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Enterprise Edition

Training Guide QAD Warehousing Fundamentals

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About This Course

Course Description

The QAD Warehousing Fundamentals course provides an overview of the process and decisions that must be made to set up the fundamental data elements of the QAD Warehousing system. The course provides implementation guidelines for such essential warehouse elements as warehouses, storage location groups (SLGs), work location groups (WLGs), internal routing groups (IRGs), internal routings (IRs), transaction types, algorithms, labor management, and warehouse items.

In addition to information on setting up these elements, this guide also teaches you the basics of warehouse processing including order processing, receipt, picking, printing, replenishment, cycle counting, and inspections. Hands-on activities ensure your familiarity and proficiency with the system.

Advanced warehousing topics such as engine processing, containerization, and system administration are covered in separate training materials. It is imperative that typical manufacturing data such as data for sites, items, customers/suppliers, orders, and so on be setup within QAD EE before the site specific operational data discussed in this course are setup.

Course Objectives

By the end of this class, students can:

- Set up your company's initial warehousing base data
- Implement conduct basic warehouse processes
- Understand the impact of your data when conducting daily warehouse business

Audience

- Members of implementation teams
- Key users

Prerequisites

An understanding of QAD EE basic manufacturing principles is essential.

Course Credit and Scheduling

This course provides 30 credit hours. This course is typically taught in five days.

QAD Web Resources

From QAD's main site, you can access QAD's Learning or Support sites.

<http://www.qad.com/>

Preliminary Setup (for Virtual Training Management System Only)

If you are using this training guide with the QAD Virtual Training Management System (VTMS) in a classroom, student lab environments are reserved for you by your instructor.

- 1 Select the Virtual Training Management System using the following url:

`http://training.success.qad.com/`

Note To test your browser once you access the site, you can click “See if your Browser is ready” and email the results to `democenter@qad.com` in the form provided before you log on.

- 2 Click on your local region in the regional map to access the login page.
- 3 Students login with the student ID and password assigned to them by the instructor.
- 4 Once you login, click on the Account Info tab and select your local time zone from the dropdown and click Save.

Transferring Files

You can transfer files to and from VTMS, using the following:

- Upload/download files using `yousendit.com`
- Upload files to Lotus Notes e-mail (5MB limit) and download from `outside.qad.com` e-mail.
- Upload/download files to and from web-mail account (for example, yahoo, hotmail)

Using the RF for Exercises

Many of the exercises in this training guide use the RF to select or confirm tasks and perform other steps. Your instructor can show you how to simulate QAD Warehousing software through a Unix session. Commands are provided to run the software just as if you were on the RF device.

4 Training Guide — Warehousing

Chapter 1

Introduction to Warehousing

Overview



Warehousing Introduction


QAD Proprietary

QAD Warehousing is a QAD Enterprise Applications Enterprise Edition version of the Advanced Inventory Management (AIM) product. QAD Warehousing is a fully merged, optional module within Enterprise Edition that displays as menu item 4, Warehousing.


A suggested basic setup sequence is provided in this section,

- Learn concepts
- Set up basic warehousing areas and functions
- Set up additional warehousing features necessary for simple warehousing operations.

QAD Warehousing Main Concepts



QAD Warehousing Main Concepts



- ▲ Warehouse
- ▲ Internal Routing Group
- ▲ Storage Location Group
- ▲ Work Location Group
- ▲ Location
- ▲ Internal routing
- ▲ Algorithms and Transaction Types
- ▲ Tasks

QAD Proprietary

QAD Warehousing provides highly flexible and adaptable warehousing functions that let you integrate a full range of inventory management features into your business.

Without QAD Warehousing, system software recognizes sites and locations; however, running a complex warehousing operation using only these elements is limiting. QAD Warehousing introduces a set of new elements that let you be very specific about the way you receive, store, and pick your inventory.

These new elements start at the warehouse level. In QAD Warehousing, a *warehouse* is the highest level of specific data. The other elements of warehousing are all subsidiary to the warehouses.

They represent ways of:

- Arranging storage locations within each warehouse
- Defining the routes through the warehouses that you want your inventory to take
- Handling the inventory management transactions that are involved in managing your warehousing activities on a day-to-day basis

Warehouses

A warehouse consists of a group of storage locations. These can constitute a single building; a part of a larger building; or, for storage of material such as construction materials, the storage locations could be in the open air. A single warehouse could actually consist of a number of separate buildings. To define it as a warehouse, you identify the storage locations that you want to group together and manage in the same way.

Because system software does not have to be aware of all the workings within the warehouse, each warehouse is defined as a standard location. This approach lets you keep all the internal warehouse operations separate from other system activities. When you want to send inventory to a warehouse, as far as system software is concerned, you are simply putting it in a location. However, when that location is also identified as a warehouse, all the warehousing functions become available within it.

From a system software point of view, you receive inventory into a location which is associated with a site. However, because this is a warehouse, the inventory does not actually stay in that location. The location is used as a gateway into the actual storage locations that exist within the warehouse.

Eventually, the inventory is put away in one or more storage locations within the warehouse. These are real locations, not placeholders. Each of these locations is defined in the same way as other locations, so the inventory is again recognized by the system as residing in a known location in a known site. The system selects locations for inventory.

Internal Routing Groups (IRGs)

QAD Warehousing manages the movement of inventory within and between warehouses by defining pathways that take the inventory from one part of the warehouse to another. These pathways are called *internal routings*, and defining them involves specifying a sequence of steps that determine which part of the warehouse the next step goes to and any specific controls that should be applied at each step.

The parts of the warehouse involved in these internal routings are the major breakdown of the warehouse storage locations into areas that have a specific purpose. In the warehousing system, the top-level grouping of the storage locations is known as an *internal routing group (IRG)*.

Storage Location Groups (SLGs)

The next level below the internal routing groups is the *storage location group (SLG)*. All the storage locations within an IRG can have the same basic function, such as bulk storage, but the use of SLGs enables you to group your storage locations in more specific ways. For example, you can group all the locations in which a particular type of item is stored, or that have a common purpose, such as a primary picking area within bulk storage.

Work Location Groups (WLGs)

In parallel with the storage location groups is another way of grouping locations called the *work location group (WLG)*. This way of grouping locations enables you to account for factors related to working practices. For example, you can specify the printers to use, and the format of the printed output, for each separate work location group.

When you have set up all the groupings within a warehouse, every location belongs to a particular storage location group as well as a particular work location group. Each SLG is defined as being within an internal routing group.

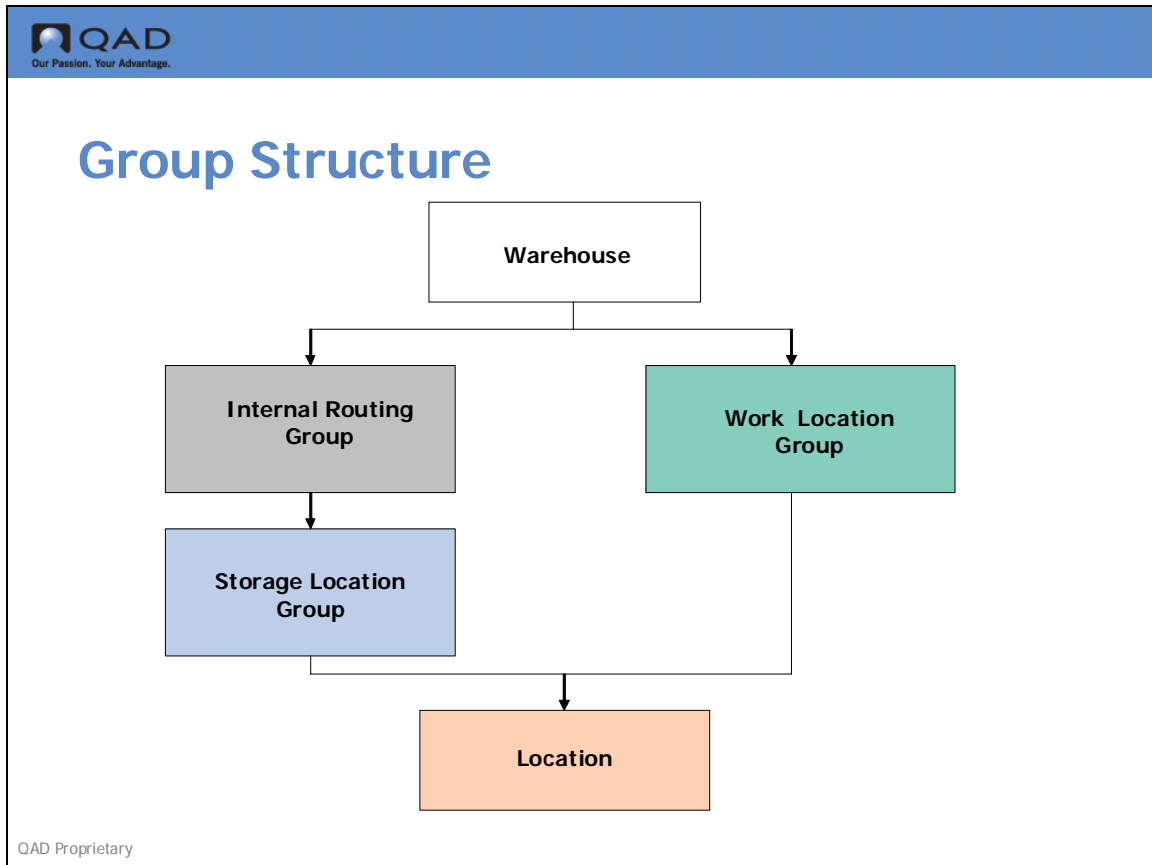
Location

Locations are unique areas within an SLG or WLG, such as a receipt dock. When you have set up all the groupings within a warehouse, every location belongs to a particular storage location group as well as a particular work location group.

For locations, QAD Warehousing provides a Warehouse Location Maintenance (4.3.13) function that replaces standard Location Maintenance (1.1.18). You can, therefore, set up all your location details within the warehousing system. Standard Location Maintenance options are not recognized by QAD Warehousing, and are not available for warehouse functions.

Locations are unique to a site. Because of this, two locations in two different warehouses but at the same site cannot have the same name.

Warehouse Groupings



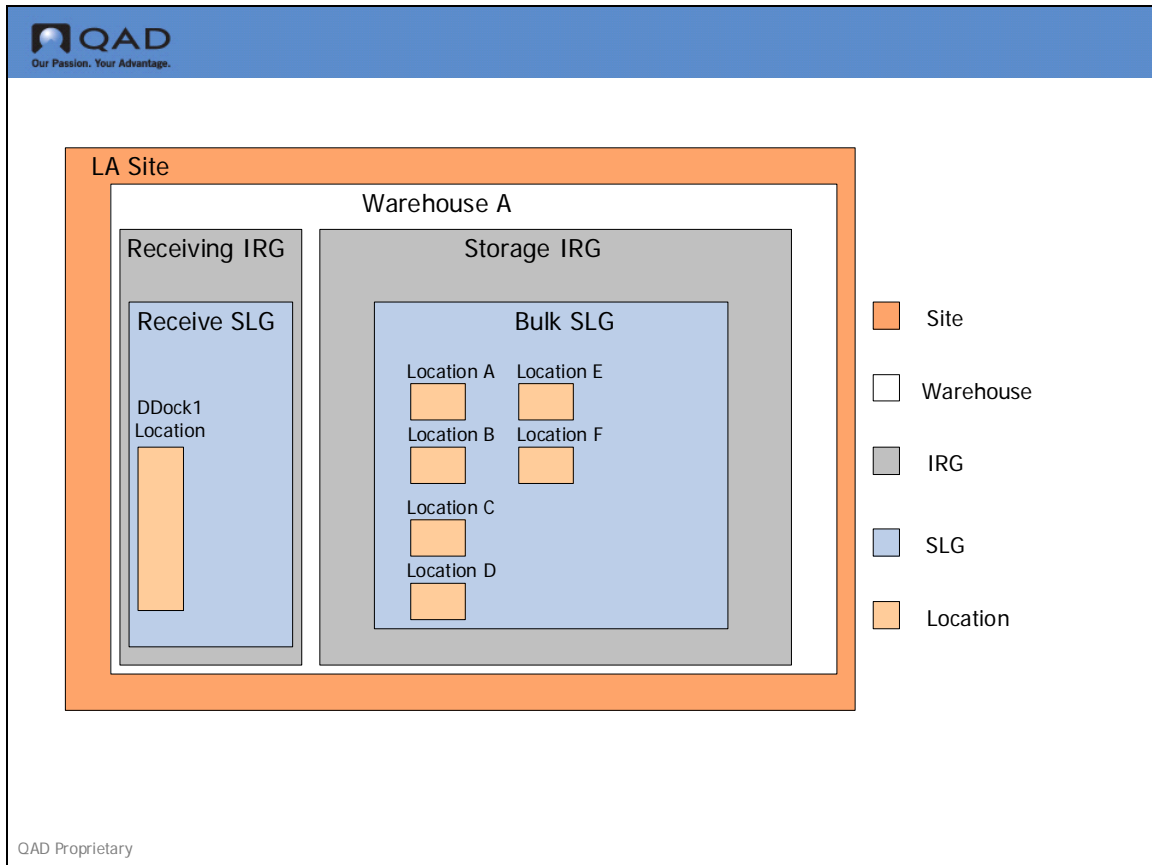
In order for QAD Warehousing to put your inventory away in the way you require, you must define the characteristics of your warehouses. This involves setting up a range of fields that control the inventory management processes, and defining the way that the storage locations within each warehouse are grouped.

The main groupings of locations within a warehouse are:

- Internal routing groups
- Storage location groups
- Work location groups

When you have set up all the groupings within a warehouse, every location belongs to a particular storage location group as well as a particular work location group. Each SLG is defined as being within an internal routing group.

Warehouse Hierarchy



Part of the flexibility of the warehousing system comes from the fact that you can set up as many warehouses as you need within a site, as many IRGs as you need within a warehouse, as many SLGs as you need within each IRG, and you can set up just one WLG, or as many as you need for your different working areas.

No rules govern the type of internal routing groups that you have to set up in a warehouse. Most users define areas such as receipt, inspection, storage, picking, packing, and dispatch. However, none of these are mandatory—you choose the areas you want, and you then choose the routes through these areas that you want your inventory to take.

Note You use IRGs to distinguish between the major functional areas of your warehouse. Although you have as many IRGs as you need for the goods-in and goods-out areas, you normally need only one or at the most two IRGs in your main storage area. Within your main storage IRG, you use SLGs to distinguish between the different types of storage areas.

Internal Routing

Internal routings (IRs) are pathways through your warehouse that you want your inventory to take.

When you have defined the internal routing groups (IRGs) within a warehouse, you can link specific sequences of IRGs together to form internal routings. Each step, or sequence, within an internal routing defines the IRG where the inventory will next be moved.

For each sequence step within an internal routing, you can also specify a number of parameters that control how the inventory is processed as it reaches that point in the sequence. The system displays default values for these processing parameters that are defined in Warehouse Maintenance. You can accept the default values, or override them with new values.

Algorithms and Transaction Types

The system uses different routines when putting stock away in functional and non-functional areas. These routines are called *algorithms*. Each algorithm is a separate program that takes into account particular conditions before attempting to carry out an inventory movement transaction.

Advanced users can set up new types of algorithms to perform special functions; however, there is a set of algorithms that are supplied with the system, such as the Lane (LA) algorithms that find suitable shipping lanes or put-away (PA) algorithms that find locations in storage areas by considering the size and available space. The system lets you choose which algorithm to use in any given situation.

Each type of inventory transaction is identified by a *transaction type* code in QAD Warehousing. Examples of transaction codes include Purchase Order Receipt (code RCT-PO) or a Sales Order Pick (code PICK-SO). All the standard transaction types are already set up within the system.

At the simplest level, you can just assign a particular algorithm to a particular transaction type, then specify the transaction type to link to an internal routing. You also specify the transaction type to link to a sequence of algorithms. The system tries your first choice algorithm, but if this does not succeed in completing the transaction, the second choice algorithm is applied, and so on until the transaction is complete.

Engine Processing


QAD Warehousing lets you use software routines, or *engines*, to process transactions within a warehouse. The system creates *engine workfiles*—requests for a transaction—when processing warehouse tasks, such as picking and put-away. You can use the engines to process engine workfiles in the Engine menu (4.7). The engine workfiles are always in use, though, in QAD Warehousing, whether you choose not to process them with the engines. Processing engines are run-time programs that select and process all the required inventory transactions. The way you set up your internal routings controls the way that inventory transactions are created and confirmed, and each step of an internal routing specifies the next step that is to follow when the current step is complete.

For each transaction type in each internal routing, you can specify the type of engine processing that you want applied. The types are:

- AUTO mode specifies that the transaction is processed immediately.
- MANUAL mode specifies that the transaction is processed only when it is selected for processing by warehousing staff.

For put-away, location find, or picking task creation, the system looks first at any available internal routing defined for the movement in Internal Routing Maintenance (4.2.5). If available, it uses the mode defined in the Mode field in the Miscellaneous frame.

Basic Setup



Basic Setup

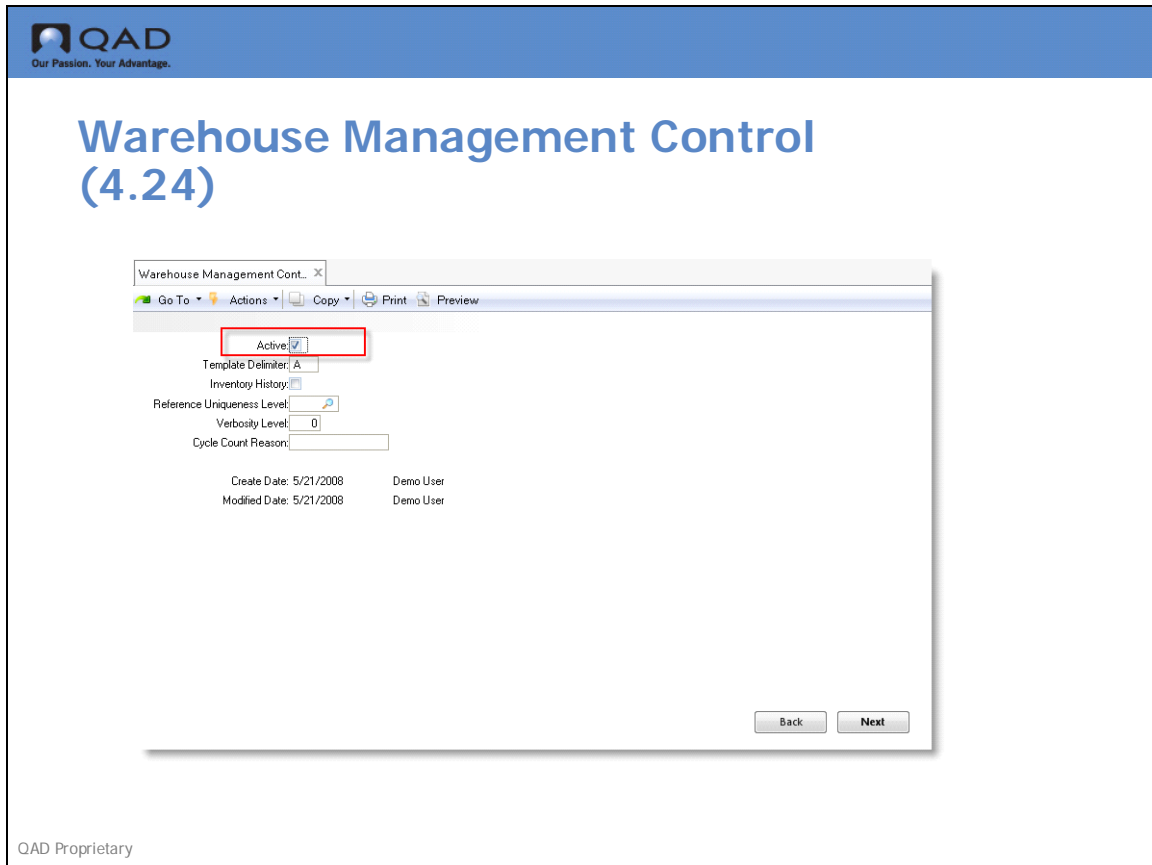
- ▲ Activate Warehousing
- ▲ Define sites and warehouses
- ▲ Define IRGs
- ▲ Define IRs and IR assignments for IRGs
- ▲ Define SLGs
- ▲ Define WLGs
- ▲ Define locations within SLGs and WLGs
- ▲ Assign algorithms to transactions
- ▲ Define transaction processing

QAD Proprietary

A suggested basic setup sequence is provided in this section,

- Activate warehousing.
- Set up major locations, such as SLGs, IRGs, WLGs and locations.
- Set up internal routings.
- Assign algorithms to transactions.
- Set up transaction (engine processing).
- Set up additional areas such as items, UMs, printing, and local exit routines.

Warehouse Management Control



Use Warehouse Management Control to activate warehousing.

Field Descriptions

Active . Indicate whether the QAD Warehousing system is active. Set this to Yes when you want to implement the system. When this field is No, none of the warehouse functions operate.

Warehouse Maintenance

Warehouse Maintenance

Warehouse Maintenance: Go To - Actions -

Site: 10000
Warehouse: 279

General Data

Description: Flavor: C

Address: Inventory Acct Sync:

Active: Allow Mixed Status Codes:

Reference Sequence ID: Logistics UM Tolerance: 0.00%

Packaging Sequence ID: Log w/Base UM Only: Cmt:

QAD Location Data

Description:

Inventory Status:

Permanent:

Type:

Single Item:

Single Lot/Ref:

Capacity: 0.0 UM:

QAD Proprietary

Use the system Site Maintenance (1.1.13) program to define sites.

Use Warehouse Maintenance (4.1.1) to define warehouses. This step is mandatory.

If you have several warehouses, you can use Warehouse Master List Maintenance (4.1.5) to set up master lists of warehouses that you can attach to inventory items. This step is mandatory for multi-warehouse picking or inter-warehouse transfers and picking only.

Frames

There are several frames within Warehouse Maintenance, and each frame contains many fields. The following table describes the frames and the types of data you can set up in each.

Frame	Purpose
General Data	This frame contains fields that relate to overall operation of the warehouse
QAD Location Data	Because the warehouse is handled as a special type of location, you must specify the same location data that you do for any other location in the system. This frame displays the relevant QAD location fields
Transaction Create Defaults	The fields in this frame determine the default characteristics of stock movement transactions created in the warehouse. The values you enter here default to all internal routings and work location groups within this warehouse and can be changed as needed

Frame	Purpose
Transaction Confirmation Defaults	The fields in this frame determine characteristics of the confirmation of stock movements entered in the warehouse. The values you enter here default to internal routings within this warehouse, but you can change the values for individual routings.
Picking	The fields in this frame define which storage location groups the system should use for picking inventory. Each SLG has a picking level defined. Any SLG with a picking level that is not between the Start and End levels you specify here
Hold Defaults	Use Hold Maintenance (4.3.23.1) to put a hold on warehouse elements, such as putting stock on hold so that it is not picked. The values you define in the Hold Defaults frame are hold defaults for internal routing groups, storage location groups, and for specific item/SLG combinations.
Cycle Count Defaults	The fields in this frame control the way cycle counts and recounts are performed. The values you enter here default to all work location groups you set up within this warehouse, but you can change the values for individual work location groups.
Miscellaneous	The fields in this frame affect the operation of storage location groups and internal routings. The values you enter here default to all storage location groups or internal routings you set up within this warehouse, but you can change the values for individual storage location groups or routings
Printing	This frame is divided into several areas: Identification, task, inspection, form, external, and miscellaneous printing. You can control the printing of transaction details in each of the areas.

Key Field Descriptions

Warehouse. Specify the name that uniquely identifies the warehouse you want to use in warehouse programs. If you specify an existing system software location, a warning displays. If you specify a value not defined as a system software location, the location will be created.

You are required to enter an existing warehouse name in many of the functions where you maintain information relating to a specific warehouse.

Each warehouse is defined as a placeholder location using standard Location Maintenance (iclomt.p), so the system software sees the warehouse name as another storage location. However, the fact that this location is defined as a warehouse in Warehouse Maintenance automatically triggers the warehouse functions to operate whenever it is specified as the location for stock receipt or stock issue.

Active. Enter Yes to make this an active warehouse using all the warehouse functions. If you enter No, the warehouse will be inactive and will not use the warehouse functions.

Reference Sequence ID. Enter the code that defines the format and sequence for reference numbers used to identify items such as pallets. The sequence definition format codes are set up using Sequence Definition Maintenance.

Packaging Sequence ID. Enter the code that defines the format and sequence for packaging units, such as box or each, used for the detail picking module. The sequence definition format codes are set up using Sequence Definition Maintenance.

Flavor. Enter the code to define the style and format of Radio Frequency screens to be used for displaying warehouse information. The Flavor codes are set up in Generalized Code Maintenance, and relate to display of information in situations such as forklift truck screens or Radio Data Terminals (RDTs).

Internal Routing Group Maintenance

The screenshot displays the 'Internal Routing Group Maint' window. It features a search bar at the top with a 'Go To' button and a menu with 'Actions', 'Copy', 'Print', and 'Preview'. The main form contains the following fields:

- Site: [Text Field] [Search Icon]
- Warehouse: [Text Field] [Search Icon]
- Internal Routing Group: [Text Field] [Search Icon]
- Description: [Text Field]
- Functional:
- SLG Default Values: [Text Field]
- Allow Issues:
- Allow Receipts:
- Allow Outgoing Returns:
- Allow Incoming Returns:

When you have defined your warehouse, the next step is to set up all the internal routing groups (IRGs) within that warehouse. You do this using Internal Routing Group Maintenance (4.2.1). This lets you define a name and a description for each area in the warehouse, and to define whether the area is functional. You must define these before you can create internal routings.

Field Descriptions

Functional. Enter Yes if this internal routing group is a functional area, such as receipt or dispatch, in which the system uses location-find algorithms to select locations when stock is moved into the area. Enter No if this is a non-functional area, such as general storage, in which the system uses put-away algorithms to select locations when stock is moved into the area.

You normally need only one IRG, or at the most two, for bulk or general storage: that is, one non-functional IRG. You use storage location groups to define the different types of area within this main storage grouping.

Allow Issues. Enter Yes if stock on hold can be issued or moved to another location; otherwise, enter No.

This field can be defined at the warehouse level, for internal routing groups, storage location groups, and for specific item/SLG combinations. It can also be specified when putting item on hold in Hold Maintenance.

Allow Receipts. Enter Yes if stock can be received into the hold location; otherwise, enter No.

This field can be defined at the warehouse level, for internal routing groups, storage location groups, and for specific item/SLG combinations. It can also be specified when putting item on hold in Hold Maintenance.

Allow Incoming Returns. Enter Yes if stock returned from a customer can be placed in the hold location; otherwise, enter No.

Allow Outgoing Returns. Enter Yes if stock to be returned to a supplier can be issued from the hold location; otherwise, enter No.

This field can be defined at the warehouse level, for internal routing groups, storage location groups, and for specific item/SLG combinations. It can also be specified when putting item on hold in Hold Maintenance.

Storage Location Group Maintenance

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Storage Location Group (4.3.5)

Storage Location Group Maint

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: UG-D-3
Storage Location Group: **Dispatch**
Description: Lanes Area

Internal Routing Group: Dispatch

Allow Issues:
 Allow Receipts:
 Allow Incoming Returns:
 Allow Outgoing Returns:
 Opportunity Counts:
 Opportunity Count Frequency: 0
 Check Digits:
 Cycle Count Status Option: 0

Picking Multiple UM:
 Acquisition UM:

Exclude from Picking:
 Picking Level: 0
 Over Pick:
 Multi-Trans:
 Detail Overflow Group:
 Capacity Check when OTF:
 Optimized Storage:
 Allow Mixed Status Codes:
 Recount UM:

Back Next

QAD Proprietary

Use Storage Location Group Maintenance to define storage areas.

Note You must also link the storage location group to the item you are receiving using Item-Warehouse Maintenance (4.4.11).

Field Definitions

Storage Location Group. Enter the code that identifies the storage location group you want to create or modify.

Allow Issues. This field controls whether inventory can be issued out of the system from locations in this SLG. Generally, you limit issues to specially designated areas, such as Goods-Out. Enter Yes if stock can be issued; otherwise, enter No.

Allow Receipts. This field controls whether inventory can be received from outside the system into locations in this area. Generally, you limit receipts to specially designated areas, such as goods-in. Enter Yes if stock can be received; otherwise, enter No.

The value defined in Internal Routing Group Maintenance is not applied directly, but defaults to all the storage location groups set up within the internal routing group. In Storage Location Group Maintenance, you can accept the default value or override it for this SLG.

Use Item-Storage Location Group Maintenance to change the setting for a specified item within a specified SLG.

Note If Allow Receipts is set to Yes in a bulk storage location group, for example, the system lets you make a direct receipt into these locations without generating any warehouse transactions.

Work Location Group Maintenance

Work Location Group Maintenance (4.3.9)

Site: 10000
 Warehouse: whse
 Work Location Group: Wik01

Description: Warehouse for testing

Confirmed at Source:
 Priority: 1
 Increment: 1
 Task: Transfer
 System Code: RF
 System Flavor: a
 Allow Task Switching:
 Two Phase:
 Keep From Status:
 Device:

When you have defined your warehouse, its internal routing groups (IRGs), and storage location groups (SLGs), the next step is to set up all the work location groups (WLGs) within the warehouse using Work Location Group Maintenance (4.3.9). This lets you define a name and a description for each work location group, and to define fields relating to the WLG.

The main purpose of work location groups is to enable you to control which warehouse staff work in which areas of the warehouse using User- Work Location Group Maintenance (4.11.3.13). The second purpose is to define the cycle count and printing fields for each work area.

Field Descriptions

Site. Enter the name of an existing site.

Warehouse. Enter the name of an existing warehouse in which you want to maintain work location groups.

Work Location Group. To modify the fields for an existing work location group, enter its name. To create a new work location group, enter its name.

Priority. This field assigns a priority value to transactions in this WLG. If no priority is assigned to the internal routing, RDTs select the highest priority task at the work location group as the next action. The lower the number you specify, the lower the priority.

Increment. This field specifies the increment that is added to a transaction's priority as time elapses.

Task. Specify the task associated with any inventory transaction that is created in this WLG. Task codes are set up in Task Maintenance (4.11.1.1).

System Code. Specify the type of screen that confirms transactions in this work location group. Leave this blank for normal screens; enter RF for transactions confirmed using Radio Data Terminals (RDTs), also known as RFs.

System Flavor. Enter the code to define the style and format of screens to be used for displaying information in this work location group other than in the standard system frames. The Flavor codes are set up in Generalized Code Maintenance (36.2.13) and relate to display of information in situations such as fork-lift truck screens or Radio Data Terminals (RDTs).

Allow Task Switching. This field is used to specify for a work location group whether warehouse staff are allowed to switch to a different task. The setting of this field is important whenever any of the task confirmation fields has been set to allow a different value, for example, of a reference or lot/serial number, to that which was expected. You have to specify whether a user who enters a different reference is changing the value for the current task, or switching to another task.

Enter Yes to allow task switching. Upon entry of a different value, such as a reference, the system checks to see whether another task exists with the reference. Enter No to prevent task switching. On entry of a different value, assumes that the value is being changed for the current task.

Two Phase. Enter Yes to specify that inventory movements in this WLG are created in one step, the first phase, and confirmed in a second step, the second phase. Between the two phases, the stock is marked as being booked out of the first location and expected in the second location. However, the anticipated inventory levels are only confirmed when the stock is confirmed as arriving at the destination. If you enter No, inventory movements are created and confirmed in a single step (single phase). The default value that was set up in Warehouse Maintenance is initially displayed.

Two-phase operation is a much safer way of ensuring precision in inventory management. Single-phase operation should only be used in special circumstances.

Keep From Status. This field specifies whether, when an inventory transaction is created and confirmed, the inventory status of the transferred inventory retains its original value by entering Yes here, or takes its status from the new location by entering No here. The default value that was set up in Warehouse Maintenance is initially displayed.

Device. Enter the code to define the device to be used within this work location group, if applicable. If a single device code is not applicable, leave this field blank.

Frames

There are several additional frames, most of which contain fields the default from Warehouse Maintenance (4.1.1):

Warehouse Location Maintenance

Warehouse Location Maintenance (4.3.13)

Site: US-D3 Warehousing Site
 Location: DBex000

Location Groupings
 Warehouse: US-D-3
 Storage Location Group: Boxes
 Work Location Group: Forklift

Warehouse Location Data

Check Digit:
 Popularity:
 Storage Type:
 Warehouse Location Type:
 Travel Sequence:
 Dedicated:

Picking Type:
 Preferred UM:
 Opportunity Count Frequency: 0
 Last Opportunity Count:
 Stage (In):
 Stage (Out):

Back Next

QAD Proprietary

Use Warehouse Location Maintenance to set up all locations within a warehouse.

Field Definitions

Location. Enter the name of the warehouse location you are creating.

Storage Location Group. Enter the SLG to which this location belongs.

Item Number. The fields on the third Warehouse Location Maintenance screen are used to specify the quantities of a particular unit of measure that will fit in the location. You can enter multiple lines for different items and different units of measure.

Enter the item number for the inventory item to which this quantity definition relates. You can leave this field blank if the quantity relates to all items. For example, you could define how many standard pallets fit in the location, regardless of the items contained on the pallets.

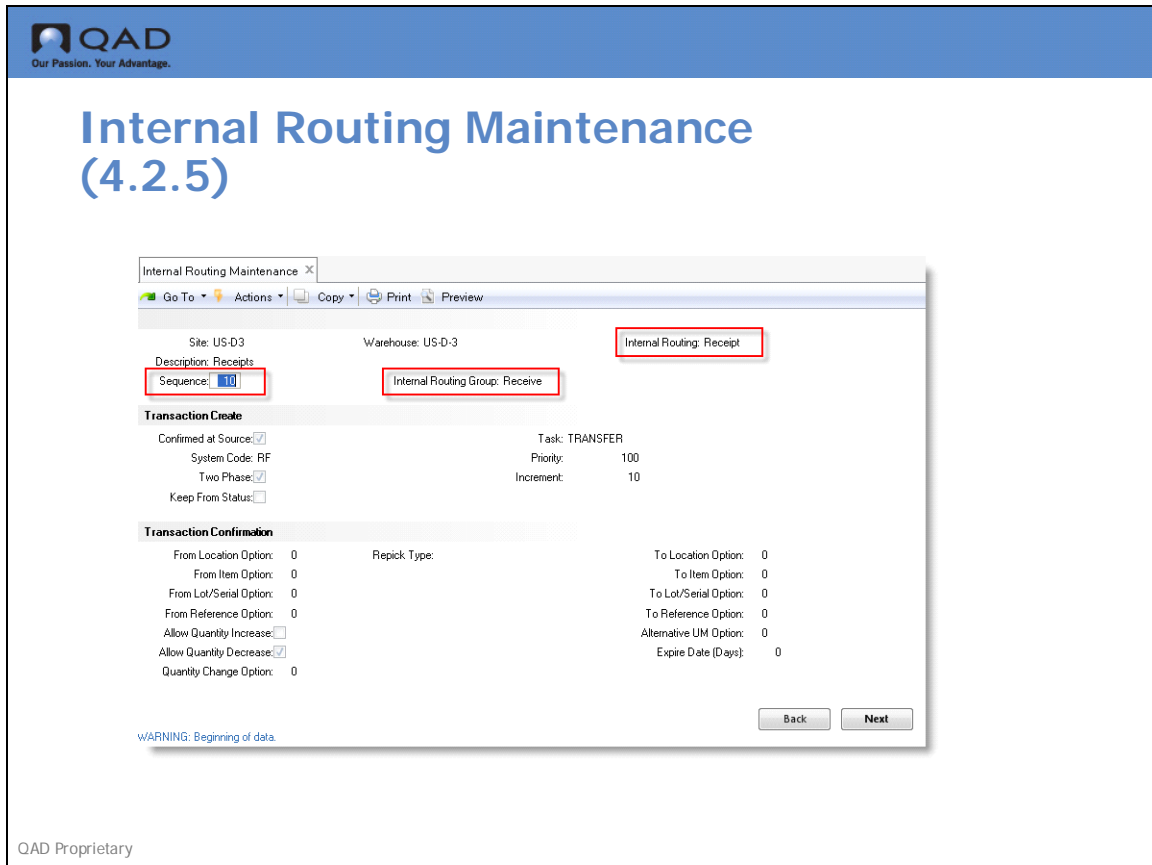
If you entered Yes in the Dedicated field on the previous screen, you must also specify the item to which this location is dedicated.

UM. The fields on the third Warehouse Location Maintenance screen are used to specify the quantities of a particular unit of measure that will fit in the location. You can enter multiple lines for different items and different units of measure.

Enter the unit of measure in which this quantity definition is specified.

Quantity . Enter the quantity of the selected UM that will fit in this location. You can enter multiple lines for different items and different units of measure.

Internal Routing Maintenance



When you have defined the internal routing groups (IRGs) within a warehouse, you can link specific sequences of IRGs together to form internal routings. Each step, or sequence, within an internal routing defines the IRG to which the inventory is next moved. For each sequence step within an internal routing, you also specify a number of fields that control how the inventory is processed as it reaches that point in the sequence.

Remember that a three-step sequence represents two inventory transactions. For example:

- 10 Receipt
- 20 Inspect
- 30 Bulk

Frames

There are several frames within Internal Routing Maintenance, and each frame contains many fields. The following table describes the frames and the types of data you can set up in each.

Frame	Purpose
Transaction Create	The fields in this frame determine the characteristics of stock movement transactions that are created in this sequence step of the internal routing. The initial values default from Warehouse Maintenance, but you can change the values for individual sequence steps of your internal routings.
Transaction Confirmation	The fields in this frame determine the characteristics of the confirmations of stock movements relating to this step in the internal routing sequence. The initial values default from Warehouse Maintenance, but you can change the values for individual sequence steps of your internal routings.
Print	The fields in this frame define the printing operations that are performed in relation to inventory transactions for this sequence step in the internal routing.
Miscellaneous	The fields in this frame affect the operation of this sequence step in the internal routing.

Key Field Descriptions

Internal Routing. To modify the fields for an existing internal routing, enter its name. To create a new internal routing, enter a new name for the routing.

Description. Enter a description of the internal routing. This is displayed in the lookup when you select internal routings for assignment to transaction types within the warehouse.

Sequence. Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, standard practice is to number the sequences as 10, 20, 30 rather than 1, 2, 3. The process of setting up an internal routing consists of entering a sequence number in the Sequence field, entering the relevant internal routing group in the next field, and then specifying the processing required for this sequence step.

Internal Routing Group. Enter the name of an existing IRG.

Mode. Specify how processes defined by the routing are initiated. The initial value defaults from Warehouse Maintenance, but you can change the value for individual sequence steps of your internal routings. The options are as follows:

- | | |
|--------|---|
| AUTO | The process in the routing sequence is started automatically as soon as the previous process is complete. |
| MANUAL | The process is only started when it is manually selected for processing. |

Clear Shortages. Enter Yes to cause the shortage clearance algorithms to be run before a location is identified to receive the inventory. These algorithms look for orders that were not fully satisfied in the original picking because of insufficient inventory levels. Enter No if you do not want the shortage clearance algorithms to be run.

Create Shipper. Enter Yes to create standard shippers. You can then use standard shipping functions to consolidate and print these shippers as shippers, containers, or bills of lading. Standard shipping functions can also be used for bulk shipment of, for example, multiple sales orders that have been combined onto a single shipper. Enter No if you do not want to create shippers.

Defining AUTO or MANUAL Mode Processing

The screenshot shows the QAD logo at the top left with the tagline "Our Passion. Your Advantage." Below the logo is the title "Internal Routing Maintenance – Auto or Manual Transaction Processing". The main content area is a form titled "Miscellaneous Options". Inside this form, there is a "Mode:" label followed by a text input field that is highlighted with a red rectangular border. Below the "Mode:" label is the text "New Unit of Measure:". To the right of the "Mode:" field are three checkboxes: "Clear Shortages:", "Create Shipper:", and "Check Inspection:", each followed by a small square checkbox icon.

QAD Proprietary

You can define either **AUTO** or **MANUAL** processing in the Miscellaneous frame of Internal Routing Maintenance (4.2.5). Engine workfile records are created in either **AUTO** or **MANUAL** mode. The following sections describe the processing for each mode.

For **AUTO** processing of an engine workfile, the system first determines the type of logic to use—picking, put-away, location find, cross-docking, inspection, or other logic. After it determines the type of logic needed, it creates the task.

You use the **MANUAL** mode to process engine workfiles as you need them processed. This is useful should you need to delay processing of a warehouse task.

Internal Routing Assignment Maintenance

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Internal Routing Assignment (4.2.9)

Int Routing Assignment Maint

Go To Actions Copy Print Preview

Transaction Type: RCT*

Site: US-06

Warehouse: US-D-3

Item Number:

Warehouse Item Type:

Address:

Custom:

Internal Routing: Receipt

Custom Program:

Back Next

QAD Proprietary

Use Internal Routing Assignment Maintenance to link specific transaction types to particular internal routings. You can also specify a combination of a transaction type with an item, an item type, or an address relating to a supplier or customer, so that the internal routing is used when that particular combination occurs.

Field Descriptions

Transaction Type. Enter the transaction type to which you want to assign an internal routing. You can maintain transaction types using Transaction Type Maintenance (4.7.1).

Site. Enter the name of the site.

Warehouse. Enter the name of the warehouse for which you want to assign internal routings.

Item Number. If you want to assign an internal routing to a combination of transaction type and item, enter the item number here. If you leave this field blank, the assignment is valid for all items.

Warehouse Item Type. If you want to assign an internal routing to a combination of transaction type and warehouse item type, enter the item type code here. If you leave this field blank, the assignment is valid for all item types.

The warehouse item type codes are a way of grouping together items that have similar properties. You assign the codes to items using the Item Maintenance options.

Address. If you want to assign an internal routing to a combination of transaction type and address, enter the address code here. If you leave this field blank, the assignment is valid for all addresses. For receipt transaction types, the address relates to the supplier of the item being received; for issue transaction types, the address relates to the customer to whom the goods are to be dispatched.

Custom. Enter Yes in this field if you want to use a custom program; otherwise, enter No. If you enter Yes, the system skips the Internal Routing field and moves to the Custom Program field.

Use custom assignments when there is more than one possible assignment for a transaction type. You create the custom program to determine which internal routing the system should use. When you run the custom program, you must provide the input fields that enable it to decide which IRG to assign.

Internal Routing. Enter the name of the internal routing you want to assign to this transaction type.

Custom Program. If you entered Yes at the Custom field, enter the name of the Custom Program to run for this transaction type.

Algorithm Assignment Maintenance

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Algorithm Assignment Maintenance (4.6.9)

Algorithm Assignment Mainten... X

Go To Actions Copy Print Preview

Algorithm Type: PK
Site: US-D3
Item Number:
Address:

Transaction Type: PICK*
Warehouse: US-D-3
Warehouse Item Type:
Custom:

Assigned Algorithms

Seq	Algo	Description
10	9	Pick by Level by Location

Sequence: 10 Algorithm: 9
Description: Pick by Level by Location

Back Next

QAD Proprietary

Use Algorithm Assignment Maintenance to link a specified sequence of algorithms (of one type per sequence) to a defined combination of the following:

- Transaction type
- Site
- Warehouse
- Item number or warehouse item type
- Address (supplier for received inventory, customer for shipped inventory)

You set up a sequence of algorithms so that you can specify the ideal method for selecting locations as the first step in the sequence. If the system cannot meet the full requirements of put-away or picking by running the first choice algorithm, it then runs the second algorithm in the sequence, and so on until the requirement has been met. Set up as many combinations of these elements as you choose.

Always include a very general algorithm as the last in the sequence so that the system always completes the task. For example, the put-away algorithm asks the system to look for storage locations that have available capacity. This may not meet any particular requirements, but including the algorithm as a last step in the sequence means that the system puts inventory away somewhere, and the task is completed.

Field Definitions

Transaction Type. Enter a valid transaction type as defined in Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

You also specify the transaction type when using the Algorithm Simulation Menu. These options simulate either location-find and put-away, or picking. The system simulates the running of the algorithms that you have assigned to the specified transaction type and displays the results of the simulated put-away or picking.

Sequence. Each algorithm assignment consists of a number of individual algorithms, in order, identified by a sequence number.

For a new assignment, Sequence defaults to 10. Number sequences by 10's (10, 20, 30, and so on) so that additional steps can be inserted easily later, if required.

Algorithm. Assign algorithms of the type you selected at the top of the frame. You can either type in the required number, or you can use the Up and Down arrow keys to move through the list of algorithms.

Use Algorithm Master Maintenance to modify the description of the algorithm you select.

In Algorithm Assignment Maintenance, you can assign algorithms of the type you selected at the top of the screen. For example, if you selected algorithm type PA, you can assign any of the put-away algorithms.

Planned orders will be created for the quantity specified in the Order Quantity field.

Algorithms

The following topics discuss various algorithms.

Picking or Replenishment Algorithms

Algorithm	Description
103	System looks first for dedicated locations in the item's storage location group. Locations must already contain inventory. If the system cannot meet the full requirements of put away by running the first choice algorithm, it then runs algorithm 101.
101	System looks for empty dedicated locations in the item's storage location group. If the system cannot meet the full requirements of put away by running the first choice algorithm, it then run algorithm 1.
1	System looks for locations in the item's storage location group.

Assigned Algorithms		
Seq	Algo	Description
10	103	Dedicated Storage Locations - Merge with Any
20	101	Empty Dedicated Storage Locations
30	1	Storage Locations

Sequence: 10	Algorithm: 103
Description: Dedicated Storage Locations - Merge with Any	

Put Away Algorithms

Algorithm	Description
9	System looks for locations that already contain the item being put away with the same alternate UM as this put away.
8	System looks for locations that already contain inventory with the alternate UM being put away.
6	System looks for locations that already contain inventory.

Assigned Algorithms		
Seq	Algo	Description
10	9	S.L. - Merge with Item and UM
20	8	S.L. - Merge with UM
30	6	S.L. - Merge with Any


Sequence: 10	Algorithm: 9
Description: S.L. - Merge with Item and UM	

Shipping Lane Algorithms

Algorithm	Description
4	The system considers carriers assigned to a specific shipping lane in Lane/Dock for a given Lane group.
1	System looks for a shipping lane in use for a given carrier.
2	The system looks for an unassigned shipping lane.
3	The system looks for a shipping lane with the lowest number of tasks assigned to it.

		Assigned Algorithms
Seq	Algo	Description
10	4	Find Dedicated (Unique) Lane for Carrier
15	1	Merge with Same carrier
20	2	Find Empty Shipping Lane
30	3	Find Shipping Lane by Best load (Active Tasks)

Additional Setup



Additional Setup

- ▶ Defining Items
- ▶ Defining Units of Measure
- ▶ Setting Up Local Exit Routines

QAD Proprietary

There are additional setup tasks that you should complete, including:

- Defining items that you want to store in your warehouse
- Defining the unit of measure to use for the warehouse items
- Setting up print parameters
- Setting up local exit routines (custom programs)

Items

The screenshot displays the 'Multi-Level Item Maintenance (4.4.5)' web application. At the top, the QAD logo and tagline 'Our Passion. Your Advantage.' are visible. The main title 'Multi-Level Item Maintenance (4.4.5)' is prominently displayed. Below the title, there is a navigation bar with options like 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. The form itself is divided into several sections: 'Attachments', 'Item Data', and 'Default Site Data'. The 'Item Data' section includes fields for 'Item Number: 1-BB', 'Power Unit', 'UM: EA', 'Unit of Measure Group', 'Barcode 1', 'Barcode 2', 'Shelf Life Offset: 0', and 'Critical Days: 0'. The 'Default Site Data' section includes 'Warehouse Item Type', 'Replenishment Type', 'Popularity', 'Single PA Trans', 'Issue Method', 'Print ID', 'ID Quantity: 0', and 'OPC Threshold: 0.0'.

You define all your standard item data in the usual way using Item Master Maintenance (1.4.1). However, because additional item attributes must be specified to enable the system to perform its put-away, storage, and picking functions, QAD Warehousing provides extra item maintenance functions that enable you to enter the required information.

You should define fields for the inventory items you want to store in your warehouses. The items must already exist. In addition to setting up the basic fields for each item, you can specify information that links the storage or picking of an item with a particular site, warehouse, storage location group, supplier, or customer. The sequence is as follows:

- 1 Use Item Maintenance (4.4.7) to set up generic default values for items. This step is optional.
- 2 Use Item-Site Maintenance (4.4.9) to set up default values for items that apply to all warehouses at the specified site. This step is optional, and uses the generic default values from Item Maintenance if you defined them.
- 3 Use Item-Warehouse Maintenance (4.4.11) to set up the actual fields to use for each item in the specified warehouse. This step is mandatory, and uses the site-level default values from Item-Site Maintenance if you have set these up.

Important An additional option, Multi-Level Item Maintenance (4.4.5), combines the first three steps in a single program, so that you can set up generic defaults, site-level defaults, and item-warehouse data in one continuous process. This option is an alternative to using Item Maintenance (4.4.7), Item-Site Maintenance (4.4.9), and Item-Warehouse Maintenance (4.4.11).

- 4 Use Item-Storage Location Group Maintenance (4.4.1) to specify additional warehousing fields for items related to a specific storage location group. This step is optional.

- 5 Use Supplier Item Inspection Maintenance (4.4.13) to specify inspection parameters for a supplier-item relationship. This step is optional.
- 6 Use Customer Item Status Maintenance (4.4.17) to specify particular inventory status codes for particular customers. This step is optional.

Field Descriptions

Unit of Measure Group. If the units of measure used for this item belong to a group, you can enter the UM group code here. Any future revisions to the conversion factors in this UM group are then applied to this item when you run UM Conversion Generation. Leave this field blank if a UM group is not applicable.

UM groups are a tool to help generate conversion factors. Defining a group and linking it to an item is not enough to have conversion factors created. You must run UM Conversion Generation.

Barcode 1. Enter a barcode number to use for this item. The system uses this number instead of the original barcode number. The barcode number must be unique; that is, the same barcode number cannot be linked to multiple items.

Typically EAN/UCC 13 or EAN/UCC 14 codes and customer item numbers that you define in Customer Item Maintenance (1.16) are alternate barcodes used in most warehouses.

Barcode 2. Enter an alternate barcode number to use in place of the original barcode number. The alternate barcode number must be unique; that is, the same alternate barcode number cannot be linked to multiple system items.

Shelf Life Offset. For inventory that has a limited shelf life, enter the number of days between the customer's best before date and the expiry date for the item. This time period is taken into account by some of the picking algorithms to prevent picking inventory which would have insufficient shelf life remaining to be saleable. If shelf life is not applicable, leave this field blank. This field is frequently used in the food industry when the customer is a distributor/grocer and not the end customer.

Critical Days. For inventory that has a limited shelf life, enter the number of days counting back from the item's expiry date during which time the inventory can be regarded as critical inventory. This time period is taken into account by some of the picking algorithms that pick only critical inventory. If critical days are not applicable, leave this field blank.

Default Site Data. The entries you make in this frame default when you enter the Item-Site data. You can override these values for individual sites.

Warehouse Item Type. Enter a code to categorize items in groups of similar type; for example, handling characteristics or put-away method. These codes can be used in some algorithms and in internal routing assignment. Leave this field blank if the item does not belong to a particular item type. Set up type codes in Generalized Codes Maintenance (36.2.13).

Replenishment Type. Enter a code to categorize items in groups that have the same replenishment requirements. Replenishment can then be specified for a group of items, rather than for individual items. Leave this field blank if the item does not belong to a particular replenishment type.

Popularity. Locations are assigned popularity codes that represent the ease of access. Similarly, you assign a popularity code to each inventory item so that the system can match popular inventory with popular locations. You can use this feature to ensure that fast moving items are stored in the most accessible locations. A sensible way to define this value is to use an ABC analysis and make categories for fast and slow moving items. Locations have a popularity code as well, and using the appropriate algorithm, the system tries to put away fast-moving items in very accessible locations.

Single PA Trans. Enter Yes if the system should attempt to put away received quantities of this item in a single put-away transaction, that is, all the inventory in the same location. Otherwise, enter No.

Issue Method. This field specifies the picking transactions that are created for this item in the bulk picking process.

Print ID. Enter Yes to print identification labels for this item; otherwise, enter No.

ID Quantity. If you have entered Yes for Print ID, enter the number of identification labels to be printed; otherwise, leave this field blank.

OPC Threshold. This field relates to opportunity counts, which you can specify when this item is stored in an RDT environment. When inventory is taken out of the location, the system checks whether the quantity on-hand falls below the threshold level you specify for the item, and also checks the OPC frequency value for the location where the item is stored. If both conditions are met, a cycle count is requested.

Inspection Data Frame

Define values related to how inspections occur in the Inspection Data frame. These values can be configured for specific suppliers in Supplier Item Inspection Maintenance (4.4.13).

Units of Measure

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Alternate Unit of Measure Maintenance (4.5.1)

Alternate Unit of Measure Maint X

Go To Actions Copy Print Preview

Unit of Measure: EA
Description: Eaches

Properties

Sizing Type: Sizing by Base UM

Print ID:

ID Quantity:

Allow Split:

Item Number:

Ship Type:

Round Inspected Qty:

Conversion Rules

New Unit of Measure:

Change Action:

The programs in the Sizing Menu (4.7) are designed to give you complete flexibility in the way you handle units of measure (UMs) relating to ordering, receipt, storage, picking, and shipping of inventory. You do not have to define your warehouses as either palletized or non-palletized. The system can handle both methods of measuring the quantities of inventory, and can easily merge palletized and non-palletized stock in the same location. You should set up details of the units of measure you want to use in the system sizing calculations. In practice, you may want to set up these details before you define the warehouses.

- 1 Use Alternate Unit of Measure Maintenance (4.5.1) to define the alternate units of measure you want to use for sizing calculations for inventory and location capacities.
- 2 Use UM Group Maintenance (4.5.5) to set up groups of related units of measure, with specified conversion factors between the different units. A UM group can then be attached to an item, with all the relevant conversion factors already defined. This step is optional.
- 3 Use UM Conversion Generation (4.5.10) to attach the conversion factors for UM groups to selected ranges of items. This step is optional.

Note Defining UM groups helps to simplify the process of defining the conversion factors and assigning them to items. The system does not use the UM groups other than to generate the conversion factors in UM Conversion Generation.

Field Descriptions

Unit of Measure . Enter the two-character code for the unit of measure.

Sizing Type. Enter valid code for the Sizing Type, defined in Generalized Codes Maintenance. Valid Sizing Types are:

Blank. This Sizing Type is used for basic UMs to be applied to individual items or pieces. The blank sizing type indicates either that this unit is the base UM for the item, or that a conversion factor must be applied to convert to the base UM.

R (Reference). This Sizing Type is used for UMs that are counted as a single quantity, regardless of the actual number of items contained.

Allow Split. Enter Yes if this unit of measure can be split into smaller units; otherwise, enter No. You can override the Allow Split setting for a selected UM within a storage location group using Storage Location Group Maintenance.

Item Number. This field is used when the unit of measure is itself an item, such as a pallet. Enter the item number for the unit. Leave this field blank for UMs that are not themselves items.

Ship Type. If an item is associated with an alternate UM, tracking of the actual storage unit can be performed. For example, an item number can be defined for pallets. This item is entered as the alternate UM's item number. The Ship Type determines if the item is to be considered as actual inventory or just as a memo item.

Leave the Ship Type field blank to maintain actual inventory levels for the item. Enter a non-blank value—the convention is M for Memo—and standard inventory transactions are created to show the movement of the item, but no on-hand or other inventory details are maintained.

Round Inspected Qty. Indicate if you want the quantity that must be inspected to be rounded to a whole unit. Use this field when you are sampling by percentage by setting the Sample% field to a value for the item. This can result in a decimal value. If your units are boxes, for example, you probably do not want to sample a percent of a box, but rather round up to a complete box.

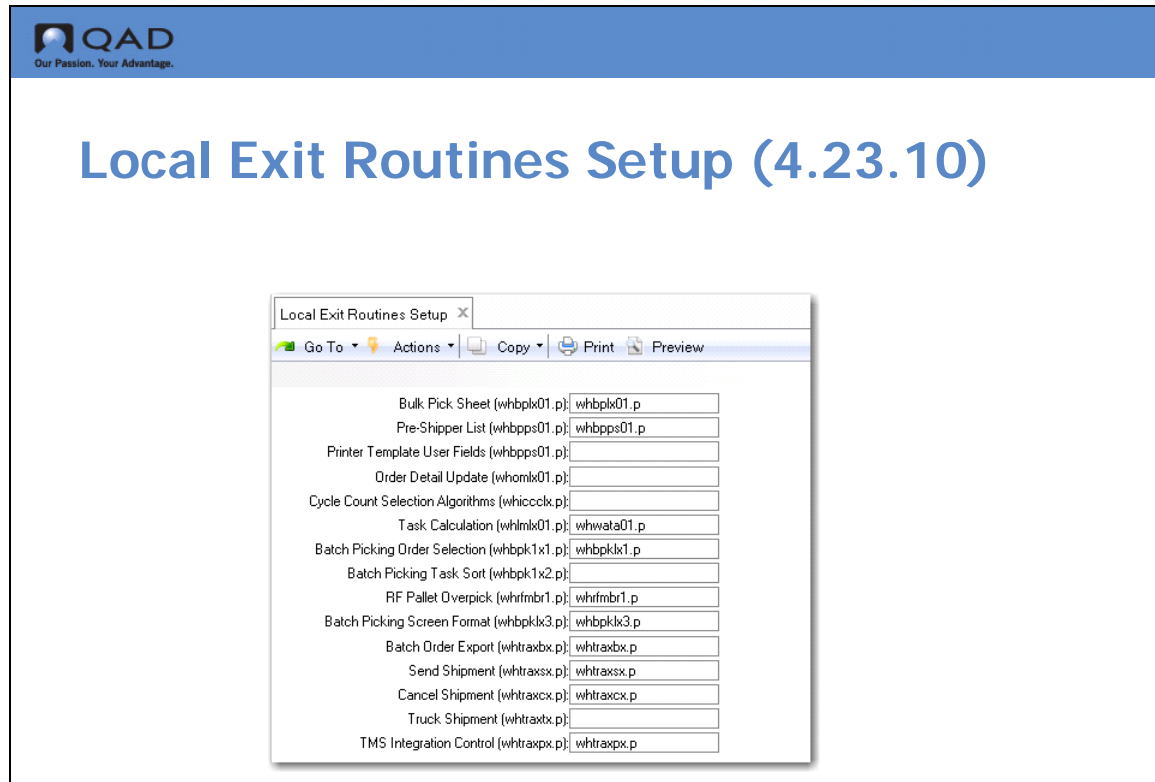
New Unit of Measure. You use Alternate Unit of Measure Maint to define Units of Measure and to specify the action that must be taken when changing an item's UM to a new UM.

Enter the two-character code for the new unit of measure. This is the UM you are changing to.

Change Action. This field defines the action to be performed when the UM defined at the top of the screen is changed to the new UM. The options are as follows:

- 0, No change
- 1, Blank reference
- 2, Prompt user for reference (other)
- 3, Prompt user for reference (same/other)
- 4, Prompt user for reference (blank allowed)
- 5, Automatic reference generation
- 6, NRM & prompt user for reference (other)
- 7, NRM & prompt user for reference (same/other)
- 8, NRM & prompt user for reference (blank allowed)

Local Exit Routines



Use Local Exit Routines Setup to extend warehousing functions by specifying custom programs that you have modified for your specific requirements.

For example, you can define the program to call when warehouse staff replenish from a single pallet or specify the programs to call when communicating with a third-party transportation management system (TMS).

QAD Warehousing supplies a custom program for each function. The supplied program is shown in parenthesis () with each function.

Field Descriptions

Bulk Pick-Sheet (whbplk01.p). Specify this program to let users print all bulk-picking tasks by item.

Pre-Shipper List (whbpps01.p). Specify this program to print a pre-shipper list during bulk picking. The pre-shipper list is similar to the standard picklist that shipping programs create.

Printer Template User Fields (whprlx01.p). Specify this empty printer template to use as a basis when you want to create and manage your own printer user fields.

Order Detail Update (whomlx01.p). Specify this program when you want local values to be set on the order detail. Use this program before you create order detail data on the order.

Cycle Count Selection Algorithms (whicclx.p). Specify this program to determine if a cycle count should be created.

Task Calculation (whlmlx01.p). Specify this program before you replenish a wave in Wave Replenishment (4.15.6) and release a wave in Wave Release (4.15.8). The Def Priority After Activ field in Wave Planning Control (4.15.1.24) gives priority to tasks once the system activates them. Activation occurs when you launch release groups during a wave release. The program you specify in this field takes priority into account when creating tasks.

Batch Picking Order Selection (whbpklx1.p)

Specify this program to manipulate selected orders; for example, when you want to remove orders.

Batch Picking Task Sort (whbpklx2.p). This program is the default procedure for sorting batch picking tasks. You can restrict the number of tasks assigned to a user and re-sort tasks so that hard-assigned tasks are reassigned by editing the whbpklx2.p sorting procedure.

RF Pallet Overpick (whrfmbr1.p). During replenishment, run this overpick program so that warehouse staff can return items that are not picked. When you use this program, the system sets the Allow Split Replen in Batch Picking Control (4.15.24) to Yes.

Batch Picking Screen Format (whbpklx3.p). Use this program to change the format of the RF screen during batch picking. You can edit the program and alter the layout and type of batch picking information that displays.

Batch Order Export (whtraxbx.p). Order Batch Export/Load Import (4.15.2.7) uses this routine to send and receive export messages with a Transportation Management System (TMS). Order Batch Export/Load Import lets you export the order batch selections created in Order Batch Selection (4.15.2.5). It uses this routine to create the batch shipment (BTCH) message, send the message to the TMS, receive a reply, and create loads.

Ship Shipment (whtraxsx.p). RF Print Paperwork (3.8) uses this routine to send and process ship shipment (SHIP) messages with the TMS. QAD Warehousing sends the final contents of shippers, including containerization information, to the TMS. It then receives the shipping labels, freight charges, and tracking or PRO numbers that it stores in header records of the shipment.


Cancel Shipment (whtraxcx.p). The RF Cancel Shipment uses this routine to send a void shipment (VOID) message to the TMS should you need to cancel a shipment. QAD Warehousing first validates that this shipment was sent to TMS using the ship shipment routine message and RF Print Paperwork function. Once validated, it sends a message to the TMS to cancel the shipment and receives a reply of the cancellation.

Truck Shipment (whtraxtx.p). The RF Ship Truck (3.5) uses this routine to process the process end of day (PEOD) message. This message lets the system recalculate final freight charges and prorating truck level charges over individual shipments. Depending on the additional freight charges, the charges can be prorated over individual sales orders.

For shipments belonging to a load, the system verifies that when users attempt to confirm a shipment, all other shipments for that same load are selected in the same transaction. If not selected, warnings or errors display, depending on Warehouse Transportation Control (4.15.2.24) settings. When communication problems occur, the system displays messages.

TMS Integration Control (whtraxpx.p). Wave Transportation Control uses this routine to set up any TMS-dependant values that it needs to process messages between QAD Warehousing and a Transportation Management System (TMS). Typical information might include the TMS host name, service, protocol and other necessary information needed for communication between the two programs.

Exercise: Set Up a New Warehouse



Objectives

- ▲ Set up a new warehouse
- ▲ Set up three IRGs for storage, receipt, and bulk areas
- ▲ Set up one internal routing for each IRG, include an IR for receipt, pick, and replenish
- ▲ Set up one SLG for each IRG
- ▲ Set up three WLGs for a forklift, worklane, and a trolley
- ▲ Set up locations for boxes within the WLGs and SLG
- ▲ Assign algorithms for location transfer (LOC-TR), sales order picking, (Pick-SO), and PO receipt (RCT-PO) transaction types
- ▲ Set the transaction processing for auto mode

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

Instruction: In this exercise, you will use set up a new warehouse with WLGs and SLGs that have locations; IRGs with IRs, and algorithms assigned to transaction types for the IRs. You will set the transaction processing for auto mode.

- 1 Complete all setup steps as specified in the setup portion of this chapter.
- 2 Use Warehouse Maintenance (4.1.1) to set up a new warehouse.
- 3 Use Internal Routing Group Maintenance (4.2.1) to set up three IRGs for storage, receipt, and bulk areas.
- 4 Use Internal Routing Maintenance (4.2.5) to set up one internal routing for each IRG, include an IR for receipt, pick, and replenish.
- 5 Use Storage Location Group Maintenance (4.3.5) to set up one SLG for each IRG.
- 6 Use Work Location Group Maintenance (4.3.9) to set up three WLGs for a forklift, worklane, and a trolley in the warehouse.
- 7 Use Warehouse Location Maintenance (4.3.13) to set up locations for boxes or pallets within the WLGs and SLG.

- 8** Use Internal Routing Assignment Maintenance (4.2.9) to link location transfer (LOC-TR), sales order picking (Pick-SO), and PO receipt (RCT-PO) transaction types to the internal routings.
- 9** Use Algorithm Assignment Maintenance (4.6.9) to assign the following:
 - a** Location find (LF) algorithm to the LOC-TR transaction
 - b** Picking (PK) algorithm to the Pick-SO transaction
 - c** Put away (PA) algorithm to the RCT-PO transaction type.
- 10** Use Internal Routing Maintenance (4.2.5) to set the transaction processing for auto mode





Study Questions

- 1 What is the highest level of specific data within QAD Warehousing?
- 2 A Storage Location Group (SLG) may contain many internal routing groups (IRGs). True or False.
- 3 Locations belong to both an SLG and a WLG. True or False.
- 4 Two locations in two different warehouses but at the same site cannot have the same name. True or False.
- 5 What is the purpose of engines within QAD Warehousing?
- 6 The system uses different routines when putting stock away in functional and non-functional areas. True or False.
- 7 Name two transaction codes.
- 8 At the simplest level, you can assign a particular algorithm to a particular transaction type, then specify the transaction type to link a string of warehouses. True or False.
- 9 What are the two types of engine processing that can be applied to transaction types in IRs?
- 10 Which one of the following are NOT true:
 - a Print templates are flat, ASCII files.
 - b Print templates can contain literal text that should appear as output such as field labels, headings, and banner messages.
 - c Print templates contain token labels that remain as permanent unless you specify removal.
 - d Print templates contain escape and control sequences.

Chapter 2

Receipts

Overview



Receipts

QAD Proprietary

In this section, you learn how to receive goods in QAD Warehousing.

A suggested setup sequence for Wave Planning includes these general setup steps:

- Learn receipt concepts
- Set up Warehousing for receiving goods by defining an internal routing for a receipt transaction, setting up a receiving dock area and storage area, and creating a PO.
- Receive goods and confirm the receipt.

Concepts

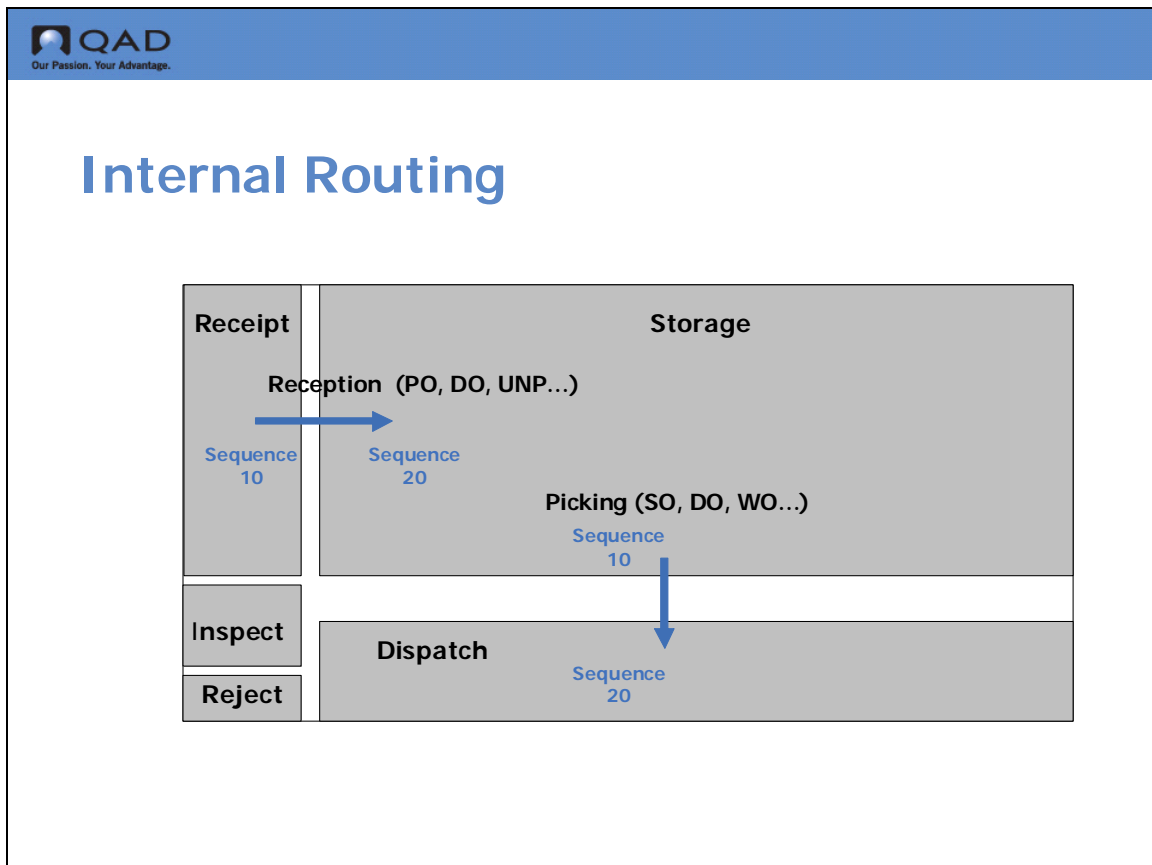
Receiving goods into a warehouse uses nearly every warehousing concept from establishing a site and warehouse to creating various locations and storage areas. It also involves creating internal working groups, linking the groups with pathways, invoking algorithms, and creating and confirming tasks associated with the receipt.

You should understand the basic warehousing concepts, such as the site, warehouse, WLGs, SLGs, IRGs, IRs, locations, algorithms and their assignments and have these areas established within QAD Warehousing before you create a purchase order and receive goods against the order.

This section reiterates a few of the key areas.

- Internal routing
- Popularity codes

Internal Routing



The key to processing receipts is the internal routing. The flexibility of the internal routing function means that any received inventory can move through any combination of locations before being put away.

You can set up Internal Routing Groups (IRGS) for storage, receipt, or other purposes. Internal routings (IRs) are the paths that link IRGs.

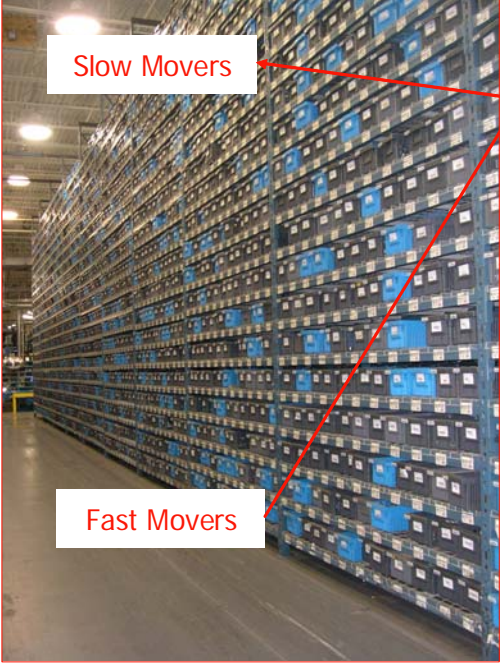
All receipts work in the same way:

- You create a transaction; for example, unplanned receipt.
- The warehouse system looks for the internal routing associated with the item, transaction type, warehouse, or address.
- The system runs the algorithms associated with the transaction type; for example, put-away.
- The receipt location can be a final location, a location in the receipt area, or a warehouse.
- Confirmations can be printed or sent to the RF. The setup fields for this can be defined for the warehouse, the item, or the transaction type.

Popularity Code

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Popularity Code



Slow Movers


Fast Movers

Put fast moving stock in the low value popularity code locations, and slow moving stock in the higher ones.


Another important concept when receiving goods is the popularity code. You specify a popularity code when setting up warehouse locations. Specify a popularity code to define the priority for choosing a location when the system can use more than one location to put away stock.

You normally want to put fast moving stock in the low value popularity code locations, and slow moving stock in the higher ones.

Receipt Setup



Receipt Setup



- ▲ Define an IR for a receipt transaction
- ▲ Set up popularity codes
- ▲ Set up a receiving dock area and storage area
- ▲ Create a Purchase Order for the items you want to receive

The introduction to this training guide covers basic areas of the warehouse. For receipt purposes, this chapter reiterates the importance of setting up warehouse areas to establish both receiving and storage areas and internal routings to link areas. For complete setup instructions, see the Introduction chapter.

A typical setup based on the receipt of a purchase order includes the following steps:

- Define an internal routing for a receipt transaction type.
- Set up popularity codes.
- Set up an internal routing RCT-PO in Internal Routing Maintenance (4.2.5)
 - Sequence 10: Receipt
 - Sequence 20: Bulk
- Define storage location groups using Storage Location Group Maintenance (4.3.5).
- Create a purchase order using Purchase Order Maintenance (5.7).

Once you create the purchase order you are ready to receive items on the order.

Internal Routing Maintenance

Internal Routing Maintenance

Site: US-D3 Warehouse: US-D-3 Internal Routing: Receipt

Description: Receipts

Sequence: 10 Internal Routing Group: Receive

Transaction Create

Confirmed at Source: Task: TRANSFER

System Code: RF Priority: 100

Two Phase: Increment: US-D0

Keep From Status:

Transaction Confirmation

From Location Option: 0 Repick Type:

From Item Option: 0

From Lot/Serial Option: 0

From Reference Option: 0

Allow Quantity Increase:

Allow Quantity Decrease:

Quantity Change Option: 0

WARNING: Beginning of data.

US-D-3

Receive

DDock1

Storage

Bulk

DBIK001 DBIK005

DBIK002 DBIK006

DBIK003

DBIK004

PO Receipt

Sequence 10

Sequence 20

Use Internal Routing Maintenance to define an internal routing for transaction type RCT-UNP to move the inventory from receipt to bulk. The internal routing would consist of two steps; for example:

- Step 10: Receipt
- Step 20: Bulk

Field Definitions

Sequence. Enter the number that identifies the order of this routing step.

Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, number the sequences as 10, 20, 30 rather than 1, 2, 3.

Internal Routing Group. Specify for this sequence step of the routing the next IRG to which the inventory should move.

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Task. Specify the most common task associated with inventory transactions in this warehouse. This field sets the default for internal routings and work location groups created in this warehouse. Set up task codes in Task Maintenance.

Warehouse Location Maintenance

Use Warehouse Location Maintenance to define a popularity code for the location.

Field Description

Location. Enter a location code where inventory is stored.

Popularity. Enter a code to define the relative priority for choosing this location when the system has a choice of locations in which to put away inventory. Low alphanumeric values for the Popularity code indicate greater popularity.

For example, a popularity code of AAA indicates a popular location that is easily accessed, while a code of ZZZ indicates an unpopular location that is perhaps difficult to access.

You typically put fast moving stock in the low value Popularity code locations, and slow moving stock in the higher ones.

You can base the popularity codes on an ABC analysis of the number of transactions; Use Item ABC Status Report/Update (ppptrp04.p) to review ABC details.

You can also assign popularity codes to items and item/site records.

Storage Location Group Maintenance

Storage Location Group

- Group of locations that have a common storage function, such as a primary picking area, or a bulk storage area for a particular type of pallet.

Storage Location Group Maint x

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: US-D-3
Storage Location Group: Receive
Description: Receive SLG

Internal Routing Group: Receive

Allow Issues:
Allow Receipts:
Allow Incoming Returns:
Allow Outgoing Returns:

Opportunity Counts:
Opportunity Count Frequency: 0
Check Digits:
Cycle Count Status Option: 0

Picking Multiple UM:
Acquisition UM:

Exclude from Picking:
Picking Level:
Over Pick:
Multi-Trans:

Detail Overflow Group:
Capacity Check when OTF:
Optimized Storage:
Allow Mixed Status Codes:
Recount UM:

Back Next

Use Storage Location Group Maintenance to define two areas: receive and bulk.

Note You must also link the storage location group to the item you are receiving using Item-Warehouse Maintenance (4.4.11).

Field Definitions

Storage Location Group. Enter the code that identifies the storage location group you want to create or modify.

Allow Issues. This field controls whether inventory can be issued out of the system from locations in this SLG. Generally, you limit issues to specially designated areas, such as Goods-Out. Enter Yes if stock can be issued; otherwise, enter No.

Allow Receipts. This field controls whether inventory can be received from outside the system into locations in this area. Generally, you limit receipts to specially designated areas, such as goods-in. Enter Yes if stock can be received; otherwise, enter No.

The value defined in Internal Routing Group Maintenance is not applied directly, but defaults to all the storage location groups set up within the internal routing group. In Storage Location Group Maintenance, you can accept the default value or override it for this SLG.

Use Item-Storage Location Group Maintenance to change the setting for a specified item within a specified SLG.

Note If Allow Receipts is set to Yes in a bulk storage location group, for example, the system lets you make a direct receipt into these locations without generating any warehouse transactions.

Purchase Order Maintenance

Purchase Order Maintenance

Go To Actions Copy Print Preview

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P01030 Supplier: A2001 Ln Format S/M: Single

Ln	Site	Requisition	Item Number	Qty Ordered UM	Unit Cost	Disc%
1	US-D3		D-1T000	700.0 EA	0.00	0.00%

Line Details

Qty Received: 0.0 Due Date: 10/8/2008 CRT Int: 0.00
 Qty to Ret: 0.0 Pur Acct: 6600 Cons
 Single Lot: Performance Date: 10/8/2008 Project:
 Location: DDock1 Need Date: 10/8/2008 Type:
 Item Revision: Sales/Job: Taxable: H
 Status: Fixed Price: Inspection Requi: Cmmts:
 Supplier Item: UM Conversion: 1.0000
 Manufacturer: Stock UM Quantity: 700.0 EA
 Description: Item 001 Update Avg/Last Cost:
 Extended Net Cost: 0.00

WARNING: Beginning of data.

End Lines Next

Use Purchase Order Maintenance (5.7) to create a purchase order for the items you want to receive.

Item Number. Enter the code for the item you receive into the warehouse.


Qty Ordered. Enter the quantity ordered.

Note You must also link the storage location group to the item you are receiving using Item-Warehouse Maintenance (4.4.11).

Receiving Goods



Receipt Processing

- 
- ▲ Receive goods into the warehouse with Purchase Order Receipts menu
 - ▲ Use the QAD Warehousing RF Device to confirm put away tasks
 - ▲ Review stock inquiries to see how algorithms handle put away movements

In this section, you will process the receipt of the items you ordered into the warehouse. To do this, you will:

- 11** Create a receipt of the purchase order using Purchase Order Receipts (5.13.1).
- 12** Confirm the put-away tasks using the RF.
- 13** Review stock inquiries.

Purchase Order Receipts

Purchase Order Receipts (5.13.1)

Order: PO1030 Supplier: A2001 Status: Packing Slip:

Ln	Item Number	UM	Qty Open UM	Receipt Qty UM	Project	Due Date	T
1	D-T1000	EA	700.0 EA	0.0 EA		10/8/2008	

Line: 1 Unit of Measure: EA Site: US-D3 Loc: DDock1

Quantity: 700 ID: Lot/Ser: Reference:

Packing Qty: 0.0 OP: 0 Supplier Lot: Multi Entry: Chg Attribute:

Cancel B/O: Item Number: D-T1000 Supplier Item: Cmnts:

Description: Item 001

Back Next

Use Purchase Order Receipts to receive the goods into the warehouse.

Note You can receive items using Receipts–Unplanned (3.9).


Field Descriptions

Order. Specify the purchase order number.

Item Number. Specify the item number.


Quantity. Specify the quantity you want to receive into the warehouse.

RF Receipt Task Confirmation

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Receipt Task Confirmation

▲ Use Next Task Menu



Pocket PC
Warehouse Management
Release: eB3
User ID: UserB
Pa:
Domain: USA
Site: US-D3
Warehouse: US-D-3
WLG:
Location:
Task:

→




Pocket PC
1 Next Task
2 Select Task
3 Transfer
4 Location Audit
5 Kanban Scan
6 Eng Activation
7 PreShip Sel Task
8 PO Receipt
9 Stock Inquiry
10 On-Line SO Pick

Warehouse staff confirm the receipt task through the RF device. After logging onto the RF, the procedure is as follows:

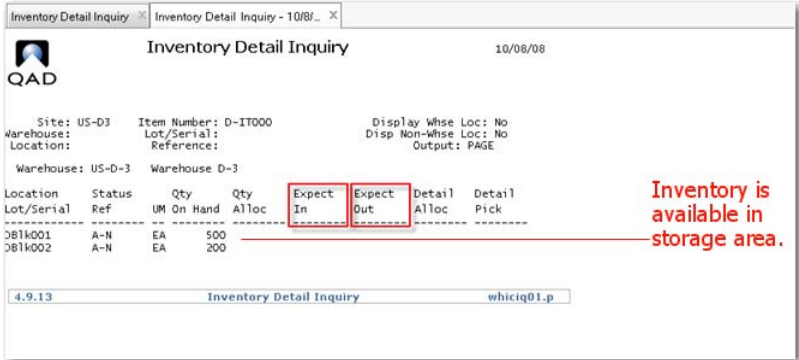
- 1 Select Next Task (1)
- 2 Enter the item origin location in the Fr Loc field.
- 3 Enter the quantity received in the Qty field.
- 4 Enter the item destination location in the To Loc field.

Inventory Detail Inquiry


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Inventory Detail Inquiry

(4.9.13)



Inventory is available in storage area.

Use Inventory Detail Inquiry to check if inventory was moved to the location.

Expect In/Expect Out. Expect In and Expect Out quantities indicate that tasks were created properly but not yet confirmed. When properly confirmed of the RF, there are no expected in/expected out quintets and inventory is available in storage area.

Exercise: Create a PO, Receive, Confirm Put-Away, Review Inventory

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will use QAD EE to create a PO, receive the goods on the PO, use the RF device to confirm put-away tasks, then review stock inquiries to see movement.

- 1 Complete all setup steps as specified in the setup portion of this chapter.
- 2 Use Purchase Order Maintenance (5.7) to create a PO for valid items.
- 3 Use Purchase Order Receipt (5.13.1) to receive the goods on the PO.
- 4 Use the RF Next task option to receive the cycle count task and confirm the cycle count transaction.
- 5 Use Inventory Detail Inquiry (4.8.17) to verify items moved to the inspection area.

Study Questions

- 1 You use internal routings to create specific pathways that ultimately link storage location groups within the warehouse. True or False.
- 2 You define a sequence in Internal Routing Maintenance that is important for receiving because it specifies:
 - a The order in which items are put away in a location.
 - b Each step of the internal routing
 - c A transaction type for each step.
 - d None of the above.
- 3 A typical sequence in a warehouse is receipt, inspection, bulk. True or False.
- 4 What is the purpose of a popularity code?
- 5 Low alphanumeric values for the Popularity code indicate lower popularity. True or False.
- 6 You can assign popularity codes to:
 - a locations
 - b items
 - c sites
 - d transfers
- 7 If you set up internal routing groups, you can bypass setting up storage location groups when receiving items. True or False.
- 8 Name two system programs that you can use to receive items.
- 9 Once you receive items, you must visibly verify the location to ensure that the items are now in inventory. True or False.
- 10 What is the purpose of the Expect In/Expect Out field when checking inventory?

Chapter 3

Printing

Overview



Printing

QAD Proprietary

Warehouse staff are required to print several documents during normal warehouse processing, including:

- Inventory IDs
- New, confirmed, or exceptions to transactions
- QA inspection tags
- Unplanned issue tags
- Picklists/preshippers
- shipping documents

You can control the printing of tags, pallet labels, or exception tags from various menus within the system, with a flexible choice of format for the output.

You have the choice of printing at the following times:


- When creating transactions
- When confirming transactions
- When transactions do not complete successfully (exceptions)
- When inventory is received into the warehouse

A suggested setup sequence for printing includes these general setup steps:


- Set up print parameters for all or some warehouses.

- Set up print parameters for internal routings (IRs) and other storage areas of the warehouse.
- Define the print mode and print flavor.
- Specify templates.

Print Setup



Print Setup



- ▲ Set print parameters for all warehouses
- ▲ Optionally, set print parameters for a single warehouse
- ▲ Optionally, set print parameters for IRs, WLGs, users, or items
- ▲ Set the print mode
- ▲ Set the print procedure code
- ▲ Set the print flavor
- ▲ Specify print templates

QAD Proprietary

There are several Warehousing programs that contain printing frames or printing fields for setting up printers and other print options.

- Use Warehouse Control (4.1.24) to set print options for all warehouses. Print options default to Warehouse Maintenance.
- Use Warehouse Maintenance (4.1.1) to set several print frames for a single warehouse that default to other warehousing maintenance programs. Use Warehouse Maintenance (4.1.1) to set the print mode, also.
- Use Internal Routing Maintenance (4.2.5) to set print options for an individual step in an IR and to define the print mode.
- Use Work Location Group Maintenance (4.3.9) to specify the printer and set up print options for the WLG and for the RF.
- Use User Work Location Group Maintenance to set up print options specific to a user.
- Use Multi-Level Item Maintenance (4.4.5) to specify a print ID for an item.
- Optionally, Use Print Banner Maintenance (4.21.1.1) or Print Label Maintenance (4.21.1.5) specify print banners and print labels.

Warehouse Control

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Warehouse Management Control (4.1.24) – Print Options

Warehouse Control x

Go To Actions Copy Print Preview

Identification Printing

<input checked="" type="checkbox"/> Print ID:	Lines of Each: <input type="text" value="0"/>	Print Mode (ID): <input type="text" value="Auto"/>
ID Printer: <input type="text"/>	Width of Each: <input type="text" value="0"/>	Use External: <input checked="" type="checkbox"/>
Number Across: <input type="text" value="0"/>	132 Mode (ID): <input type="checkbox"/>	

Task Printing

Print Create: <input type="checkbox"/>	Number Across:	Create Print Mode:
Print Confirm: <input type="checkbox"/>	Lines of Each:	Confirmed Print Mode:
Print Except: <input type="checkbox"/>	Width of Each:	Exception Print Mode:
Task Printer:	132 Mode (Task): <input type="checkbox"/>	Use External: <input type="checkbox"/>

Inspection Printing

Insp Printer:	Width of Each:	Use External: <input type="checkbox"/>
Number Across:	132 Mode (Insp): <input type="checkbox"/>	
Lines of Each:	Print Mode:	

Use Warehouse Control (4.1.24) to set print options for all warehouses. Print options default to Warehouse Maintenance.

The fields in the Printer Defaults frame set default values used when you set up individual warehouse details.

Warehouse Maintenance

The screenshot displays the 'Warehouse Maintenance Print Frames' configuration window. At the top, the QAD logo and tagline 'Our Passion. Your Advantage.' are visible. The main title 'Warehouse Maintenance Print Frames' is centered. Below the title, the window title bar shows 'Warehouse Maintenance' and a menu bar with 'Go To', 'Actions', 'Copy', 'Print', and 'Preview'. The configuration is organized into three sections:

- Identification Printing:** Includes fields for 'Print ID', 'ID Printer', 'Number Across' (set to 0), 'Lines of Each' (set to 0), 'Width of Each' (set to 0), '132 Mode (ID)', and 'Print Mode (ID)' (set to 'Auto'). A 'Use External' checkbox is checked.
- Task Printing:** Includes checkboxes for 'Print Create', 'Print Confirm', and 'Print Except'; a 'Task Printer' field; 'Number Across', 'Lines of Each', 'Width of Each', and '132 Mode (Task)' fields; and checkboxes for 'Create Print Mode', 'Confirmed Print Mode', 'Exception Print Mode', and 'Use External'.
- Inspection Printing:** Includes fields for 'Insp Printer', 'Number Across', 'Lines of Each', 'Width of Each', '132 Mode (Insp)', and 'Print Mode'. A 'Use External' checkbox is present.

Use Warehouse Maintenance (4.1.1) to set several print frames for a single warehouse that default to other warehousing maintenance programs.

Note Use Warehouse Control (4.1.24) to set print options for all warehouses. Print options default to Warehouse Maintenance.

The Print frame is divided into several areas: Identification, task, inspection, form, external, and miscellaneous printing. You can control the printing of transaction details in each of the areas. These cover the following:

- Printing an identification of inventory coming into the warehouse, such as a pallet label
- Printing transactions for tasks when they are created
- Printing transactions for tasks when they are confirmed
- Printing exceptions when changes have been made to the original transaction; for example, a change to the put-away location or quantity
- Printing transactions relating to external devices
- Printing QA sampling inspection tags
- Printing to a specific printer for inspection results

Each type of printing has a common set of fields that define print-related settings. Only the settings for the identification print fields are described here; settings for the other print events are the same, but you can use different printers or print parameters to accommodate different print tags or locations as needed.

Field Descriptions

Print ID. Enter Yes to print an identification of inventory coming into the warehouse; otherwise, enter No. If you enter No, you can ignore the other fields in this group.

ID Printer. Enter the name of the printer on which the IDs are to be printed.

Number Across. Enter the number of identifications that are to be printed across each page.

Lines of Each. Enter the number of printed lines in each identification.

Width of Each. Enter the width in character positions of the lines of the identification.

132 Mode. Enter Yes if the identifications are to be printed in 132 character position mode; otherwise, enter No.

Print Mode. Select a print mode to determine when output should be printed. The options are as follows:

AUTO	The system prints identifications automatically as soon as they are created.
MANUAL	The system holds identification print requests until an online or batch process activates printing.
AUTOSIG	The system prints identifications automatically but holds them until a signal to print is received.

The signal to trigger AUTOSIG printing is normally a sign that the process creating print requests is complete and that all requested prints can be output at one time. This is particularly relevant when, for example, printing multiple transactions on the same task sheet.

Use External. Enter Yes if you want RDT users to be able to print the identifications on an external printer such as the local printer in a fork-lift truck. Enter No if the identifications must be printed on the ID printer.

Note The following group of fields are from the Miscellaneous Printing frame in Warehouse Maintenance. They cover general print format.

Print Flavor. This field defaults to each work location group you set up within the warehouse. Select the Print Flavor code to determine the format of the printed output. Print Flavor codes are set up in Generalized Code Maintenance (36.2.13).

A. Use the default print formats.

B. Use a print template. The system lets you create your own templates from ASCII files, described in the next section.

Print by WLG. Indicate whether the sequence in the printed output is sorted by work location group.

If you are using barcode prefixes, update the Manufacturer Code field.

Manufacturer Code. Specify the code that identifies your company's site. This code is a required component of serial shipping container codes (SSCC) used in some barcode pallet IDs.

Print Templates

The screenshot displays the QAD logo at the top left with the tagline 'Our Passion. Your Advantage.' Below the logo, the title 'Print Templates – Samples' is centered. Underneath, there are two main sections:

Simple Template

```

~BANNER~

Transaction Number: ~TRNR~ (~TYPE~)
Site: ~SITE~ ~SITEDS~
Location: ~LOC~ ~LOCDS~
Item Number: ~PART~ ~PARTDS~
Lot/Serial: ~SERIAL~
Reference: ~REF~

Quantity: ~QTY_CHG~ ~UM~

```

Simple Template Result

```

Identification

Transaction Number: 123 (RCT-P0)
Site: JONSITE Jon Miller's Site
Location: RC01 Receipt's Dock 1
Item Number: 100101 Box of Things
Lot/Serial:
Reference:

Quantity: 10 EA

```

QAD Proprietary

Templates are flat ASCII files that contain the layout of required printed output. Use Print Template Load (4.21.3) to load the template into the database.

A template can contain the following elements:

- All the escape and control sequences required by specific printer types for specific functions such as bar coding, line drawing, font selection, and character position.
- Literal text that should appear as output such as field labels, headings, and banner messages.
- Token labels that are replaced by actual data when output is generated.

Token labels supported are:

- All base transaction fields. For transaction creation, all transaction detail fields are available.
- Associated fields. These are fields that are not on the base transaction but are related to it, such as item description or storage location group description.
- User-definable fields, values determined in a local exit routine.

Internal Routing Maintenance

Internal Routing Maintenance

Go To Actions Copy Print Preview

Site: 10000 Warehouse: whse Internal Routing: porec

Description:

Sequence: 10 Internal Routing Group: dispatch

Print Options

Print ID: Print Mode (ID): Auto

Print Created Tasks: Create Print Mode: Auto

Print Confirmed Tasks: Confirmed Print Mode: Auto

Print Exceptions: Exception Print Mode: Auto

Miscellaneous Options

Use Internal Routing Maintenance (4.2.5) to set print options for an individual step in an IR and to define the print mode.


The Print Options frame in Internal Routing Maintenance contains fields where you define the printing operations that are performed in relation to inventory transactions for this sequence step in the internal routing.

The types of printing are:

- ID, identification of the inventory
- Created tasks
- Confirmed tasks
- Exceptions, when changes have been made to the original transaction

For each of these, you can enter Yes or No to specify whether the element is printed. The initial values default from the Printing frame in Warehouse Maintenance, but you can change the values for individual sequence steps of your internal routings. See the field descriptions in Warehouse Maintenance for details on these fields.

Work Location Group Maintenance


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Work Location Group Maintenance (4.3.9)

Work Location Group Maintena...
Go To
Actions
Copy
Print
Preview

Site: 10000
Warehouse: whse
Work Location Group: truck

Task Printing

<input type="checkbox"/> Print Create:	Number Across: 0	Create Print Mode: Auto
<input type="checkbox"/> Print Confirm:	Lines of Each: 0	Confirmed Print Mode: Auto
<input checked="" type="checkbox"/> Print Except:	Width of Each: 0	Exception Print Mode: Auto
Task Printer:	132 Mode (Task): <input type="checkbox"/>	Use External: <input checked="" type="checkbox"/>

Inspection Printing

Insp Printer: <input style="width: 80%;" type="text"/>	Width of Each: <input style="width: 40%;" type="text" value="0"/>	Use External: <input checked="" type="checkbox"/>
Number Across: <input style="width: 40%;" type="text" value="0"/>	132 Mode (Insp): <input type="checkbox"/>	
Lines of Each: <input style="width: 40%;" type="text" value="0"/>	Print Mode: <input style="width: 80%;" type="text" value="Auto"/>	

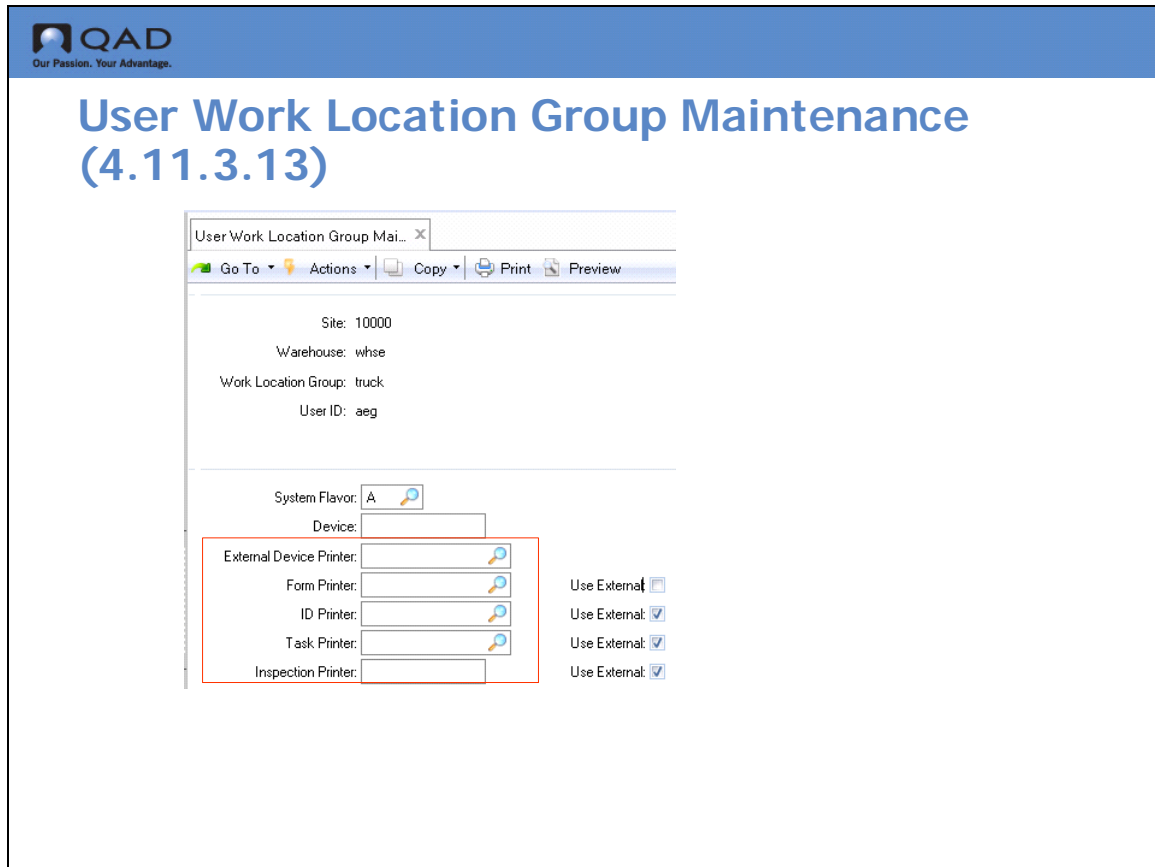
Form Printing

Form Printer:	132 Mode (Form): <input type="checkbox"/>	Use External: <input type="checkbox"/>
---------------	---	--

Use Work Location Group Maintenance (4.3.9) to specify the printer and set up print options for the WLG and for the RF.

The Printing frame of Work Location Group Maintenance contains fields where you define the printing operations that are performed in this work location group. The initial values default from the Printing frame in Warehouse Maintenance, but you can change the values. See the field descriptions in Warehouse Maintenance for details on these fields.

User Work Location Group Maintenance



Use User Work Location Group Maintenance to set up print options specific to a user.

Field Definitions

External Device Printer. Enter the code for the device printer.

Form Printer. Enter the code for the form printer.

ID Printer. Enter the code for the ID printer.

Task Printer. Enter the code for the task printer, or select a code from the drop-down list.

Use External. Indicate whether tasks/forms/IDs should be printed on an external printer.

Multi-Level Item Maintenance

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Multi-Level Item Maintenance (4.4.5)

Multi-Level Item Maintenance: Go To ▾ Actions ▾

Item Number: 1-BB Red Bean Bag
UM: EA

Item Data

Unit of Measure Group:

Barcode 1:

Barcode 2:

Shelf Life Offset:

Critical Days:

Default Site Data

Warehouse Item Type:

Replenishment Type:

Popularity:

Single PA Trans:

Issue Method:

Print ID:

ID Quantity:

OPC Threshold: 0,0

QAD Proprietary

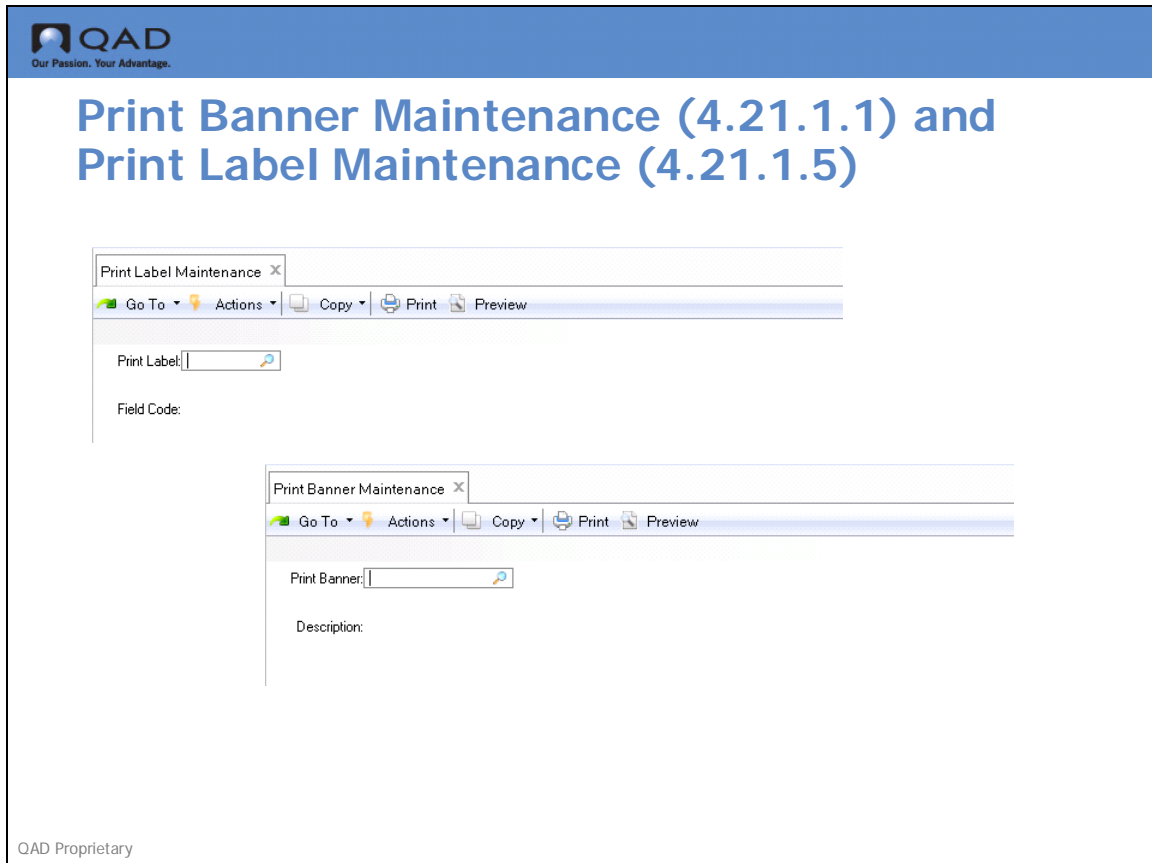
Use Multi-Level Item Maintenance to set up a print ID for an item.

Field Descriptions

Print ID. Enter Yes to print identification labels for this item; otherwise, enter No.

ID Quantity. If you have entered Yes for Print ID, enter the number of identification labels to be printed; otherwise, leave this field blank.

Print Banner Maintenance and Print Label Maintenance



Use Print Banner Maintenance to print banners that identify actions or elements associated with warehouse activities. Banners are associated with print flavor B. The print flavor code determines the format of printed output in the system.

Use Print Label Maintenance to print labels that identify individual pieces of information linked to print banners. Labels are associated with print flavor B. The print flavor code determines the format of printed output in the system. Use Print Label Report (4.21.1.7) to display print labels and associated field codes.

Print Processing



Print Processing

- ▲ Specify auto or manual print mode for task, ID, or inspection printing.
- ▲ If manual, process print requests.

QAD Proprietary

For printing tags, the system uses the Print Mode fields in the Print Options frame of Internal Routing Maintenance (4.2.5) to determine the mode for printing for created, confirmed, and exception tasks.

- Use Warehouse Location Group Maintenance (4.3.9) to specify automatic or manual print mode.
- Use Print Request Maintenance (4.21.7) to manually process print requests.

Warehouse Location Group Maintenance

Work Location Group Maintena... x

Go To Actions Copy Print Preview

Site: 10000
Warehouse: whse
Work Location Group: Wlk01

Task Printing

Print Create: [] Number Across: [0]
 Print Confirm: [] Lines of Each: [0]
 Print Except: [x] Width of Each: [0]
 Task Printer: [] 132 Mode (Task): []

Create Print Mode: Auto
 Confirmed Print Mode: Auto
 Exception Print Mode: Auto
 Use External: [x]

Inspection Printing

Insp Printer: [] Width of Each: [] Use External: []
 Number Across: [] 132 Mode (Insp): []
 Lines of Each: [] Print Mode: []

Form Printing

Form Printer: [] 132 Mode (Form): [] Use External: []

When an internal routing for the movement does not exist, the system determines the print mode for specific movements, such as transfers, from the work location group using the values you specify in the Print Mode fields in each of the printing frames of Work Location Group Maintenance (4.3.9):

- Task printing
- Identification printing
- Inspection printing

Field Descriptions

Print Mode. When Print ID is Yes, select a Print Mode to determine when output should be printed. The setting you enter in Warehouse Maintenance defaults to internal routings set up within the warehouse. The options are as follows:

AUTO: The system prints transactions automatically as soon as they are created.

MANUAL: The system holds print requests until an on-line or batch process activates printing.

AUTOSIG: The system prints transactions automatically but holds them until a signal to print is received.

The signal to trigger AUTOSIG printing is normally a sign that the process creating print requests is complete and that all requested prints can be output at one time. This is particularly relevant when printing multiple transactions on the same task sheet.

Create Print Mode. When Print on Create is Yes, select a Print Mode to determine when output should be printed. The setting you enter in Warehouse Maintenance defaults to internal routings set up within the warehouse. The options are as follows:

AUTO: The system prints transactions automatically as soon as they are created.

MANUAL: The system holds print requests until an on-line or batch process activates printing.

AUTOSIG: The system prints transactions automatically but holds them until a signal to print is received.

The signal to trigger AUTOSIG printing is normally a sign that the process creating print requests is complete and that all requested prints can be output at one time. This is particularly relevant when printing multiple transactions on the same task sheet.

Confirmed Print Mode. When Print on Confirm is Yes, select a Print Mode to determine when output should be printed. The setting you enter in Warehouse Maintenance defaults to internal routings set up within the warehouse. The options are as follows:

AUTO: The system prints transactions automatically as soon as they are created.

MANUAL: The system holds print requests until an on-line or batch process activates printing.

AUTOSIG: The system prints transactions automatically but holds them until a signal to print is received.

The signal to trigger AUTOSIG printing is normally a sign that the process creating print requests is complete and that all requested prints can be output at one time. This is particularly relevant when printing multiple transactions on the same task sheet.

Exception Print Mode. For exceptions, select a Print Mode to determine when output should be printed. The setting you enter in Warehouse Maintenance defaults to internal routings set up within the warehouse. The options are as follows:

AUTO: The system prints transactions automatically as soon as they are created.

MANUAL: The system holds print requests until an on-line or batch process activates printing.

AUTOSIG: The system prints transactions automatically but holds them until a signal to print is received.

The signal to trigger AUTOSIG printing is normally a sign that the process creating print requests is complete and that all requested prints can be output at one time. This is particularly relevant when printing multiple transactions on the same task sheet.

Use External . When any of the task printing options is Yes, enter Yes if you want RDT users to be able to print the documents on an external printer such as the local printer in the fork-lift truck. Enter No if the documents must be printed on the task printer.

If Use External is Yes, specify values for the external printer.

Print Request Maintenance

Print Request Maintenance

Go To Actions Copy Print Preview

Engine Type:

Transaction Type: Print

Site:

Warehouse:

New Mode: Auto

QAD Proprietary

Warehouse staff typically print tags during task creation, confirmation, exception processing, or when they need an ID tag. Normally, as soon as the print request is made, output is printed. When the Print Mode field in Internal Routing Maintenance is set for Manual, however, print requests are queued up until you run Print Request Maintenance (4.21.7). You can run this online or in a batch; for example, once every hour.

You set the mode to **MANUAL** for the internal routing sequence step you want to process with engine workfiles in the Print Options and Miscellaneous frame of Internal Routing Maintenance.

Together with the print flavor code defined at the work location group level, the print procedure code specifies the name of the program to start to print a transaction task or a pallet ID.

Field Descriptions

Engine Type. Select the engine type code for printing from the drop-down list:

OD: Printing- Transaction creation

OH: Printing-Transaction confirmation

OI: Printing - ID

OQ: Printing - Inspection

OR: Printing - reference

OS: Printing - signal

OU: Printing - unplanned receipt

OX: Printing - exception

Transaction Type . Enter the code that identifies a transaction type.

Exercise: Print Receipt Confirmation of Items



Objectives



- ▲ Set printing for items received into a single warehouse
- ▲ Set printing for a internal routing step for a receipt
- ▲ Receive the items and print the receipt confirmation transaction

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will set up printing for the confirmation of items received in a single warehouse.

- 1 Use Warehouse Maintenance (4.1.1) to set printing for a single warehouse and to set up printing for inventory coming into the warehouse.
- 2 Use Internal Routing Maintenance (4.2.5) to set print options for an individual step in an internal routing for a receipt confirmation.
- 3 Follow the exercise in the Receipt chapter of this training guide to receive goods, verifying items printed.

Step 1: Use Warehouse Maintenance (4.1.1) to set printing options

Warehouse Maintenance x

Go To Actions Copy Print Preview

Site: 10000
Warehouse: whse

Identification Printing

Print ID: Lines of Each: 0 Print Mode (ID): Auto
ID Printer: ampr13 Width of Each: 0 Use External:
Number Across: 0 132 Mode (ID):

Task Printing

Print Create: Number Across: 15 Create Print Mode: Auto
Print Confirm: Lines of Each: 15 Confirmed Print Mode: Auto
Print Except: Width of Each: 0 Exception Print Mode: Auto
Task Printer: ampr13 132 Mode (Task): Use External:

QAD Proprietary

Use the Task Printing frame of Warehouse Maintenance to specify the following:

- Set Print Confirm to Yes.
- Specify a task printer.

Note Your instructor can supply a classroom printer name.

- Specify the number across, lines, and width of the printed page.
- Specify the Confirmed Print Mode as Auto.

Step 2: Use Internal Routing Maintenance (4.2.5) to set print options for internal routing step.

The screenshot shows the 'Internal Routing Maintenance' window in QAD. The window title is 'Internal Routing Maintenance'. The menu bar includes 'Go To', 'Actions', 'Copy', 'Print', and 'Preview'. The main area displays the following information:

- Site: 10000
- Warehouse: whse
- Internal Routing: receipt
- Description:
- Sequence: 10
- Internal Routing Group: dispatch

The 'Print Options' section is highlighted and contains the following fields:

- Print ID:
- Print Created Tasks:
- Print Confirmed Tasks:
- Print Exceptions:
- Print Mode (ID): Auto
- Create Print Mode: Auto
- Confirmed Print Mode: Auto
- Exception Print Mode: Auto

QAD Proprietary

- Specify the IR for the receipt step.
- Specify Yes for a Print ID.
- Specify Yes to Print Confirmed Tasks.
- Set the Print Mode ID to Auto.
- Set the Confirmed Print Mode to Auto.

Step 3: Receive goods and print the receipt confirmation.

Follow the setup and exercise for receiving goods in the Receipt chapter of this training guide.

When you confirm the receipt, the confirmation should print on the printer you specified for the IR in Step 2.

Note Confirmations can be printed or sent to the RF. The setup fields for this can be defined for the warehouse, the item, or the transaction type. This exercise uses the print setup for the IR; a transaction and algorithm are associated with the IR.

Study Questions

- 1 List three things that warehouse staff can print within the warehouse.
- 2 You cannot print system-created tasks. True or False.
- 3 Name three warehouse maintenance programs that contain printing options?
- 4 Describe what the print mode defines, then describe the modes.
- 5 Where do you set the print mode?
- 6 What is the significance of the print flavor option?
- 7 Print templates are flat ASCII files. True or False.
- 8 Name a maintenance program that lets you set the print flavor?
- 9 You process print requests through a QAD EE program. True or False.
- 10 When processing print requests, you need to specify a print engine code and what else?

Chapter 4

Replenishment

Overview









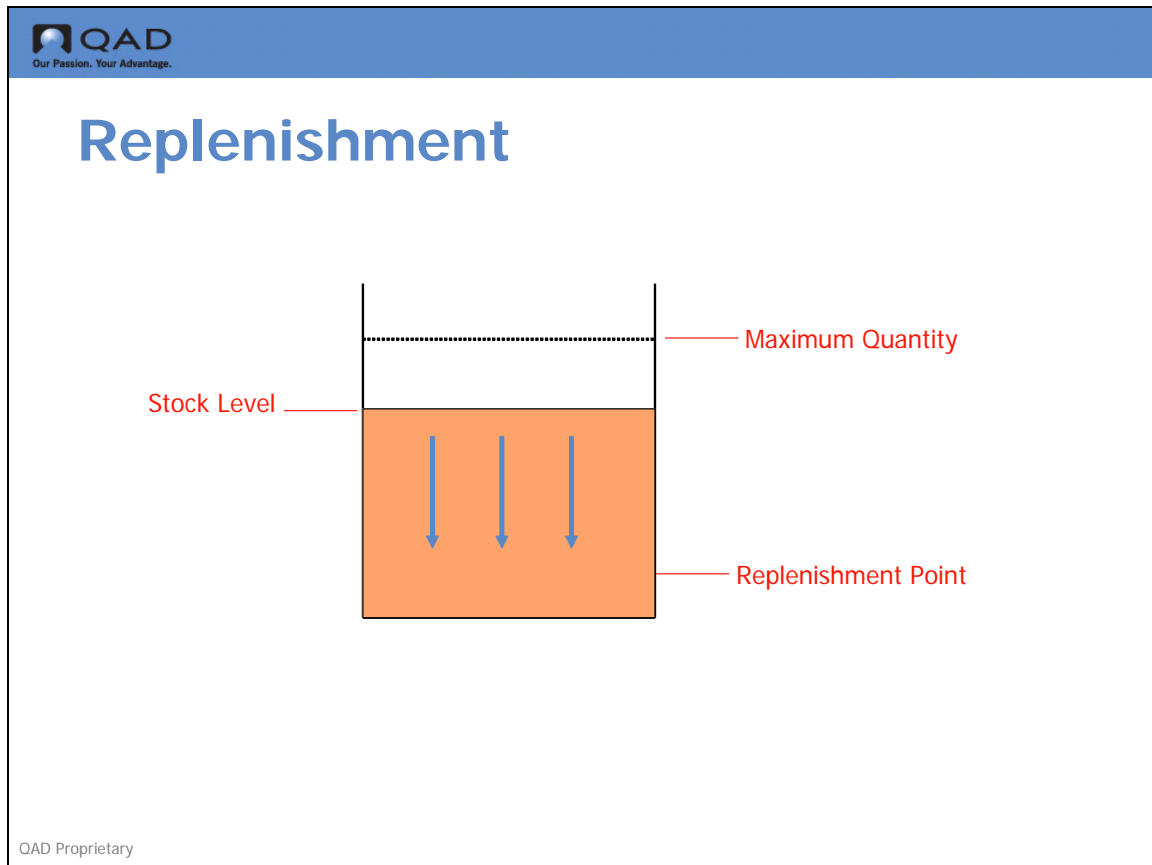
Replenishment

QAD Proprietary

A suggested setup sequence for Wave Planning includes these general setup steps:

- Learn replenishment concepts
- Set up warehousing for replenishment
- Replenish a warehouse through the exercise

Replenishment Concepts



QAD Warehousing lets you define areas in the warehouse where the main picking activity occurs. In order for this area to be maintained at the optimum stock levels, the system uses a process called *replenishment*. The area in which stock is stored prior to picking is generally called the primary picking area. This area would typically contain the stock required for picking first and in quantities and locations that are easy to maintain.

You define the types of items and the quantities that can be stored in the replenishment, or primary picking, locations. Picking functions look in these locations first before searching the rest of the warehouse.

In warehousing, you can define:

- Replenishment for a given item and a given location.
- Replenishment for a given item in a storage location group. This means that a put-away is performed in the storage location group in order to place the items at the best suitable location inside this storage location group.
- Replenishment lists. A series of storage location groups in which the system looks for the item to replenish. Sequences allow searching some storage location groups first and then others by order corresponding to the sequence.
- Replenishment in real-time on the RF device.

- **Overpick Replenishment.** Warehouse staff can select a multi- or single-item pallet from the reserve area and replenish one or multiple locations from the pallet in the picking area. After staff replenish, they can return the remainder on the pallet to the reserve area.

Replenishment and SLGs

In warehousing, you can define replenishment for a given item and a given location. More commonly, though, you can define replenishment for a given item in a storage location group. This means that a put-away is performed in the storage location group in order to place the items at the best suitable location inside this storage location group.

You can also create a replenishment list. This is a series of storage location groups in which the system looks for the item to replenish. Sequences allow searching some storage location groups first and then others by order corresponding to the sequence.

Replenishment Requests

When you have warehousing set up for replenishment, you can run a Replenishment Request (4.16.13).

This function lets you:

- Run a simulation of the replenishment. By default, the Create Transactions field is set to No. You can then run a report to look at all the replenishments to be done, simulate a picking, and generate a list of all potential transactions, without actually creating the transactions. You can run this report several times using different percentages each time, until you select a quantity of work that can be handled by the current staffing levels.
- When you are satisfied that the replenishment report contains a manageable workload, change the Create Transactions field to Yes, and then run the report again.

The field Include Area Below Replenishment Point enables you to adjust the value of the replenishment point defined in Replenishment-Location Maintenance or Replenishment-SLG Maintenance.

When the inventory for a given item in a given location stays above the replenishment point, running the replenishment has no effect. When an inventory movement makes the inventory in that location drop below the replenishment point, running the replenishment request with Create Transactions set to No tries to find available stock for the replenishment. The Include Area Below Replenishment Point field enables you to change the value of the replenishment point. This is a way to have fewer transactions to carry out if the load is too high.

Automatic Replenishment

Replenishment can happen automatically, without running Replenishment Request. As soon as the system issues inventory and stock drops below the minimum level, the system automatically creates a replenishment task.

Replenishment Setup



Replenishment Setup



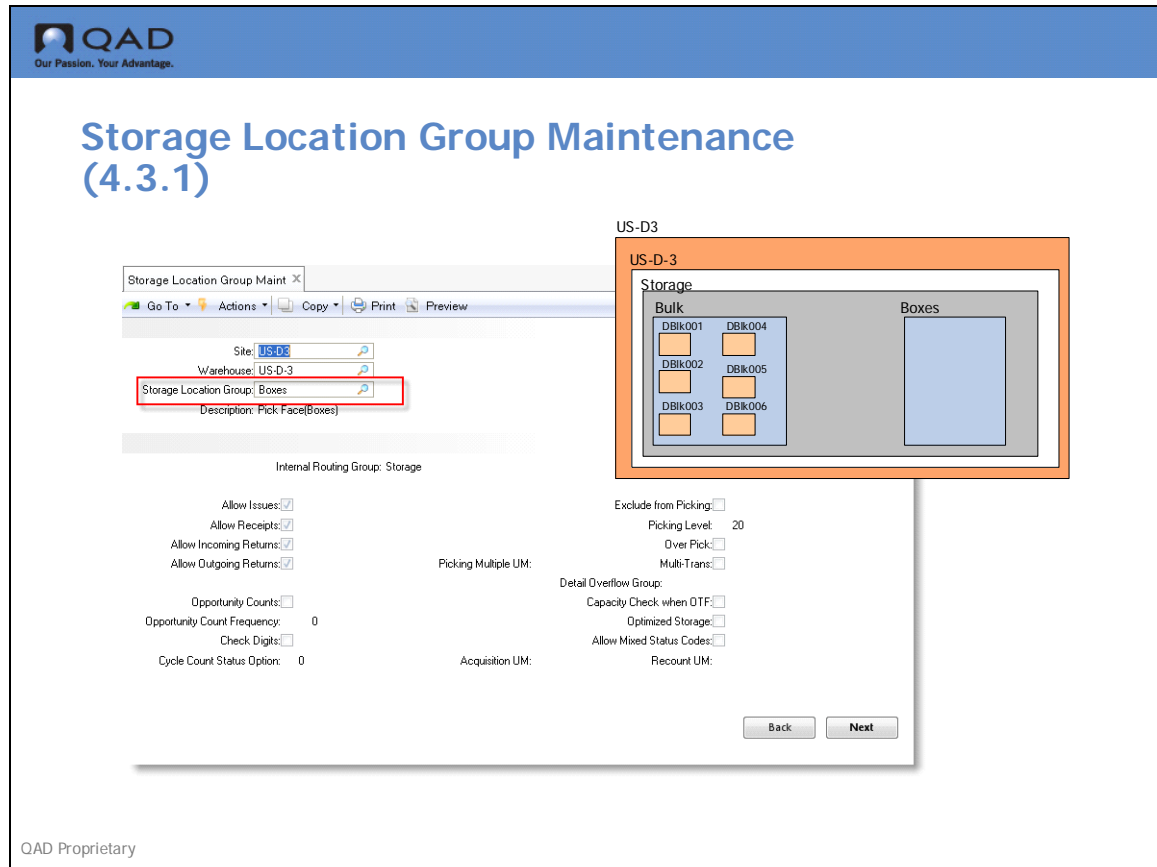
- ▲ Create an SLG for replenishment.
- ▲ Set up locations for an item in the SLG to be replenished.
- ▲ Ensure a replenish IR exists and a transaction type is assigned to the IR.
- ▲ Ensure an algorithm is assigned to the item/transaction.
- ▲ Create a replenishment list.
- ▲ Link the replenishment list to item/SLG or item/location.

QAD Proprietary

A typical setup based on the receipt of a purchase order includes the following steps:

- Use Storage Location Group Maintenance to create a new area for replenishment.
- Use Warehouse Location Maintenance to set up a location for an item within the new SLG area to be replenished.
- Use Internal Routing Maintenance to ensure a replenishment routing and sequence exist.
- Use Internal Routing Assignment to ensure a transaction type is assigned to the IR.
- Use Algorithm Assignment Maintenance to ensure an algorithm is assigned to the transaction type.
- Use Replenishment List Maintenance to create a replenishment list.
- Use Replenishment Location Maintenance to link the replenishment list to the item/SLG.

Storage Location Group Maintenance



Use Storage Location Group Maintenance to create a new SLG area for items to be replenished.

Field Definitions

Storage Location Group . Enter the code that identifies the storage location group you want to create or modify.

Warehouse Location Maintenance

Warehouse Location Maintenance (4.3.13)

Warehouse Location Maintenance

Site: US-D3 Warehousing Site
Location: DBK000

Location Groupings
Warehouse: US-D-3
Storage Location Group: Boxes
Work Location Group: Forklift

Warehouse Location Data
Check Digit:
Popularity:
Storage Type:
Warehouse Location Type:
Travel Sequence:
Dedicated:

Site: US-D-3 Warehousing Site
Location: DBK000

Item Number	UM	Quantity	Height	Length	Width
	EA	100.0000			

Storage

Bulk
DBK001 DBK004
DBK002 DBK005
DBK003 DBK006

Boxes
DBK000

Item Number UM Quantity Height Length Width
| EA 100.0000

WARNING: End of data.

Back Next

QAD Proprietary

Use Warehouse Location Maintenance to set up all locations within a warehouse.

Field Definitions

Location. Enter the name of the warehouse location you are creating.

Storage Location Group. Enter the SLG to which this location belongs.

Item Number. The fields on the third Warehouse Location Maintenance screen are used to specify the quantities of a particular unit of measure that will fit in the location. You can enter multiple lines for different items and different units of measure.

Enter the item number for the inventory item to which this quantity definition relates. You can leave this field blank if the quantity relates to all items. For example, you could define how many standard pallets fit in the location, regardless of the items contained on the pallets.

If you entered Yes in the Dedicated field on the previous screen, you must also specify the item to which this location is dedicated.

UM. The fields on the third Warehouse Location Maintenance screen are used to specify the quantities of a particular unit of measure that will fit in the location. You can enter multiple lines for different items and different units of measure.

Enter the unit of measure in which this quantity definition is specified.

Quantity . Enter the quantity of the selected UM that will fit in this location. You can enter multiple lines for different items and different units of measure.

Internal Routing Maintenance

Internal Routing Maintenance (4.2.5)

Site: US-D3 Warehouse: US-D-3 Internal Routing: ReplenIR

Description: Wave Replenishment IR
Sequence: 10 Internal Routing Group: Storage

Transaction Create

Confirmed at Source: Task: TRANSFER
System Code: RF Priority: 100
Two Phase: Increment: 10
Keep From Status:

Transaction Confirmation

From Location Option: 0	Repick Type:	To Location Option: 0
From Item Option: 0		To Item Option: 0
From Lot/Serial Option: 0		To Lot/Serial Option: 0
From Reference Option: 0		To Reference Option: 1
Allow Quantity Increase: <input checked="" type="checkbox"/>		Alternative UM Option: 1
Allow Quantity Decrease: <input checked="" type="checkbox"/>		Expire Date (Days): 0
Quantity Change Option: 0		

WARNING: End of data.

Back Next

QAD Proprietary

Use Internal Routing Maintenance to define the pathways through your warehouse that you want your inventory to take.

For each sequence step within an internal routing, you can also specify a number of parameters that control how the inventory is processed as it reaches that point in the sequence. The system displays default values for these processing parameters that are defined in Warehouse Maintenance. You can accept the default values, or override them with new values.

Field Definitions

Internal Routing . Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Sequence . Enter the number that identifies the order of this routing step.

Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, number the sequences as 10, 20, 30 rather than 1, 2, 3.

Internal Routing Group . Specify for this sequence step of the routing the next IRG to which the inventory should move.

Internal Routing Assignment

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Internal Routing Assignment (4.2.9)

Int Routing Assignment Maint

Go To Actions Copy Print Preview

Transaction Type: PICK-RE

Site: US-D-3

Warehouse: US-D-3

Item Number:

Warehouse Item Type:

Address:

Custom:

Internal Routing: ReplenR

Custom Program:

Back Next

QAD Proprietary

Use Internal Routing Assignment Maintenance to link transaction types to internal routings. For this training, assign the Internal Routing to the PICK-RE transaction.

Field Definitions

Transaction Type. This field is used to specify the transaction type.

Maintain transaction types using Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Algorithm Assignment Maintenance

Algorithm Assignment Maintenance (4.6.9)

Algorithm Type: PK
 Site: US-D3
 Item Number: D-IT000
 Address:

Transaction Type: PICK-RE
 Warehouse: US-D-3
 Warehouse Item Type:
 Custom:

Seq	Algo	Description
10	4	Pick by Expiration Date
20	1	Pick by Location

Sequence: 10 Algorithm: 4
 Description: Pick by Expiration Date

Back Next

QAD Proprietary

Use Algorithm Assignment Maintenance to link a specified sequence of algorithms (of one type per sequence) to a defined combination transaction type, site, warehouse, item number, or address.

Field Definitions

Transaction Type. This field is used to specify the transaction type.

Maintain transaction types using Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

You also specify the transaction type when using the Algorithm Simulation Menu. These options simulate either location-find and put-away, or picking. The system simulates the running of the algorithms that you have assigned to the specified transaction type and displays the results of the simulated put-away or picking.

Warehouse Item Type. If you want to assign a sequence of algorithms to a combination of transaction type and warehouse item type, enter the item type code here. If you leave this field blank, the assignment will be valid for all item types.

The warehouse item type codes are a way of grouping together items that have similar properties. You assign the codes to items using the any of the warehouse item Maintenance functions.

If you enter a warehouse item type code, you cannot also enter an item number.

Replenishment List Maintenance

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Replenishment List Maintenance (4.16.1)

Replenishment List Maintenance

Go To Actions Copy Print Preview

Site: US-D3 Warehousing Site
Description: Rep List D-1T000

Replenishment List: ReplList
Comments:

Replenishment List Details

Seq	Warehouse	Description	SLG	Description
10	US-D-3	Warehouse D-3	Bulk	Reserve Area(Pallets)

Seq: 10 Warehouse: US-D-3 Store Loc Group: Bulk

Back Next

QAD Proprietary

Use Replenishment List Maintenance to define a replenishment list. This is a series of storage location groups in which the system looks in sequence for items in order to replenish a specified location or set of locations. You link the list to a location or SLG to replenish.

Field Definitions

Replenishment List. Enter the name of the Replenishment List, for example, List A, to be used by Replenishment functions.

Replenishment Location Maintenance

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Replenishment Location Maintenance (4.16.5)

Replenishment Location Maint

Go To Actions Copy Print Preview

Site: US08
 Location: DB00000
 Item Number: D-IT000
 Replenishment Type:
 Start Date:

End Date:
 Replenishment UM: FA
 Replenishment Point: 20.0
 Maximum Quantity: 100.0
 Replenishment List: RepList

Percent Full: 0.00 Capacity: 100

Maximum Quantity: 100 EA
 Replenishment Point: 20 EA

Back Next

QAD Proprietary

Use Replenishment Location Maintenance to link the replenishment list to the location you want to replenish. You can also set additional parameters.

Field Definitions

Location. Indicate the location to replenish.

Item Number. Enter the code for the item to replenish.


Replenishment UM. Enter the UM to use for replenishment.

Replenishment Point. Enter the quantity of stock at which the location should be replenished.


Maximum Quantity. Specify the maximum quantity by which the location or SLG may be replenished. Leave this field blank to allow any quantity.

Replenishment List. Enter the name of the Replenishment List, for example, List A, to be used by Replenishment functions.

Process a Replenishment Request



Process a Replenishment Request



- ▲ Run Replenishment request menu option
- ▲ Use the QAD Warehousing RF Device to confirm tasks
- ▲ Review stock inquiries to see stock movements

QAD Proprietary

In this section, you will create and process a replenishment request. To do this, you will:

- 1 Create a replenishment request.
- 2 Confirm a receipt task using the RF.
- 3 Review stock inquiries.

Replenishment Request Maintenance

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Replenishment Request (4.16.13)

Replenishment Request X

Go To Actions Copy Print Preview

Site: US-03 To: US-03
Warehouse: To:
Internal Routing Group: To:
Storage Location Group: To:
Location: To:
Item Number: 0-11000 To: 0-11000
Replenishment Type: To:

Item/Location Replenishment
Item/Storage Location Group Replenishment
Create Transactions
Include Area below Replenishment Point: 100
Effective Date: 10/9/2008
Output page
Batch ID:

Back Next

Report is now running. Press Ctrl C to cancel
End of report
Enter data or press PF4 to end

QAD Proprietary

When you have created a replenishment list and linked it to a location or storage location group, you can start a Replenishment Request.

By default, the Create Transactions field is set to No. This lets you generate a report listing the replenishments to be done, simulate a picking, and have a list of all potential transactions, without actually creating the transactions. You can run this report several times using different percentages each time, until you select a quantity of work that can be handled by the current staffing levels.

When you are satisfied that the replenishment report contains a manageable workload, change the Create Transactions field to Yes, and then run the report again.

Field Descriptions

Create Transactions. Indicate whether to run a simulation of replenishment using the parameters you input. Entering default No in the fields allows simulation. To create transactions and carry out a replenishment request, change this field to Yes.

Effective Date . Indicate the date you want to run the replenishment request.

Include Area below Replenishment Point . This field enables you to adjust the value of the replenishment point defined in the Replenishment Location Maint or Replenishment-SLG Maintenance.

On-line Replenishment. You use this screen to carry out replenishment for one or more locations on-line.

End Date . Enter the last date the replenishment should be carried out.

Internal Routing Group . Enter the first internal routing group in a range for selecting items for replenishment.

RF Task Confirmation



The following procedure illustrates how to replenish from a single pallet and return unused quantities from the RF. Although you can perform this task with the RF Select Task function (1.2), the following procedure uses the Next Task (1.1) function.

- 1 Log in to the RF and enter your ID, password, site, warehouse, and if applicable, your work location group.

- 2 Select Work (1), then Next Task (1.1).

The RF displays the Overpick screen.

Note If the system displays other tasks, cancel the Next Task program, return to the RF login screen, and enter REPLEN in the Login screen's Task field; then select Work (1), then Next Task (1.1).

- 3 To pick for the replenishment, scan the source location, then scan the pallet number.

The RF displays the number of replenishment tasks to perform for the pallet in the counter at the top.

- 4 To replenish a bin, scan the destination location, then scan the items.

The system prompts for the quantity in the base UM.

- 5 Enter the quantity that fits into the location, attempting to completely fill the location:
 - a On the RF, scroll down to select the UM/Conversion drop-down window.
 - b Select the Alternate UM.
 - c Enter the quantity in the alternate UM.
The system stores the quantity and displays the quantity in the base UM.
- 6 Confirm the quantity.
- 7 Repeat steps 3 through 6 for multiple replenishment from the pallet.

Inventory Detail Inquiry

The screenshot shows the QAD Inventory Detail Inquiry window. The window title is "Inventory Detail Inquiry" and the date is 10/09/08. The QAD logo is in the top left corner. The window displays the following information:

Site: US-D3 Item Number: Display Whse Loc: No
Warehouse: Lot/Serial: Disp Non-Whse Loc: No
Location: Reference: Output: PAGE

Warehouse: US-D-3 Warehouse D-3

Location	Item Lot	Status Ref	Qty UM	Expect On Hand In	Expect Out	Detail Alloc	Detail Pick
0B1k001	D-IT000	A-N	EA	500	100		
0B1k002	D-IT000	A-N	EA	200			
0B1k005	D-IT000	A-N	EA	500			
0B1k006	D-IT000	A-N	EA	200			
0B1k006	D-IT000	A-N	EA	100			
0B1k006	D-IT000	PL000031	p1				
0B1k006	D-IT000	A-N	EA	100			
0B1k006	D-IT000	PL000032	p1				
0B1k006	D-IT000	A-N	EA	100			
0B1k006	D-IT000	PL000033	p1				
0Box000	D-IT000	A-N	EA		100		

4.9.13 Inventory Detail Inquiry whiciq01.p

QAD Proprietary

Use Inventory Detail Inquiry to check if inventory was replenished at the location.

Field Descriptions

Expect In/Expect Out. Expect In and Expect Out quantities indicate that tasks were created properly but not yet confirmed. When properly confirmed of the RF, there are no expected in/expected out quintets and inventory is available in storage area.

Exercise: Replenish an SLG

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will create a replenishment list, link it to an existing storage location group, and start a request to replenish the SLG. You will use the RF to confirm receipt and review stock movement.

- 1 Complete all setup steps as specified in the setup portion of this chapter.
- 2 Use Replenishment List Maintenance to create a replenishment list for an SLG.
- 3 Use Replenishment Location Maintenance to define the location within the SLG to replenish.
- 4 Use Replenishment Request Maintenance (4.16.13) to request a replenishment for the SLG.
- 5 Use the RF Next Task option to confirm replenishment movement.
- 6 Use Inventory Detail Inquiry (4.9.13) to verify items were replenished in the correct location.

Study Questions

- 1 Which of the following can you define for replenishment in Warehousing:
 - a Replenishment for a given item
 - b Replenishment for given location
 - c Replenishment for a given item in a storage location group
 - d All of the above
- 2 What is the significance of the put-away in replenishment?
- 3 The replenishment list contains a list of items that require replenishment according to item ship dates. True or False.
- 4 You must complete replenishment processing in Warehousing before staff can replenish in the warehouse. True or False.
- 5 What is meant by overpick replenishment?
- 6 When using automatic replenishment, at which point does the system produce a replenishment request?
- 7 You must assign a transaction type to an IR to ensure replenishment occurs. True or False.
- 8 You link a replenishment list to:
 - a Internal Routing
 - b Replenishment algorithm
 - c Item you are replenishing
 - d Location you want to replenish
 - e None of the above.
- 9 When running a replenishment request, the system always creates a transaction. True or False.
- 10 You use the RF to only print replenishment requests from within the warehouse. True or False.

Chapter 5

Labor Management

Overview





Labor Management

QAD Proprietary

A suggested setup sequence for labor management includes these general setup steps:

- Learn labor management concepts
- Set up warehousing for labor management
- Complete labor management exercises

Concepts



Labor Management

- ▲ Using labor management, the warehouse staff can be assigned the tasks most suited to their individual or collective skill sets or experience.



QAD Proprietary

QAD Warehousing lets you manage resources by using resources and groups of resources and assigning tasks to them. Resources are simply individuals or users of the system, who work specifically within the warehouse.

Using labor management, the warehouse staff can be assigned the tasks most suited to their individual or collective skill sets or experience.

Labor Management Setup



Labor Management Setup

- ▲ Set up specific WLGs
- ▲ Assign locations to WLGs and SLGs
- ▲ Assign users to WLGs
- ▲ Define tasks
- ▲ Assign the task to an internal routing
- ▲ Assign resources to tasks
- ▲ Approve tasks

QAD Proprietary

A basic flow of labor management is as follows:

- 1 Define specific work location groups and locations in which staff work using Work Location Group Maintenance and Warehouse Location Maintenance.
- 2 Assign users to work location groups using User Work Location Group Maintenance.
- 3 Define each variation of warehouse task (transaction) using Task Maintenance.
- 4 Assign the task to an internal routing using Internal Routing Maintenance.
- 5 Assign resources to the tasks using Task Assignment Maintenance.
- 6 Approve the movement of inventory from one location to another (tasks) using the RF.

Note Before setting up warehousing, you should have defined resources within the system, including defining each warehouse staff, warehouse groups, and optionally the warehouse shifts. Each warehouse staff member is a resource.

Work Location Group Maintenance

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Work Location Group Maintenance (4.11.3.13)

Work Location Group Maintena... X

Go To Actions Copy Print Preview

Site: US-D3

Warehouse: US-D-3

Work Location Group: ForkLift

Description: ForkLift Truck Group

Confirmed at Source:

Priority: 100

Increment: 10

Task: TRANSFER

System Code: RF

System Flavor: A

Allow Task Switching:

Two Phase:

Keep From Status:

Device:

Back Next

QAD PROPRIETARY

Use Work Location Group Maintenance to define an area within the warehouse that you can assign workers to work in. The primary purpose of work location groups is to enable you to control which warehouse staff work in which areas of the warehouse using User Work Location Group Maintenance. When warehouse staff log onto the RF, they are prompted to enter their work location group.

Field Descriptions

Work Location Group. Enter the code that identifies the work location group you want to create or modify.

Device . Enter the code to define the device to be used, such as an RF/RDT terminal, within this work location group, if applicable. If no single device code is applicable, leave this field blank.

Warehouse Location Maintenance

Warehouse Location Maintenance

Site: US-D3 Warehousing Site

Location: DBlk001

Location Groupings

Warehouse: US-D3

Storage Location Group: Bulk

Work Location Group: ForkLift

Warehouse Location Data

Check Digit: _____

Popularity: _____

Storage Type: _____

Warehouse Location Type: _____

Travel Sequence: 0

Dedicated:

Picking Type: _____

Preferred UM: _____

Opportunity Count Frequency: 0

Last Opportunity Count: _____

Stage (In): _____

Stage (Out): _____

Back Next

QAD Proprietary

Use Warehouse Location Maintenance to set up all locations within a warehouse. You can also set up a cart as user location.

You can define a user location to temporarily store the stock on a cart until staff move stock to the shipping location. The user location represents the cart, which temporarily stores stock that staff picked from the picking location. Before you can define a user location as a cart location, you must define the user in User Maintenance.

Field Descriptions

Location. Enter the code for the location.

Warehouse. Specify the name of the warehouse to which a location belongs.

Storage Location Group. Specify the name of the storage location group to which a location belongs.

Work Location Group. Specify the name of the work location group to which a location belongs.

User Work Location Group Maintenance

The screenshot displays the 'User Work Location Group Maint (4.11.3.13)' web application. The form includes the following fields and options:

- Site: US-D3
- Warehouse: US-D-3
- Work Location Group: ForkLift
- User ID: UserB
- System Flavor: B
- Device:
- External Device Printer:
- Form Printer: Use External:
- ID Printer: Use External:
- Task Printer: Use External:

A preview window on the right shows a 'Pallet Area' with a forklift icon and the user name 'UserB'. Navigation buttons 'Back' and 'Next' are located at the bottom right of the form.

Use User Work Location Group Maint to assign a user to a work location group, set up print options specific to that user, and set the system flavor for the user.

Field Descriptions

Warehouse. Enter a warehouse for the user and work location group.

Work Loc Group. Enter the work location group to link to the user.

User ID. Enter the ID of the user to link to the work location group.

System Flavor. Enter the code to define the style and format of Radio Frequency (RF) screens that display warehouse information.

Device. Enter the code for the device to be used, such as an RF or Radio Data Terminal (RDT), within this work location group.

External Device Printer. Enter the code for the device printer.

Form Printer. Enter the code for the form printer.

ID Printer. Enter the code for the ID printer.

Task Printer. Enter the code for the task printer, or select a code from the drop-down list.

Use External. Indicate whether tasks/forms/IDs should be printed on an external printer.

Task Maintenance

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Task Maintenance (4.11.1.1)

Task Maintenance x

Go To Actions Copy Print Preview

Task: **TRANSFER**

Description: Inventory Transfers

Procedure Code: TF

Confirmation Mode: Auto

Comments:

Time: 0.0

Tasks: 0

Create User ID: mfg 1/1/2001

Modified By: mfg 1/1/2001

WARNING: End of data.

Back Next

QAD Proprietary

Use Task Maintenance to create and update the tasks performed in a warehouse.

Field Descriptions

Task. Enter the task name, such as TRANSFER or PICKING.

Enter the 2-character procedure code such as PK for this task.

Confirmation Mode. Enter the default confirmation method for this task type.

A confirmation mode of AUTO requires the user to perform a movement confirmation.

A confirmation mode of MANUAL is confirmed by the confirmation engine.

Time. This display-only field defaults from the time you set in Task Time Maintenance (4.11.1.13).

Tasks. This display-only field depicts the number of confirmed tasks (warehouse transactions) for the task you are defining. The system stores the number of tasks and the average time per task; it uses the information in labor management reports to display pending tasks.

Internal Routing Maintenance

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Internal Routing Maintenance (4.2.5)

Internal Routing Maintenance

Go To Actions Copy Print Preview

Site: US-D3 Warehouse: US-D-3 Internal Routing: Receipts

Description: Receipts
Sequence: 20 Internal Routing Group: Storage

Transaction Create

Confirmed at Source: Task: TRANSFER
System Code: RF Priority: 100
Two Phase: Increment: 10
Keep From Status:

Transaction Confirmation

From Location Option: 0	Repick Type:	To Location Option: 0
From Item Option: 0		To Item Option: 0
From Lot/Serial Option: 0		To Lot/Serial Option: 0
From Reference Option: 0		To Reference Option: 0
Allow Quantity Increase: <input type="checkbox"/>		Alternative UM Option: 0
Allow Quantity Decrease: <input checked="" type="checkbox"/>		Expire Date (Days): 0
Quantity Change Option: 0		

WARNING: End of data.

Back Next

QAD Proprietary

Use Internal Routing Maintenance to define the pathways through your warehouse that you want your inventory to take. You can specify the task for a particular internal routing.

Field Descriptions

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Sequence. Enter the number that identifies the order of this routing step.

Task. Specify the most common task associated with this internal routing within the warehouse. This field sets the default for internal routings and work location groups created in this warehouse.

Task Assignment Maintenance

Task Assignment Maintenance

Go To Actions Copy Print Preview

User ID: UserB RF User B Comments:

Queue 1			
10	PICK		Auto
20	TRANSFER		Auto

Queue: Seq: Task: Confirmation Mode:

Delete Back Next

Modifying existing record

QAD Proprietary

After defining the resources and tasks that are being undertaken within the warehouse, you must assign the tasks to the resources. This is achieved by using Task Assignment Maintenance.

Field Descriptions

User ID. Enter the name of the warehouse staff. An entry should be made for each warehouse staff.

Queue. Indicate the queue for this task. The queue contains a number of sequences, and queues are examined sequentially. Therefore, when the system is assigning tasks to resources, it checks all the sequences in queue 1 before queue 2. If multiple tasks exist for a user, the user is prompted to perform the task with the higher priority within the queue.

Sequence. Indicate the order within the queue for examining tasks.

Task. Indicate the tasks that are assigned to the specified employee (user).

This does not assign a specific task; it indicates that the user can undertake this task, assuming some are available.

If two outstanding tasks exist within the warehouse—a pick and a receipt—and a user is defined with sequence 1 receipt and sequence 2 pick, the user is prompted to move the receipt first, since this has a higher priority within the queue.

RF Confirm Movement


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Movement Confirmation

▲ Use Next Task Menu


→


QAD Proprietary

Warehouse staff use the RF to inform the system that tasks are complete. This process is called *movement confirmation*.

Task Confirmation Setup

Warehouse staff can confirm that tasks are completed through the RF. To confirm task, ensure the following are set up first.

Description	Program
Ensure tasks are defined.	Task Maintenance (4.11.1.1)
Ensure the RF user is defined as a user.	User Maintenance (36.3.1; 36.3.18 before eB2.1)
Ensure the RF user is defined as a warehouse user.	User Warehouse Data Maintenance (4.11.3.1)
Set the System Code field to RF.	Internal Routing Maintenance (4.2.5)
Ensure tasks are assigned to the user.	Task Assignment Maintenance (4.11.1.9)

You use Task Assignment Maintenance (4.11.1.9) to define tasks for the warehouse staff. You define the queue; the tasks within a queue; the sequence number of the task within the queue; and whether confirmation of the task is automatic, manual, or timed.

When you set Confirmation Mode to AUTO, the system updates inventory, quantities on hand, detail allocations, and so on, immediately after warehouse staff confirm the task. The RF may pause until it completes the update and warehouse staff cannot control the RF during the pause. If warehouse staff want to control the RF at all times, set the Confirmation Mode to MANUAL. The system completes the remaining updates when you manually instruct the engine processor to do so in the Engine Menu (4.7).

You can set the engine processor to process records within fractions of a second so that records are updated immediately, even if done manually, or you can delay updating until a predefined time by setting the Repeat Every field in the engine processor options (4.7.9 through 4.7.11) within the Engine Menu.

Exercise: Assign User to a WLG Receipt



Objective



- ▲ Assign a new user to an existing work location group to perform receipt tasks
- ▲ Follow exercises in the Receipt chapter to receive goods into the warehouse.
- ▲ Log in to RF as the new user and verify that tasks are assigned.

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will assign a warehouse worker (a user) to a work location group (WLG). You will assign existing receipt tasks to the new user; then use the Receipt chapter of this training guide to receive goods and verify that receipt tasks were assigned to the user through the RF.

- 1 Use User Work Location Group Maintenance (4.11.3.13) to assign a valid system user to an existing WLG.
- 2 Follow the receipt exercise to receive goods into the warehouse.
- 3 During the receipt exercise when logging onto the RF, log in using the ID of the new user and the WLG to which you assigned the user. When using the RF Next Task option in the receipt exercise, verify that receipt tasks are assigned to the new user.


Study Questions




- 1 Before setting up warehousing, you should have defined resources within QAD EE's production and work center functions. True or False.
- 2 Work Location Groups are important for workers to be assigned as users must enter their work location group when they login to the RF. True or False.
- 3 You assign users to a work location group in Warehouse Location Maintenance (4.1.1.). True or False.
- 4 Which of the following can be defined as a user location in QAD Warehousing:
 - a Trolley
 - b Forklift
 - c Picking cart
 - d Pallet
 - e None of the above
- 5 What is the significance of assigning a system flavor to a user?
- 6 In Task Maintenance, you assign tasks to the user as well as whether the user's tasks automatically display on the RF. True or False.
- 7 When in Auto confirmation mode, the user is not required to confirm at all. True or False.
- 8 When assigning tasks in Task Assignment Maintenance, what is the significance of the queue?
- 9 To confirm task completion, to what should you set the system code option that appears in Internal Routing Maintenance?
- 10 If in Manual confirmation mode, you can still complete confirmation within seconds by setting engine processor options. True or False.

Chapter 6

Picking

Overview






Picking

QAD Proprietary

A suggested setup sequence for Wave Planning includes these general setup steps:

- Learn picking concepts
- Set up warehousing for picking
- Pick for orders through the exercise.

Concepts



QAD EE and Warehousing Picking Comparison

<u>QAD EE</u>	<u>QAD EE + QAD Warehousing</u>
<ul style="list-style-type: none"> – One picking logic – Entire site is considered – Pick only by date, expiry date, and/or location – No splitting pallets/cases – No RF picking 	<ul style="list-style-type: none"> – Multiple picking logics per transaction type, item, item type, and/or warehouse – Picking by warehouse(s) – Pick by area, then by date, expiry date, and/or location – Pick by full pallet, split pallets or boxes, SKU, optionally with overpicking – RF picking: <ul style="list-style-type: none"> • Normal picking • Bulk picking • Batch picking

QAD Proprietary

There are extended picking features in QAD Warehousing that are not available in QAD EE.

This section describes the concepts associated with the extended features:

- Splitting containers
- Overpicking
- Picking levels
- Types of picking

Splitting Containers

QAD Warehousing lets you decide whether staff can split a unit --a container, box, or pallet --when picking inventory from a location. This is useful and may help you complete orders more efficiently. For example, you might want sales orders to be picked in whole packaging quantities from Bulk Storage, but then require that whole packages be split in a Repackaging area.

When you combine the split picking feature with other features, you get even greater flexibility. For example, if a location contains boxes of 100 of the item, and the required picking quantity is 70 pieces, the following possibilities can be specified:

Over Pick	Allow Split	Result
Yes	Yes	Pick 70 by splitting a box
Yes	No	Over pick—take a box of 100
No	Yes	Pick 70 by splitting a box
No	No	No pick from this location

Overpicking

Overpicking lets staff pick more stock from locations than is specified in the order.

You can set overpicking at the SLG level, or in Transaction Type Maintenance or Warehouse Transaction Type Maintenance.

Overpicking works in conjunction with split picking for better control. For example, when the quantity required for the pick does not match the unit of measure in which the item is stocked in the location, you can combine overpicking and container splitting to pick the right amount.

The system uses picking algorithms and other replenishment options to split pallets, overpick, and so on, that you specify when you set up replenishment tasks for warehouse staff.

Picking Levels

QAD Warehousing lets you assign a picking level to each storage location group. You can set default start and end picking levels in Warehouse Maintenance or by using Warehouse Transaction Type Maintenance. These start and end settings determine the picking levels to be used for the pick. The system then looks for inventory in the storage location groups that correspond to the specified range of picking levels. In addition to specifying a start and end picking level, you can specify whether all picking must be taken from only one picking level.

Types of Picking

Normal Picking

Normal picking is typical system-like picking that does not include mechanisms that shorten picking or travel time. Picking is done for an order and is based on a system-generated picklist.

Bulk Picking

In a warehouse, it is inefficient if staff have to visit the same area more than once in a short period of time. Picking stock needs to be managed so that this happens as little as possible. The orders that can be collected to form a bulk pick are sales, distribution, and works orders.

When orders are created, you can optionally group them together into *routes*. You can request orders by route, so that all orders for a particular delivery area can be picked together. When creating sales orders, the route can be defined by customer and the ship-to address. For distribution orders the route can be defined by customer and the ship-to site address. Works orders can be grouped together in a similar way.

These bulk picks accumulate the items together, and, using the defined picking rules, issue the instructions to the staff to pick the stock. Efficiency is improved by grouping the orders, since the detail allocations are examined and, if necessary, the allocations rationalized. There is no direct link between orders in a bulk pick, other than the fact that they have items in common and can thus be grouped together.

A major key to understanding how bulk picking works is the relationship between a bulk pick number, bulk pick details, temporary sequence IDs during order line selection, load IDs, and pre-shipper IDs.

Bulk Pick Details

Bulk pick details form a link between a warehouse transaction and one or more detail allocations. Bulk pick details are generated when you approve the order selection. The system generates a single bulk pick number to contain all bulk pick details that result from a single approval.

Load ID

All order lines with the same load ID are combined, if possible, in the same warehouse transaction. The load ID is automatically generated when you select the order line for inclusion in a bulk pick. Multiple bulk pick details can still result from a single load ID.

If different item numbers are grouped within one load ID, they generate separate warehouse pick transactions. The way transactions are created for multiple order lines for the same item number that are grouped within one load ID depends on the issue method:

Temporary Sequence ID

When you select order lines, rather than generating all load IDs at the start, order lines are grouped by temporary sequence ID. This lets you group order lines together without having to assign them load IDs. When you accept the selections and groupings, the load IDs are generated, assigning one per temporary sequence ID.

Pre-Shipper ID

Pre-shipper IDs are not generated until you approve the order. One pre-shipper ID is assigned for each combination of Load ID, site, order type, and/or ship-to address.

The pre-shipper IDs that are then associated with each order line are only effective and converted to shipper IDs when the transfer of picked inventory reaches a step in an internal routing with the Create Shippers field set to Yes.

Batch Picking

Batch picking lets warehouse staff pick items in a more efficient way. The time it takes to travel through the warehouse completing tasks at various locations, or the *travel sequence*, constitutes the largest amount of time involved when picking items from a warehouse. Batch picking functionality reorders the order-picking sequence and tasks so that warehouse staff can pick multiple items from multiple orders at various locations throughout the warehouse with a shortened travel sequence.

Batch picking functionality is applicable when picking the following:

- Small items with small volume from multiple order lines
- Multi-bin items for a single order

Batch-picking functionality calculates the smallest difference in location from the warehouse staff's current location, letting them pick several small items from the same storage location for several different orders, then move to the next storage location nearest their current location to pick items there. For multi-bin orders, warehouse staff can build a pallet with large boxes of large items for one order with a shortened time sequence through the warehouse. You can also specify the maximum number of orders to pick.

Because batch picking can take several hours, the stock can be physically out of the location and on the cart. You define a user cart as a location to temporarily store the stock until staff move stock to the shipping location.

Batch and Bulk Picking Differences

Unlike bulk picking, batch picking uses a *sort-by-pick* methodology. Warehouse staff can pick items from the same location for multiple orders while keeping the orders separated in different containers (boxes or totes) on their cart. Optionally, they can merge items for orders into a container, as long as order lines use the same pre-shipper and you have set control options to allow order merging.


Normal Picking




Normal Picking

QAD Proprietary

Normal Picking Setup



Normal Picking Setup



- ▲ Set up IRGs
- ▲ Set up SLGs
- ▲ Set up warehouse picking levels
- ▲ Set up SLG picking levels and parameters
- ▲ Set up locations for lanes
- ▲ Set up internal routings
- ▲ Assign picking transaction types
- ▲ Assign algorithms to the picking transaction types

In this section, you will learn how to set up QAD Warehousing for normal picking.

Note You should have previously set up bulk and receipt storage areas from the Receipt and Replenishment chapters of this training guide.

Typically, you follow these setup steps

- Use Internal Routing Group Maintenance to set up IRGs and make them functional.
- Use Storage Location Group Maintenance to set up SLGs.
- Use Warehouse Maintenance to set up picking levels
- Use Storage Location Group Maintenance to set up picking levels and other picking parameters.
- Use Warehouse Location Maintenance to set up locations for lanes.
- Use Internal Routing Maintenance to set up routings for picking functions.
- Use Internal Routing Assignment to assign picking transaction types.
- Use Algorithm Assignment Maintenance to assign algorithms to the transaction types.

Internal Routing Group Maintenance

Internal Routing Group Maint x

Go To Actions Copy Print Preview

Site: US-D3

Warehouse: US-D-3

Internal Routing Group: Dispatch

Description: Lanes Area

Functional:

SLG Default Values

Allow Issues:

Allow Receipts:

Allow Outgoing Returns:

Allow Incoming Returns:

US-D-3

US-D-3

Storage

Bulk

DBK001	DBK004
DBK002	DBK005
DBK003	DBK006

Dispatch

Back Next

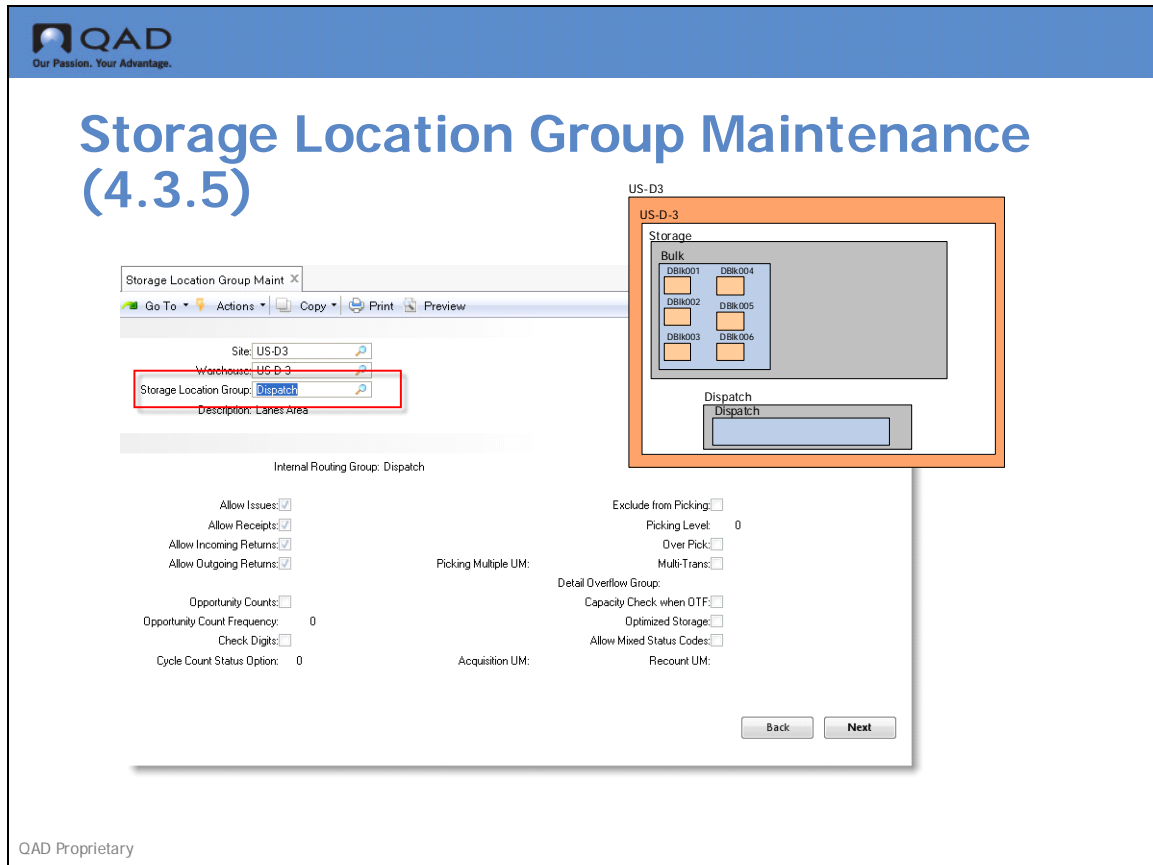
QAD Proprietary

Use Internal Routing Group Maintenance to define a name and a description for each area in the warehouse for picking and to define whether the area is functional.

Field Descriptions

Functional. Enter Yes if this internal routing group is a functional area, such as receipt or dispatch, in which the system uses location-find algorithms to select locations when stock is moved into the area. Enter No if this is a non-functional area, such as general storage, in which the system uses put-away algorithms to select locations when stock is moved into the area.

Storage Location Group Maintenance



Use Storage Location Group Maintenance to define dispatch areas for picking.

Field Definitions

Storage Location Group. Enter the code that identifies the storage location group you want to create or modify.

Allow Issues. This field controls whether inventory can be issued out of the system from locations in this SLG. Generally, you limit issues to specially designated areas, such as Goods-Out. Enter Yes if stock can be issued; otherwise, enter No.

Allow Receipts. This field controls whether inventory can be received from outside the system into locations in this area. Generally, you limit receipts to specially designated areas, such as goods-in. Enter Yes if stock can be received; otherwise, enter No.

The value defined in Internal Routing Group Maintenance is not applied directly, but defaults to all the storage location groups set up within the internal routing group. In Storage Location Group Maintenance, you can accept the default value or override it for this SLG.

Use Item-Storage Location Group Maintenance to change the setting for a specified item within a specified SLG.

Note If Allow Receipts is set to Yes in a bulk storage location group, for example, the system lets you make a direct receipt into these locations without generating any warehouse transactions.

Warehouse Maintenance

Warehouse Maintenance (4.1.1)

Warehouse Maintenance

Site: US-D3
Warehouse: US-D-3

Picking

Start Picking Level: 10
End Picking Level: 20

Single-Level Picking:
Max Trans Assign: 0
Flavor C Hard/Soft Assignment: Hard
Multi-Bin Pick Flavor C Sort: 0

Default ID Print Flavor C:

Hold Defaults

Allow Issues:
Allow Receipts:
Allow Picking:
Allow Incoming Returns:
Allow Outgoing Returns:
Allow Cycle Counts:

Back Next

QAD Proprietary

Use options in the Picking frame of Warehouse Maintenance that control RF prompts to complete or fail picking tasks or repick when the quantity to pick is less than the total quantity.

Field Descriptions

Start Picking Level. The fields in the picking frame define the storage location groups that the system should use for picking inventory. Each SLG has a picking level defined. Any SLG with a picking level that is not between the start and end levels you specify here is not considered by the picking algorithms in this warehouse.

Enter the numerical code for the picking level at which picking is to start. Each SLG has a picking level defined. Any SLG with a picking level that is not between defined start and end levels is not considered by the picking algorithms in this warehouse.

Set default start picking levels in Warehouse Maintenance or Warehouse Transaction Type Maintenance.

End Picking Level. Enter the numerical code for the picking level at which picking is to end. Each SLG has a picking level defined. Any SLG with a picking level that is not between defined start and end levels is not considered by the picking algorithms in this warehouse.

Set default end picking levels in Warehouse Maintenance or Warehouse Transaction Type Maintenance.

Single-Level Picking. Enter Yes if all the picking quantity must be taken from only one picking level; otherwise, enter No.

Storage Location Group Maintenance - Picking Parameters

The screenshot shows the 'Storage Location Group Maintenance (4.3.1)' screen in QAD. The form includes the following elements:

- Header:** QAD logo and 'Storage Location Group Maint' title.
- Navigation:** Go To, Actions, Copy, Print, Preview buttons.
- Form Fields:**
 - Site: US-D3
 - Warehouse: US-D-3
 - Storage Location Group: Boxes
 - Description: Pick Face(Boxes)
- Diagram:** A diagram of the storage layout for 'US-D-3' showing 'Bulk' and 'Boxes' areas with various DBK001-DBK006 locations. A red box highlights the 'Pick Multi UM' field in the 'Alt UM' section.
- Picking Parameters:**
 - Exclude from Picking:
 - Picking Level: 20 (highlighted with a red box)
 - Over Pick:
 - Multi-Trans:
 - Detail Overflow Group:
 - Capacity Check when OTF:
 - Optimized Storage:
 - Allow Mixed Status Codes:
 - Recount UM:
- Buttons:** Back and Next buttons at the bottom.

You can also set the picking level for the storage location group in Storage Location Group Maintenance (4.3.1).

Field Descriptions

Picking Level. You can assign a Picking Level number to each storage location group. You can set default start and end picking levels in Warehouse Maintenance, or by using Warehouse Transaction Type Maintenance. These Start and End settings determine the picking levels to be used for the pick. The system will then look for inventory in the storage location groups that correspond to the specified range of picking levels.

Alt UM. Use the fields on the second SLG Maintenance screen to define alternate units of measure to be used in relation to inventory in locations in this storage location group. You can specify more than one alternate UM by using more than one line on this screen.

Press Enter in the Alternate UM field to allow entry of an alternate UM. Enter the two-character code for the alternate UM and press Enter. You can then update the Conversion field with the conversion factor between the base UM and this alternate UM.

Over Pick. This field specifies whether you can pick more stock from locations in this storage location group than is specified in the order. Enter Yes if overpicking is allowed; otherwise, enter No.

This field works in conjunction with the Split field to control whether stock can be picked from locations in the SLG in situations where the quantity required for the pick does not match the unit of measure in which the item is stocked in the location.

For example, if a location contains boxes of 100 of the item, and the required picking quantity is 70 pieces, if you allow the UM (that is, a box) to be split, the system will pick 70 pieces from a box. If you do not allow the box to be split, the system will check the Over Pick field. If it is set to Yes, the system will pick a box of 100 (that is, an overpick of 30 pieces); if it is set to No, the system will not pick from this SLG.

The same field also appears in Transaction Type Maintenance and Warehouse Transaction Type Maintenance. You specify whether the SLG setting or the transaction type setting takes precedence by use of the Control Over-Pick at SLG field in the transaction type and Warehouse Transaction Type Maintenance options.

Picking Multiple UM. Enter the unit of measure (UM) multiples of which must be used when picking inventory from locations in this storage location group. For example, inventory could be stored on pallets, with the pallets containing a number of boxes. Each box contains a number of individual items. You might want to allow splitting of the pallet, but restrict such splitting to multiples of whole boxes.

Multi-Trans. This field defines whether the system should create multiple transactions when picking in multiples of the UM. For example, if BX (for Box) is the Picking Multiple UM, and a box contains 20 EA (for individual items), two ways of creating transactions exist when you pick 40 EA:

- When Multi-Trans is Yes, two transactions each for 1 BX (or 20 EA)
- When Multi-Trans is No, one transaction for 40 EA

Warehouse Location Maintenance

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Warehouse Location Maintenance (4.3.13)

Internal Routing Group Maint x Warehouse Location Maintena... x

Go To Actions Copy Print Preview

Site: US-D3 Warehousing Site

Location: DBox001

Location Groups

Warehouse: US-D3

Storage Location Group: Boxes

Work Location Group: Trolley

Warehouse Location Data

Check Digit: Picking Type:

Popularity: Preferred UM:

Storage Type: Opportunity Count Frequency: 0

Warehouse Location Type: Last Opportunity Count:

Travel Sequence: 0 Stage (In):

Dedicated: Stage (Out):

Back Next

QAD Proprietary

Use Warehouse Location Maintenance to set up specific locations for picking tasks, such as locations for lanes.

Field Descriptions

Location. Enter the name of the location.

Warehouse. Specify the name that uniquely identifies the warehouse you want to use in warehouse programs. If you specify an existing system software location, a warning displays. If you specify a value not defined as a system software location, the location will be created.

Storage Location Group . Enter the name of a storage location group, previously defined in the system.

Work Location Group. Specify the name of the work location group to which a location belongs.

Internal Routing Maintenance

Internal Routing Maintenance (4.2.5)

Internal Routing Maintenance X
Go To Internal Routing Maintenance Actions Copy Print Preview

Site: US-D3 Warehouse: US-D-3 Internal Routing: PICKIR

Description: Picking Path
Sequence: 10 Internal Routing Group: Storage

Transaction Create
Confirmed at Source:
System Code: RF
Two Phase:
Keep From Status:

Task: TRANSFER
Priority: 100

Internal Routing Maintenance X
Go To Actions Copy Print Preview

Site: US-D3 Warehouse: US-D-3 Internal Routing: PICKIR

Description: Picking Path
Sequence: 20 Internal Routing Group: dispatch

Transaction Create
Confirmed at Source:
System Code: RF
Two Phase:
Keep From Status:

Task: PICK
Priority: 100
Increment: 10

Transaction Confirmation
From Location Option: 0 Repick Type: To Location Option: 0
From Item Option: 0 To Item Option: 0
From Lot/Serial Option: 0 To Lot/Serial Option: 0
From Reference Option: 0 To Reference Option: 0
Allow Quantity Increase: Alternative UM Option: 0
Allow Quantity Decrease: Expire Date (Days): 0
Quantity Change Option: 0

WARNING: Beginning of data.

QAD Proprietary

Delete Back Next

Use Internal Routing Maintenance to set up pathways for the IRG for picking.

Field Descriptions

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Sequence. Enter the number that identifies the order of this routing step.

Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, number the sequences as 10, 20, 30 rather than 1, 2, 3.

Internal Routing Group. Specify for this sequence step of the routing the next IRG to which the inventory should move.

Internal Routing Assignment Maintenance

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Internal Routing Assignment Maintenance (4.2.9)

Int Routing Assignment Maint

Go To Actions Copy Print Preview

Transaction Type: PICK

Site: US-D3

Warehouse: US-D-3

Item Number:

Warehouse Item Type:

Address:

Custom:

Internal Routing: PickIR

Custom Program:

Back Next

QAD Proprietary

Use Internal Routing Assignment Maintenance to link transaction types to internal routings. You can also specify a combination of a transaction type with an item, an item type, or an address relating to a supplier or customer so that the internal routing is used when that particular combination occurs.

Field Descriptions

Transaction Type. This field is used to specify the transaction type. Maintain transaction types using Transaction Type Maintenance. Typically, there are several PICK transaction types for a warehouse system, including PICK-SO for sales orders, PICK-WO for work orders, PICK-DO for distribution orders, PICK-RE for picking replenishment, PICK-UNP for unplanned issue picks, and so on.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

You also specify the transaction type when using the Algorithm Simulation Menu. These options simulate either location-find and put-away, or picking. The system simulates the running of the algorithms that you have assigned to the specified transaction type and displays the results of the simulated put-away or picking.

Site. Enter the name of the site.

Warehouse. Enter the name of the warehouse for which you want to assign internal routings.

Item Number. If you want to assign an internal routing to a combination of transaction type and item, enter the item number here. If you leave this field blank, the assignment is valid for all items.

Algorithm Assignment Maintenance

Algorithm Assignment Maintenance

Algorithm Type: PK Transaction Type: PICK

Site: US-D3 Warehouse: US-D-3

Item Number: Warehouse Item Type:

Address: Custom:

Assigned Algorithms

Seq	Algo	Description
10	9	Pick by Level by Location

Sequence: 10 Algorithm: 9

Description: Pick by Level by Location

Back Next

QAD Proprietary

Use Algorithm Assignment Maintenance to link a specified sequence of algorithms (of one type per sequence) to a defined combination of the transaction type, site, warehouse, item number, or address.

Field Definitions

Algorithm Type. Use Algorithm Type to specify the two-character code for the type of algorithm you want to maintain or assign. The standard two-character codes are CM, LA, LF, PA, PK, QA, and SC.

These standard codes are supplied with the system, and you will not normally need any other algorithm types. If you should ever need to add another algorithm type code, you must create it, and its description using Generalized Code Maintenance.

Transaction Type. This field is used to specify the transaction type. Maintain transaction types using Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

Sequence. Each algorithm assignment consists of a number of individual algorithms, in order, identified by a sequence number.

For a new assignment, Sequence defaults to 10. Number sequences by 10's (10, 20, 30, and so on) so that additional steps can be inserted easily later, if required.


Sequence . Each algorithm assignment consists of a number of individual algorithms, in order, identified by a sequence number.

For a new assignment, Sequence defaults to 10. Number sequences by 10's (10, 20, 30, and so on) so that additional steps can be inserted easily later, if required.

Normal Picking Process



Normal Picking Process

- 
- ▲ Create an order and run picklist or preshipper modules in system software.
 - ▲ Warehouse staff use QAD Warehousing on the RF device to confirm picking tasks
 - ▲ Use QAD Warehousing to run stock inquiries to review movements


QAD Proprietary

In this section, you will learn the normal picking process.

Creating an Order and Picklist


Use any of the order maintenance programs in the system software to create a sales, work, or distribution order., such as Sales Order Maintenance (7.1.1). Then, create a picklist/pre-shipper using system software modules such as Picklist/Pre-shipper-Automatic (7.9.1).

Picking on the RF



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Picking Task Confirmation

▲ Use Next Task Menu



→



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Warehouse staff conduct picking by selecting orders and confirming tasks on the RF.

- 1 On the RF session, log in, specifying your login ID and password.

Note You can run QAD Warehousing RF software from within QAD Warehousing.

- 2 Specify the site and WLG in which you are picking.
- 3 Select Next Task (1)
- 4 Enter the item origin location in the Fr Loc field.
- 5 Scan or enter the item you are pick in the Ref(erence) field.
- 6 Enter the item destination location in the To Loc field.
- 7 Confirm all picking tasks when you are finished.
The system moves stock based on your picks.

Exercise: Conduct a Normal Picking Session



Normal Picking Process



- ▲ Create an order and run picklist or preshipper modules in system software.
- ▲ Warehouse staff use QAD Warehousing on the RF device to confirm picking tasks
- ▲ Use QAD Warehousing to run stock inquiries to review movements

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will create a sales order and a picklist for the order. You will then use the RF to confirm picking tasks and review the inventory movement.

- 1 Use Sales Order Maintenance (7.1.1) to create a sales order.
- 2 Use Picklist/Pre-Shipper - Automatic (7.9.1) to create a picklist.
- 3 Use the RF Next Task option to confirm picking tasks.
- 4 Use Inventory Detail Inquiry (4.9.13) to verify items in the system-created pre-shipper.

Step 2: Create a Picklist

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Exercise – Picklist/Pre-Shipper – Automatic (7.9.1)

The system picks full pallets from Bulk area and pieces from boxes.

Ln	Item Number	Site	Lot/Serial	Qty	Open	UM	Shipped	Due
1	0811001			122.0	EA			10/10/08
2	0800001	PL000034		100.0				
3	0800001			22.0				

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Use Picklist/Pre-Shipper- Automatic to create a picklist for the sales order you created in Step 1. The system displays the picklist as shown in the following graphic.

Step 3: Use the RF Next Task Option to Confirm Picking

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Exercise - Picking Task Confirmation

▲ Use Next Task Menu

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Follow instructions for RF Next Task Confirmation in the Normal Pick Processing section of this training guide.

Once you enter locations and reference numbers, confirm the quantity picked as shown in the following graphic.

Exercise - Picking Task Confirmation

▲ Use Next Task Menu



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Step 4: Verify the Movement

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Exercise – Inventory Detail Inquiry (4.9.13)

Inventory Detail Inquiry - 10/9/08

QAD **Inventory Detail Inquiry** 10/09/08

Site: US-D3 Item Number: D-IT001 Display Whse Loc: No
 Warehouse: Lot/Serial: Disp Non-Whse Loc: No
 Location: Reference: Output: PAGE

Warehouse: US-D-3 Warehouse D-3

Location	Status	Qty	Qty	Expect	Expect	Detail	Detail
Lot/Serial	Ref	UM	On Hand	In	Out	Alloc	Pick
DB1k001	A-N	EA	100				
	PL000035	PL					
DBox001	A-N	EA	80			22	22
PLane001	A-N	EA		22	22		
PLane001	A-N	EA	100				100
	PL000034	PL					

4.9.13 Inventory Detail Inquiry whiciq01.p

QAD Proprietary

Use Inventory Detail Inquiry to verify that the quantities you specified moved from the starting location to the ending location; in this case, items moved to the shipping lane.

Normal Picking Study Questions

- 1 What is the major difference between normal picking and the Warehousing bulk and batch picking?
- 2 Splitting containers during picking is a Warehousing feature, not a QAD EE feature. True or False.
- 3 What is overpicking?
- 4 Where do you set overpicking options?
- 5 Describe the importance of picking levels.
- 6 You set picking levels for the entire warehouse in Warehouse Maintenance. True or False.
- 7 List at least three Warehousing maintenance programs that contain fields with picking options.
- 8 How does a warehouse worker know that he is required to pick items?
- 9 How does the warehouse user signify that picking is complete?
- 10 Normal picking relies on picklists generated through QAD EE, but bulk picking does not. True or False.


Bulk Picking




Bulk Picking

QAD Proprietary

Bulk Picking Setup



Bulk Picking Setup



- ▲ Set up warehouse properties, similar to normal picking:
 - IRGs and SLGs
 - Warehouse and SLG picking levels and parameters
 - Locations for picking
 - Internal routings
 - Picking transaction types
 - Picking Algorithms
- ▲ Set bulk picking controls

QAD Proprietary

Before you bulk pick for orders, you must:

- Set the same warehousing properties that you do for normal picking:
 - Use Internal Routing Group Maintenance to set up IRGs and make them functional.
 - Use Storage Location Group Maintenance to set up SLGs.
 - Use Warehouse Maintenance to set up picking levels
 - Use Storage Location Group Maintenance to set up picking levels and other picking parameters
 - Use Warehouse Location Maintenance to set up locations for lanes.
 - Use Internal Routing Maintenance to set up routings for picking functions.
 - Use Internal Routing Assignment to assign picking transaction types.
 - Use Algorithm Assignment Maintenance to assign algorithms to the transaction types.
- After you ensure these properties are set up, use Bulk Picking Control to set bulk-picking defaults and other parameters.

Bulk Picking Control

Set bulk picking controls and parameters and defaults for other bulk-pick programs in Bulk Picking Control.

Create Bulk Picking Orders. If set to Yes (the default), bulk picking orders are created automatically in the Bulk Pick Selection and Approval programs.

Bulk Pick History. Indicate whether to keep history of all bulk pick details processed.

Automatically Reselect BPs. If set to Yes, whenever an order line has been approved but not picked, the order line is automatically reselected (pick status set to S) for future bulk pick approval.

Bulk Pick Sequence ID. Identify the number range management (NRM) sequence ID to use for creating bulk picking order numbers. If not correctly defined, it is not possible to create bulk picking orders. You create bulk picking sequences in Sequence Definition Maintenance (4.23.1).

Load Sequence ID. Identify the NRM sequence ID to use for defining load IDs. If not correctly defined, it is not possible to create bulk picking orders. You create load sequences in Sequence Definition Maintenance (4.23.1).

Pre-Shipper Sequence ID. Identify the NRM sequence ID to use for creating pre-shipper numbers. If not correctly defined, it is not possible to create bulk picking orders. You create pre-shipper sequences in Sequence Definition Maintenance (4.23.1).

This system does not use this field to create SO or DO pre-shippers. The system creates data in bulk picking tables for later printing of pre-shippers.

Select All. If set to Yes, the automatically calculated load ID assignments are used for selection. If set to No, a window is displayed in the selection and approval programs enabling you to include and exclude selected order lines, and to manipulate which order line is assigned to each load ID.

Auto Approve. If set to Yes, the selected order lines are automatically approved.

Select By. You can set this to A (Address), O (Order), P (Part), or R (Route).

Select by Priority. If set to Yes, order lines are selected within the address, order, part, or route selection by priority, and then by due date. If set to No, the subselection is by due date and then priority.

Min Status for WO Selection. This field enables you to enter the minimum status needed for work orders selection.

You can set this to A (Allocated), B (Batch), E (Exploded), F (Firm), P (Planned), or R (Released).

Pre-Shippers. If set to Yes (the default), a pre-shipper ID is automatically generated and assigned to each line in the selection and approval programs.

Print Pre-Shipper List. When Pre-Shippers is Yes, indicate if a list of generated pre-shippers should also print.

Bulk Pick-Sheets. If set to Yes (the default), bulk pick sheets are automatically created in the selection and approval programs.

Release Work Orders. If set to Yes (the default), work orders are automatically released for the bulk pick.

Ship Weight UM. Enter the default UM for the shipping weight of bulk pick orders.

Net Weight UM. Enter the default UM for the net weight of bulk pick orders.

Volume Unit of Measure. Enter the default UM for the volume of bulk pick orders.

Quantity UM. Enter the default UM for the quantity of bulk pick orders.

Auto All Sales Orders. If set to Yes, the system performs general allocations for sales order lines that are not yet generally allocated at the time the bulk picking process is run. Allocations depend on the settings in Sales Order Control (7.1.24).

Allocate Components. Indicate whether the system automatically applies pick logic and creates detail inventory allocations for components of configured kits.

No: The system uses sales order line site for the site and default item location. In both cases, the quantity to ship for a component is determined by the quantity open for the configured kit item, and not the quantity available to allocate for component.

Yes: The system creates detail allocations for confirmed sales order lines.


Modify detail allocations for components of configured kits in Pre-Shipper/Shipper Workbench (7.9.2).

Override Partial OK. Indicate whether the system overrides the sales order Partial OK field setting in Sales Order Maintenance. When Partial OK is Yes, the system prints a packing list and lets you make shipments when the entire quantity is not available. When Partial OK is No, the system checks that all line items are available for shipping before printing a packing list. If they are not, you cannot print a packing list for the order.


No (the default): Do not override the Partial OK setting.

Yes: Override the Partial OK setting and reset it to Yes. You can print a packing list and create a partial shipment for the customer. You can ship the remainder of the order when items are available.

Bulk Picking Process



Bulk Pick Process



- ▲ Select order lines for bulk picking
- ▲ Approve selected order lines
- ▲ Print bulk-pick orders
- ▲ Create pre-shippers
- ▲ Confirm transactions

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Typically, you follow these steps when processing bulk orders.

- Use Bulk Pick Order Selection to select orders for a bulk pick.
- Use Bulk Pick Selection Approval to approve a set of order lines that you have previously selected for a bulk pick, and to create bulk pick transactions for them.
- Use Bulk Pick Print to print bulk pick orders.
- Use Bulk Pick Order Selection to print bulk pick pre-shippers.
- Confirm transactions using the RF.

Bulk Pick Order Selection

Use Bulk Pick Order Selection to select orders for a bulk pick.

When you select order lines, the system sets the picking status to S (for selected). Selected order lines are automatically general allocated. Selecting work order components results in the selected work order being upgraded to a status of A (Allocated).

Key Field Descriptions

Target Ship Weight. This field enables you to enter a target shipping weight for the bulk pick. If you enter a value, another load ID is selected once the target is reached. The adjacent field enables you to enter a default shipping weight UM.

Target Net Weight. This field enables you to enter a target net weight for the bulk pick. If you enter a value, another load ID is selected once the target is reached. The adjacent field enables you to enter a default net weight UM.

Target Volume. This field enables you to enter a target volume for the bulk pick. If you enter a value, another load ID is selected once the target is reached. The adjacent field enables you to enter a default volume UM.

Target Quantity. This field enables you to enter a target quantity for the bulk pick. If you enter a value, another load ID is selected once the target is reached. The adjacent field enables you to enter a default quantity UM.

Select All. Specify whether the system includes all order lines for this bulk pick.

No: A window displays in the Selection and Approval screens enabling you to include and exclude selected order lines and to manipulate which order line is assigned to each load ID.

Yes: The automatically calculated load ID assignments are used for selection. Select All field is set to No, a window is displayed in which you can manually assign order lines to load IDs.

- The field Select By lets you display the selected order lines by address (A), order (O), part (P) or route (R).
- If you enter the target weight, volume, and quantity for the bulk pick, a new load ID is automatically created after the target weight is reached.
- If the Auto Approve field is set to No, you must run Bulk Pick Selection Approval (4.14.4) in order to perform the picking; otherwise, the order approval process is executed right after the selection process.

Load ID. If you leave this field blank, the system generates a load ID automatically. If you enter a value, any order lines that have not already been assigned to a load ID are assigned to this ID.

The load ID can be assigned ahead of time on the order line. Ultimately, all order lines with the same load ID are combined, if possible, onto the same warehouse transaction. If not defined on the order line, the load ID is automatically generated when you select the order line for inclusion in a bulk pick. Multiple bulk pick details can still result from a single load ID.

Route/To. Enter a range of routes if you want to include orders only from specific routes.

Item Number/To. Enter a range of item numbers if you want to include only order lines containing the items in the range in the bulk pick. Otherwise, leave these fields blank.

Warehouse Item Type/To. Enter a warehouse item type if you want to include only order lines containing this group of items in the bulk pick. Otherwise, leave these fields blank.

Order/To. Enter a range of order numbers if you want to include lines only from specific orders.

Due Date/To. Enter a range of due dates on which the bulk pick should be carried out.

Auto All Sales Orders. Specify Yes or No to generally allocate inventory for confirmed sales order lines that are unallocated. Allocations depend on the setting of these Sales Order Control fields:

- Limit Allocations to Available to Allocate
- Allocate Sales Order Lines due in Days

If Limit Allocations to Available to Allocate is Yes, allocations are limited to the quantity available to allocate. If there is not enough inventory to allocate the entire order, the system partially allocates the inventory. If there is zero quantity available to allocate, the system does not allocate inventory for this sales order, even if Auto All Sales Orders is set to Yes.

Allocate Components. Specify Yes or No to automatically apply pick logic and create detail inventory allocations for components of configured kits.

Override Partial OK. Specify Yes or No for the system to consider the partial shipment setting for each order when selecting orders for a bulk pick.

No: The system checks the value of Partial OK on each order and selects order lines based on this setting. If the setting is No for the order, the system verifies that all line items for each site represented on the order are available (allocated) and can be completely selected. If this is not true, none of the line items from that site are selected.

Yes: The system selects order lines when the entire order quantity is not available even when Partial OK is No on the order. This may occur when only some of the line items are ready to ship, or an individual line item can only be partially satisfied. The remainder of the order remains in the system on backorder until it can be shipped.

Release Work Orders . If set to Yes, work orders are automatically released for the bulk pick. The field defined in Bulk Pick Control defaults when you select work orders for bulk pick.

Bulk Pick Selection Approval

Use Bulk Pick Selection Approval to approve a set of order lines that you have previously selected for a bulk pick, and to create bulk pick transactions for them.

When you approve selected order lines, you change the status from S to A (approved). Once approved, the system creates detail allocations, bulk pick details, and warehouse transactions. When you approve selected work order components, you can upgrade the approved work order's status to R (Released).

Field Descriptions

Sales Orders, Work Order Issues, Distribution Orders. Select the type of orders for the bulk pick.

Create Bulk Picking Orders. If set to No, standard picking is performed with each created detail allocation resulting in a separate warehouse transaction. If set to Yes (the default), a bulk picking order is created letting you regroup detail pickings for the same warehouse transaction. To do this, you must first define a valid bulk pick sequence ID in Bulk Picking Control (4.14.24).

Bulk Pick Sheets. If set to Yes, a Bulk Pick Sheets Report is printed.

Pre-Shippers. If set to Yes, pre-shipper IDs are generated and assigned to each sales and distribution order line.

Print Pre-Ship List. If set to Yes, the Pre-Shipper List Report is printed after you exit the program.

Load ID, Route, Item Number, Whse Item Type, Order, Due Date. Optionally enter a range of load IDs, routes item numbers, item types, orders, and due dates for previously selected order lines for approval.

Once you have selected the output method, the system creates the pick transactions for the order lines, and prints the pick sheets.

Bulk Pick Print

The screenshot displays the 'Bulk Pick Selection Approval (4.14.4)' window. At the top left is the QAD logo with the tagline 'Our Passion. Your Advantage.'. The main title is 'Bulk Pick Selection Approval (4.14.4)'. Below the title is a search bar with 'Site: 10000' and 'Warehouse:' fields. The interface contains several checkboxes: 'Include Sales Orders' (checked), 'Include Work Order Issues' (checked), 'Include Distribution Orders' (checked), 'Create Bulk Picking Orders' (checked), 'Bulk Pick Sheets' (checked and highlighted with a red box), 'Pre-Shippers' (checked), and 'Print Pre-Shipper List' (unchecked). There are also input fields for 'Load ID', 'Route', 'Item Number', 'Whse Item Type', 'Order', and 'Due Date'. On the right side, there are 'To:' fields and an 'Output:' dropdown menu.

You can print bulk pick orders by setting Bulk Pick Sheets to Yes in Bulk Pick Selection Approval. Also, you can use Bulk Pick Print or Multiple Bulk Pick Print (4.14.12) to:

- Print bulk pick orders for the first time if Bulk Pick Sheets was set to No in Bulk Pick Selection Approval (4.14.4).
- Reprint bulk pick orders if Bulk Pick Sheets was set to Yes in Bulk Pick Selection Approval (4.14.4).

To print bulk pick orders, you must specify one of the system-supplied programs in the Bulk Pick Sheet field in Local Exit Routines Setup (4.23.10).

- whbp1x01.p: Bulk pick sheet print by item number
- whbp1x02.p: Bulk pick sheet print by location

Field Descriptions

Field descriptions are similar to those in Bulk Pick Order Selection.

Bulk Pick Order Selection

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Bulk Pick Order Selection - Preshippers

Bulk Pick Order Selection

Go To Actions Copy Print Preview

Site: 10000
Warehouse: 001

Auto Allocate Sales Orders: <input type="checkbox"/>	Create Bulk Picking Orders: <input checked="" type="checkbox"/>	0.00
Allocate Components: <input type="checkbox"/>	Bulk Pick Sheets: <input checked="" type="checkbox"/>	0.00
Override Partial OK: <input type="checkbox"/>	Pre-Shippers: <input checked="" type="checkbox"/>	0.0 EA
Release Work Orders: <input checked="" type="checkbox"/>	Print Pre-Shipper List: <input type="checkbox"/>	

Select By: 0 Order

Load ID: To:
Route: To:
Item Number: To:
Whse Item Type: To:
Order: To:
Due Date: To:

Output:
Batch ID:


In Bulk Pick Order Selection (4.14.1), set the Pre-Shippers field is set to Yes for the system to generate a pre-shipper for each selected sales and distribution order. The system creates different pre-shippers, grouping together order lines depending on the different ship-to addresses.

If you set Print Pre-Shipper List to Yes in Bulk Pick Selection Approval (4.14.4), the system printed the pre-shipper list at the printer specified for the warehouse. However, you can use Bulk Picking Pre-Shipper Print (4.14.18.4) or Multiple Bulk Pre-Shipper Print (4.14.18.6) to reprint bulk pick pre-shippers or print them for the first time if Print Pre-Shipper List was not selected when approving the orders.

Field Description


Pre-Shippers. Indicate Yes or No to generate pre-shippers for this bulk order.

RF Transaction Confirmation



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Picking Task Confirmation

▲ Use Next Task Menu



→



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Once you approve the bulk pick orders and optionally create bulk pick details and pre-shippers, the system generates warehouse transactions to confirm the movement of goods. Use the RF Next Task menu to confirm the transactions. When these transactions are confirmed through the RF, the system deletes the bulk pick details associated with them.

When you confirm the transactions for a sales order line or distribution order requisition, if the Create Shipper field is Yes in the Miscellaneous frame of Internal Routing Maintenance (4.2.5) and the pre-shipper was generated, the confirmation of the warehouse transactions ensures that confirmed item quantities are included on a standard shipper, just like items are created and confirmed in the Shipment Processing Menu (7.9) for sales orders or in the Distribution Orders Shipping Menu (12.19) for distribution orders.

Exercise: Conduct a Bulk Picking Session



Objectives



- ▲ Create three sales orders with the same ship-to address
- ▲ Select order lines for bulk picking
- ▲ Approve the order lines
- ▲ Use the RF to confirm transactions

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The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will create three sales orders, select order lines from the orders for a bulk pick, approve the bulk pick order lines, and use the RF to confirm picking transactions.

- 1 Use Sales Order Maintenance (7.1.1) to create three sales orders for the same ship-to code.
- 2 Use Bulk Pick Order Selection (4.14.1) to select order lines for a bulk pick.
- 3 Use Bulk Pick Selection Approval (4.14.4) to approve a set of order lines that you have previously selected for a bulk pick, and to create bulk pick transactions for them.
- 4 Use the RF Next Task option to confirm the bulk pick.

Step 1: Use Sales Order Maintenance to create sales orders

Exercise – Create Sales Orders

Header

Order: S0111 Sold-To: 4000 Bill To: 4002 **Ship-To: 4000**

Sold-To

ABC Company
150 JFK Parkway
Morristown NJ 07960
United States

Ship-To

ABC Company
150 JFK Parkway
Morristown NJ 07960
United States

Details

Order Date: 9/15/2008 Line Pricing: Confirmed: 9/15/2008
 Required Date: 9/16/2008 Manual: Currency: USD Language: US
 Promise Date: Daybook Set: DB2 Taxable: AST
 Due Date: 9/16/2008 Channel: Fixed Price:
 Perform Date: Project: Credit Terms: Base
 Pricing Date: 9/15/2008 Org Inv: Site: 10000
 Purchase Order: Credit Terms Interest %: 0.00
 Remarks: Reprice:

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Create three sales orders for different items that ship to the same ship-to address.

Sales orders for the same ship-to address can be grouped, forming one consolidated pack list. This can then be used to decide the packing of the order.

Step 2: Use Bulk Pick Order Selection (4.14.1) to select order lines

Exercise – Select Order Lines

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Bulk Pick Order Selection

Go To Actions Copy Print Preview

Site: 10000
Warehouse: whse

Include Sales Orders:
Include Work Order Issues:
Include Distribution Orders:

Target Ship Weight: 0.00
Target Net Weight: 0.00
Target Volume: 0.00
Target Quantity: 0.00

Select All:
Select By Priority:
Select By: 0 Order

Auto Approve:

Load ID:
Route:
Item Number:
Whse Item Type:
Order:
Due Date:

To:
To:
To:
To:
To:
To:
Output:
Batch ID:

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Select order lines from the three sales orders you created.

Leave the Load ID blank to let the system create the Load ID.

Step 3: Use Bulk Pick Selection Approval to approve the order lines

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Exercise – Approve Bulk Pick Order Lines

Bulk Pick Selection Approval

Go To Actions Copy Print Preview

Site: 10000
Warehouse: whse

Include Sales Orders:
 Include Work Order Issues:
 Include Distribution Orders:

Create Bulk Picking Orders:
 Bulk Pick Sheets:
 Pre-Shippers:
 Print Pre-Shipper List:

Load ID:
 Route:
 Item Number:
 Whse Item Type:
 Order:
 Due Date:

To:
 To:
 To:
 To:
 To:
 To:

Output:
Batch ID:

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Specify the Load ID that the system created in Step 2.

Ensure that you select Pre-Shippers.

When Yes, the system prints the pre-shipper list at the printer specified for the warehouse.

Note You can use Bulk Picking Pre-Shipper Print (4.14.18.4) or Multiple Bulk Pre-Shipper Print (4.14.18.6) to reprint bulk pick pre-shippers or print them for the first time if Print Pre-Shipper List was not selected when approving the orders.


Once you have selected the output method, the system creates the pick transactions for the order lines, and prints the pick sheets.

Step 4: Use the RF Next Task option to confirm picking tasks

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Exercise -RF Task Confirmation

▲ Use Next Task Menu



The image shows two Symbol Pocket PC devices. The left device displays a 'Warehouse Management' screen with the following text: 'Release: eB3', 'User ID: UserB', 'Pa: Domain: USA', 'Site: US-D3', 'Warehouse: US-D-3', 'WLG:', 'Location: []', and 'Task: []'. A blue arrow points to the right device, which displays an 'Overpick 164' screen with the following text: 'Fr Loc: DBLK008', 'Loc: []', and 'Chk: []'. Both devices have a numeric keypad and a green 'Enter' key.

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For instructions on confirming tasks using the Rf, refer to Replenishment or Picking chapters.

“Replenishment” on page 87 or “Picking” on page 123 for more information on confirming tasks with the RF.

Bulk Picking Study Questions

- 1 The orders that can be collected to form a bulk pick are sales orders and distribution orders. True or False.
- 2 When creating sales orders for bulk picking what defines the route?
- 3 Which of the following is the only link among sales orders in a bulk pick?
 - a customer
 - b ship-to address
 - c items
 - d warehouse location
- 4 What is a load?
- 5 All order lines with the same load ID are combined, if possible, in the same warehouse transaction. True or False.
- 6 What is the significance of the temporary ID?
- 7 The load ID is automatically generated when you select the order line for inclusion in a bulk pick. True or False.
- 8 In Bulk Pick Control, you can optionally set the number range management (NRM) sequence ID. True or False.
- 9 You must manually approve all bulk pick orders. True or False.
- 10 You set transaction creation when you select the order lines. True or False.


Batch Picking




Batch Picking

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Batch Picking Setup



Batch Picking Setup



- ▲ Assign users to a work location group (WLG)
- ▲ Specify user carts as locations to record movement of stock from a picking location to a cart
- ▲ Set batch-picking control options

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In this section, you will learn how to set up QAD Warehousing for batch picking.

Typically, you follow these setup steps

- Use User Work Location Group Maintenance to assign warehouse staff to a workgroup and set up printers for them.
- Use Warehouse Location Maintenance to set up a user cart as a location.
- Use Batch Picking Controls to set batch-picking defaults and other picking controls.

User Work Location Group Maintenance

User Work Location Group Maintenance? (4.11.3.13)

Site: 10000
Warehouse: 279
Work Location Group: WG01
User ID: ail

System Flavor: C
Device:
External Device Printer:
Form Printer:
ID Printer:
Task Printer:

Use External:
Use External:
Use External:

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Use User Work Location Group Maintenance (4.11.3.13) to assign users to a workgroup and to set up print options specific to the user. You must complete this step for all users if you intend to use task reassignment features.

For the system to function properly, if you define one user-WLG relationship in a warehouse, you must define a relationship for all users in all WLGs in which they work.

Field Descriptions

Work Location Group. Enter the work location group of the user. **User ID.** Enter the ID of the user you are assigning to this WLG.

Flavor. Specify the code to define the style and format of screens to use for displaying warehouse information:

- b: Selection by Reference
- c: Multi-Bin Pick-Up
- d: Dynamic Sizing

You set up flavor codes in Generalized Codes Maintenance (36.2.13). The codes determine the format for information display on devices such as fork-lift truck screens or RF devices.

Device. Enter a code to define the device, such as an RF device, for the user within the WLG. Leave blank to indicate no device.

External Device Printer. Enter the code that identifies the printer the external device uses.

Form Printer. Indicate the code for the form printer for the user or use the lookup to select a printer code.

Enter Yes to Use External if you want RF users to print identifications on an external printer such as a forklift printer. Enter No to Use External if you want RF users to print using the ID printer.

ID Printer. Indicate the code for the ID printer for the user or use the lookup to select a printer code.

Indicate whether the ID printer is an external printer by specifying either Yes or No to Use External.

Task Printer. Enter the code for the printer or use the lookup to select a printer code for the user when printing tasks.

Enter Yes to Use External if you want RF users to print identifications on an external printer such as a forklift printer. Enter No to Use External if you want RF users to print using the ID printer.

Warehouse Location Maintenance

Use Warehouse Location Maintenance to define a location for each user that represents the carts used to temporarily store picked stock until staff move it to the shipping location.

Before you can define a user location:

- Define the user in User Warehouse Data Maintenance (4.11.3.1).
- Optionally, assign the user to a WLG (4.11.3.13).

Important If you define one user-work location group relationship, you must define all possible relationships between all users and all work location groups.

Batch Picking Control

Bulk Picking Control (4.14.24)

Create Bulk Picking Orders
 Bulk Pick History
 Automatically Reselect BPs
 Pre-Shippers
 Print Pre-Shipper List
 Bulk Pick Sheets
 Release Work Orders
 Auto Approve
 Auto Allocate Sales Orders
 Allocate Components
 Override Partial OK

Bulk Pick Sequence ID:
 Load Sequence ID:
 Pre-Shipper Sequence ID:
 Ship Weight UM:
 Net Weight UM:
 Volume Unit of Measure:
 Quantity UM:

Select All
 Select By: Order
 Select By Priority
 Min Status for WD Selection:

Create Date: 12/28/2006 Robin Kronk
 Modified Date: 3/11/2008 Cheryl Crane

Use Batch Picking Control to specify options for warehouse staff that use an RF to perform batch picking.

Batch picking lets warehouse staff pick items in a more efficient method. Because the travel sequence constitutes the largest amount of time involved when picking items from a warehouse, batch picking functionality reorders the order-picking sequence and tasks so that the staff can pick multiple items from multiple orders at various locations throughout the warehouse with a shortened travel sequence. Batch picking functionality is applicable when picking the following:

- Small items with small values from multiple order lines
- Multi-bin items for a single order

Batch-picking functionality calculates the smallest difference in location from the warehouse staff's current location, letting the staff pick several small items from the same storage location for several different orders, then move to the next storage location nearest the staff's current location to pick items from that location. For multi-bin orders, the staff can build a pallet with large boxes of large items for one order with a shortened time sequence through the warehouse. Staff can also pick from negative inventory, for example, during a negative backflush.

Field Definitions

Include Sales Orders. Indicate whether to include sales orders for the batch picking.

No: The system does not include sales orders for batch picking.

Yes: The system includes sales orders for Batch Pick-All on the RF. When warehouse select sales orders, the orders display with the letter S preceding the order number.

Include Distribution Orders. Indicate whether the system includes distribution orders for batch picking.

No: The system does not include distribution orders for batch picking.

Yes: The system includes distribution orders for Batch Pick-All on the RF. Warehouse staff specify Batch Pick-ALL from the RF selection screen to select distribution orders. Distribution orders display with the letter D preceding the order number.

Include Work Orders. Indicate whether the system includes work orders for batch picking.

No: The system does not include work orders for batch picking.

Yes: The system includes work orders for Batch Pick-All on the RF. Warehouse staff specify Batch Pick-ALL from the RF selection screen to select work orders. Work orders display with the letter W preceding the order number.

SO/DO Batch Selection. Indicate whether the system displays customers, orders, or pre-shippers when selecting from the RF screen. The system validates your specification here against Generalized Codes Maintenance. The system displays C=Customer O=Order P=Pre-shipper at the bottom of the screen.

Customer: The system displays customer IDs to select from in the RF screen. You define customers in Address Whse Detail Maint.

Order (the default): Display order numbers to select from in the RF screen. The system displays orders by priority, then due date. The system checks order priority in SO Warehouse Data Maintenance or in DO Warehouse Data Maintenance. The priority defaults from Address Warehouse Detail Maintenance when you create a new order. You can also manually update priority in Address Warehouse Detail Maintenance by entering a new priority in the Priority field.

Pre-shipper: The system displays pre-shipper numbers to select from in the RF screen. The priority defaults from the Priority field in Address Whse Detail Maint.

Allow Merge Orders . Indicate whether warehouse staff can combine items from different orders into containers. The items can be from separate orders but must have the same pre-shipper.

No: Do not combine items from different orders into the same container.

Yes: Combine items from different orders and the same pre-shipper into the same container.

Close Option . Indicate the action to be performed when RF users scan a container other than the one the system defaults in the batch-picking process.

When staff select a container for a given order, the system defaults that container for additional order lines to pick for the same order. If the container is full, staff can scan another container-new box or tote-and the system prompts to close the previous box.

If staff specify Yes to close the box, the system determines the action required for the remaining order lines through options you set in Release Orders Option.

0: Never close container. The system confirms the pick and leaves the previous container open. For the next pick on the same order, staff can use either an old or new container.

1: Always close container. The default container is closed. Because carts can hold only a certain number of boxes or totes, specify this option if it is not practical to open more boxes on the cart. The system determines whether it should continue proposing additional lines by options you set in Release Orders Option.

2: Prompt to close container. The system prompts to close the container and order. The system considers the option you set in Release Orders Option depending upon the response to this prompt.

AutoSelection. Indicate whether the system automatically selects orders with the highest priority.

No (the default): Warehouse staff can select orders for batch picking.

Yes: The system selects orders with the highest priority for picking. The orders are marked with an asterisk (*) on the RF screen. Staff must pick for orders in the order that they display on the RF; that is, they cannot scroll to the bottom of the list or skip orders.

Maximum Selection. Enter the maximum number of sales orders, pre-shippers, or customers that can be grouped for one picking session. The system displays the orders with the highest priority.

Maximum Picked Cases. Enter the maximum number of cartons/totes/boxes that warehouse staff can pick at the same time. You cannot leave this field blank. This number typically depends on the capacity of the cart. When selecting orders from the RF, staff cannot select more orders/customers/pre-shippers than the maximum number of picked cases.

Container/Reference. Specify a container level to create for each tote/box/pallet staff use during the batch-picking process. This field applies to sales and distribution orders only.

Container: The system creates a container level for every tote or pallet in the pre-shipper structure. The items that staff pick and place in the container display as a sub-level of the container. If you set this field to Container, you must specify an item number in Container Item.

Reference: The system does not create a container level. Instead, it uses the reference field of the inventory record as the placeholder for a container number or a kit number. All items staff place in the same container or kit have the same reference number. This field applies to work orders only when specifying a reference for a container. This field also applies to sales orders, if specifying a reference for a kit.

Container Sequence ID. Enter the starting sequence ID for box/tote/container numbers. You specify the sequence IDs in Sequence Definition Maintenance. If staff use preprinted labels, the system does not consider this field.

Container Item. Enter the item number of the container. If you set Container/Reference to Container, you must specify an item number

Container Unit of Measure. Enter the unit of measure for the container. For example, if batch picking items to a box, enter the box UM. You define the UM in Alternate Unit of Measure Maint.

Scan Location. Indicate whether to scan the location from which items are picked.

No: Do not scan the location label or barcode from which items are picked.

Yes: Warehouse staff can access the Location field and scan. To make scanning mandatory, mark the Required field next to the scan option field.

Required. Indicate if the associated scanning operation is required on the RF.

Scan Item Number . Indicate whether to scan the item being picked.

No: Do not scan the item being picked.

Yes: Warehouse staff can access the Item field and scan. To make scanning mandatory, mark the Required field next to the scan option field.

Scan Lot/Serial. Indicate whether to scan the lot/serial number for the picking location.

No: Do not scan the lot/serial number when picking.

Yes: Warehouse staff can access the Lot/Serial field and scan. To make scanning mandatory, mark the Required field next to the scan option field.

Scan Reference. Indicate whether to scan the destination reference when picking.

No: Do not scan the reference ID when picking.

Yes: Warehouse staff can access the Reference field and scan. To make scanning mandatory, mark the Required field next to the scan option field.

Scan Quantity. Indicate whether to scan the quantity picked.

No: Do not scan the quantity picked.

Yes: Warehouse staff can access the Quantity field and scan. To make scanning mandatory, mark the Required field next to the scan option field.

Single Packing Location. Indicate whether batch-picked items are for a single-packing location. For example, if you use a single-shipping location as the packing location, then set this option to Yes. Locations are defined in Warehouse Location Maintenance. Specify a default packing location in Default Packing Location.

No: There are multiple packing locations.

Yes: There is a single packing location. The system eliminates an RF screen since all picks from all references go to the same destination. Once picking tasks are complete and confirmed as completed, the RF screen displays the selection screen with the default location in the To Location field.

Default Packing Location . Specify a default packing location. Locations are defined in Warehouse Location Maintenance.

Label Print Option . Indicate whether labels print automatically, not at all, or if the system prompts to print labels after the order selection is complete but before picking begins. You must specify the print program in Label Print Program. The system prints UCC128/EAN128-format labels for cases, empty boxes, or totes that do not already have a label. Use the look-up browse to select an option.

0: Never print labels before picking.

1: Always print labels before picking.

2: Prompt RF user to print labels before picking.

Note To specify printing after picking, set Postprint Option to Yes.

Printing before picking is useful when you perform multiple order picking. Warehouse staff can print labels for containers, scan the labels and then use the scanned data to ensure that each order is put into the right container. Use the look-up browse to select an option.

Warehouse staff frequently use different sized containers, depending on their picking experience and the picking information the system provides in the picking order selection program specified in Local Exit Routines Setup.

Since the system does not recommend the size of the container/box that staff should use for a given number of picks, staff can select a container/box, then paste the pre-printed box label on the edge of the box, so that it can be easily removed should a different size container be needed when the batch picking is complete.

Post-Print Option. Indicate whether labels print automatically after picking, not at all, or if the system prompts to postprint labels.

0: Never postprint labels.

1: Always postprint labels.

2: Prompt to postprint labels.

Printing after picking, or postprinting, is useful when warehouse staff know the exact contents of the box, tote, or pallet to which they pick. If you use batch picking for multi-bin pickup with only one pallet, warehouse staff typically use post-printed labels, not preprinted labels.

Label Print Program. Specify the print program to use when printing labels. One program is supplied with the warehousing system. The whpripkz.p print program is Loftware-format compatible. You can edit whpripkz.p, using a standard text editor; rename the program; then, enter it here.

RF Screen Height. Specify the number of lines that display on the RF screen. The default is 0 (zero); however, for RF screen readability, enter a number between 6 and 20.

Logical Format. Indicate whether RF users enter logical values 1/0 or Yes/No. Yes/No is applicable to RF devices that have a keyboard. This field is mandatory. Enter the forward slash (/) with either the 1/0 or Yes/No. The system treats the value preceding the slash as positive, and the value following the slash as negative.

Note Entering characters without the slash can cause errors in interpretation. For example, if you specify 10, the system interprets the number 10 as negative.

1/0: RF users can enter the number 1 for positive and 0 (zero) for negative responses.

Yes/No: RF users can type Yes or No on their keypad.

Undo Available. Indicate whether the system prompts to undo picking tasks and leave the batch picking process on the RF when the RF user presses cancel (F4) during picking.

No: RF users are not prompted to undo tasks and leave picking functions after they press cancel.

Yes: If RF users press cancel on the RF screen during picking, the system first displays a prompt to exit the process. If the user specifies Yes, the system displays a prompt to undo and leave picking tasks. If Yes, the system rolls back all completed picks and sets pick tasks to unassigned. Upon exiting the picking process, the system sets confirmed to No or 0 (zero).

Note RF use of Yes/No or 1/0 depends upon control settings.

Release Orders Option. Indicate whether to release the order after the RF user closes a box. Use this field in conjunction with the Close Option field.

0: Never Release Order: When the RF user closes a box, staff can continue picking for the next order lines and open additional boxes for the order.

1: Always Release Order: Staff cannot open additional boxes and the picking process for the order is complete. You should unallocate all remaining picking tasks for the same order so that the system does not present remaining tasks to the picker assigned. You can assign remaining tasks to other pickers.

2: Prompt for Releasing Order: The system prompts to release the order and execute the appropriate action.

Container Length. Specify the number of characters for the container ID. For example, if you specify 8 characters, you can have a container ID as CA000001.

Pallet Print Program. Specify the print program to use when printing labels for pallets. The system default is the whprtpal.p program.

Pallet Print Option. Indicate whether pallet labels print automatically, not at all, or if the system prompts to print labels. You must specify the print program in Pallet Print Program. The system prints labels for pallets that do not already have a label.

0: Never print pallet labels.

1: Always print pallet labels.

2: Prompt RF user to print pallet labels

Prompt to Remove Container. Indicate if you want the system to prompt RF users to remove a container. If users respond to the prompt with Yes, the system removes the box from the pallet. When you view the shipper structure in Order Whse Detail Status Inquiry, the display shows the box below the shipper level, instead of below the pallet. When you remove all boxes in a pallet, the system deletes the pallet, too, and moves all items below the shipper level for the pallet.

No (the default): The system removes the box from the pallet without prompting warehouse staff for confirmation.

Yes: The system prompts warehouse staff to remove the box from the pallet.

Generate Identification. Specify whether the system generates a new container ID when warehouse staff use the RF Container Bld menu option.

No: The system does not generate a new container ID.

Yes: The system generates a new number during RF containerization. You should set up pallet label printing if the system generates new numbers.

Generating a new ID can lead to errors if warehouse staff accidentally press Return in the RF containerization process and Generate Identification is set to Yes. The system considers stock to be on the newly generated pallet number while it may actually be on a different pallet ID.

Explosion Option. Specify whether the system prompts the RF user to enter the number of boxes or splits the items into boxes when you explode a pallet.

0: The RF does not prompt the user to specify the number of boxes. The system splits goods into x boxes of y items, where x and y are values that the system calculates based on the item's base UM conversion factor. You define the conversion factor in Alternate Unit of Measure Maint. If the items cannot be split into boxes equally, the last box contains the remaining items from the conversion.

1: The RF prompts the user to enter the number of boxes into which the contents of the pallet are exploded.

Print Paperwork Option. Indicate the type of message the RF displays when the system checks for pending tasks (unconfirmed tasks) and ensures that inventory is not on the truck.

0: The system does not display messages and does not take action when either condition exists.

1: The system displays a warning message when either condition exists.

2: The system displays a message when either condition exists.

3: The system displays an error message when either condition exists.

Print Features and Options. Enter Yes to print order line item numbers followed by a list of features and options selected for the item or No to only print the item number.

Note This setting applies to sales order shipper processing.

Print Order Details. This field determines whether the order number and order line number associated with line items on the shipper is included in the printed output when printing from the RF.

Assign Shipper Numbers. This field specifies whether you want the system to assign a shipper number when printing shippers from the RF. Assigning the number converts pre-shippers to shippers on the RF>.

In order for the system to generate a number, the NRM sequence for the pre-shipper/shipper must be an internal sequence generated by the system. If the assigned NRM sequence is external, the pre-shipper/shipper is skipped. To use an external sequence, you can assign the shipper number during shipper creation (if pre-shippers are not used), or during confirmation (if pre-shippers are used).

Display Quantity in SO UM. Specify Yes or No for the RF device to display quantities in the UM specified in the sales order.

Note This setting applies to sales order shipper processing.

Print Lot/Serial Numbers. Specify whether a complete list of each of the lot/serial and lot reference numbers shipped print on the shipper when printing from the RF>

No: Each line item shipped is followed by a list of the lot/serial and lot reference numbers shipped.

Yes: Only the total shipped quantity prints fro each line item.

Sequential Shipper Option. Specify the type of message the system displays when it checks for partially loaded pre-shippers or shippers; that is, pre-shippers/shippers for which the truck was loaded, but have pallets remaining to be loaded.

0: The system does not display messages and does not take action.

1: The system displays a warning message.

- 2: The system displays a message and prompts for user confirmation of the message before continuing.
- 3: The system displays an error message and you cannot continue.

Use the setting to ensure all pallets for a given shipment are loaded consecutively in the truck, ideally in the reverse order of unloading so that the unloading process is easier.

Only Shipper Option. Specify the type of message the system displays when it verifies whether users can load both pre-shippers and shippers or just shippers. If you set this option so that users can continue processing despite messages before loading the truck, the system converts any selected pre-shippers to shippers.

- 0: The system does not display messages and does not take action.
- 1: The system displays a warning message.
- 2: The system displays a message and prompts for user confirmation of the message before continuing.
- 3: The system displays an error message and you cannot continue.


Master Bill Ship-To/Dock]. Specify the default ship-to/dock to be used in the RF Ship Truck option when creating master bills of loadings in Master Bill of Lading Maintenance. RF Ship Truck creates an MBOL that includes all shippers being confirmed; this is the ship-to/dock against which the system creates the MBOL.

Confirm on Error. Specify whether RF Ship Truck option should confirm shipments when errors are received from a Transportation Management System (TMS).


No: If there is an error in the communication between QAD warehousing and the TMS, no shipments are confirmed. Use In this case you should use other system shipper confirmation programs to confirm shippers.

Yes: A warning message displays but you can proceed and confirm shippers.

Batch Picking Process



Batch Picking Process



- ▲ Ensure the orders have an existing pre-shipper.
- ▲ Select orders in the RF
- ▲ Pick the items
- ▲ Confirm picking tasks in the RF

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Warehouse staff conduct batch picking by selecting orders and confirming tasks on the RF.

- 1 On the RF session, log in, specifying your login ID and password.

Note If you are a QAD employee, you can run QAD Warehousing for the RF by running a Unix session, then starting a character session that invokes the RF test software. For example, after you set the correct environment, run the RF software for the test93 environment by entering `rundb testaim93rf` at the Unix prompt.

- 2 Specify the site and WLG in which you are picking.
- 3 On the RF screen, select the Picking/Container function.
- 4 On the RF, select either Batch Pick-SO/DO for only sales orders and distribution orders or Batch Pick-ALL for distribution orders, work orders, or combinations of all three types of orders.
- 5 Choose one of the following:
 - Select the orders by entering the order number.
 - Use the arrow keys to move up or down; then press Enter to select the order.

The RF displays selected orders with an asterisk (*). The orders that display are open and available, and have unassigned tasks.

If you selected Batch Pick-SO/DO, orders are preceded with an S or D depending on the type of order you selected.

If you selected Batch Pick-ALL, orders are preceded with an S, D, or W, depending on control options that specify sales, distribution, or work orders.

Other order information that displays includes the number of open picks for the order, the order priority and due date, and the total weight of items for open tasks.

Orders can display by customer, pre-shipper, or order number, depending on control settings.

- 6 Click Next when you finish selecting orders.
The system assigns tasks to you and records the tasks assigned in the transaction file. The assigned tasks are not visible to other users.
- 7 Pick items, and either scan location data from which you pick or the container into which you place picked items, depending on control settings.
If an asterisk displays near the end of the RF screen, you can view order line comments. Press F2 to display line comments on the order.
When you pick an order for the first time, the destination reference (To Reference) is blank until you scan the box or tote. Once scanned, that reference defaults each subsequent time you pick the order.
When you pick an item and place it on a cart, the system moves the stock from the picking location to your user location.
- 8 Print labels for the container either before you pick, when picking is complete, or when you are prompted, depending on control settings.
- 9 Optionally, close the container (box or tote) when it is full, depending on control settings.
- 10 Confirm all picking tasks when you are finished.
The system moves stock from your user location to the shipping location.

Managing Picking Tasks from the RF

The RF device displays the open pick tasks for orders that are part of the work location group in which the staff work. During picking, warehouse staff can press function keys on the RF device to help them manage the picking process:

- F3 displays the order picking status.
- F2 displays sales and distribution order header comments.
- F2 on any field in the picking screen displays the order line comments.
- F4 exits the picking process; however, the cancel function (F4) is disabled while you confirm to prevent canceling picked items.
- F5 skips a task and place it at the end of the task queue.
- F6 drops off all or some of the filled boxes to shipping lanes or staging areas.
- F7 moves contents from one box to another box during picking.

Note Some UNIX terminals, LINUX terminals, and RF devices do not map the F5 key. Typically, terminal users can use the emulation software's key mapping tool; however, users may require the Progress protermcap file to map the F5 key. For RF devices, key mapping may depend on hardware vendors.

Exercise: Conduct a Batch Picking Session



Objectives



- ▲ Print the pre-shipper for an existing order
- ▲ Select orders in the RF
- ▲ Confirm picking tasks in the RF

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

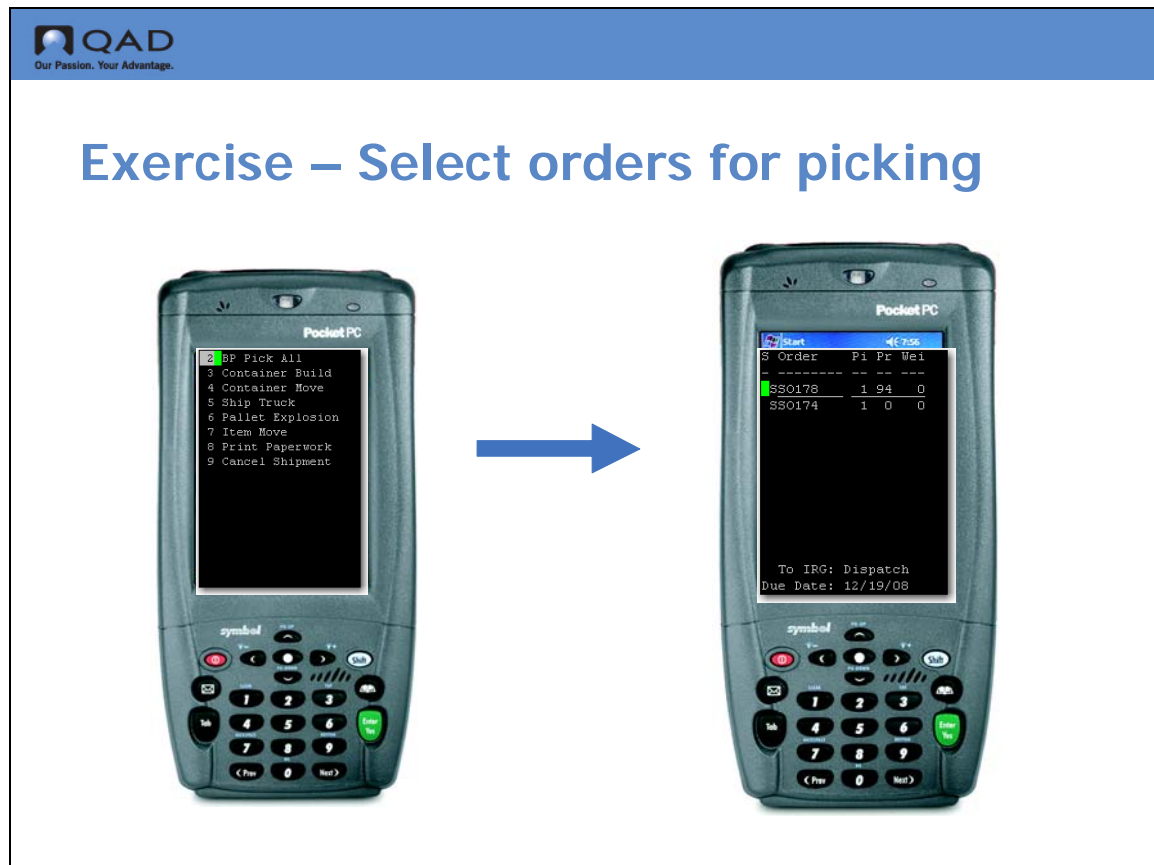
Instruction: In this exercise, you will print a pre-shipper for an order, then use the RF to select the order and batch pick items for the order. Once picked, you will confirm picking tasks on the RF.

1 Use Picklist/Pre-Shipper-Automatic (7.9.1) to print a picklist.

Note You can also use DO Picklist-Pre-shipper (12.19.1) or release a wave in Wave Release (4.15.8) to initiate batch-picking functionality.

2 Use the RF Batch Pick-All option to select orders for picking. (See below).

Step 2: Use the RF Batch Pick-All option to select orders for picking.



- 1 Log onto the RF, then select the 3. Picking/Container.
- 2 Select 1. BP Pick-ALL
- 3 Select the orders by entering the order number.

Note Orders are preceded with an S, D, or W, depending on control options that specify sales, distribution, or work orders.

- 4 Click Next when you finish selecting orders.
The system assigns tasks to you and records the tasks assigned in the transaction file. The assigned tasks are not visible to other users.

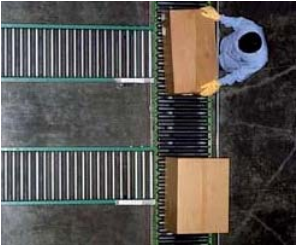




Batch Picking Study Questions

- 1 Which one of the following is not a good application for batch picking:
 - Small items with small volume
 - Multiple order lines
 - Multi-bin items for a single order
 - Multiple items with large volume
- 2 For multi-bin orders, warehouse staff can specify the maximum number of orders to batch pick. True or False.
- 3 What is the difference between bulk picking and batch picking in QAD Warehousing?
- 4 Which one of the following is the primary reason you set up User Work Location Group Maintenance for batch picking:
 - Assign users to a picking location and set user profiles
 - Assign users to a workgroup location and set printing options
 - Assign users to a dedicated warehouse location and set default picking options
 - Assign users to a working group and set location defaults
- 5 You must set a system flavor code for users in a workgroup to:
 - Set the system interface default colors
 - Set the warehouse default scanning codes
 - Specify the code to define the style and format of screens for displaying warehouse information
 - Set the system picking code defaults
- 6 Batch Picking Control consists of several frames, not just for batch picking. True or False.
- 7 You can include work orders, sales orders, distribution orders, and purchase orders as part of your batch picking. True or False.
- 8 For one picking session, you can specify the maximum number of orders, pre-shippers, customers, or pallets that can be grouped for one picking session. True or False.
- 9 You can specify whether scanning is a mandatory part of batch picking for warehouse staff. True or False.
- 10 On the RF, you select either Batch Pick-SO/DO for only sales orders or Batch Pick-ALL for sales, distribution orders, work orders, or combinations of all orders. True or False.

Chapter 7

Inspection/Quality

Overview



Inspection/Quality

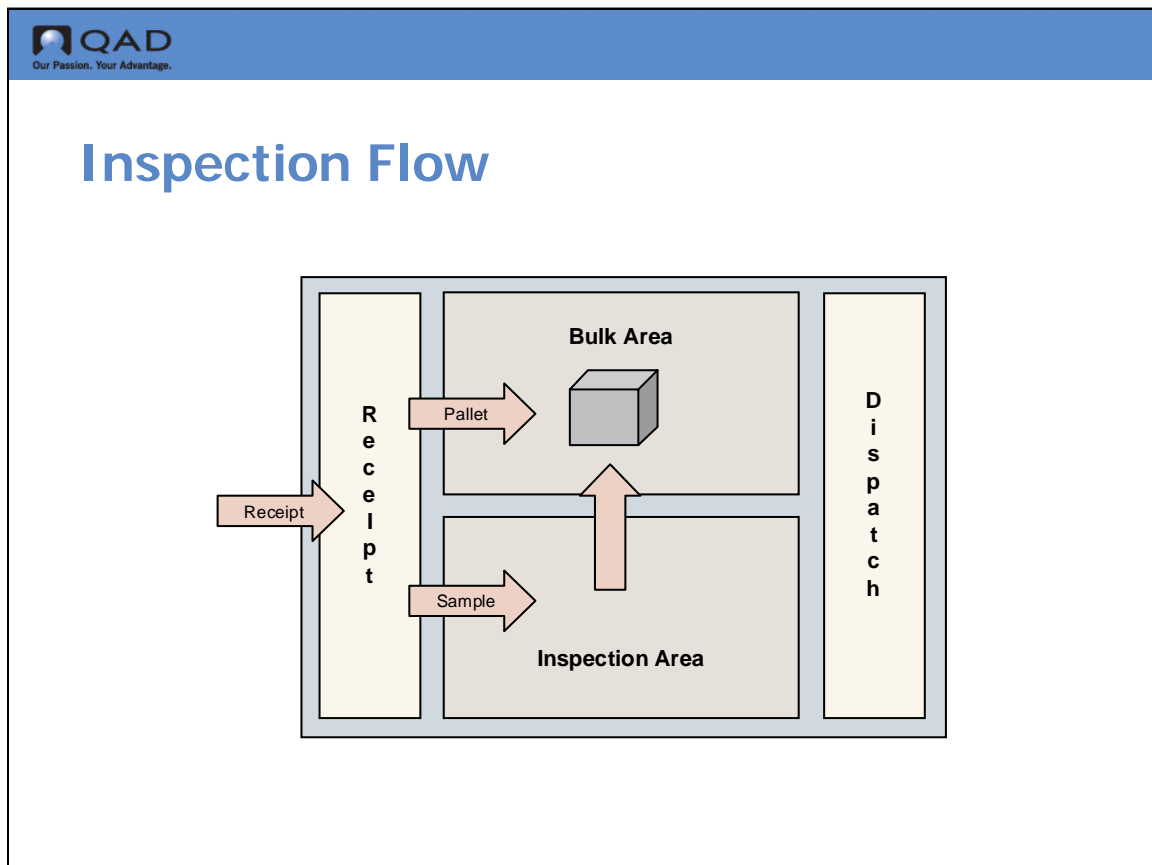
QAD Proprietary

A suggested setup sequence for Wave Planning includes these general setup steps:

- Learn inspection concepts
- Set up WLGs, SLGs and IRs for inspection.
- Link transaction types to IRs.
- Assign algorithms to the transactions.
- Set up items for inspections.
- Specify the inspection for the IR.

Once setup is complete, you can create a PO, receive items from the PO, move the items to an inspection area, inspect, then enter inspection results.

Inspection Flow Concepts



QAD Warehousing supports quality inspection with sample control, change of inventory status, and creation of warehouse transaction.


During a receipt, the quality algorithms are started. These determine if an inspection is required and an inspection tag is printed based on different criteria such as the receipt frequency, if the previous inspection was bad, if an inspection is required on the order, and so on.

If the quality algorithm returns a sample quantity to be inspected, a transaction or movement is created from the source location to an inspection area. After inspection, typically by the RD device, the sample is sent back to the inventory area, using a standard put-away algorithm.

Inspection Flow

In the graphic above, you receive a full pallet. The inspection algorithm identifies that an inspection is required and looks for an internal routing for the corresponding transaction type. The algorithm also calculates what quantity to control, and this sample quantity follows the quality inspection internal routing. The remaining items on the pallet continue the normal flow according to the receipt internal routing, and move to the Bulk Area.

Inspection Setup



Inspection Set Up

- ▲ Optionally, set up inspection parameters for a particular supplier
- ▲ inventory status to inspection
- ▲ Set up internal routings from receipt to inspection areas and from the inspection to storage areas
- ▲ Link transaction types to the IR for inspections and the IR for items returning from inspection
- ▲ Assign algorithms to transaction types
- ▲ Set up items for inspections
- ▲ Specify the inspection for the IR
- ▲ Optionally, change the status of inspected items

QAD Proprietary

To set up for inspection:

- Optionally, use QAD EE Supplier Item Inspection Maint to setup inspection parameters for a particular supplier.
- Use Internal Routing Group Maintenance to specify an IRG for inspections.
- Use Storage Location Group Maintenance to specify an storage area for inspected items.
- Use Warehouse Location Maintenance to set up an inspection inventory status.
- Use Internal Routing Maintenance to define an IR for an inspection pathway and to define an IR for a pathway for items returning to storage from inspection.
- Use Internal Routing Assignment Maintenance to link the INSP-PO transaction type to the IR for inspections and to link the BACK-PO transaction type to the IR for items returning from an inspection.
- Use Algorithm Assignment Maintenance to link algorithms to the INSP-PO, BACK-PO, and RCT-PO transaction types.
- Use Item-Warehouse Maintenance to define warehouse item attributes for inspection, specifically the inspection frequency, logical fields, and sample quantities. Use this program to also set up selective inspections.
- Return to Internal Routing Maintenance to specify the inspection.
- Optionally, use Inspection Status Change Maintenance to keep inventory awaiting inspection results from becoming blocked.

Supplier Item Inspection Maintenance (Optional Step)

Supplier Item Inspection Maintenance (4.4.13)

Supplier: Item Number:

Inspection Data

Selective Inspection:
 Inspection Frequency:
 Inspection Frequency (Days):
 Destructive:
 Sample Quantity:
 Sample Percent:
 Random Inspection %:

Sample Inspection Maintenance

Ref.	Lot/Serial	Ref	Qty to Insp	Fa	Inc
		PL000445	10000	<input type="checkbox"/>	<input type="checkbox"/>

WARNING: End of data.

QAD Proprietary

Use Supplier Item Inspection Maintenance to specify inspection parameters for particular items from specified suppliers. These values are used during inspection flow to provide the inspection frequency and the quantity to be inspected.

Field Descriptions

Supplier/Item Number. Enter a valid supplier code, then the item from this supplier.

Validating and Failing Samples

Click Go to move to the list of items in Supplier Item Inspection Maintenance; then use the pull-down menu to enter inspection results that display on either a standard monitor or the RF device. Be sure to click the Inc(lude) field to include the item.

Internal Routing Group Maintenance

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Internal Routing Group Maintenance (4.2.1)

Internal Routing Group Maint

Go To Actions Copy Print Preview

Site: US-D3

Warehouse: US-D-3

Internal Routing Group: Inspect

Description: Inspection Area

Functional:

SLG Default Values

Allow Issues:

Allow Receipts:

Allow Outgoing Returns:

Allow Incoming Returns:

Back Next

QAD Proprietary

Use Internal Routing Group Maintenance to define a name and a description for an inspection area in the warehouse.

Field Descriptions

Internal Routing Group. Specify an IRG for inspections.

Functional. Enter Yes if this internal routing group is a functional area, such as receipt or dispatch, in which the system uses location-find algorithms to select locations when stock is moved into the area. Enter No if this is a non-functional area, such as general storage, in which the system uses put-away algorithms to select locations when stock is moved into the area.

Storage Location Group Maintenance

Storage Location Group Maintenance (4.3.1)

Storage Location Group Maint

Go To Actions Copy Print Preview

Site: US-D3

Warehouse: US-D-3

Storage Location Group: **Inspect**

Description: Inspection SLG

Internal Routing Group: **Inspect**

Allow Issues: Exclude from Picking:

Allow Receipts: Picking Level: 0

Allow Incoming Returns: Over Pick:

Allow Outgoing Returns: Picking Multiple UM: Multi-Trans:

Opportunity Counts: Detail Overflow Group:

Opportunity Count Frequency: 0 Capacity Check when DTF:

Check Digits: Optimized Storage:

Cycle Count Status Option: 0 Acquisition UM: Allow Mixed Status Codes:

Recount UM:

Back Next

QAD Proprietary

Use Storage Location Group Maintenance to create a new SLG area for items to be inspected.

Field Definitions

Storage Location Group. Enter the code that identifies the storage location group you want to create or modify.

Internal Routing Group. Specify the inspection IRG.

Warehouse Location Maintenance

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Warehouse Location Maintenance (4.3.13)

Warehouse Location Maintena... x

Go To Actions Cc Warehouse Location Maintenance

Site: US-D3 Warehousing Site

Location: DIns001

QAD Location Data

Description: Inspection Location

Inventory Status: Inspect

Permanent:

Item Location Type:

Single Item:

Single Lot/Reference:

Capacity: 0.0 UM:

Location Dimensional Data

Height:	0.00
Length:	0.00
Width:	0.00
Dimensional Unit of Measure:	
Percent Full:	0.00

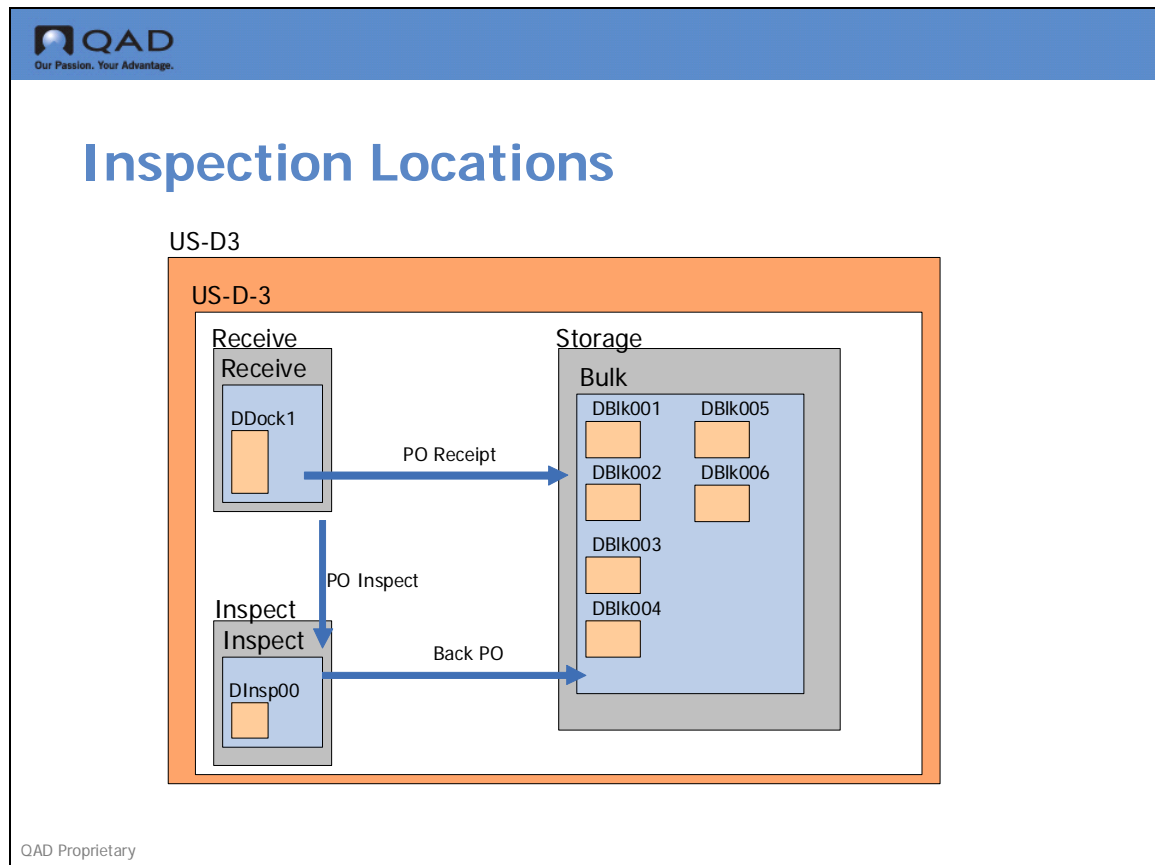
Back Next

QAD Proprietary

Use Warehouse Location Maintenance to:

- Set up an inspection inventory status for each location
- Define individual locations for inspection.

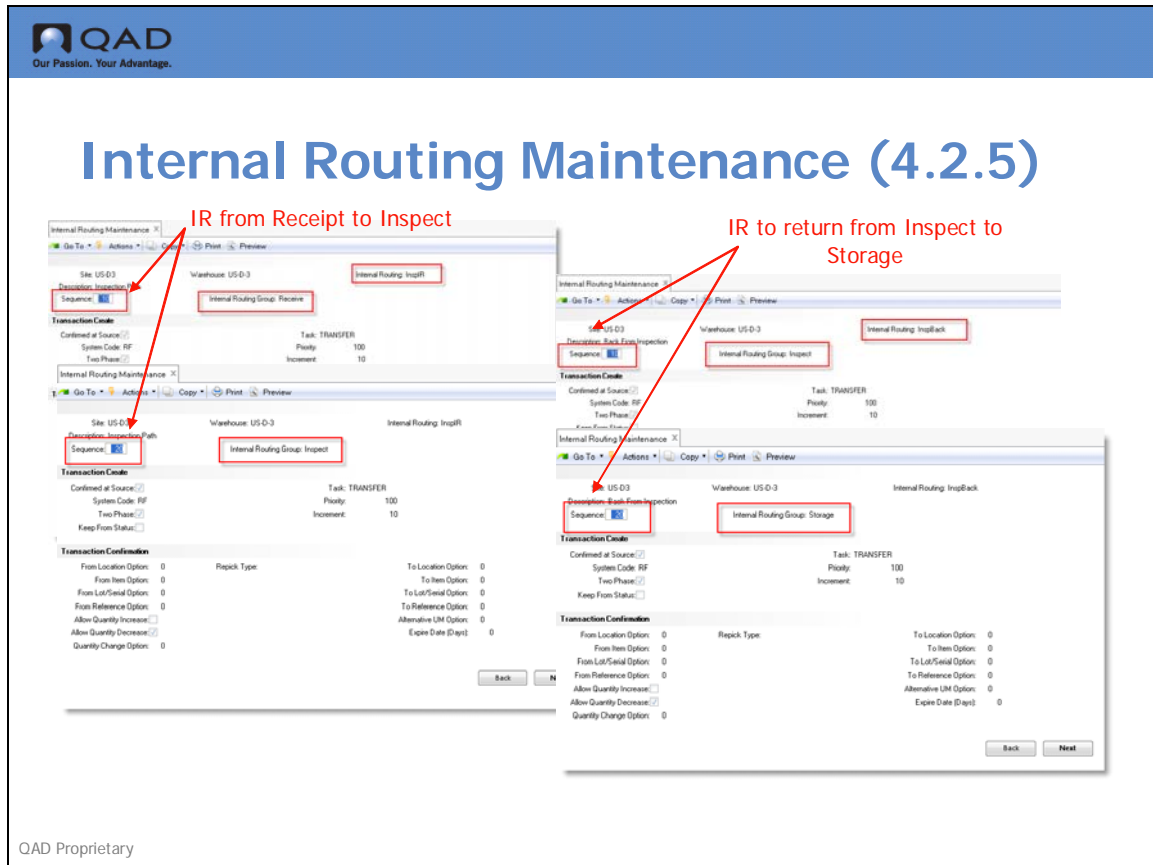
Defining Locations



QAD Proprietary

To define individual inspection locations, specify the location name in the Location field in Warehouse Location Maintenance. For example, in the figure below, define a location for DIInsp00 within the Inspect area.

Internal Routing Maintenance



Use Internal Routing Maintenance to define the pathways through your warehouse that you want your inventory to take.

Create separate IRs for:

- An inspection path from the receipt area to the inspection area.
- A path for items that are returned to storage from the inspection area.

For each sequence step within an internal routing, you can also specify a number of parameters that control how the inventory is processed as it reaches that point in the sequence.

Field Definitions

Internal Routing . Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Sequence . Enter the number that identifies the order of this routing step.

Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, number the sequences as 10, 20, 30 rather than 1, 2, 3.

Internal Routing Group . Specify for this sequence step of the routing the next IRG to which the inventory should move.

Internal Routing Assignment

Use Internal Routing Assignment Maintenance to link transaction types to internal routings.

You should assign transactions for the:

- Internal routing that is the inspection path from receipt to the inspection area (use INSP-PO transaction.)
- Internal routing that is the path for items returned to storage from inspection (use BACK-PO transaction)

BACK-PO tasks are related tasks the system creates after a sample inspection.

Example You inspect one whole pallet and want to move the inspected pallet to the bulk area. If you set up the BACK-PO IR and transactions for after a sample inspection and validation, the system automatically creates one task to move the pallet from the inspection area to bulk area.

Field Definitions

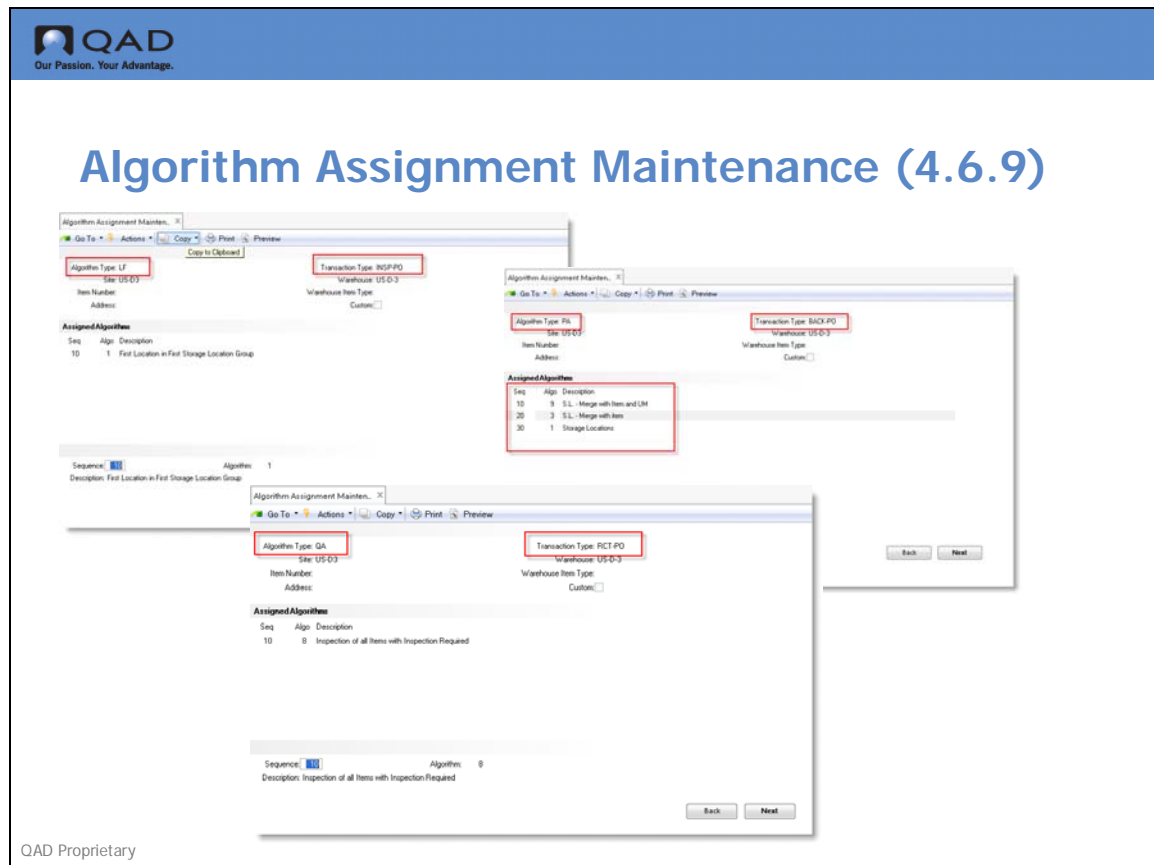
Transaction Type. This field is used to specify the transaction type.

Maintain transaction types using Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Algorithm Assignment Maintenance



Use Algorithm Assignment Maintenance to link a specified sequence of algorithms (of one type per sequence) to a defined combination transaction type, site, warehouse, item number, or address.

For this training, create records to assign the:

- LF (location find) algorithm to the INSP-PO transaction type
- PA (put away) algorithm to the BACK-PO transaction type
- QA (quality assurance) algorithm to the RCT-PO

Field Definitions

Transaction Type. This field is used to specify the transaction type.

Maintain transaction types using Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

You also specify the transaction type when using the Algorithm Simulation Menu. These options simulate either location-find and put-away, or picking. The system simulates the running of the algorithms that you have assigned to the specified transaction type and displays the results of the simulated put-away or picking.

Quality Inspection Algorithms

Quality inspection algorithms that are supplied with the system include the following:

	Algorithm	Description
1	Inspection of Item Every X Days	Inspection on a cyclic basis, using the frequency in days defined at the item/warehouse level or at the item/supplier level from the last receipt of a given item.
2	Inspection of Item from Given Supplier every X Days	Inspection on a cyclic basis, using the frequency in days defined at the item/warehouse level or at the item/supplier level from the last receipt of a given item from a given supplier.
3	Inspection if previous Item Inspection was bad	Inspection takes place if previous inspection failed for the item.
4	Inspection if previous Inspection from supplier was bad	Inspection takes place if previous inspection failed for <i>any</i> item coming from a given supplier.
5	Inspection if previous Item Inspection from supplier was bad	Inspection takes place if previous inspection failed for a <i>given</i> item coming from the given supplier.
6	Inspection if inspection required on order (PO,WO only)	Inspection takes place if the order field for Inspection Required has been set to Yes.
7	Inspection ID Quantity Received is greater Quantity Required (PO Only)	Inspection takes place if the quantity received is larger than expected. This algorithm only works with purchase orders.
8	Inspection of All Items with Inspection Required	Inspection takes place if the item is marked for inspection in Item/Warehouse Maintenance.
9	Inspection of Item every X receipts	Inspection frequency is based on the receipt frequency defined at the item/warehouse level or at the supplier/item level.
10	Random Inspection	Inspection is based on a random % defined at the item/warehouse level or at the item/supplier level. This percentage can be dynamically changed based on the results of the inspection.
11	Inspection if new Item (No existing PO Receipt)	Inspection takes place if no existing PO receipt exists for this item; it is received for the first time.

Item-Warehouse Maintenance

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Item-Warehouse Maintenance (4.4.11)

Item-Warehouse Maintenance x

Go To Actions Copy Print Preview

Item Number: D-15020 Item S020
 UOM: EA
 Site: US-D3 Warehousing Site
 Warehouse: US-D-3 Warehouse D-3

Inspection Data

Selective Inspection: Sample Quantity: 1 Ref:
 Inspection Frequency: 0 Sample Percent: 0
 Insp Freq (Days): 0 Destructive:
 Random Inspection %: 0

Back Next

QAD Proprietary

Use Item-Warehouse Maintenance to define warehouse item attributes for inspection, specifically the inspection frequency, logical fields, and sample quantities.

Field Descriptions

Selective Inspection. Enter Yes if you want this item to be inspected every time the corresponding algorithm is used. Only items marked for selective inspection are considered for inspection.

Inspection Frequency. Specify the number of receipts between each inspection of this item when the corresponding algorithm is used.

Insp Freq (Days). Specify the number of days separating two consecutive inspections of this item when the corresponding algorithm is used.

Random%. Specify the probability of this item being inspected when the corresponding algorithm is used.

Sample Quantity. Specify the sample quantity to consider. If Reference is Yes, quantity indicates a number of references, such as pallets, to consider for inspection. Otherwise, quantity is in the base UOM of the item.

Ref. Indicate if the inventory to be inspected includes pallet reference numbers.

Sample%. The sample% is used in place of the sample quantity. It represents the percentage of items inspected out of those being received.

Destructive. Indicate if the inspection test is a destructive test. When set to Yes, the inspection sample is assigned a specific status after inspection. This stock must be deleted manually, using an unplanned issue, for example.

Returning to IR Maintenance to Start Inspection

The screenshot displays the 'Internal Routing Maintenance - Receipt' window. Key elements include:

- Title:** Internal Routing Receipt
- Site:** US D3
- Warehouse:** US D 3
- Description:** Receipts
- Sequence:** 20
- Internal Routing Group:** Storage
- Transaction Confirmation:**
 - Confirmed at Source:
 - System Code: RF
 - Two Phase:
 - Keep From Status:
- Transaction Confirmation Options:**
 - From Location Option: 0
 - From Item Option: 0
 - From Lot/Serial Option: 0
 - From Reference Option: 0
 - Allow Quantity Increase:
 - Allow Quantity Decrease:
 - Quantity Change Option: 0
- Print Options:**
 - Print ID:
 - Print Created Tasks:
 - Print Confirmed Tasks:
 - Print Exceptions:
 - Print Mode (ID): Auto
 - Create Print Mode: Auto
 - Confirmed Print Mode: Auto
 - Exception Print Mode: Auto
- Miscellaneous Options:**
 - Mode: Auto
 - New Unit of Measure:
 - Clear Shortages:
 - Create Shipment:
 - Check Inspection:

Buttons at the bottom include 'Back' and 'Next'. A warning message at the bottom left reads 'WARNING: End of data.' The QAD logo and 'QAD Proprietary' are visible at the bottom left of the window.

When you have items setup and you are ready to inspect items, return to Internal Routing Maintenance (4.2.5) and ensure that you check Yes for two fields for the Receipt IR:

- Keep From Status
- Check Inspection

Field Descriptions

Keep From Status. Indicate how the system should set the status of transferred inventory.

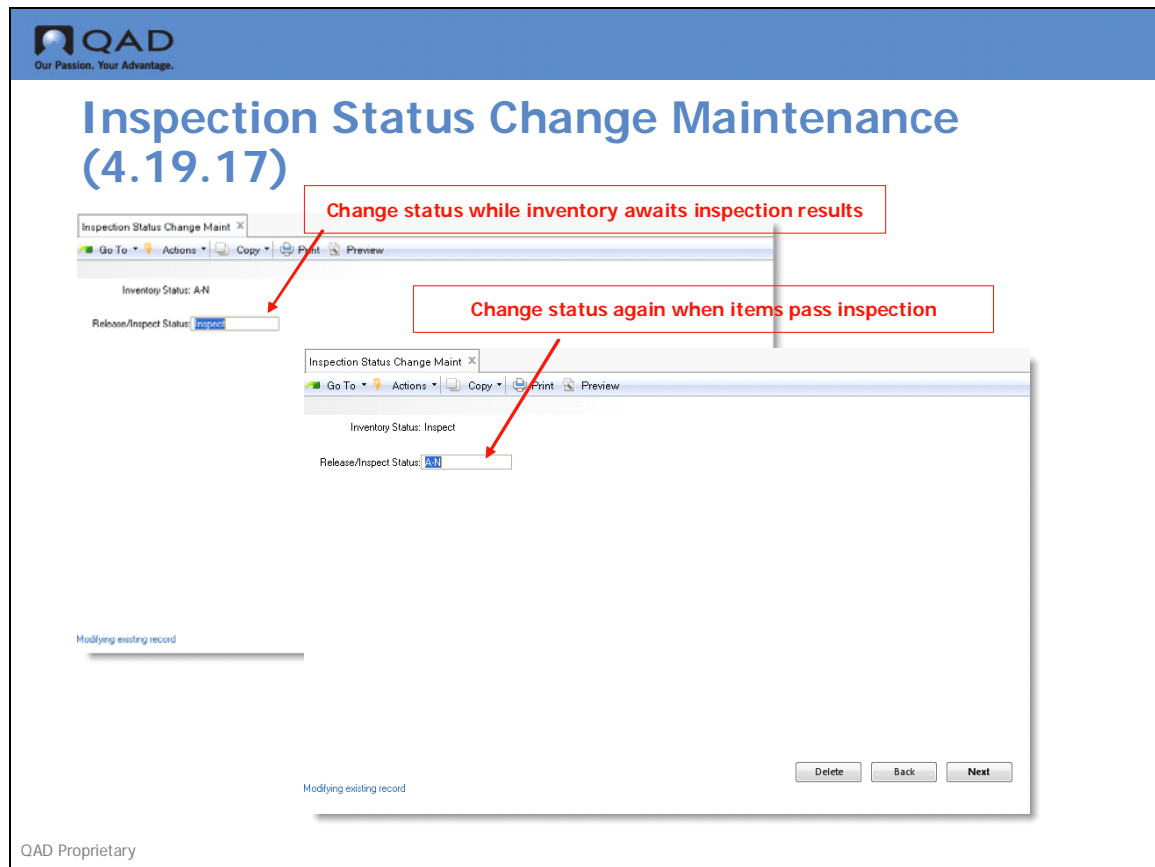
No: The inventory takes its status from the new location.

Yes: The inventory status of the transferred inventory retains its original value.

This field defaults to the internal routings and work location groups that you set up in this warehouse.

Check Inspection. Entering Yes causes the Inspection (QA) algorithm to be run to determine whether inspection must take place.

Inspection Status Change Maintenance



While a sample is in the inspection area waiting inspection results, the inventory related to the sample can become physically blocked. Use Inspection Status Change Maintenance to modify the status associated with inventory being inspected, based on its original status. You can use this in two situations:

- While a sample is in the inspection area waiting inspection results, you can prevent any transactions with the inventory by changing its status. Change Inspection Status Maintenance lets you define the new status of this inventory, based on its original status.
- Similarly, after a successful inspection is performed, you can release the inventory by changing its status again.

Field Descriptions

Inventory Status. Inventory status codes identify the status of inventory at a specific site and location with a specific lot/serial number and lot reference.

Inventory status codes determine whether specific inventory balances on hand are available for allocation to sales orders or work orders, are considered available by MRP, and are allowed to go negative.

Inventory status codes also restrict particular transactions at specific locations -- you can restrict issues from an inspection location.

Inventory status codes are assigned when items are received by inventory. They can be changed using Inventory Detail Maintenance or Detail Maintenance by Item/Lot. PO Rcpt Status assigns a default inventory status code for purchase order receipts. WO Rcpt Status assigns a default inventory status code to work order receipts.

Release/Inspect Status. Enter a valid inventory status code defined in Inventory Status Code Maint. The system changes the sample ID to the status code you specify when the sample is moved to the inspection area. Release/Inspect Status needs to be a valid status code defined in

Inspection Processing



Inspection Processing



- ▲ Create a PO and receive goods into the warehouse
- ▲ Move stock from receiving area to storage and inspection area
- ▲ Validate inspection samples

QAD Proprietary

To conduct the inspections:

- In QAD EE:
 - Use Purchase Order Maintenance to create a PO.
 - Use Purchase Order Receipt to receive goods into the warehouse.
- Use QAD Warehousing on RF device to pick items for the inspection.
- Use Sample Inspection Maintenance to enter the inspection results and validate the inspection.

Purchase Order Maintenance

Purchase Order Maintenance (5.7)

Purchase Order Maintenance X

Go To Actions Copy Print Preview

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P01043 Supplier: A2001 Ln Format S/M: Single

Lines

Ln	Site	Requisit	Item Number	Qty Ordered UM	Unit Cost	Disc%
1	US-D3		D-4S020	300.0 EA	0.00	0.00%

Line Details

Qty Received: 0.0 Due Date: 10/15/2008 CRT Int: 0.00
 Qty to Ret: 0.0 Pur Acct: 6600 Cons
 Single Lot: Performance Date: 10/15/2008 Project
 Location: DDock1 Need Date: 10/15/2008 Type:
 Item Revision: Sales/Job: Taxable: H
 Status: Fixed Price: Inspection Requi: Cmnts:
 Supplier Item: UM Conversion: 1.0000
 Manufacturer: Stock UM Quantity: 300.0 EA
 Description: Item S020 Update Avg/Last Cost: Extended Net Cost: 0.00

WARNING: Beginning of data.

End Lines Next

QAD Proprietary

Use Purchase Order Maintenance (5.7) to create a purchase order for the items you want to receive.

Field Descriptions

Purchase Order. Enter an existing PO number or leave blank to create a new PO number.

Item Number. Enter the code for the item you receive into the warehouse to be inspected.

Qty Ordered. Enter the quantity ordered.

Note You must also link the storage location group to the item you are receiving using Item-Warehouse Maintenance (4.4.11).

Purchase Order Receipts

Use Purchase Order Receipts to receive the goods into the warehouse.

Note You can receive items using Receipts–Unplanned (3.9).

Field Descriptions

Order. Specify the purchase order number.


Item Number. Specify the item number.

Quantity. Specify the quantity you want to receive into the warehouse.

Receipt Detail


The Receipt Detail frame depicts the location of the receipt and the reference (pallet IDs) of items being received.

RF Picking Task Confirmation


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RF Picking Task Confirmation

▲ Use Next Task Menu



Warehouse Management
Release: eB3
User ID: UserB
Pa:
 Domain: USA
 Site: US-D3
 Warehouse: US-D-3
 WLG:
 Location:
 Task:

→



Transfer 156
 Loc: DDock1
PL Ref: PL000806
 Ref:

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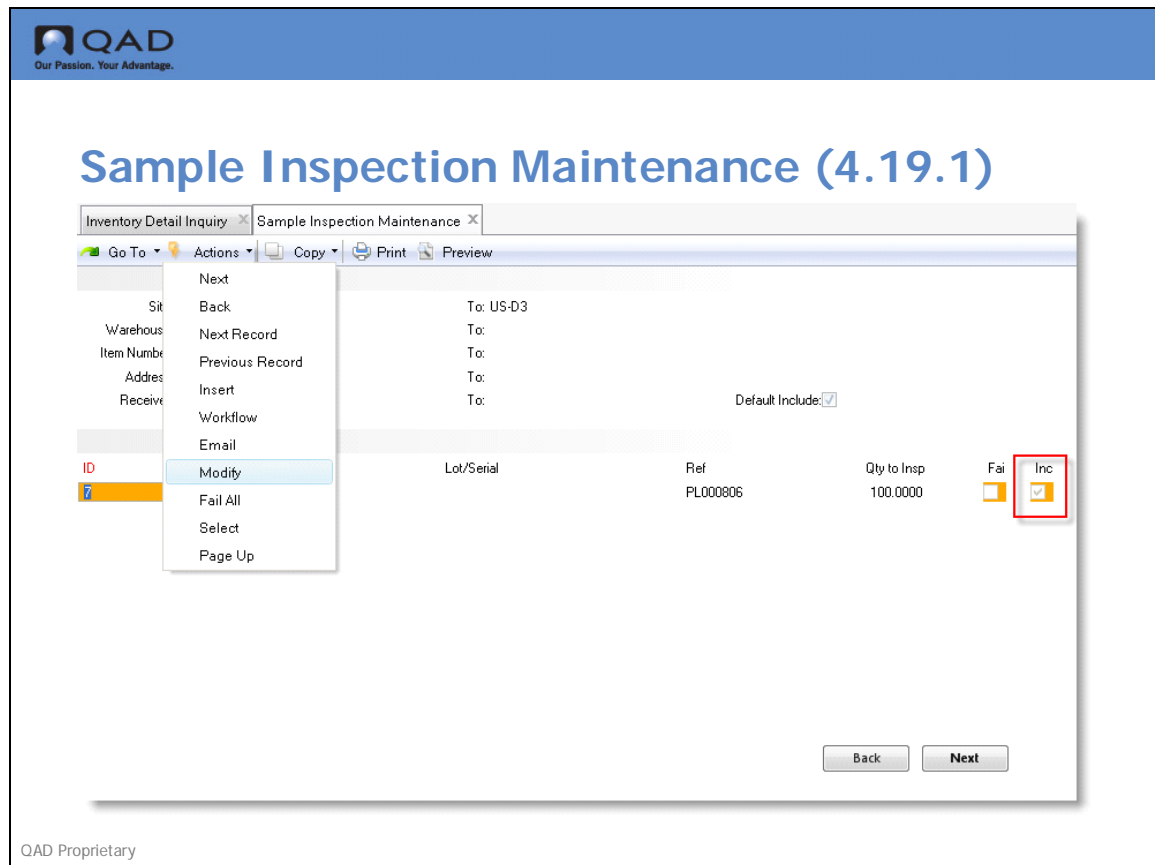
Warehouse staff conduct picking by selecting orders and confirming tasks on the RF.

- 1 On the RF session, log in, specifying your login ID and password.

Note You can run QAD Warehousing RF software from within QAD Warehousing.

- 2 Specify the site and WLG in which you are picking.
- 3 Select Next Task (1)
- 4 Enter the item origin location in the Fr Loc field.
- 5 Scan or enter the item you are pick in the Ref(erence) field.
- 6 Enter the item destination location in the To Loc field.
- 7 Confirm all picking tasks when you are finished.
The system moves stock based on your picks.

Sample Inspection Maintenance



Use Sample Inspection Maintenance to enter the inspection results and validate the inspection.

Select the sample group to inspect; then, enter the inspection results.

- 1 Select a range of samples in the first frame.

Samples display only if the sample has reached its destination location, the inspection location. If you have any open transaction for the sample, inspection results cannot be entered.

You can select a sample from the resulting list to view its details.

- 2 Enter details of the inspection status (Fail or Pass).
- 3 Enter additional information regarding the generation of return transactions and the quantity to be returned.

The Create Transaction defaults from Quality/Inspection Control. The return quantity depends on the test. If some pieces are destroyed during the test, the return quantity is different than the sample quantity. If the return quantity is always the same as the sample quantity, the Return Quantity prompt can be skipped by setting the Update Quantity field in Quality/Inspection Control to No.

The results of the inspection depend on whether the test is destructive, whether the test passed or failed, and whether Create Transactions is set to Yes or No.

Field Definitions

Receiver/To. Enter a range of receiver numbers that uniquely identify the receiving history created by a purchase order receipt or return transaction. Leave blank for a system-generated number.

When you receive or return purchased items, the system creates a receiving record (receiver) for verification against the supplier's invoice when entered into Accounts Payable. The system assigns the receiver the number you or the system specifies here. The next receiver number is recorded in Purchasing Control and incremented automatically by the system.

The system displays the receiver number and receiver data on reports and inquiries.

Default Include . Indicate whether the Inc field for the sample inspection display is set to Yes to include samples that match criteria you specify.

No: Do not set the Inc field to Yes in the sample inspection display. Samples that match the default criteria are not included.

Yes: Set the Inc field to Yes in the sample inspection display to include all samples that match the default criteria.

Use this field to streamline program execution if you typically include all selected samples when executing this function.

Exercise: Create PO, Receive Goods, Move Stock, and Validate Inspection



Objectives

- ▲ Create a Purchase Order and receive goods into the warehouse with Purchase Order Receipts menu
- ▲ Use the RF Device to move stock from receiving area to Storage and Inspect area
- ▲ Validate Inspection sample

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The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will use QAD EE to create a PO, receive the goods on the PO, pick the goods from the storage area and move them to an inspection area, then validate the inspection by entering inspection results.

Throughout the exercise, you will verify that the system records tasks and provides expected results through the use of QAD EE or Warehousing Inquiries. So, your complete exercise consists of the following major steps:

- 1 Complete all setup steps to create WLGs, SLGs, IRs, and assign algorithms and transactions as specified in the setup portion of this chapter.
- 2 Use Purchase Order Maintenance (5.7) to create a PO for valid items.
- 3 Use Purchase Order Receipt (5.13.1) to receive the goods on the PO.
- 4 Use the RF Next task option to confirm picking items from the receipt area and moving them to the inspection area.

- 5** Use Inventory Detail Inquiry (4.8.17) to verify items moved to the inspection area.
- 6** Use Sample Inspection Maintenance (4.19.1) to enter inspection results.



Study Questions

- 1 When are quality algorithms typically started:
 - a During a receipt
 - b After movement confirmation
 - c When you start engines for the inspection
 - d After inspection tasks are assigned to the user
 - e None of the above.
- 2 Inspection tags are printed based on which of the following criteria:
 - a Receipt frequency
 - b A previous bad inspection
 - c An inspection is required on the order
 - d All of the above
 - e None of the above.
- 3 Which algorithm is typically used after an inspection?
- 4 Inspection algorithms identify an inspection is required and look for the correct IRG to use as an inspection location. True or False.
- 5 For complete inspections, you must specify inspection parameters for both the supplier and the item in QAD EE programs. True or False.
- 6 How many IRs do you typically use in an inspection and why?
- 7 Which program do you use to specify warehouse item attributes?
- 8 Which program do you use to keep inventory from being blocked while it awaits inspection results?
- 9 You can use the INSP-PO transaction type for both the inspection IR and the return IR. True or False.
- 10 Which program do you use to define individual locations for inspection:
 - a Storage Location Group Maintenance
 - b Location Maintenance
 - c Internal Routing Group Maintenance
 - d Warehouse Location Maintenance
 - e Warehouse Maintenance

Chapter 8

Cycle Count

Overview



Cycle Counting

QAD Proprietary

A suggested setup sequence for Wave Planning includes these general setup steps:

- Learn cycle count concepts.
- Specify the system generate cycle count transactions.
- Set up items and WLGs for cycle count.
- Assign users to cycle count tasks.

Once setup is complete, you can create a PO, receive items from the PO, receive and confirm cycle count tasks through RF, then review inventory.

Cycle Counting Concepts



Cycle Counting Concepts

- ▲ Count/Recount Tasks
- ▲ Opportunity Counts
- ▲ Parameters
- ▲ Cycle Count Transactions
- ▲ Count on Fail
- ▲ RF Audit

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A cycle count is a count of inventory items to monitor stock levels and maintain inventory accuracy. You initiate cycle counts manually or automatically.

Once you do, the RF displays a cycle count frame, prompting the warehouse employee to count the level of stock remaining in a location.

Count and Recount Tasks

Warehouse staff perform count tasks when stock quantities are inside the tolerance; they perform recount tasks when stock quantities are outside the tolerance. You define the tolerance in the inventory count parameters specified in Inventory Control (3.24). You can generate cycle count tasks using Cycle Count Generation (4.8.12).

When a warehouse is empty, you can generate cycle count tasks for every location in the warehouse, populating the database with inventory.

You confirm or process cycle count tasks by RF devices or Movement Confirmation programs, with cycle count tags being automatically generated, if required.

Opportunity Counts

Unlike cycle counts, opportunity counts are triggered automatically by stock movements. Certain conditions—for example when stock is picked or transferred from a non-special SLG s—cause the system to check the opportunity count threshold for that item.

If this is found to be at or below the threshold level set using the Opp Cnt Threshold field, the system initiates a cycle count. This allows cycle counts to be performed on an on-going basis, reducing the need to do a large cycle count all at once.

Also, if the OPC frequency is over the date specified in the Last OPC Date (Location), the system triggers an opportunity count.

Parameters

You can set the ABC Class field in Item Master Maintenance (1.4.1) to classify the value of items to be counted. The more valuable the item, the more frequent the count. So, items with class A are counted more frequently than B class, and so on.

Cycle Count Transactions

When you set Create Transactions fields in Cycle Count programs, the system generates a report of the items and locations that will be counted and creates transactions.

Count on Fail Option

You can set the Count on Fail field in Work Location Group Maintenance (4.3.9) so that the system creates a cycle count task at the WLG level for the RF user when the user confirms with a lower quantity because stock was not available to pick for the specified quantity. When the Count on Fail user is prompted to enter a fail during picking.

RF Location Audit

From the RF, you can select Location Audit (1.4) to start a cycle count or a recount of a bin location. You can use functions in Location Audit to:


- Count the contents of a bin or pallet.
- View the stock you want to recount.
- Recount items that are not in the system yet.

After you select the Location Audit function, scan the location. The RF displays all pallets in the location. Select the pallet you want to audit. The RF displays item numbers and current quantities. Select the item you want recounted. If there are no pallets, the RF skips pallets and displays the items only. Once you select the item, the system creates a cycle count or a recount task.

Cycle Count Setup



Cycle Count Setup

- 
- ▲ Generate cycle count transactions/task
 - ▲ Classify the value of items to be counted
 - ▲ Specify the threshold that triggers an opportunity count during stock movement
 - ▲ Specify the RF device for system-created WLG cycle count or recount requests
 - ▲ Specify that warehouse staff perform a cycle count and set the frequency in days
 - ▲ Specify cycle count tasks at the WLG level
 - ▲ Assign users to cycle count tasks

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- Use Cycle Count Generation (4.8.12) to generate cycle count transactions/task.
- Use Item Master Maintenance (1.4.1) to classify the value of items to be counted.
- Use Item Maintenance (4.4.7) to specify the threshold that triggers an opportunity count during stock movement.
- Use Warehouse Maintenance (4.1.1) to specify that the RF is the device where the system creates a cycle count or recount request in the WLG.
- Use Storage Location Group Maint (4.3.1) to:
 - Set the Opportunity Counts field so that the system requests that warehouse staff perform a cycle count.
 - Specify the frequency in days that you want to perform a count since the last count.
- Use Work Location Group Maintenance (4.3.9) to specify whether the system creates a cycle count task at the WLG level.
- Use Task Assignment Maintenance (4.11.1.9) to assign warehouse users to cycle count tasks.

Cycle Count Generation

Use Cycle Count Generation to generate cycle count transactions/task. You can check inventory levels in a planned way by using the cycle counting option. Use Cycle Count Generation to create:

- A report showing the items and locations that will be counted
- Cycle count transactions

After you set fields in the first frame, click Next, and then select the output destination for the cycle count.

Depending on what you selected in the Create Transactions field, the system either produces a cycle count report without creating transactions, or a report plus an actual cycle count.


Field Descriptions

Create Transactions. No: A report is generated of the items and locations that will be counted without transactions being created.

Yes: Transactions are created.

If the screen is run with the Randomize Selection field set to Yes, items and locations selected need not match those of a previous run.

Item Master Maintenance


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Item Master Maintenance (1.4.1)

Item Inventory Data Frame

Item Inventory Data

ABC Class:	Average Interval: 90	
Lot/Serial Control: S	Cycle Count Interval: 120	Shelf Life:
Site: FL1000	Allocate Single Lot: <input type="checkbox"/>	Key Item: <input type="checkbox"/>
Location: 100	PO Receipt Status:	Active: <input type="checkbox"/>
Location Type:	WO Receipt Status:	Active: <input type="checkbox"/>
Auto Lot Numbers: <input type="checkbox"/>		Memo Order Type:
Lot Group:		
Article Number:		

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Use Item Master Maintenance to classify the value of items to be counted and set the cycle count interval.

Field Descriptions

ABC Class. This code classifies items by level of importance, such as dollar value, with class A being the most important. The system uses the ABC class code with cycle counting. You can add the code directly or leave it blank. If left blank, you can have the system calculate an item's ABC class code by running the Item ABC Status Report/Update (1.5.9 or 3.6.3).

Cycle Count Interval. Specify the number of calendar days between cycle counting this item.

Item Maintenance

The screenshot displays the QAD Item Maintenance (4.47) web interface. The QAD logo is in the top left corner. The main heading is "Item Maintenance (4.47)". Below the heading is a toolbar with "Go To", "Actions", "Copy", "Print", "Preview", and "Attach" buttons. The form is divided into two main sections: "Item Data" and "Default Site Data".

Item Data:

- Unit of Measure Group: []
- Barcode 1: []
- Barcode 2: []
- Shelf Life Offset: 0
- Critical Days: 0

Default Site Data:

- Warehouse Item Type: []
- Replenishment Type: []
- Popularity: []
- Single PA Trans:
- Issue Method: []
- Print ID:
- ID Quantity: [0]
- OPC Threshold: [0.0]

The OPC Threshold field is highlighted with a red rectangular box. The text "QAD Proprietary" is visible in the bottom left corner of the interface.

Use Item Maintenance to specify the threshold that triggers an opportunity count during stock movement. If stock is found to be at or below the threshold level set in this field, the system initiates a cycle count.

Field Descriptions

OPC Threshold. This field relates to opportunity counts, which you can specify when this item is stored in an RDT environment. When inventory is taken out of the location, the system checks whether the quantity on-hand falls below the threshold level you specify for the item, and also checks the OPC frequency value for the location where the item is stored. If both conditions are met, a cycle count is requested.

You can specify an OPC threshold value for each item, and also for items related to a specific Storage Location Group.

Warehouse Maintenance

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Warehouse Maintenance (4.4.1) Cycle Count Frame

Warehouse Maintenance: Go To - Actions -

Site: 10000
Warehouse: 279

Cycle Count Defaults

Cycle Count Task: <input type="text"/>	Recount Task: <input type="text"/>
Count System Code: <input type="text"/>	Recount System Code: <input type="text"/>
Cycle Count Priority: <input type="text" value="0"/>	Recount Priority: <input type="text" value="0"/>
Count Increment: <input type="text" value="0"/>	Recount Increment: <input type="text" value="0"/>
Cycle Count on Fail: <input type="checkbox"/>	Cycle Count Status Option: <input type="text" value="0"/>
Use Recount UM of SLG: <input type="checkbox"/>	Blind Location Audit: <input type="checkbox"/>

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Use Warehouse Maintenance to specify that the RF is the device where the system creates a cycle count or recount request in the WLG.

The fields in the Cycle Count frame control the way cycle counts and recounts are performed. The values you enter here default to all work location groups you set up within this warehouse, but you can change the values for individual work location groups.

Field Descriptions

Count System Code. Specify the system code associated with any cycle counts created in the work location group. The system code determines the type of screen that is used to confirm cycle count transactions. Leave blank for normal screens; enter RF for RDT screens.

Storage Location Group Maintenance

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Storage Location Group Maintenance (4.3.1)

Storage Location Group Maint: Go To Actions

Site: 10000
Warehouse: 279
Storage Location Group: SL01
Description: First Warehouse Storage

Internal Routing Group: IRG01

Allow Issues:
 Allow Receipts:
 Allow Incoming Returns:
 Allow Outgoing Returns:

Opportunity Counts:
 Opportunity Count Frequency: 0
 Check Digits:
 Cycle Count Status Option: 0

Picking Multiple UM:
 Acquisition UM:

Exclude from Picking:
 Picking Level: 0
 Over Pick:
 Multi-Trans:

Detail Overflow Group:
 Capacity Check when OTF:
 Optimized Storage:
 Allow Mixed Status Codes:
 Recount UM:

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- Use Storage Location Group Maint to:
 - Set the Opportunity Counts field so that the system requests that warehouse staff perform a cycle count.
 - Specify the frequency in days that you want to perform a count since the last count.

Field Descriptions

Opportunity Counts. Set this field to Yes so that the system requests that warehouse staff perform a cycle count.

OPC Frequency. Specify the frequency in days that you want to perform a count since the last count. The system checks the OPC frequency value for the location and specifies that a count be performed based on the last date and the frequency number you specify.

Work Location Group Maintenance

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Work Location Group Maintenance (4.39) Cycle Count Frame

Work Location Group Maintenance: Go To ▾ Actions ▾

Site: 10000
Warehouse: 279
Work Location Group: WLG01

Cycle Counts

Cycle Count Task: count	Recount Task: count
Count System Code: []	Recount System Code: []
Cycle Count Priority: 0	Recount Priority: 0
Count Increment: 0	Recount Increment: 0
Cycle Count on Fail: <input type="checkbox"/>	

Use Work Location Group Maintenance to specify whether the system creates a cycle count task at the WLG level.

Field Descriptions

Cycle Count Task. Specify the task of any cycle counts created in the work location group. The tasks must already have been set up in Task Maintenance.

Warehouse staff perform count tasks when stock quantities are inside the tolerance; they perform recount tasks when stock quantities are outside the tolerance. You define the tolerance in the inventory count parameters specified in Inventory Control (3.24).

Count System Code. Specify the system code associated with any cycle counts created in the work location group. The system code determines the type of screen that is used to confirm cycle count transactions. Leave blank for normal screens; enter RF for RDT screens

Cycle Count Priority. Specify a priority value for cycle count transactions created in the work location group. The RDTs select the highest priority task as the next action. The higher the number you specify, the higher the priority.

Count Increment. Specify the increment that is added to a cycle count transaction's priority as time elapses, when you run the increment addition program as a background process. This prevents low priority tasks from never reaching the top of the priority list, and, therefore, never being performed.

Cycle Count on Fail. Indicate whether a cycle count should be automatically generated for the inventory if that inventory is failed, for example, when a transaction is completed for less than the required quantity.

Use Recount UM of SLG. Indicate whether recounts should result in inventory with the alternate unit of measure specified for the storage location group.

This field is especially useful when a CIM load in Cycle Count Entry (3.14) is required to load the stock into the system. The way session triggers work prevents the system from creating the alternate UM correctly. The consequence is an incorrect capacity calculation. When this field is set to Yes, the system gives any pallet recounted in Cycle Count Entry the alternate UM defined in the recount UM of the corresponding storage location group.

Recount Task. Specify the task of any recounts created in the work location group. The tasks must already have been set up in Task Maintenance.

Recount System Code. Specify the system code for any recounts created in the work location group. System codes define the type of screen that is used to confirm recount transactions, blank for normal screens, RF for RDT screens.

Recount Priority. Specify a priority value for recount transactions created in the work location group. The RDTs select the highest priority task as the next action: the higher the number you specify, the higher the priority.

Recount Increment. Specify the increment that is added to a recount transaction's priority as time elapses when you run the increment addition program as a background process. You use this to prevent low priority tasks from never reaching the top of the priority list, and, therefore, never being performed.

Task Assignment Maintenance

Task Assignment Maintenance (4.11.1.9)

User ID: UserB RF User B Comments:

Queue 1		
10	PICK	Auto
20	TRANSFER	Auto
30	COUNT	Auto
40	RECOUNT	Auto

Queue: Seq: Task: RECOUNT Confirmation Mode: Auto

Back Next

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Use Task Assignment Maintenance (4.11.1.9) to assign warehouse users to cycle count tasks.

Field Descriptions

User ID . Enter the ID of the user to whom you want to assign tasks.

Queue . Tasks are grouped in Queues, with the lowest number having priority. Enter the number of the Queue to which you want to assign the task.

For confirmation with RDTs (Next Task), transactions are selected in the following order:

- 1.a: Hard assigned transaction
- 1.b: Soft assigned transaction
- 1.c: Not assigned transaction
- 1.d: Transaction soft assigned to other users
- 2: Task queue
- 3: Priority
- 4: Travel sequence
- 5: Task queue sequence

Seq. Tasks are grouped within queues by sequence, with the lowest number having priority. Enter the number of the queue sequence to which you want to assign the task.

For confirmation with RDTs (Next Task), transactions are selected in the following order:

- 1.a: Hard assigned transaction
- 1.b: Soft assigned transaction
- 1.c: Not assigned transaction
- 1.d: Transaction soft assigned to other users
- 2: Task queue
- 3: Priority
- 4: Travel sequence
- 5: Task queue sequence

Processing Cycle Counts



Cycle Count Processing



- ▲ Create a PO and receive goods into the warehouse
- ▲ Warehouse staff use the RF device to receive a cycle count task
- ▲ Warehouse staff count the level of stock in a pallet or location, then confirm tasks
- ▲ Review stock inquiries to view results of put away movements

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To conduct the inspections:

- In QAD EE:
 - Use Purchase Order Maintenance to create a PO.
 - Use Purchase Order Receipt to receive goods into the warehouse.
- Use the RF device Next Task option to receive the cycle count task and once inventory is counted, to confirm cycle count transactions.
- Use Inventory Detail Inquiry (4.9.13) to check if inventory was moved to the location.

Purchase Order Maintenance

Purchase Order Maintenance (5.7)

Purchase Order Maintenance X

Go To Actions Copy Print Preview

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P01043 Supplier: A2001 Ln Format S/M: Single

Lines

Ln	Site	Requisit	Item Number	Qty Ordered UM	Unit Cost	Disc%
1	US-D3		D-4S020	300.0 EA	0.00	0.00%

Line Details

Qty Received: 0.0 Due Date: 10/15/2008 CRT Int: 0.00
 Qty to Ret: 0.0 Pur/Acct: 6600 Cons
 Single Lot: Performance Date: 10/15/2008 Project
 Location: DDock1 Need Date: 10/15/2008 Type:
 Item Revision: Sales/Job: Taxable: H
 Status: Fixed Price: Inspection Requi: Cmmts:
 Supplier Item: UM Conversion: 1.0000
 Manufacturer: Stock UM Quantity: 300.0 EA
 Description: Item S020 Update Avg/Last Cost:
 Extended Net Cost: 0.00

WARNING: Beginning of data.

End Lines Next

QAD Proprietary

Use Purchase Order Maintenance (5.7) to create a purchase order for the items you want to receive.

Field Descriptions

Purchase Order. Enter an existing PO number or leave blank to create a new PO number.

Item Number. Enter the code for the item you receive into the warehouse to be inspected.

Qty Ordered. Enter the quantity ordered.

Purchase Order Receipts

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Purchase Order Receipt (5.13.1)

Purchase Order Receipts X

Go To Actions Copy Print Preview

Order: P01043 Supplier: A2001 Status: Packing Slip:

Ln	Item Number	UM	Qty Open UM	Receipt Qty UM	Project	Due Date	T
1	D-IS020	EA	300.0 EA	0.0 EA		10/15/2008	

Receipt Detail - Site: US-D3 Quantity: 300 EA

Location	Lot/Serial	Ref	Supplier Lot	Quantity
DDock1		PL000806		100.0
DDock1		PL000807		100.0
DDock1		PL000808		100.0

Line: 1 Unit of Measure: EA Site: US-D3 Loc: DDock1
 Quantity: 300.0 ID: Lot/Ser:
 Packing Qty: 0.0 OP: 0 Reference:

Location	Lot/Serial	Ref	Supplier Lot	Quantity
DDock1		PL000806		

Total lot/serial quantity entered: 300

Back Next

QAD Proprietary

Use Purchase Order Receipts to receive the goods into the warehouse.

Note You can receive items using Receipts–Unplanned (3.9).

Field Descriptions

Order. Specify the purchase order number.

Item Number. Specify the item number.

Quantity. Specify the quantity you want to receive into the warehouse.

Receipt Detail

The Receipt Detail frame depicts the location of the receipt and the reference (pallet IDs) of items being received.

RF Next Task



When the system generates cycle count tasks, the RF users who are assigned the tasks, must receive the cycle count task.

Once they count inventory, they use the RF to confirm put away tasks and thereby confirm the cycle count transaction. RF users use the Next Task menu to receive the counted items. You can also confirm using the movement confirmation programs (4.8).

Note Cycle count tags can be being automatically generated, if required.

RF screens identified with a system procedure code of Adjust are supplied for confirming cycle counts. It is important that the tasks used to identify cycle counts and recounts are defined with a procedure code of AJ. Other tasks must *not* be defined with this procedure code; otherwise, for example, sales order picks would be processed as if they were cycle counts.

Inventory Detail Inquiry

Inventory Detail Inquiry (4.9.13)

Location	Status	Lot/Serial	Ref	UM	On Hand	Qty	Alloc	Expect In	Expect Out	Detail Alloc	Detail Pick
0B1k001	A-N			EA		500					
0B1k002	A-N			EA		200					

Inventory is available in storage area.


Use Inventory Detail Inquiry to check if inventory was moved to the location.

Field Descriptions


Expect In/Expect Out. Expected out/ expected in quantities indicate that tasks were created properly but must be confirmed.

With the movement confirmation programs, cycle count transactions are created with an expected quantity of zero so that the Expected In and Out inventory quantities are not automatically updated. If cycle count transactions are confirmed without first modifying them, they are confirmed as zero counts. That is, if each transaction is not manually modified to reflect the counted quantity, the on-hand quantity of each piece of counted inventory is set to zero.

Exercise: Create a PO, Receive goods, Confirm Put-Away, Review Inventory



Objectives



- ▲ Create a PO
- ▲ Receive goods
- ▲ Receive a cycle count task and confirm put-away tasks
- ▲ Review stock

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will use QAD EE to create a PO, receive the goods on the PO, pick the goods from the storage area and move them to an inspection area, then validate the inspection by entering inspection results.

Throughout the exercise, you will verify that the system records tasks and provides expected results through the use of QAD EE or Warehousing Inquiries. So, your complete exercise consists of the following major steps:

- 1 Complete all setup steps to create WLGs, SLGs, IRs, and assign algorithms and transactions as specified in the setup portion of this chapter.
- 2 Use Purchase Order Maintenance (5.7) to create a PO for valid items.
- 3 Use Purchase Order Receipt (5.13.1) to receive the goods on the PO.
- 4 Use the RF Next task option to receive the cycle count task and confirm the cycle count transaction.
- 5 Use Inventory Detail Inquiry (4.8.17) to verify items moved to the inspection area.

Study Questions

- 1 How do warehouse users know they are required to perform a cycle count?
 - a Warehouse users gather assignments through Task Assignment Maintenance (4.11.1.9).
 - b The RF provides a cycle count task after users confirm the current task.
 - c The warehouse foreman informs the employee of cycle count tasks.
 - d The RF displays a cycle count frame that prompts the warehouse employee to count the level of stock.
 - e None of the above.
- 2 You confirm or process cycle count tasks only through the RF device. True or False.
- 3 What is the difference between a cycle count and an opportunity count?
- 4 Explain the importance of the ABC field during a cycle count.
- 5 You can count the contents of a pallet or bin through the RF Location Audit option. True or False.
- 6 Which program would you use to generate cycle count transactions:
 - a Any of the engine workfile programs in the Engine Menu (4.7)
 - b Transaction Type Maintenance (4.7.1)
 - c Cycle Count Generation (4.8.12)
 - d The Cycle Count frame of Warehouse Maintenance (4.1.1)
 - e None of the above, the system generates transactions automatically.
- 7 Which program lets you specify a threshold that triggers an opportunity count during stock movement?
- 8 You can specify the frequency of a count by month, day, or hour. True or False.
- 9 What is the Count System Code? True or False.
- 10 Where do you set the Count System Code?

Chapter 9

Work Orders

Overview



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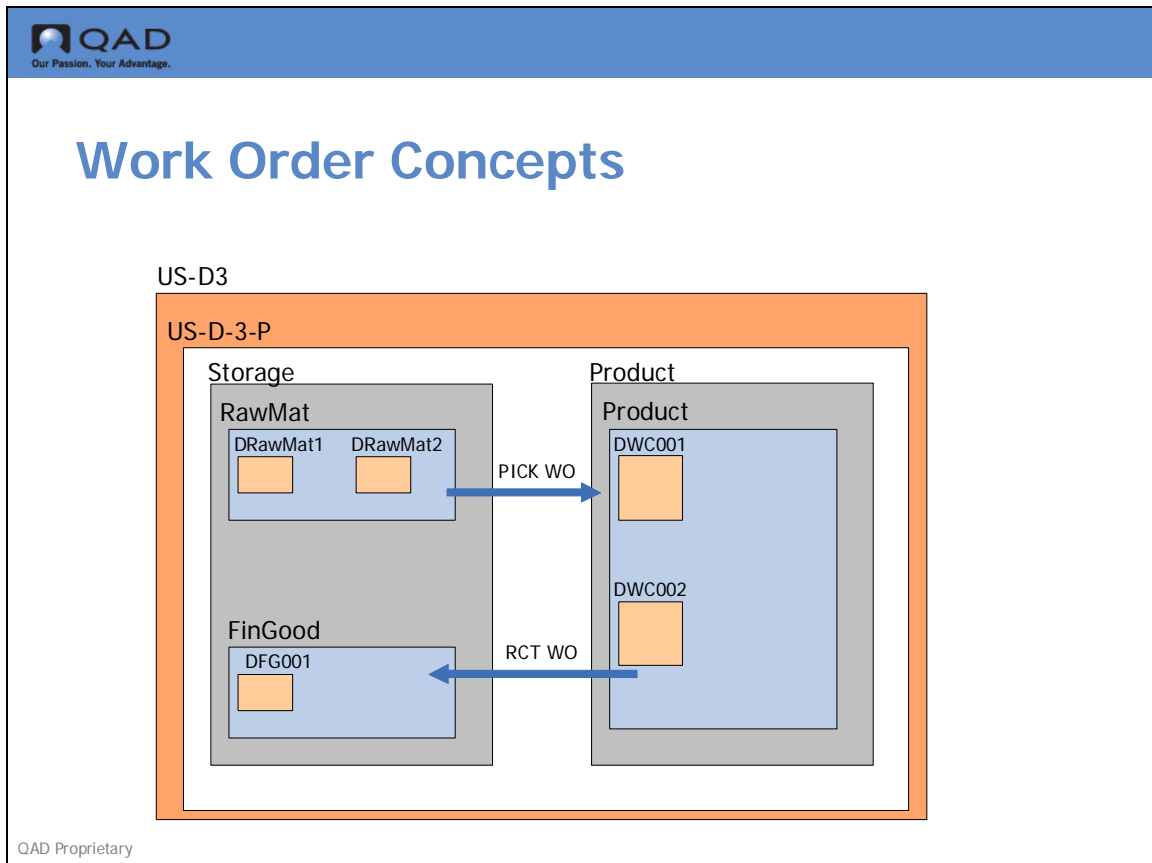
Work Orders

QAD Proprietary

A suggested setup sequence for Wave Planning includes these general setup steps:

- Learn work order concepts.
- Set up the warehouse for manufacturing by creating storage areas for raw materials and finished goods, creating production areas and work centers, creating work location groups and assigning workers to those groups, and associating items with storage areas.
- Set up QAD EE with WO and BOM supporting data.
- Process work orders with the RF device by transferring raw material from storage area to work centers.
- Backflush to produce finish good.
- Transfer finish good to storage area.

Work Order Concepts



When working with work orders, staff pick raw materials then put away finished goods. Finished goods are put away against work orders. Finished products are shipped to customers. Finished products can consist of one or more finished goods, such as personal computers, which consist of finished keyboards, mouse, and so on.

So, your warehouse is a manufacturing plant and you have storage locations for raw materials, finished goods, and the product. Since workers are completing finished goods, there should be work centers within the warehouse, too. All of these must be defined.

For work orders the following occurs:

- 1 The system looks for the site/warehouse/location from which the inventory can be picked.
- 2 The algorithms for the transaction type are run until warehouse staff pick the raw material quantities specified in the order for finished goods.
- 3 Open work order inventory pick transactions, which are two-phase transactions, must be confirmed by one of the movement confirmation functions. Confirming such transactions records that the movement of inventory has been completed.

Work Center

A work center is a group of people and/or machines. Work centers also link departments with routing operations.

Work centers are the basic unit for operation scheduling. Depending on how you plan and schedule work, you can set up work centers for an individual machine or for groups of similar machines within the warehouse. The system uses work centers for scheduling, planning, and determining costs for GL transactions.

Product Structures

Product structures and formulas are much like the list of ingredients for a recipe—they indicate the components and quantities needed to make a product. Unlike a recipe, in many cases, these documents also list the ingredients for each component

BOM Codes

Sometimes, a single product structure can produce more than one kind of product. In another case, one product can be produced with several different product structures. In both cases, enter product structures and formulas by using a product structure—or bill of material (BOM)—code as the parent item instead of an item number.

Routings

In QAD EE, a routing consists of one or more operations—steps needed to make an item. Each operation is identified by a routing code and an operation number.


Backflush

The automatic recording of component/raw material issues based on:


- The quantity of end items received, and
- The quantity per of the component from the end item's bill of material

Can be used for both work order and repetitive production, as well as shipping of kit configured items. Backflush quantity for a base process is used to calculate the issue (backflush) quantities for co-products and by-products.

Setting Up Work Order Processing



Work Order Set Up



- ▲ Create a manufacturing warehouse
- ▲ Set up IRGs and SLGs
- ▲ Set up WLGs and assign workers to them
- ▲ Associate raw materials, finished goods, and products with SLGs
- ▲ Set up all supporting QAD EE data
- ▲ Set up IRs for work orders
- ▲ Set up IR assignments for WO pick and receive transaction types
- ▲ Assign algorithms to the pick and receive transaction types

QAD Proprietary

In this section, you will learn how to set up QAD Warehousing for normal picking.

Typically, you follow these setup steps

- Use Warehouse Maintenance to create a manufacturing warehouse.
- Use Internal Routing Group Maintenance to set up an IRG for work orders.
- Use Storage Location Group Maintenance to set up SLGs for raw materials and finished products.
- Use Work Location Group Maintenance to set up WLGs, system codes, and system flavors.
- Use User Work Location Group Maintenance to assign users to a workgroup and to set up print options specific to the user.
- Use Item-Warehouse Maintenance to associate items with raw and finished goods SLGs within the warehouse.
- In QAD EE:
 - Use Product Structure Code Maintenance to define finished goods.
 - Use Work Center Maintenance to define work centers.
 - Use Standard Operation Maintenance to set up operations for the work center.
 - Use Routing Maintenance to set up operations (the steps needed to make an item).
- Use Internal Routing Maintenance to set up IRs for work orders.

- Use Internal Routing Assignment Maintenance to specify pick and receive work order transaction types for the IRs.
- Assign algorithms to the pick and receive transaction types

Warehouse Maintenance

The screenshot shows the 'Warehouse Maintenance' form in a QAD application. The form is titled 'Warehouse Maintenance (4.1.1)'. It has a header with the QAD logo and the tagline 'Our Passion. Your Advantage.'. Below the title, there are two input fields: 'Site' with the value 'US-D3' and 'Warehouse' with the value 'US-D-3P'. The 'Warehouse' field is highlighted with a red box. The form is divided into two main sections: 'General Data' and 'QAD Location Data'. The 'General Data' section includes fields for Description, Address, Active (checked), Reference Sequence ID, Packaging Sequence ID, Flavor, Inventory Acct Sync, Allow Mixed Status Codes, Logistics UM Tolerance, Log w/Base UM Only, and Cnt. The 'QAD Location Data' section includes fields for Description, Inventory Status, Permanent, Type, Single Item, Single Lot/Reference, and Capacity. At the bottom right of the form, there are 'Back' and 'Next' buttons. The QAD logo and 'QAD Proprietary' text are visible at the bottom left of the screenshot.

Use Warehouse Maintenance to set up a manufacturing warehouse.

Note If you have several manufacturing warehouses, you can use Warehouse Master List Maintenance (4.1.5) to set up master lists of warehouses that you can attach to manufactured items. This step is mandatory for multi-warehouse picking or inter-warehouse transfers and picking.

Field Definitions

Warehouse. Specify the name that uniquely identifies the warehouse you want to use in warehouse programs. If you specify an existing system software location, a warning displays. If you specify a value not defined as a system software location, the location will be created.

You are required to enter an existing warehouse name in many of the functions where you maintain information relating to a specific warehouse.

Each warehouse is defined as a placeholder location using standard Location Maintenance (iclomt.p), so the system software sees the warehouse name as another storage location. However, the fact that this location is defined as a warehouse in Warehouse Maintenance automatically triggers the warehouse functions to operate whenever it is specified as the location for stock receipt or stock issue.

Internal Routing Group Maintenance

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Internal Routing Group Maintenance (4.2.1)

Internal Routing Group Maint ×

Go To Actions Internal Routing Group Maint Preview

Site: US-D8

Warehouse: US-D-3:P

Internal Routing Group: Storage

Description: Man Storage Area

Functional:

SLG Default Values

Allow Issues:

Allow Receipts:

Allow Outgoing Returns:

Allow Incoming Returns:

Back Next

QAD Proprietary

Use Internal Routing Group Maintenance to create an IRG for storage.

Field Definitions

Internal Routing Group. Enter the name of the storage IRG.

Functional. Indicate how the storage location groups are used in this IRG.

No: This is a non-functional area such as general storage, and the system uses put-away algorithms to select locations when stock is moved into the area.

Yes: This internal routing group is a functional area, such as receipt or dispatch, and the system uses location-find algorithms to select locations when stock is moved into the area.

Storage Location Group Maintenance

Storage Location Group Maint

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: UIS-D-3P
Storage Location Group: RawMat
Description: Raw Material Area

Internal Routing Group: Storage

Allow Issues:
Allow Receipts:
Allow Incoming Returns:
Allow Outgoing Returns:
Opportunity Counts:
Opportunity Count Frequency: 0
Check Digits:
Cycle Count Status Option: 0

Picking Multiple UM:
Acquisition UM:

Exclude from Picking:
Picking Level: 0
Over Pick:
Multi-Trans:
Detail Overflow Group:
Capacity Check when OTF:
Optimized Storage:
Allow Mixed Status Codes:
Recount UM:

Back Next

QAD Proprietary

Use Storage Location Group Maintenance to create a storage area within the IRG.

Field Definitions

Storage Location Group. Enter the code that identifies the storage location group you want to create or modify. Internal Routing Group

Enter the code that identifies the storage location group you want to create or modify.

Work Location Group Maintenance

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Work Location Group Maintenance (4.3.9)

Work Location Group Maintena... X

Go To Actions Copy Print Preview

Site: US-D3

Warehouse: US-D-3P

Work Location Group: ForkLift

Description: Warehouse US-D3 Manufact

Confirmed at Source:

Priority: 100

Increment: 10

Task: TRANSFER

System Code: RF

System Flavor: B

Allow Task Switching:

Two Phase:

Keep From Status:

Device:

Back Next

QAD Proprietary

Use Work Location Group Maintenance to set up and maintain WLG) within your warehouse.

The main purpose of work location groups is to enable you to control which warehouse staff work in which areas of the warehouse using User Work Location Group Maintenance. The second purpose is to define the printing parameters for each work area.

Field Definitions

Work Location Group. Enter a valid code for the WLG.

System Code. Specify the type of screen used to confirm transactions:

Blank: Normal maintenance screens are used.

RF: Transactions are confirmed using Radio Data Terminals (RDTs), also known as Radio Frequency (RF) terminals.

This field defaults from the internal routings that you set up in this warehouse.

System Flavor. Enter the code to define the style and format of Radio Frequency screens to be used for displaying warehouse information. The Flavor codes are set up in Generalized Code Maintenance, and relate to display of information in situations such as forklift truck screens or Radio Data Terminals (RDTs).

User Work Location Group Maintenance

The screenshot displays the 'User Work Location Group Maintenance' web page. At the top, the QAD logo and tagline 'Our Passion. Your Advantage.' are visible. The page title is 'User Work Location Group Maintenance (4.11.3.13)'. Below the title is a browser window showing the form. The form has the following fields and options:

- Site: US-D
- Warehouse: US-D-3P
- Work Location Group: ForkLift
- User ID: UserB
- System Flavor: B
- Device:
- External Device Printer:
 - Form Printer: Use External:
 - ID Printer: Use External:
 - Task Printer: Use External:

At the bottom right of the form are 'Back' and 'Next' buttons. The footer of the page reads 'QAD Proprietary'.

Use User Work Location Group Maintenance to assign users to a workgroup and to set up print options specific to the user. You must complete this step for all users if you intend to use task reassignment features.

For the system to function properly, if you define one user-WLG relationship in a warehouse, you must define a relationship for all users in all WLGs in which they work.

Field Descriptions

Work Location Group. Enter the work location group of the user. **User ID.** Enter the ID of the user you are assigning to this WLG.

System Flavor. Specify the code to define the style and format of screens to use for displaying warehouse information:

- b: Selection by Reference
- c: Multi-Bin Pick-Up
- d: Dynamic Sizing

You set up flavor codes in Generalized Codes Maintenance (36.2.13). The codes determine the format for information display on devices such as fork-lift truck screens or RF devices.

Item-Warehouse Maintenance

Item-Warehouse Maintenance (4.4.11)

Item Number: D-FG001 Finish Good 001
 UM: EA
 Site: US-D3 Warehousing Site
 Warehouse: US-D-3-P Warehouse US-D3 Manufact

Warehouse Data

Location: _____
 Storage Location Group: FinGood
 SLG List: _____
 Warehouse Item Type: _____
 Replenishment Type: _____
 Popularity: _____
 Logistics UM Tolerance: 0.00%
 Auto Replenish:

Single PA Trans:
 Issue Method: _____
 Print ID:
 ID Quantity: 0
 OPC Threshold: 0.0
 Logistics UM: EA
 Pallet Max Height: 0
 Auto Replenishment %: 0.00%
 Print Unplanned Issue Tag:

Adding new record

Delete Back Next

QAD Proprietary

Use Item-Warehouse Maintenance to define warehouse item attributes for the manufacturing warehouse. Define item attributes for each item that is raw material, finished goods, or a product.

Field Descriptions

Item Number. Enter a valid item code as defined in Item Master Maintenance (1.4.1)

Storage Location Group. Enter the ID of the SLG for the item.

Product Structure Code Maintenance

The screenshot shows the QAD Product Structure Code Maintenance (13.1) web application. The interface includes a header with the QAD logo and tagline "Our Passion. Your Advantage." Below the header, the title "Product Structure Code Maintenance (13.1)" is displayed. The main content area contains a form with the following fields:

- BOM Code:** D-FG001
- Description:** Finish Good 001
- Unit of Measure:** EA
- Comments:** (empty text area)

At the bottom right of the form, there are two buttons: "Back" and "Next". The QAD logo and tagline are also visible in the bottom left corner of the page.

Use Product Structure Code Maintenance to define a BOM code for finished goods.

Product structure relationships include a parent and component items. BOMs identify the parent, which is an item number usually predefined in Item Master Maintenance (1.4.1).

Enter a product structure code in Product Structure Maintenance. The system records the parent item number as a BOM.

Field Descriptions

BOM Code. Enter the parent of a product structure. This must be a valid item number or predefined BOM code.

Unit of Measure. Specify the unit of measure for this BOM, which is typically the same as the item UM.

Work Center Maintenance

Work Center Maintenance

Go To Actions Copy Print Preview

Work Center: DW001 Machine:

Description:

Department: 10 Assembly

Queue Time:	1.0		
Wait Time:	2.0		
Mach/Dp:	1		
Setup Crew:	0.00	Setup Rate:	0.00
Run Crew:	1.000	Labor Rate:	0.00
Machines:	1.000	Labor Burden Rate:	0.00
Mach Bdn Rate:	0.00	Labor Bdn %:	0.00%

Back Next

QAD Proprietary

Use Work Center Maintenance to set up work centers.

Field Descriptions

Work Center and Machine. Uniquely identify a work center by a work center code along with an optional machine code. Leave Machine blank if only one type of machine is in the work center. If there are multiple machine types or models, set up a different record for each machine, using the same work center ID.

Standard Operation Maintenance

Standard Operation Maintenance

Go To Actions Copy Print Preview

Standard Operation: **Step10**

Description: Step 10

Work Center: DwC001

Machine:

Setup Time: 1.0

Run Time: 2.0

Move Time: 1.0

Yield Percent: 100.00%

Tool Code:

Supplier:

Milestone Operation:

Inventory Value: 0.00

Subcontract Cost: 0.00

Subcontract LT: 0

Overlap Units: 0

Comments:

Back Next

QAD Proprietary

Use Standard Operation Maintenance to set up standard operations.

Field Descriptions

Standard Operation. Enter the code for the standard operation.

Work Center and Machine. Enter codes for the work center and machine that normally perform this operation.

Routing Maintenance

Routing Maintenance (14.13.1)

Routing Code: D-FG001
 Operation: 10
 Finish Good 001
 Start Date:
 End Date:

Standard Operation: step10
 Work Center: DWC001

Machine:
 Description: Step 10

Machines per Operation:	1	Milestone Operation:	<input checked="" type="checkbox"/>
Overlap Units:	0	Subcontract LT:	0
Queue Time:	1.0	Setup Crew:	0.00
Wait Time:	2.0	Run Crew:	1.00
Setup Time:	1.0	Tool Code:	
Run Time:	2.0	Supplier:	
Move Time:	1.0	Inventory Value:	0.00
Start Date:		Subcontract Cost:	0.00
End Date:		Comments:	<input type="checkbox"/>
Yield Percent:	100.00%		

Back Next

QAD Proprietary

Use Routing Maintenance to create the steps needed to make an item. Each operation is identified by a routing code and an operation number.

Field Definitions

Routing Code. This is typically the same as the item number, but routing codes and item numbers are entirely independent. This allows the same routing to be used for multiple items. One item can also be made using one of several routings.

A matching item number and routing code are automatically linked to each other. When an item's routing code is blank in the item or item-site planning data, the system uses the item number as the routing code. If they are different, specify the routing code in Item Planning Maintenance (1.4.7) or Item-Site Planning Maintenance (1.4.17).

Operation. Each routing consists of a series of steps. Enter a number to identify this step within this specific routing code. Operation numbers must be unique within a routing. Routing operations are always printed in ascending sequence by operation—operation 20 follows operation 10. Number by 10s or 100s, so you can add new intermediate steps without renumbering existing ones.

Standard Operation. Enter the code for the standard operation to use as the basis of this operation step. Many values then default from that standard operation. You can then modify them as needed to create the specific operation for this routing.

Work Center. Enter codes for the work center that normally performs this operation.

Internal Routing Maintenance

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Internal Routing Maintenance (4.2.5)

Internal Routing Maintenance X

Go To Actions Copy Print Preview

Site: US-D3 Warehouse: US-D-3-P Internal Routing: PickWO

Description: Work Orders Pick

Sequence: 10 Internal Routing Group: Storage

Transaction Create

Confirmed at Source: Task: TRANSFER

System Code: RF Priority: 100

Two Phase: Increment: 10

Keep From Status:

Transaction Confirmation

From Location Option: 0 Repick Type: To Location Option: 0

From Item Option: 0 To Item Option: 0

From Lot/Serial Option: 0 To Lot/Serial Option: 0

From Reference Option: 0 To Reference Option: 0

Allow Quantity Increase: Alternative UM Option: 0

Allow Quantity Decrease: Expire Date (Days): 0

Quantity Change Option: 0

Back Next

QAD Proprietary

Use Internal Routing Maintenance to define an internal routing for transaction type PICK-WO to move raw materials to work centers. The internal routing would consist of two steps; for example:

- Step 10: Receipt
- Step 20: Bulk

Note You must repeat this step for a transaction type REC-WO (work order receipt).

Field Definitions

Sequence. Enter the number that identifies the order of this routing step.

Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, number the sequences as 10, 20, 30 rather than 1, 2, 3.

Internal Routing Group. Specify for this sequence step of the routing the next IRG to which the inventory should move.

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Task. Specify the most common task associated with inventory transactions in this warehouse. This field sets the default for internal routings and work location groups created in this warehouse. Set up task codes in Task Maintenance.

Internal Routing Assignment Maintenance

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Internal Routing Assignment Maintenance (4.2.9)

Int Routing Assignment Maint

Go To Actions Copy Print Preview

Transaction Type: PICK-WO

Site: US-D3

Warehouse: US-D-3-P

Item Number:

Warehouse Item Type:

Address:

Custom:

Internal Routing: PickWO

Custom Program:

Back Next

QAD Proprietary

Use Internal Routing Assignment Maintenance to link transaction types to internal routings. For work order processing, assign the Internal Routing to the PICK-WO transaction.

Note You must repeat this step for a RCT-WO (receipt for work order) transaction type.

Field Definitions

Transaction Type. This field is used to specify the transaction type.

Maintain transaction types using Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Algorithm Assignment Maintenance

Algorithm Assignment Maintenance (4.6.9)

Algorithm Type: PK
Site: US-D3

Transaction Type: PICK-WO
Warehouse: US-D-3-P

Item Number:
Address:

Warehouse Item Type:
Custom:

Assigned Algorithms

Seq	Algo	Description
10	1	Pick by Location

Sequence: 10 Algorithm: 1
Description: Pick by Location

Back Next

QAD Proprietary

Use Algorithm Assignment Maintenance to link a specified sequence of algorithms (of one type per sequence) to a defined combination transaction type, site, warehouse, item number, or address.

For work orders, create algorithm assignment records that assign the following:

- PK (picking) algorithm to the PICK-WO transaction
- LF (location find) algorithm to the PICK-WO transaction.
- LF algorithm to the RCT-WO transaction
- PA (put away) algorithm to the RCT-WO transaction

Field Definitions

Algorithm Type. Specify the algorithm type to attach to a transaction.

Transaction Type. This field is used to specify the transaction type.

Maintain transaction types using Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

You also specify the transaction type when using the Algorithm Simulation Menu. These options simulate either location-find and put-away, or picking. The system simulates the running of the algorithms that you have assigned to the specified transaction type and displays the results of the simulated put-away or picking.

Processing Work Orders



Processing Work Orders



- ▲ Create a work order
- ▲ Print a picklist
- ▲ Transfer raw material from storage area to work centers
- ▲ Produce finish goods using receipt backflush
- ▲ Transfer finished goods to the storage area

QAD Proprietary

To process a work order through your production warehouse:

- Use Work Order Maintenance to create work orders.
- Use Work Order Release Print to create picklists.
- Use the RF Next Task option to transfer raw materials to work centers
- Use Work Order Receipt Backflush to produce finished goods
- Use the RF Next Task option to transfer finished goods to storage areas.

Work Order Maintenance

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Work Order Maintenance (16.1)

Work Order Maintenance

Go To Actions Copy Print Preview

Work Order: 400008 ID: 2280417

Item Number: D-FG001 Type: Finish Good 001

Site: US-D3

Quantity Ordered: 3.0 Order Date: 10/10/2008
 Quantity Completed: 0.0 Release Date: 10/10/2008
 Qty Rejected: 0.0 Due Date: 10/10/2008

Work Order Status: F Site: US-D3
 Sales/Job: Routing Code:
 Supplier: BOM/Formula Code:
 Yield Percent: 100.00%

Remarks:
 Comments: Post variances at SFC:

Back Next

QAD Proprietary

Use Work Order Maintenance to create work orders. For complete descriptions on how to create work orders in QAD EE., see *QAD User Guide: Manufacturing*.

Work orders are also created as the result of executing other functions.

- Running MRP generates planned orders.
- Releasing a sales order or service return material authorization (RMA) for a configured item to a work order in Sales Order Release to Work Order (8.13).
- Releasing an RMA receipt line to a work order with RMA Release to Work Order (11.7.1.5).
- Releasing a parent work order for an item with a routable component creates a related work order for the component.

Field Descriptions

Item Number. Enter the item being manufactured on this work order, either a finished product or an intermediate subassembly.

Quantity Ordered. Enter the quantity to be produced on this work order, expressed in the item unit of measure. The order quantity is the number of units of the item you plan to produce.

Work Order Release/Print

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Work Order Release Print (16.7)

Work Order Release/Print

Go To Actions Copy Print Preview

Go To

Work Order: 400008
ID: 2280417
Batch:
Print Picklist:
Print Routing:
Print Co/By-Products:

Deliver To:
Print Bar Code:
Operation:

Item Number: D-FG001
Finish Good 001

Release Date: 10/10/2008

Quantity Ordered: 3.0
Quantity Completed: 0.0
Sales/Job:

Work Order Due Date: 10/10/2008
Work Order Status: F
Supplier:

Remarks:

Output: page
Batch ID:

Back Next

QAD Proprietary

Inventory can only be issued or received against a released work order. Use Work Order Release/Print (16.6) to release orders one at a time and print a picklist.

Note Release multiple orders at the same time using Multiple Work Order Release/Print (16.7).


Releasing a work order has the following effects:

- Items not previously allocated are detail allocated. The system uses the default picking logic defined in Inventory Control (3.24).
- The picklist is printed, showing the location and quantity of the material in Picked status for this order.
- The first operation is moved to the queue status if Move First Operation is Yes in Work Order Control (16.24).

Field Descriptions


Item Number. If you entered a valid work order ID, the system fills in the correct item number.

RF Next Task


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RF Next Task (1.1)

▲ Use Next Task Menu



QAD Proprietary

Use the following procedure to transfer raw materials from the storage area to the work centers. You must confirm the transfer before the system recognizes that goods are moved to work centers.

- 1 Log in to the RF and enter your ID, password, site, warehouse, and if applicable, your work location group.
- 2 Select Work (1), then Next Task (1.1).
The RF displays the Overpick screen.
Note If the system displays other tasks, cancel the Next Task program, return to the RF login screen, and enter REPLEN in the Login screen's Task field; then select Work (1), then Next Task (1.1).
- 3 To pick the raw materials to move to work centers, scan the source location, then scan the cart used to move the items.
- 4 Confirm the quantity.
- 5 Repeat steps 3 and 4 to transfer all goods needed for the work order to the work centers.

Work Order Receipt Backflush

Work Order Receipt Backflush X

Go To Actions Copy Print Preview

Work Order: 400008 ID: 2280417 Effective Date: 10/10/2008
 Item Number: D-FG001 WD Stat: R Receive:
 Finish Good 001 Backflush:

Component Issue

Item Number	Op	Qty Open	Qty Alloc	Qty to Iss	Qty B/D
D-RM001	10	3.0	3.0	3.0	0.0
D-RM002	20	6.0	6.0	6.0	0.0

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: UM: Reference:
 Substitute: Cancel B/D: Multi Entry:

Back Next

QAD Proprietary

Use Work Order Receipt Backflush to issue inventory as completed products are received.

Work Order Receipt Backflush combines the functions of Work Order Component Issue and Work Order Receipt. You can also backflush quantities different from those received. Either method keeps track of the inventory transactions used to issue components to a work order and excludes floor stock, which is issued using an unplanned issue transaction.


Field Descriptions

Item Number. Enter the items that comprise the components of the finished goods.

If you enter additional quantities or negative quantities for an item, the quantity allocated cannot become more than the quantity required or less than zero (0). It is set to the quantity required or the quantity open, whichever is less.


Operation

RF NextTask

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RF Next Task (1.1)

▲ Use Next Task Menu



QAD Proprietary

Use the RF Next Task (1.1) procedure to transfer finished goods to the storage area.

Exercise: Create WO, Transfer Material, Backflush, and Transfer Goods



Objectives



- ▲ Create a WO and picklist to pick raw material from a storage area
- ▲ Transfer raw material from storage area to work centers
- ▲ Backflush inventory to produce finish good
- ▲ Transfer finish good to storage area

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

Instruction: In this exercise, you will use QAD EE to create a WO and picklist. You will transfer raw material to the work center, then use QAD EE backflush functions to produce a finished good. Once finished, you will transfer the finish good to a storage area.

- 1 Complete all setup steps as specified in the setup portion of this chapter.
- 2 Use Work Order Maintenance (16.1) to create a work order.
- 3 Use Work Order Release/Print (16.7) to create a picklist for the work order.
- 4 Use the RF Next Task option to transfer raw materials to work centers.
- 5 Use Work Order Receipt Backflush (16.6) to produce finished goods.
- 6 Use the RF Next Task option to transfer finished goods to storage areas.

Study Questions


- 1 The system uses location find (LF) algorithms to look for the site, warehouse, or location from which inventory can be picked. True or False.
- 2 The algorithms for transaction types used with work orders are run until:
 - a Warehouse staff confirm the last transaction.
 - b The RF displays a new task.
 - c Warehouse staff pick the raw material quantities specified in the order for finished goods.
 - d None of the above.
 - e All of the above.
- 3 In QAD EE, routings consists of one or more work center pathways, not warehouse pathways. True or False.
- 4 In a backflush, the automatic recording of component/raw material issues is based on:
 - a The quantity of end items received
 - b The quantity per of the component from the end item's bill of material
 - c The quantity of finished good items minus raw material items.
 - d Only C.
 - e A and C.
- 5 You can use a backflush for the following:
 - a Work orders
 - b Repetitive productions
 - c Kit configured items
 - d Only A.
 - e All of the above.
- 6 When setting up a manufacturing warehouse, you create internal routing groups (IRGs) and work location groups (WLGs), but not internal routings (IRs). True or False.
- 7 What do you set up in Product Structure Code Maintenance when dealing with work orders?
- 8 For the system to function properly, if you define one user-WLG relationship in a warehouse, you must define a relationship for all users in all WLGs in which they work. True or False.
- 9 What are you defining in Item-Warehouse Maintenance when dealing with work orders?
- 10 For work orders, create algorithm assignment records that assign the following:
 - a PK (picking) algorithm to the PICK-WO transaction
 - b LF (location find) algorithm to the PICK-WO transaction.


- c** LF algorithm to the RCT-WO transaction
- d** PA (put away) algorithm to the RCT-WO transaction
- e** All of the above.

Chapter 10

Wave Planning

Overview






Wave Planning

QAD Proprietary


A suggested sequence for wave planning includes these general steps:

- Learn wave concepts.
- Set up wave planning.
- Create the wave.
- Replenish the wave.
- Release the wave.
- Optionally close the wave.

Wave Planning Concepts



Wave Planning Concepts



- ▲ What is a Wave?
- ▲ Wave Features
- ▲ Replenishment Techniques
 - overpick replenishment
- ▲ Areas in the Warehouse
 - Reserve area,
 - picking area (forward/pickface area)
 - shipping lanes,
 - staging area

QAD Proprietary

In this section, you learn how concepts important to wave planning:

What is a Wave?

A *wave* is a collection of either sales orders (SO) or distribution orders (DO) or both. Sales orders include scheduled orders. Warehouse staff can pick for the collection of orders together at a certain point in time. For example, if you know that a carrier arrives at 4:00 pm, you can create a wave for all orders linked to the carrier.

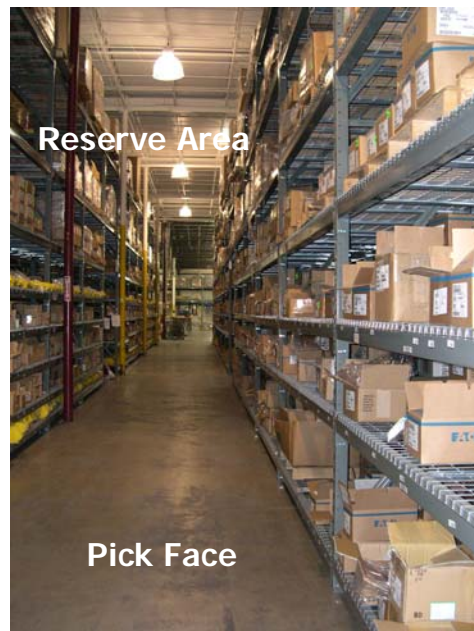
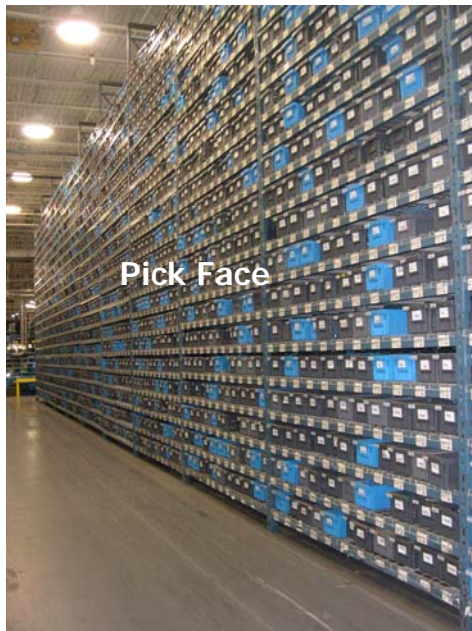
Wave Features

- Organize the picking activities across the entire business day
- Configure waves by carrier route, customer (ship-to), due date, or profile.
- Start wave activities based on picking loads.
- Have stock ready to load when trucks arrive.
- Optimize docking selection based on various criteria.
- Merge order lines to shipping lane by carrier.
- Specify a maximum number of order lines at a time by shipping lanes.
- Re-allocate picking tasks to shipping lanes.
- Dedicate shipping lanes for particular carriers.


Areas in the Warehouse

Wave planning applies best to companies that have many sales or distribution order lines. For example, large component manufacturers can typically fulfill 7,000 sales order lines with as many as 14,000 different items to pick per day.


In this scenario, extra space can be required to hold numerous pallets full of different types of items. This, in turn, results in greater distances for picking staff to travel. To reduce travel time, companies typically designate smaller areas to pick items and keep items in reserve to replenish the items being picked. These *picking areas* typically consists of a few aisles of pallets, boxes, or containers with items. The picking area is sometimes called the *forward picking area*, *detail picking area*, or the *pickface area*.



Wave Planning Setup



Wave Planning Setup



- ▲ Set up the warehouse
- ▲ Set up functional internal routing groups (IRGs)
- ▲ Set up storage location groups (SLGs)
- ▲ Set up internal routings (IRs)
- ▲ Set up IR assignments (assign transactions to IRs)
- ▲ Assign algorithms to transaction types
- ▲ Specify the site/warehouse for the item
- ▲ Specify the unit of measure
- ▲ Set up generalized codes
- ▲ Set up item-warehouse properties
- ▲ Set up the work location group (WLG)
- ▲ Set up warehouse/user/truck locations
- ▲ Set up the user for the work location group
- ▲ Define a shipping lane/groups of shipping lanes
- ▲ Assign the item to the lane group
- ▲ Assign algorithms to find lanes/lane groups
- ▲ Specify custom programs (local exit routines)
- ▲ Create a replenishment list
- ▲ Set wave planning controls

QAD Proprietary

The following topics cover steps you must make to set up the system and QAD Warehousing for wave planning. Your objective when setting up for wave planning is to:

- Set up a storage area with full pallet area and boxes area.
- Set up a shipping lane area with a special lane for heavy products and dedicated carrier lanes
- Set up a truck area with dedicated carrier trucks
- Set up wave planning module in order to activate full pallets tasks and create small volume tasks in wave release
- Create Release Groups accordingly previous set up

To complete the setup objectives, you:

- Use Warehouse Maintenance to set up a warehouse for waves.
- Use Internal Routing Group Maintenance to set up IRGs.
- Use Storage Location Group Maintenance to set up SLGs.
- Use Internal Routing Maintenance to set up IRs.
- Use Internal Routing Assignment Maintenance to set up IR assignments.
- Use Algorithm Assignment Maintenance to assign algorithms to transaction types.
- Use Item Master Maintenance to specify the site and warehouse for the item.
- Use Unit of Measure Maintenance to specify the unit of measure.

- Use Generalized Codes Maintenance to set up generalized codes.
- Use Item-Warehouse Maintenance to set up item-warehouse properties.
- Use Work Location Group Maintenance to set up work location groups.
- Use Warehouse Location Maintenance to set up warehouse, cart, or truck locations.
- Use User Work Location Group Maintenance to set up the user for the WLG.
- Use Lane Maintenance to define a shipping lane.
- Use Lane Group Maintenance to assign a lane to the lane group.
- Use Lane Group Assignment to assign algorithms to find lanes.
- Use Local Exit Routines Setup to specify custom programs.
- Use Replenishment List Maintenance to create a replenishment List
- Use Wave Control to set wave planning controls.

In addition to the steps outlined in this section, you must also set parameters for batch picking since warehouse staff use batch picking to fill orders for the waves.

If you intend to use truck shipping features to ship the orders of a wave, you must ensure that you set the following:

- Truck internal routing groups are functional
- Storage location groups exist for trucks
- Internal routings have the correct one-phase movement for a truck and RF users can change destination locations.

Warehouse Maintenance

Warehouse Maintenance (4.1.1)

Warehouse Maintenance

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: US-D-3

Picking

Start Picking Level: 10

Single-Level Picking:

Max Trans Assign: 0

Default ID Print Flavor C:

End Picking Level: 20

Flavor C Hard/Soft Assignment: Hard

Multi-Bin Pick Flavor C Sort: 0

Hold Defaults

Allow Issues:

Allow Incoming Returns:

Allow Receipts:

Allow Outgoing Returns:

Allow Picking:

Allow Cycle Counts:

Back Next

QAD Proprietary

Use Warehouse Maintenance (4.1.1) to set up the picking levels for the storage location group (SLG) of a warehouse.

Any SLG with a picking level that is not between the Start and End levels you specify here is not considered for picking by the picking algorithms in this warehouse.

Field Definitions

The information below describes the key fields in the screen above.

Start Picking Level. The fields in the picking frame define the storage location groups that the system should use for picking inventory. Each SLG has a picking level defined. Any SLG with a picking level that is not between the start and end levels you specify here is not considered by the picking algorithms in this warehouse.

Enter the numerical code for the picking level at which picking is to start. Each SLG has a picking level defined. Any SLG with a picking level that is not between defined start and end levels is not considered by the picking algorithms in this warehouse.

End Picking Level. Enter the numerical code for the picking level at which picking is to end. Each SLG has a picking level defined. Any SLG with a picking level that is not between defined start and end levels is not considered by the picking algorithms in this warehouse.

Internal Routing Group Maintenance

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Internal Routing Group Maintenance (4.2.1)

Internal Routing Group Maint x

Go To Actions Copy Print Preview

Site: US-D-3

Warehouse: US-D-3

Internal Routing Group: Storage

Description: Storage Area

Functional:

SLG Default Values

Allow Issues:

Allow Receipts:

Allow Outgoing Returns:

Allow Incoming Returns:

Back Next

QAD Proprietary

Use Internal Routing Group Maintenance when you have defined your warehouse to set up all the internal routing groups (IRGs) within that warehouse. This allows you to define a name and a description for each area in the warehouse and to define whether the area is functional or not. For wave planning, the IRG must be functional.

Field Definitions

Functional. Indicate how the storage location groups are used in this IRG.

No: This is a non-functional area such as general storage, and the system uses put-away algorithms to select locations when stock is moved into the area.

Yes: This internal routing group is a functional area, such as receipt or dispatch, and the system uses location-find algorithms to select locations when stock is moved into the area.

Functional IRGs are areas that have a particular warehousing function, such as receipt or dispatch. Available storage space is not a relevant factor.

Non-functional IRGs are used for storing inventory when space is really important. You want the system to choose the most efficient locations that meet your warehouse storage strategy. In functional areas, the system uses location-find algorithms to select locations where the capacity of the location and the size of the inventory are not relevant. Location-find algorithms can make use of other inventory management criteria, such as ensuring that all picks for a sales order are kept together, ready for dispatch.

The difference between functional and non-functional areas relates to the way that the system chooses a location within the internal routing group when inventory is moved into the area. In non-functional areas, the system uses put away algorithms to select locations based on the capacity of the location and the size of the inventory. These are the standard criteria used in warehouse storage areas.

Storage Location Group Maintenance

Storage Location Group Maint x

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: US-D-3
Storage Location Group: **Dispatch**
Description: Lanes Area

Internal Routing Group: Dispatch

Allow Issues:
Allow Receipts:
Allow Incoming Returns:
Allow Outgoing Returns:
Opportunity Counts:
Opportunity Count Frequency: 0
Check Digits:
Cycle Count Status Option: 0

Picking Multiple UM:
Acquisition UM:

Exclude from Picking:
Picking Level: 0
Over Pick:
Multi-Trans:
Detail Overflow Group:
Capacity Check when OTF:
Optimized Storage:
Allow Mixed Status Codes:
Recount UM:

Back Next

QAD Proprietary

Use Storage Location Group Maintenance to set up and maintain storage location groups (SLGs) within each IRG in the warehouse. Set fields for the SLG that define parameters relating to the control of issues, receipts, returns, cycle counts, and picking for locations in the SLG.

For wave planning, it is important that you set the picking level and indicate whether pallets or boxes (the UM) can be split when picking in the SLG.

Note Cycle counts and opportunity counts are discussed in warehousing quality/inspection training.

Internal Routing Maintenance

Use Internal Routing Maintenance to define a list of steps that act as the pathway through your warehouse for your inventory to take.

You can link specific sequences of IRGs together to form internal routings. Each step, or sequence, within an internal routing defines the IRG where the inventory moves next.

For each sequence step within an internal routing, you can also specify a number of parameters that control how the inventory is processed as it reaches that point in the sequence.

Several fields in this program default from Warehouse Maintenance (4.1.1). Important fields that do not default from Warehouse Maintenance are described in the following topics.

Field Definitions

Sequence. Enter the number that identifies the order of this routing step.

Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, number the sequences as 10, 20, 30 rather than 1, 2, 3.

Internal Routing Group. Specify for this sequence step of the routing the next IRG to which the inventory should move.

Internal Routing. Specify the internal routing for this internal routing group.

Internal Routing Assignment Maintenance

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Internal Routing Assignment Maintenance (4.2.9)

Int Routing Assignment Maint

Go To Actions Copy Print Preview

Transaction Type: PICK

Site: US-D3

Warehouse: US-D-3

Item Number:

Warehouse Item Type:

Address:

Custom:

Internal Routing: PickIR

Custom Program:

Back Next

QAD Proprietary

Use Internal Routing Assignment Maintenance to link specific transaction types to internal routings.

You can also specify a combination of a transaction type with an item, an item type, or an address relating to a supplier or customer so that the internal routing is used when that particular combination occurs.

Field Definitions

Transaction Type. This field is used to specify the transaction type. Maintain transaction types using Transaction Type Maintenance. You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Algorithm Assignment Maintenance

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Algorithm Assignment Maintenance (4.6.9)

Algorithm Assignment Mainten... X

Go To Actions Copy Print Preview

Algorithm Type: PK
Site: US-D3
Item Number:
Address:

Transaction Type: PICK*
Warehouse: US-D-3
Warehouse Item Type:
Custom:

Assigned Algorithms

Seq	Algo	Description
10	9	Pick by Level by Location

Sequence: 10 Algorithm: 9
Description: Pick by Level by Location

Back Next

QAD Proprietary

Use Algorithm Assignment Maintenance to link a specified sequence of algorithms (of one type per sequence) to a defined combination of the following:

- Transaction type
- Site
- Warehouse
- Item number or warehouse item type
- Address (supplier for received inventory, customer for shipped inventory)

You set up a sequence of algorithms so that you can specify the ideal method for selecting locations as the first step in the sequence. If the system cannot meet the full requirements of put-away or picking by running the first choice algorithm, it then runs the second algorithm in the sequence, and so on until the requirement has been met. Set up as many combinations of these elements as you choose.

Always include a very general algorithm as the last in the sequence so that the system always completes the task. For example, the put-away algorithm asks the system to look for storage locations that have available capacity. This may not meet any particular requirements, but including the algorithm as a last step in the sequence means that the system puts inventory away somewhere, and the task is completed.

Field Definitions

Transaction Type. Enter a valid transaction type as defined in Transaction Type Maintenance.

You specify the transaction type to link to an internal routing in Internal Routing Assignment Maintenance. You specify the transaction type to link to a sequence of algorithms in Algorithm Assignment Maintenance.

You also specify the transaction type when using the Algorithm Simulation Menu. These options simulate either location-find and put-away, or picking. The system simulates the running of the algorithms that you have assigned to the specified transaction type and displays the results of the simulated put-away or picking.

Sequence. Each algorithm assignment consists of a number of individual algorithms, in order, identified by a sequence number.

For a new assignment, Sequence defaults to 10. Number sequences by 10's (10, 20, 30, and so on) so that additional steps can be inserted easily later, if required.

Algorithm. Assign algorithms of the type you selected at the top of the frame. You can either type in the required number, or you can use the Up and Down arrow keys to move through the list of algorithms.

Use Algorithm Master Maintenance to modify the description of the algorithm you select.

In Algorithm Assignment Maintenance, you can assign algorithms of the type you selected at the top of the screen. For example, if you selected algorithm type PA, you can assign any of the put-away algorithms.

Planned orders will be created for the quantity specified in the Order Quantity field.

Return to Internal Routing Maintenance

Once you assign algorithms, return to Internal Routing Maintenance to reset these fields.

Field Definitions

Sequence. Enter the number that identifies the order of this routing step.

Each internal routing consists of a number of steps, identified by a sequence number. To make it easier to add steps within the sequence later, number the sequences as 10, 20, 30 rather than 1, 2, 3.

To Reference Option. Enter 1 to blank the Reference field.

Depending upon the warehouse operation, it is sometimes easier to issue inventory if the inventory is as close to standard as possible; that is, it's easier to have no lot/serial (when possible), and no pallet number (reference). To set a no reference, enter option 1, which sets this field to blank.

Alternate UM Option. Set the Alternate UM to the item's default stock keeping unit (SKU) of measure.

Transaction Type. This field is used to specify a transaction type, created in Transaction Type Maintenance, to associate with the internal routing.

Internal Routing. Specify the internal routing to associate with the transaction type.

Item Master Maintenance

The screenshot displays the QAD Item Master Maintenance (1.4.1) web application. The interface is organized into several sections:

- Item:** Contains 'Item Number: 01000' and 'Unit of Measure: CL'. The description is 'Item 003 (COIL)'.
- Item Data:** Includes 'Prod Line: D', 'Added: 9/23/2008', 'Design Group', 'Promo Group', 'Item Type', 'Status: ACTIVE', 'Group', 'Drawing', 'Revision', 'Drawing Loc', 'Size', and 'Price Break Category'.
- Item Inventory Data:** Includes 'ABC Class: a', 'Average Interval: 90', 'Lot/Serial Control', 'Cycle Count Interval: 120', 'Site: US-D3', 'Location: MRL1st', 'Shelf Life', 'Allocate Single Lot', 'Key Item', 'Auto Lot Numbers', 'PO Receipt Status', 'W/O Receipt Status', 'Active' checkboxes, and 'Memo Order Type'.

Navigation buttons 'Back' and 'Next' are located at the bottom right of the form.

Use Item Master Maintenance to set the site and warehouse for the item. Ensure the item status is set to Active.

Field Definitions

Item Number. Specify the code for the item that is stored in the warehouse.

Unit of Measure. Specify a valid unit of measure for the item.

Status. Enter a code identifying the status of an item. Set up item status codes in Item Status Code Maintenance. If no codes are defined, this field is not valid.

You can use this field to identify the engineering status of an item. For example, use codes such as A(ctive), I(nactive), E(ngineering design), P(rototype), or O(bsolete).

Each status can specify one or more restricted transactions. For example, you can use a status code for obsolete items to prevent an item from being issued to a work order. Before starting an inventory transaction, the system verifies if the item status permits the transaction.

Site. Enter the site that contains the warehouse which stores the item.

Location. Enter the warehouse code, as defined in Warehouse Maintenance as the location.

Unit of Measure Maintenance

Unit of Measure Maintenance (1.13)

Unit of Measure: CL

Alternate UM: PL

Item Number: D-JT003 Item 003 (COIL)

UM Conversion: 2.0000

WARNING: End of data.

Back Next

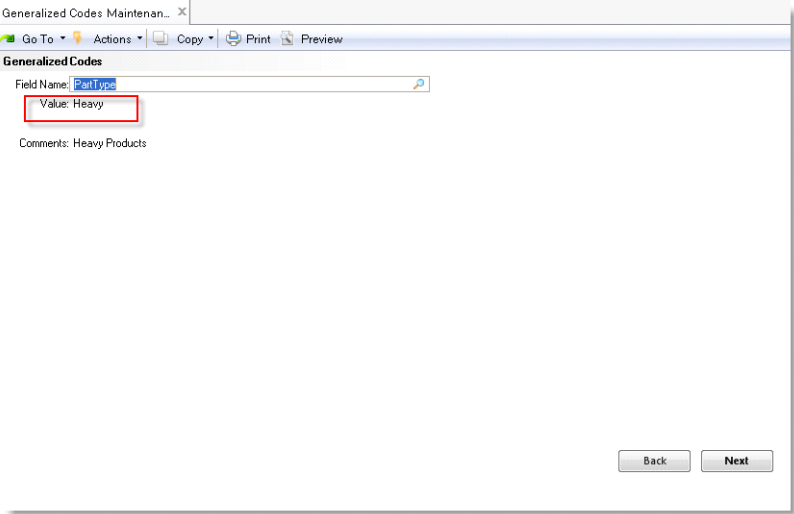
QAD Proprietary

Use Unit of Measure to set the UM for all items that you intend to use in wave planning.

Field Definitions

UM Conversion. Enter the conversion factor for converting quantities of alternate units of measure back to the item's unit of measure. This is expressed as the ratio of the alternate unit of measure to the item unit of measure.

Generalized Codes Maintenance



Generalized Codes Maintenance (36.2.13)

Generalized Codes Maintenance

Field Name: PartType

Value: Heavy

Comments: Heavy Products

Back Next

QAD Proprietary

Use Generalized Codes Maintenance to set up default values for the parttype fields; for example, specify that users can enter a heavy or standard part type.

Item-Warehouse Maintenance

Item-Warehouse Maintenance

Go To Actions Copy Print Preview

Item Number: D-IT003 Item 003 (COIL)
 UM: CL Warehousing Site
 Site: US-D3 Warehouse: US-D-3
 Warehouse: US-D-3 Warehouse D-3

Warehouse Data

Location: _____
 Storage Location Group: **BULK**
 SLG List: _____
 Warehouse Item Type: **Heavy**
 Replenishment Type: _____
 Popularity: _____
 Logistics UM Tolerance: 0.00%
 Auto Replenish:

Single PA Trans:
 Issue Method: _____
 Print ID:
 ID Quantity: 0
 OPC Threshold: 0.0
 Logistics UM: **PL**
 Pallet Max Height: 0
 Auto Replenishment %: 0.00%
 Print Unplanned Issue Tag:

Modifying existing record

Delete Back Next

QAD Proprietary

Use Item-Warehouse Maintenance to define warehouse item attributes for a specific warehouse.

Field Definitions

Warehouse Item Type. Use the Warehouse Item Type field to group items that have similar properties; for example, group heavy products.

Work Location Group Maintenance

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Workload Group Maintenance (4.15.1.9)

Workload Group Maintenance

Site: US-D3
Warehouse: US-D-3
Workload Group: wikload1
Description:
Shift Size: 1

Assigned Groups

Seq	Work Location Group	Description	Picks/Wave	Pick (Min)
1	Trolley	Trolley Group	2	4.00

Seq	Work Location Group	Description	Picks/Wave	Pick (Min)
1	Trolley	Trolley Group	2	4.00

Back Next

QAD

Use Work Location Group Maintenance to set up various work location groups such as forklift, work lane, and trolley groups.

Most of the fields default from Warehouse Maintenance (4.1.1).

Field Descriptions

Work Location Group. Enter a code that identifies the work location group you want to create.

System Code. Specify the type of screen used to confirm transactions:

Blank: Normal maintenance screens are used.

RF: Transactions are confirmed using Radio Data Terminals (RDTs), also known as Radio Frequency (RF) terminals.

This field defaults to the internal routings and work location groups that you set up in this warehouse

System Flavor. Enter the code to define the style and format of Radio Frequency screens to be used for displaying warehouse information. The Flavor codes are set up in Generalized Code Maintenance, and relate to display of information in situations such as forklift truck screens or Radio Data Terminals (RDTs).

Warehouse Location Maintenance

Warehouse Location Maintenance (4.3.13)

Warehouse Location Maintenance

Site: US-03 Warehousing Site
Location: DB9-003

Location Groupings
Warehouse: US-03
Storage Location Group: Bulk
Work Location Group: ForkLift

Warehouse Location Data
Check Digit:
Popularity:
Storage Type:
Warehouse Location Type:
Travel Sequence: 0
Dedicated:

Picking Type: Preferred UM
Opportunity Count Frequency: 0
Last Opportunity Count:
Stage (In):
Stage (Out):

Item Number	UM	Quantity	Height	Length	Width
D41004	ea	10000.0000			

Item Number: DB9-003 UM: ea Quantity: 10000.0000

QAD Proprietary

Use Warehouse Location Maintenance to set up all locations within a warehouse, after you define the warehouse and its internal routing groups (IRGs), storage location groups (SLGs), and work location groups (WLGs). When you have several locations to define, use Mass Location Maintenance.

Field Descriptions

Location. Enter the code for the location within the warehouse.

Work Location Group. Specify the name of the work location group to which a location belongs.

Dedicated. Enter Yes if this location is dedicated to storage of only one item or product; otherwise, enter No. If you enter Yes, only specific algorithms for dedicated items will consider this location for put-away. You must also specify the item for which the location is dedicated.

The location dimensions are used only for reference purposes, so you do not have to enter values. If you do enter dimensions, the values are all in terms of the dimensional unit of measure that is specified in the Dimensional UM field, below the three dimensions.

Item Number. The fields on the third Warehouse Location Maintenance screen are used to specify the quantities of a particular unit of measure that will fit in the location. You can enter multiple lines for different items and different units of measure.

Enter the item number for the inventory item to which this quantity definition relates. You can leave this field blank if the quantity relates to all items. For example, you could define how many standard pallets fit in the location, regardless of the items contained on the pallets.

If you entered Yes in the Dedicated field on the previous screen, you must also specify the item to which this location is dedicated.

UM . The fields on the third Warehouse Location Maintenance screen are used to specify the quantities of a particular unit of measure that will fit in the location. You can enter multiple lines for different items and different units of measure.

Enter the unit of measure in which this quantity definition is specified.

Quantity . Enter the quantity of the selected UM that will fit in this location. You can enter multiple lines for different items and different units of measure.

Warehouse Location Maintenance

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Warehouse Location Maintenance

Warehouse Location Maintena... X

Go To Actions Copy Print Preview

Site: US-D3 Warehousing Site
Location: DTruck01

Location Groupings
Warehouse: US-D3
Storage Location Group: Truck
Work Location Group: forklift

Warehouse Location Data

Check Digit:	Picking Type:
Popularity:	Preferred UM:
Storage Type: Truck	Opportunity Count Frequency: 0
Warehouse Location Type:	Last Opportunity Count:
Travel Sequence: 0	Stage (In):
Dedicated: <input type="checkbox"/>	Stage (Out):

Back Next

QAD Proprietary

Use Warehouse Location Maintenance to set up:

- A picker cart as a location
- A truck as a location

Setting up a Cart as a Location

When warehouse staff pick an item and place it on a cart, the stock moves from the picking location to the user location. To reflect stock movement, the system reduces the quantity in the picking location and increases the quantity in the user location.

Setting up Truck as Location

Also, use Warehouse Location Maintenance to set up the truck as a location. You set up the truck as a location and specify its storage location group and storage type. For example, you can define a Truck location and specify the storage location group and storage type as Truck. When a truck is defined as a storage location, you can use functions to report on truck capacity and contents and the warehousing system can use the truck location for storage.

Field Descriptions

Location. Enter a location that represents the truck.

Storage Location Group. Enter a storage location group for the truck.

Work Location Group. Enter a work location group for the truck.

Storage Type. Enter a code to represent the type of storage for the truck.

User Work Location Group Maintenance

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User Work Location Group Maintenance (4.11.3.13)

User Work Location Group Mai... x

Go To Actions Copy Print Preview

Site: US-D3

Warehouse: US-D-3

Work Location Group: Trolley

User ID: UserA

System Flavor: A

Device:

External Device Printer:

Form Printer: Use External:

ID Printer: Use External:

Task Printer: Use External:

Back Next

QAD Proprietary

Use User-Work Location Group Maint to assign a user to a work location group, and also to set up print options specific to that user. For example, set up a user to be a batch-picking zone picker and another to be a fork lift truck driver.

Field Descriptions

User ID. Enter a valid system ID for the user you want to associate with the specified work location group.

Form Printer. Specify the name of the printer to be used for printing forms.

ID Printer. When Print ID is Yes, specify the name of the printer to be used for printing inventory IDs.

Task Printer. When any of the task printing options is Yes, specify the name of the printer to be used for printing inventory task transactions.

External Device Printer. If any of the Use External fields are set to Yes, specify the name of the external printer to be used.

Lane Maintenance

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Lane Maintenance (4.15.1.1)

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: US-D-3
Lane: DLane001
Description: Lane 001

Capacity: 20.00
Carrier: Fedex
Tasks: 0
Absolute Full %: 0.00

Modifying existing record

Delete Back Next

QAD Proprietary

Use Lane Maintenance to define a shipping lane or a dock. A shipping lane and a dock are locations. You can specify the carrier for this shipping lane.

Field Descriptions

Lane. Enter a location previously defined in Warehouse Location Maintenance that represents this shipping lane or dock.

Carrier. Specify the carrier for this shipping lane. Specify multiple carriers with a comma-separated list.

Tasks. Specify the most common task associated with this lane.

Lane Group Maintenance

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Lane Group Maintenance (4.15.15)

Lane Group Maintenance x

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: US-D-3
Lane Group: GroupST
Description: Standard Material Group

Assigned Lanes

Seq	Lane	Description
10	DLane001	Lane 001
20	DLane002	Lane 002

Sequence: 10 Lane: DLane001 Lane 001

Back Next

QAD Proprietary

Use Lane Group Maintenance to define a collection of shipping lanes. You can group several shipping lanes together to serve other purposes; for example, you may have several shipping lanes that you use for one item type and other shipping lanes that you use for a different item type. You can group the shipping lane based on the item type.

Enter shipping lanes by specifying the next sequence number in the Seq field and the shipping lane name in the Lane field at the bottom of the display; then press Go. The system adds the shipping lane as the next lane in the sequence to the display.

Field Descriptions

Lane Group. Enter the name of the lane group. A lane group is a collection of shipping lanes. You must define the shipping lane first in Location Maintenance (80.3.13.1). You can group several shipping lanes together to serve other purposes; for example, you may have several shipping lanes that you use for one item type and other shipping lanes that you use for a different item type. You can group the shipping lane based on the item type.

Sequence. Specify the next number in the sequence in the group to be accessed by the system.

Lane . Specify the name of the shipping lane to add to the lane group.

Lane Group Assignment

The screenshot displays the QAD Lane Group Assignment (4.15.1.13) web interface. The interface features a blue header with the QAD logo and the tagline "Our Passion. Your Advantage." Below the header, the title "Lane Group Assignment (4.15.1.13)" is prominently displayed. The main content area contains a form with the following fields and values:

- Site: US-D3
- Warehouse: US-D-3
- Warehouse Item Type: (empty, highlighted with a red box)
- Description: Link Standard Item
- Last Lane Group: (empty)
- Lane Group: GroupST (highlighted with a red box)

At the bottom right of the form, there are two buttons: "Back" and "Next". The QAD logo and "QAD Proprietary" text are visible at the bottom left of the interface.

Use Lane Group Assignment to link a shipping lane group to a site and warehouse and, optionally, link a warehouse item type to a shipping lane group.

Field Descriptions

Warehouse Item Type. Specify a code that categorizes items in groups of similar type, for example, handling characteristics or put-away method. These codes can be used in some algorithms and internal routing assignment.

Local Exit Routine Setup

Local Exit Routines (4.23.10)

Local Exit Routines Setup

Go To Actions Copy Print Preview

Bulk Pick Sheet (whbplk01.p)	whbplk01.p
Pre-Shipper List (whbpps01.p)	whbpps01.p
Printer Template User Fields (whbpps01.p)	
Order Detail Update (whomk01.p)	
Cycle Count Selection Algorithms (whicccck.p)	
Task Calculation (whlmlk01.p)	whwata01.p
Batch Picking Order Selection (whbplk1x1.p)	whbplk1.p
Batch Picking Task Sort (whbplk1x2.p)	
RF Pallet Overpick (whrfmbr1.p)	whrfmbr1.p
Batch Picking Screen Format (whbplk3.p)	whbplk3.p
Batch Order Export (whtraxbp.p)	
Send Shipment (whtraxsp.p)	
Cancel Shipment (whtraxcp.p)	
Truck Shipment (whtraxtp.p)	
TMS Integration Control (whtraxcp.p)	

Create Date: 9/23/2008 mfg
Modified Date: 10/13/2008 mfg

Modifying existing record

Back Next

QAD Proprietary

Use Local Exit Routine Setup to extend warehousing functions by specifying custom programs that you have modified for your specific requirements.

For example, you can define the program to call when warehouse staff replenish from a single pallet. QAD Warehousing supplies a custom program for each function. The supplied program is shown in parenthesis () with each function.

Field Descriptions

RF Pallet Overpick (whrfmbr1.p). During replenishment, run this overpick program so that warehouse staff can return items that are not picked. When you use this program, the system sets the Allow Split Replen in Batch Picking Control (4.15.24) to Yes.

Replenishment List Maintenance

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Replenishment List Maintenance (4.1.16)

Replenishment List Mainten... x

Go To Actions Copy Print Preview

Site: US-D3 Warehousing Site
Description: Wave Rep List

Replenishment List: WaveRep
Comments:

Replenishment List Details

Seq	Warehouse	Description	SLG	Description
10	US-D-3	Warehouse D-3	Bulk	Reserve Area(Pallets)

Seq: 10 Warehouse: US-D-3 Store Loc Group: Bulk

Back Next

QAD Proprietary

Use Replenishment List Maintenance to define a replenishment list. This is a series of storage location groups in which the system looks in sequence for items in order to replenish a specified location or set of locations. You link the list to a location or SLG to replenish. To build the list, enter a code and replenishment list name, then enter the sequence number for the SLG.

Field Definitions

Seq. Enter the sequence number for the SLG. The sequence number indicates the order that the system will use at the SLGs in order to pick inventory for the replenishment-step 10 first, step 20 second, and so on.

Wave Planning Control

Use Wave Planning Control to set defaults for wave planning programs and operations.

Field Descriptions

Default From Due Date. Specify a number of days to be added or subtracted from the current date when setting a default value for the Due Date field in Wave Selection.

Specify in terms of days from the due date; for example, specify 9 for 9 days from the due date.

Use the second entry field to specify a plus (+) or minus (-) to indicate past dates or future dates. Valid past dates include today's date minus 9,999 days. Valid future dates include today's date plus 9,999 days. Use negative numbers to indicate past due items for which you want picking completed.

When you enter -9999 here, the field is blank in Wave Selection. In this case, the system includes all due dates until the To Due Date value.

[FromSign]. Specify a plus (+) or minus (-) to indicate past dates or future dates. Valid past dates include today's date minus 9,999 days. Valid future dates include today's date plus 9,999 days. Use negative numbers to indicate past due items for which you want picking completed.

[ToSign]. Specify a plus or minus to indicate past dates or future dates.

Default To Due Date. Specify the number of days to be added to or subtracted from the current date when setting a default value for the To field in Wave Selection. Use the second entry field to specify a plus (+) or minus (-) to indicate past dates or future dates.

Sort Algorithm. Specify the algorithm the system uses to sort orders for a wave. You can select from sales orders, scheduled orders, or distribution orders, or all to include in the wave.

Note Currently only one algorithm is available; future releases of wave planning will include additional algorithms.

Algorithm 1: Sort by priority by order. The program for this algorithm is whwa001.p. Algorithm 1 considers all orders with the highest priority.

Define the priority for a customer in Address Whse Detail Maint, which defaults to any order you create for the customer. Use Order Maintenance to view priority.

If you restrict wave selection to a specific number of order lines by specifying a maximum number of order lines in the Def Max Order Lines field, the system selects only the orders with the highest priority for that wave.

You can customize whwa001.p with any text-editing tool, and then enter your customized program here. For example, you can change the sort algorithm to sort by customer class and define a new algorithm as whwa999.p. You must add the customized program to Generalized Codes Maintenance for the SortAlgo field before you can use it in the system. If you create whwa999.p, you enter 999 in SortAlgo because the system already looks for algorithm programs called whwa.

You can change the priority of the order using Wave Priority Boost; for example, if you have an urgent request to fill orders immediately.

Load Algorithm. Enter an algorithm to calculate the workload during the wave selection process.

Note Currently only one algorithm is available; future releases of wave planning will include additional algorithms.

Algorithm 1: Workload by WLG - dedicated location. The program name for this algorithm is whlo001.p. This algorithm first considers a dedicated location for the item. If there are multiple dedicated locations, it only considers the first one found in the system. If there are no dedicated locations, the system looks for an item-location replenishment definition. If a definition exists, then the algorithm uses this location. If there are multiple item-location replenishment definitions, the system only considers the first. The system calculates the number of forecasted picks based on the rule that one order line equals one pick.

A pick occurs in a given WLG because the system links the item needed to a dedicated location and that location belongs to a WLG. If you use multiple dedicated locations for a given item, then the algorithm supplies a correct result only if the different locations belong to the same WLG. The algorithm always looks for the first location dedicated for the item.

You must define the workload group that you monitor in a specific site/warehouse for a wave in Workload Group Maintenance.

Use any text editor to edit and customize the algorithm and save it with a different name. Define and describe the new algorithm in Generalized Codes Maintenance for the LoadAlgo field.

Use Def WL Algo. When different workload algorithms are available, you can specify which algorithm to use for calculations when you select a wave in Wave Selection. Indicate whether the system prompts you to use the default workload algorithm in Wave Selection.

No: Prompt for which algorithm to use during wave selection.

Yes: Do not prompt for which algorithm to use during wave selection. Use the default algorithm specified in Workload Algorithm. If you always use only one algorithm, set to Yes to remove the prompt for the algorithm to use during wave selection.

Modify Details. Indicate whether to select or deselect order lines in Wave Selection.

No: You cannot select or deselect order lines in Wave Selection. You can only deselect an entire order.

Yes: You can select or deselect order lines in Wave Selection.

Priority At Task Creation. Specify a default priority value for a wave release. The system creates the release group when you release the wave. Once created, you can assign the release group to a lane; however, the system may create tasks and an RF device can receive the tasks before you assign the release group to a shipping lane. To prevent this, set this field to 0 (zero). The default is 0. The field defaults to the same-named field in Wave Release.

Priority After Active. Specify a default priority value to use when you release the wave in Wave Release. This is the priority the system assigns to the picking tasks once you activate release groups. If you want the tasks to be processed with RF devices, specify a non-zero value. When using batch picking in the picking area, this value is not important as long as it is a non-zero value. This is because batch picking sorts orders by order priority, not task priority, and selects tasks based on the travel sequence. For other picking techniques, though, when warehouse staff use the RF Next Task screen, the task priority is important.

Important You must set the Task Calculation field in Local Exit Routines Setup to the whwata01.p program.

Lane Load Algorithm. Enter a load algorithm to use when you use lane groups.

Before you set this field, you must:

- Define lanes in Lane Maintenance.
- Define lane groups in Lane Group Maintenance.

The following lists the load algorithms you can specify and the program that corresponds to the algorithm.

Algorithm 0-Take Next Lane Group: This algorithm considers the last lane group used, then takes the next one based on alphabetical order. If the last one is reached, it takes the first one again. Use this algorithm when you want to split shipping lanes and use sets of shipping lanes for different waves. In this case, each wave uses the next lane group and the system selects a lane within that lane group. The program name for this algorithm is whlalo00.p.

Algorithm 1-By Number of Tasks: This algorithm selects the lane group that has the least number of tasks allocated to a shipping lane that belongs to that lane group. The program name for this algorithm is whlalo01.p.

Algorithm 2-By Current Stock: This algorithm selects the lane group containing the smallest amount of items. It sums the inventory records-stock on-hand and stock coming in-regardless of the base unit of measure. This means the total is not always relevant. The program name for this algorithm is whlalo02.p.

Algorithm 3-By Number of Orders: This algorithm selects the lane group containing the smallest amount of orders, regardless of the number of lines for those orders. The program name for this algorithm is whlalo02.p.

Algorithm 4-By Number of Order Line: This algorithm selects the lane group containing the smallest amount of lines. The program name for this algorithm is whlalo04.p.

Create RG in Wave Release. Indicate whether the system creates wave release groups automatically when you release the wave.

No: Release groups are not created automatically in Wave Release. Only picking tasks take place when you release the wave. You must use Wave Release Groups Creation to create release groups and assign them to shipping lanes and Wave Release Group Activation to activate them.

Yes: The system automatically creates release groups when you release the wave in Wave Release.

Lane Group. Specify the default lane group. This field defaults to the Lane Group field in Wave Release. The wave release process requires that at least one group exist; even when you do not need different lane groups, you must create one and assign all shipping lanes to it.

You must leave the Lane Group field blank in Wave Release if you want to use the lane load algorithms to find the most suitable lane for a wave release; otherwise, the system uses the lane group you specify in Default Lane Group.

Maximum Order Lines. Enter the maximum order lines for a typical wave. This field defaults to the same-named field in Wave Selection.

The size of a wave depends on many things, such as the number of order lines per day, carriers, and work load capacity. With experience, you can learn the optimal size of the wave that streamlines the throughput of operations in your warehouse and set this field to achieve the optimal wave size.

Default Include. Indicate the default value of the Include field that displays when orders display in Wave Selection.

No: The default value of the Include field is No. You must toggle the Include field to Yes in Wave Selection to include the order or order lines in the wave.

Yes: The default value of the Include field is Yes. You must toggle the Include field to No to deselect the order or order lines in the wave.

Use Limit in Add Frame. When the system displays orders for a wave in Wave Selection, additional function keys can be used. One function lets you add more orders than originally selected to create the wave. Indicate whether the system considers the setting of Def Max Order Lines when you add more orders.

No: The system does not take the maximum number of order lines into account when you add more orders.

Yes: The system considers the Def Max Order Lines you specify before you can add more orders.

Time per Pick (Min). Enter the default value for the average pick time in a WLG measured in minutes. This is the value the system uses when you add a WLG in Workload Group Maintenance. You can modify this value for each WLG.

Display Only Allocated Lines. Indicate whether the system selects only order lines with a general allocation when it selects orders for a wave in Wave Selection.

No: The system selects all order lines for the wave even if there is no general allocation.

Yes: The system selects only order lines with a general allocation for the wave.

By default, the picking that takes place when you replenish the wave has Auto Allocation set to Yes. This means that if the order line is not generally allocated before the system selects it in the wave, it is generally allocated during the picking process.

Note This field does not apply to customer schedules since they do not work with general allocation on order lines.

Display Qty Alloc/Open. Indicate whether the system displays the quantity generally allocated for the order line or the quantity open for the order line in Wave Selection.

Open (the default): The system displays the quantity open for the order line.

Alloc: The system displays the quantity generally allocated for the order line.

Generate Release Groups. Indicate whether the system creates multiple release groups or only one release group for the entire wave when you release the wave. This field defaults to the same-named field in Wave Release.

No: The system creates only one release group for the wave you are releasing.

Yes: The system creates more than one release group for the entire wave you are releasing.

Order Lines per Release Group. Indicate a number for the limit of picks per release group. This field defaults to the same-named field in Wave Release. If you do not want to limit the number of picks per release group, enter the maximum value of 99999.

Release Group Algorithm. Enter an algorithm that the system uses to create the release group.

Note The release group algorithm is unique to Wave Planning Control; it is not an algorithm type that you assign to movements, items, or warehouses. Currently only two algorithms are available; future releases of wave planning will include additional algorithms

Release Group Algo 1: Standard release group creation. The program name for this algorithm is whre001.p. This algorithm creates different release groups if the order lines are for different due dates, carriers, and warehouse item types.

Release Group Algo 2: Release group creation without due date. The program name for this algorithm is whre002.p. This algorithm creates different release groups if the order lines are for different carriers and warehouse item type. Order lines are a part of the same release groups even if they have different due dates.

Release Group Algo 3: Used for load optimization. The program name for this algorithm is whre003.p. This algorithm creates different release groups if the order lines belong to different loads.

You can create a new release group algorithm. Add the new selection in Generalized Codes Maintenance for the RelAlgo field.

Change Include. Indicate whether shipping lanes are included as the default when the system launches release groups during a wave release.

No: When you manually assign a shipping lane to a release group in Wave Release Groups Create/Activate, the system does not include the shipping lane by default when it launches the release group during a wave release. When releasing a wave, you must manually enter the shipping lane in the Lane Group field in Wave Release.

Yes: When you manually assign a shipping lane to a release group, the system includes the shipping lane by default when it launches release groups in a wave release.

Activate RG in Wave Release. Indicate whether the system activates release groups automatically when you release the wave.

No: The system does not automatically activate release groups that it automatically created by setting Create RG in Wave Release to Yes. You must activate release groups using Wave Release Groups Activation.

Yes: The system automatically activates release groups when you release the wave in Wave Release.

Pick Boxes in Pallet Area. Indicate whether this second step of a wave replenishment is implemented or bypassed.

No: The system skips this step. Staff can replenish enough items in the detail picking area to cover box picking from that area.

Yes: The system implements this step and sets tasks to pick boxes from the pallet area and move them directly to the consolidation area or dock.

Box Pick UM. Enter the UM for picking boxes. The system uses this setting in step 2 of wave replenishment. For this step, the system considers only the reserve area. The following picking parameters are hard-coded and unchangeable for this step:

You can optionally omit the second step of wave replenishment by specifying No to Pick Boxes in Pallet Area. When you omit the step, the system does not use the value you enter here.

If this field is blank, the system uses the Pick/Multi Of field in Storage Location Group Maintenance to set up multiple pallet units of measure.

Multi Trans for Box . Indicate whether the system creates a task for each box picked in step 2 of wave replenishment.

No: The system creates only one task for the entire quantity that staff pick from the pallet, regardless of the number of boxes on the pallet.

Yes: The system creates a task for each box picked during step 2.

Replenishment OverPick. Indicate whether staff can overpick during step 3 of replenishment.

No: Staff cannot overpick for the replenishment and can only pick the quantity required.

Yes: Staff overpick for the replenishment and pick more than the quantity required. If you set Allows Split Replen to No, set this field to Yes.

Allows Split Replenishment. Indicate whether staff can split the pallet in the reserve area during step 3 of wave replenishment.

No: Staff can only pick the full alternate UM; for example, a complete pallet based on standard picking rules in the system. If set to No, set Replenishment Overpick to Yes; otherwise, the system creates no tasks if the remaining required quantity is less than the pallet quantity.

Yes: Staff can split the pallet in the reserve area during the picking for replenishment. The system does not consider Replenishment Overpick if set to Yes.

Pallet/Box Initial Priority . Specify the default priority for tasks in the first and second steps of the wave replenishment. In these two steps, staff pick full pallets or boxes in the reserve area and move them directly to the consolidation area or dock. This field defaults to the same-named field in Wave Replenishment.

The default is 0 (zero). When the priority is 0, the system creates the tasks but they are not yet visible on the RF device. When you release the wave, the system modifies the priority of the tasks when it launches the release groups during the wave release. The system does this to synchronize picking tasks in the reserve area and detail picking area. Also, during the wave release, the system reassigns the destination location of the tasks, moving the task location to the same shipping lanes as the remaining picking tasks.

You can view picking tasks for each wave by using Wave Task Inquiry.

Pause Between Waves . Enter the rate based on the number of seconds at which the system refreshes the display in Wave Status Inquiry. The display in Wave Status Inquiry is auto-refreshable, and the rate is set by the value you enter here.

From Order Type. Enter the first order type in a range of order types to:

- Use as the default when selecting orders for the wave in Wave Selection.
- Determine which order type to pick first during step 1 and step 2 of wave replenishment.

Enter the last order type in the range in To Order Type.

Valid values are SO and DO. The default is SO.

Select orders as follows:

- From SO To SO: Use sales order lines.
- From DO To DO: Use distribution order lines.
- From DO To SO: Use distribution orders and sales orders.

Note If you specify From SO To DO, the system cannot display the orders. The system searches for orders in alphabetical order and cannot find a sales order before a distribution order.

During step 1 and step 2 of wave replenishment, this field determines whether staff start with SO picking or DO picking. When enough stock to cover all orders does not exist, the setting of this field can have important consequences. Typically, general allocation prevents this problem. If Display Only Allocated Lines is Yes in Wave Planning Control, the system selects only the lines already generally allocated for the wave; that is, only order lines for which there is enough inventory.

This field defaults to the Order Type field in Wave Selection.

To Order Type. Enter the last order type in the range that begins with the From Order Type field. Valid values are SO and DO. The default is SO.

SO Pick First. Indicate whether warehouse staff pick first for sales orders in the wave.

No: Warehouse staff pick first for either distribution orders or sales orders in the wave.

Yes: Warehouse staff pick first for sales orders in the wave.

Split Multi-Item Pallet. Indicate whether the system splits a multi-item pallet for step 1 of replenishment.

No: The pallet cannot be split. You should set Pick Multi-Item Pal to indicate whether staff can pick from the complete pallet.

Yes: The pallet can be split and the system proposes a picking task only for the item required on the pallet instead of the full pallet.

Auto Allocation. Indicate whether the system automatically performs general inventory allocations for confirmed order lines that are not yet generally allocated.

No: The system does not automatically perform general allocations.

Yes: The system automatically performs general inventory allocations for confirmed order lines.

New Pre-Shipper by Wave. Specify whether the system generates a new pre shipper even when orders on a new wave are for a ship-to or carrier that is on an existing pre-shipper. The system typically sets up wave picking so that an open pre-shipper for a given ship-to and carrier is reused and wave order lines are added to it.

No: Do not generate a new pre-shipper. Use an existing pre-shipper and add lines for the new wave to it.

Yes: Generate a new pre-shipper by wave.

Pallet Unit of Measure. Specify the common pallet alternate unit of measure (UM) for the reserve area. The default is blank.

The system uses the setting of this field during the first step of wave replenishment. During the first step, pallets are never splittable and there is no overpicking. These parameters are hard coded for the first step. The system sets up pick tasks by multiples of the pallet UM that you enter here.

If this field is blank, the system uses the Pick/Multi Of field in Storage Location Maintenance to set up multiple pallet units of measure.

Pallet SLG Level From/To. Enter a range of Storage Location Group (SLG) picking levels. The field includes two entry points: the first for the first level in the range, and the second for the last level in the range.

Set levels here to ensure the following:

- Picking from the detail picking area only during wave release
- Picking from the reserve area only in step 1 of the wave replenishment

During a wave release, the system does not consider stock in the reserve area. The system avoids picking in the reserve area by skipping the SLG that has a picking level equal to or within the range of the values you specify here.

Note All picking algorithms the system uses in wave planning should be pick-by-level types such as the pick-by-level-by-month or pick-by-level-by-expiration-date algorithms. These types of algorithms contain the logic the system uses when setting pallet SLG picking levels. Use Algorithm Master Report to find a pick-by-level algorithm.

Replenishment List. Enter a valid replenishment list that contains a list of all SLGs in the reserve area to use during wave replenishment. You define replenishment lists in Replenishment List Maintenance.

Replenishment Pick UM. Enter a UM to use during step 3 of wave replenishment when staff replenish detail picking area stock from the reserve area. The default is blank.

If this field is blank, the system uses the Pick/Multi Of field in Storage Location Maintenance to set up multiple pallet units of measure.

Replenishment Multi Trans. Indicate whether the system creates a task for each alternate UM staff pick during step 3 of wave replenishment. The system determines an alternate UM based on the setting of Replen Pick UM.

No: The system creates only one task for all alternate UMs that staff pick.

Yes: The system creates a task for each alternate UM that staff pick.

For example, if you set Pick UM to bx (for box) and this field to Yes, the system creates a task for each box that staff move to the detail picking area. If you set this field to No, the system creates only one task regardless of the number of boxes on the pallet.

Only Allocate Distribution Orders]. Indicate whether to allocate distribution orders only.

No: Allocate both sales orders and distribution orders.

Yes: Allocate distribution orders only.

Pick Trigger%. Specify a percentage of completed picking tasks in a wave to use as the trigger to start the next wave.

The system displays an asterisk (*) next to the wave you need to start in Wave Status Inquiry.

Your experience with wave releases dictates the percentage you enter here. Typically, wave replenishment starts just before the previous wave completes, but you can start replenishment too late, resulting in too little stock to release the wave; and multiple releases are then required to complete the wave.

Avoid Rel w/o Replen. Indicate whether wave replenishment is required to release the wave.

No: You can skip the wave replenishment and release the wave. You should ensure that you have enough stock in the picking area to cover the wave requirements before you avoid replenishment.

Yes: You must replenish the wave using Wave Replenishment before you release the wave, even if no replenishment tasks are necessary for the current wave.

Pick Multi-Item Pallet. Indicate whether warehouse staff can pick a full pallet if it contains multiple items.

No: The system skips step 1 of replenishment for the pallet and instead replenishes using step 3 which replenishes from the picking area.

Yes: The system allocates only the required item, but staff can move the complete pallet.

Replenishment Task Priority. Enter the default task priority for standard replenishment tasks.

When the system creates wave replenishment tasks, standard non-wave replenishment tasks may exist for wave items. Warehouse wave replenishment tasks are for an order, while non-wave tasks may not be for an order. When they are not for an order, the replenishment task can have a lower

priority than a wave replenishment task. When the standard replenishment task has a lower priority, staff may not perform the task right away and the wave release can be blocked until that task is confirmed. Use this field to increase the priority.

New Pre-Shipper if Older (Days). Specify the number of days that the system adds wave orders for a given ship-to an open pre-shipper. After this period, the system creates a new pre-shipper for wave orders.

Priority. This field contains the value of the priority for the next wave in a wave release. During wave release, all orders that are released take the priority of the wave. After the wave is released, this counter is decremented one unit at a time. This means that the first wave that is released gets a higher priority than the next wave. As a result, the Batch Picking screen on RF devices displays the wave that was released first before the other waves. This lets staff complete all the tasks for a given wave before picking for the next wave.

Workload Group Maintenance

QAD
Our Passion. Your Advantage.

Workload Group Maintenance (4.15.1.9)

Workload Group Maintenance x

Go To Actions Copy Print Preview

Site: US-D3
Warehouse: US-D-3
Workload Group: wklload1
Description: Shift Size: 1

Assigned Groups				
Seq	Work Location Group	Description	Picks/Wave	Pick (Min)
1	Trolley	Trolley Group	2	4.00

Seq	Work Location Group	Description	Picks/Wave	Pick (Min)
1	Trolley	Trolley Group	2	4.00

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QAD Proprietary

Use Workload Group Maintenance to define a workload group and assign it to a warehouse and site. A workload group is a collection of work location groups (WLGs). When the system uses workload calculations, it takes into account all workload groups you define in Workload Group Maintenance for the site and warehouse to which it applies the calculations.

Workload Group Maintenance displays the shift size at the workload group level. The shift size indicates the number by which the system multiplies the capacity of all WLGs.

You can enter a new workload groups by specifying the next sequence number in the Seq field, the work location group name, number of picks expected per wave, and the number of picks per minute at the bottom of the display; then press Go.

Field Descriptions

Shift Size. Enter the number of warehouse staff in a shift when you create a new workload group. The system uses this value to determine the capacity of all WLGs. For example, capacity is 64 picks/wave per person; therefore, for a shift of two people that work in that workload group, the total capacity is 128 picks/wave.

Seq. Enter a sequence number identifying the work location group within this workload group. Sequence numbers must be unique within a workload group. The system prints work location group sequence numbers in ascending sequence. For example, work location group 20 follows work location group 10.

Number sequences by 10s or 100s, so you can add new work location groups without renumbering existing ones. For example, if you have work location group 10, 20, and 30 and need to add another work location group after 20, you can enter it as work location group 25.

WLocGrp. Enter the name of the work location group.

Picks/Wave

Enter the number of picks expected per wave for the work location group.

Pick (min). Enter the number of picks expected per minute for the work location group.

Creating a Wave

Field has index that lets you search

Wave Selection

Go To Actions Copy Print Preview

Wave Number: 00000011
Wave Status: NEW
Order Priority: 0
Remark:
Site: US-D3
Warehouse: US-D-3
Warehouse Site: Warehouse D-3

Due Date: 10/3/2008 :
To: 11/2/2008 :
Order Type: DQ
Order:
Ship-To:
Class:
Priority:
Route:
Carrier:
Profile:
Reference:

To:
To:
To:
To:
To:
To:
To:
To:

Maximum Order Lines: 9,999
Default Include:
Include Load Optimization:

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QAD Proprietary

Use Wave Selection to create the wave. Wave selection lets you:

- Create the Wave
- Select orders for the wave similar to Picklist/Pre-Shipper—Automatic (7.9.1)
- Add carrier, route, priority, class, and profile criteria to a wave.

In Wave Selection, fields marked with an asterisk (*) have indexes. This lets you search the indexes and sort by different criteria, display additional information about the orders

Field Descriptions

Wave Number. Enter a wave number to edit an existing wave or leave blank to let the system create a wave number for a new wave. If you enter a value, the system displays data for that wave.

Wave Status. The system displays the status of an existing wave or automatically assigns a status of NEW to a new waves. Wave status is managed and updated by the system during the wave life cycle. You can view wave status details using Wave Status Inquiry (4.15.4.3). Possible statuses are:

- NEW: New wave
- INCREPL: Incomplete replenishment
- REPLEN: Replenishment
- RGASSIGN: Release groups assigned orders

RGCREATE: Release groups created

RGACTIVE: Release groups active

CLOSED: Closed

Due Date and To. Enter a range of due dates for selecting orders to include in the wave. Enter two-digit months, days, and years. You can also enter the time of day, based on a 24-hour clock; for example, enter July 4, 2006, 1:00 PM as 07/04/06 13:00.

The default values for Due Date and To are calculated based on entries in the Def From Due Date and Def To Due Date fields in Wave Planning Control (4.15.1.24).

Order Type. Enter the order type or range of order types as follows:

- From SO To SO: Use sales order lines for this wave.
- From DO To DO: Use distribution order lines for this wave.
- From DO To SO: Use distribution orders and sales orders for this line.

If you specify From SO To DO, the system cannot display the orders. The system searches for orders in alphabetical order and cannot find a sales order before a distribution order.

This field defaults from the same-named field in Wave Planning Control (4.15.1.24).

Order. Enter a range of specific order numbers if you want to include lines from those orders only.

Ship-To. Enter a range of ship-to codes for selecting orders to include in the wave.

Class. Enter a range of customer class codes for selecting orders to include in the wave.

Priority. Enter a range of priorities for the orders for selecting orders to include in the wave. You associate a priority with an order in Order Warehouse Data Maintenance (4.13.1).

Route. Enter a range of route codes if you want to include orders only from specific routes in the wave. You associate a route with an order in Order Warehouse Data Maintenance.

Carrier. Enter a range of carrier codes for selecting order lines for this wave. If you specified the carrier for order lines in warehouse order maintenance functions, the system selects lines that match. Otherwise, if you do not specify the line-level carrier, the system uses the carrier you specify at the order header level.

Profile. Enter a range of specific profiles to use when selecting orders for a wave. You define profiles in Address Whse Detail Maintenance (4.13.13). You can update the Profile in the wave selection screen by pressing P.

Reference. For customer scheduled orders, enter a range of references for selecting orders to include in the wave.

Def Max Order Lines. Enter a numeric value for the default maximum number of order lines to include in a single wave. This field defaults from the Maximum Order Lines field in Wave Planning Control (4.15.1.24).

Default Include. Indicate how to set the Inc field in the wave order display. This field defaults from the Default Include field in Wave Planning Control.

No: Do not set the Inc field to Yes in the order display to automatically include the orders that match the defaults set in Wave Selection.

Yes: Set the Inc field to Yes in the order display to include all orders that match the defaults set in Wave Selection.

Use this field to streamline program execution if you typically include all selected orders when creating a wave.

Include Load Optimization. Indicate Yes or No to include load optimization for this wave. Refer to the Wave Selection procedural help for more information on load optimization.

No: Do not include orders that are marked for load optimization by a Transportation Management System (TMS).

Yes: The system displays the Load Selection frame that lets you include load orders in a wave. Select loads by a range of load numbers, arrival/departure dates, carrier, ship via, FOB point, MOT, vehicle ID or language. You can also specify whether to include full or less than full truck loads or parcel shipping.

Once you specify criteria to select orders for the wave, the system displays the selected orders.

Using Additional Functions in the Wave Order Display

You can use additional functions when orders display in Wave Selection:

- Remove orders from the wave using either the Keep Only or Remove Frame (F11) function.
- Add orders to the wave using wave selection criteria (F12)
- Sort the frame by carrier (C), due date (A), ship-to (S), net weight (N), order (O) or profile (P). You can find a line, once you sort.
- Select/deselect all orders (Return). Select/Deselect by a given ship-to in real time after you sort by ship-to (I)
- See order details and select/deselect order lines one at a time (D)
- Edit the Profile or Carrier (E)
- Display a summary (M). The summary displays the number of orders and order lines based on the last sort criteria used. For example, first sort by carrier by pressing (C); then press (M).
- Refresh the frame (R). When you refresh a frame, the system deletes all orders or order lines having Include set to No.
- Undo the last action (U). The system will undo only the latest action.
- Display the workload and once displayed, calculate the workload.
- Display a summary of all loads included in a wave selection, add loads to a selection, or deselect closed load orders from a wave.

Wave Replenishment

Wave Replenishment (4.15.6)

Wave Number: 00000008
Wave Status: RGCREATE

Remark:
Site: BATCHWV
Warehouse: Batchwv

Def Pal/Box Init Pri: 0

Start Wave Replenishment?

Specify Yes to replenish the wave.§

The system displays a replenishment report.

End of Report

Report Criteria: Report Submitted By: mfg

Wave Number: 00000008
Wave Status: RGCREATE

Remark:
Site: BATCHWV
Warehouse: Batchwv

Def Pal/Box Init Pri: 0 Output: PAGE

QAD Proprietary

Use Wave Replenishment to ensure that stock moves from the reserve area to the picking area before the picking takes place. Wave replenishment ensures that quantities are sufficient to meet the demands for the order lines in the wave.

When you run wave replenishment, the system considers the requirement for the item on the wave and all open waves that require the item. If other waves require the item, the system adds the requirement to the warehouse staff assigned to the replenishment task for the waves. When you run wave replenishment for the other waves that require the item, the system checks not only existing stock in the picking location but all the stock expected to arrive in the picking location. This ensures that there is enough stock to cover existing replenishment task

The system considers inventory in the storage location group (SLG) during wave replenishment to determine if enough inventory is available in the forward pick location. The system checks for stock first in the home SLG for the item, then in the overflow SLG linked to the home SLG

Field Descriptions

Wave Number. Enter the number of the wave you want to replenish. The system displays the status of the wave, and the site, warehouse, and remarks entered in Wave Selection.

Default Pal/Box Init Priority. Specify the default priority for tasks in the first and second step of the wave replenishment. In these two steps, staff pick full pallets or boxes in the reserve area and move them directly to the consolidation area or dock.

If you want staff to perform pallet and box picking at the same time as the detail picking, set this field to 0 (zero). When 0, the system creates tasks but the tasks are not visible by RF device users. When you release the wave, the system activates the tasks and sets the priority to a non-zero value. By setting priorities, the system synchronizes all picking activities for the wave.

Wave Replenishment Steps

Wave replenishment involves three steps, so setup is different from standard replenishment where you set up picking parameters for a specific storage location group (SLG); however, depending on the setup, you may not use all steps:

- Step 1: Full-pallet picking

For larger quantities to pick, such as for distribution orders, staff can pick full pallets from the reserve area and move them either to the picking area or directly to the shipping lanes, bypassing the picking area. You can bypass the picking area only if the quantity on a single order line is bigger than the pallet quantity.

- Step 2: Box picking from the reserve area

Staff can pick either full boxes from the reserve area or full or open boxes from the picking area. You can use this step to pick multiple boxes from the reserve area and move them directly to the consolidation or staging area.

- Step 3: Picking area replenishment

When full-pallet picking or box picking is complete for a wave, the system calculates the remaining missing quantities in the picking area to fulfill all order lines from the wave. The system creates the tasks to move items to the picking area from the reserve area.

The system calculates the requirement per item across the entire wave; that is, the remaining quantities needed are the sum of all order line quantities needed for a given item at a time. You can view the remaining quantity replenishment as *bulk replenishment* because staff replenish multiple orders at the same time.

Overpicking

Most replenishment techniques replenish a location to its maximum level and not to just the wave's required level. This technique is called *overpicking* since staff bring more than the quantity required. When you overpick, you over-replenish a location by creating one or multiple tasks for each box and moving entire pallets to the replenishment area.

In overpicking:

- Replenishment tasks are created for a pallet (single or multi-items pallet). Staff take a complete pallet of items to a user location.
- For multi-bin replenishment, staff put as much as possible into various places within a dedicated location.
- Staff return either a complete pallet or one item at time to stock.

Overpicking Setup

RF Pallet Overpick (whrfmbr1.p). During replenishment, run this overpick program so that warehouse staff can return items that are not picked. When you use this program, the system sets the Allow Split Replen in Batch Picking Control to Yes. Set overpicking in Wave Planning Control (4.15.1.24), with the following field:

Replenishment OverPick. Indicate whether staff can overpick during step 3 of replenishment.

No: Staff cannot overpick for the replenishment and can only pick the quantity required.

Yes: Staff overpick for the replenishment and pick more than the quantity required. If you set Allows Split Replenishment to No, set this field to Yes.

Specify the overpick program in Local Exit Routines Setup (4.23.10) with the following field:

Wave Release

Wave Release (4.15.8)

Wave Number:

Wave Status:

Remark:

Site:

Warehouse:

Lane Group:

Priority at Task Creation:

Def Pri after Active:

Order Priority:

Generate Release Groups:

Order Lines per Release Group:

Release Group Algorithm:

Output:

Default Values from Wave Planning Control File

Back Next

QAD Proprietary

Use Wave Release to release a wave. When you start a picking process, the system creates a pre-shipper. In the warehousing system, when you release the wave, you release the sales and distribution orders for picking and the system creates and prints a pre-shipper.

When you release a wave, the system:

- Uses picking logic to calculate the number of items needed for the wave
- Makes tasks available to staff through the RF device
- Creates and prints the pre-shipper for sales and distribution orders

Field Descriptions

Wave Number. Enter the number for the wave you want to release. The system displays the status of the wave, and any remarks entered when the wave was created, as well as the associated site and warehouse.

Lane Group. Enter a valid lane group. A lane group is a collection of shipping lanes. You define lane groups in Lane Group Maintenance (4.15.1.5).

The system creates release groups (collections of orders) automatically and assigns them to shipping lanes when you release the wave if you set options in Wave Planning Control, or you can do this manually in Wave Release Group Creation (4.15.9).

Generate Release Groups. Indicate whether the system creates multiple release groups or only one release group for the entire wave when you release the wave. This field defaults from the same-named field in Wave Planning Control.

No: The system creates only one release group for the entire wave you are releasing.

Yes: The system creates more than one release group for the entire wave you are releasing.

Priority Task Creation. Specify a default priority value for a wave release. This field defaults from the same-named field in Wave Planning Control. The system creates the release group when you release the wave. Once created, you can assign the release group to a lane; however, the system may create tasks and an RF device can receive the tasks before you assign the release group to a shipping lane. To prevent this, set this field to 0 (zero). The default is 0.

Order Lines per Rel Group. Indicate a number for the limit of picks per release group. This field defaults from the same-named field in Wave Planning Control. If you do not want to limit the number of picks per release group, enter the maximum value of 99999.

Def Pri After Activate. Specify the default priority the system assigns to the picking tasks once you activate release groups. If you want the tasks to be processed with RF devices, specify a non-zero value. When using batch picking in the picking area, this value is not important as long as it is a non-zero value. This is because batch picking sorts orders by order priority, not task priority, and selects tasks based on the travel sequence. For other picking techniques, though, when warehouse staff use the RF Next Task screen, the task priority is important. This field defaults from the same-named field in Wave Planning Control.

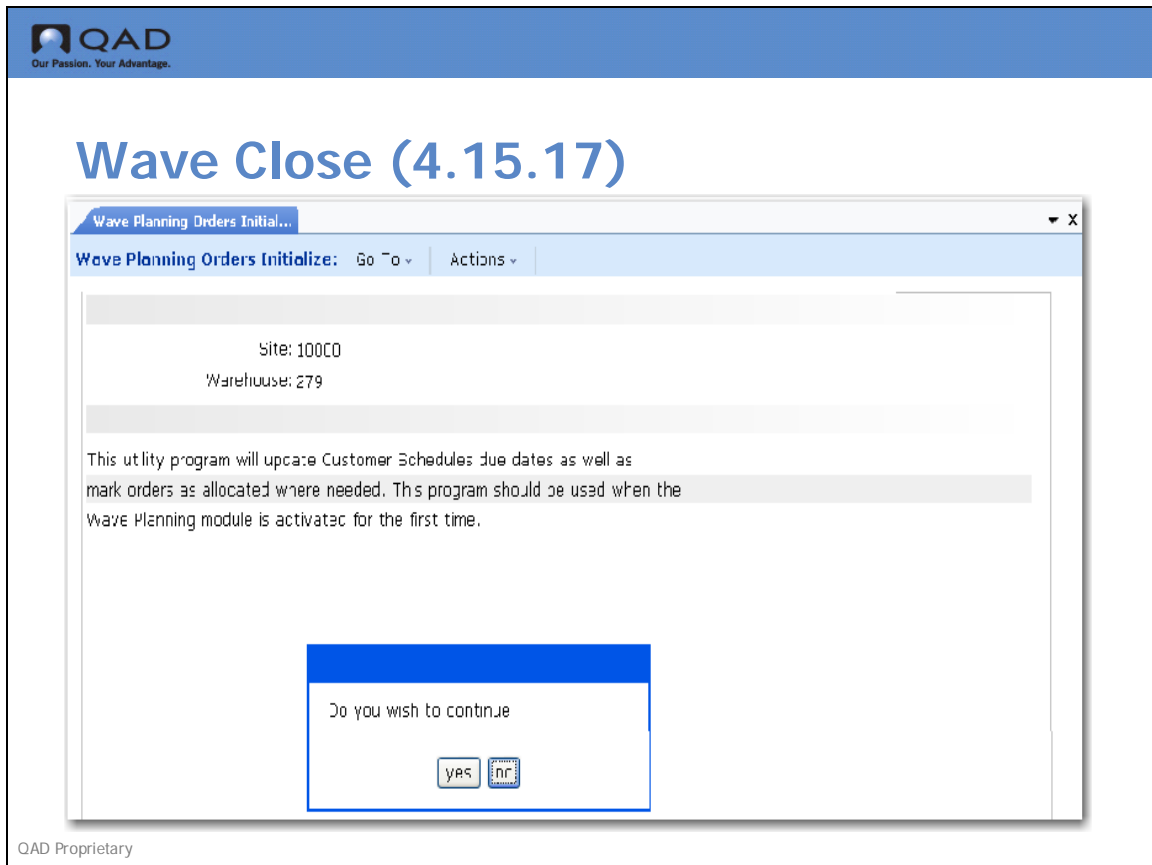
You must set the Task Calculation field in Local Exit Routines Setup (4.23.10) to the whwata01.p program.

Release Group Algorithm. Enter an algorithm that the system uses to create the release group.

Order Priority. Specify the value of the priority for the next wave.

When you release the wave, the system updates the wave priority and all order priorities for the wave you are releasing based on the value of this field. The order priority value is decremented by one for each new wave that you release. When you re-release a wave, however, the priority does not change. For the highest priority wave, the system sorts orders or pre-shippers by descending order with the highest number orders or pre-shippers displaying first in the RF batch-picking screens.

Wave Close



Use Wave Close to close a wave. You can only close a wave when both replenishment and release are complete and no tasks exist for the wave.

Closing a wave is important since an order line can only be in one wave at a time for sales and distribution orders. If the system does not process an order line in a wave, you can close the wave so you can add the line to another wave.

Wave Status Inquiry (4.15.4.3) displays all open waves. When numerous waves exist in the system, the report can be difficult to read. For reporting efficiency, you should close waves.

Field Descriptions

Wave Number. Enter a number for the wave you want to close. The system displays the wave status and site, warehouse, and remarks specified when the wave was created in Wave Selection.

Close the Wave. Indicate whether to close the wave.

No: Do not close this wave.

Yes: Close this wave.

You can also close a wave when reporting using Wave Close Batch/Report. You can use the report to close a batch of waves or a single wave. You can specify to close waves that have:

- Orders that shipped


- No open orders

Enter Yes in the Update field to close the waves.

Exercise: Create, Replenish, and Release a Wave



Objectives

- 
- ▲ Print two sales orders
 - ▲ Create a wave to include the sales orders
 - ▲ Replenish the wave
 - ▲ Confirm tasks on the RF
 - ▲ Release the wave
 - ▲ Confirm tasks on the RF
 - ▲ Verify inventory
 - ▲ Verify pre-shipper

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will create a wave to include two sales orders. You will then replenish the wave, and release the wave.

Throughout the exercise, you will verify that the system creates tasks and that items were picked for the wave. Once you release the wave, you will verify that inventory was updated for the wave and that the wave cycle created a pre-shipper. So, your complete exercise consists of the following major steps:

- 1 Use Sales Order Print (7.1.3) to print two, existing sales orders.
- 2 Use Wave Selection (4.15.3) to create a wave to include the two sales orders.
- 3 Use Wave Replenishment (4.15.6) to replenish the wave.
- 4 Use Inventory Detail by Item Inquiry (3.2) or Inventory Detail by Site Inquiry (3.3) to verify replenishment tasks
- 5 Use the RF Next Task option to confirm replenishment tasks
- 6 Use Wave Release (4.15.8) to release the wave.

- 7 Use Order Warehouse Detail Status Inquiry (4.15.4.1) to verify picked items.
- 8 Use the RF Next Task option to confirm picked tasks.
- 9 Use Pre-Shipper/Shipper Inquiry (7.9.3) to verify items in the system-created pre-shipper.

Step 1: Use Sales Order Print to print two, existing sales orders

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Exercise - Sales Order Print (7.1.3)

Sales Order Print Sales Order Print - 10/14/2008_ X

USA-A 1000 Industriail Way 92130 San Diego, CA UNITED STATES	S A L E S O R D E R S I M U L A T I O N Order Number: 5010067 Revision: 0 Order Date: 10/14/08 Page: 1 Print Date: 10/14/08
Sold-To: A1001 Roxy Carriage Hill Road 139 Roxbury, NY NY12474 UNITED STATES	Ship-To: A1001 Roxy Carriage Hill Road 139 Roxbury, NY NY12474 UNITED STATES
Attention: Andrew Jeffrey Telephone: 123 Salesperson(s): Credit Terms: 300 30 days after invoice date Resale: Remarks:	Attention: Andrew Jeffrey Telephone: 123 Purchase Order: Ship Via: UPS FOB Point:

Ln	Item Number	Due Date	Qty Open	UM	Price	Extended Price
1	D-IT003 Item 003 (COIL)	10/15/08	2.0	CL	100.00	200.00
2	D-IT004 Item 001	10/15/08	110.0	EA	70.00	7,700.00
3	D-IT005 Item 001	10/15/08	20.0	EA	85.00	1,700.00
USD Total:						9,600.00

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You can print two sales orders for two different ship-to codes. You can use different ship via methods, such as FedEx and UPS, for each order.


Step 2: Use Wave Selection to create a wave to include the two sales orders

The screenshot shows the QAD Wave Selection window. At the top left is the QAD logo with the tagline "Our Passion. Your Advantage." The main title of the window is "Exercise – Wave Selection (4.15.3)". Below the title bar is a menu with "Go To", "Actions", "Copy", "Print", and "Preview". The main content area displays the following information:

- Wave Number: 00000014 (highlighted with a red box)
- Wave Status: NEW
- Order Priority: 0
- Remark:
- Site: US-D3
- Warehousing Site
- Warehouse: US-D-3
- Due Date: 10/4/2008 (dropdown menu)
- To: 11/3/2008 (dropdown menu)
- Order Type: DO
- To: SO
- Order: SO10067 (highlighted with a red box)
- To: SO10068 (highlighted with a red box)
- Ship-To: (empty field)
- To: (empty field)
- Class: (empty field)
- To: (empty field)
- Priority: (empty field)
- To: (empty field)
- Route: (empty field)
- To: (empty field)
- Carrier: (empty field with search icon)
- To: (empty field with search icon)
- Profile: (empty field)
- To: (empty field)
- Reference: (empty field with search icon)
- To: (empty field with search icon)
- Maximum Order Lines: 9,999
- Default Include:
- Include Load Optimization:

At the bottom right of the window are "Back" and "Next" buttons. The bottom left corner of the page contains the text "QAD Proprietary".

Step 3: Use Wave Replenishment to replenish the wave


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Exercise – Wave Replenishment (4.15.6)


Wave Replenishment Wave Replenishment - 10/14/2...

Ship To: A1001 P I C K L I S T / P R E - S H I P P E R
 Roxy Carriage Hill Road 139 Pre-Shipper: PR0006
Page: 1
 Roxbury, NY NY12474 Print Date: 10/14/08
 UNITED STATES

Sales Order: S010067 Order Date: 10/14/08 Ship To PO:

Ln	Item Number	Site	T Location	Lot/Serial	Qty	Due
					Open	UM Date
1	D-IT003 Item 003 (COIL)	US-D3			2.0	CL 10/15/08
		DBLK007		PL000789	2.0	()
2	D-IT004 Item 001	US-D3			110.0	EA 10/15/08
		DBLK008		PL000792	100.0	()

End of Report



Wave Replenishment


USA

10/14/08 05:37:56

Page:2


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Step 4: Use Inventory Detail Inquiry to verify replenishment tasks


QAD

Exercise – Inventory Detail Inquiry

Inventory Detail Inquiry
Inventory Detail Inquiry - 10/14/2008 1:40:02 PM


Inventory Detail Inquiry - 10/14/2008 1:40:02 PM

Site: US-D3 Item Number: Display Whse Loc: No
 Warehouse: US-D-3 Lot/Serial: Disp Non-Whse Loc: No
 Location: Reference: Output: PAGE

Location	Item Lot	Status Ref	Qty UM	On Hand	Expect In	Expect Out	Detail Alloc	Detail Pick
DBLK007	D-IT003	A-N CL		2	2	2		2
		PL000789 PL						
DBLK007	D-IT003	A-N CL		2				
		PL000790 PL						
DBLK007	D-IT003	A-N CL		2				
		PL000791 PL						
DBLK008	D-IT004	A-N EA		100		100		100
		PL000792 p1						
DBLK008	D-IT004	A-N EA		100		90		
		PL000793 p1						
DBLK008	D-IT004	A-N EA		100				
		PL000794 p1						
DBLK008	D-IT005	A-N EA		100		20		
		PL000762 p1						
DBLK008	D-IT005	A-N EA		100				
		PL000763 p1						
DBLK008	D-IT005	A-N EA		100				
		PL000770 p1						
DBox004	D-IT004	A-N EA				90		
DBox005	D-IT005	A-N EA				20		
DLane001	D-IT003	A-N CL				2		
		PL000789 PL						
DLane001	D-IT004	A-N EA				100		
		PL000792 p1						

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Step 5: Use the RF Next Task option to confirm replenishment tasks

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Exercise -RF Task Confirmation

▲ Use Next Task Menu



The image shows two Symbol Pocket PC devices. The left device displays a 'Warehouse Management' screen with the following text: 'Release: eB3', 'User ID: UserB', 'Pa: Domain: USA', 'Site: US-D3', 'Warehouse: US-D-3', 'WLG:', 'Location: [bar]', and 'Task: [bar]'. A blue arrow points to the right device, which displays an 'Overpick 164' screen with the following text: 'Fr Loc: DBLK008', 'Loc: [bar]', and 'Chk: [bar]'. The Symbol logo is visible on the bottom of both devices.

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For instructions on confirming tasks using the Rf, refer to Replenishment or Picking chapters.

Step 6: Use Wave Release to release the wave

The screenshot displays the QAD Wave Release interface. At the top left is the QAD logo with the tagline "Our Passion. Your Advantage." The main heading is "Exercise – Wave Release (4.15.8)". Below this is a window titled "Wave Release" with a menu bar containing "Go To", "Actions", "Copy", "Print", and "Preview".

Rel Grp	Due Date	Ship Via	WIT	Net Weight	Tasks	Algo	Lane	Inc
40		FEDEX		56.00	1	4	DLane001	<input checked="" type="checkbox"/>
41		UPS		91.00	3	4	DLane002	<input checked="" type="checkbox"/>
42		UPS	Hea	206.00	1	4	DLane003	<input checked="" type="checkbox"/>

In the center of the window, a dialog box is displayed with the text "Please confirm exit" and two buttons: "yes" and "no". At the bottom right of the window, there are "Back" and "Next" buttons.

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Step 7: Use Order Warehouse Detail Status Inquiry to verify picked items

Exercise – Order Whse Detail Status Inquiry

Order Whse Detail Status Inqui... x

Go To Actions Copy Print Preview

Site: Warehousing Site

Warehouse: Warehouse D-3

Status: ALL

Wave Number: To:

Due Date: To:

Order Type: DO To: SO

Order: To:

Pre-Shipper/Shipper Nbr: To:

Ship-To: To:

Class: To:

Priority: To:

Route: To:

Carrier: To:

Profile: To:

Back Next


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Step 8: Use the RF Next Task option to confirm picked tasks

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Exercise -RF Task Confirmation


▲ Use Next Task Menu



The image shows two Symbol Pocket PC devices. The left device displays a 'Warehouse Management' screen with the following text: 'Warehouse Management', 'Release: eB3', 'User ID: UserB', 'Pa:', 'Domain: USA', 'Site: US-D3', 'Warehouse: US-D-3', 'WLG:', 'Location: []', and 'Task: []'. A blue arrow points to the right device, which displays an 'Overpick 164' screen with the following text: 'Overpick 164', 'Fr Loc: DBLK008', 'Loc: []', and 'Chk: []'. Both devices have a numeric keypad and a green 'Enter' key.


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Step 9: Use Pre-shipper Inquiry to verify items in the system-created pre-shipper


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Exercise – Pre-Shipper/Shipper Inquiry

Pre-Shipper/Shipper Inquiry x
Pre-Shipper/Shipper Inquiry - 1... x



Pre-Shipper/Shipper Inquiry

10/14/08

Ship-From ID: US-D3 Warehousing Site

Pre-Shipper/Shipper: Pre-Shipper Output: PAGE

Number: PR0007

Ship-To/Dock: A1002 Explore

Master Bill ID: Inventory Movement Code:

Status:

ID Site	Item Number Location Customer Ref	PO Number Lot/Serial Model Year	Order Ref	Line Stat	To Ship
PR0007				0	1.0
.CCT002 US-D3	Box DLane001			0	EA
..I US-D3	D-IT004 DLane001		S010068	1	80.0 EA

7.9.3
Pre-Shipper/Shipper Inquiry
rciq03.p

QAD Proprietary

Study Questions

- 1 Which one of the following is NOT one of the ways by which you can configure a wave:
 - due date
 - profile
 - shipper
 - customer
- 2 Wave picking is best applied to companies with few distribution order lines in many warehouse. True or False.
- 3 What are other names for the picking area?
- 4 What is the difference between a functional and non-functional area in the warehouse?
- 5 Which program lets you set up pathways through your warehouse for your inventory to take?
- 6 You need to specify algorithms for warehouse locations before you use wave planning. True or False.
- 7 What are the three steps to wave replenishment and to which step does overpicking belong?
- 8 Which Warehousing program lets you set up the truck as a location?
- 9 You can skip the first two steps of replenishment, but not the last step. True or False.
- 10 The system creates the pre-shipper for a wave when you create the wave. True or False.

Chapter 11

Wave Transportation

Overview

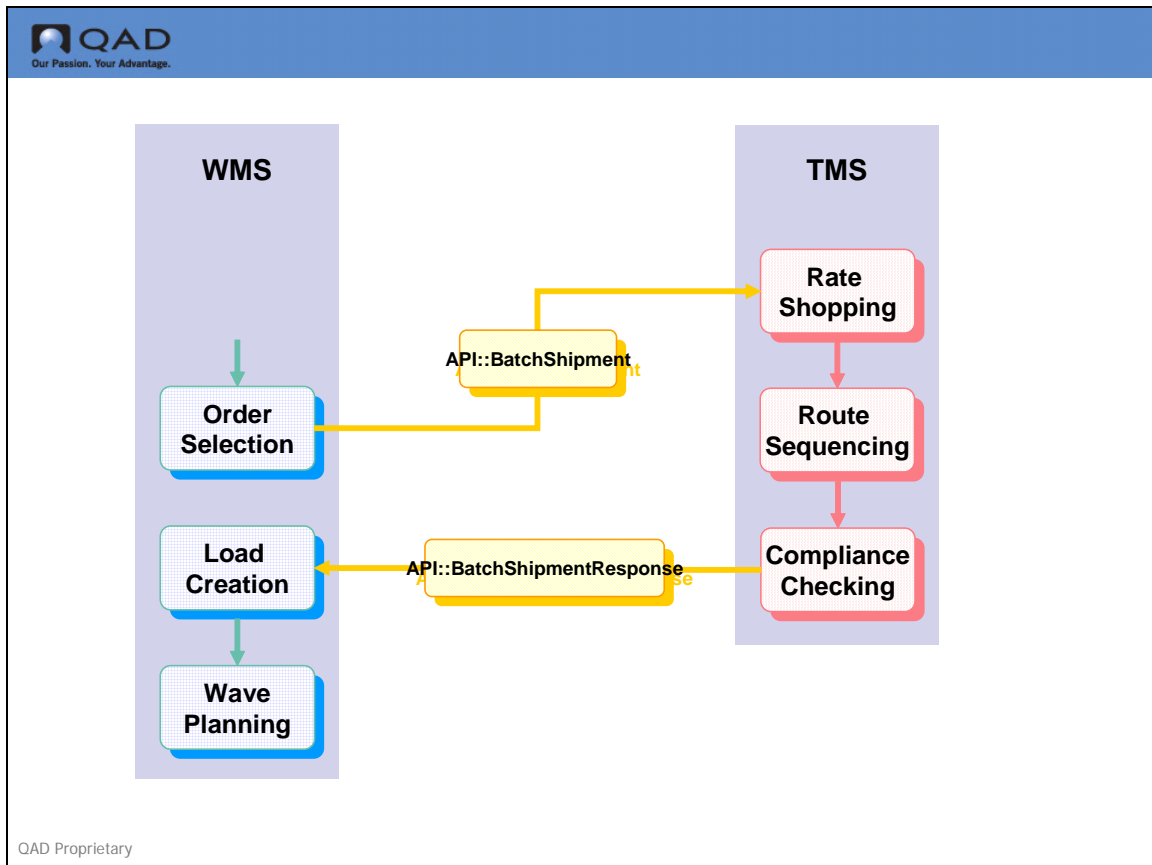


Wave Transportation

A suggested setup sequence for Wave Planning includes these general setup steps:

- Learn wave transportation concepts
- Set up warehousing for wave transportation
- Process orders that have been optimized by a transportation management system

Concepts



QAD Warehousing can interface with a transportation management system (TMS). The TMS can be a system-supplied TMS, like QAD TMS, or any third-party TMS.

The objectives of wave transportation include:

- Respond to customer needs faster, with less space, less inventory, and more accuracy
- Eliminate waste in warehousing operations, such as picking tasks
- Reduce transportation costs
- Increase shipment visibility
- Improve on-time delivery performance

A typical TMS supports the following transportation processes within a supply chain:

- Multi-carrier shipping
- Parcel manifesting
- International trade classification and documentation
- Regulatory compliance screening
- Freight forwarding

Load Optimization

A *load* (truck) is a collection of pre-shippers and shippers with an optional, given stop sequence. The stop sequence, or *drop-off sequence*, is the order in which a truck stops for the different shipments. Load optimization provides route calculation with drop-off sequencing that both expedites shipments and decreases shipment costs.

Most TMSs either consolidate orders into shipments to reduce overall shipping costs or optimize the loads by calculating routes with drop-off sequences. The TMS creates the optimized or consolidated loads and sends them back to QAD Warehousing. You can also create loads in QAD Warehousing.

Wave Planning, Replenishment, and Release

When using QAD Warehousing wave planning functions, the system relies on workload capacity constraints for planning warehouse picking, packing, and shipping activities. The system uses a TMS to consider load consolidation and optimization during wave planning.

The TMS factors in different modes of available shipping when warehouse staff select loads, not individual orders, for a wave:

- Small package carriers (SPS)
- Less than truckload (LTL)
- Full truck load (FTL)

In short, load optimization drives the wave planning process so that warehouse staff pick what they can ship. Before starting a wave selection, you need to know you ship the orders.

During wave replenishment and release, the system creates picking tasks and groups them for pre-shippers per ship-to address. Load optimization functions within wave planning to let you:

- Import TMS load optimization information to produce more efficient task groups for pre-shippers
- Organize task groups to optimize picking, packing, and shipping of loads by similar means of transport.
- Execute checking against waves lines and quantities
- Drive the replenishment and release processes

The relationship between waves and loads is many to one.

Batch Picking and RF Options

Batch picking and other RF options are linked to the TMS. Although task confirmation and related activities are the same, the system enhances task orders that display on the RF to take advantage of load optimization.

Warehouse staff cannot mix items belonging to different loads into the same container (tote, box, or pallet) when picking.

When building containers through the RF, the system ensures the containers cannot contain items from different loads in the same container.

Manifesting

QAD Warehousing sends packing information to the TMS so that the TMS can produce the appropriate shipping labels. During print paperwork functions, QAD Warehousing exports packing information to the TMS; the TMS, in turn, returns shipping labeling information or prints shipping labels. The system produces all necessary documentation for individual shipments (manifesting), including cross-border transactions within governmental and customs regulations.

Loading

Container Move functionality uses TMS drop-off sequencing information to stage pallets in the right order, inverse to the *drop-off sequence* linked to each pre-shipper. That is, when loading containers that belong to a load, the system verifies that the containers belonging to pre-shippers with the last stop sequence are loaded first.

During loading, wave transportation:

- Checks weight
- Identifies any picking or packing errors before product loading
- Pallet Loading
- Ensures efficient staging and loading
- Optimizes dock assignments
- Minimizes travel
- Avoid paperwork


Shipping

During ship truck activities, QAD Warehousing sends shipping information to the TMS so that the TMS can calculate shipment freight charges, track information, and send this information back to QAD Warehousing.


When analyzing shipment charges, the TMS considers:

- Cost analysis
- Rate development and negotiation
- Accessory charges
- Fuel surcharge
- Hazardous materials
- Detention/demurrage
- Reconsignment
- Cash on delivery (COD)

Wave Transportation Setup



Wave Transportation Setup



- ▲ Set up initial load data
- ▲ Set wave transportation control parameters
- ▲ Set local exit routines
- ▲ Assign carriers/services
- ▲ Set batch picking control parameters

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In this section, you learn how to set up wave transportation.

A typical setup includes the following steps:

- Use Load Optimization Setup Maintenance to set initial load data.
- Set controls in Wave Transportation Control.
- Specify custom programs using Local Exit Routine Setup.
- Specify carriers or services using Carrier/Service Assignment Maintenance.
- Set controls in Batch Picking Control

Load Optimization Setup Maintenance

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Load Optimization Setup Maintenance (4.15.2.1)

Load Optimization Setup Maint

Go To Actions Copy Print Preview

Site: Site10 AIM Site
Warehouse: whse10

Comma separated excluded Ship Vias List

Address	Name	Sales Order	Distribution Order
<All addresses>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Please select a function:

Insert - Add Options
Delete - Delete Options

Ship-To Addresses

Delete Options

- 1 - Delete Single Address
- 2 - Delete Addresses by List Type
- 3 - Delete Addresses by Country

Back Next

QAD Proprietary

Before you can use load optimization while batch picking for waves and truck shipping, you must set up load optimization parameters in Load Optimization Setup Maintenance.

Determine which sales or distribution order lines need to be included on a load before picking starts. Key elements that define whether an order line should be processed for the TMS load optimization include:

- Ship-from site and warehouse
- Ship-to addresses
- Items
- Ship via carrier and service

Load Optimization Default Values

In Load Optimization Setup Maint, you define default values for the Load Optimization field that displays in Order Warehouse Data Maint, SO Warehouse Data Maint, and DO Warehouse Data Maint. The ship-to addresses and items you define here sets the default for the Load Optimization field in these programs to Yes.

Procedure

Use the following procedure to set up load optimization:

- 1 Enter the site and warehouse.
- 2 Specify carriers that should not be included in load optimization in the Exclude Ship Via List.
- 3 Select from a list of ship-to addresses to modify in the Destination Addresses frame or enter a new address.
Note If Address is blank, all ship-to addresses go through load optimization.
- 4 Indicate whether sales orders or distribution orders for the ship-to address are included in load optimization, then cancel to display the Items frame.
- 5 Select from a list of items in the Items frame to modify a range of item numbers for which load optimization should apply or enter a new item range.

When you enter an item, the system sets the default for the Load Optimization field in QAD Warehousing SO or DO order maintenance programs to Yes. If Items is blank, all item numbers go through load optimization.

Note When you are in the Items or Addresses frame browse, you can press F3 to get a additional Add options and F5 to get additional Delete options.

Field Descriptions

Exclude Ship Via List. Enter a list of carriers, separated by commas that should not be included in load optimization.

Address. Enter a ship-to address for order lines to include in load optimization. Entering the address here sets the Load Optimization field to Yes in Order Warehouse Data Maint, SO Warehouse Data Maint, and DO Warehouse Data Maint.

Sales Order. Indicate Yes or No to include sales orders for this ship-to address for load optimization.

Distribution Order. Indicate Yes or No to include distribution orders for this ship-to address for load optimization.

Item Number. Enter an item for which order lines will be included for load optimization via the TMS. The item must be defined within the QAD Warehousing Item Menu. Entering the item here sets the Load Optimization field to Yes in Order Warehouse Data Maint, SO Warehouse Data Maint, and DO Warehouse Data Maint.

Wave Transportation Control

Wave Transportation Control (4.15.2.24)

Site: site10 AIM Site
Warehouse: whse10

Default From Due Date: 10 -
Default To Due Date: 10 +
From Order Type: DO
To Order Type: SO
Export Algorithm: 1
Weight UM: LB
Volume Unit of Measure: CM
Workload Algorithm: 1

Maximum Order Lines: 999
Default Include:
Use Limit in Add Frame:
Display Only Allocated Lines:
Next Load Number: 10
Load Header Comments:
Load Line Comments:
Use Def WL Algo:

Create Date: 7/8/2008 Miguel Alonso
Modified Date: 7/25/2008 Edgar Roca

Modifying existing record

Delete Back Next

QAD Proprietary

Use Wave Transportation Control to set defaults and parameters for load optimization. Set up defaults in the header for programs in the QAD Wave Transportation Menu.

Field Descriptions

Default From Due Date. Specify a number of days to add to or subtract from the current date when setting a default value for the Due Date field in Order Batch Selection.

Specify in terms of days from the due date; for example, specify 9 for 9 days from the due date.

Use the second entry field to specify a plus (+) or minus (-) to indicate past dates or future dates. Valid past dates include today's date minus 9,999 days. Valid future dates include today's date plus 9,999 days. Use negative numbers to indicate past due items for which you want picking completed.

When you enter -9999 here, the field is blank in Wave Selection. In this case, the system includes all due dates until the To Due Date value.

Default To Due Date. Specify the number of days to be add to or subtract from the current date when setting a default value for the To field in Order Batch Selection. Use the second entry field to specify a plus (+) or minus (-) to indicate past dates or future dates.

From Order Type/To. Enter a range of order types to:

- Use as the default when selecting orders for the selection in Order Batch Selection.

- Determine which order type to pick first when picking orders for a load.

Valid values are SO and DO. The default is SO. Select orders as follows:

- From SO To SO: Use sales order lines.
- From DO To DO: Use distribution order lines.
- From DO To SO: Use distribution orders and sales orders.

If you specify From SO To DO, the system cannot display the orders. The system searches for orders in alphabetical order and cannot find a sales order before a distribution order.

This field defaults to the Order Type field Order Batch Selection.

To Order Type. Enter the last order type in the range that begins with the From Order Type field. Valid values are SO and DO. The default is SO.

Export Algorithm. Specify the algorithm the system uses to select order lines to export data to the TMS for load optimization.

Weight UM. Enter the default unit of measure for the weight for the shipment.

Maximum Order Lines. Enter the maximum order lines for an order batch selection. This field defaults to the same-named field in Order Batch Selection.

The size of a selection depends on many things, such as the number of order lines per day, carriers, and work load capacity. With experience, you can learn the optimal size of the selections that streamlines the throughput of operations in your warehouse and set this field to achieve the optimal size.

Workload Algorithm. Specify the workload algorithm to use for calculations when you create a selection in Order Batch Selection. Currently only one algorithm is available:

Algorithm 1: Workload by WLG - dedicated location. The default program name for this algorithm is `whtm001.p`. This algorithm first considers a dedicated location for the item. If there are multiple dedicated locations, it only considers the first one found in the system. If no dedicated locations are found, the system looks for an item-location replenishment definition. If a definition exists, the algorithm uses this location. When multiple item-location replenishment definitions exist, the system only considers the first.

The system calculates the number of forecasted picks based on the rule:

$$1 \text{ order line} = 1 \text{ pick}$$

A pick occurs in a given WLG because the system links the item needed to a dedicated location and that location belongs to a WLG. If you use multiple dedicated locations for a given item, the algorithm supplies a correct result only if the different locations belong to the same WLG. The algorithm always looks for the first location dedicated for the item.

Default Include. Indicate how to set the Inc field in the order selection display in Order Batch Selection.

No: Do not set the Inc field to Yes in the order batch display to automatically include the orders that match the defaults set in Order Batch Selection.

Yes: Set the Inc field to Yes in the order display to include all orders that match the defaults set in Order Batch Selection.

Use this field to streamline program execution if you typically include all selected orders when creating a selection.

Use Limit in Add Frame. When the system displays orders for a selection in Order Batch Selection, additional function keys can be used. One function lets you add more orders than originally selected. Indicate whether the system considers the setting of Def Max Order Lines when you add more orders.

No: The system does not take the maximum number of order lines into account when you add more orders.

Yes: The system considers the Def Max Order Lines you specify before you can add more orders.

Display Only Allocated Lines. Indicate whether the system selects only order lines with a general allocation when it selects orders for a load in Order Batch Selection.

No: The system selects all order lines for the load even if there is no general allocation.

Yes: The system selects only order lines with a general allocation for the load.

By default, the picking that takes place when you replenish has Auto Allocation set to Yes. This means that if the order line is not generally allocated before the system selects it in the load, it is generally allocated during the picking process.

Next Load Number. Specify the default number to use for the next load. This setting does not depend on the site/warehouse combination but is unique by domain.

Load Header Comments. Indicate Yes or No to set the default for Comments in the Load Maintenance header.

Load Line Comments. Indicate Yes or No to set the default for Comments at the line level in Load Maintenance.

Local Exit Routine Setup

Local Exit Routines Setup (4.23.10)

Bulk Pick Sheet (whbplk01.p):	whbplk01.p
Pre-Shipper List (whbpps01.p):	whbpps01.p
Printer Template User Fields (whbpps01.p):	
Order Detail Update (whomlk01.p):	
Cycle Count Selection Algorithms (whicccck.p):	
Task Calculation (whlmlk01.p):	whwata01.p
Batch Picking Order Selection (whbpbk1x1.p):	whbpbk1.p
Batch Picking Task Sort (whbpbk1x2.p):	
RF Pallet Overpick (whrfmbr1.p):	whrfmbr1.p
Batch Picking Screen Format (whbpbk3.p):	whbpbk3.p
Batch Order Export (whtraxbx.p):	whtraxbx.p
Send Shipment (whtraxsx.p):	whtraxsx.p
Cancel Shipment (whtraxcx.p):	whtraxcx.p
Truck Shipment (whtraxtx.p):	whtraxtx.p
TMS Integration Control (whtraxpx.p):	whtraxpx.p

Create Date: 11/7/2007 Mochesh Chandran
 Modified Date: 9/16/2008 Edgar Roca

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Modifying existing record

Use Local Exit Routine Setup to specify programs that provide additional functionality when working with a TMS.

Field Descriptions

Batch Order Export (whtraxbx.p). Order Batch Export/Load Import (4.15.2.7) uses this routine to send and receive export messages with a Transportation Management System (TMS). Order Batch Export/Load Import lets you export the order batch selections created in Order Batch Selection (4.15.2.5). It uses this routine to create the batch shipment (BTCH) message, send the message to the TMS, receive a reply, and create loads.

Ship Shipment (whtraxsx.p). RF Print Paperwork (3.8) uses this routine to send and process ship shipment (SHIP) messages with the TMS. QAD Warehousing sends the final contents of shippers, including containerization information, to the TMS. It then receives the shipping labels, freight charges, and tracking or PRO numbers that it stores in header records of the shipment.

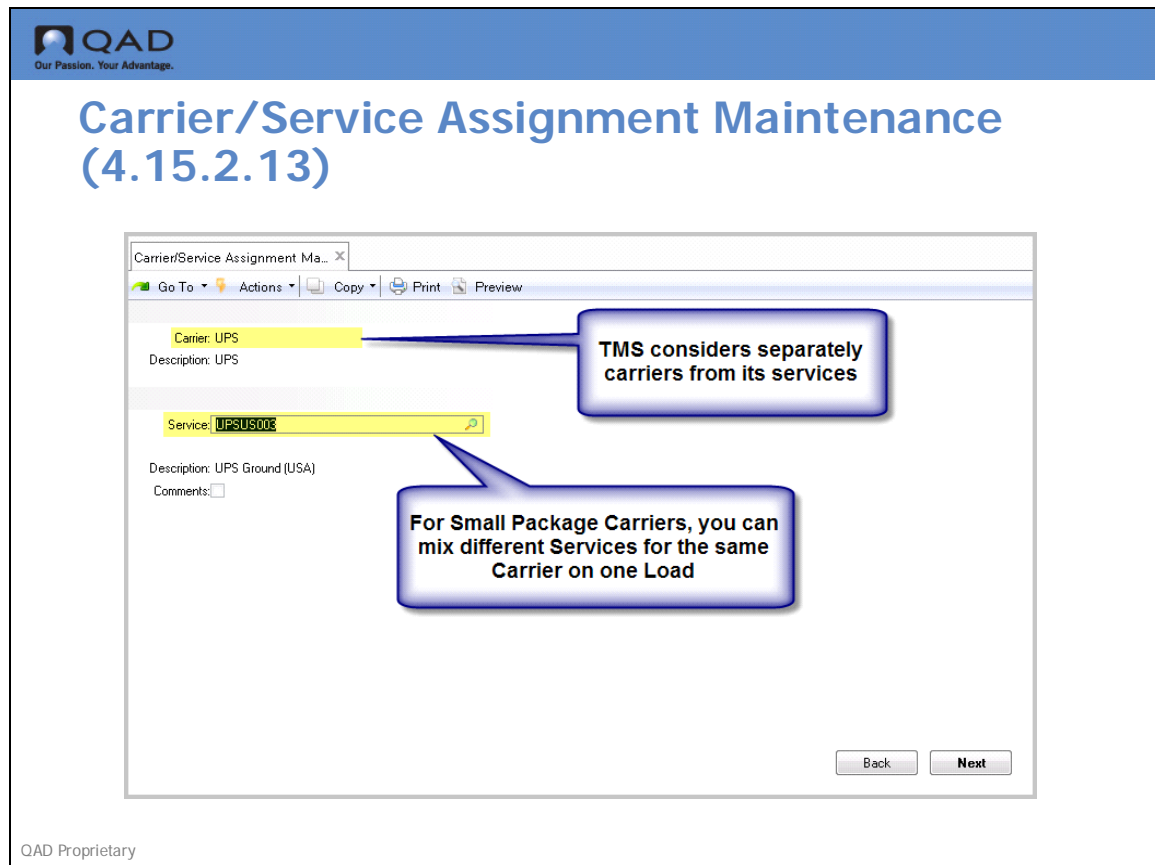
Cancel Shipment (whtraxcx.p). The RF Cancel Shipment uses this routine to send a void shipment (VOID) message to the TMS should you need to cancel a shipment. QAD Warehousing first validates that this shipment was sent to TMS using the ship shipment routine message and RF Print Paperwork function. Once validated, it sends a message to the TMS to cancel the shipment and receives a reply of the cancellation.

Truck Shipment (whtraxtx.p). The RF Ship Truck (3.5) uses this routine to process the process end of day (PEOD) message. This message lets the system recalculate final freight charges and prorating truck level charges over individual shipments. Depending on the additional freight charges, the charges can be prorated over individual sales orders.

For shipments belonging to a load, the system verifies that when users attempt to confirm a shipment, all other shipments for that same load are selected in the same transaction. If not selected, warnings or errors display, depending on Warehouse Transportation Control (4.15.2.24) settings. When communication problems occur, the system displays messages.

TMS Integration Control (whtraxpx.p). Wave Transportation Control uses this routine to set up any TMS-dependant values that it needs to process messages between QAD Warehousing and a Transportation Management System (TMS). Typical information might include the TMS host name, service, protocol and other necessary information needed for communication between the two programs.

Carrier/Service Assignment Maintenance



Use Carrier/Service Assignment Maint to assign a carrier or shipping service to be considered for load optimization by a TMS. Typically, when the TMS analyzes your shipment information, it attempts to select the lowest cost carrier for shipments. It also considers lead time and the carrier you assign here for a particular shipment before selecting the best carrier or service to optimize the load.

You can optionally choose to enter values for the service or carrier to generalized codes for the `abs_shipvia` field once you enter either the carrier or service. Specify Yes at the system prompt to add values if you want either carrier or service values added to generalized codes.

Field Descriptions

Carrier. Specify a valid carrier defined in Carrier Maintenance to be considered for load optimization by the TMS.

Normally the carrier is defined in the TMS; however, depending on the setting you enter for generalized codes when prompted, you can create the carrier as a generalized code for the `abs_shipvia` field so that you can reference it in core system and QAD Warehousing data.

Service. Specify a valid carrier service to be considered for load optimization by the TMS.

Most TMSs distinguish a carrier from a service; for example, UPS is a carrier that offers different services, such as same day, next business day, and so on. The core system software and QAD Warehousing do not make this distinction—both use the `shipvia` field to reference either a carrier or a service. Use this field to make the distinction as the TMS can indicate that you need to send two shipments using two different services with the same carrier.

Comments. Optionally, add any comments about the carrier or carrier service.

Batch Picking Control

QAD Proprietary


You should set a field in Batch Picking Control that determines whether shipper numbers are assigned or now.

Field Descriptions


Assign Shipper Numbers. This field specifies whether you want the system to assign a shipper number when printing shippers from the RF. Assigning the number converts pre-shippers to shippers on the RF.

In order for the system to generate a number, the NRM sequence for the pre-shipper/shipper must be an internal sequence generated by the system. If the assigned NRM sequence is external, the pre-shipper/shipper is skipped. To use an external sequence, you can assign the shipper number during shipper creation (if pre-shippers are not used), or during confirmation (if pre-shippers are used).

Processing Orders with Wave Transportation



Wave Transportation Processing



- ▲ Select orders for the load
- ▲ Export/import order batch data with TMS
- ▲ Create a load
- ▲ Add load-optimized orders to a wave
- ▲ View/manage picking tasks by the load
- ▲ Print paperwork through the RF
- ▲ Use Container Move features
- ▲ Cancel shipments (optional)
- ▲ Use RF Ship Truck features

QAD Proprietary

To process orders using wave transportation features, you:

- Select orders using Order Batch Selection
- Use Order Batch Export/Load Import to export and import data to/from the TMS.
- Manually create a load or edit a TMS-created load using Load Maintenance
- Use Wave Selection to add the load to a wave.
- Use the RF Print Paperwork function to print shipping paperwork
- Load trucks in reverse order using the RF Container Move functions.
- Optionally, cancel a load-optimized shipment
- Use the RF Ship Truck option to validate that a shipper was sent through the ship shipment message to the TMS.

Order Batch Selection

Order Batch Selection (4.15.2.5)

Selection Number: 00000061
 Selection Status: PENDING
 Remark:
 Site: site10 AIM Site
 Warehouse: value10
 Due Date: 9/27/2008 To: 9/27/2008
 Order Type: DO To: SO
 Order:
 Ship-To:
 Class:
 Priority:
 Route:
 Carrier:
 Profile:
 Reference:
 Maximum Order Lines: 999,999
 Default Include:

OT	Order	Line/ID	Due Date	Item Number	Quantity UM	Ship-To	Incl
DO	DO2016	987	9/17/2008	ca02	20.0 EA	12000	<input type="checkbox"/>
DO	DO2016	988	9/17/2008	ca03	50.0 EA	12000	<input type="checkbox"/>
SO	SO5015	1	9/20/2008	ca02	120.0 EA	4000	<input checked="" type="checkbox"/>
SO	SO5017	1	9/20/2008	ca02	5.0 EA	4003	<input type="checkbox"/>
SO	SO5017	2	9/20/2008	ca03	25.0 EA	4003	<input checked="" type="checkbox"/>

QAD Proprietary

Use Order Batch Selection to select order lines that have Load Optimization set to Yes in DO Order Data Maint, SO Order Data Maint, or DO Order Data Maint for load optimization through a TMS.

The system assigns a selection number when you leave the Selection field blank. It also sets the status of the selection to Pending. Other valid values for Status include:

- Exporting: QA Warehousing export to the TMS is in progress for the orders in the selection.
- Error: The communication process has failed. If a result of the order batch export and load import, these are errors that occur during normal operations, not because of the export and import completion.
- Closed: Order selections for which the exporting process has successfully finalized.

The fields marked with an asterisk (*) have indexes. This lets you search the indexes and sort by different criteria, display additional information about the orders, add more orders matching the same criteria, and so on. For example, you select only orders for a specific carrier. You can search all orders for that carrier, then select orders that ship to a specific region of the country and add them to the wave.

Field Descriptions

Selection Number. Enter a selection number to edit an existing selection or leave blank to let the system create a new selection number. If you enter a value, the system displays data for that selection.

Due Date/To. Enter a range of due dates for selecting orders to include for load optimization. Enter two-digit months, days, and years. You can also enter the time of day, based on a 24-hour clock; for example, enter July 4, 2006, 1:00 PM as 07/04/06 13:00.

The default values for Due Date and To are calculated based on entries in the Def From Due Date and Def To Due Date fields in Wave Transportation Control.

Enter the first time of day in a range of due times for orders you want to include for load optimization. Enter the date in 24-hour format; for example, enter 13:30 for 1:30 PM.

Order Type. Enter the order type or range of order types as follows:

From SO To SO: Use sales order lines for load optimization.

From DO To DO: Use distribution order lines for load optimization.

From DO To SO: Use distribution orders and sales orders for load optimization.

If you specify From SO To DO, the system cannot display the orders. The system searches for orders in alphabetical order and cannot find a sales order before a distribution order.

This field defaults from the same-named field in Wave Transportation Control.

Order. Enter a range of specific order numbers if you want to include lines from those orders only.

Max Order Lines. Enter a numeric value for the default maximum number of order lines to include in a single export for load optimization. This field defaults from the Def Max Order Lines field in Wave Transportation Control.

Include. Indicate how to set the Inc field in the wave order display. This field defaults from the Default Include field in Wave Transportation Control.

No: Do not set the Inc field to Yes in the order display to automatically include the orders that match the defaults set in the selection fields.

Yes: Set the Inc field to Yes in the order display to include all orders that match the defaults set in the selection fields.

Use this field to streamline program execution if you typically include all selected orders when creating a selection for export to the WeightUM.

Specify the weight unit of measure for the order that is exported to the TMS. If blank, the system uses the order UM for exporting. If you specify a value here, the system first converts to this UM, then exports.

VolumeUM. Specify the volume unit of measure for the order that is exported to the TMS. If blank, the system uses the order UM for exporting. If you specify a value here, the system first converts to this UM, then exports.

Order Batch Export/Load Import

QAD
Our Passion. Your Advantage.

Order Batch Export/Load Import (4.15.2.7)

Order Batch Export/Load Import x

Go To Actions Copy Print Preview

Selection Number: 00000061
Selection Status: PENDING

Remark:
Site: site10
Warehouse: whse10
AIM Site

Show Details:
Show Warning Messages:
Show Errors:

Start order batch selection export?
yes no

Output:

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QAD Proprietary

Use Order Batch Export/Load Import to export/import data from and to a TMS. Order Batch Export/Load Import selects the batch order selection that you create in Order Batch Selection and uses local exit routines specified in Local Exit Routines Setup to create a batch shipment message to send to a TMS. It can also receive the answer from a TMS. The system exports one selection at a time.

When an order selection export starts, the system changes the status of the selection to Exporting to prevent updates in Order Batch Selection. You can view status messages about order selections being exported in Order Batch Export/Load Import.

If the export fails as a result of a communication problem or a time-out, the status of the selection is changed to Error so that the export can restart when communications are re-established. When this happens, some TMSs can send the previously calculated answer without going through a completion process again.

This program also imports a batch shipment response message from the TMS. As a result, it creates loads in the system. You can edit the system-created loads using Load Maintenance.

Field Descriptions

Selection. Enter the selection number for this function to consider.

Show Details/Warning Messages/Errors. Indicate yes or no to display export details, warning messages, or errors.

Load Maintenance Frames

Load Maintenance consists of several frames. Enter general load settings in the header such as the ship-from site, and warehouse; after that, use frames as follows:

Frame	Purpose
Load Shipment Selection	Use this frame to define the different shipments contained in a load. Specify the drop-off sequence number for the load in the frame for full truck loads (FTL). The drop-off sequence and the shipment carrier ref uniquely identify a shipment detail record. Specify the ship-to address, then press Go.
Automatic Selection frame	If you specified Yes to Auto Select in the header, this frame displays after the Load Shipment Selection frame. Specify a range of selection numbers, orders, items, routes, or carriers to automatically select the shipments for a load.
Shipment Detail	This frame contains the ship-to address and the order type, either SO or DO orders. The Type, ID, Shipping Group, and Inventory Movement Code fields are display only. They are populated from the pre-shipper or shipper once the picking for this load shipment starts and a pre-shipper/shipper in the system is created. You can update the Ship Via, FOB Point, Mode of Transport, and Vehicle ID fields only when you enter a PS load type. Otherwise, the value defaults from the load header and cannot be changed.
Load Details	Use this frame to specify the selection number as established in Order Batch Selection. Order Batch Selection creates a selection number for the various order lines that have load optimization specified for them. You also specify the order, line, and item.
Shipment Contents	Use this frame to identify the order lines associated with each shipment within a load. The order lines are the result of the TMS optimization processing and are used to guide the wave selection process for optimal picking and shipping

Key Field Descriptions

Load Number. Specify a load number or leave blank to let the system assign a load number.

Load Type. Specify a load type for load optimization by the TMS. Valid values include:

TL: Truck load

LTL: Less than truck load

FTL: Full truck load

For truck load or less than a truck load, all shipments for a given load have the same ship-via service. For parcel shipping, all shipments for a given load can have different services and modes of transport, even though they have the same carrier.

A truck load or less than truck load type can belong to only one wave. For parcel shipping loads, the load can belong to different waves, but individual load shipments belong to one wave. To include orders for a load in a wave, set Include Load Optimization to Yes in Wave Selection.

Arrival Date. Enter the arrival date for the items to consider for load optimization.

Time. Enter the arrival time in hours and minutes. The arrival time is the time you expect the truck to arrive to the warehouse. Use these fields to determine when to pick for a wave. For example, if you add loads to a wave in Wave Selection, you can use these fields to select loads that arrive within the next two hours.

Departure Date. Enter the departure date for the items to consider for load optimization.

Time. Enter the arrival time in hours and minutes.

Ship Date. Enter the ship date for the items to consider for load optimization.

Time. Enter the ship time in hours and minutes.

Load Status. Enter the status of the load:

Blank: Open load

X: Cancelled

C: Closed. The system automatically closes a load when the last shipper linked to this load is confirmed.

Multi. Indicate whether to enter multiple carriers.

Master Bill. Enter the bill of lading ID for this load.

FOB Point. Enter the free on board code. FOB terms of a sale identify when title passes from a seller to a buyer, and who pays shipping.

Mode of Transport. Enter the first mode of transport code for the load. If you use RF Ship Truck (3.5) option in combination with the process end of day (EOD) message sent from the TMS, the system populates this field automatically and creates an MBOL in Master Bill of Lading Maintenance.

Ship Via. Enter the ship via code for this load. Depending on the load type, ship via might have different values. For FTL and LTL load types, the ship via contains the service as defined in Carrier/Service Assignment Maint. For PS loads, the ship via contains the carrier as defined Carrier/Service Assignment Maint. Services for individual load shipments are entered at the load shipment level (ship via). The system validates the value against the values you defined in Carrier/Service Assignment Maint.

Vehicle ID. Enter the vehicle ID for this function to consider.

Drop Off. Specify the sequence number for dropping off the items in the load for shipping. The stop sequence, or drop-off point, is the order in which a truck stops for the different shipments. The drop-off sequence and the shipment carrier reference number uniquely identify a shipment detail record.

Carrier Shipment Ref. Specify the carrier reference ID for this load.

Ship-To. Specify the ship-to code for this load.

Payment. Specify the payment type if you manually create a load or edit the payment type if the value is from a TMS-created load.

If the TMS is set up for collection, use the payment type and carrier account information to inform carriers of the accounts that require shipment payment collection. The Payment Type and Carrier Account fields also display in:

- Pre-Shipper/Shipper Workbench (7.9.2)

- Sales Order Shipper Maintenance (7.9.8)
- DO Pre-Shipper/Shipper Maint (12.19.3)

When a TMS sends the payment type, QAD Warehousing verifies that pre-shippers or shippers created for this load shipment inherit the payment type value.

Optionally, enter any comments about the load.

Carrier Account. Specify the carrier account number if you manually create a load or edit the carrier account if the value is from a TMS-created load.

Auto Select. Indicate Yes or No to automatically select pending order lines for the load that belong to pending selections that you create in Order Batch Selection. This is useful if you do not automatically export the orders to the TMS using Order Batch Export/Load Import. You can use the order selection process here to consolidate orders manually.

No: Do not automatically select pending orders for the pending-selection load.

Yes: Select orders marked for load optimization automatically for the pending-selection load. The Automatic Selection frame displays after the Load Shipment Selection frame. Specify a range of selection numbers, orders, items, routes, or carriers to automatically select the shipments for the load

Wave Selection

Wave Selection (4.15.3)

Wave Number: 0000205
Wave Status: NEW
Order Priority: 0
Remark: Site: site10
Warehouse: whse10
AIM Site

Due Date: 9/7/2008 To: 10/7/2008
Order Type: DD To: SQ
Order: To:
Ship-To: To:
Class: To:
Priority: To:
Route: To:
Carrier: To:
Profile: To:
Reference: To:

Maximum Order Lines: 999
Default Include:
Include Load Optimization:

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QAD Proprietary


You can specify to add loads to a wave in Wave Selection (4.15.3). Truck load (TL) or less than truck load (LTL) load types can belong to only one wave. For parcel shipping (PS) type loads, the load can belong to different waves, but the load lines belong to one wave.

You can use function keys in the Wave Selection frame to add loads to the current wave selection, display load summary data, or view line details. Also, the Order Line Detail frame in Wave Selection displays which lines are included in a load. You can select a load in the frame and view additional load details or deselect the load.

Field Descriptions

Wave Selection fields are described in the Wave Planning chapter of this training guide.

Load Detail Status Inquiry


Our Passion. Your Advantage.

Load Detail Status Inquiry (4.15.2.12.7)

Load Detail Status Inquiry x
Go To Actions Copy Print Preview

Load Nbr	Type	Ship Via	Due Date	Pendi	Selec	Pick	Shipp	Cance
00000006	PS	shipvia1		0	1	0	0	0
00000006	FTL			0	0	1	0	0
00000008	FTL			0	0	1	0	0
00000009	FTL			0	0	1	0	0
00000442	FTL	LTL_OVNT	7/18/2008	0	0	1	0	0
00000443	PS	UPS	7/18/2008	0	1	0	0	0
00000492	FTL	LTL_OVNT	7/25/2008	0	0	1	0	0
00000494	PS	USPS	7/30/2008	0	0	1	0	0
00000498	PS	USPS	8/13/2008	0	0	1	0	0
00000499	FTL	LTL_OVNT	9/17/2008	0	0	3	0	0

**Status of each
Shipment in this Load**

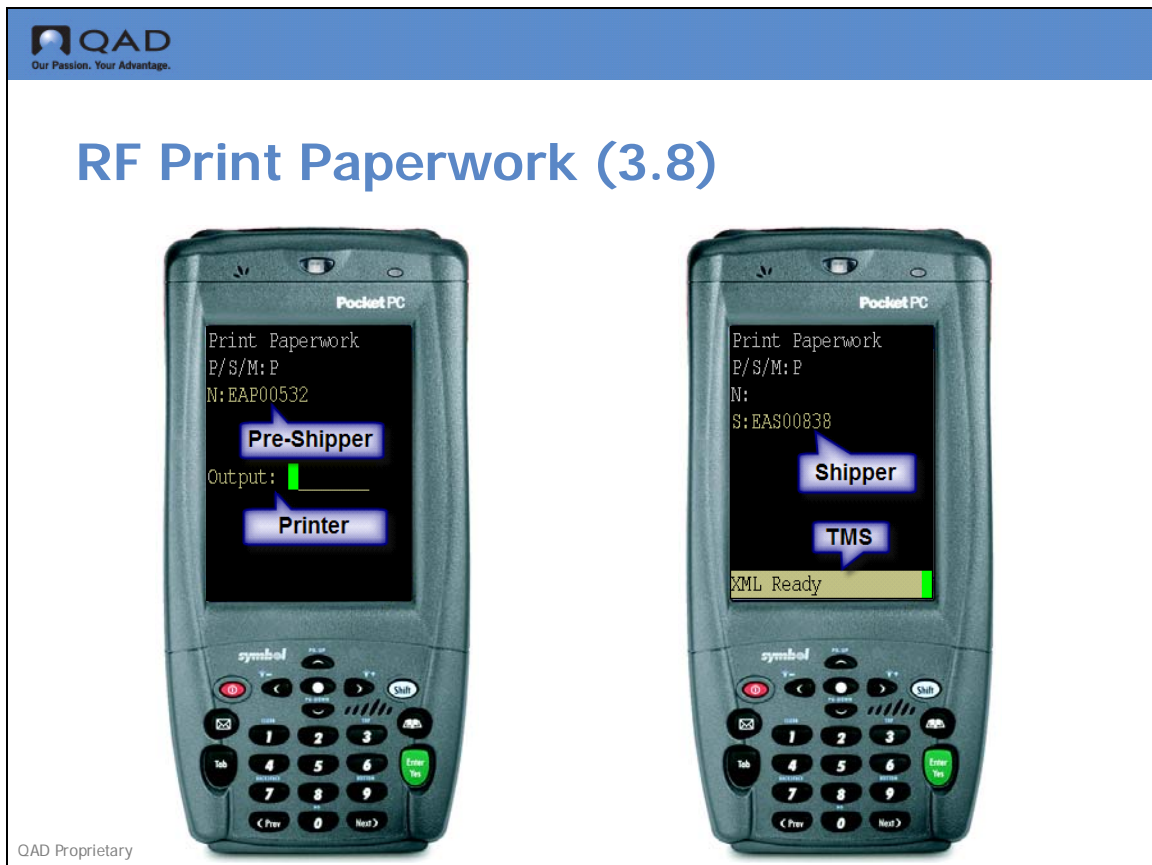
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QAD Proprietary

Use Load Detail Status Inquiry to view status information, including pending, selected, picked, shipped, or cancelled loads. This inquiry provides you with several views to load data. You can select from a range of criteria and see load information for picked, pending, canceled loads, and so on.

You can also view a summary of load information in Load Detail Status Inquiry. The system displays the number of pending, selected, and picked loads.

RF Print Paperwork



You can use the RF Print Paperwork option to send and process the ship shipment message generated through the Ship Shipment local exit routine. The system sends the final contents of a given shipper, including containerization information through the ship shipment message. As a result, QAD Warehousing receives shipping labels, freight charges, and tracking and/or PRO numbers for the shipment for processing.

The system marks shippers that were successfully processed for load optimization. If you need to modify the contents of a shipper before the shipper is confirmed, you can cancel the shipment. When you do, the system restarts the process by selecting the RF Print Paperwork and producing updated documentation and shipping labels for the shipment.

Setting a Printer

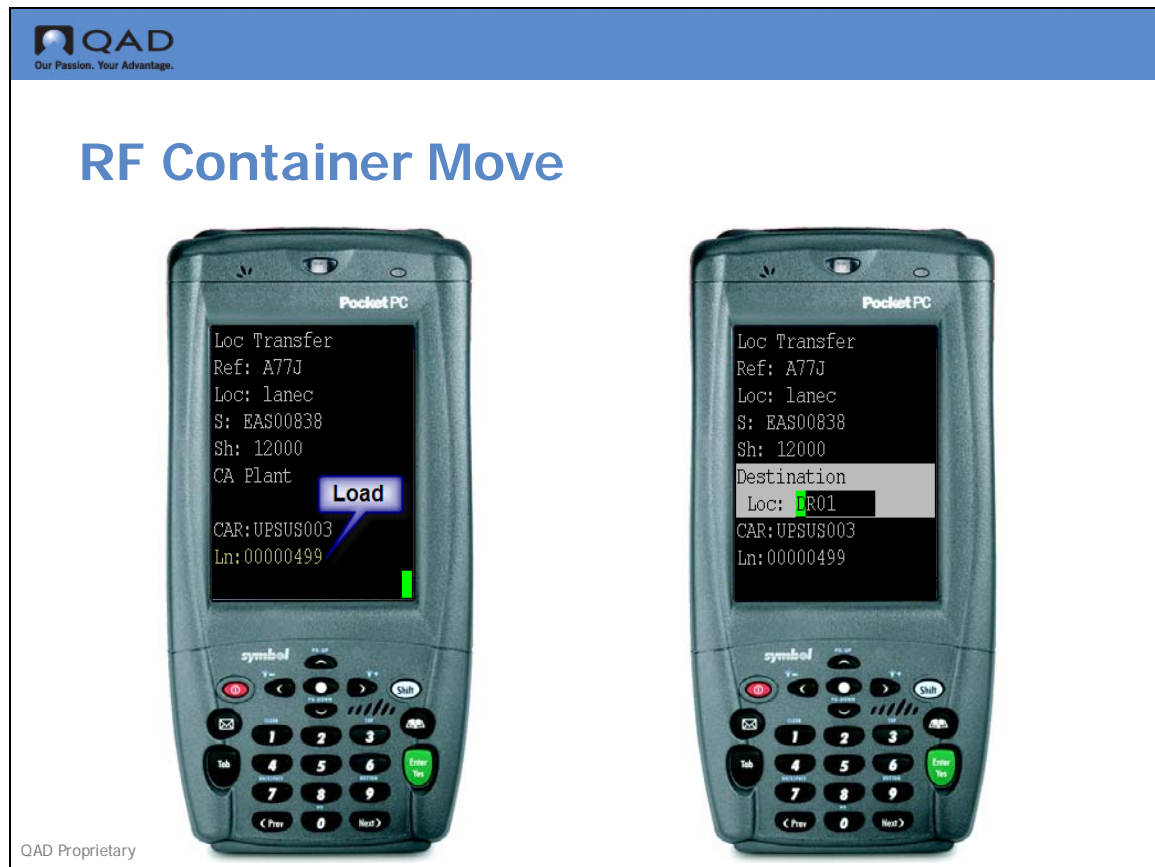
Typically you print the shipper before confirming the shipment. To do this, you must assign a form printer to either the:

- User who scans while loading
- Work location group (WLG) of the truck location

Important If you decide to assign printers to users, you must create a record for all users. Typically it is easier to simply assign the printer to a work location group.

The system looks first for a printer assigned to the user who is logged onto the RF device and performing the truck loading, then for a form printer assigned to the WLG of the truck location.

RF Container Move



When users use QAD Warehousing Container Move functions, users can load trucks in the reverse order as its drop-off sequence.

Note Set up container move options in the Batch Picking Control (4.15.24) Container Move frame

Loading a Truck

Warehouse staff use the RF for truck loading. For load sequencing for LTL Loads with a drop-off sequence, the system forces the correct loading sequence. The system can optionally perform validations.

From the RF, staff select the option to move items, specify the truck location or accept the default, and scan references. Staff must specify the location because the truck load transaction does not generate any put-away.

Load Shipment Cancellation



Occasionally you may have to cancel a shipment because pallets do not fit into the truck or goods were damaged while preparing to ship. When cancelling a shipment, you must modify the shipper in the system before confirming the shipment. Typically, you modify shippers using any of the system sales or distribution order shipper maintenance programs. However, when the TMS interfaces are in place, you must send the void shipment message to the TMS because the shipment was previously rated by the TMS. Use the RF Cancel Shipment (3.9) option to send a void shipment message to the TMS and cancel the shipment.

- 1 In the RF, select Picking/Container (3).
- 2 Select Cancel Printing (9).
- 3 Enter the shipper number for the shipment you want to cancel in the N field, then press Go.
The system sends the void shipment message to the TMS and cancels the shipment.

After the system exports shipment data to the TMS but before the shipment is actually voided, you cannot modify the shipper in the following programs:

After the system exports shipment data to the TMS but before the shipment is actually voided, you cannot modify the shipper in the following programs:

- SO Container Maintenance (7.7.5)
- Pre-Shipper/Shipper Workbench (7.9.2)
- Sales Order Shipper Maintenance (7.9.8)

- DO Pre-Shipper/Shipper Maint (12.19.3)
- DO Container Maint (12.19.7)

RF Ship Truck



During ship truck activities, QAD Warehousing sends shipping information to the TMS so that the TMS can calculate shipment freight charges, track information, and send this information back to QAD Warehousing.

During ship truck activities, the system validates that a shipper has been sent to the TMS before it sends an end of day (EOD) message to the TMS.

For typical ship truck operations, after the truck has been loaded, shipment documentation has been printed, and the shipment is ready, warehouse staff use a single transaction to confirm that the truck shipped. They use the truck ship transaction to confirm a sales order shipper, much like you use Pre-Shipper/Shipper Confirm (7.9.5) for a sales order or DO Pre-Shipper/Shipper Confirm (12.19.13) for a distribution order.

Truck ship features let you:

- Indicate truck shipment, resulting in shipment of all orders on the truck.
- Create a master bill of lading (MBOL) that includes all shippers for both SOs and DOs.
- View all shippers loaded on the truck for a given truck location.
- If specified in the Truck Shipment (whtraxtx.p) field in Local Exit Routines Setup (4.23.10), a process end of day (PEOD) message can be produced and exported to the TMS.

Exercise: Create SO, Export, Add Load to Wave



Objectives



- ▲ Create a sales order
- ▲ Export data to a TMS
- ▲ Add the TMS-created load to a wave.

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will use QAD EE to create a sales order, select order lines from the order, import data about the order to QAD TMS, then add the TMS-created load to an existing wave.

- 1 Set up Wave Transpiration per setup instructions.
- 2 Use QAD EE Sales Order Maintenance (7.1.1.) to create a sales order.
- 3 Use Order Batch Selection (4.15.2.5) to select order lines from the order for QAD TMS load optimization.
- 4 Use Order Batch Export/Load Import to export and import data to/from QAD TMS.
- 5 Use Wave Selection to add the load to an existing wave.

Study Questions

- 1 Which one of the following is not an objective for wave transportation?
 - a Respond to supplier needs faster
 - b Eliminate waste in warehousing operations, such as picking tasks
 - c Reduce transportation costs
 - d Increase shipment visibility
 - e Improve on-time delivery performance
- 2 In TMS terms, what is a load?
- 3 What is another term for the stop sequence?
- 4 Most TMSs consolidate orders into shipments to reduce overall shipping costs or optimize the loads by calculating the number of orders that make up an ideal shipment. True or False.
- 5 You send shipment information to the TMS to calculate the load; this is the only method to derive at load data. True or False.
- 6 Which of the following does the TMS factor in when considering available shipping:
 - a Small package carriers
 - b Less than truckload
 - c Full truck load
 - d All of the above
 - e B and C only
- 7 During wave replenishment and release, the system creates shipping tasks and groups them for pre-shippers per ship-to address. True or False.
- 8 Name two benefits of load optimization functions within wave planning.
- 9 You set all wave transportation controls in Wave Transportation Control so there's no reason to use another control file within Warehousing. True or False.
- 10 Which of the following options are *not* set in Load Optimization Setup Maintenance?
 - a Determine which sales order lines are included in the load
 - b Determine which distribution order lines are included in the load
 - c Determine which work order lines are included in the load
 - d Specify which ship-visas are excluded from load optimization
 - e None of the above.

Chapter 12

Parcel Manifest, Container Move, and Truck Ship

Overview

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**Parcel Manifest, Container Move,
and Truck Ship**

QAD Proprietary

A suggested basic setup sequence is provided in this section,

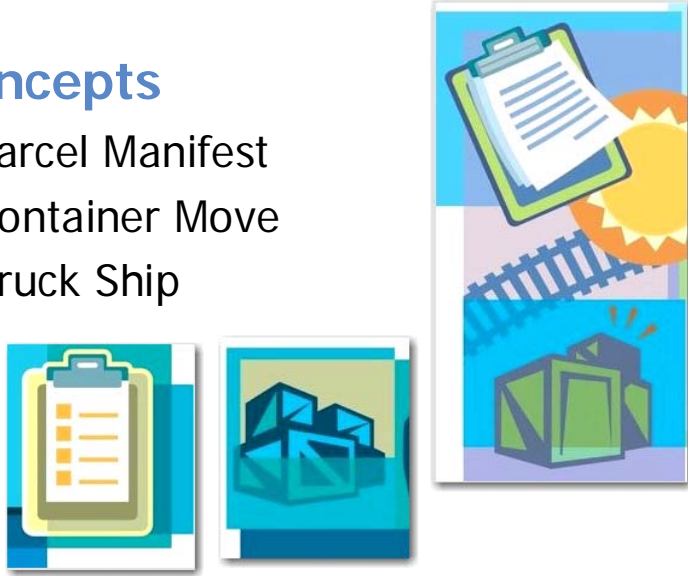
- Learn concepts
- Set up container move and truck ship functions
- Learn the basic process.

Concepts



Concepts

- ▲ Parcel Manifest
- ▲ Container Move
- ▲ Truck Ship



QAD Proprietary

After warehouse staff assemble pallets to ship to customers, they can use print paperwork functionality to produce all necessary shipment documentation.

Once shipment documentation is produced and shipping labels placed onto containers, warehouse staff can use container move functionality to move allocated boxes or pallets from the dock location to a truck location.

When warehouse staff scan pallet tags and labels that they load onto a truck, warehouse reports and inquiries indicate that an SO or DO order line has been loaded onto a truck. When all pallets for a shipper have been loaded, an RF message displays notifying warehouse staff that the shipper is ready to be shipped. The system automatically creates a bill of lading (BOL) for the truck shipment.

Parcel Manifest

A manifest is a list of goods carried on a truck, train, or ship. Before starting the container move and truck load process, RF users can produce the necessary shipment manifest by using the RF Print Paperwork (3.8) function. Print Paperwork allows RF users to:

- Print pre-shipper/shippers by scanning the document number in the RF device.
- Convert pre-shippers to shippers by assigning a shipper number.
- If the Send Shipment (whtraxsx.p) routine is specified in Local Exit Routines Setup (4.23.10), the system produces a ship shipment (SHIP) message and exports it to the TMS for rating.

Container Move

Container move functionality in QAD Warehousing lets:

- Staff move any pallet with detail allocation and containerization to any other location, including another truck.
- Optionally, add staging or validation steps when moving containers.
- Facilitate cross-docking functionality.
- Report the position of each pallet in the truck.
- Load pallets in the appropriate reverse dropping order if a drop-off sequence has been specified in a load.

Truck Ship


After the truck has been loaded, shipment documentation has been printed, and the shipment is ready, you can use a single transaction to confirm that the truck shipped. You use the truck ship transaction to confirm a sales order shipper, much like you use Pre-Shipper/Shipper Confirm (7.9.5) for a sales order or DO Pre-Shipper/Shipper Confirm (12.19.13) for a distribution order.

Truck ship features let you:


- Indicate truck shipment, resulting in shipment of all orders on the truck.
- Create a master bill of lading (MBOL) that includes all shippers for both SOs and DOs.
- View all shippers loaded on the truck for a given truck location.

If specified in the Truck Shipment (whtraxtx.p) field in Local Exit Routines Setup (4.23.10), a process end of day (PEOD) message can be produced and exported to the TMS

Parcel Manifest Setup



Parcel Manifest Setup

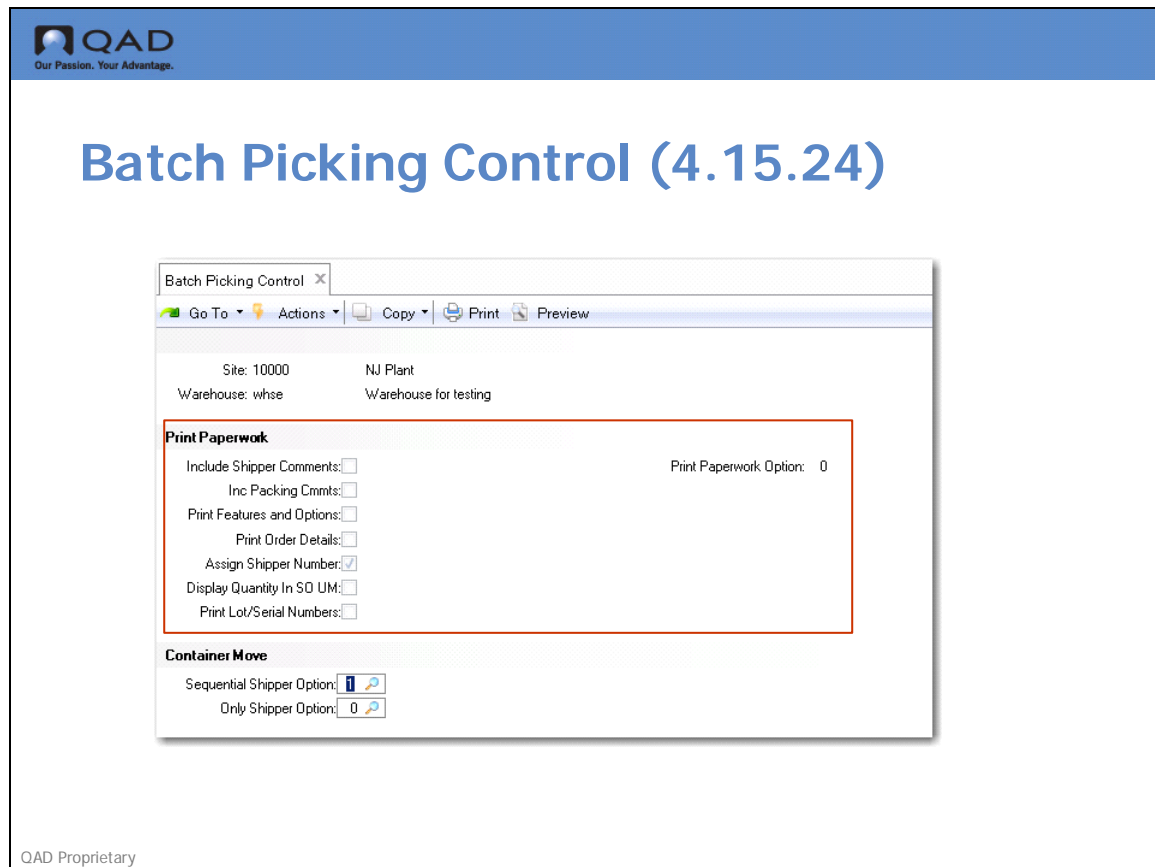


- ▲ Set up print paperwork controls
- ▲ Assign a form printer
- ▲ Optionally specify a routine to produce a ship shipment message to export to a TMS

QAD Proprietary

- Use Batch Picking Control (4.15.24) to set print paperwork control options.
- Use User Work Location Group Maint (4.11.3.13) to assign a form printer to the use who prints paperwork.
- Use Local Exit Routines Setup (4.23.10) to optionally specify the ship shipment message when using wave transportation with the shipment.

Batch Picking Control - Print Paperwork Frame



Use options in the Print Paperwork frame of Batch Picking Control (4.15.24) to set defaults for shipper printing when using the RF Print Paperwork function.

Field Descriptions

Print Paperwork Option. Indicate the type of message the RF displays when the system finds pending tasks (unconfirmed tasks) or finds that inventory is not on the truck when staff attempt to print shipper paperwork to ship items.

- 0: The system does not display messages and does not take action when either condition exists.
- 1: The system displays a warning message when either condition exists.
- 2: The system displays a message when either condition exists and prompts for user confirmation of the message before continuing.
- 3: The system displays an error message when either condition exists.

Include Shipper Comments. Enter Yes to include shipper comments when printing paperwork from the RF or No to exclude such comments.

Inc Packing Cmnts. Enter Yes to include packing comments when printing paperwork from the RF or No to exclude such comments.

Print Features and Options. Enter Yes to print order line item numbers followed by a list of features and options selected for the item or No to only print the item number. This setting applies to sales order shipper processing.

Print Order Details. This field determines whether the order number and order line number associated with line items on the shipper are included in the printed output when printing from the RF.

Assign Shipper Numbers. This field specifies whether you want the system to assign a shipper number when printing shippers from the RF. Assigning numbers converts pre-shippers to shippers on the RF.

In order for the system to generate a number, the NRM sequence for the pre-shipper/shipper must be an internal sequence generated by the system. If the assigned NRM sequence is external, the pre-shipper/shipper is skipped. To use an external sequence, you can assign the shipper number during shipper creation (if pre-shippers are not used), or during confirmation (if pre-shippers are used).

Display Quantity in SO UM. Specify Yes or No for the RF device to display quantities in the UM specified in the sales order. This setting applies to sales order shipper processing.

Print Lot/Serial Numbers. Specify whether a complete list of each of the lot/serial and lot reference numbers shipped print on the shipper when printing from the RF.

No: Each line item shipped is followed by a list of the lot/serial and lot reference numbers shipped.

Yes: Only the total shipped quantity prints for each line item.

User Work Location Group Maintenance

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User Work Location Group Maintenance (4.11.3.13)

User Work Location Group Mai... x

Go To Actions Copy Print Preview

Site: 10000
Warehouse: whse
Work Location Group: truck
User ID: aeg

System Flavor: A

Device:

External Device Printer:

Form Printer: Use External:

ID Printer: Use External:

Task Printer: Use External:

Inspection Printer: Use External:

Use User Work Location Group Maintenance to specify a printer for the warehouse worker to use when printing the pre-shipper or shipper documents.

Form Printer. Specify the name of the printer to be used for printing forms.

Use External. Enter Yes if you want RDT users to be able to print the forms on an external printer such as the local printer in the fork-lift truck. Enter No if the documents must be printed on the form printer.

Local Exit Routines Setup

Local Exit Routines Setup

Go To Actions Copy Print Preview

Bulk Pick Sheet (whbplk01.p):	whbplk01.p
Pre-Shipper List (whbpps01.p):	whbpps01.p
Printer Template User Fields (whbpps01.p):	
Order Detail Update (whomlx01.p):	
Cycle Count Selection Algorithms (whicccx.p):	
Task Calculation (whmlx01.p):	whwata01.p
Batch Picking Order Selection (whbplk1x1.p):	whbplk1.p
Batch Picking Task Sort (whbplk1x2.p):	
RF Pallet Overpick (whfmb1.p):	whfmb1.p
Batch Picking Screen Format (whbplk3.p):	whbplk3.p
Batch Order Export (whtraxbx.p):	whtraxbx.p
Send Shipment (whtraxsx.p):	whtraxsx.p
Cancel Shipment (whtraxcx.p):	whtraxcx.p
Truck Shipment (whtraxtp.p):	
TMS Integration Control (whtraxpx.p):	whtraxpx.p

QAD Proprietary

Use Local Exit Routine Setup to specify QAD-provided routines that perform specific warehousing functions.

Field Descriptions

Send Shipment (whtraxsx.p). Specify Yes if you are using TMS with your orders to provide load data. When Send Shipment is Yes, the system produces a ship shipment (SHIP) message and exports it to the TMS for rating.


Local Exit Routines Setup (4.23.10), a ship shipment (SHIP) message can be produced and exported to the TMS as part of the print paperwork process.

As a result of the ship shipment message, the TMS returns carrier shipping labels in its reply to QAD Warehousing. Warehouse staff print the carrier shipping labels from the RF, by selecting the appropriate labels printer when prompted.

Parcel Manifest Processing



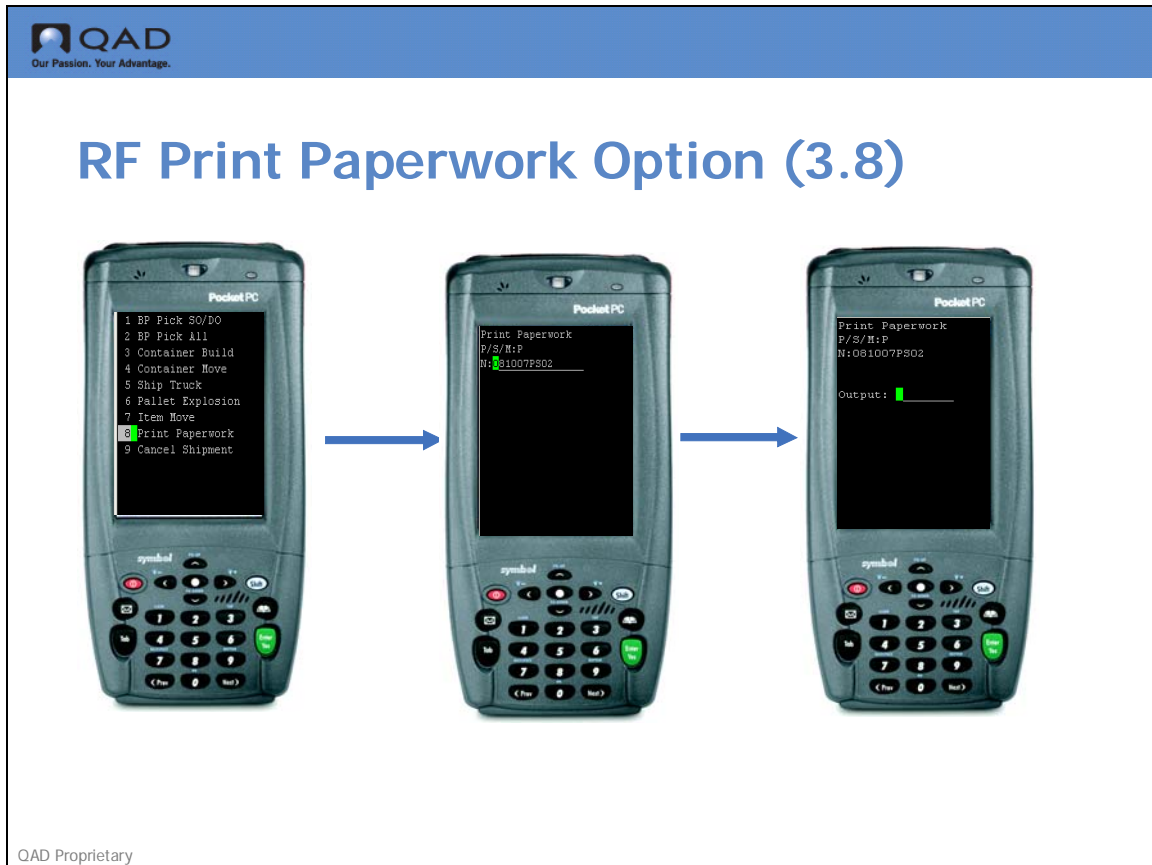
Parcel Manifest Processing

- 
- ▲ Print pre-shipper/shippers
 - ▲ Convert pre-shippers to shippers
 - ▲ Print carrier shipping labels if using wave transportation

QAD Proprietary

- Use the RF Print Paperwork (3.8) to print the pre-shippers/shippers.
- Use QAD EE programs to convert pre-shippers to shippers
- Use the RF to print carrier shipping labels.

RF Print Paperwork



You can print before beginning the container move or truck ship process so that users can collect shippers before they pack the truck. You can print for both sales and distribution orders.

To print pre-shippers/shippers from the RF:

- 1 Select Print Paperwork (3.8) in the RF Picking/Container Menu (3).
- 2 Scan (enter) the pre-shipper or shipper ID.
- 3 Specify a printer in the Output field.
- 4 Print the paperwork.

QAD EE Programs to Convert Pre-Shippers

The screenshot displays the QAD EE Programs interface. At the top left is the QAD logo with the tagline "Our Passion. Your Advantage." Below the logo, the title "QAD EE Programs" is centered. The interface is divided into two main sections:

- Shipper Processing Menu (7.9):** A list of programs including:
 - 7.9.1 Picklist/Pre-Shipper - Automatic
 - 7.9.2 Pre-Shipper/Shipper Workbench
 - 7.9.3 Pre-Shipper/Shipper Inquiry
 - 7.9.4 Pre-Shipper/Shipper Print
 - 7.9.5 Pre-Shipper/Shipper Confirm
 - 7.9.6 Pre-Shipper/Shipper Report
 - 7.9.7 Pre-Shipper/Shipper Auto Confirm
 - 7.9.8 Sales Order Shipper Maintenance
 - 7.9.9 Sales Order Shipper Print
 - 7.9.10 Manual Shipper Validation
 - 7.9.11.1 Rule Definition Maintenance
 - 7.9.11.5 Source/Destination Rule Link
 - 7.9.11.13 Hierarchy Report
 - 7.9.11.14 Rules Report
 - 7.9.11.15 Shipper Validation Error Report
 - 7.9.11.18 Export Rules
 - 7.9.11.19 Export Profiles
 - 7.9.11.20 Import Validation Data
 - 7.9.11.24 Shipper Validation Control
 - 7.9.12.1 Bill of Lading Print
 - 7.9.12.2 Master Bill of Lading Maint
 - 7.9.12.3 Master Bill of Lading Inquiry
 - 7.9.12.4 Master Bill of Lading Print
 - 7.9.12.23 Master Bill Delete/Archive
 - 7.9.13 Sales Order Packing List
 - 7.9.14 Sales Order Shipping Label Print
 - 7.9.15 Sales Order Shipments
 - 7.9.16 Shipper Report
- Distribution Orders Shipping Menu (12.19):** A list of programs including:
 - 12.19.1 DO Picklist/Pre-Shipper - Auto
 - 12.19.3 DO Pre-Shipper/Shipper Maint
 - 12.19.4 DO Pre-Shipper/Shipper Inquiry
 - 12.19.5 DO Pre-Shipper/Shipper Report
 - 12.19.7 DO Container Maintenance
 - 12.19.8 DO Container Inquiry
 - 12.19.9 DO Container by Item Inquiry
 - 12.19.11 DO Pre-Shipper/Shipper Print
 - 12.19.13 DO Pre-Shipper/Shipper Confirm
 - 12.19.15 DO Backlog/Missed Shipment Rpt
 - 12.19.17 DO Shipping Label Print
 - 12.19.20 Undo DO Shipper Nbr Assignment
 - 12.19.22 DO Container Delete/Archive
 - 12.19.23 DO Shipper Delete/Archive
 - 12.19.24 DO Container/Shipper Control
 - 12.19.26 Release Locked DO Shipper Confirms
 - 4.11.12.19 Tasks by Group and Date Inquiry

At the bottom left of the screenshot, the text "QAD Proprietary" is visible.

Depending on the settings in the Print Paperwork frame in Batch Picking Control, pre-shippers are converted to shippers in the same way the system converts them for sales orders in the Shipment Processing Menu (7.9) or for distribution orders in the Distribution Orders Shipping Menu (12.19).

The system makes a distinction between pre-shippers and shippers and numbers them separately. This distinction accommodates businesses that must number their shipments consecutively. When you print pre-shippers, you can automatically turn them into shippers. If you do not assign a shipper number to a pre-shipper when you print it, the shipper number is assigned when the pre-shipper is confirmed.

When the system converts the pre-shipper to a shipper, the new shipper number appears on the RF device screen after the shipper is printed.

RF for Carrier Labels



Depending on the settings in the Send Shipment (whtraxsx.p) field in Local Exit Routines Setup (4.23.10), a ship shipment (SHIP) message can be produced and exported to the TMS as part of the print paperwork process.

As a result of the ship shipment message, the TMS returns carrier shipping labels in its reply to QAD Warehousing. To print carrier shipping labels from the RF, select the appropriate labels printer when prompted to do so:

Parcel Manifest Exercise: Create a SO Preshipper, Convert, and Print



Objective



- ▲ Create a pre-shipper for an existing SO
- ▲ Convert the pre-shipper to a shipper
- ▲ Print the shipper from the RF device

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will create a pre-shipper, convert it to a shipper, and print the shipper from the RF.

- 1 Follow all setup tasks for parcel manifest, ensuring that you assign a form printer to the user who will log in to the RF in this exercise.

Note Your instructor will provide a printer name to use as the form printer.

- 2 Use a QAD EE Shipping Menu program to create a pre-shipper for an existing sales order.
- 3 Use a QAD EE Shipping Menu program to convert the pre-shipper to a shipper.
- 4 Log in to the RF and use the RF Print Paperwork (3.8) option to enter the shipper number and print the shipper.

Note Your instructor will provide a printer name to use as the form printer.

Parcel Manifest Study Questions

- 1 What is a manifest?
- 2 You use any of the QAD EE programs to convert a pre-shipper to a shipper, the new shipper number appears on the RF device screen after the shipper is printed. True or False.
- 3 As a result of the ship shipment (SHIP) message, the TMS returns carrier shipping labels in its reply to QAD Warehousing. The TMS also rates the carriers. True or False.
- 4 Which of the following methods does the system use to inform RF users that carrier labels require printing:
 - a TMS exports carrier labels and sends instructions to print them.
 - b QAD EE shipment processing programs automatically send label data to the printer.
 - c The RF user selects the Next Task option to display the printing task.
 - d The RF system prompts the RF user.
 - e None of the above.
- 5 You print after the container move, but before the truck ship process so that users can collect shippers before they pack the truck. True or False.
- 6 Shipper number assignment occurs only in QAD EE when you convert pre-shippers to shippers. True or False.
- 7 Which control option determines the type of message the RF displays when the system finds inventory is not on the truck when staff attempt to print shipper paperwork to ship items?
- 8 You can print a pre-shipper from the RF as well as a shipper. True or False.
- 9 The Ship Shipment field in Local Exit Routine specifies messages the system prints during shipment processing on the RF. True or False.
- 10 You can print shippers and pre-shippers for distribution orders and sales orders. True or False.

Container Move Setup



Container Move Setup



- ▲ Define an IRG for truck locations
- ▲ Define a truck location
- ▲ Set up printers for the truck IRG user
- ▲ Define an IR from lanes to truck and from truck to truck
- ▲ Link truck load transactions to the IR
- ▲ Specify truck locations for lanes
- ▲ Set up control options

- Use Internal Routing Group Maintenance (4.2.1) to set up an IRG for truck locations.
- Use Warehouse Location Maintenance (4.3.13) to define a truck as a location.
- Use User Work Location Group Maintenance (4.11.3.13) to set up printers for the user who is associated with the truck IRG.
- Use Internal Routing Maintenance (4.2.5) to define an IR for truck load movements.
- Use Internal Routing Assignment Maintenance (4.2.9) to assign an internal routing to the truck-load transaction.
- Use Lane Maintenance (4.15.1.1) to specify the truck location for a shipping lane.
- Use Batch Picking Control (4.15.24) to set control options for container move functions.

Internal Routing Group Maintenance

Internal Routing Group Maint

Go To Actions Copy Print Preview

Site: US-D3

Warehouse: US-D3

Internal Routing Group: Dispatch

Description: Lanes Area

Functional:

SLG Default Values

Allow Issues:

Allow Receipts:

Allow Outgoing Returns:

Allow Incoming Returns:

Back Next

Internal Routing Group Maintenance (4.2.1) to set up an IRG for truck locations.

Field Descriptions

Internal Routing Group. Specify the Internal Routing Group as the truck location.

Functional. Enter Yes if this internal routing group is a functional area, such as receipt or dispatch, in which the system uses location-find algorithms to select locations when stock is moved into the area. Enter No if this is a non-functional area, such as general storage, in which the system uses put-away algorithms to select locations when stock is moved into the area.

Warehouse Location Maintenance

Warehouse Location Maintenance (4.3.13)

Site: 10000 NJ Plant

Location: 100

Location Groupings

Warehouse: whse

Storage Location Group: truck

Work Location Group: truck

Warehouse Location Data

Check Digit:

Popularity:

Storage Type: truck

Warehouse Location Type:

Travel Sequence:

Dedicated:

Picking Type:

Preferred UM:

Opportunity Count Frequency: 0

Last Opportunity Count:

Stage (In):

Stage (Out):

Use Warehouse Location Maintenance (4.3.13) to define a truck as a location.

When a truck is defined as a storage location, you can use functions to report on truck capacity and contents and the warehousing system can use the truck location for storage.

Field Descriptions

Location. Specify the location of the truck.

Storage Location Group. Specify the storage location group for the truck.

Work Location Group. Specify the work location group for the truck.

Storage Type. Specify the storage type as Truck.

User Work Location Group Maintenance

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User Work Location Group Maintenance (4.11.3.13)

User Work Location Group Mai... x

Go To Actions Copy Print Preview

Site: 10000
Warehouse: whse
Work Location Group: truck
User ID: aeg

System Flavor: A

Device:

External Device Printer:

Form Printer:

ID Printer:

Task Printer:

Inspection Printer:

Use External:

Use External:

Use External:

Use External:

Use User Work Location Group Maintenance (4.11.3.13) to set up printers for the user who is associated with the truck IRG.

Field Descriptions

Work Location Group. Specify the work location group for the truck.

User ID. Specify a valid system user ID of the person who scans during truck loading.

Form Printer. Specify the printer to print the pre-shipper. If you do not set up printers for a combination of user and work location group, use Work Location Group Maintenance to assign the form printer to the work location group in the Printing frame.

Internal Routing Maintenance

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Internal Routing Assignment Maintenance (4.2.9)

Int Routing Assignment Maint x

Go To Actions Copy Print Preview

Transaction Type: LDC-TR

Site: 10000

Warehouse: whse

Item Number:

Warehouse Item Type:

Address:

Custom:

Internal Routing: truck

Custom Program:

Use Internal Routing Maintenance (4.2.5) to define an IR for truck load movements.

Define the internal routing with a single step that moves to the truck IRG. Define a single-step movement that lets staff move items:

- From the shipping lane IRG to the IRG truck location
- Between locations of the same IRG should you need to transfer from one truck to another

A one-phase internal routing represents movement within the IRG.

Important Do not specify a two-phase movement for the truck.

Field Descriptions

Internal Routing. Specify the code that identifies the internal routing you want to maintain or assign to a particular transaction type.

Internal Routing Group. This field is used to specify the name of the internal routing group you want to maintain or use in an internal routing.

Task. Enter a valid task defined in Task Maintenance for the internal routing, for example, TRANSFER, which will be assigned with inventory transaction at the internal routing level.

Two Phase. This field indicate show transactions should be confirmed. Ensure this field is NOT selected.

Internal Routing Assignment Maintenance

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Internal Routing Assignment Maintenance (4.2.9)

Int Routing Assignment Maint: Go To - Actions -

Transaction Type: LOC-TR
Site: 10000
Warehouse: 279
Item Number: 100A
Warehouse Item Type:
Address:
Custom:
Internal Routing: truck
Custom Program:

QAD Proprietary

Use Internal Routing Assignment Maintenance(4.2.9) to assign an internal routing to the truck-load transaction.

Field Descriptions

Transaction Type. Specify the LOC-TR transaction type. The location transfer transaction (LOC-TR) is included with the system data as a generalized code for field tr_type.

Internal Routing. Specify the truck internal routing.

Lane Maintenance

The screenshot shows the QAD Lane Maintenance (4.15.1.1) form. The form is titled "Lane Maintenance" and includes a menu bar with "Go To", "Actions", "Copy", "Print", and "Preview". The form fields are as follows:

Site:	site20
Warehouse:	Whse20
Lane:	Lane001
Description:	
Capacity:	20.00
Carrier:	DHL.Fedex
Tasks:	6
Absolute Full %:	30.00

Use Lane Maintenance (4.15.1.1) to specify the truck location for a shipping lane.

Field Descriptions

Lane/Dock. Specifying the truck location name.

If you do not specify a truck location, the system uses the warehouse as the truck location; however, warehouse staff can override the warehouse location and manually enter a valid truck location or stage area on the RF device.

Batch Picking Control

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Batch Picking Control (4.15.24)

Batch Picking Control

Go To Actions Copy Print Preview

Site: 10000 NJ Plant
Warehouse: whse Warehouse for testing

Print Paperwork

Include Shipper Comments: Print Paperwork Option: 0
 Inc Packing Cmmts:
 Print Features and Options:
 Print Order Details:
 Assign Shipper Number:
 Display Quantity In SD UM:
 Print Lot/Serial Numbers:

Container Move

Sequential Shipper Option: 1
 Only Shipper Option: 0

QAD Proprietary

Use the Container Move frame in Batch Picking Control (4.15.24) to set up truck load messages.

Field Descriptions

Sequential Shipper Option. Specify the type of message the system displays when it checks for partially loaded pre-shippers or shippers; that is, pre-shippers/shippers for which the truck loading began, but pallets still remain to be loaded.

- 0: The system does not display messages and does not take action.
- 1: The system displays a warning message.
- 2: The system displays a message and prompts for user confirmation of the message before continuing.
- 3: The system displays an error message and you cannot continue.

Use the setting to ensure all pallets for a given shipment are loaded consecutively in the truck, ideally in the reverse order of unloading so that the unloading process is easier.

You have three shippers for which you are loading a truck: Shipper 1 has three pallets, all of which are loaded. Shipper 2 has two pallets, only one of which is loaded. Shipper 3 has two pallets, none of which are loaded. You set this option to 3. The system displays an error message when you attempt to load and scan pallets for Shipper 3 because Shipper 2 has a pallet remaining to be loaded.

Only Shipper Option. Specify the type of message the system displays when it verifies whether users can load both pre-shippers and shippers or just shippers. If you set this option so that users can continue processing despite messages before loading the truck, the system converts any selected pre-shippers to shippers.

- 0: The system does not display messages and does not take action.
- 1: The system displays a warning message.
- 2: The system displays a message and prompts for user confirmation of the message before continuing.
- 3: The system displays an error message and you cannot continue.

Container Move Processing- RF Container Move



Warehouse staff use the RF Container Move option when loading a truck.

Since the truck is defined as a location, you do not have to associate an RF transaction to a warehouse task.

Staff can load boxes or pallets onto the truck. The boxes or pallets can be totes or references.

Procedure

- 1 From the RF, select Container Move.

The system displays the Loc Transfer RF frame.

- 2 Scan the references.

The system displays the truck location. If you assign a shipping lane to a truck location in Lane Maintenance (4.15.1.1) in the Dock/Truck field, the default truck location displays in the Loc field. Otherwise, the system uses the warehouse as a location and you must enter either a valid truck or stage location.

- 3 Click Next.

The system displays the Transfer Complete message, then informs you that the truck is ready to ship.

Container Move Exercise: Move Items to a Truck



Objectives



- ▲ Define a Truck location.
- ▲ Specify the storage location group and storage type as Truck.
- ▲ Create a shipper for an existing sales order and confirm the shipper.
- ▲ Use the RF Cont Move to enter items (scan items) loaded onto a truck.
- ▲ Verify movement.

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will use the previous Manifest exercise shipper to load items onto a truck from the RF.

- 1 Follow the set up for both parcel manifest and container move.
- 2 Define a truck location, specifying the storage location group and storage type as Truck.
- 3 Create an SO pre-shipper for an existing sales order, confirm/convert the pre-shipper as described in Parcel Manifest exercises.
- 4 Use the RF Cont Move to enter items (scan items) on the pre-shipper and move them onto a truck.
- 5 Use Order Warehouse Detail Status Inquiry (4.15.4.1) to verify that all items are in the designated location, such as the truck location. When items are loaded on the truck, the Load column indicates the number of boxes that are loaded onto the truck.

Container Move Study Questions

- 1 Which of the following is not provided by container move functionality:
 - a Move any pallet with detail allocation and containerization to a truck.
 - b Validate steps when moving containers.
 - c Load trucks in two-phase movements from dock to truck and truck to truck.
 - d Report on the position of each pallet in the truck.
 - e Load pallets in reverse dropping order
- 2 You do not need to specify an SLG specific for truck loading. True or False.
- 3 When a truck is defined as a storage location, you can use functions to report on truck capacity and contents and the warehousing system can use the truck location for what?
- 4 The user must be assigned to the truck work location group before loading can begin. True or False.
- 5 What are you setting up, outside of the user's WLG, in User Work Location Group Maintenance?
- 6 What represents a single-step movement within the IRG and how do you set it up?
- 7 You define a single-step movement that lets staff:
 - a Move from the shipping lane IRG to the IRG truck location
 - b Move between locations of the same IRG
 - c Transfer from one truck to another.
 - d All of the above
 - e Only A and B.
- 8 Which transaction do you use for truck loading?
- 9 Since you specify a transaction type, all tasks associated with the transaction are assigned to warehouse staff and task setup is not required. True or False.
- 10 You must define the LOC-TR transaction type in Transaction Type Maintenance. True or False.

Ship Truck Setup

QAD
Our Passion. Your Advantage.

Ship Truck Setup –Batch Picking Control

Batch Picking Control

Go To Actions Copy Print Preview

Site: 10000 NJ Plant
Warehouse: whse Warehouse for testing

Print Paperwork

Include Shipper Comments: Print Paperwork Option: 0
Inc Packing Cmmts:
Print Features and Options:
Print Order Details:
Assign Shipper Number:
Display Quantity In SO UM:
Print Lot/Serial Numbers:

Container Move

Sequential Shipper Option: 1
Only Shipper Option: 0

Ship Truck

Master Bill Ship-To/Dock: Confirm on Error:

QAD Proprietary

You set up truck ship in the Ship Truck frame in Batch Picking Control (4.15.24).

Field Descriptions

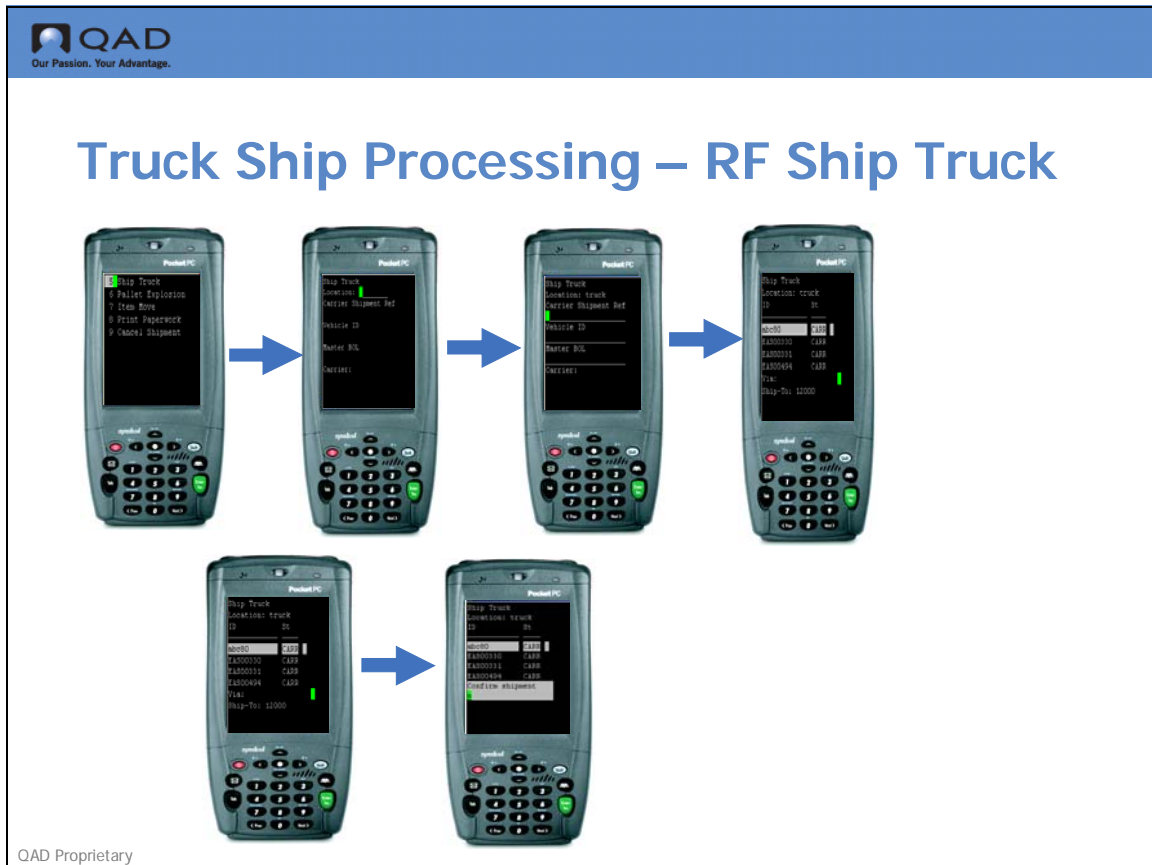
Master Bill Ship-To/Dock. Specify the default ship-to/dock to be used in the RF Ship Truck option when creating master bills of lading in Master Bill of Lading Maintenance (7.9.12.2). RF Ship Truck creates an MBOL that includes all shippers being confirmed; this is the ship-to/dock against which the system creates the MBOL.

Confirm on Errors. Specify whether RF Ship Truck option should confirm shipments when errors are received from a Transportation Management System (TMS).

No: If there is an error in the communication between QAD warehousing and the TMS, no shipments are confirmed. In this case you should use other system shipper confirmation programs to confirm shippers.

Yes: A warning displays, but you can proceed and confirm shippers.

Truck Ship Processing



Warehouse staff use the RF Ship Truck option to confirm truck shipping.

Procedure

- 1 From the RF, select Ship Truck (3.5).
- 2 Select the shippers by truck location.
The RF displays shipper IDs.
- 3 Optionally, enter the carrier shipment reference, vehicle ID, or master bill of lading (MBOL).
Note If you do not enter an MBOL, the system generates one and assigns shippers that are being confirmed to it. Print the MBOL using the RF Print Paperwork option. If you enter an MBOL, the system adds the shippers that are being confirmed to the existing MBOL.
If Truck Shipment (whtraxtx.p) is specified in Local Exit Routines Setup (4.23.10), the system prompts for a valid carrier.
- 4 Specify a valid carrier as defined in Carrier/Service Assignment Maintenance (4.15.2.13).
The system validates that all shippers being confirmed belong to a service of the carrier. The RF displays shipper IDs with varying shipper status.
- 5 Press Enter to select shippers.

An asterisk (*) next to a shipper indicates open tasks exist. If no asterisk displays, no open tasks exist and staff confirm the ship truck.

Note Press Enter to deselect one shipper at a time.

- 6 Press F2 to show load details. This option is only available when using load optimization in wave planning.
- 7 Press F3 to show shipper details.
- 8 Confirm the ship truck.

If specified in the Truck Shipment (whtraxtx.p) field in Local Exit Routines Setup, the system exports a process end of day (PEOD) message to the TMS prior to confirming the shipper issue inventory transactions.

Truck Ship Exercise: Use RF Ship Truck to Complete Truck Shipping



Objectives

- ▲ Create a shipper for an existing SO.
- ▲ On the RF, select the shipper.
- ▲ Enter carrier data.
- ▲ Confirm the truck shipment.

QAD Proprietary

The data used in the following exercises may not be the same as the data shown in the screen captures in this lesson.

If you are using this guide in self-paced training, perform the first exercise, “Preliminary Setup (for Virtual Training Management System Only)” on page 3, to login to the training domain.

Instruction: In this exercise, you will use the shipper created in the Manifest exercise and the truck locations set up in the Container Move exercise along with the RF Ship Truck function to complete truck shipping.

- 1 Follow the set up for both parcel manifest and container move.
- 2 Define a truck location, specifying the storage location group and storage type as Truck.
- 3 Create an SO pre-shipper for an existing sales order, confirm/convert the pre-shipper as described in Parcel Manifest exercises.
- 4 From the RF, select the Ship Truck (3.5) option.
- 5 Select the shippers by truck location.
- 6 Specify a valid system carrier.
- 7 Confirm the shipment.

Truck Ship Study Questions

- 1 Which of the following is not a truck ship feature:
 - a Indicate truck shipment.
 - b Create a master bill of lading (MBOL).
 - c View all shippers loaded on the truck for a given truck location.
 - d Monitor truck shipments to any destination
 - e None of the above.
- 2 You can use truck ship features with an external TMS. True or False.
- 3 You can create a Master Bill of Lading (MBOL) from within warehousing to use when truck shipping. True or False.
- 4 You can still confirm shipments on the RF even though errors were received. True or False.
- 5 When using the RF Ship Truck option, you select shippers by work location group. True or False.
- 6 During RF Ship Truck, you must specify one of the following:
 - a carrier shipment reference
 - b vehicle ID
 - c MBOL
 - d truck driver user ID
 - e A through C
- 7 Where do you define a valid carrier?
- 8 When you specify the carrier when confirming, what does the RF validate?
- 9 Before confirming the truck shipment on the RF, the system may send a shipment complete message to the TMS. True or False.
- 10 On the RF, what does the asterisk next to a shipper ID indicate?

Appendix A

Answers to Study Questions

Warehouse Introduction

- 1 A warehouse.
- 2 False. An IRGs can contain several SLGs.
- 3 True.
- 4 True.
- 5 Processing engines are run-time programs that select and process all the required inventory transactions.
- 6 True.
- 7 Purchase Order Receipt (code RCT-PO) and Sales Order Pick (code PICK-SO).
- 8 False. At the simplest level, you can just assign a particular algorithm to a particular transaction type, then specify the transaction type to link an *internal routing*.
- 9 AUTO and MANUAL
- 10 e. Print templates contain token labels that are replaced by actual data when you print.

Receipts

- 1 False. IRs link Internal Routing Groups (IRGs.)
- 2 e. Each step of the internal routing
- 3 True
- 4 Specify a popularity code to define the priority for choosing a location when the system can use more than one location to put away stock.
- 5 False. Low alphanumeric values for the Popularity code indicate *greater* popularity.
- 6 You cannot assign popularity codes to transfers.
- 7 False.
- 8 Purchase Order Receipts (5.13.1) and Receipts–Unplanned (3.9)
- 9 False. Run Detailed Inventory Inquiry.
- 10 What is the purpose of the Expect In/Expect Out field when checking inventory?

Printing

- 1 Inventory IDs, inspection tags, tasks.
- 2 False. You can print both.
- 3 Warehouse Maintenance (4.1.1), Internal Routing Maintenance (4.2.5), Work Location Group Maintenance (4.3.9).

- 4 Print mode determines when output should be printed. Auto: automatic printing of identifications; Manual: system holds ID print requests until online or batch print request processing occurs; Autosig: system prints identifications automatically but holds them until a signal to print is received.
- 5 Internal Routing Maintenance (4.2.5)
- 6 Print Flavor determines the format of the printed output, either a default format or a template.
- 7 True.
- 8 Warehouse Maintenance (4.1.1).
- 9 False. You process warehouse print requests through Print Request Maintenance (4.21.7)
- 10 A transaction type.

Replenishment

- 1 d. All of the above.
- 2 The put-away is performed in the storage location group in order to place the items at the best suitable location inside this storage location group.
- 3 False. The replenishment list contains a series of storage location groups in which the system looks for the item to replenish.
- 4 False. You can replenish in real time through the RF device.
- 5 Warehouse staff select a multi- or single-item pallets from the reserve area and replenish one or multiple locations from the pallet in the picking area; they then return the remainder on the pallet to the reserve area.
- 6 As soon as the system issues inventory and stock drops below the minimum level, the system automatically creates a replenishment task.
- 7 Y True. You use Internal Routing Maintenance to assign a transaction to an IR set up for replenishment.
- 8 d. The location you want to replenish.
- 9 False. The default for the Create Transaction field in Replenishment Request is No. This lets you run a report first.
- 10 False. You must confirm tasks through the RF before replenishment is complete.

Labor Management

- 1 False. You define resources with QAD Warehousing functions.
- 2 True.
- 3 False. You assign a user to a WLG in User Work Location Group Maintenance (4.11.3.13).
- 4 c. Picking cart.

- 5 The system flavor code defines the style and format of Radio Frequency (RF) screens that display warehouse information to the user.
- 6 False. You define whether user confirmation is automatic or manual.
- 7 False. A confirmation mode of AUTO requires the user to perform a movement confirmation.
- 8 The queue contains a number of sequences, and queues are examined sequentially. Therefore, when the system is assigning tasks to resources, it checks all the sequences in queue 1 before queue 2. If multiple tasks exist for a user, the user is prompted to perform the task with the higher priority within the queue.
- 9 You must set the system code to RF, so that confirmation can occur the RF device.
- 10 True. Set the engine processor to process confirmations within fractions of a second, letting warehouse staff confirm within seconds.

Normal Picking

- 1 Normal picking is typical system-like picking that does not include mechanisms that shorten picking or travel time. Bulk/batch picking have time-saving mechanisms.
- 2 True.
- 3 Overpicking lets staff pick more stock from locations than is specified in the order. Overpicking works in conjunction with split picking for better control. For example, when the quantity required for the pick does not match the unit of measure in which the item is stocked in the location, you can combine overpicking and container splitting to pick the right amount.
- 4 You can set overpicking at the SLG level, or in Transaction Type Maintenance or Warehouse Transaction Type Maintenance.
- 5 Use picking levels to set default start and end picking levels. These start and end settings determine the levels to be used for the pick. The system then looks for inventory in the storage location groups that correspond to the specified range of picking levels. In addition to specifying a start and end picking level, you can specify whether all picking must be taken from only one picking level.
- 6 True.
- 7 Warehouse Maintenance, Storage Location Group Maintenance, Algorithm Assignment Maintenance\
- 8 Warehouse workers are assigned tasks within a WLG. When they login to the RF device, they use the Next Task option to determine tasks they need to complete.
- 9 Once origin and destination locations are scanned in, the RF Next Task option lets the user confirm the picking task.
- 10 True.

Bulk Picking

- 1 False. Work orders can also be a part of bulk picking.
- 2 The customer and ship-address.
- 3 C. Items
- 4 A load is a collection of order lines combined, if possible, by the same warehouse transaction.
- 5 True.
- 6 When you select order lines, rather than generating all load IDs at the start, order lines are grouped by temporary sequence ID. This lets you group order lines together without having to assign them load IDs.
- 7 True.
- 8 False. You must identify the number range management (NRM) sequence ID to use for creating bulk picking order numbers. If not correctly defined, it is not possible to create bulk picking orders.
- 9 False, you can set options in Bulk Pick Control to auto-approve bulk pick orders.
- 10 False. You set transaction creation when you *approve* order lines.

Batch Picking

- 1 Multiple items with large volume
- 2 True.
- 3 Unlike bulk picking, batch picking uses a *sort-by-pick* methodology. Warehouse staff can pick items from the same location for multiple orders while keeping the orders separated in different containers (boxes or totes) on their cart. Optionally, they can merge items for orders into a container, as long as order lines use the same pre-shipper and you have set control options to allow order merging.
- 4 Assign users to a workgroup location and set printing options.
- 5 Specify the code to define the style and format of screens for displaying warehouse information.
- 6 True. Batch Picking Control contains frames for containerization, ship truck, and container move.
- 7 False. You cannot include purchase orders.
- 8 False. You cannot specify the maximum number of pallets.
- 9 True. You click the Required box next to the Scan Quantity field in Batch Picking Controls (4.15.24) to make scanning mandatory.
- 10 False. Batch Pick-SO/DO is for only sales orders or distribution orders.

Inspections

- 1 a. During a receipt
- 2 d. All of the above.
- 3 Put-away (PA) algorithm
- 4 False. The algorithm looks for an IR that corresponds to the transaction type.
- 5 False. Setting up inspection parameters for a supplier is optional.
- 6 Two. One IR defines an inspection pathway and another IR defines a pathway for items returning to storage from inspection.
- 7 Item-Warehouse Maintenance.
- 8 Inspection Status Change Maintenance.
- 9 False. You must use the BACK-PO transaction for the return IR.
- 10 d. Warehouse Location Maintenance.

Cycle Count

- 1 d. The RD displays a cycle count frame and prompts users to count stock.
- 2 False, You can also use Movement Confirmation programs.
- 3 Unlike cycle counts, opportunity counts are triggered automatically by stock movements. Certain conditions cause the system to check the opportunity count threshold for that item. If this is found to be at or below the threshold level set using the Opp Cnt Threshold field, the system initiates a cycle count.
- 4 You can set the ABC Class field in Item Master Maintenance (1.4.1) to classify the value of items to be counted. The more valuable the item, the more frequent the count. So, items with class A are counted more frequently than B class, and so on.
- 5 True.
- 6 c. Cycle Count Generation.
- 7 Item Maintenance (4.4.7).
- 8 False, frequency is set only by days.
- 9 The code determines the type of screen that is used to confirm cycle count transactions. Leave blank for normal screens; enter RF for RDT screens.
- 10 Warehouse Maintenance (4.1.1)

Work Orders

- 1 True.
- 2 c). Warehouse staff pick the raw material quantities in the order for finished goods.

- 3 False. In QAD EE routings consists of one or more operations.
- 4 A and C.
- 5 e. All of the above.
- 6 False. you set up IRs for work orders.
- 7 Use Product Structure Code Maintenance to define finished goods.
- 8 True.
- 9 Use Item-Warehouse Maintenance to define item attributes for each item that is raw material, finished goods, or a product.
- 10 e. All of the above.

Wave Planning

- 1 shipper
- 2 False. It's best for companies with very large distribution or sales orders.
- 3 pick face, forward picking
- 4 Functional IRGs are areas that have a particular warehousing function, such as receipt or dispatch. Available storage space is not a relevant factor. Non-functional IRGs are used for storing inventory when space is really important. The difference between functional and non-functional areas relates to the way that the system chooses a location within the internal routing group when inventory is moved into the area. In non-functional areas, the system uses put away algorithms to select locations based on the capacity of the location and the size of the inventory. These are the standard criteria used in warehouse storage areas.
- 5 Internal Routing Maintenance (4.2.5)
- 6 True
- 7 Step 1: Full-pallet picking; Step 2: Box picking from the reserve area; Step 3: Picking area replenishment. You cannot use overpicking in Step 2.
- 8 Warehouse Location Maintenance (4.3.13)
- 9 True
- 10 False. The system creates and prints the pre-shipper when you release the wave

Wave Transportation

- 1 a). Respond to supplier's needs
- 2 A load (truck) is a collection of pre-shippers and shippers with an optional, given stop sequence.
- 3 The drop-off sequence.
- 4 False. A TMS calculates routes with drop-off sequences.

- 5 False. QAD Wave Transportation functions include options to create a load.
- 6 d) All of the above.
 - f B and C only
- 7 False. The system creates *picking* tasks.
- 8 More efficient task groups for pre-shippers and task groups optimized for picking, packing, and shipping by similar means of transport.
- 9 False. You set controls in Batch Picking Control, too.
- 10 c. Work orders are not a part of loads.

Parcel Manifest Study Questions

- 1 A a list of goods carried on a truck, train, or ship.
- 2 True.
- 3 True.
- 4 d) the RF system prompts the RF user.
- 5 False. You can print before both container move and truck ship.
- 6 False. Use the Assign Shipper Number field in Batch Picking Control to specify whether the system assigns a shipper number when printing shippers from the RF. Assigning numbers converts pre-shippers to shippers on the RF.
- 7 Print Paperwork Option in Batch Picking Control.
- 8 True
- 9 False. The Ship Shipment field lets you specify a routine that sends a message to an external transportation management system (TMS).
- 10 True.

Container Move Study Questions

- 1 c). Load trucks in a two-phase movement. Truck loading is always a one-phase movement.
- 2 False. You must specify the SLG for the truck location in Warehouse Location Maintenance.
- 3 The truck location can be used as storage.
- 4 True.
- 5 You must specify the printer for warehouse staff to print shippers.
- 6 A one-phase IR represents a single-step movement within the IRG. You set up a one-phase movement by deselecting the two-phase movement field in Internal Routing Maintenance.
- 7 c) All of the above.

- 8 LOC-TR (location transfer).
- 9 False. You must specify a TRANSFER task in Internal Routing Maintenance.
- 10 False. LOC-TR is supplied with the system.

Truck Ship Study Questions

- 1 d) Monitor truck shipments to any destination.
- 2 True.
- 3 False. You create MBOLs in QAD EE Master Bill of Lading Maintenance.
- 4 True. You can set options in Batch Picking Control to confirm with errors.
- 5 False. You select shippers by truck location.
- 6 e) A through C
- 7 QAD EE Carrier/Service Assignment Maintenance (4.15.2.13).
- 8 The RF validates that all shippers being confirmed belong to a service of the carrier.
- 9 False. The system may send an process end of day (PEOD) message to the TMS.
- 10 An asterisk (*) next to a shipper indicates open tasks exist.

