Picking Assignments

Product Development - 2025-09-16 - Miscellaneous

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Overview

Inventory Manager's Picking Assignments functionality streamlines the mobile fulfillment process by ensuring pickers know what they can and should be working on. This feature set helps prevent common warehouse problems like missing orders and double picking orders, and it makes it possible to eliminate paper pick tickets and reduce waste.

Inventory Manager users can be flagged as pickers and optionally assigned to picking groups, and then they can be assigned sales orders to fulfill. Warehouse managers can manually assign orders to pickers via an Inventory Manager console screen, or automatic order assignment can occur when a picker starts picking an order on the mobile app. Orders can also be assigned to pickers automatically ahead of time via Automation Agent or workflow handling in SalesPad.

The mobile Picking module can then be restricted so that pickers can only see and load sales orders that are assigned to them. Pickers can also be allowed to pick orders which are not assigned to anyone and therefore open for anyone to fulfill. These restrictions are configured per security group.

Picking Assignments are available as of Inventory Manager 5.14.0 and SalesPad 5.5.5.

Additional SalesPad DLLs are required for access to the Picking Assignment functionality in SalesPad.

Picking Assignments Configuration

Inventory Manager users can be flagged as pickers and optionally assigned to picking groups, and then pickers and/or groups can be assigned sales orders to fulfill. Pickers and groups can be set up to have specific capacities to help ensure that they have enough work but not too much work. Rules can be set around the types of orders that they are assigned, so that newer pickers can be given less complex orders to pick, and veteran pickers can be assigned more complex orders.

Securities

Picking Configuration: Can Create Groups - Allows the user to create new picking groups. (Default: True)

Picking Configuration: Can Delete Groups - Allows the user to delete picking groups. (Default: True)

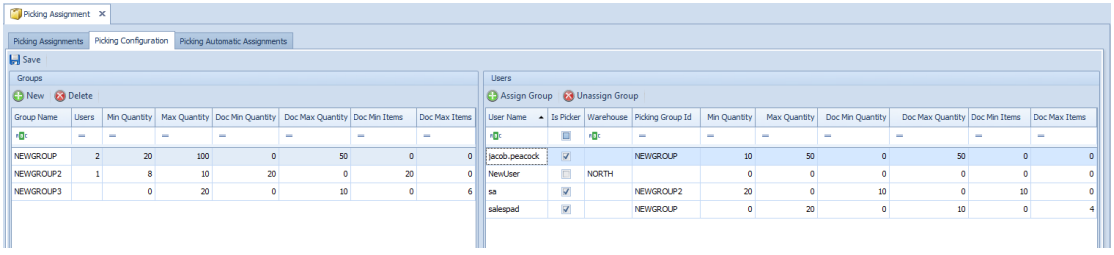
Picking Configuration: Can Update Groups - Allows the user to update picking group configuration fields. (Default: True)

Picking Configuration: Can Update Picker Group Assignments - Allows the user to update which users are assigned to which picking groups. (Default: True)

Picking Configuration: Can Update Pickers - Allows the user to update picker configuration fields. (Default: True)

Configuring Pickers And Groups

The Picking Configuration screen on the Inventory Manager console application allows configuring pickers and groups, as well as optional rules around capacity and order complexity.



All Inventory Manager users are visible and can be flagged as pickers. Users can only be un-flagged as pickers if they do not have any assigned orders that still need fulfillments, and if they are not set up in an Automatic Assignment rule.

Picking groups can be created and assigned a group name which can be updated as needed. Pickers can be assigned to those groups and updated

as needed. Groups will automatically update to show how many users are assigned. Groups can only be deleted if they have no assigned orders that still need fulfillments, and if they are not set up in an Automatic Assignment rule.

Capacities can be configured for pickers and groups. This includes a Min Quantity and a Max Quantity, which can be taken into account when assignments are made manually on the Picking Assignments screen and automatically in SalesPad. Capacity rules help ensure that pickers and groups have enough work, but not too much work.

- Min Quantity - the desired minimum unfulfilled quantity in base UofM across all assigned orders for this picker/group. Most assignment options will consider pickers/groups who are below their Min Quantity as the highest priority for the next assignment. Use this to help ensure that pickers have enough work.

- Max Quantity - the desired maximum unfulfilled quantity in base UofM across all assigned orders for this picker/group. Most configuration options will prevent assignments that would put a picker/group above their Max Quantity. Use this to help ensure that pickers don’t have too much work.

Document complexity rules can be set up for pickers and groups. This includes controls around the complexity of each order that is assigned, such as the total quantity to fulfill in base UofM, and the total number of unique items to fulfill. Complexity rules help ensure that pickers and groups have work that matches their experience level. Most assignment options will skip assignments that break these rules, but some options allow bypassing these rules.

- Doc Min Quantity - the minimum unfulfilled quantity in base UofM on each order that is assigned to this picker/group. Use this to avoid assigning smaller orders to more experienced pickers.

- Doc Max Quantity - the maximum unfulfilled quantity in base UofM on each order that is assigned to this picker/group. Use this to avoid assigning larger orders to newer pickers.

- Doc Min Items - the minimum number of unique items on each order that is assigned to this picker/group. Use this to avoid assigning

simpler orders to more experienced pickers.

- Doc Max Items - the maximum number of unique items on each order that is assigned to this picker/group. Use this to avoid assigning more complex orders to newer pickers.

Once pickers and groups are configured, they can be assigned orders for fulfillment.

Manual Picking Assignments

Warehouse managers can manually assign sales orders to pickers and picking groups on the Picking Assignments screen in the Inventory Manager console. Assignments can be fully manual, where the manager selects one or more pickers/groups and assigns them specific orders. This process allows assigning more than one picker/group to the same order, and it can override the rules around capacity and document complexity.

Assignments can also be semi-automated on this screen by leveraging the balanced assignments feature. The manager can select one or more pickers/groups and many orders, then choose to make the system assign those orders to those pickers/groups via a balanced process, assigning one picker or group to each order while respecting capacity and complexity rules. This process is closer to the full automation provided by SalesPad, but it does not require SalesPad and it allows the warehouse manager to have full control over when the assignments are created.

Picking assignments can be updated and removed on this screen. Orders can also be moved in workflow, for example to support a process where the orders wait in a particular queue for assignment and then they move to a READY TO PICK queue once they are assigned and ready for fulfillment.

Securities

Picking Assignments: Can Assign Documents - Allows the user to assign and unassign documents to pickers/groups. (Default: True)

Picking Assignments: Can Move Documents In Workflow - Allows the user to send documents to certain queues in workflow. (Default: True)

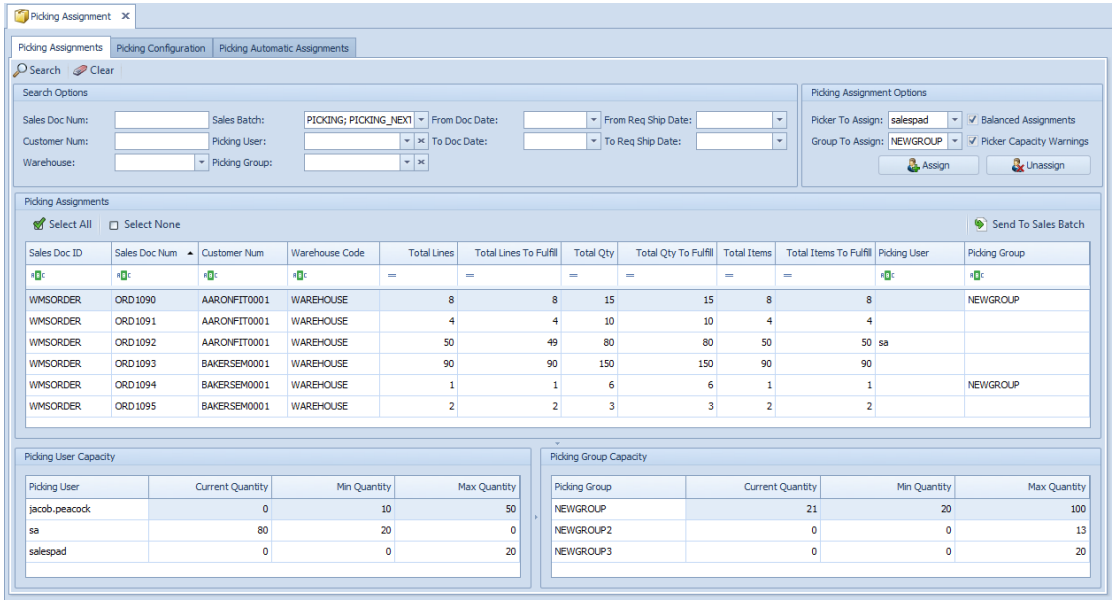
Picking Assignments: Picker Capacity Checks - Controls how picker capacity checks are handled. Restrict will prevent assignments that fail a capacity check. Warn will inform the user of the failed capacity check and perform the assignment. None will allow assignments regardless of capacity without warning the user. Note that the Picker Capacity Warnings checkbox is only interactable when this is set to Warn. (Default:

Warn)

Picking Assignments: Can Disable Picker Capacity Warnings - Allows the user to disable the warnings that appear when they try to assign a document that does not meet the picker/group's capacity constraints. (Default: True)

Assigning Pickers And Groups

The Picking Assignments screen provides search options to find sales orders that are ready to be assigned for fulfillment, visibility of the current capacities and assignment rules for pickers and picking groups, and various options for creating and removing picking assignments.



The upper left portion of the screen displays options to search for sales orders that need picking assignments. Sales orders can be filtered by customer, warehouse, sales batch (workflow queue), document date ranges, and their current assignments. The Search button in the upper left is used to update the search results, which appear in the main grid.

The middle portion of the screen contains the main grid which shows orders that match the search criteria. Standard document header fields are available and can be tailored to the most relevant fields for determining how to create assignments; use the Column Chooser to see all possible fields. The currently assigned Picking User and Picking Group are visible by default and will update automatically as assignments are created and removed. Several special calculated fields are also available:

- Total Lines To Fulfill - the total number of sales lines that need fulfillment on this order

- Total Items To Fulfill - the total number of unique items that need fulfillment on this order

- Total Qty To Fulfill - the total quantity in base UofM across all items that need fulfillment on this order

Above the grid are buttons that affect grid selections and update orders in workflow:

- The Select All and Select None buttons will select all or none of the orders in the main grid.

- The Send To Batch button will show a prompt to select the batch (workflow queue) that will be assigned to all selected orders in the grid.

At the top right of the screen are options for creating and removing picking assignments.

- The Picker To Assign and Group To Assign dropdowns control which pickers and/or groups will receive assignments or be removed as assignments.

- The Assign button will assign the selected pickers and/or groups to the selected orders in the grid.

- The Unassign button will unassign the selected pickers and/or groups from the selected orders in the grid.

- The Balanced Assignments checkbox controls how the assignments are created. When unchecked, all selected pickers and/or groups will be assigned to all selected orders, which gives full assignment control to the user and also makes it possible to assign more than one picker or group to the same order. When this checkbox is checked, the assignment logic becomes much more complex; see the Balanced Assignments section for more details.

- The Picker Capacity Warnings checkbox controls whether special icons display at the far left of the row when an assignment is created

that breaks a rule around a picker's/group's capacity or document complexity. These icons show a tooltip that explains the broken rule when hovered over with the mouse. This checkbox relates to the *Picker Capacity Checks* security, which can be used to hard prevent assignments that break those rules instead of allowing them with warnings.

The lower portion of the screen shows information on the current capacities for pickers and groups, as well as their configured capacity and document complexity rules. This part of the screen can be hidden if it is not relevant, and the picking groups subsection can be hidden if only pickers are relevant. Most of the fields simply display what is set up on the Picking Configuration screen for easy reference when creating assignments. The Current Quantity is a special calculated field that shows the current unfulfilled quantity in base UofM across all orders assigned to that picker/group. This value refreshes each time the search results are updated, and each time assignments are created or removed on this screen.

Balanced Assignments

Balanced assignments can be used to semi-automate the assignment of orders to pickers and groups while optionally respecting rules around capacities and document complexity. When the Balanced Assignments checkbox is checked, and an Assign button is clicked, then only one of the selected pickers or groups is assigned to each selected order. Various checks and decisions are used to determine the best way to balance these assignments.

Each selected order is processed in the sequence in which they display in the grid. The search options and grid filter options can be used to arrange the orders in the desired priority sequence for assignment. For each order, the following processing occurs:

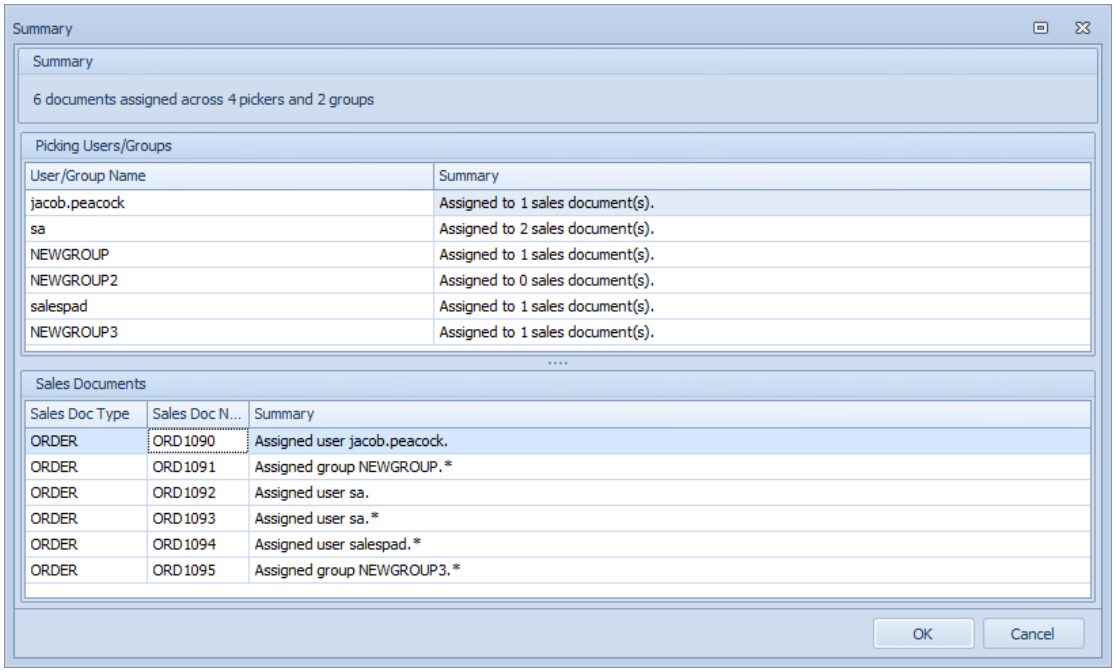
1. The selected pickers/groups are prioritized based on their Current Quantity, where the picker/group with the least assigned quantity is the highest priority for assignment. Any pickers/groups whose Current Quantity is less than their Min Quantity are bumped up in priority so that they will receive assignments before pickers/groups who already meet their Min Quantity or do not have a Min Quantity configured. Any pickers/groups whose Current Quantity is greater than their Max Quantity are moved down so that they are considered for assignment last. When Assign Picker + Group is used, and there is a picker and a group that are equivalent on all the above conditions, then the picker is prioritized before the group.

2. Each picker/group in that priority sequence is checked for whether it is valid for assignment to this order. The order's total quantity to fulfill and unique item count is compared to the Current Quantity, capacity rules, and document complexity rules for this picker/group. When the *Picker Capacity Checks* security is set to Restrict, then pickers/groups who would be put over their Max Quantity by adding this assignment, or who have document complexity rules that do not match this order, are considered invalid and will not receive the assignment. When the *Picker Capacity Checks* security is set to Warn, then the picker/group will still receive the assignment, but warnings are compiled where rules are broken. When the *Picker Capacity Checks* security is set to None, then the picker/group will still receive the assignment and no warnings will be compiled.

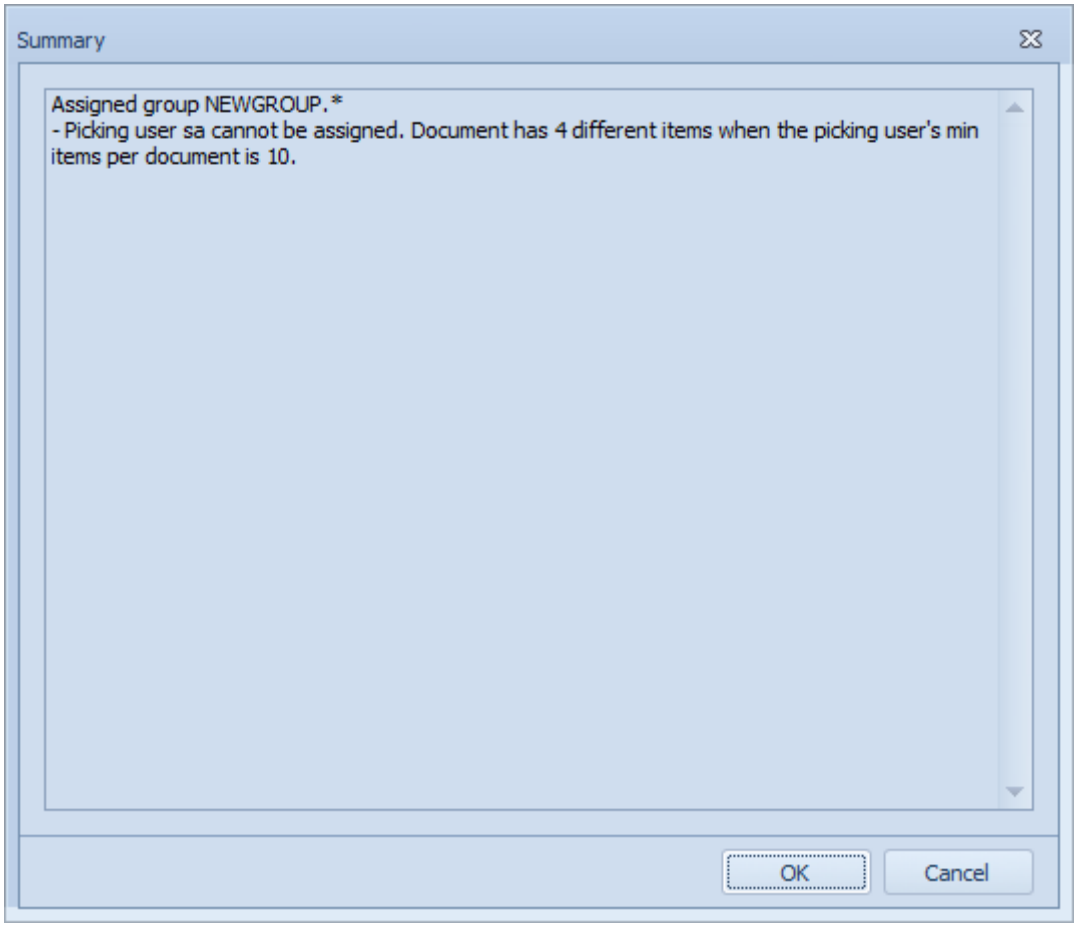
3. Once a picker/group is found that is valid for assignment, that picker/group is assigned to the order, and lower priority pickers/groups are not checked. That picker/group has their Current Quantity updated to include the new assignment, and then the processing continues to the next order and starts again at step 1 where it reprioritizes the pickers/groups to reflect the new assignments.

4. When the *Picker Capacity Checks* security is set to Restrict, it is possible for no assignment to be valid for a given order. The processing will simply skip assigning a picker/group to that order, and it will continue to the next order in the sequence.

A results popup displays at the end of balanced assignments processing. This shows how many orders were assigned to each selected picker/group, and which picker/group was assigned to each order. When the *Picker Capacity Checks* security is set to Restrict, then each order also shows notes on any checks that were made for invalid pickers/groups before the official assignment was determined. When the *Picker Capacity Checks* security is set to Warn, then each order also shows warnings if it received an assignment that broke any of the rules.



When an order's assignment notes contain more information than can be displayed in the grid, its ellipses button can be clicked to display a popup with the full details.



Automatic Picking Assignments

Picking assignments can be configured to happen automatically as pickers begin picking orders in Inventory Manager mobile, or ahead of time via SalesPad workflow.

SalesPad picking assignment processing respects the Inventory Manager configuration for possible pickers and groups, as well as their rules for capacity and document complexity. Another Inventory Manager console screen allows specifying rules for which pickers and groups can be assigned to certain orders. SalesPad provides an Automation Agent job for targeting specific workflow queues and assigning all sales orders that are currently in those queues, and a workflow plugin which triggers as each individual order hits a certain point in workflow. Both of these processes follow the same rules for assignments.

Note that there is no direct visibility of picking assignments for sales orders in SalesPad, outside of the sales order audits created by the automatic processing.

Note: Additional SalesPad DLL files are required to access the Automation Agent job and workflow plugin.

Securities

Mobile Picking: Automatically Assign Picking Users To Sales Orders - If enabled, when a user loads a sales order in the Mobile Picking module, their username will be automatically added to the Picking User field for that order. (Default: False)

Mobile Picking: Automatically Assign Picking Groups To Sales Orders - If enabled, when a user loads a sales order in the Mobile Picking module, their configured picking group name will be automatically added to the Picking Group field for that order. (Default: False)

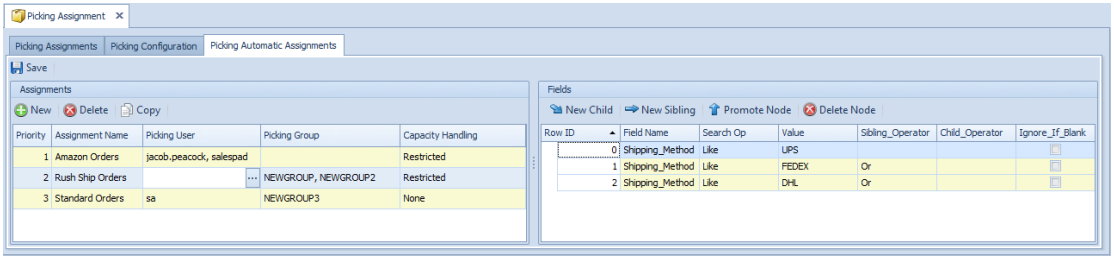
Auto-Assign When Picking Begins

Sales orders can be automatically assigned to pickers and groups when they are loaded in the mobile Picking module. Securities control whether the Picking User and/or Picking Group for the order is assigned. When the user should be assigned, the current mobile user’s username is set as the order’s Picking User. When the group should be assigned, the Picking Configuration tab is referenced for which picking group includes the current mobile user, and that group’s name is set as the order’s Picking Group. If there is already one or more users or groups set, then the new value is added to the end of the list in that field. This makes it possible to keep track of all users and/or groups who helped pick an order.

These assignments use the same fields that are set when manual assignments are created on the Picking Assignments screen in the Inventory Manager console, so they can be reviewed and updated there as needed. Because the assignment is created when the order is loaded, this can cause a bad assignment to be created if the user loads the wrong order for picking. Bad assignments can be cleared on the Picking Assignments screen via the Unassign buttons to make those orders available for other pickers.

Automatic Assignments Configuration

The Picking Assignment screen's Automatic Assignments tab in the Inventory Manager console application allows configuring rules for how the SalesPad AA job and workflow plugin will assign orders to pickers and groups.



Sales order assignment rules can be added in the left grid. Each rule can be named as desired, and possible pickers and groups can be specified. The Priority determines which rule will be used when multiple rules are valid for a given order.

Capacity Handling functions similarly to the *Picker Capacity Checks* security for balanced picking assignments. When set to Restricted, each possible picker/group will be evaluated for whether their capacity and document complexity rules are respected, and they will be considered invalid for assignment if any of their rules would be broken by that assignment. When set to None, capacity and complexity rules will not be enforced.

The right grid allows configuring the document-level conditions that make an order match that rule. Any document-level field including SalesPad UDFs can be used for this determination. Some examples include:

- All orders for the AMAZON0001 customer are assigned to a specific Amazon picking group who know how Amazon orders need to be fulfilled and shipped

- All orders that have a priority shipping method or have a Req Ship

Date of today or earlier are assigned to a specific picker who focuses on these high priority orders

- All orders that have a specific Priority UDF value are assigned to a specific picker who knows how to handle these orders

- All other orders can be assigned to any of the other pickers

Document conditions must always be specified. To create a “catch-all” rule that assigns any sales orders that don’t match any of the other rules, simply set up a condition that is always true, such as the Customer Num is not blank.

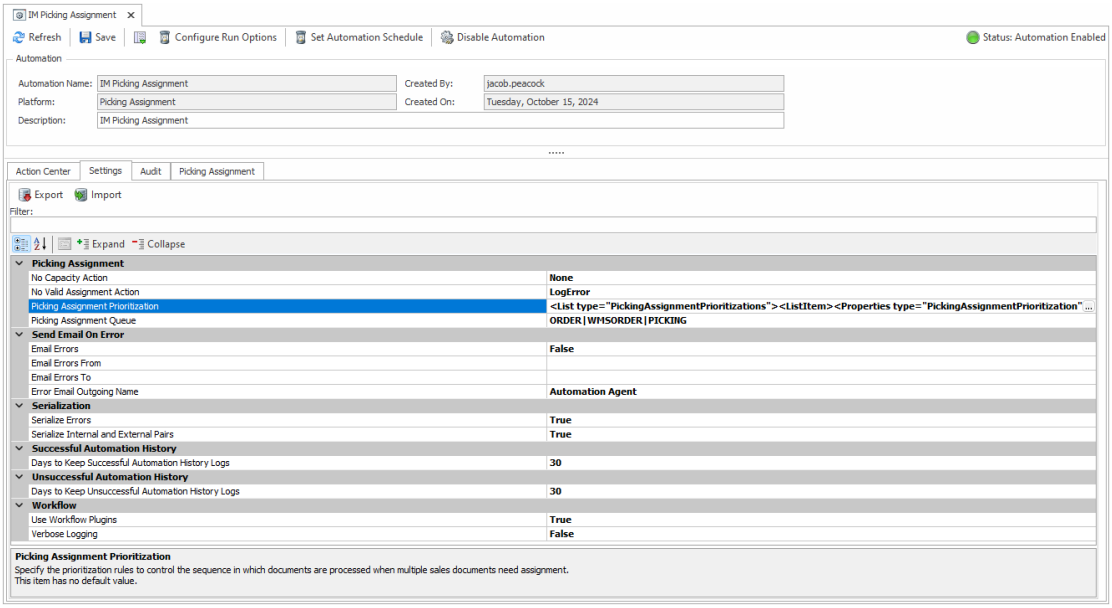
Automation Agent Job

SalesPad provides an Automation Agent job for assigning sales orders to pickers and picking groups ahead of time. This ties into SalesPad workflow as it targets specific workflow queues that are ready for picking assignment, and it will forward sales orders through workflow once assigned.

This AA job requires SalesPad and Inventory Manager, and it also requires licensing for Automation Agent. If you already have SalesPad, Inventory Manager, and Automation Agent, then you can simply ask your account executive for the extended DLLs that provide automated picking assignments.

Configuration

The Inventory Manager Picking Assignment AA job can be configured to run on a schedule and target specific workflow queues to assign sales orders to pickers and picking groups. Standard Automation Agent configuration around scheduling and error handling is available, as well as settings that control behavior specific to this job.



Picking Assignment Queue - Specify the queue(s) where sales documents are ready to be assigned to a picker.

Picking Assignment Prioritization - Specify the prioritization rules to control the sequence in which documents are processed when multiple sales documents need assignment.

No Valid Assignment Action - Specify what happens to sales documents that are not matched to a picking assignment on the Picking Assignment Configuration screen. Forward will forward the document in workflow without an assignment and Log Error will report an error to the Action Center.

No Capacity Action - Specify what happens to sales documents that are matched to a picking assignment but all possible pickers/groups do not currently have capacity for this assignment. Forward will forward the document in workflow without an assignment and Log Error will report an error to the Action Center.

Verbose Logging - If set to 'True', batch forwarding will log additional information to the Audit tab. This is usually used for troubleshooting purposes.

Use Workflow Plugins - Use workflow plugins when forwarding. WARNING: When running as a service, only non-UI plugins should be used by the forwarding process.

Processing

When the Inventory Manager Picking Assignments AA job runs, all sales orders that are in the configured *Picking Assignment Queues* are loaded and sorted based on the *Picking Assignment Prioritization* rules.

For each order, the following processing occurs:

1. The Inventory Manager console's Automatic Assignments configuration is loaded and the order is compared against each of the sales order assignment rules. All assignment rules that match the order based on the document field criteria are considered valid. Each valid assignment rule in its configured priority order then has its pickers/groups checked for whether they are valid for assignment.

2. The possible pickers/groups for the given assignment rule are prioritized based on their Current Quantity, where the picker/group with the least assigned quantity is the highest priority for assignment. Any pickers/groups whose Current Quantity is less than their Min Quantity are bumped up in priority so that they will receive assignments before pickers/groups who already meet their Min Quantity or do not have a Min Quantity configured. Any pickers/groups whose Current Quantity is greater than their Max Quantity are moved down so that they are considered for assignment last. When there are both pickers and groups set for the assignment rule, and there is a picker and a group that are equivalent on all the above conditions, then the picker is prioritized before the group.

3. Each picker/group in that priority sequence is checked for whether it is valid for assignment to this order. The order's total quantity to fulfill and unique item count is compared to the Current Quantity, capacity rules, and document complexity rules for this picker/group. When the Capacity Handling for the assignment rule is set to Restricted, then pickers/groups who would be put over their Max Quantity by adding this assignment, or who have document complexity rules that do not match this order, are considered invalid and will not receive the assignment. When the Capacity Handling for the assignment rule is set to None, then the picker/group will still receive the assignment.

4. Once a picker/group is found that is valid for assignment, that picker/group is assigned to the order, and lower priority pickers/groups and assignment rules are not checked. An audit is created on the sales order to indicate which picker/group was assigned. That picker/group has their Current Quantity updated to include the new assignment, and then the processing continues to the next order and starts again at step 1 to check the assignment rules against that order.

5. When the Capacity Handling for all valid automatic assignment rules is set to Restricted, it is possible for no assignment to be valid for a given order. The processing will simply skip assigning a picker/group to that order, and it will continue to the next order in the sequence.

No Assignment Created

Because this processing is entirely automated, there is special handling to control what happens when no assignment can be created for an order. The order could remain in its current queue and be processed again when the job next runs, which makes sense if all pickers are at capacity and orders should wait until someone has capacity. The order could be forwarded in workflow, which makes sense if it is expected that some orders are not assigned to specific pickers before going on to be fulfilled. Or the order could log an error, which is helpful if it is expected that all orders should receive assignments.

If there are no assignment rules that match the order, or if all matching assignment rules are set to Restricted and have only pickers/groups with document complexity rules that invalidate this order, then the *No Valid Assignment Action* setting is used to determine what happens. This could mean that a use case was missed during testing, or a new use case has been created since the assignment rules were created, or it could be intended that some orders are not assigned prior to fulfillment. If orders are always expected to match one of the assignment rules, use Log Error to call out this scenario so that configuration can be adjusted as needed; logging the error will specify whether the issue is due to no matching assignment rules or the picker/group complexity rules. If some orders are intended to not match any assignment rules, use Forward to let them continue on in workflow. If orders in this scenario should neither log an error nor forward in workflow, leave this blank and the orders will be checked again the next time the job runs; but note that this could cause orders to linger in the processing queue without ever receiving an assignment, unless some other process is in place to handle them.

If there are assignment rules that match the order, but they are all set to Restricted and there are no pickers/groups who currently have capacity for the order, then the *No Capacity Action* setting is used to determine what happens. If this is a scenario that needs attention, use Log Error. If orders are allowed to continue without an assignment (e.g. there are pickers who can see unassigned orders and pick them up), use Forward to let them continue on in workflow. If this is expected, and it is desired to let sales orders wait until a picker has capacity, leave this blank and the orders will be checked again the next time the job runs; but note that this could cause smaller orders to receive assignments while larger orders wait

longer because they require more open capacity.

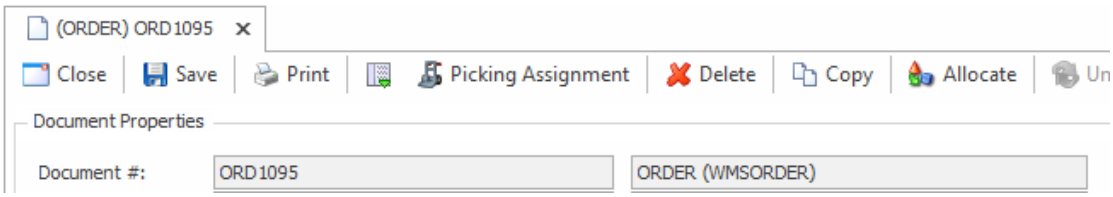
Workflow Plugin

SalesPad provides a workflow plugin for assigning sales orders to pickers and picking groups ahead of time. This ties into SalesPad workflow as this plugin can be configured to trigger automatically when sales orders hit a particular point in workflow which indicates they are ready for picking assignment. This plugin can also be triggered manually for a sales order in SalesPad's Sales Entry screen.

This workflow plugin requires SalesPad and Inventory Manager. If you already have SalesPad and Inventory Manager, then you can simply ask your account executive for the extended DLLs that provide automated picking assignments.

Configuration

The Inventory Manager Picking Assignment workflow plugin can be run manually in Sales Entry or configured to run automatically in workflow. This plugin processes a single order at a time and assigns a picker and/or group based on the Inventory Manager automatic assignment rules. It must be enabled in the Security Editor for each user group who needs to trigger it manually or automatically.



Processing

The workflow plugin processing works the same way as the AA job processing, but it only processes the target order. There is no specific handling around what happens when no assignments can be made. Results are always audited to the sales order, and they are also displayed to the user when the plugin is run manually.

Picking Assignments Mobile Visibility

Securities

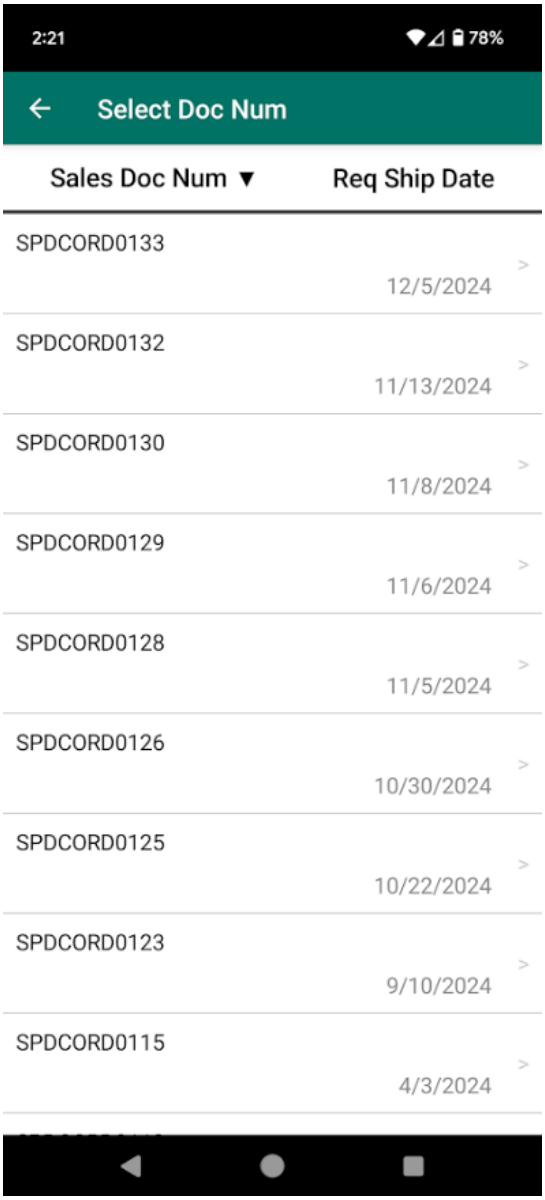
Mobile Picking: Restrict To Assigned Picking User - Only Assigned User restricts users to only see orders in the sales document lookup if they are assigned as a Picking User for them, and they can only load those orders for picking. Only Assigned User And Unassigned Docs still restricts users to orders that are assigned to them but also includes orders that are not

assigned to any Picking User. No Restriction provides access to all applicable sales orders regardless of Picking User assignment. (Default: No Restriction)

Mobile Picking: Restrict To Assigned Picking Group - Only Assigned Group restricts users to only see orders in the sales document lookup if their user group is assigned as a Picking Group for them, and they can only load those orders for picking. Only Assigned Group And Unassigned Docs still restricts users to orders that are assigned to their group but also includes orders that are not assigned to any Picking Group. No Restriction provides access to all applicable sales orders regardless of Picking Group assignment. (Default: No Restriction)

Assigned Order Visibility

Inventory Manager mobile users can have their Picking access restricted to only those orders that are assigned to them as a picker or group. They can also be given access to orders that are not assigned to any specific picker/group, which indicates they are free for anyone to take. This restricts their visibility of orders in the Doc Num lookup, as well as their ability to load orders via scan or manual entry.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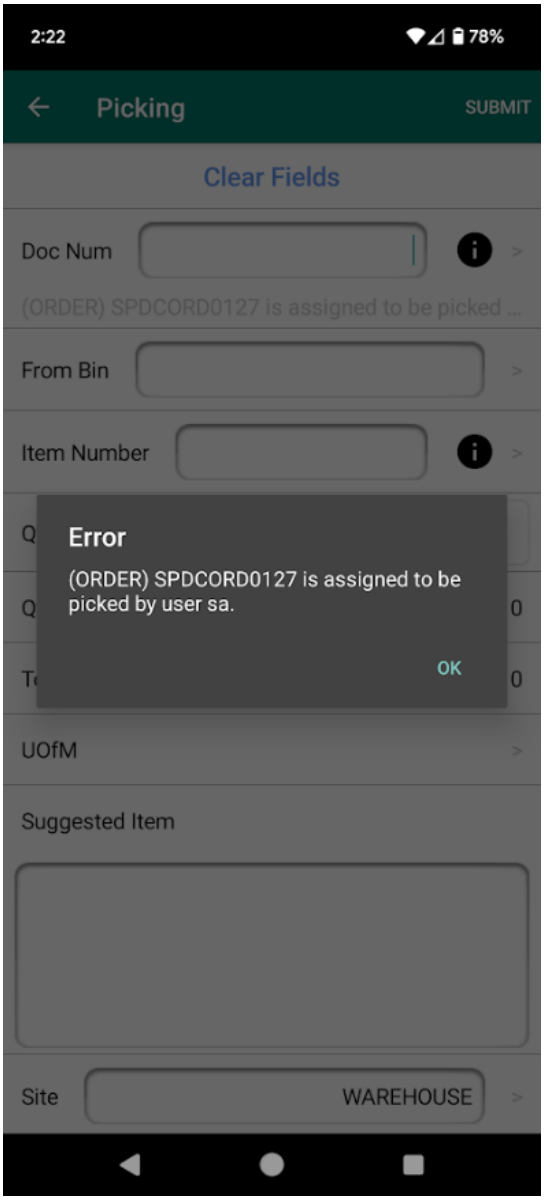

Configuration Tips

Common Use Cases

- A picker can select an order from all available orders that are ready to pick, and then they are the Picking User and no one else can see or pick that order.
    - *Automatically Assign Picking Users To Sales Orders* = true
    - *Restrict To Assigned Picking User* = Only Assigned User And Unassigned Docs

- A picker can select an order from all available orders that are ready to pick, and then their configured picking group is the Picking Group and other picking groups cannot pick it, but anyone in their group can help pick that order.
    - *Automatically Assign Picking Groups To Sales Orders* = true
    - *Restrict To Assigned Picking Group* = Only Assigned Group And Unassigned Docs
- A picker can select an order from the orders that are assigned to their picking group, and then they are the Picking User and no one else can pick it.
    - *Restrict To Assigned Picking Group* = Only Assigned Group
    - *Automatically Assign Picking Users To Sales Orders* = true
    - *Restrict To Assigned Picking User* = Only Assigned User And Unassigned Docs
- A picker can select an order from the orders that are assigned to them as Picking User, and no one else can pick those assigned orders.
    - *Restrict To Assigned Picking User* = Only Assigned User
- A picker is not restricted to any specific picking user/group visibility, so they can see and help pick any order.
    - *Restrict To Assigned Picking User* = No Restriction
    - *Restrict To Assigned Picking Group* = No Restriction