



# Mantis – DC Expert

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# Mantis Overview

Mantis, is a leading international WMS/logistics software and solutions vendor, addressing the demanding requirements of large enterprises in more than 20 countries in Europe and Russia-CIS and recently in USA/Canada and Middle East.



Established in 1996



30 Countries



8 offices



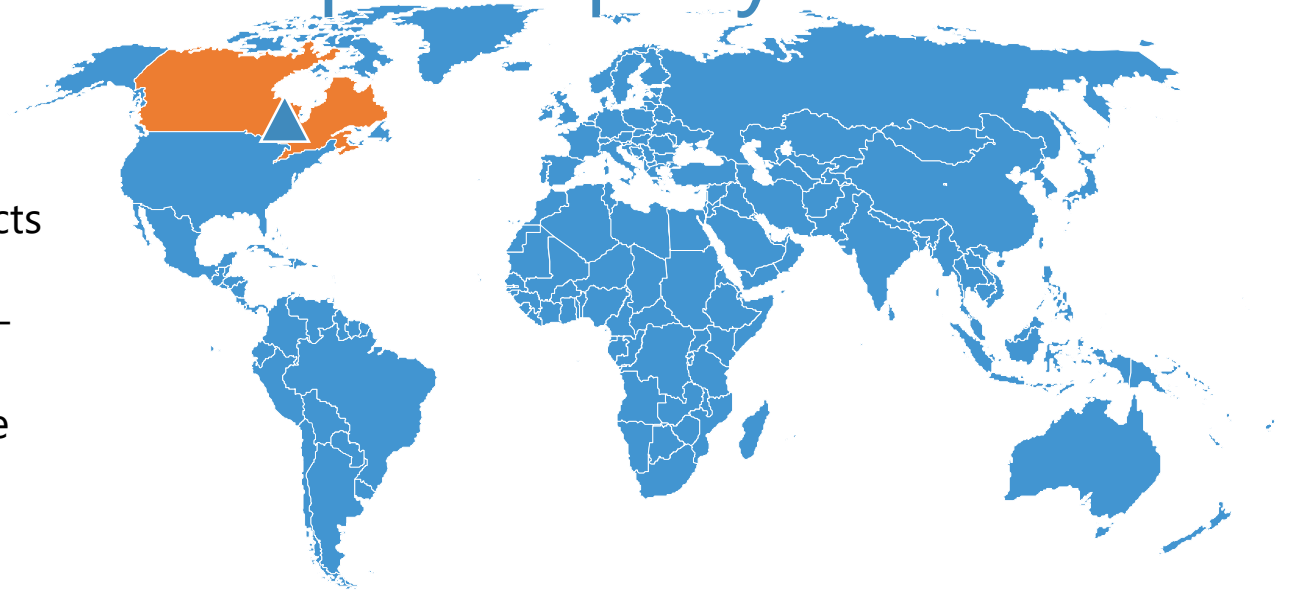
14 Languages

**POWERED BY POSSIBILITIES.**



# Insight Technologies / A Mantis Group Company.

Insight Technologies offers a single source for your supply chain goals. With a complete portfolio of technology products and consulting services, Insight Technologies can take you from planning to implementation to ongoing management - no matter the size of your operation. With an impressive list of clientele, we have solutions to take your operation to the next level.



Acquired in 2018



HQ in Canada



+150,000 Algorithms



+500 operations

**POWERED BY POSSIBILITIES.**



# Insight products



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# Products and Services

## →✦← Enterprise

- Warehouse Master II WMS
- Global Executive Manager
- DC Expert Integration Module

## →✦← Desk Top

- DC Expert
- Transportation Routing & Scheduling

## →✦← Strategic

- Strategic Logistics Modeling

## →✦← Professional Services

- Consulting
- Health Check
- Implementation

# Our Clients

Ace Hardware | Tesco Lotus | Thyssen Krupp | VF Outdoor | Lennox | Kraft | Nissan Canada | Eaton Corp. | Grace Kennedy | Nestle | Bridgestone | Proctor & Gamble | Big C Superstores | Moen | Sobeys | Fruit of the Loom | Johnson and Johnson | Asics | Fosters Group | Spectrum Supply Chain Solutions | Mainfreight International | Unilever | CP All Public 7-11 Stores | Apollo Health and Beauty | CEVA Logistics | Cummins

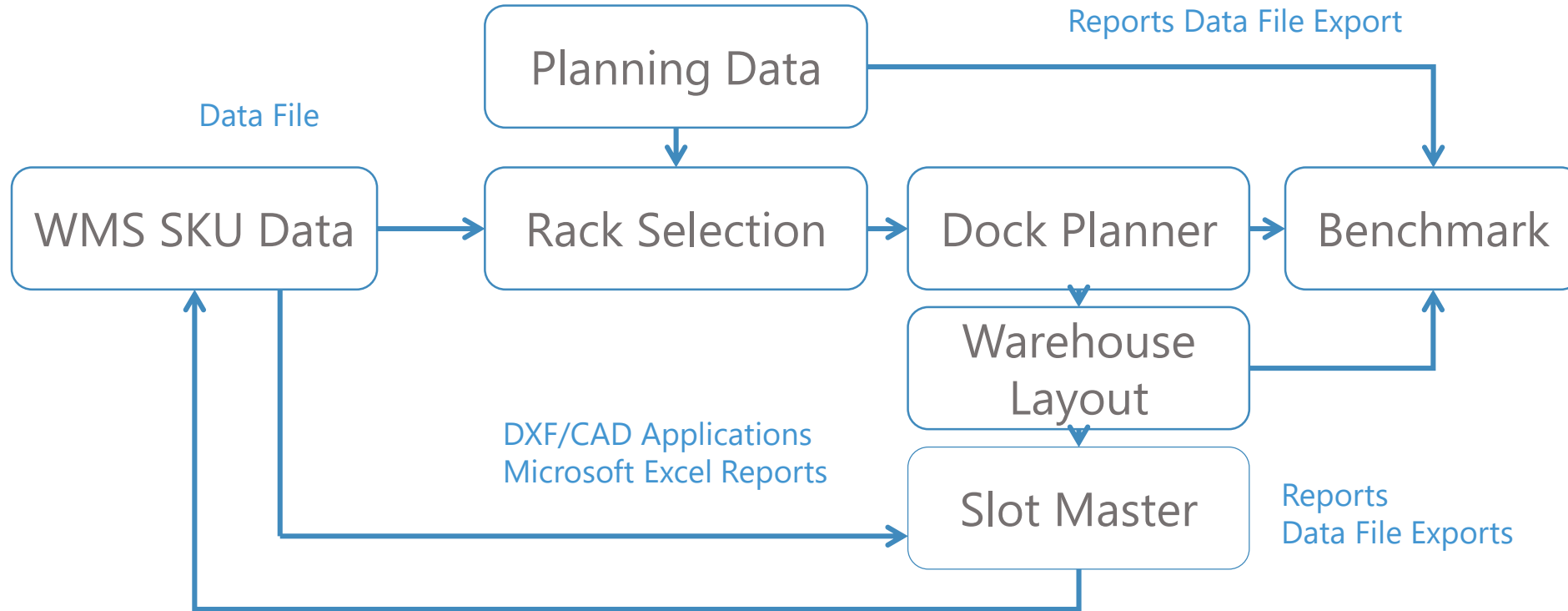
## Logistics Companies

DHL | Metro Canada Logistics | CEVA Logistics | Spectrum Supply Chain | Odyssey Logistics | Protrans | Ryder Logistics | Exel | Mainfreight Intl | Huxloe Logistics | Delamode | Bev Chain – Linfox | Progistix – SCL | Alpha Distribution

# DC Expert 4.5

- 1 Maximize your warehouse facility
- 2 Increase cubic utilization of the facility
- 3 Decrease overall travel distance and handling in the facility
- 4 Apply new or existing models in the warehouse against each other for proof of concept and ROI discussions
- 5 Increase warehouse flexibility to handle new or seasonal products
- 6 Quickly react or predict labor requirements
- 7 Create a standard set of terminology and tool set for the entire supply chain operation
- 8 Comprehensive warehouse slotting and planning (including zone and work balancing)

# Integration of Modules





# Why DC Expert

**DC Expert** is the only product on the market to integrate all aspects of warehouse planning in one tool set.

Interface and data requirements for **DC Expert** are simple yet unique. Using Access, Excel or CSV formats, any existing enterprise system can feed **DC Expert** data.

**DC Expert** is the only planning product to combine warehouse design, location coordinates and slotting in one tool.

- ❖ Slot Master provides unique ability to slot through logical location or physical location
- ❖ Slot Master automatically calculates cube utilization based on SKU analysis by location
- ❖ Pre Profiler in Slot Master automatically calculates bay, shelf, bed or location profiles and totals for the facility
- ❖ Over 256,000 algorithms in DC Expert
- ❖ Benchmark tool allows users to calculate activity KPI's and then forecast labor and MHE requirements

# Data Template

# File Description

Key	Field	Req'd	RS	SM	Example	Default	Description
1	Item	Y			AB123		The SKU number/code as a unique item identifier
2	Supplier	N			ABC Wines	1	Supplier Name or Identifier
3	Pre_Process	N			0	0	ADVANCED: 1 = Yes; 0 = No: Is there a pre-Process for this product prior to dispatch? (Kitting, QA etc.)
4	Description	Y			Merlot		Standard Product Description at the SKU Level
5	Prod_Fam	Y			Wines		Standard Product grouping field - defined as text - can conform to user generated groupings.
6	Ave_Activity	Y			18		Number of Pallets (or Pallet Equivalents) picked per week
7	BOH	Y			72		BOH Snapshot - or Ideal Inventory holdings by SKU (i.e. 2 weeks inventory plus safety stock)
8	BOH_Percent_In_Pface	N			1	1	ADVANCED: The Percentage of total BOH required in the Physical Pickface
9	Min_In_Pface	N			1	0	ADVANCED: The min.amount in the pick face as assigned by the user in cases/units(def=0)
10	Max_In_Pface	N			20	99999	ADVANCED: the max amount in the pick face as assigned by the user in cases/units (def = 99999)
11	Pickface_Slots	N			3	1	ADVANCED: The number of allocated pick face slots - manually defined by user
12	Pickface_Cubefill_Percent	N			0.55	1	ADVANCED: the Percentage of cube required
13	M_Case_Height	Y			5		Master case height in inches or meters
14	M_Case_Length	Y			10		Master case length(depth) in inches or meters
15	M_Case_Width	Y			8		Master Case With in inches or meters
16	P_Height	Y			6		Height of the pallet in inches or meters
17	P_Width	Y			40		width of the pallet in inches or meters
18	P_Length	Y			48		Length (depth) of the pallet in inches or meters
19	Stack_Height	N			0	1	ADVANCED: If product is floorstacked - define height of the stack on the floor <b>including</b> base pallet.
20	Crushable	Y			0		Scale from 1-99999: Based on Fragility of the picked product (higher fragility = higher Crushable value)
21	Cases_Layer	Y			4		Ti - or Number of cases per layer
22	Layers_Pallet	Y			4		Hi - or Number of layers per pallet
23	Toxicity	Y			7		Scale from 1-99999: Based on hazardous nature of the product or to define product adjacencies
24	M_Case_Weight	Y			200		Mcase case weight in pounds or KG
25	Item_Ranking	N			2	1	User entered rank of each product - for manually defined self-building algorithms
26	Item_Ranking_Expression	N			8	1	Formulated expressions used as criterion on which to sort each family (SQL Based)
27	Case_Pick	Y			1		1=Case or Unit Storage Pick, 0= Full Pallet Pick (use smallest unit in assigning this value)
28	Fam_Ranking	N			1	1	User entered rank of each family grou
29	Fam_Ranking_Expression	N			1	1	Formulated expression in SQL used as criterion to sort each item within the defined group
30	UPC_Code	N			652145889		Standard UPC Code per User - not required
31	Toteable	N			0	0	1=Yes, 0 = No - is there a fixed bin or storage container size for this SKU item
32	Decantable				0		1=Yes, 0 = No - Can a pallet of this SKU be broken down to the case or unit level?
33	Casepick				1		1= Case or Unit Storage, 0=Full Pallet Storage
34	Special	N			0	0	1=Yes, 0=No - Special Process - User Defined
35	Preferred_Zone_Id	Y			Zone 1		Advanced zoning ID: by Designated product/family/classification types.
36	Location_ID	Y			D1203A1		User's naming convention or nomenclature

Content

# Rack Selection

Rack Selection provides the Macro slotting functionality by indicating what type of medium a product should be stored in and picked from.

Looking at both the physical Fixed costs of a medium and the Variable costs around productivity, Rack Selection provides a SKU by SKU analysis of the lowest cost solution.

Rack Selection allows users to compare a multitude of storage mediums and real or forecasted data to create models for actionable management decisions.

# Rack Selection

Creates a Matrix



Checks for fit in rack type



Removes racking based on minimums

Item	Rack A	Rack B	Rack C
1			
2			
3			
4			
5			

Item	Rack A	Rack B	Rack C
1	Y	Y	Y
2	Y	Y	Y
3	Y	Y	N
4	Y	N	N
5	Y	N	N

Item	Rack A	Rack B	Rack C
1	Y	Y	Y
2	Y	Y	Y
3	Y	Y	N
4	Y	N	N
5	Y	N	N
Min SKUs	YES	YES	NO

Item	Rack Type	Rank	Variable (\$)
1	A	1	1,500
1	B	2	1,621
1	C	Fail	711

2	B	1	1,782
2	A	2	1,972
2	C	Fail	1,172

3	B	1	3,287
3	A	2	3,982

4	A	1	1,224
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5	A	1	1,311
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Calculates fixed and variable costs then ranks each rack type for each item



# Dock Planner

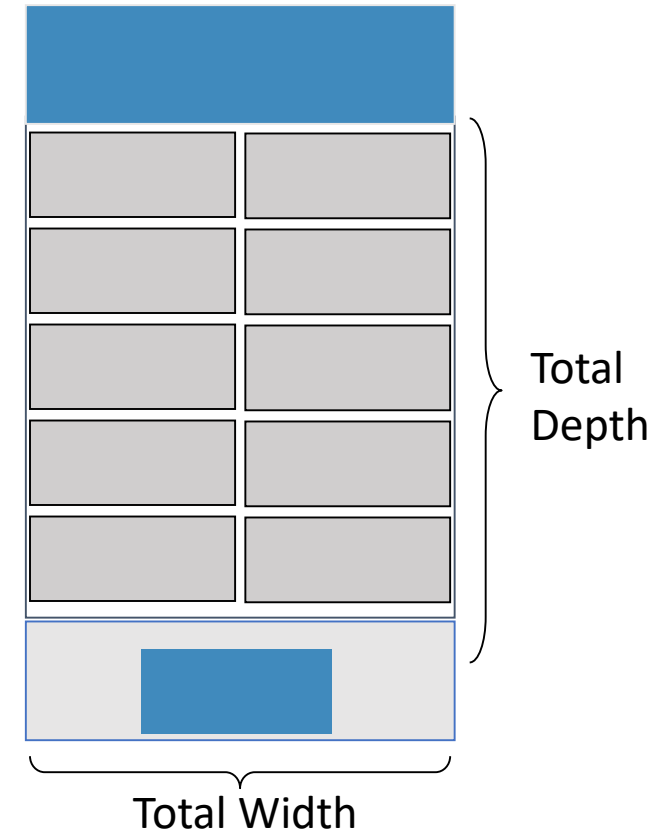
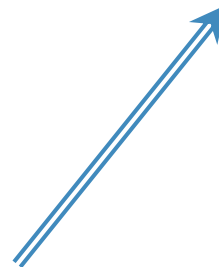
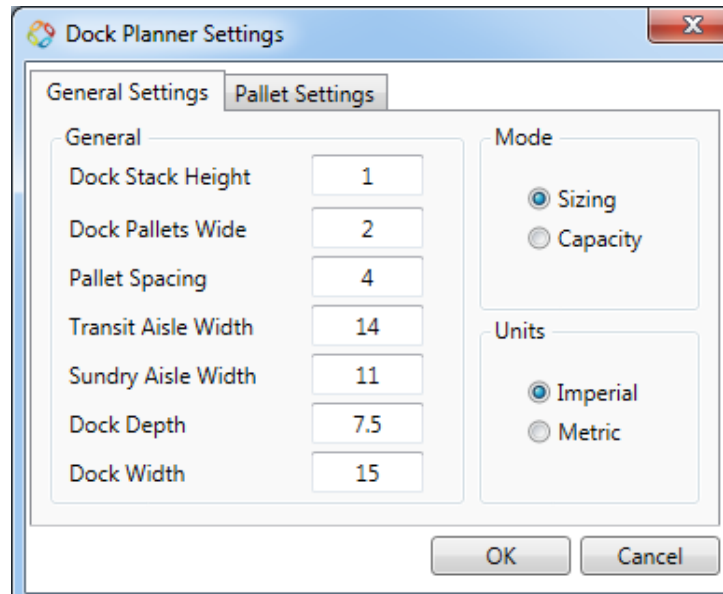
Within the Dock Planner module from the menu:

Select Mode | Settings

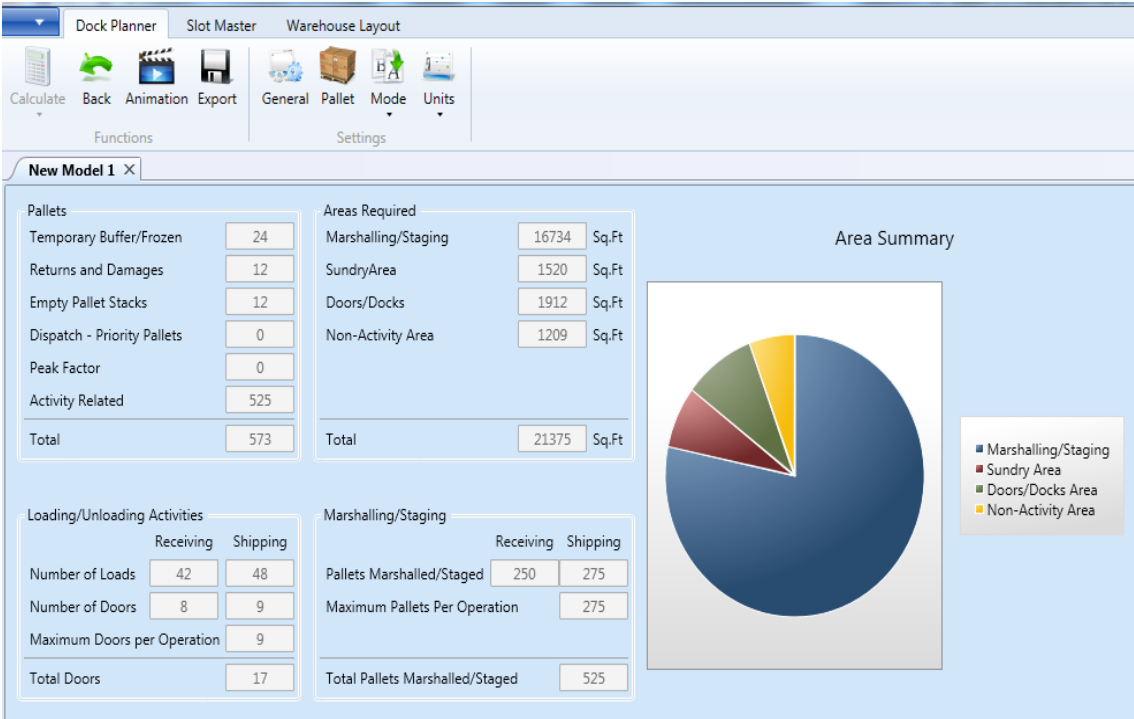
Select General Settings Change Button

The parameters are used to build up:

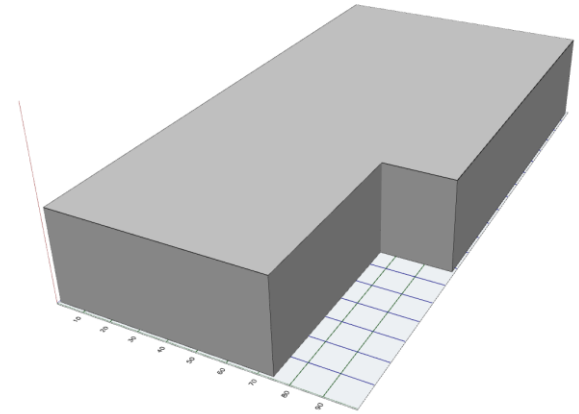
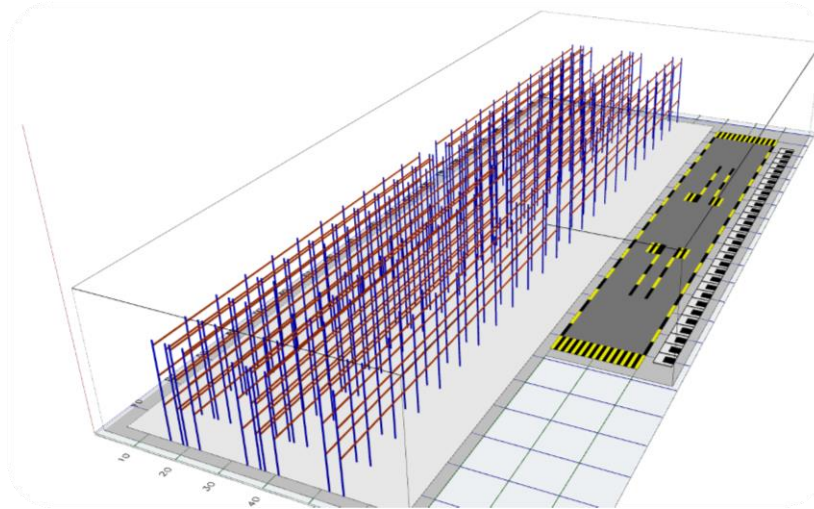
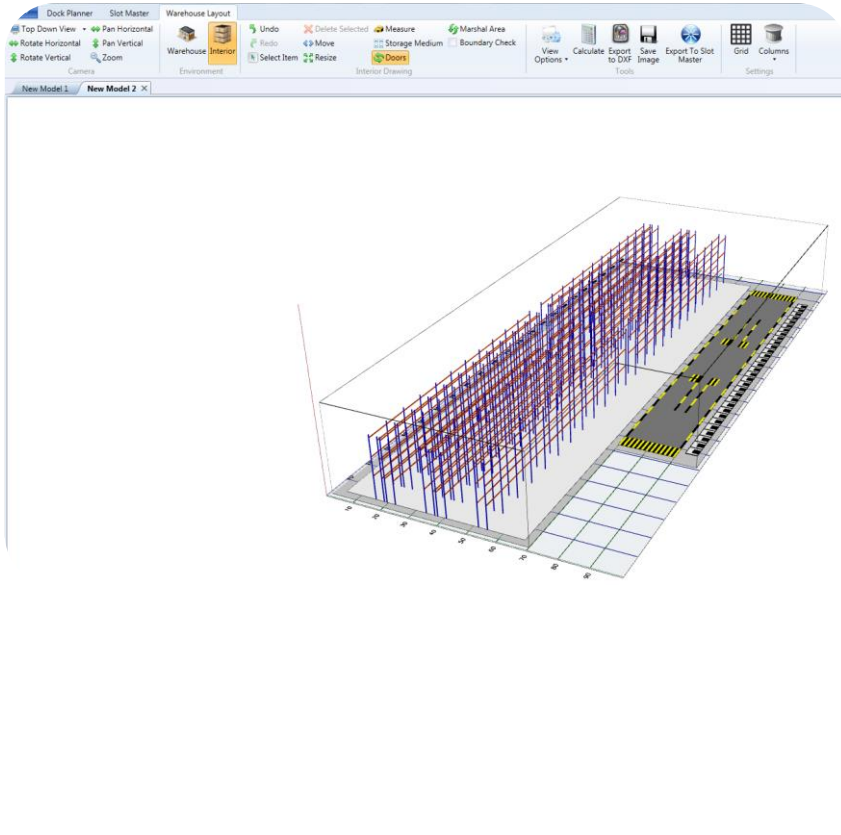
- Dock area
- Sundry pallet area



# Dock Planner Simulation

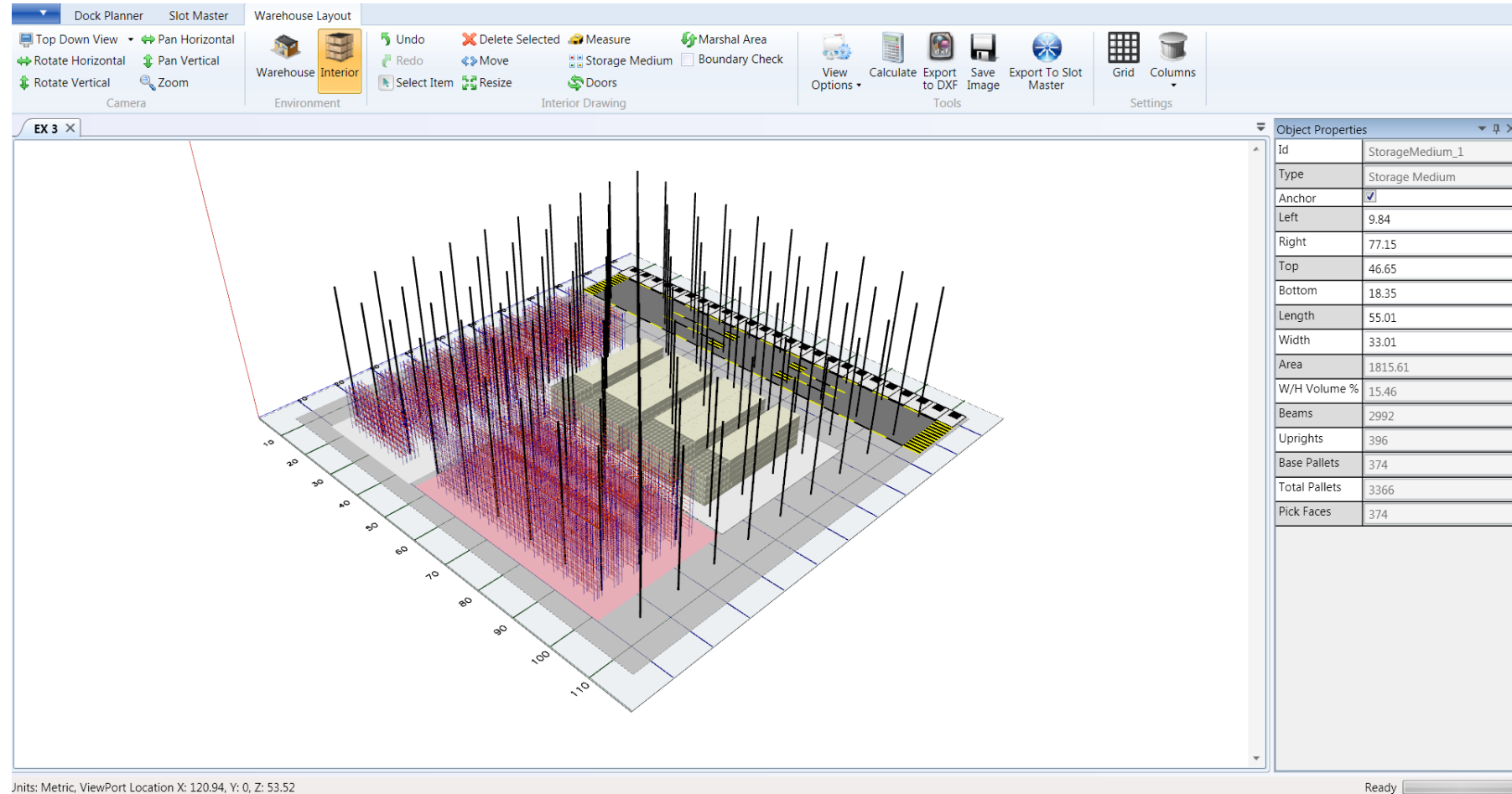


# 3D Drawing Engine



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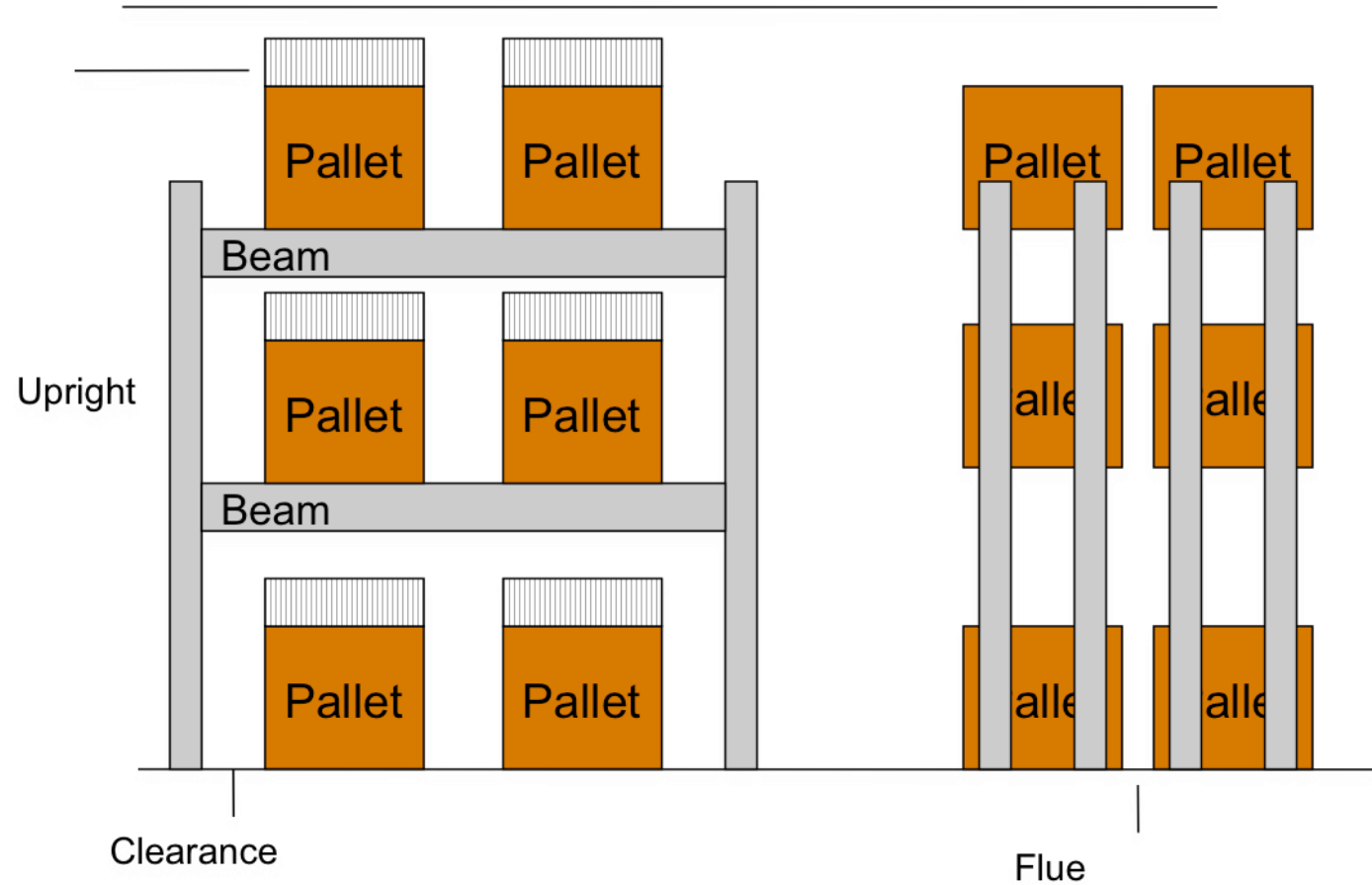
# Warehouse Layout



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# Warehouse Layout

- Input Pallet dimensions.
- ▲ Input Pallet clearance, lift off space, flue space (or use defaults listed).
- Software automatically builds the racking to those specifications.





# Slot

A

Slotting warehouse in family groups.

B

Run different pick sequences in different sections of the warehouse.

C

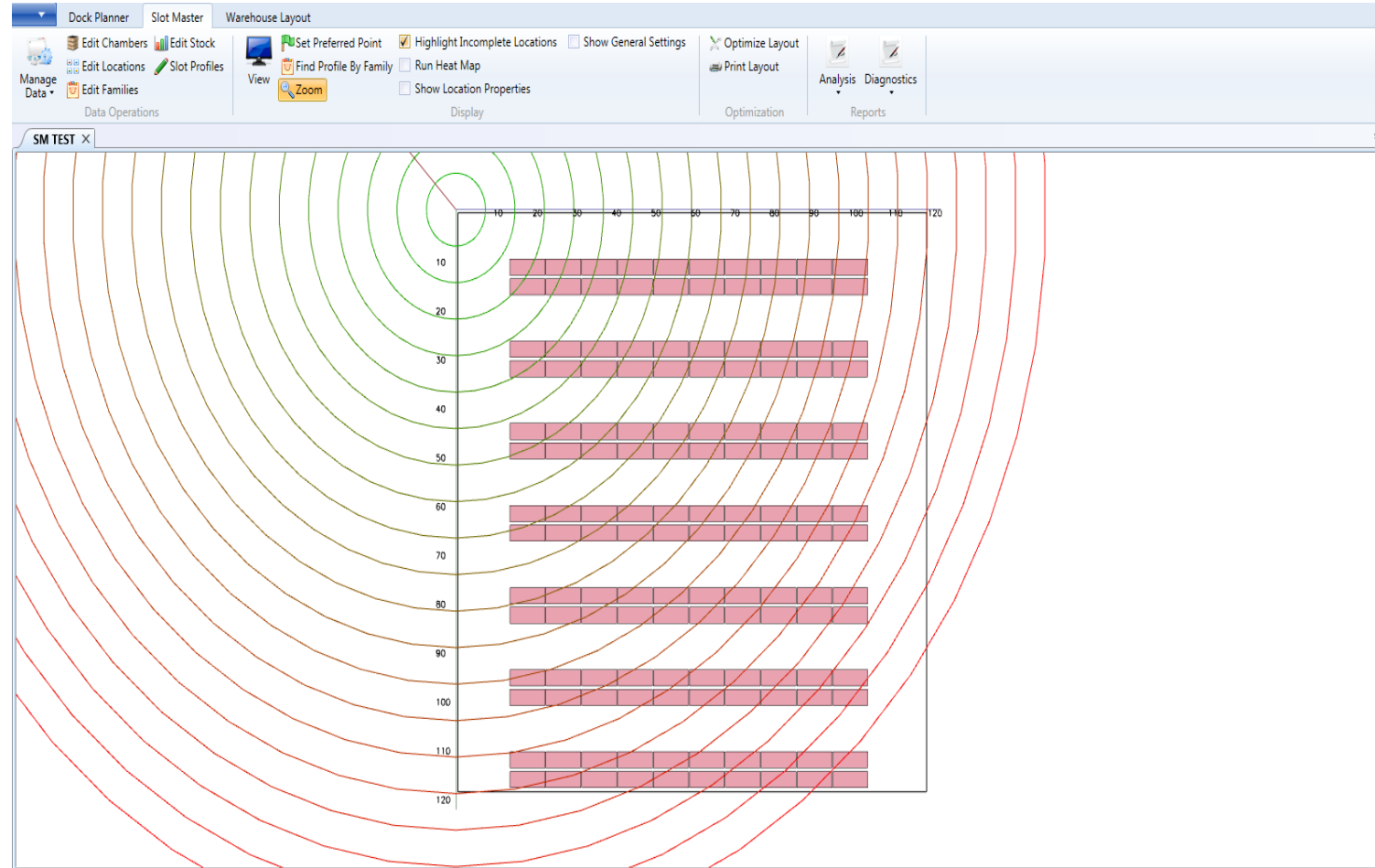
Able to handle product toxicity ratings.

D

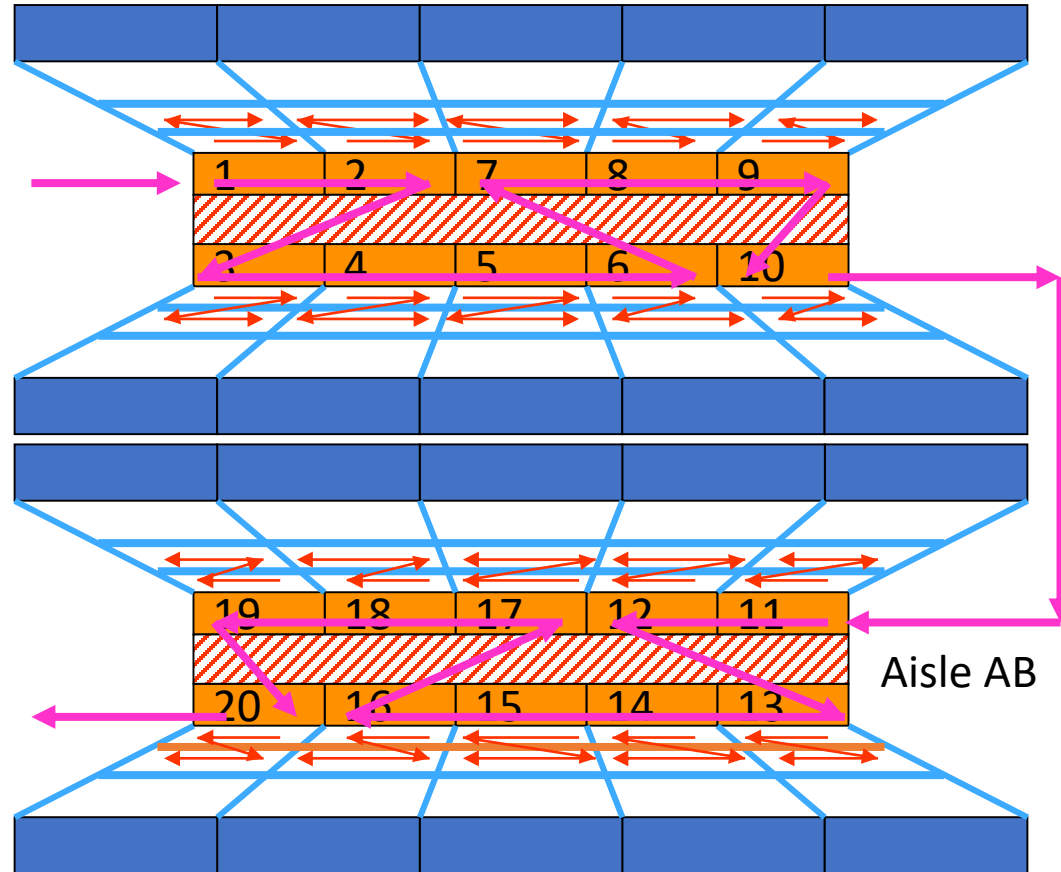
Thousands of different slotting scenarios to chose from.

E

Compare different sort criteria against each other to find optimum slot order.



# Slot Master



# Slot Master

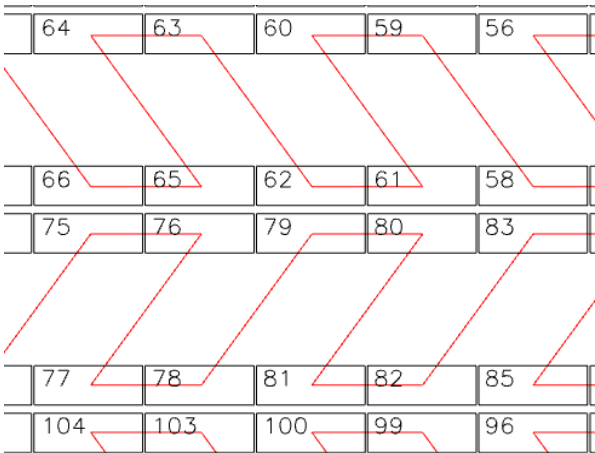
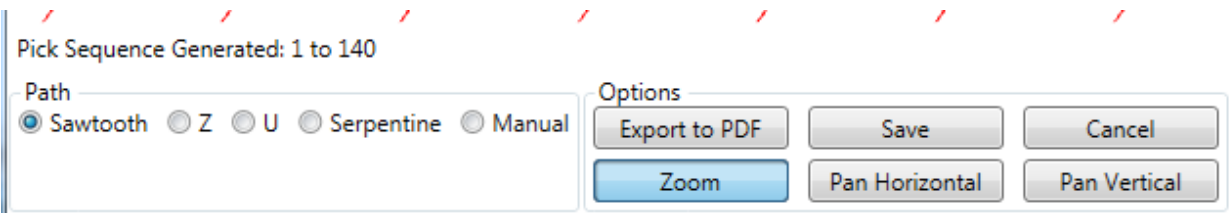
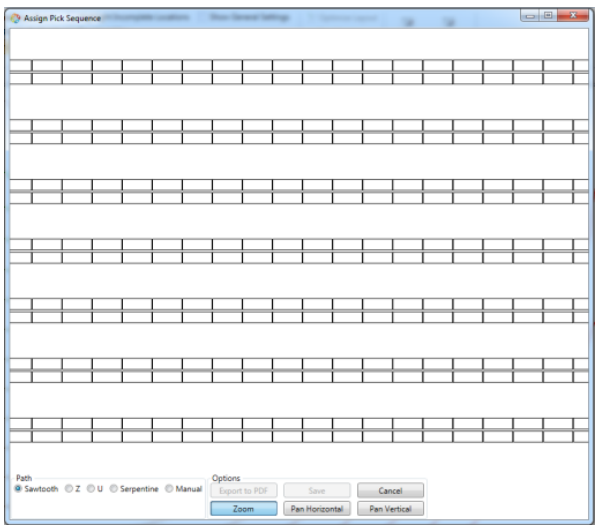
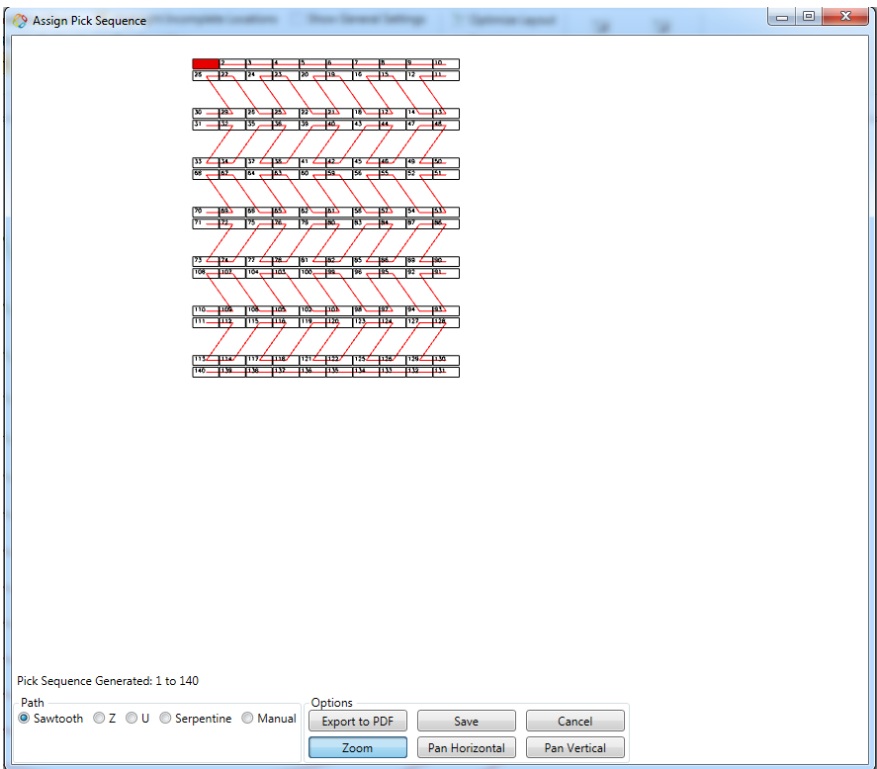


The user can define pick paths through the warehouse moving from bay to bay

- Sawtooth
- Z Pick Path
- U Pick Path
- Serpentine

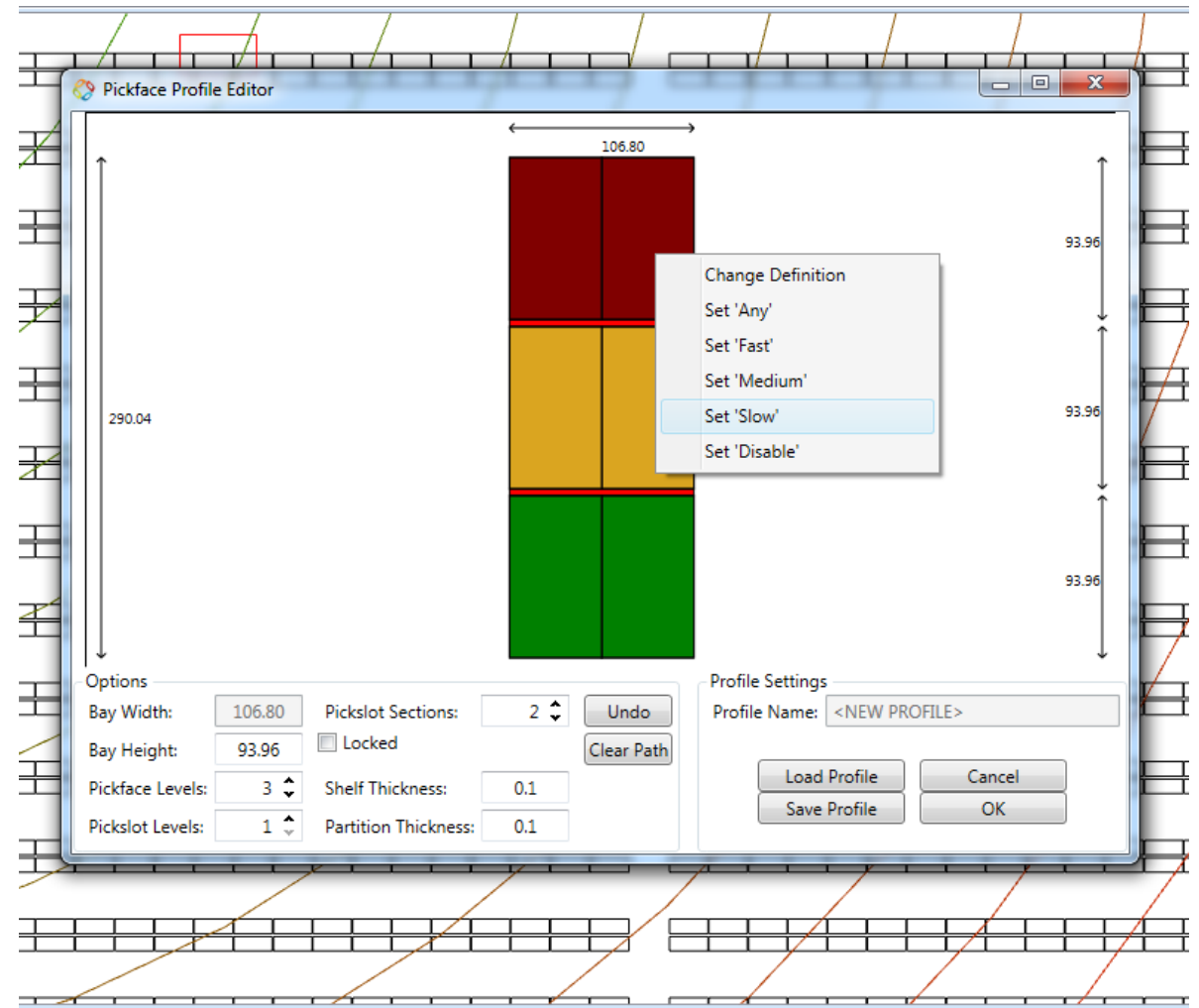


From this, the user can define the vertical component of a multi level pick path



# Slot Master

- Can support multi-level Picking.
- Multi-levels & multi sections / bay.
- The user can define the pick slot path the size of the shelves.
- Velocity levels can also be defined
  - Green: Fast
  - Gold: Medium
  - Red: Slow
- These profiles can be saved and applied to an individual bay or aisle.



# Slot Master



Slot Master allows the user to import existing locations from the ERP or WMS system and use as a baseline to optimize the operation

Microsoft Access

File Edit View Insert Format Records Tools Window Help

Type a question for help

Slot Master Baseline Template : Database (Access 95 file format)

Open Design New X

Objects

- Tables
- Queries

ImportErrors

LocationMap

StockLocation

LocationMap : Table

Location	Bay	Layer	Slot	Description	LocID
AA001A	1	1	1	1 Carton Flow	Chamber(A)-Run(2)-Bay(1)-Slot(4)-Layer(5)
AA001A	1	1	2	2 Carton Flow	
AA001A	2	1	1	1 Carton Flow Slow	
AA001A	2	1	2	2 carton Flow Slow	

Record: 1 of 550

StockLocation : Table

SKU	Supplier	StockDescription	Family	FamilyDescripti	LocID
0000279	0042214	BN RC CHZ BR 47	Brake Pads		Chamber(A)-Run(2)-Bay(1)-Slot(4)-Layer(5)
0000294	0007851	MCRO MGC HS 14	Master Cylinder		
0000316	0000860	WW DLX PZZA 411	Exhaust Kits		
0000339	0000609	B E NEW ENG 14	Master Cylinder		
0000359	0000711	MS SMTH COC 56	Racing Slicks		
0000371	0000523	M C PIZZA W/T 4	Rear Differential		

Record: 1 of 203

Datasheet View



# Slot Master

## Slotting Fundamentals

Slot by SKU Characteristics, order profiles or family group

## Slotting supports

- Zone Picking
- Velocity
- Weight
- Cube
- Slot Capacity
- Seasonal
- Custom Algorithms
- Location and Center of gravity models
- Multiple pick Sequencing

# Slot Master

**Slot Master optimization wizard** allows the user to lock or select either SKU or location to eliminate or include in a particular run. This feature is ideal for slotting new or seasonal product into the warehouse.

Settings

SM280714110955

Run Description:

Display Dimensions

Door X (Left to Right):

0

% Top:

0

Door Y (Top to Bottom):

0

% Middle:

0

Free Space:

0

% Bottom:

0

Sort Tolerance:

0

☐ Break Chamber on Family

☒ Disable Summary Screens

☐ Break Aisle on Family

☐ Use BOH Slotting Constraints

☐ Break Loc on Family

☐ Allow Multiple Pickfaces

☐ Break Bay on Family

☐ Force SKU Order

☐ Break Layer on Family

☐ Slot Pickfaces On Same Layer

1

Layers

Slot Master Wizard

Review Active SKUs (Disabled)

Prone through the list of SKUs grouped by Product Family. Activate or Deactivate an entire Family by clicking on the Family Active CheckBox. To toggle individual SKUs within a family click the expander then the SKU Active CheckBox. To Unslot a SKU from a specific Slot expand the SKU and click on each slot you want to unslot.

Family | Family Active | SKU | SKU Active | Location | Bay | Slot | Layer

Select Locations

Zoom

	Location	Aisle	Chamber	Description	Capacity	Bulk
<input checked="" type="checkbox"/>	AA001A	1	1		1	0
<input checked="" type="checkbox"/>	AA002A	1	1		1	0
<input checked="" type="checkbox"/>	AA003A	1	1		1	0
<input type="checkbox"/>	AA004A	1	1		1	0
<input type="checkbox"/>	AB001A	2	1		1	0
<input checked="" type="checkbox"/>	AB002A	2	1		1	0
<input checked="" type="checkbox"/>	AB003A	2	1		1	0
<input checked="" type="checkbox"/>	AB004A	2	1		1	0
<input checked="" type="checkbox"/>	AC001A	2	1		1	0
<input checked="" type="checkbox"/>	AC002A	2	1		1	0
<input type="checkbox"/>	AC003A	2	1		1	0
<input checked="" type="checkbox"/>	AC004A	2	1		1	0

Select All

Select None

Invert Selection

Filter Selection

Cancel

Prev

Next

Save

Finish

Sort Order

Tier 1 - Product Family

Current Selection

<END SORT>

Toxicity Rating : asc

Velocity : desc

Number of SKUs : asc

Ranking : desc

Ranking Expression : desc

Up

Down

Toggle Asc/Desc

Tier 2 - Stock Item

Current Selection

<END SORT>

Toxicity Rating : asc

Crushable Rating : desc

Tie Count : asc

Velocity : asc

Weight : desc

SKU Code : desc

Up

Down

Toggle Asc/Desc

Tier 3 - Location

Current Selection

<END SORT>

Chamber Proximity : asc

Aisle Proximity : asc

Pick Path Sequence : asc

Pick Path Proximity : asc

Location Proximity : asc

Cube Fill : asc

Up

Down

Toggle Asc/Desc

Cancel

Prev

Next

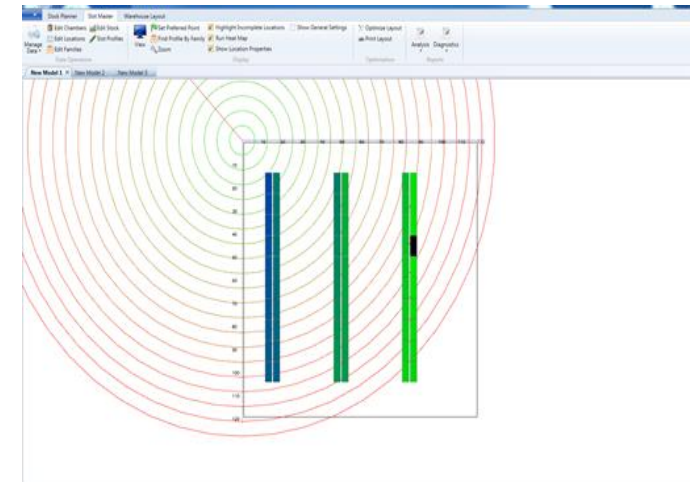
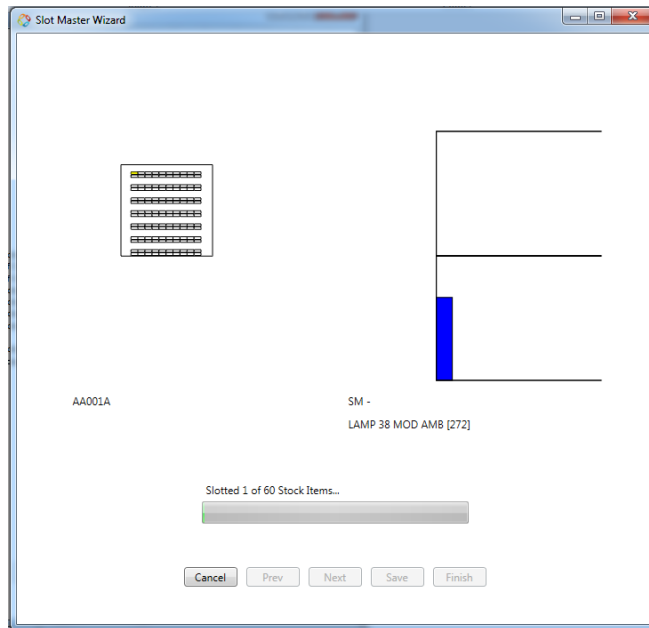
Save

Finish

# Slot Master

## Cube Utilization

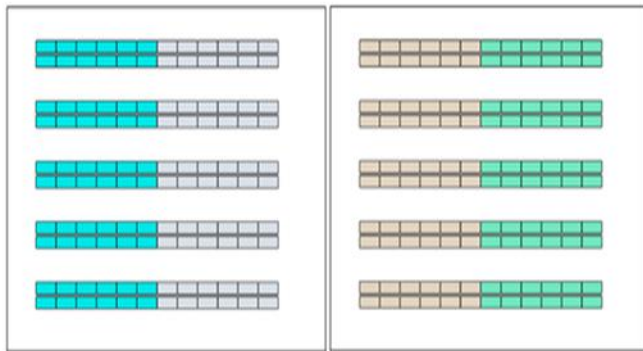
- After slotting the product, Slot Master will produce location and utilization statistics
- Maximize the storage density in your operation with measurable statistics



# Zone Slotting and Balancing

Select Zones

	ZoneID	Description	Colour
<input checked="" type="checkbox"/>	100	Z1	Light Blue
<input checked="" type="checkbox"/>	200	Z2	Orange
<input checked="" type="checkbox"/>	300	Z3	Cyan
<input checked="" type="checkbox"/>	400	Z4	Green



- Set up zones easily to apply vertical or horizontal or both assignments
- Balance activity In zones for optimized pick module functionality
- Complete zone reporting and optimization

# Benchmark

- ➔ Uses 5 industrial engineered data bases to calculate average KPI's within an operation
- ➔ Captures 72 measures of information (17 Mandatory) to calculate work levels and performance measure
- ➔ Provides a unique comparison to industry averages and target performance
- ➔ Provides the basis for activity-based costing in the operation - a key necessity for professional logistics operations

## Benchmark Layering

- ➔ We use layering to evaluate different parts of the business
- ➔ We can make decisions on how to change the operation of certain product groupings and make them more efficient



# Benchmark

The screenshot displays the Benchmark software interface. At the top, there are three buttons: 'Calculate' (with a calculator icon), 'View Report' (with a clipboard icon), and 'Exit' (with a red X icon). Below these are five tabs: 'Basic Parameter', 'Activity', 'Warehouse Operations', 'Warehouse Basics', and 'Dual Cycling TR'. The 'Activity' tab is currently selected. The main content area is divided into three sections:

- Basic Activity:** Contains three input fields with yellow highlights: '%Performance against Standard' set to 82.00 %, 'Conversion Hours to headcount' set to 40.00, and 'Cost per Hour' set to 20.00.
- Totals:** A table showing calculated values:

Hours:	4,581
Headcount:	114.52
Costs:	91,619.67
Cost/Unit:	0.54
- Imperial or Metric Measurement:** Two radio buttons, 'I' (selected) and 'M'.

At the bottom right, there is a section for 'Overall cases per hour and rate' showing 'Overall Cases per hour' as 37. Below this, a text box states 'Costs are based on the following hourly rate: 20.00'. A small pop-up window titled 'Executive Suite' is visible in the bottom right corner, containing text about an announcement and an invitation to accept.

- **Calculate** Benchmark standards and overall productivity against a standard.
- **Use** Benchmark to forecast labor requirements for future activities.
- **Measure** operation vs. operation KPI's in a network

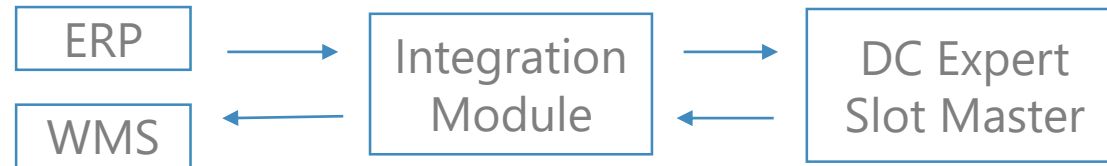
# Data Integration Module

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# Benefits

- Integration Module creates an Easy Button approach to the continuous slotting experience
- Rules are predefined so that both Micro and Macro slotting are performed in sequence on a large amount of data.
- Set up and implementation are very quick and integration can be customized to any ERP or WMS platform.
- All filters back to the WMS can be customized to meet the needs of each particular operation



# Technology



Using an SQL database the Integration unit will receive data from the ERP or WMS and macro slot (order SKU's) into the most appropriate storage mediums in the building.



Once Macro slotting has been completed, the file will be run in Slot Master to determine the best slot possible based on the rules configured in the Slot Master module.



Results will then be filtered by operator in the integration module to suit the operation prior to moves being uploaded into WMS or Task Management system.



If desired, moves can be printed out for movement sheets.

# m▲ntis



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Thank you!  
If you have any questions at all please  
contact us at 905.829.3514

