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CHAPTER 10 - WAVE MANAGEMENT

SYNAPSE Wave Management is a process that allows orders to be selected planned and released to warehouse floor associates for picking. Wave Maintenance also provides capabilities to monitor released waves and task queues. Wave plans can be saved as templates. Wave planning functions can also assist warehouse managers in adjusting staffing requirements to accommodate fluctuations in daily workloads.

The wave management process consists of four steps:

1. The wave coordinator groups orders into logical release units, usually selecting orders with similar characteristics together (e.g., all “FedEx orders that must ship by 4:00 PM”) and assessing the potential wave’s impact on warehouse staffing capabilities.
2. Once the wave coordinator has created a potential wave, the wave can be analyzed. This includes identification and location of available inventory to meet the wave’s inventory demands. The screen displays the potential wave’s results including a more defined workload estimate. The wave coordinator may then adjust the results by adding, changing or deleting potential wave items to meet order and workload requirements.
3. Next, the adjusted wave is released for picking. The warehouse associates receive the pick tasks.
4. Finally, the wave coordinator monitors the status of all released waves and task queues releasing new waves and adjusting warehouse associate staffing needs.

**Note: There are other methods available, the above is the most common.

WAVE PLANNING AND RELEASE

The Outbound Order Process includes creating and releasing waves. These waves contain a series of common orders. The planning portion of working with waves is where information is specified such as the type of orders to be included, common staging locations for all orders, and Customer ID or Carrier. Once the waves have been planned, the user can generate and process the waves so they are ready to be released when needed. Waves are released into the system in order for the tasks to be created and accessible in the warehouse.

Wave Planning – Criteria 1 (Standard)

The following sections will detail the wave screens and their fields. The systematic process for waves can be found in the Outbound Order Process section of this manual.

When working with wave management, the first screen to be used is the Wave Planning screen.

The Wave Planning screen will display as follows:

The screenshot shows the 'Synapse 2 - [Wave Planning Order Select for Facility ZET]' application window. The menu bar includes File, Edit, Lookup, Requests, Setup, Window, Utilities, Billing, Freight Billing, Yard, and Help. The toolbar has buttons for New, Open, Save, Print, and Exit. The main area is titled 'Criteria - 1' and contains various search and filter fields:

- Description:** A dropdown menu showing '1-All'.
- Customer ID:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- Ship To:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- State/Province:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- Postal Code:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- Carrier:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- Delivery Service Code:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- Order Type:** Radio buttons for 'Include' and 'Exclude' with a search field.
- Order Priority:** Radio buttons for 'Include' and 'Exclude' with a search field.
- Product Group:** Radio buttons for 'Include' and 'Exclude' with a search field.
- Shipment Type:** Radio buttons for 'Include' and 'Exclude' with a search field.
- From Lot Number:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- To Lot Number:** Search fields for 'From' and 'To' with operators '(All)', '(Current Date +/- -999 Days)', and '(Current Date +/- 999 Days)'.
- Single SKU Only:** A checked checkbox.
- Active Line-Item Count:** A dropdown menu with 'From:' and 'To:' fields.

At the bottom, there are buttons for 'Process' (with a green checkmark icon) and 'Commit...' (with a database icon). A status bar at the bottom left shows 'Facility ZET (Last Update by DJ at 8/26/2013 09:29 AM)'. A legend at the bottom right defines colors for status indicators: Hold (Green), Excluded (Grey), Hazardous (Red), Ship Short (Purple), Included (White), and HOT (Orange).

The Wave Planning screen has 6 tabs- Criteria -1, Criteria - 2, Where Clause, Results, Options and Auto Release.

The first tab, Criteria - 1, is where the actual wave template field requirements are entered. Any of the fields on this tab can be used to create a customer specific or carrier specific template.

The only field on this screen that is required for every template is the Description field. This field is the ID that allows the template to be identified in the system.

Many of the other fields on this tab are self-explanatory, however, the fields that have radio buttons for Include and Exclude are used to detail specific order requirements to be allowed in this wave. For example, Order Priority can be entered to only include Immediate and High Priority orders. A template like this could be used to get the last of these types of orders out of the warehouse before the last loads are departed for the day.

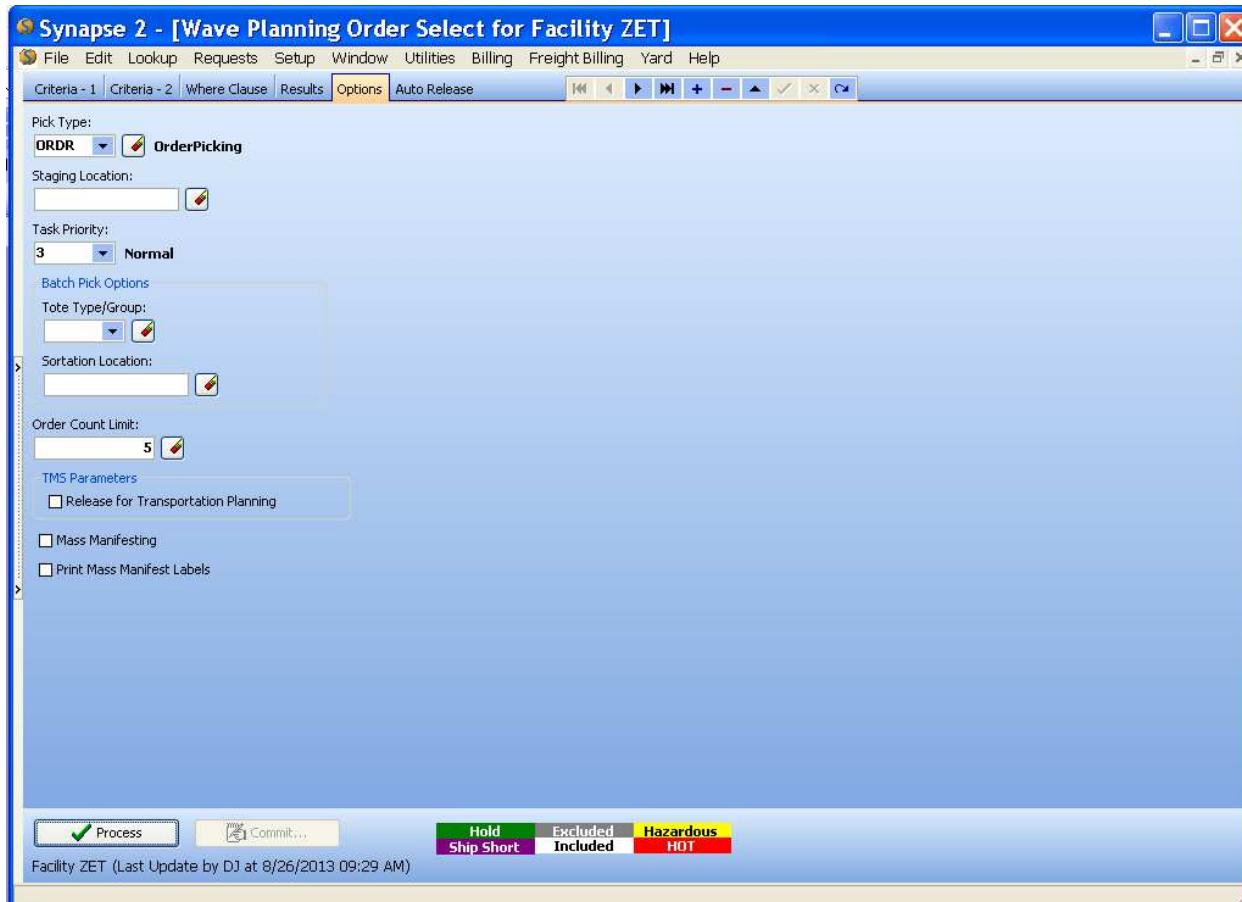
The Order ID and Load fields should not be included in a template since these are only 'one time' entries. A template can be used and a Load number added for just this wave and the load number would not be saved as an edit to the template.

The second tab Criteria - 2, is used for additional date criteria. Up to three subsets of the 13 dates can be used as wave selection criteria.

NOTE: **If there is a conflict of dates between what is entered on the Criteria – 1 tab, for appointment or schedule ship dates with the dates entered on the Criteria – 2 tab, the most restrictive range will apply. One tab does not take precedence over another.**

Other information specific to this template can be added on the Options tab of this screen.

The Options tab of this screen will display as follows:



The Options tab allows other information to be entered and saved to this template. If there is only one Pick Type to be used for the orders with this template, the Pick Type can be selected here.

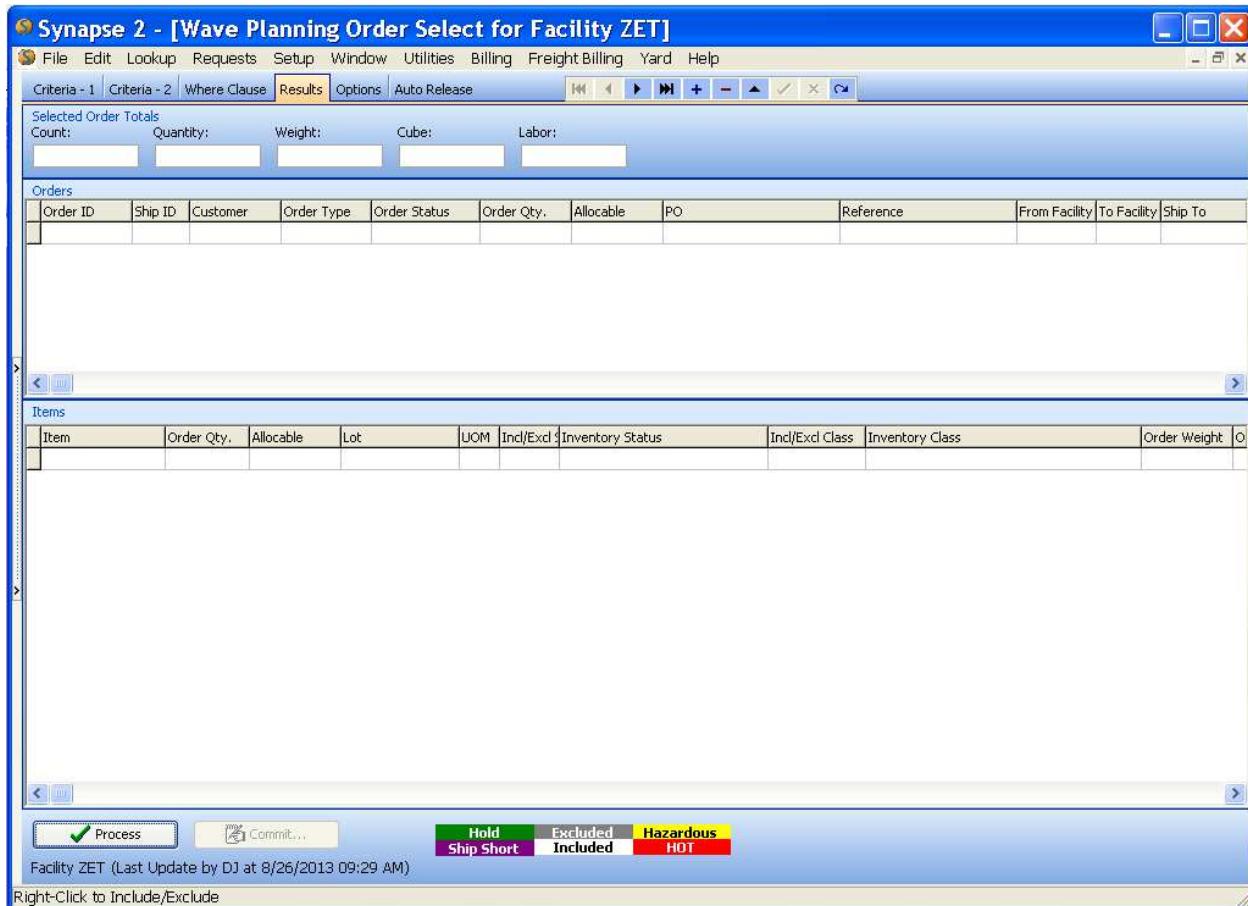
Other information such as a specific Staging Location and Task Priority are also entered on the Options tab. The system default Task Priority of 9 automatically puts all of the tasks associated with this wave on hold. The user needs to select the desired task priority if a value other than HOLD is desired.

Batch Pick options are also found here. For Batch Picking, a conveyance type and sortation location can be specified.

If there are a specific number of Orders that the wave manager wants to allow in each wave, a limit can be set here. If a limit is set, the system will start a new wave each time the limit number is met. The limit is only examined by the automatic logic during order import.

Once a template has been saved, it can be used as many times as needed. By clicking the Process button , the user is telling SYNPASE to go through all outbound orders and find every order that meets the criteria that was set up for this template and display them on the Results screen.

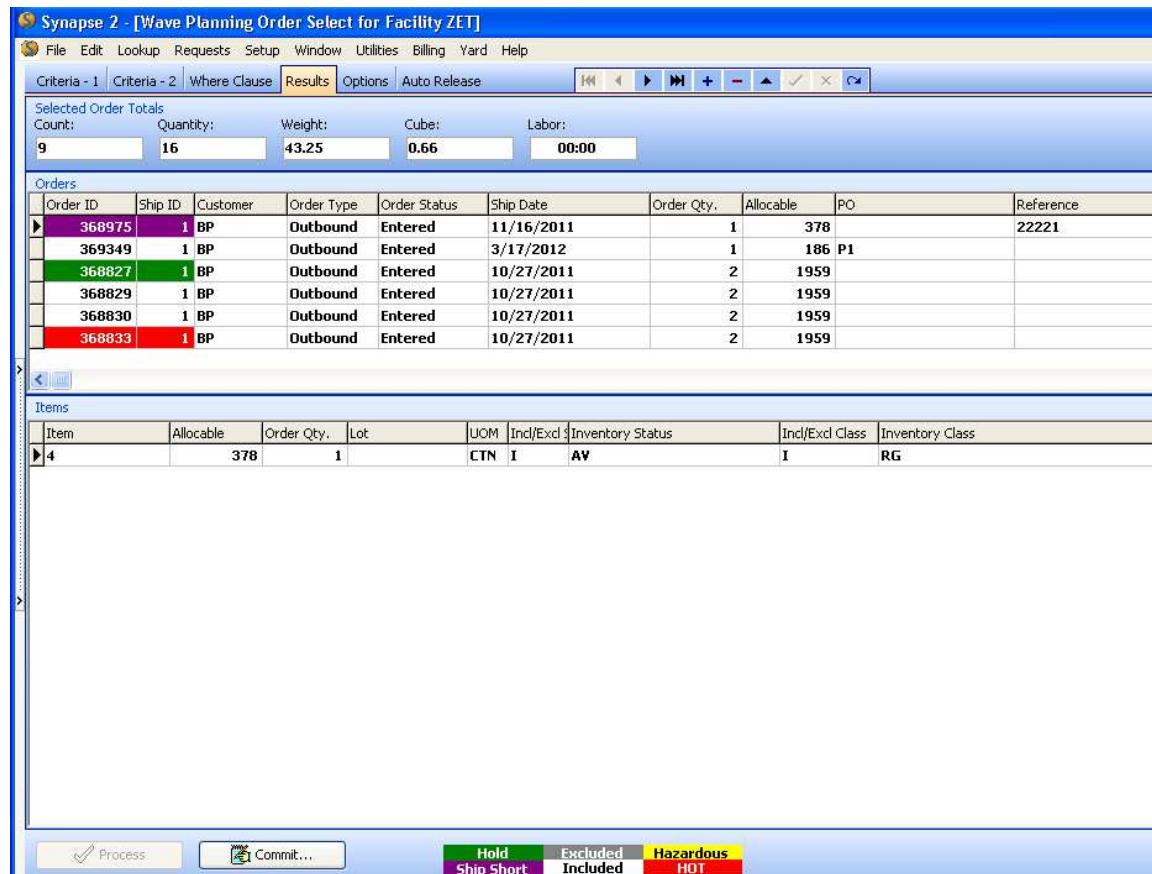
The Results tab will display as follows:



The Results tab will display all orders that met the criteria in the top grid of the screen. The bottom grid on the Results tab displays each item that is associated with the highlighted order in the top grid. If everything looks OK on the Results tab, clicking the Commit button will send this wave to the Wave Release screen and 'soft allocate' inventory for these orders.

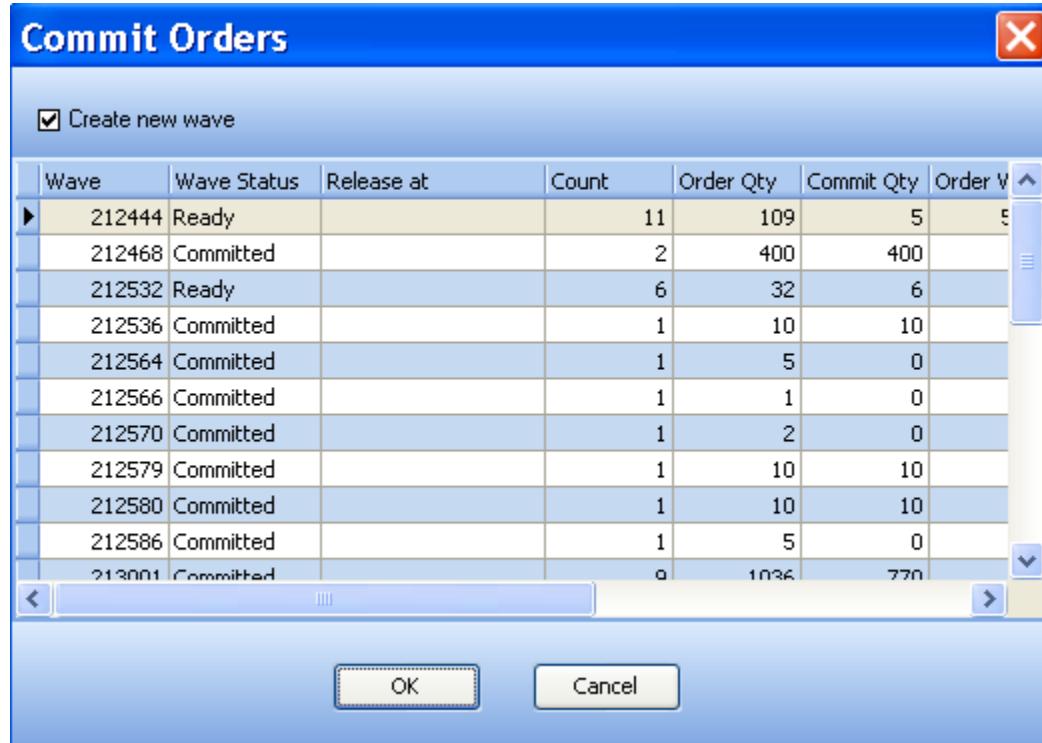
Wave Planning/Order Priority Color Highlighting

Color highlighting has been added to the Wave Planning screen to identify Orders with specific Order Priority settings. The new order priorities used are Ship Short and Hold. These priorities do not affect the order processing but can be used to identify orders to the wave planner.



- Dark Green identifies orders with a Priority = Hold. **Note that this is not Order Status = Hold.**
- Purple identifies orders with a Priority = Ship Short.
- Red will continue to identify orders with a Priority = Hot and the default value does not need to be set.
- In order to use this option for HOLD and SHIP SHORT, the default value, ORDERPRIORITYCOLOR, must be set to Y.

The Commit Orders window will display as follows:

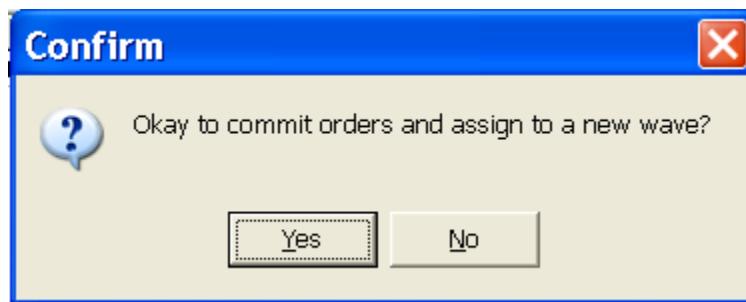


NOTE: If there are currently waves that are not released yet, they will display in the grid at the bottom of the window. Orders can be added to a committed wave until the wave has been released. Otherwise, a new wave can be created.

If creating a new wave, make sure there is a check mark in the box next to Create new wave.

Click the OK button to create the wave.

A message window will display with the following message:



Click the Yes button to assign the wave.

A new window with the wave number will display:



Click OK to complete this portion of the process.

If the error count does not equal zero, review the errors by using the Request Menu/Messages screen.

Wave Planning – Where Clause

This option is designed to provide a more flexible wave planning capability than the fixed fields options by allowing the user to create custom SQL to return order candidates for wave planning. Note that most of the functions in the enhancement should be set by a system administrator/super user and tested in an appropriate test environment.

Max Total Quantity

On the Wave Planning screen, Criteria - 1 tab, a field labeled "MaxTotal Quantity" has been added. This will allow filtering of orders with a total ordered quantity less than or equal to the entered value for orders returned upon clicking Process.

The screenshot shows the Synapse User Manual interface for creating distinct waves. The main window is titled "Criteria - 1". It contains several search and filter fields:

- Customer ID:** 1200, with a dropdown arrow.
- Scheduled Ship Dates From:** (All) (Current Date +/- -999 Days)
- Ship To:** (All) (Current Date +/- 999 Days)
- State/Province:** (All) (Current Date +/- -999 Days)
- Postal Code:** (All) (Current Date +/- 999 Days)
- Carrier:** (All) (Current Date +/- 999 Days)
- Delivery Service Code:** (All) (Current Date +/- 999 Days)
- Order ID:** MaxTotal Quantity: 25
- Order Type:** Include, Exclude
- Order Priority:** Include, Exclude
- Product Group:** Include, Exclude
- Shipment Type:** Include, Exclude
- From Lot Number:** (All)
- To Lot Number:** (All)
- Single SKU Only:** (checkbox)
- Active Line-Item Count:** (dropdown menu), From: (text box), To: (text box)

At the bottom, there are buttons for **Process**, **Commit...**, **Hold**, **Ship Short**, **Excluded**, **Included**, and **Hazardous**. A status bar at the bottom left says "Facility ZFT (Last Update by SWINCHELL at 10/17/2011 02:54 PM)".

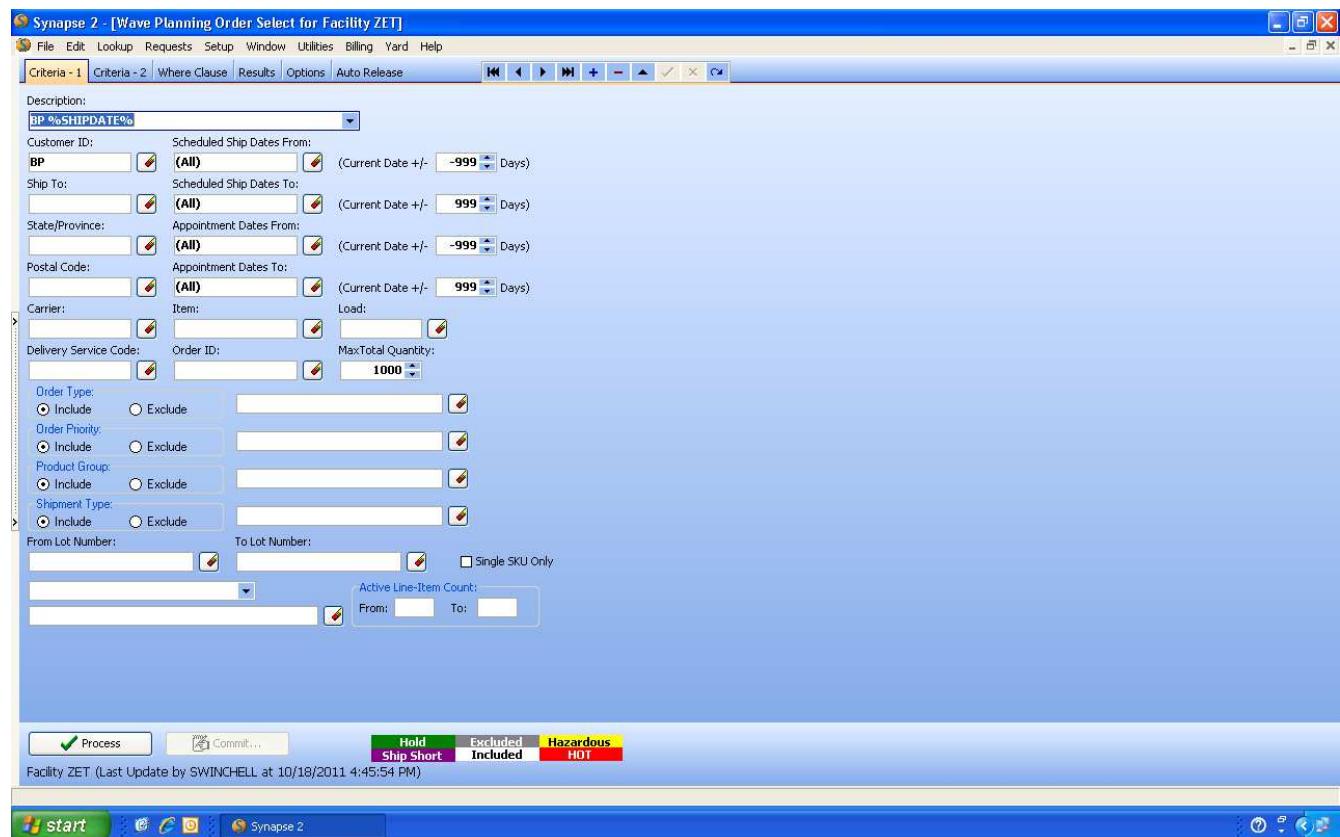
Creating Distinct waves for various data combinations

Description Variable

Also on the Criteria - 1 tab, the Description field will be enhanced to accept token values and utilize them for creating distinct waves for various unique instances of data that exist in the tokenized field. All fields from the **LOADSORDERVIEW** (**See list of values at the end of this document) will be available for use in this manner. When a

token value is utilized as part of a wave description, upon commit the system will create multiple waves rather than one. Each created wave will contain orders with one of however many unique values exist in the tokenized field. So, if 3 orders were filtered out after clicking Process, and the Description field contained the value %HDRPASSTHRUCHAR01% and one order contained "A" in HDRPASSTHRUCHAR01 and two contained "B", two waves would be created, the first containing the "A" order and the second containing the two "B" orders. Additionally, the Description fields for those waves will contain the tokenized value replaced by whatever value is represented within the tokenized field in the orders contained in the wave. Only one tokenized field will be usable per wave template.

In the example below, the wave template description "BP %SHIPDATE%" would create a distinct wave for each ship date and insert the Ship date into the actual wave description.



CHAPTER 10 - Wave Management.doc

Synapse 2 - [Wave Planning Order Select for Facility ZET]

File Edit Lookup Requests Setup Window Utilities Billing Yard Help

Criteria - 1 Criteria - 2 Where Clause Results Options Auto Release

Selected Order Totals									
Count:	Quantity:	Weight:	Cube:	Labor:					
3	44	132.00	1.53	00:00					

Orders

Order ID	Ship ID	Customer	Order Type	Order Status	Ship Date	Order Qty.	Allocable	PO	Referer
368486	1	BP	Outbound	Entered	5/13/2010	24	0		
368581	1	BP	Outbound	Entered	11/10/2011	10	46		
368764	1	BP	Outbound	Entered	10/31/2011	10	46		

Items

Item	Allocable	Order Qty.	Lot	UOM	Incl/Excl	Inventory Status	Incl/Excl Class	Inventory Class
6	0	24	12345	EA	I	AV	I	RG

Synapse 2 - [Wave 212580 Maintenance for Facility ZET]

File Edit Lookup Requests Setup Window Utilities Billing Yard Help

Waves Orders Labor Options

Wave:	Description:		
212580	BP 10/31/11		
Order Count:	Labor:	% Complete:	
1	00:00	0	
Ordered:	Quantity	Weight	Cube
10	30.00	0.35	
Committed:	10	30.00	0.35

Status: Committed

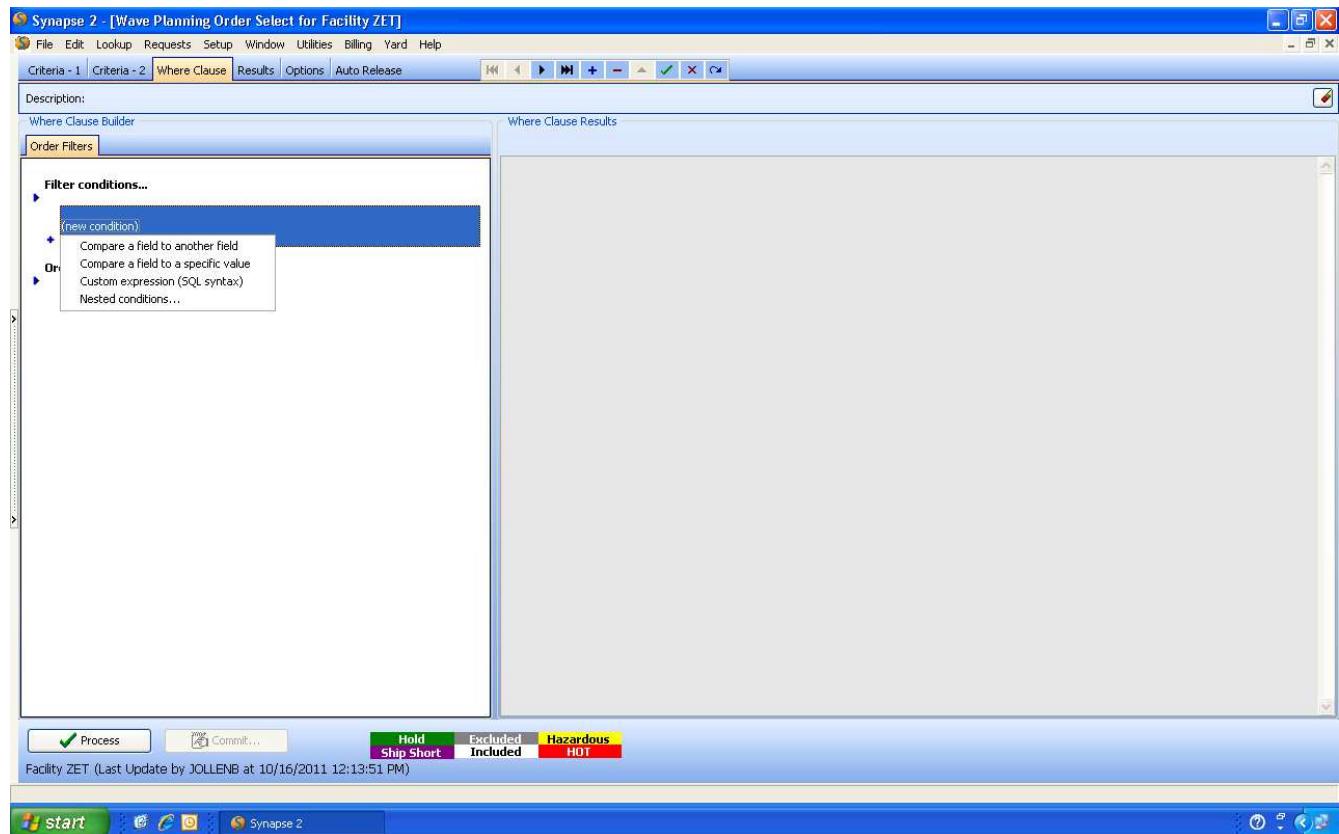
Scheduled Release:

Ready... Active Waves Only Trace this request

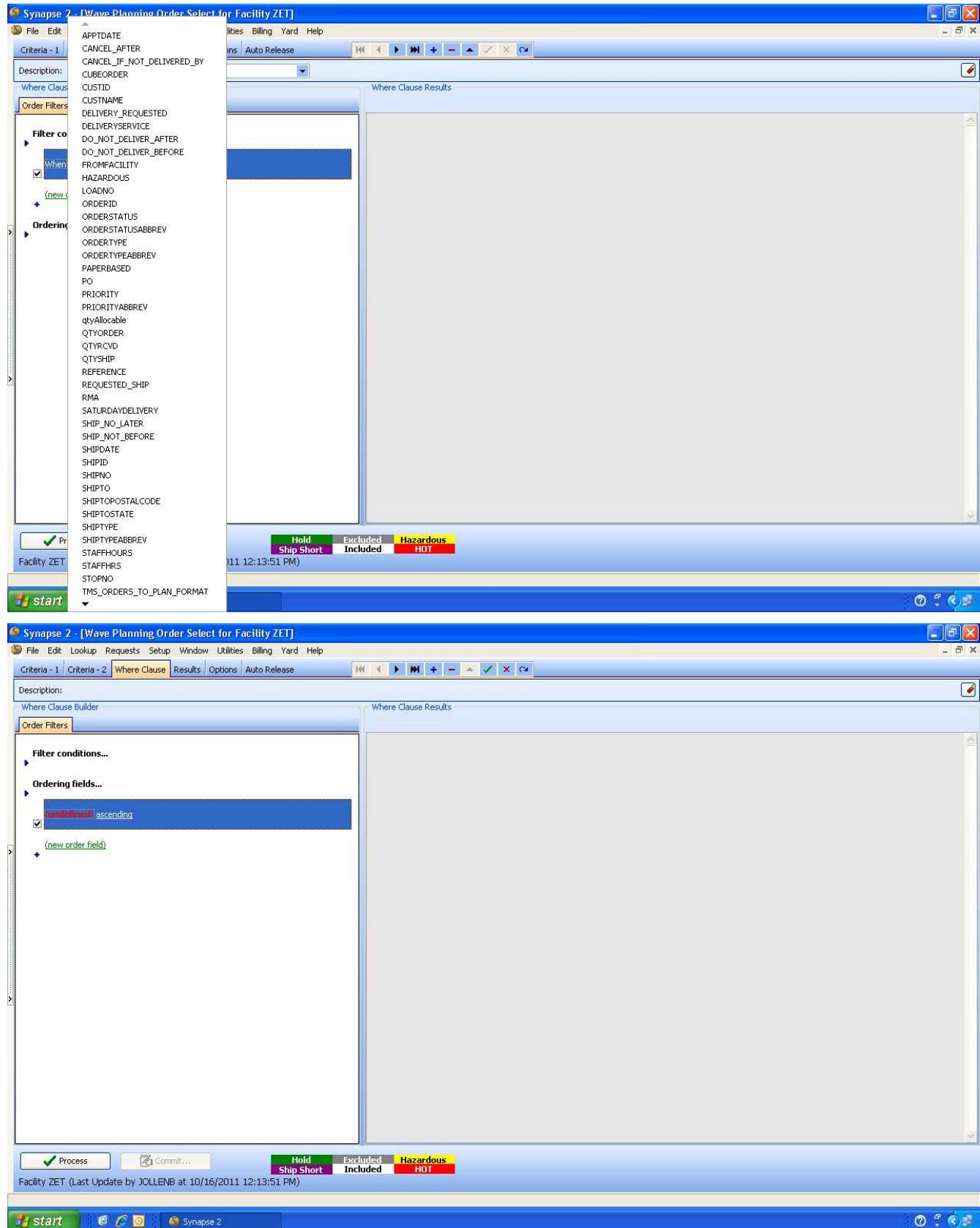
Wave	Wave Status	Description
212580	Committed	BP 10/31/11
212579	Committed	BP 11/10/11
212578	Committed	BP 05/13/10
212570	Committed	BP 5
212569	Committed	BP 5

Query Builder

On the Criteria - 2 tab, a button labeled “Query Builder” was added as will a memo field that will initially be blank upon first opening of the screen. The user will click the Query Builder button to invoke a new query building utility. Doing so will disable the other fields on the wave planning screen and this tab will not be viewable. Using the Query Builder, the user is able to create custom SQL queries as part of a wave planning request for retrieving orders in a very flexible way. All fields from the ORDERHDR, ORDERDTL, and LOADS tables will be available for inclusion in custom queries. The query builder provides a simple method for building standard SQL as well as provides the capability to build custom expressions. SQL generated from the Query Builder can be saved as part of a wave planning template. Once the query is built, the Query Builder will be closed and the new memo field populated with the SQL output. Following are several screenshots of the possible options.



The user can select from a list of fields for the field option



Example of the Description Variable and the SQL option

Below is a sample of a completed query using the SQL option

The screenshot shows the Synapse 2 interface with the title "Synapse 2 - [Wave Planning Order Select for Facility FRA]". The menu bar includes File, Edit, Lookup, Requests, Setup, Window, Utilities, Billing, and Help. The toolbar has buttons for Where Clause, Results, Options, Auto Release, and navigation.

In the "Where Clause" pane, the "Description" field contains "VIBRAM RETAIL 15-60 %SHIPDATE%". The "Where Clause Builder" section shows filter conditions:

- When "upper(waveselectview.CUSTID) = upper('9245')"
And "upper(waveselectview.ORDERSTATUS) = upper('1')"
And "waveselectview.QTYORDER >= 15"
And "waveselectview.QTYORDER <= 60"
- (new condition)

The "Where Clause Results" pane displays the generated WHERE clause:

```
WHERE
upper(waveselectview.CUSTID) = upper('9245')
AND
upper(waveselectview.ORDERSTATUS) = upper('1')
AND
waveselectview.QTYORDER >= 15
AND
waveselectview.QTYORDER <= 60
```

In the example below, the wave template description

"VIBRAM RETAIL 15-60 %SHIPDATE%" would create a distinct wave for each ship date and insert the Ship date into the actual wave description.

Wave Status	Wave	Order Count	Released At:	Description	Order #
Released	191302	2	10/17/2011 11:52 AM	ORIGINAL BUFF	
Released	191296	11	10/17/2011 11:41 AM	BELGIUM'S BEST CHOCOLATE	
Released	191287	10	10/17/2011 11:28 AM	ORIENTAL FURNITURE	
Released	191286	88	10/17/2011 11:28 AM	ORIENTAL FURNITURE	
Released	191285	1	10/17/2011 11:23 AM	ORIGINAL STYLE	
Released	191283	4	10/17/2011 11:11 AM	ALKALOL	
Released	191280	4	10/17/2011 11:11 AM	VIBRAM ROUT 10/17/11	2
Released	191277	4	10/17/2011 11:11 AM	VIBRAM RETAIL 15-60 10/17/11	
Released	191275	6	10/17/2011 11:11 AM	VIBRAM RETAIL 2-14 10/17/11	
Released	191274	1	10/17/2011 10:46 AM	DROMEDARIS	
Released	191270	3	10/17/2011 10:32 AM	CALUMET	
Released	191266	18	10/17/2011 10:10 AM	MANGIACOTTI FLORALS	1
Released	191265	1	10/17/2011 09:56 AM	PURAC	
Released	191264	1	10/17/2011 09:40 AM	ORIGINAL BUFF	
Released	191260	11	10/17/2011 09:23 AM	ORIENTAL FURNITURE	
Released	191259	185	10/17/2011 09:23 AM	ORIENTAL FURNITURE	

****Fields in the LOADSORDERVIEW for the Description variable**

AMT2CHECK
AMT2PACK
AMT2SORT
AMTCOD
AMTCOMMIT
AMTORDER
AMTPICK
AMTRCVD

AMTSHIP
AMTTOTCOMMIT
APPOINTMENTID
APPTDATE
ARRIVALDATE
ASNVARIANCE
BACKORDERYN
BILLOFLADING
CANCEL_AFTER
CANCEL_IF_NOT_DELIVERED_BY
CARRIER
COD
COMMENT1
COMMITSTATUS
CONSIGNEE
CUBE2CHECK
CUBE2PACK
CUBE2SORT
CUBECOMMIT
CUBEORDER
CUBE_PICK
CUBERCVD
CUBESHIP
CUBETOTCOMMIT
CUSTID
CUSTNAME
DELAREA
DELIVERY_REQUESTED

DELIVERYSERVICE
DO_NOT_DELIVER_AFTER
DO_NOT_DELIVER_BEFORE
ENTRYDATE
FROMFACILITY
HAZARDOUS
HDRPASSTHRUCHAR01
HDRPASSTHRUCHAR02
HDRPASSTHRUCHAR03
HDRPASSTHRUCHAR04
HDRPASSTHRUCHAR05
HDRPASSTHRUCHAR06
HDRPASSTHRUCHAR07
HDRPASSTHRUCHAR08
HDRPASSTHRUCHAR09
HDRPASSTHRUCHAR10
HDRPASSTHRUCHAR11
HDRPASSTHRUCHAR12
HDRPASSTHRUCHAR13
HDRPASSTHRUCHAR14
HDRPASSTHRUCHAR15
HDRPASSTHRUCHAR16
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HDRPASSTHRUCHAR59
HDRPASSTHRUCHAR60
HDRPASSTHRUDATE01
HDRPASSTHRUDATE02
HDRPASSTHRUDATE03
HDRPASSTHRUDATE04
HDRPASSTHRUDOLL01
HDRPASSTHRUDOLL02
HDRPASSTHRUNUM01
HDRPASSTHRUNUM02
HDRPASSTHRUNUM03
HDRPASSTHRUNUM04
HDRPASSTHRUNUM05
HDRPASSTHRUNUM06
HDRPASSTHRUNUM07
HDRPASSTHRUNUM08
HDRPASSTHRUNUM09
HDRPASSTHRUNUM10
LASTUPDATE
LASTUSER

LOADNO
LOADSTATUS
LOADSTOPSHIPTO
LOADSTOPSTAGELOC
LOADSTOPSTATUS
LOADSTOPSTATUSABBREV
MANUAL_PICKS_YN
ORDERHDRCARRIER
ORDERID
ORDERSTATUS
ORDERSTATUSABBREV
ORDERTYPE
ORDERTYPEABBREV
PAPERBASED
PO
PRIORITY
PRIORITYABBREV
QTY2CHECK
QTY2PACK
QTY2SORT
QTYCOMMIT
QTYORDER
QTYPICK
QTYRCVD
QTYSHIP
QTYTOTCOMMIT
REFERENCE
REQUESTED_SHIP

RMA
SATURDAYDELIVERY
SHIP_NO_LATER
SHIP_NOT_BEFORE
SHIPDATE
SHIPID
SHIPNO
SHIPTERMS
SHIPTO
SHIPTOADDR1
SHIPTOADDR2
SHIPTOCITY
SHIPTOCOUNTRYCODE
SHIPTOEMAIL
SHIPTOFAX
SHIPTONAME
SHIPTOPHONE
SHIPTOPOSTALCODE
SHIPTOSTATE
SHIPTYPE
SHIPTYPEABBREV
SPECIALSERVICE1
SPECIALSERVICE2
SPECIALSERVICE3
SPECIALSERVICE4
STAFFHOURS
STATUSUPDATE
STATUSUSER

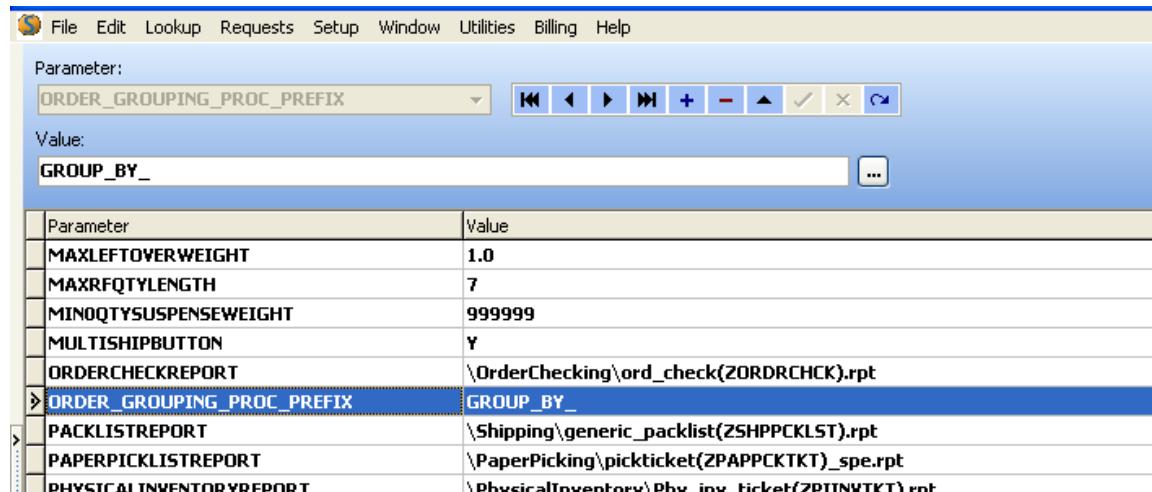
STOPNO
TMS_ORDERS_TO_PLAN_FORMAT
TMS_STATUS
TOFACILITY
TOTAL_PICKS
WAVE
WEIGHT_ENTERED_KGS
WEIGHT_ENTERED_LBS
WEIGHT2CHECK
WEIGHT2CHECK_KGS
WEIGHT2PACK
WEIGHT2PACK_KGS
WEIGHT2SORT
WEIGHT2SORT_KGS
WEIGHTCOMMIT
WEIGHTCOMMIT_KGS
WEIGHTORDER
WEIGHTORDER_KGS
WEIGHTPICK
WEIGHTPICK_KGS
WEIGHTRCVD
WEIGHTRCVD_KGS
WEIGHTSHIP
WEIGHTSHIP_KGS
WEIGHTTOTCOMMIT
WEIGHTTOTCOMMIT_KGS
XDOCKORDERID

Wave Planning - Specialized Order Grouping

This function is designed to provide the capability for easily tagging orders a group in order to simplify wave planning. There is a setup requirement, by customer, required for this function to work. If the setup options are not active, the system will perform as normal.

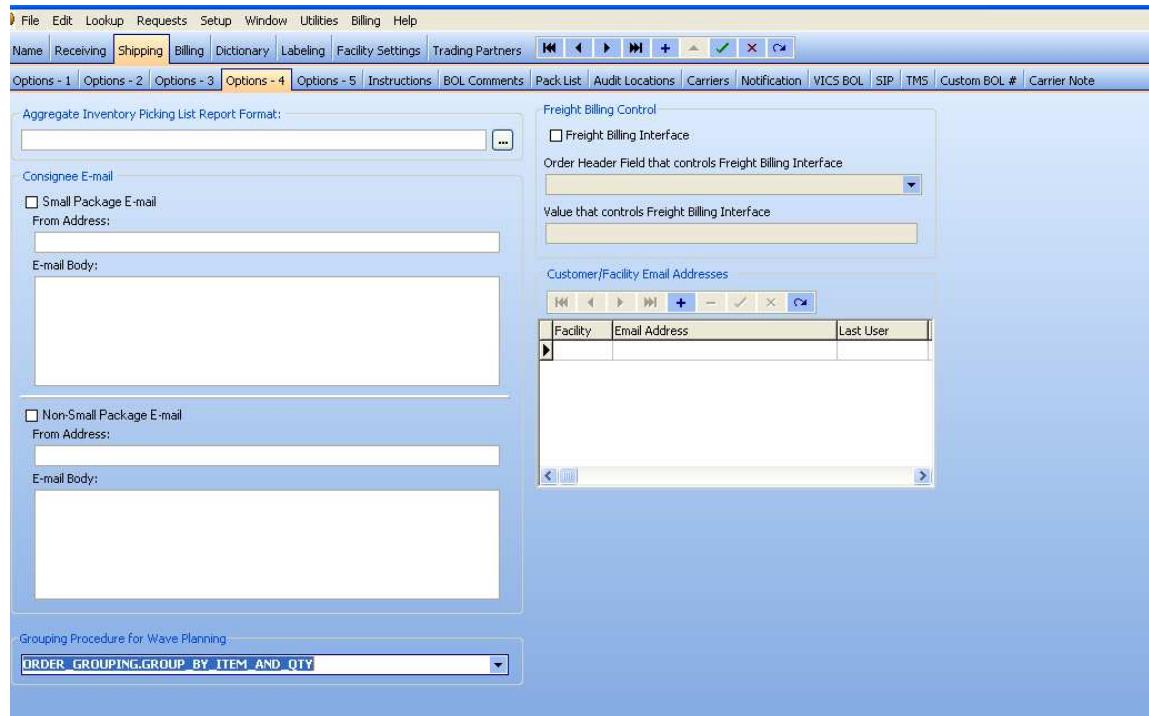
Default Value

In the Default Value screen, the Parameter named Order_Grouping_Proc_Prefix will need to be setup with a Value of GROUP_BY_. This value will define a prefix that will be used to identify PL/SQL procedures used as part of the functionality.



Customer Maintenance/Shipping/Options 4

On the Customer Maintenance/Shipping/Option-4 tab there is a new option to be used in conjunction with the Default Value. The field is named Grouping Procedure for Wave Planning. Using the drop down arrow, select the value from the list. The options in this list will be database procedures beginning with the prefix value defined in the Default Value screen (GROUP_BY_).



Lookup/Orders

In the Lookup/Orders screen, select the orders that the procedure will be ran against.

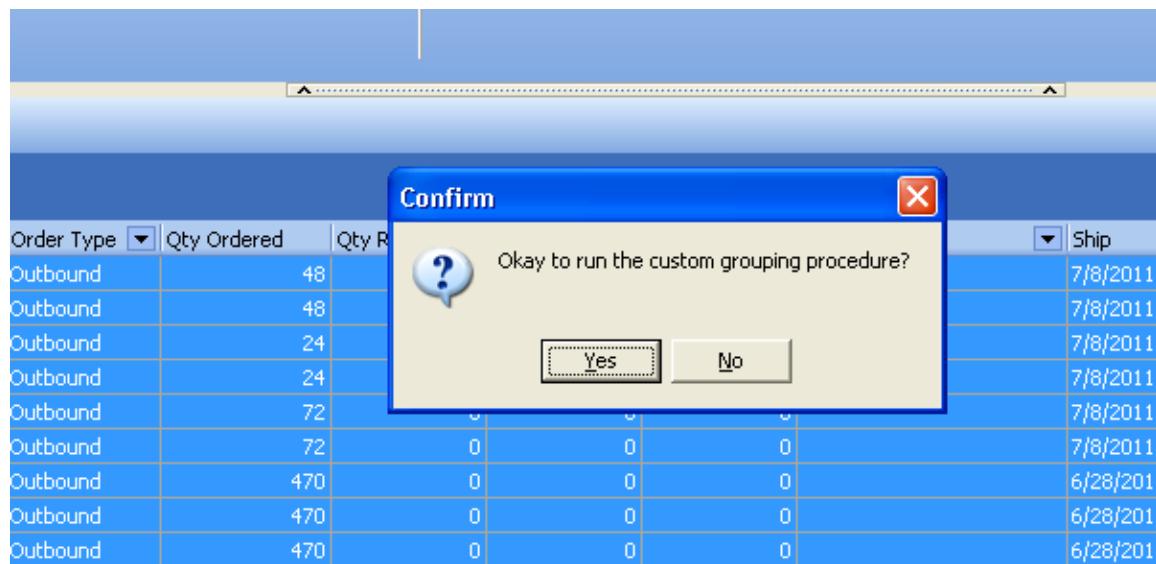
Order ID	Ship ID	Order Status	Customer	Order Type	Qty Ordered	Qty Received	Qty Shipped	Qty Picked	Appointment	Ship	Customer PO	RMA #	From Facility
308261	1	Entered	GIL	Outbound	48	0	0	0		7/8/2011	GROUP		PH1
308260	1	Entered	GIL	Outbound	48	0	0	0		7/8/2011	GROUP		PH1
308259	1	Entered	GIL	Outbound	24	0	0	0		7/8/2011	GROUP		PH1
308258	1	Entered	GIL	Outbound	24	0	0	0		7/8/2011	GROUP		PH1
308257	1	Entered	GIL	Outbound	72	0	0	0		7/8/2011	GROUP		PH1
308256	1	Entered	GIL	Outbound	72	0	0	0		7/8/2011	GROUP		PH1
308255	1	Entered	GIL	Outbound	470	0	0	0		6/28/2011	TEST		PH1
308254	1	Entered	GIL	Outbound	470	0	0	0		6/28/2011	TEST		PH1
308253	1	Entered	GIL	Outbound	470	0	0	0		6/28/2011	TEST		PH1

Right click will display an options menu. Select the option Run Order Grouping Procedure.

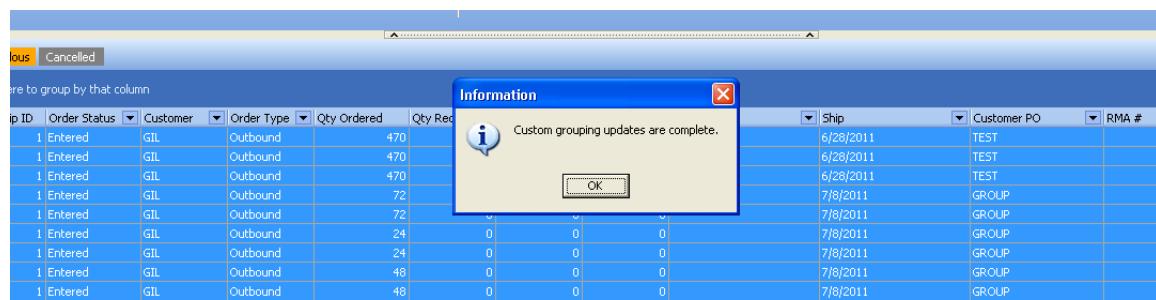
The screenshot shows a search interface with fields for Facility, Order Type, Carrier, Bill To, Customer ID, Order Status, Delivery Service Code, Ship To, Order ID, Order Priority, Customer PO, Item, Wave, Shipment Type, Reference, and Ordered Lot Number. Below the search bar is a legend with 'Hot' (red), 'Hazardous' (yellow), and 'Cancelled' (grey) status indicators. A message 'Drag a column header here to group by that column' is displayed above the grid. The grid contains 11 rows of order data, each with columns for Order ID, Ship ID, Order Status, Customer, Order Type, Qty Ordered, Qty Received, Qty Shipped, Qty Picked, Appointment, Ship, Customer PO, RMA #, and From Facility.

Order ID	Ship ID	Order Status	Customer	Order Type	Qty Ordered	Qty Received	Qty Shipped	Qty Picked	Appointment	Ship	Customer PO	RMA #	From Facility
308261	1	Entered	GIL	Outbound	48	0	0	0	7/8/2011	GROUP	PH1		
308260	1	Entered	GIL	Outbound	48	0	0	0	7/8/2011	GROUP	PH1		
308259	1	Entered	GIL	Upgrade Delivery Service	24	0	0	0	7/8/2011	GROUP	PH1		
308258	1	Entered	GIL	Assign To Load	24	0	0	0	7/8/2011	GROUP	PH1		
308257	1	Entered	GIL	Run Custom Grouping Procedure	72	0	0	0	7/8/2011	GROUP	PH1		
308256	1	Entered	GIL	Outbound	72	0	0	0	7/8/2011	GROUP	PH1		
308255	1	Entered	GIL	Outbound	470	0	0	0	6/28/2011	TEST	PH1		
308254	1	Entered	GIL	Outbound	470	0	0	0	6/28/2011	TEST	PH1		
308253	1	Entered	GIL	Outbound	470	0	0	0	6/28/2011	TEST	PH1		

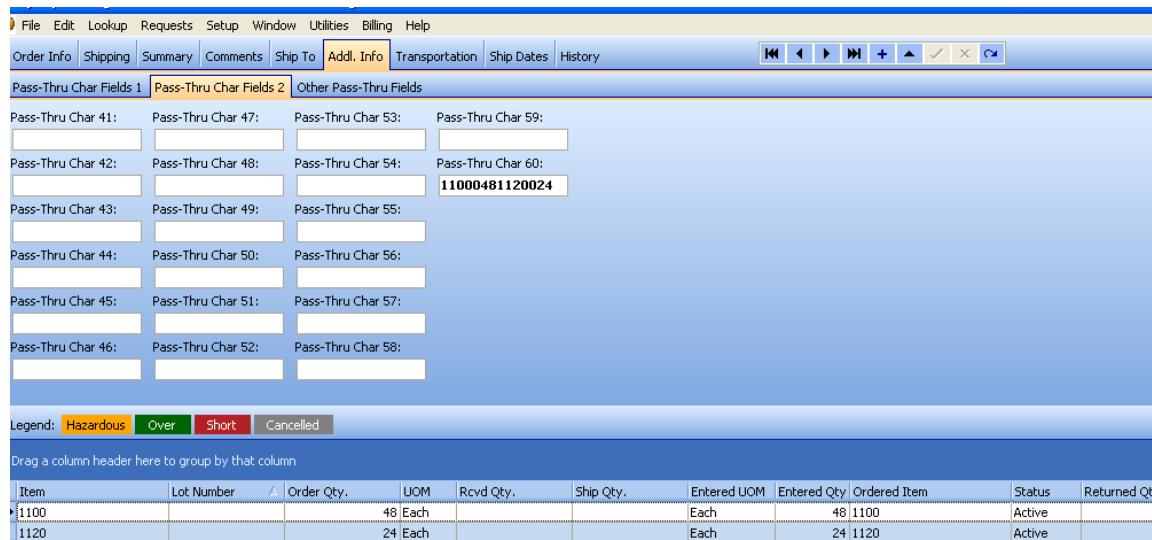
The user will be prompted with the message below.



Once the procedure has completed, the message will be displayed as below.

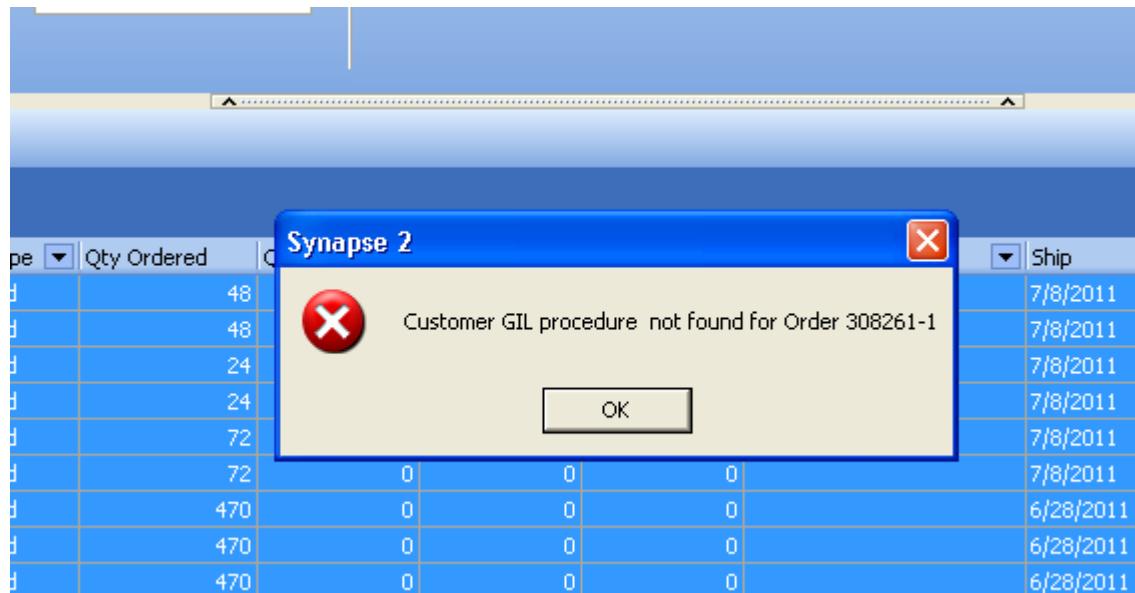


The procedure will concatenate the item and quantities on each order and populate that value into the OrderHdrPassThruChar60 field, as shown below.



This will allow the orders that all contain the same value string in this field to be grouped together easily on the same wave.

Below is an example of an error message that will display if the setup is not defined properly for the customer. If the user receives an error message when performing the 'Run Custom Grouping Procedure' it will result in none of the orders being updated. The setup issue must be resolved before the update can be performed. Or if the selection contained customers that are not setup for this procedure, the selection will have to be corrected and then run the procedure again.



Wave Planning

In the Wave Planning screen, there are two filters at the bottom the screen that will be used to group orders.

Using the drop down arrow, select the Pass-Thru Char 60 option from the list. The filter below this is where the user will select the value on the orderhdr to be grouped together on the wave.

The screenshot shows a software interface for 'Wave Planning'. At the top, there's a menu bar with File, Edit, Lookup, Requests, Setup, Window, Utilities, Billing, and Help. Below the menu is a toolbar with buttons for Criteria - 1, Criteria - 2, Results, Options, Auto Release, and navigation icons. The main area contains several input fields and dropdown menus:

- Description:** A dropdown menu set to "GIL WILL CALL".
- Customer ID:** "GIL" with a search icon.
- Scheduled Ship Dates From:** "(All)" with a search icon, "(Current Date +/- -999 Days)".
- Ship To:** An empty field with a search icon.
- Scheduled Ship Dates To:** "(All)" with a search icon, "(Current Date +/- 999 Days)".
- State/Province:** An empty field with a search icon.
- Appointment Dates From:** "(All)" with a search icon, "(Current Date +/- -999 Days)".
- Postal Code:** An empty field with a search icon.
- Appointment Dates To:** "(All)" with a search icon, "(Current Date +/- 999 Days)".
- Carrier:** An empty field with a search icon.
- Item:** An empty field with a search icon.
- Load:** An empty field with a search icon.
- Delivery Service Code:** An empty field with a search icon.
- Order ID:** An empty field with a search icon.
- Order Type:** Radio buttons for "Include" (checked) and "Exclude", followed by an empty field with a search icon.
- Order Priority:** Radio buttons for "Include" (checked) and "Exclude", followed by an empty field with a search icon.
- Product Group:** Radio buttons for "Include" (checked) and "Exclude", followed by an empty field with a search icon.
- Shipment Type:** Radio buttons for "Include" (checked) and "Exclude", followed by an empty field with a search icon.
- From Lot Number:** An empty field with a search icon.
- To Lot Number:** An empty field with a search icon.
- Single SKU Only:** A checkbox.
- Pass-Thru Char 60:** A dropdown menu currently set to "3100024".
- Active Line-Item Count:** A field with "From:" and "To:" input boxes.

The user can double click in the field to display a list of values to choose from. To choose one of the options, click on the value, then select the Select button to have the value populate automatically into the field.

Pass-Thru Char 60 Lookup

Beginning with:

Include

Pass-Thru Char 60	Order Count
11000481120024	2
11200243100024	2
126036014100601440050	3
3100024	2

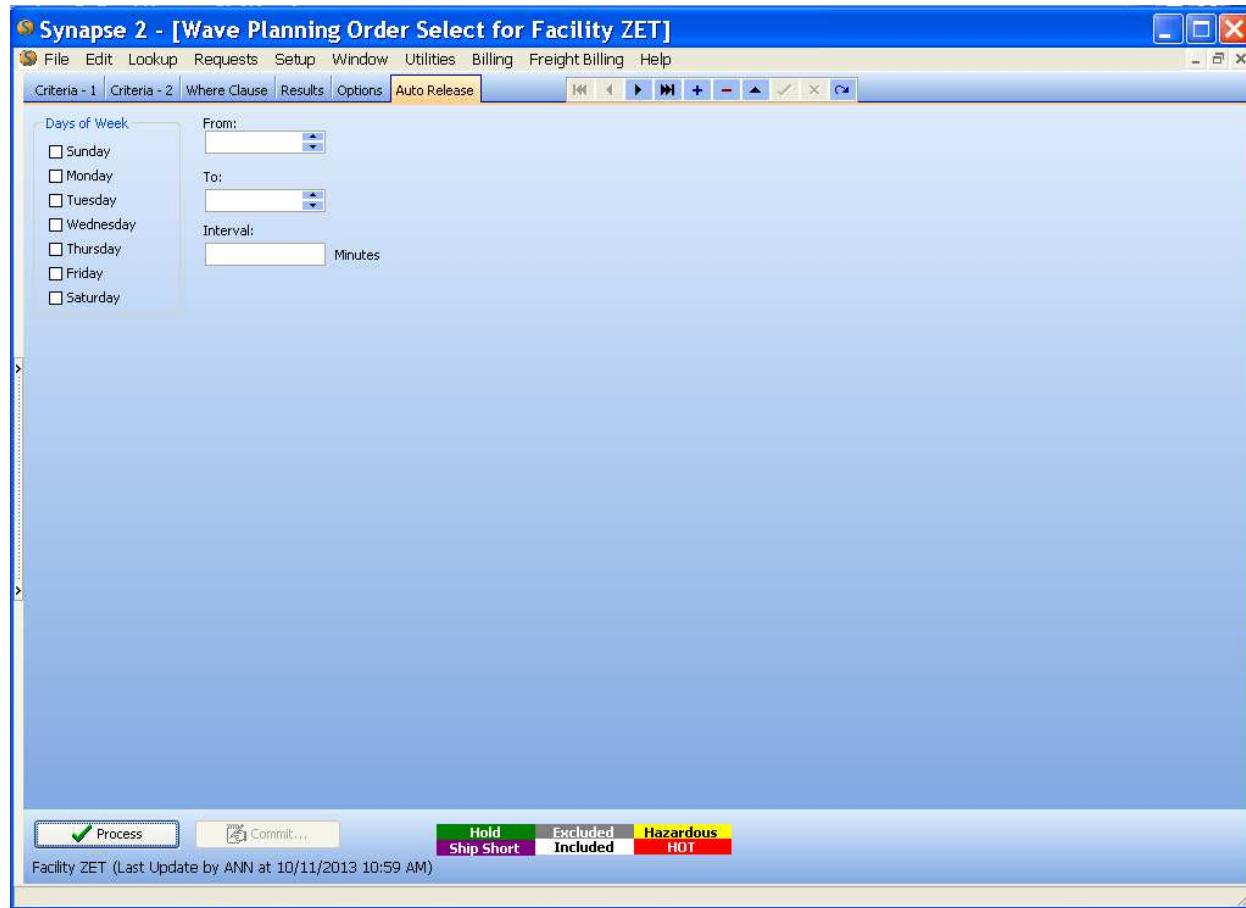
From this point the Wave Planning/Wave Release process remains the same as it does today.

Security

The user must have the security setting for RunnOrderGroupingProcedure in order to utilize this function.

Wave Planning - Auto Release

On the Auto Release tab, a user can define the frequency of when the Auto Release should occur.

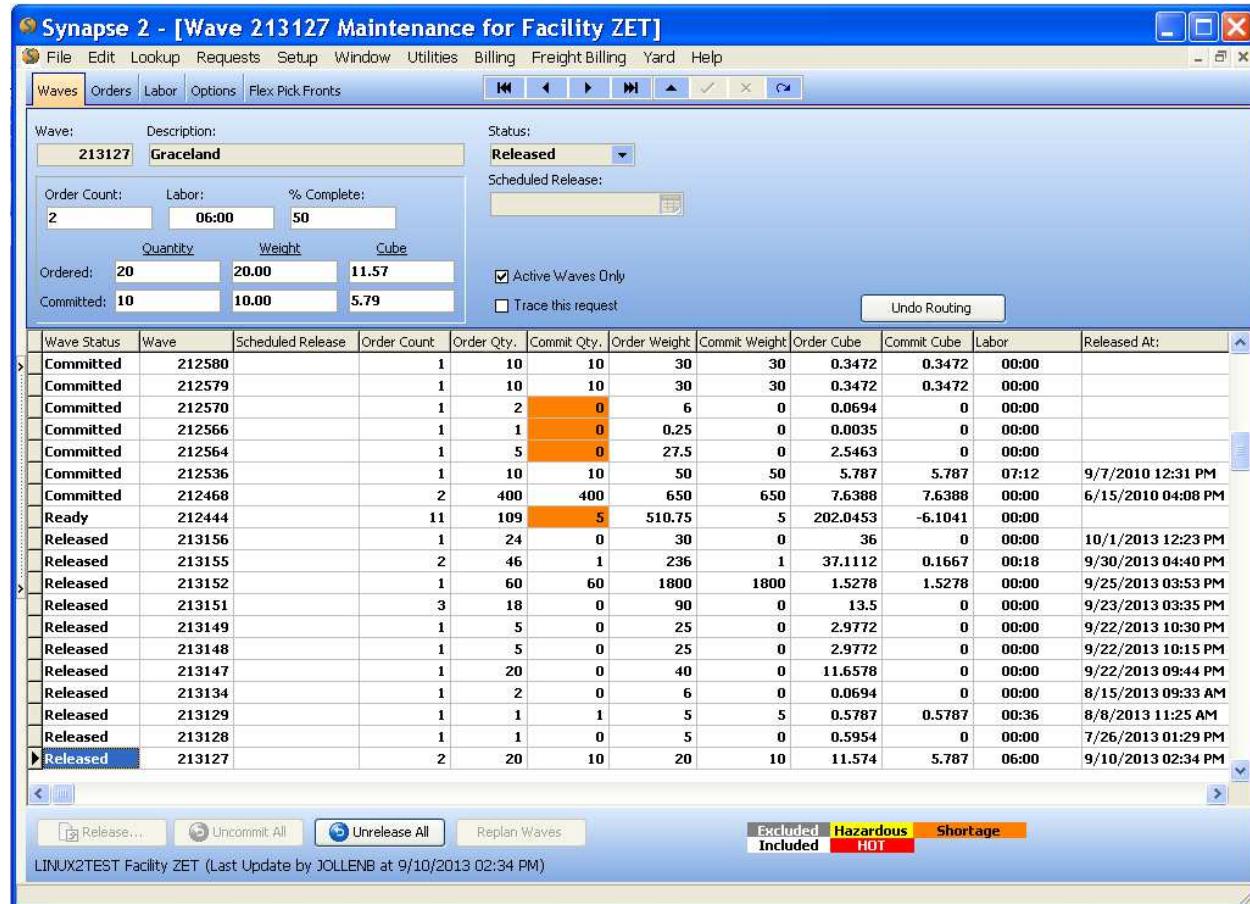


**Note: Further information on the setup requirements for this feature is outlined in the Concepts Manual.

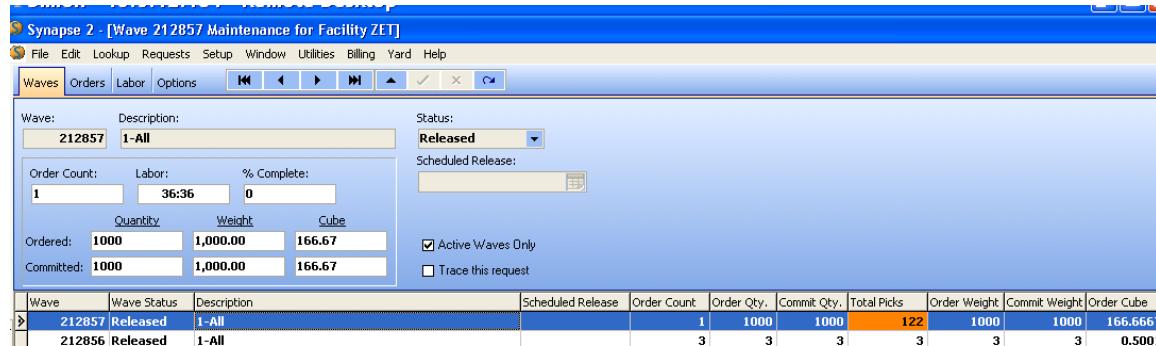
Wave Release

The next step in the wave management process is releasing the waves. By releasing the waves, the tasks are being released into the warehouse so they are available.

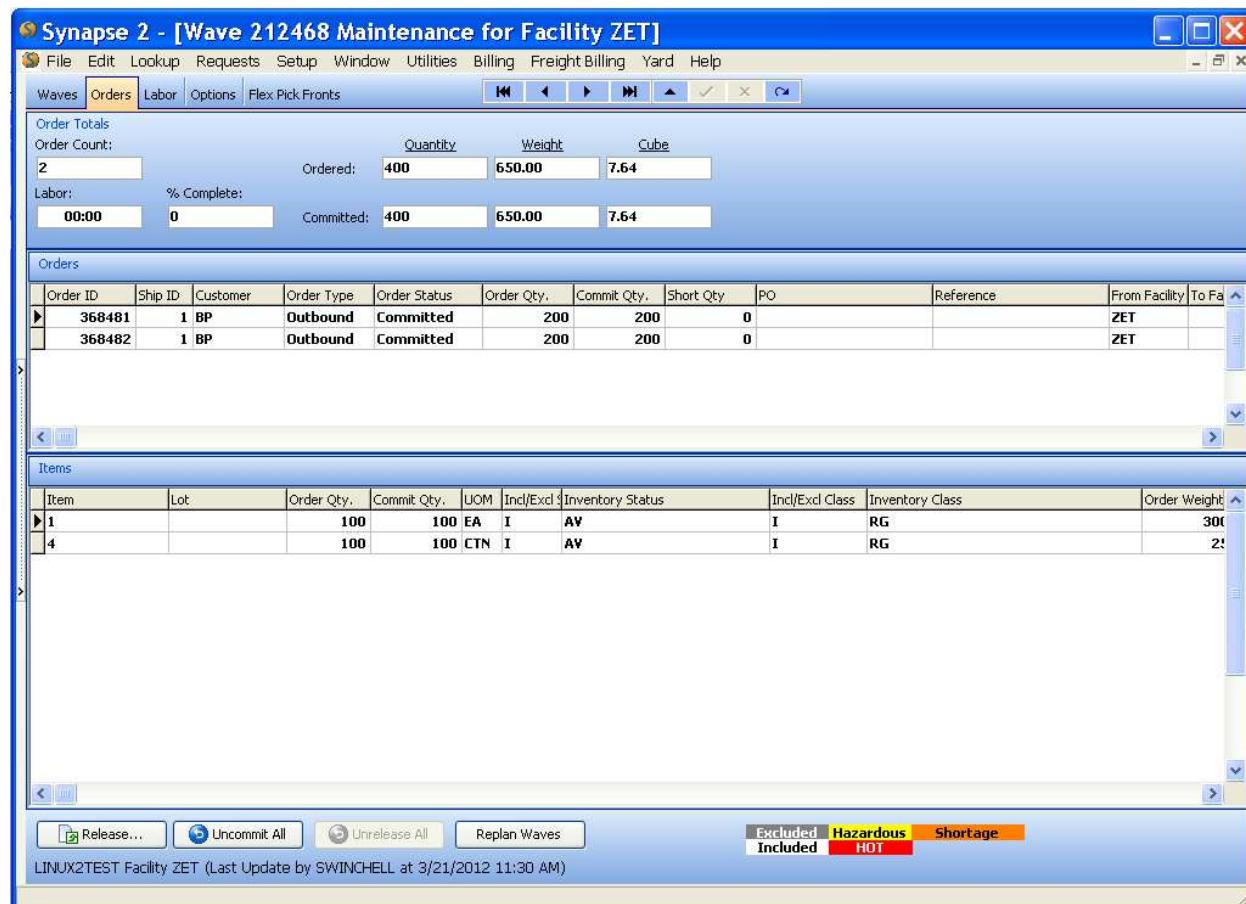
The Wave Release screen will display as follows:



There are 4 tabs that make up the Wave Release screen- Waves, Orders, Labor and Options. The first tab, Waves, displays all waves and their status. A wave will automatically be removed from this tab once all orders have been completed and shipped for the wave. The three Wave Status types that are displayed on this screen are Released, Committed, and Ready. Once a wave is in a **Released** status, the warehouse associates can access the tasks. Wave status **Committed** still allows orders to be added to the wave. Wave status **Ready** freezes the wave and does not allow orders to be added to the wave. This screen also displays additional information about each wave such as the number of orders in one wave, order type, and order quantity and total picks which will show the total tasked quantity and will illuminate in Orange if there is a variance. This should assist the Wave Planner. The application messages will not change.

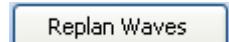


The next tab is the Orders tab. The Orders tab will display as follows:



The Orders tab will display all orders that are included in the wave. By highlighting an order in the grid at the bottom of the screen, the Selected Order Totals area at the top of the screen will display the order specific information. This is just an informational screen and nothing can be changed here.

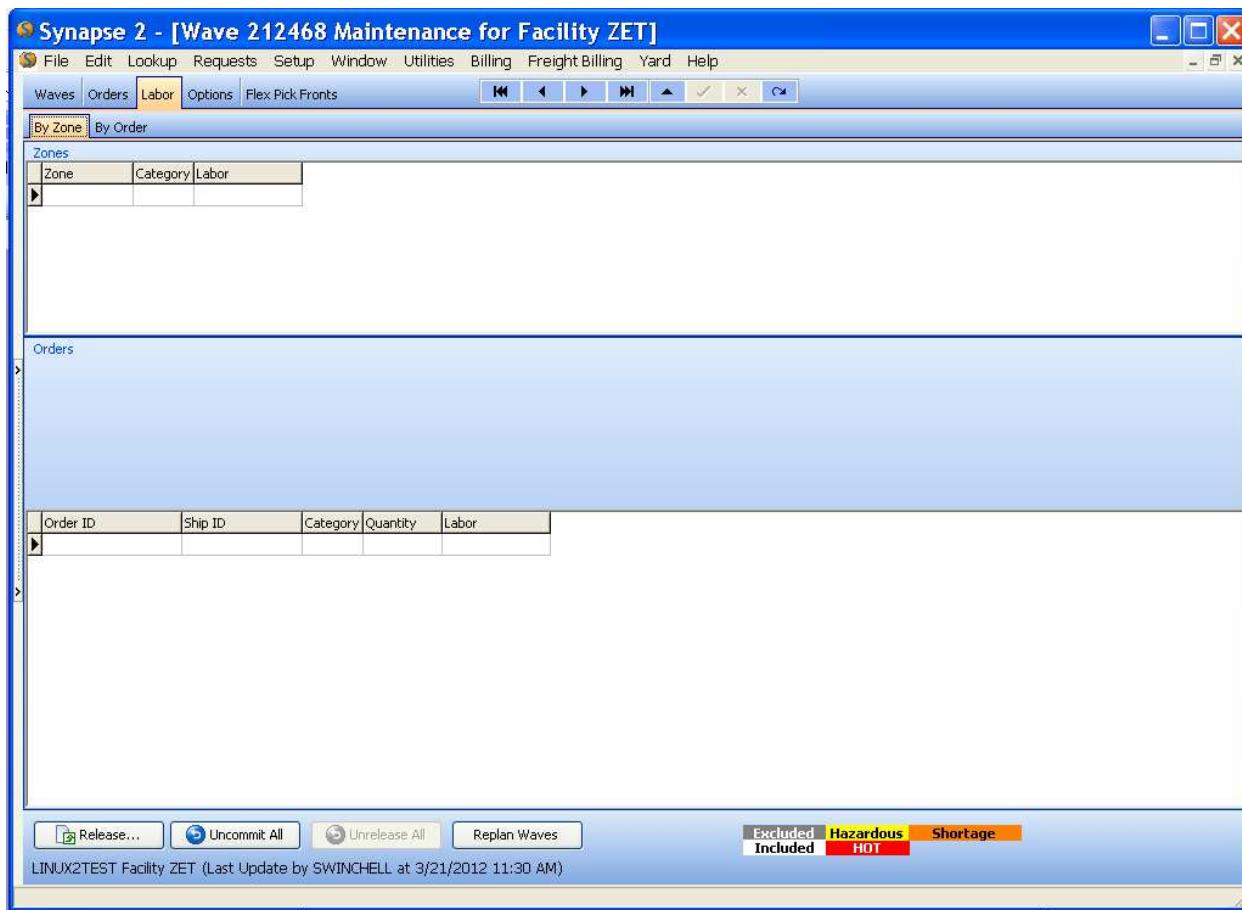
The purpose of the Replan Waves feature is to allow the wave to be re-planned without un-committing the product associated with the order, therefore assuring that the product

doesn't get committed to another order. After reviewing it, if it is necessary to re-plan the wave, click on the Replan Waves  button.

NOTE: **Re-planning can only occur on waves with a Committed or Ready status. Once the wave is released the wave cannot be re-planned.**

The next tab is the Labor tab that shows Labor Totals.

The Labor tab will display as follows:



The Labor tab will display how long it will take for each order in the wave to be completed. These times are displayed in minutes: seconds format. The total for an order is displayed in the top grid of the screen while a breakdown of times is shown for each item in the order in the lower grid of the screen. These labor totals are derived from information that is set up in the Labor Setup screen for the facility. The last tab to be viewed is the Options tab.

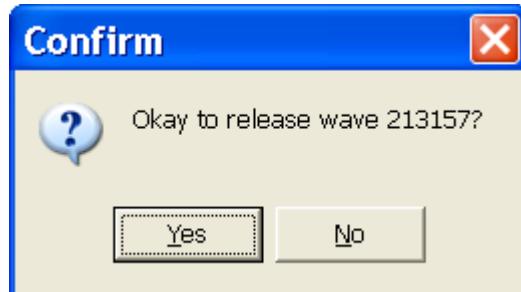
The Options tab will display as follows:



This screen is the same Options tab that is found on the Wave Planning screen. The tab will display the information that was set up for this wave on the template but can be changed now before the wave is released to the floor. This is the only tab on the Wave Release screen that information can be altered from its original format. Once all of the information has been reviewed, it is time to release the wave to the floor.

Highlight the line for the wave that needs to be released. The current status of the wave should be Committed. Click the Release button .

The system will display a message box asking if it is ok to release the wave:



Click "Yes" in this window to confirm. Click the Refresh button to see if the status of the wave changed to Released. Once the status has changed to released, the tasks are now available for the associates to pick.

Additional Information:

If orders are entered into the system via EDI, this process is not done the same way. The waves are automatically created for orders that pass the editing process and the Wave Planner only needs to release the waves in the same process that is described above.

When manually releasing a manually entered 'O'utbound order from hold, if the release is successful (no validation errors) the system will check to see if a "Wave Template for Imported Order" value has been specified on the Customer Form's Shipping/Options 2 tab.

If so, the system will automatically attempt to:

- Commit the order
- Assign it to a "Committed" Wave matching this template value using the same logic that already applies to imported orders. If a wave's order count limit is reached, its status is set to "Ready" and another "Committed" wave is created.

Trace Request

The **Wave Release screen** contains a "Trace this request" checkbox. If the box is checked prior to the wave release, the system will generate "trace" messages (which will appear on the Messages Form under type 'T'race Message). The checkbox will only appear on the screen if the user has 'S'upervisor security, since these checkboxes are intended to be used for support/debug purposes.

Automatic Release

If a wave in committed status is to be released at a specified date and time, check the READY box, and enter a future date and time in the Scheduled Release box. The wave status will change to "Ready". The Oracle scheduler will trigger the wave release at the designated date and time.