Master planning in Dynamics AX

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Agenda

- Short Intro

- Master planning basics

- Master plan settings

- Time fences

- Coverage groups

- Misc.

- Forecasting

- Questions?

Introduction

- Who am I?

- Which version are you on?
  - Pre- AX 4.0?
  - AX 4.0
  - AX 2009
  - AX 2012
    - R2
    - R3

- Who uses master planning in Dynamics AX

- Who trusts master planning results

- Who knows how to troubleshoot master planning behavior

What is Master Planning?

- A grouping of business processes that includes the following activities: demand management, which includes the forecasting of sales, the planning of distribution, and the servicing of customer orders; sales and operations planning, which includes sales planning, production planning, inventory planning, backlog planning, and resource planning; master scheduling, which includes the preparation of the master production schedule and the rough-cut capacity plan.
  - APICS Dictionary

Master planning basics

Supply − **Demand** = **Net requirements**

Supply	Demand	Net requirements
Purchase orders	Sales orders	Planned purchase orders
Production orders	Sales forecast	Planned transfer orders
Sales order returns	Safety stock	Planned production orders
Inventory adjustments	Transfer order shipments	
On-hand inventory	Production line	
Transfer order receipts		

Net requirements

Results of master planning / scheduling requirements

Show amount supply, demand, and planned supply

Form shows relationship between demand and supply (pegging)

One plan vs Two plans

One plan

Same plan between static and dynamic

Ad-hoc updating of net requirements or explosions affect the main plan

Static plan changes throughout the day as users update net requirements

Two plans

Different plans for static and dynamic

Ad-hoc updating of net requirements or explosions affect only the dynamic plan

Static plan remains static until nightly regeneration of plan creates new orders

Master plan setup

General	Time fences	Futures messages	Action messages	Safety margin

Inclusion of specific inventory transactions
Consider shelf life
Planned production scheduling parameters
Sales forecast settings

Same time fences as coverage groups
Used to override coverage groups

Used to specify if requirement date should automatically update to calculated futures date

Used to specify if requirement date on planned order should be automatically updated to action date

Receipt margin
Issue margin
Reorder margin

Master planning parameters

General
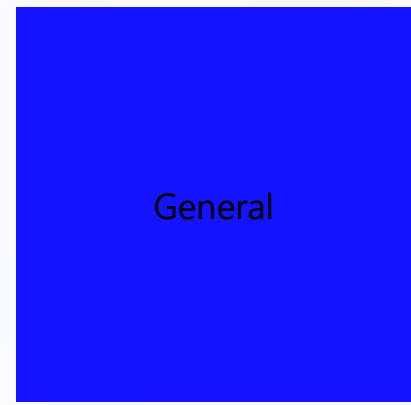
Dynamic and static plan
Default coverage group
Dynamic negative days
Calendar

Planned orders

Find trade agreements
Planned receipt time

Standard update

Defaults for firming
Find purchase agreements

Time fences

Firming

Freeze

Futures

Action

Capacity

Explosion

Coverage

Time

Time fences, cont.

Based on requested ship date

Capacity and explosion time fences have most significant impact on performance

Past capacity time fence, inventory lead times are used to calculate order date

Recommendation for coverage time fence on purchased items: no longer than twice the longest lead time
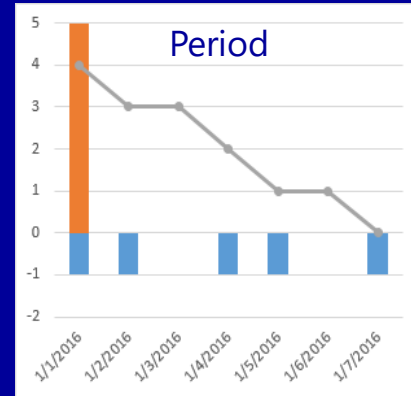
Coverage groups

Used to plan similar items similar ways

Determine time fences and planned order behavior
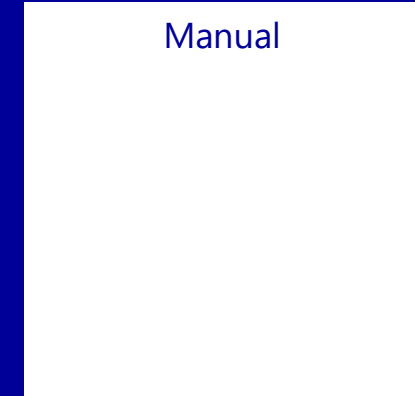
Negative days and positive days

Coverage codes
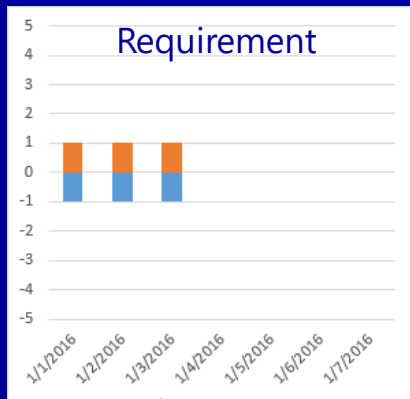
Requirement

Each uncovered demand drives a planned supply
Can use order multiples to optimize

Period

Coverage period of 6 days
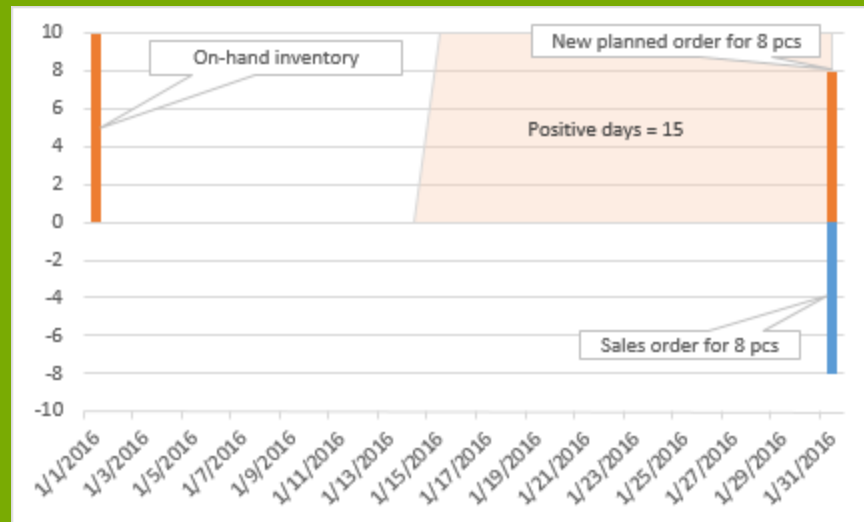Demand is satisfied on the first requirement date and looks out entire coverage period

Min/max
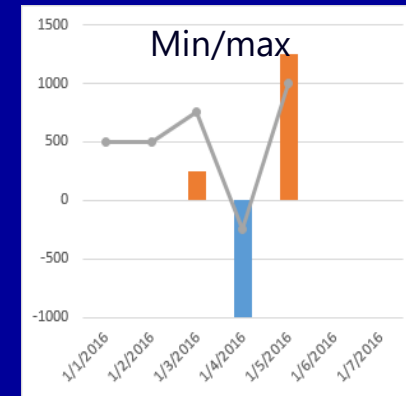
Min of 250, max of 1000
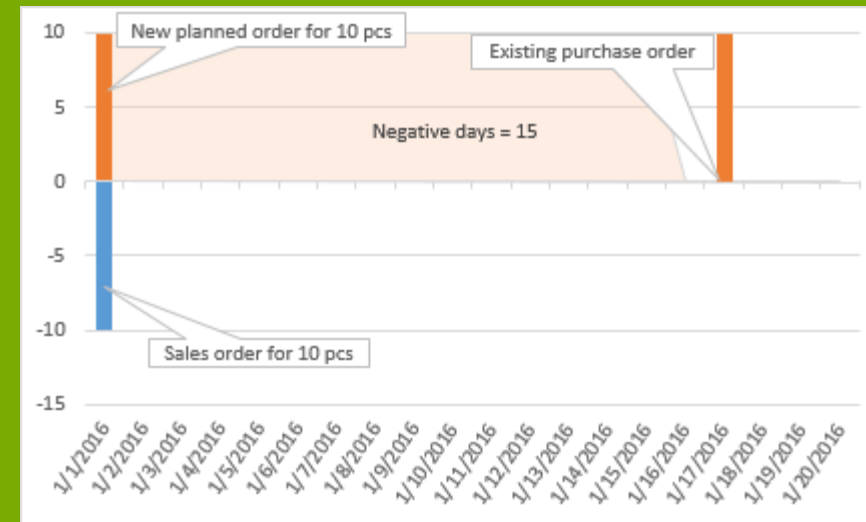Once accumulated value falls below min, an order big enough to bring accumulated up to the max is generated

Manual

Net requirements are not calculated for these items

Positive and negative days
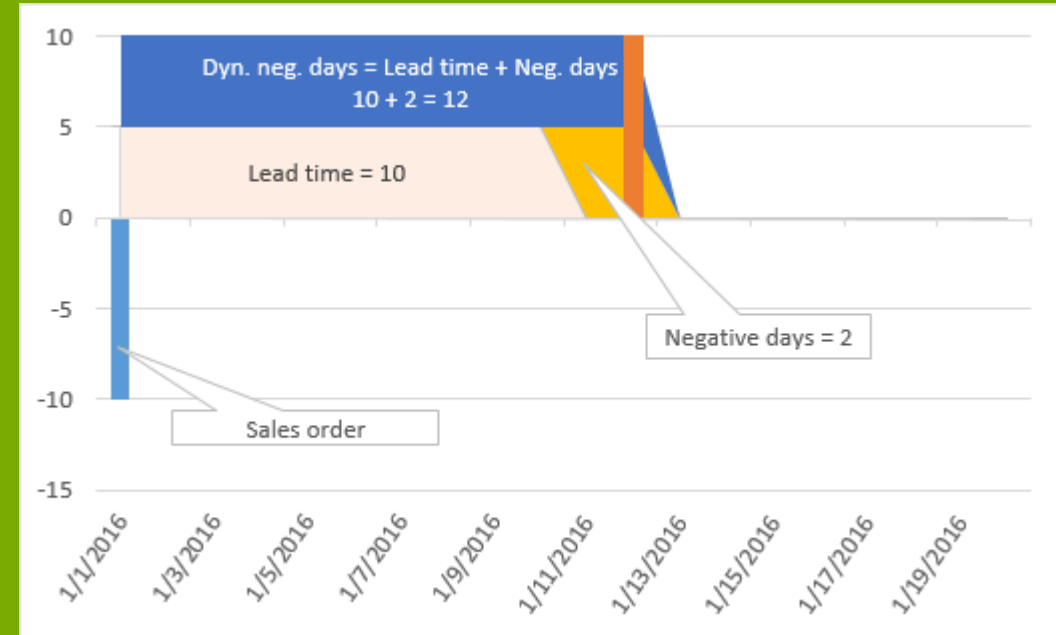
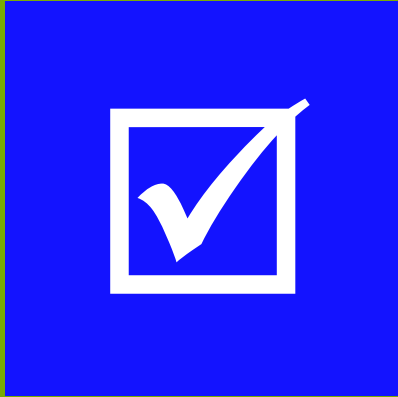## Positive days

Negative days

Dynamic negative days

Available in versions 2009 and after

Reduce need for coverage groups for different lead times
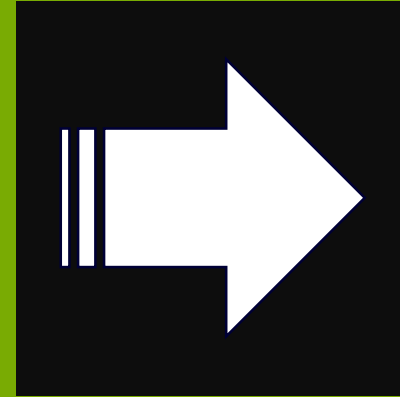
Dyn. neg. days = Lead time + neg. days

Approved planned orders

Used to indicated orders have been reviewed and should be acted on

Are not deleted by "Delete plan" or "Regenerate"

Intermediate step between planned order and firmed order

Fulfill minimum

Changes requirement date of safety stock

Can negatively impact sales order explosions and futures dates

By default, set to "Today's date"

For a detailed example, check out this blog post:
http://dynamicconsulting.com/frontpage/i-have-on-hand-inventory-let-me-use-it

Forecasting

Intermediate forecast

- Forecasts can be reduced at intermediate levels
- Use "All transactions" reduction key on coverage group

Dynamic reduction principle

- "Transactions – dynamic period"
- Creates dynamic periods based on forecast date
- Controlled on master plan parameters

Item allocation keys

- Used to forecast at a "product family" level
- Important with new R3 forecasting functionality
- Interesting for reporting / viewing stats on "Supply schedule" form

Questions?

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Questions

Lead times	Calendars	Safety stock journal
• Where should lead times go? Trade agreements, item coverage, default order settings? • What's the "disregard lead time" check box for?	• Which calendars control how master planning works? • What about closed days or working days?	• What are safety stock journals for? • How are calculations performed?

Links

Dynamic negative days – Roxana Diaconu (Program manager – Microsoft)
http://blogs.msdn.com/b/axmfg/archive/2015/02/19/more-about-dynamic-negative-days.aspx

Using multiple plans / recommended time fences – Conrad Volkmann (Program manager – Microsoft)
http://blogs.msdn.com/b/axmfg/archive/2012/10/12/separating-tactical-and-operative-planning-for-master-scheduling.aspx

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