Today, Other period
- Date range: 05/27/2013 to 05/28/2013

Structure parameters
- Evaluation Path: MRS_0-P
- Resources for Organizational Unit
- Status vector: 5
- Display depth

Transfer Node
- Options: Create/Transfer Resources, Delete Resources, Transfer Availabilities
- Options for Read Availability, Update Alerts, Update Address, Update Start and End Dates

Communication Parameters for the MRS System
- Options: Insert (Complete Distribution: Delete in Tgt System, recreate), Update

HR Availability Data.

Planning Node / Work Center Data

Create / Maintain planning nodes in MRS system

Work Center data
- Plant: 0120
- Work center: ZC2A32

Parameters for Selection
- Start Date: 05/01/2013
- End Date: 06/30/2013
- Packet Size for Transfer: 10
Revisions – Weekly Buckets

Use Revisions to define Weeks and group Work Order (Demands) for Schedule consideration

![Change View "Maintenance revisions": Overview](image)

<table>
<thead>
<tr>
<th>Planning plant</th>
<th>Revision</th>
<th>Revision Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0120</td>
<td>C13-WK20</td>
<td>Canton Weekly Schedule 20</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK21</td>
<td>Canton Weekly Schedule 21</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK22</td>
<td>Canton Weekly Schedule 22</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK23</td>
<td>Canton Weekly Schedule 23</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK24</td>
<td>Canton Weekly Schedule 24</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK25</td>
<td>Canton Weekly Schedule 25</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK26</td>
<td>Canton Weekly Schedule 26</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK27</td>
<td>Canton Weekly Schedule 27</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK28</td>
<td>Canton Weekly Schedule 28</td>
</tr>
<tr>
<td>0120</td>
<td>C13-WK29</td>
<td>Canton Weekly Schedule 29</td>
</tr>
</tbody>
</table>

**Planning plant**: 0120

**Revision**: C13-WK22

**Revision Description**: Canton Weekly Schedule 22

**RevCompleted**: No

**Event/Duration of revision**

- **Revision start date**: 05/27/2013
- **Revision end date**: 06/02/2013
Assign Revisions

Use Revisions to define Weeks and group Work Order (Demands) for Schedule consideration

Use Operations Listing to assign Revisions

Drives Basic Start Dates
Rough Match Demands Hours to Capacity

<table>
<thead>
<tr>
<th>S</th>
<th>Order</th>
<th>Work</th>
<th>Bsc start</th>
<th>Operation short text</th>
<th>Revision</th>
<th>User Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>980117924</td>
<td>10.0</td>
<td>01/07/2013</td>
<td>Test for service issued from VWO</td>
<td>C13-WK2</td>
<td>PLND</td>
</tr>
<tr>
<td>2</td>
<td>980117924</td>
<td>0.0</td>
<td>01/07/2013</td>
<td>Rebuild gearbox-balls</td>
<td>C13-WK2</td>
<td>PLND</td>
</tr>
<tr>
<td>3</td>
<td>980117924</td>
<td>0.0</td>
<td>01/07/2013</td>
<td>Rebuild pump-tencara</td>
<td>C13-WK2</td>
<td>PLND</td>
</tr>
<tr>
<td>4</td>
<td>980118442</td>
<td>0.0</td>
<td>01/07/2013</td>
<td>pump c/o</td>
<td>C13-WK2</td>
<td>UNPL</td>
</tr>
<tr>
<td>5</td>
<td>980118336</td>
<td>0.0</td>
<td>01/07/2013</td>
<td>371067 PM ROLL STOPS</td>
<td>C13-WK2</td>
<td>PLND</td>
</tr>
<tr>
<td>6</td>
<td>980119364</td>
<td>4.0</td>
<td>01/07/2013</td>
<td>ORDER FOR PM0007 3</td>
<td>C13-WK2</td>
<td>PLND</td>
</tr>
<tr>
<td>7</td>
<td>980117901</td>
<td>0.0</td>
<td>01/07/2013</td>
<td>shop at macy’s to buy somet</td>
<td>C13-WK2</td>
<td>UNPL AO OR</td>
</tr>
<tr>
<td>8</td>
<td>980119366</td>
<td>3.0</td>
<td>01/07/2013</td>
<td>ORDER FOR PM0007 5</td>
<td>C13-WK2</td>
<td>PLND</td>
</tr>
</tbody>
</table>

Total # of man hours assigned to that revision = 17.0

Man*hrs. needed for a 40hr week:
- 2 men = 80hrs
- 3 men = 120hrs
- 4 men = 160hrs
- 5 men = 200hrs
- 6 men = 240hrs
- 7 men = 280hrs
- 8 men = 320hrs
- 9 men = 360hrs
- 10 men = 400hrs
- Canton and Waynesville Outages
Use WBS to define Outages and group Work Order (Demands) for Schedule consideration

**Assign WBS (Outages)**

Drives Basic Start and End Dates
MRS – Demand Status Relevant

- **User status** must be in **PLND** or **SCHD**

- **System status** **REL** or **CRTD** included as long as **PLND** or **SCHD**

- **SCHD** status set on Work Order by creating at least one Assignment in MRS
MRS – Demand Status Relevant

- Pull WO into the Demand View
- Set a rough weekly schedule in Demand View
  - Move jobs to roughly the day of week you will do them- M, T, W, Th, F
- Change to Resource View
- Drag and drop Work Order to the time the craftsmen(s) will be schedule to do the work
- Repeat until all available hours are scheduled
MRS – Calling Planning Board

Selection of Work Center(s) and Demands to be further assigned / scheduled

**Planning Board**

**Resource Selection**
- Resource Planning Node: 50016043
- Resource Service Area:
- Personnel number:
- Period for Resources: 10/01/2012 to 10/22/2012

**Demand Selection**
- Resource Planning Node:
- Demand Service Area:
- Demand:
- Order Type:
- Inclusive User Status:
- Exclusive User Status:
- Period for Demands: 10/01/2012 to 10/22/2012

- Copy from Resources

- Single or Multiple Resource Planning Nodes / work Centers
- Enter dates for the day/week you are scheduling
- Search Demands using Revision
Selection of Demands previously defined by Revision or WBS

Enter Revision or WBS #
Selection of Work Center(s) and Demands to be further assigned / scheduled

**Planning Board**

**Resource Selection**
- Resource Planning Node: 50016043
- Resource Service Area
- Personnel number
- Period for Resources: 10/01/2012 to 10/22/2012
  - Only Resources with On-Call

**Demand Selection**
- Resource Planning Node
- Demand Service Area
- Demand: 980117694
- Order Type
- Inclusive User Status
- Exclusive User Status
- Period for Demands: 10/01/2012 to 10/22/2012
  - Copy from Resources

**Text on Title Bar**
- Text on Title Bar
MRS – Planning Board Demand View

Demands Loaded to start of week based on Revision

![Gantt section]

![Order worklist]

![Alert section]

![Item worklist]
### MRS – Planning Board Demand View

#### Item Work list details Demands

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
<th># of craftsmen</th>
<th>Duration</th>
<th>Order</th>
<th>Early Start Date</th>
<th>Early End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>980119256</td>
<td>MRS354 Created on 09/07/2012</td>
<td>2</td>
<td>6.000</td>
<td>M2MP</td>
<td>01/14/2013</td>
<td>13:00:00</td>
</tr>
<tr>
<td>980119268</td>
<td>MRS386 Created on 09/07/2012</td>
<td>2</td>
<td>6.000</td>
<td>M2MP</td>
<td>01/14/2013</td>
<td>12:52:30</td>
</tr>
<tr>
<td>980119261</td>
<td>MRS359 Created on 09/07/2012</td>
<td>1</td>
<td>6.000</td>
<td>M2MP</td>
<td>01/14/2013</td>
<td>13:00:00</td>
</tr>
<tr>
<td>980119266</td>
<td>MRS364 Created on 09/07/2012</td>
<td>1</td>
<td>6.000</td>
<td>M2MP</td>
<td>01/15/2013</td>
<td>04:30:00</td>
</tr>
<tr>
<td>980119293</td>
<td>MRS391 Created on 09/07/2012</td>
<td>1</td>
<td>6.000</td>
<td>M2MP</td>
<td>01/14/2013</td>
<td>13:00:00</td>
</tr>
<tr>
<td>980119252</td>
<td>MRS349 Created on 09/07/2012</td>
<td>3</td>
<td>4.000</td>
<td>M2MP</td>
<td>01/14/2013</td>
<td>10:45:00</td>
</tr>
<tr>
<td>980119255</td>
<td>MRS353 Created on 09/07/2012</td>
<td>1</td>
<td>4.000</td>
<td>M2MP</td>
<td>01/14/2013</td>
<td>10:45:00</td>
</tr>
<tr>
<td>980119260</td>
<td>MRS358 Created on 09/07/2012</td>
<td>5</td>
<td>4.000</td>
<td>M2MP</td>
<td>01/14/2013</td>
<td>10:45:00</td>
</tr>
</tbody>
</table>

- **Default sort**
  - Planning status
  - Early start date
  - Early start time
  - Duration

**Job duration**

**# of craftsman needed**
MRS – Planning Board Demand View

Adjust demands using drag and drop as necessary.
MRS – Planning Board Demand View

Mass change of demands option

Hold CTRL button and select the first group of Operations to move to Tuesday. Once all are highlighted click the mass change button.
MRS – Planning Board Demand View

Mass change of demands option

Repeat the mass change process to move jobs to the rest of the days of the week.
MRS – Planning Board Demand View

Adjust demands using drag and drop as necessary. Once ‘Rough Layout’ complete change to Resource View to Assign people.
MRS – Planning Board Resource View

Use Drag and drop to Schedule / Assign work to Technicians

Resource names

Rough cut Work order demands ready for assignment
MRS – Planning Board Resource View

Use Drag and drop to Schedule / Assign work to Technicians

Grab a WO # from the bottom list and drag & drop to the resource you want to schedule it to

Use Plan Status Icons to monitor assignment completion status
Use Plan Status Icons to monitor assignment completion status
MRS – Planning Board Resource View

Zoom in to 2 day or single day window for more refinement on making assignments

Assign to specific day and time

Drag and drop assignments
**MRS – Planning Board Resource View**

Use Drag and drop to Schedule / Assign work to Technicians

---

**Goal to fill all available work times – fully load schedule**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Start/End</th>
<th>Description</th>
<th>Number</th>
<th>Order</th>
<th>Start/End</th>
<th>Start/End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource 1</td>
<td>06:00-06:30</td>
<td>Task 1</td>
<td>4</td>
<td>1</td>
<td>06:00-06:30</td>
<td>06:00-06:30</td>
</tr>
<tr>
<td>Resource 2</td>
<td>07:00-07:30</td>
<td>Task 2</td>
<td>2</td>
<td>2</td>
<td>07:00-07:30</td>
<td>07:00-07:30</td>
</tr>
<tr>
<td>Resource 3</td>
<td>08:00-08:30</td>
<td>Task 3</td>
<td>5</td>
<td>3</td>
<td>08:00-08:30</td>
<td>08:00-08:30</td>
</tr>
</tbody>
</table>

---

*Note: The schedule is for the period from 12/17/2012 to 12/21/2012.*
MRS – Planning Board Resource View

Monitor resource loading during process

Resource loading %’ge and Available remaining hours
MRS – Planning Board Resource View

Availability – Standard and Exception times

Week vacation from Kronos (in pink)

One day off from Kronos (in pink)
MRS – Planning Board Resource View

MRS Time Allocations

Extended Work allocation adds Resource Availability
MRS – Planning Board Resource View

MRS Time Allocations

<table>
<thead>
<tr>
<th>Resource</th>
<th>Description</th>
<th>Start</th>
<th>End</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS</td>
<td>No resource assigned</td>
<td>10/29/2012 06:00</td>
<td>10/30/2012 06:00</td>
<td>24.00 Hours</td>
</tr>
</tbody>
</table>

Details for Time Allocation:
- Create
- Close
MRS – Planning Board Resource View

### MRS Time Allocations

<table>
<thead>
<tr>
<th>Le.</th>
<th>Type</th>
<th>Resource</th>
<th>Monday, 10/29/2012</th>
<th>Tuesday, 10/30/2012</th>
<th>Wednesday, 10/31/2012</th>
<th>Thursday, 11/01/2012</th>
<th>Friday, 11/02/2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>[ZC2A32] PEACE HUTCH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>[ZC2A32] SORRELLS ANDY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>[ZC2A32] TAYLOR TRAVIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>[ZC2A32] TRULL TERRY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>[ZC2A32] HENSON DERRY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>[ZC2A32] PAYNE DERK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>[ZC2A32] BIRGINAN SANDY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>[ZC2A32] PUTKIN MICHAEL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>[ZC2A32] CORZINE BRETTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Time Allocations taken into account when making Assignments**

---

**FALL FOCUS**

**COMMUNITIES CONNECTING**
**MRS – Planning Board Resource View**

Collisions configured to highlight overloads / overlaps

<table>
<thead>
<tr>
<th>Le</th>
<th>Typ</th>
<th>Resource</th>
<th>Assignments (in blue)</th>
<th>Time allocation created in MRS (in white with red letters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ZC2A32]</td>
<td>REECE HUTCH</td>
<td>11</td>
<td>29 Monday, 10/29/2012</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>SORRELS ANDY</td>
<td>11</td>
<td>29 Tuesday, 10/30/2012</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>TAYLOR, TRAVIS</td>
<td>10</td>
<td>29 Wednesday, 10/31/2012</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>TRULL TERRY</td>
<td>11</td>
<td>29 Thursday, 11/01/2012</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>HENSON, JERRY</td>
<td>11</td>
<td>29 Friday, 11/02/2012</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>PAYNE, DEBRA</td>
<td>11</td>
<td>09:00-12:00, 12:00-16:00</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>BRIGMAN, SANDY</td>
<td>11</td>
<td>09:00-12:00, 12:00-16:00</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>PUTNAM, MICHAEL</td>
<td>11</td>
<td>09:00-12:00, 12:00-16:00</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
<tr>
<td>[ZC2A32]</td>
<td>CORZINE, BRETT</td>
<td>11</td>
<td>09:00-12:00, 12:00-16:00</td>
<td>06:00-09:00, 09:00-12:00, 12:00-16:00</td>
</tr>
</tbody>
</table>

Collision created by a time conflict (in red)
MRS – Auto Split Capability

e.g. 40 hour job, 1 Resource, auto split across 5 days
• 5 individual assignments created

<table>
<thead>
<tr>
<th>Resource Planning from 10/01/2012 to 10/22/2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand: 580121700: Off the basement</td>
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<tr>
<td>Resource</td>
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<td>##################################################</td>
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<tr>
<td>Type</td>
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</table>
MRS – Manual Split Capability

Manually split job to reflect change in planning or adjusted availability

Duration is split into two assignments. Either can now be moved.

Extend into overtime by stretching.

Move assignment to new Resource.
MRS – Adding Additional Resources

Key requirement was ability to add additional resources ‘on the fly’ from any other Work Center

- Double Click to bring back all Canton or Waynesville Resources
- Pick and choose resources
MRS – Adding Additional Resources

Key requirement was ability to add additional resources ‘on the fly’ from any other Work Center

Available for assignment

Shutdown scenario
MRS – Print View

For selected Work Center view of Demands with corresponding Assignments
Print for specific date range
For selected Work Center view of Demands with corresponding Assignments
Print for specific date range

<table>
<thead>
<tr>
<th>Level</th>
<th>Type</th>
<th>Demand</th>
<th>to date</th>
<th>Weekdays</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>30: wednesday pm oil #11p</td>
<td></td>
<td>Monday</td>
<td>16:00</td>
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<tr>
<td></td>
<td></td>
<td>40: thursday pm oil #11p</td>
<td></td>
<td>Tuesday</td>
<td>16:00</td>
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<tr>
<td></td>
<td></td>
<td>50: friday pm oil #11p</td>
<td></td>
<td>Wednesday</td>
<td>16:00</td>
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<tr>
<td></td>
<td></td>
<td>980179345: oil route #12pm</td>
<td></td>
<td>Thursday</td>
<td>16:00</td>
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<td></td>
<td></td>
<td>10: monday pm oil #12pm</td>
<td></td>
<td>Friday</td>
<td>16:00</td>
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<td></td>
<td></td>
<td>20: tuesday pm oil #12pm</td>
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<td>30: wednesday pm oil #12p</td>
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<td></td>
<td>980179346: #11 pm route</td>
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<td>10: monday #11 pm route</td>
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<td>20: tuesday #11 pm route</td>
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<td>50: friday #11 pm route</td>
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<td>980179347: #12 pm route</td>
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<td></td>
<td></td>
<td>10: monday #12 pm route</td>
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<td>20: tuesday #12 pm route</td>
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<td>40: thursday #12 pm route</td>
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</tbody>
</table>

BUCKNER DARREN
SELLERS CARLTON
CREARY JR BENNY
HOLLAND JOHN
List Edit report that includes specific assignments (Work Order Requirement splits).

List ALV with Excel or Print output options
Custom Metrics established to report on % Schedule Adherence

- Measure ability to execute labor as assigned to individuals
  - Snap shot concept to capture SAP information at Start of Schedule week and End of Schedule week
    - Data captured using background job run at specific times
  - All Resource Assignments falling within reporting week
  - Report hours captured at level of each assignment
  - Adherence based on actual hours charged relative to assigned hours
  - Capture detail and report based on Organization Hierarchy or on Demand attributes

(e.g. Work Order Type, Maintenance Activity Type, etc..)
Multi-Resource Scheduling (MRS)
THANK YOU FOR PARTICIPATING.

SESSION CODE: 0905

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