

The Book of Movements

A Technical and Training Guide For iDempiere Warehouse Management System

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This is part of the iDempiere Open Source Project Distro codenamed:

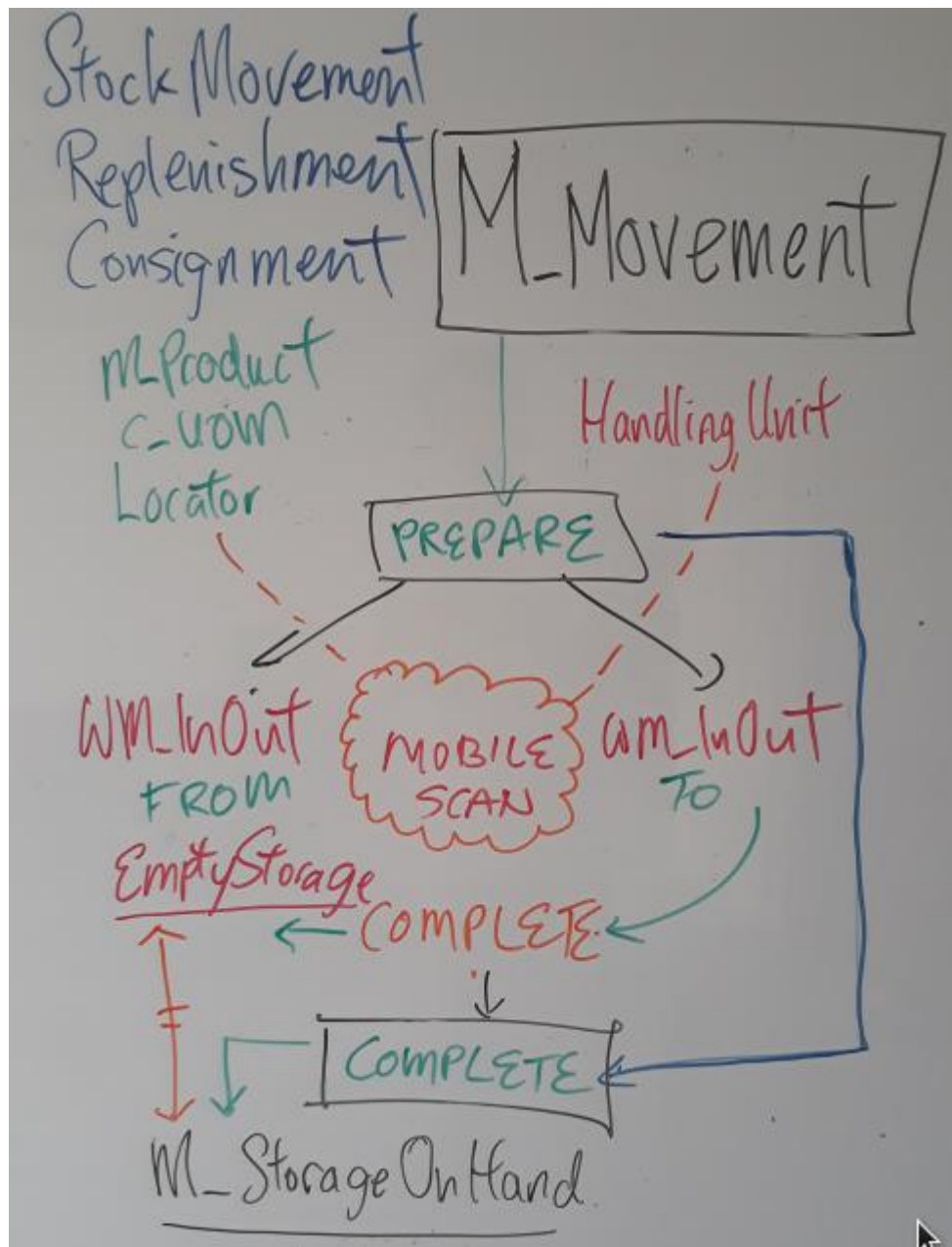
Canggih ERP

Usage is coupled with additional plugins, ***org.red1.wms*** and ***org.red1.wmsex*** and ***org.canggih.consignment***. For more information, refer to www.red1.org/adempiere.

The owner of this project is **HPCS Sdn Bhd**, Shah Alam, Malaysia. All made available under GPL version 2.0.

Please get educated first before asking what it really means -

<https://www.gnu.org/philosophy/selling.en.html>



"Daring ideas are like chessmen moved forward: they may be beaten, but they may start a winning game."

— Johann Wolfgang von Goethe

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This guide is for the use of the following software applications:

1. iDempiere ERP from www.idempiere.com
2. Warehouse Management System from www.red1.org (initial sponsorship by SYSNOVA, Bangladesh and MotiveSolutions, Thailand)
3. Extension plugins from www.red1.org (sponsored by HPCS).
4. Source code of WMS and WMSExt and Consignment plugins at <http://bitbucket.org/red1/>
5. And compile binary plugins at <http://sourceforge.net/projects/red1/files>

This guide assumed you have a fully setup iDempiere ERP together with the WMS (Warehouse Management System). HPCS is the main company responsible for a major use case that implements such a system here in Malaysia. The guide begins with guidance how to move the storage around using the following concepts:

6. Stock Movement
7. Replenishment
8. Consignment

Users that are undergoing training just need to follow the STEPS in bold. The other notes is for deeper understanding.

VERSION 2 NOTE

A good application must allow easy ReverseCorrect or Void of any document. It is a convention in Compiere-iDempiere ERP application model. Thus we have incorporated such capability particularly to reverse Movements that will check linked Picking/Putaway documents to be reversed. If they are further linked to Storage lines, likewise reversed too. This shall then let the app and data stay in synch. We also written a 'SynchCheck' routine hidden in the Repair Movement process to make a comparison analysis between WMS Storage data and Core's StorageOnHand data. We also have ReverseCorrect for the Sales/Purchase cycle. A big bonus is more user friendliness with direct Import Excel of Sales and Consignment listings. The SO/PO can also break up bulk orders into box or line qtys depending on each product's highest UOM's DivideRate.

Background of Client

The client is a nation-wide, leading, and large manufacturing & distribution company, providing schooling uniforms and accessories. It has a manufacturing production base of cloth sewing in Kota Bahru, on the east coast of Malaysia. Its HQ is on the west coast in Shah Alam. It has 300 sewing workers in the Kota Bahru factory, This ERP project is divided into 3 phases:

- a. Warehousing
- b. Manufacturing
- c. Financials

It is also integrated into its E-Commerce platform, Point of Sales, and IoT mobile apps also provided by HPCS.

Client's main concern is to keep stock of its raw materials and finished goods kept in its warehouses and distributors and retailers that purchase from them either on cash or consignment basis. It has to provide timely information to the warehouse floor to make quick decisions on its stock exposures and nearest supply points to fulfill its 250 outlets all over the country.

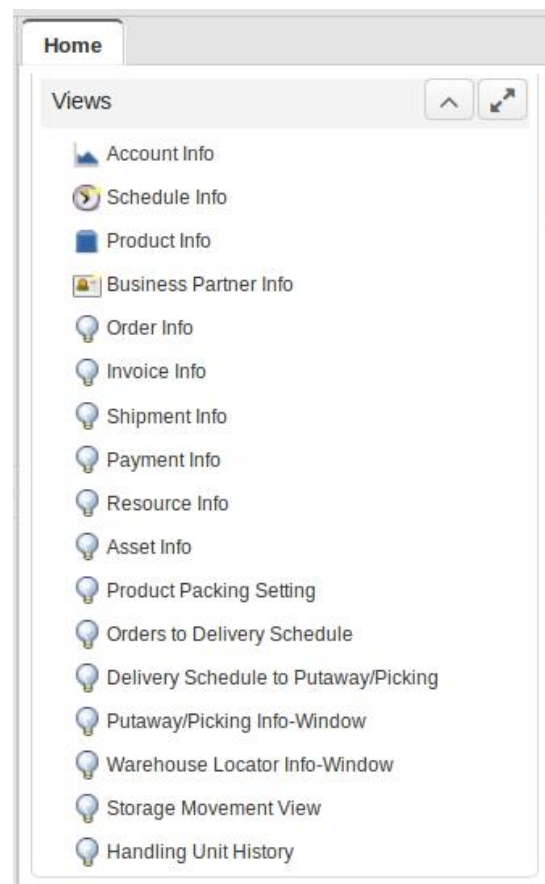
It also deal with suppliers of raw materials and accessories from local and overseas.

The client has freshly migrated all Purchases, Material Receipts and Stock information of its warehouses into the iDempiere ERP, where now we have also the other plugins installed. Note that these plugins follows strictly RED1's unique but critical best practice of non-core touching, and does not impact any core processes.

On the right, is the front panel view of ready Info-Windows, which shall appear when the plugins are fully active.

Please refer to the community forum or our paid consulting for implementation advice.

This guide assumes you already have a fully installed and data migrated instance of iDempiere + WMS plugins.



Storage Movement

This Info-Window, accessible from the front panel of iDempiere, is the first window of truth. This is because it shows that:

- 1) Your Warehouse Management System is working. Data in there are made a layer above the underlying core Material Management.
- 2) You have active data ready to be moved.

STEP A1 - Open Storage Movement View

Home
Storage Movement View X

Handling Unit

Product

UOM

InOut

Date Start >

Aisle (X)

Bin (Y)

Sales

Order

Transaction

Attribute Set

<<

<

1

/ 3

>

>>

Stock Movement

Expired Stock

Report Storage Movement

STEP A2 - Select Lines To Move

In this Storage Movement Info-Window View, select the items that you wish to move. Then press the Stock Movement button at the bottom.

STEP A3 - Click on Stock Movement

STEP A4 - Select Warehouse, Locator

Pull down the Locator list and select the Locator name you wish to send the items to. The selection of available Locators are restricted to the Warehouse chosen. If there is no Warehouse selected, it shall list down ALL locators in the WMS.

STEP A5 - Press

OK.

After a few seconds, a success dialog box shall open with a link to the newly created Inventory Movement record.

Stock Movement

Internal movement of selection to a single Locator. Can move by Qty of each selection.
 Select Warehouse (Default Locator) or exact Locator. Capacity of target locator does not matter. Click on Movement link and open Movement to Prepare - generate Picking/Putaway Lists for mobile scanner on floor.

QtyMovement

Warehouse

Locator

☐ Create New Record

Warehouse

Locator

Type

Aisle (X)

Bin (Y)

Level (Z)

Key

STEP A6 - Click on Link

Stock Movement

Process completed successfully

Lines done: 3

[Jun 27, 2019, 11:59:11 AM MYT Inventory Move Created](#)

STEP A7 - Process Prepare

Click on the Gear icon to Document. Select the Process to Prepare.

The screenshot shows the 'Inventory Move: 10000001' window. The 'Move' tab is active, displaying a 'Data requested' section with fields for Document No (10000001), Sales Representative, Description (Stock Movement To Store West-3-C-1), Movement Date (06/27/2019), and Document Type (Material Movement). Below this is the 'Delivery' section with Business Partner (Standard) and Partner Location. The 'Move Line' section shows a table with 3 records:

Line No	Product	Locator	Locator To	Movement Quantity	Active
10	Hoe-Hoe 4 ft	HQT-2-A-1	Store West-3-C-1	60	<input checked="" type="checkbox"/>
20	Hoe-Hoe 4 ft	HQT-2-A-1	Store West-3-C-1	60	<input checked="" type="checkbox"/>
30	Hoe-Hoe 4 ft	HQT-2-A-1	Store West-3-C-1	60	<input checked="" type="checkbox"/>

It shall generate a set of 2 WMS InOut documents. One is for Picking and accessible by the mobile scanner app. The other is for the Putaway also accessible by the mobile scanner app.

STEP A8 - Zoom Across to Picking/Putaway Records

After they are processed, you can just easily Zoom Across without leaving your Movement window or hunt them down at the Search Menu. Clicking on the In Out / Inventory Move (#2) shall open both records!

The screenshot shows the 'In Out / Inventory Move (#2)' window. It displays document details for 'Inventory Move: 10000003' and 'In Out: 10000003 Stock Move...'. The fields shown are:

- Organization*: HQ
- Order Reference
- Sales Representative
- Document Type*: Material Movement

STEP A9 Edit the Picking/Putaway Details

You may edit the Handling Unit change in the Picking (Sales Transaction - 1000003) record. Or the Putaway (1000004) if there is a Locator change. No other change is accepted.

In Out

Data requested

	Di Sales Tra	Business P	Name	Document S	Pro	Document No	Approved
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Standard	Stock Movement To Store West-3-C-1 10000001	Drafted	<input type="checkbox"/>	1000003	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Standard	Stock Movement To Store West-3-C-1 10000001	Drafted	<input type="checkbox"/>	1000004	<input type="checkbox"/>

In Out Line

3 Records

	Sequ	Product	UOM	Qty Picked	Locator	Handling Unit	Move Line	Is Packed	Docum
<input type="checkbox"/>	1.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU10	10_60_10000001	<input type="checkbox"/>	
<input type="checkbox"/>	2.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU11	20_60_10000001	<input type="checkbox"/>	
<input type="checkbox"/>	3.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU12	30_60_10000001	<input type="checkbox"/>	

Note the Sequence for Warehouse floor route. Complete the Picking WM InOut document. If the Handling Unit (box) are changed, They be noted automatically.

STEP A10 - Run Process Complete

Complete the Putaway WM InOut document.

In Out

Data requested

	Di Sales Tra	Business P	Name	Document S	Pro	Document No	Approved
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Standard	Stock Movement To Store West-3-C-1 10000001	Drafted	<input type="checkbox"/>	1000003	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Standard	Stock Movement To Store West-3-C-1 10000001	Drafted	<input type="checkbox"/>	1000004	<input type="checkbox"/>

In Out Line

3 Records

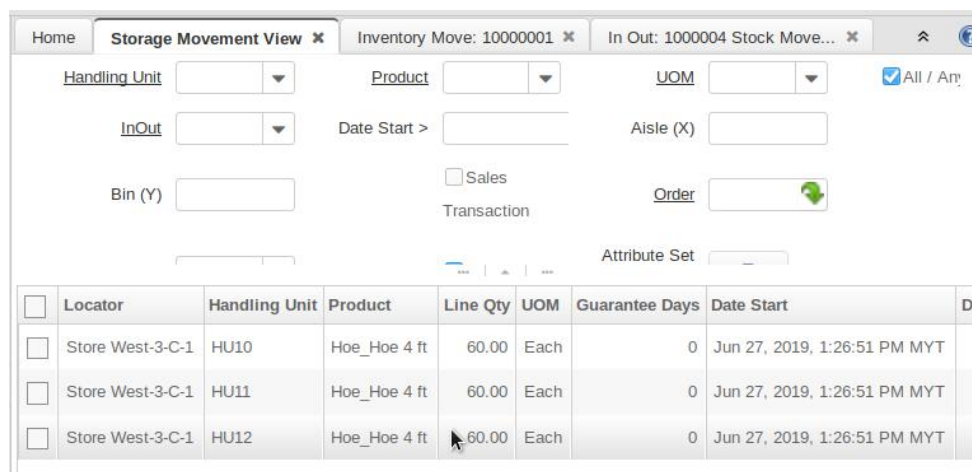
	Sequ	Product	UOM	Qty Picked	Locator	Handling Unit	Move Line	Is Packed	Docum
<input type="checkbox"/>	1.0	Hoe_Hoe 4 ft	Each	60	Store West-3-C-1	HU10	10_60_10000001	<input type="checkbox"/>	
<input type="checkbox"/>	2.0	Hoe_Hoe 4 ft	Each	60	Store West-3-C-1	HU11	20_60_10000001	<input type="checkbox"/>	
<input type="checkbox"/>	3.0	Hoe_Hoe 4 ft	Each	60	Store West-3-C-1	HU12	30_60_10000001	<input type="checkbox"/>	

STEP A11 - Complete Movement Record

Return to the Inventory Move record and Complete it.

STEP A12 - Examine Results

Now, check the Storage Movement View, refresh it, and you will notice the 3 lines have disappeared and shall appear in a different Locator, i.e. **Store West**.

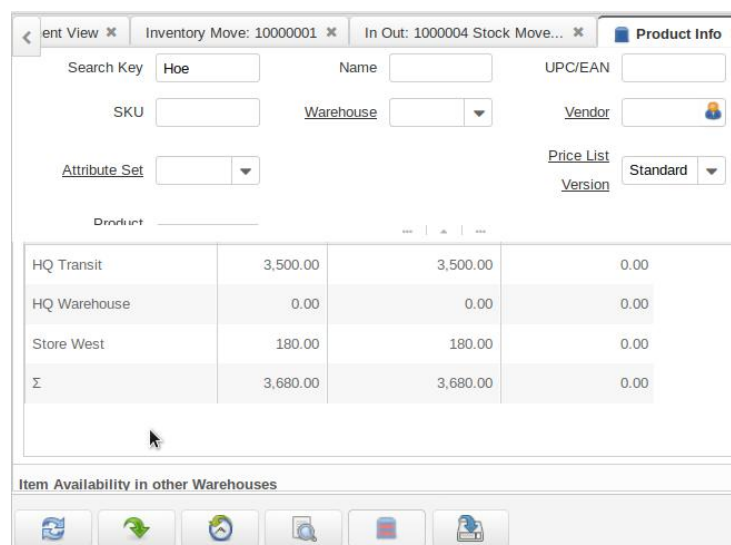


The screenshot shows the 'Storage Movement View' window. At the top, there are tabs for 'Home', 'Storage Movement View', 'Inventory Move: 10000001', and 'In Out: 1000004 Stock Move...'. Below the tabs are various filters: 'Handling Unit', 'Product', 'UOM', 'InOut', 'Date Start >', 'Aisle (X)', 'Bin (Y)', 'Sales' checkbox, 'Transaction', 'Order' button, and 'Attribute Set'. The main table has columns: 'Locator', 'Handling Unit', 'Product', 'Line Qty', 'UOM', 'Guarantee Days', 'Date Start', and 'De'. The table contains 3 lines of data:

Locator	Handling Unit	Product	Line Qty	UOM	Guarantee Days	Date Start	De
Store West-3-C-1	HU10	Hoe_Hoe 4 ft	60.00	Each	0	Jun 27, 2019, 1:26:51 PM MYT	
Store West-3-C-1	HU11	Hoe_Hoe 4 ft	60.00	Each	0	Jun 27, 2019, 1:26:51 PM MYT	
Store West-3-C-1	HU12	Hoe_Hoe 4 ft	60.00	Each	0	Jun 27, 2019, 1:26:51 PM MYT	

STEP A13 - Examine Product Info

Go to Product Info View and check for the product availability. They are reflected correctly in the core **M_StorageOnHand** data.



The screenshot shows the 'Product Info' window. At the top, there are tabs for 'Product View', 'Inventory Move: 10000001', 'In Out: 1000004 Stock Move...', and 'Product Info'. Below the tabs are various filters: 'Search Key', 'Name', 'UPC/EAN', 'SKU', 'Warehouse', 'Vendor', 'Attribute Set', 'Price List', and 'Version'. The main table shows product availability data for 'Hoe'.

Product	Qty	Cost	Price
HQ Transit	3,500.00	3,500.00	0.00
HQ Warehouse	0.00	0.00	0.00
Store West	180.00	180.00	0.00
Σ	3,680.00	3,680.00	0.00

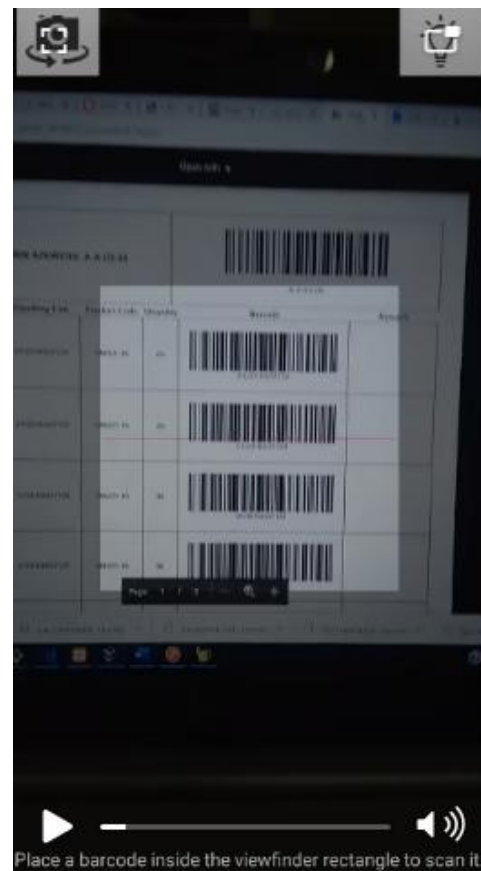
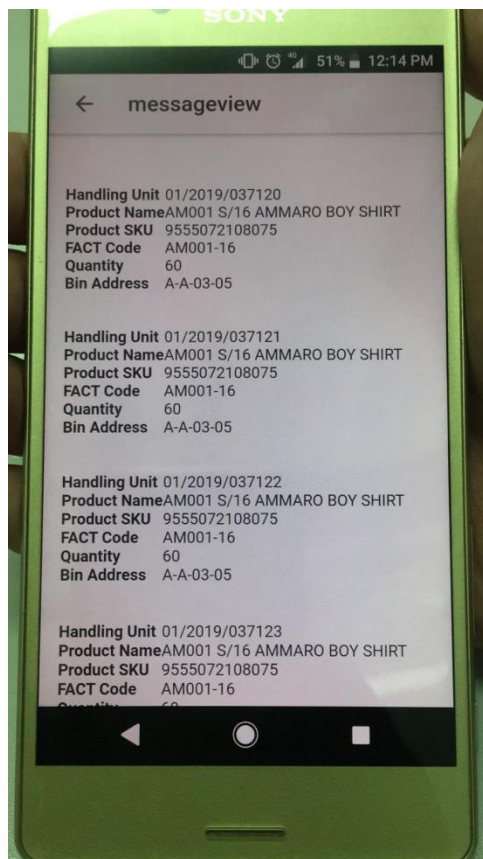
Below the table, there is a section titled 'Item Availability in other Warehouses' with several icons for different warehouse types.

Note that the WMS layer of Picking and Putaway documents are controllable by the warehouse floor mobile app, also made available by HPCS in a separate application to be released separately also under the FLOSS policy.

The use of the mobile app give full traction and control of the completion of documents, which works with a background processor also done separately by HPCS to monitor the open documents and complete them when fully updated by the mobile app.

What is shown here is in lieu of such apps, the Stock Movements are still controllable and desktop manageable.

Note also the stocks moved by this method does not check the capacity constraint of the receiving Locator. This is for emergency and urgent relocation purposes. Other features of the software such as Replenishment and Consignment fully utilise the capacity control and flow of the stock picking and putaway.



Replenishment Movement

The Replenishment Process is a major feature in the Stock Movement design. It uses the following setup in the WMS:

- Zoning. The allocation of specific set of locators for a particular set of products
- Material Replenishment. A core function of iDempiere where Products are given Replenishment details such as Reorder Qty, Maximum and Minimum Levels, Order Pack Qty and type of Replenishment.
- Auto-Replenishment Setup. The Material Replenishment based on the Zoning information provided by the user.

The first and third feature above are part of the extra plugins capability. The second one is already present in the iDempiere project since Compiere, the parent project it forked from.

Type Table Setup

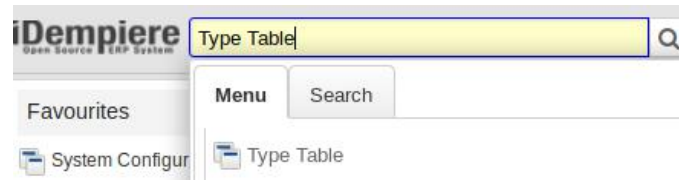
This is to setup the zoning information which Replenishment and Putaway reference to.

Below is how the Client sets up its Zoning information. The Excel sheet is easily imported into the Type Table via Red1's Ninja Tool into WM_TypeTable.

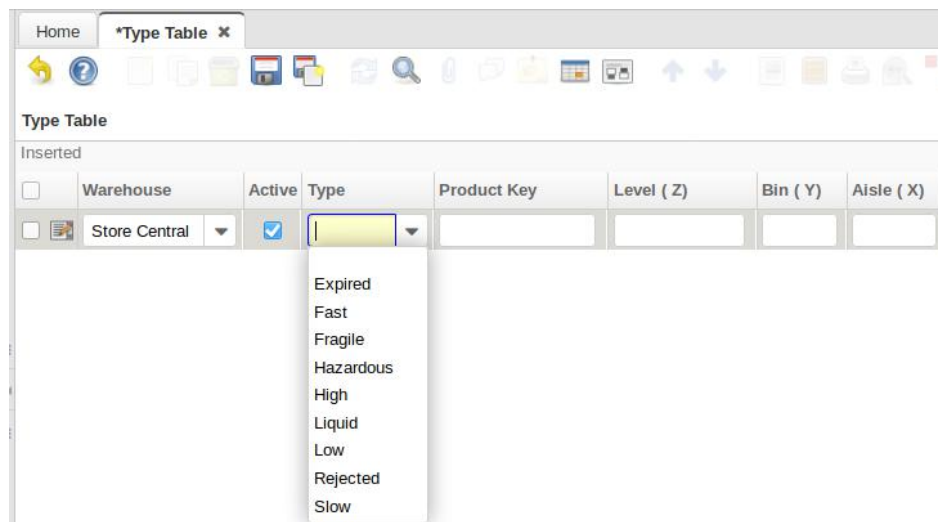
	A	B	C	D
1	M Warehouse ID	ProductValue	WM Type ID	X
2	SAWH-A	CP001	BOY SHIRT	A
3	SAWH-A	CP004	PRIMARY LONG PANTS	B
4	SAWH-A	CP014	SECONDARY LONG PANTS	C
5	SAWH-A	CP022-SBLS	CP BOY LONG SLEEVE WHITE	C
6	SAWH-A	CP021-BLS	CP BOY LONG SLEEVE BLUE	C
7	SAWH-A	CP009	BAJU KURUNG	D
8	SAWH-A	CP008	PRIMARY LONG SKIRTS	E
9	SAWH-A	CP018	SECONDARY LONG SKIRTS	F
10	SAWH-A	KT2002	TUDUNG	G
11	SAWH-A	CP009-LBR	PAKAIAN WARNA SEMUA ITEM	G
12	SAWH-A	CP009-LGR	PAKAIAN WARNA SEMUA ITEM	G
13	SAWH-A	CP009-LPK	PAKAIAN WARNA SEMUA ITEM	G
14	SAWH-A	CP009-LPL	PAKAIAN WARNA SEMUA ITEM	G
15	SAWH-A	CP009-LYL	PAKAIAN WARNA SEMUA ITEM	G
16	SAWH-A	CP014-	PAKAIAN WARNA SEMUA ITEM	G
17	SAWH-A	CP021-	PAKAIAN WARNA SEMUA ITEM	G
18	SAWH-A	CP008-	PAKAIAN WARNA SEMUA ITEM	G
19	SAWH-A	CP018-	PAKAIAN WARNA SEMUA ITEM	G
20	SAWH-A	CP007	PINAFORÉ	F

STEP B1 - Using Type Table

Search in the Menu field, for Type Table. Click on it. In the opened Type Table, fill in the Type, what product starting Value to be allocated that type, and the Locator zone to assign the type to.



You may create as many types, even overlapping a same locator. Or having many types to a certain product. Just remember this is up to your planning. Good news is that you can always reset this anytime and the WMS shall follow in all its future putaway and replenishment calculation



Product Key here is just the starting value that exists among the Product's Value Key. Example starting with Ho for Hoe and Holly Bush, then just key in 'Ho'.

STEP B2b - Set Product Locator

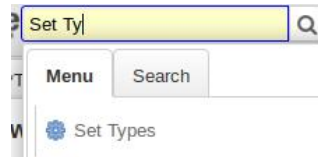
Option when using TypeTable, use process Set Product Locator to put in the Type information inside the Storage Type and Product Type tables. This basically are the Zoning information.

Later, we set up the M_Replenish data according to the capacities of the Locators defined by the Zoning information in Type Table. In our case above, we use the alternative smaller set Set Types.

These STEP 12 and 12b are used in the Client use case, as they have a large set of zoning information and they may not rely on Category but naming convention.. In our Garden World example we are going to setup 2 types only. So next page is how to do it alternatively.

STEP B3 - Setup Types

There is an alternative process if your products are mostly well categorised and few. For example we going to set 'Bushes' to whole of Aisle 4 at HQ Warehouse.



First you have to create new Types before we can use them. Go ahead and create Fragile and Fast types on your own. No screenshot shown. Try it. They are simple.

STEP B4 Create New Type = Fragile and Fast

STEP B4b Set Fragile to Bushes / HQ / 4

Click OK. Note the result that appears to confirm it worked.

Next setup another type, Fast for Tools Category, at Aisle 2 of both HQ Warehouse and Transit.

STEP B4c - Set Fast to Tools for HQ/Transit / 2

STEP B5 - Set SourceWarehouse

The following are only set one time. But they can be set again each time user wish to make changes to such setup. Before running Replenish Report Process, we have to set a [Source Warehouse](#) for the Warehouse that is going to be Replenished. Set it to another - HQ Warehouse. It shall fetch stock from there to the HQ Transit.

The screenshot shows the 'Warehouse Locators: HQT H...' window. The 'Client' is 'GardenWorld' and the 'Organization' is 'HQ'. The 'Search Key' is 'HQT'. The 'Name' is 'HQ Transit'. The 'Description' is empty. The 'Active' checkbox is checked, and the 'In Transit' checkbox is also checked. The 'Address' is '2828 SW Corbett Ave, Suite 130, P'. The 'Element Separator' is '*'. The 'Source Warehouse' is set to 'HQ Warehouse'. The 'Replenishment Class' is empty. The 'Reservation Locator' is 'HQT-4-C-2'. The 'Disallow Negative Inventory' checkbox is unchecked.

STEP B6 Setup Product PO

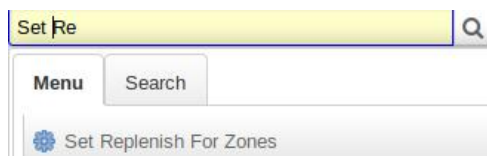
Make sure that the products have a Purchasing Vendor. This is stored in the M_Product_PO. Below is where to find such data on the Product Window, [Purchasing](#) Tab.

The screenshot shows the 'Product: Hoe Hoe 4 ft' window. The 'Client' is 'GardenWorld' and the 'Organization' is '*'. The 'Search Key' is 'Hoe' and the 'Version No' is empty. The 'Name' is 'Hoe 4 ft' and the 'Description' is '4 Foot Metal Hoe'. The 'Purchasing' tab is selected, showing a table with 1 record.

Organization	Product	Business Partner	Quality Rating	Active	Current vendor
*	Hoe_Hoe 4 ft	Seed Farm Inc.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

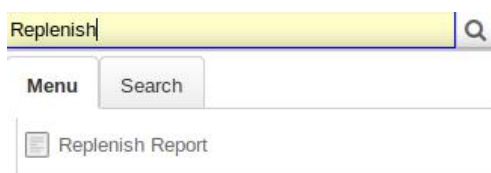
STEP B7 - Set Replenish For Zones

This process is to setup the M_Replenish table under the Product window. Instead of manually input the zones' capacities under the Replenish tab, as the Maximum Order Qty, this process does it automatically for you en bloc.



STEP B8 - Open Replenish Report

Now with the STEP 16 set done, we are ready to run the regular or periodic Replenish Report. From the Menu search box, key in Replenish and choose Replenish Report.



STEP B8b - Set HQ Transit, Inventory Move

Fill in the details as shown. Click OK and a Report will be generated. If the process is successful an Inventory Movement will also be linked.

 A screenshot of a software window titled 'Inventory Replenish Report'. The window has a title bar with 'Home', '*Type Table x', 'Set Types x', and 'Replenish Report x'. Below the title bar is a text area containing instructions: 'Report lists products to be replenished. Note that a product can have only one current vendor. If there are more then vendor per product, both records are reset. You need to select a current vendor manually. Movements are only created, if a sourcing warehouse is defined for the warehouse to be replenished.' Below the text area are four dropdown menus: 'Warehouse' (selected: HQ Transit), 'Business Partner' (empty), 'Create' (selected: Inventory Move), and 'Document Type' (selected: Material Movement). At the bottom, there is a 'Print Format' dropdown, a 'View Report' button, an 'HTML' dropdown, a 'Summary' checkbox, a 'Saved Parameters' dropdown, and two buttons: 'OK' (with a green checkmark) and 'Cancel' (with a red X).

The above creates a Replenish Report for HQ Transit, which will source from HQ Warehouse, according to the setting in the M_Replenish table.

[Home](#)
[Replenish Report](#)
[Report: Replenish Report](#)

Report: Replenish Report

HTML
Replenish Report
☐ Summary

Doc Type	Maximum Level	Minimum Level	Minimum Order Qty	On Hand Qty	Ordered Qty	Order Pack Qty	Product	Qty to Order	Replenish Type
Material Movement	5,040	2,579	1	0	0	1	Hoe_Hoe 4 ft	5,040	Maintain Maximum Level
Material Movement	84	41	1	0	0	1	Rake-Bamboo_Rake Bamboo	84	Maintain Maximum Level
Material Movement	84	41	1	0	0	1	Rake-Metal_Rake Metal	84	Maintain Maximum Level
Material Movement	84	41	1	0	0	1	Weeder_Weeder	84	Maintain Maximum Level
Material Movement									Maintain

[Replenish_Report13619924477561683552.html](#)

STEP B9 - Click on Inventory Movement Link

There is an Inventory Movement document also created and it is hidden by this report. Click back to the earlier tab, Replenish Report.

Click on the Inventory Move Created link. It shall open Inventory Move window.

Home

Replenish Report

Inventory Move: 10000000

Report: Replenish Report

Move

[1/1]

Data requested

Description

Inventory Replenishment: HQ Warehouse->HQ Transit

Move Line

Attributes

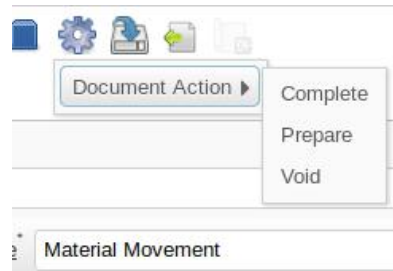
9 Records

1 / 1

	Line No	Description	Search Key	Active	Product	Locator	Locator To	Movement Q
<input checked="" type="checkbox"/>	10	Total: 5040	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	Default HQ Lo...	HQT-4-C-2	20
<input type="checkbox"/>	20	Total: 5040	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQ-2-A-1	HQT-4-C-2	2,520
<input type="checkbox"/>	30	Total: 5040	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQ-2-A-2	HQT-4-C-2	1,140
<input type="checkbox"/>	40	Total: 84	Rake-Bamboo	<input checked="" type="checkbox"/>	Rake-Bamboo-Rake Ba...	Default HQ Lo...	HQT-4-C-2	15
<input type="checkbox"/>	50	Total: 84	Rake-Metal	<input checked="" type="checkbox"/>	Rake-Metal-Rake Met...	Default HQ Lo...	HQT-4-C-2	20
<input type="checkbox"/>	60	Total: 84	Weeder	<input checked="" type="checkbox"/>	Weeder-Weeder	Default HQ Lo...	HQT-4-C-2	20

STEP B10 - Movement Prepare

This shall generate a pair of Warehouse Picking and Putaway documents. At the Movement window, you may review and even edit the details in the Lines tab. Then all is OK, click on the Process icon on the top right and select Prepare. If it does not appear, that means the WMSExt plugin is not installed or active.



STEP B11 - Open WM Picking/Putaway Documents

Remember the Picking/Putaway documents are processed by the mobile app integrated to the WMS in our use case. But it still can be manually accessed and processed on a desktop as shown in the Stock Movement Zoom Across function earlier.

The In Out Picking can be edited by the Mobile App to change the box Handling Unit information, due to certain unforeseen reasons such as the box is hidden or not accessible behind other boxes, and the warehouse floor picker wishes to replace that with a more convenient option of the same size, type and Locator. S/he cannot pick from another Locator or type of material. User just has to scan in the new Handling Unit, according to the instruction in the Mobile App (to be described in another document).

STEP B11b - Editing Picking/Putaway Details

Similarly, as in STEP 9b before, user may edit the records. In the Picking (Sales Transaction='Y') only the HandlingUnit change is accepted. It means a box has been swapped due to convenience of reaching it But it must be of equal quantity, size and product.

Under the Putaway record (Sales Transaction='N'), only the Locator can be changed, i.e. the box has to be put in another bin instead of the assigned one.

In box these cases, the mobile app can automatically update these details directly as it is integrated to the WMS.

STEP B12 - Complete Pick/Putaway Movement

Once the underlying WM InOut Picking and Putaway records connected to the Movement record are processed, and completed, the Movement record is automatically completed and the StorageOnHand details will be affected.

Consignment Movement

Now we come to the third part of the Warehouse system enhancement for Movement, which is Consignment. Depending on the country practice, usually a consignment is not an outright sale yet. It is merely a supplier sending goods to a retail outlet to sell, and at the end of a period charged only for the quantity sold and the rest are returned.

Such a sending and returning are actually movements by itself, and thus the outlet can be treated as a virtual Warehouse. And this is how our WMS module has setup this feature easily for the users to operate quite right away.

STEP C1 Open Consignment Window

In the main menu search box, key in 'Consignment'.



Consignment Window is a special window created to make it easy to manage the virtual Warehouse creation, sending goods to it, receiving returns from it, and issuing a nett Sales Order. All from the same window. There is also a Project Code and Campaign Code, to allow project costing and ABC - Activity Based Costing.

What is special about the new WMS plugins, is that, different packaging **Unit of Measures Conversions** can be used. For example Box of 60, and Plastic of 5. The plugin will automatically convert into Each.

At the Movement and Picking / Putaway level the base UOM of Each is used, after any conversion from the higher packing sizes.

STEP C2 Fill in Consignment Window

Provide the following information:

- Reference Name - this is referred to in sub detail tab and generated documents.
- Business Partner - this is the outlet or retailer that you are sending the consignment to.
- Warehouse - if this is not present, just Save the window twice and it shall create automatically.
- Date Promised - this shall be used for Movement Date.
- PriceList - optional at this moment
- Sales Rep - optional at this moment
- Project/Campaign Code - this is to associate this activity with a particular Project or Campaign.

The screenshot displays the 'Consignment' window. The top section contains form fields for 'Client' (GardenWorld), 'Organization' (HQ), 'Reference Name' (Special), 'Warehouse' (AEON Klang), 'Date Promised' (07/05/2019), 'Time' (12:00:00), 'Business Partner' (AEON Klang), and 'Type'. Below this is a 'Consignment Line' tab with a table showing one record. The table has columns for 'Consignment', 'Name', 'Product', 'UOM', 'Available', 'Qty Movement', and 'Attri'. The record shows 'Special' consignment, 'Hoe_Hoe 4 ft' product, 'Box60' UOM, and available quantities of 0 for HQ and 61 for HQT.

Consignment	Name	Product	UOM	Available	Qty Movement	Attri
Special		Hoe_Hoe 4 ft	Box60	HQ:0 HQT:61	5	

STEP C3 Fill in ConsignmentLine

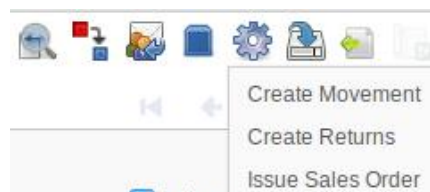
At the Consignment Line tab, you can fill in:

- Product
- UOM - Different packaging can be defined under Unit of Measure Conversion
- Qty Movement - i.e. quantity of boxes, or qty of plastics or qty in pieces.

Note the Available column, after saving the line, will show the available converted quantities under each warehouse that is defined under the same Organization. In this case, it is HQ Main, and HQ Transit. HQ has zero and HQT has 61 available boxes of 60.

STEP C4 - Create Consignment Movement

At the upper tool bar, at the gear icon for available processes, you can find 3 items. Choose the first one, Create Movement.



A dialog window shall appear.

A screenshot of a 'Create Movement' dialog window. The title bar says 'Create Movement'. The main text reads: 'Creates Movement Document to Prepare for Picking/Putaway. Run Prepare to generate Picking/Putaway lists for mobile scan to mark and input any Handling Unit change. Then Complete them before Complete this Movement. Then StorageOnHand shall be committed. Choose Warehouse (default locator) or an exact Locator'. Below this text are two checkboxes: 'Active' and 'Run as Job', both of which are unchecked. At the bottom left, there is a 'Saved Parameters' label followed by a dropdown menu and two icons (a blue folder and a green document). At the bottom right are two buttons: 'OK' with a green checkmark icon and 'Cancel' with a red X icon.

It's help description explains what will happen after the Movement record is created. Do not need to fill in anything. Just press OK. A result box will open with description of what been created, in this case, 5 boxes for a single line defined in the Consignment Line. A link to the generated Inventory Move is also provided.

A screenshot of a 'Create Movement' dialog window showing a successful completion message. The title bar says 'Create Movement' with a close button (X). The main content area has a blue information icon (i) on the left. To its right, the text reads: 'Process completed successfully', 'Iterated - 5 for consignment list of: 1', and a blue hyperlink: 'Jul 5, 2019, 6:16:39 AM MYT Inventory Move Created'. At the bottom right, there is a green checkmark icon.

STEP C4b Click on Inventory Move link

Click on the Inventory Move link, and the Inventory Movement window shall open.

STEP C5 Review Consignment Movement

Home Consignment: Special x Inventory Move: 10000001 x

Move

Data requested

Description Consignment Out Special AEON Klang

Movement Date* 07/05/2019 Document Type* Material Movement

Delivery

Business Partner AEON Klang Partner Location

Shipper User/Contact

Move Line Attributes

5 Records

Line No	Search Key	Active	Product	Locator	Locator To	Movement Quantity
10	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
20	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
30	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
40	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
50	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60

Check the newly opened Movement record. Note that all the details of who the Business Partner is, and where the Locator (from) and Locator To is referring to are correct. Also note the assumed box quantity based on the conversion formula of 60 is used.

This should exist as line quantity in the storage as captured in the Empty Storage Line table. If not, the system will look for larger ones and break them up. Those such break-ups will be prompted in the mobile app on the warehouse floor, so that it can return the exact boxes as well as broken up, and their Handling Unit number/labels as scanned of their barcodes.

New boxes for broken up quantities will be assigned new Handling Unit number label during the floor pick up and relayed back to the Picking document automatically.

During pickup, the mobile scanner can also scan a different box of the same type and size and same Locator but different Handling Unit. This is because a particular given box maybe blocked inside a bin and another box is in front of it that is the same. Later we shall examine this in detail.

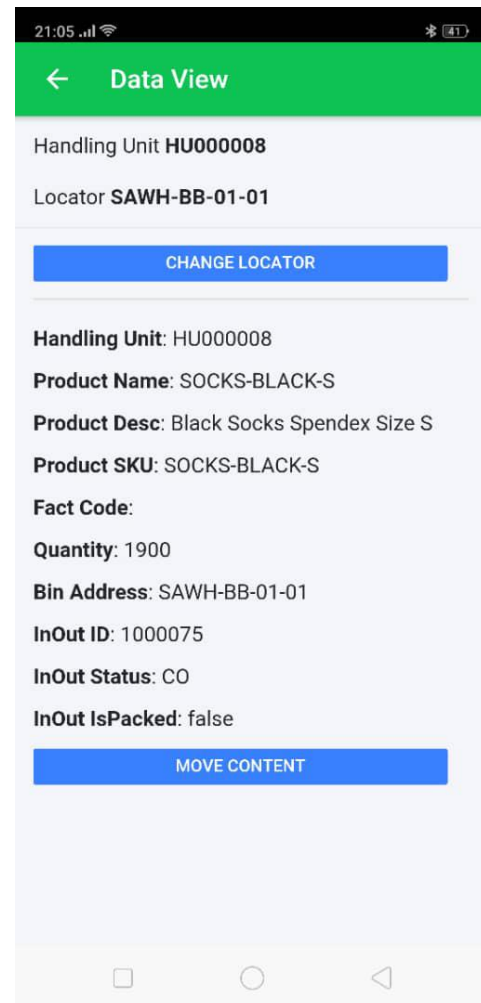
STEP C7b Mobile App Scan to Pick Up

The mobile app (source repository link will be provided later), comes in handy for a couple of reasons:

1. To capture bar-code labels of boxes and items labeled and referenced in picking and put-away lists generated by the WMS.
2. The user has the convenience of a common mobile phone app instead of a dedicated and expensive scanner. Any mobile phone can use this.
3. The user can opt to input data by manual keypad input in lieu of a bar-code.
4. The user has options to make floor decisions without wasting time such as:- change of box handling unit due to a certain box been not pick-able either due to be hidden or missing; the ability to change Locator during put-away, as the location bin maybe blocked or full; and make quick Movements on its own.

Even though the system calculates and estimates best to its programmed ability to ensure a locator is available there maybe mistakes or miscalculations due to human or physical conditions. Thus the system is both flexible and also fast in allowing a normal mobile phone to scan in via bar-code and let the system respond to its status instantly.

The messaging between the mobile phone app and the server is via Active MQ that is asynchronous and thus allows gathering of input independently of the server.



The mobile phone app also can query data quickly by scanning Locator (return contents), Handling-Unit (returns locations and content), or Product SKU (returns availability and locations).

STEP C8 - Complete Picking Document

The scanner or user may take a different Handling Unit. By scan input the new Handling Unit, the system will take note of the change and update the Empty Storage Line accordingly so that the system knows that the previous tagged box is now free, and another one has taken its place.



After the floor has done the pickup, the supervisor can check the Picking Document and execute the Document Action to Complete it.

Home In Out: 1000003 Consignmen... x

In Out

Completed

Business Partner Standard

Name Consignment Out Special AEON Klang 10000001

Document Status Completed

In Out Line

5 Records

Sequence	Product	UOM	Qty Picked	Locator	Handling Unit	Document Type
1.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU000041	Material Movement
2.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU15	Material Movement
3.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU16	Material Movement
4.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU17	Material Movement
5.0	Hoe_Hoe 4 ft	Each	60	HQT-2-A-1	HU18	Material Movement

This action shall commit the Warehouse Storage Lines to the exact box Handling Unit labels.

The WMS also ensure that any open Storage Line that is tagged to a Picking document is not open to any other Picking activity. The Calculate Available Capacity for each storage is also based on pending Picking and pending Putaway that are not yet completed and closed and committed to storage data.

STEP C9 - Complete Putaway Document

The scanner or user may put the box at a different Locator in the target warehouse. In this case it is more related to the Stock Movement and Replenishment Movement. This is because, the Retail Outlet usually has only one large locator as it is outside the system. However if the outlet happens to tie in or outsource its warehousing to the Client, then this is also possible and very useful.

Sequence	Product	UOM	Qty Picked	Locator	Handling Unit	Document Type
1.0	Hoe_Hoe 4 ft	Each	60	AEONKlang	HU000041	Material Movement
2.0	Hoe_Hoe 4 ft	Each	60	AEONKlang	HU15	Material Movement
3.0	Hoe_Hoe 4 ft	Each	60	AEONKlang	HU16	Material Movement
4.0	Hoe_Hoe 4 ft	Each	60	AEONKlang	HU17	Material Movement
5.0	Hoe_Hoe 4 ft	Each	60	AEONKlang	HU18	Material Movement

From here, the Inventory Move originating document has to be completed immediately. In our implementation, we are considering an event handler process that automatically do that, when both Picking and Putaway documents are complete.

STEP C10 - Consignment Movement Completes

You will notice that once the Picking and Putaway records are completed, the Movement is automatically completed too. This is to maintain close synchronicity as the final Putaway ends the whole chain.

Line No	Search Key	Active	Product	Locator	Locator To	Movement Quantity
10	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
20	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
30	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
40	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60
50	Hoe	<input checked="" type="checkbox"/>	Hoe-Hoe 4 ft	HQT-2-A-1	AEONKlang	60

Note back the Consignment record and you can see it has also been updated with the Picking List link. Later when the Putaway is completed, that will be replaced with the latest putaway link. This is to let you keep track at what stage you are at. Note that the Consigned Qty is also updated.

Warehouse	AEON Klang	Date Promised	07/05/2019	12:00:00 AM	Sales Rep	GardenAdr
Business Partner	AEON Klang	Type				
Project Code		Campaign Code		Price List	Purchase 2	
Delivery Schedule		Picking List	Consignment Out Spec	Movement Record	10000001	
Consigned Qty	300	Consigned Value	0.00	Sales Invoice		

STEP C11 Inspect Storage Views

Home | Consignment: Special x | Inventory Move: 10000001 x | Product Info x

Search Key: Hoe | Name: | UPC/EAN: | ☒ All / Any

SKU: | Warehouse: | Vendor: |

Attribute Set: | Price List: | Version: |

Warehouse	Description	Substitute	Related Product	Available to Promise	Price
AEON Klang				300.00	300.00
HQ Transit				3,380.00	3,380.00
HQ Warehouse				0.00	0.00

Item Availability in other Warehouses

You can view the latest changes to the storage data from the above Product Info or below via the Storage Movement View that gives a box breakdown view.

Home | Warehouse Locator Info-Window x | Storage Movement View x

Handling Unit: | Product: Hoe_Hoe 4 ft | UOM: |

InOut: | Date Start > | Aisle (X): |

Bin (Y): | ☐ Sales Transaction | Order: |

Warehouse: AEON Klang | ☒ Active | Attribute Set Instance: |

	Locator	Handling Unit	Product	Line Qty	UOM	Guar	Date Start	DateEnd	At Or	Warehouse
<input type="checkbox"/>	AEONKlang	HU10	Hoe_Hoe 4 ft	60.00	Each	0	Jul 5, 2019, 7:33:18 PM MYT		0	AEON Klang
<input type="checkbox"/>	AEONKlang	HU11	Hoe_Hoe 4 ft	60.00	Each	0	Jul 5, 2019, 7:33:18 PM MYT		0	AEON Klang
<input type="checkbox"/>	AEONKlang	HU12	Hoe_Hoe 4 ft	60.00	Each	0	Jul 5, 2019, 7:33:18 PM MYT		0	AEON Klang
<input type="checkbox"/>	AEONKlang	HU13	Hoe_Hoe 4 ft	60.00	Each	0	Jul 5, 2019, 7:33:18 PM MYT		0	AEON Klang
<input type="checkbox"/>	AEONKlang	HU14	Hoe_Hoe 4 ft	60.00	Each	0	Jul 5, 2019, 7:33:18 PM MYT		0	AEON Klang

STEP C12 - Consignment Returns

Note that during returns the boxes may be used up and everything is lumped together. For example let's say a return is 200 pieces. That will be equivalent to 3 boxes and a box of only 20. So let us see if this following process can handle that. First we go to the Returns tab.

Consignment

Data requested

Client* GardenWorld Organization* HQ ☒ Active

Reference Name Special Remarks

Warehouse AEON Klang Date Promised 07/05/2019 12:00:00 AM Sales Rep GardenAdmin

Business Partner AEON Klang Type

Project Code Campaign Code Price List Purchase 2003

Delivery Schedule Picking List Consignment Out Spec Movement Record 10000001

Consignment Line **Consignment Returns**

1 Records

Active	Name	Product	Attribute Set Instance	Consignment	UOM	Qty Movement	Ordered
<input checked="" type="checkbox"/>		Hoe_Hoe 4 ft		Special	Each	15	

We fill in the detail of 200 for Qty Movement.

STEP C13 Create Returns

Go to the process icon and select Create Returns.

The process will automatically set the Consignee warehouse as the From warehouse and the login location as the To warehouse. In this case, it shall be from AEON Klang to HQ Warehouse.

Creates Returns

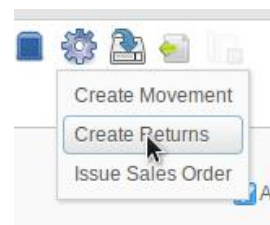
Movement Document for Picking/Putaway
Run Prepare to generate Picking/Putaway lists for mobile scan to mark and input any Handling Unit change. Then Complete them before Complete this Movement. Then StorageOnHand shall be committed. Choose Warehouse (default locator) or an exact Locator)

☐ Active

☐ Run as Job

Saved Parameters

OK Cancel



A new Movement record will be linked to the Consignment. Note it is 4 lines as expected.

Click on the given link to open the Inventory Movement record.

Create Returns

Process completed successfully
Iterated - 4 from returns list of: 1
[Jul 6, 2019, 11:14:43 AM MYT Inventory Move Created](#)

OK

STEP C14 Process Movement and Floor Documents

Check the details in the Inventory Move record. Description identifying it correctly. Note the lower tab line detailing the product and accurate 4 'boxed' quantities and the target locator. Note that the final locator to is chosen based on earlier zone and preferred product setting and the available space to take it. In this case it is HQ-2-A-1.

Line No	Search Key	Product	Locator	Locator To	Movement Quantity
10	Hoe	Hoe-Hoe 4 ft	AEONKlang	HQ-2-A-1	60
10	Hoe	Hoe-Hoe 4 ft	AEONKlang	HQ-2-A-1	60
10	Hoe	Hoe-Hoe 4 ft	AEONKlang	HQ-2-A-1	60
10	Hoe	Hoe-Hoe 4 ft	AEONKlang	HQ-2-A-1	20

Same as the earlier Movement out document, we also Document Action > Prepare this and complete the In Out for them. Search for the new warehouse floor records with %Returns%

After processing through all these documents, in sequence ending with the Movement In, you can examine the Product Info View again and note the changing results for Hoe's availability in all the Warehouses.

We sent 5 boxes of 60 each to AEON Klang = 300 pieces. 200 return, leaving a balance of 100. if you check Storage Movement View, you can see the breakdown. HandlingUnits will be reassigned.

Locator	Handling Unit	Product	Line Qty	UOM
AEONKlang	HU14	Hoe_Hoe 4 ft	60.00	Each
AEONKlang	HU13	Hoe_Hoe 4 ft	40.00	

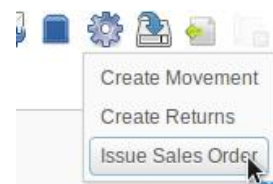
Locator	Handling Unit	Product	Line Qty	UOM
HQ-2-A-1	HU10	Hoe_Hoe 4 ft	60.00	Each
HQ-2-A-1		Hoe_Hoe 4 ft	20.00	Each
HQ-2-A-1	HU12	Hoe_Hoe 4 ft	60.00	Each
HQ-2-A-1	HU11	Hoe_Hoe 4 ft	60.00	Each

Warehouse	Available	On Hand Quantity
AEON Klang	100.00	100.00
HQ Transit	3,380.00	3,380.00
HQ Warehouse	200.00	200.00
Σ	3,680.00	3,680.00

STEP C15 - Issue Sales Order

Now that you have finally received the last returns from the consigned outlet, you are ready to issue an Invoice for the balance sold. Here you need not calculate again. Just click on the Issue Sales Order process in the same Consignment window.

This process can be run at anytime even before the returns are made so as to give the customer outlet a proforma Invoice of the goods issued.



Issue Sales Order

Balance between Consignment>Returns after negotiations
 Sales Order may be issued at Consignment out stage, to give a Proforma Invoice quotation or total commitment to the retailers. Later after returns, a further Sales Order will then be based on the nett qtys.

☐ Active

☐ Same Line

☐ Same distribution for source and target

Price List Version: Standard 2003

☐ Run as Job

Saved Parameters: ▼ 📄 📁

✓ OK ✗ Cancel

In our client use case, they use this to negotiate further with the large outlets, who wants further discounts. So this Sales Order acts as a reference before finally framed and process into an Invoice.

AI Project and Campaign IDs are also conveniently copied over to the Order. In the end, the client can keep track with full ABC accounting and reporting.

Select a price list in the dialog box and click OK. Right away a link in the Sales Invoice box appears. A link to it is also given in the Consignment record.

Movement Record: 10000001 📄

Sales Invoice: 50000_07/06/2019 📄

Note that you can run this as often as possible but only the latest draft will be linked. Those older ones as long they are draft or voided can be discarded.

Issue Sales Order ✕

i **Process completed successfully**

[Jul 6, 2019, 6:15:29 PM MYT MOrder_ID Created](#)

✓

Home Consignment: Special **Sales Order: 50003** ⌵ ?

Order [1/1]

1 Line - 1,350.00 - Total: 1,350.00 USD = 1,350.00

Client: GardenWorld Organization: Retailer

Document No: 50003 Order Reference:

Description: Special CONSIGNMENT

Order Line Warehouse Pick Order Tax Payment Schedule

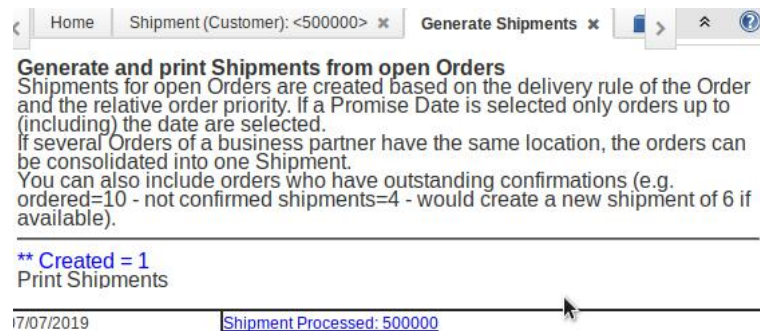
📄 📁 🔍 1 Records

	Organizat	Order	Business Partner	Date Ordered	Line No	Warehouse	Product	Quantity	UOM
<input type="checkbox"/>	Retailer	50003_07/06/2019	AEON Klang	07/06/2019	10	AEON Klang	Hoe_Hoe 4 ft	100	Each

Note that the Sales Order is assigned under the Retailer organization and Warehouse of the consignee. So that when this is processed and DeliverySchedule to Picking completed, it shall reflect correctly as deducted from the 100 pieces at the virtual AEON Klang as sold.

STEP C16 - Clear Consignment

Now we need to clear the virtual warehouse at AEON Klang from its 100 pieces balance as sold. So by processing Complete the Sales Order, and then Generate Shipments for AEON Klang, and Complete then at the same time.



You can then send the Shipment Delivery Note as a confirmation that the stock is cleared.



You can check the Product Info view again to see the final stock standing where AEON Klang is cleared at zero.

Warehouse	Description	Substitute	Related Product	Available to Promise
Warehouse	Available	On Hand Quantity	Reserved Qt	
AEON Klang	0.00	0.00		
HQ Warehouse	200.00	200.00		
HQ Transit	3,380.00	3,380.00		
Σ	3,580.00	3,580.00		

Simple Bulk Movement

There may be cases, where the user needs to make an Inventory Move that just state items in bulk quantities and not knowing which locators they are exactly at and which locators they can go to. The solution is simple because the Inventory Replenishment Movement handles that.

However a pre-requisite is that you need to define Putaway zones for the products that are to be moved. Otherwise this will not work as the code cannot find zone to putaway.

Once that is done, without going through the Replenish Report, just open a new Inventory Move and put the words 'Inventory Replenish' as the start of the Description field. You may add your own additional after that.

Move

Data requiered

Client* GardenWorld Organization* HQ

Order Reference

Document No 10000003 Sales

Representative

Description Inventory Replenishment

Move Line Attributes

1 Records

Line No	Product	Locator	Locator To	Movement Quantity
10	Hoe-Hoe 4 ft	Default HQ Locator	Default Store Locator	200

After this, just Process > Prepare so that you can then Zoom Across to the generated Picking and Putaway - In Outs.

In those documents, you shall find the Qtys and Lines are adjusted to be from corrected ones.

Reverse of Movement

ReverseCorrect

As with any document, there maybe a need to reverse due to human error. For Movement, ReverseCorrect is an option but what about the associated Pick and Putaway documents? Now, we can also have them affected. To ReverseCorrect means you are abandoning the just completed Picking/Putaway Movement process and nullified their transactions.

That means the Picking will be put back and the putaway creations will be deleted. To do this, go to the Inventory Move record and choose ReverseCorrect.

The screenshot shows the 'Inventory Move: 10000001' record. The 'Description' field contains 'Stock Movement To HQT-2-B-1 10000001'. A 'Document Action' menu is open, showing options: 'Close', 'Reverse - Accrual', and 'Reverse - Correct'. Below the menu, the 'Move Line' table is visible, showing 10 records. The first record is highlighted.

Line No	Description	Search Key	Product	Locator	Locator To	Movement Quar
10	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
20	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
30	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
40	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
50	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
60	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
70	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
80	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60

Right away after the successful message of Completed appearing in the top left corner, you will notice the Description box showing a new document in brackets (1000001^<-). You can search for it as a newly created Inventory Move but also showing Reversed in the Document Status as this one.

The screenshot shows the 'Inventory Move: 10000001' record. The 'Description' field contains 'Stock Movement To HQT-2-B-1 10000001 | (1000001^<-)'. The 'Movement Date' is '07/24/2019'. The 'Document Type' is 'Delivery'. The 'Status' section shows 'Approved' checked and 'In Transit' unchecked. The 'Document Status' is 'Reversed'.

Line No	Description	Search Key	Product	Locator	Locator To	Movement Quar
10	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
20	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
30	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
40	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
50	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
60	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
70	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60
80	Hoe	Hoe	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	60

Reversed Movement

In the new document notice the same reference, Reversed status and negative quantities.

Move

Document No: 10000001^

Representative:

Description: Stock Movement To HQT-2-B-1 10000001 | {->10000001}

Movement Date: 07/24/2019

Document Type: Material Movement

Delivery

Reference

Status

☒ Approved

Approval Amount:

☐ In Transit

Date received:

Document Status: Reversed

Move Line

Attributes

10 Records

Line No	Des	Search Key	Product	Locator	Locator To	Movement Quantity
10	Hoe	Hoe-Hoe 4 ft	Hoe-Hoe 4 ft	HQT-2-A-1	HQT-2-B-1	-60

Back to the original document, you can Zoom Across to the underlying Picking/Putaway documents and view their status as Reversed.

In Out

Name: Stock Movement To HQT-2-B-

Inventory Move: 10000001

Gate: DocTypeEv

Document Status: Reversed

Document No: 1000003

Lastly, you have to do Refresh Empty Capacity so that the whole Warehouse is recalculated its Vacant Available Capacities. This is because the ReverseCorrect at the moment does not recalculate for you. Do it for both the source and target Warehouses.

Refresh Empty Capacity

Do you want to start the Process?

Warehouse: HQ Transit

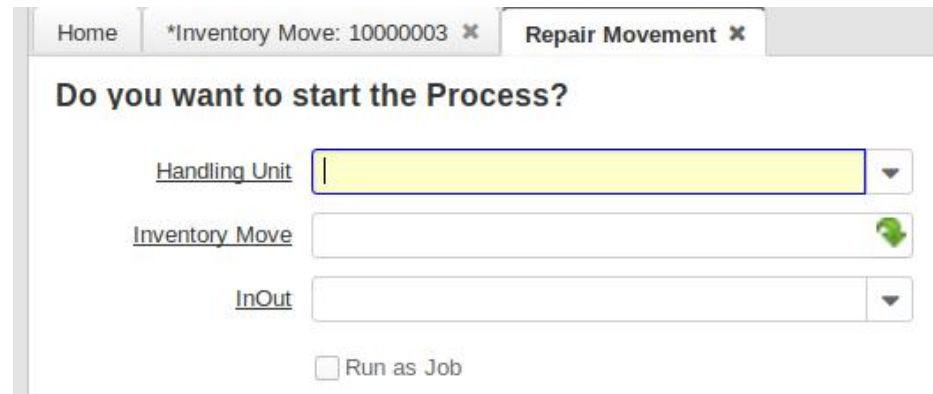
☐ Run as Job

Locators:25 Lines:61

Repair Movement

Sometimes something went wrong and you cannot reverse a Movement easily. For example some picking is stuck and you have to repair or reset the Empty Storage Lines to be freed from the Picking IDs. Then only can another fresh picking does its job.

For that, we have a Repair Movement process to do just that.



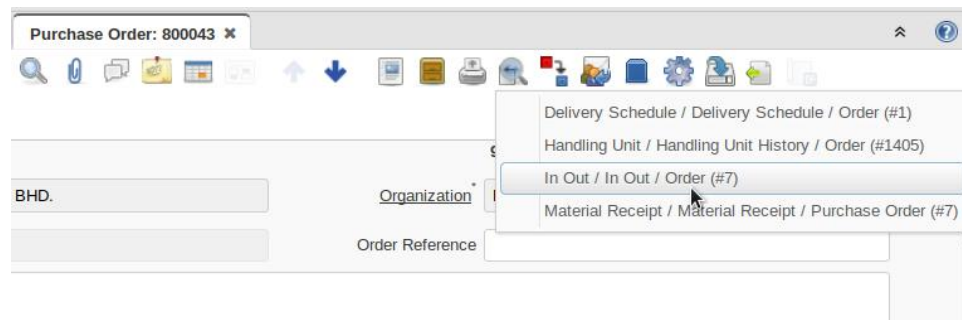
The screenshot shows a web application interface for the 'Repair Movement' process. At the top, there is a navigation bar with 'Home', '*Inventory Move: 10000003', and 'Repair Movement'. Below this, the main heading is 'Do you want to start the Process?'. The form contains three input fields: 'Handling Unit' (a dropdown menu with a yellow highlight), 'Inventory Move' (a text input field with a green circular arrow icon to its right), and 'InOut' (a dropdown menu). At the bottom of the form, there is a checkbox labeled 'Run as Job'.

Specify the Picking document or Movement record in question, and this process shall Close and Void all their records.

Remember to use this on a copy of the live data (copied on to your localhost) to test out first to examine the results to be what is desired. Then only do it on the actual instance.

Reverse of Sales or Purchase

When a Sales or Purchase is reversed, the linked Picking or Putaway is not. It has to be reversed at the linked Putaway/Picking document. Below is an example that is opened by Zooming Across from its original Purchase Order DocumentNo: 800043.



Home In Out: 1001118 Document N... x

In Out

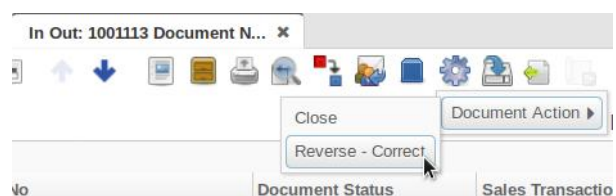
	Business Partner	Delivery Schedule	Document No	Document Status
<input type="checkbox"/>		Document No:800043	1001118	Completed

In Out Line

8 Records

	Sequer	Product	Handling Unit	Locator	UOM	Qty Pi	WM_Handling U
<input type="checkbox"/>	1.0	CP008-PGLS30	01006702	KBWH	Each	60	
<input type="checkbox"/>	2.0	CP008-PGLS30	01006703	KBWH	Each	60	
<input type="checkbox"/>	3.0	CP008-PGLS30	01006704	KBWH	Each	60	
<input type="checkbox"/>	4.0	CP008-PGLS30	01006705	KBWH	Each	60	
<input type="checkbox"/>	5.0	CP008-PGLS30	01006706	KBWH	Each	60	
<input type="checkbox"/>	6.0	CP008-PGLS30	01006707	KBWH	Each	60	
<input type="checkbox"/>	7.0	CP008-PGLS30	01006708	KBWH	Each	60	
<input type="checkbox"/>	8.0	CP008-PGLS30	01006709	KBWH	Each	60	

At the top right of the menu, drag the process selection to choose Reverse - Correct. The process will execute and you can see the status of the Putaway document below.



Home Purchase Order: 800043 In Out: 1001118 Document N...

In Out

Completed

	Business Partner	Delivery Schedule	Document No	Document Sta
<input type="checkbox"/>	N ...	Document No:800043	1001118	Reversed

In Out Line

8 Records

	Sequer	Product	Handling Unit	Locator	UOM	Qty Picked
<input type="checkbox"/>	1.0	CP008-PGLS30	01006702	KBWH	Each	60
<input type="checkbox"/>	2.0	CP008-PGLS30	01006703	KBWH	Each	60
<input type="checkbox"/>	3.0	CP008-PGLS30	01006704	KBWH	Each	60
<input type="checkbox"/>	4.0	CP008-PGLS30	01006705	KBWH	Each	60
<input type="checkbox"/>	5.0	CP008-PGLS30	01006706	KBWH	Each	60
<input type="checkbox"/>	6.0	CP008-PGLS30	01006707	KBWH	Each	60
<input type="checkbox"/>	7.0	CP008-PGLS30	01006708	KBWH	Each	60
<input type="checkbox"/>	8.0	CP008-PGLS30	01006709	KBWH	Each	60

This will reverse the underlying Material Receipt too. Examine by Zooming Across from the Purchase Order to select.

But if there are too many issuance of Putaways from a large Purchase as in this real life scenario here, a better shortcut will be to go into the In Out Line detail of the Putaway and click on any Shipment/Receipt line link.

Purchase Order: 800043

Delivery Schedule / Delivery Schedule / Order (#1)

Handling Unit / Handling Unit History / Order (#1405)

In Out / In Out / Order (#7)

Material Receipt / Material Receipt / Purchase Order (#9)

Order Reference

Home In Out: 1001118 Document N... Material Receipt: 1000103 Purchase Order: 800043

In Out > In Out Line

Client: [Redacted] Organization: KBWH - KOTA BHARU WAR

☒ Active

Delivery Schedule Line: 1022273 Document Type: Purchase Order

Handling Unit: 01006702 In Out: Document No:800043

☐ Is Packed Locator: KBWH

Move Line: Product: CP008-PGLS30

Qty Picked: 60 Sales Order Line: 800043_09/17/2019_90_10838

Sequence: 1.0 Shipment/ Receipt Line: 10_60_CP008-PGLS30_10001

UOM: Each WM_Handling Unit Old_ID:

Then go the parent tab of the Document. Notice the Reversed status at the Document Status.

The screenshot shows the 'Material Receipt' window. At the top, there are tabs for 'Home', 'In Out: 1001118 Document N...', 'Material Receipt: 1000103', and 'Purchase Order: 80004'. Below the tabs is a toolbar with various icons. The main section is titled 'Material Receipt' and shows 'Data requiered'. Below this, the 'Document Status' is set to 'Reversed'. There are also tabs for 'Receipt Line', 'Confirmations', 'Attributes', 'Matched POs', and 'Matched Invoices'. The 'Receipt Line' tab is active, showing a table with 8 records. The table has columns: 'Purchase Order Line', 'Line No', 'Product', 'Locator', 'Quantity', and 'UOM'. The first record is highlighted in yellow.

Purchase Order Line	Line No	Product	Locator	Quantity	UOM
800043_09/17/2019_90_10838.40	10	CP008-PGLS30	KBWH	60	Each

User can then return to the DeliverySchedule to Putaway Info-Window to redo the Putaway again if desired as it shall reappear there.

Excel Importer

Our particular use-case requires lots of data from external sources given in Excel format that has to be imported into the Sales Order or Consignment Line tabs without redo or input again. So now that is easy. Here is an example of an Excel where the items are stated all over the sheet/s without qty. The Excel Sales Order will group the occurrence of the items and calculate its total qty. If there is an error, those lines can be easily deleted. Each run will accumulate their occurrence where encountered.

NO	NAMA PELAJAR	DARJAH	JANTINA (Sila ✓)	KEMEJA	SELUAR	BAJU KURL
			L	P	PANJANG	PENDEK
1		1		P		AM009-15.5
2		1	L		AM001-13	AM004-22
3		1	L		AM001-14	AM004-24
4		1	L		AM001-17	AM004-30
5		1		P		AM009-14
6		1		P		AM009-14
7		2		P		AM009-13
8		2	L		AM001-15	AM004-32
9		2	L		AM001-15	AM004-32
10		2		P		AM009-16.5

Home Excel Sales Order x Sales Order: 50000014 x

Do you want to start the Process?

File_Directory: /home/red1/Downloads/Seminyih.xls

Order: 50000014_09/03/2019

Description: 0,22,5

☐ Run as Job

There are two ways to get this Excel into the system. First is via a File_Directory path which is useful particularly in localhost or sharing of files in FTP site. Second, is by attaching to the Sales Order itself.

If no File_Directory is given, then the Sales Order must have an attachment.

Home Excel Sales Order x Sales Order: 50000014 x

Order > Order Line

Data requested

Line No	Product	Quantity	UOM	Ordered Q
10	AM009-15.5	3	Each	3
20	AM008-28	2	Each	2
30	SOCKS-BLACK-S	13	Each	13
40	BAG-TWILL POLY	29	Each	29
50	AM001-13	2	Each	2

Description field is to give offsets i.e. Sheet 0, at Starting Row 22, and Starting Cell 5. If lazy, just put in 0,0,0. But if you want to access a second sheet, then put in 1,0,0.

The result is almost instantenous.

Consignment Excel Import

For the Consignment window, it uses an almost similar approach. However its line details may be more organised with quantities.

5	Agent		Y/O Numb	Y/O Date		Proforma	Proforma	Cash/Bank
6								0
7	SI #	Item	Description					Quantity
8	1	CP001-BS1	CP Boy Shirt (12)					20
9	2	CP001-BS1	CP Boy Shirt (13)					30
10	3	CP001-BS1	CP Boy Shirt (14)					30
11	4	CP001-BS1	CP Boy Shirt (15)					30
12	5	CP001-BS1	CP Boy Shirt (16)					50
13	6	CP001-BS1	CP Boy Shirt (17)					10
14	7	CP001-BS1	CP Boy Shirt (18)					10
15	8	CP009-BK1	CP Baju Kurung (12)					20
16	9	CP009-BK1	CP Baju Kurung (13)					20
17	10	CP009-BK1	CP Baju Kurung (18.5)					20
18	11	CP014-SBL	CP Sec. Boy L/Pants (26)					20
19	12	CP014-SBL	CP Sec. Boy L/Pants (27)					10
20	13	CP014-SBL	CP Sec. Boy L/Pants (28)					10
21	14	CP014-SBL	CP Sec. Boy L/Pants (29)					10

In this example, the Qtys are all along Cell H. So just attach this to the Consignment window and run from its Process icon, Import Excel. You can also have the alternative of using File_Directory to access the Excel file. In the Description it only accepts a single value of the Cell Column Address, H.

Import Excel

Do you want to start the Process?

File_Directory

Description

☐ Run as Job

Create Movement

Create Returns

Issue Sales Order

Import Excel

0 AM
Sales Rep
CGUser

Affiliate

Price List
Sales 20

Giving this an OK, will also be magical.

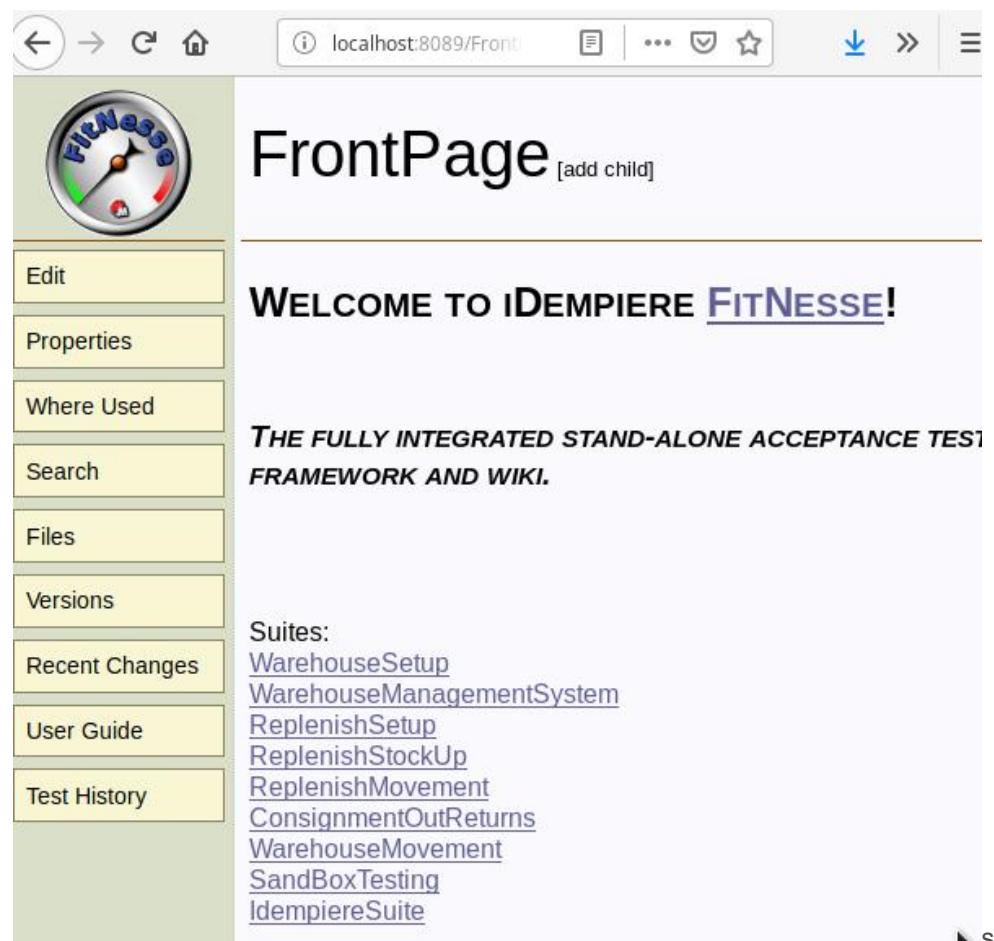
Consignment Line				
Consignment Returns				
Consignment Move				
Record saved				
<input type="checkbox"/>	Product	Available	UOM	Qty Movement
<input type="checkbox"/>	CP001-BS12	SAWH:21193	Each	20
<input type="checkbox"/>	CP001-BS13	SAWH:17484	Each	30
<input type="checkbox"/>	CP001-BS14	SAWH:23946	Each	30
<input type="checkbox"/>	CP001-BS15	SAWH:21920	Each	30
<input checked="" type="checkbox"/>	CP001-BS16	SAWH:15870	Each	50
<input type="checkbox"/>	CP001-BS17	SAWH:15997	Each	10
<input type="checkbox"/>	CP001-BS18	SAWH:11120	Each	10
<input type="checkbox"/>	CP009-BK12	SAWH:14072	Each	20
<input type="checkbox"/>	CP009-BK13	SAWH:13062	Each	20

Quality Assurance

This suite of plugins has a strong FitNesse Testing Suite that goes thru all the main logic and weed out creeping bugs. I run them each time i made a change to the code. It has helped me more often than once. I am next going to place them in a robot Jenkins service so that they run autonomously whenever we made a change.

Below are the series of screenshots of the testing. The story script is committed to <https://sourceforge.net/projects/red1/files/Testing/> in the [FitNesseRootForWarehousing.zip](#)

You have to apply my modification to the FitNesseFixture plugin as described in [iDempiereFitNesse.pdf](#)



WarehouseManagementSystem

SUITE RESULTS [\[history\]](#)

Test Pages: 6 right, 0 wrong, 0 ignored, 0 exceptions **Assertions:** 74 right, ignored, 0 exceptions (10.062 seconds)

TEST SUMMARIES

FIT:FITNESSE.CLIENT.FITSERVERSERVLETINVOKER

13 right, 0 wrong, 0 ignored, 0 exceptions [AddPurchases](#) (2.301 seconds)
 8 right, 0 wrong, 0 ignored, 0 exceptions [AllPurchaseToPutaway](#) (4.648 seconds)
 17 right, 0 wrong, 0 ignored, 0 exceptions [AlwaysPurchaseResults](#) (0.062 seconds)
 14 right, 0 wrong, 0 ignored, 0 exceptions [CompleteSalesPickingProcess](#) (1.270 seconds)
 2 right, 0 wrong, 0 ignored, 0 exceptions [LoginTo](#) (0.002 seconds)
 20 right, 0 wrong, 0 ignored, 0 exceptions [ReadResults](#) (0.203 seconds)

TEST OUTPUT

ReplenishSetup

SUITE RESULTS [\[history\]](#)

Test Pages: 3 right, 0 wrong, 0 ignored, 0 exceptions **Assertions:** ignored, 0 exceptions (1.784 seconds)

TEST SUMMARIES

FIT:FITNESSE.CLIENT.FITSERVERSERVLETINVOKER

10 right, 0 wrong, 0 ignored, 0 exceptions [CreateForReplenish](#) (0.383 seconds)
 5 right, 0 wrong, 0 ignored, 0 exceptions [ExecuteReplenish](#) (0.700 seconds)
 2 right, 0 wrong, 0 ignored, 0 exceptions [SubLogin](#) (0.011 seconds)

TEST OUTPUT

ReplenishStockUp

SUITE RESULTS [\[history\]](#)

Test Pages: 4 right, 0 wrong, 0 ignored, 0 exceptions **Assertions:** ignored, 0 exceptions (17.231 seconds)

TEST SUMMARIES

FIT:FITNESSE.CLIENT.FITSERVERSERVLETINVOKER

10 right, 0 wrong, 0 ignored, 0 exceptions [DoPurchasing](#) (2.065 seconds)
 9 right, 0 wrong, 0 ignored, 0 exceptions [DoPutaway](#) (14.318 seconds)
 7 right, 0 wrong, 0 ignored, 0 exceptions [ReadEmptyStorage](#) (0.078 seconds)
 2 right, 0 wrong, 0 ignored, 0 exceptions [SubLogin](#) (0.002 seconds)

TEST OUTPUT

ReplenishMovement.

ReplenishReport

TEST RESULTS [\[history\]](#)
Assertions: 4 right, 0 wrong, 0 ignored, 1 exceptions (0.316 seconds)

 ▶ Included page: [SubLogin](#) ([edit](#))

CREATES M_MOVEMENT LINES FROM M_REPLENISH ITEMS

RunProcess	
ProcessValue	RV_T_Replenish
M_Warehouse_ID	@Ref=M_Warehouse[Name='HQ Transit'].M_Warehouse_ID
	50000
ReplenishmentCreate	MMM
C_DocType_ID	@Ref=C_DocType[Name='Material Movement'].C_DocType_ID
	143
	#1 - 10000000
	Jul 6, 2019, 12:00:00 AM MYT Inventory Move Created
	java.lang.Exception: Report not supported yet at org.idempiere.fitness.fixture.RunProcess.doStaticTable(RunProcess.java:288)

ReplenishMovement.

StartMovement

TEST RESULTS [\[history\]](#)
Assertions: 6 right, 1 wrong, 0 ignored, 0 exceptions (8.804 seconds)

 ▶ Included page: [SubLogin](#) ([edit](#))

PREPARE MOVEMENT

Read Record	
Table	M_Movement
DocStatus	'DR'
Read	X_M_Movement[1000000]
M_Movement_ID	1000000

Run Process	
ProcessValue	M_Movement_Process
RecordID	@M_Movement.M_Movement_ID@
	1000000
DocAction	PR
Run	Completed Expected PR Received IP

Read Record

Table	M_StorageOnHand
M_Product_ID	@Ref=M_Product[Value='Hoe'].M_Product_ID
	138
QtyOnHand	2520.0
Read	MStorageOnHand[M_Locator_ID=1000006,M_Proc
M_Locator_ID	1000006

Read Record

Table	M_Locator
M_Locator_ID	@M_StorageOnHand.M_Locator_ID@
	1000006
Read	HQ-2-A-1
Value	HQ-2-A-1

RollBack

Commit	TRUE
----------	------

ReplenishMovement.

ZebraMovement

TEST RESULTS [\[history\]](#)**Assertions: 13 right, 0 wrong, 0 ignored, 0 exceptions (4.800**▶ Included page: [SubLogin](#) ([edit](#))

COMPLETE MOVEMENT

Mobile Scan Completes the Warehouse Movements first

Read Record	
Table	WM_InOut
DocStatus	'DR'
IsSOTrx	'Y'
Read	X_WM_InOut[1000001]
WM_InOut_ID	1000001

Set DocAction	
Table	WM_InOut
WM_InOut_ID	@WM_InOut.WM_InOut_ID@
	1000001
docAction	CO
Save	DocStatus=CO expected CO - IP - WP - WC

Read Record	
Table	WM_InOut
DocStatus	'DR'
IsSOTrx	'N'
Read	X_WM_InOut[1000002]
WM_InOut_ID	1000002

Read Record	
Table	M_Locator
M_Locator_ID	@M_StorageOnHand.M_Locator_ID@
	1000030
Read	HQT-2-A-1
Value	HQT-2-A-1

Read Record	
Table	WM_EmptyStorage
M_Locator_ID	@Ref=M_Locator[Value="HQT-2-A-2"].M_Locator_ID
	1000007
VacantCapacity	42
AvailableCapacity	42.0
Percentage	100.000
IsFull	'N'
Read	X_WM_EmptyStorage[1000008]
WM_EmptyStorage_ID	1000008

Read Record	
Table	WM_EmptyStorage
M_Locator_ID	@Ref=M_Locator[Value="HQT-2-A-2"].M_Locator_ID
	1000031
VacantCapacity	42
IsFull	'N'
AvailableCapacity	22.00
Percentage	52.000
Read	X_WM_EmptyStorage[1000033]
WM_EmptyStorage_ID	1000033

RollBack	
C.nmmi	TRUE

Set DocAction	
Table	WM_InOut
WM_InOut_ID	@WM_InOut.WM_InOut_ID@
	1000002
docAction	CO
Save	DocStatus=CO expected CO - IP - WP - WC

M_Movement Complete It and Close

Read Record	
Table	M_Movement
DocStatus	'IP'
Read	X_M_Movement[1000000]
M_Movement_ID	1000000

Run Process	
ProcessValue	M_Movement_Process
RecordID	@M_Movement.M_Movement_ID@
	1000000
DocAction	CO
Run	Completed

Read Record	
Table	M_StorageOnHand
M_Product_ID	@Ref=M_Product[Value="Hoe"].M_Product_ID
	138
QtyOnHand	2460.0
Read	MStorageOnHand[M_Locator_ID=1000030,M_f
M_Locator_ID	1000030

ConsignmentOutReturns

SUITE RESULTS [\[history\]](#)**Test Pages: 6 right, 0 wrong, 0 ignored, 0 exceptions Assertions: 6 right, 0 wrong, 0 ignored, 0 exceptions (3.883 seconds)**

TEST SUMMARIES

FIT:FITNESSE.CLIENT.FITSERVERSERVLETINVOKER

2 right, 0 wrong, 0 ignored, 0 exceptions [AdminLogin](#) (0.002 seconds)

3 right, 0 wrong, 0 ignored, 0 exceptions [ConsignmentOut](#) (0.050 seconds)

9 right, 0 wrong, 0 ignored, 0 exceptions [ConsignmentOutProcess](#) (2.121 seconds)

2 right, 0 wrong, 0 ignored, 0 exceptions [ConsignmentReturn](#) (0.024 seconds)

9 right, 0 wrong, 0 ignored, 0 exceptions [ConsignmentReturnProcess](#) (0.361 seconds)

6 right, 0 wrong, 0 ignored, 0 exceptions [ReadResults](#) (0.030 seconds)

TEST OUTPUT

WarehouseMovement

SUITE RESULTS [\[history\]](#)

Test Pages: 4 right, 0 wrong, 0 ignored, 0 exceptions **As:**
right, 0 wrong, 0 ignored, 0 exceptions (5.973 seconds)

TEST SUMMARIES

FIT:FITNESSE.CLIENT.FITSERVERSERVLETINVOKER

2 right, 0 wrong, 0 ignored, 0 exceptions [AdminLogin](#) (0.002 seconds)
1 right, 0 wrong, 0 ignored, 0 exceptions [BeginStorageInfo](#) (1.041 seconds)
8 right, 0 wrong, 0 ignored, 0 exceptions [ProcessMovement](#) (3.179 seconds)
6 right, 0 wrong, 0 ignored, 0 exceptions [ReadResults](#) (0.046 seconds)

[BeginStorageInfo](#)

RUN THIS AFTER ZEBRA MOVEMENT IS COMPLETE

ReadInfoWindow	
InfoWindow	Storage Movement View
WHERE	a.WM_HandlingUnit_ID<1000010

RunProcess	
ProcessValue	StockMovement
M_Locator_ID	@Ref=M_Locator[Value='HQT-2-A-2'].M_Locator_ID 1000031
Run	Lines done: 10 Jul 6, 2019, 7:32:36 PM MYT Inventory Move Created

[ProcessMovement](#)

OPEN MOVEMENT

Read Record	
Table	M_Movement
DocStatus	'DR'
Read	X_M_Movement[1000004]
M_Movement_ID	1000004

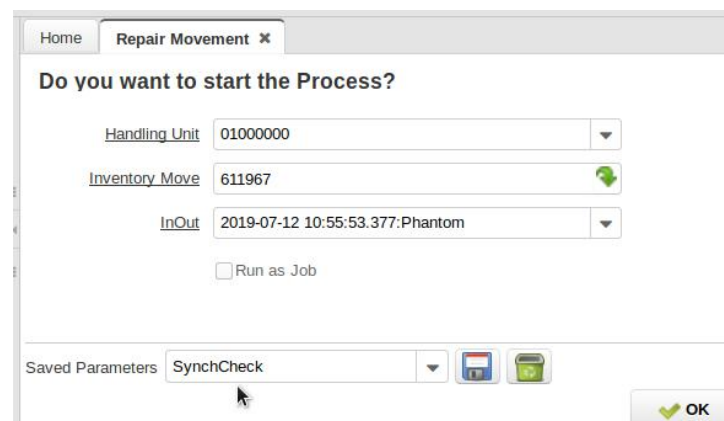
PREPARE MOVEMENT

Set DocAction	
---------------	--

Synch-Check

There is a secret trap door in the QA arsenal of the WMS which is the Synch-Check to verify that the WMS EmptyStorageLine data is in synch with the core StorageOnHand.

You can execute that by calling up Repair Movement but fill in all three parameters, which is a bypass code to do just Synch-Checking. The parameter settings can be saved. Here I named it as SynchCheck for easy recall.



After executing it, at the real life client system, we get the baseline of 15. This is run daily or after some heavy processing of Ins and Outs. If the baseline increases, then there must be an unfinished In-Progress Picking or Putaway. Otherwise it be a code fault and must be raised to the developer.

Do you want to start the Process?

**** Items not in synch:15 out of 1464**

The End