Open source supply chain planning software

Introduction for supply planners

Agenda

- Supply planning workflow
  - Initial plan generation
  - Plan review, adjustment and approval
  - Export to ERP system
- A day in the life of a supply planner

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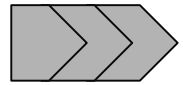
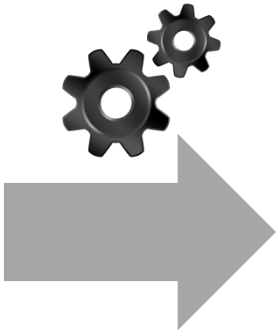
Supply planning workflow



Data from external data sources + Sales forecast + Inventory planning parameters

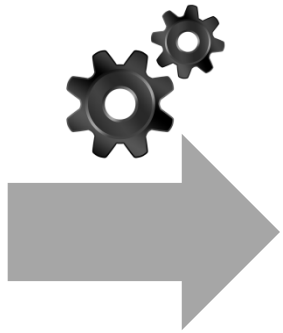


Initial plan generation

Proposed Plan

Plan review, adjustment and approval

Approved plan



Export to external system

Workflow steps:

1. Creation of initial plan
2. Plan review, adjustment and approval
3. Export to external systems

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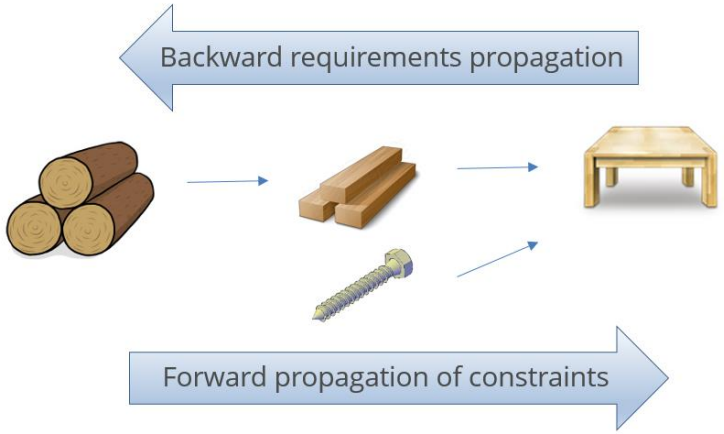
Supply planning workflow

1
Initial plan generation

- FrePPle runs an finite capacity planning and scheduling algorithm
  - Constrained and unconstrained planning modes
    - Material constraints
    - Capacity constraints
    - Lead time constraints
  - Synchronize material and capacity plans
    - Buy components to follow the pace of the bottleneck resources and materials
    - Align capacity allocation with material availability
  - Smart allocations
    - Allocate scarce material and capacity to the priority demands



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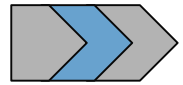
Supply planning workflow



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Plan review, adjustment and approval

- Overall plan review
  - Capacity review
  - Inventory review
  - Delivery plan review of sales orders
- Plan adjustment
  - Gantt chart plan editor
  - Inventory planning screen
- Exception based analysis
  - Late order analysis
    - Drill down into a customer order that is planned late, review its delivery plan and the causes for the delay
  - Critical purchase order review
    - Understand for which open purchase orders the planner should contact the supplier to expedite the delivery

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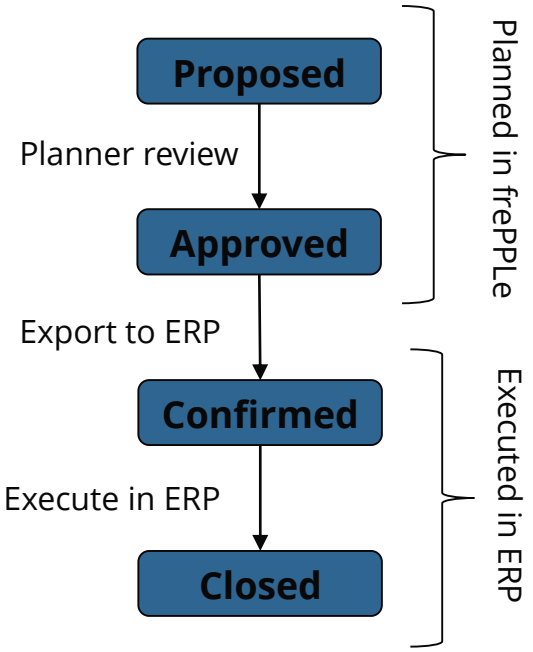
Supply planning workflow

3
Export to ERP system for execution

- Approval of the proposed plan:
  - Purchase orders
  - Distribution orders
  - Manufacturing orders
- Transactions status:
  - Proposed
    New suggestion by frePPLe
  - Approved
    Reviewed by the planner
  - Confirmed
    Execution is ongoing in the ERP



- Exporting to ERP can happen in 2 modes:
  - Incremental export capability for individual proposals manually selected by the planners
  - Automated bulk export of all proposals (using configurable filters) after approval of the overall plan

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Agenda

- Supply planning workflow
- A day in the life of a supply planner
  - Cockpit
  - Plan generation
  - Plan review
    - Resource report
    - Inventory report
    - Demand plan
  - Plan adjustment
    - Plan editor – manufacturing environments
    - Inventory planning screen – distribution environments
  - Purchase/distribution/manufacturing order approval

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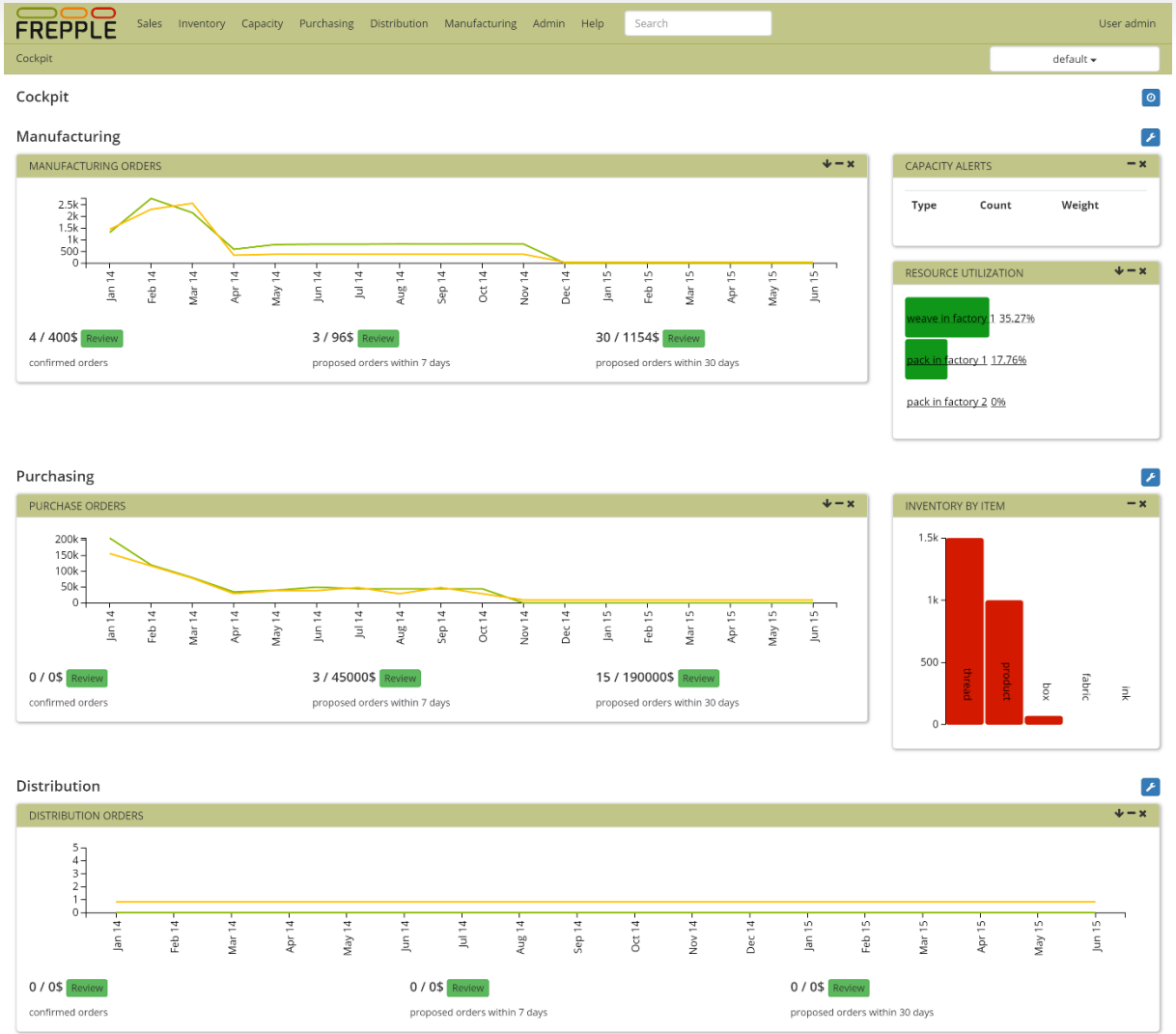
Cockpit screen

- All users workflows start their work on the cockpit screen
- Every user can configure a personal dashboard with the widgets that fit his/her tasks
- For a production planner the following widgets can be useful:
  - Purchase orders
  - Manufacturing orders
  - Distribution orders
  - Late orders
  - Resource utilization
  - Delivery performance



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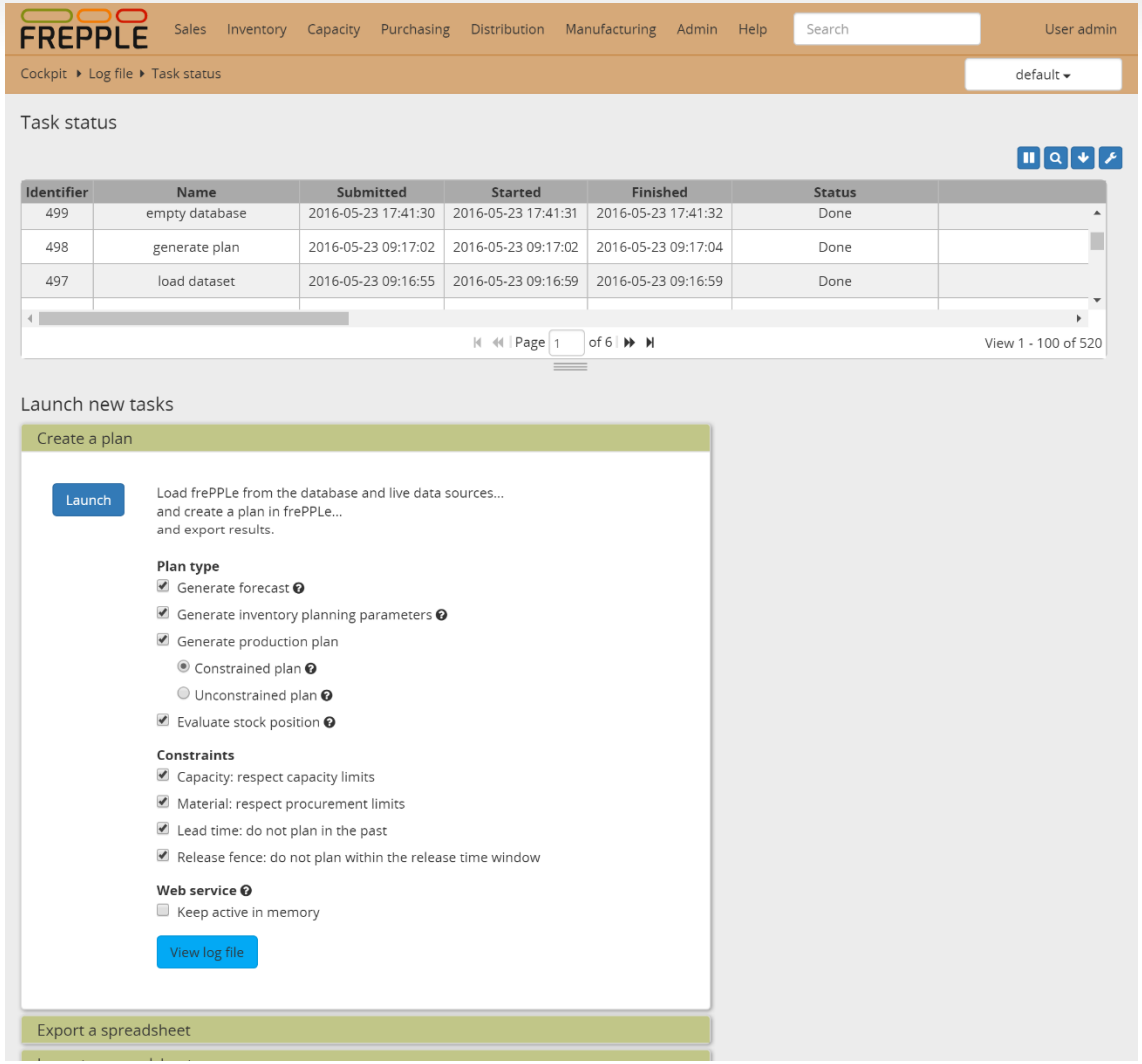
Plan generation

- From the execution screen the planner can trigger generation of a new plan
- This task can also be automated using the command line utility “frepplectl”



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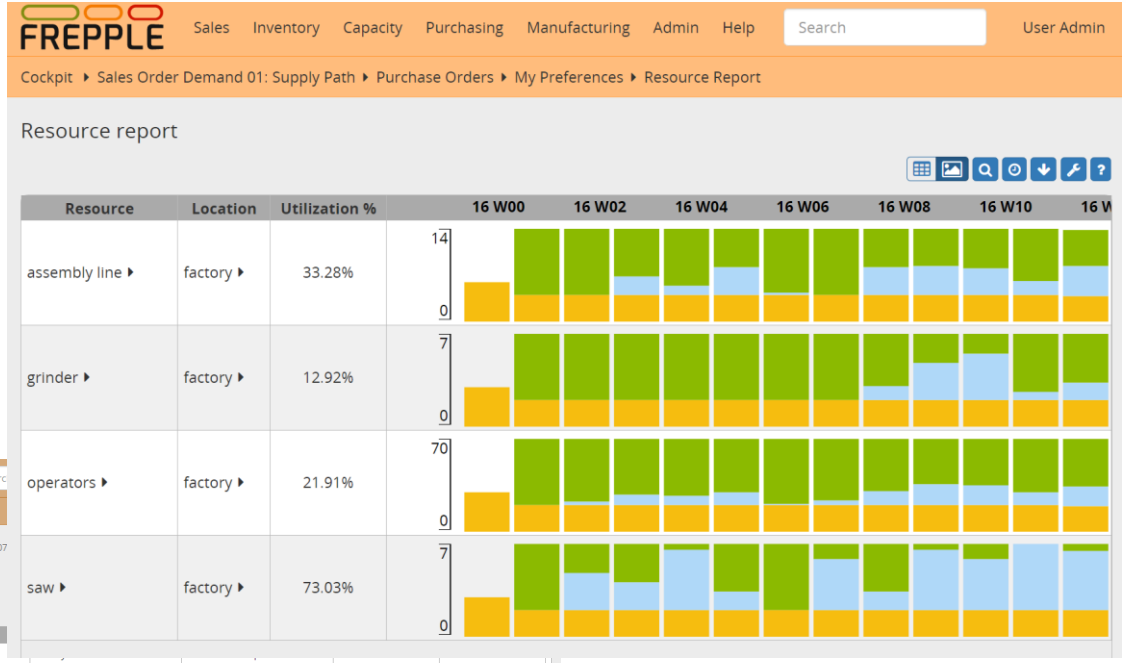
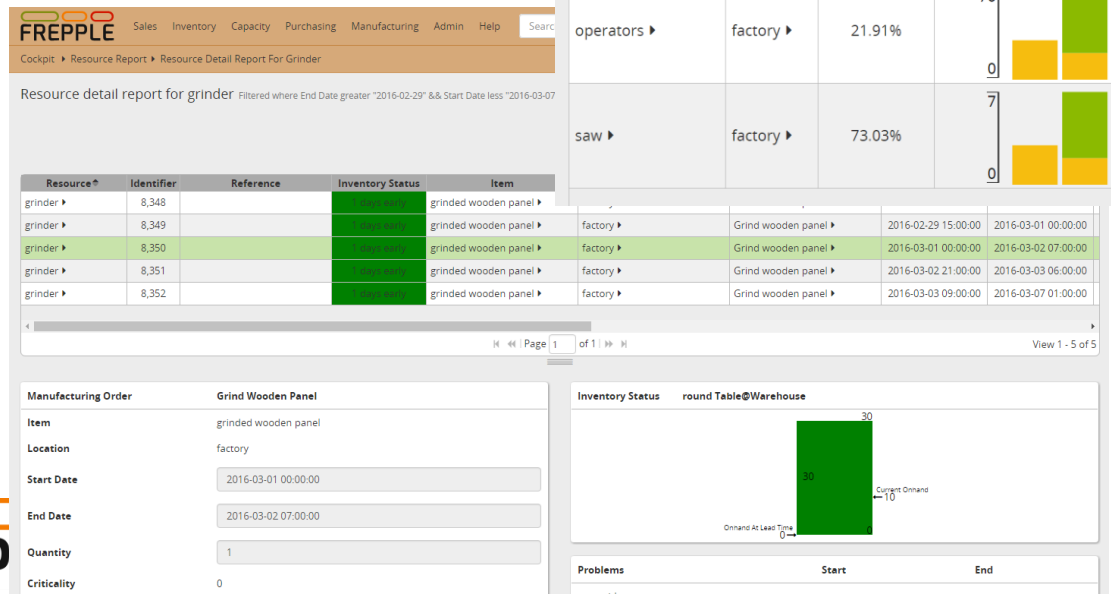
Plan review - Resource report

- Shows the resource utilization per time bucket
  - Time buckets and horizon are configurable
  - Toggle between grid and graph display
- Drill down to resource detail report for details on each planned operation





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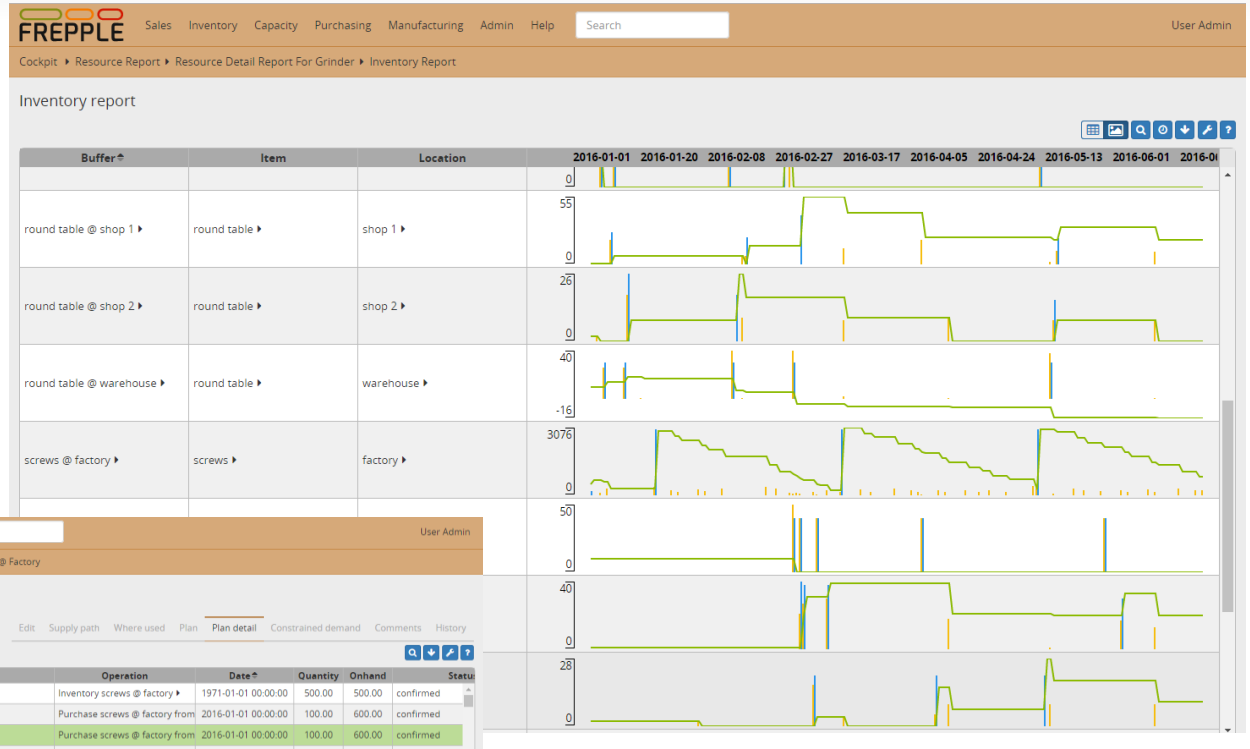
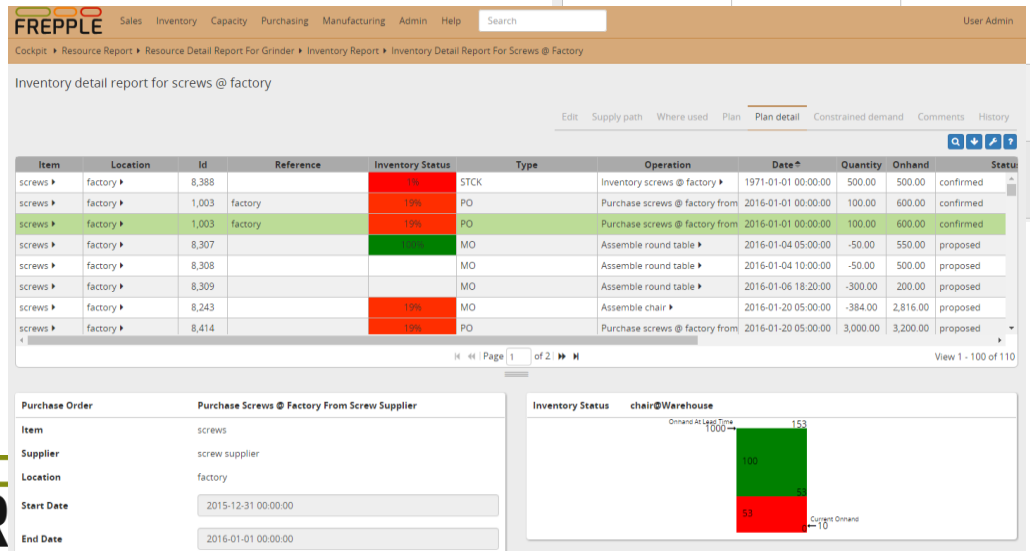
Plan review - Inventory report

- Shows the material production and consumption per time bucket
  - Time buckets and horizon are configurable
  - Toggle between grid and graph display
- Drill down to inventory detail report for details on each planned operation





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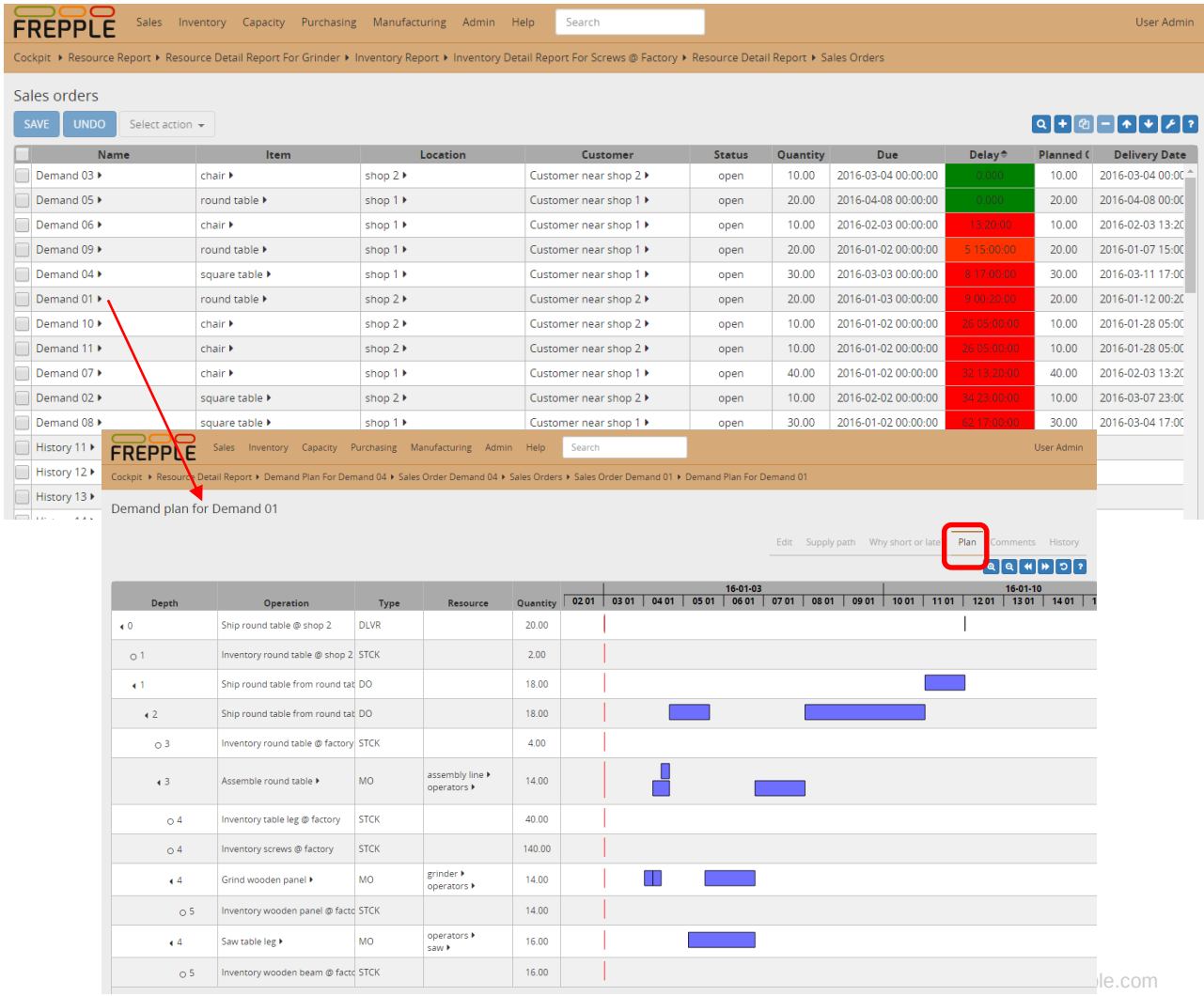
Plan review - Demand plan

- Sales order list shows the list of all customer sales orders
  - Quickly identify late orders
- Drilling down on a late demand displays its delivery plan
  - Red line is due date
  - Black line is today
  - “Why short or late” tab shows the constraint causing the delay



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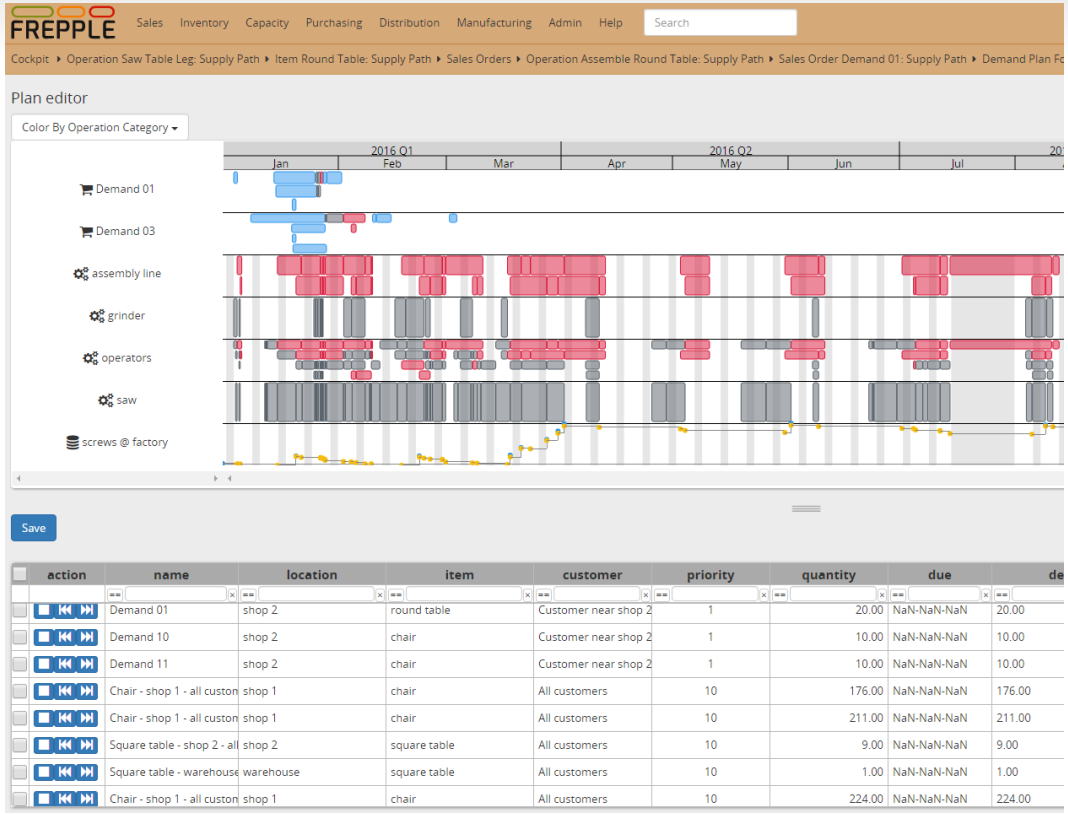
Plan adjustment – manufacturing
Plan editor

- Visually review the plan
  - Use colors for criticality, delay, priority, item category, operation category
- Adjust the plan
  - Replan customer orders
  - Adjust operation date and quantity
  - Change operation status
- Plan changes are automatically propagated
  - Move an assembly operation
    => schedule for its subassemblies also moves
  - Add a new assembly operation
    => the plan for its subassemblies is updated
  - Delete an assembly => some customer orders can no longer be satisfied



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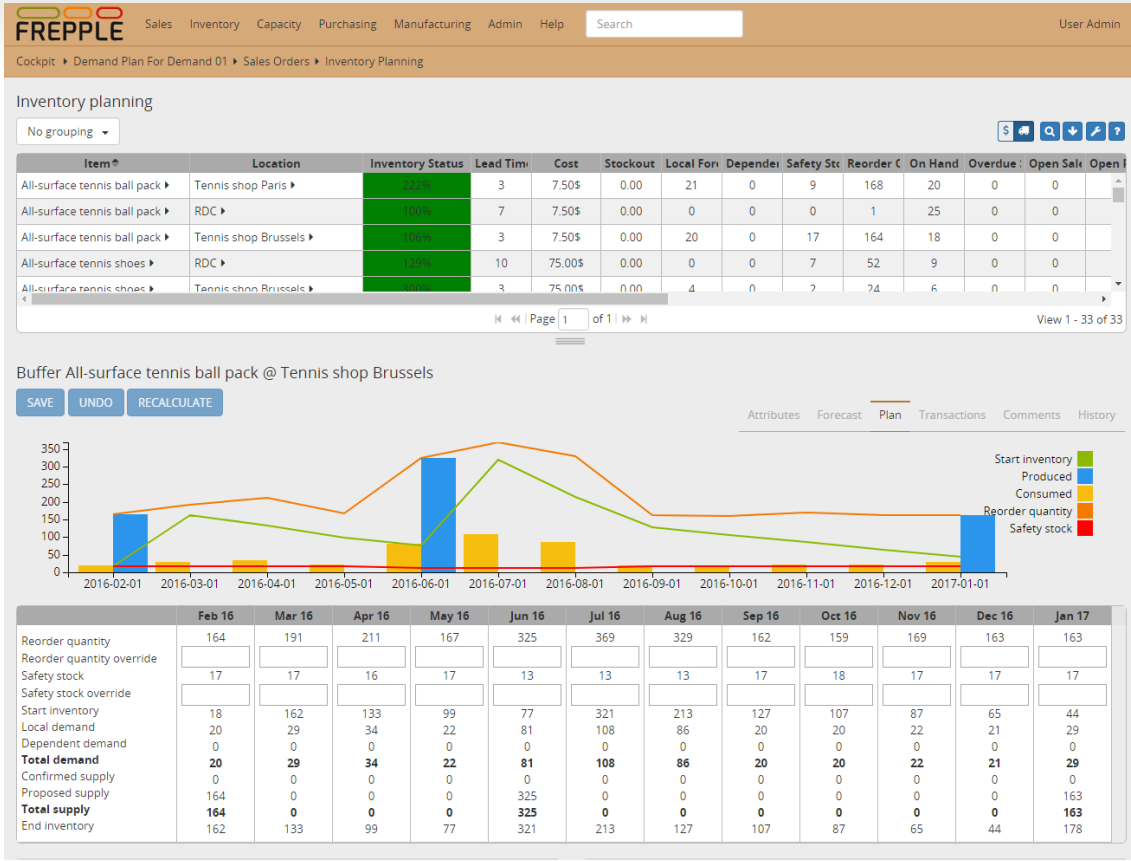
Plan adjustment – distribution Inventory planning screen

- Adjust inventory plan for critical item x locations
  - Sort and filter in the top section
  - Edit selected intersection in the bottom section
  - Simulate demand and supply changes
  - Override inventory plan in specific periods
  - Edit and approve transactions



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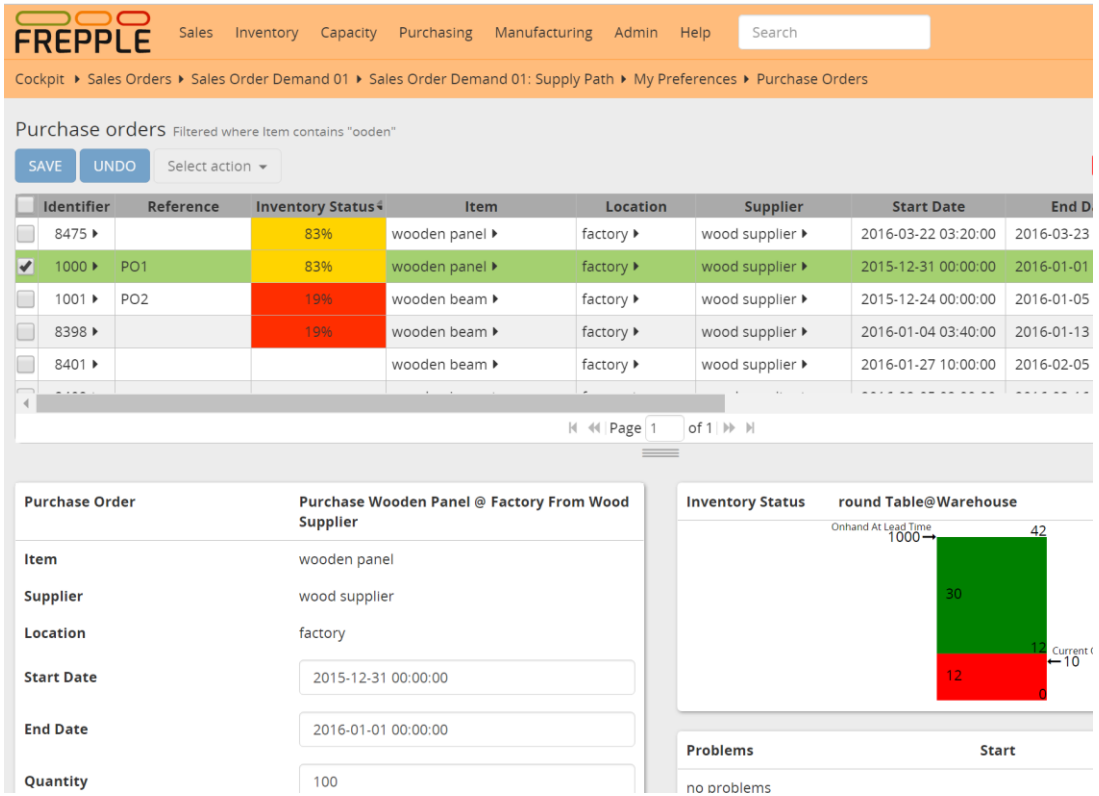
Plan approval
Purchase/distribution/manufacturing orders

- Review a prioritized list of planned operations:
  - Intuitive color coding to identify most critical and urgent operations
  - Select a single transaction to see the details at the bottom
  - Editable dates, status and quantity
  - Select multiple transactions to see an aggregated summary at the bottom
  - Action dropdown to change the status of the selected transactions, or export to the ERP system



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Other screens

- Other screens used for occasional review and analysis, depending on the production planners responsabilities:
  - Inventory planning screen
    - Allows editing of the forecast and inventory planning parameters
    - Also has the capability to review and approve transactions
  - Forecast editor
    - Allows updating of the sales forecast
  - Order quoting screen
    - Displays the expected delivery date for a new customer order you are about to enter in the ERP system
    - Computes a feasible delivery date considering all capacity, material and lead time constraints

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Try it out yourself

Online demos can be accessed at:

https://manufacturing.frepple.com
https://distribution.frepple.com

User : admin
Password : admin

Hint:
Use the “guided tour” to walk through the “day-in-the-life” workflows

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