QAD Enterprise Applications
Enterprise Edition

Training Guide

QAD Warehousing Fundamentals

About This Course
Introduction to Warehousing
Receiving
Replenishment
Picking
Shipping
Inspection
Labor Management
Cycle Count
Printing

70-3240A
QAD Enterprise Edition
November 2011

This document contains proprietary information that is protected by copyright and other intellectual property laws. No part of this document may be reproduced, translated, or modified without the prior written consent of QAD Inc. The information contained in this document is subject to change without notice.

QAD Inc. provides this material as is and makes no warranty of any kind, expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. QAD Inc. shall not be liable for errors contained herein or for incidental or consequential damages (including lost profits) in connection with the furnishing, performance, or use of this material whether based on warranty, contract, or other legal theory.

QAD and MFG/PRO are registered trademarks of QAD Inc. The QAD logo is a trademark of QAD Inc.

Designations used by other companies to distinguish their products are often claimed as trademarks. In this document, the product names appear in initial capital or all capital letters. Contact the appropriate companies for more information regarding trademarks and registration.

Copyright © 2010 by QAD Inc.

Warehousing_TG_v11.2011EE.pdf/crl/QAD/

QAD Inc.
100 Innovation Place
Santa Barbara, California 93108
Phone (805) 566-6000
http://www.qad.com

Contents

About This Course 1
QAD Web Resources 2
Logging in to Training Success Web Site 2
Setting Up the Environment 2
Logging into QAD Enterprise Edition 3
Troubleshooting the Training Environment 3
Using the RF for Exercises 4
Logging In to Unix Character Session and Starting RF Software 5
Logging into RF as User A or User B 5
Shortcut to Enabling and Executing the RF Software 8

Chapter 1 Introduction to Warehousing 9
Overview 10
QAD Warehousing Setup 11
QAD + QAD Warehousing 12
QAD Warehousing Manages Tasks 13
Task Prioritization 14
Task Directed 15
Task Concepts 16
QAD Warehousing Main Concepts 17
Set Up a Site and Warehouse 18
Set Up Areas 19
Set Up Zones 20
Zone Example 21
QMI Layout 22
Location Examples 23
Locations are Site Specific 24
WLGs Defined by Work Practices and Printers 25
Locations Belong to a Zone and WLG 26
Use Standard Transaction Types 27
Transaction Types 28
Dependencies that Help Set Up the Warehouse 29

Enable QAD Warehousing 30
Exercise - Set up Inventory Detail Inquiry 31
Many Control Features are Managed in a Warehouse 32
Control Scan Options 33
Defaults Can Be Altered 34
Setting Up Areas 35
Exercise - What Areas are Set Up in the Warehouse? 36
Setting Up Zones 37
Exercise - Which Zones are Set Up in the Warehouse? 38
Set Up Work Sections 39
Exercise - Which Work Locations are Set Up? 40
Set Up Locations 41
Location - Caution 42
Set Up Locations - Warehouse Location Maintenance 43
Location - Alert 44
Setting Up Many of the Same Type of Location 45
Locations Setup - Implementation Alert 48
Exercise - Location Capacity 50
Define Routes 51
Define Routes - Internal Routing Maintenance 52
Auto Versus Manual Processing 53
Example - Map the Internal Routings 54
Which Routings Do You Use and When 56
Example - What are the Transaction Types Associated with the IRs? . 58
Define Rules 61
Which Rules to Use and When 62
Example - Which Algorithms are Assigned to Material Flows 63
QMI Units of Measure 65
Know Your Units of Measure 66
Items Currently Assigned to a Site 67
Other Item Characteristics 68
User Setup 69
Implementation Consideration - Define User Parameters 70
Assign the user to a Work Location Group 71
Traditional Warehouse Tasks 72
Assign Tasks to Users 73
QAD Warehousing - Key Learning Points 74
Exercises 75
Guidelines for Initial Data Setup 76
Exercise - Set Up Warehouses 77
Exercise - Set Up Areas 78
Exercise - Set Up Zones 79
Exercise - Define Work Sections 81

Exercise - Assign Users to Work Location Groups 82
Exercise - Set Up Locations 83
Exercise - Set Up Mass Locations 85
Exercise - Enable Users 87
Exercise - Set Up a License Plate Number 88
Questions 89
Answers 90
Notes 91

Chapter 2 Receiving 93

Overview 94
QAD Warehousing Receiving Objectives 95
Functional Fit - What Warehousing Does Not Do 96
Functional Fit Continued 97
Receipt Types 98
Receiving Configuration - Dependencies to Help Set Up 99
Define Receiving and Storage Zones 100
Typical Flow is Direct to Storage 101
Look for a Specific Spot 102
Rules Available for Put Away 103
Locations Have Many Attributes 104
Support Slotting Strategy 105
Manage Location Capacities 106
Manages Workers and Work Sections 107
Example - Receive Two Pallets to Locations with Existing Inventory 109
Example - Allow Mixed Item Storage 113
Put-Away Rules 114
Bonus Coverage: Three-Step Sequence 115
Bonus Coverage - Location Stage In/Stage Out 117
Implementation Consideration 118
Item Master Considerations 119
.Item Configuration- Step 1 120
Item Configuration- Step 2 121
Item Configuration- Step 3 122
Example - Receive an Item Not Set Up in the Warehouse 123
Example - Inventory Received, Nothing Happens 124
Example - Add Items to the Warehouse 125
Example - Set Up the Item at the Site and Warehouse 126
Example Test = Success 127
Example - Create New UM Groups 128
Example - UM Groups Help During Implementation 129
Example - Assign UM Group to Item 130
Example - Run the UM Conversion Generation 131

Example Test = Success 132
Implementation Consideration - Back to Locations 133
Location Popularity 134
Example - Assign Location Popularity 135
Example - Assign Popularity Codes 136
Example - Change the Receipt Put-Away Rules 137
Example - Storage by Popularity 138
Example- Receipt One 139
Example - Receipt Two 140
Example - Receipt Three 141
Implementation Consideration 142
Verbosity Reporting is a Troubleshooting Tool 143
Setting Verbosity Level for Go Live 144
Simulation 145
Example - Simulate Put Away when Locations are Full 146
Example - Simulate Receipt of an Item with Three Pallets 147
.Example - Review Simulation Results 148
Example - Verbosity Report 149
Example - What About the Extra Pallet? 150
Implementation Hint: Setting Up a Trouble Location 151
Bonus Coverage: LPN Creation 152
Bonus Coverage - Configure the LPN 153
Key Learning Points 154
Exercises 155
Exercise - Set Up Items 156
Exercise - Set up Alternate Units of Measure 160
Exercise - Set up Receipt Put Away/Routing 161
Exercise - Assign a Transaction to the Routing 162
Receive Items 164
Add More Items and Create UM Groups 165
Questions 167
Answers 168
Notes 169

Chapter 3 Replenishment. 171

Overview 172
Objectives 173
Functional Fit: What We Don’t Do So Well 174
Optimize Space and Material Handling 175
Reserve Storage and Forward Pick is a Best Practice 176
Replenishment is Used for Restocking Automated Equipment 177
Auto-Replenish Flags Set in Two Places 178
Overpick Replenishment 179

Dependencies that Help with Replenishment Setup 180
Which Locations Get Replenished 181
Which Locations Get Replenished - IR Maintenance 182
Which Locations Get Replenished - IR Assignment Maintenance . . . 183
Which Locations Get Replenished - Warehouse Location Maintenance 184
Where Does Replenishment Inventory Originate? 185
How is Replenishment Inventory Managed? 186
Which Items and Capacities Get Replenished? 187
Example 188
Manual Replenishment 189
Replenishment Request Triggers a Product Move 190
Replenishment Via the RF 191
Replenishment Complete 192
Implementation Consideration 193
Example - Reducing Replenishment Product Touches 194
Example - Consider Filling Forward Pick Locations 195
Bonus Coverage - Zone Replenishment 196
Key Learning Points 197
Exercises - Set Up and Execute Replenishment 198
Exercise - Confirm Forward Pick Location Setup 199
Exercise - Set Up Replenishment Routing 200
Exercise - Assign a Transaction to the Replenishment Routing 201
Exercise - Define Zones for Replenishment Inventory 202
Exercise - Define Replenishment Picking Rules 203
Exercise - Set Up Replenishment Parameters for Forward Pick Locations 204
Exercise - Generate Replenishment Tasks 205
Questions 207
Answers 208
Notes 209

Chapter 4 Picking 211

Overview 212
Objectives 213
Functional Fit: Picking 214
QAD Inventory Control Versus QAD Warehousing 215
Discrete, Bulk, and Batch 216
Can You Split Unit Loads? 217
Can You Overpick? 218
Picking Levels Define Pick Zones 219
Discrete Picking 220
Discrete Picking - One Order at a Time 221
Set Up Storage and Picking Area 222
Set Up Different Zones by Material Handling Type 223

Set Up Locations in Each Zone 224
Define Which Zones are Available for Picking 225
Assign Picking Levels to Zones 226
Define Product Flow Path for Picks 227
Assign Flow Paths to Picking Transactions 228
Define Product Movement Rules to Use for Transaction 229
Example - Set Up and Execute a Discrete Pick 230
Example - Discrete Picking 231
Example - Discrete Picking, Zones 232
Example - Discrete Picking, Release Order 233
Example - Discrete Picking, Review Pick Activity 234
Bonus Coverage 235
Bonus Coverage - Pick Strategies 236
Example - Discrete Picking, User Picking Pallet 237
Example - Discrete Picking, Test=Success 238
Discrete Picking Learning Points 239
Example - Reduce Wasted Time Driving and Dropping 240
Example - Reduce Travel 241
Example - Test=Success 242
Batch Picking 243
Batch Picking Defined 244
Batch Picking Process 245
Example - Batch Picking Setup and Execution 246
Example 1- Assign Users to a WLG 247
Example 2- Specify Users as a Location 248
Example 3 - Set Batch Picking Control Parameters 249
Example 4 - Set Up and Release Multiple Sales Orders 262
Example 5 - Select Order Using RF 263
Example 5A - Select Order Using RF 265
Benefits of Batch Picking 266
Batch Pick Function Keys 267
Bulk Picking 268
Bulk Picking Defined 269
Bulk Picking Control 270
Bulk Pick Setup 271
Bulk Pick Order Selection Inquiry 272
Wave Planning 273
Bulk and Wave - What is the Difference? 274
Bonus Coverage - Engine Processing and 3-Step Routing 275
Example - Engine Processing 276
Engine Processing - Three-Step Routing Setup 277
Modify the Pick Routing 278
Enable User A to Process a Transfer Task 279

Release and Pick an Order 280
Validate an Order in Packaging 281
Activate Engine Processing 282
Process the Move from Packaging to Shipping 283
Key Learning Points 284
Exercises - Picking Setup and Execution 285
Exercise - Set Up Warehouse, Area, and Zone 286
Exercise - Set Up Pick Routing 287
Exercise - Assign Pick Routing 288
Exercise - Set Up Pick Rules 289
Exercise - Set Up Drop Pick Rules 290
Exercise - Set Up Discrete Pick Items 291
Questions 292
Answers 293
Notes 294

Chapter 5 Shipping 295

Overview 296
Objectives 297
Functional Fit: What We Don’t Do So Well 298
Concepts 299
Shipping Configuration 300
Define Shipping and Zone Area 301
Locations Can Have Many Attributes 302
Typical Flow Direct to Shipping 303
When to Use Pick Routing 304
Look for a General Spot in Shipping 305
Any User Performs Manual Moves 306
Truck Shipping 307
Ship Truck 308
Set Up Ship Truck 309
QAD Warehousing Shipping - RF Ship Truck 310
Example - Ship Truck 313
Example - Ship Truck (RF 3.5) 314
Optional - Container Move 315
Container Move 316
Container Move Configuration 317
Set Up at Least One Truck Location 318
Define a Product Flow to Move to Truck Locations 319
Link a Transaction Path to the Product Flow Type 320
Look for a General Stage/Truck Location 321
Example - Container Move 322
Example - Container Move (RF 3.4) 323

Optional - Trucks as Temporary Storage 324
Truck Area, Zone, and Location Configuration 325
Set Up a Truck Area 326
Set Up a Truck Zone 327
Set Up at Truck Locations 328
Define Product Flow 329
Link a Transaction Type to the Product Flow Path 330
Look for a General Truck Location 331
Example - Move Container/Load to a Truck 332
Example - Use Trucks as Locations (RF 3.4) 333
Control Truck Load Building Sequence 335
Optional - Containerization 336
Containerization 337
QAD Warehousing Shipping - Containerization 338
Viewer Discretion Advised 339
Containerization Setup 340
QAD Warehousing Shipping - Containerization (RF 3.3) 341
View Containerization Progress Via RF 3.3 342
Remove Boxes from a Container Via RF 3.3 343
Remove Boxes Between Containers Via RF 3.3 344
Monitor the Order Status Via RF 3.3 345
Example - Pre-Shipper/Shipper Inquiry 346
Example - Pre-Shipper/Shipper Inquiry 347
Example - RF 3.3 Container Build 349
Bonus Coverage: Assign Carriers to Shipping Lanes 355
Parcel Manifest 356
Parcel Manifest Setup and Execute 357
Set Up Print Paperwork Controls 358
Assign a Form Printer to Shipping 359
Optionally Set Up a TMS Messaging Interface 360
Print Pre-Shipper/Shipper 361
Key Learning Points 362
Exercises - Shipping Setup and Execution 363
Warehouse, Area, and Zone Setup 364
Exercise - Ship Location Setup 365
Exercise - Review Pick Routing and Drop Rules 366
Exercise - Ship the Order 367
Exercise - Move Load to an Alternate Shipping Location/Lane 368
Exercise- Move Load to an Alternate Shipping Location/Lane (cont’d) 369
Exercise - Move Load to an Alternate Shipping Location/Lane (cont’d) 370
Exercise - Move Load to an Alternate Shipping Location/Lane (cont’d) 371
Exercise - Move Load to an Alternate Shipping Location/Lane (cont’d) 373
Exercise - Move Load to an Alternate Shipping Location/Lane (cont’d) 374

Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd) 375
Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd) 376
Questions 377
Answers 378
Notes 379

Chapter 6 Inspection 381

Objectives 382
What We Do Not Do Well 383
Inspection Product Flow 384
Inspection Flags Set in Multiple Places 385
Dependencies 386
Define Inventory Status - Optional 387
Activate Inspection Control 388
Set Up Inspection and QA Hold Area, Zone, and Location 389
Define Inventory Status Code Changes 390
New Product Flows=New Routings 391
Determine Product Flow through Inspection 392
Confirm Check Inspection to Trigger QA Rules 393
A Receipt Triggers Various Product Moves 394
New Rules Required for New Routings 395
Define Item-Warehouse Level Inspection Parameters 396
Example - Receive Item with Inspection Requirement 397
Example - Confirm Inspection Results 398
Example - Add Inspection Comments/Change Qty 400
Example - Add Inspection Comments/Change Qty (Contd) 401
Example - Success 402
Bonus Coverage: Example - Inspect Partial Pallet 403
Bonus Coverage - Example Inspect Partial Pallet (Continued) 404
Bonus Coverage: Example - Inspect Partial Pallet (Continued) 405
Bonus Coverage - Example - Success 406
Bonus Coverage: Define Inspection Parameters by Supplier 407
Bonus Coverage: Inspection Fail Processing 408
Bonus Coverage: Move Product to QA Hold 409
Key Learning Points 411
Exercises - Inspection Setup and Execution 412
Exercise - Set up an Area, Zone, and Location 413
Exercise - Set Up Inspection Product Flows and Rules 414
Exercise - Create Routings 415
Exercise - Assign Routing 417
Exercise - Use Put-Away Rules 418
Exercise - Define Inspection Parameters 420
Exercise - Activate Inspection 421

Exercise - Receive and Inspect an Item 422
Exercise - Receive and Inspect a Split Load 423
Questions 425
Answers 426
Notes 427

Chapter 7 Labor Management 429

Overview 430
Objectives 431
Functional Fit: Labor Management 432
What is Labor Management? 433
What is Labor Management - True Labor Management System 434
Implementation Planning 435
Implementation Planning - User Parameters 436
Define Work Sections 437
Assign Locations to a Zone or WLG 438
Assign User to Work Location Group 439
Traditional Warehouse Tasks 440
Tasks Link to Internal Routings 441
Assign Task Types to Users 442
Example - Set Up a New UserC 443
Example- Set Up UserC for Cycle Counting 444
Example - Change Task Priority and Assignment 445
Example - Change Task Priorities 446
Example - Change Task Assignments 447
Labor Reporting 448
Key Learning Points 449
Questions 450
Answers 451
Notes 452

Chapter 8 Cycle Count 453

Overview 454
Objectives 455
Functional Fit: What We Don’t Do 456
Types of Cycle Count 457
Cycle Count Configuration 458
Setting Up Cycle Counting 459
Item Level CC Parameters 460
Warehouse Level Parameters 461
Zone Level Parameters 462
Work Location Group Parameters 463

Cycle Count Task Assignment . . . 464
Cycle Count Processing . . . 465
Cycle Count Execution . . . 466
Cycle Count Simulation or Creation . . . 467
Cycle Count Tasks . . . 468
Cycle Count Execution - Done on RF . . . 469
Non-RF Cycle Count Activity . . . 470
Avoid Mixing . . . 471
Bonus Coverage - Opportunity Counts . . . 472
Cycle Count White Paper . . . 473
Bonus Coverage - Opportunity Count Configuration . . . 474
Bonus Coverage - Opportunity Counts . . . 475
Bonus Coverage - Opportunity Count, Set OPC Threshold . . . 476
Bonus Coverage - Confirm Opportunity Counts by Zone . . . 477
Bonus Coverage - Opportunity Counts, Define OPC Frequency . . . 478
Bonus Coverage - Opportunity Counts, Assign Cycle Count Tasks . . 479
Bonus Coverage - Example . . . 480
Bonus Coverage - Example Test = Success . . . 481
Bonus Coverage - Physical Inventory Process . . . 482
Implementation Consideration- Using Location Audit . . . 483
Current Inventory Positions . . . 484
Use RF Location Audit to Change Inventory Positions . . . 485
Use RF Location Audit to Change Inventory Positions (Continued) . 486
Key Learning Points . . . 487
Questions . . . 488
Answers . . . 489
Notes . . . 490

Chapter 9 Printing . . . 491

Overview . . . 492
QAD Warehouse Printing . . . 493
Print Setup . . . 494
Warehouse Control Print Options . . . 495
Warehouse Maintenance Print Frames . . . 496
Print Templates . . . 497
Internal Routing Maintenance Print Options . . . 498
Work Location Group Maintenance Print Frames . . . 499
User Work Location Group Maintenance . . . 500
Multi-Level Item Maintenance . . . 501
Print Request Maintenance . . . 502
Objectives . . . 503
Example - Warehouse Setup . . . 504
Exercise - IR Setup . . . 505

Questions 506
Answers 507
Notes 508

About This Course

QAD Web Resources

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

http://www.qad.com/

Logging in to Training Success Web Site

For QAD employees, attending an internal class, exercises are built around existing data within the QMI training environment database which is built through Surgient software tools.

When using this training guide within a QAD-sponsored training class, your QAD Warehousing instructor provides information on the environment and a student ID to access the environment.

If using this guide as a self-study course, you can contact the QAD IT department to request a student ID. To do this, enter a help desk ticket through QAD's Changepoint program. Use a request type for the Demo Center. If you are with a partner, you can email the Product Center at:

http://democenter.qad.com/

To access the environment, use the following procedure:

1. Go to the following url:

   https://training.success6.qad.com/

2. Click the correct AP region on the regional map page.

   Note If the AP region does not connect, use either the Australia or US gateways.

3. Enter the *Student ID*, provided by your instructor or provided by QAD's IT department.

4. Enter the password as `qadtrain`.

5. Enter the organization as `classroom training`.

Note The system may display a message, informing you the certificate is expired. In most cases, QAD employees can click OK to bypass the message; then, select the continue to IE option. QAD customers can inform the QAD instructor should the expired certificate message display during training sessions. Note, too, that the instructor typically assigns a unique ID for every student so that IDs cannot be shared in a training session.

Setting Up the Environment

Once the Enterprise Edition screen displays, you must select additional options as part of the environment setup.

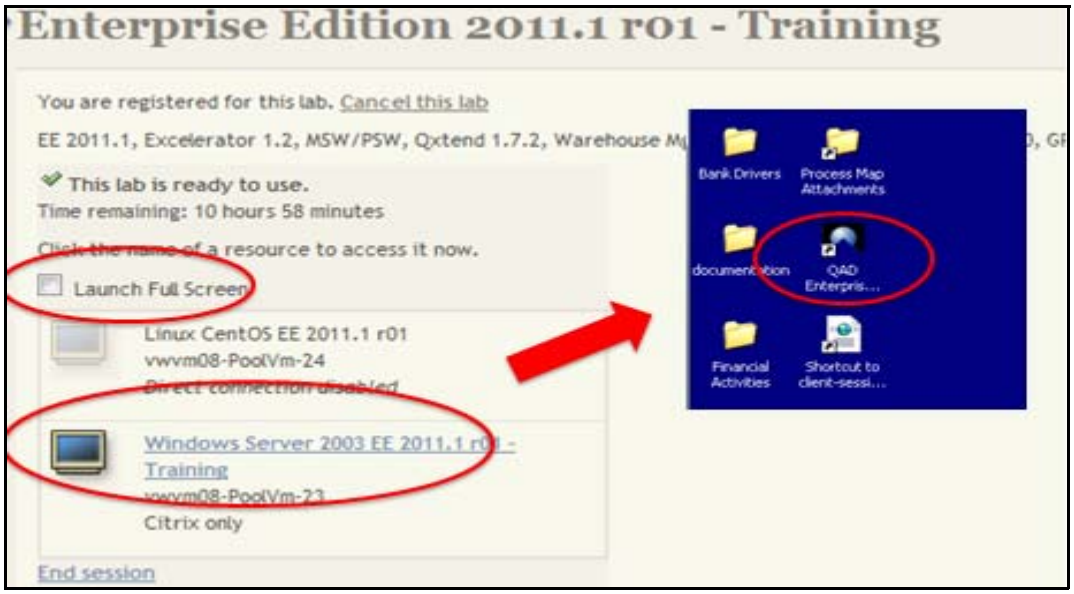
To set up the environment, use the following procedure:

1. Select `Launch Full Screen`.

2. Select `Windows Server 2003 EE 2011.1r01 - Training`.

   When you select the EE 2011.1r01, the system launches the QAD EE software and presents the log in screen.

Fig. 0.1
Environment Setup



Logging into QAD Enterprise Edition

Once you launch EE 2011.1r01, you enter the following at the QAD EE login screen:

1. Enter the user ID as `qmi` .
2. Leave the password blank.
3. Log on to `qadui (default)`.

Fig. 0.2
QAD EE Login

Troubleshooting the Training Environment

If the environment becomes unresponsive, use the following procedure:

1. Close the session.
2. Return to the lab entry screen; see Figure 0.1.

The session reconnects and you returns you to the screen you were in when your session became unresponsive.

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. QAD provides the same software that displays on the RF device through a Unix character session. Commands are provided to run the software just as if you were on the RF device.

Logging Onto Putty

You can start a Unix character session that lets you run the RF version of QAD Warehousing software through the Putty tool.

There are two ways to start Putty:

- You can start Putty within the .NET UI EE software, by navigating to the bottom of the screen and clicking the QAD tab; see Figure 0.3. The tab reflects your regional environment that you selected when you set up the training session.
- If you are a QAD employee, you can start Putty from Citrx.qad.com in the Homer environment. To do this, use the following procedure:

  a From the desktop, select the Tools folder.

  b Within the Tools folder, select Putty.

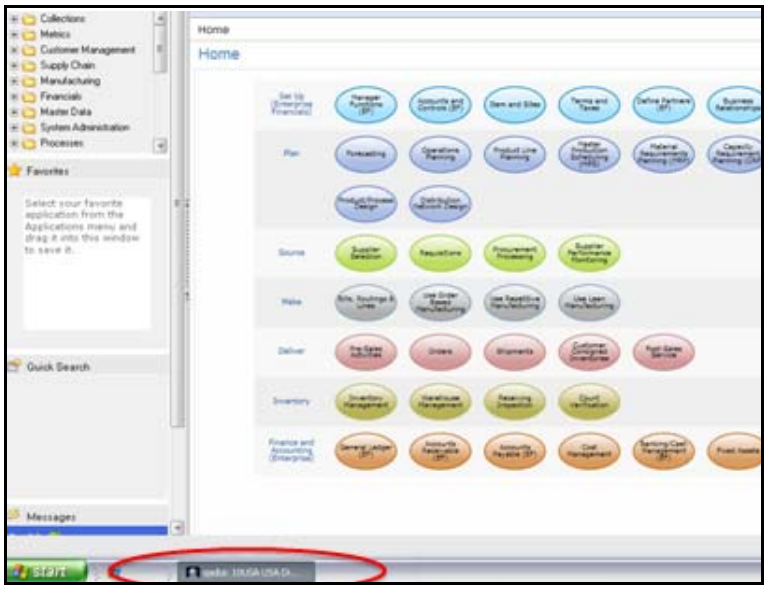
  c The Putty Configuration window displays.

  d Enter `qaddemo` in the Putty Host Name (or IP Address) field.

  e Click Open.

  f The system starts a Unix character session.

Fig. 0.3
QAD Training Session Regional Tab



Logging In to Unix Character Session and Starting RF Software

This section tells you how to log in to a Unix character session and start the RF (radio frequency device) software.

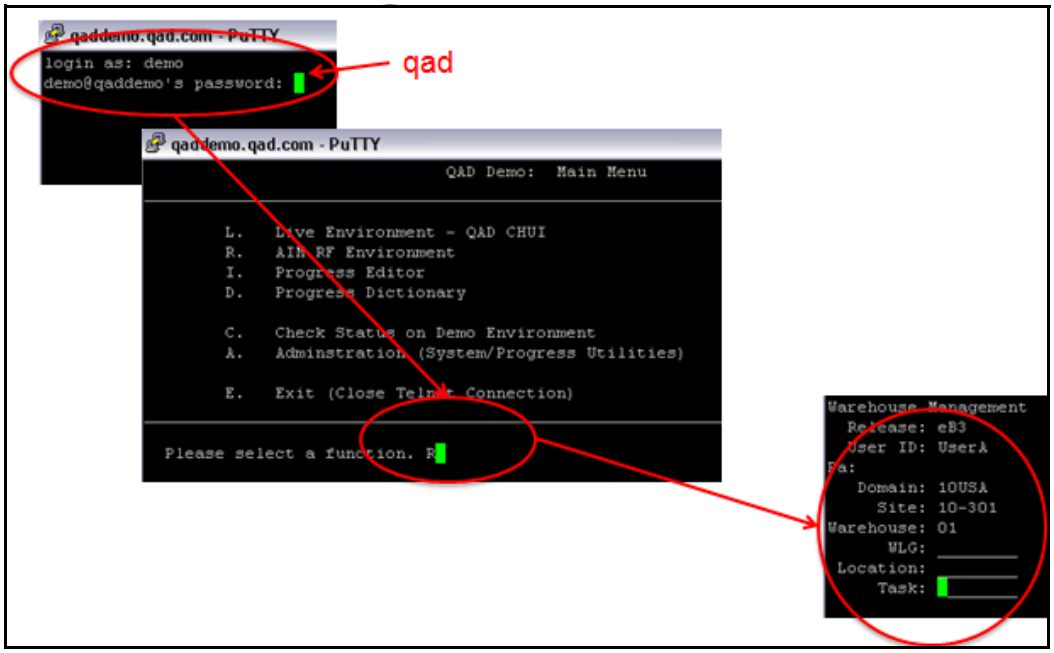
To log in to the Unix character session and start the RF software:

1. When the qaddemo.qad.com putty session starts, log in as `demo`.
2. Enter the password as `qad`.

   The qaddemo Main Menu displays.
3. Enter `R` to start the RF warehousing software.

   The RF main menu displays.
4. Enter RF login data, such as the user ID, domain, site, warehouse, work location group (WLG), warehouse, or task; see Figure 0.4.

Fig. 0.4
RF Login



Logging into RF as User A or User B

To log into the RF software as UserA, the user in many of the exercises in this training guide, use the following procedure:

1. From the RF main menu, right click the mouse.

   The Putty Quick Menu displays.
2. Select `New Session`.

   The Putty configuration window displays.
3. Select Open; see Figure 0.5.

A new character session displays.

4 When the qaddemo.qad.com putty session starts, log in as `demo`.

5 Enter the password as `qad`.

The qaddemo Main Menu displays.

6 Enter `R` to start the RF warehousing software.

The RF main menu displays.

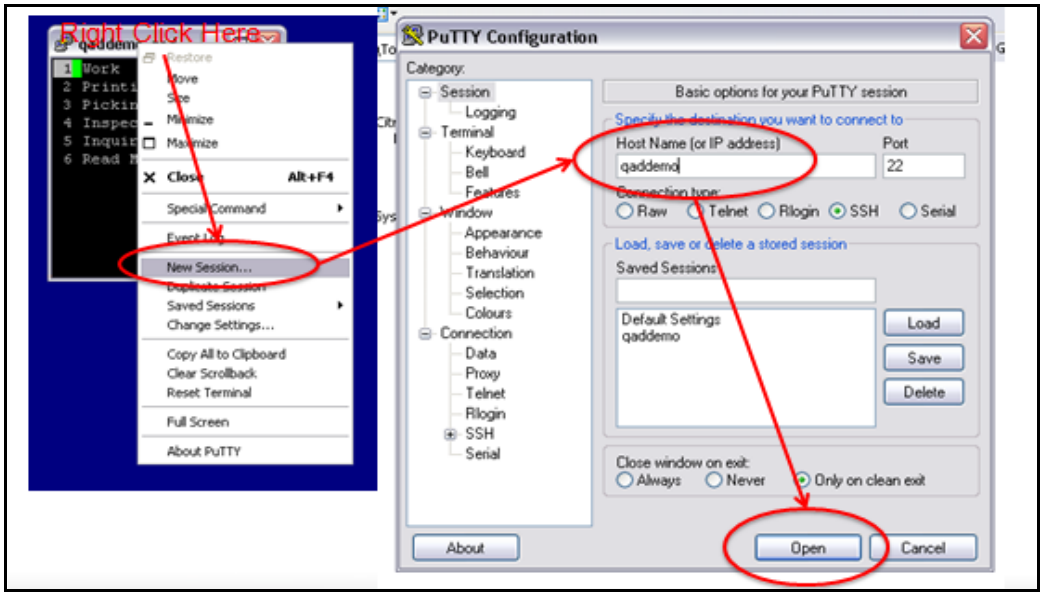
7 In the User ID field, enter `UserA`.

Note Leave the password field blank.

8 Enter other user data, such as warehouse, WLG, location, or task.

Note You can leave these fields blank, or accept the defaults unless otherwise noted in this training guide or by the instructor.

Fig. 0.5
User A Login

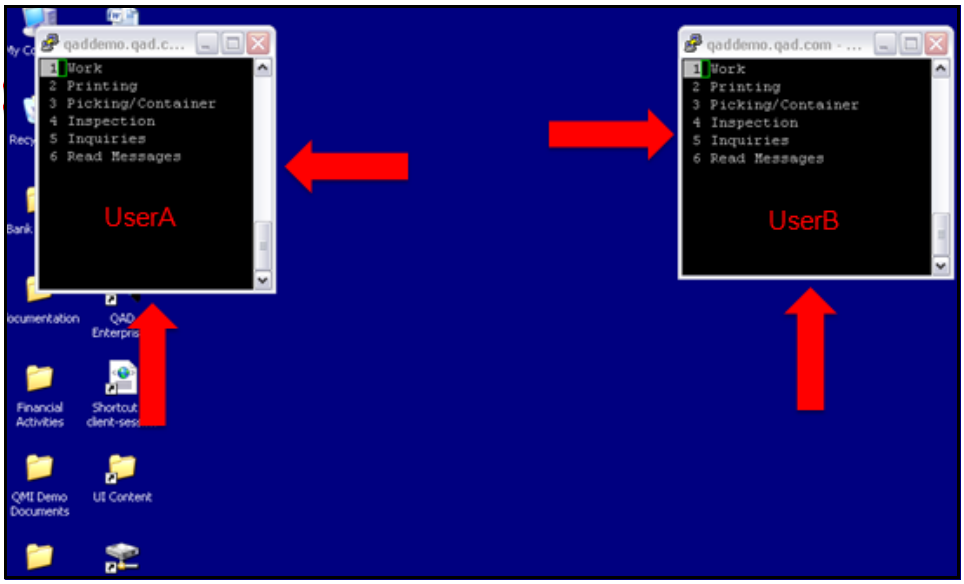


Logging In as UserB

To login as UserB for the exercises, follow all steps for logging in as User A, but change the RF user ID to `UserB`.

You should be able to see two putty sessions, one for User A and another for User B from the QAD database user interface.

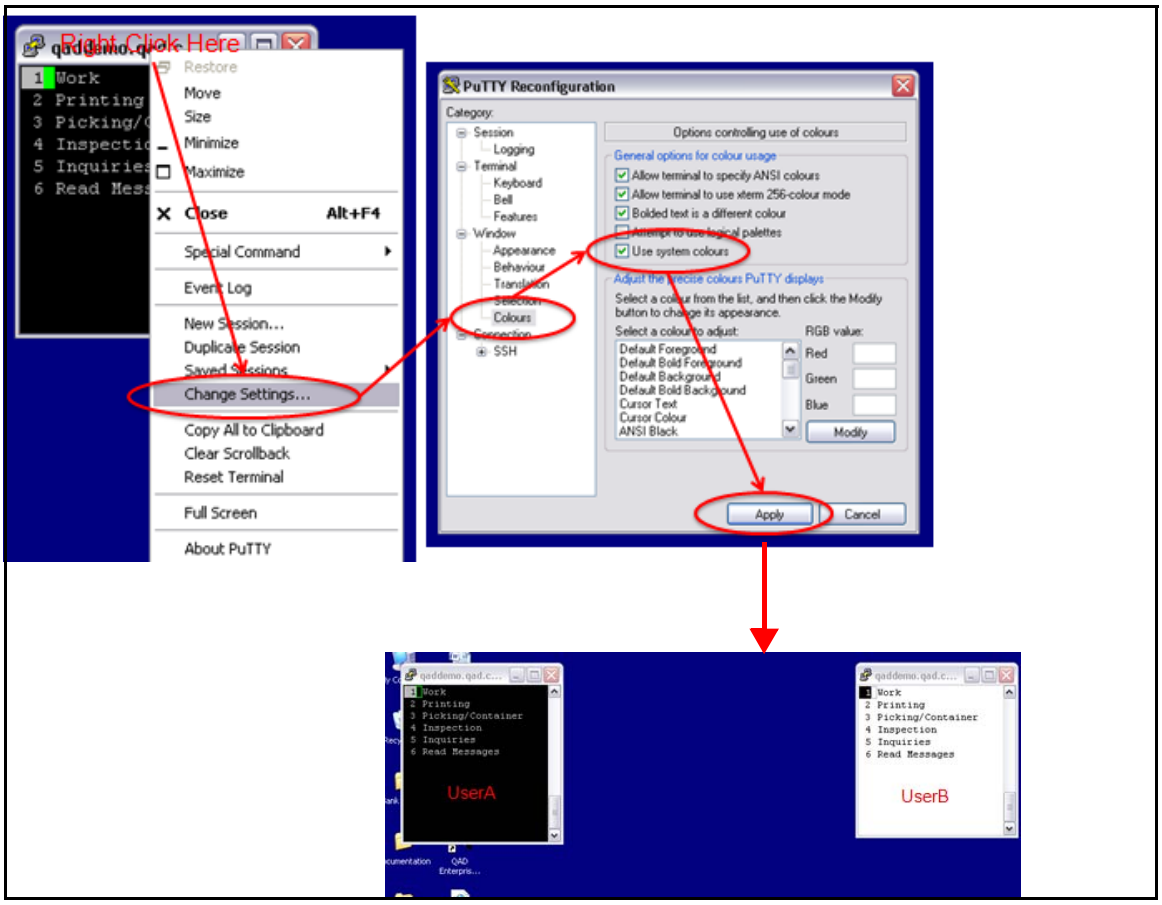
Fig. 0.6
User A and User B Sessions



You can change the color of one of the users by:

1. Right click in either User A's or User B's putty RF session.
   The Putty Quick Menu displays.
2. Select Change Settings.
3. The Putty Reconfiguration Menu displays.
4. In the left Category portion of the screen, select Colors.
5. In the right side of the screen, select `Use System Colors`; see Figure 0.7.

Fig. 0.7
Reconfigure User Screen Color



Shortcut to Enabling and Executing the RF Software

If you are familiar with the Progress Editor, then you know that you can use the Editor as a means to enter commands directly.

To use the Progress Editor as a shortcut to starting the RF software, use the following procedure:

1. From the .NET UI interface, enter the left side Applications window, and type `Progress Editor`.

   The system displays the Progress Editor choice before you finish typing.

2. Click on the Progress Editor to start it.

3. In the Progress Editor menu, type `run mfwhex.p`.

4. Select `CTRL + X` to enter the text.

   The RF Login screen displays.

5. Log in to the RF as described in this section.

   Note You may need to press the Shift key when entering the User ID field.

You can set up another user in this method.

Chapter 1

Introduction to Warehousing

Overview

QAD Warehousing is the warehouse management system product for QAD core.

Did You Know

QAD Warehousing has two solutions, QAD Warehousing for EE and QAD Warehousing for SE (formally called Advanced Inventory Management (AIM)).

The suggested setup sequence is provided in this section,

- Understand warehouse concepts
- Set up a basic warehouse
- Configure the system to support general warehouse processes

QAD Warehousing Setup

This section covers basic setup concepts, programs, and steps you should be aware of when you begin to setup QAD Warehousing. Setup and configuration concepts are discussed first. Setup exercises follow this section.

QAD + QAD Warehousing

Did You Know

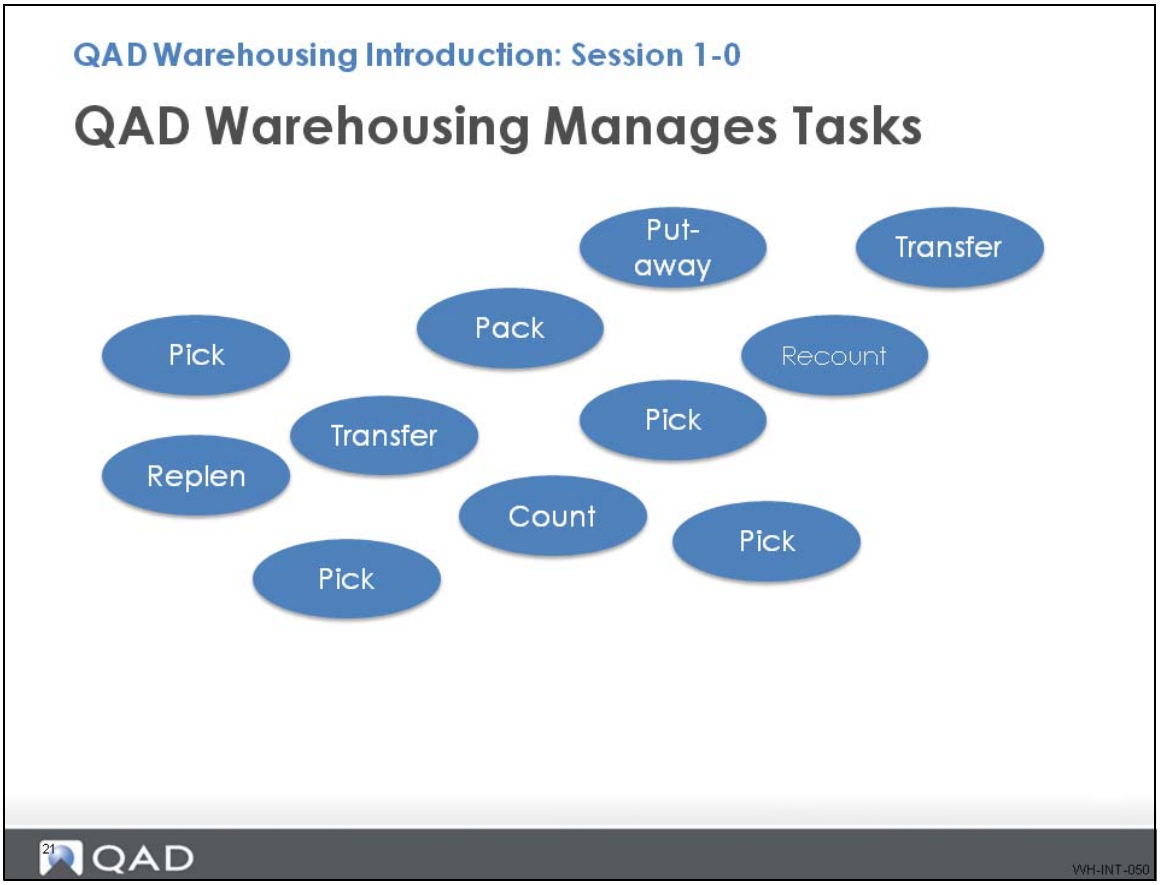
The warehouse is the highest level of specific data in QAD Warehousing.

For locations, QAD Warehousing provides a Warehouse Location Maintenance menu, replacing standard QAD EE Location Maintenance. You can, therefore, set up all your location details within QAD Warehousing. QAD Location Maintenance options are not recognized by QAD Warehousing and are not available for warehouse functions.

Part of the flexibility QAD Warehousing lets you set up as many warehouses as you need within a site, as many areas as you need within a warehouse, as many zones as you need within each area, and just one or as many WLGs as you need for your different working sections.

No rules govern the type of areas 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; then, you choose the routes through these areas that you want your inventory to take.

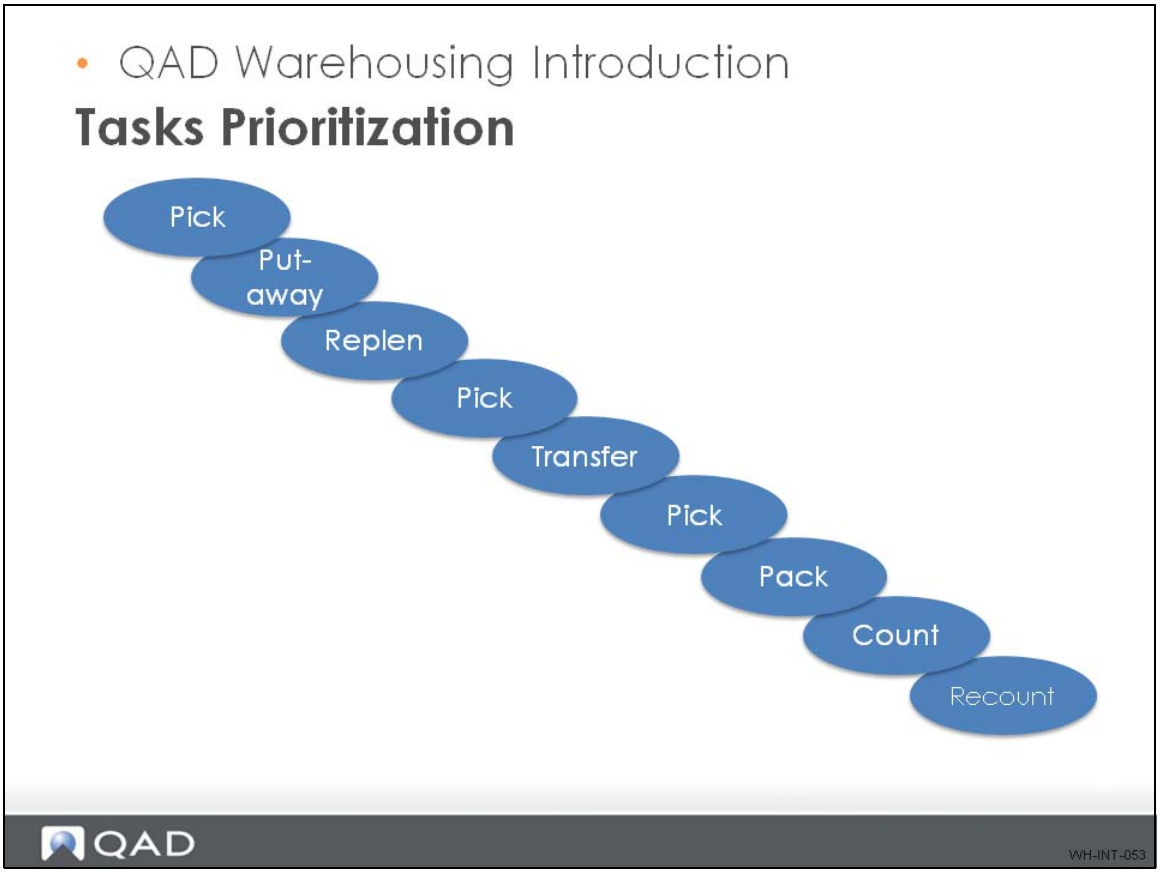
QAD Warehousing Manages Tasks



QAD Warehousing is a task management system that optimizes processes in the warehouse on a real-time, ongoing basis. At any given time a typical warehouse can have hundreds of pending tasks ranging from a load transfer from receiving into storage to a line item pick.

Important Tasks can be assigned to specific users. Also, generic tasks can be assigned on a first come, first served basis. Hard tasks are for a specific user and cannot be changed. Soft tasks can be switched to another user.

Task Prioritization

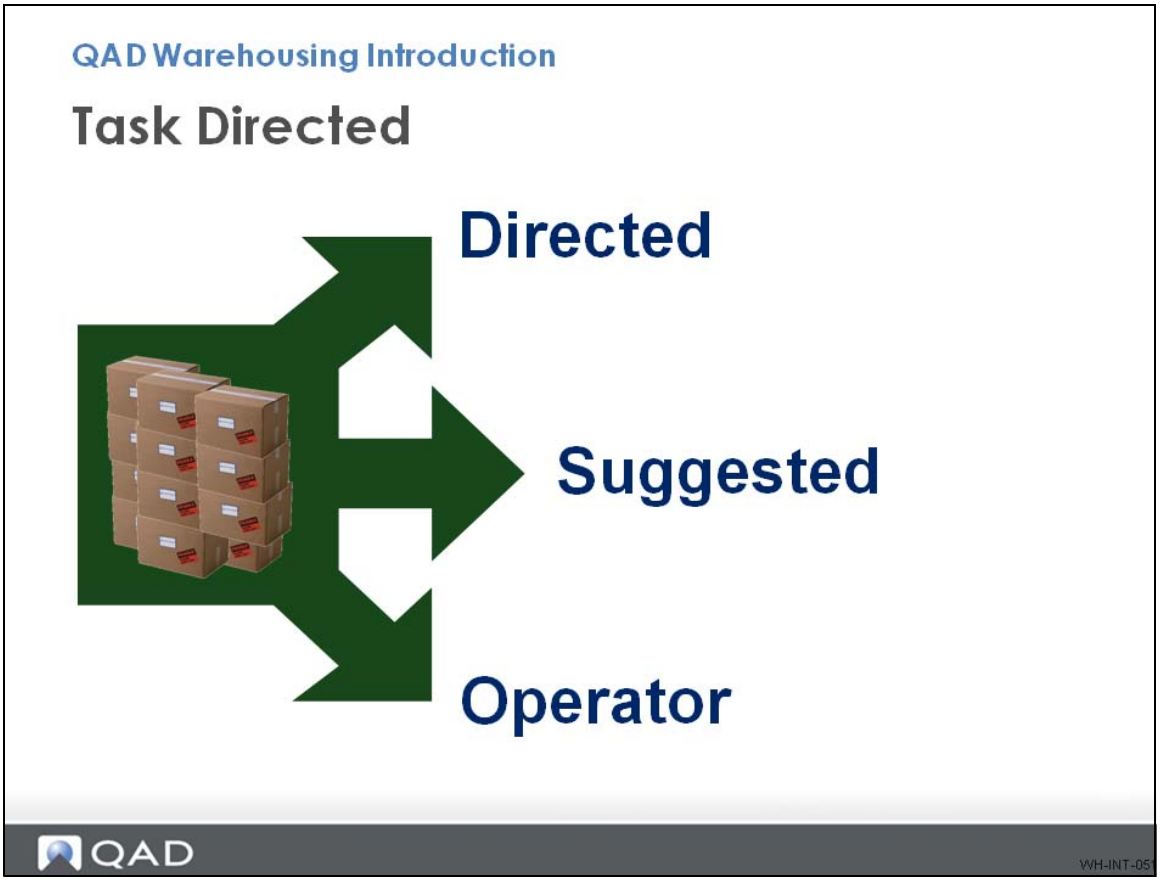


When a task (transaction) is generated, QAD Warehousing looks at multiple variables to determine when the task is executed. For example, the system can determine the best user to assign the task based on proximity or tasks can be assigned based on task age, or how long the task has been in the queue.

Did You Know

Low priority tasks can automatically increase based on age. If the task has been in the queue too long, it eventually becomes a top priority.

Task Directed



The objective of task directed activities is to minimize operator decision making. In best practices organization, everything should be task directed.

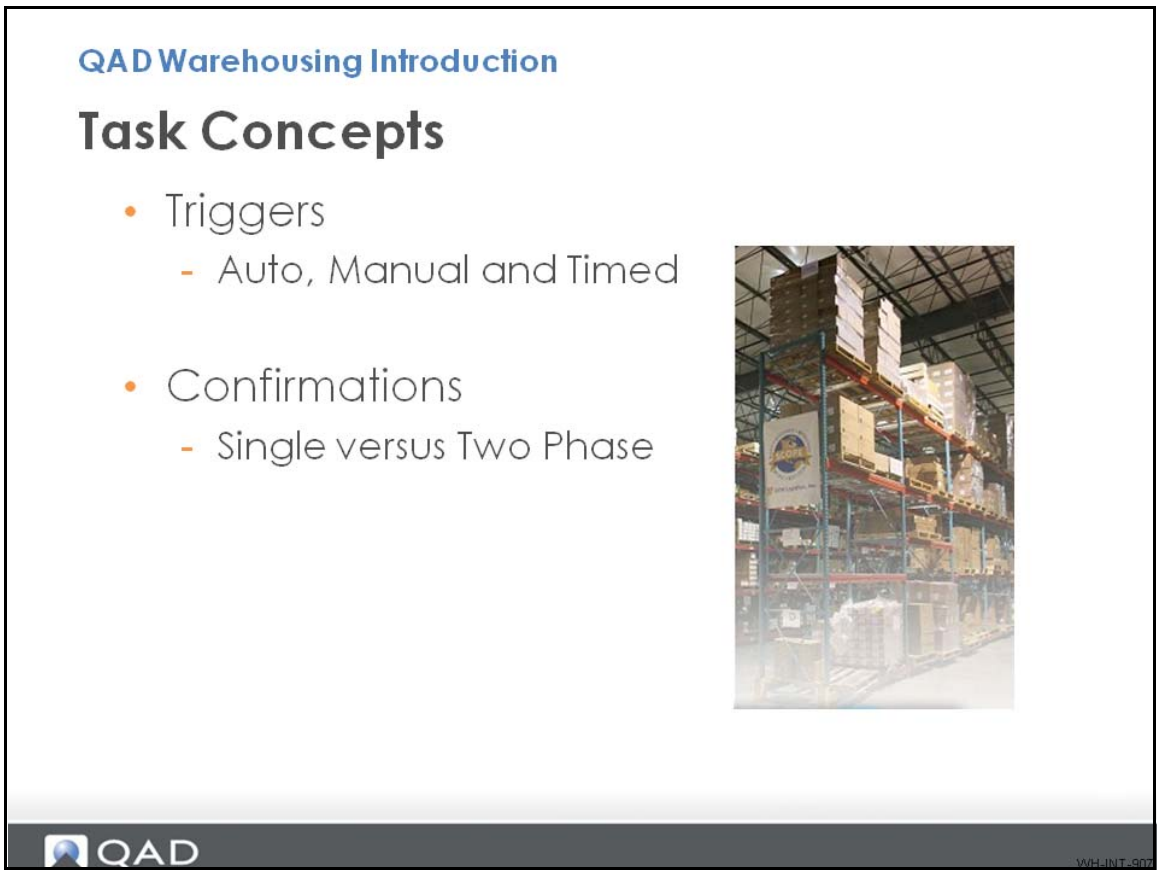
With all the open tasks considered, QAD Warehousing makes a decision on which tasks are completed first and by whom.

Did You Know

Operators have the ability to over ride origination or put-away information including location, LPN, item, and so on.

When an operator is allowed to override the system, issues can result if other open tasks are also impacted. Setting the Allow Task Switching field helps avoid this potential problem. For more information on Task Switching, refer to *User Guide: QAD Warehousing.*

Task Concepts



Two concepts are key to understanding how QAD Warehousing processes requests: triggers and confirmations.

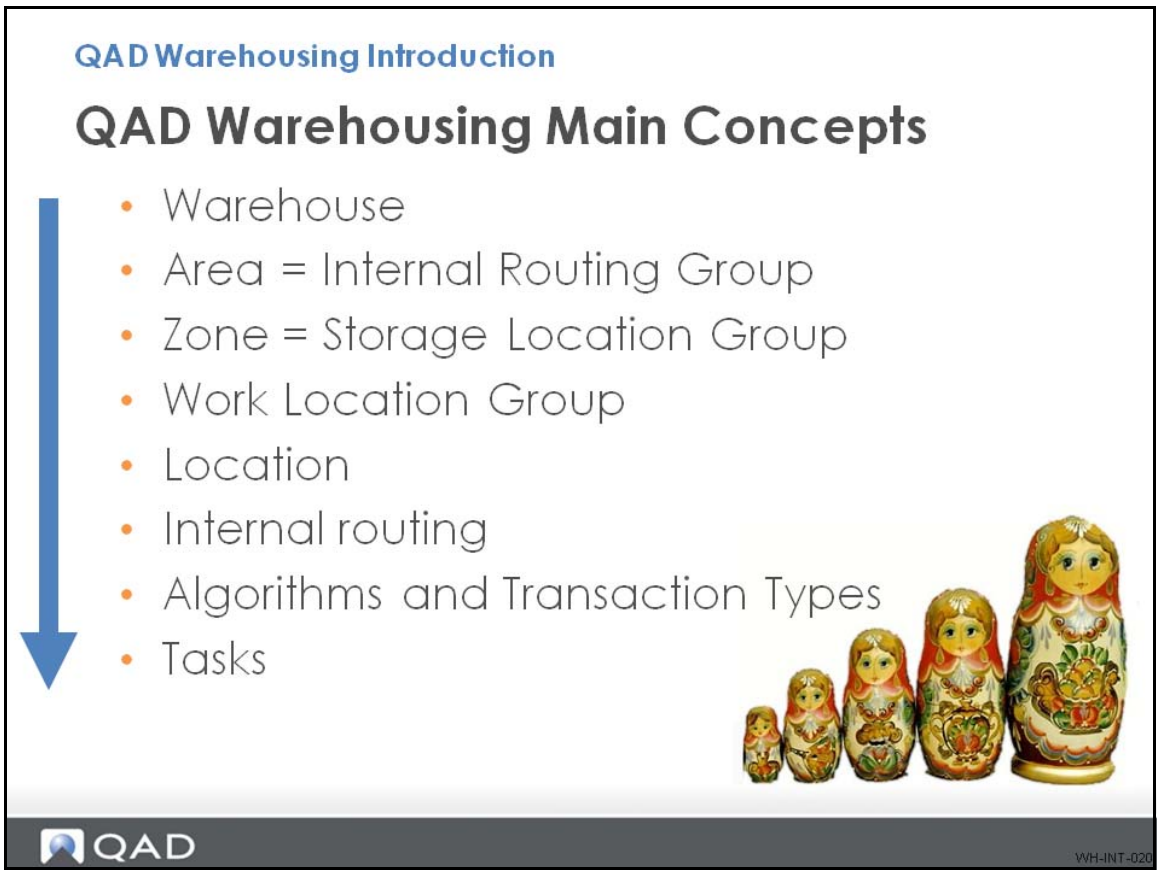
Triggers determine when a task is released for processing. When in AUTO mode, the system processes engine workfiles automatically without user intervention. This is the most common use. When in MANUAL mode, you must start one of the engine processor programs in the Engine menu to process an engine workfile request. TIMED mode is similar to AUTO, but TIMED mode processes the engine workfiles after a pre-defined delay.

Transactions are confirmed in either single or two-phase moves. In single-phase, inventory movements are created and confirmed in a single step—the single phase.

In two-phase, inventory movements 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.

As a general rule, a two-phase operation is a much safer way of ensuring precision in inventory management. Single-phase operations should only be used in special circumstances.

QAD Warehousing Main Concepts

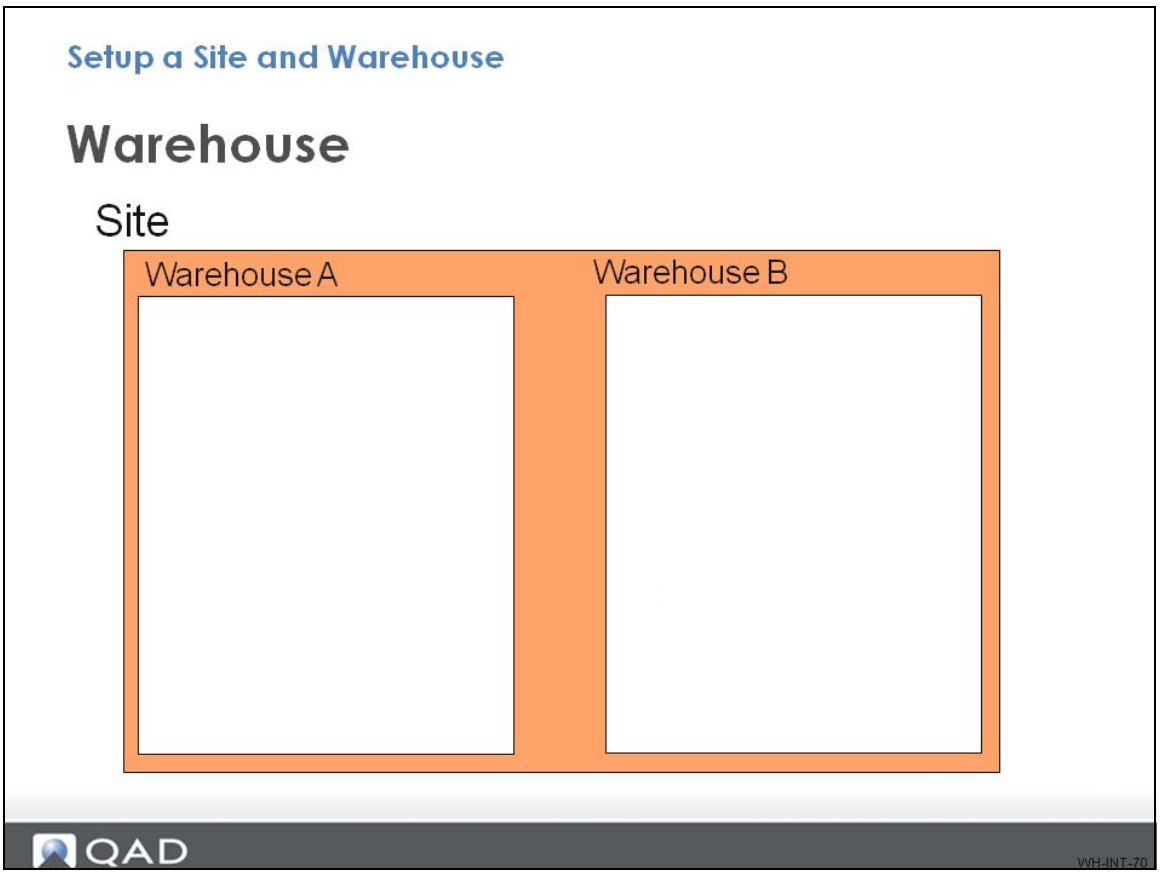


QAD Warehousing provides highly flexible and adaptable warehousing functions that let you integrate a full range of warehouse management features into a business.

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

Set Up a Site and Warehouse



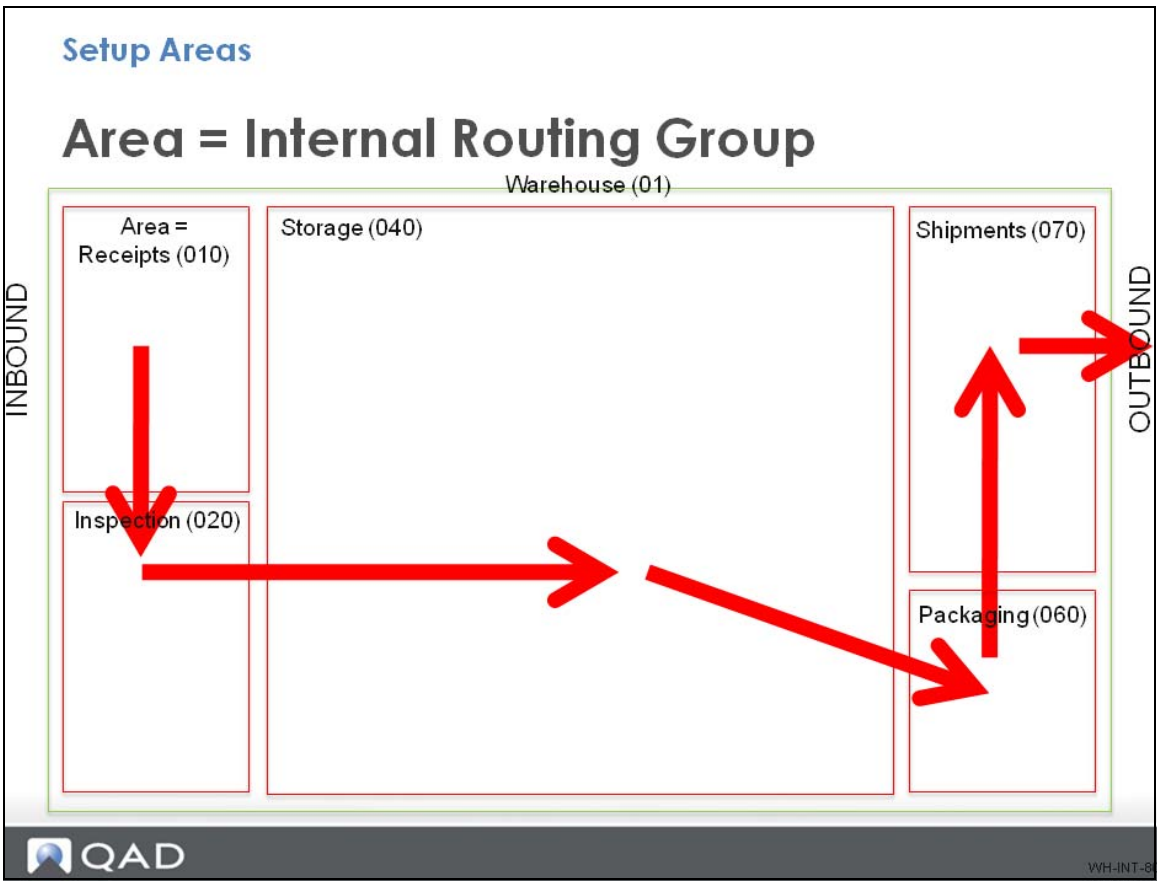
A warehouse consists of a group of storage locations and processing functions. These can constitute a single building; a part of a larger building; or, for storage of material such as construction materials, the storage locations can be in the open air. A single warehouse can actually consist of a number of separate buildings.

Because QAD core is not concerned with 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 QAD core is concerned, you are simply putting it in a location; however, when that location is identified as a warehouse, all the QAD Warehousing functions are available.

From a QAD core perspective, you receive inventory into a location 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 within the warehouse.

Eventually, the inventory is put away in one or more storage locations within the warehouse. 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.

Set Up Areas



Did You Know

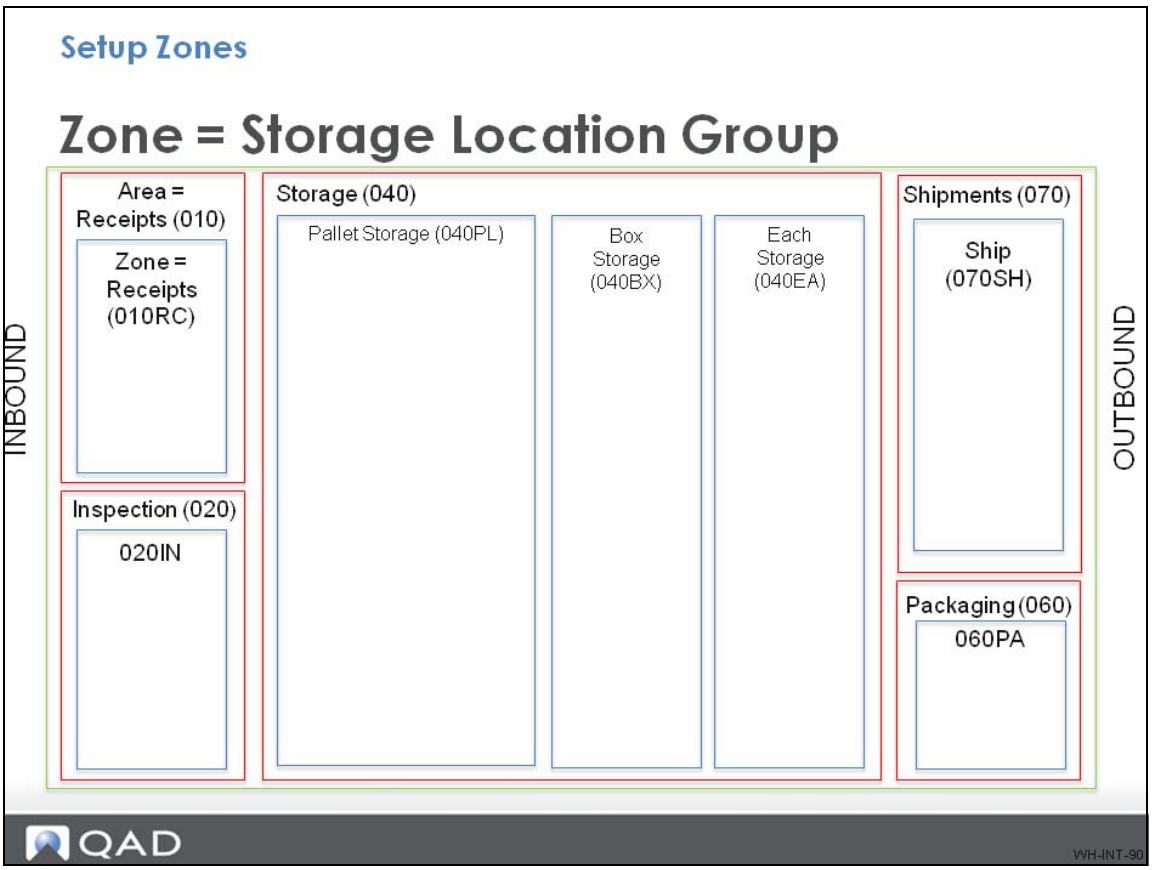
Only one area is required for QAD Warehousing to operate; however, most operations have areas for Receiving, Inspection, Storage, Packing, and Shipping areas.

QAD Warehousing manages the movement of inventory within and between warehouses by defining routes that move inventory from one part of the warehouse to another. These routes are called internal routings, and defining them involves specifying a sequence of steps that determine product flow and any specific controls to be applied at each step.

Within the warehouse, the first segregation is an Internal Routing Group (IRG) or area. An area represents a specific grouping or type of functional process (that is, receiving, inspection, storage, shipping, and so on).

The types of areas you setup also determine the types of rules you can use for product storage and retrieval.

Set Up Zones

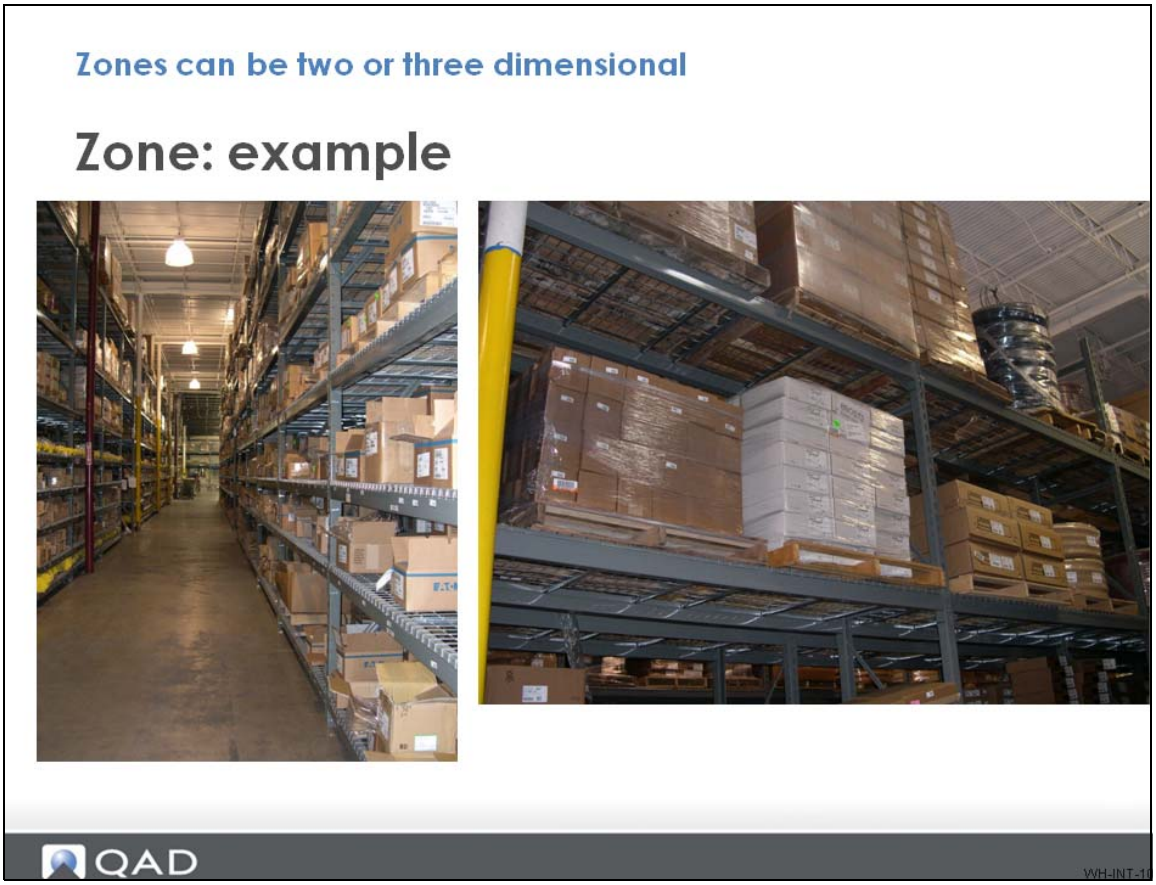


Did You Know

An area can have multiple zones, but a zone can only have one area.

A zone is a further space segregation within an area. Typically, each area has one zone except for storage. Within storage, it is common to have a different zone for each type of picking unit (that is, pallet, case, and each).

Zone Example

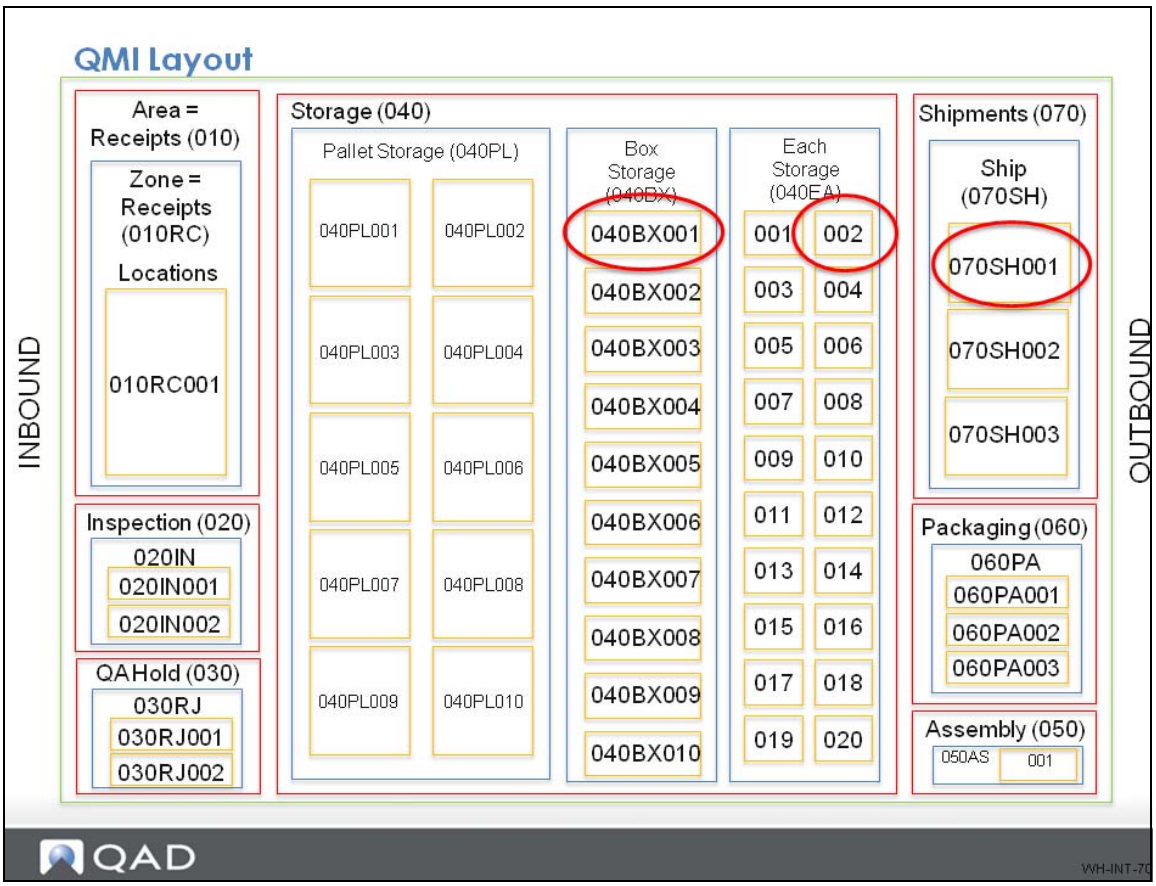


An example of a two-dimensional zone is the QMI layout with the forward pick zones on the right side of storage and pallet (reserve) storage zone on the left. A three-dimensional zone has picking locations on the lower level racks with pallet reserve storage overhead.

In the graphic above, the picture on the left is an example of a two-dimensional zone similar to the QMI layout. All locations in the entire rack are in the same zone.

On the right, a three-dimensional zone might have bulk/pallet storage zone locations on the top sections, and box or each locations on the bottom, floor-accessible sections.

QMI Layout



Did You Know

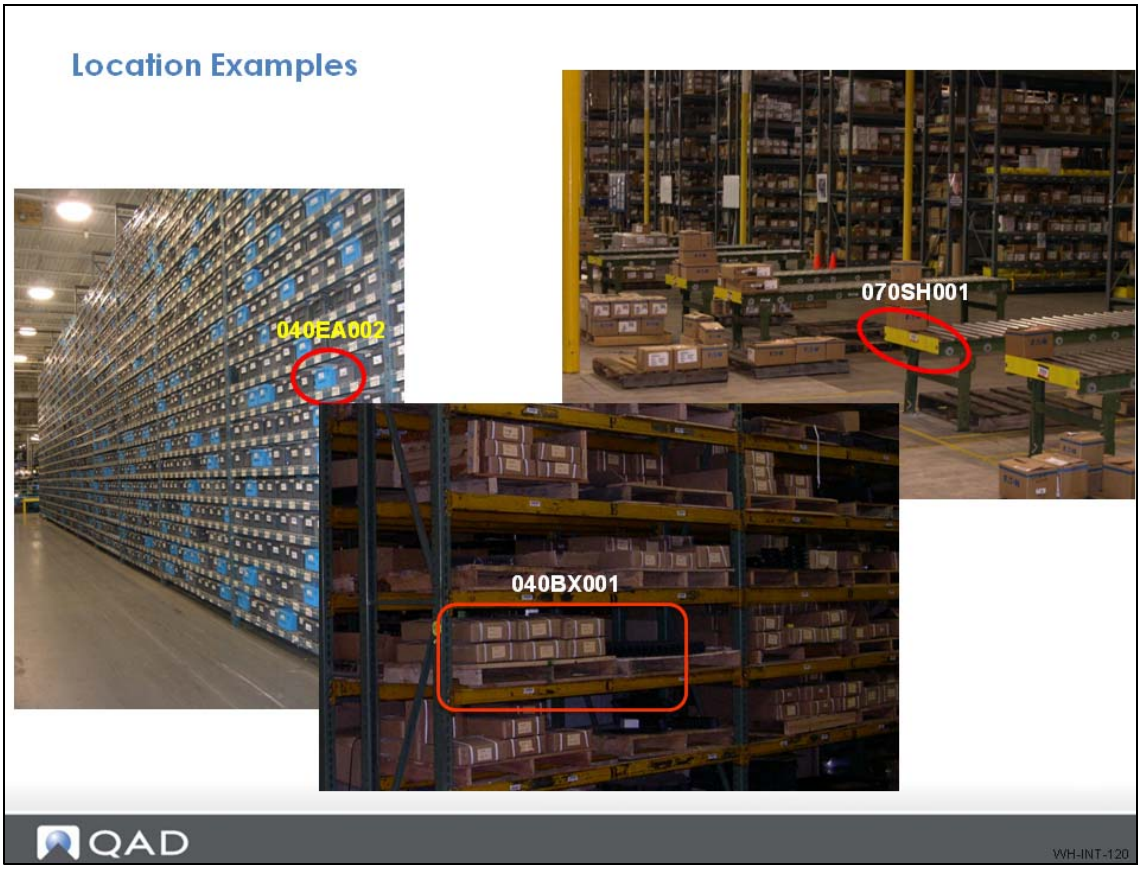
QAD Warehousing uses Warehouse Location Maintenance in place of standard Location Maintenance to establish and define characteristics for the way a product is stored and picked.

If you set up a location in Warehouse Location Maintenance, the location displays in QAD EE Location Maintenance; however, if you set up in QAD EE Location Maintenance, the location does not show up in Warehouse Location Maintenance.

The final space segregation is QAD Warehousing is location. Each zone has at least one location. Locations are used for tracking and reporting inventory positions within the warehouse.

Typically storage zones have many locations.

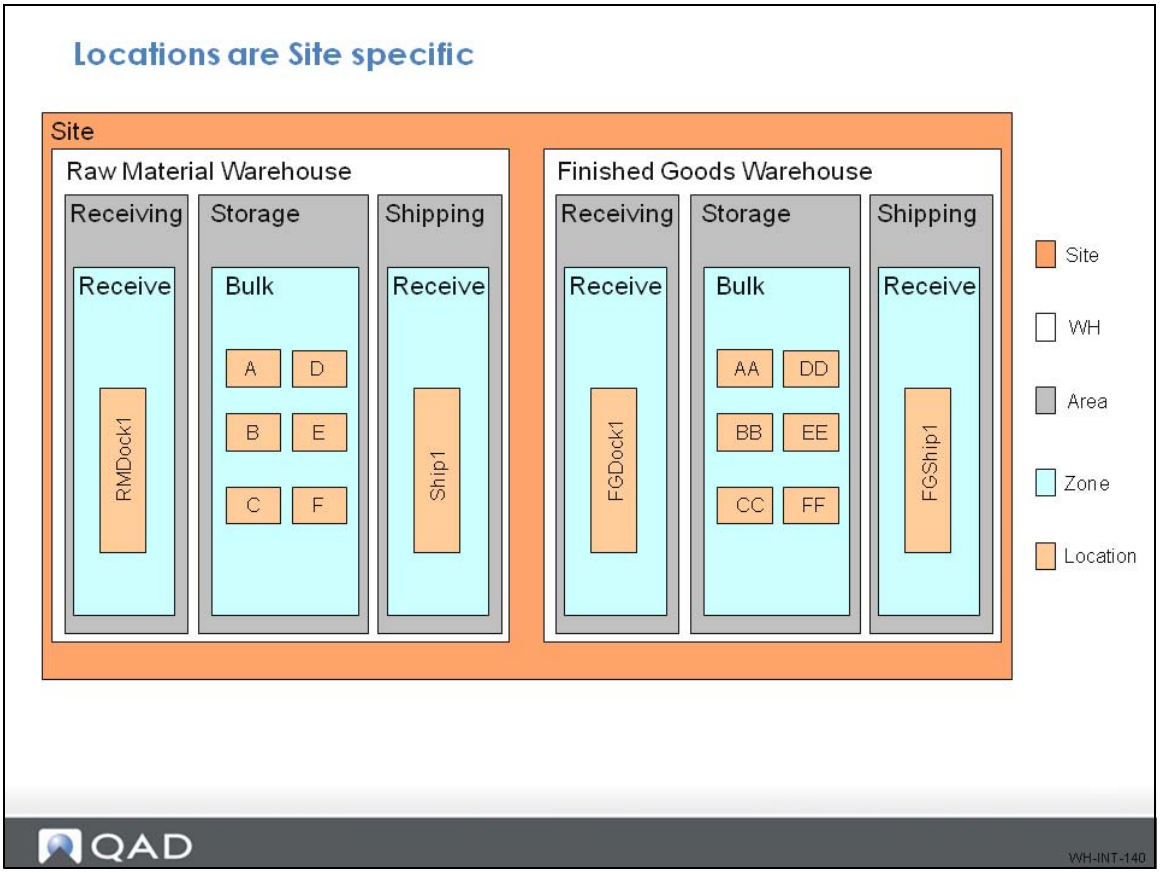
Location Examples



The rule here is that there should be a location wherever product is staged or stored.

The picture on the left above can be each storage/pick locations for small items similar to QMI location 040EA002. he middle picture is similar to a case storage/pick location (QMI 040BX001), and the picture on the right represents a shipping staging lane (QMI 070SH001).

Locations are Site Specific

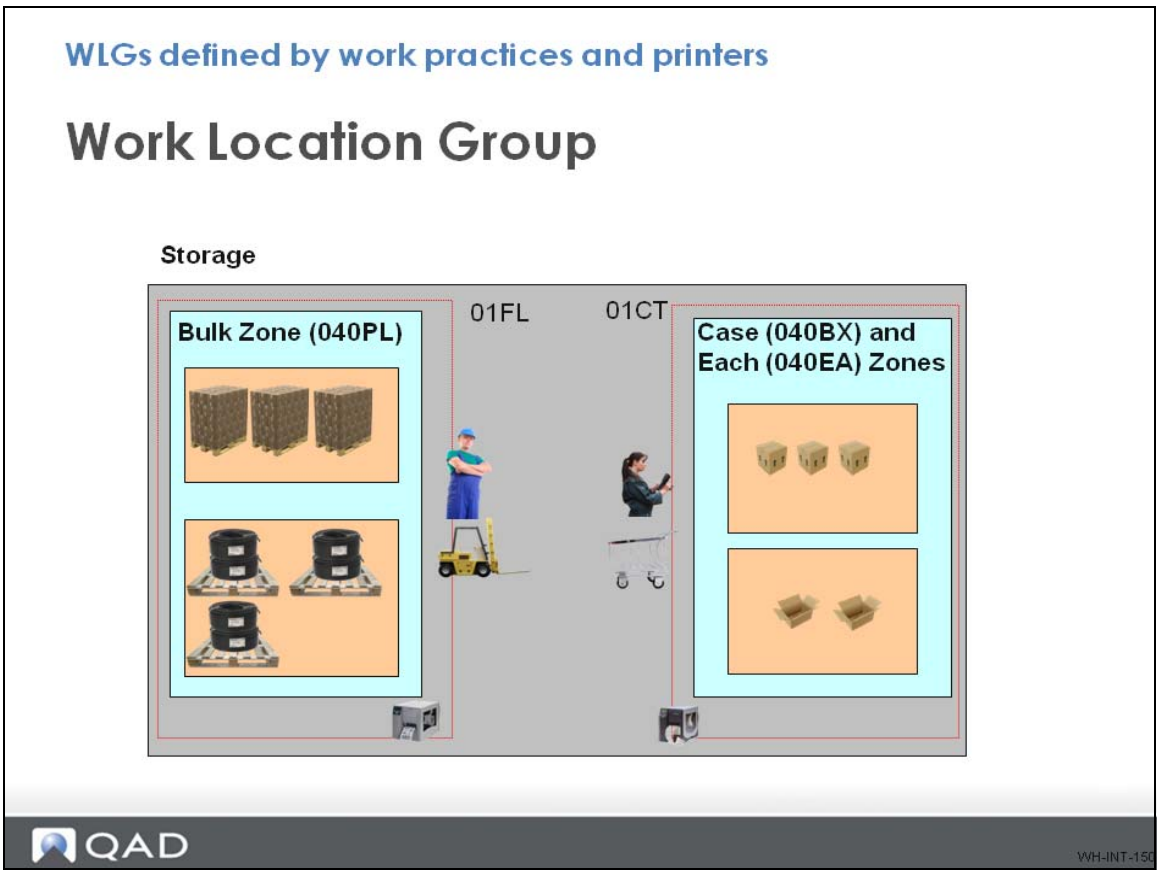


Did You Know

Locations are site specific. Two locations in two different warehouses but at a the same site cannot have the same name.

Areas and zones, however, can have the same name in different warehouses.

WLGs Defined by Work Practices and Printers



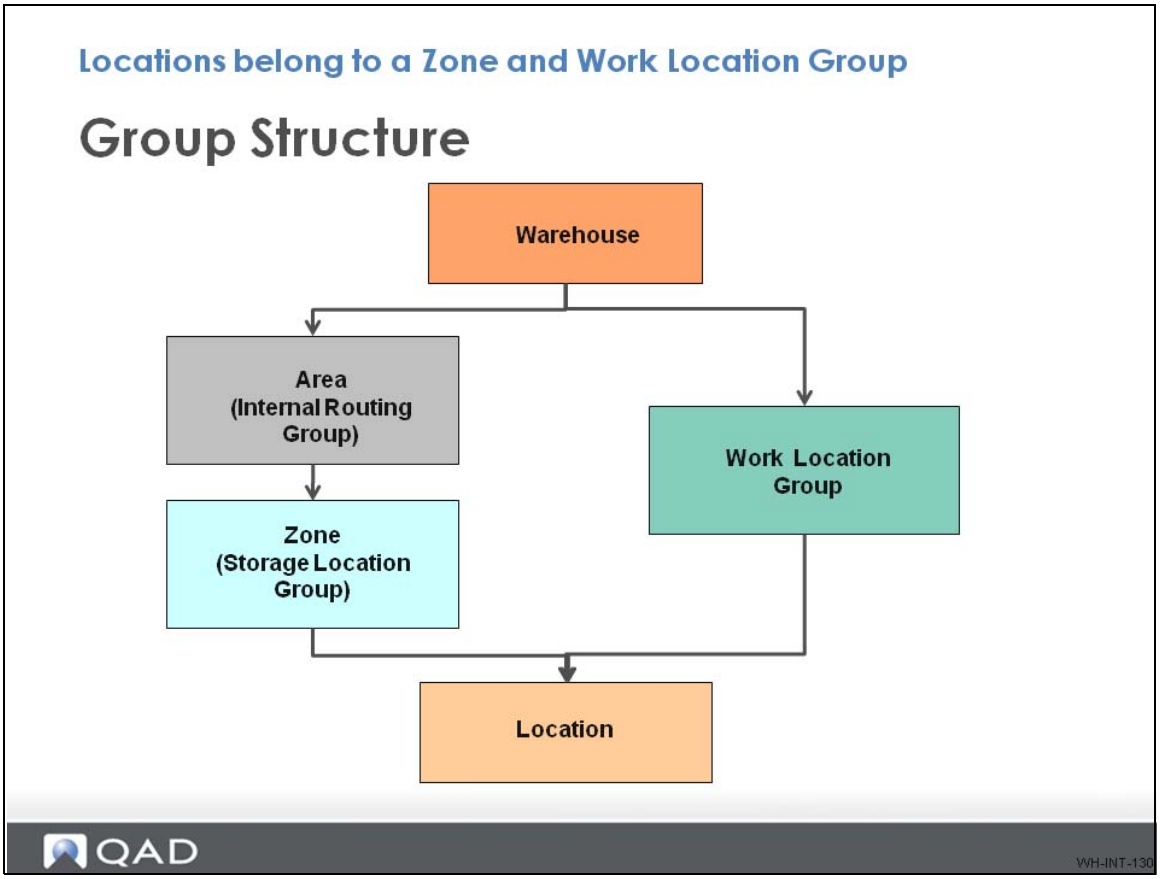
Did You Know

A Work Location Group is procedural while a zone is physical.

Work Location Groups (WLG) are defined by types or equipment used and work processes. WLGs can cross over different zones and focus on procedures rather than physical placement of inventory.

WLGs are helpful for defining where operators can work in the warehouse, the format of the RF screens and the printers they use.

Locations Belong to a Zone and WLG

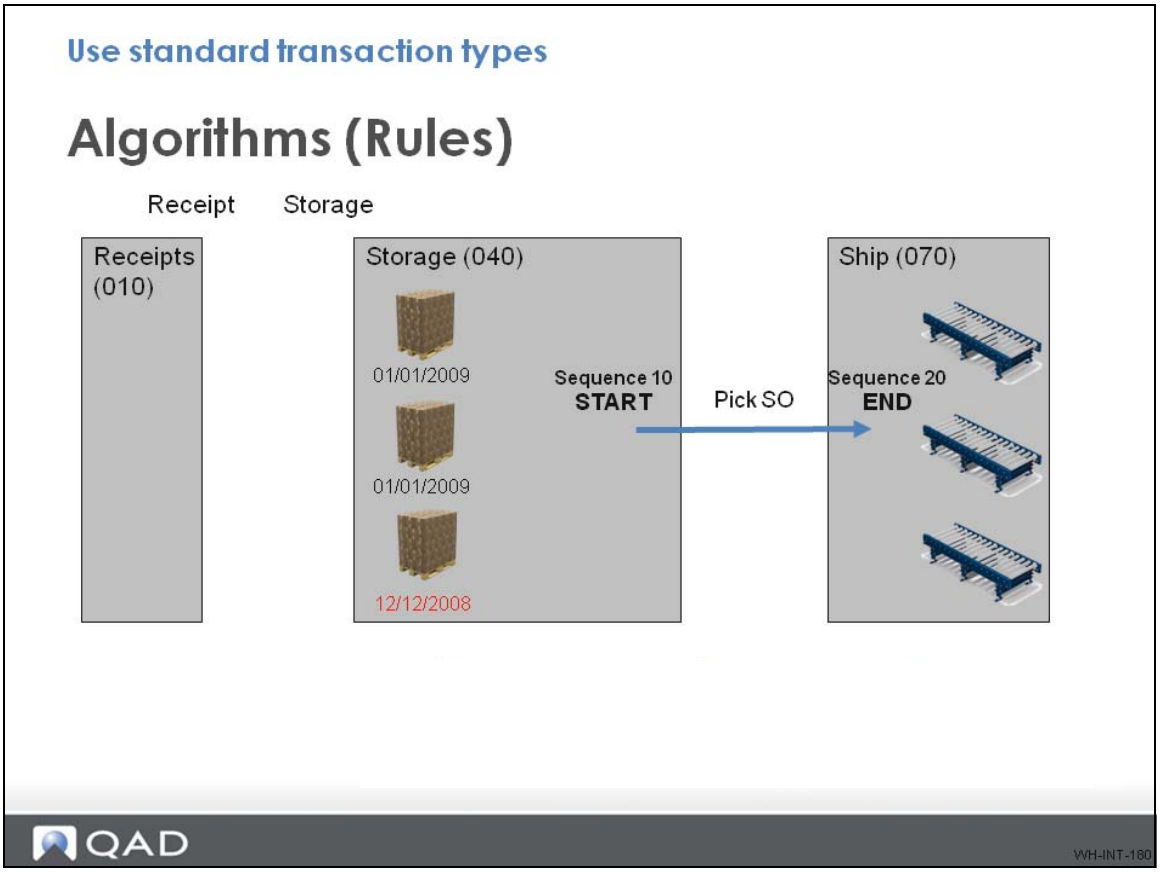


Did You Know

Locations are assigned to both a zone (storage location group) and a Work Location Group (WLG).

This helps define how the locations are used for storage and picking, and how the locations are groups by work section/process.

Use Standard Transaction Types



Did You Know

Use Algorithm Assignment Maintenance to link a specified sequence of rules to each transaction type or combination of transaction type, site, warehouse, item, and address.

QAD Core has one product flow rule. QAD Warehousing has multiple rules and they are configurable.

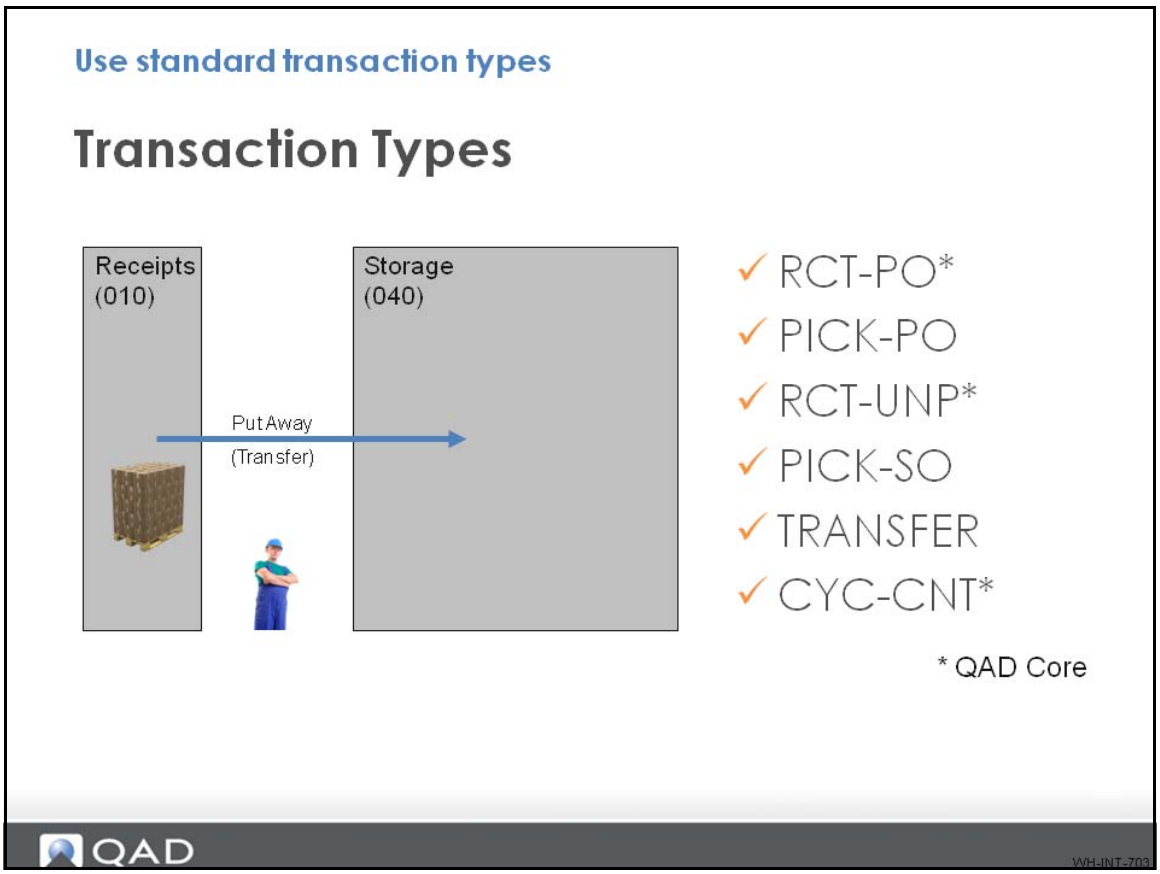
Algorithms help companies manage inventory control and space utilization by addressing specific operating scenarios.

- What inventory should be selected for picking (FIFO, LIFO, FEFO, and so on)?
- Which location is best for a product put-away?
- Which task should be completed next?

Algorithms are used whenever a system decision is required. For example, when the system must decide which inventory is picked from storage and where it is dropped in shipping. There are over 200 algorithms available to use depending on what you plan to accomplish.

If FIFO is preferred for inventory management, the 12/12/2008 pallet, in the graphic above is picked first. The specific drop conveyor depends on other parameters to be defined.

Transaction Types

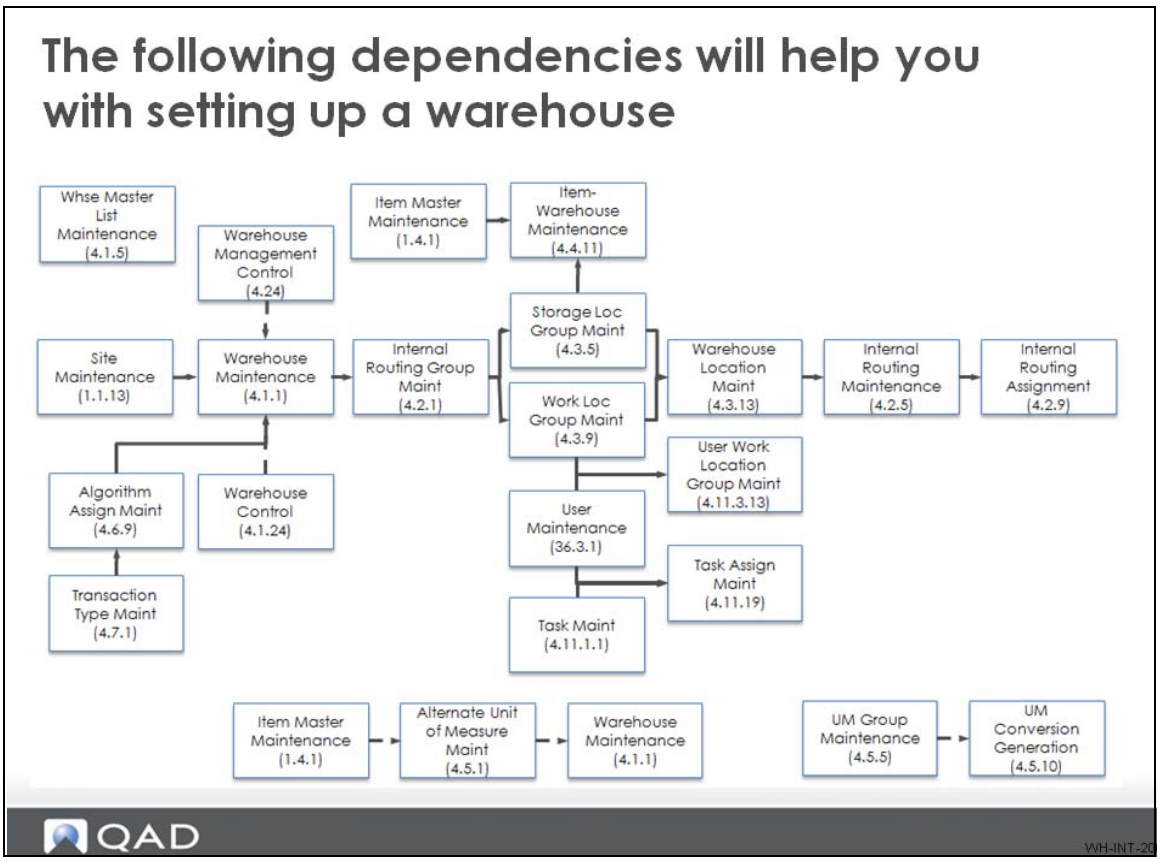


Did You Know

The standard transaction types can be configured to support the needs of QAD Warehousing using Transaction Type Maintenance (4.7.1)

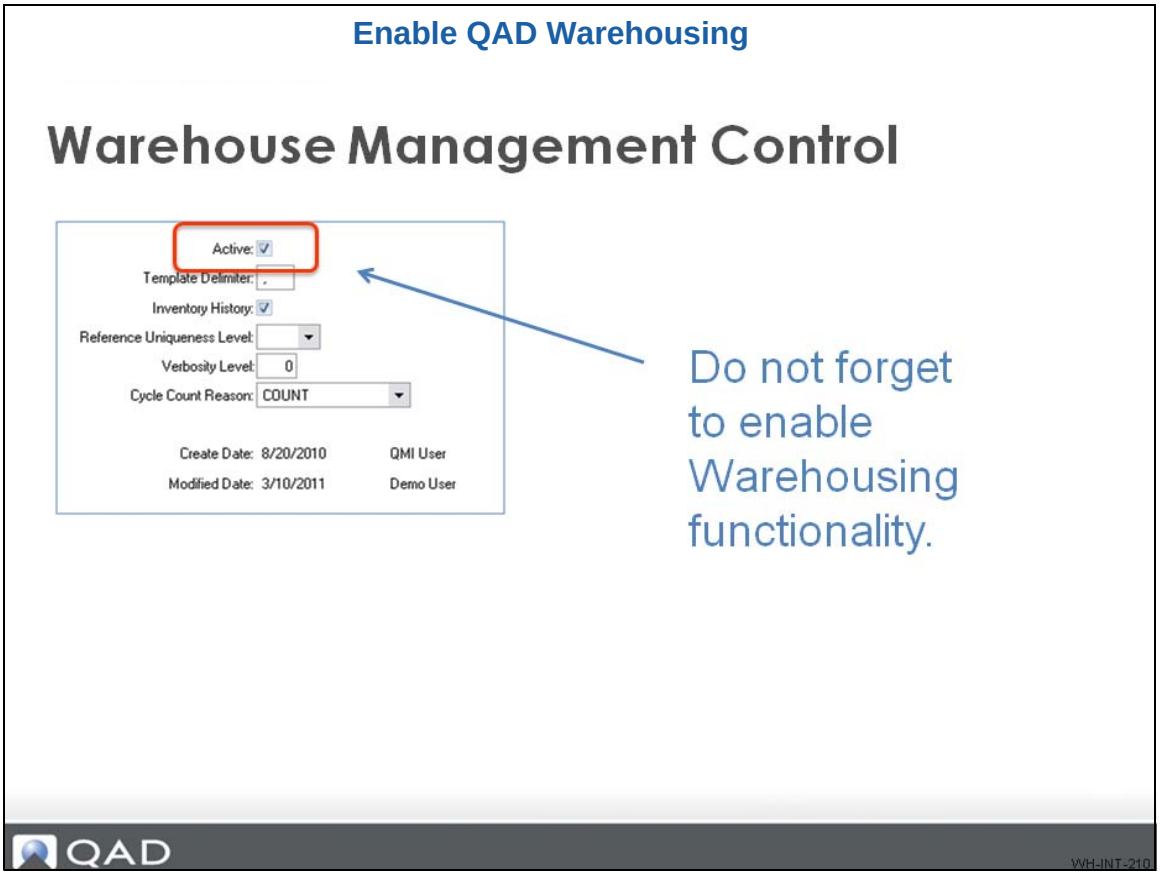
Each type of inventory transaction within QAD Warehousing is identified by a transaction type code. QAD Warehousing uses the standard QAD application transaction types. Examples are a purchase order receipt (RCT-PO) or a sales order pick (PICK-SO).

Dependencies that Help Set Up the Warehouse



Use the graphic above to determine the dependencies among QAD Warehousing programs. For example, maintenance programs that are below in the diagram above are dependent upon setup and configuration to be completed are in the upper portion of the diagram.

Enable QAD Warehousing

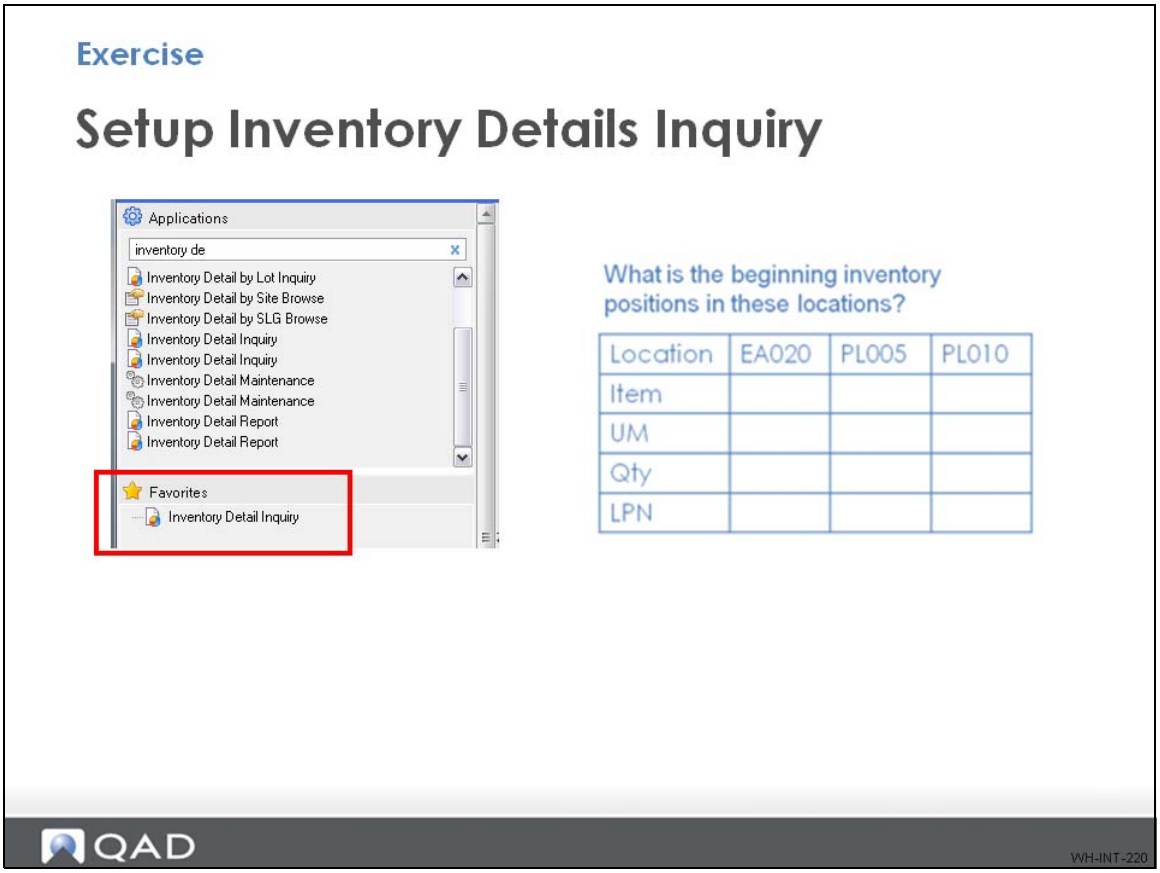


You must set the Active field to Yes in Warehouse Management Control to use QAD Warehousing.

Although QAD Warehousing is offered as a standard product offering (bundled), it is sold as a separate license and need to be activated using Warehouse Management Control.

There is one frame and six fields in Warehouse Control used for configuration.

Exercise - Set up Inventory Detail Inquiry



You use Inventory Detail Inquiry frequently to check inventory levels in the warehouse during training exercises.

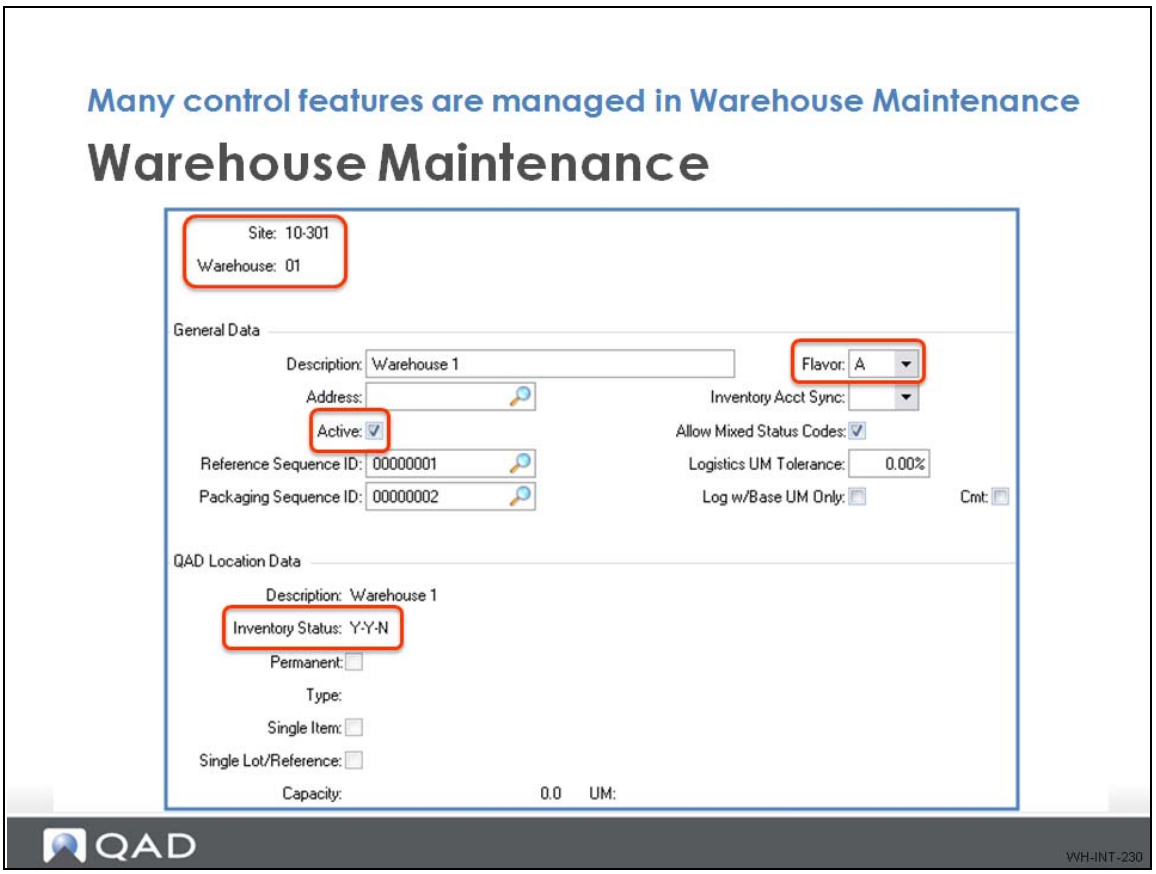
You can practice setting up Inventory Details Inquiry and enter the data in the table above.

Note This is not relevant for configuring QAD Warehousing but helps present the inventory flow picture as you test and use the system.

When testing or doing QAD Warehousing exercises, it is helpful to view inventory positions using either a browse, inquiry, or report.

1. In the QMI environment, add Inventory Detail Inquiry or Inventory by Site Browse to Favorites.
2. Fill in the beginning inventory matrix.

Many Control Features are Managed in a Warehouse

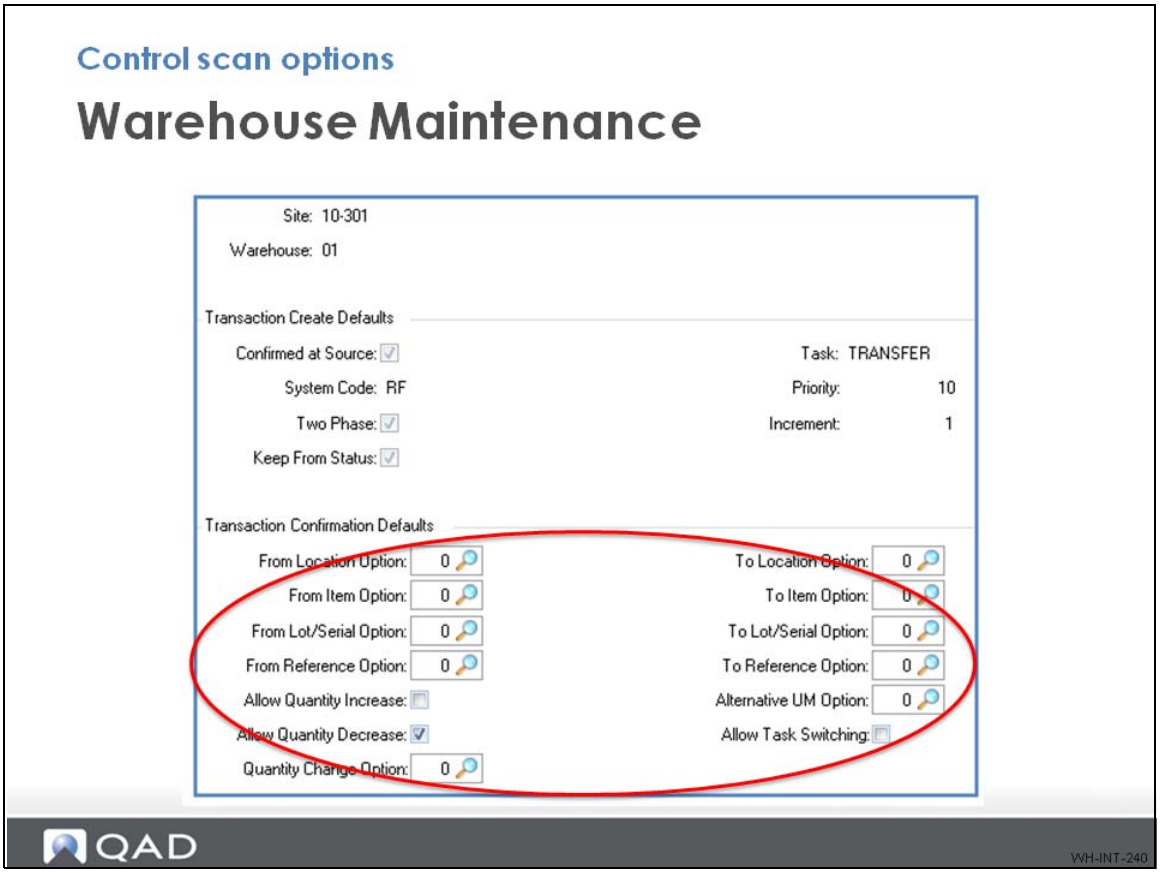


Warehouse Maintenance lets you set many control features. When you define a warehouse, you specify the parameters that control the way the inventory management functions work.

Some data you set in the program defaults to other QAD Warehousing programs. Some of the data in Warehouse Maintenance defaults from Warehouse Control.

There are 15 frames and roughly 165 fields in Warehouse Maintenance used for configuration. A few are required but most are optional. For now, you setup the required fields and discuss the more popular fields for a typical warehouse. Other fields are discussed through the remaining training sections as needed.

Control Scan Options

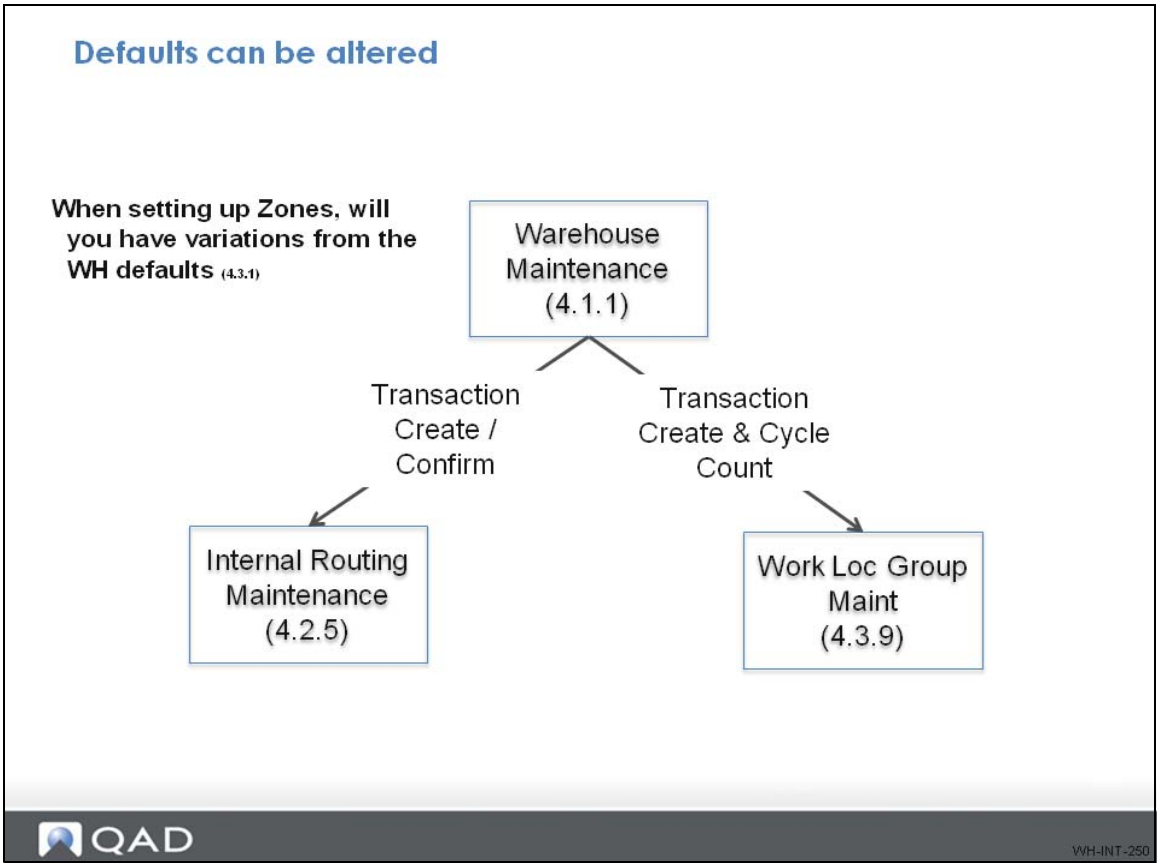


Did You Know

You can configure the frequency and need for scanning at the Warehouse Maintenance level. Too much scanning and productivity is reduced, too few scans and accuracy is reduced.

The general rule is to accept the menu defaults.

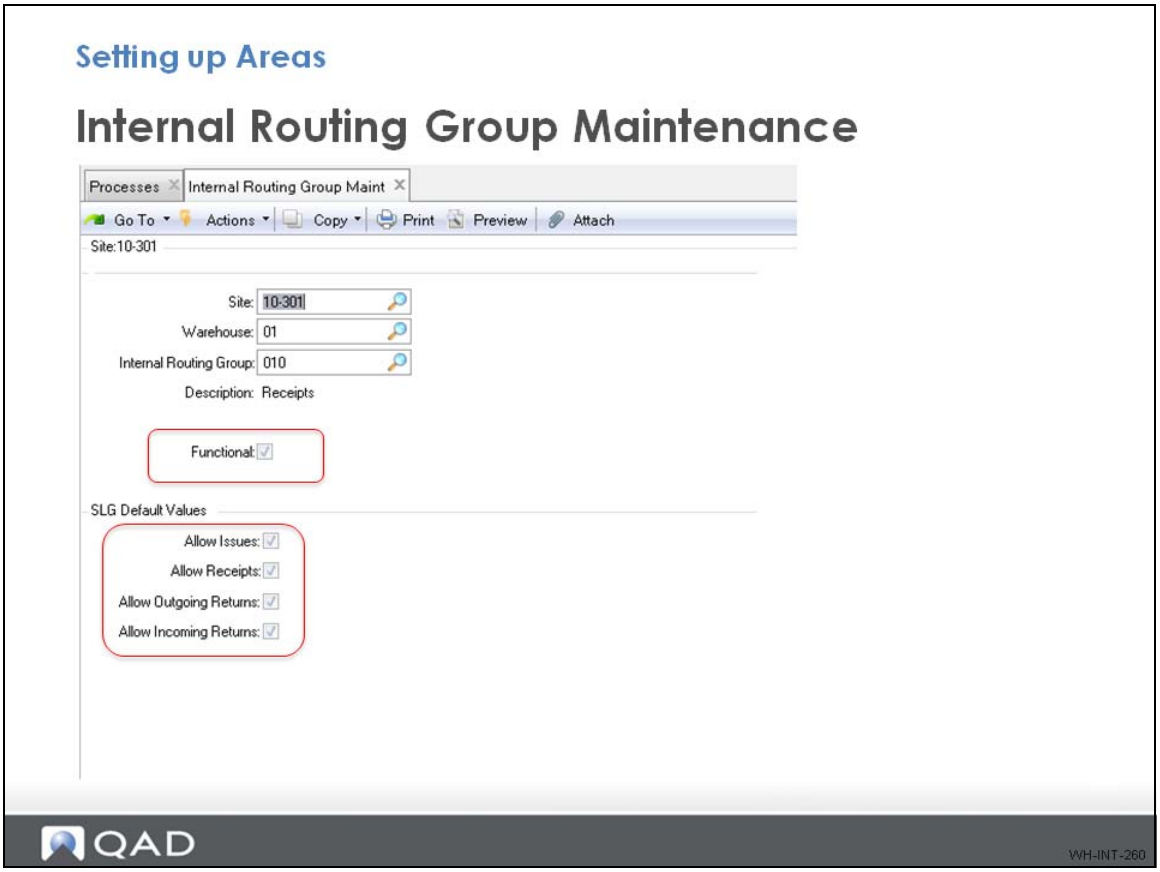
Defaults Can Be Altered



Internal Routing Maintenance and Work Location Group Maintenance defaults are set at the Warehouse Maintenance level but can be changed at lower level screens.

For configuration purposes, keep in mind defaults set at the Warehouse Maintenance menu can be changed in subsequent menus. This provides another layer of flexibility.

Setting Up Areas



This is one of the easiest screens to configure. The main decision is whether or not the area is functional. Accepting the SLG default values provides more flexibility in the zone. Disabling defaults is more restrictive.

Did You Know

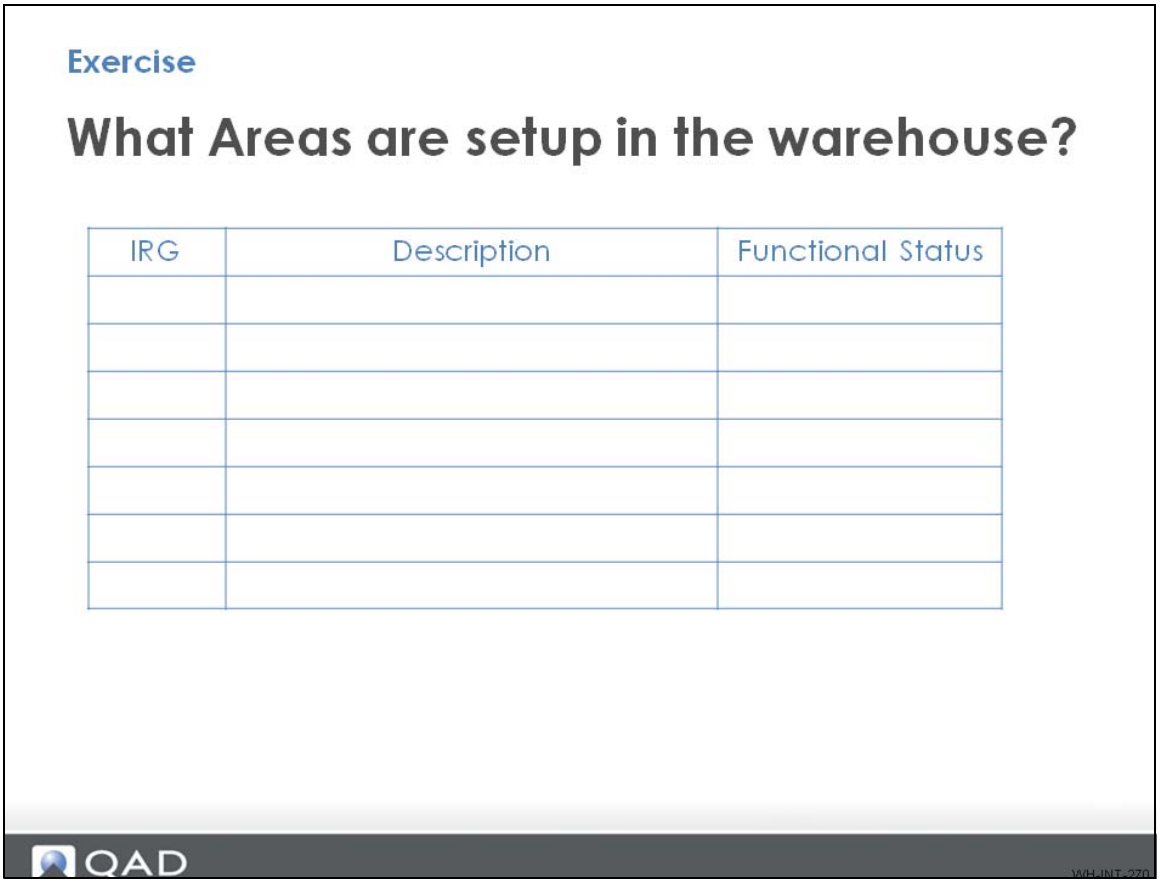
- Functional internal routing group: Use the LF algorithm
- Non-functional internal routing group: Use the PA and PK algorithm
- Zones can be configured to restrict product receipts and issues

Non-functional IRGs are only storage locations. Areas, such as receiving areas, are considered functional because warehouse staff perform a specific function in the area. Functional areas have a a specific algorithm associated with them. Non-functional areas are concerned with storage capacity. There is, however, a put-away algorithm associated with storage areas because there is a concern for capacity when storing.

As a general rule, all pick areas are non-functional; all other areas are functional.

There are four frames and six fields in Internal Routing Group Maintenance used for configuration.

Exercise - What Areas are Set Up in the Warehouse?



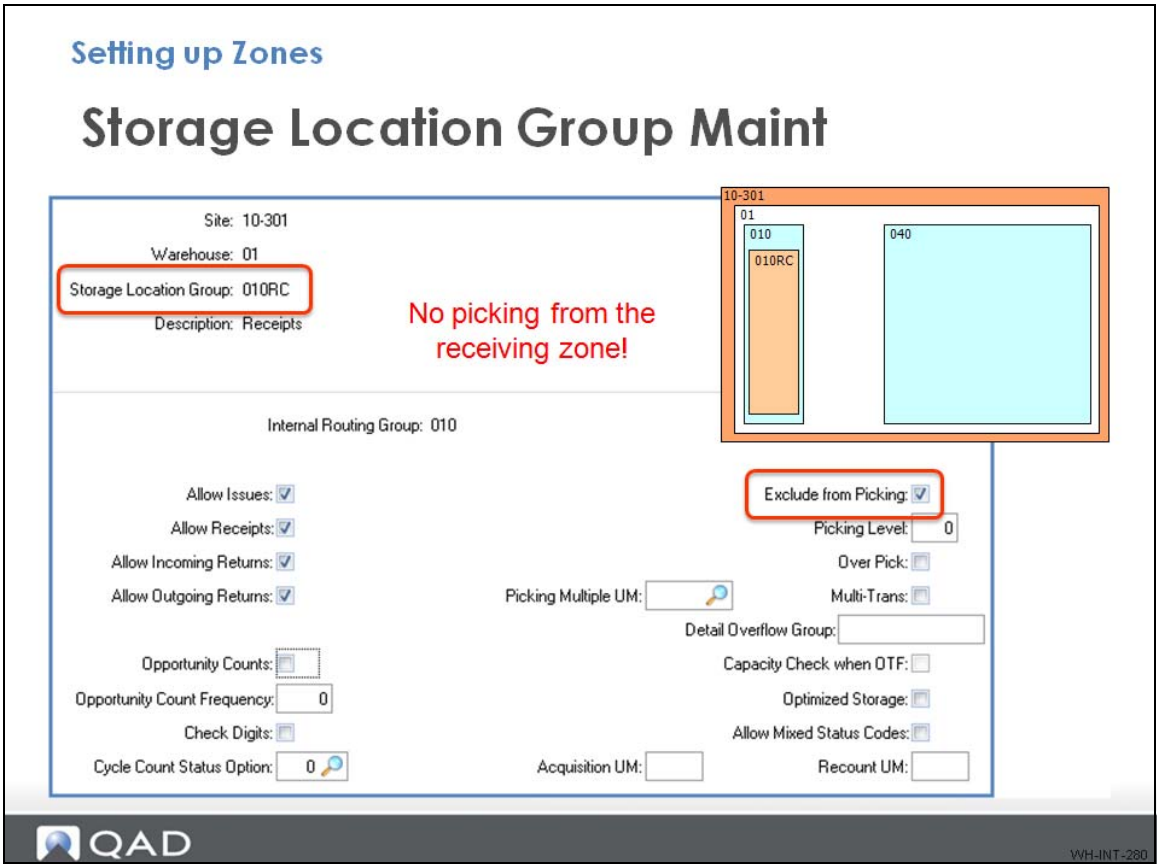
Before configuring Areas, understand the warehouse layout and process flows and document the information. This helps with setup.

During implementation, you should define and document the warehouse areas as defined in the business process workshop.

Remember that an area is an IRG, so you use IRG Maintenance to configure IRGs.

It is helpful to have a large print out of the facility drawing to use as a reference. Consider laminating the drawing to let easy writing and erasing on the drawing.

Setting Up Zones



Did You Know

SLGs (zones) can be blocked from picking based on their Picking Level in warehouse setup.

The next space segregation in an area is the storage location group (SLG) or zone. All the storage locations within an area can have the same basic function, such as storage, but the use of zones 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 storage. Each area has at least one zone.

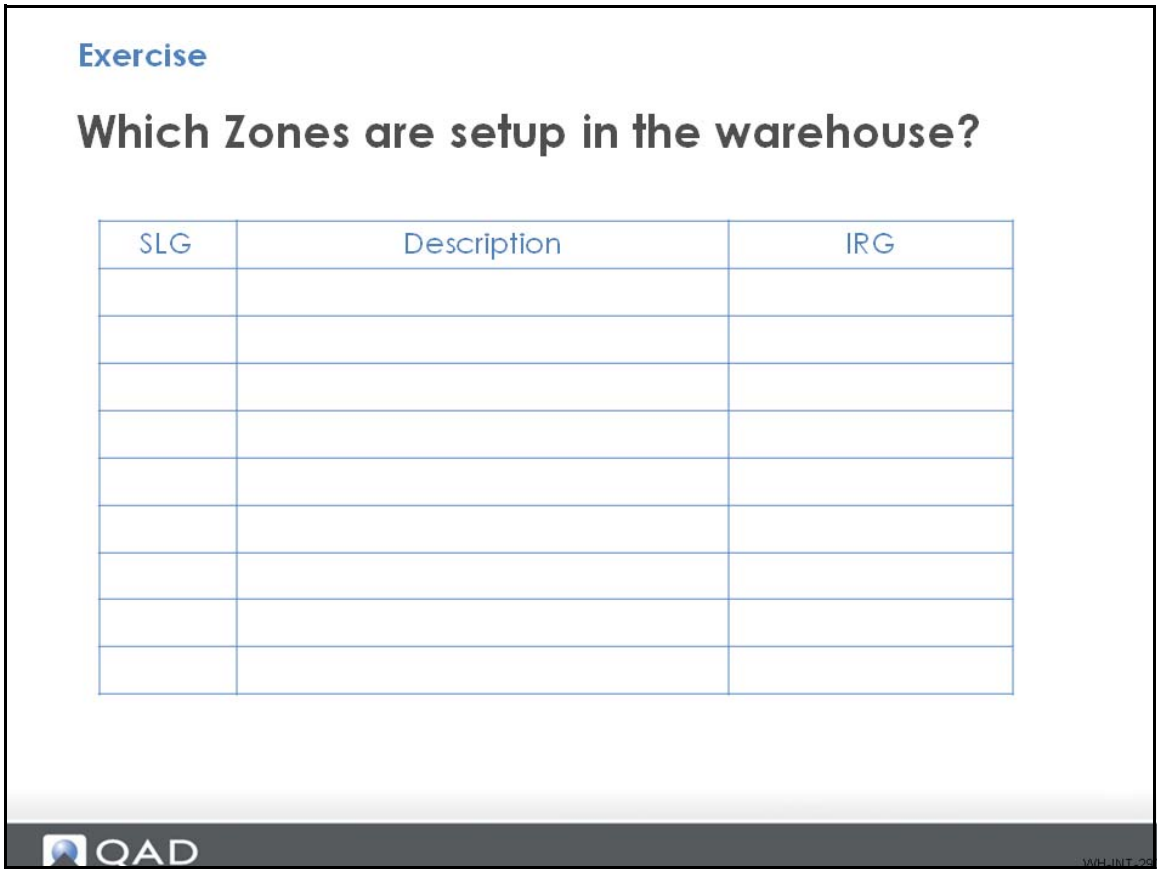
Zones require more detailed configuration. Specific zone configuration is discussed in more detail in later sessions.

In the graphic above, the Exclude From Picking field is critical. A zone can be blocked from picking when you disable the field. The Opportunity Count field lets you define whether goods are counted or not when you move material.

When setting up zones, you can block them from picking all together using the Exclude from Picking field and/or set the pick level priority using the Picking Level field.

There are three frames and 30 fields used to configure a zone.

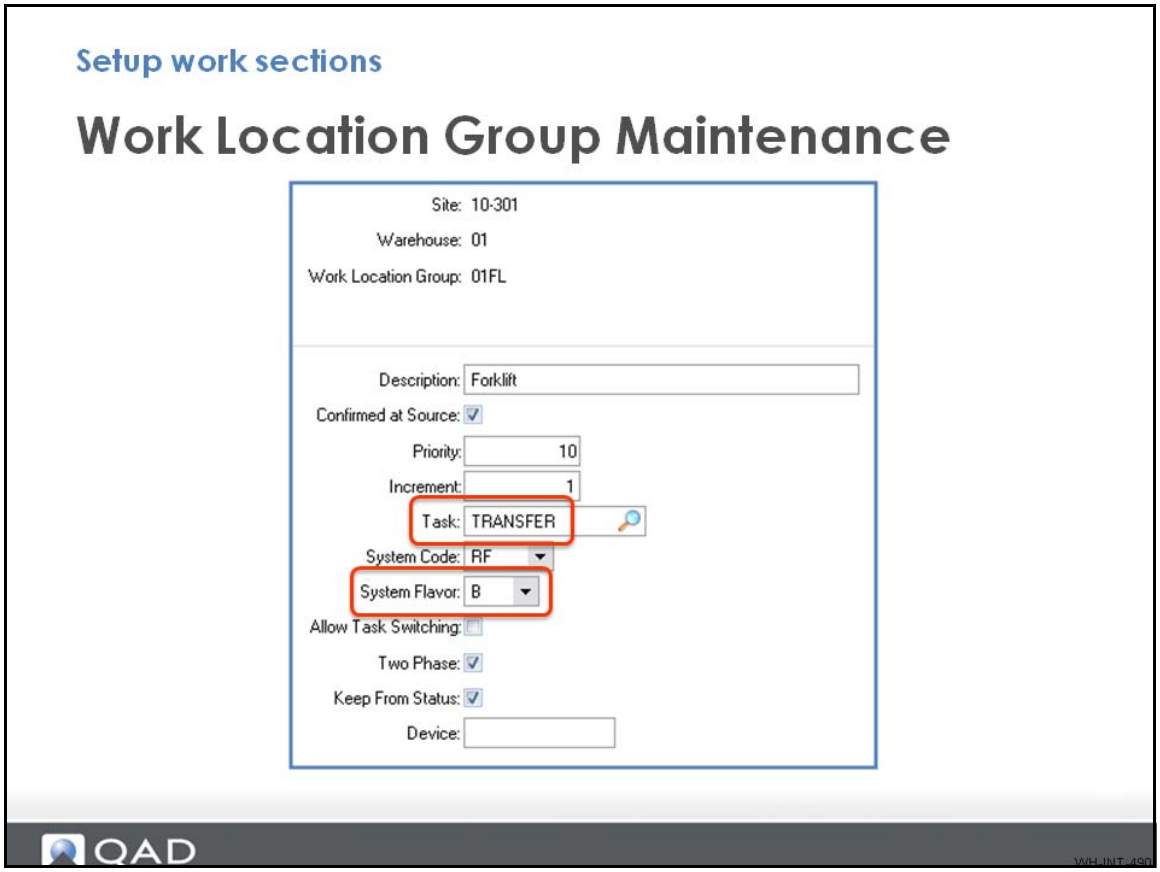
Exercise - Which Zones are Set Up in the Warehouse?



Determine which zones are setup in the warehouse using QMI data. Name the SLGs, the description, and the associated IRGs.

Note You can take a shortcut and use SLG Inquiry to find the data above.

Set Up Work Sections

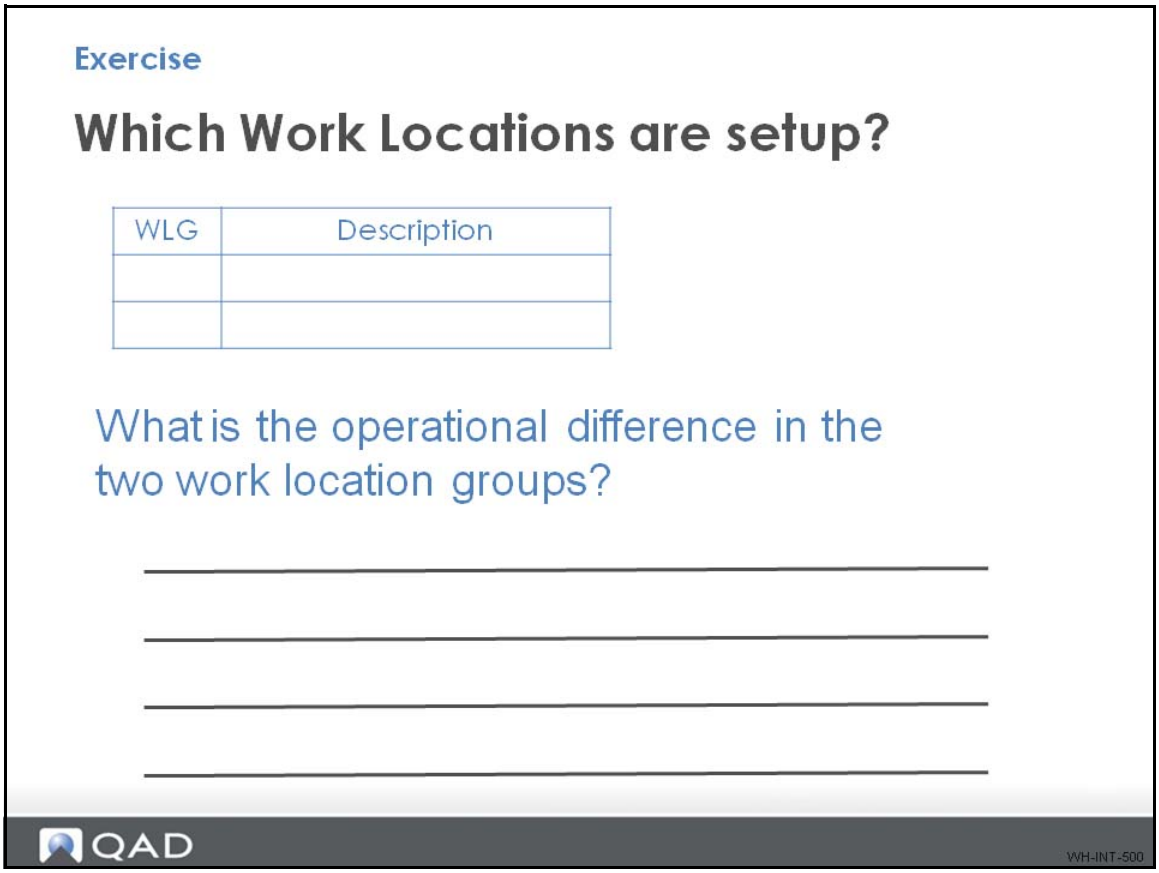


Did You Know

Work Location Groups define procedural work sections within the warehouse.

There are eight frames and 61 fields used to configure Work Location Groups. As a general rule, accept the system defaults during setup.

Exercise - Which Work Locations are Set Up?



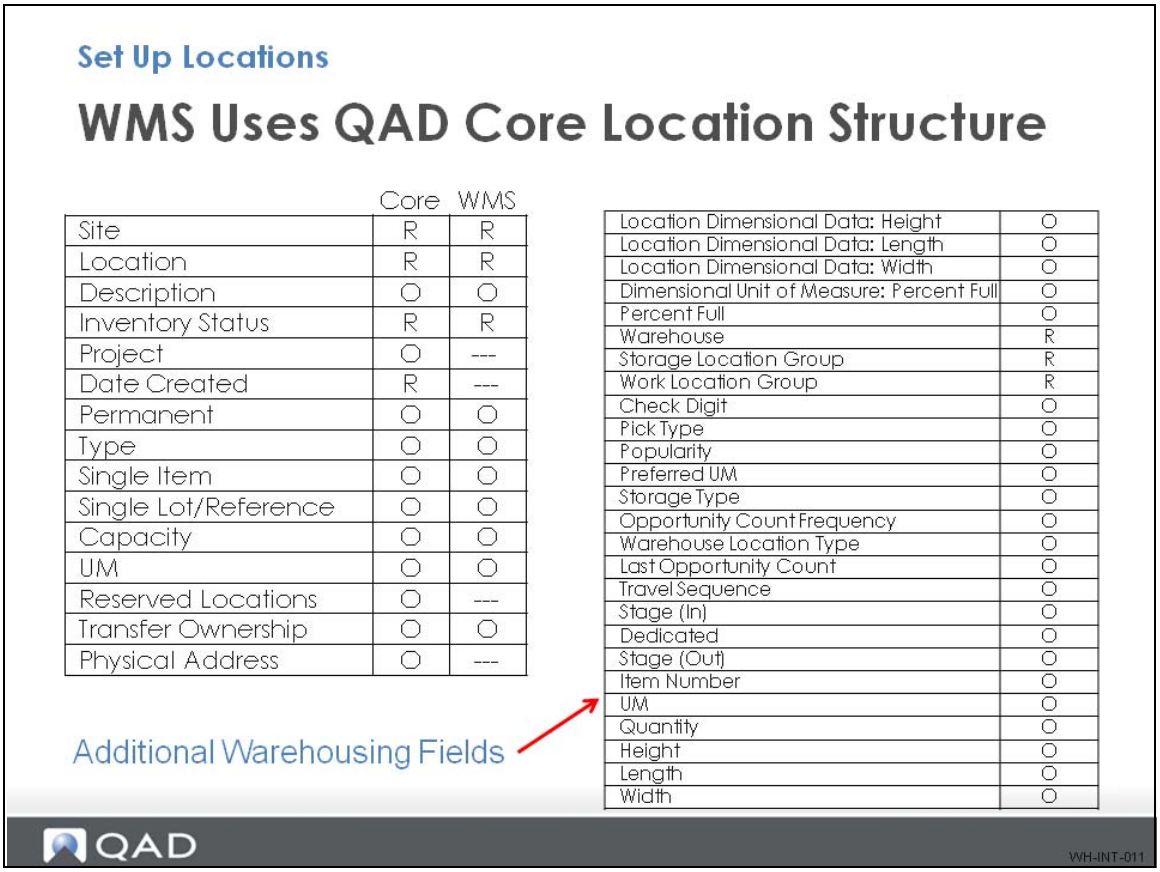
Use Work Location Group Maintenance to determine which work locations are set up in the warehouse.

For example, the following are work locations groups in QMI data:

- 01CT Carts
- 01FL Forklift

Carts WLG is used for case and each picks while Forklift WLG is used for moving full pallets from receiving to reserve storage and for replenishments.

Set Up Locations

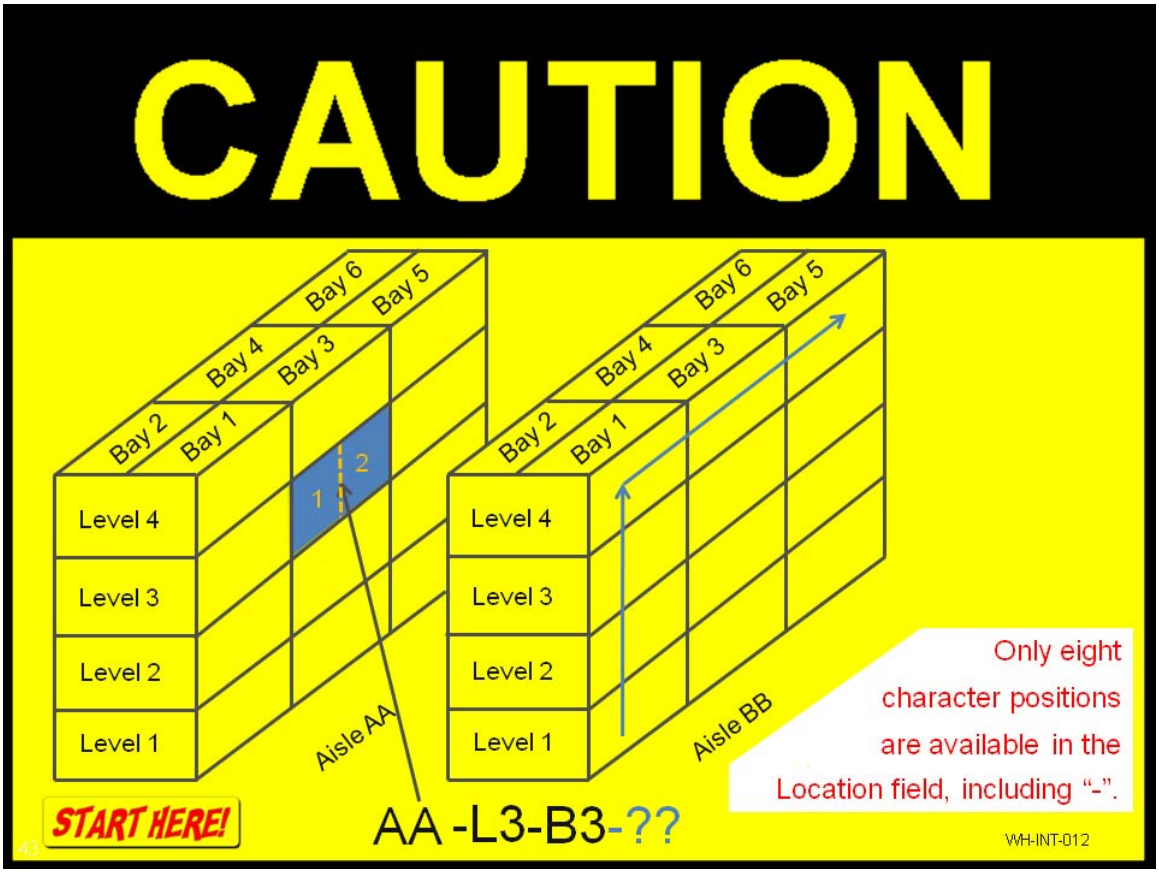


	Core	WMS
Site	R	R
Location	R	R
Description	O	O
Inventory Status	R	R
Project	O	---
Date Created	R	---
Permanent	O	O
Type	O	O
Single Item	O	O
Single Lot/Reference	O	O
Capacity	O	O
UM	O	O
Reserved Locations	O	---
Transfer Ownership	O	O
Physical Address	O	---

Location Dimensional Data: Height	O
Location Dimensional Data: Length	O
Location Dimensional Data: Width	O
Dimensional Unit of Measure: Percent Full	O
Percent Full	O
Warehouse	R
Storage Location Group	R
Work Location Group	R
Check Digit	O
Pick Type	O
Popularity	O
Preferred UM	O
Storage Type	O
Opportunity Count Frequency	O
Warehouse Location Type	O
Last Opportunity Count	O
Travel Sequence	O
Stage (In)	O
Dedicated	O
Stage (Out)	O
Item Number	O
UM	O
Quantity	O
Height	O
Length	O
Width	O

QAD Warehousing starts with the same base Location Maintenance database found in QAD Core but adds several more fields to let management run a more effective warehouse. A few of the fields are required (R) but most are optional (O).

Location - Caution



With only eight positions available in the Location field, you are limited on how you can define warehouse location addresses. For example, many warehouses define locations by:

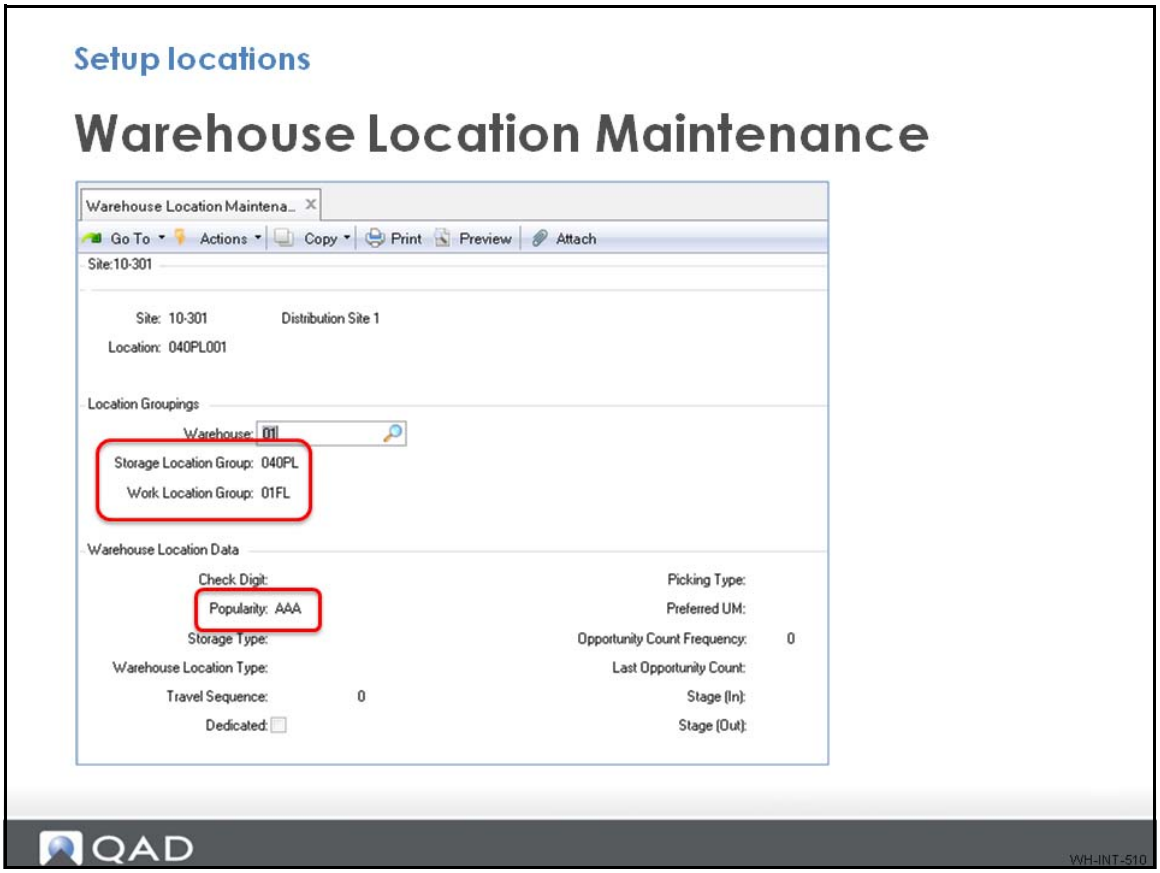
- Aisle = AA
- Level = L3
- Bay = B3

However, in a selective rack space, there is enough room for two pallets in a typical bay. In this situation, the preference would be to add a fourth data element representing the bay position, 1 or 2. With only eight character positions, you are not able to add more characters to the XX-YY-ZZ format. You need to be creative when defining detailed locations.

Did You Know

- There are only eight characters allowed in the Location field to name the location.
- Location address impacts the picking sequence because the system defaults the picking algorithm on the location.

Set Up Locations - Warehouse Location Maintenance

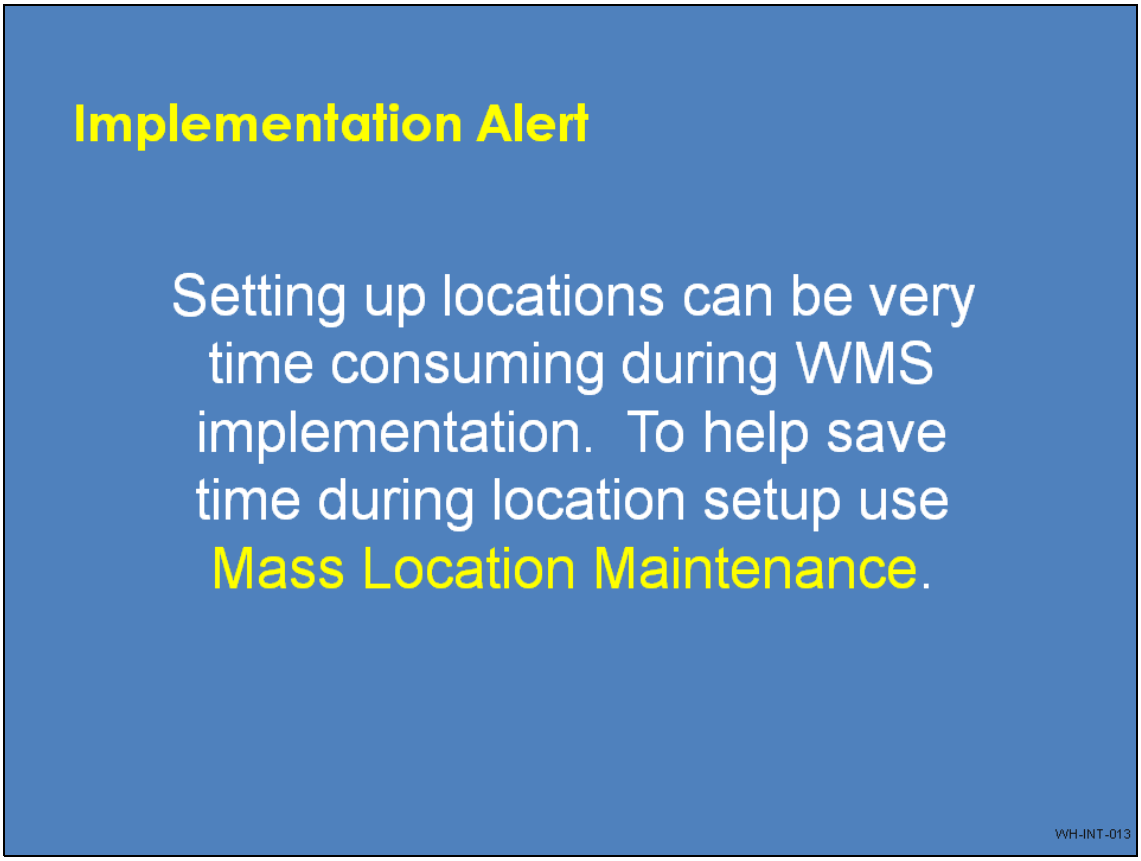


Locations can be categorized by popularity to support slotting strategies.

You can check the popularity and if items are not being picked, they may be moved to another location, based on product popularity. This lets you improve your warehouse flow.

There are five frames and 49 fields used to configure warehouse locations. Most of these are discussed in more detail in later sections.

Location - Alert

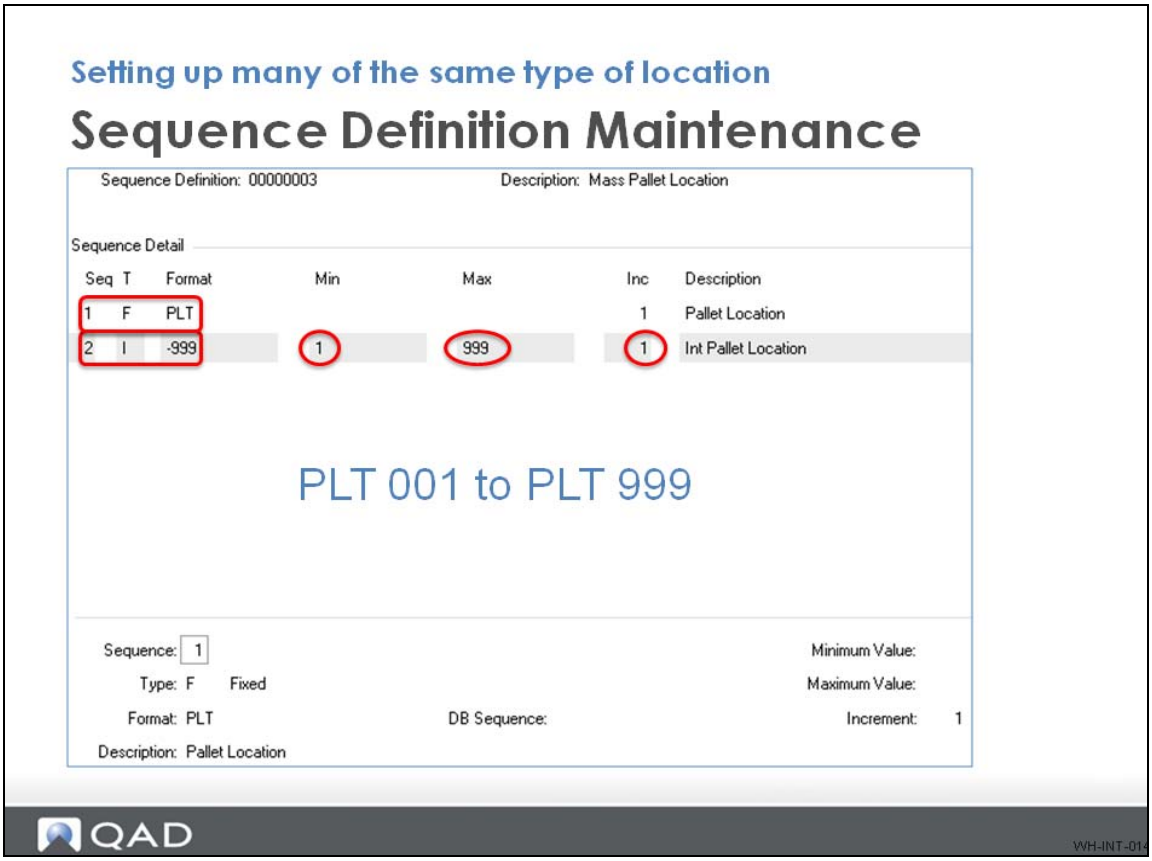


To set up many locations with a similar format, use Mass Location Maintenance. Depending on your location address format, you may need to do this multiple times to create locations by aisle, zone, or area by changing the location pre-fix and number scheme.

Did You Know

When you consider many warehouses can have thousands of locations, location setup can be very time consuming. To help save time during implementation, use Mass Location Maintenance.

Setting Up Many of the Same Type of Location



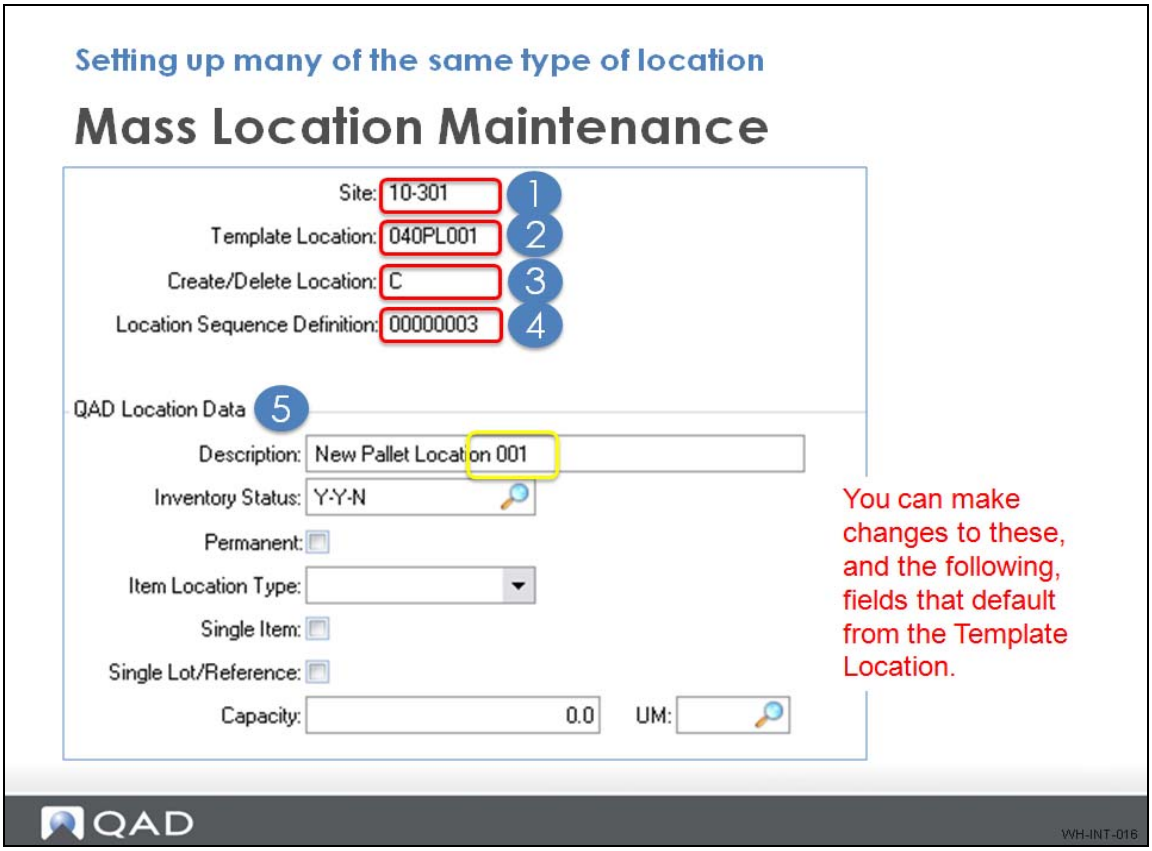
Use Sequence Definition Maintenance when required to setup many locations of the same type. Sequence Definition Maintenance lets you define how controlled sequences of numbers are structured.

The program lets you specify the format and range of the location identifiers when you use Mass Location Maintenance to create a number of storage locations. You can specify the type of sequence such as integer, character, fixed, date, and so on as well as the format.

The first sequence is Type F (fixed) and is the prefix of the label. The second sequence is the variable integer. In this case, the integer is three digits starting at 1 and ending at 999 with a increment of 1. You can have more than 2 sequences but remember the location field capacity is 8 characters.

There are five frames and six fields in Sequence Definition Maintenance used for configuration.

Setting Up Many of the Same Type of Location (Continued)



In Mass Location Maintenance, you:

1 Enter the site for the new locations.

2 Enter the Template Location. This is location already set up in QAD Warehousing and should have similar characteristics.

3 The Create/Delete Location field determines whether you can create or delete a location. To create locations, you need a template location defined; however, a template location is not required to delete locations.

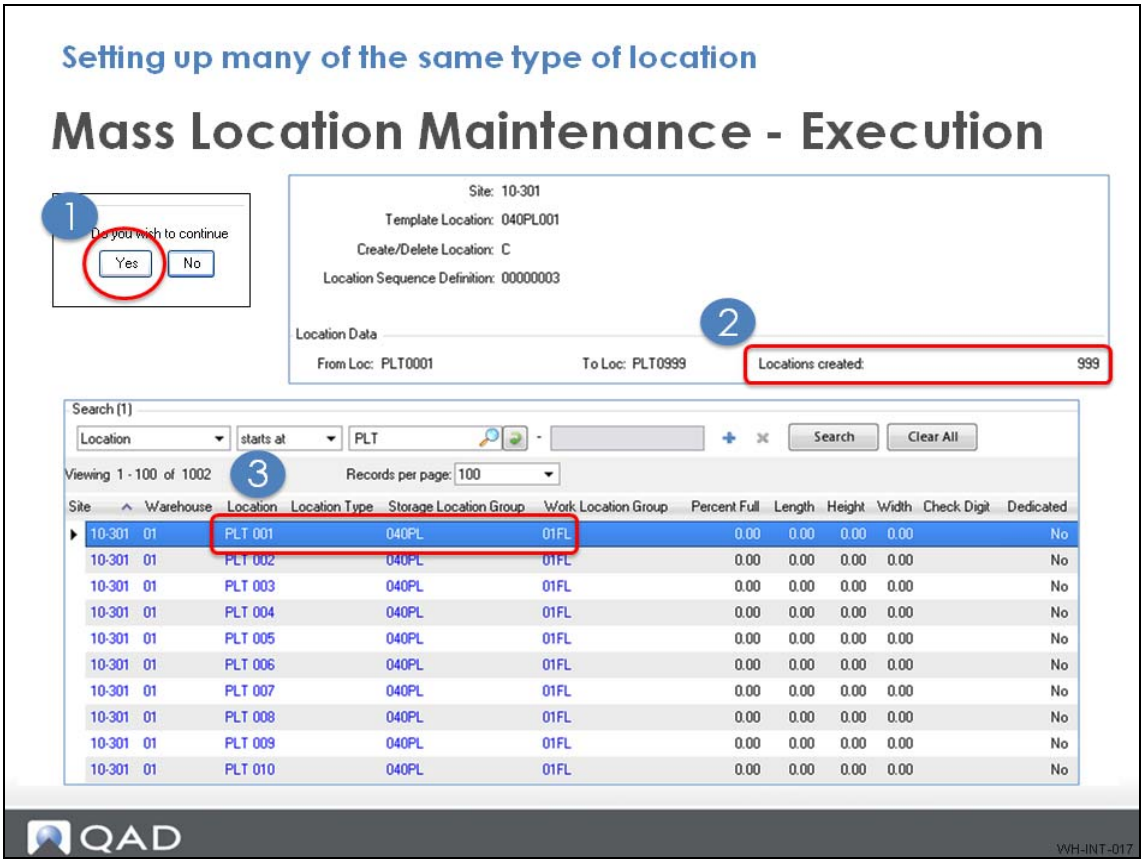
4 Select the sequence definition you use to create the locations.

5 Adjust the fields in the remaining frames to customize the new locations.

The description you enter here defaults to all new locations created. It is a good idea to keep this generic rather than assign a number.

6 Click through all frames (mandatory) before selecting Back to trigger the mass location creation process.

Setting Up Many of the Same Type of Location (Continued)

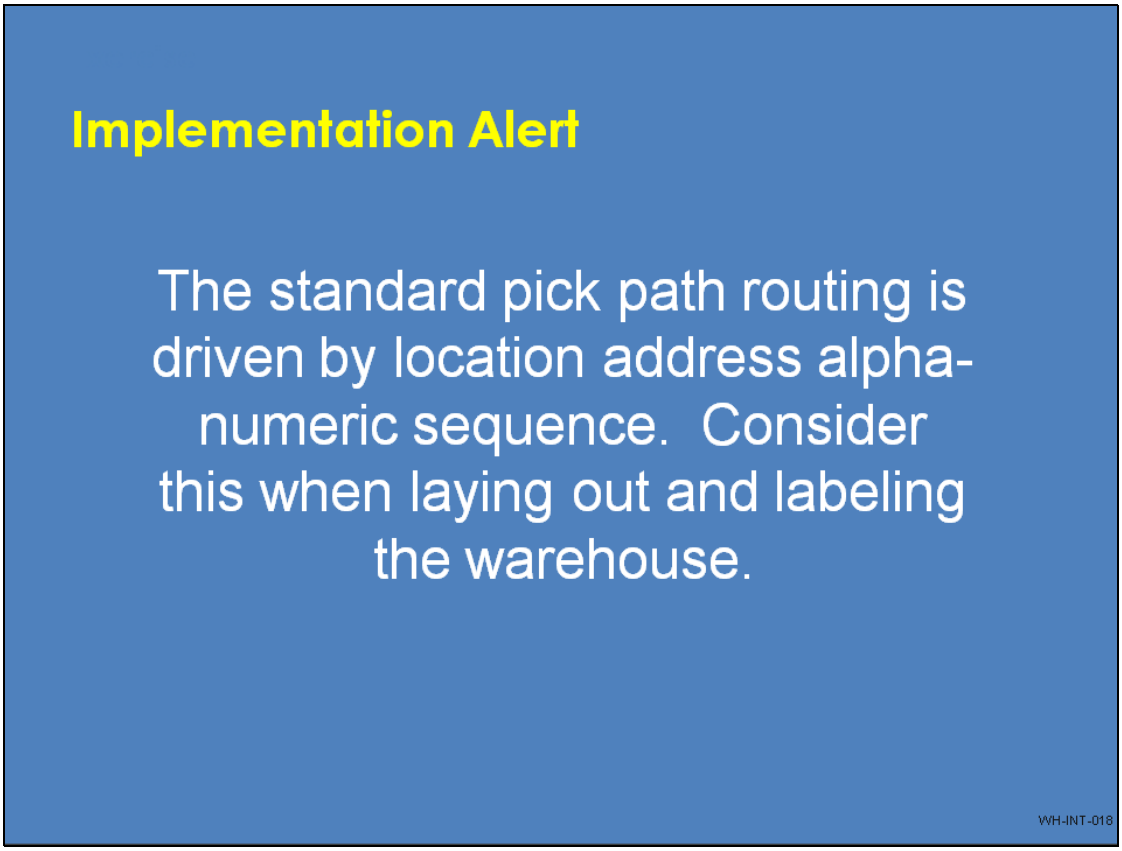


1 Select Yes at the frame that prompts, `Do You Wish to Continue?`
The next frame displays the number of locations created.

2 View the newly created locations in Warehouse Location Browse.

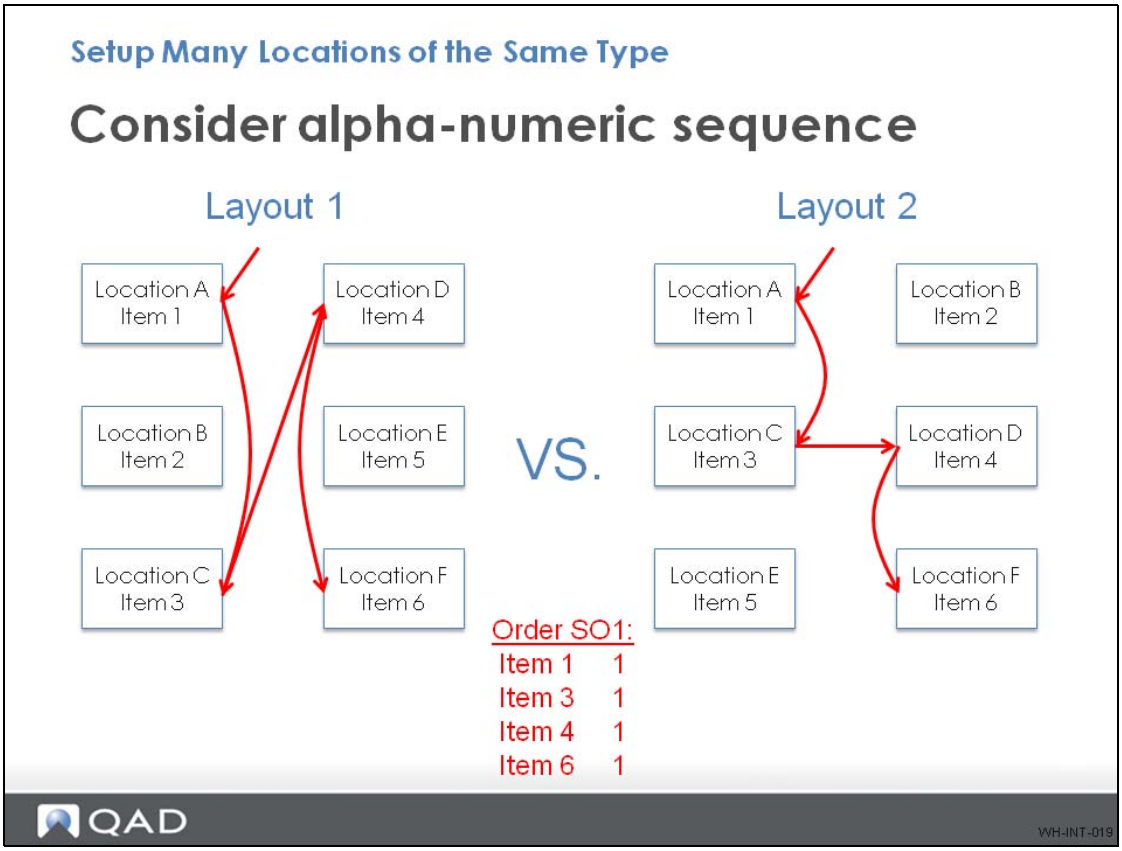
3 Once the new location parameters are defined, click Next to proceed to the next frame.

Locations Setup - Implementation Alert



The warehouse layout and location label sequence have an impact on the system directed pick path.

Set Up Many Locations of the Same Type (Continued)

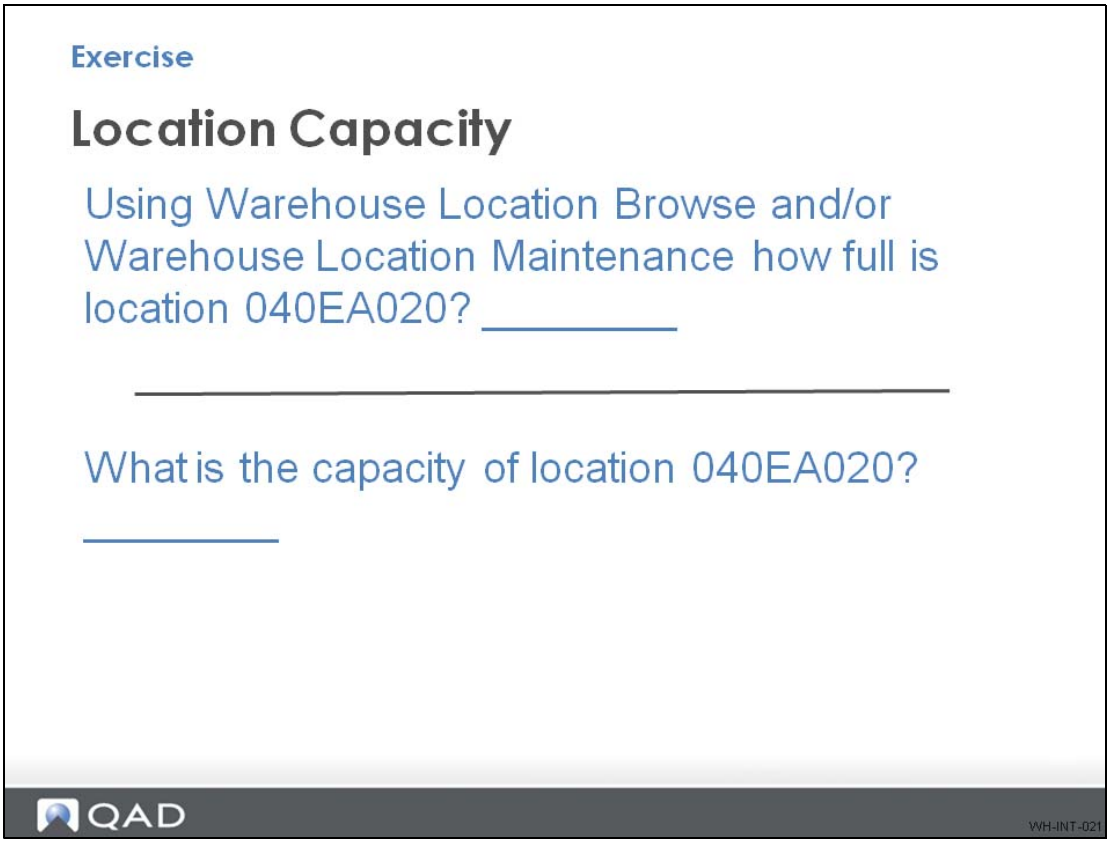


If you perform a batch pick for the single order SO1, the pick flow path follows the location alpha-numeric sequence.

Note in Layout 1, there is a significant travel time from Location C to Location D. To help reduce this travel time, you can re-label or re-layout the warehouse to Layout 2. This is also possible by assigning a travel sequence number to each location. Reference the discussion on Batch Picking for more information on travel sequence.

The goal within the warehouse is to achieve a shorter travel distance or shorter pick path.

Exercise - Location Capacity



Follow the instructions in the slide above to determine:

- How full is location 040EA020?
- What is the capacity of that same location?

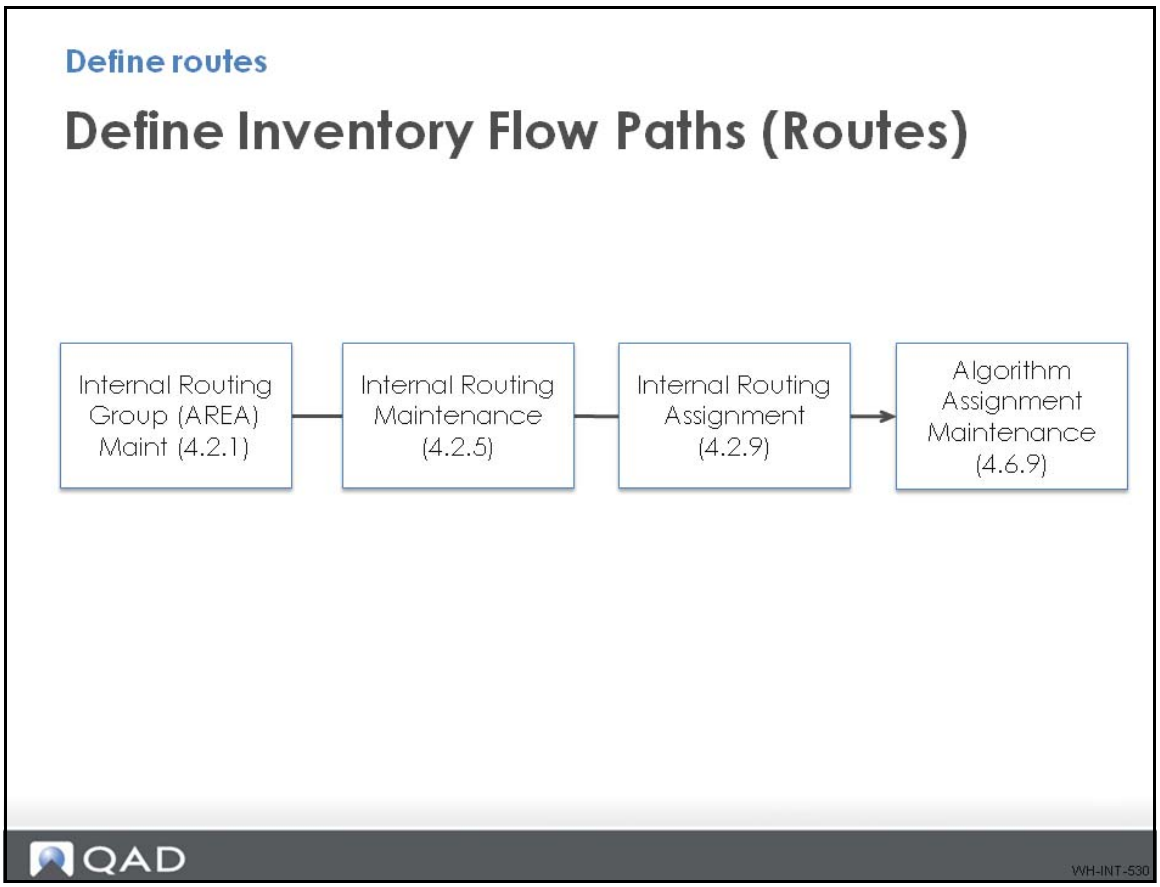
Using Warehouse Location Browse, the line for location 040EA020 shows 16.0 in the Percent Full column.

Using Warehouse Location Maintenance for Site 10-301, Location 040EA020, the location dimensional data shows Percent Full as 16.

The Warehouse Location Maintenance capacity as shown in the Percent Full field does not truly show the capacity. You need to scroll through and find the item frame in the program, then look at height, width, and so on and check the dimensions of the item. You can also run the Location Full % Report.

Clicking through to the final frame, the item number shows UM is EA and Quantity is 500. Because there is no item number listed, this is a generic capacity for all items.

Define Routes



Did You Know

I*nternal routings control the flow of inventory between areas.*

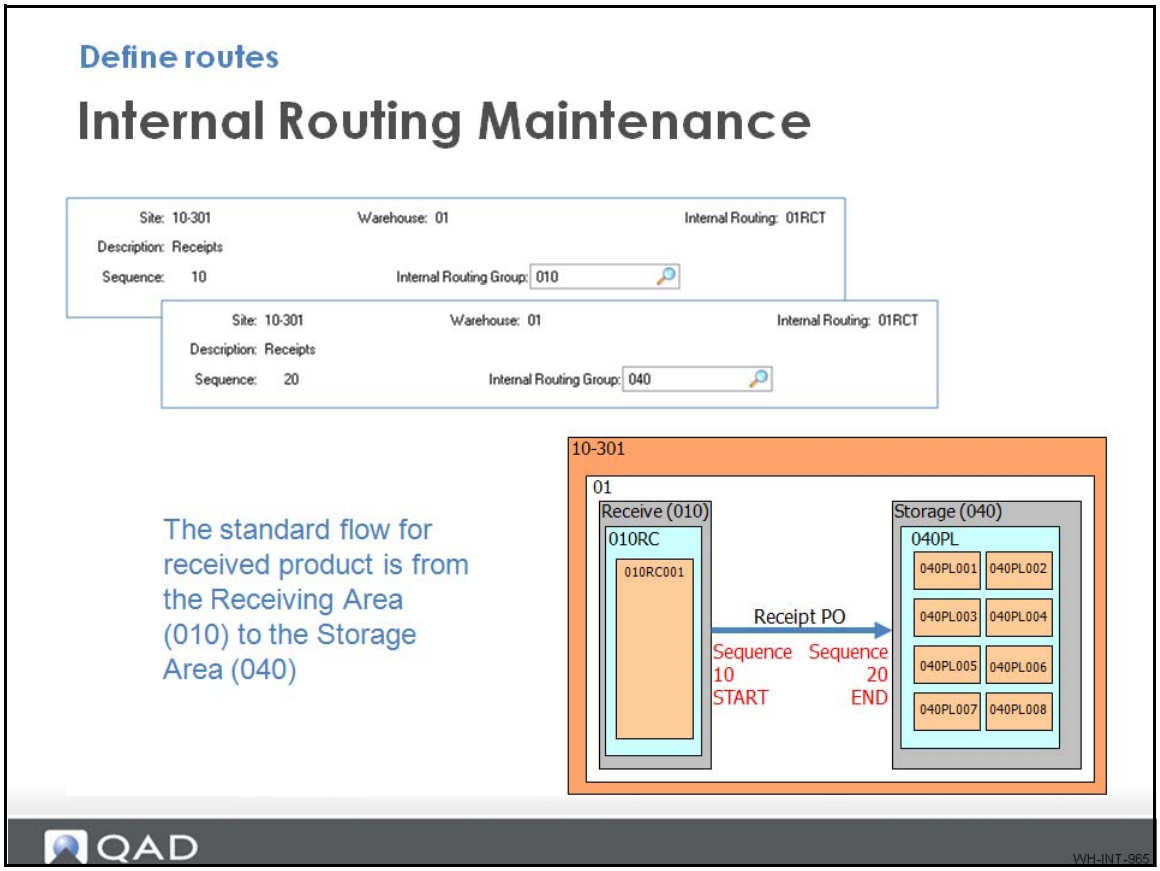
Inventory flow paths are configured using different menus.

Follow these steps:

1. Set up the area using Internal Routing Group Maintenance.
2. Define the flow path using Internal Routing Maintenance.
3. Assign the routing using Internal Routing Assignment.
4. Define what happens to the load once is gets to the new area.

This is required for each different inventory flow path. The QMI setup for these steps is discussed in the topics that follow, starting with Internal Routing Maintenance.

Define Routes - Internal Routing Maintenance



The standard flow for QMI received product is from the Receiving Area (010) to the Storage Area (040).

Did You Know

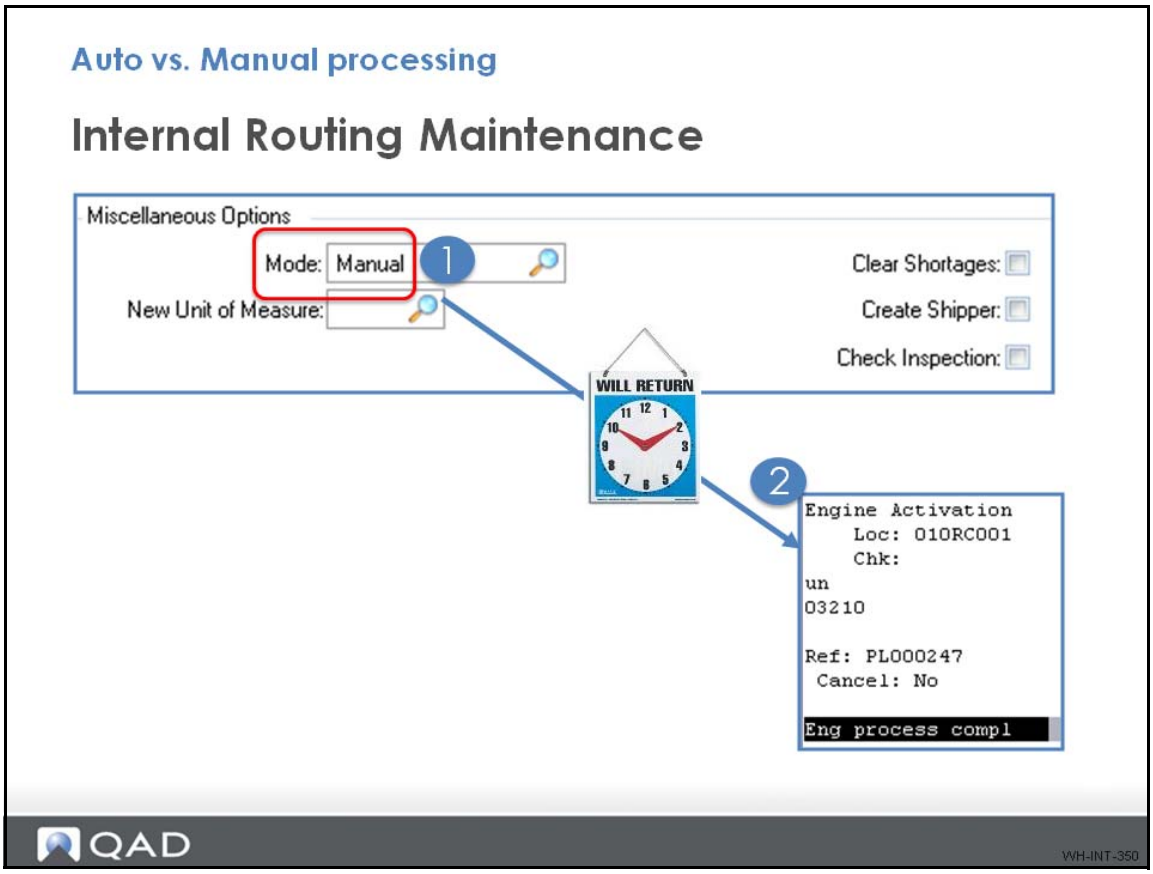
Use internal routings to create specific pathways linking Areas (IRGs) within the warehouse.

When you have defined the internal routing groups (IRGs)—areas within a warehouse—you can link specific sequences of areas to form internal routings. Each step, or sequence, within an internal routing defines the area where the inventory is moved 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. 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.

There are 10 frames and 41 fields in Internal Routing Maintenance used for configuration.

Auto Versus Manual Processing



Did You Know

There are three types of engine processing that can be applied to internal routings:

- Auto
- Manual
- Timed

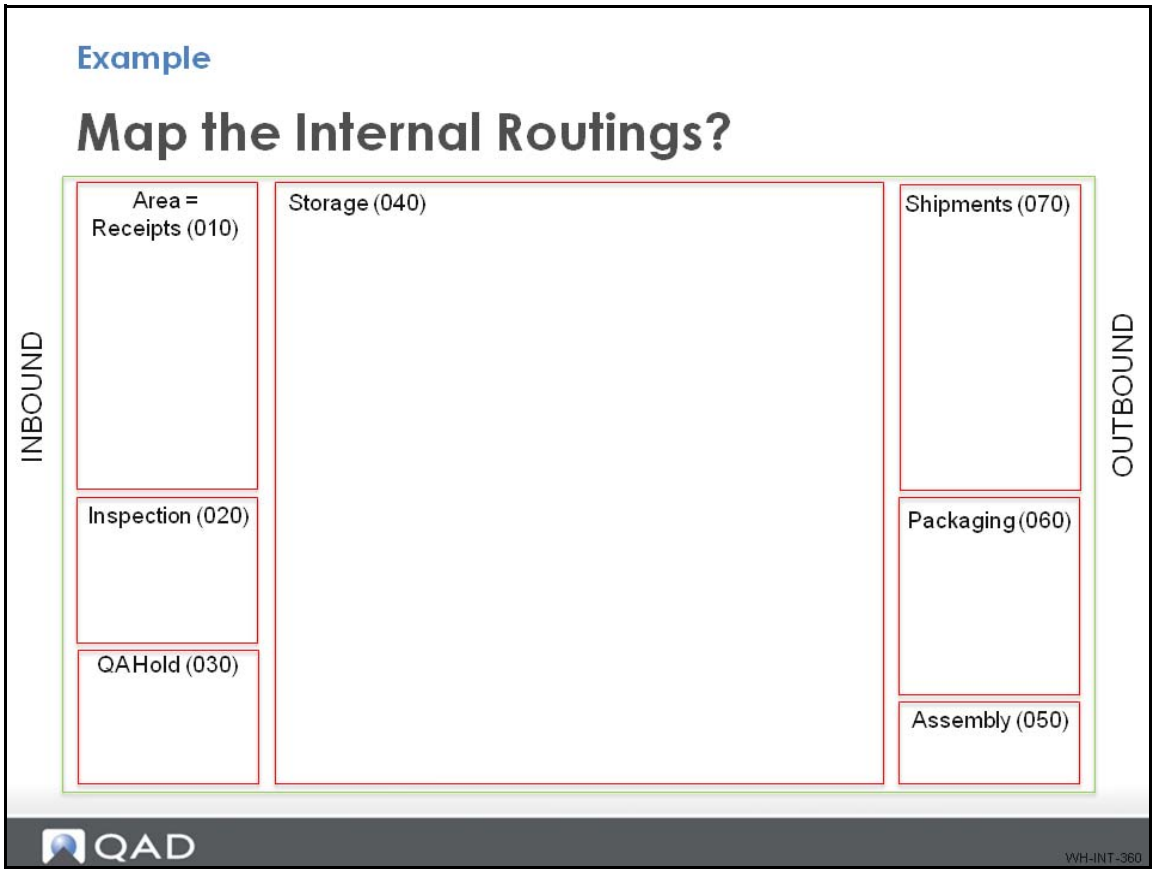
Auto mode specifies that the transaction is processed immediately. Auto engine processing means tasks are triggered automatically without user intervention. In Manual mode, the user must intervene by starting one of the engine processor programs in the Engine menu.

Manual mode specifies that the transaction is processed only when it is selected for processing by warehousing staff. Manual can be useful in many environments. For example, because staff can work on a work order for an extended period of time, can release pallets when they are finished rather than wait until the entire work order is finished.

Timed mode is similar to AUTO but process the engine workfiles after a pre-defined delay.

The default engine processing is set at the Warehouse Maintenance level. The default can be tailored for each internal routing in Internal Routing Maintenance. If a routing is not defined for the process, the system uses the mode set in Transaction Type Maintenance.

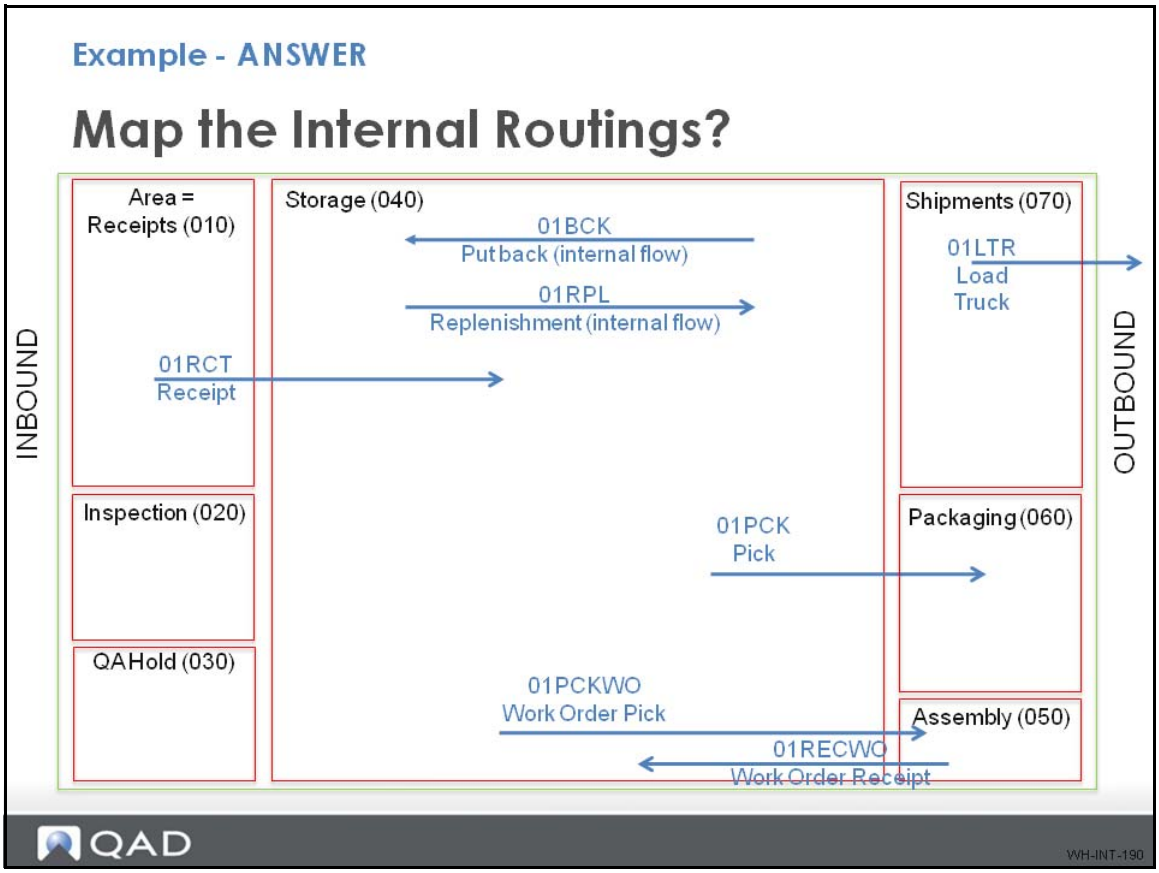
Example - Map the Internal Routings



Before you configure QAD Warehousing, it is helpful to define the product flows. You do this by mapping the internal routings.

Use the QMI layout above to map internal routings for areas between the inbound and outbound flow of goods.

Example - Answer to Mapping Internal Routings



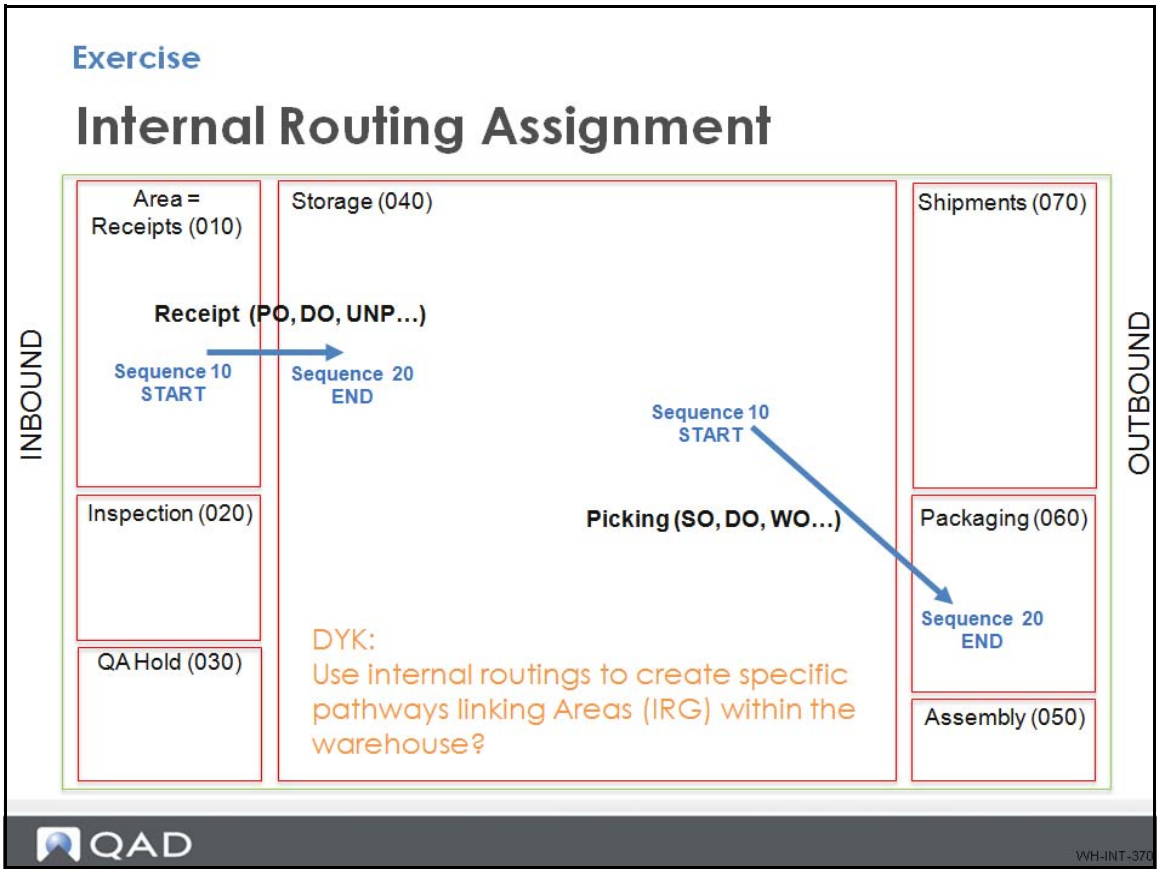
The lines in blue depict the internal routings mapped to the various areas.

Any product that moves from one area to another within a warehouse has to have the flow defined.

In QMI there are seven defined product flows:

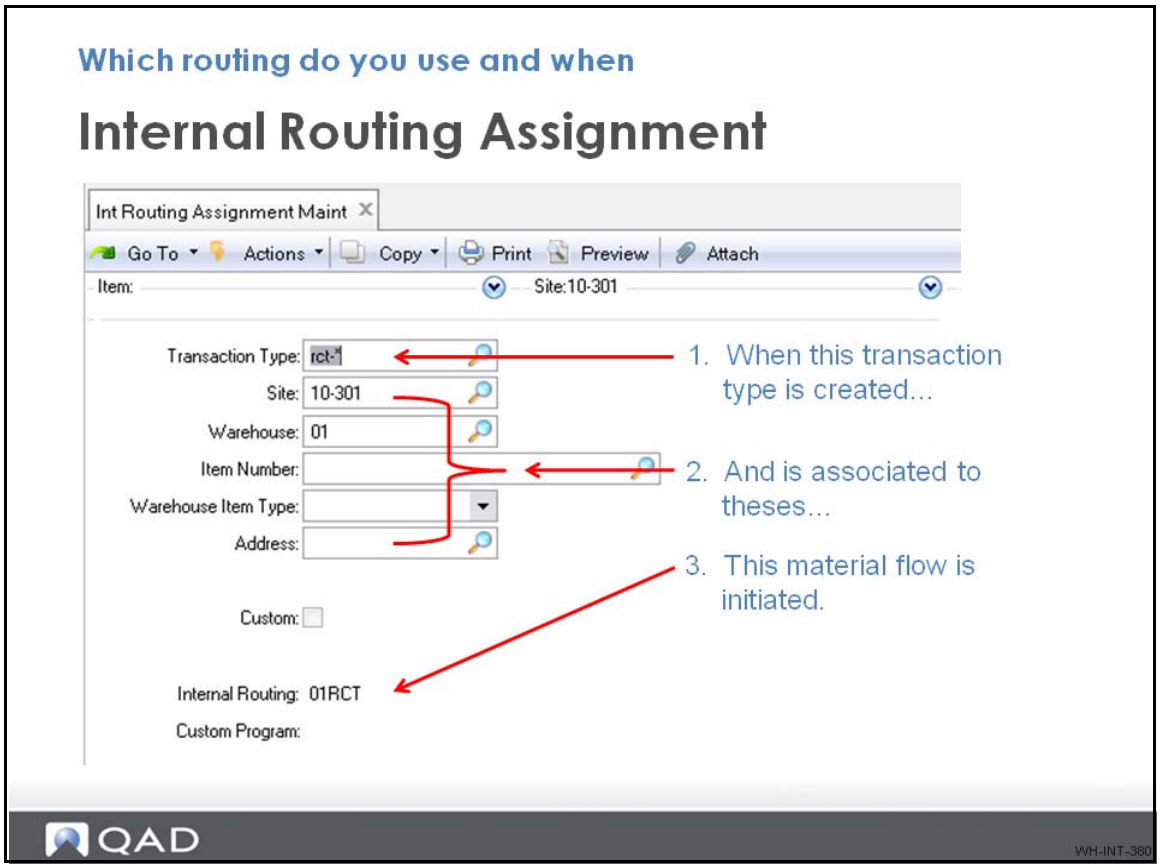
Routing	Path	Purpose
01RCT	From Receiving to Storage	General receipts
01BCK	Forward Pick zone to Reserve Storage zone	Return replenishments
01RPL	Reserve Storage to Forward Pick	Replenishment
01PCK	Storage to Packaging	General pick
01PCKWO	Storage to Assembly	Work Order pick
01RECWO	Assembly to Storage	Assembly receipt
01LTR	Shipping to out of the system	Shipping

Which Routings Do You Use and When



Internal routings (IRs) are pathways through your warehouse that you want your inventory to take; however, it is the IR assignment that tells the system when to use the internal routing.

Once the routings are defined the next step is to determine when the specific flows are triggered.

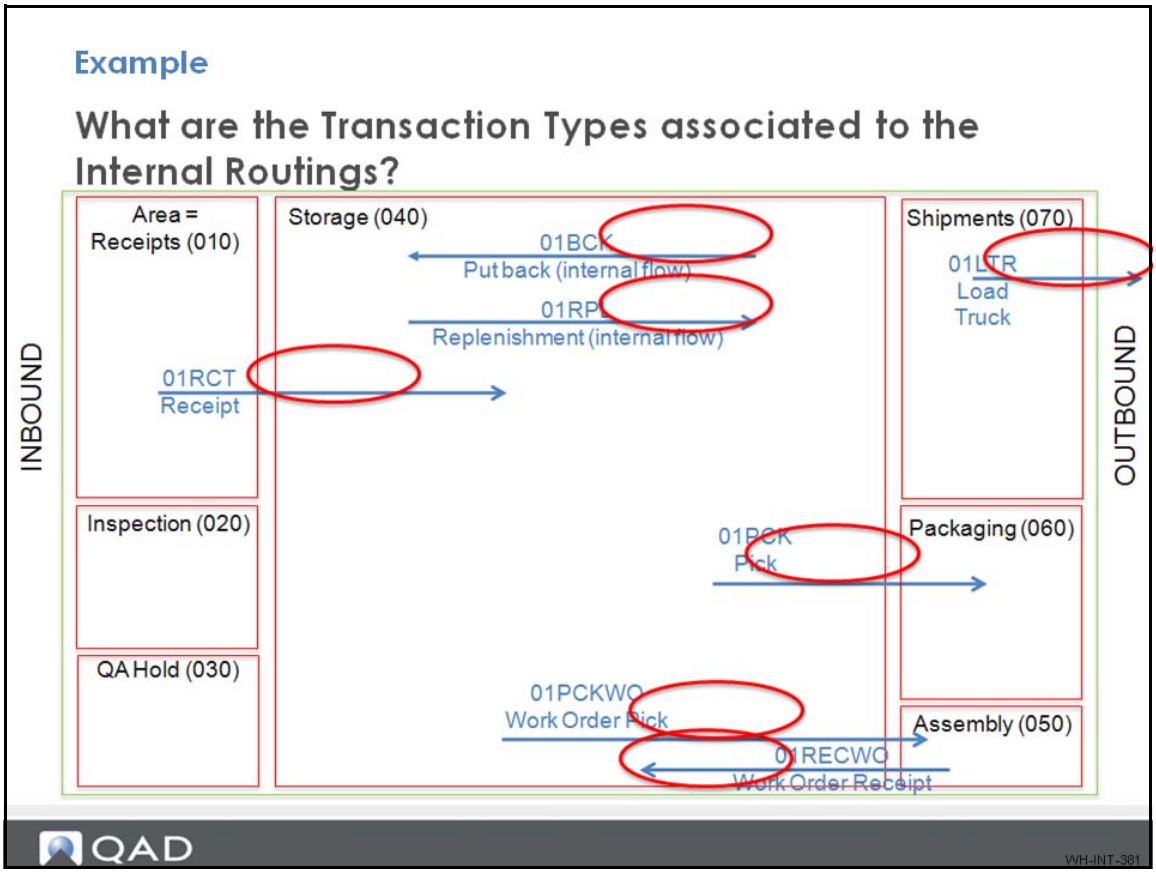


Use Internal Routing Assignment Maintenance to associate a transaction type to a site and warehouse. When the system creates the transaction type, the material flow is initiated.

You can also define other optional parameters (item number, warehouse item type, address) to create more specific triggers.

There are three frames and nine fields in Internal Routing Assignment Maintenance used for configuration.

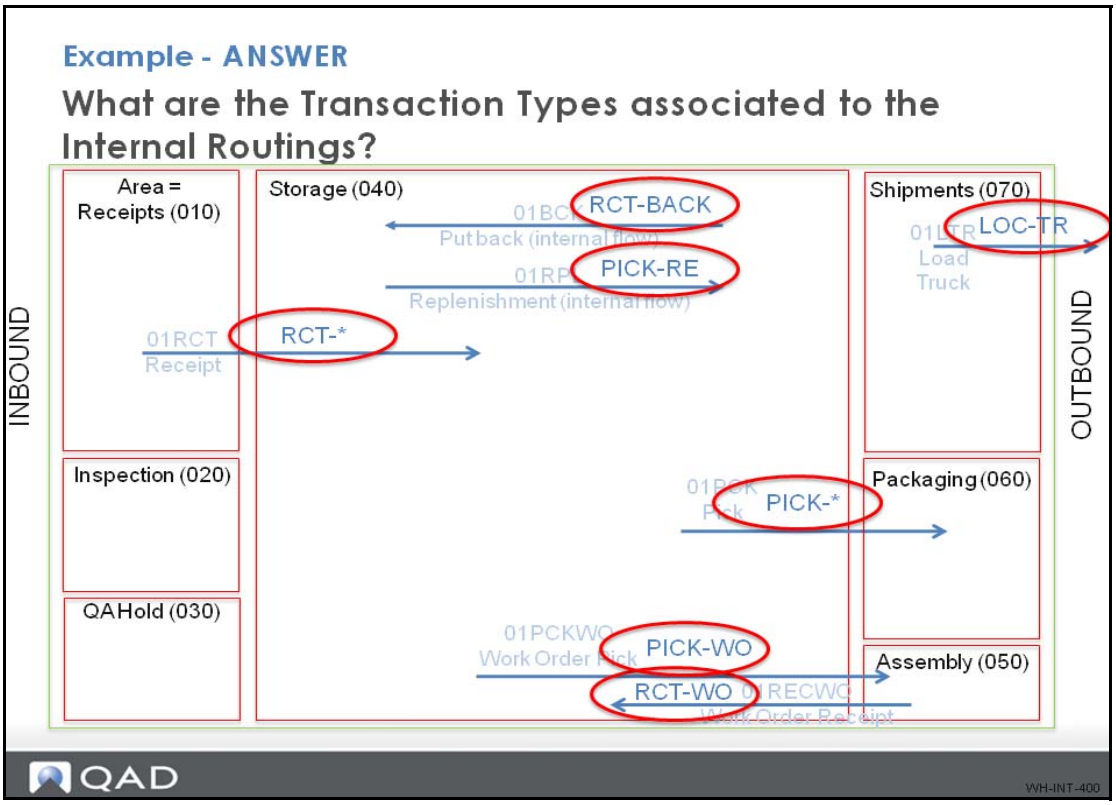
Example - What are the Transaction Types Associated with the IRs?



Each time a transaction occurs, the system looks at the internal routing.

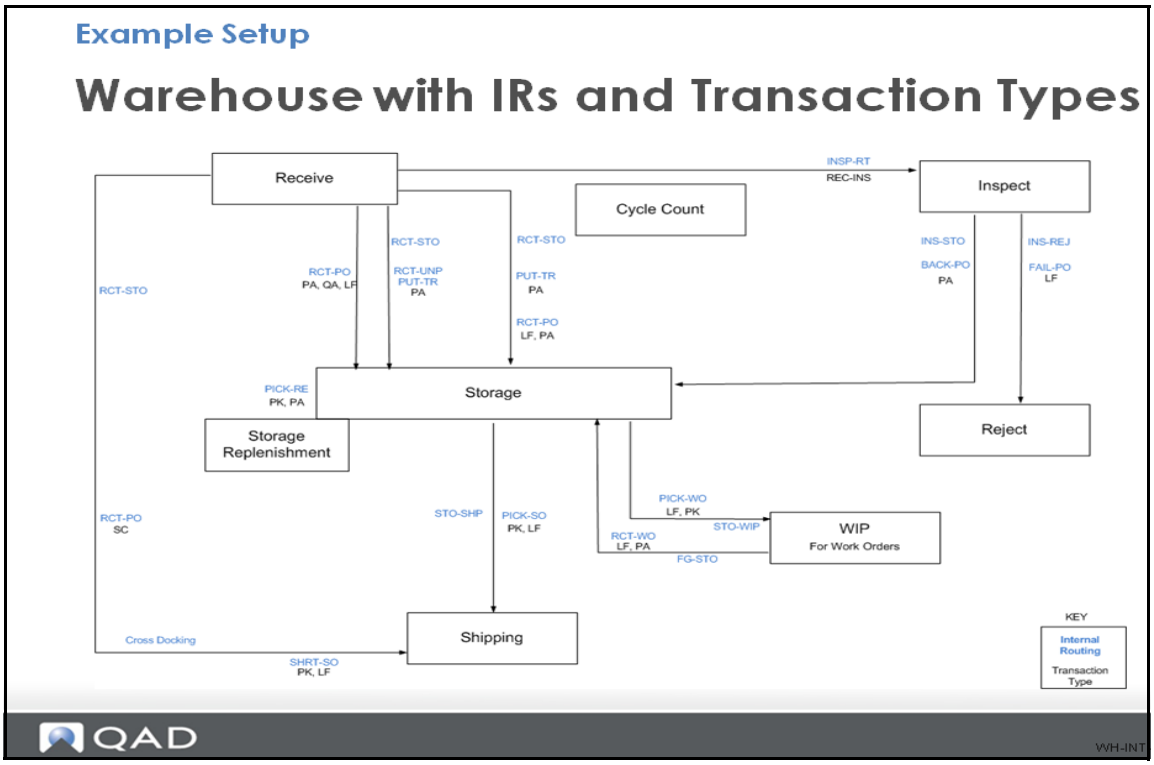
Use Internal Routing Assignment Browse to determine the transaction types associated with the internal routings in QMI?

Example Answer - Transaction Types Associated with IRs



Throughout QAD Warehousing you can use a wildcard (*) indicator to represent a generic solution. For example, when a general receipt transaction is generated, the product flow 01RCT is triggered.

Example Setup with IRs and Transaction Types

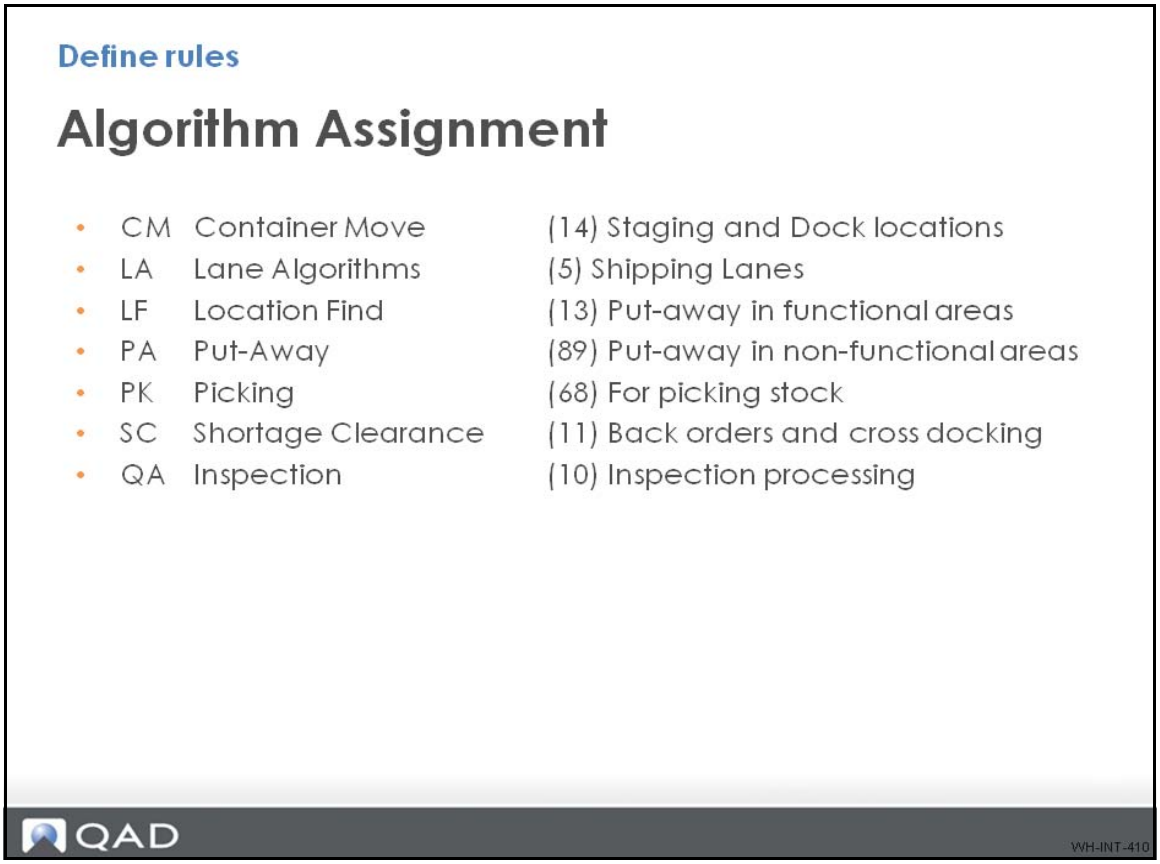


The graphic above depicts a warehouse with typical areas set up for receiving, storage, WIP, cycle count, inspection and reject, and shipping.

Note the following:

- A special area of storage is set up for storage of replenishment items.
- A routing for Cycle Count is not needed.
- Regarding the third routing between Receipts and Storage that shows only PA and LF algorithms, this is a routing that does not require inspections.

Define Rules



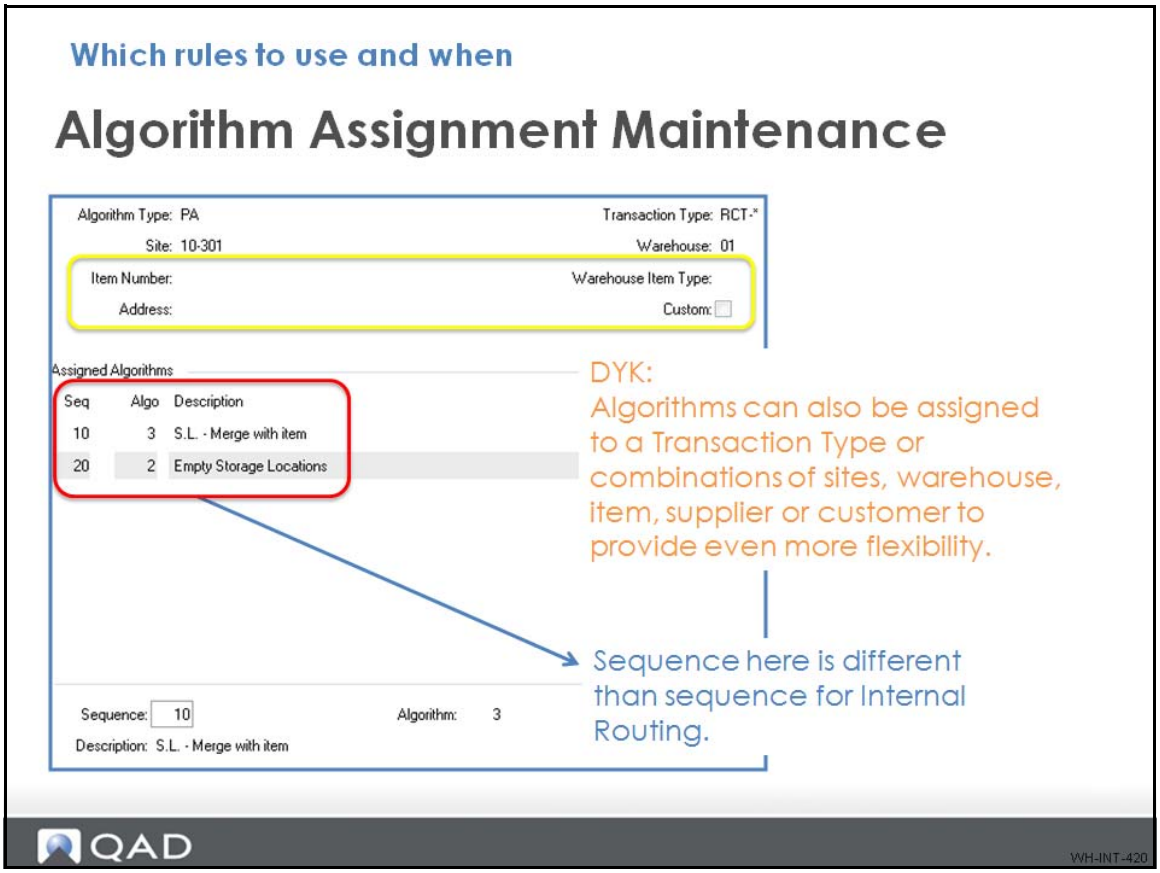
Did You Know

Algorithms are rules/routines used when moving, putting away or picking product.

An algorithm is a processing program that takes into account particular conditions before attempting to complete an inventory move.

There are 210 standard rules you can assign, depending on the area.

Which Rules to Use and When



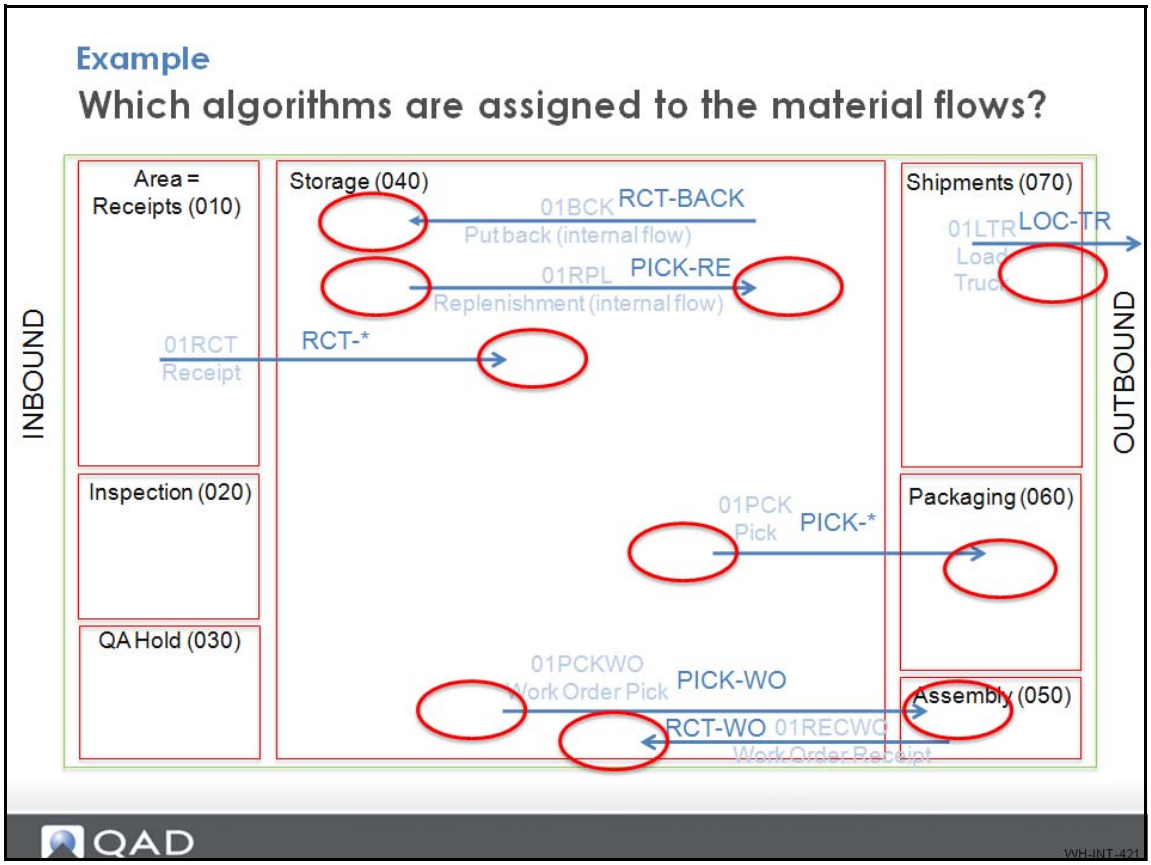
Did You Know

Similar to Internal Routing Assignment, algorithms can also be assigned to a transaction type or combinations of sites, warehouses, items, suppliers, or customers to provide even more flexibility.

Sequence in Algorithm Assignment Maintenance is different than sequence in Internal Routing Maintenance. Before, sequence was used as a start and stop control; meaning the system started with the first sequence and *always* completed the next sequence. Here, the sequence is cascading; meaning if the task can be completed using the first rule, the system stops. If not, it moves to the next rule (sequence).

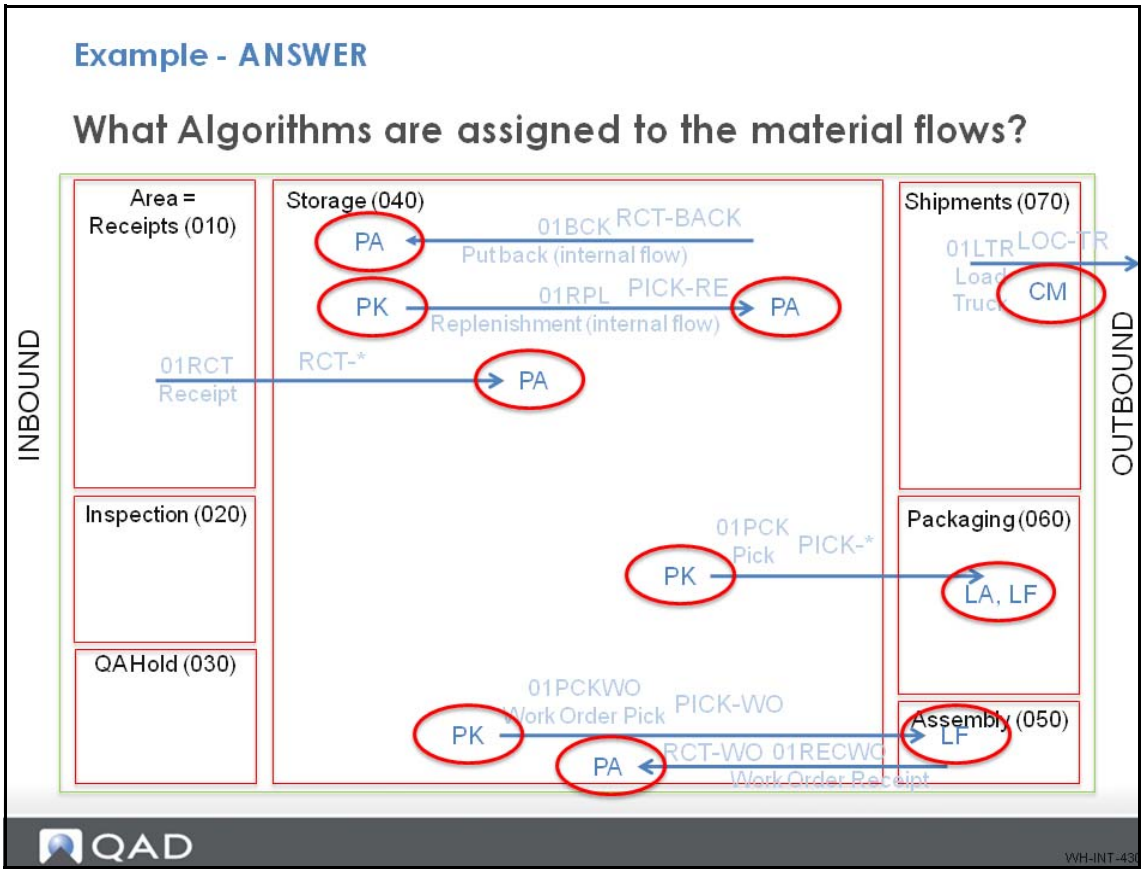
There are four frames and 10 fields in Algorithm Assignment Maintenance used for configuration.

Example - Which Algorithms are Assigned to Material Flows



In the graphic above, use Algorithm Assignment Maintenance to determine which algorithms are assigned to the material flows in QMI.

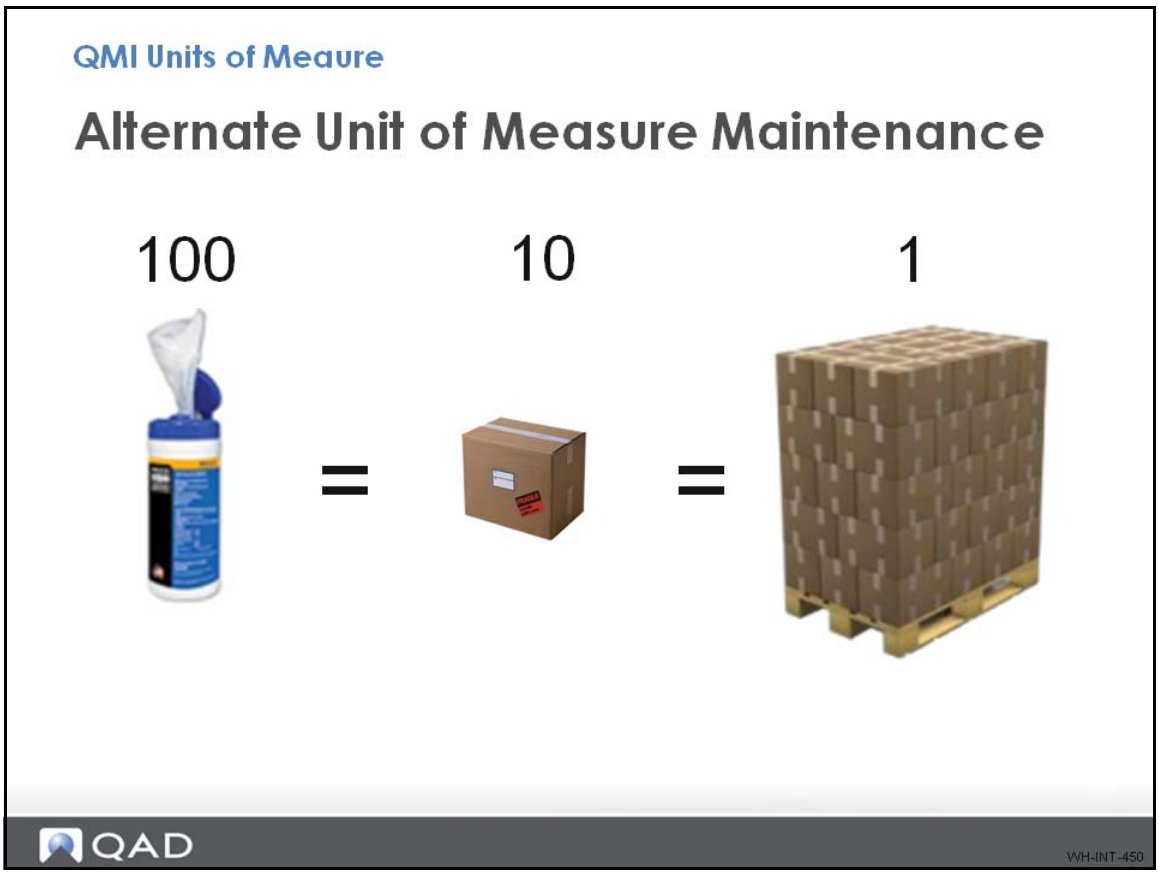
Example - Answer - Algorithms Assigned to Material Flows



The algorithms are circled in red in the graphic above.

In QMI, when product is moved into the storage area using a RCT-* transaction, the product is stored using (PA) put-away rules.

QMI Units of Measure

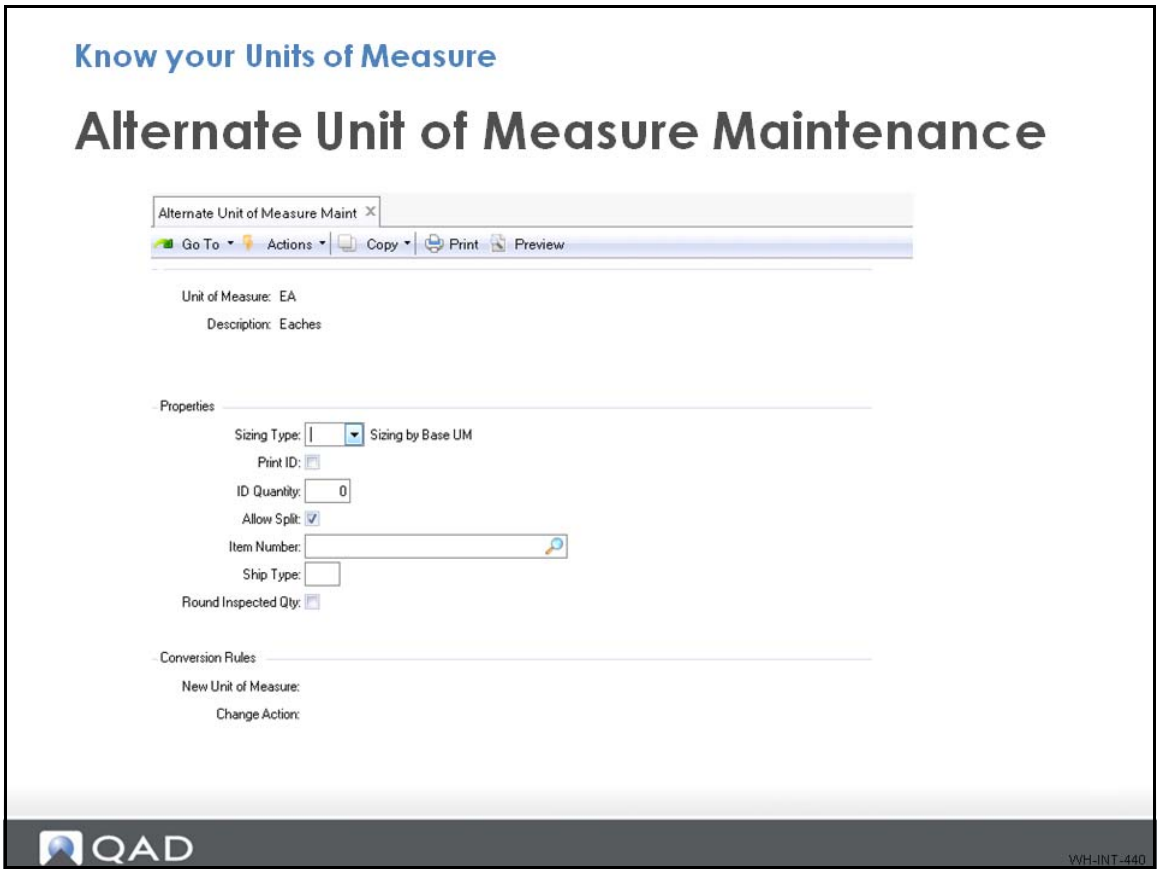


Did You Know

Use Alternate Unit of Measure to establish conversion factors for item measurement. This can be done at the item or item family group level.

For example, you can define how many EA fit into a box, how many boxes fit into a pallet.

Know Your Units of Measure

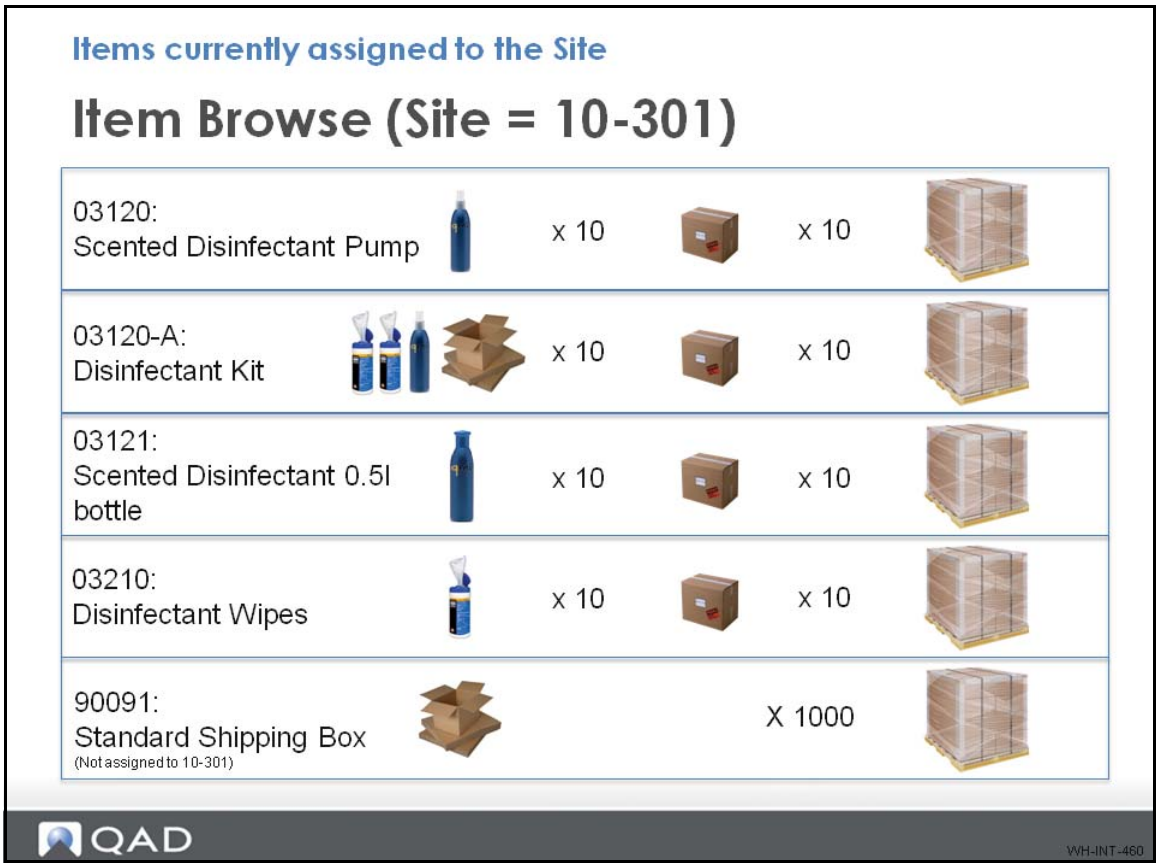


Did You Know

QAD Warehousing allows companies to store palletized and non-palletized product together through the use of Alternate Units of Measure Maintenance.

There are five frames and 11 fields in Alternate Unit of Measure Maintenance used for configuration.

Items Currently Assigned to a Site

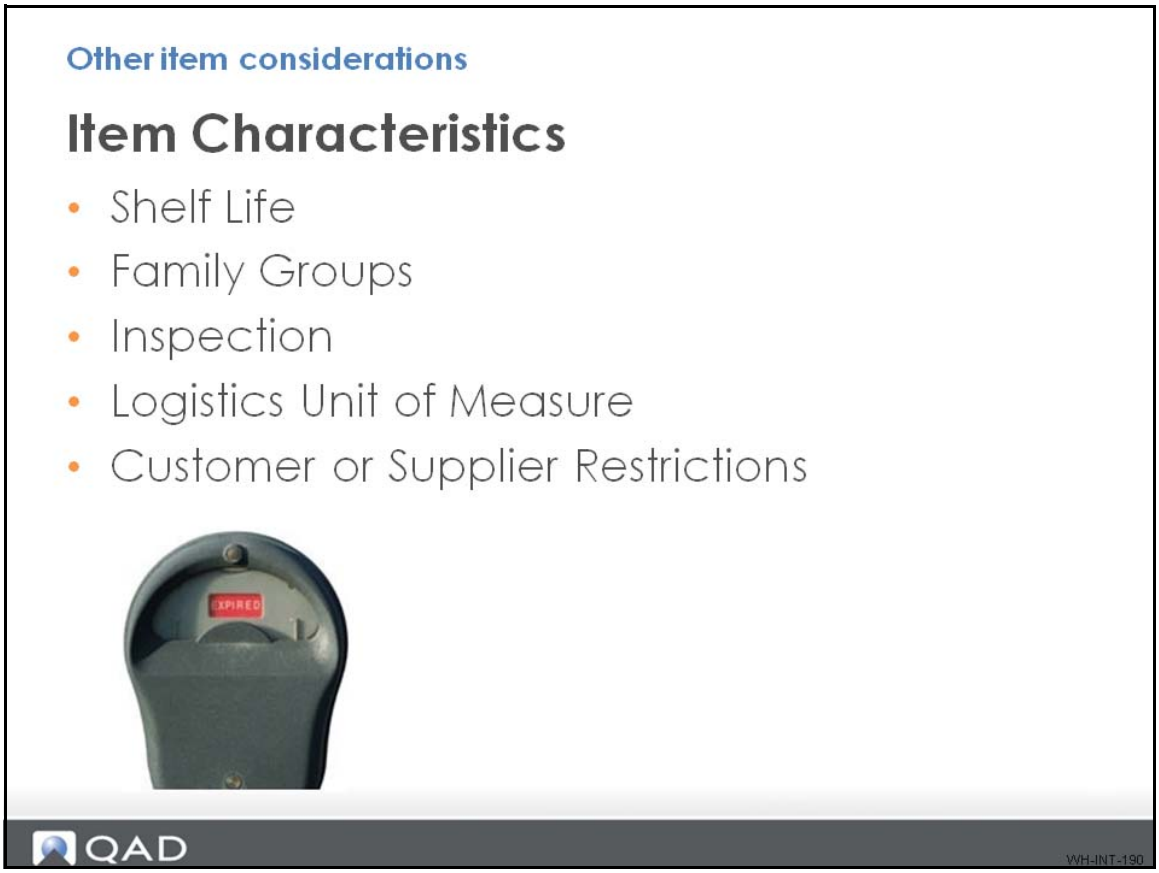


Use Item Browse to determine which items are assigned to a site.

Item Browse Uses the same item master as QAD core.

There is a more detailed review of item setup in the Receiving training session.

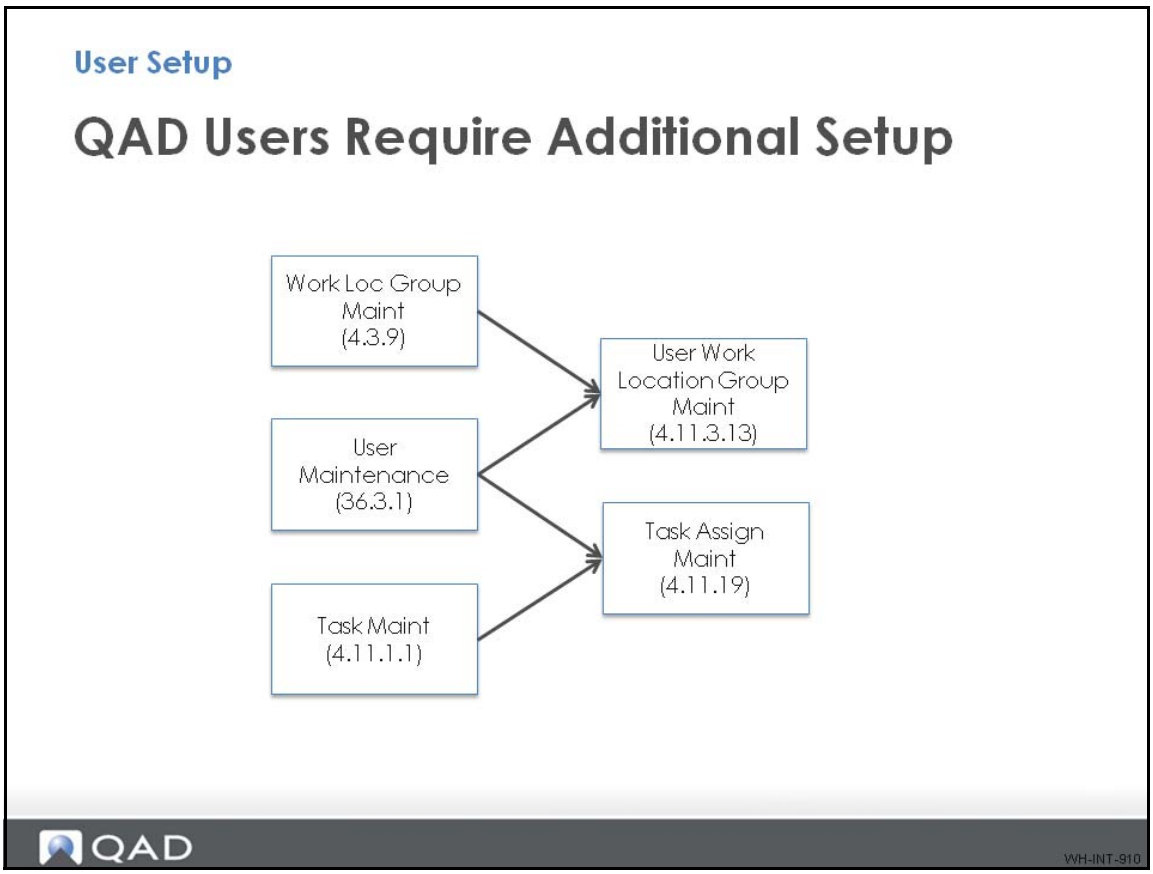
Other Item Characteristics



Did You Know

You can pick by expiry date and mix expiry dates during storage within a specific number of days.

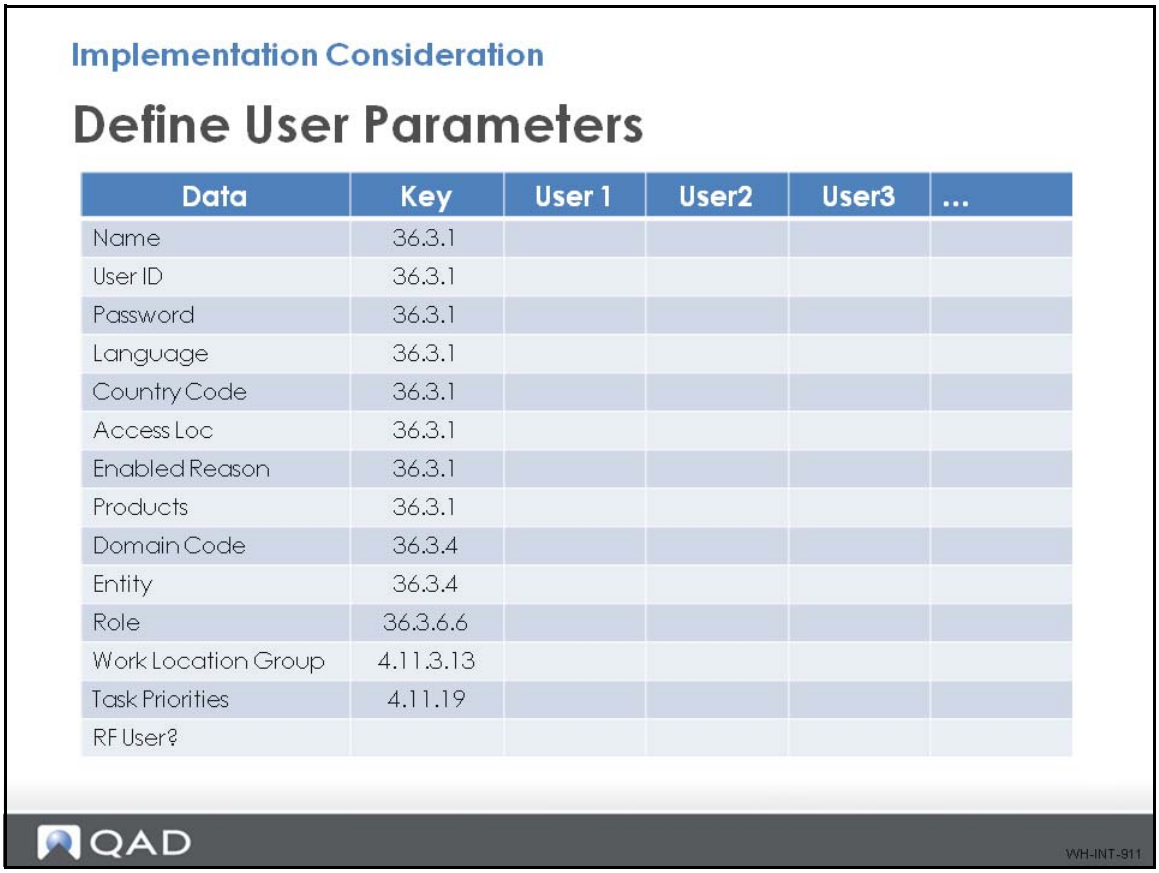
User Setup



The programs listed in the graphic above show you the steps you need to take to set up users.

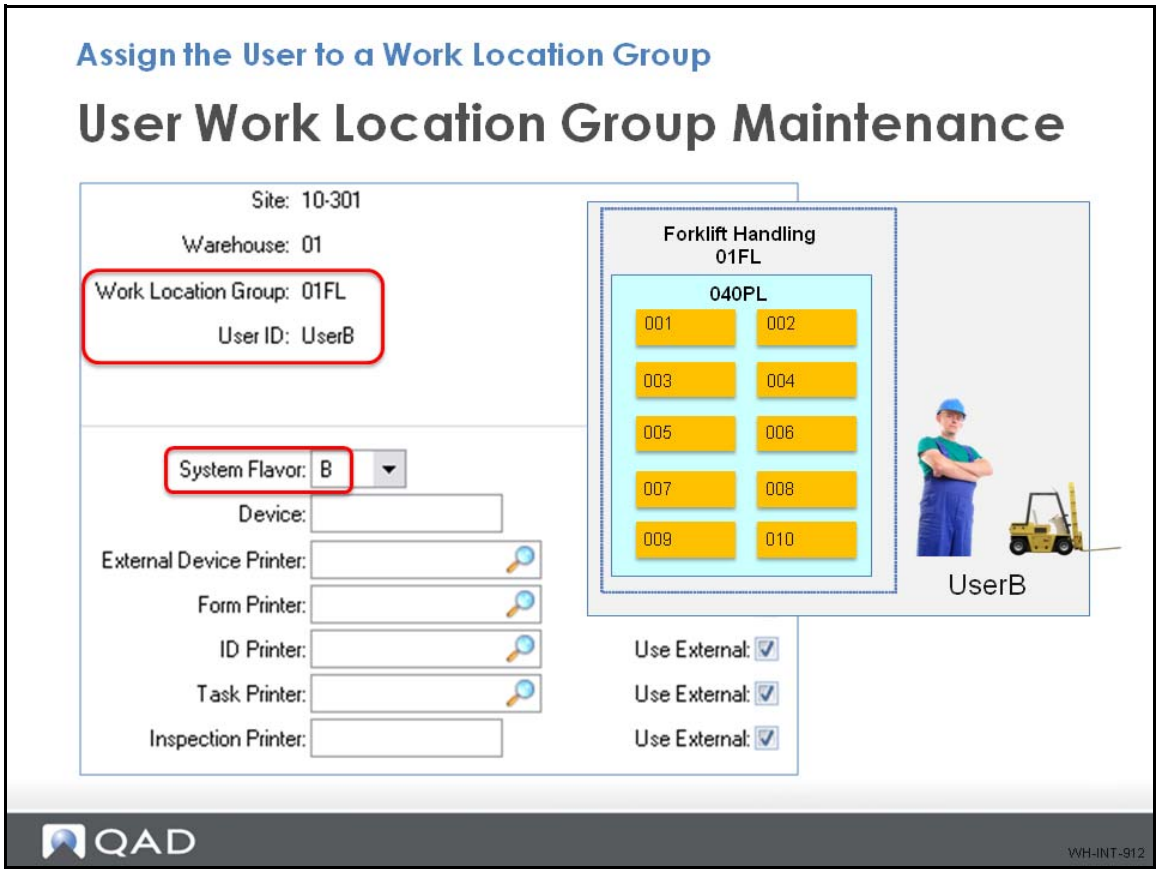
Setting up users in the warehouse requires user to first be set up in QAD core.

Implementation Consideration - Define User Parameters



The graphic above shows you the data you need to set up and the program menu number for the program that you use to set up the data.

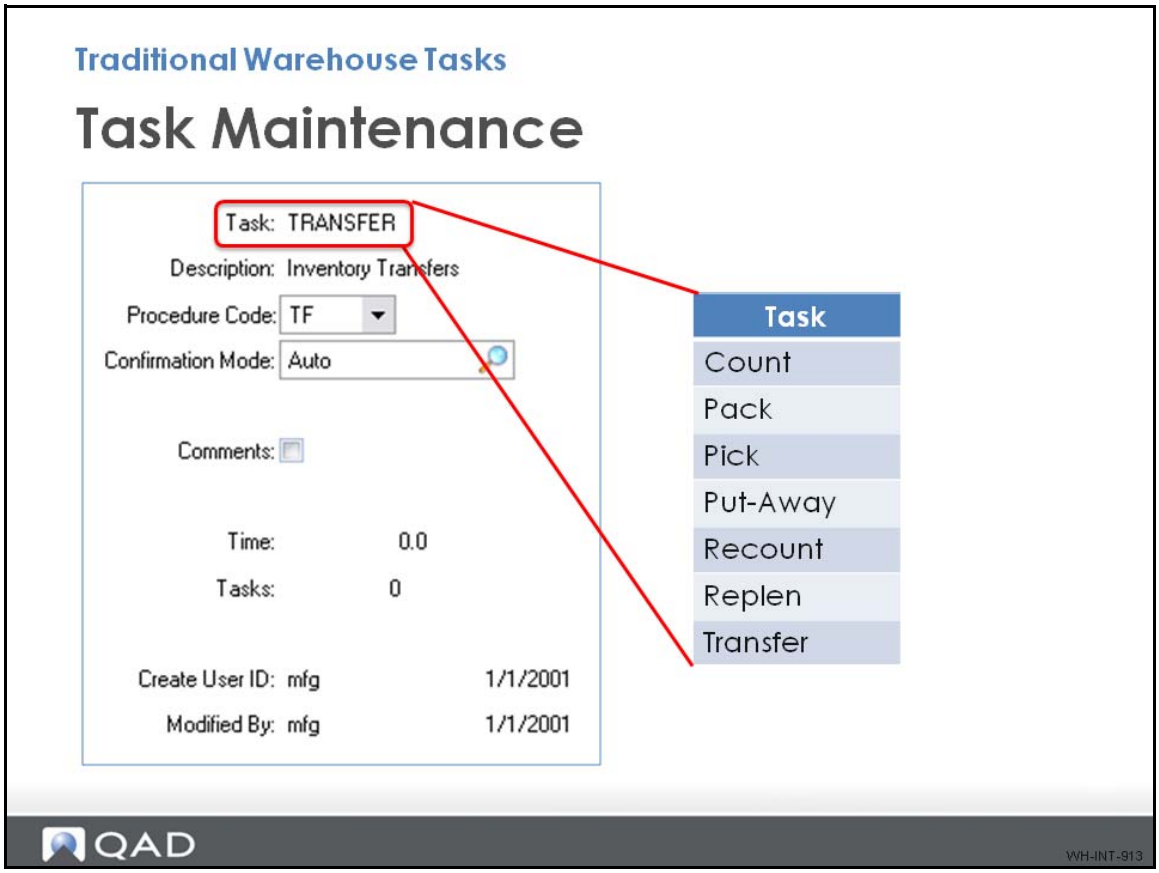
Assign the user to a Work Location Group



User Work Location Group Maintenance to assign users to a WLG.

There are two frames and 15 fields in User Work Location Group Maintenance used for configuration.

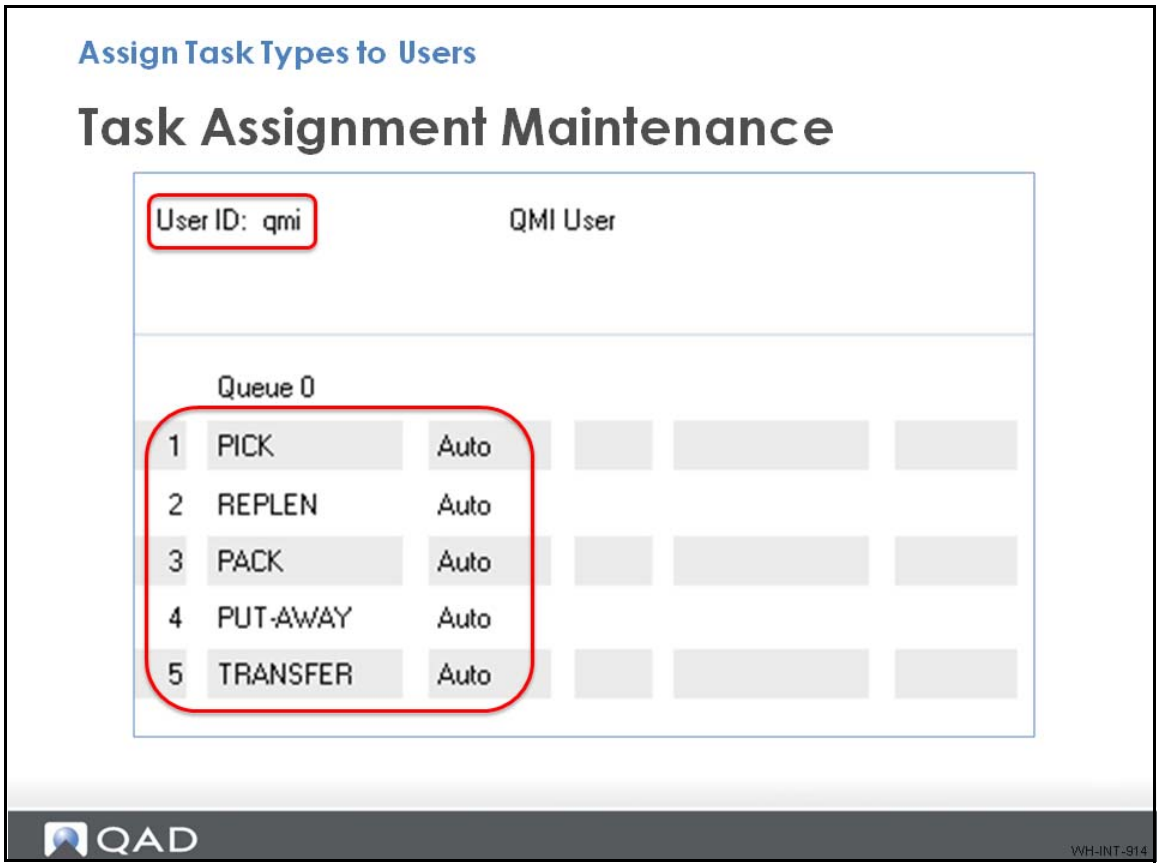
Traditional Warehouse Tasks



Use Task Maintenance to set up traditional warehouse tasks for staff. The blue box depicts typical tasks.

There are three frames and five fields in Task Maintenance used for configuration.

Assign Tasks to Users

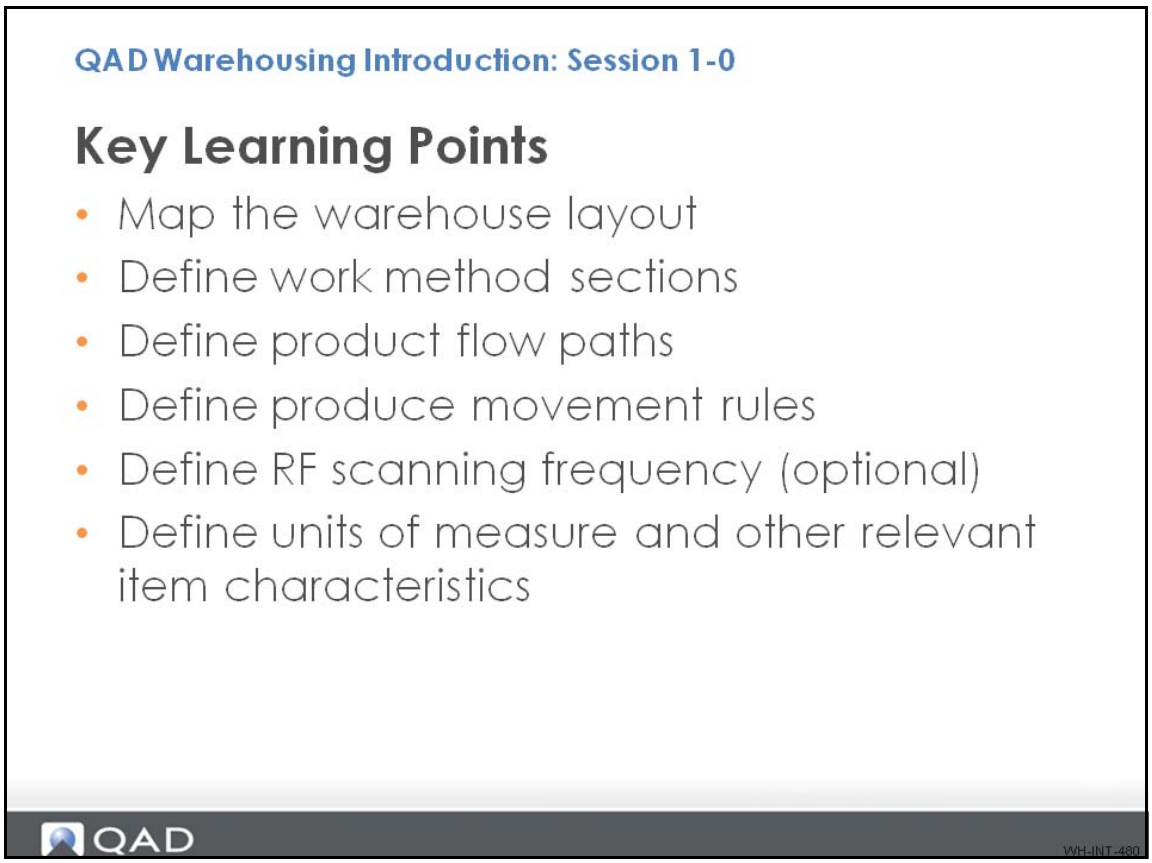


Did You Know

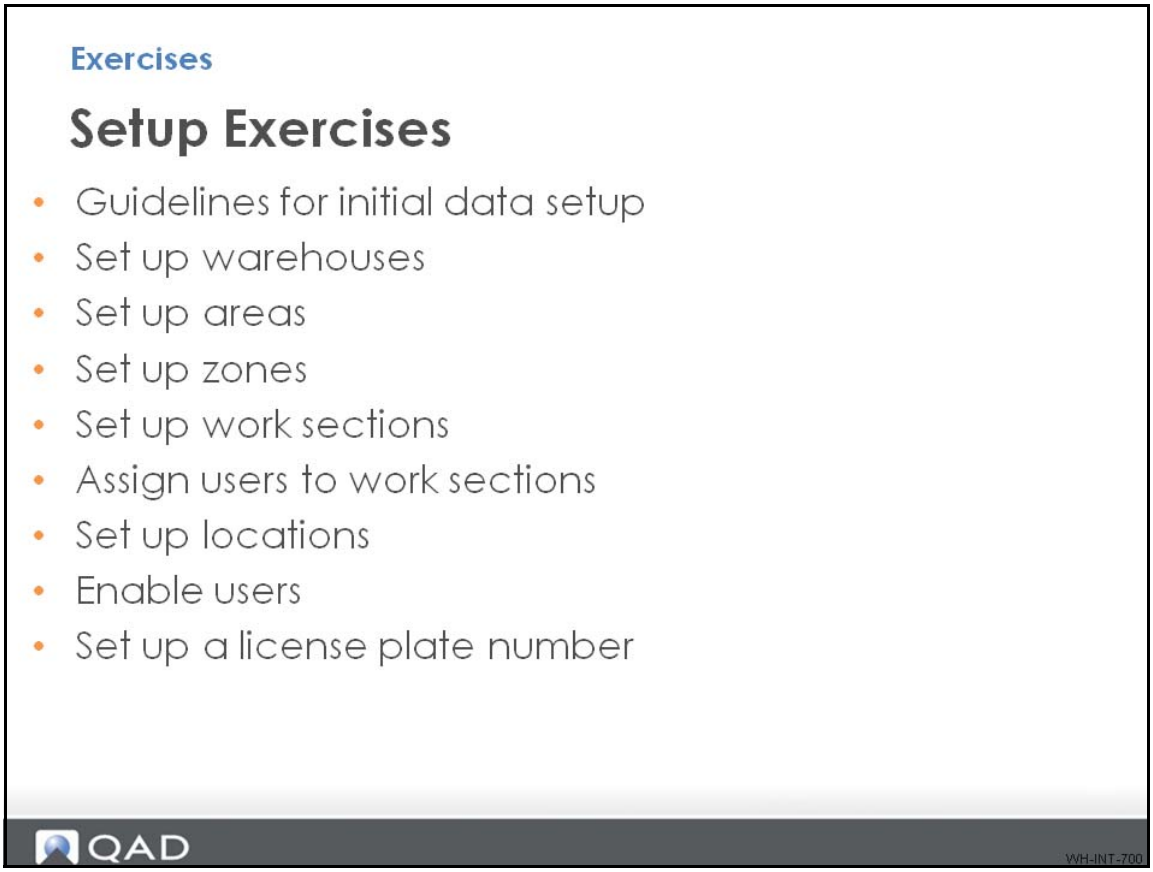
Task priority queues can be setup to help ensure important tasks are completed first.

There are five frames and 6 fields in Task Assignment Maintenance used for configuration.

QAD Warehousing - Key Learning Points



Exercises



The following topics contain warehousing setup exercises, based on information presented in this Introduction section.

You set up a second warehouse for the existing QMI site 10-301. In the end,the site has two warehouses: Warehouse 01, already setup in the demo/test environment and the warehouse you are setting up. For learning purposes, your new warehouse closely reflects existing warehouse 01. This lets you check your configuration against the existing setup. Depending on the exercise, you may be able to reuse existing data, or you may be required to create completely new information.

In some instances, space is provided in tables for you to enter the data you entered in QAD Warehousing programs; in other instances, the values you need to enter in fields are presented within the tables.

Finally, for some exercises, answers are provided.

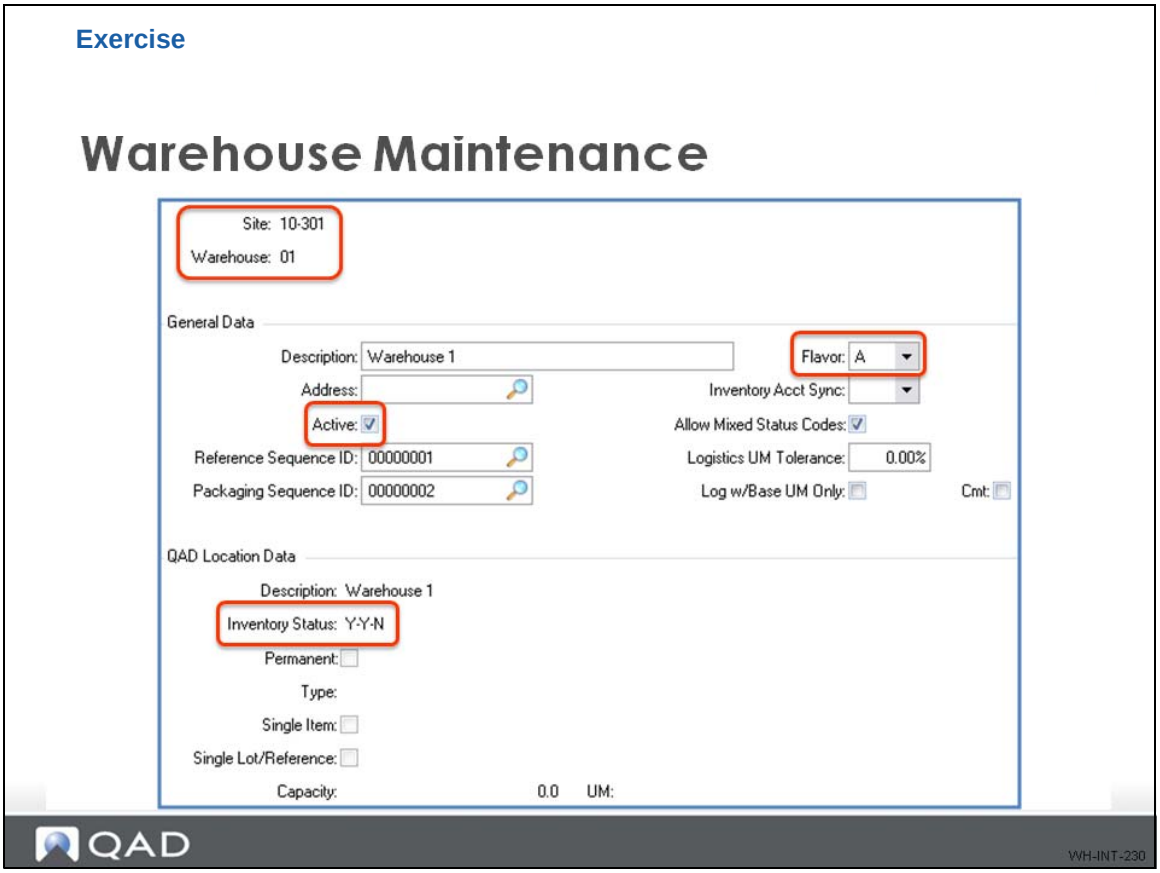
Guidelines for Initial Data Setup

The following topics provide information regarding the nature of your warehouse, items, pallets, processes, and so on. Use the information to help you set up data for the exercises throughout this training guide.

- The customer is QMI. They provide medical supplies and disinfectants to hospitals, businesses and consumers through retailers.
- Items are in various sizes but most fit 10 each per box, 10 boxes per pallet. All pallets are one standard size.
- Lot tracking or serial numbers are not used in the warehouse and there is not special storage or handling characteristics for any item.
- For items:
  - All items can be picked in each or pallet quantities.
  - Most items are picked in eaches with FIFO movement preferred.
  - Item mixing is not allowed in storage.
  - There is no inbound or outbound item inspection requirement.
- There are three areas in the warehouse. One each for receiving, storage and shipping.
- Pallet storage locations can hold four pallets. Each locations hold 100 eaches.
- Operators cover two work sections, Fork Lift and Pick Cart.
  - Fork Lift processing is used to move loads:
    - From receiving into storage
    - From reserve storage to forward pick
    - In shipping
  - Pick Cart processing is used for each picks
  - All operators can perform cycle counts

The exercises do not populate or discuss all configurable fields. Only the required fields or fields relevant to the exercise are used.

Exercise - Set Up Warehouses



Warehouse Maintenance controls many warehouse parameters and provides configuration defaults for many subsequent screens.

Use the following to help set up the warehouse:

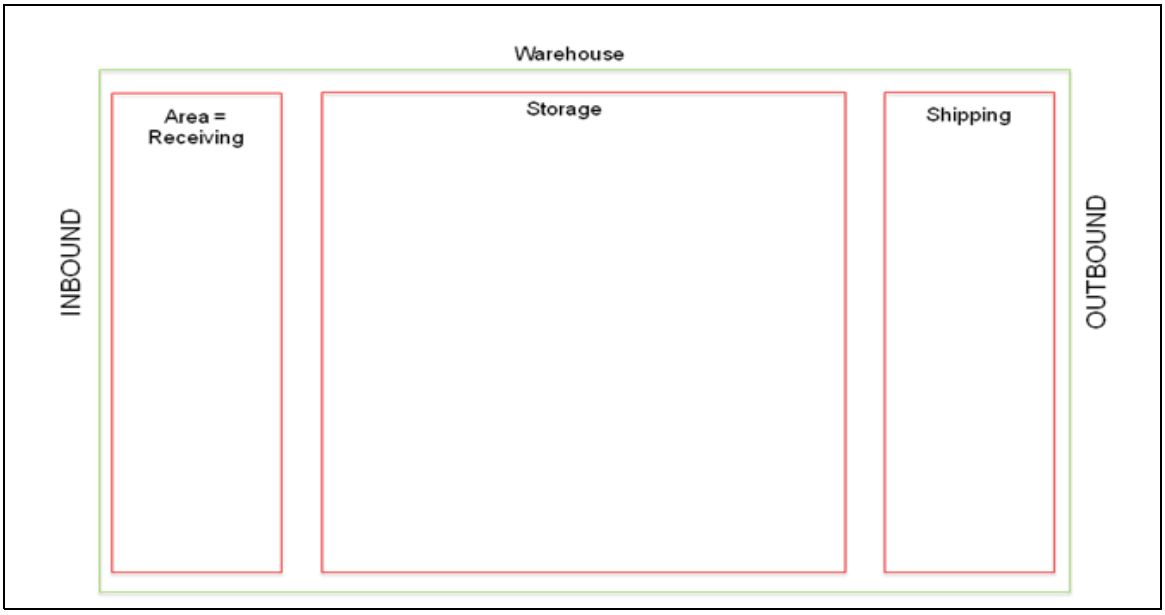
1 Ensure QAD Warehousing is active using Warehouse Management Control.

2 In Warehouse Maintenance, define Warehouse parameters, then note the parameters you enter here:

Field	Data to Enter
Site	10-301
Warehouse	
Description (optional)	
Reference Sequence ID	00000001
Packaging Sequence ID	00000002
Start Picking Level	10
End Picking Level	20

Note The End Picking Level is different from Warehouse 01. In the new warehouse, there are only two picking zones versus the three in Warehouse 01.

Exercise - Set Up Areas



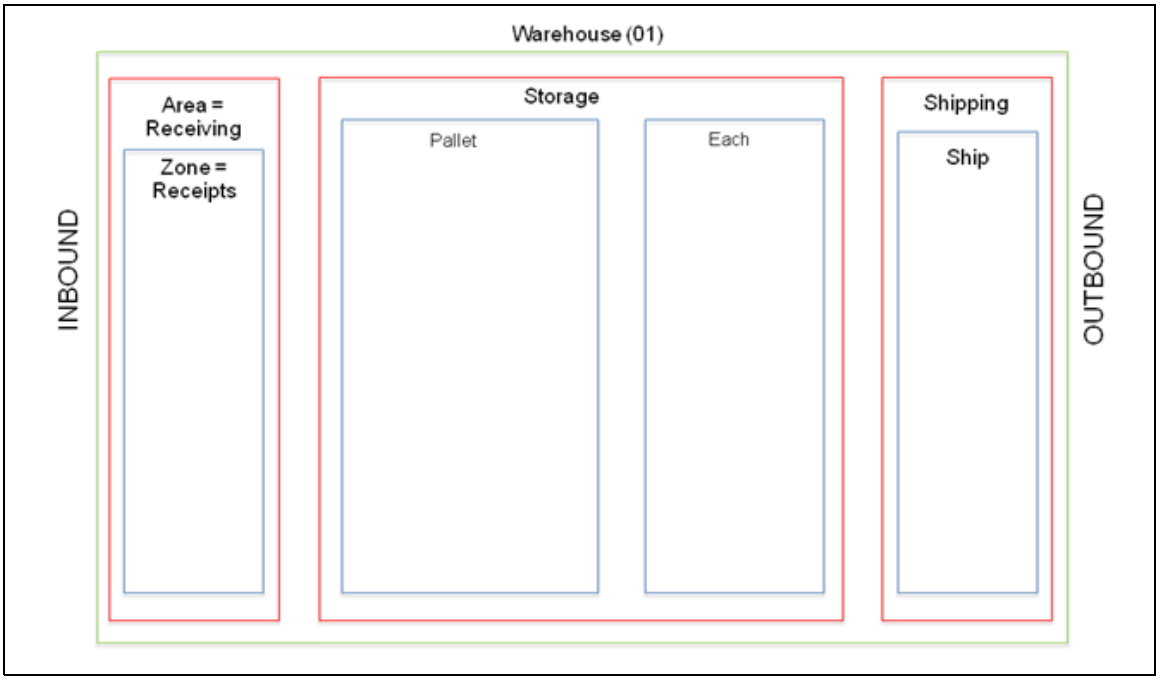
There is no inspection requirement. All product flows in through a general receiving area and is put away to storage. Product is picked from storage locations and moved to shipping for shipment prep and load consolidation.

Use the following to help set up areas:

1 In Internal Routing Group Maintenance, use the following matrix to help you set up data:

Site	Warehouse	SLG	Description	Functional
10-301			Receiving	Y
10-301			Storage	N
10-301			Shipping	Y

Exercise - Set Up Zones



Zones require more detailed configuration. Specific Zone configurations are discussed in more detail in later sessions.

Use the following to help set up zones within the warehouse:

1 Use Storage Location Group Maintenance to set up zones.

2 Set up zone parameters as follows, noting data you supply here:

Substep	Site	Warehouse	SLG	Description (optional)	IRG
a	10-301			Receiving	
b	10-301			Pallet Storage	
c	10-301			Each Storage	
d	10-301			Shipping	

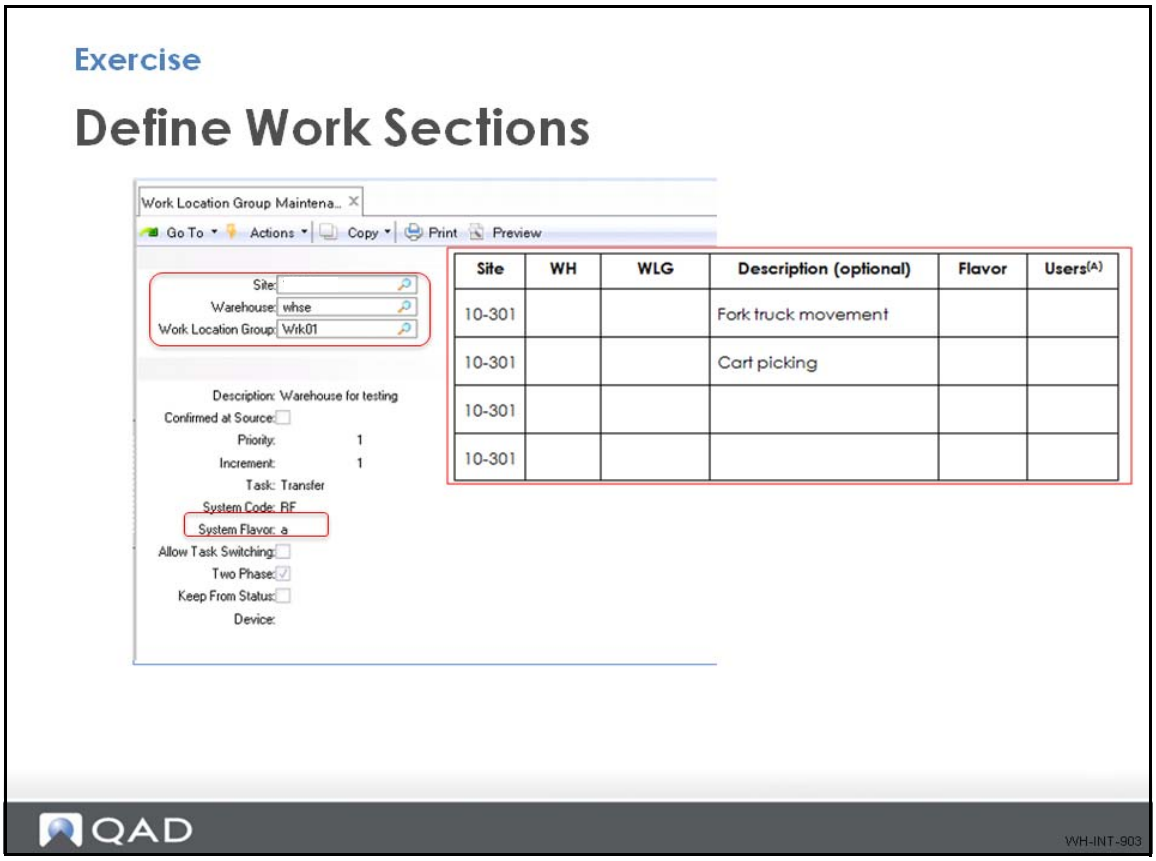
3 Continue on, adding data to more Storage Location Group Maintenance fields for the data you set up in step 2.

Substep	Receipts	I Returns	0 Returns	Exclude from Picking (A)	Picking Level	Picking Multiple UM (B)	UM(B)	Acquisition UM
a	Y	Y	Y	Y	--	--	--	--
b	Y	Y	Y	--	10	PL	PL	--
c	Y	Y	Y	--	20	--	--	EA
d	Y	Y	Y	Y	--	--	--	--

Note For the table above:

- (A) Zones in functional areas are excluded from picking.
- (B) Picking Multiple UM and UM should be blank in non-storage zones.
- Clicking Next on the last frame with a blank UM displays are error message. Click Back to save changes

Exercise - Define Work Sections



Operators work in two sections: pallet/load movements and each item picking. Use the following to help assign users to work location groups.

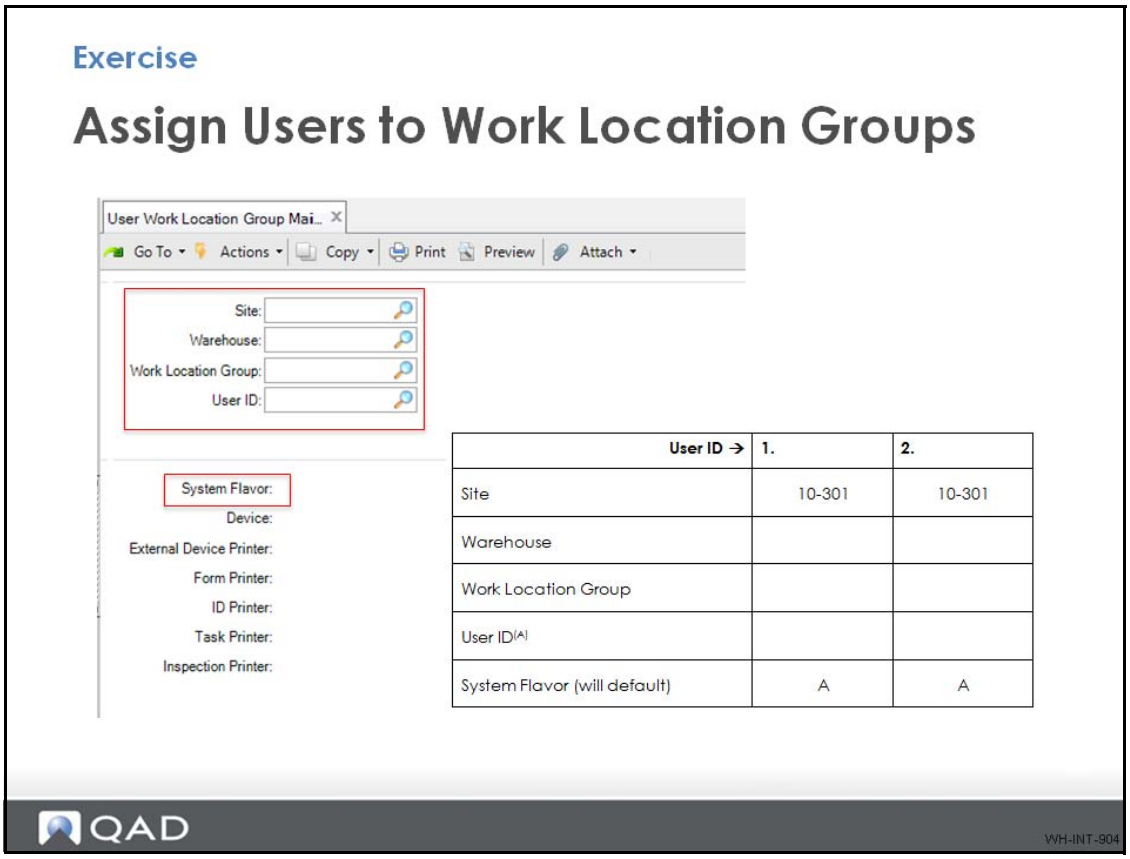
1 Use Work Location Group Maintenance to set work sections.

2 Set up parameters, then note the parameters you enter here:

Site	Warehouse	WLG	Description (Optional)	Flavor	Users (A)
10-301			Fork truck movement		
10-301			Cart picking		
10-301					
10-301					
10-301					

Note In the table above, (A) is a user field that is not on the maintenance screen but is presented here for reference to help set up the next exercise.

Exercise - Assign Users to Work Location Groups



Use the following to help assign users to work location groups.

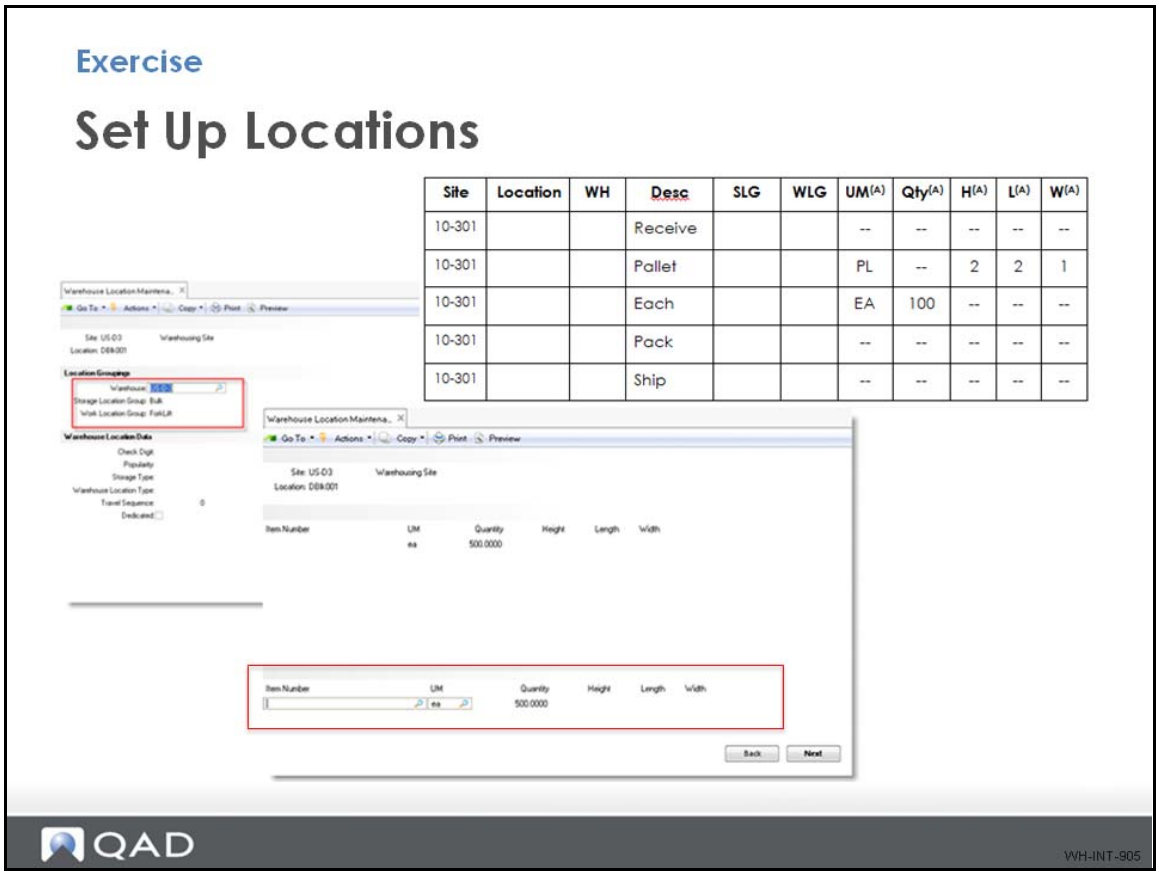
1 Use User Work Location Group Maintenance to assign users to WLGs.

2 Set up parameters, then note the parameters you enter here:

	User A	User B
Site	10-301	10-301
Warehouse		
WLG		
User ID (A)		
System Favor	A	A

Note (A) You must first set up the user at the site using User Maintenance.

Exercise - Set Up Locations



Use Warehouse Location Maintenance to set up locations for a warehouse.

Use the following to help set up locations.

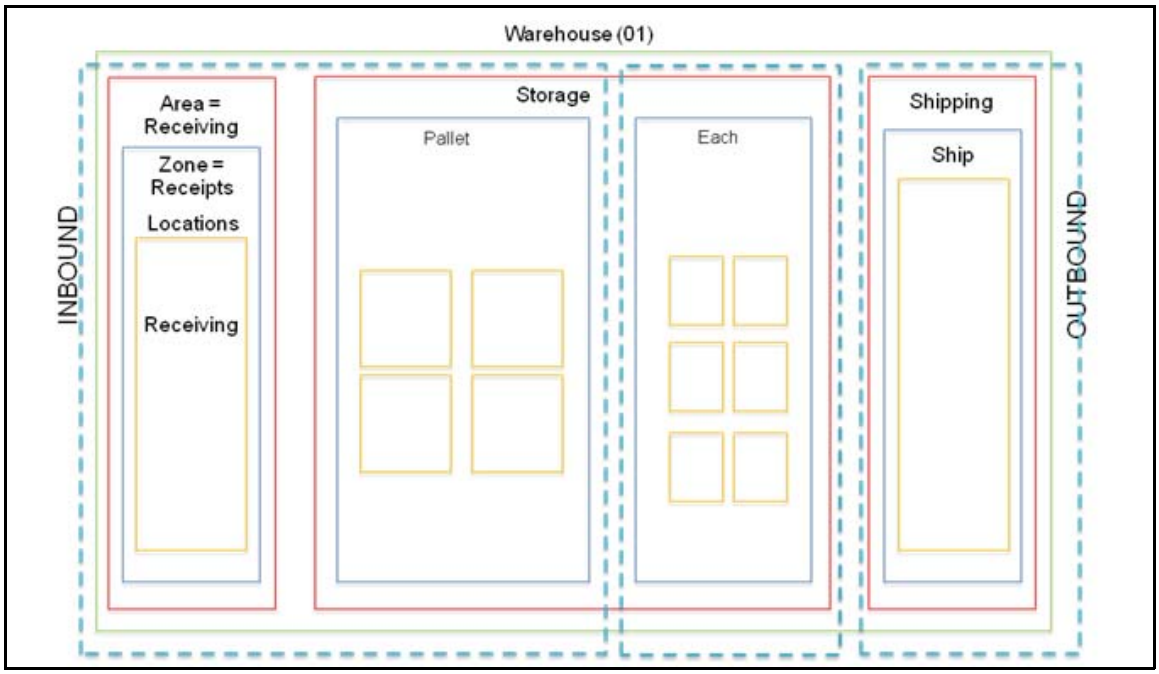
1 Use Warehouse Location Maintenance to set up locations.

2 Set up parameters, then note the parameters you enter here:

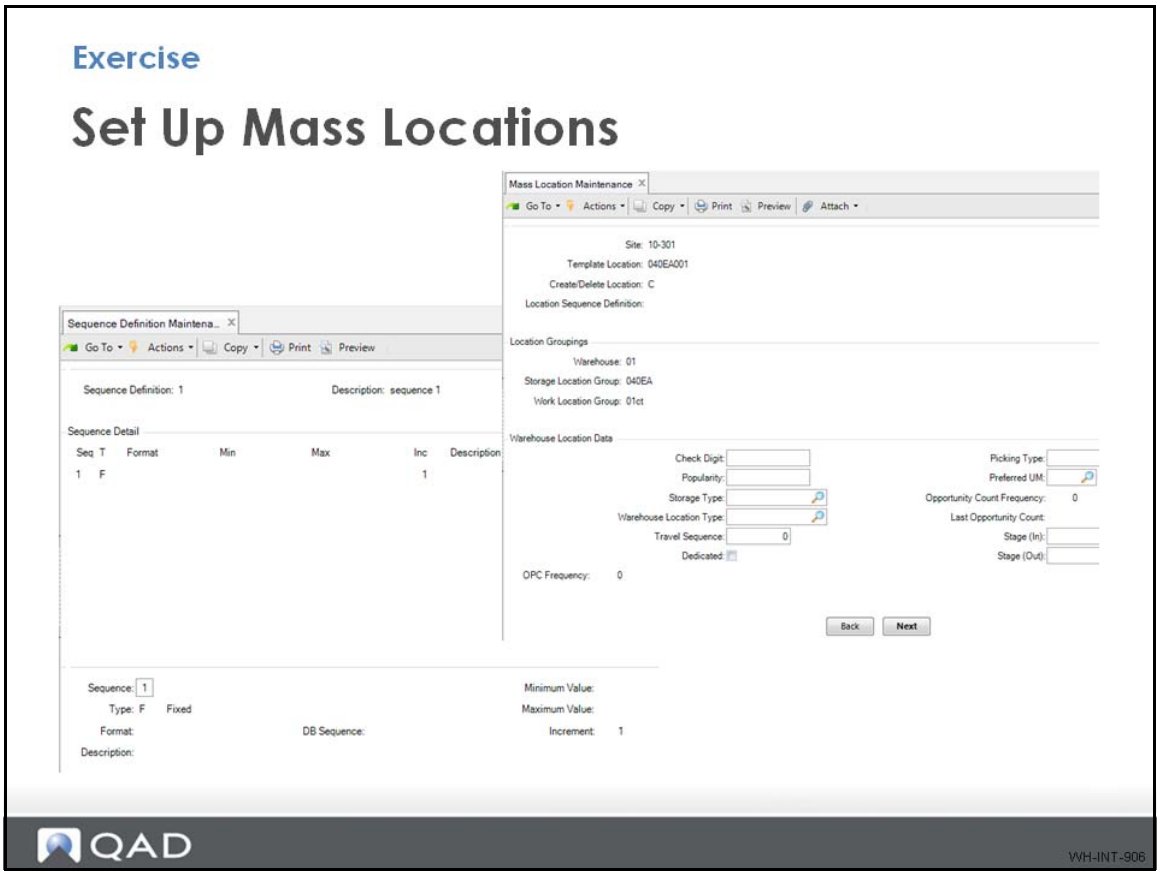
Site	Location	Description (optional)	SLG	WLG	UM (A)	Qty (A)	H (A)	L (A)	W (A)
10-301		Receive			--	--	--	--	--
10-301		Pallet			PL	--	2	2	1
10-301		Each			EA	100	--	--	--
10-301		Ship			--	--	--	--	--

Note (A) These fields are in the final frame in the program, as shown in the graphic above.

Fig. 1.1
Warehouse Locations Map



Exercise - Set Up Mass Locations



Setting up multiple locations can be a time consuming part of the warehousing implementation. To make the process easier, use Sequence Definition Maintenance and Mass Location Maintenance to setup the additional five locations in the pallet and each storage zones.

1 Make certain you have at least one location of the type you want to duplicate.

2 Use Sequence Definition Maintenance to create the location address format and numbering sequence. Use the following table to enter data:

Sequence	Type	Format	Min	Max
1	F	Format	--	--
2	I	999	1	4

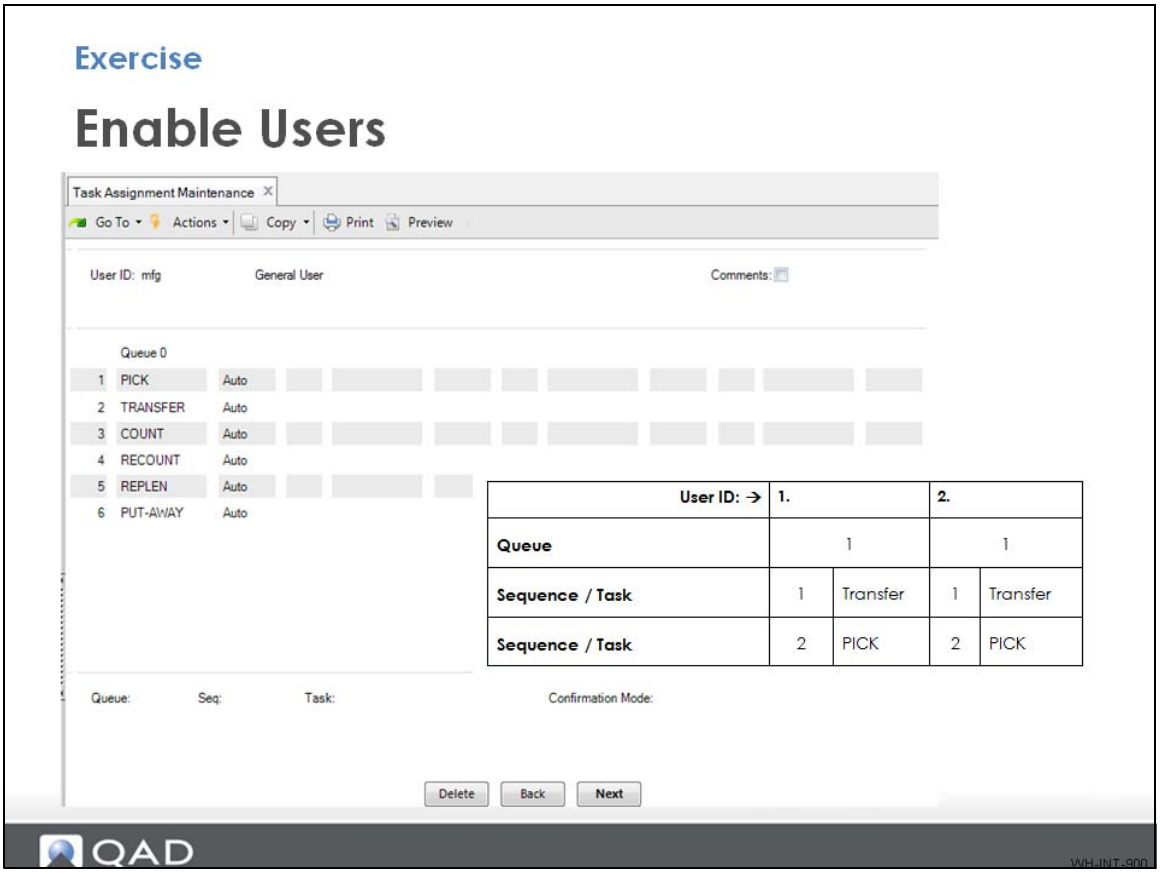
3 In Mass Location Maintenance:

- **a** Select a location template.
- **b** Select the recently created sequence definition.
- **c** Change the defaults at the location level or accept.
- **d** Ensure that C is selected to create locations.
- **e** Delete locations by selecting D. When deleting locations, you do not need a template location.

f Once all info is formatted click <back>. You must go through all frames before clicking back.

g Click OK.

Exercise - Enable Users



User ID: →	1.		2.	
Queue	1		1	
Sequence / Task	1	Transfer	1	Transfer
Sequence / Task	2	PICK	2	PICK

To ensure users receive RF tasks, they must first be enabled to perform the tasks. Use Task Assignment Maintenance to enable UserA and UserB to receive pick and transfer tasks.

Set the following fields

User ID	**User A**		**User B**	
Queue	1		1	
Sequence/Task	1	Transfer	1	Transfer
Sequence/Task	2	Pick	2	Pick

Note For the QMI warehouse example, the sequence order of Pick of Transfer is not relevant.

Exercise - Set Up a License Plate Number

Because all loads are tracked using a License Plate Number (LPN), you must set up the license plate number within QAD Warehousing.

Note Within QAD Warehousing, license plate numbers are called references.

Use the following information to help you setup a license plate number.

1 Setup/modify the LPN using Sequence Definition Maintenance.

Note You can reuse the existing sequence definitions.

2 Change the prefix to LPN.

Note The current LPN sequence definition has the prefix PL.

3 Set up or change the following in Sequence Definition Maintenance:

Field	Data to Enter
Sequence Definition	00000001
Description (optional)	Reference Generation Seq
Sequence	1
Format	LPN
Description	LPN prefix for loads

Questions

1. QAD Warehousing is a _____ management system that _____ processes in the warehouse on a real-time, ongoing basis.
2. Name the five space segregation in QAD Warehousing, in order of their hierarchy.
3. True or False. When setting up warehouse locations, QAD Warehousing uses a unique warehouse location maintenance program.
4. QAD Warehousing algorithms are best described as what?
5. True or False. You use Algorithm Assignment Maintenance to link a specified sequence of algorithms to a defined combination of transaction type, site or warehouse, item number, or customer/supplier address.
6. QAD Warehousing manages the movement of inventory within and between warehouses by defining pathways that move inventory from one part of the warehouse to another. These pathways are called what?

Answers

1 task, optimizes.

2 Site, warehouse, area, zone, location.

3 True. Use Warehouse Location Maintenance to set up locations for a warehouse.

4 Rules.

5 True.

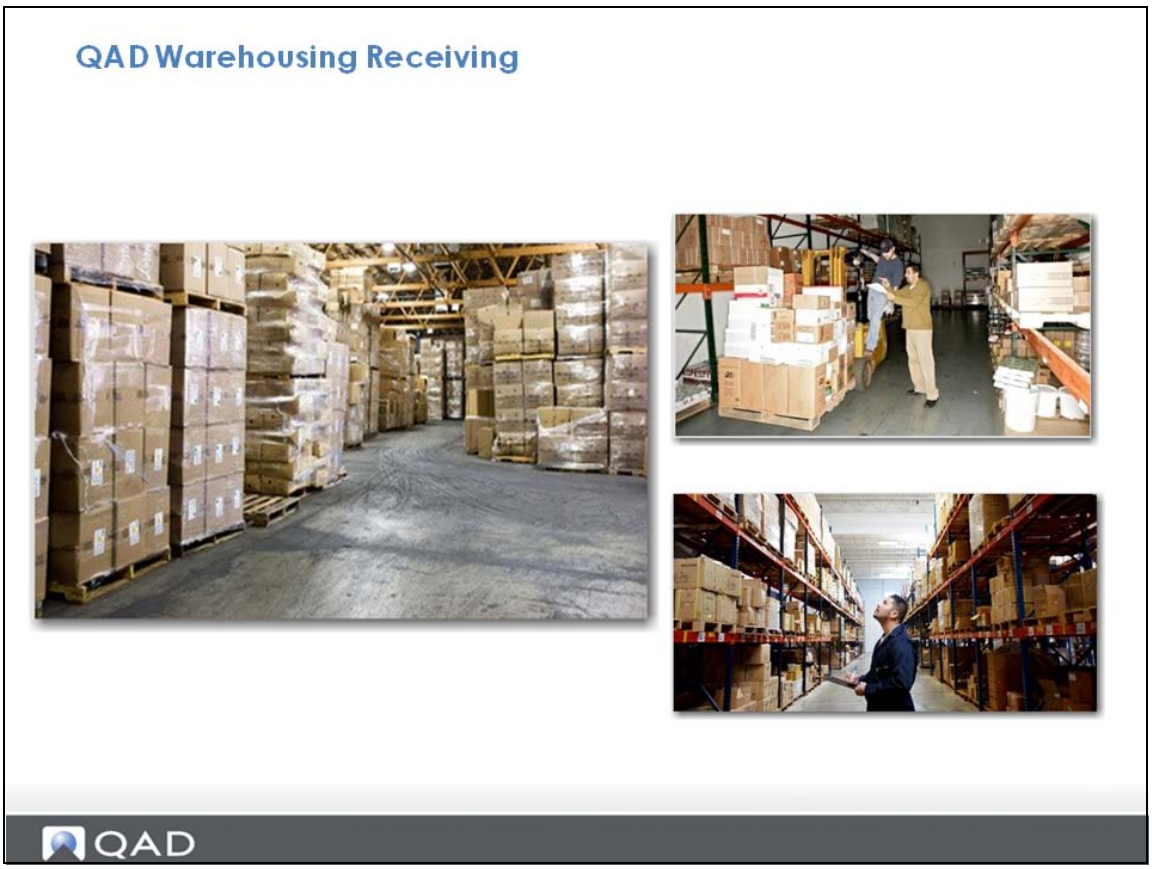
6 Internal routings

Notes

Chapter 2

Receiving

Overview



QAD Warehousing Receiving Objectives

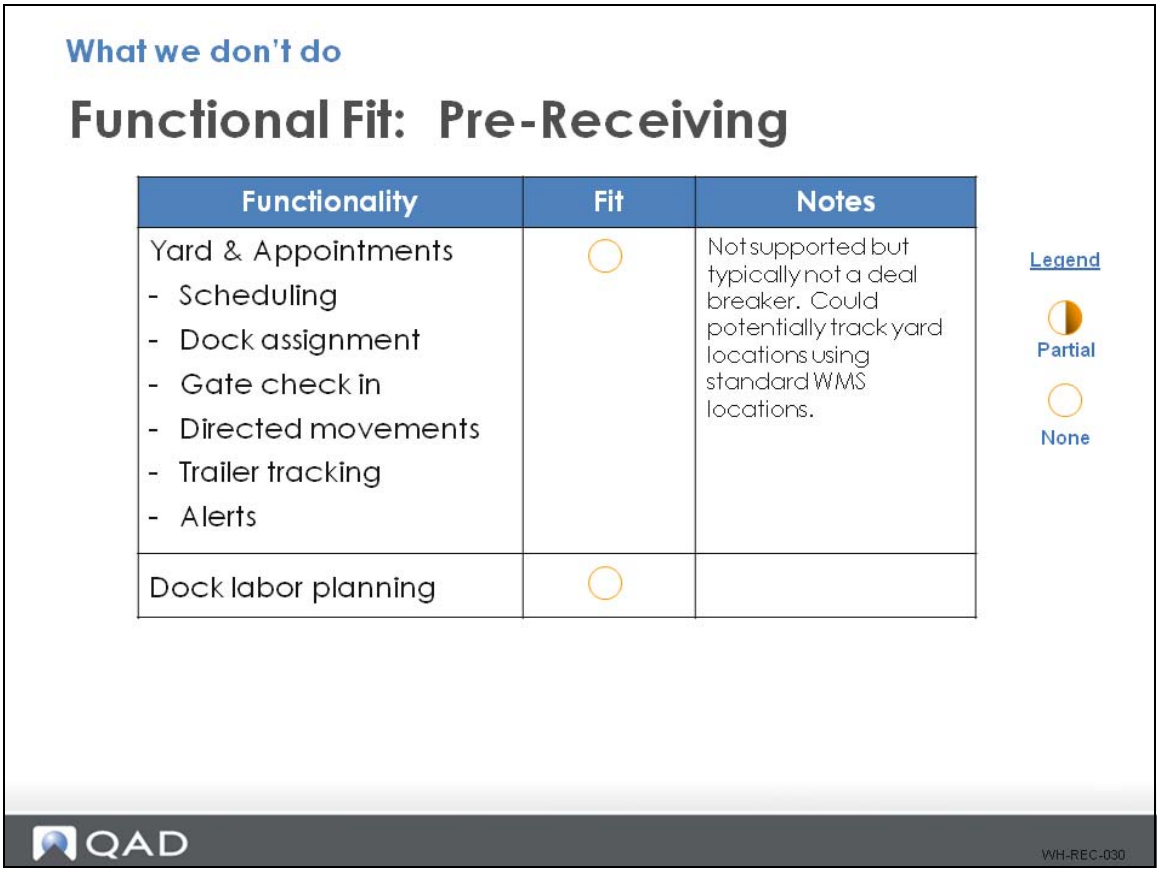
In this section, you learn receiving.

- Functional fit
- Concepts
- Receipt set up
- Receiving goods

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 areas, linking the areas with pathways, invoking algorithms, and creating and confirming tasks associated with the receipt.

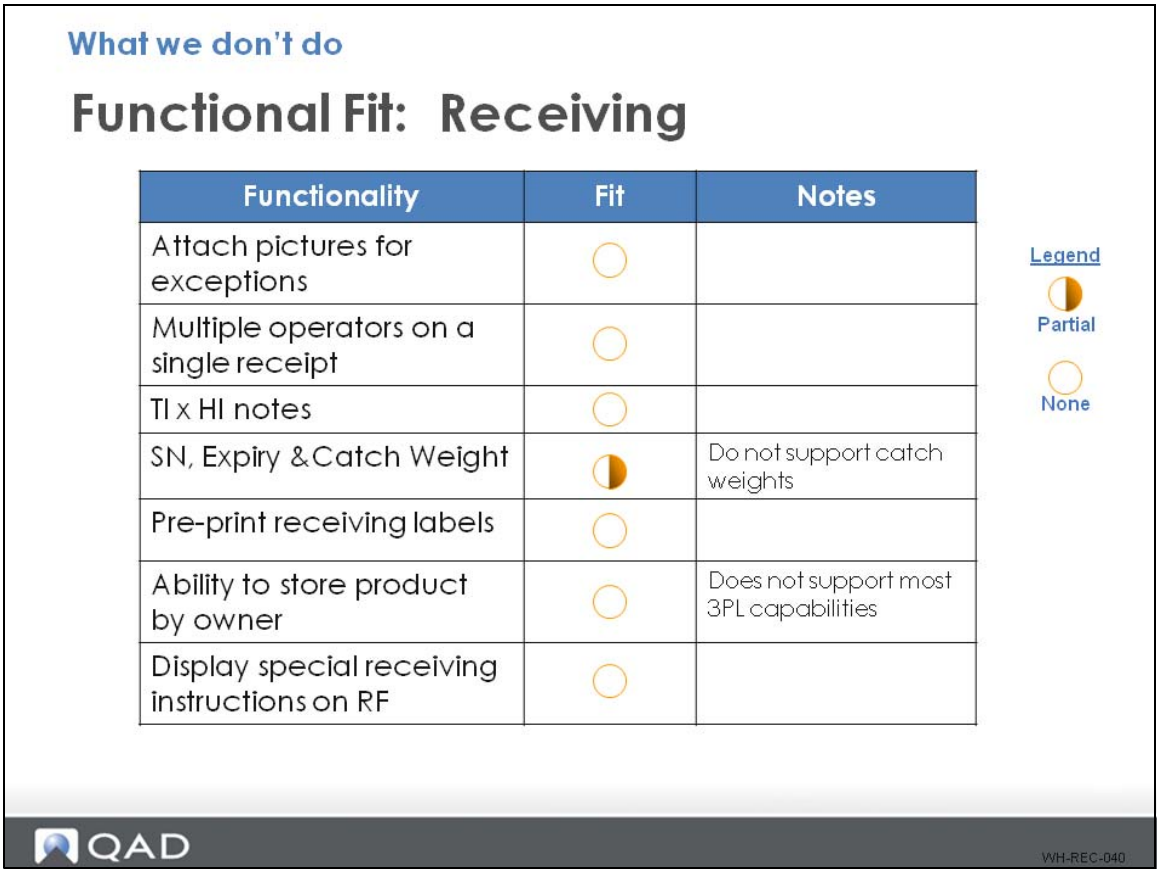
The receiving section of this training guide discusses item setup in more detail.

Functional Fit - What Warehousing Does Not Do



Pre-receiving activities are helpful for high volume operations and facilities with large yards. Most QAD customers do not fit this criteria; hence, you have not developed many pre-receiving features.

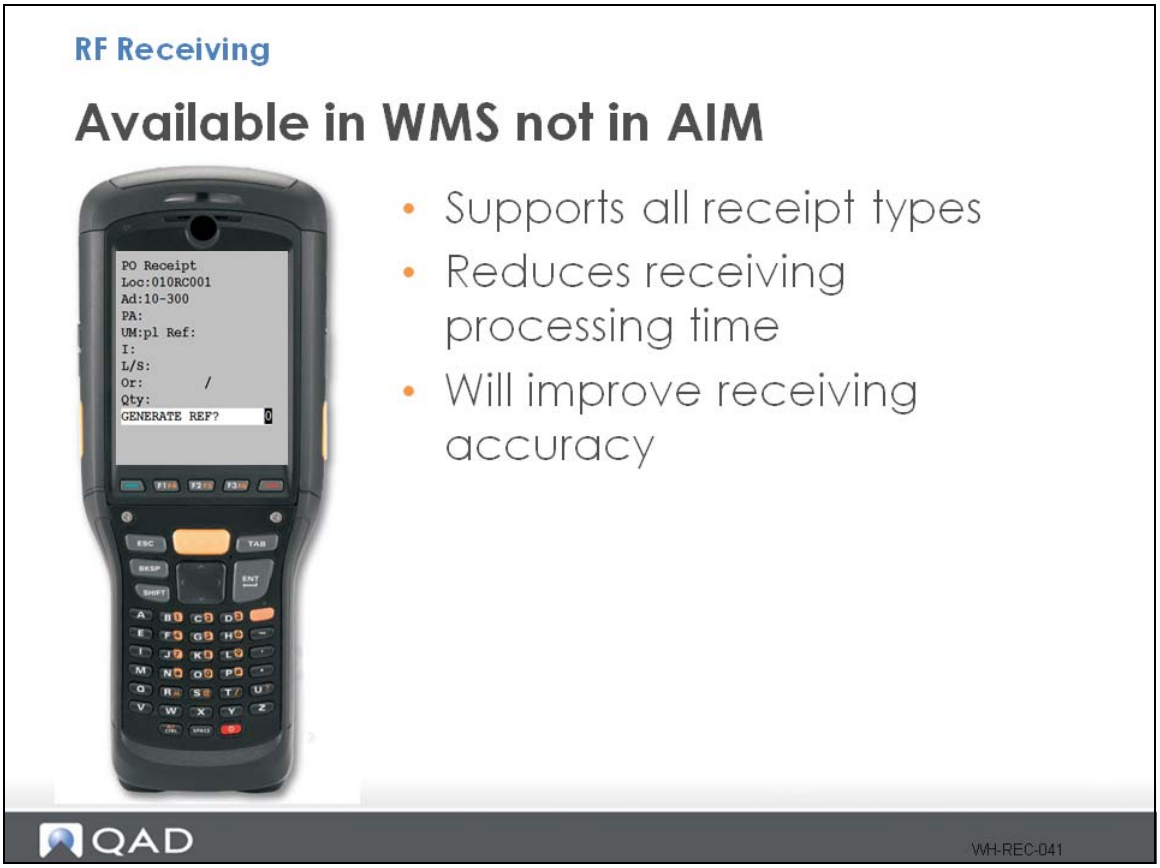
Functional Fit Continued



Some companies actually take photos of trailer and other pre-receipt holding areas to know the contents so that they know what is coming into the warehouse.

Some companies need to know pre-receiving quantities and contents to prepare and improve labor management during the receipt and processing of the goods.

Receipt Types

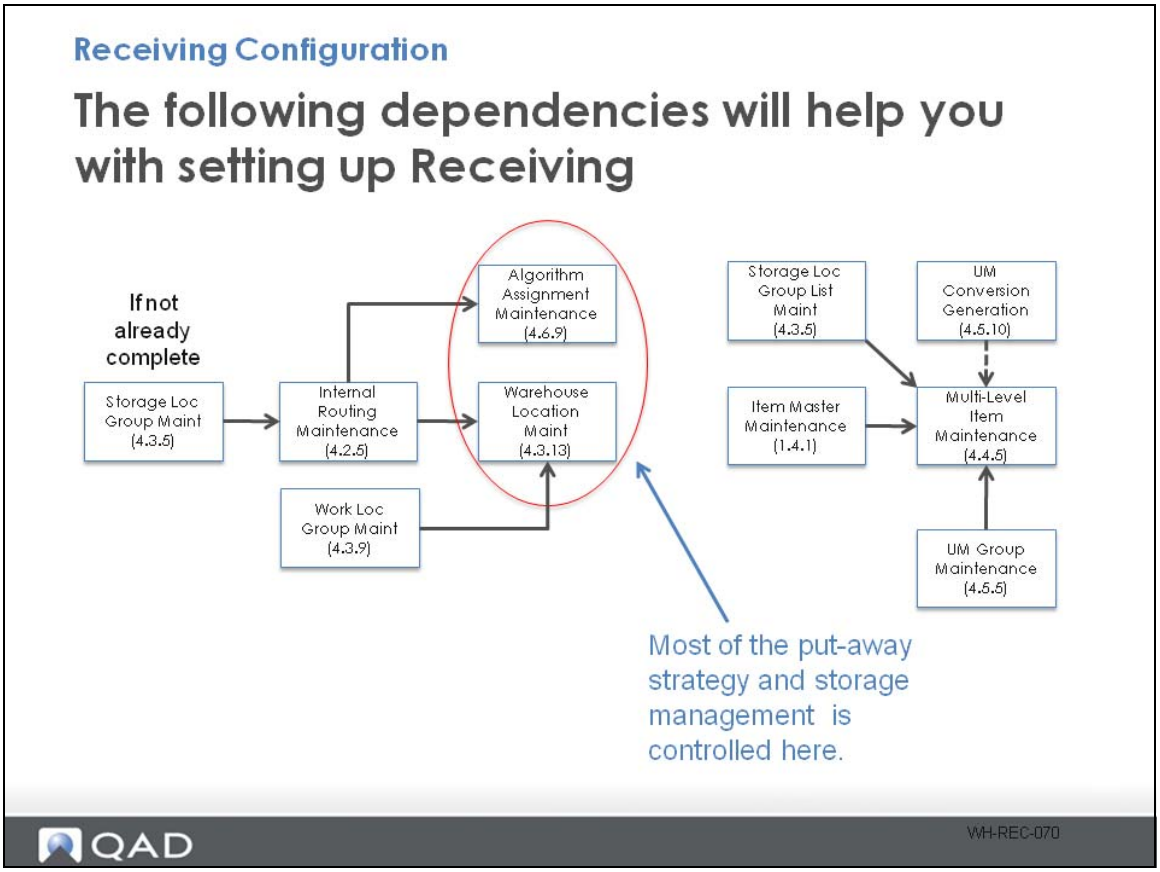


The RF device supports all receipt types, including:

- Distribution order receipts
- sales order returns
- PO receipts
- ASN receipts
- Unplanned receipts
- MO returns
- RMA receipts

These functions are available through QAD Warehousing Enterprise Edition (EE) RF software, though, and not through the Standard Edition QAD Warehousing versions, previously called Advanced Inventory Management (AIM).

Receiving Configuration - Dependencies to Help Set Up



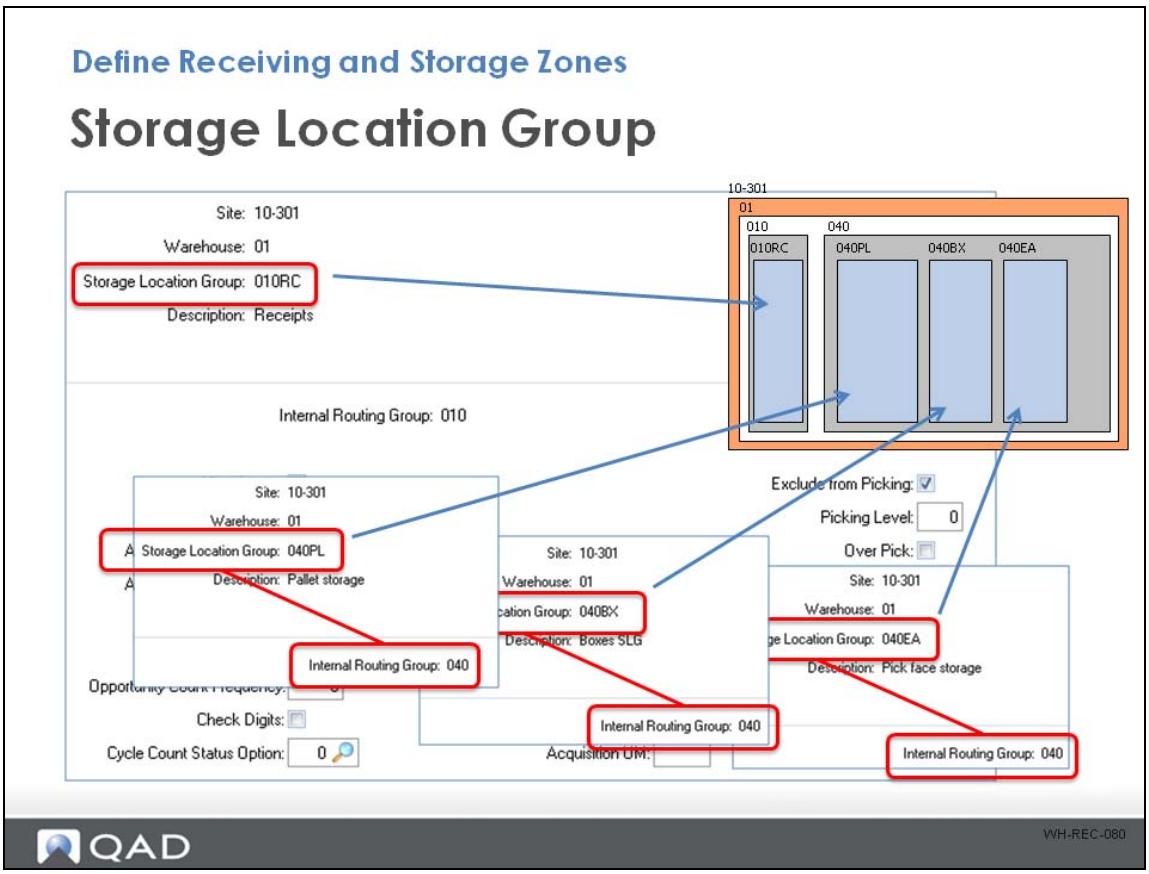
As depicted in the graphic, most of the put-away strategy and storage management is controlled by two maintenance programs:

- Algorithm Assignment Maintenance
- Warehouse Location Maintenance

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.
- Confirmations can be printed or sent to the RF.

Define Receiving and Storage Zones

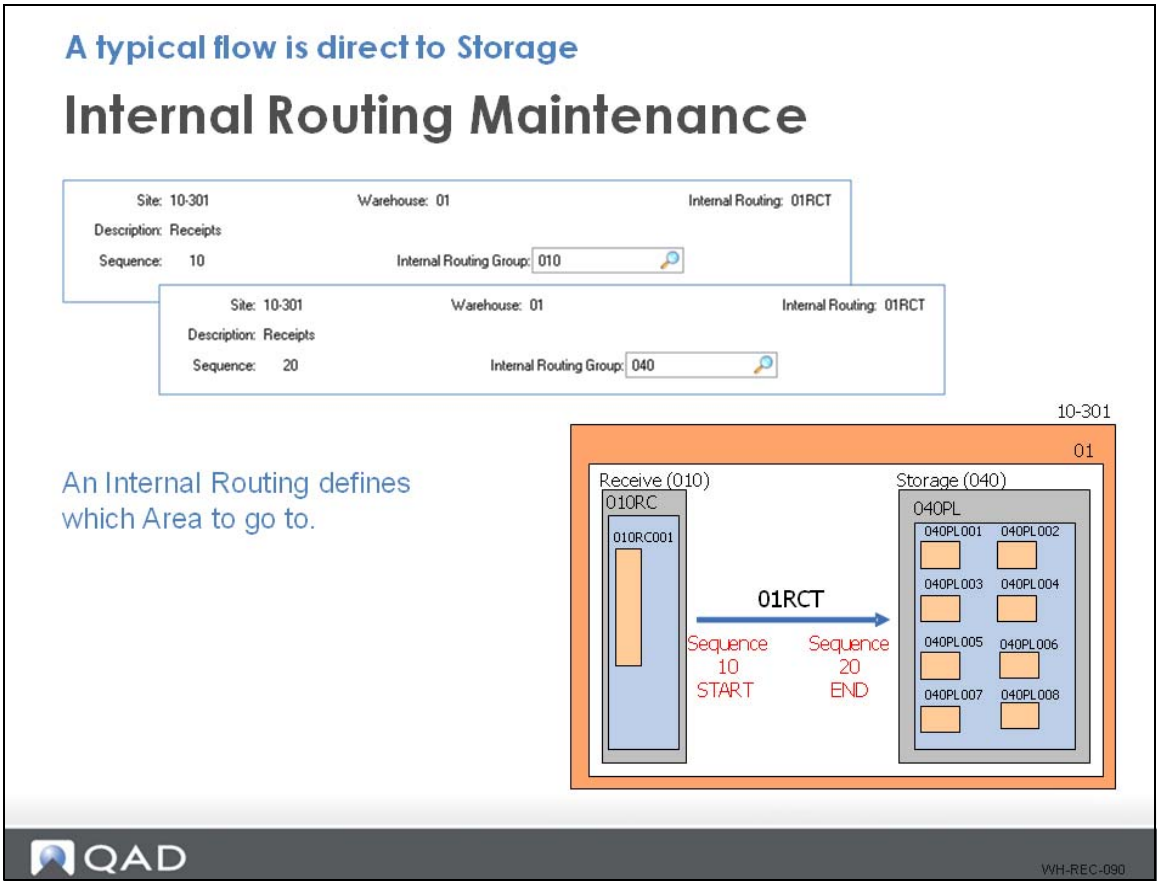


Within a warehouse, each area can be broken down into zones-groups of locations that have a common storage function-such as a primary picking zone, or a bulk storage zone for a particular type of pallet.

The receiving and put-away process works with storage zones to optimize space utilization and handling. In QMI, there are three storage zones in the storage area, Pallet (040PL), Box(040BX) and Each (040EA).

The topics that follow discuss zone configuration in more detail.

Typical Flow is Direct to Storage



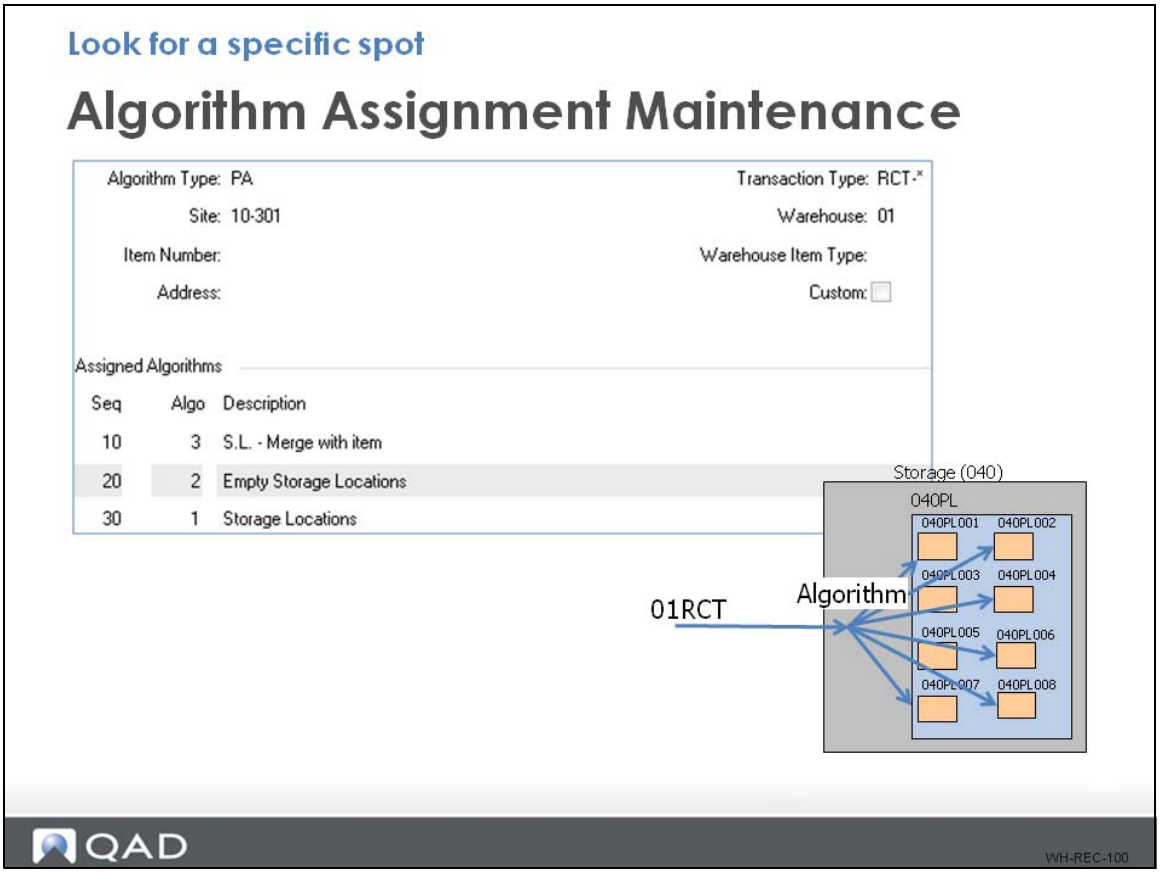
Did You Know

U*se internal routings to create specific pathways linking Areas (IRG) within the warehouse.*

You must specify each step of the internal route.

In the QMI warehouse, all product is moved from receiving into storage. Routing 01RCT is setup to facilitate this move and is built with start (10) and stop (20) sequences.

Look for a Specific Spot

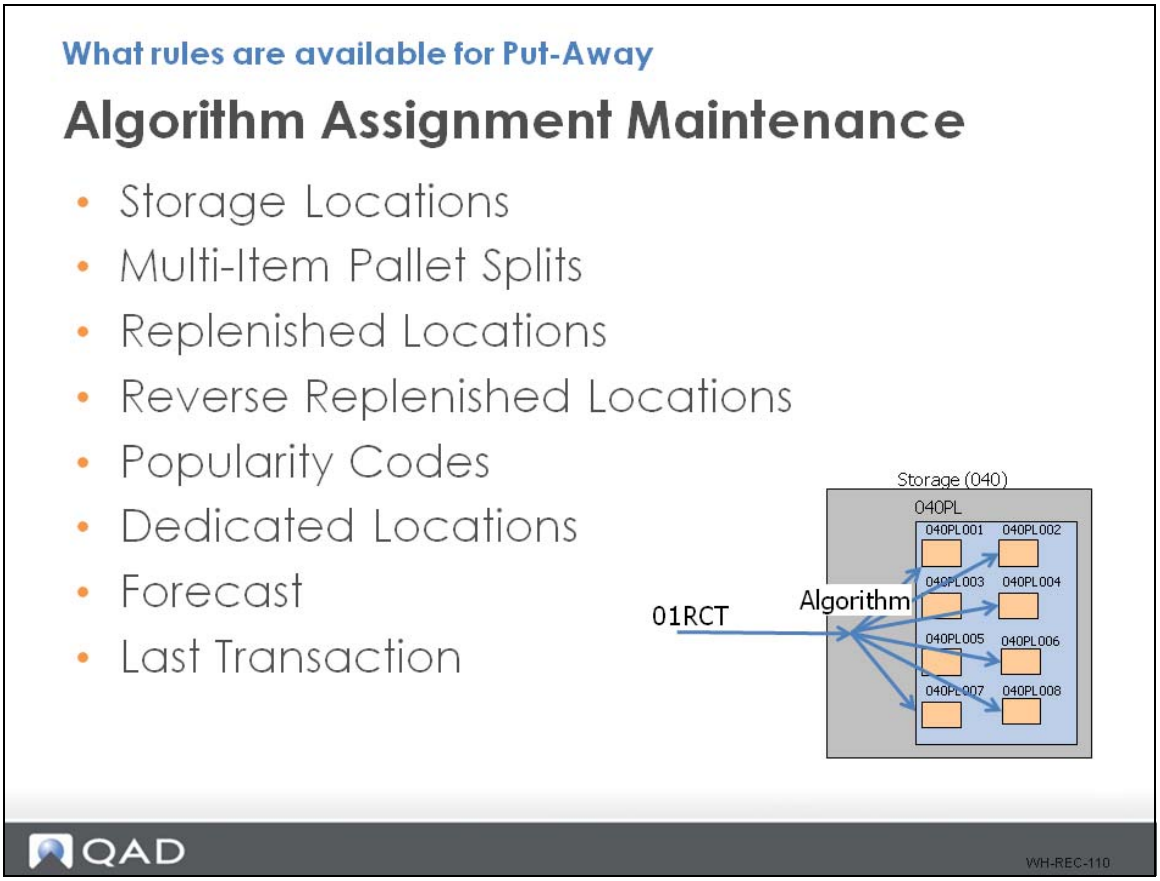


Once product is moved from receiving to storage using routing 01RCT, the next system decision is to decide which location to use for product storage. This decision is driven by algorithms, or rules, defined during setup.

For QMI, the receipt (RCT-*) put-away (PA) rules are:

- 3: Merge the item with existing inventory of the same item as space allows.
- 2: Put the inventory in an empty location.
- 1: Put the inventory in any location that has space. This rule allows for mixing items in a location.

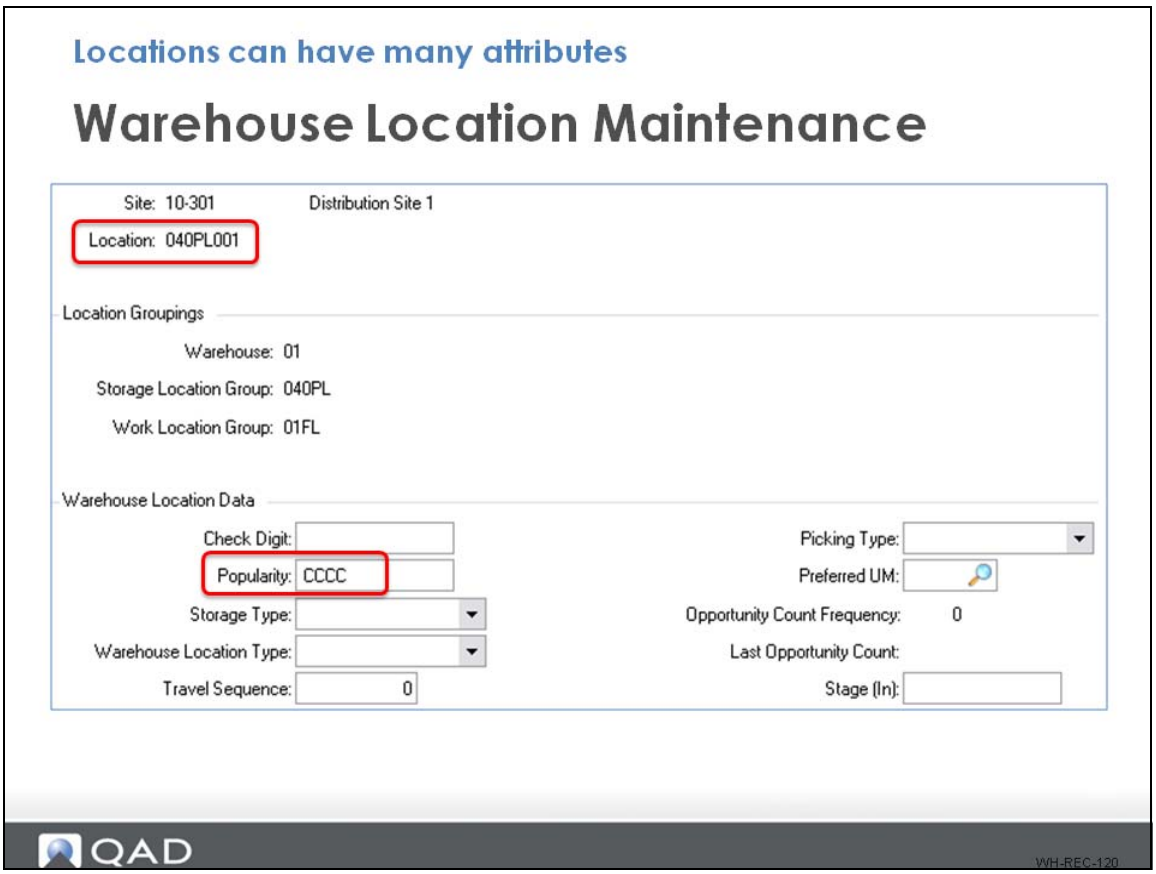
Rules Available for Put Away



The put-away rules can be categorized into smaller groups and used based on the preferred storage strategy.

Refer to *User Guide: QAD Warehousing* for more information on algorithms.

Locations Have Many Attributes



Did You Know

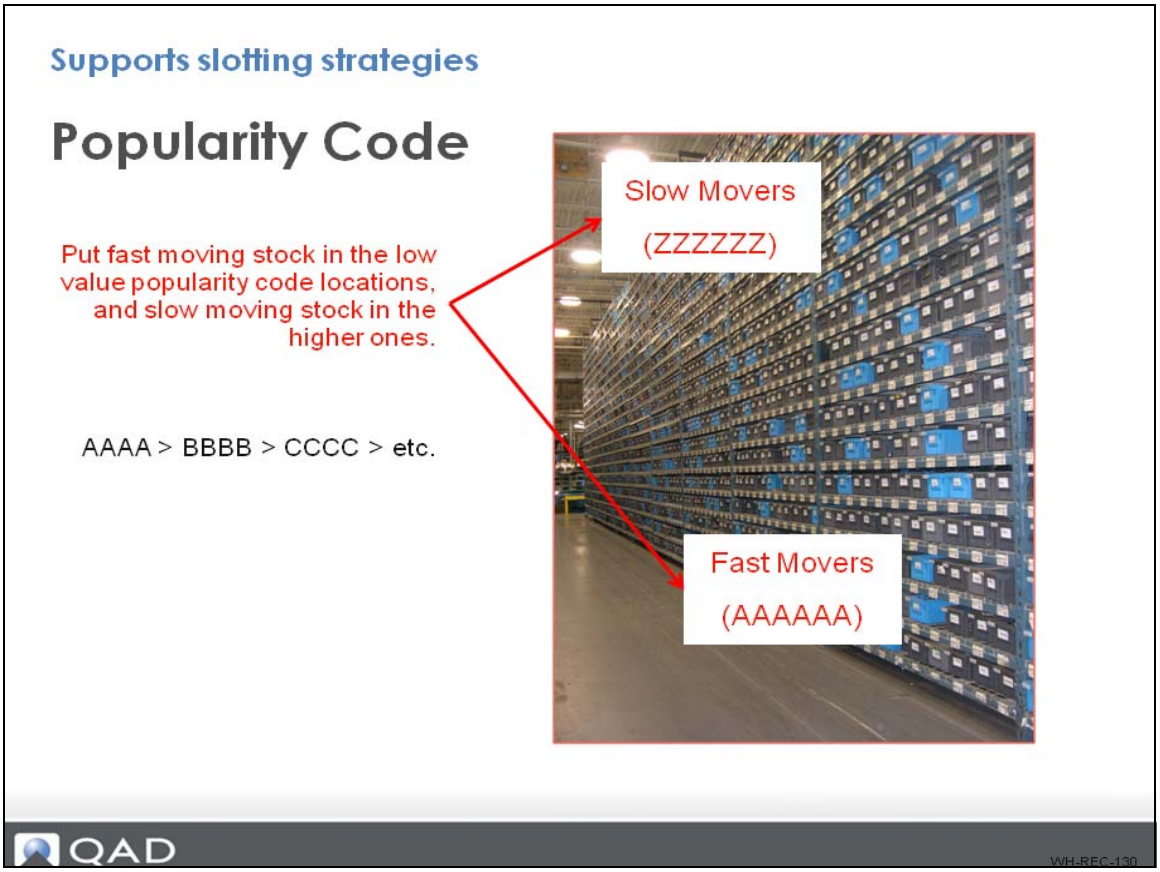
AAA indicates a popular location that is easily accessed, while a code of ZZZ indicates an unpopular location perhaps difficult to access or does not drive the right kind of car.

Although QAD Warehousing does not support a dynamic slotting strategy, it is possible to assign popularity rankling to both locations and items. Then you can assign a popularity algorithm to be used during put-away to facilitate slotting and improve picking efficiency

Without a Popularity ranking, locations are selected in descending alpha-numeric sequence.

Use Warehouse Location Maintenance to specify the attributes of a warehouse location.

Support Slotting Strategy



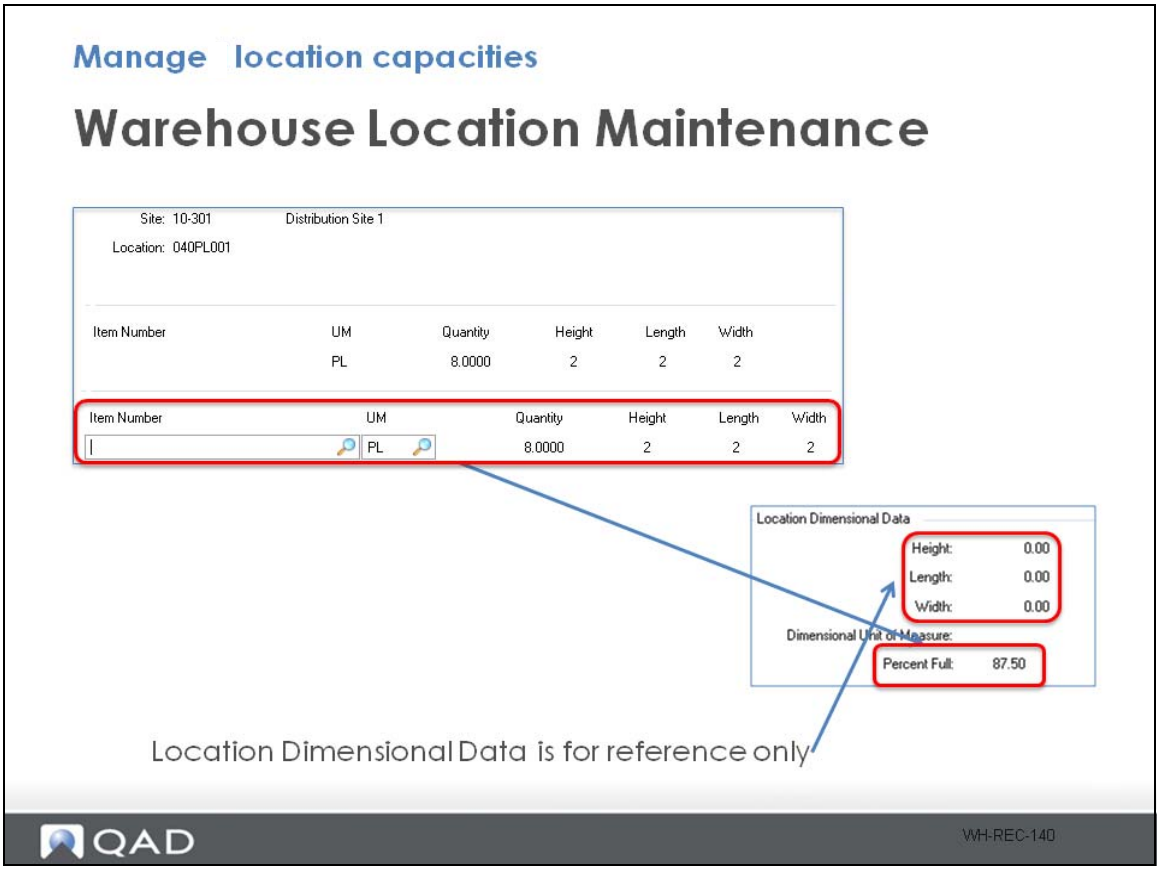
Did You Know

Popularity codes can be assigned at both the item and location levels.

In this example, locations overhead are more difficult to access and has a low (Z) popularity code. Locations at ground level are typically easier to access (i.e. do not require special handling equipment) and has a higher (A) popularity code.

Other topics within this training guide cover the use of popularity in more detail.

Manage Location Capacities

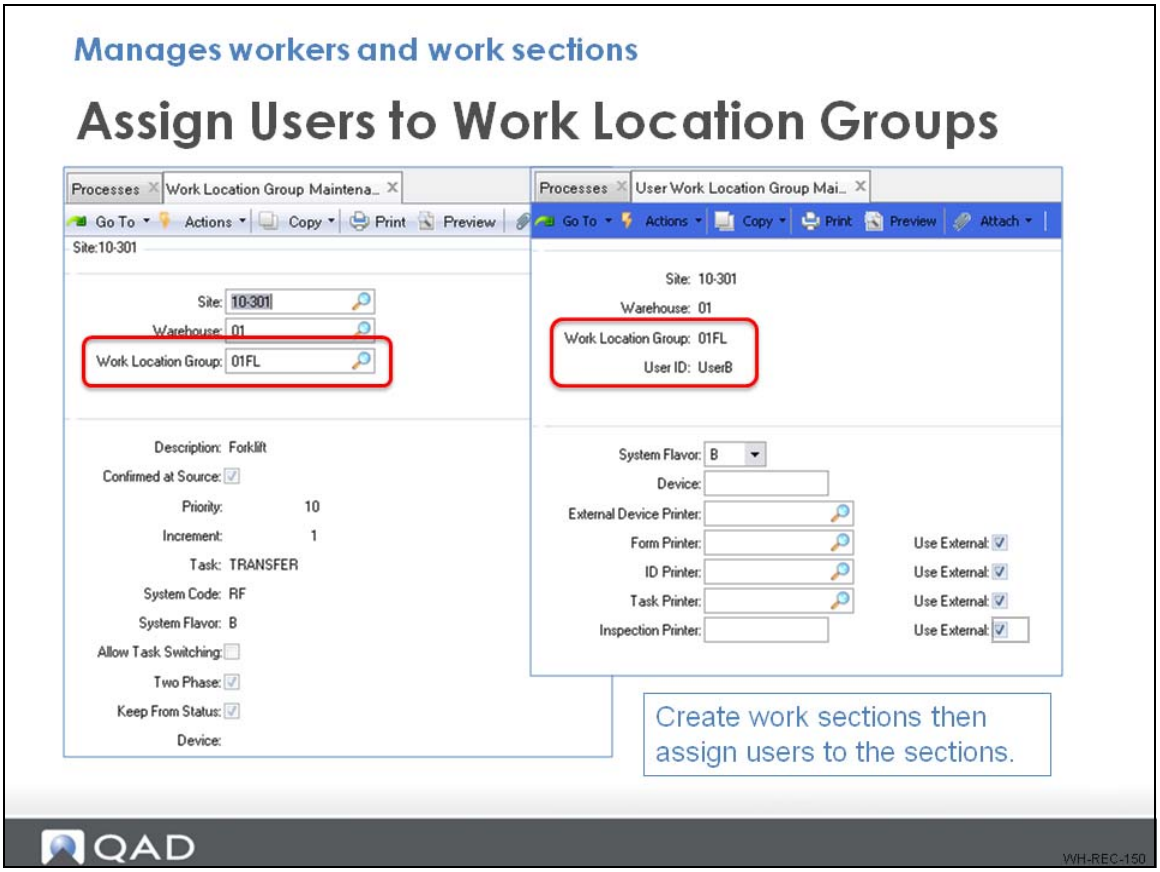


You can also define the location capacity using Warehouse Location Maintenance.

In the last frame, you can assign various combinations or items, units of measure and quantity. When the UM if PL, the quantity is calculated by multiplying Height x Length x Width.

Note that in the previous frame, Location Dimensional Data is independent of the final frame data and is for reporting purposes only while the Percent Full metric is calculated using the final frame parameters.

Manages Workers and Work Sections



Did You Know

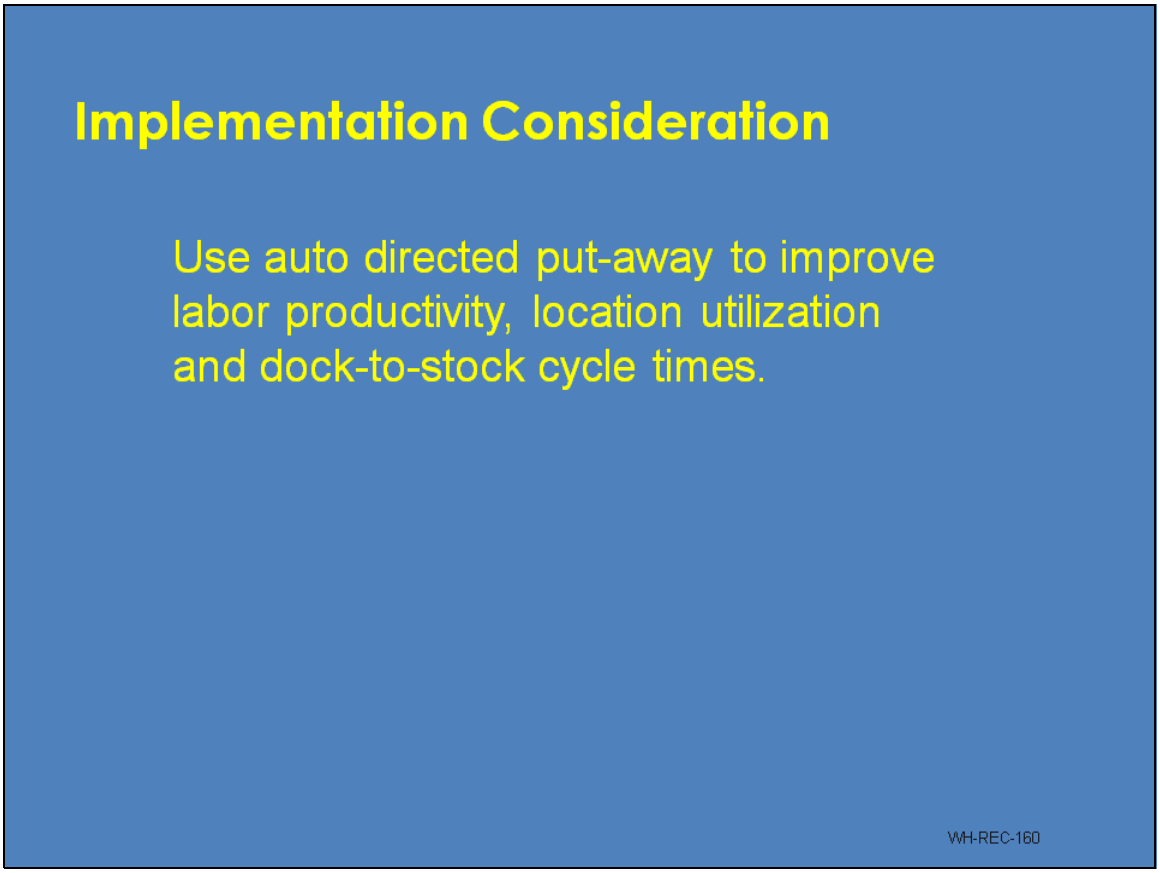
Use User Work Location Group Maintenance to assign users to a work group location and set printing options.

Before tasks can be viewed and processed using an RF device, users must be assigned to the Work Location Groups.

Use Work Location Group Maintenance to create work sections.

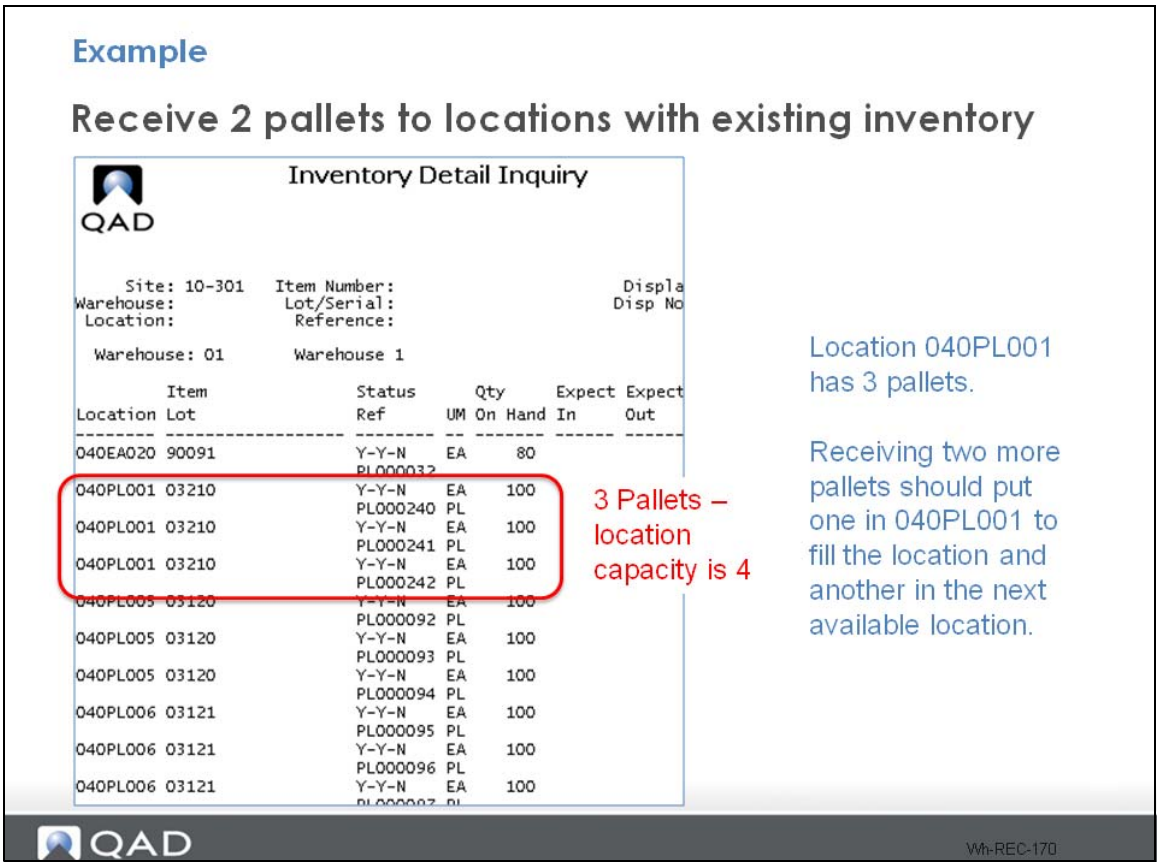
Use User-Work Location Group Maintenance to assign a user to the work section and to set up print options specific to that user.

Implementation Consideration - Use Auto-Directed Put Away



Directed put-away means QAD Warehousing determines the appropriate storage location for an item/quantity combination and directs the operator to the defined location. This approach improves labor productivity, overall location utilization, and reduces dock to stock cycle times to minimize congestion on the receiving dock.

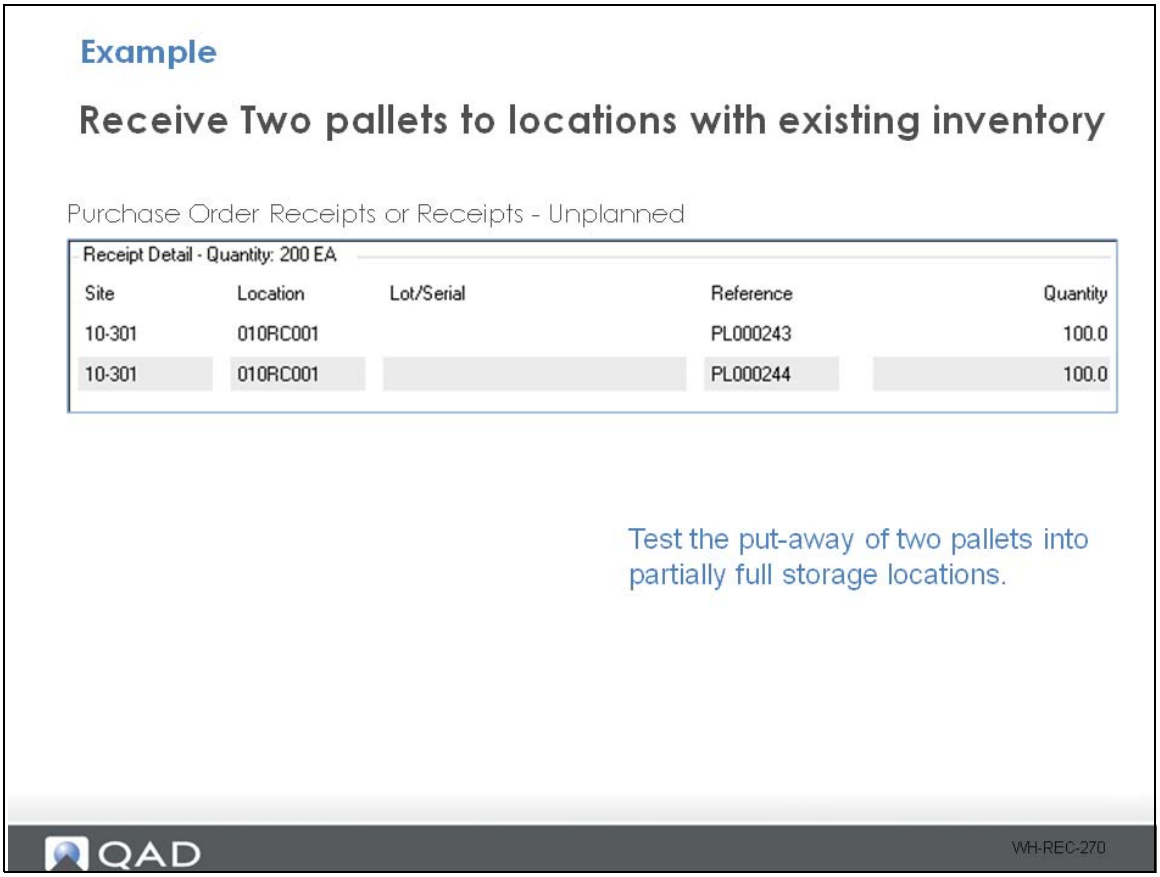
Example - Receive Two Pallets to Locations with Existing Inventory



In this example, location 040PL001 has seven pallets. You need to receive two more pallets, putting one in 040PL001 to fill the location and another in the next available location.

Receiving two more pallets should put one more pallet in location 040PL001 to fill the location and the second pallet in another location.

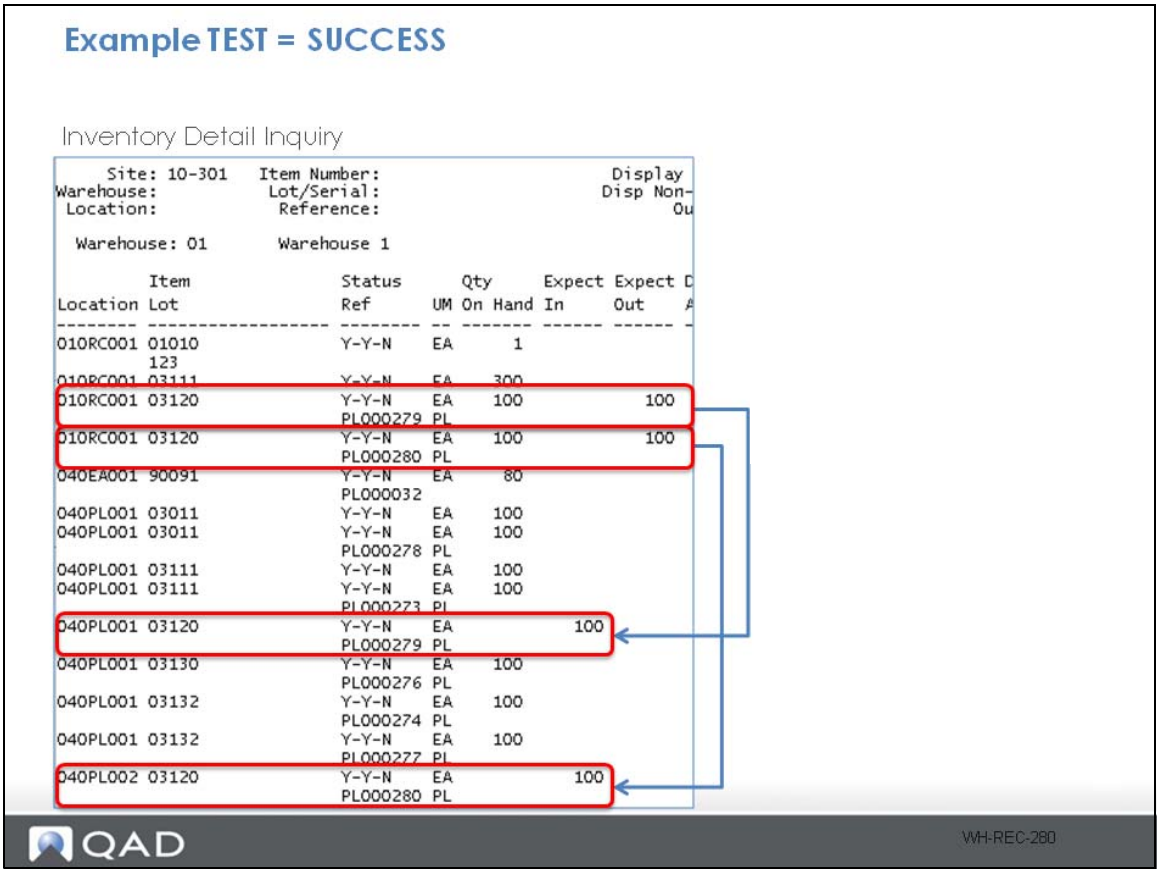
Example - Continued



Use Purchase Order Receipts to receive two pallets into the receipt location 010RC001.

Note If the receiving location is not defined in the report (see above), something is incorrect in the setup.

Example Test = Success



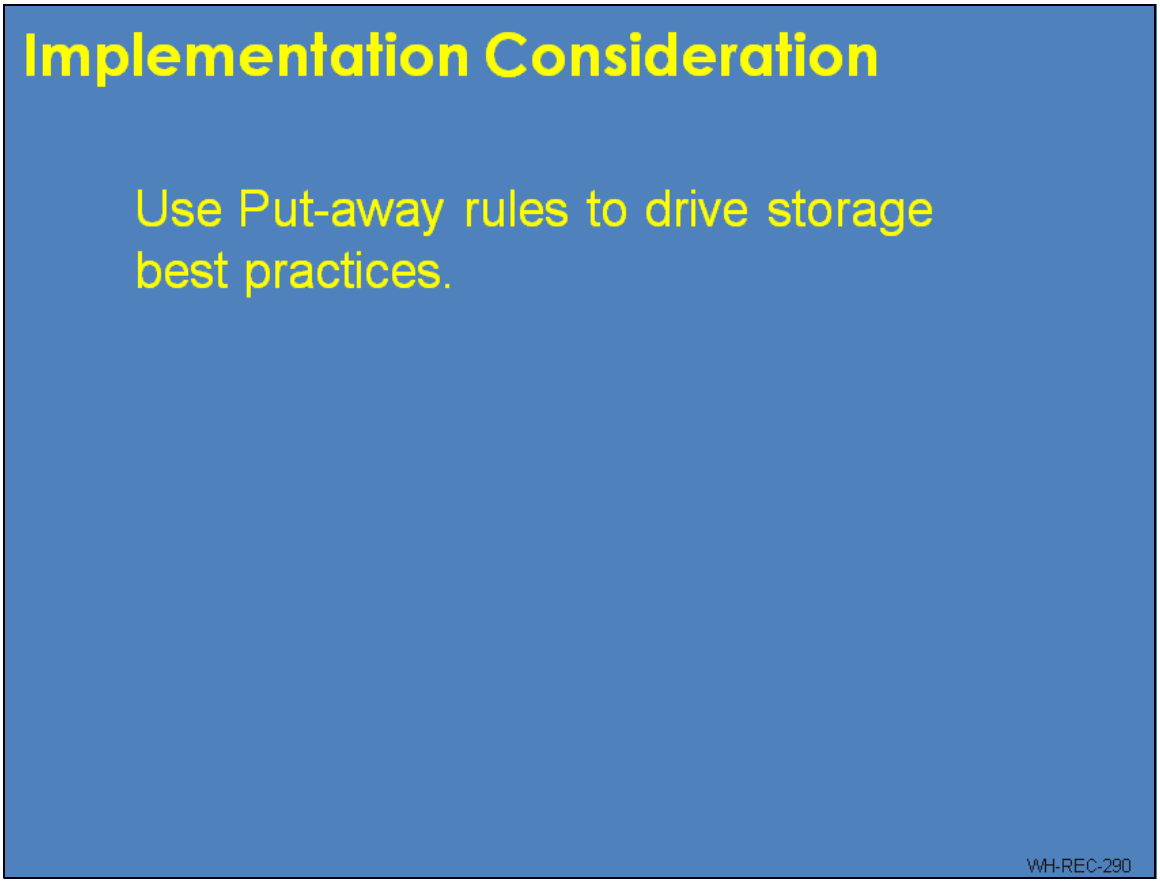
With directed (and auto) put-away once the product is received, two put-away tasks (moves) are created; One to location 040PL001 and another to the next available location.

Use Inventory Detail Inquiry to check the test results.

Note The put-away algorithm being used (1) allows for mixed items in a location.

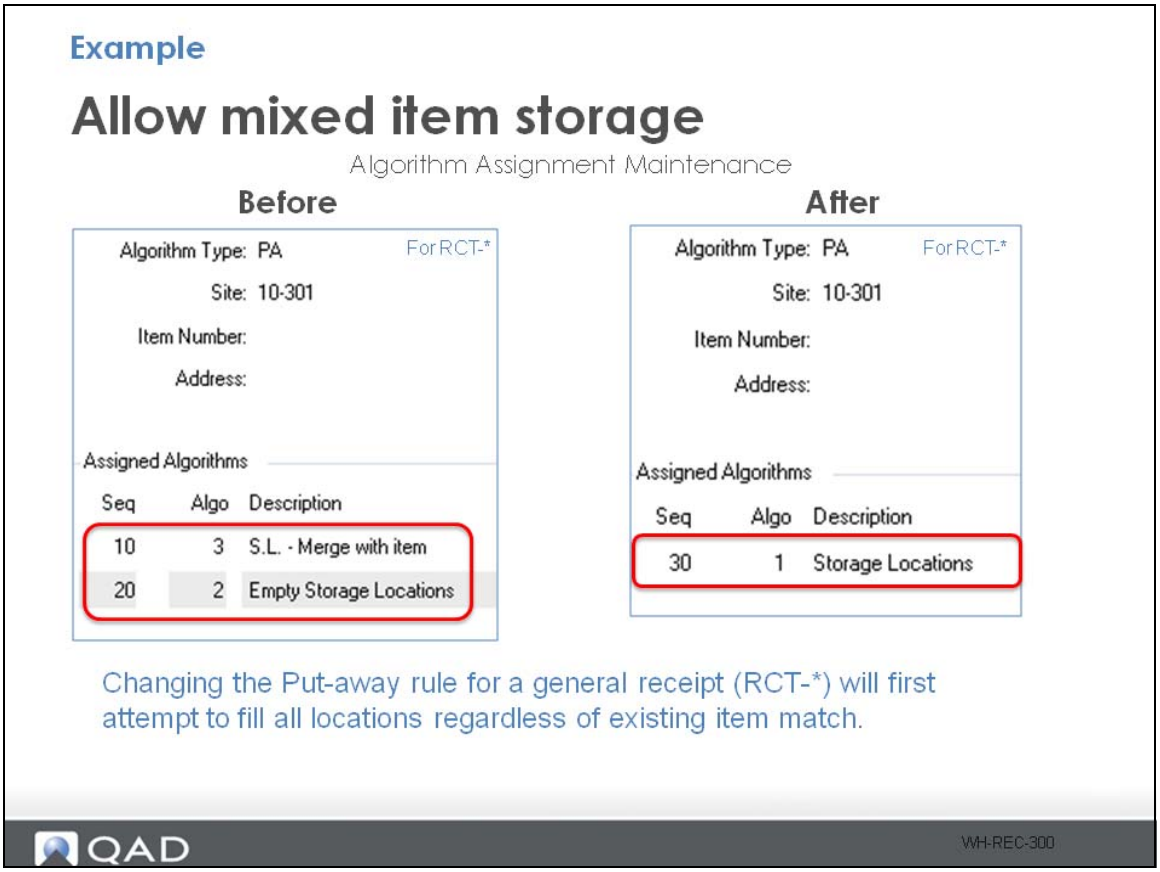
What would you change to restrict mixing items in a location?

Implementation Consideration - Put Away



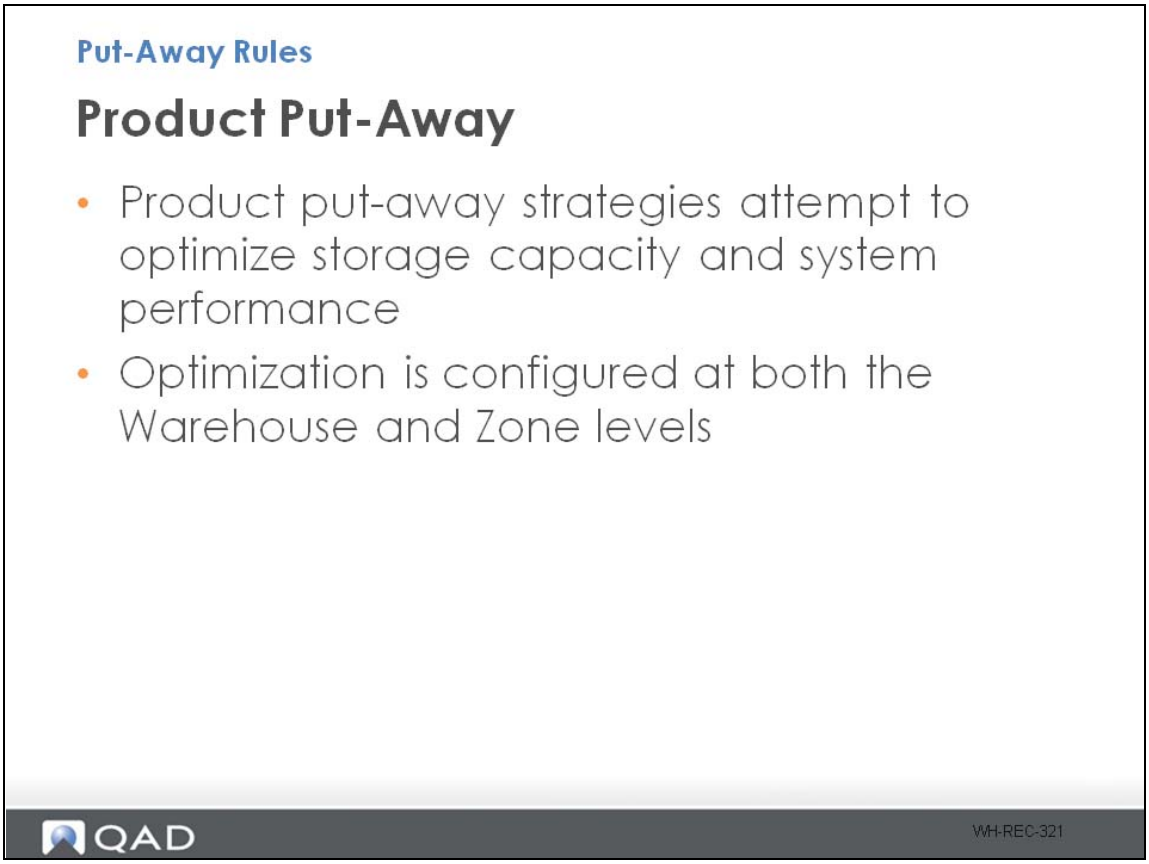
You should understand your customers reserve storage strategy before setting up put-away algorithms.

Example - Allow Mixed Item Storage



Changing the put-away rule for a general receipt (RCT-*) causes the system to first attempt to fill all locations, regardless of existing item match.

Put-Away Rules



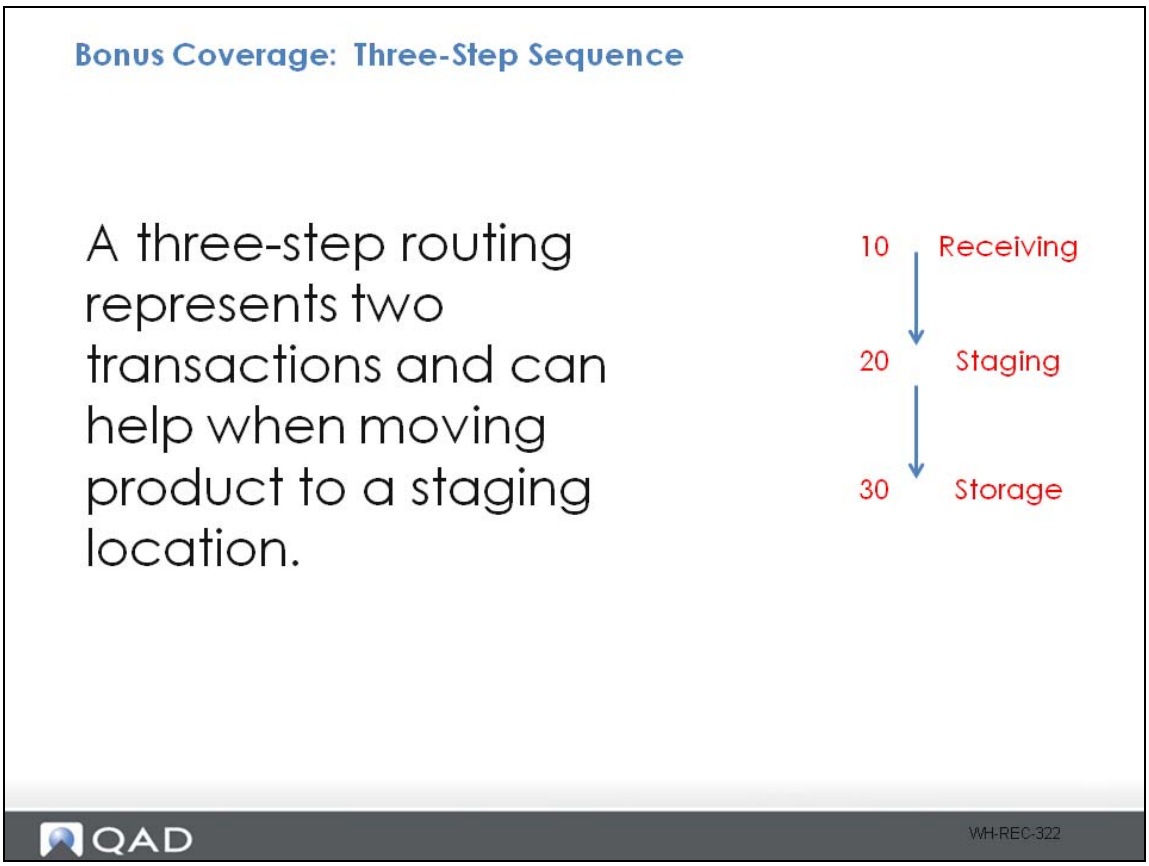
Did You Know

Pr*oduct put-away strategies attempt to optimize storage capacity and system performance.*

Warehouse and zone level optimization are advanced concepts used to improve the overall facility storage location utilization. Warehouse / zone optimization is typically not implemented for go live.

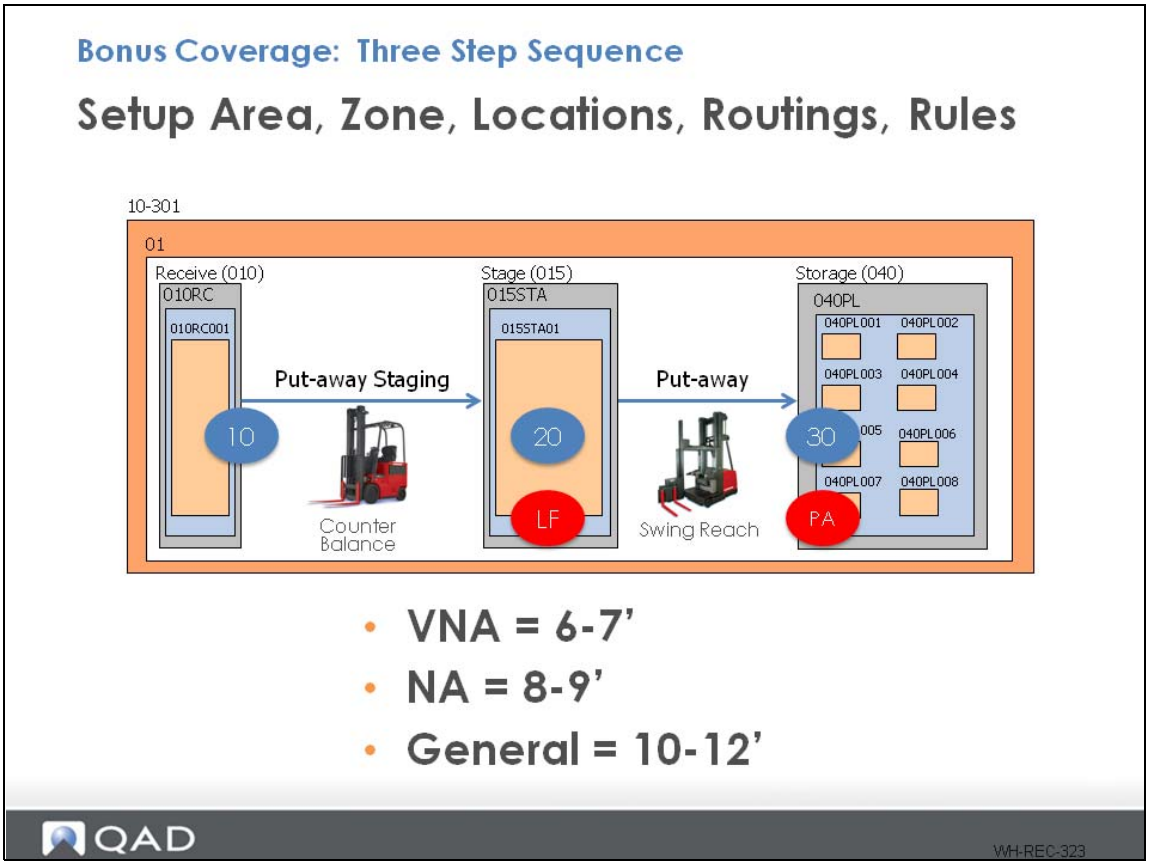
Refer to *User Guide: QAD Warehousing* for a more detailed discussion.

Bonus Coverage: Three-Step Sequence



So far, the examples have shown a two-step sequence moving from one area to the next. In QAD Warehousing it is possible to have a three-step sequence where product is moved to an interim position/location en route to the final destination.

Bonus Coverage Continued



Did You Know

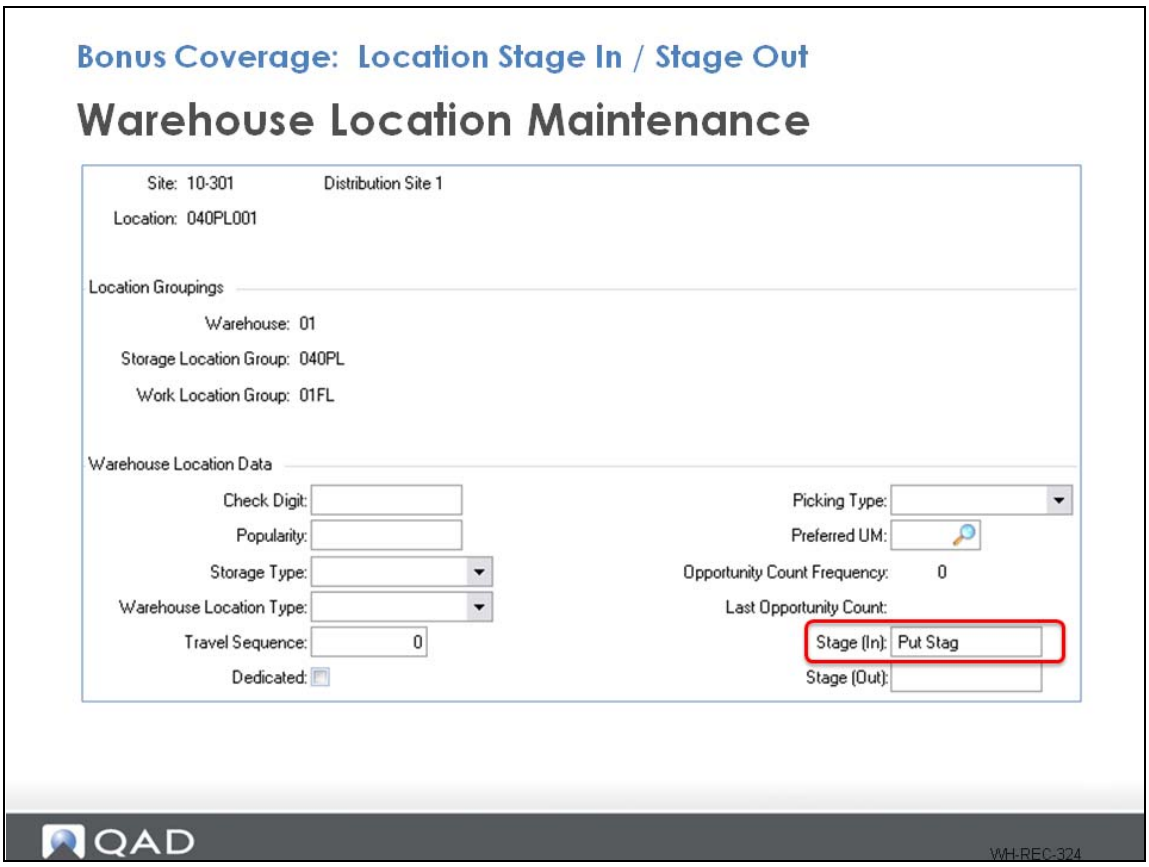
Some warehouses are setup with different types of equipment for different areas.

For a three-step sequence, you can setup a staging area, zone and location between receiving and storage. This might occur when different equipment is used for receiving and product put-away; for example, when storing in a very narrow-aisle area.

In the above graphic, the narrow aisle (NA) has less space to pass than the general area, so only specific types of equipment can pass. The Very Narrow Aisle (VNA) requires specialized equipment. So, for example, a three-step routing is needed because the same equipment cannot be used to put-away in every area.

Given the specialized equipment and more complex design, this is a process for advanced operations.

Bonus Coverage - Location Stage In/Stage Out

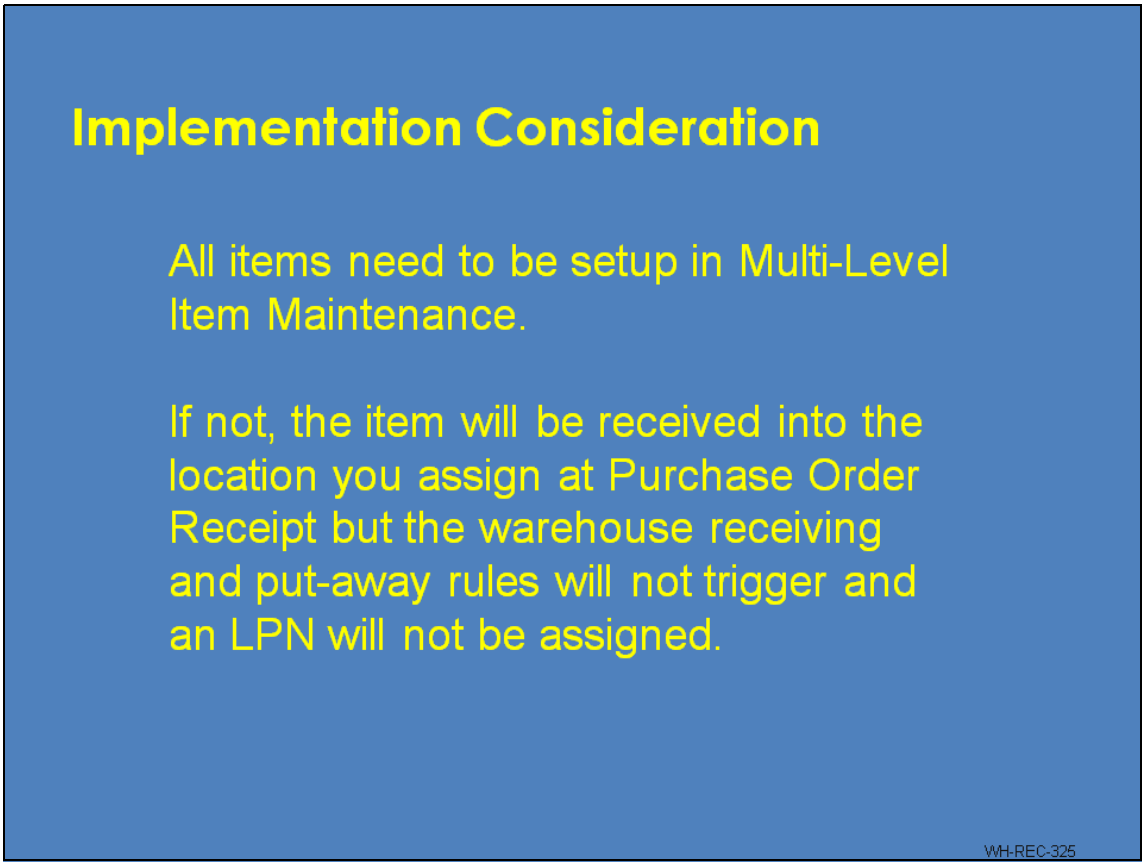


You can also experiment with Stage In and Stage Out in Warehouse Location Maintenance. This is another way to handle put-away in a location.

The Stage In and Stage Out fields in Warehouse Location Maintenance identify whether a location is staged. If both fields are blank, the location is not staged.

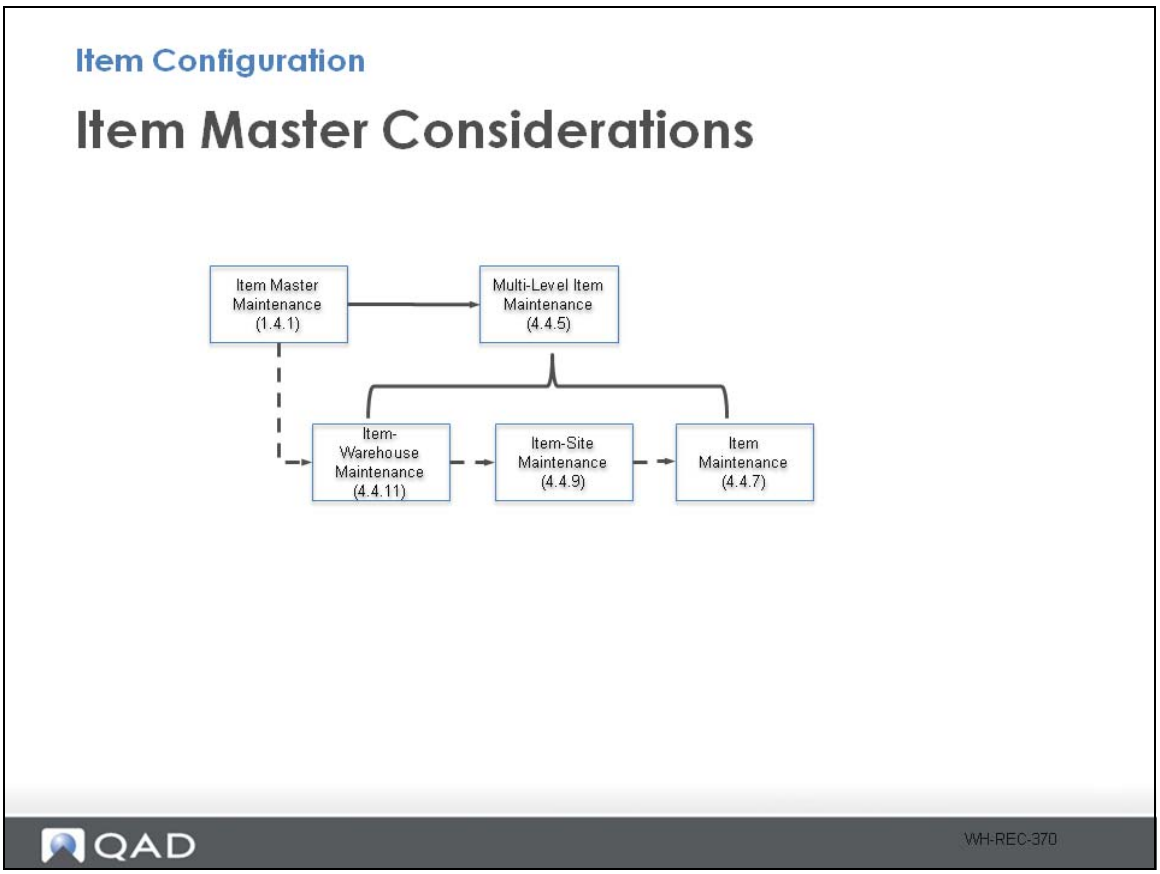
When the fields are filled in, this creates a phantom location or temporary location, used for staging product into or out of the designated location, in this example, 040PL001.

Implementation Consideration



Referring back to the warehouse introduction portion of this training guide, all items need to first be set up in the warehouse the item can be received.

Item Master Considerations



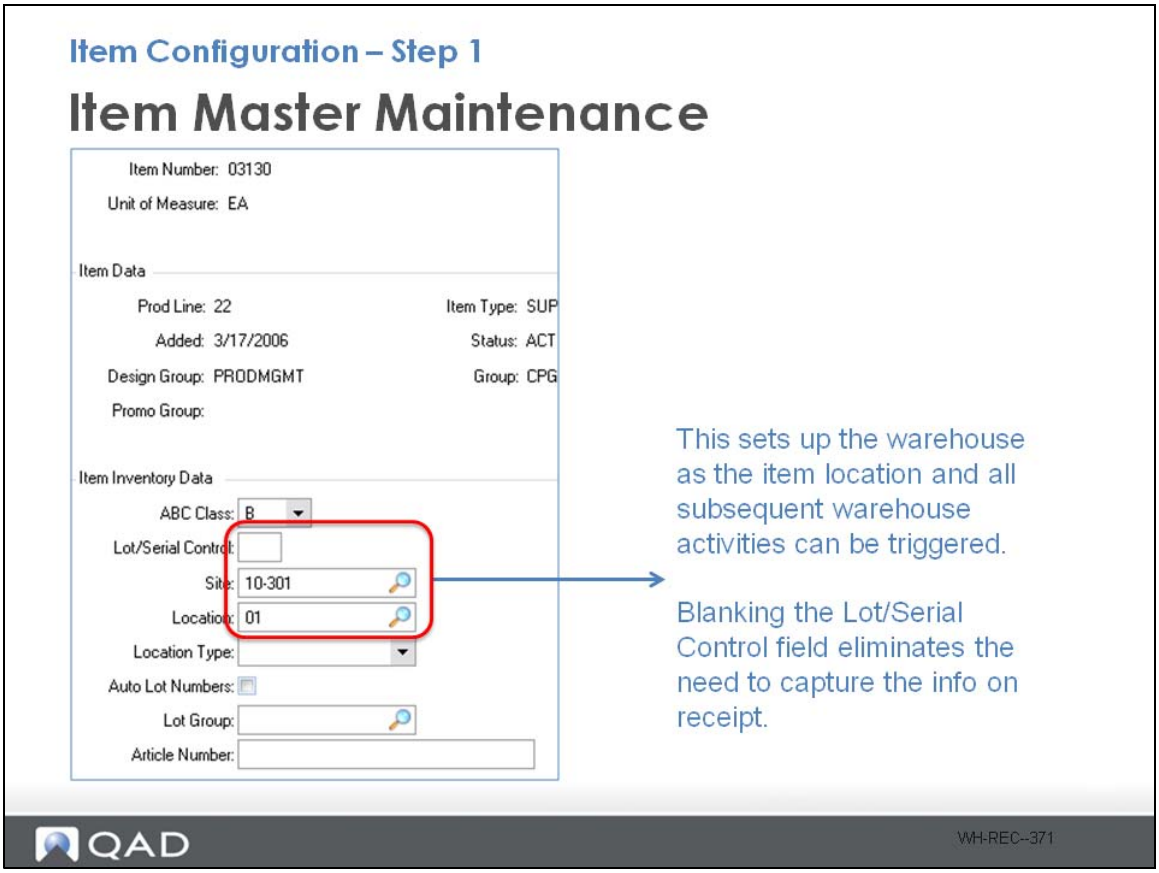
Did You Know

Items must first exist in QAD Core. QAD Warehousing has more specific item characteristics managed at the warehouse level.

Once the item is setup in QAD core using Item Master Maintenance, there are several menus you can use to link the item to the site/warehouse. For ease, use Multi-Level Item Maintenance to populate all the required and optional data for the item to use in the warehouse.

In the graphic above, the item is setup in the warehouse using Item Warehouse Maintenance, Item-Site Maintenance or Item Maintenance, depending on your needs. Alternatively, use Multi-Level Item Maintenance which aggregates all three other menus.

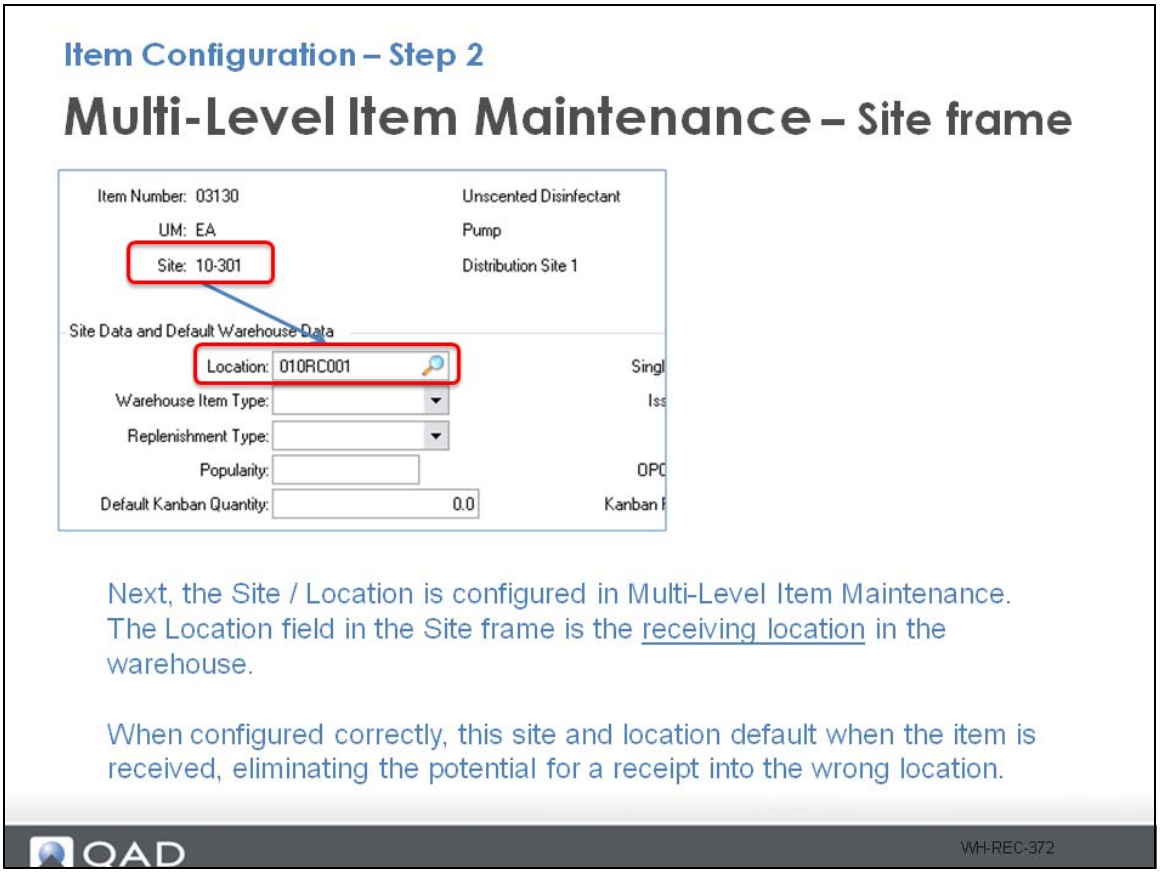
.Item Configuration- Step 1



This sets up the warehouse as the item location and all subsequent warehouse activities can be triggered.

Blanking the Lot/Serial Control field eliminates the need to capture the info on receipt.

Item Configuration- Step 2

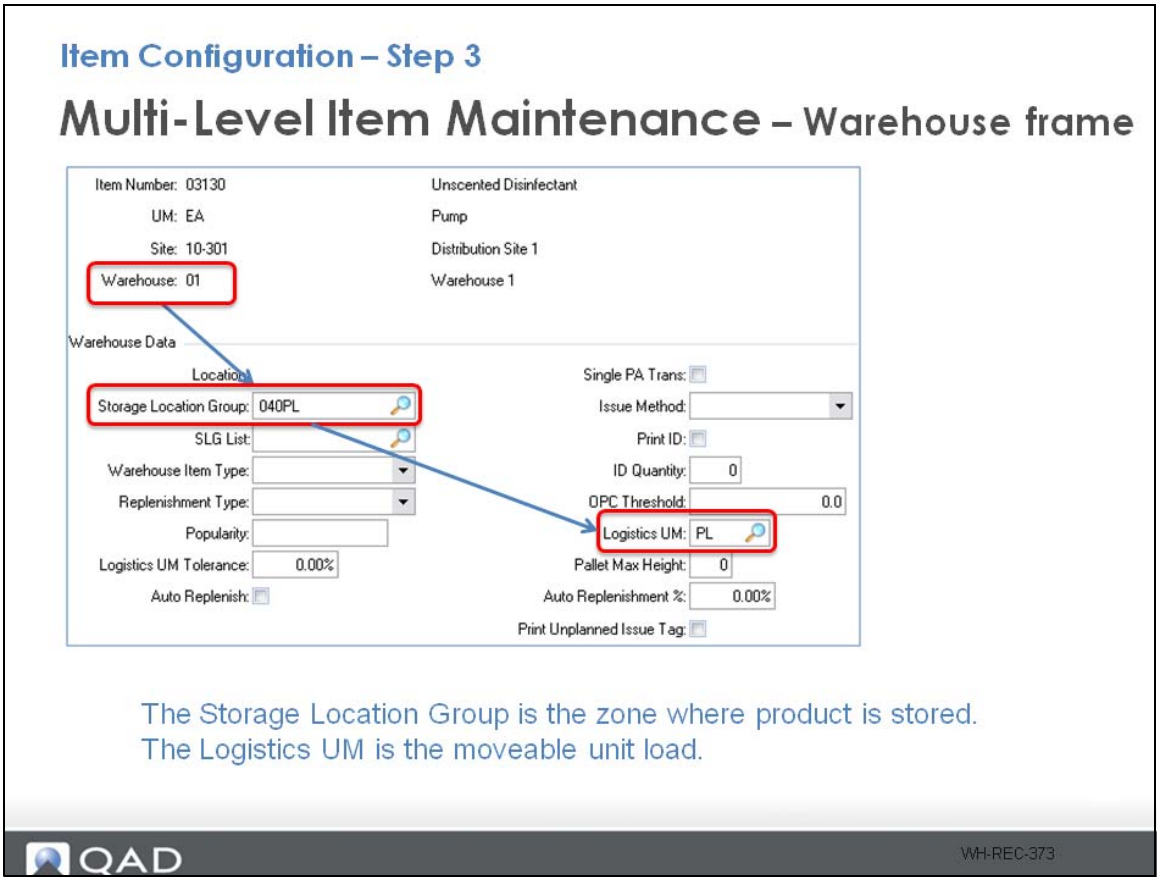


Next, the Site / Location is configured in Multi-Level Item Maintenance. The Location field in the Site frame is the receiving location in the warehouse.

When configured correctly, this site and location default when the item is received, eliminating the potential for a receipt into the wrong location.

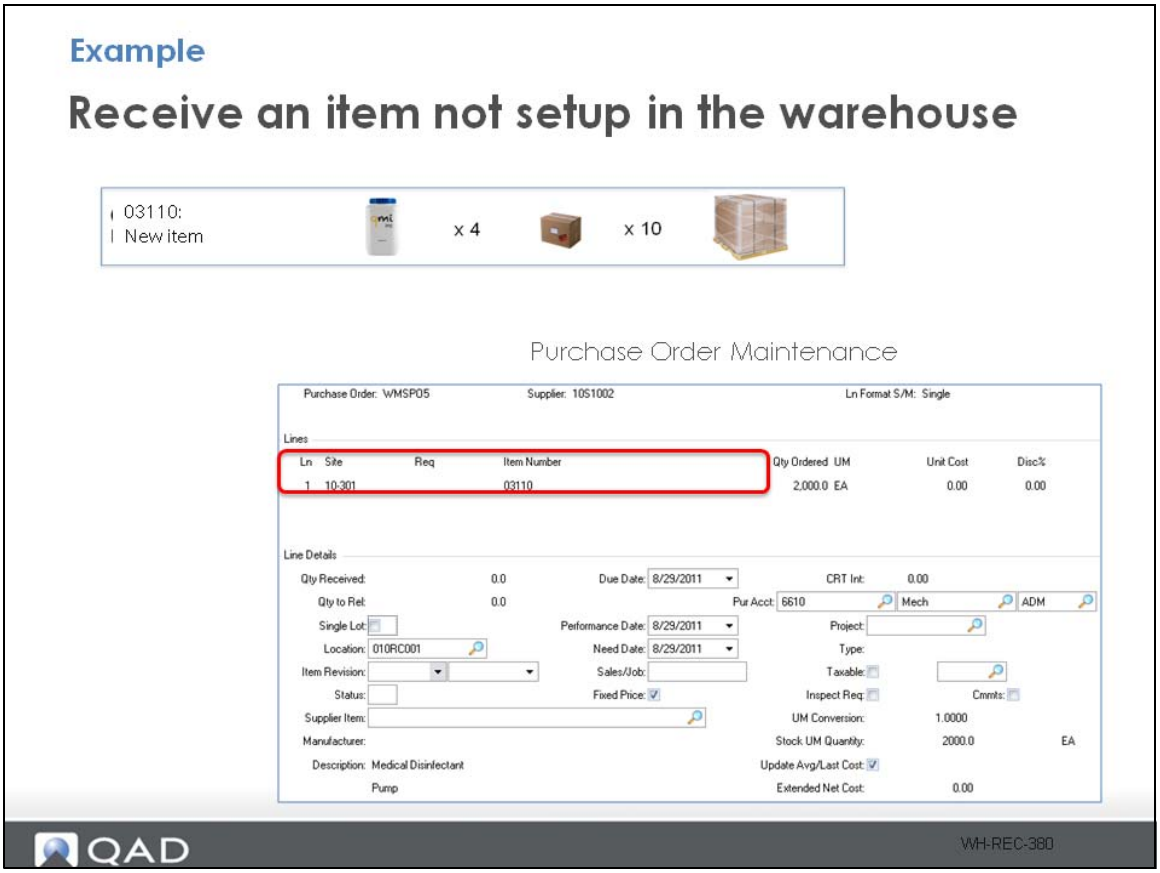
There are 13 frames and 72 fields in Multi-Level Item Maintenance used for configuration.

Item Configuration- Step 3



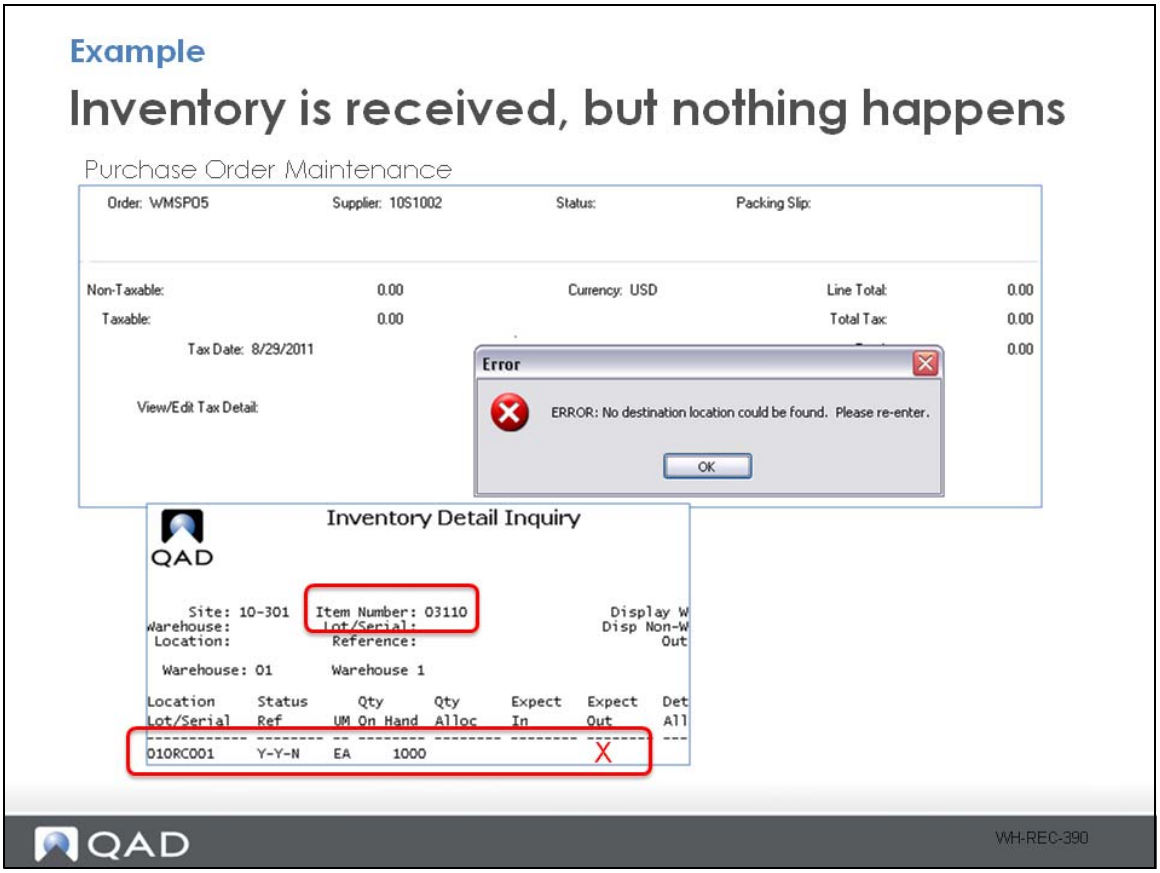
The Storage Location Group is the zone where product is stored. The Logistics UM is the moveable unit load.

Example - Receive an Item Not Set Up in the Warehouse



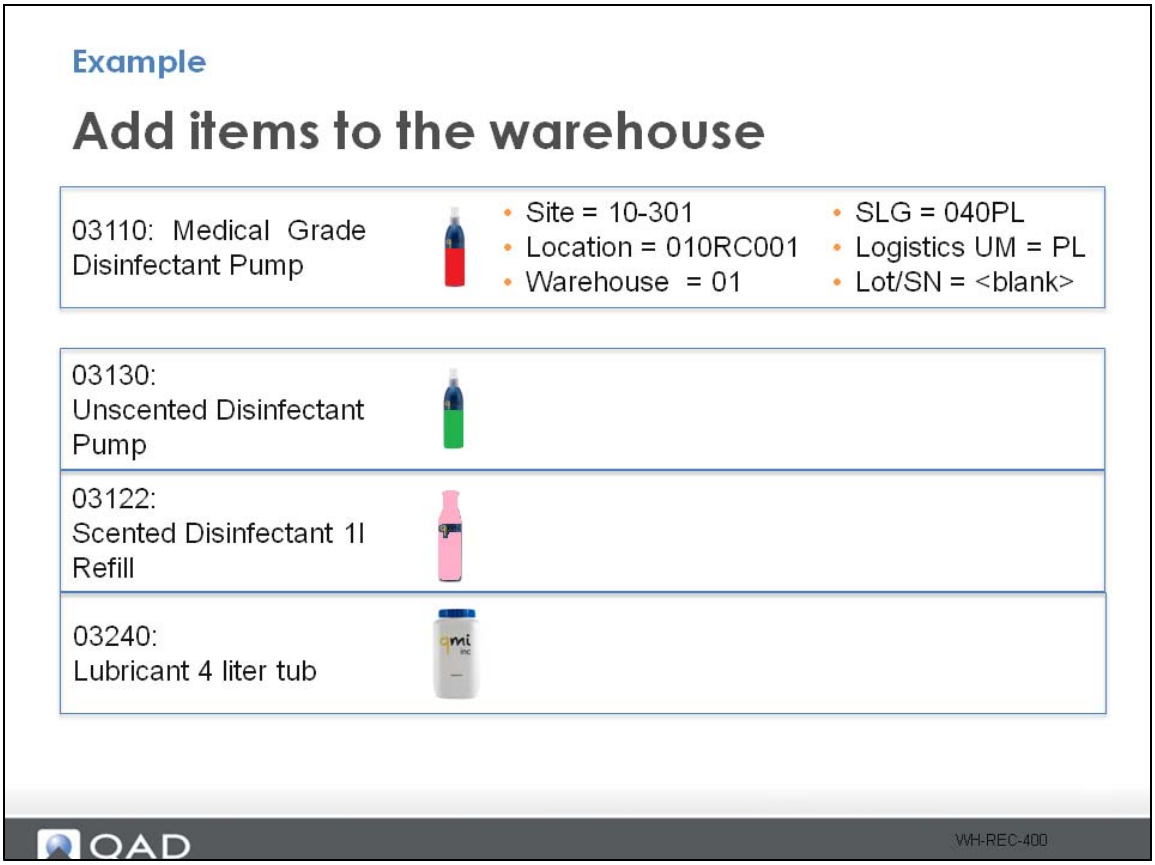
In this example, a new purchase order exists for an item that is not set up within the warehouse. The following topics describe the results and corrective measures to add the item to the warehouse.

Example - Inventory Received, Nothing Happens



The item exists in QAD core so the inventory is received into the warehouse; however, because the item is not setup in the warehouse, put-away rules are not triggered, an LPN is not assigned, a pallet is not built, and the item remains in the receiving location.

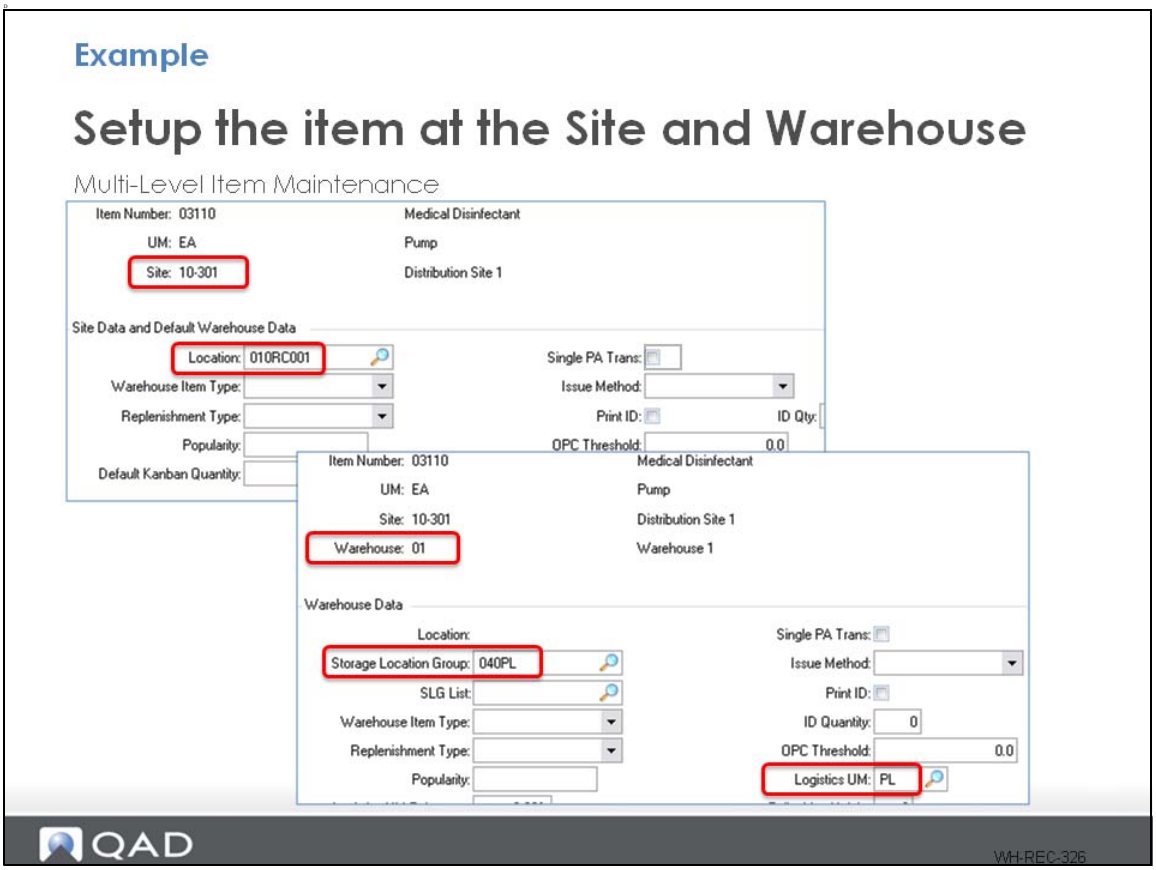
Example - Add Items to the Warehouse



In this example, you add the new items to a site, warehouse, and location. You also set the SLG and the UM for the item.

To correct the problem you first need to adjust the Item Maintenance Menu and add the item to the warehouse.

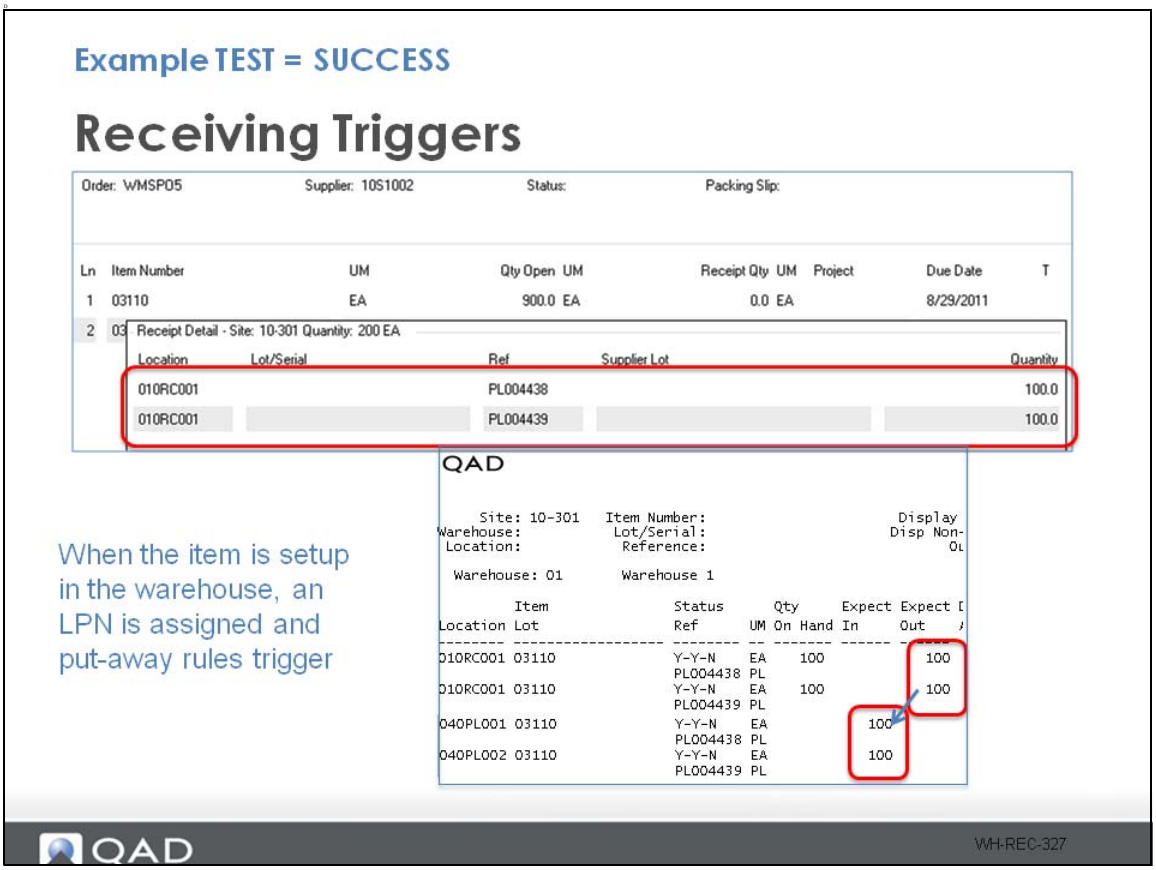
Example - Set Up the Item at the Site and Warehouse



Did You Know

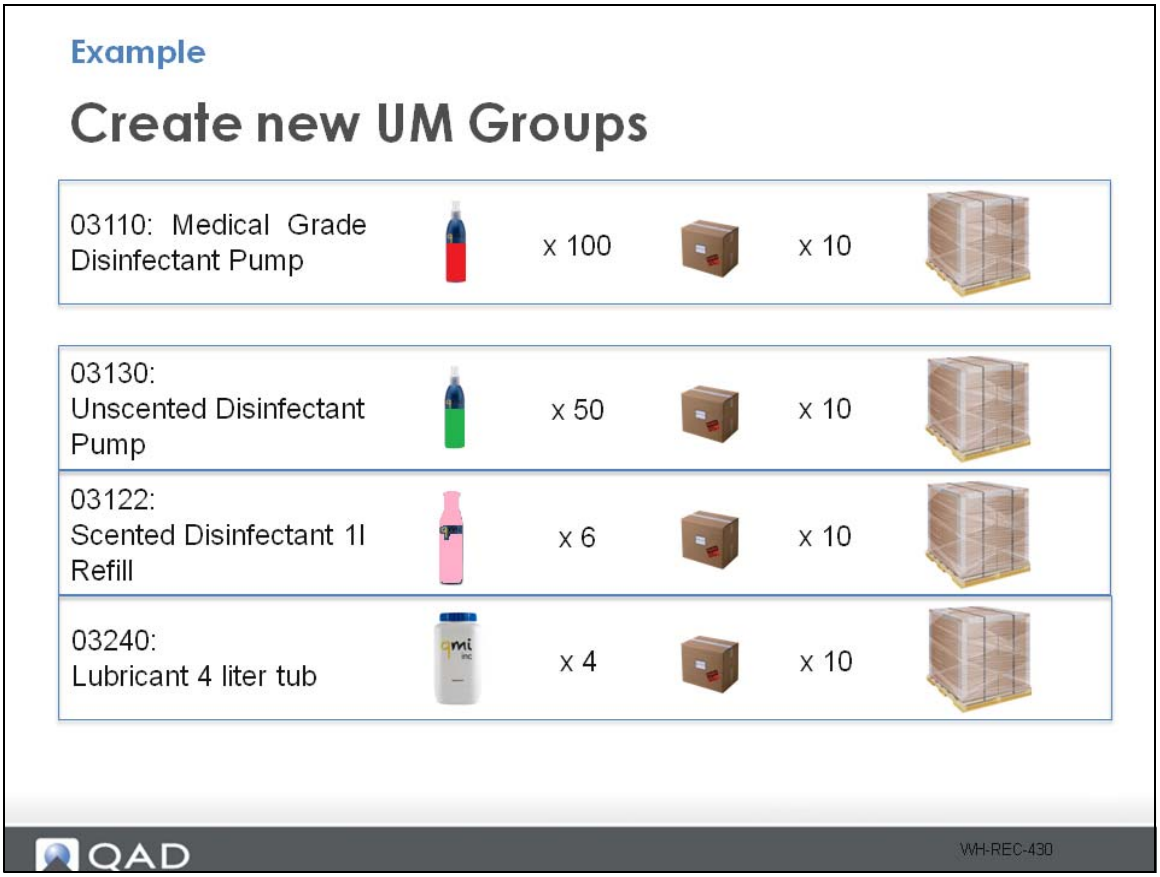
QAD Warehousing uses standard item data programs from QAD applications, but requires additional information per Multi-Level Item Maintenance to provide micro-level management.

Example Test = Success



When the item is setup in the warehouse, the system builds pallets based on UM conversions, assigns an LPN and executes the put-away rules.

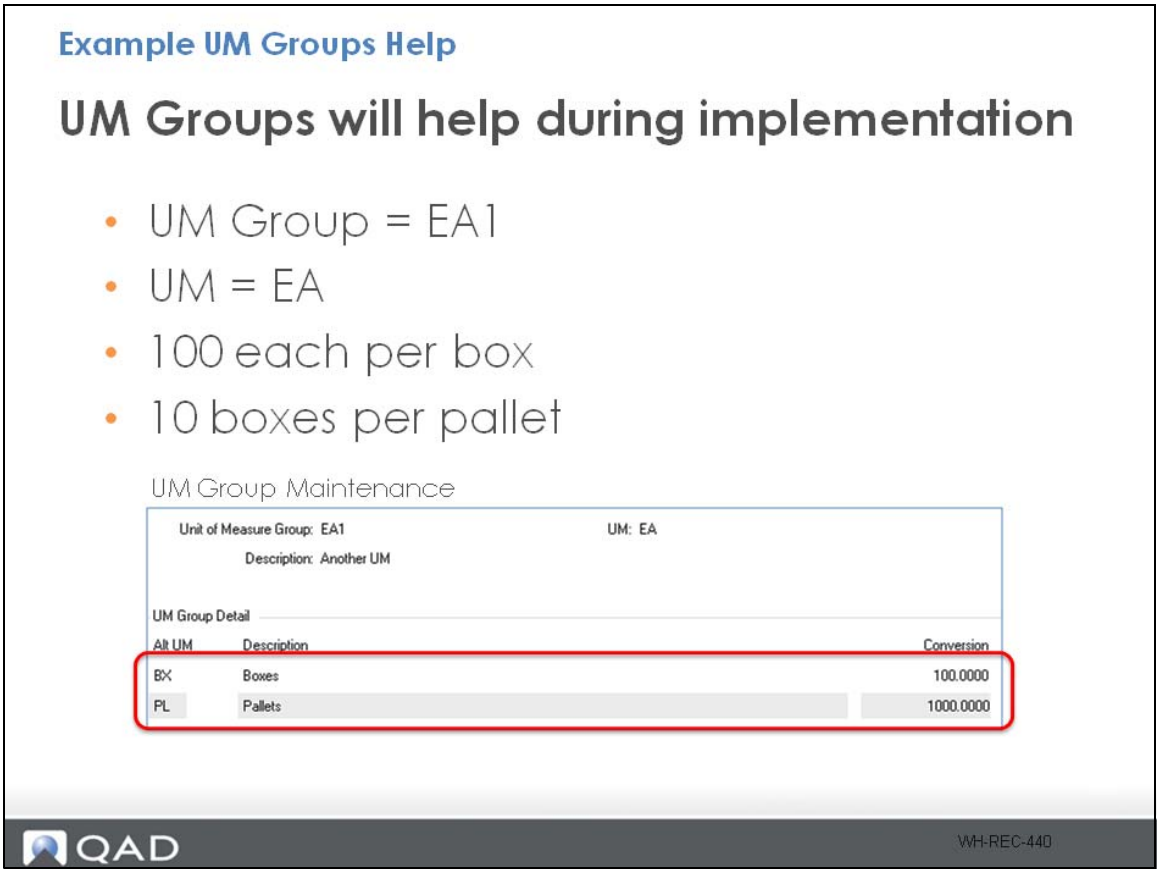
Example - Create New UM Groups



In a perfect warehouse, all items would have the same each-box-pallet unit of measure conversion; however, most warehouses have item family groups with different unit of measure conversions. If this occurs, use UM Groups to manage the unit of measure conversions by item family.

In this example, use Multi-Level Item Maintenance to add these four items to the site/warehouse.

Example - UM Groups Help During Implementation

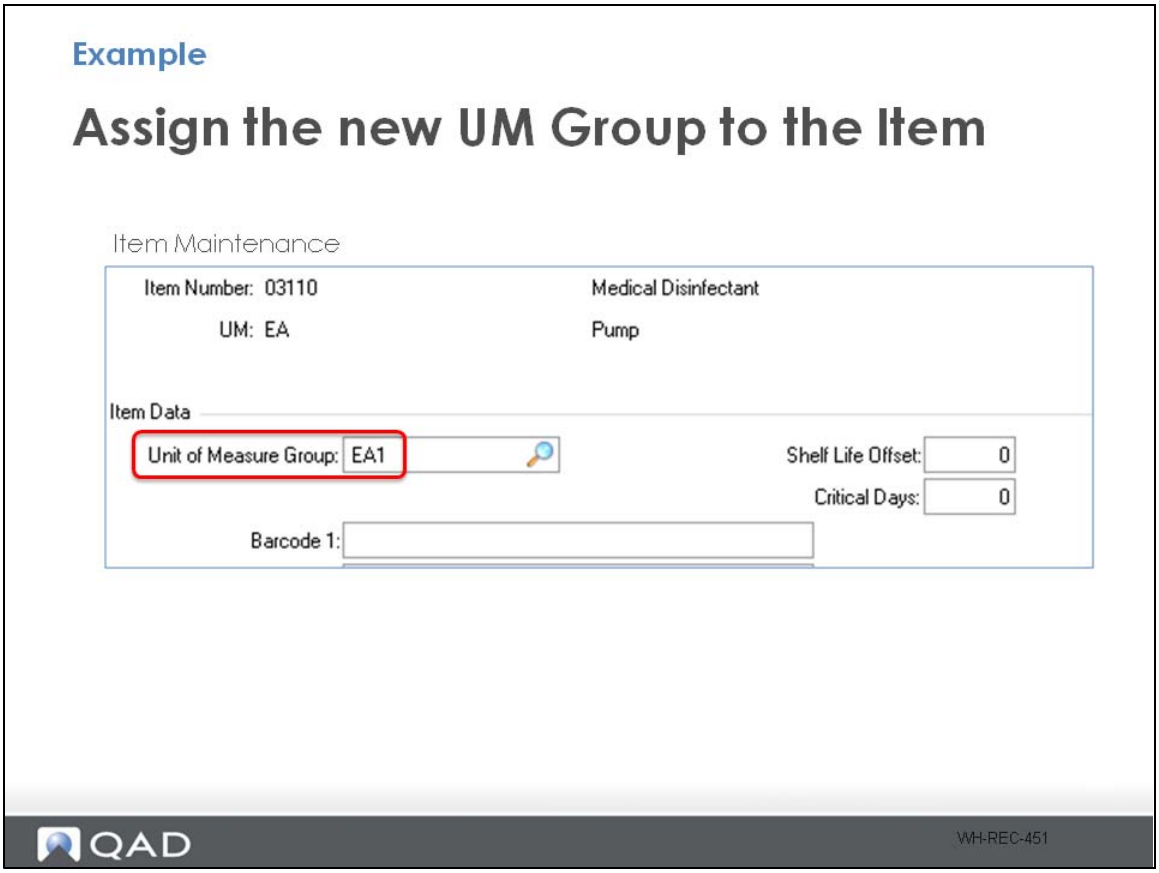


In UM Group Maintenance, use the UM Group Detail frame to define a UM group that specifies all the conversion factors from the selected base UM to a range of other alternate UMs.

Specifying all conversation factors in one program saves you time during implementation.

UM Group Maintenance helps you set up groups or families of UMs that save you time during implementation. For example, if you have 1000 items, each with a different UM, it is difficult to set up a UM for every item.

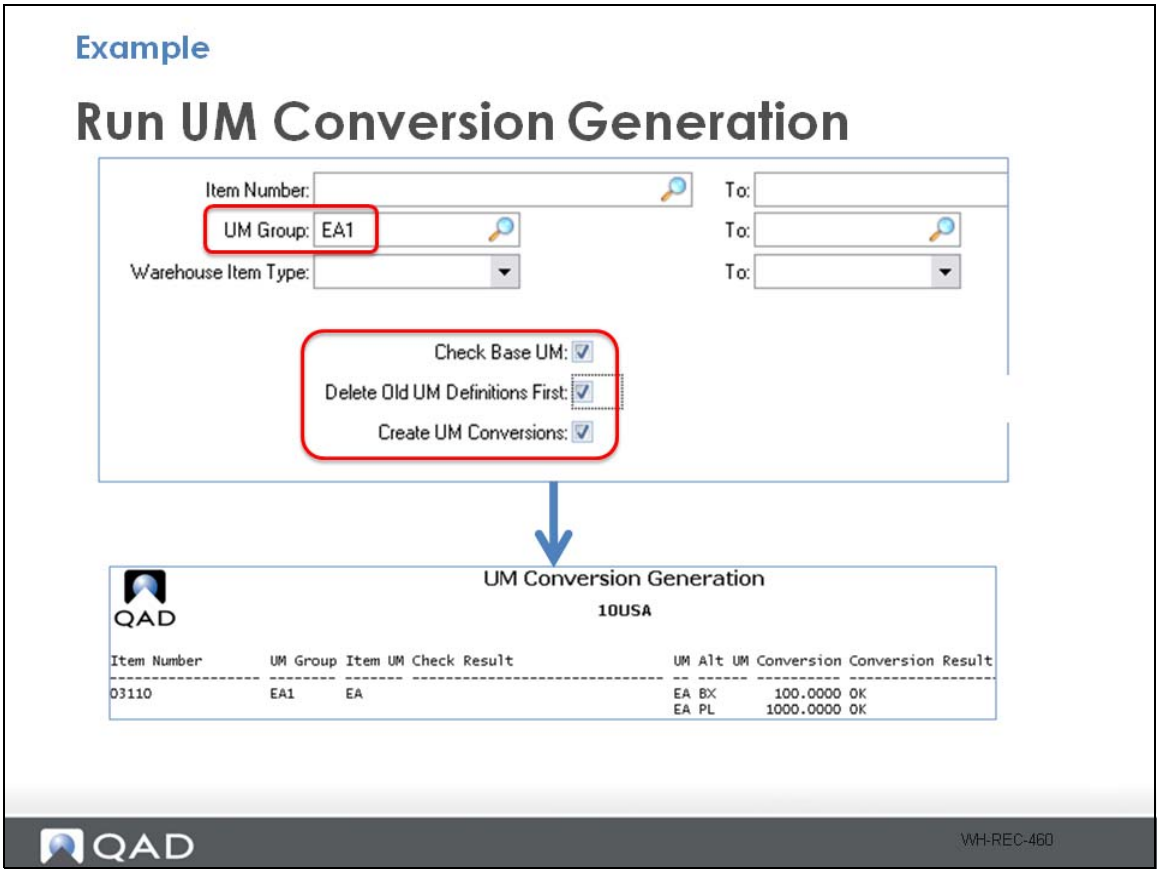
Example - Assign UM Group to Item



In UM Group Maintenance, you attach the UM group to the relevant items.

Once the new UM Groups are defined they need to be assigned to the items in the family/group. If not done, the default UM conversion applies to the item.

Example - Run the UM Conversion Generation

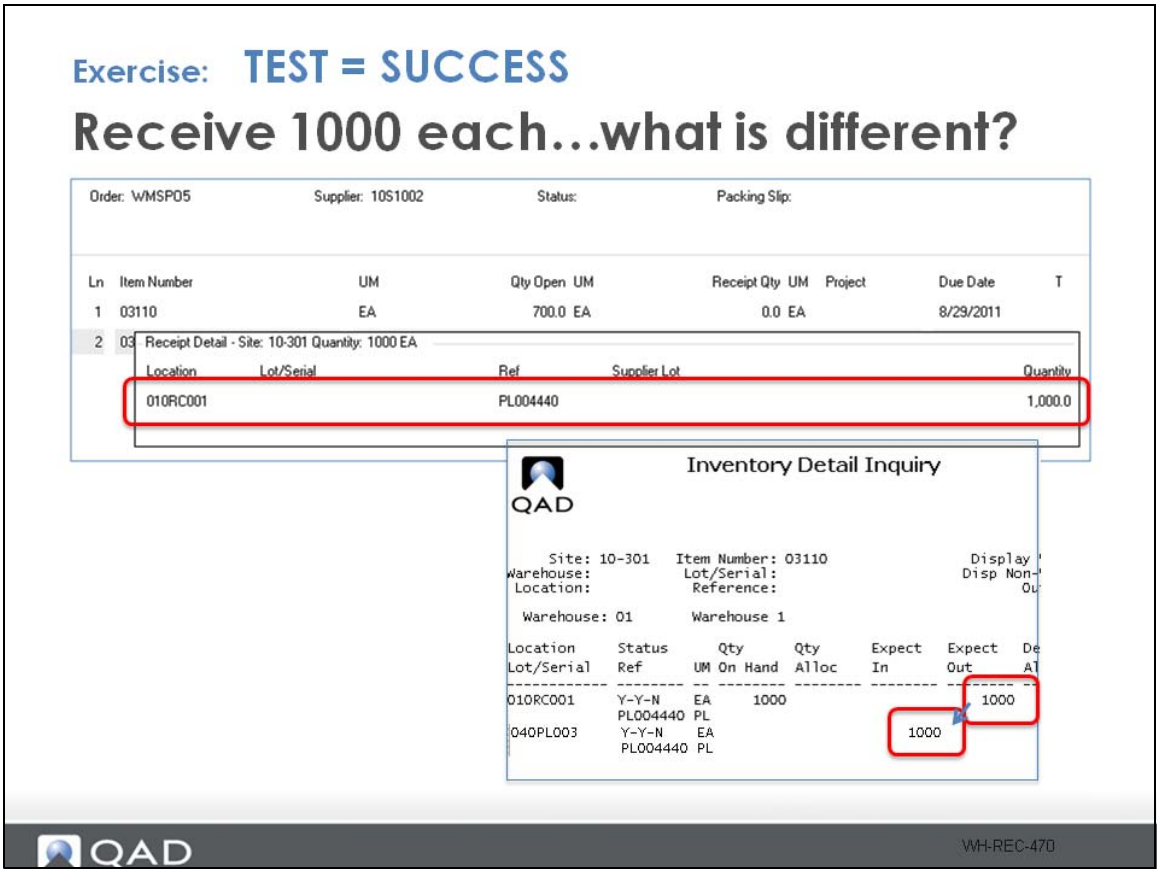


Leaving all fields blank runs conversions for all UM Groups.

Be sure to check all three boxes at the bottom.

Finally, to apply the new UM Groups to the assigned items, you must run UM Conversion Generation with Create UM Conversions checked.

Example Test = Success

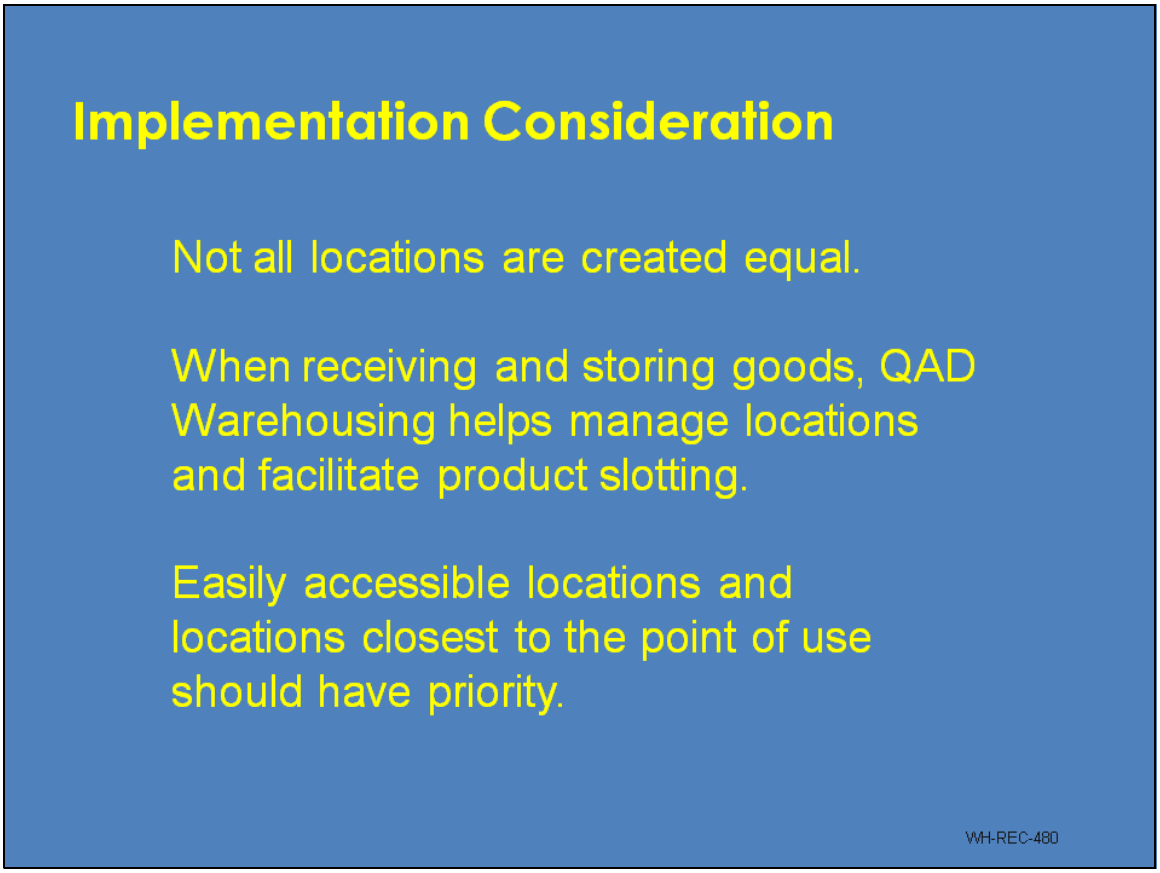


Use Inventory Detail Inquiry to test the UM changes.

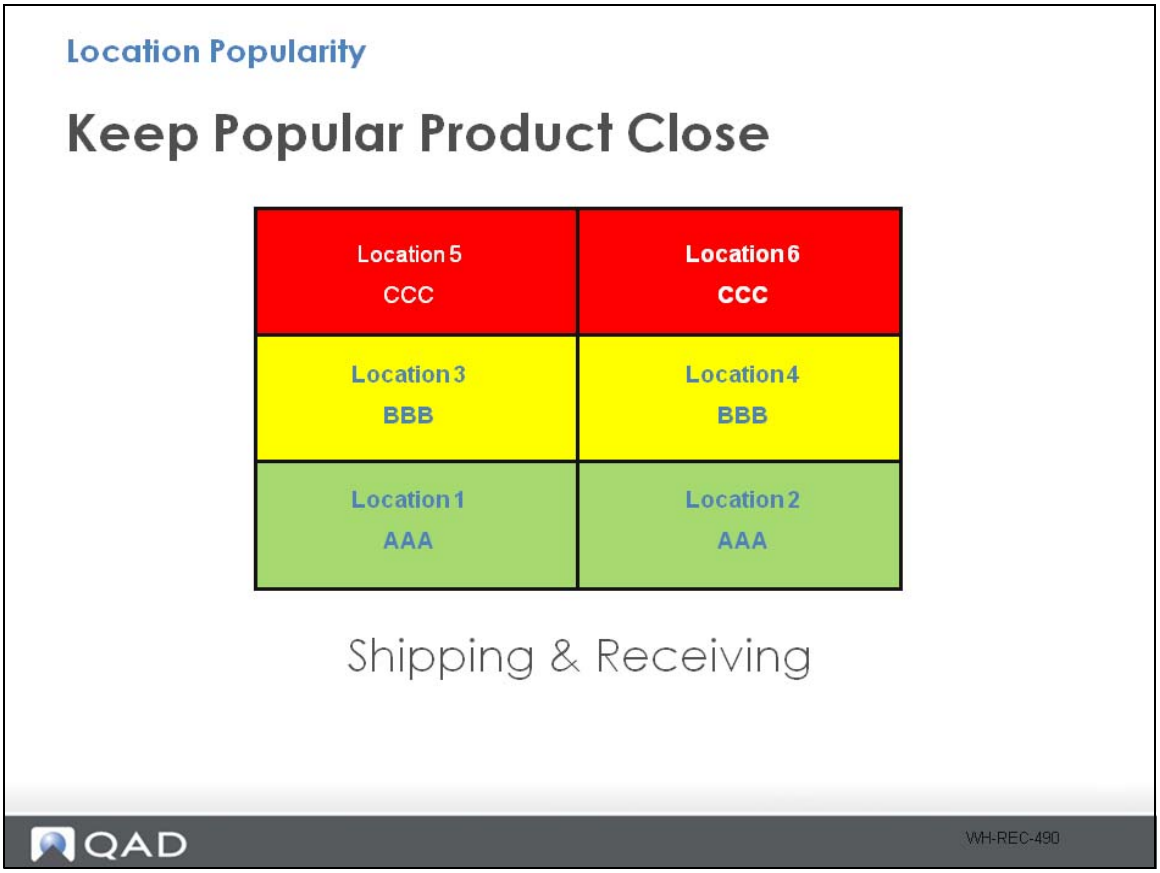
With the new Unit of Measure Group, a receipt of 1,000 each creates 1 pallet versus 10.

To validate the new UM conversions, receive 100o each of the item. Success means one pallet of the item (1000 each) is received and directed to a storage location.

Implementation Consideration - Back to Locations



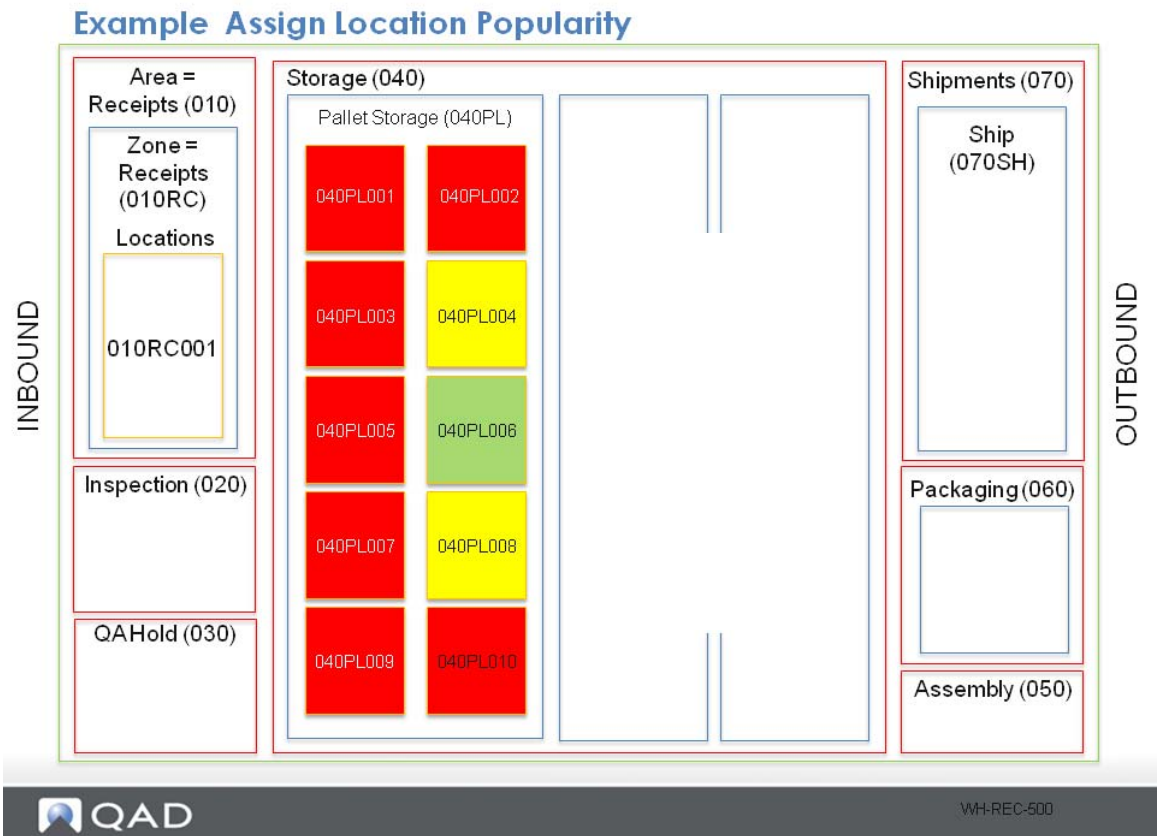
Location Popularity



You can set up location popularity within QAD Warehousing.

As previously discussed, you can define the relative priority for the system to choose a particular location when more than one location is a possible choice for put away.

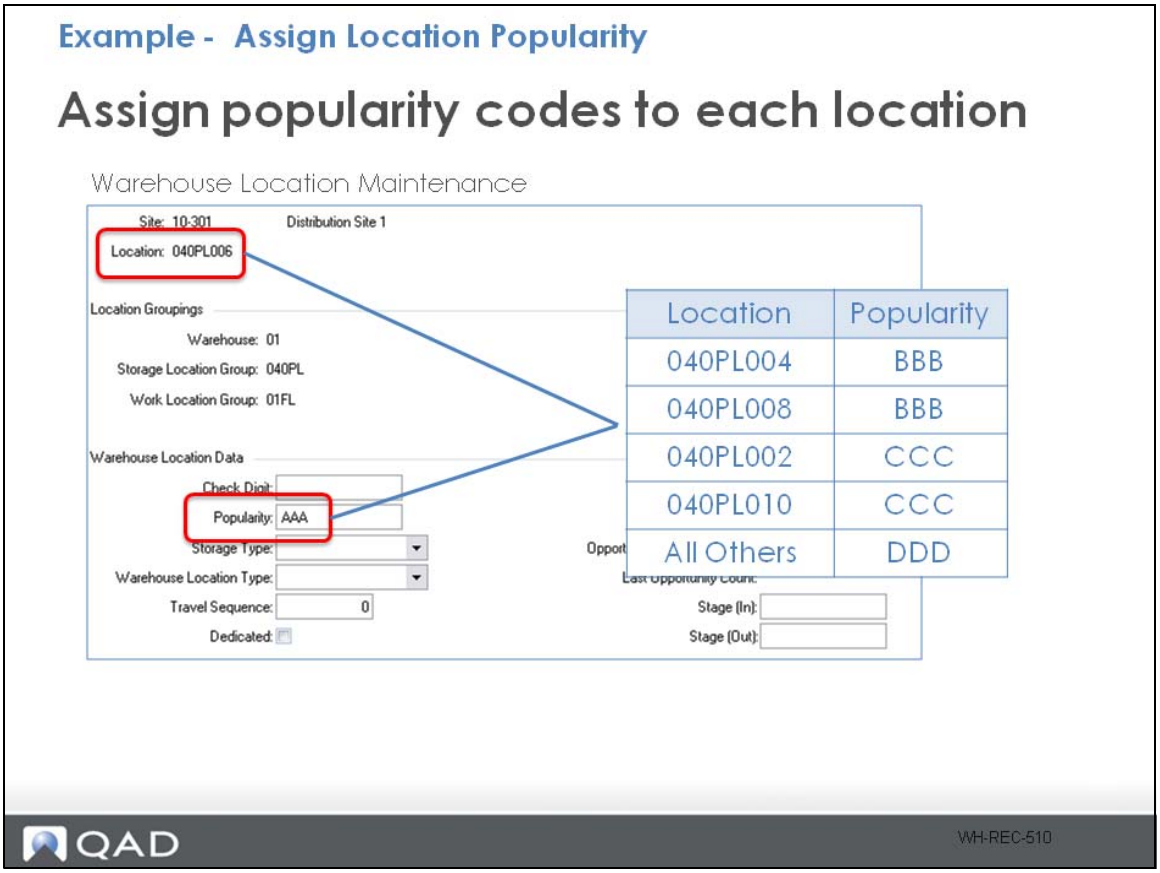
Example - Assign Location Popularity



In this example, the strategy is to keep product in 006 followed by 004 and 008, then 002 and 010. Finally, this is followed by 001, 003, 005, 007, and 009.

You can set up QAD Warehousing to support this strategy.

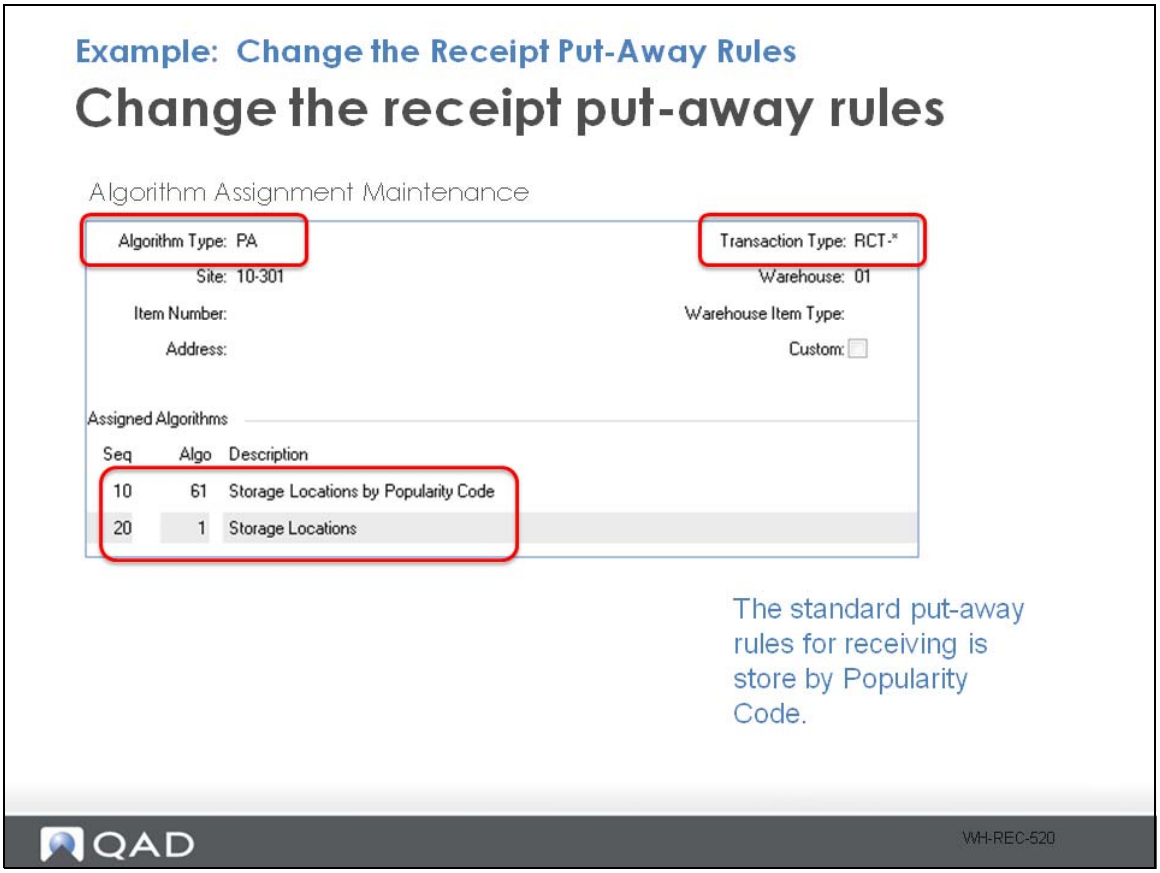
Example - Assign Popularity Codes



First, define the location popularity code.

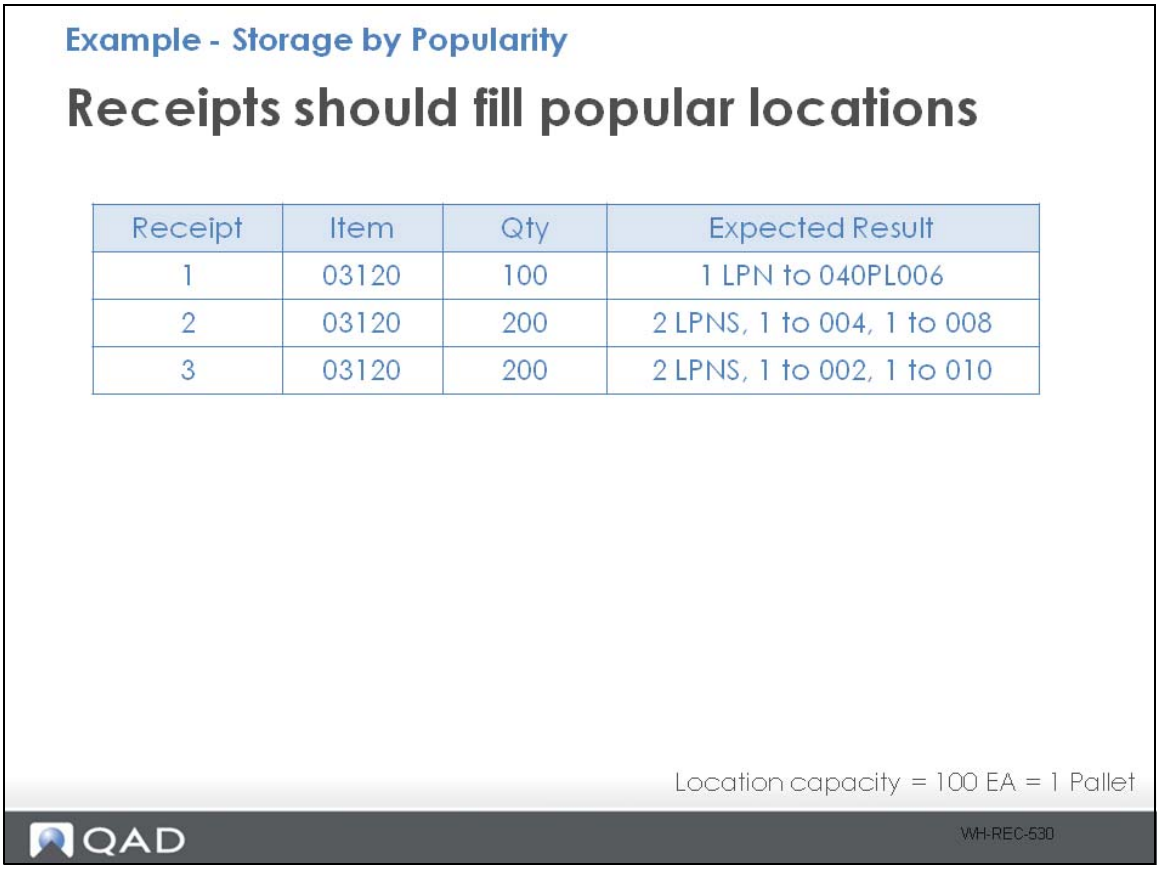
Remember A is more popular than B which is more popular than C.

Example - Change the Receipt Put-Away Rules



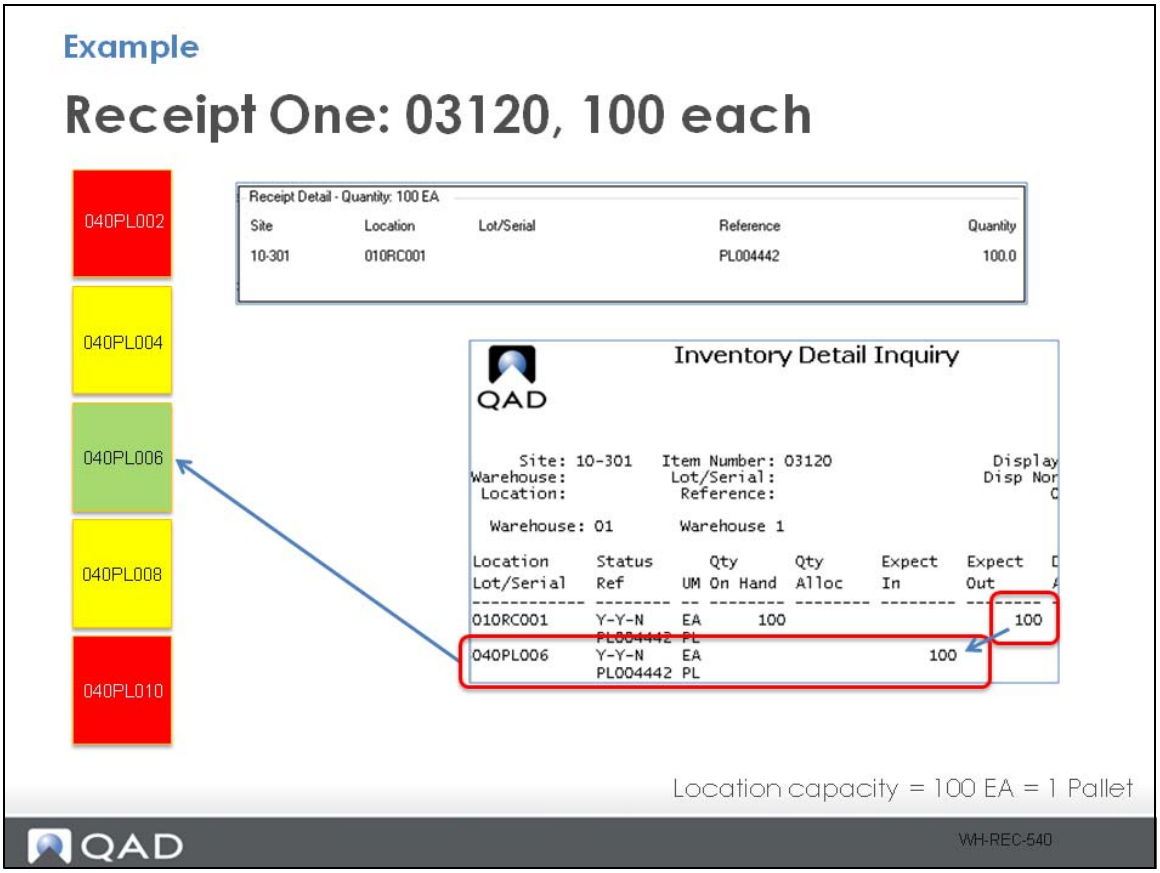
With a popularity code assigned to each location you next need to define put-away rule to search locations based on popularity. Do this by assigning algorithm 61, Storage Location by Popularity, to a general receipt (RCT-*).

Example - Storage by Popularity



In the example above, you have three separate receipts of the same item; however, the quantity differs for the first receipt, and the receipts are based on locations that have set popularity codes. The topics that follow show details for Receipt One, Receipt Two and Receipt Three.

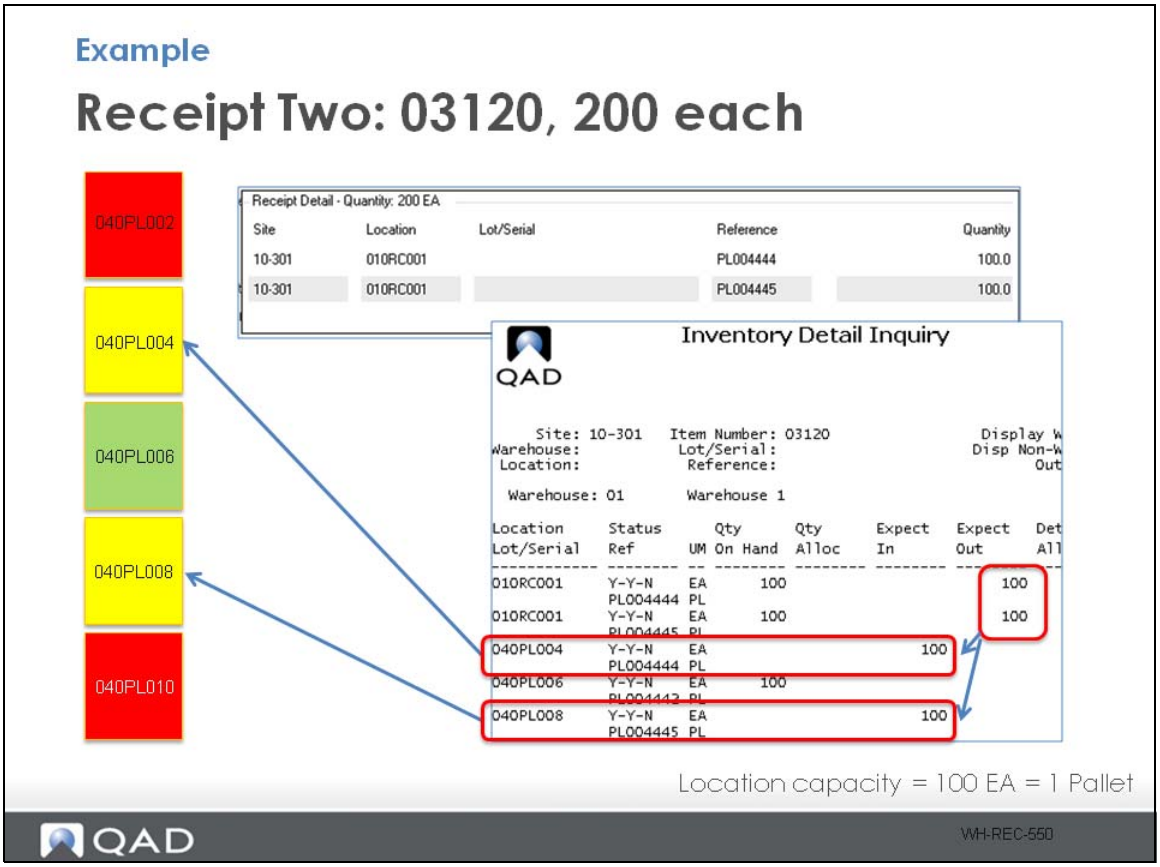
Example- Receipt One



First, receive 100 EA of item 03120. Using the popularity put-away algorithm the load should be directed to the most popular (and available) location, 040PL006

In this example, the location capacity is 100 EA which equals one pallet.

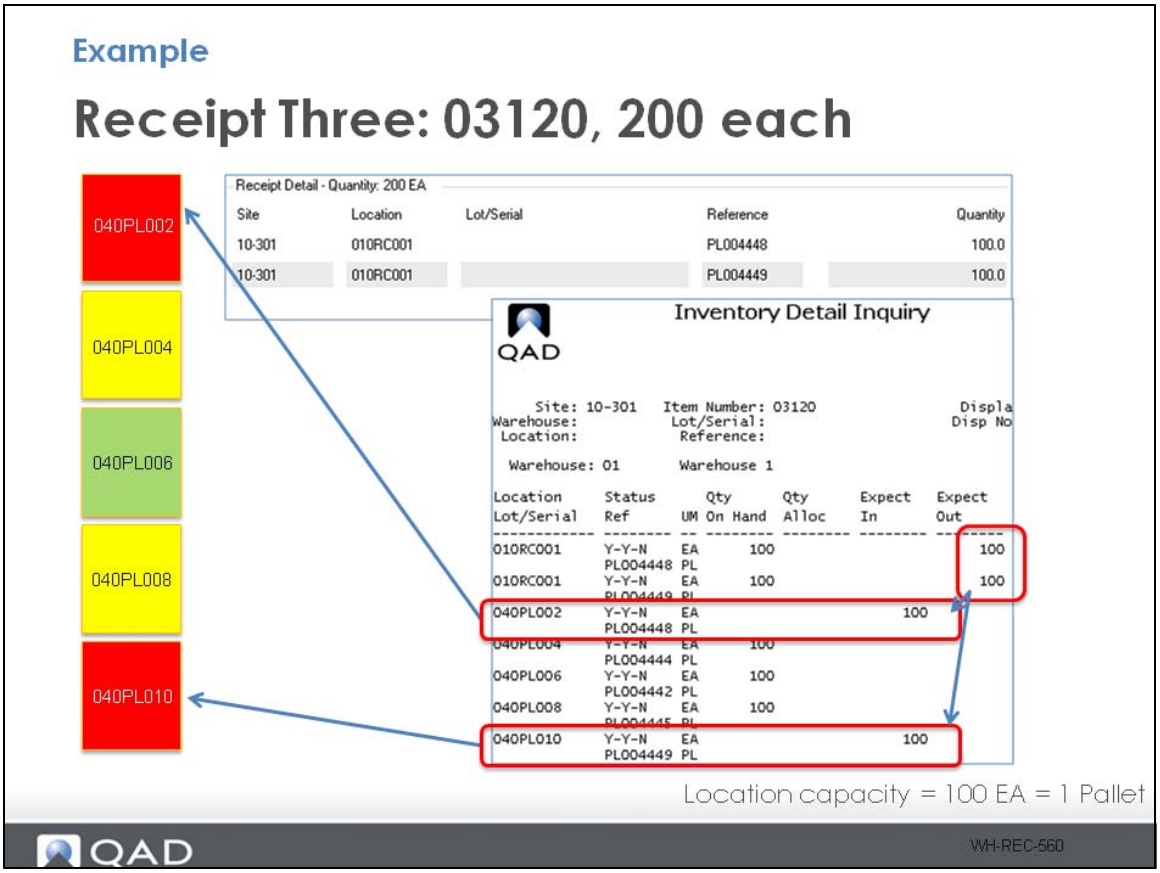
Example - Receipt Two



Next receive 200 EA of item 03120

Again, with the popularity put-away rules being used, the next most popular locations should be selected, 040PL004 and 040PL008.

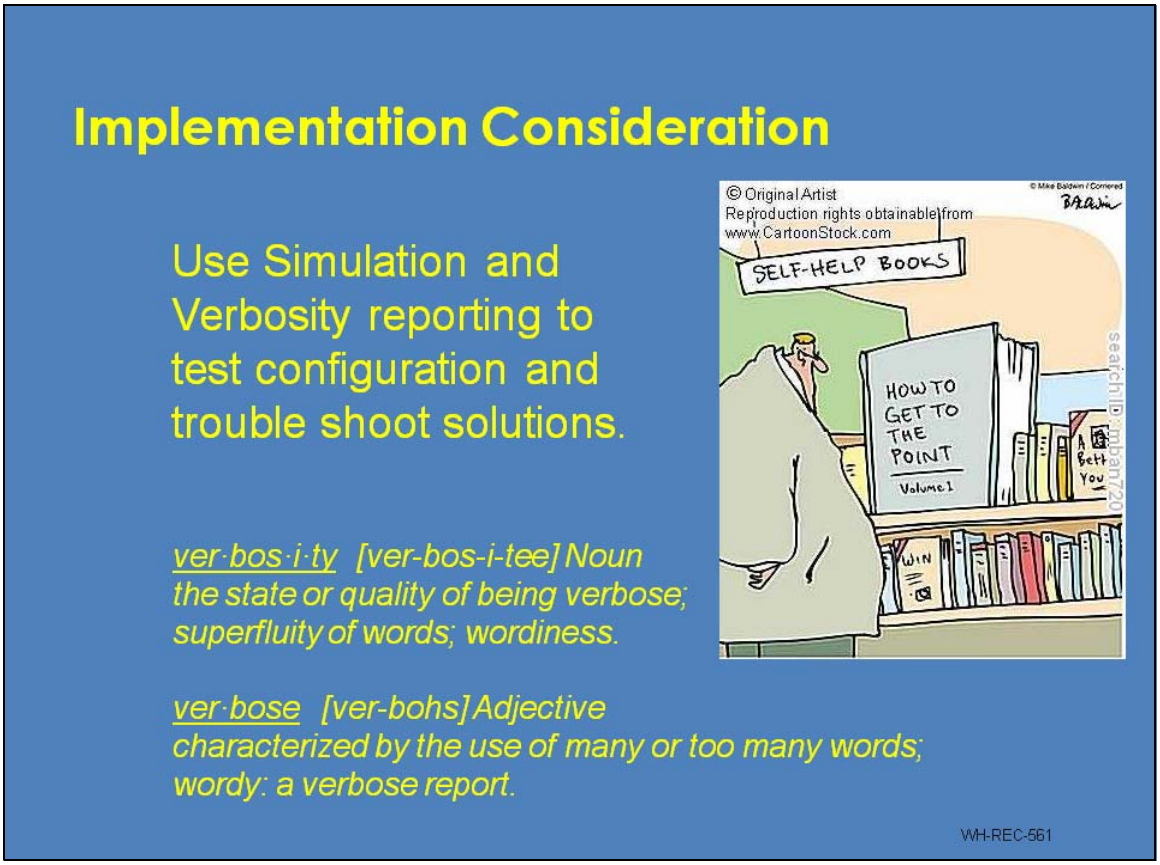
Example - Receipt Three



Finally receive 200 again of item 03120.

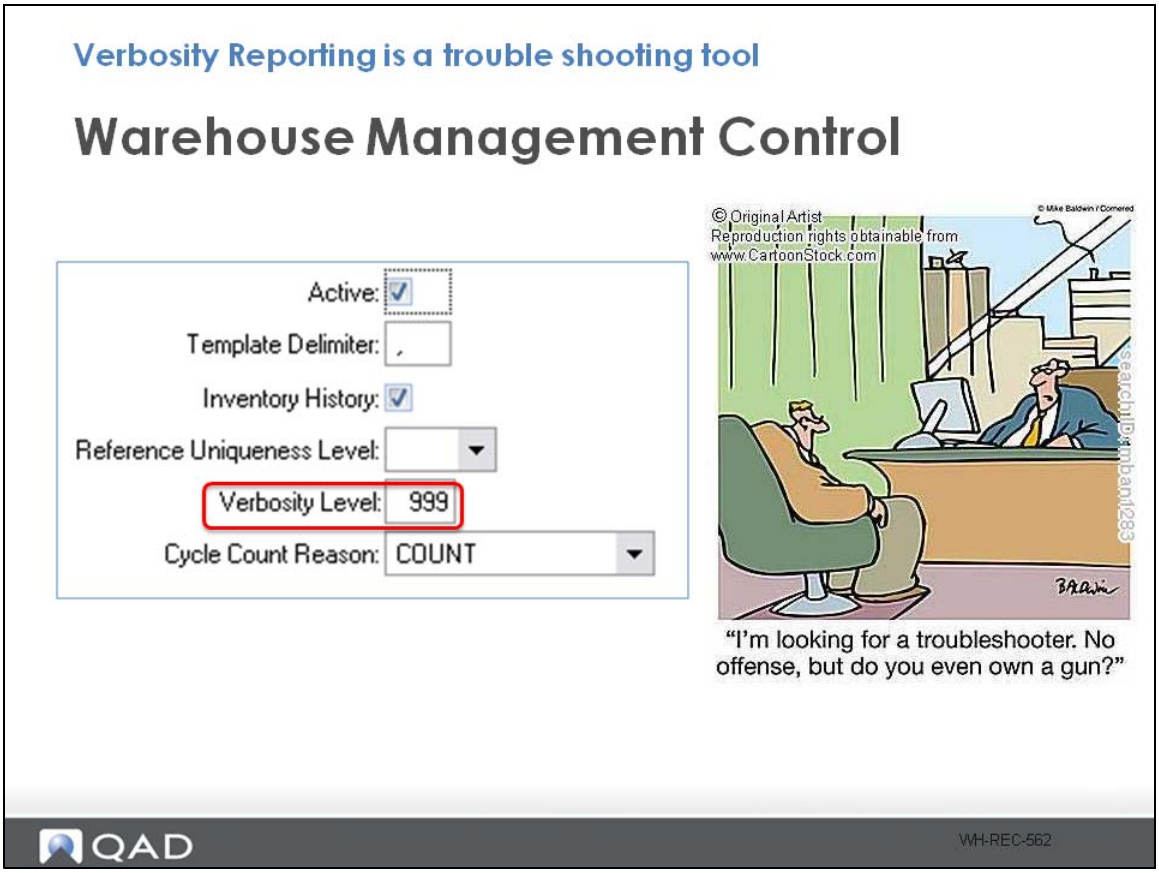
Following the same rationale, the loads should be directed to location 040PL002 and 040PL010.

Implementation Consideration



Occasionally it is helpful for you to review the process the system is going through in an effort to complete a task. To help with this process, QAD Warehousing lets you simulate various product flows and report the possible results given the current inventory and setup snapshot. Also Verbosity reporting/inquiry is available to track and report the system decision flow process used to develop the simulation results.

Verbosity Reporting is a Troubleshooting Tool



To use Verbosity reporting set the Verbosity Level field in Warehouse Management Control to a value in the range of 0 to 999 depending on the level of message detail you want to capture.

Level	Result
999	Reports all system messages
0	Turns off Verbosity reporting. No messages are reported

Although any number between 0 and 999 is allowed, the system tends to round entries to the nearest 10.

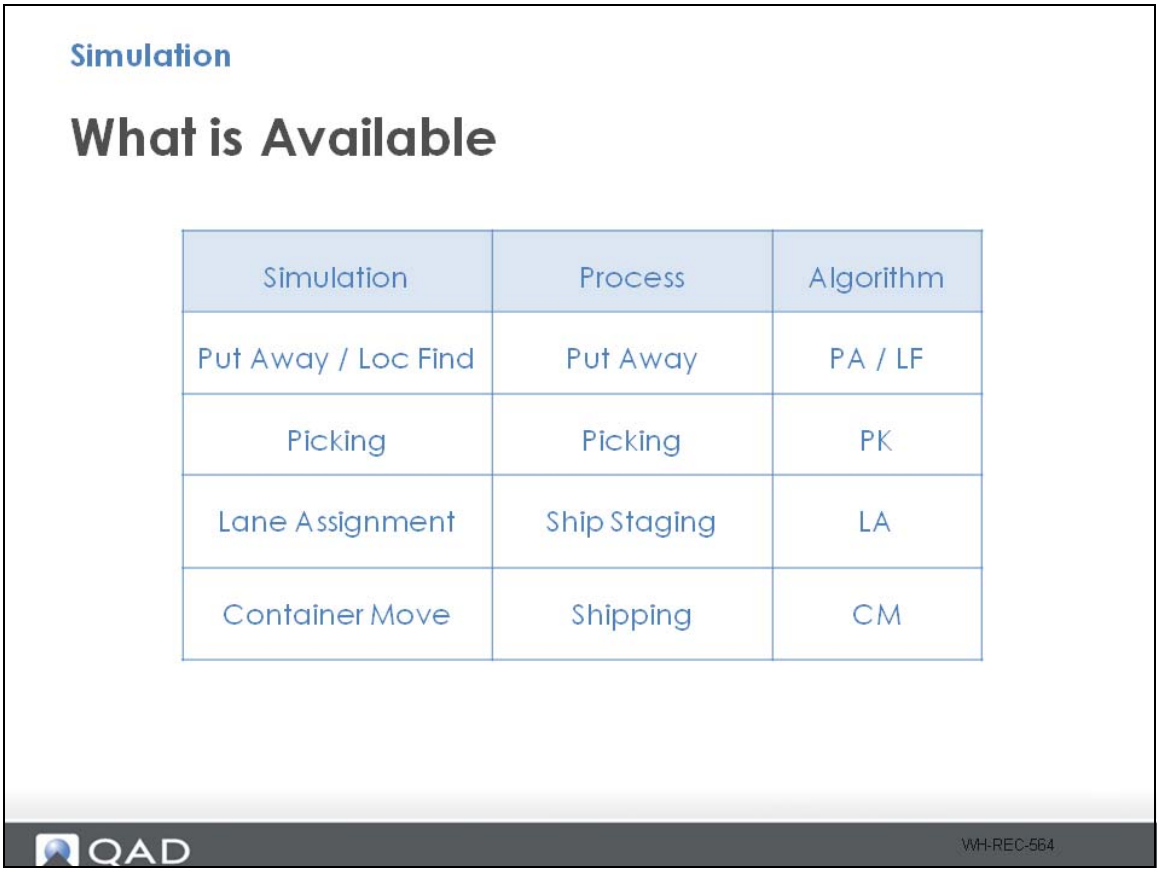
The verbosity level you need depends on how much information is required. You should test results to determine what is best for your situation.

Setting Verbosity Level for Go Live

Although Verbosity reporting is helpful for testing and solving problems, it does impact system performance. The higher the Verbosity Level, the slower the system performs. Remember to set Verbosity Level to 0 for go live.

Verbosity levels affect the log reports. When set properly, the verbosity level affects the data that displays in the log reports. This can be useful when troubleshooting.

Simulation



You can simulate the various transaction (types) associated with the types of algorithms used.

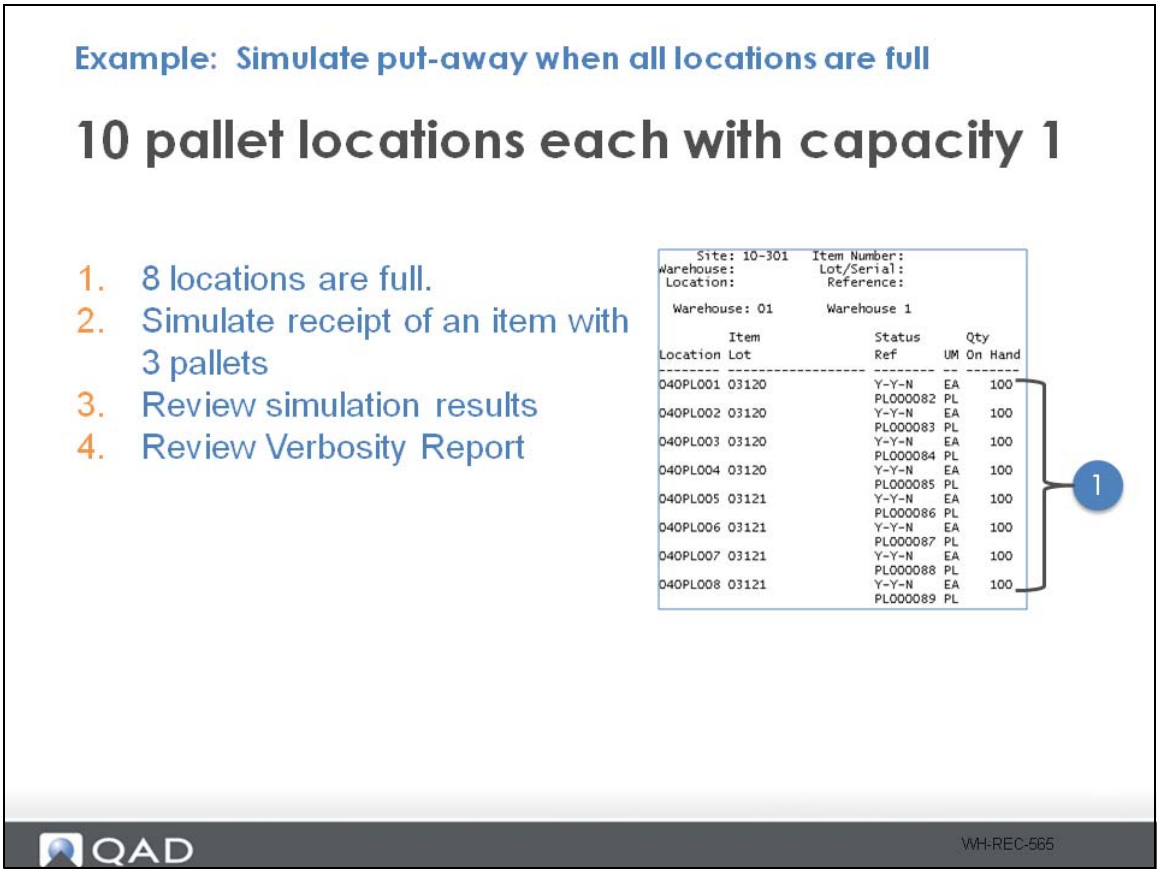
The put away/loc find (PA/LF) algorithm simulates the put-away of received inventory using either the PA or LF algorithm.

Picking simulates picking of inventory from locations using PK algorithms.

Lane Assignment simulates product staging to a shipping lane using LA algorithms.

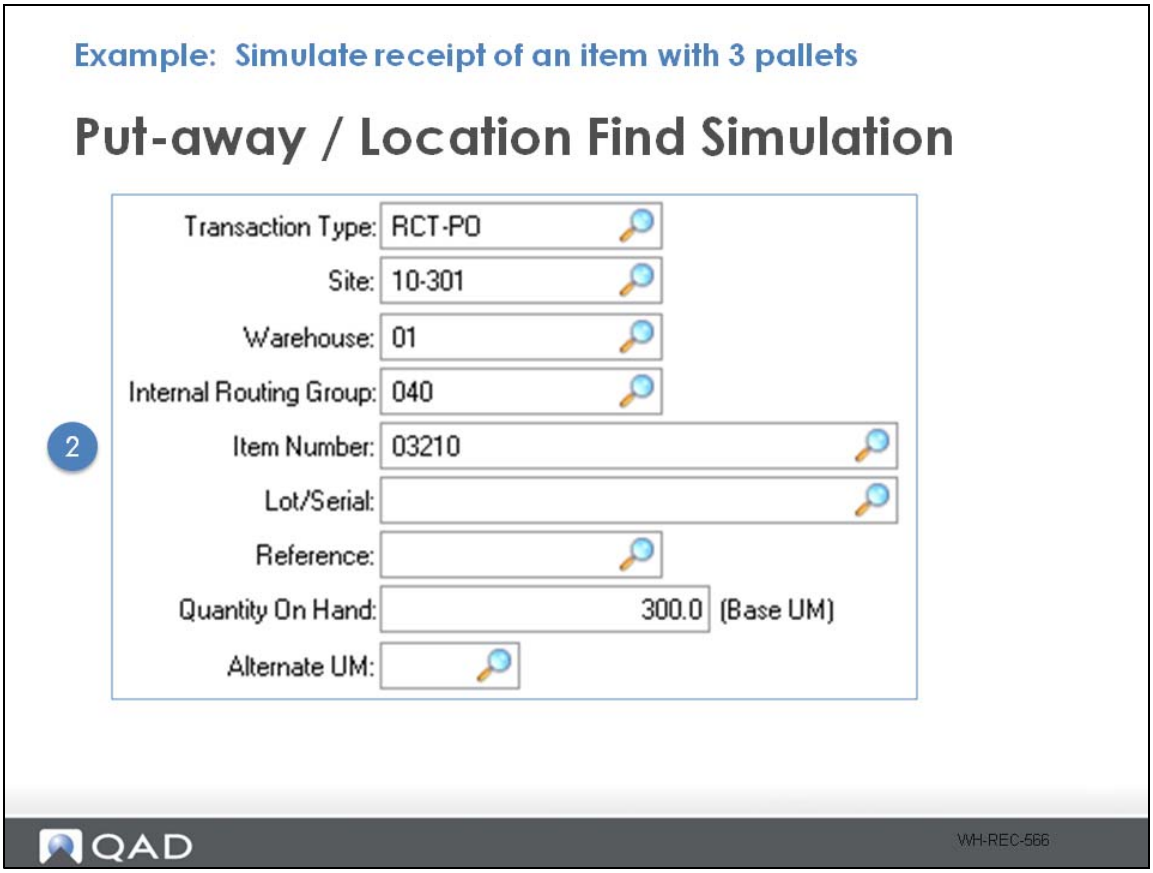
Container Move simulates the movement of product to suitable stage, truck, and dock locations using CM algorithms.

Example - Simulate Put Away when Locations are Full



To demonstrate the simulation and verbosity-reporting tools, you can receive three pallets into the warehouse. In this situation, the pallet locations have capacity 1 (pallet) and eight of the ten locations are full, which means that there are only two pallet locations available for storage.

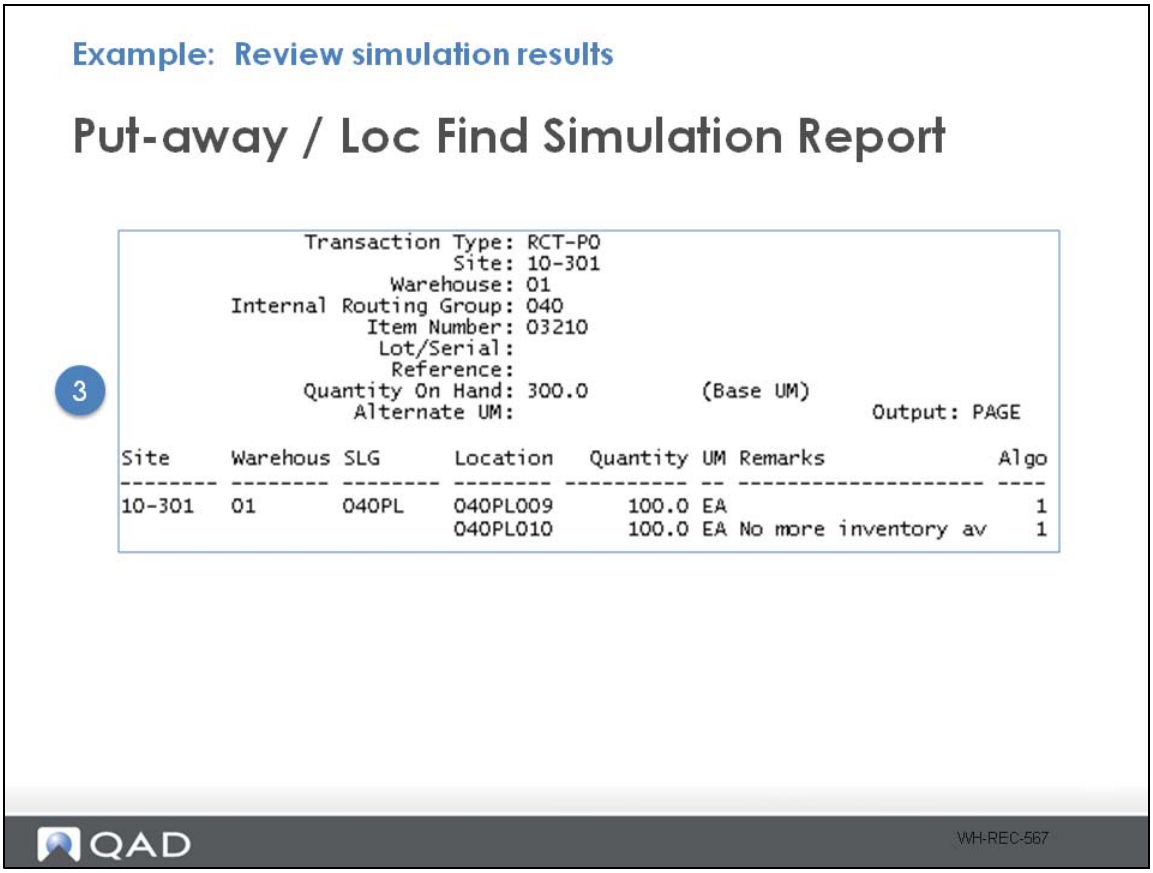
Example - Simulate Receipt of an Item with Three Pallets



Performing a PA/LF simulation shows you where the pallets are stored. In this scenario, you use transaction type RCT-PO which uses the PA algorithm to find suitable locations in Area 040 for 300 each of item 03210.

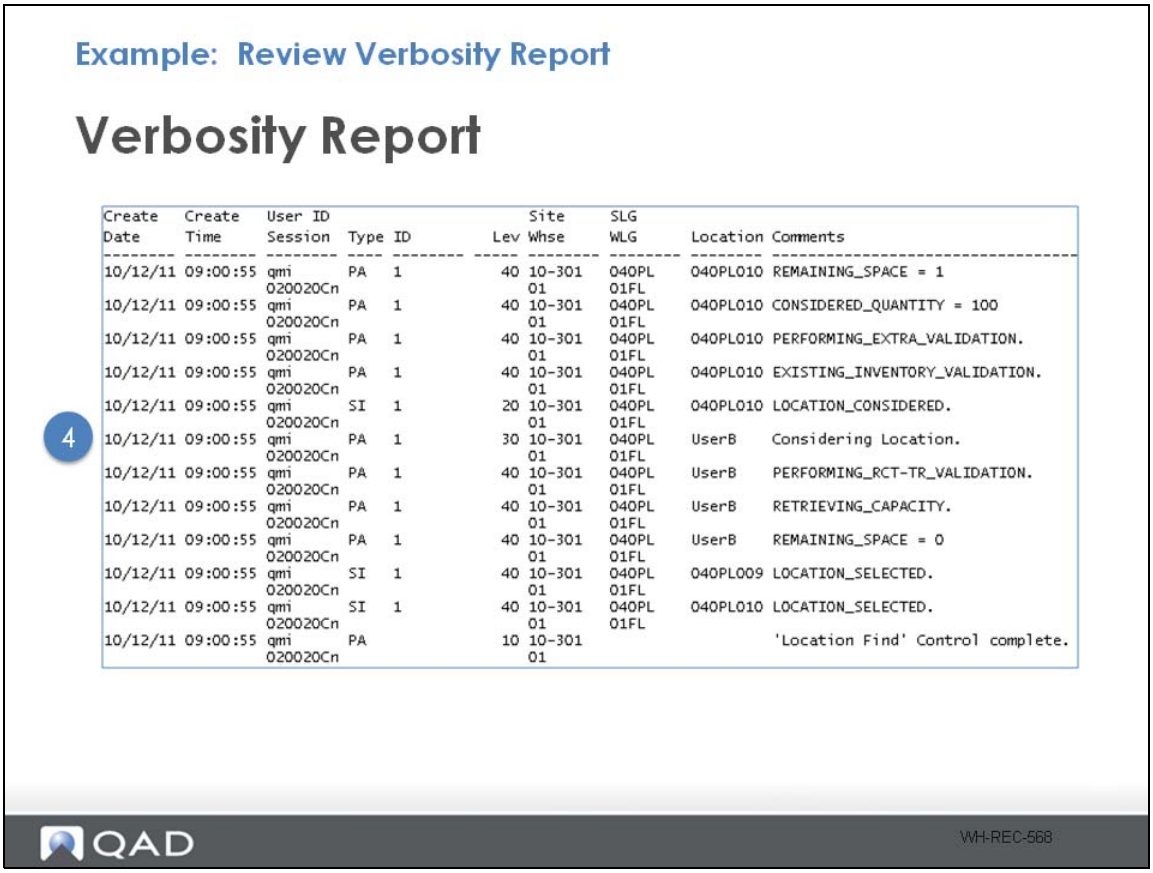
Above, 300 each should create three pallet put-away transactions of 100 each.

.Example - Review Simulation Results



The PA/LF Simulation Report shows two pallets stored in Locations 040PL009 and 040PL010; however, there are no available locations for the third pallet.

Example - Verbosity Report



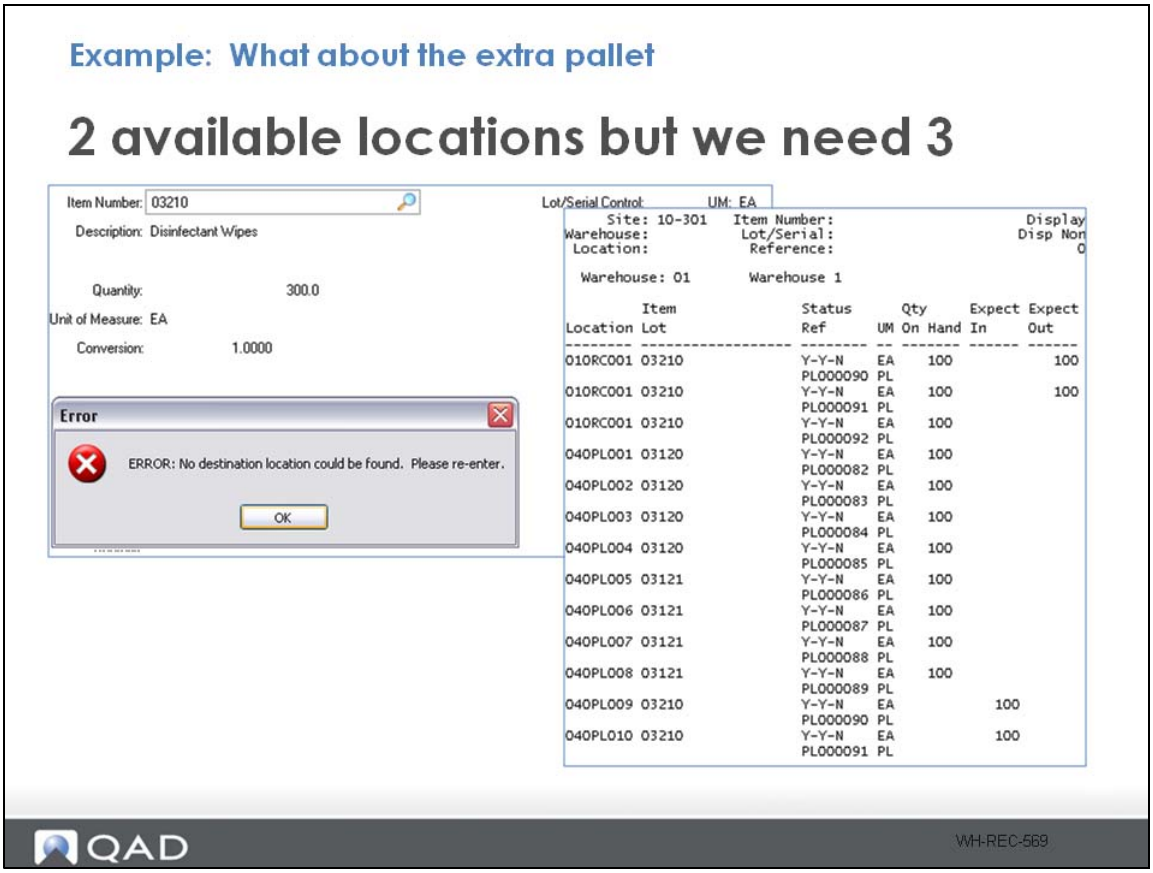
Create Date	Create Time	User ID Session	Type	ID	Lev	Site Whse	SLG WLG	Location	Comments
10/12/11	09:00:55	qmi 020020Cn	PA	1	40	10-301 01	040PL 01FL	040PL010	REMAINING_SPACE = 1
10/12/11	09:00:55	qmi 020020Cn	PA	1	40	10-301 01	040PL 01FL	040PL010	CONSIDERED_QUANTITY = 100
10/12/11	09:00:55	qmi 020020Cn	PA	1	40	10-301 01	040PL 01FL	040PL010	PERFORMING_EXTRA_VALIDATION.
10/12/11	09:00:55	qmi 020020Cn	PA	1	40	10-301 01	040PL 01FL	040PL010	EXISTING_INVENTORY_VALIDATION.
10/12/11	09:00:55	qmi 020020Cn	SI	1	20	10-301 01	040PL 01FL	040PL010	LOCATION_CONSIDERED.
10/12/11	09:00:55	qmi 020020Cn	PA	1	30	10-301 01	040PL 01FL	UserB	Considering Location.
10/12/11	09:00:55	qmi 020020Cn	PA	1	40	10-301 01	040PL 01FL	UserB	PERFORMING_RCT-TR_VALIDATION.
10/12/11	09:00:55	qmi 020020Cn	PA	1	40	10-301 01	040PL 01FL	UserB	RETRIEVING_CAPACITY.
10/12/11	09:00:55	qmi 020020Cn	PA	1	40	10-301 01	040PL 01FL	UserB	REMAINING_SPACE = 0
10/12/11	09:00:55	qmi 020020Cn	SI	1	40	10-301 01	040PL 01FL	040PL009	LOCATION_SELECTED.
10/12/11	09:00:55	qmi 020020Cn	SI	1	40	10-301 01	040PL 01FL	040PL010	LOCATION_SELECTED.
10/12/11	09:00:55	qmi 020020Cn	PA		10	10-301 01			'Location Find' Control complete.

Now, running the Verbosity Report shows us the decision process the system went through to determine the locations.

Note This is the end of the report. There several lines prior to these that do not fit into this example report

In a more complex environment, you can use this report to debug the configuration and determine what is happening.

Example - What About the Extra Pallet?



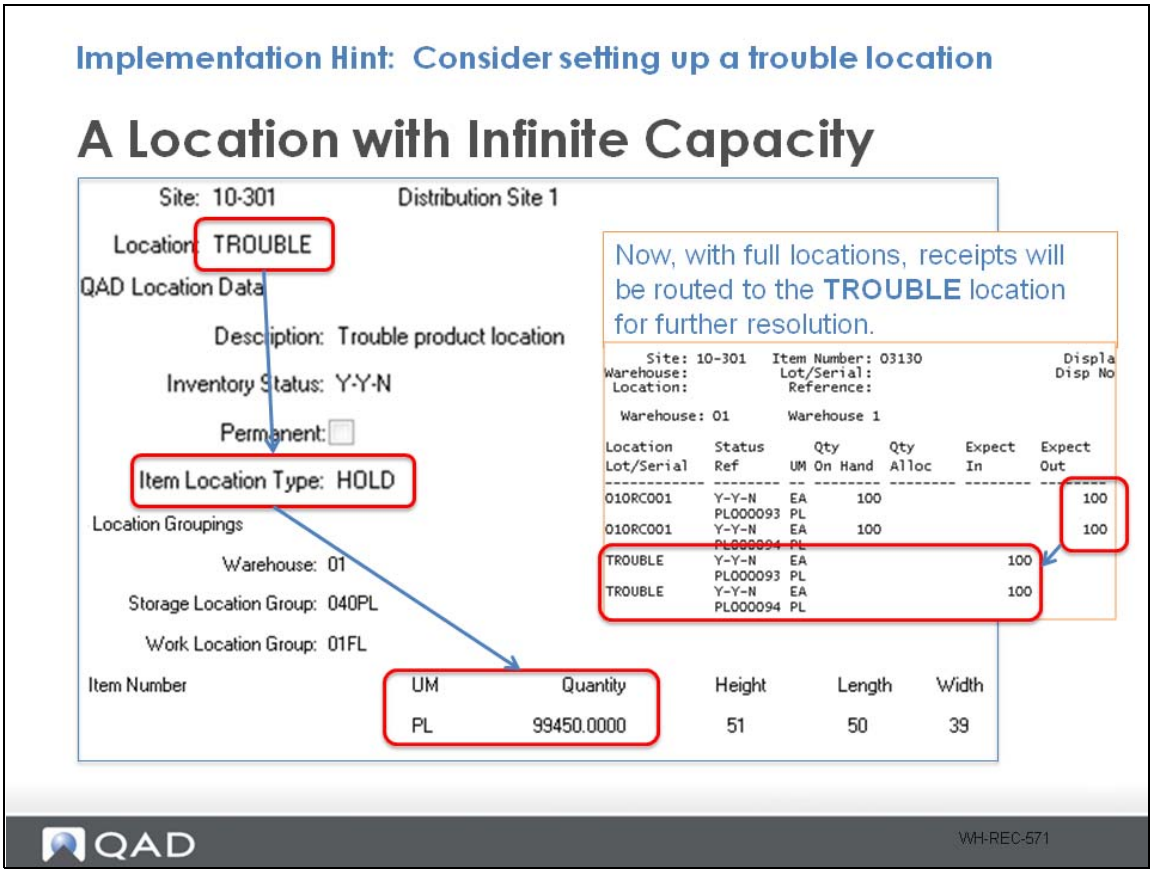
Now, you are ready to actually receive three pallets with only two available locations.

When the receipt is processed an error message indicates no destination location can be found.

Inventory Detail Inquiry shows all three pallets were received. One stays in receiving while the other two are routed to the two available locations.

You should work with your customer to setup a process to address potential problems.

Implementation Hint: Setting Up a Trouble Location



To help increase visibility to potential problem inventory, similar to the previous example, consider setting up a trouble location with a large capacity that collects all pallets that cannot find a home through the traditional rules.

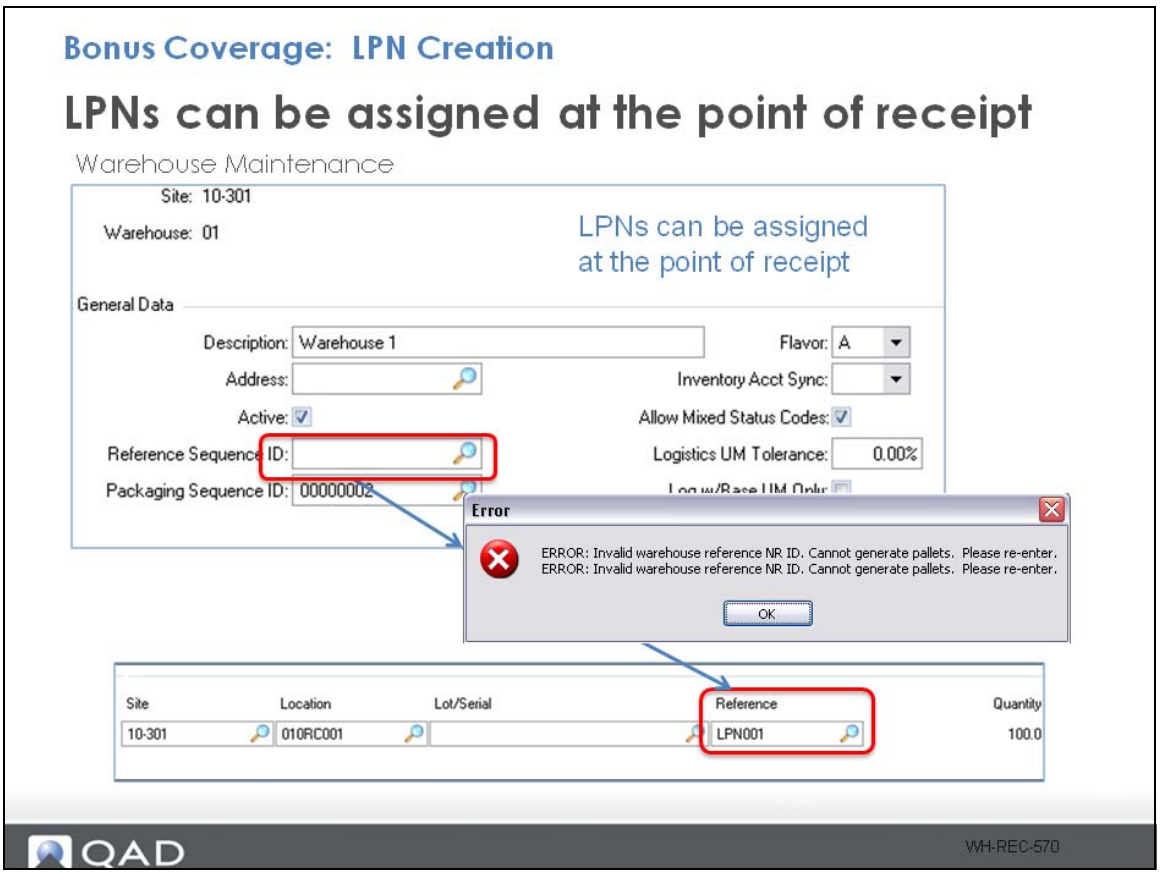
You can set up a process to routinely review the inventory in this trouble location.

In the above example, you can alternatively change the warehouse location capacity to:

UM = EA, Quantity = 99999

This achieves the same results. The general rule is have enough capacity in the location to ensure anything fits (assuming you allow mixed item storage).

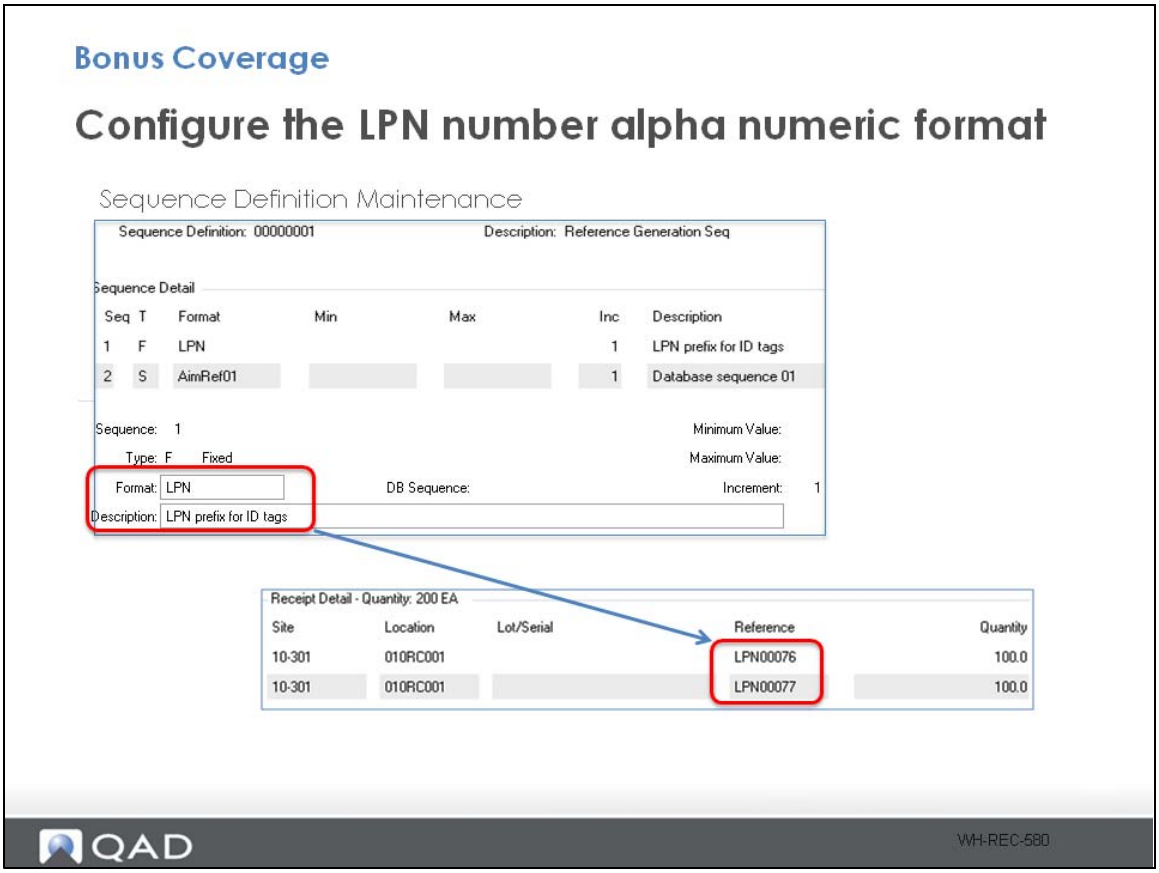
Bonus Coverage: LPN Creation



You can disable creation of LPNs by blanking the Reference Sequence ID field in Warehouse Maintenance. This allows you to apply a pre-printed LPN at the point of receipt.

For example, if your company buys rolls of pre-printed LPNs that your staff peels off then scans, you can use the above mechanism to assign at the receipt.

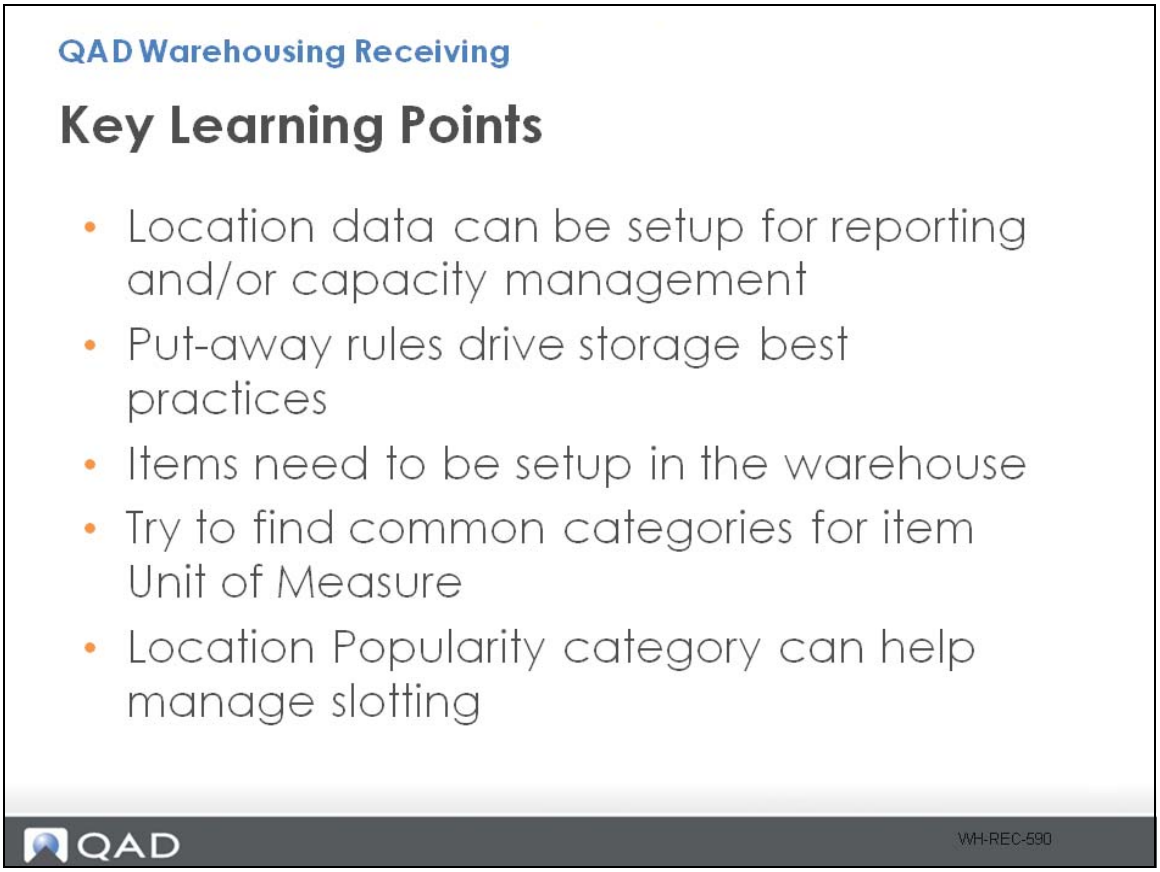
Bonus Coverage - Configure the LPN



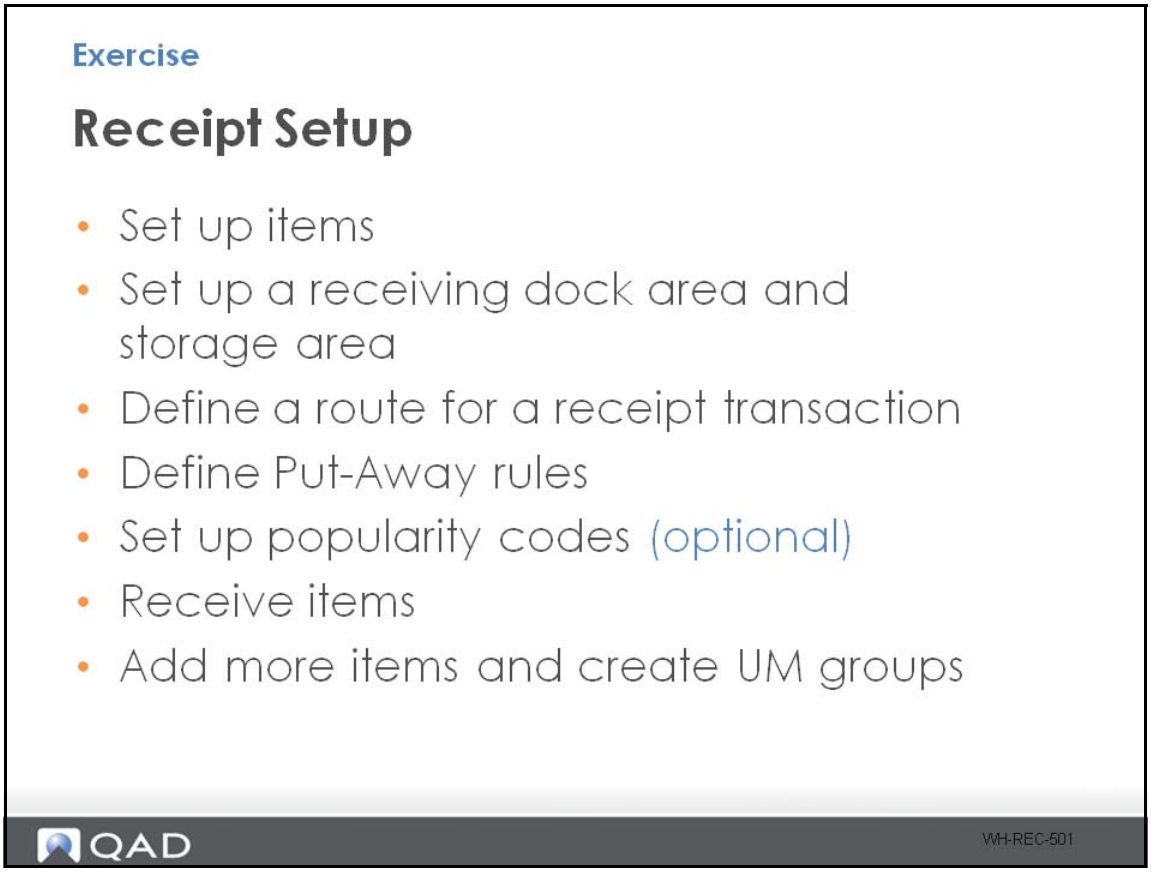
You can tailor the LPN format for your customer using sequence definition maintenance. In this example, you change the format prefix from PL to LPN.

This is a cosmetic change with no system impact.

Key Learning Points



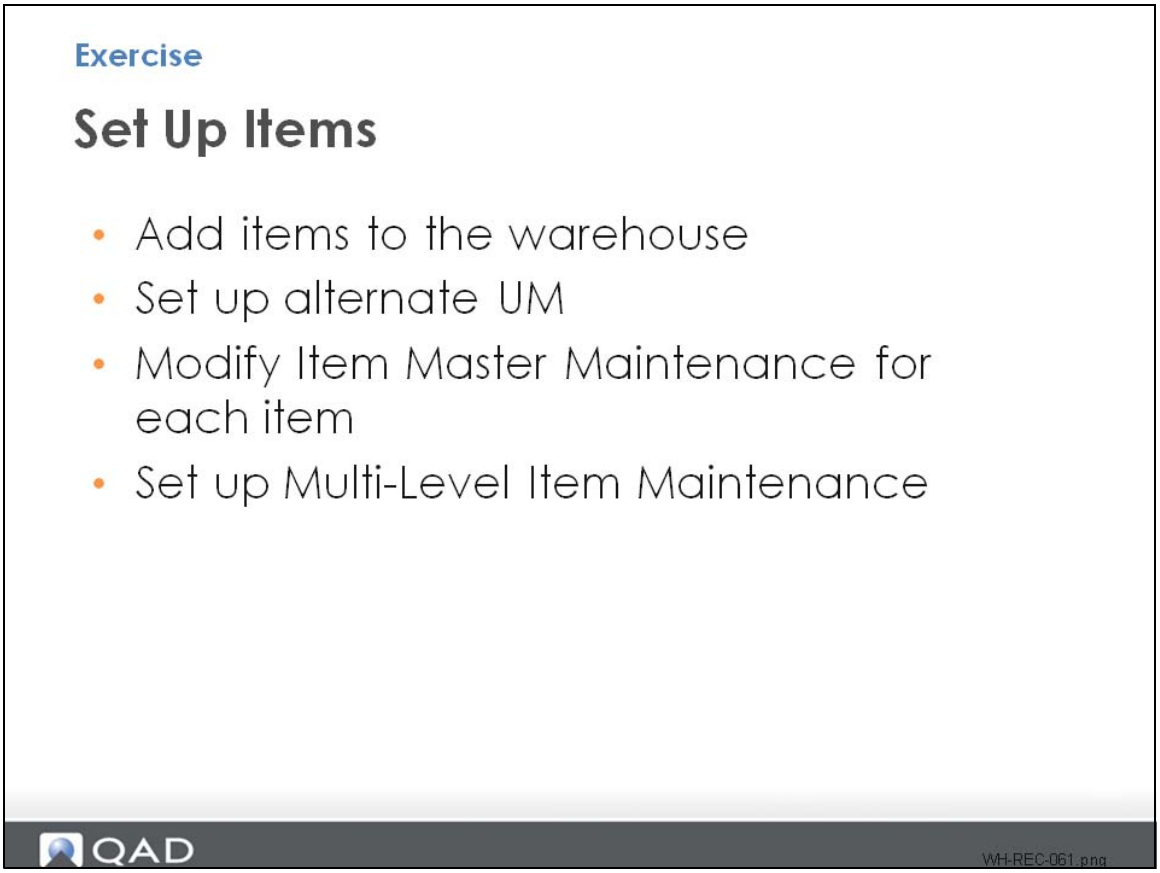
Exercises



The following topics contain receiving exercises that are based on information presented in this section.

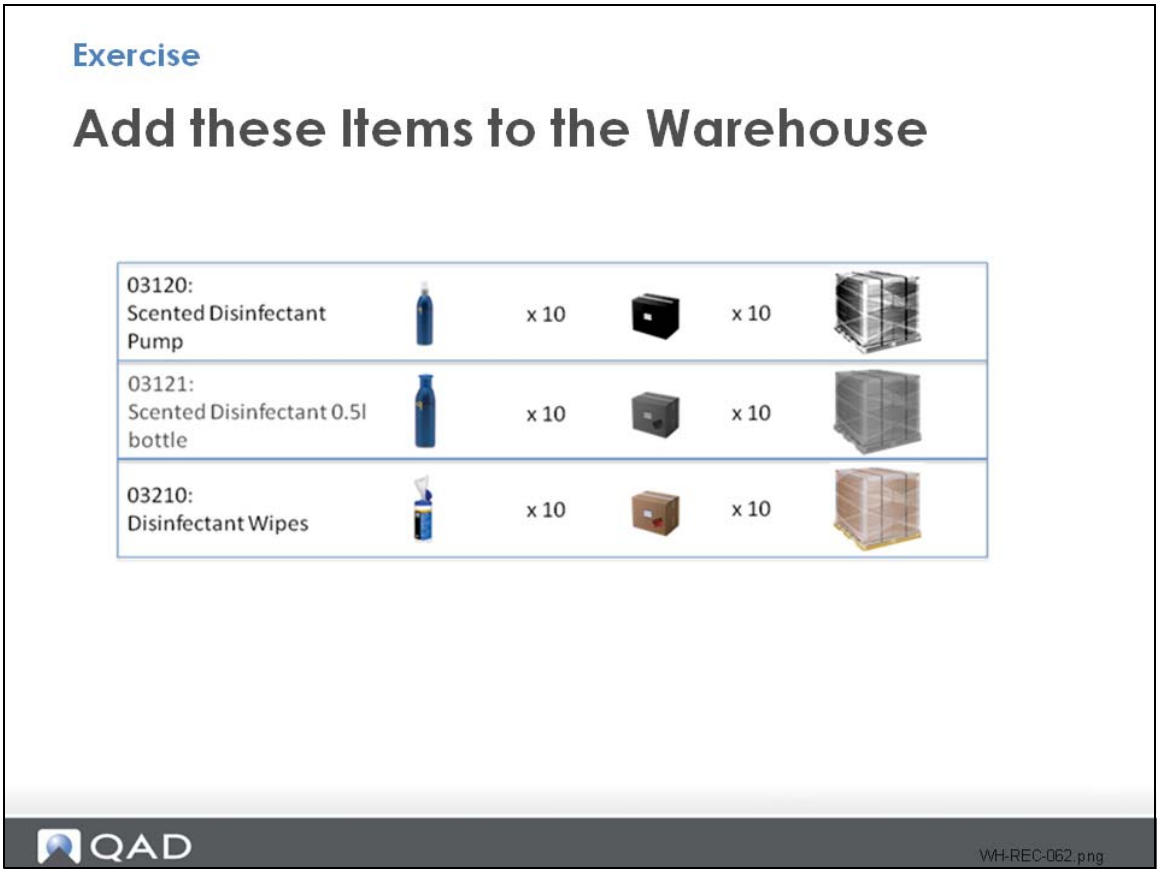
In some instances, space is provided in tables for you to enter the data you entered in QAD Warehousing programs; in other instances, the values you need to enter in fields are presented within the tables.

Exercise - Set Up Items



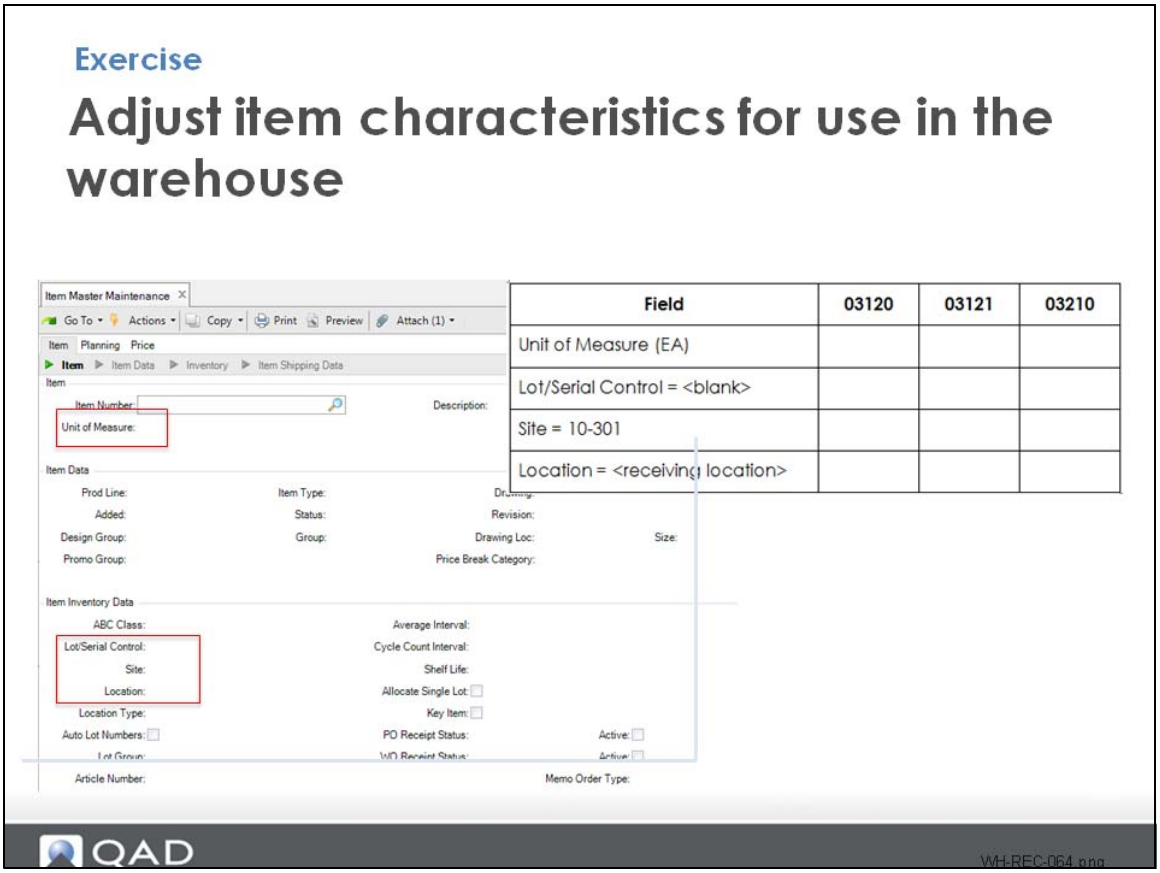
The following topics walk you through setup of items for the exercise.

Exercise- Add Items to the Warehouse



In the following topics, you add these items to the warehouse.

Exercise - Adjust Item Characteristics for Use in the Warehouse

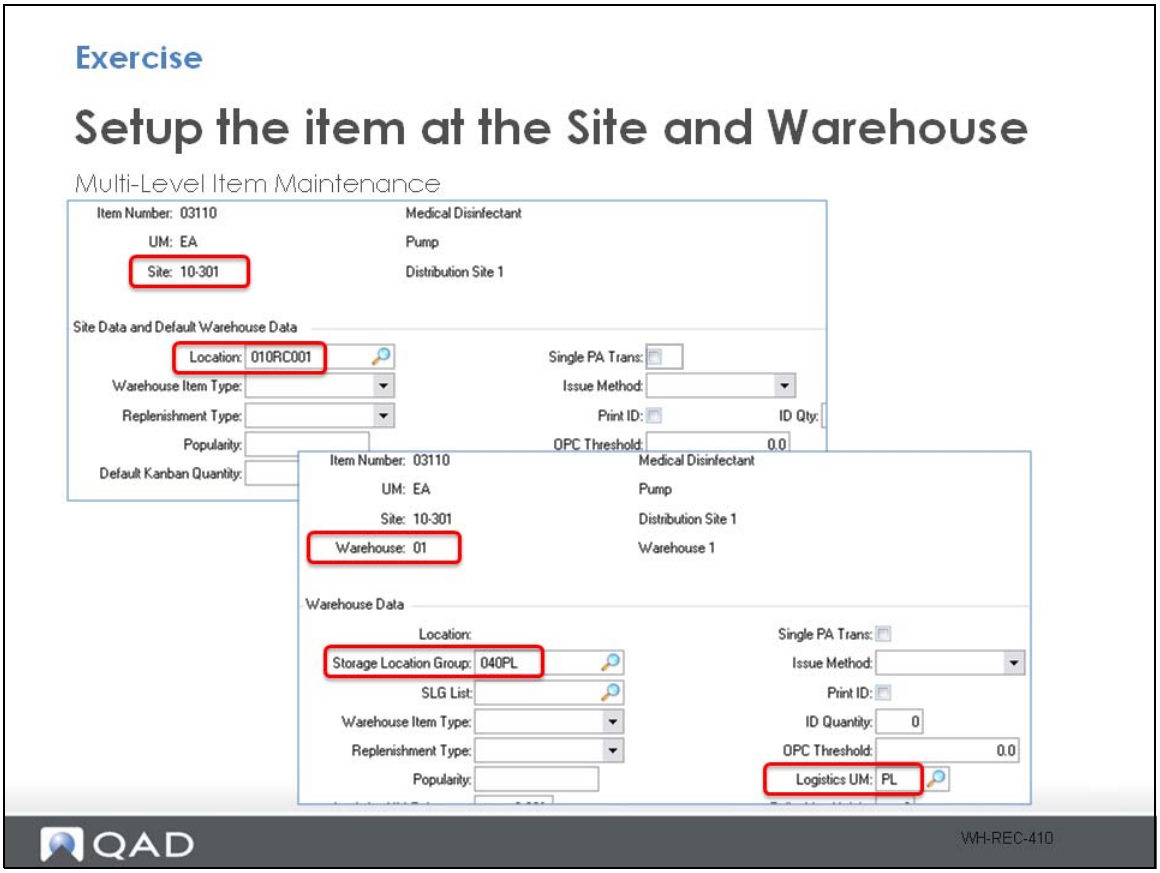


Use Item Master Maintenance to modify each warehouse item. Use the following table to enter data in fields. When data is not supplied, use the space here to record your entry:

Field	03120	03121	03210
UM	EA	EA	EA
Lot/Serial Control	blank	blank	blank
Site	10-301	10-301	10-301
Location = receiving location			

When you associated this site with a warehouse in Multi-Level Item Maintenance, the system populates the Location field in Multi-Level Item Maintenance when product is received. If not, the Location field populates incorrectly upon receipt and can cause processing errors.

Exercise - Adjust Warehouse Item Level Information



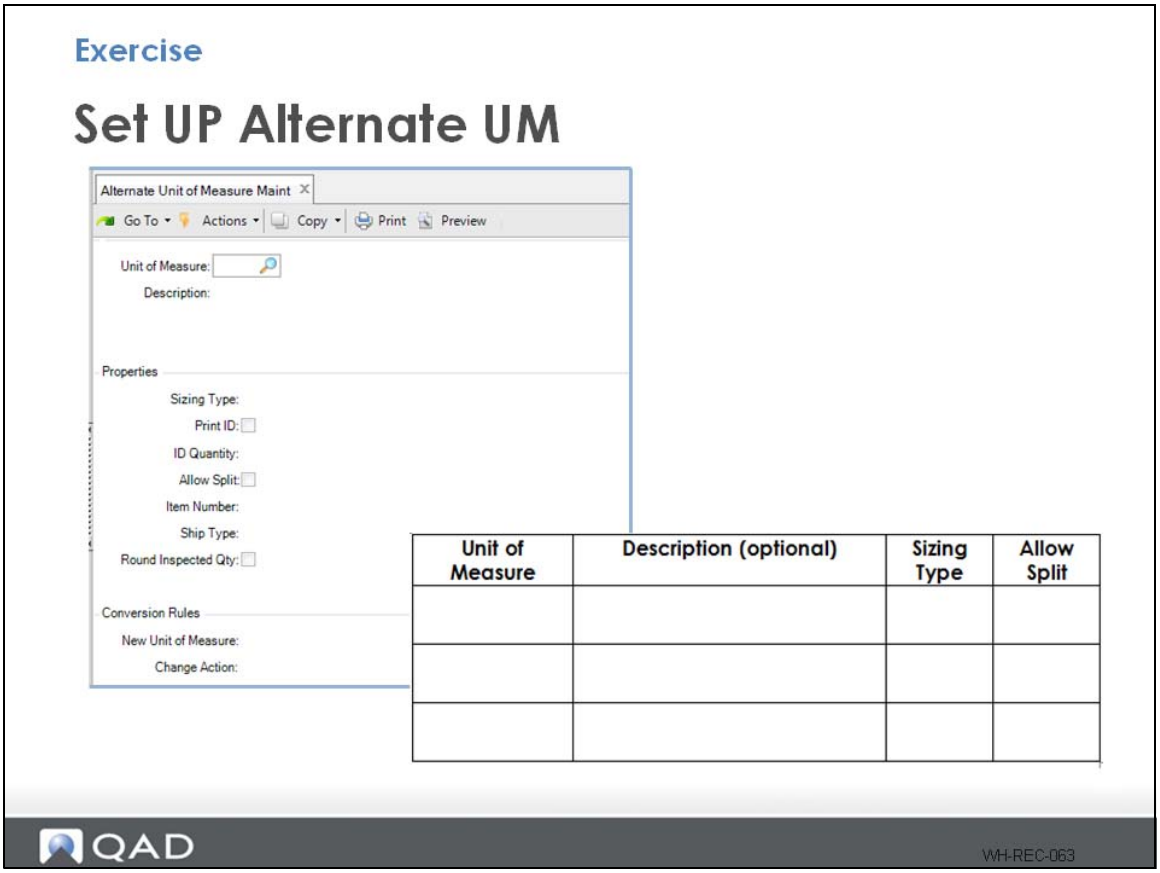
For this exercise, set up the following fields in Multi-Level Item Maintenance:

Field	03120	03121	03210
Site	10-301	10-301	10-301
Location= receiving location (A)			
Warehouse			
SLG = <pallet storage zone>(B)			
Logistics UM	PL	PL	PL

Note In the table above note the following:

- (A) If this Site is the associated Site in the Item Master Maintenance, this Location defaults when the item is received. Having the correct warehouse receiving location to self-populate saves time and reduces errors.
- (B) The preferred put-away zone.

Exercise - Set up Alternate Units of Measure



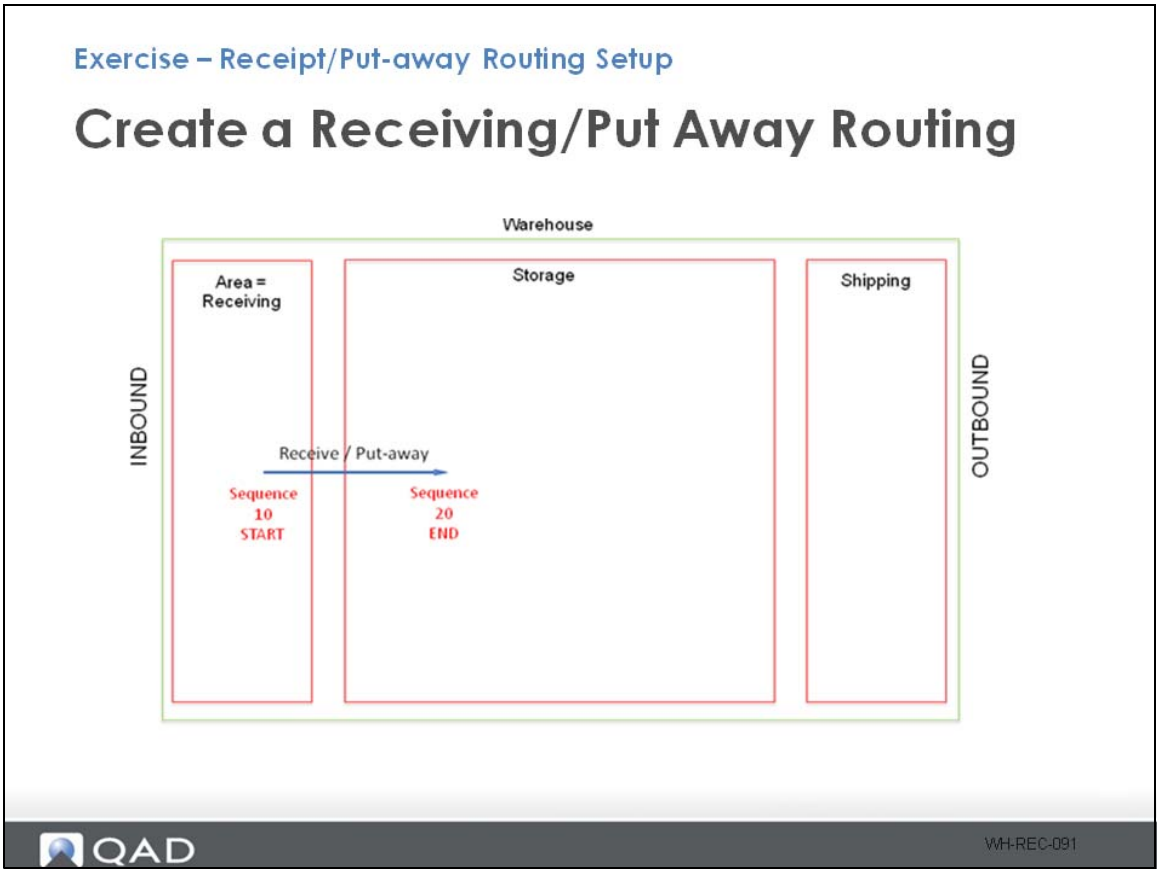
The following unit of measure conversions should be defined/confirmed using Alternate Unit of Measure.

UM	Description	Sizing Type	Allow Split
EA	Eaches	blank	N
BX	Boxes	blank	Y
PL	Pallets	R	Y

You can use Alternative Unit of Measure Browse to validate the above

This step defines an each is the smallest unit of measure to pick. Also pallet load quantities are tracked using a license plate number (Sizing Type = R).

Exercise - Set up Receipt Put Away/Routing



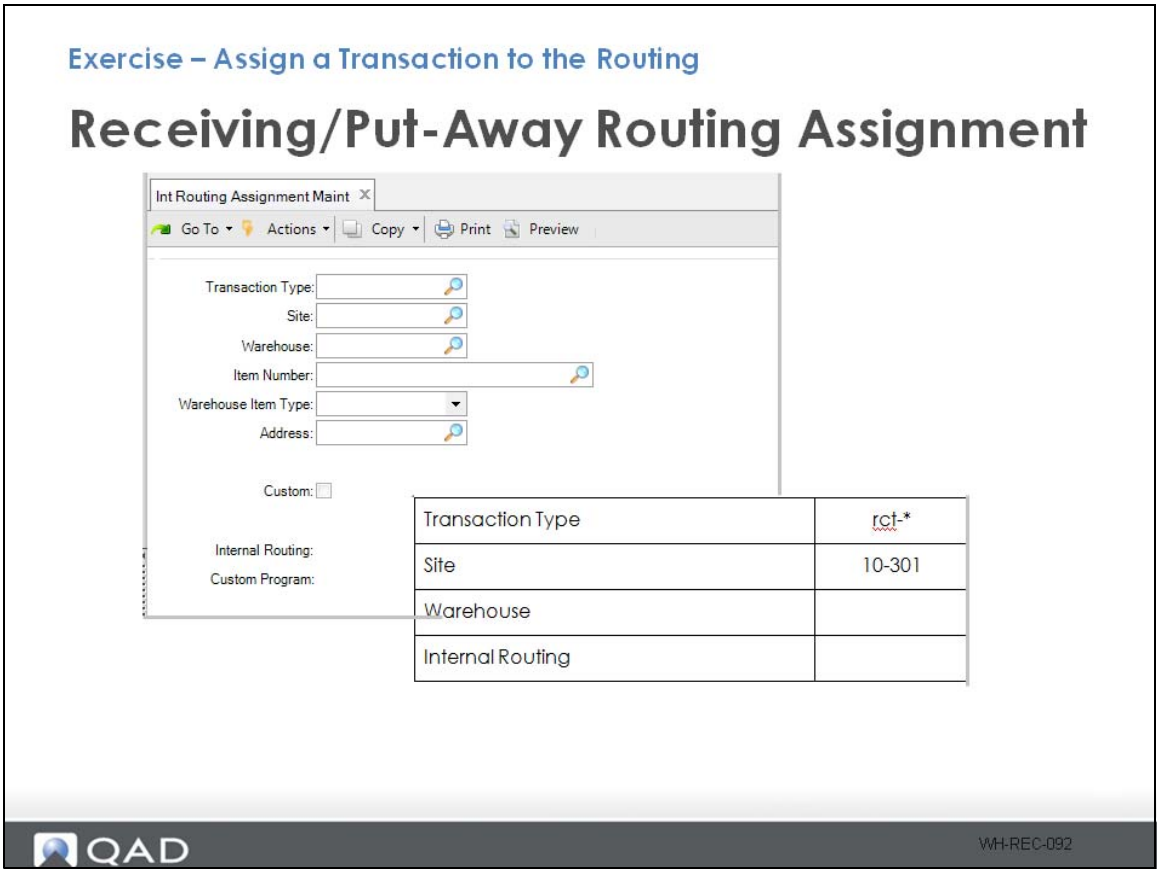
All product is received and moved direct to storage.

Use Internal Routing Maintenance to create a receiving/put-away routing using the following table to enter data for fields.

Field		
Site	10-301	
Warehouse		
Internal Routing	Put-away	
Description		
Sequence	Start =10	End =20
IRG		

Note The default engine processing is set to Auto in the Internal Routing Maintenance Miscellaneous Options frame. Auto engine processing enables a real-time automated warehouse by automatically generating work tasks when triggers occur. When set to Auto, the system automatically creates put-away tasks and releases them when an item is received. When set to Manual, put-away tasks require manual intervention to be released.

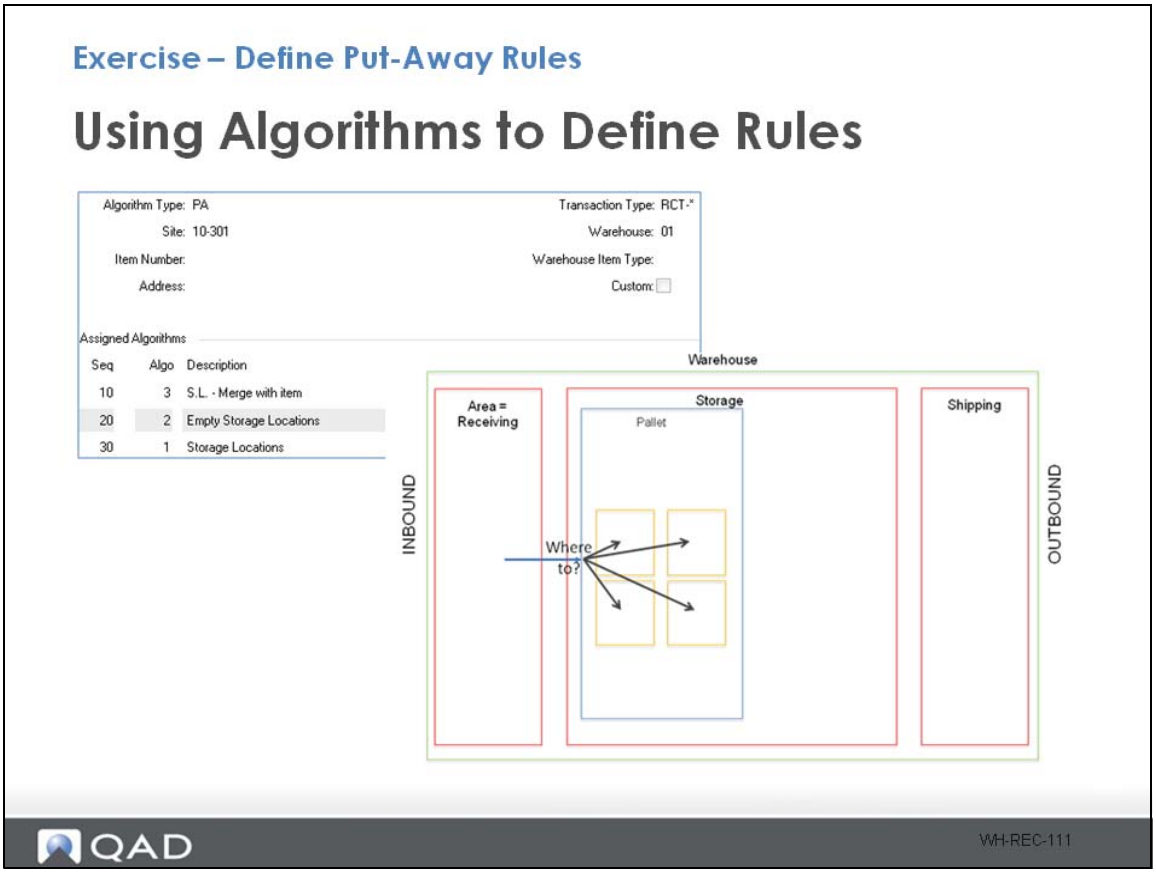
Exercise - Assign a Transaction to the Routing



All product goes to the same receiving location then direct to storage for put-away. Assign the Receiving/Put-away routing to a generic receipt transaction type using Int Routing Assignment Maint.

Field	
Transaction Type	rct-*
Site	10-301
Warehouse	
Internal Routing	

Exercise - Define Put Away Rules



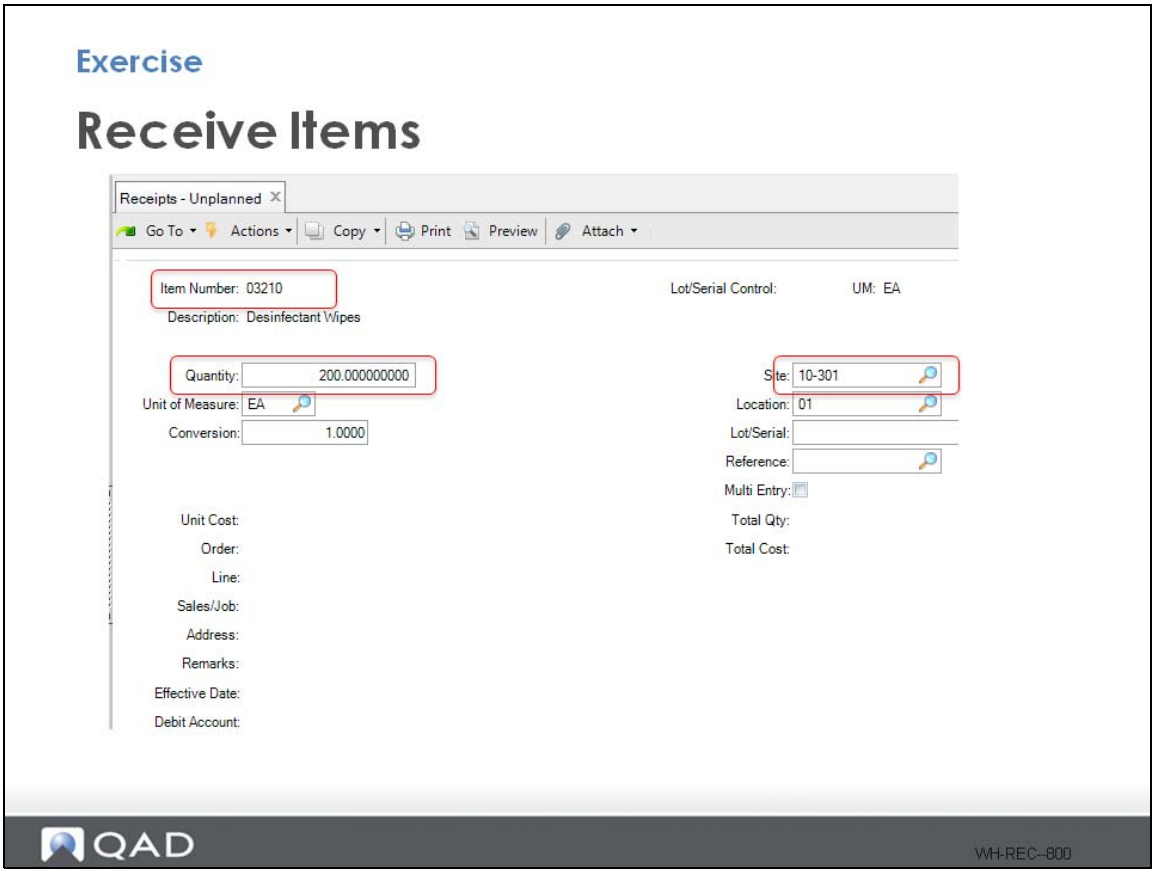
What happens when the load/item arrives in the next area? How are storage locations selected?

Use Algorithm Assignment Maintenance to define put-away rules. For QMI, the only operational consideration is items cannot be mixed in storage.

Field		
Algorithm Type		PA
Transaction Type		rct-*
Site		10-301
Warehouse		
Sequence	10	20
Algorithm	3	2

What does this algorithm sequence accomplish?

Receive Items



1 Use Receipts-Unplanned to receive: 200 EA, item 03210

- What loads are created? (view Inventory Detail Inquiry to find out).
- What is the LPN(reference) prefix?_____

  (It should match what you setup in session 1)
- Are put-away tasks automatically generated? _____.

2 Use Movement Confirmation Workbench to complete all moves. Alternatively you can perform all move tasks in the RF if you are logged into Putty as UserB.

3 Use Receipts-Unplanned to receive: 200 EA, item 03120 and 03121

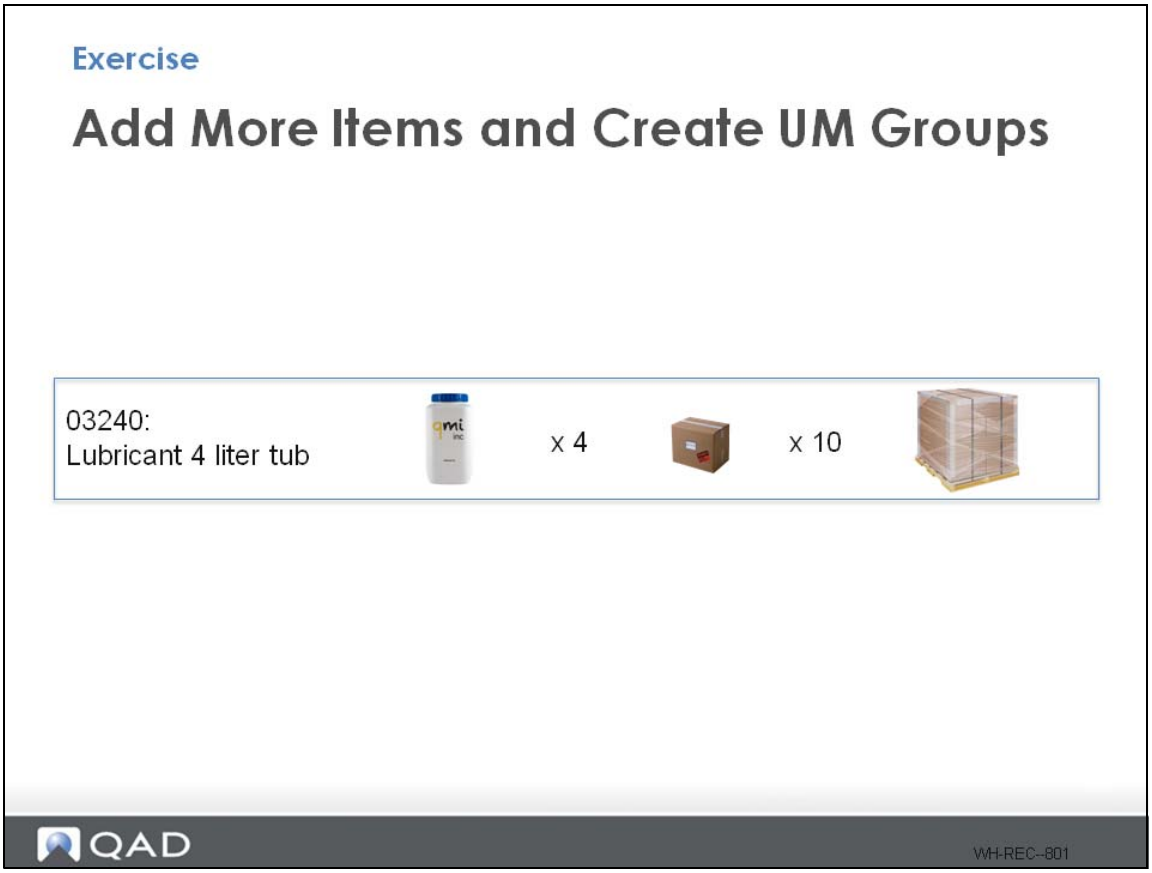
- What loads are created and which locations are selected for item put-away? (view Inventory Detail Inquiry)

  If the put-away rules are configured correctly, each item with 200 each or two pallets are in a different location pallet storage location.

4 Use Movement Confirmation Workbench to complete all moves.

- Use Location Full % Report to check the warehouse 02 space utilization. Relative Full % = 18.75, Absolute Full % = 37.50.

Add More Items and Create UM Groups



Management identified a new item 03240 to add to the warehouse inventory

1 Set up a new unit of measure group for the above conversions, using UM Group Maintenance.

Field	Data to Enter
Unit of Measure Group	
UM	EA
Alt UM	BX
Conversion	
(How many eaches fit in a box.)	
Alt UM	PL
Conversion	
(How many eaches fit on a pallet).	

2 Assign the new item to the warehouse.

a See Item Master Maintenance exercise above.

b See Multi-Level Item Maintenance exercise above.

Assign the new UM Group to the new item using Multi-level Item Maintenance. For efficiency, you can also use Item Maintenance to make this change.

Field	Data to Enter
Item Number	03240
Unit of Measure Group	

3 Run UM Conversion Generation to apply the new UM Group:

Field	Data to Enter
UM Group	
Confirm three boxes in lower frame are checked.	

The UM Conversion Generation report displays the UM changes made. If the report is blank, the UM Conversion did not occur.

4 Use Receipts-Unplanned to receive: 120 EA, item 03240

What loads are created and which locations are selected for item put-away? (View Inventory Detail Inquiry.)

When done properly, three pallets with 40 each are created and put-away to the next empty pallet location

5 Use Location Full % Report to check the warehouse 02 space utilization. Relative Full % = 28.13, Absolute Full % = 50.00.

Questions

1. Most of the put-away strategy and storage management is controlled by which two maintenance programs?
2. Which program do you use to specify the attributes of a warehouse location?
3. What does the QAD Warehousing put-away strategy attempt to accomplish?
4. True or False. To trigger warehouse receiving process, all items need to be set up in QAD Warehousing?
5. Popularity codes are used in QAD Warehousing to support _____ strategies.
6. When is verbosity reporting useful and not useful?

Answers

1 Algorithm Assignment Maintenance and Warehouse Location Maintenance.

2 Warehouse Location Maintenance.

3 Product put-away strategies attempt to balance storage capacity optimization with system performance.

4 Multi-Level Item Maintenance

5 Slotting

6 Useful when troubleshooting, not useful when you go live at a customer site.

Notes

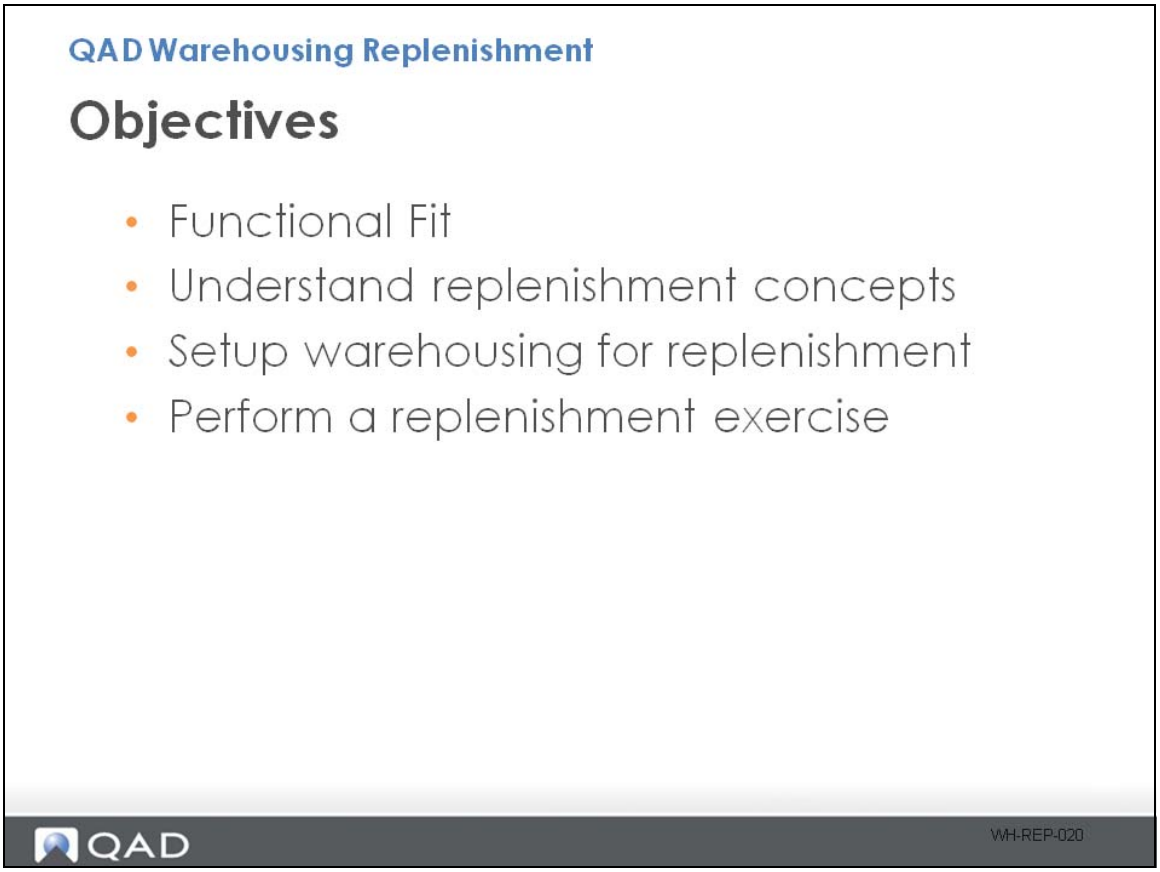
Chapter 3

Replenishment

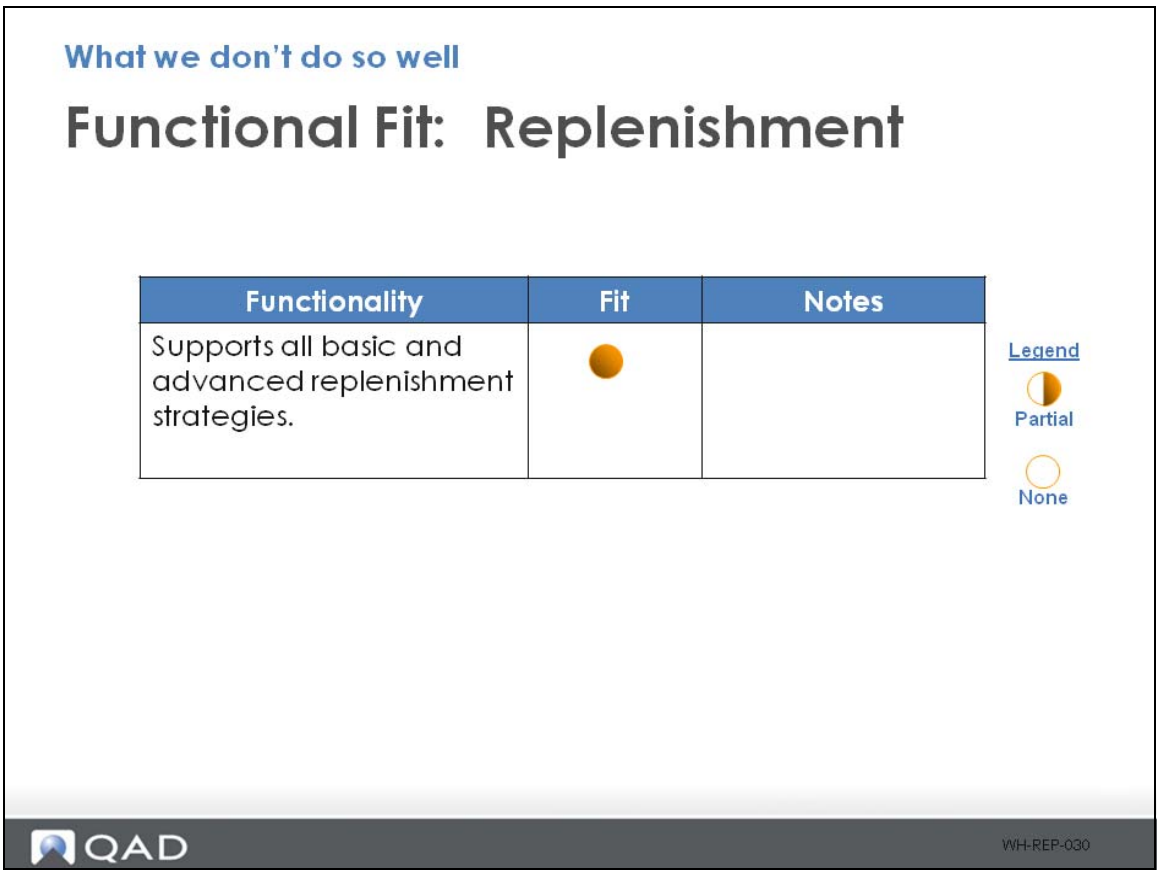
Overview

QAD Warehousing Replenishment
QAD Warehousing
Field Readiness
QAD
Our Passion. Your Advantage.

Objectives


QAD Warehousing Replenishment
Objectives
Functional Fit
Understand replenishment concepts
Setup warehousing for replenishment
Perform a replenishment exercise
QAD
WH-REP-020

Functional Fit: What We Don’t Do So Well

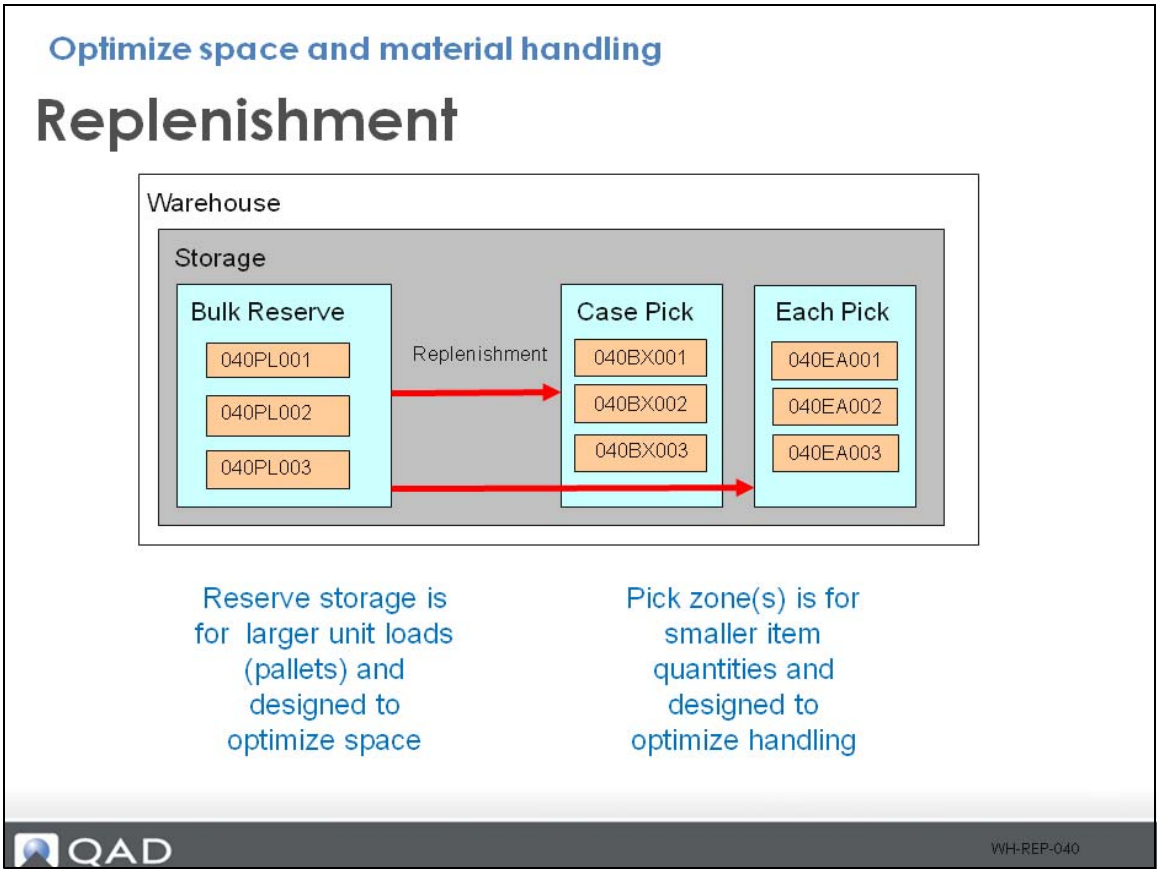


Did You Know

Replenishment is an optional configuration; however, it is very helpful in improving operational efficiencies and works in conjunction with reserve storage and forward-pick locations.

QAD Warehousing lets you define forward-pick zones in the warehouse. These zones typically contain the stock required for picking first and in quantities and locations that are easy to maintain. In order for this zone to be maintained at the optimum stock levels, the system uses a process called replenishment.

Optimize Space and Material Handling



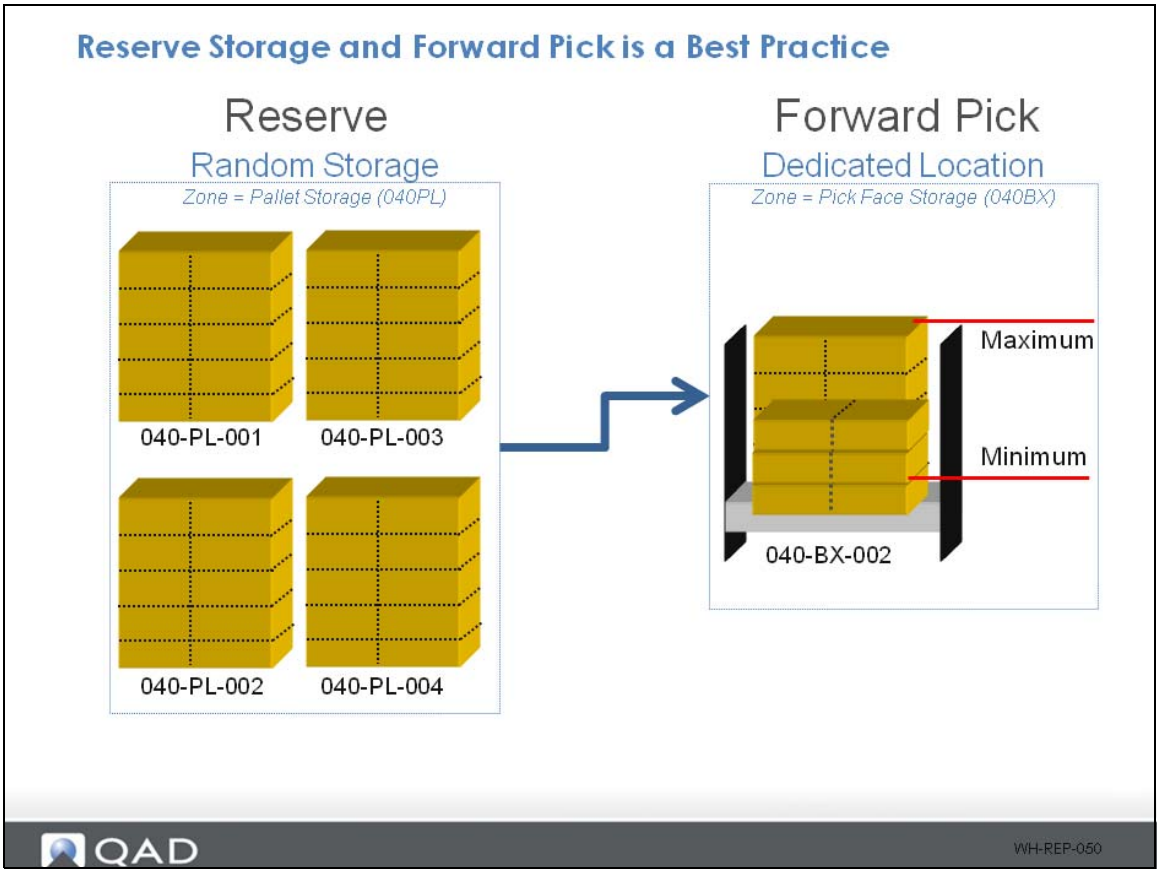
Define the types of items and the quantities that can be stored in the replenishment, or forward-pick locations typically. Picking functions look in these locations first before searching the rest of the warehouse for available inventory.

In QMI data, there is a bulk reserve, a case pick area, and an each pick area, as shown above.

Bulk Reserve storage is for larger unit loads (pallets) and designed to optimize space.

Case and Each picks are for smaller item quantities and designed to optimize handling.

Reserve Storage and Forward Pick is a Best Practice

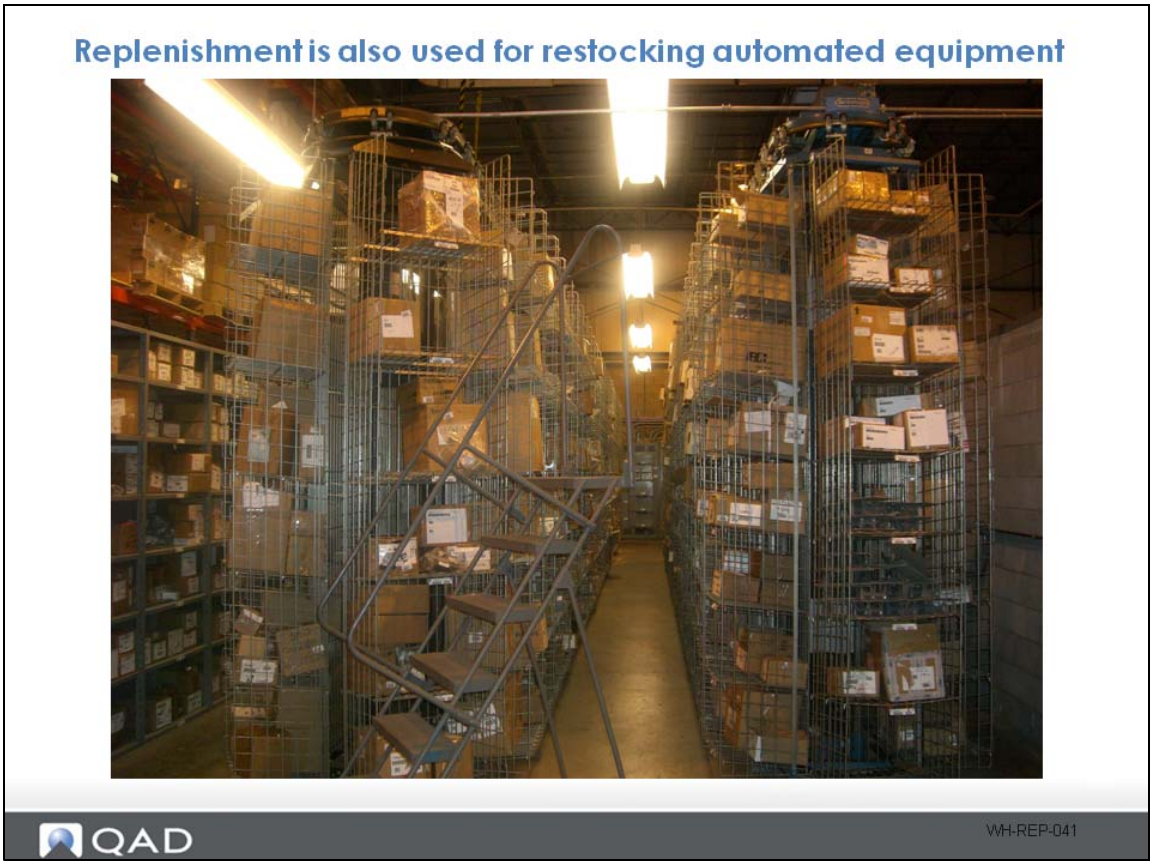


Did You Know

Replenishment can be defined for an item/location or item/zone.

Replenishment follows similar principles of reorder point and kanban. When the forward pick location reaches the defined minimum (reorder point), the system creates a replenishment pick task for a load from the reserve storage zone (040PL).

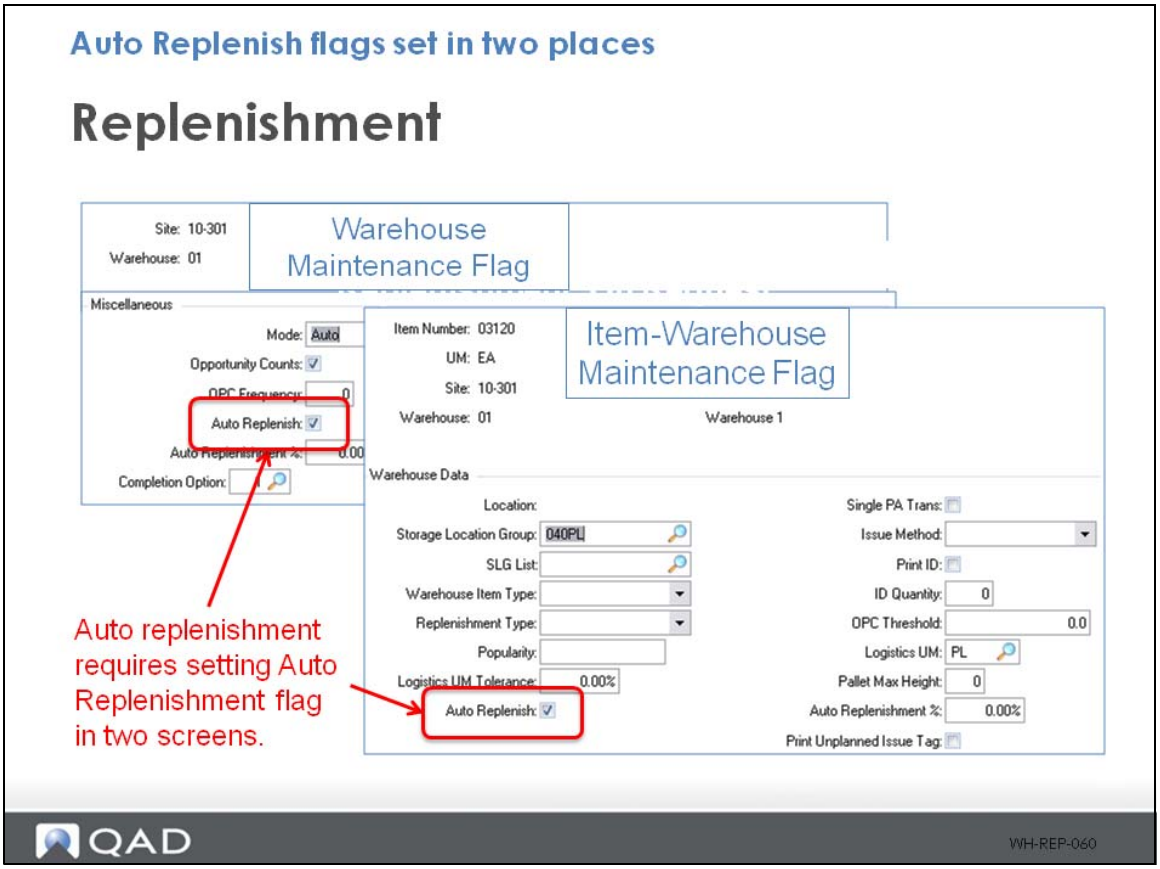
Replenishment is Used for Restocking Automated Equipment



Replenishment is also used for restocking automated equipment. In this example, a carousel is used for picking from slot 1 at the bottom to slot 8 at the top. To improve picking productivity, restocking these locations is typically done after/before the picking process, perhaps during 2nd or 3rd shift.

Several customers use automated storage equipment interfaced to QAD Warehousing. For example, above is a picture of a customers carousel picking module.

Auto-Replenish Flags Set in Two Places



Did You Know

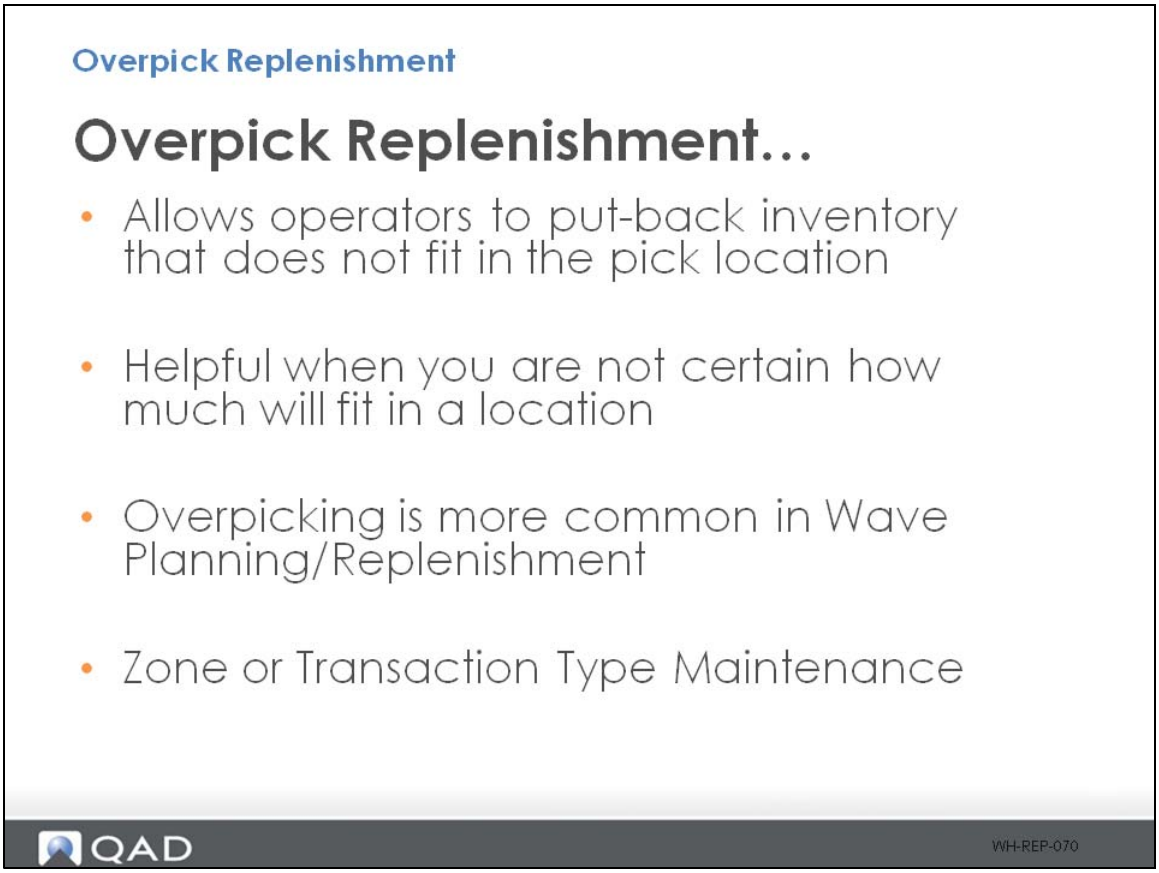
Replenishment is either a manual or automatic process.

A manual replenishment request is activated using Replenishment Request.

Automatic Replenishment occurs as soon as the system issues inventory and stock drops below the minimum level. When this happens, a replenishment task is created.

Auto replenishment is set in two places: Warehouse Maintenance and Item-Warehouse Maintenance. You need to set it in both places. If you only set it in one of the two places, replenishment does not work.

Overpick Replenishment

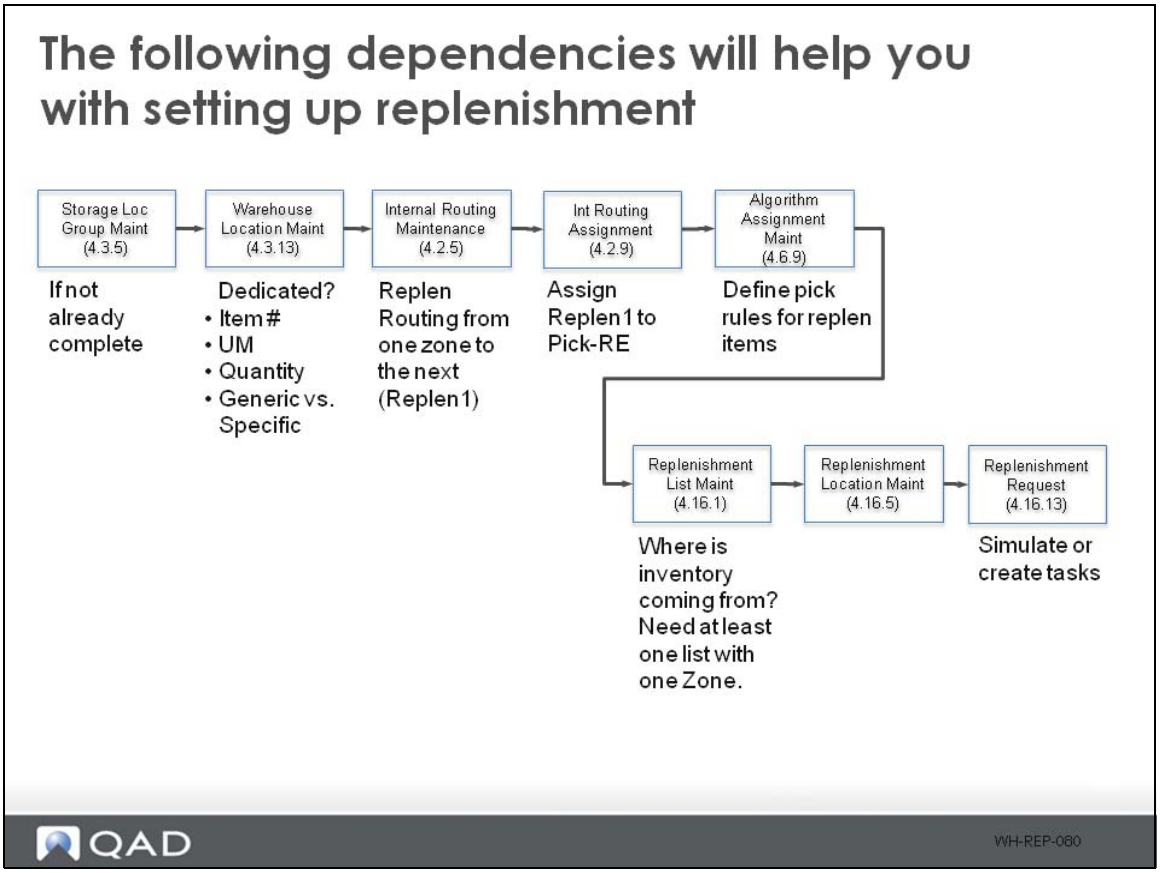


Warehouse staff can select a multi- or single-item pallet from the reserve zone and replenish one or multiple locations from the pallet in the picking zone. After staff replenish, they can return the remainder on the pallet to the reserve zone.

You can up a user (or a user cart) as a location. For example, in QMI, User A also is a location. You set this in Warehouse Location Maintenance when you enter the user ID as part of the location's parameters.

Overpicking inventory then stays with the user location, until the user drops off the inventory.

Dependencies that Help with Replenishment Setup

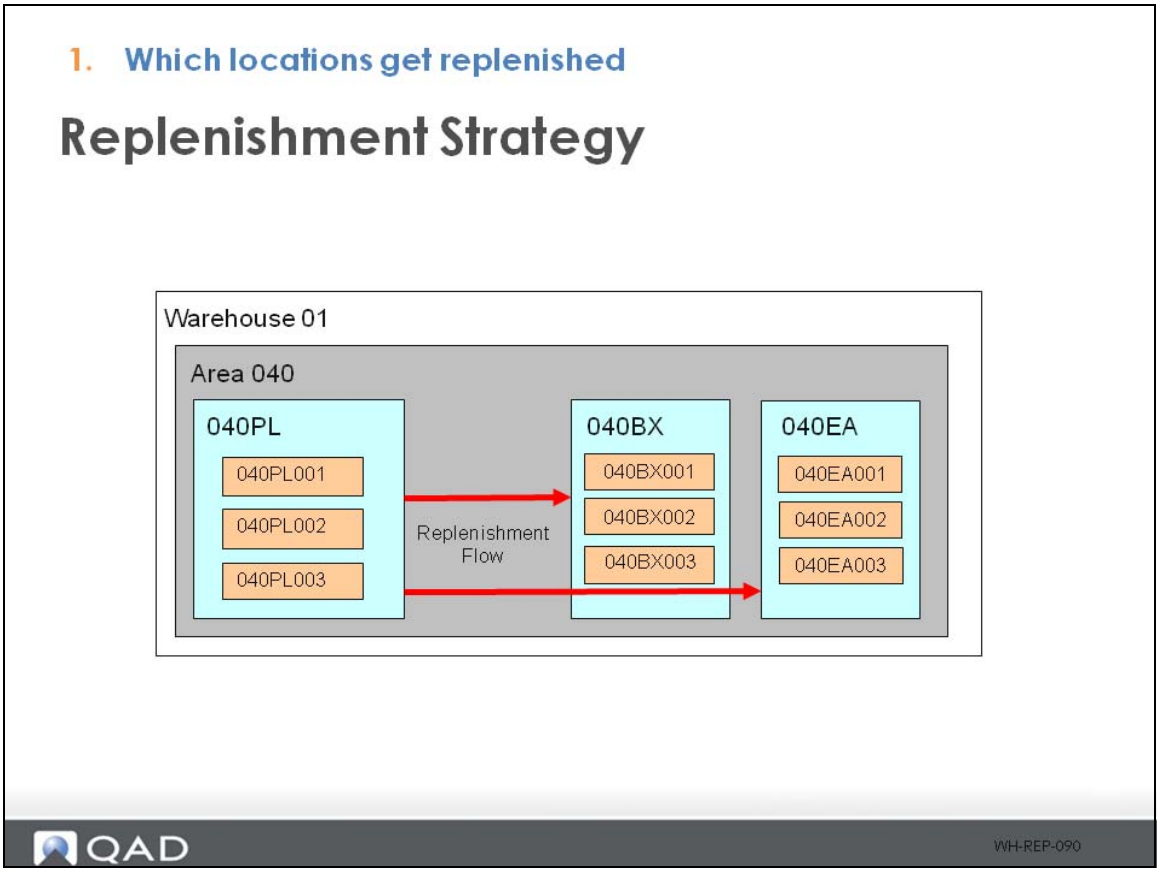


The graphic above shows which programs you use in the setup for replenishment. Under each program, the graphic shows the considerations you need to make when you enter the programs.

The following are questions to consider when defining your replenishment strategy:

- Which locations gets replenished?
- Where does replenishment inventory originate?
- How is replenishment inventory managed? (FIFO, control, capacity)
- Which items and capacities?

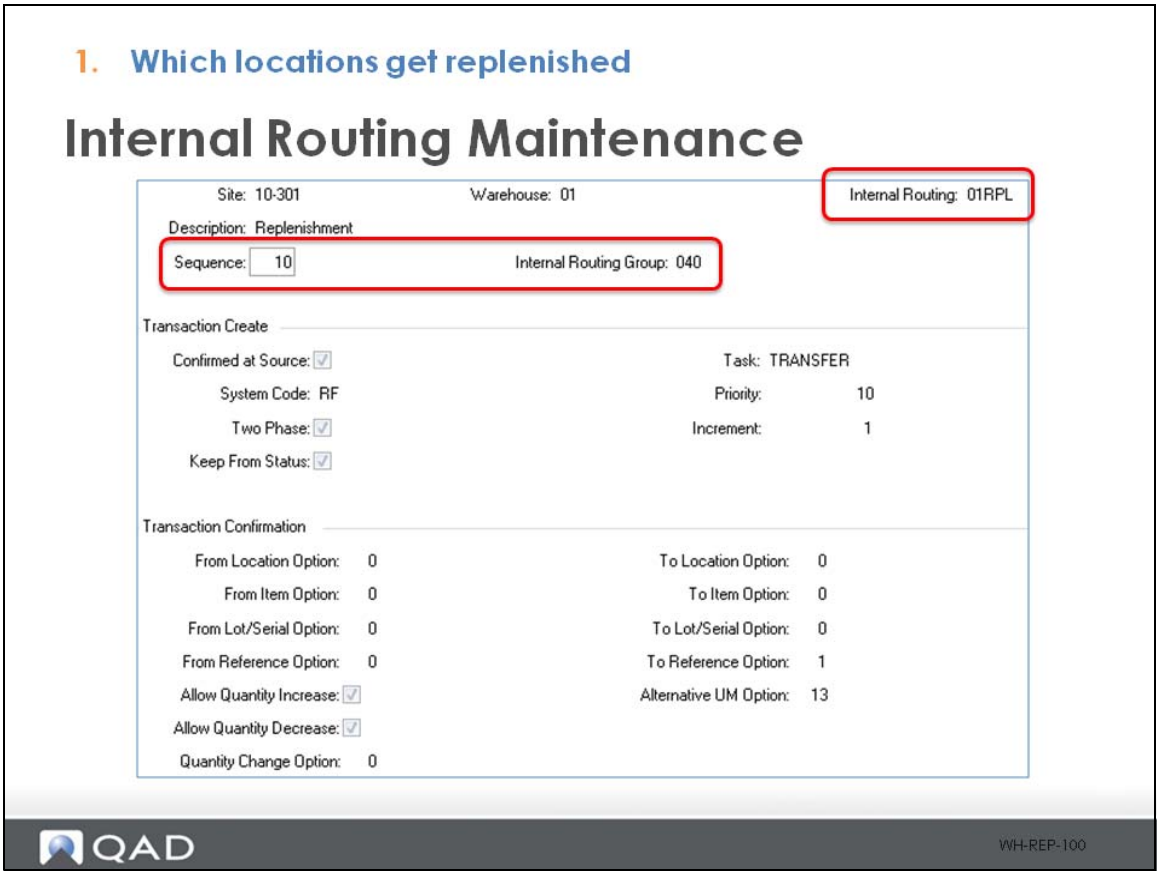
Which Locations Get Replenished



First define forward pick and reserve storage locations.

Typically, each zone (040BX and 040EA) is replenished from one reserve storage zone (040PL) to minimize product touches; however, it is possible to setup replenishment of zone 040BX from 040PL and zone 040EA from zone 040BX using Replenishment List Maintenance.

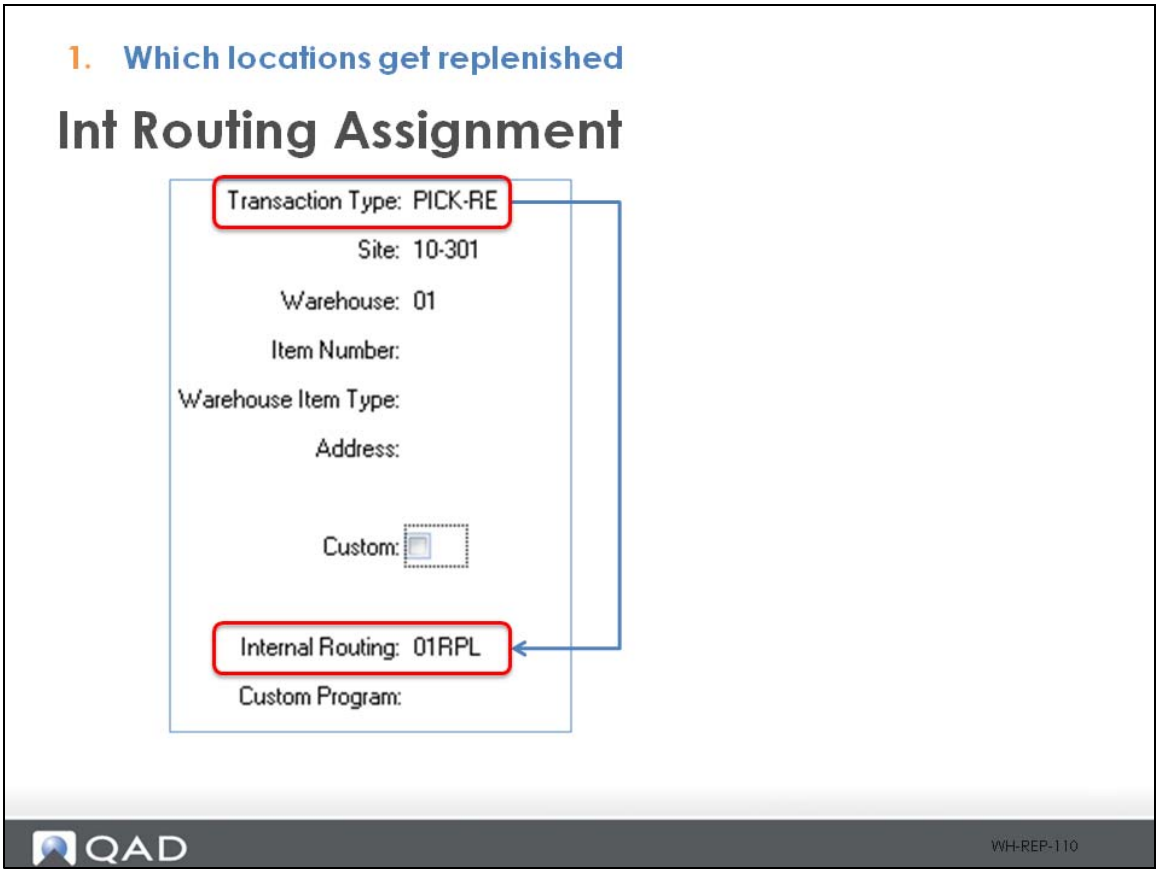
Which Locations Get Replenished - IR Maintenance



Next, define a replenishment material flow (01RPL) using Internal Routing Maintenance.

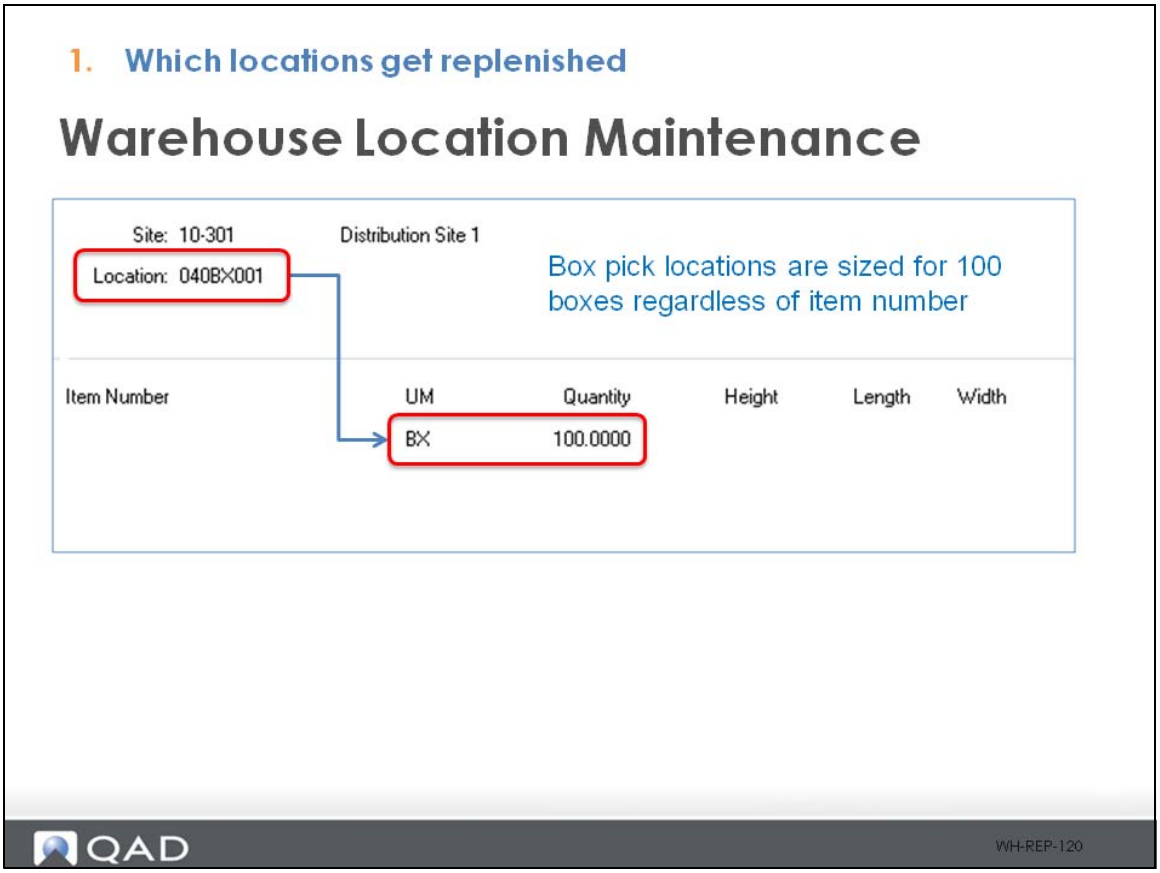
Replenishment inventory stays in the same area so the internal routing has one sequence.

Which Locations Get Replenished - IR Assignment Maintenance



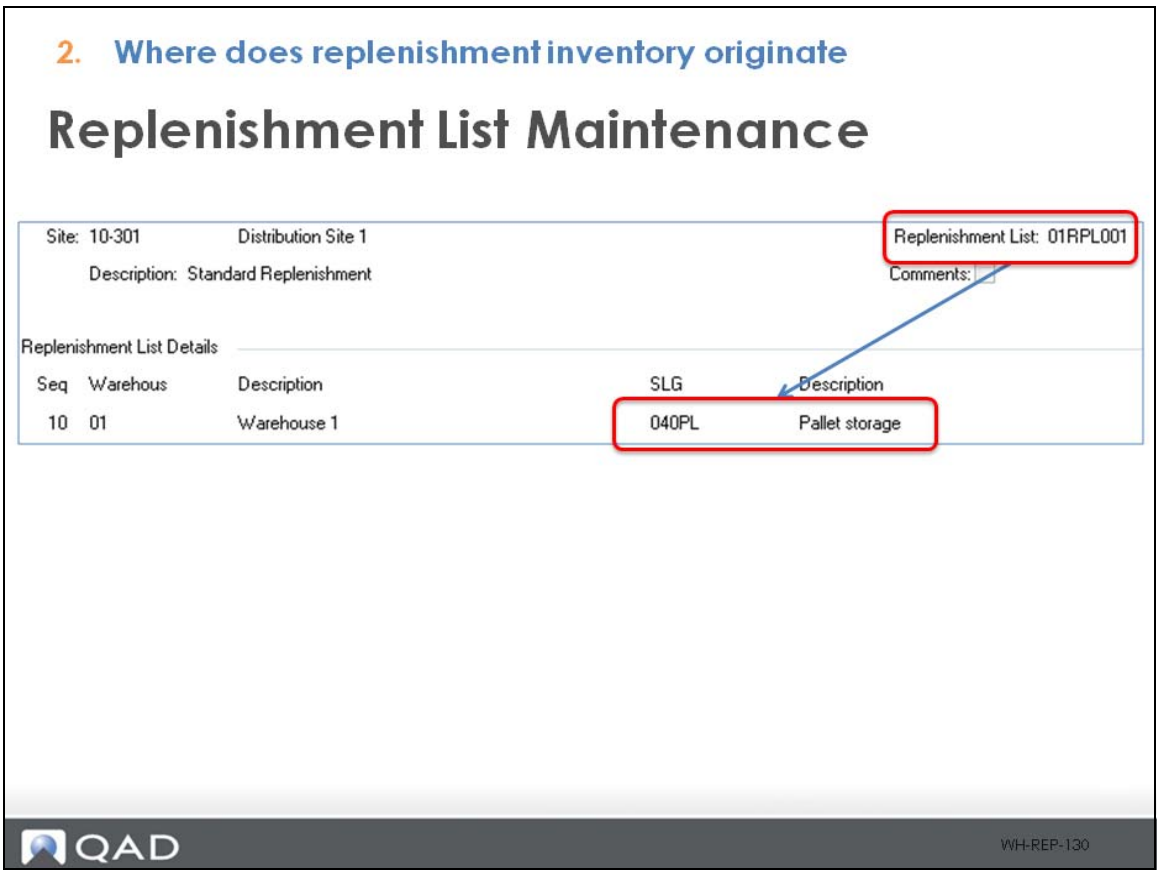
Use the defined replenishment internal routing for replenishment tasks (PICK-RE). Once the replenishment material flow is defined, 01RPL, assign the routing to a transaction, PICK-RE.

Which Locations Get Replenished - Warehouse Location Maintenance



Then, specify which locations get replenished in Warehouse Location Maintenance. Box pick locations (040BX) are sized for 100 boxes, regardless of the item number.

Where Does Replenishment Inventory Originate?



Did You Know

A replenishment list defines a list of zones where the system looks for inventory to use for replenishment.

Next, define the zones and sequence the system uses to search for inventory to replenish to the forward pick locations.

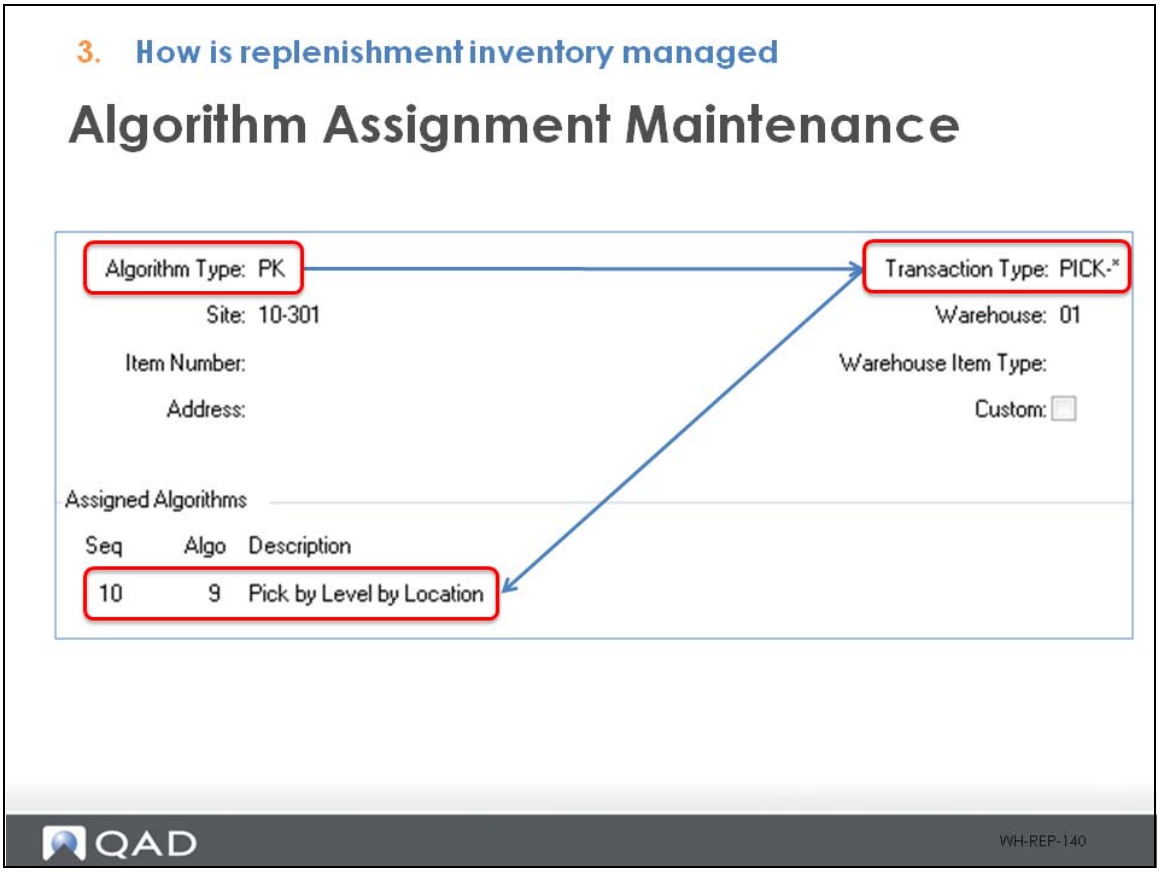
The above example links a replenishment list to a location in Replenishment Location Maintenance or Replenishment SLG Maintenance.

The standard replenishment strategy picks inventory from the reserve storage bulk pallet zone (040PL).

In the graphic above, the replenishment list always looks in the pallet storage area.

There are four frames and seven fields in Replenishment List Maintenance used for configuration.

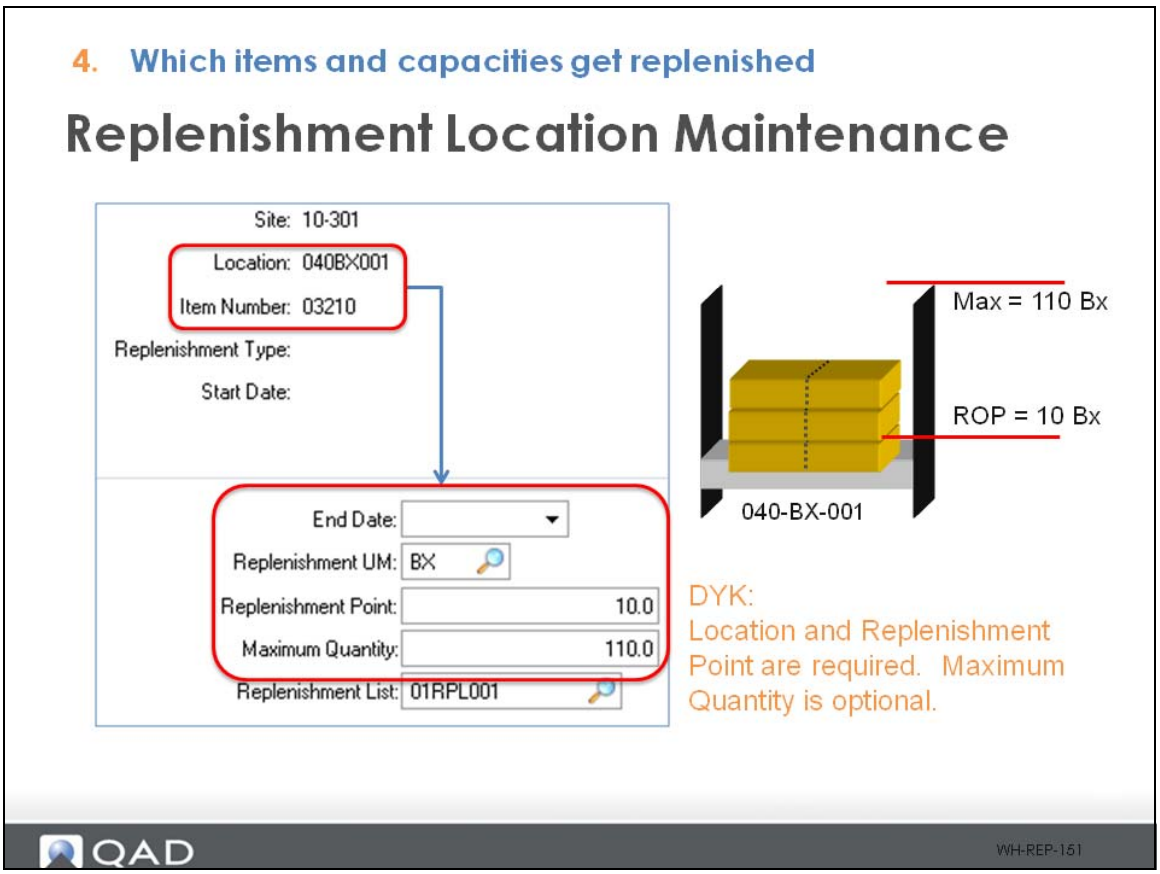
How is Replenishment Inventory Managed?



Next, use Algorithm Assignment Maintenance to define a specific pick strategy for selecting replenishment (PICK-RE) inventory or use a generic pick strategy (PICK-*).

In this example, the same pick rules are used for replenishment picks as well as order picks, 9: Pick by Level bu Location.

Which Items and Capacities Get Replenished?



Did You Know

Lo*cation and Replenishment Point are mandatory fields. Maximum Quantity is an optional field.*

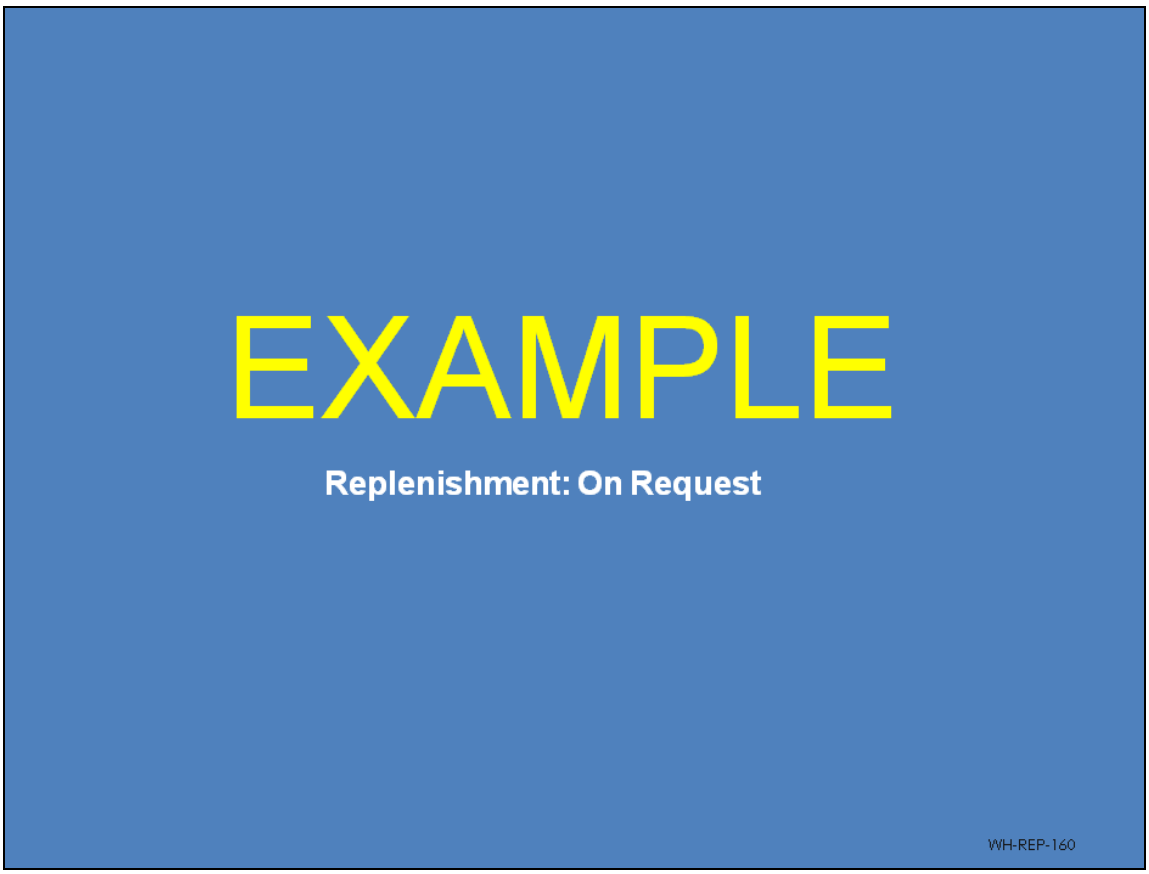
With the replenishment pick rules defined, establish the item and replenishment metrics by location.

In this example, location 040BX001 receives a replenishment when 10 boxes or fewer are in the location and a replenishment task is generated.

When configuring Replenishment Point and Maximum Quantity, consider the location might not be completely empty when the replenishment occurs. For example, if you replenish with a full pallet, you might need to size the location (Maximum Quantity) of a full pallet plus one extra row.

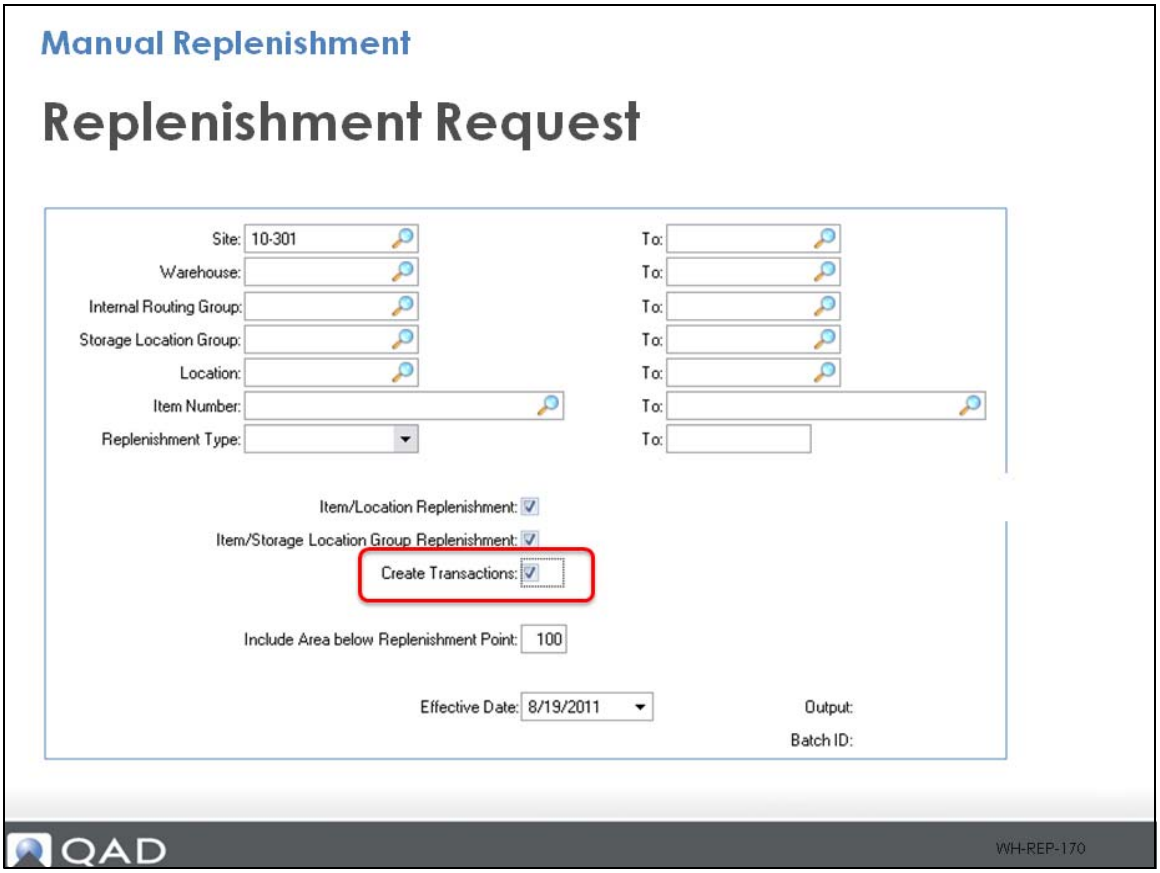
There are two frames and 10 fields in Replenishment Location Maintenance used for configuration.

Example



Replenishment can either occur automatically or on demand. On demand is used when you prefer replenishment is managed on an off shift.

Manual Replenishment

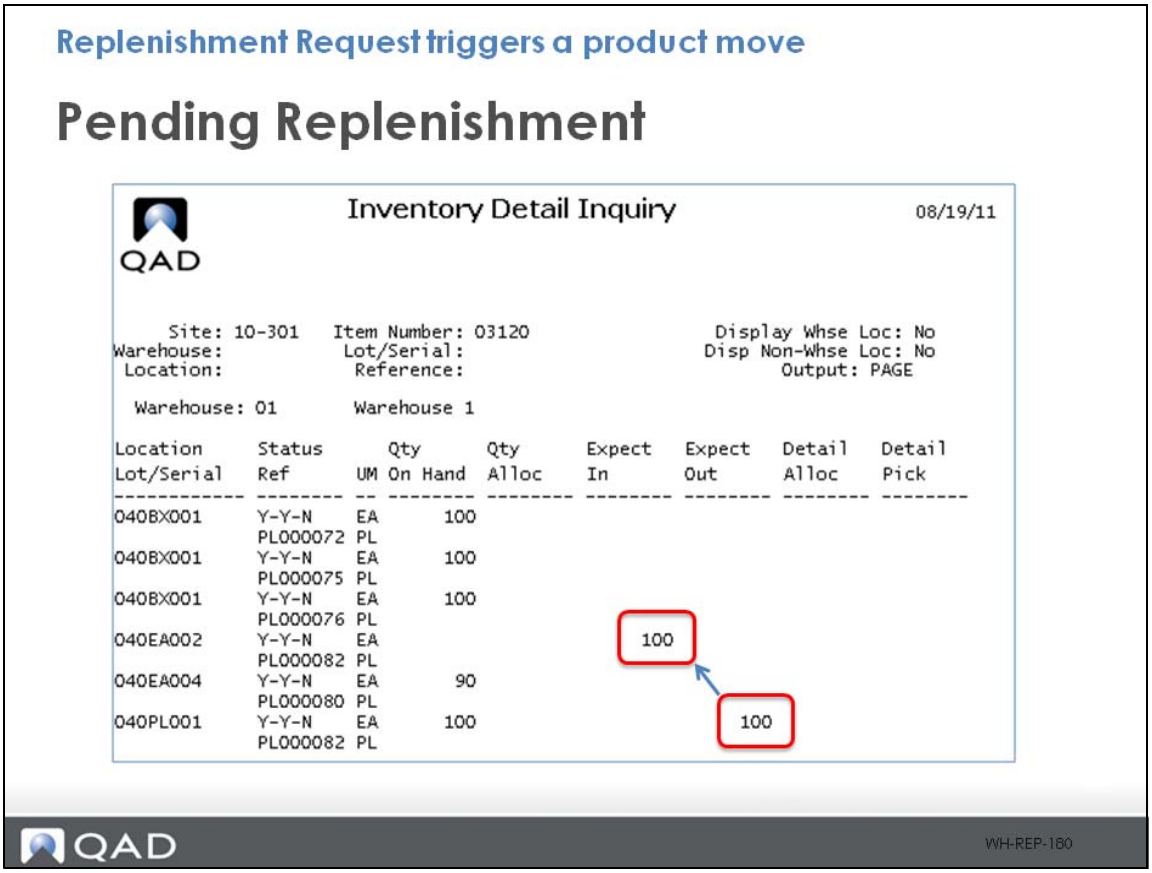


Did You Know

You can simulate replenishment activities or check the Create Transactions box to initiate replenishment transactions.

To generate replenishment tasks on demand, make sure the Create Transaction box is checked before executing the Replenishment Request menu.

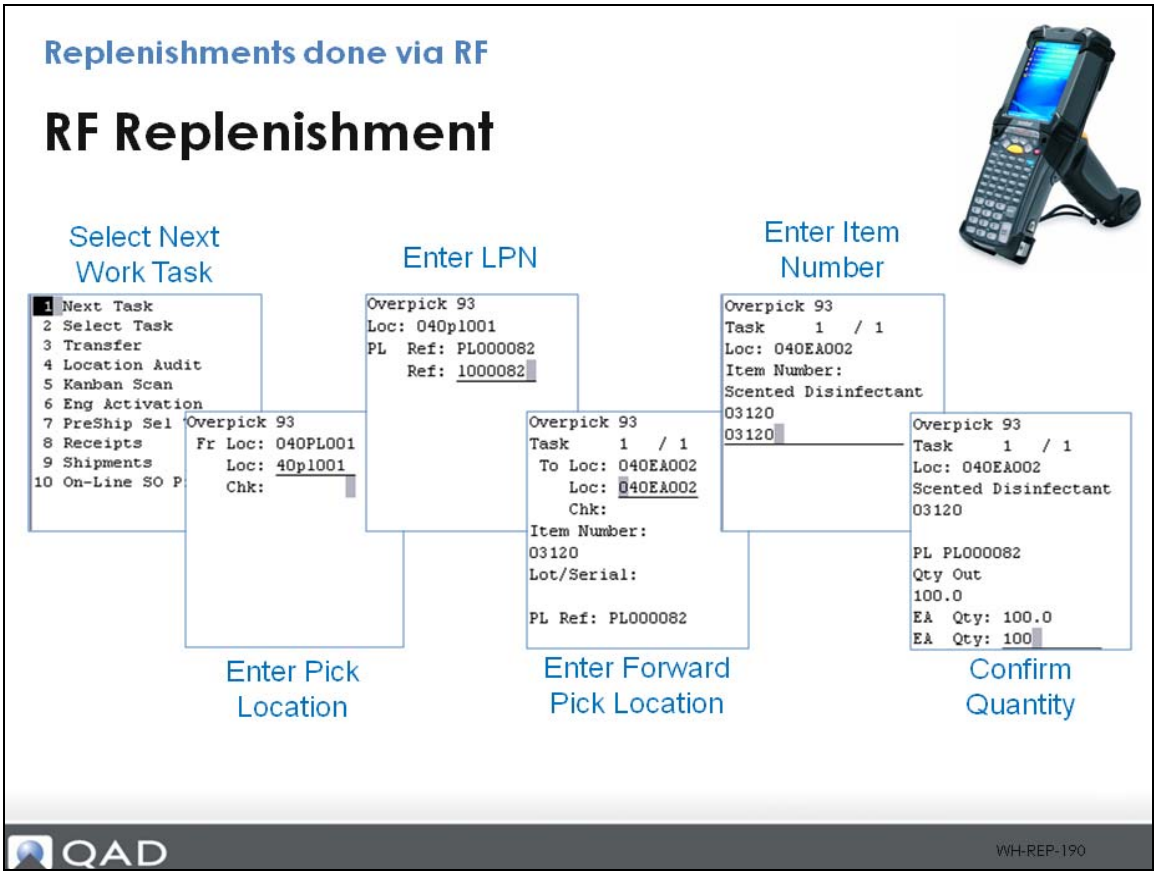
Replenishment Request Triggers a Product Move



Once the replenishment tasks are released, check the pending tasks using Inventory Detail Inquiry. In this example, a full pallet is being transferred from 040PL001 to the 040BX002 forward pick location.

As a general rule, items in forward pick locations do not have a reference number (that is, PL000072, 75, 76, 80 and 82). Items in forward pick are typically tracked by the location address. To let this happen, when you set the second sequence in the internal routing To Reference field to 1 (one), the LPN is blanked when the item is moved to a forward-pick location.

Replenishment Via the RF

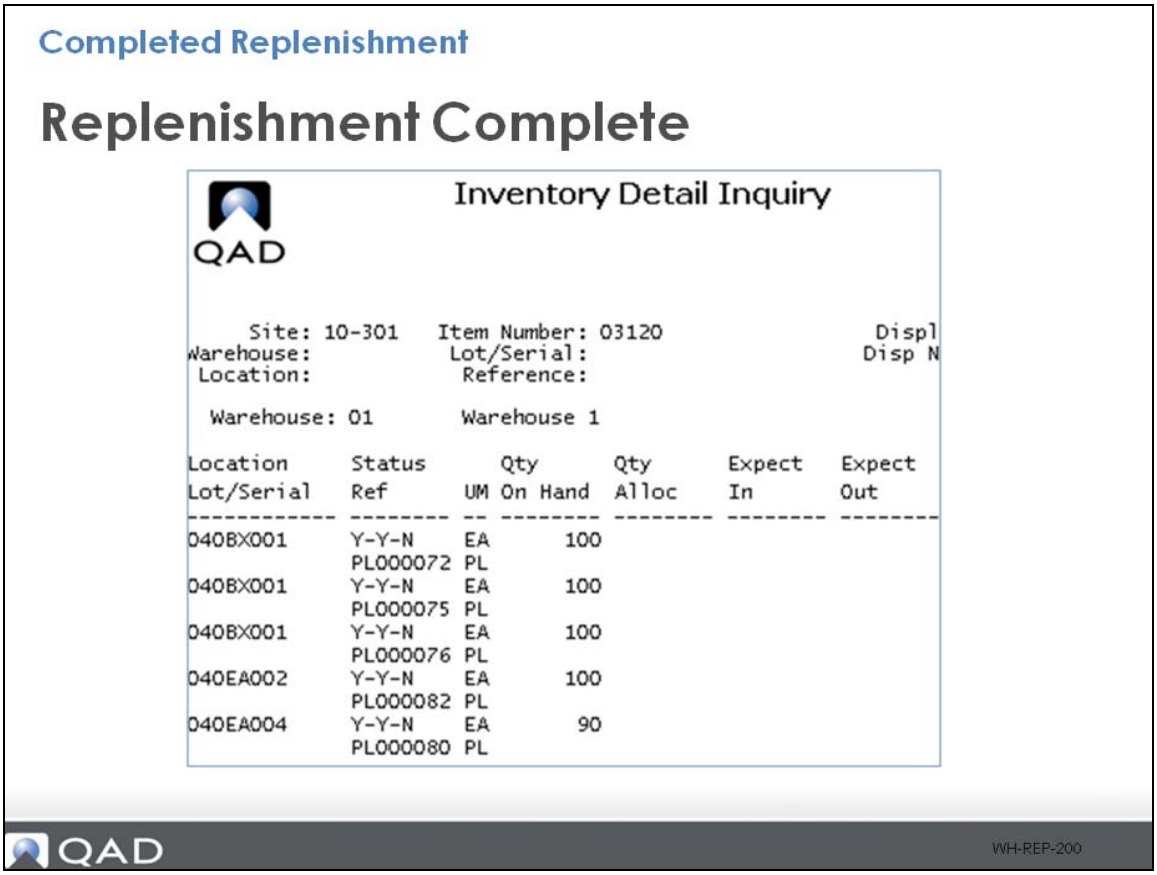


When replenishment pick tasks are created and released, warehouse staff can us the RF device, using Next Task (RF1.1) to complete the transaction.

Staff can use the overpick replenishment to pick for the replenishment. They can scan the source location, then scan the pallet number, shown as the Ref field in the graphic above.

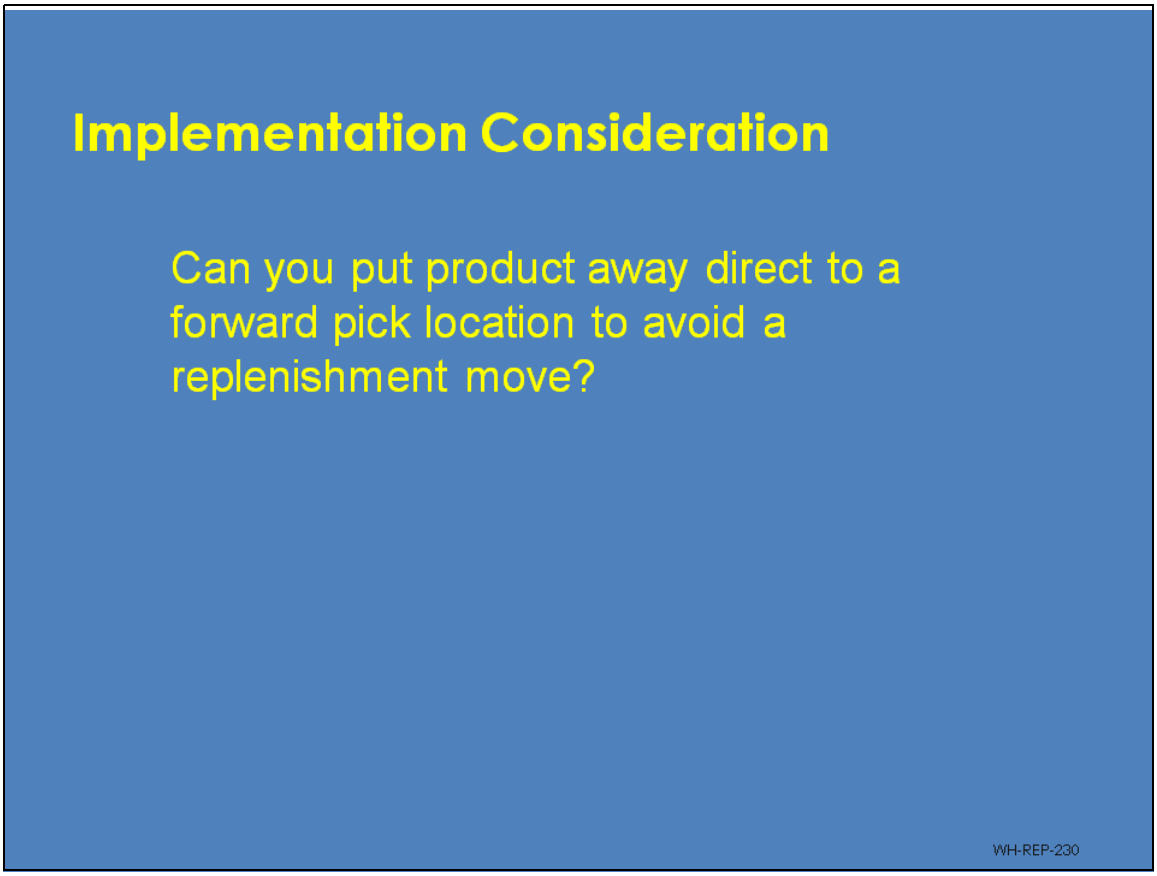
To replenish a bin, scan the destination location, then scan the items, then enter the quantity that fits into the location, attempting to completely fill the location.

Replenishment Complete



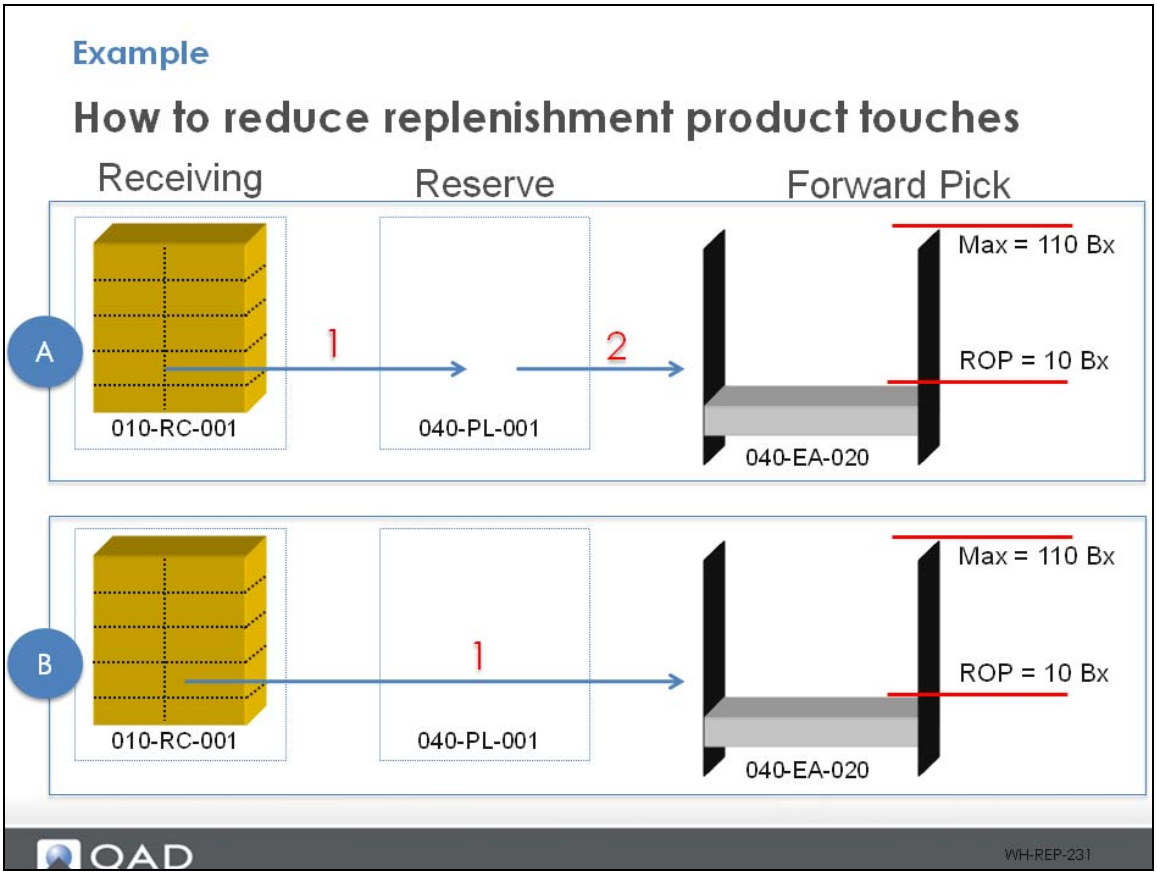
Once the replenishment is complete, use Inventory Detail Inquiry to check that replenishment completed. Check the Qty On Hand column for the locations replenished.

Implementation Consideration



Yes, QAD Warehousing can be configured to support this process; however, this creates inventory rotation issues and complications if FIFO is preferred.

Example - Reducing Replenishment Product Touches



If FIFO is not a concern, consider filling forward pick locations during put-away. This can eliminate a material handling move.

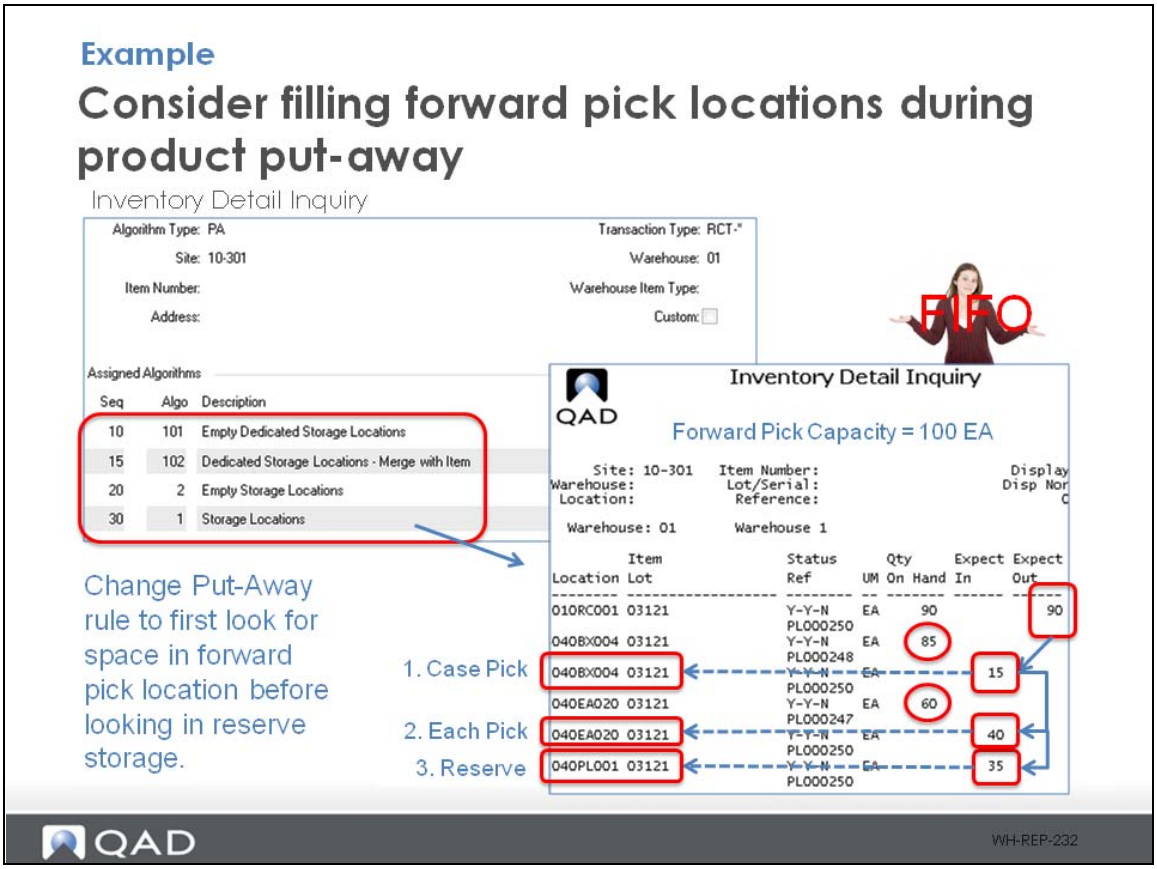
To make this happen, setup the following:

1. Setup an SLG list (10 = 040EA, 20 = 040PL); then, search first the FP locations then reserve storage.
2. Assign the SLG list to the item in Multi-Level Item Maintenance.
3. Dedicate an item and associated capacity quantity to each forward pick location using Warehouse Location Maintenance.

   If the location does not have a dedicated item, any item is stored there when the zone is considered for a put-away. (All locations in the zone need to be dedicated to an item.)
4. Setup the put-away algorithm with 101, 102, 1, 1 (Empty dedicated location merge with part in dedicated, empty storage location, any location).
5. Set Zone Optimization to Yes for all forward pick zones using the SLG,

Done properly, this fills the forward pick locations to capacity and moves the remainder to reserve storage. This also works in sequential order with multiple forward pick zones (that is, Box and Each).

Example - Consider Filling Forward Pick Locations



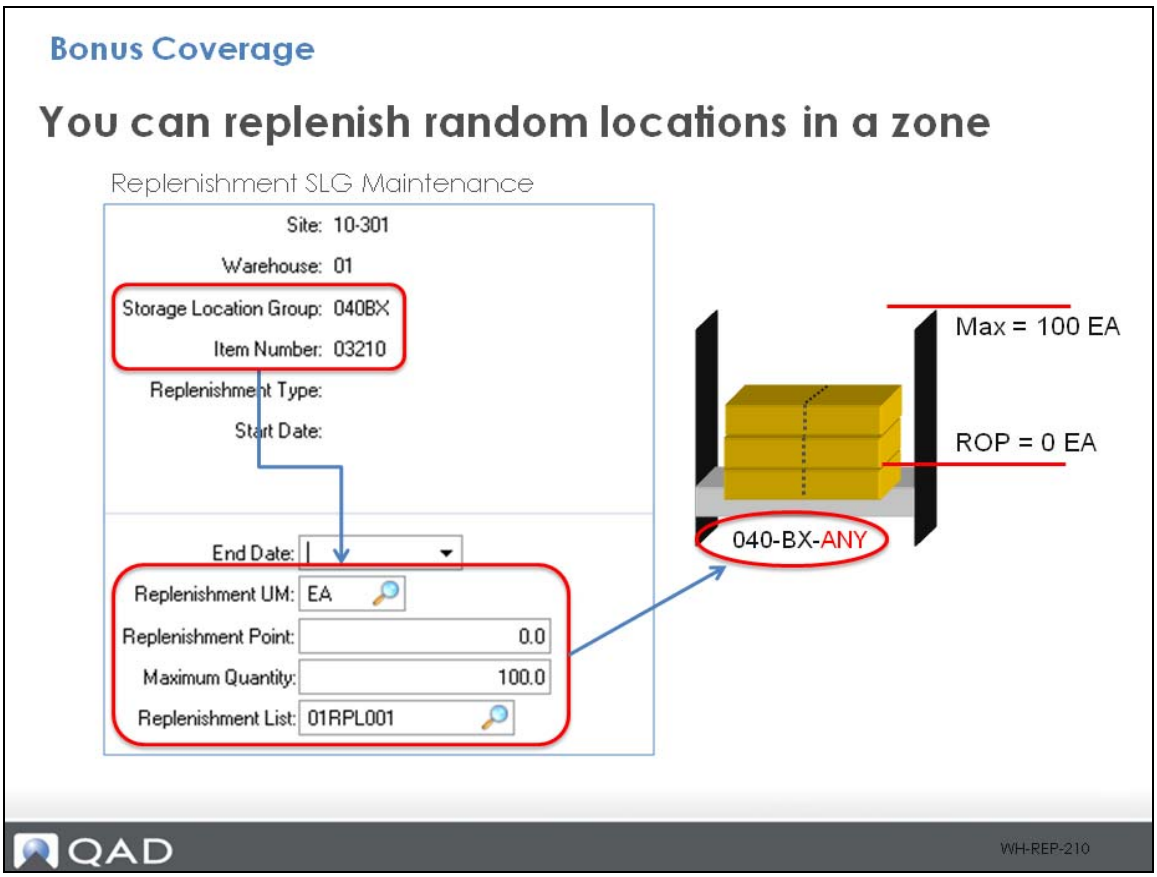
Notice in the graphic above, the put-away algorithm is set to fill dedicated locations first. The SLG list is setup to scan in the following order: 040EA, 040BX, 040PL.

Item 03121 is dedicated to each pick location 040EA020 and case pick location 040BX004. Both each and box locations have capacity of EA = 100, so both locations have capacity.

When you receive 90 each of item 03121, QAD Warehousing first looks at location 040BX004 and fills 15. Next, it looks at location 040EA020 and fills 40. The excess is moved to reserve storage.

This effectively keeps the forward pick locations full and reduces replenishment activity.

Bonus Coverage - Zone Replenishment



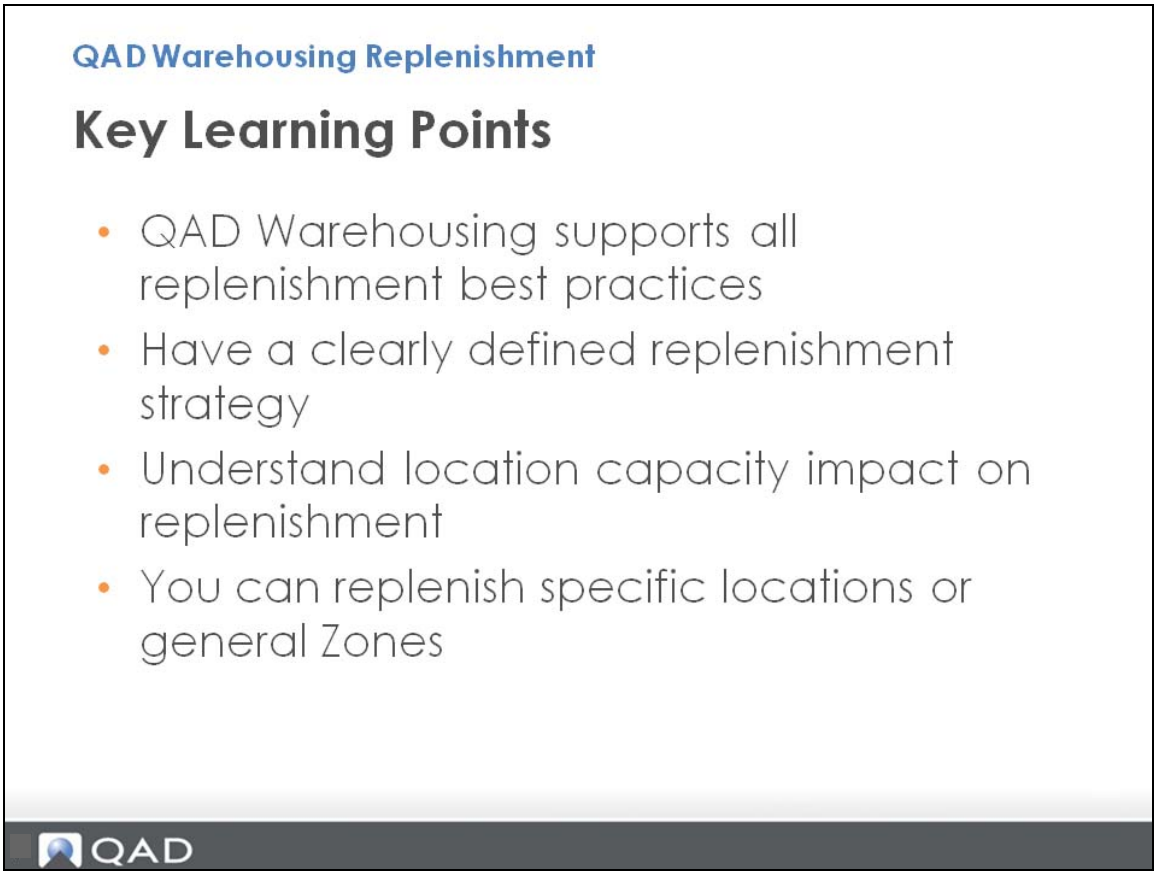
You can set up a zone replenishment with random or dedicated locations.

Rather than having dedicated pick locations, you can have a zone replenishment strategy.

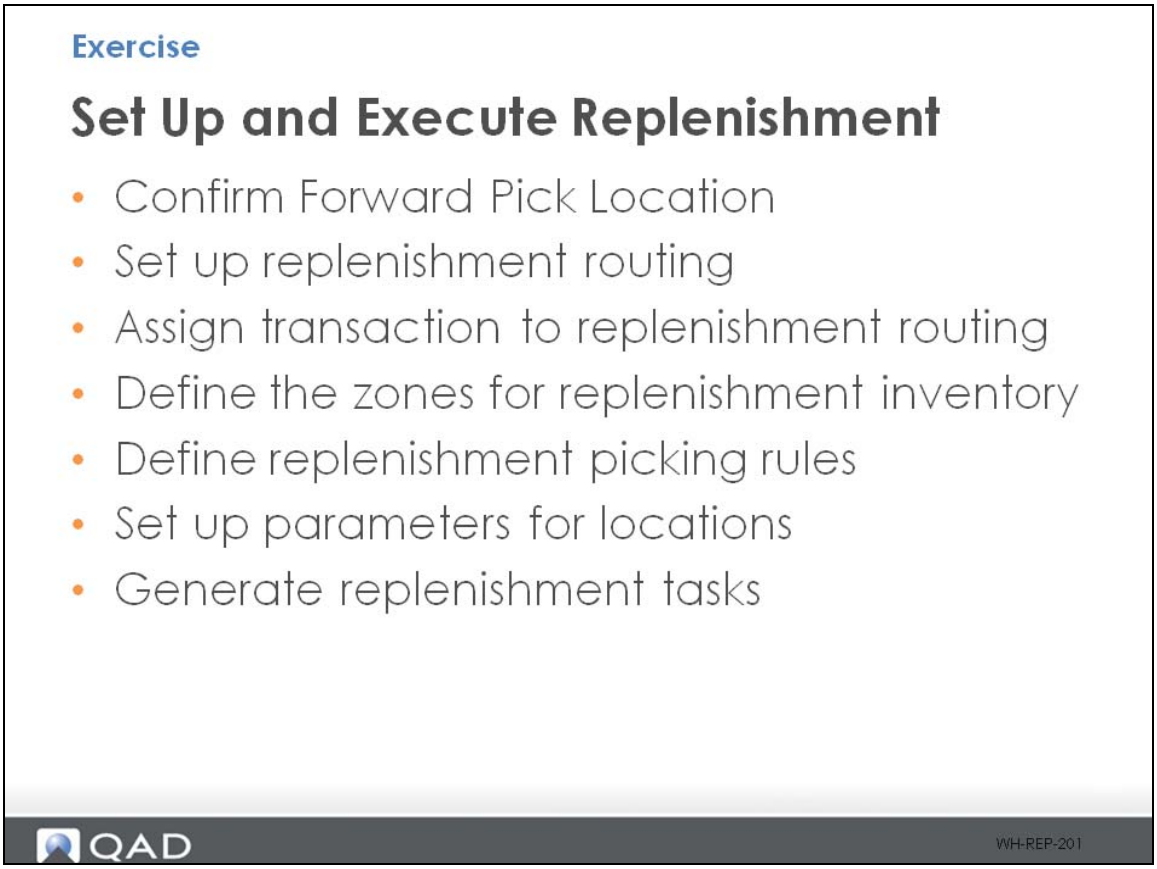
In this example, zone 040BX is setup for an item and replenishment metrics using Replenishment SLG Maintenance. In this scenario, the item can be replenished to any location in the zone; however, best practice is to replenish to a dedicated location to help improve picking efficiencies by maintaining pick location consistency.

There are two frames and 11 fields in Replenishment SLG Maintenance used for configuration.

Key Learning Points

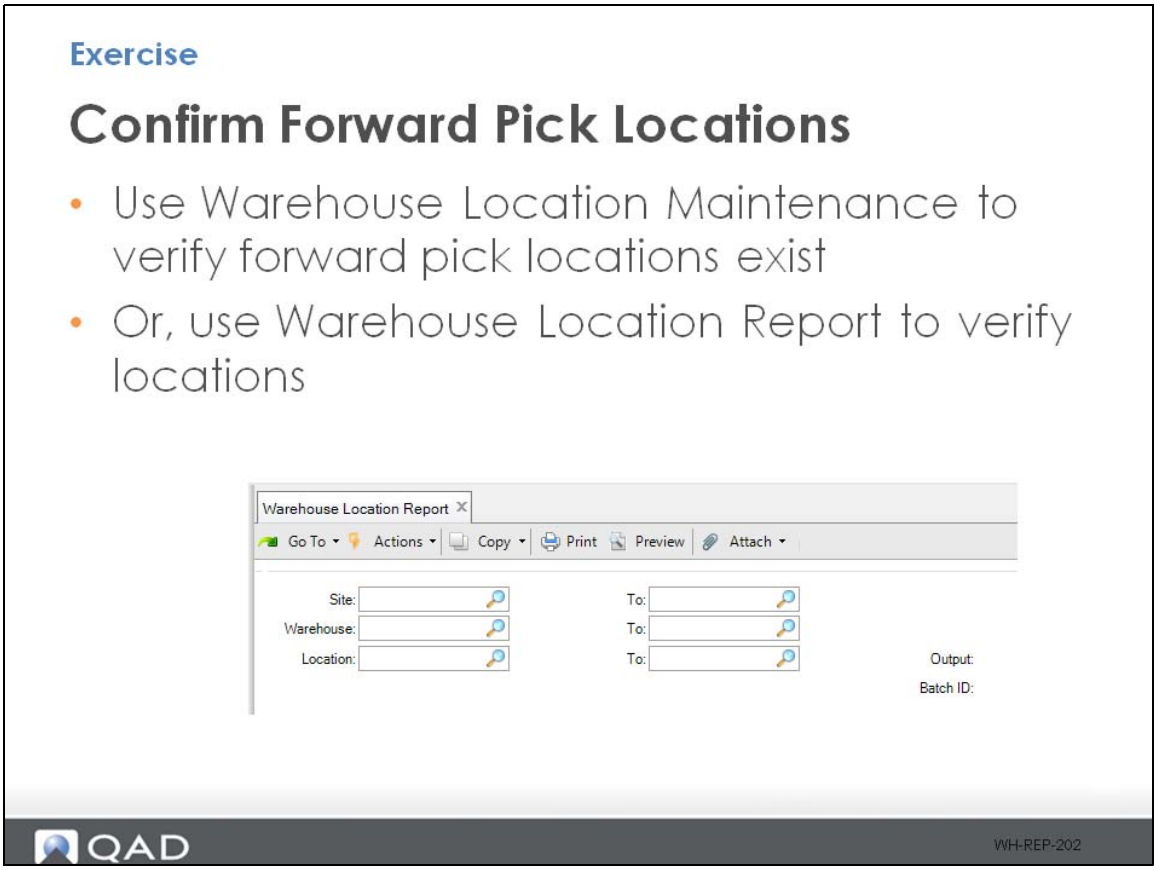


Exercises - Set Up and Execute Replenishment



The following topics walk you through a replenishment exercise in which you set up and execute replenishment within the warehouse. You should have completed exercises in the Introduction and the Receiving topics before starting this exercise.

Exercise - Confirm Forward Pick Location Setup



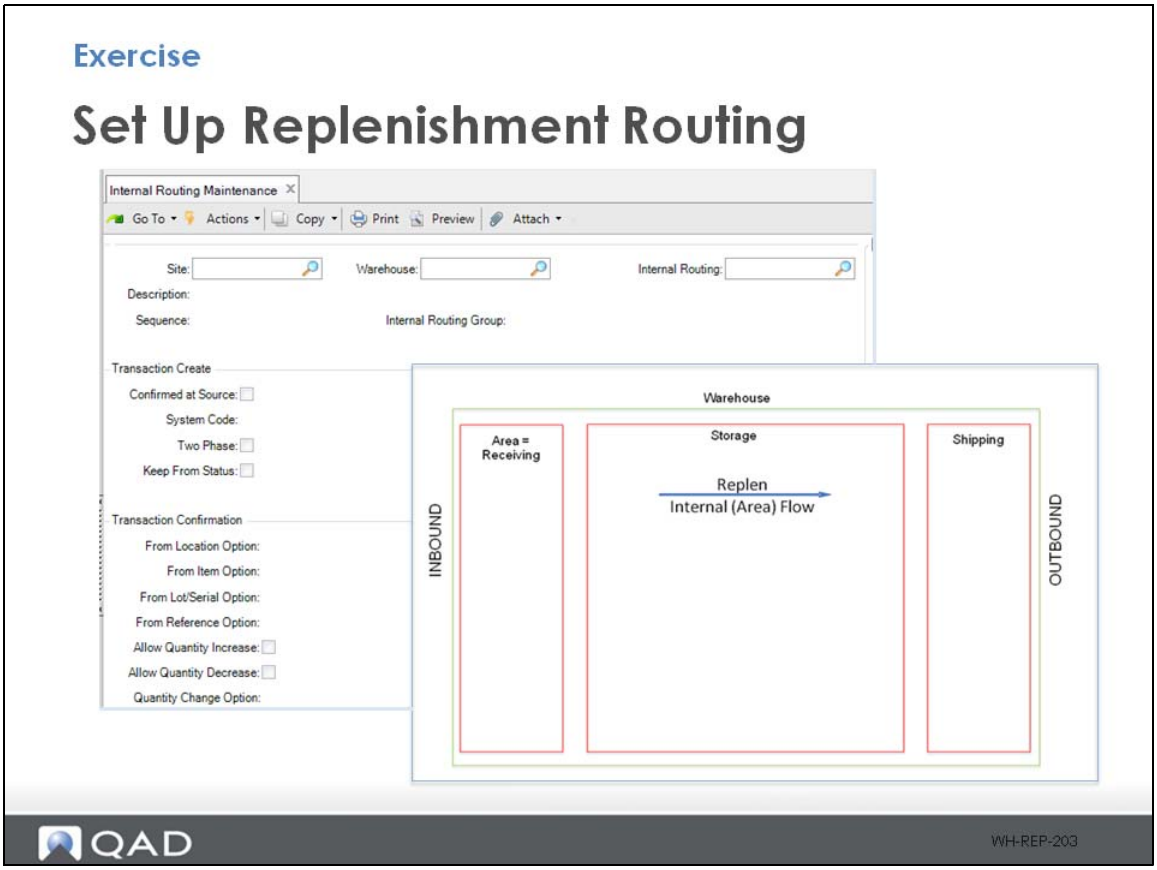
With most items picked in each quantities, setup a reserve storage and forward pick strategy.

1 Confirm the Forward Pick locations are setup per a previous exercise; refer to the warehouse location setup exercises in the Introduction.

2 Or, you can run a report on warehouse locations and use report criteria to display forward pick locations.

Note The forward pick is the Eaches storage locations; reserve storage is the pallet storage locations.

Exercise - Set Up Replenishment Routing



The system replenishes from pallet storage zone (reserve) locations to each storage zone (forward pick) locations. This is an internal (area) flow and requires only one sequence. Create a replenishment routing using the following:

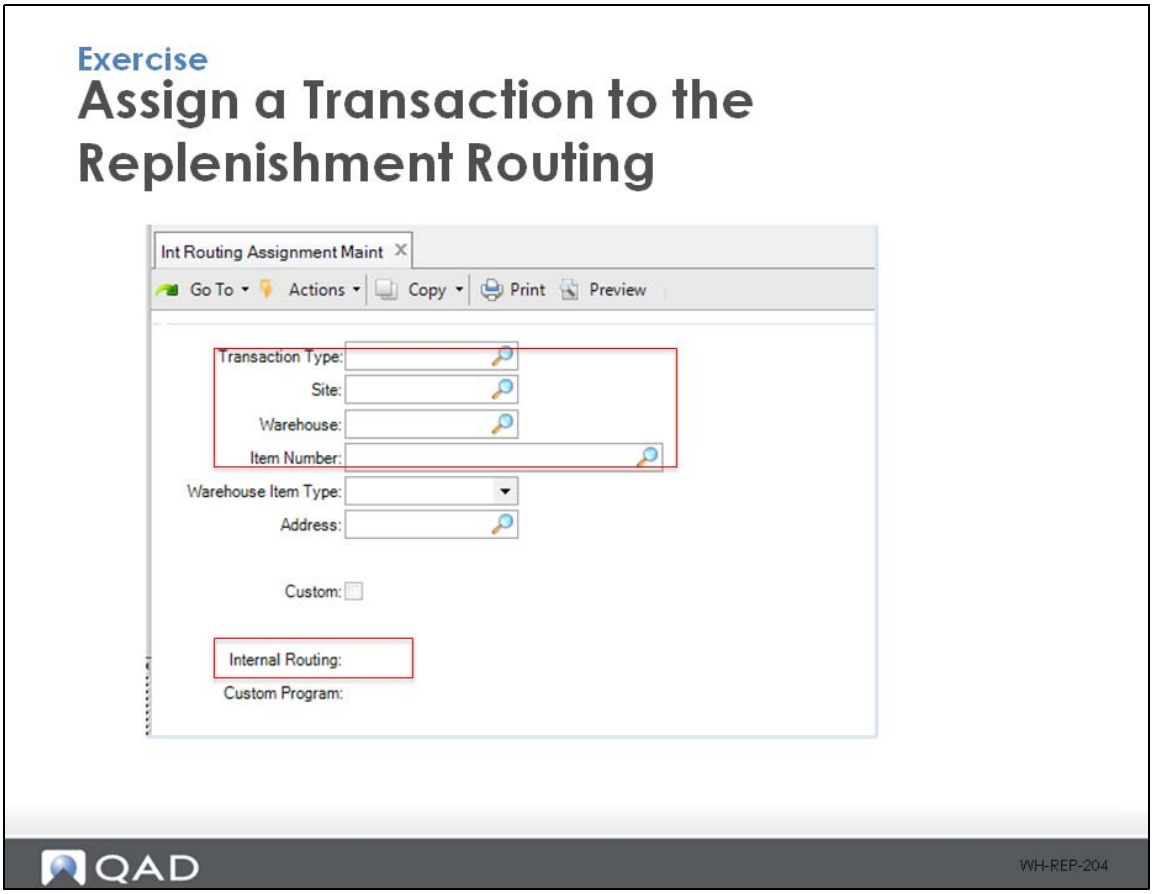
1 Use Internal Routing Maintenance to create the replenishment routing. Specify data for the fields as presented in the table; otherwise, enter your own data and jot down your entered data here.

Field	Data Entered
Site	10-301
Warehouse	
Internal Routing	
Description	Replenishment
Sequence	10
IRG	
To Reference Option	1
Alternate UM Option	13

Notes

- Setting the To Reference Option to 1 removes the LPN reference from the load. If forward pick locations, the location address is the identifier. Setting Alternative UM Option to 13 reports the item measurement in the zone unit of measure, in this case, EA.

Exercise - Assign a Transaction to the Replenishment Routing

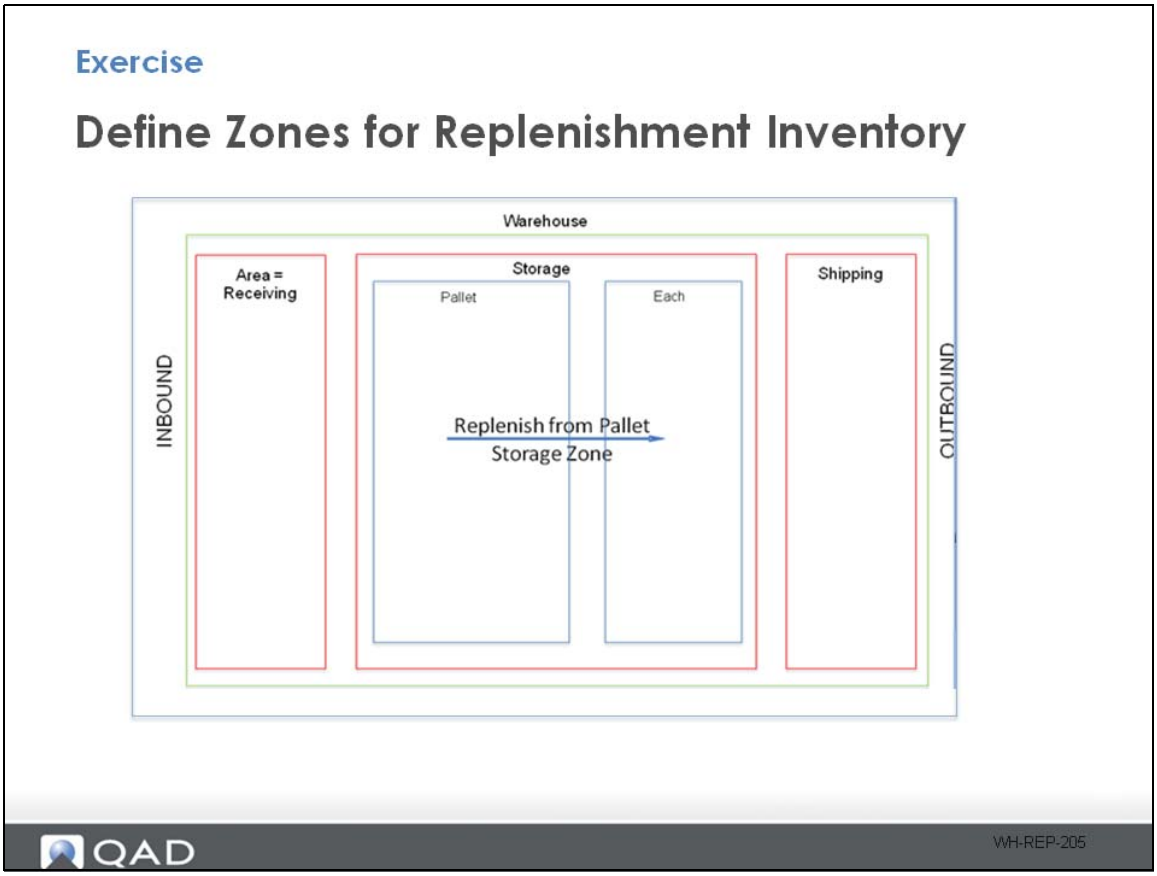


When a replenishment pick task is created, it follows the replenishment routing.

1 Assign the Replenishment routing to a generic replenishment pick transaction type using Int Routing Assignment Maintenance. Use the table below to enter data for fields. Fill in the details here:

Field	Data Entered
Transaction Type	PICK-RE
Site	10-301
Warehouse	
Internal Routing	

Exercise - Define Zones for Replenishment Inventory



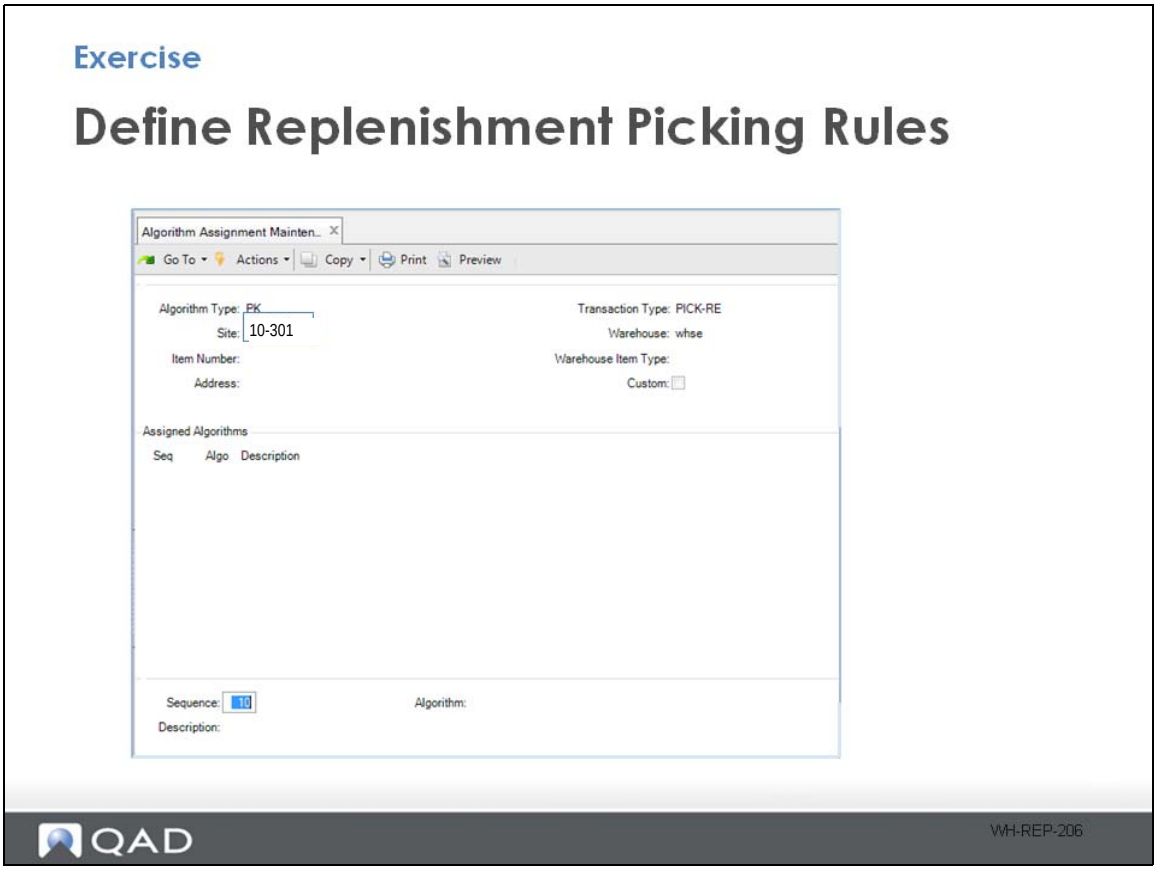
You define which zones the system uses for replenishment inventory using Replenishment List Maintenance.

Establishing a replenishment list allows you to define which zones are used for replenishment inventory in priority sequence.

1 Use Replenishment List Maintenance to define the zones and priority for replenishment inventory. For QMI, all inventory is replenished from the Pallet storage zone. Use the following table to find the fields for which you enter data. Fill in the details here:

Field	Data Entered
Site	10-301
Replenishment List	
Description	Replenishment
Seq	10
Warehouse	
Storage Loc Group	

Exercise - Define Replenishment Picking Rules

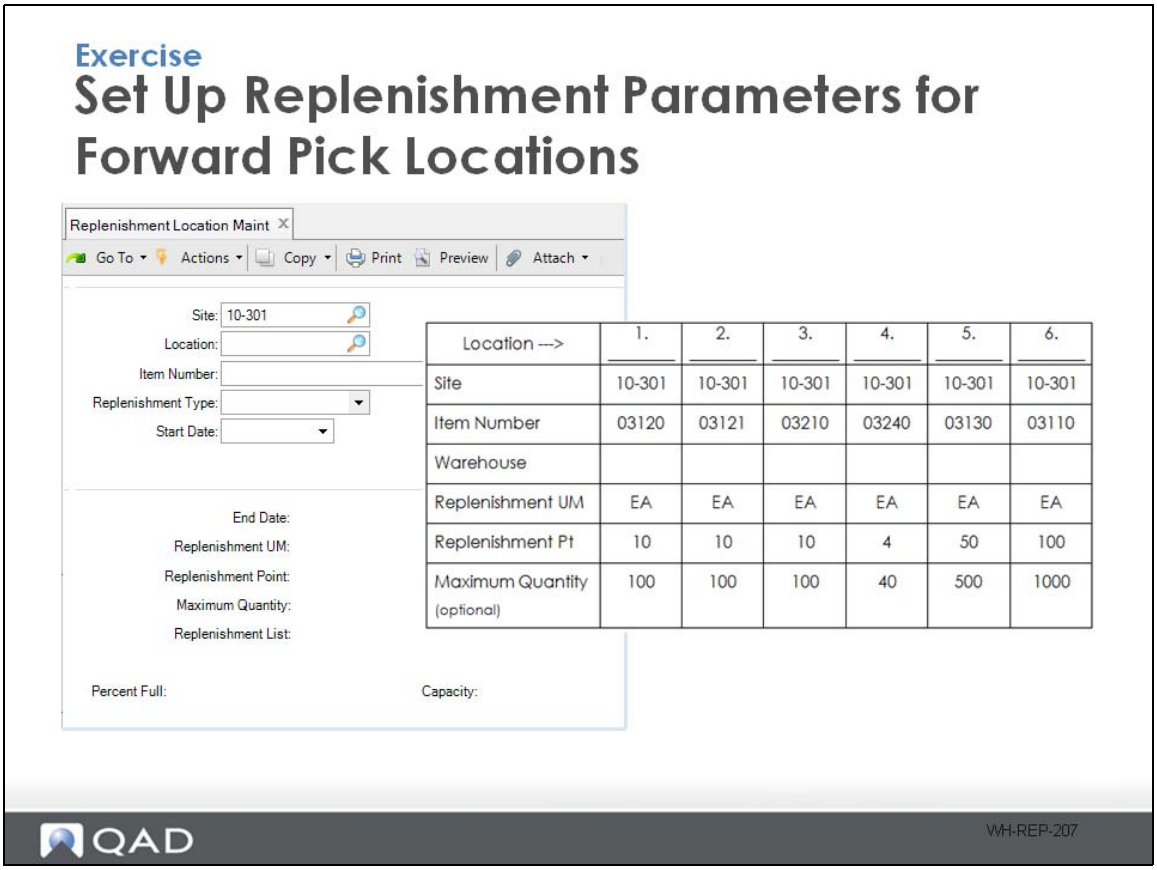


QMI management has a FIFO inventory preference.

Use Algorithm Assignment Maintenance to define picking rules for replenishment inventory. Use the table below to determine which fields to use and mandatory data to enter. Fill in the details here for other fields.

Field	Data Entered
Algorithm Type	PK
Transaction Type	Pick *
Site	10-301
Warehouse	
Sequence	10
Algorithm	11

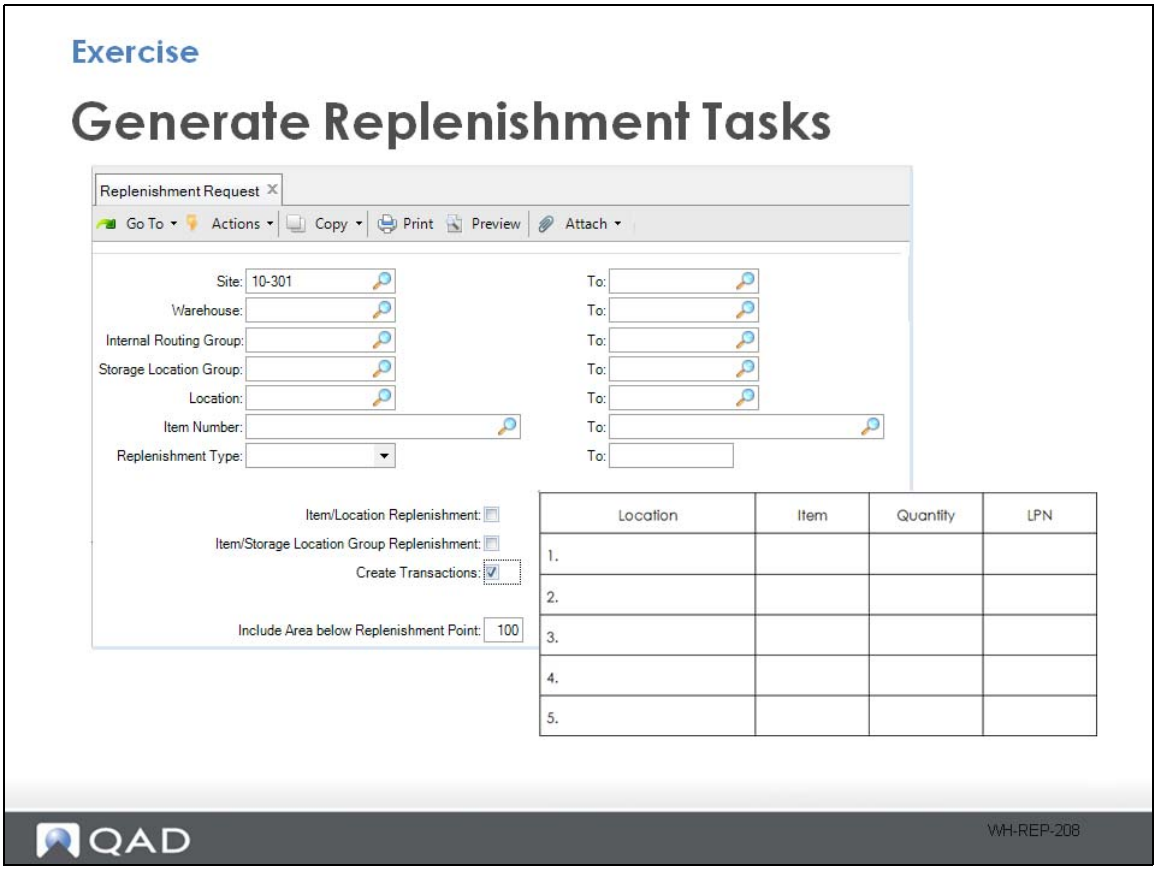
Exercise - Set Up Replenishment Parameters for Forward Pick Locations



1 Define the items and replenishment points by location using Replenishment Location Maintenance. Use the table below to determine which fields to use and mandatory data to enter. Fill in the details here for other fields.

Location ->	**1**	**2**	**3**	**4**	**5**	**6**
Site	10-301	10-301	10-301	10-301	10-301	10-301
Item Number	03120	03121	03210	03240	03130	03110
Warehouse						
Replenishment UM	EA	EA	EA	EA	EA	EA
Replenishment Pt	10	10	10	4	50	100
Maximum Quantity (optional)	100	100	100	40	500	1000
Replenishment List						

Exercise - Generate Replenishment Tasks



With the current setup, you generate replenishment tasks manually using Replenishment Request. Enter your site and warehouse, and select Create Transactions to generate available replenishment tasks.

1 Review Inventory Detail Inquiry to observe pending replenishment tasks.

2 Use Movement Confirmation Workbench to complete open move tasks.

When done correctly, new inventory positions are in the forward pick locations, and inventory is decremented from the reserve pallet storage locations. Fill in the details here:

	Location	Item	Quantity	LPN
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

When this exercise is correct, new inventory positions are in the forward pick locations and inventory is decremented from the reserve Pallet storage locations.

Also, note several of the inventory positions do not have an LPN. Do you know why?

Questions

1. True or False. Replenishment is an optional configuration.
2. Replenishment can be defined by _____ or _____.
3. What is bulk reserve storage typically used for in a warehouse?
4. Replenishment is used in conjunction with a _____ storage and _____ pick strategy.
5. When the replenishment is generated, where does the system look for the replenishment flow to follow?
6. Replenishment is similar to _____ or _____ in manufacturing terms.

Answers

1 True. Replenishment is an optional configuration.

2 Replenishment can be defined for an location or zone.

3 Bulk Reserve storage is for larger unit loads (pallets).

4 reserve, forward

5 When the replenishment is generated, the system looks for the flow shown in the internal routing, defined in Internal Routing Maintenance.

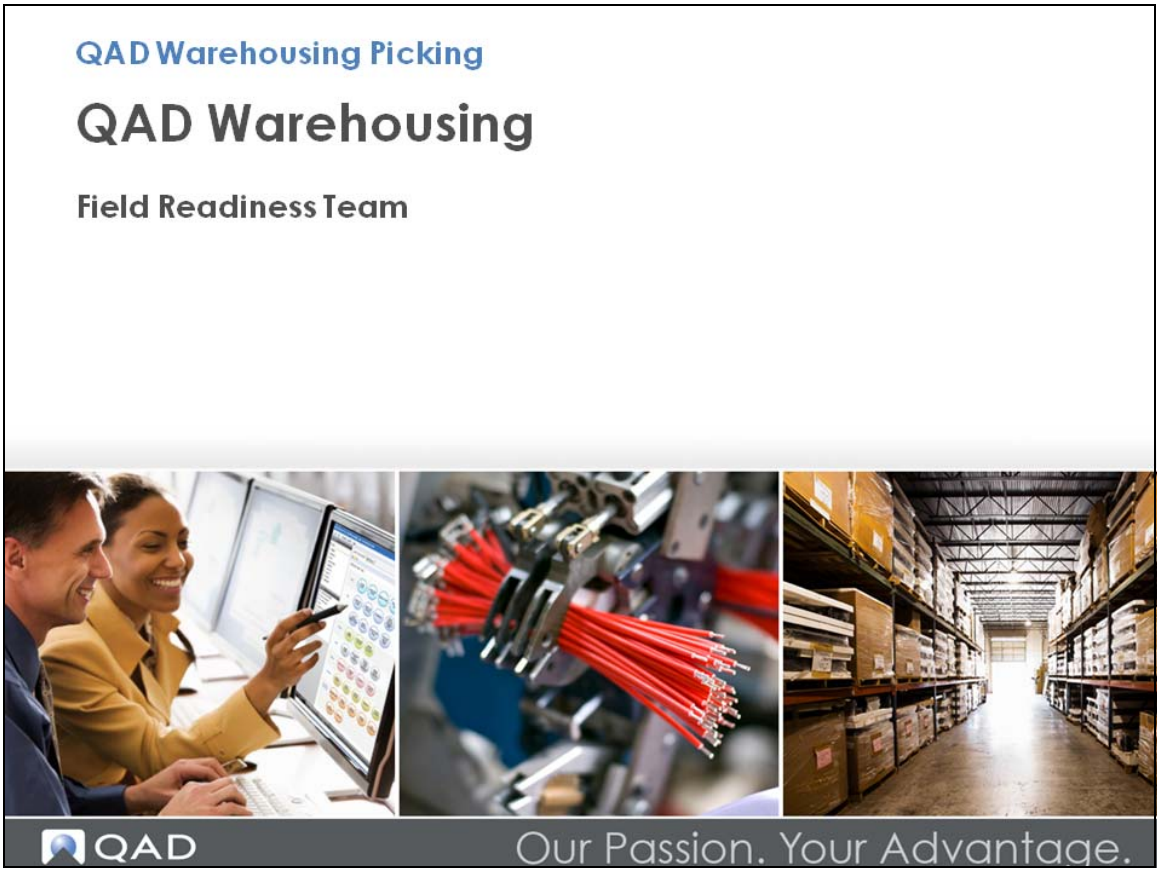
6 kanban, re-order point

Notes

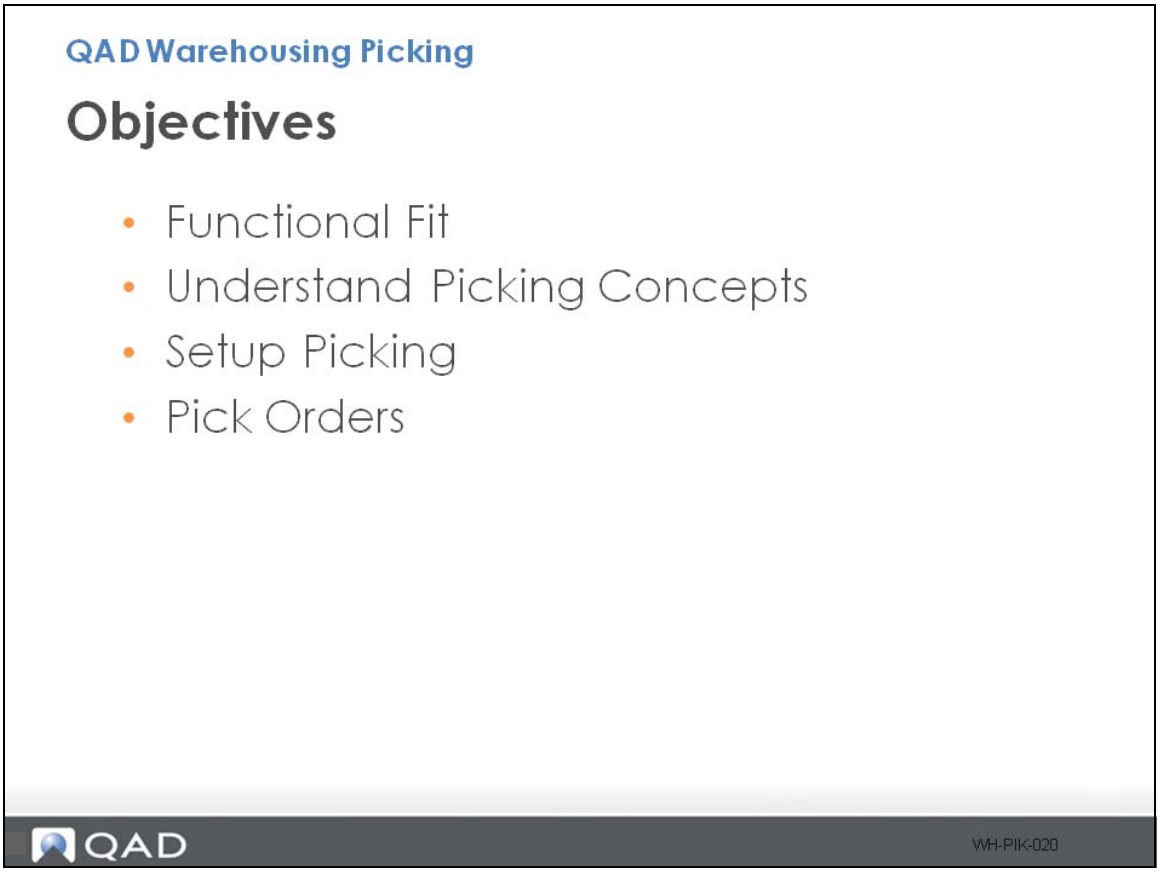
Chapter 4

Picking

Overview

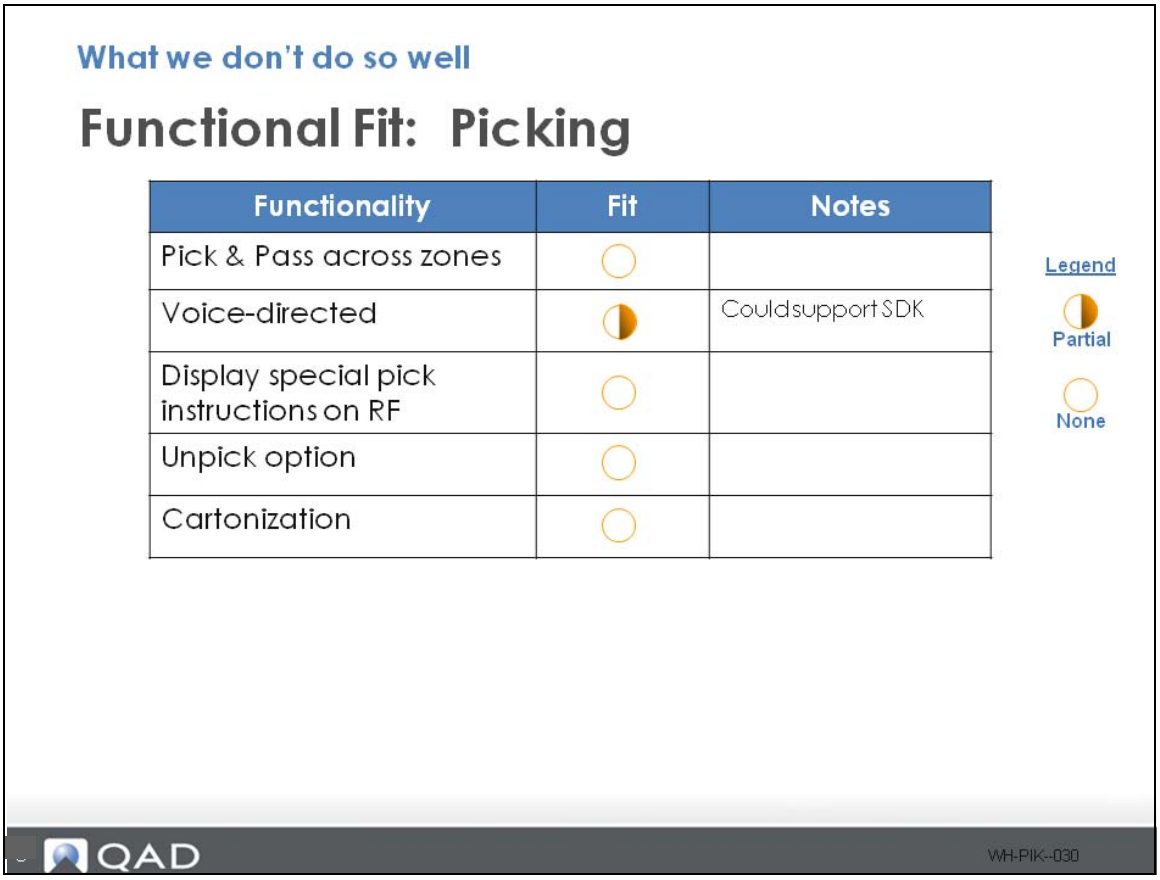

QAD Warehousing Picking
QAD Warehousing
Field Readiness Team
QAD
Our Passion. Your Advantage.

Objectives



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

Functional Fit: Picking



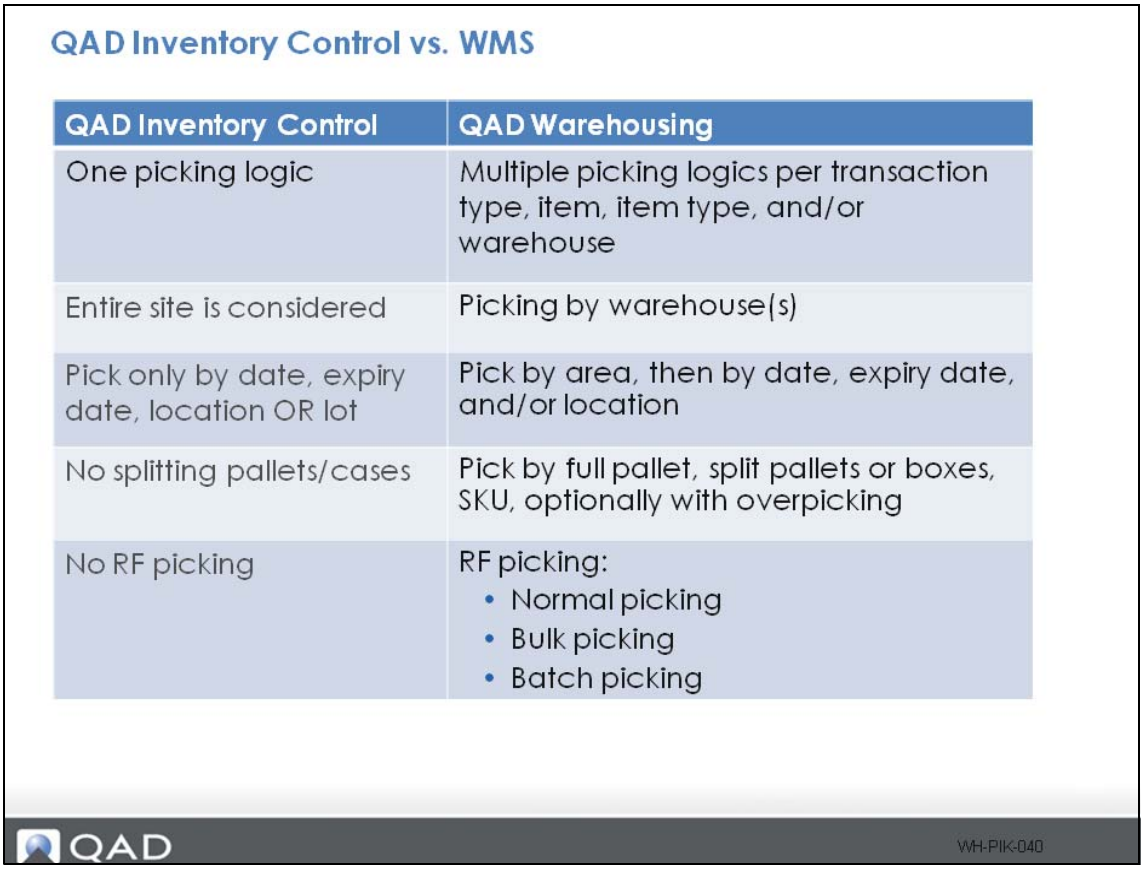
Pick and pass lets users pick items, for example to a box, then put the box onto a conveyor belt and pass it on to another picker who would add other items to the box.

Voice detection systems let users put a headset on the RF device, then listen to instructions on which location to report and pick. This is also known as hands-free picking.

Unpick options let staff remove items from a pick, for example when orders are cancelled.

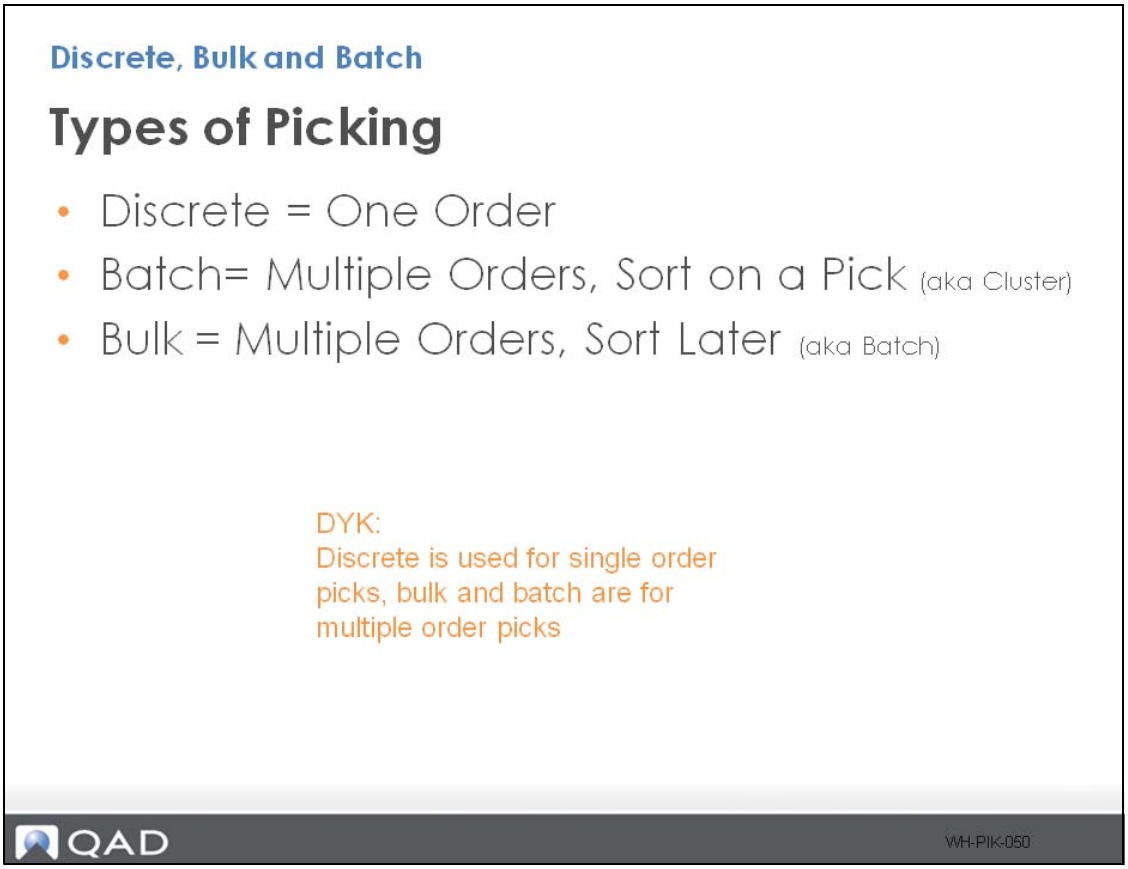
Cartonization lets staff know the correct size of carton or box to use for the pick because they know ahead of time if the items to be picked fit into the box or item.

QAD Inventory Control Versus QAD Warehousing



QAD Warehousing offers more configurable picking options than standard QAD core.

Discrete, Bulk, and Batch



Did You Know

D*iscrete is used for single order picks, bulk and batch are for multiple order picks.*

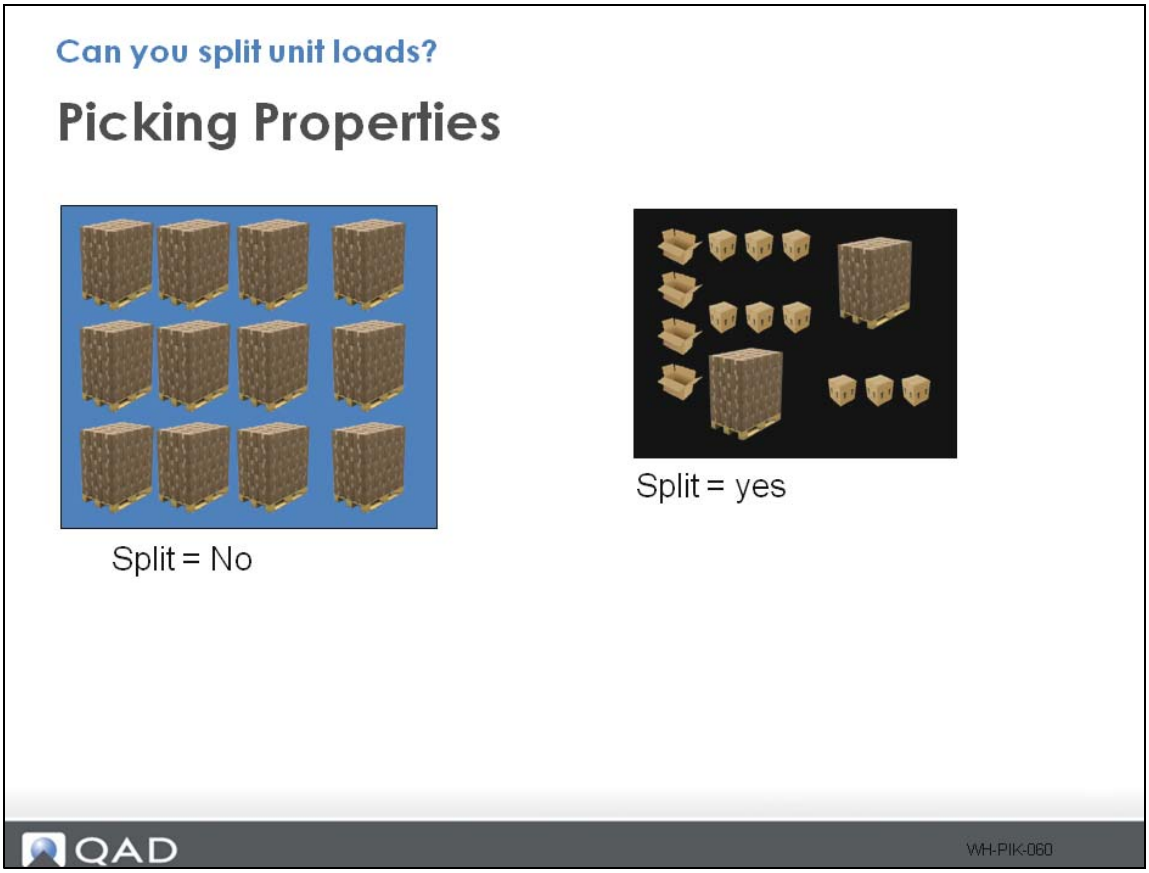
Discrete picking is typically one order, system-like picking that does not include mechanisms to shorten picking or travel time.

In bulk picking, the orders that can be collected to form a bulk pick are sales, distribution, and works orders. These bulk picks accumulate the items together, and, using the defined picking rules, issue the instructions to the staff to pick the stock. The total item quantity is picked and sorted to individual orders during a subsequent step.

Batch picking lets warehouse staff pick items in a more efficient way. Batch picking reorders the order-picking sequence and tasks so warehouse staff can pick multiple items from multiple orders at various locations throughout the warehouse with a shortened travel sequence. The items are sorted to the individual orders during the pick process.

As a general rule, smaller warehouses use discrete order picking while higher volume (based on number of order picked) warehouses take advantage of batch picking. Bulk picking is used to a lesser degree.

Can You Split Unit Loads?



Did You Know

Splitting containers allows you to pick a less than full pallet, case, or box quantity.

QAD Warehousing lets you decide whether warehouse 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 whole packages be split in a Repackaging area.

Can You Overpick?

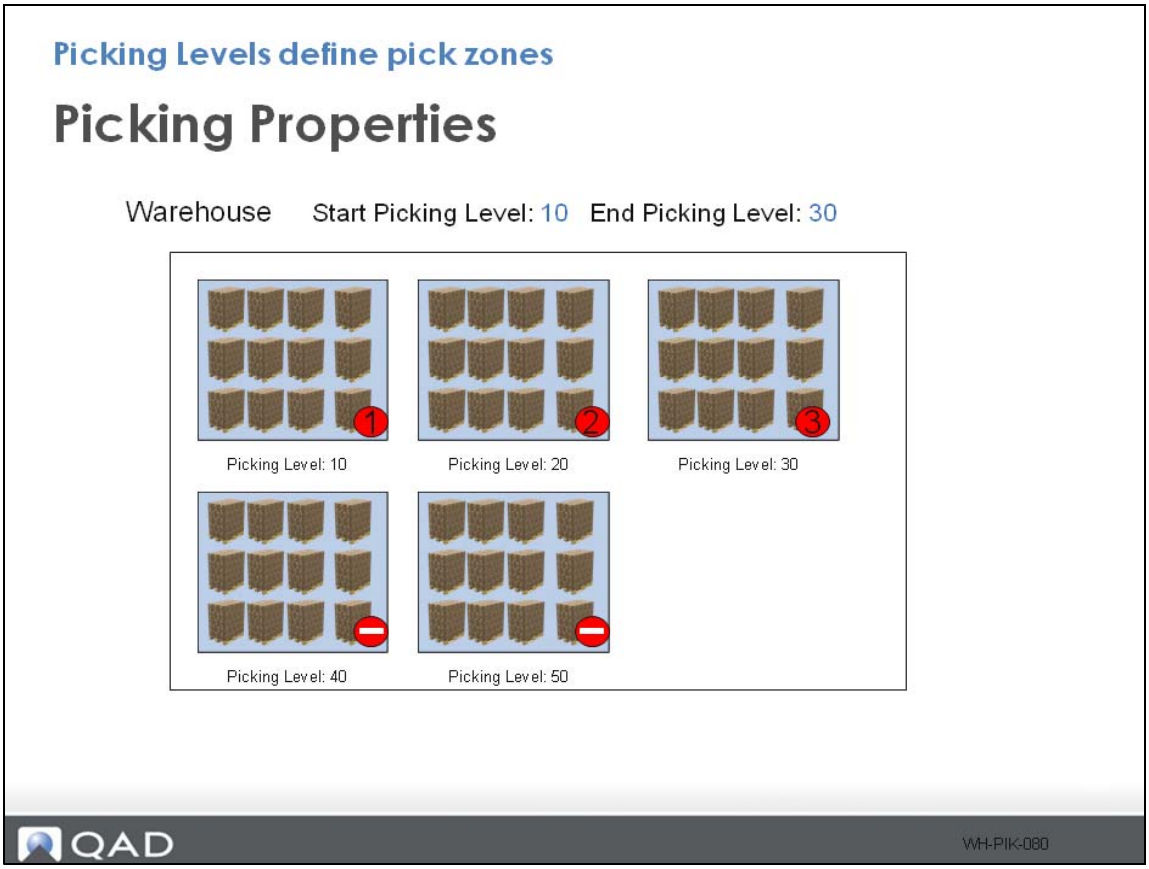
Did You Know

Over picking allows you to pick more inventory than what is specified on the pick task.

Over picking 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 over picking and container splitting to pick the right amount.

Over pick is used mostly with replenishment.

Picking Levels Define Pick Zones



Did You Know

Picking levels are used to determine the zone priority for selecting inventory.

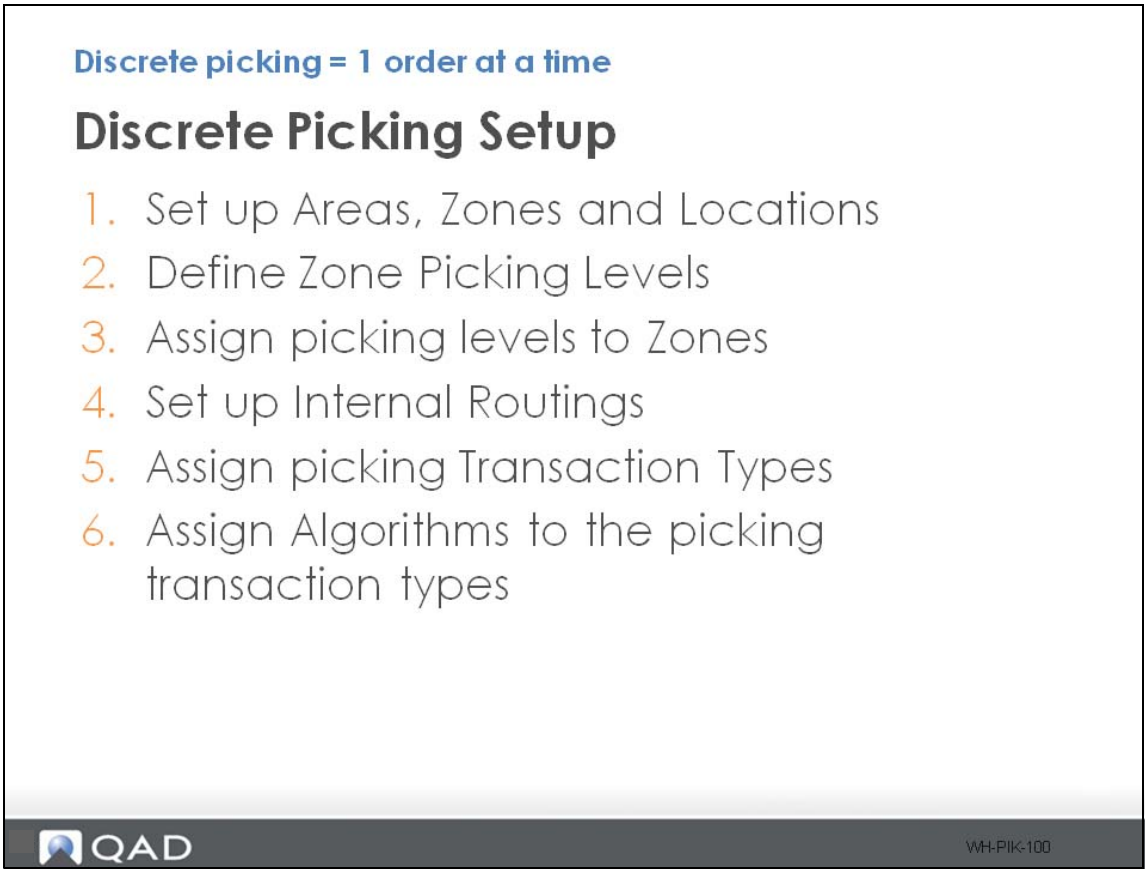
QAD Warehousing lets you assign a picking level to each zone. You can set default start and end picking levels in Warehouse Maintenance or by using Warehouse Transaction Type Maintenance. These start and end settings determine the picking levels to be used for the pick. The system then looks for inventory 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.

Picking levels define which storage location groups the system should use for picking inventory.

Discrete Picking

Discrete picking is typically one order, system-like picking that does not include mechanisms to shorten picking or travel time.

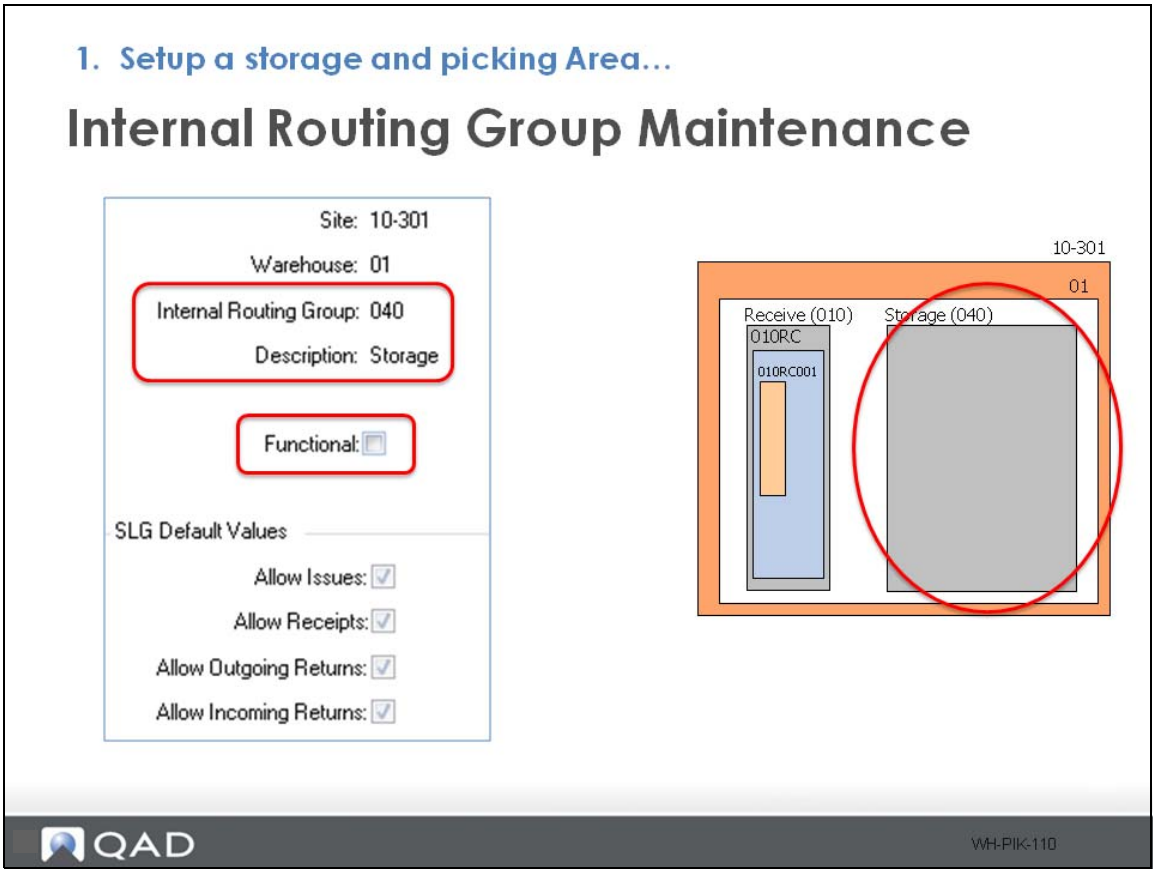
Discrete Picking - One Order at a Time



Follow these steps to enable discrete picking:

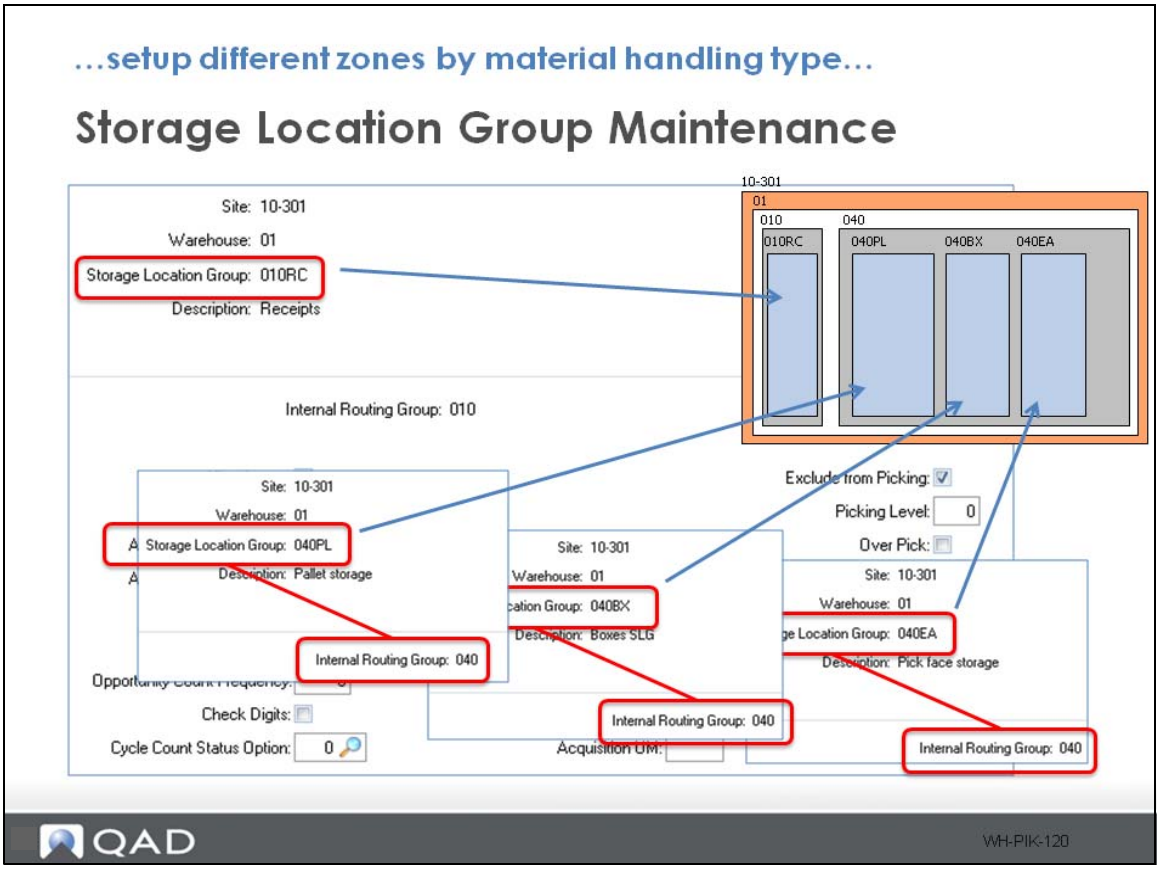
1. Use Work Location Group Maintenance to set up WLGs or zones and use Warehouse Location Maintenance to set up locations.
2. Use Warehouse Maintenance to set up picking levels.
3. Use Storage Location Group Maintenance to set up picking levels for zones
4. Use Internal Routing Maintenance to set up routings for picking functions.
5. Use Internal Routing Assignment to assign picking transaction types.
6. Use Algorithm Assignment Maintenance to assign algorithms to the transaction types.

Set Up Storage and Picking Area



Use Internal Routing Group Maintenance to set up a non-functional storage area. This area has multiple zones for picking.

Set Up Different Zones by Material Handling Type



Use Storage Location Group Maintenance to set up picking levels and other picking parameters.

In this example, there are three zones:

- One for reserve (bulk) storage, 040PL
- One for box storage and picking, 040BX
- One for each storage and piking, 040EA.

Note the picking level of the zones:

010RC = 0

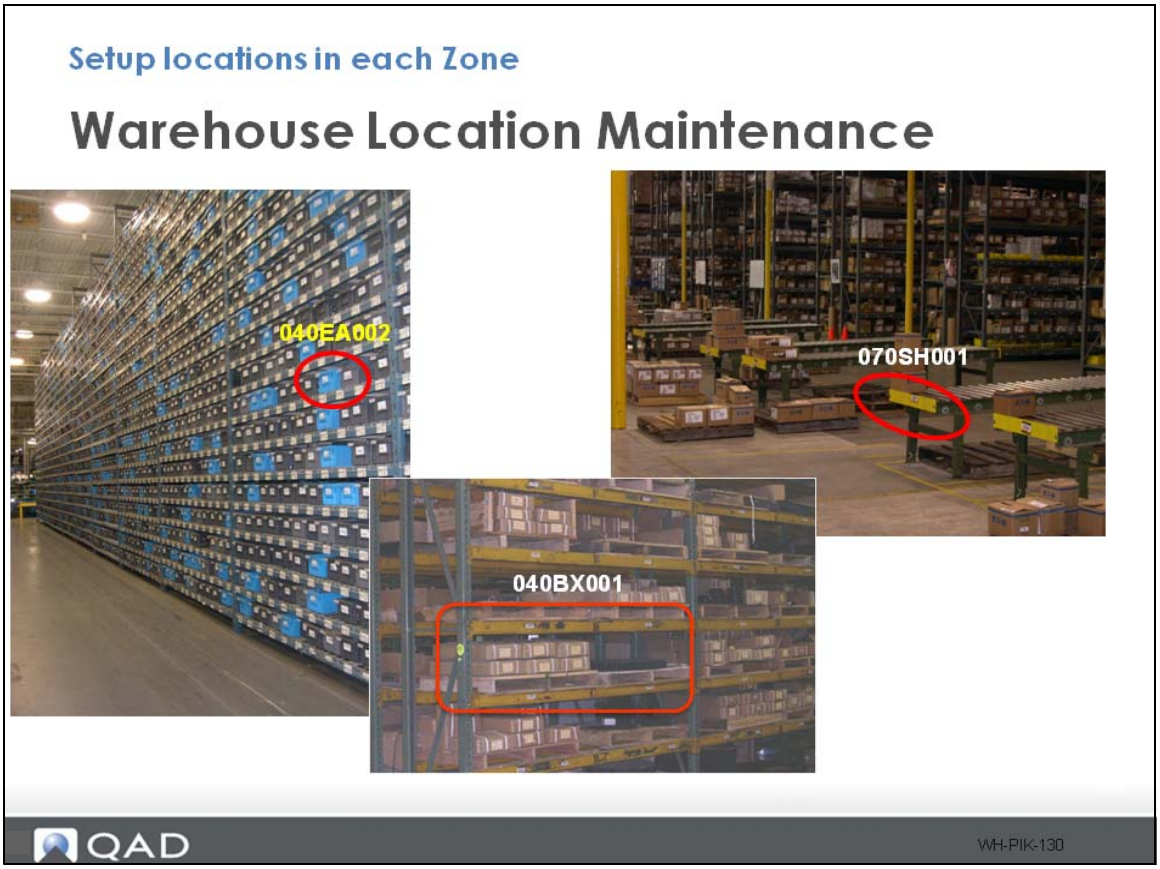
040PL = 10

040BX = 20

040EA = 30

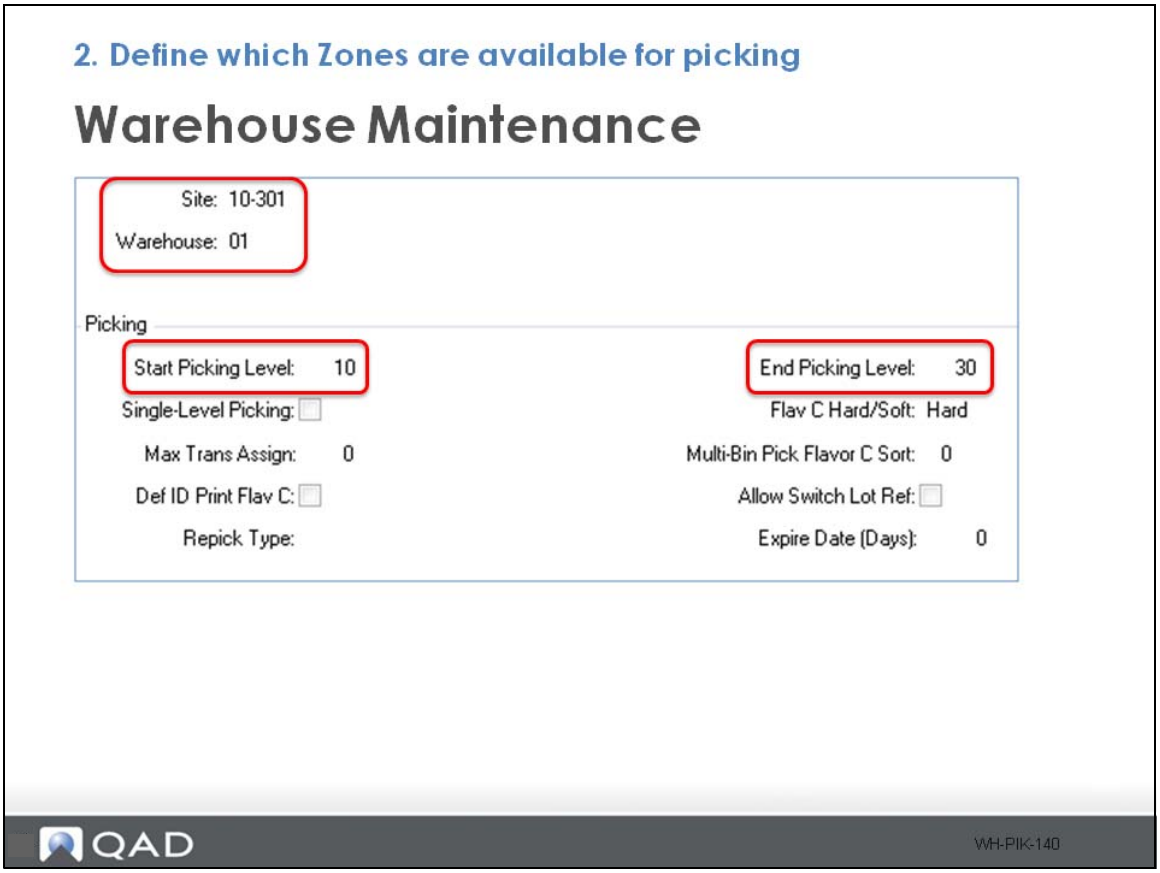
Pick level relevance is discussed later in this section.

Set Up Locations in Each Zone



Locations should also be setup in each zone using Warehouse Location Maintenance.

Define Which Zones are Available for Picking



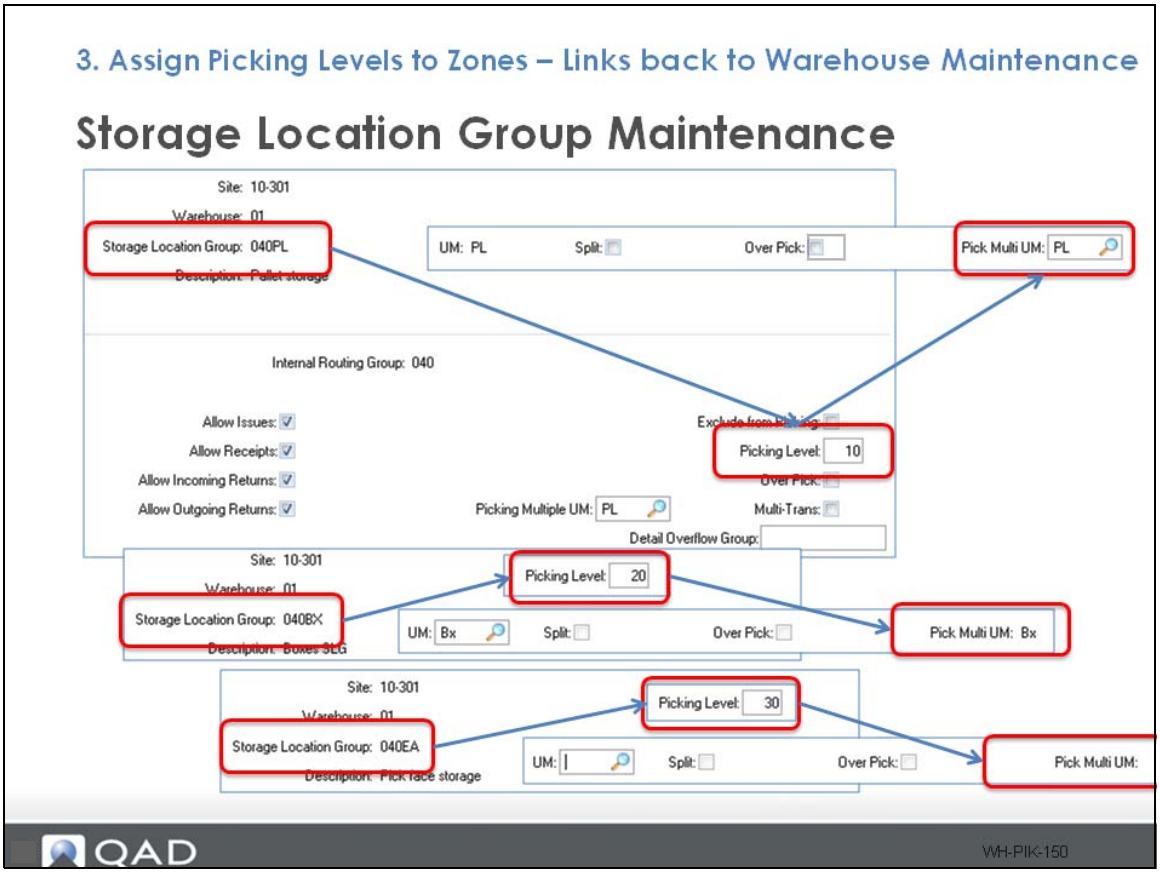
The fields in the picking frame in Warehouse Maintenance default to the picking frame fields in Storage Location Group Maintenance. So, you can define the Zone picking parameters in Warehouse Location Maintenance that the system uses for picking inventory.

Going back to the Warehouse Maintenance menu, set up the start and end picking levels to define the range of zones the systems use to satisfy pick tasks.

These picking levels associate back to the picking level parameters setup in storage location group maintenance (Step 1).

In this example, picking starts in 040PL move to 040BX and end in 040EA if needed.

Assign Picking Levels to Zones

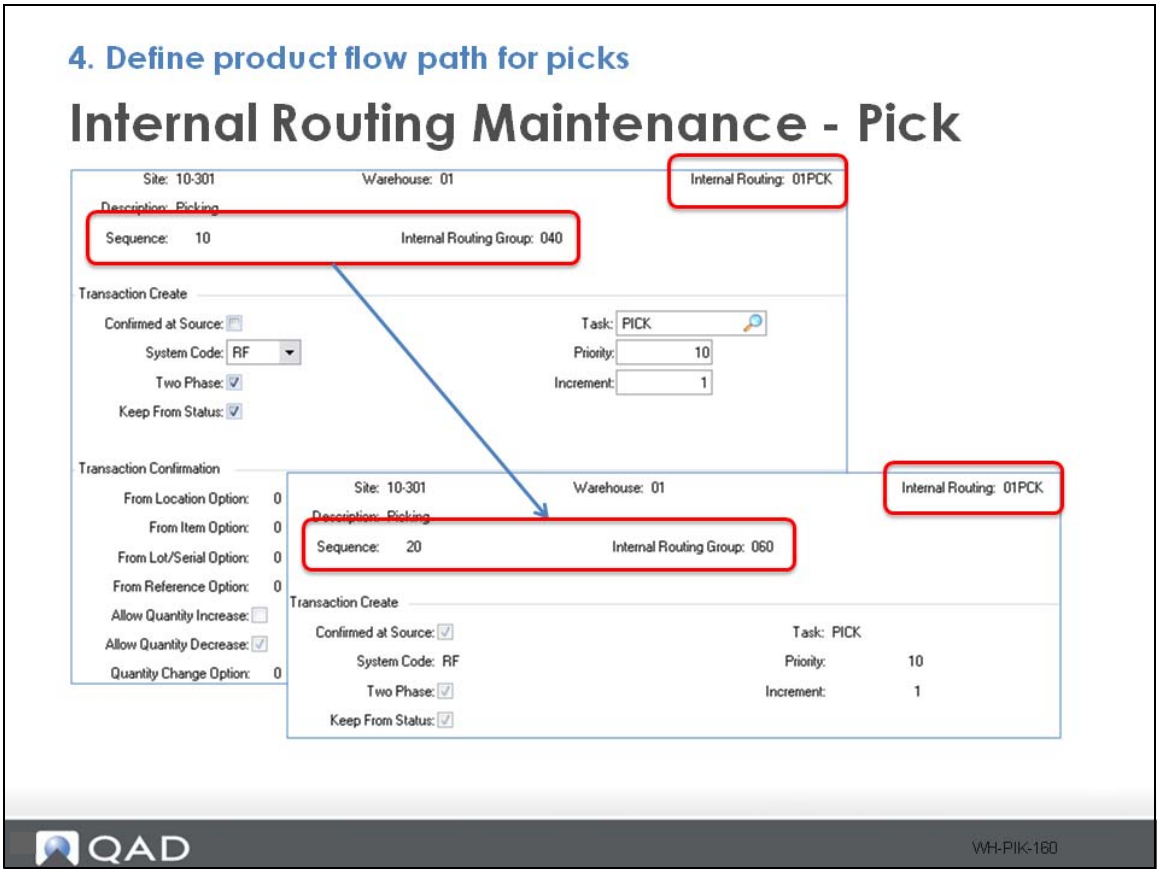


Each zone has a picking level defined. Any zone with a picking level that is not between the start and end levels you specify here is not considered by the picking algorithms in this warehouse.

When setting up zones for picking, you can also setup the associated pick unit of measure (Pick Multi UM).

In this example, pallets are picked from 040PL, boxes from 040BX and each (<blank> Pick Multi UM) from 040EA.

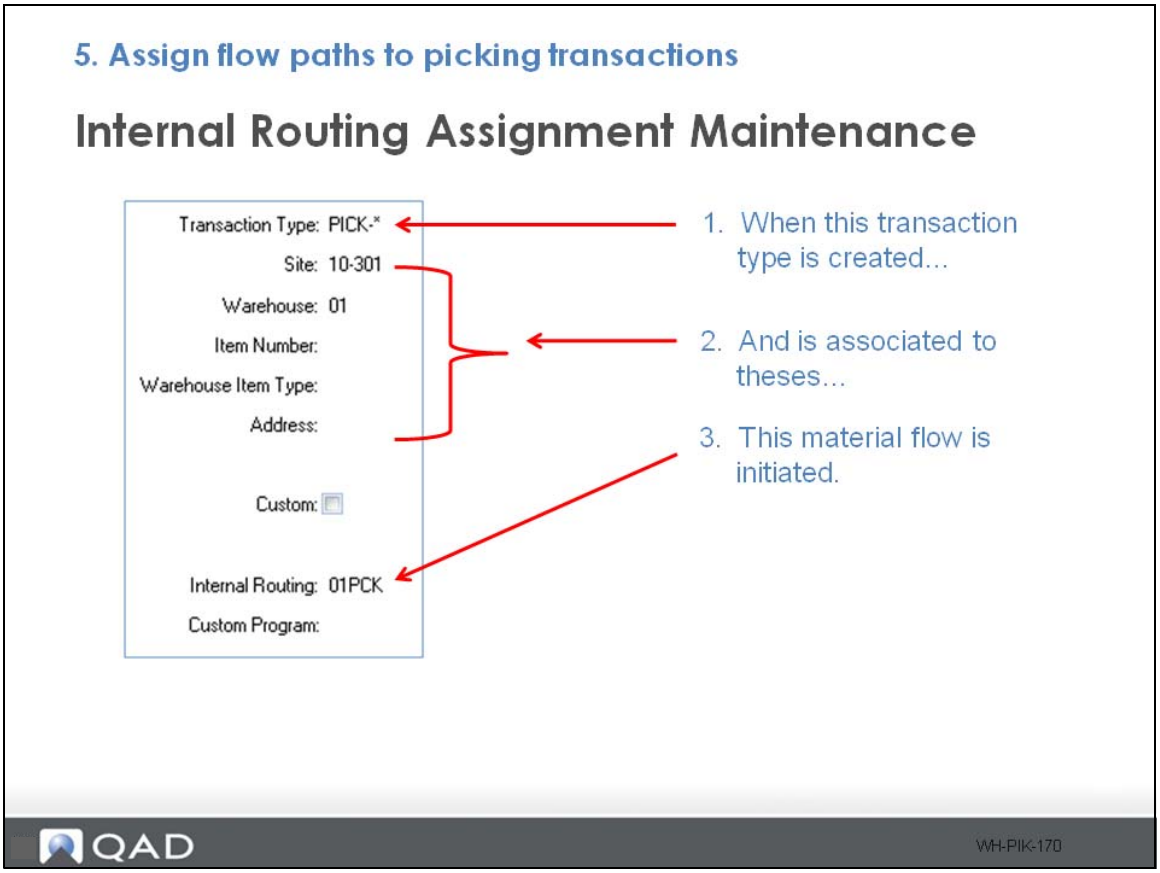
Define Product Flow Path for Picks



As with all other product flows, an internal routing (01PCK) is set up, linking storage area 040 to the packaging area 060 using Internal Routing Maintenance.

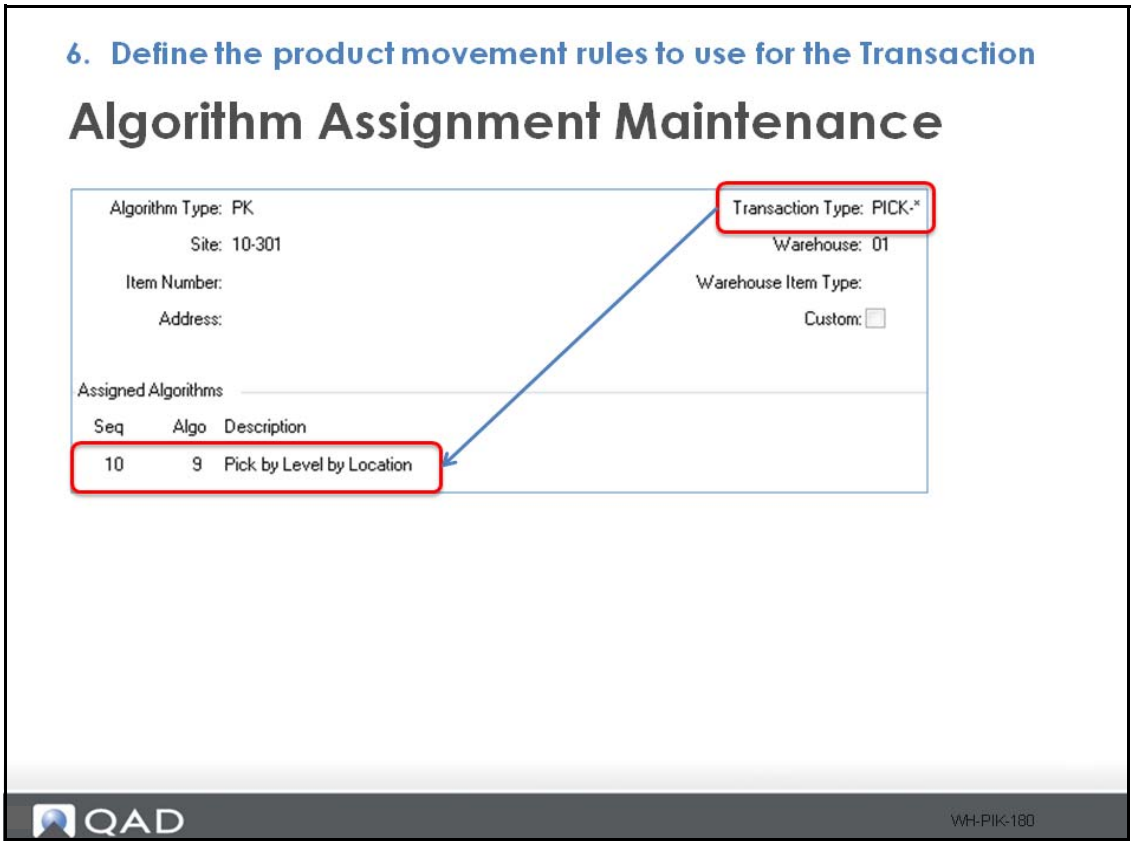
In QMI, all picks are routed to Packaging.

Assign Flow Paths to Picking Transactions



The pick routing (01PCK) is then assigned to the PICK-* transaction at the site and warehouse. The routing can also be based on combinations of item number, warehouse item type and address (in this example, the customer address).

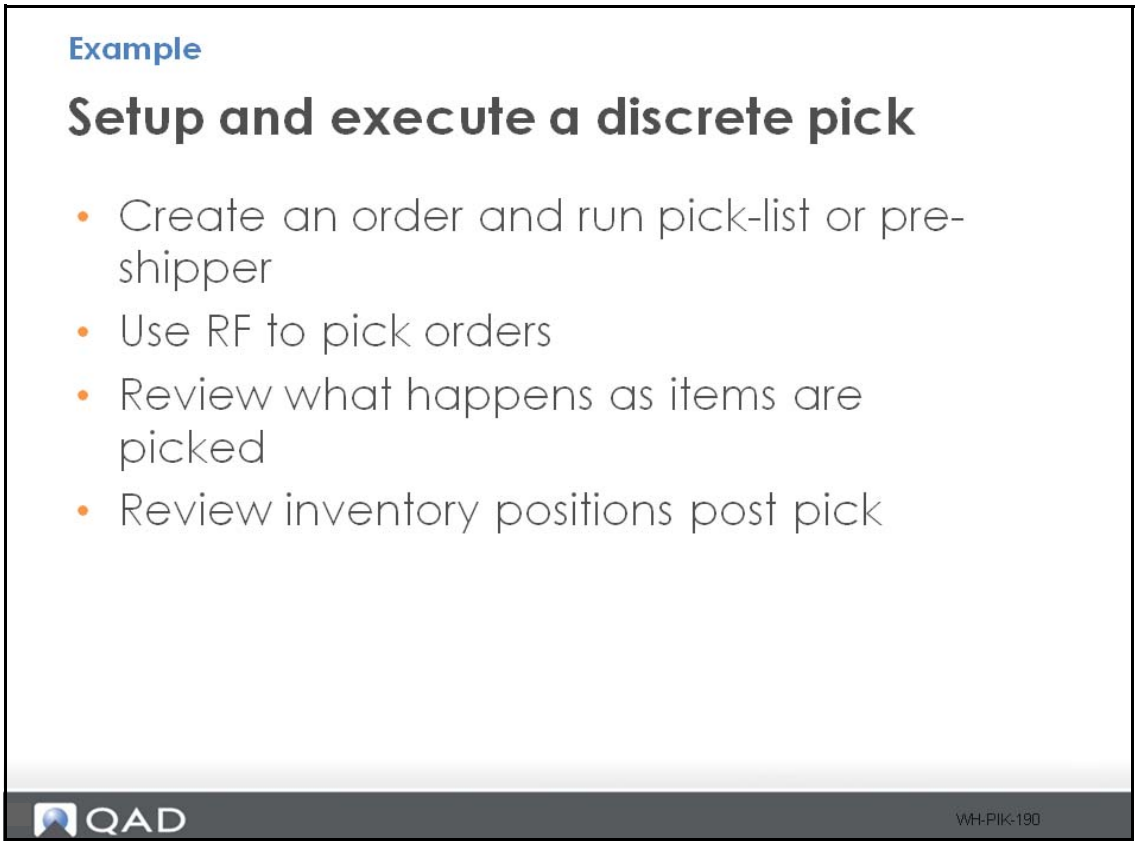
Define Product Movement Rules to Use for Transaction



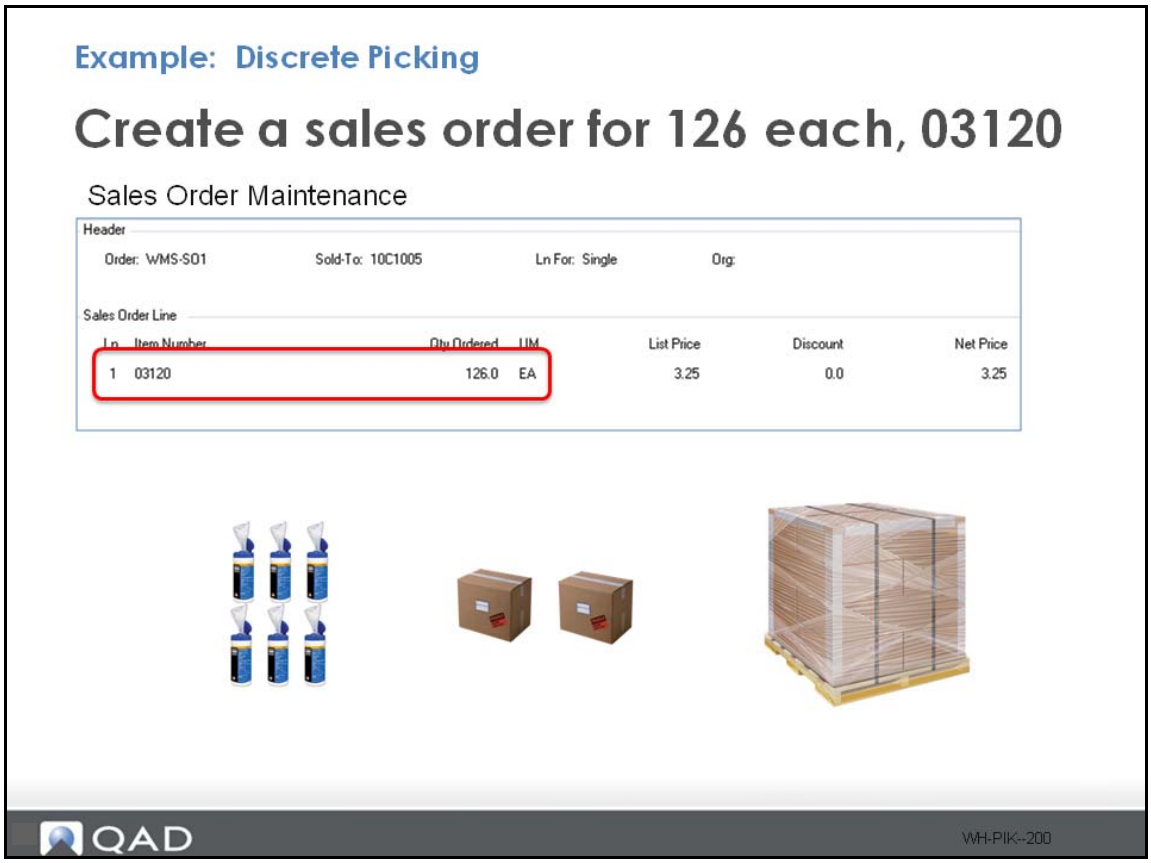
Finally, use Algorithm Assignment Maintenance to define the picking rules for the PICK-* transaction.

In this example, when any pick task is created, the system picks by level, then location. This means the zones are prioritized by the Picking Level field (10, 20, 30) then within each zone, locations are searched in descending alpha-numeric sequence.

Example - Set Up and Execute a Discrete Pick



Example - Discrete Picking

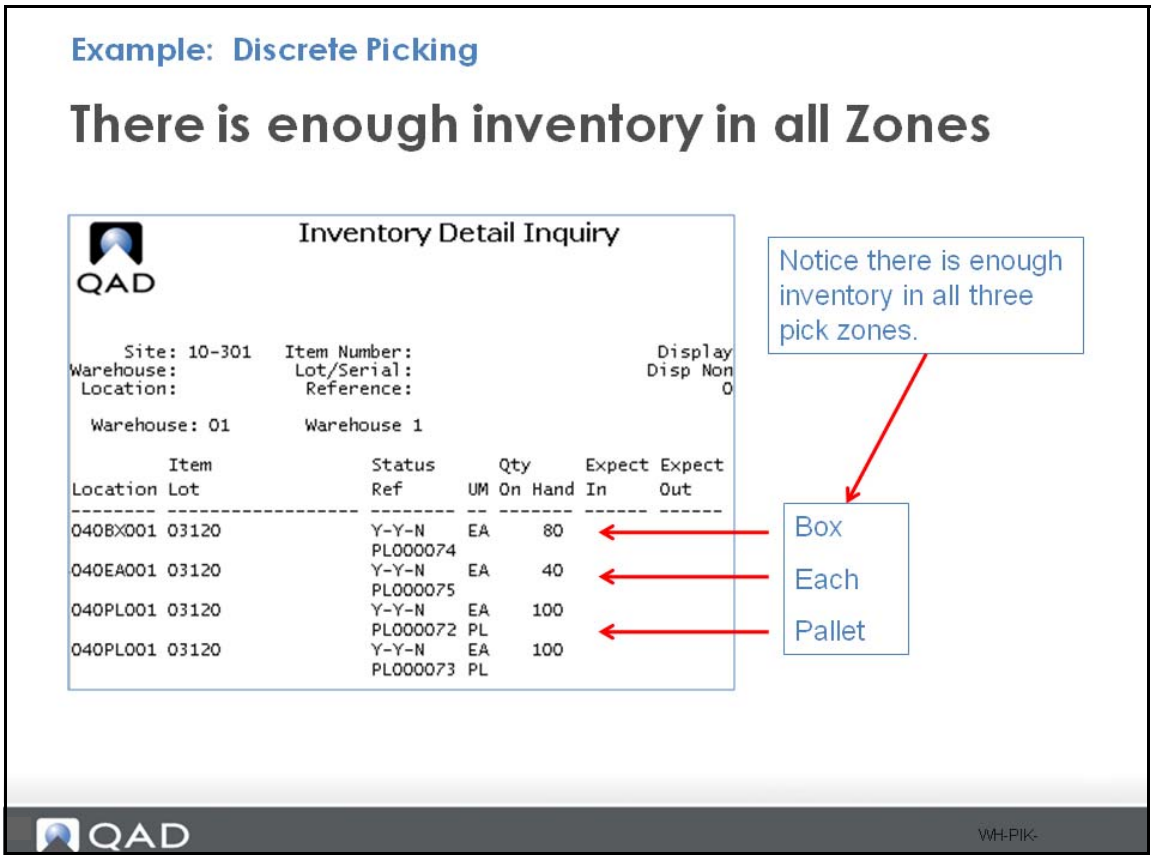


In this exercise, you use Sales Order Maintenance to create a sales order for 126 each for item 03120.

This lets you test picking unit of measure quantities by zone:

- 1 pallet (100 each) from 040PL
- 2 boxes (20 each) from 040BX
- 6 eaches from 040EA

Example - Discrete Picking, Zones

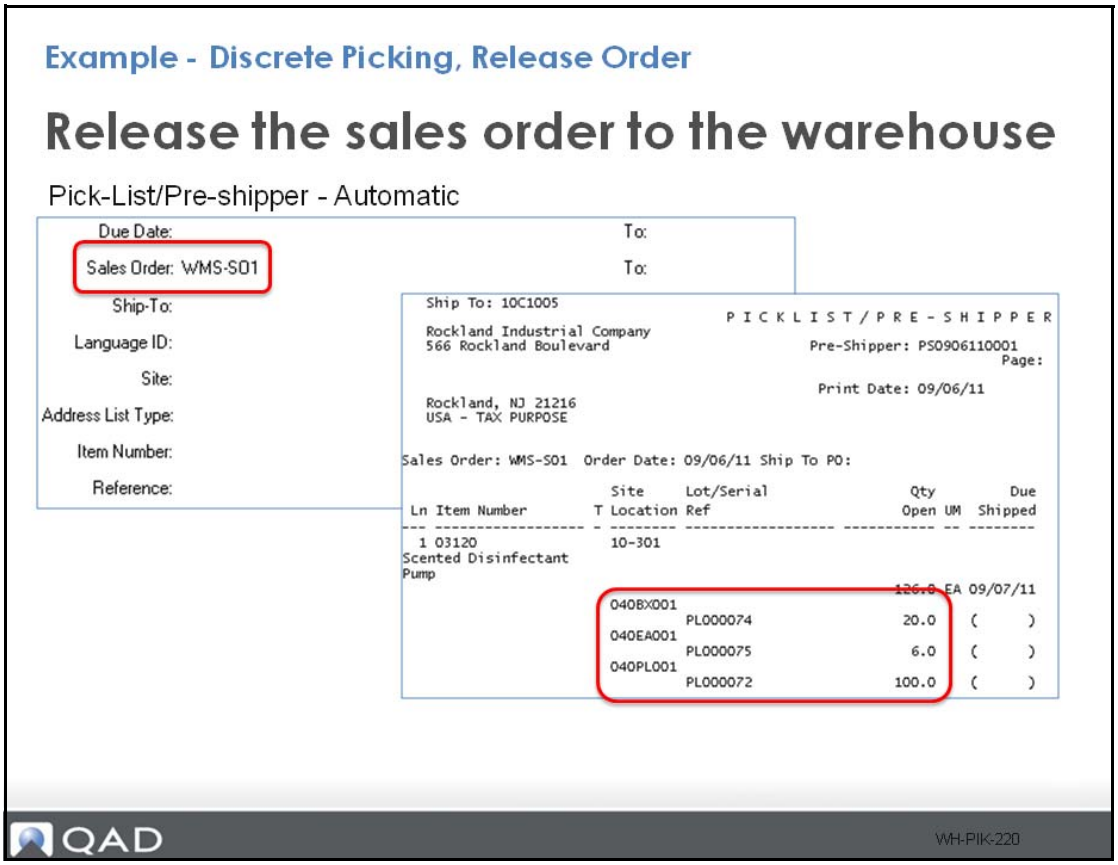


Use Inventory Detail Inquiry to verify enough inventory exists in all zones.

Before releasing the order for picking, validate there is enough inventory of each unit of measure quantity in the associated zones:

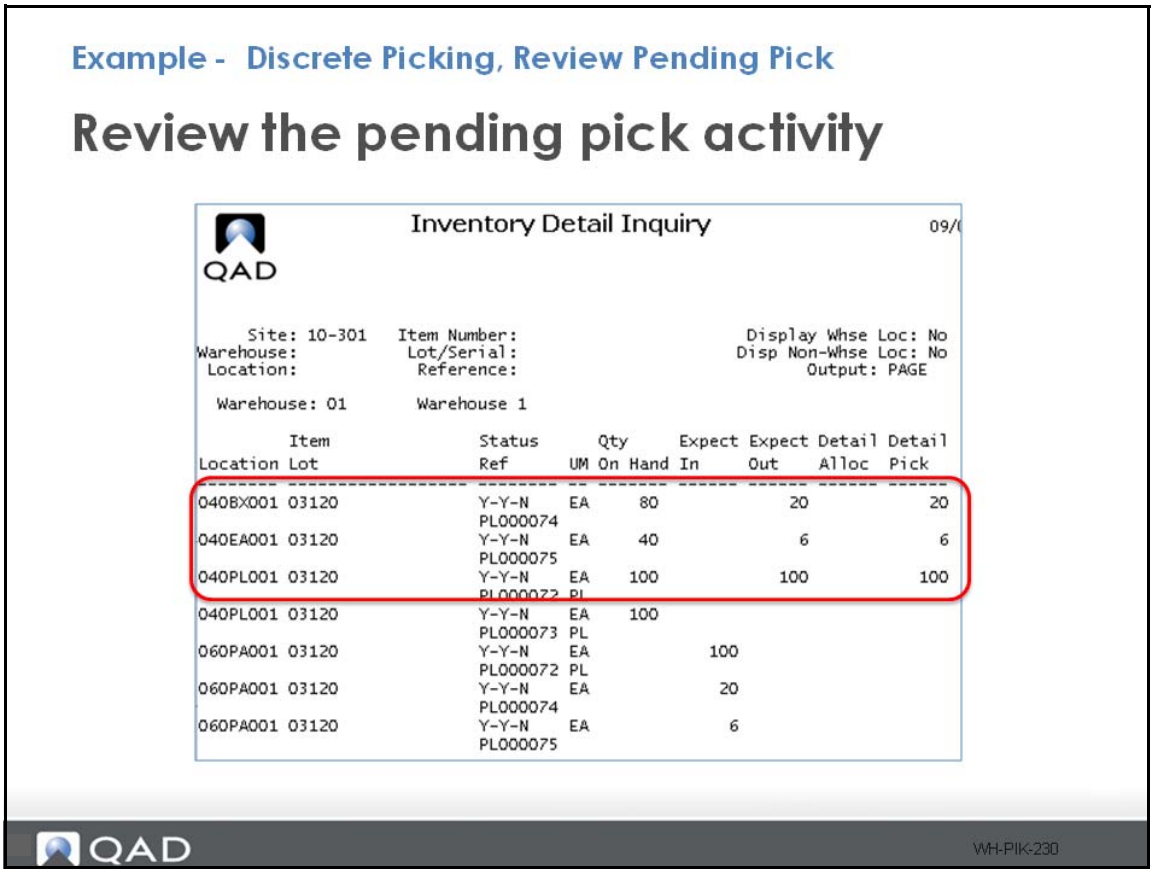
Zone	Minimum Inventory
040PL	100 each
040BX	20 each
040EA	6 each

Example - Discrete Picking, Release Order



Use Picklist/Pre-Shipper - Automatic to release the sales order and generate pick tasks. The picklist shows the locations from which items should be picked.

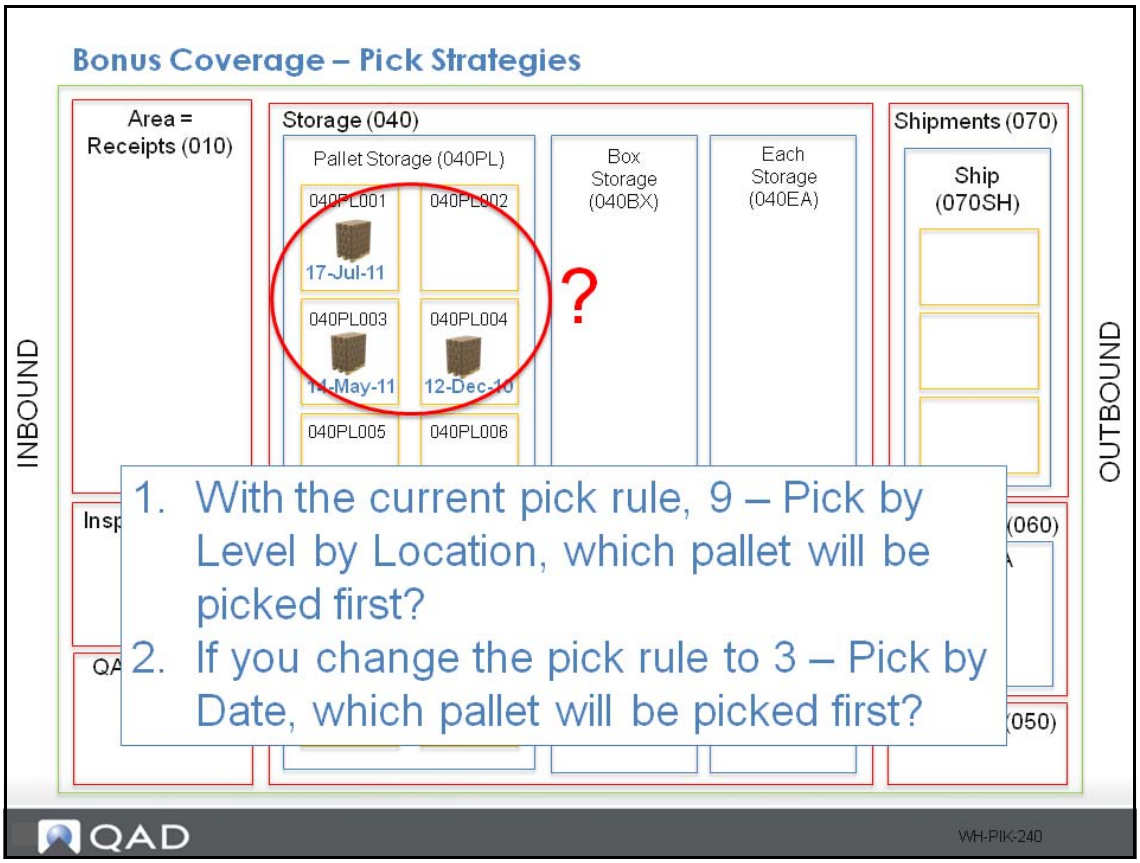
Example - Discrete Picking, Review Pick Activity



When the order is released pick tasks are created. Use Inventory Detail Inquiry to validate the test results:

Pick Quantity	Location
20	040BX001
6	040EA001h
100	040PL001

Bonus Coverage

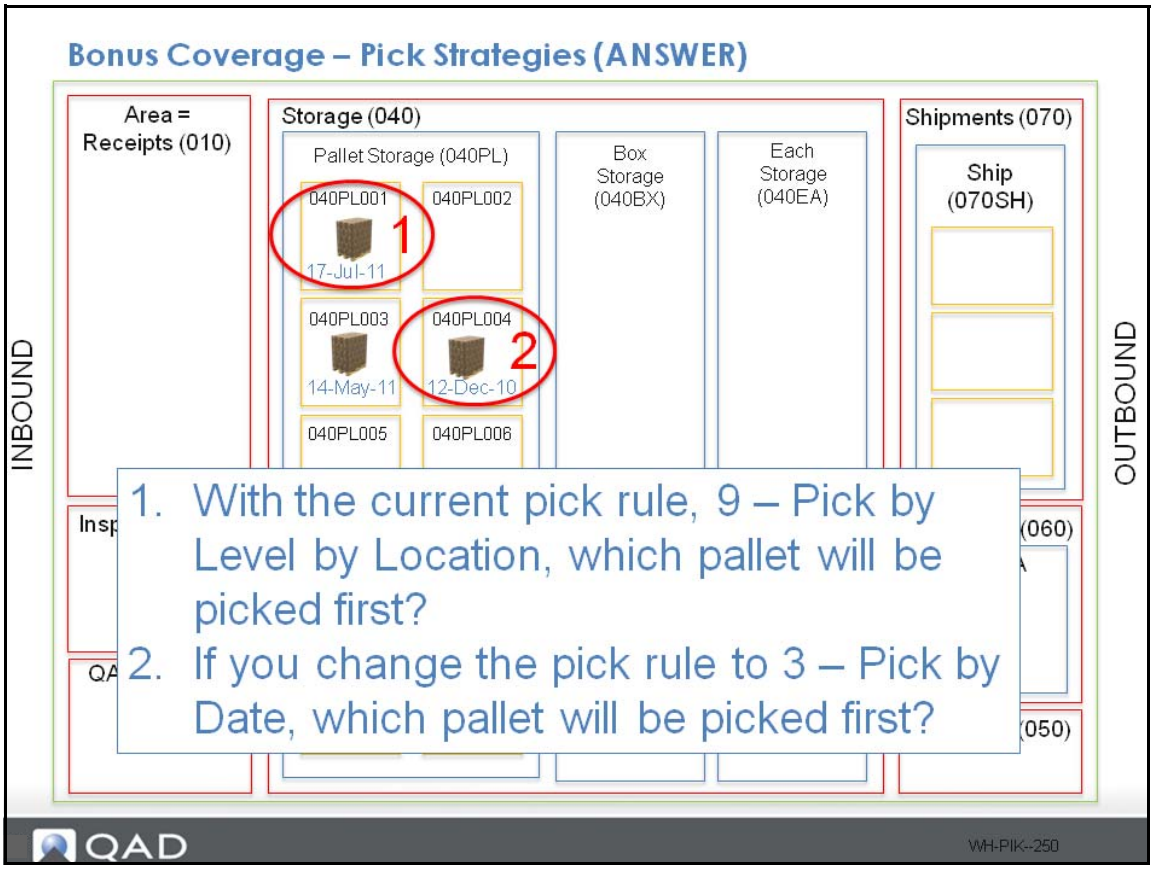


The pick rule used determines which inventory is selected for picking.

1 With the current pick rule, 9 - Pick by Level by Location, which pallet is picked first?

2 If you change the pick rule to 3 - Pick by Date, which pallet is picked first?

Bonus Coverage - Pick Strategies

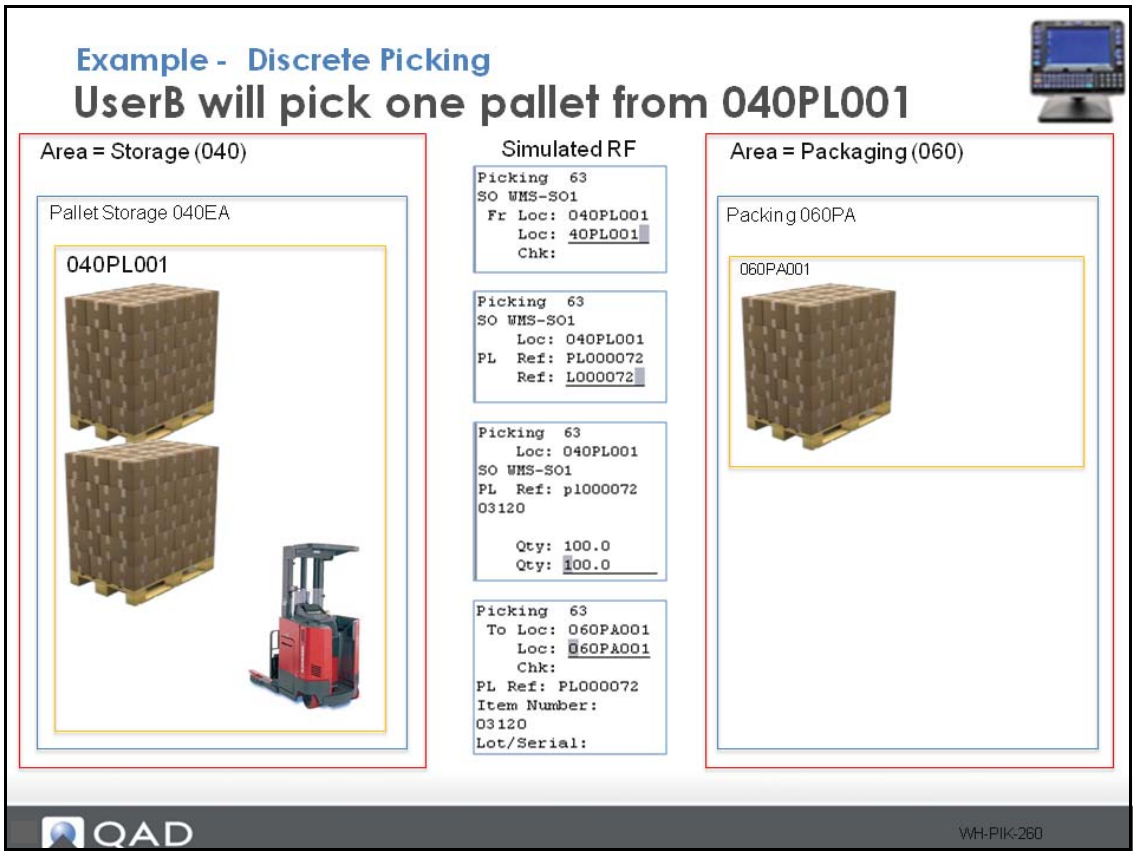


Note that:

1 Pick by Level by Location first looks at the assigned zone pick level in ascending order, 10, 20, 30, then the Location in ascending alpha-numeric sequence. If the zone pick level is within the pick range per Warehouse Maintenance, (Start Pick Level = 10, End Pick Level = 30), QAD Warehousing first looks in PL (level 10) for available inventory. It then selects inventory based on alphanumeric sequence 1, 2, 3, 4, and so on.

2 Changing the pick rule to 3, Pick by Date, the system selects the oldest date inventory first assuming the zone is in the pick zone range.

Example - Discrete Picking, User Picking Pallet

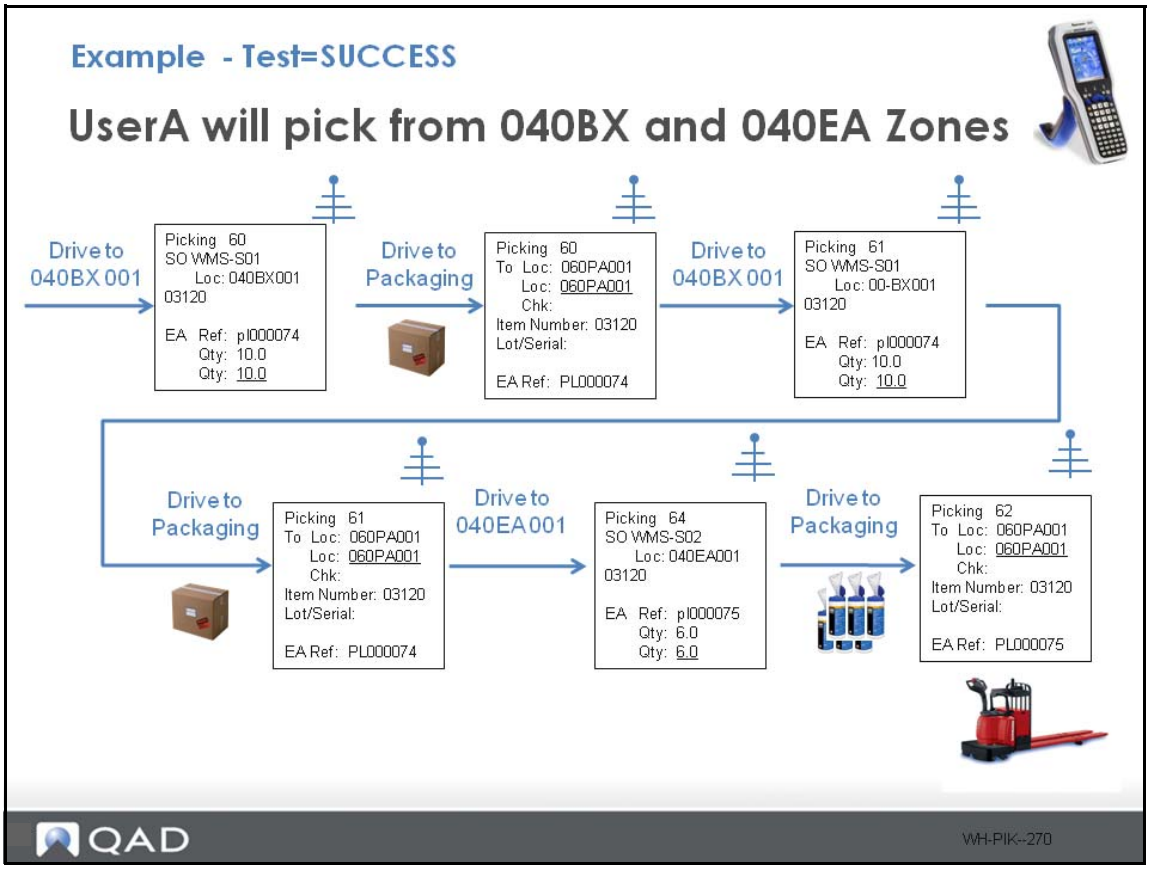


To process the example order, log into RF (Putty) with both UserA and UserB.

UserB gets the first pick task for 100 each from location 040PL001. The load is picked via RF and dropped to a packaging location, 060PA001.

When dropping the load in packaging, assign an LPN. This can be the same LPN that was picked or a different number. This helps track the consolidated order and subsequent movement or shipping.

Example - Discrete Picking, Test=Success

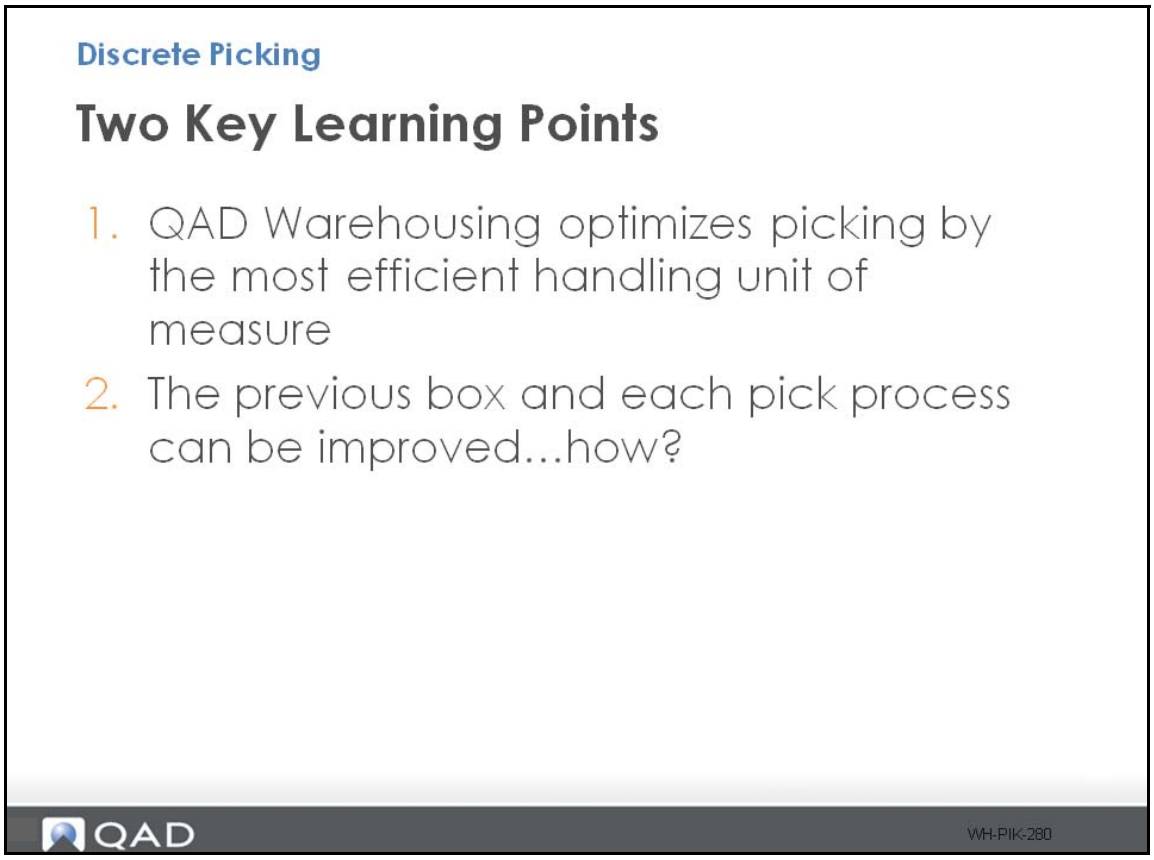


The RF screen flow show data for the picking exercise. You can zoom in on the screen above to see the actual data in the RF fields.

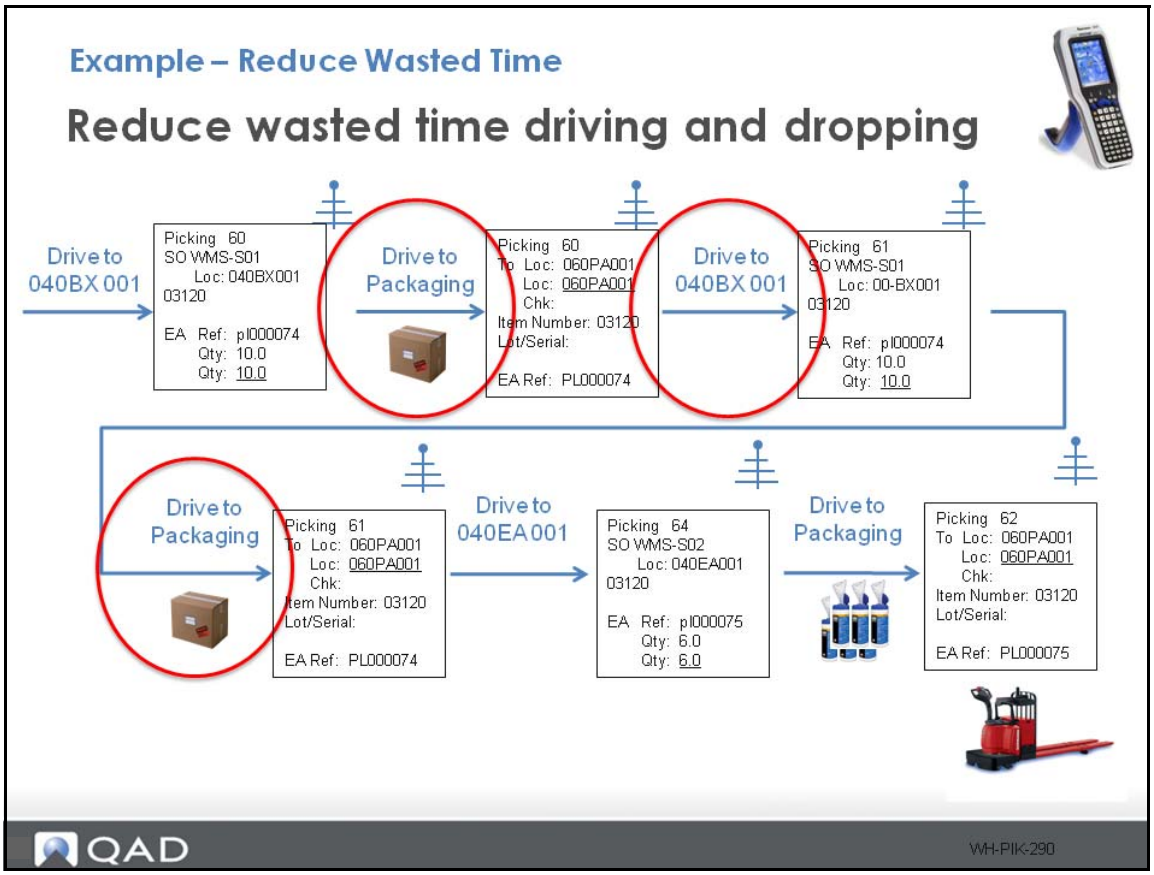
The other tasks, pick 20 each from 040BX and 6 from 040EA are processed by UserA using RF.

When the items are dropped they are either associated to the same LPN as the pallet pick of a new LPN is assigned. The system keeps the LPNs linked for shipping.

Discrete Picking Learning Points

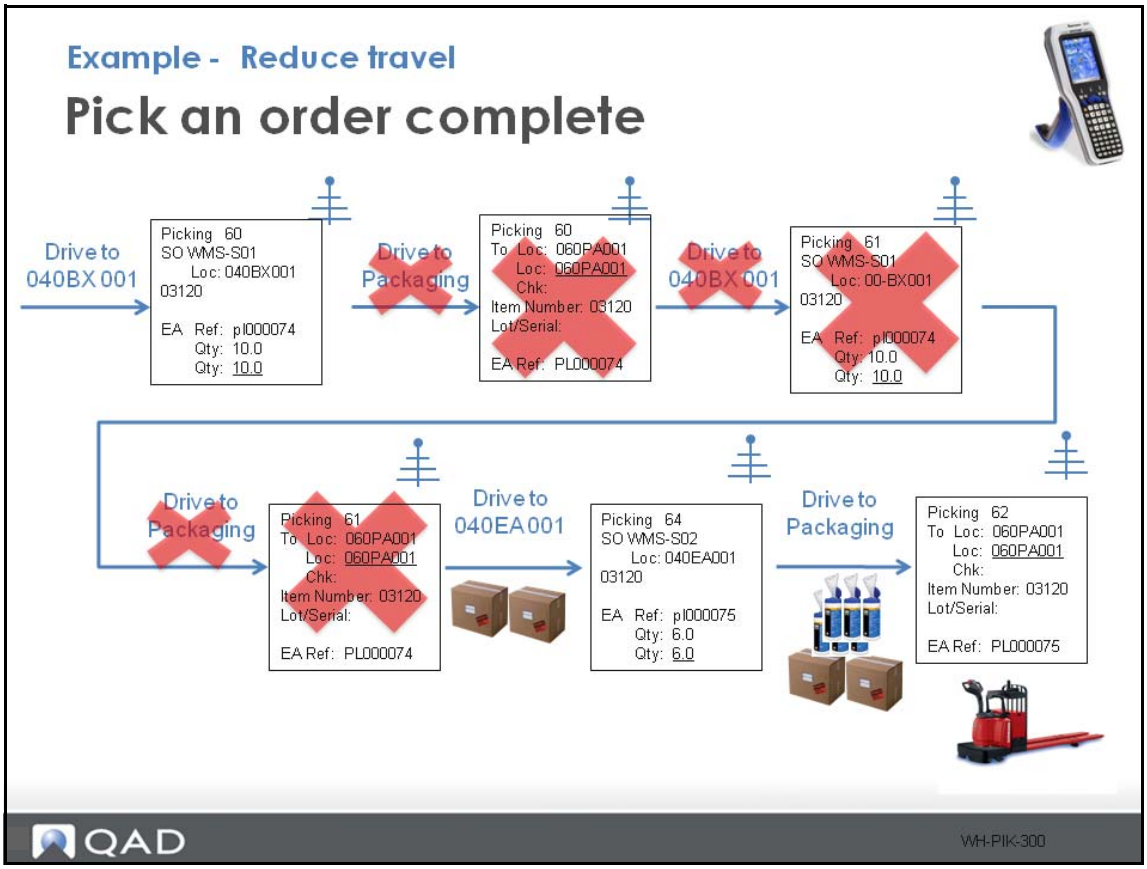


Example - Reduce Wasted Time Driving and Dropping



In this discrete pick example, there is still significant time wasted driving back and forth between picking and packaging.

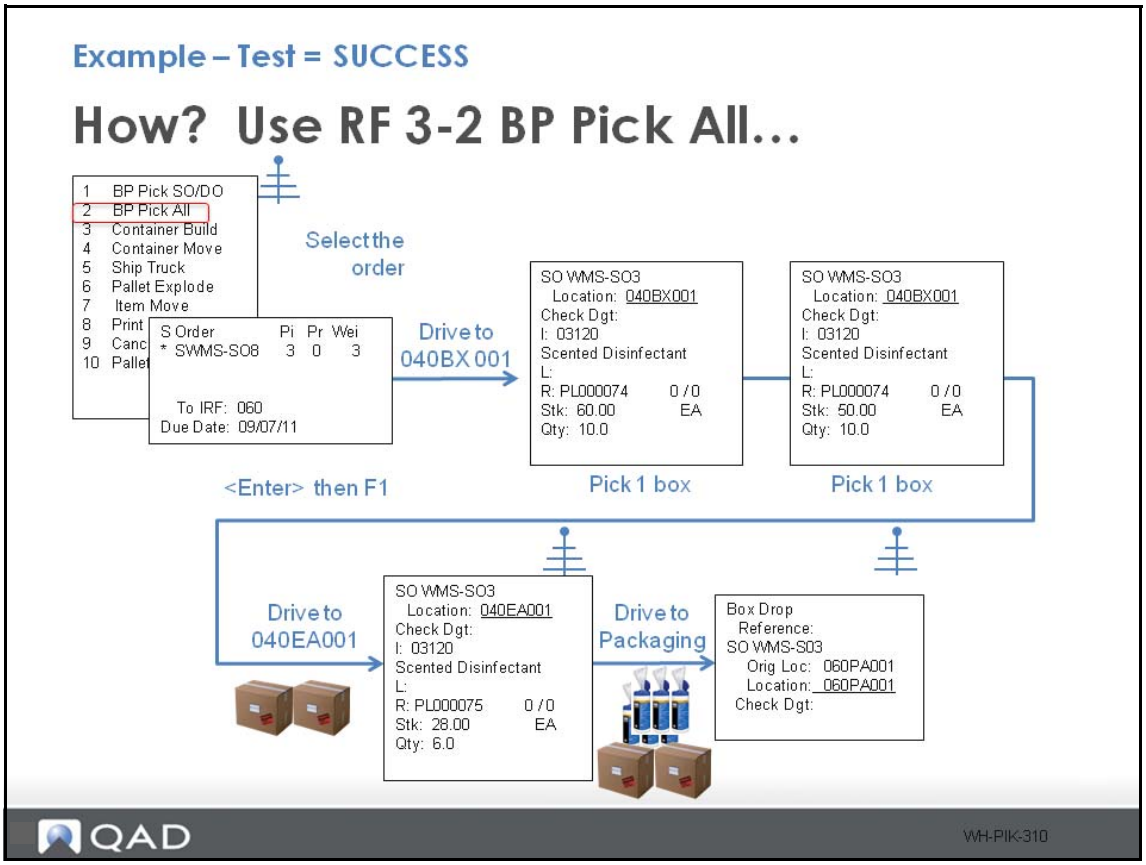
Example - Reduce Travel



These trips can potentially be reduced to one using the RF Batch Pick feature, but for only one order.

This assumes two boxes and six eaches can be handled by one operator and the operator has access (with equipment) to the inventory.

Example - Test=Success

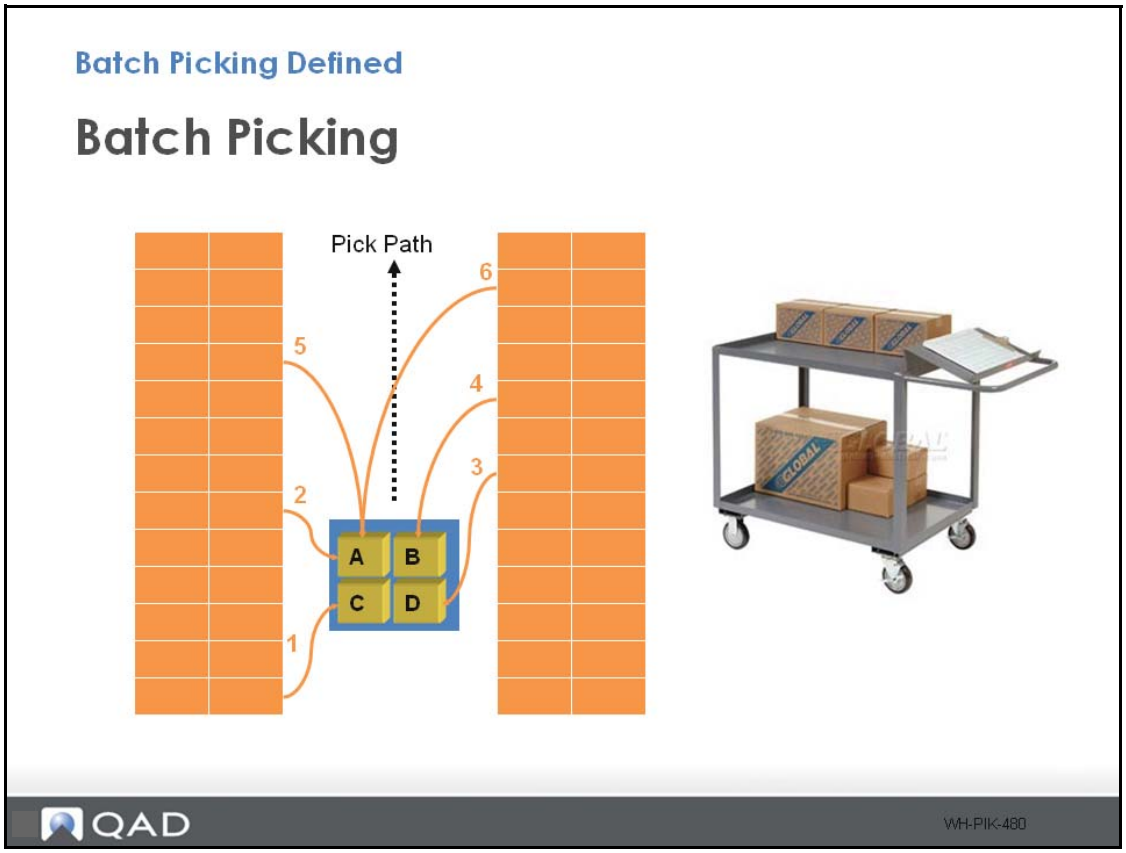


Batch picking drives warehouse staff to pick items in a more efficient way. The time it takes to travel through the warehouse completing tasks at various locations, or the travel sequence, constitutes the largest amount of time involved when picking items from a warehouse. Batch picking functionality 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.

The new process does not require a system configuration change, only a change to the RF function used for picking. UserA would log into RF 3.2 (BP Pick All) and select the one order.

Batch Picking

Batch Picking Defined

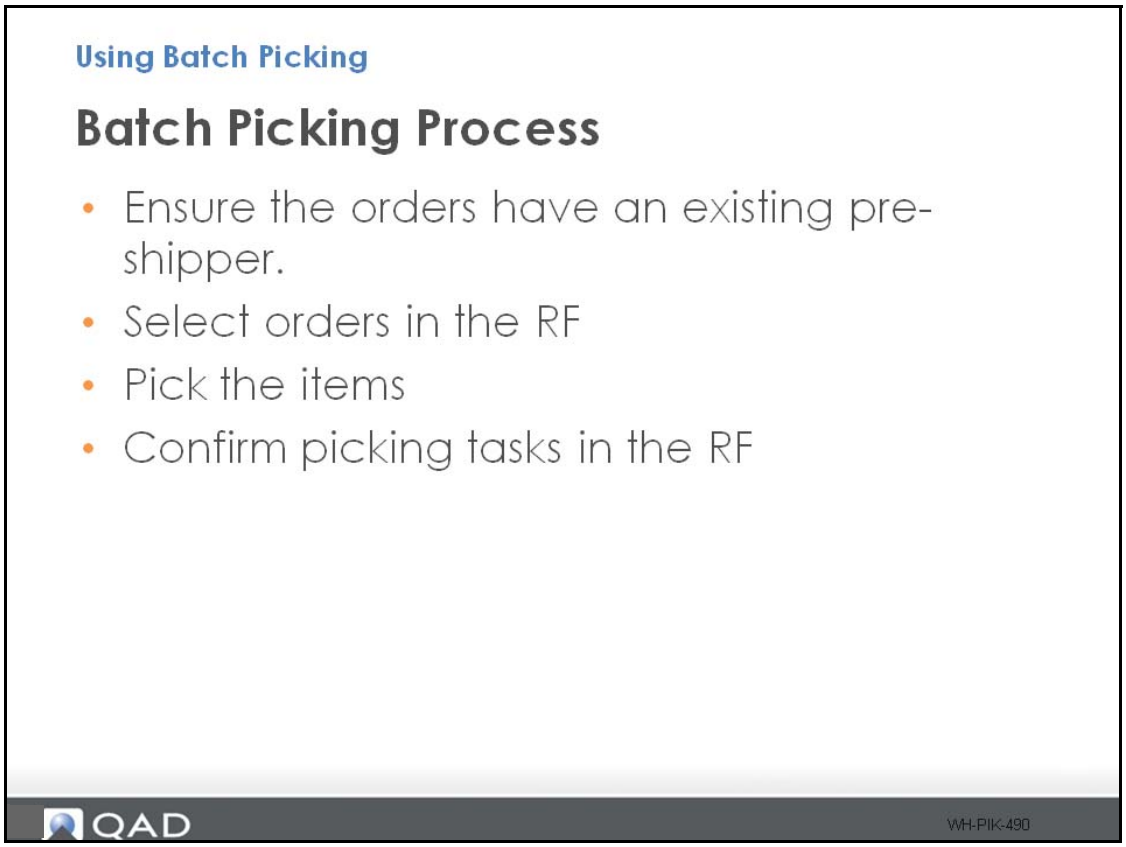


Discrete picking relies on pick-lists generated through QAD EE, but batch picking uses more sophisticated algorithms in QAD Warehousing.

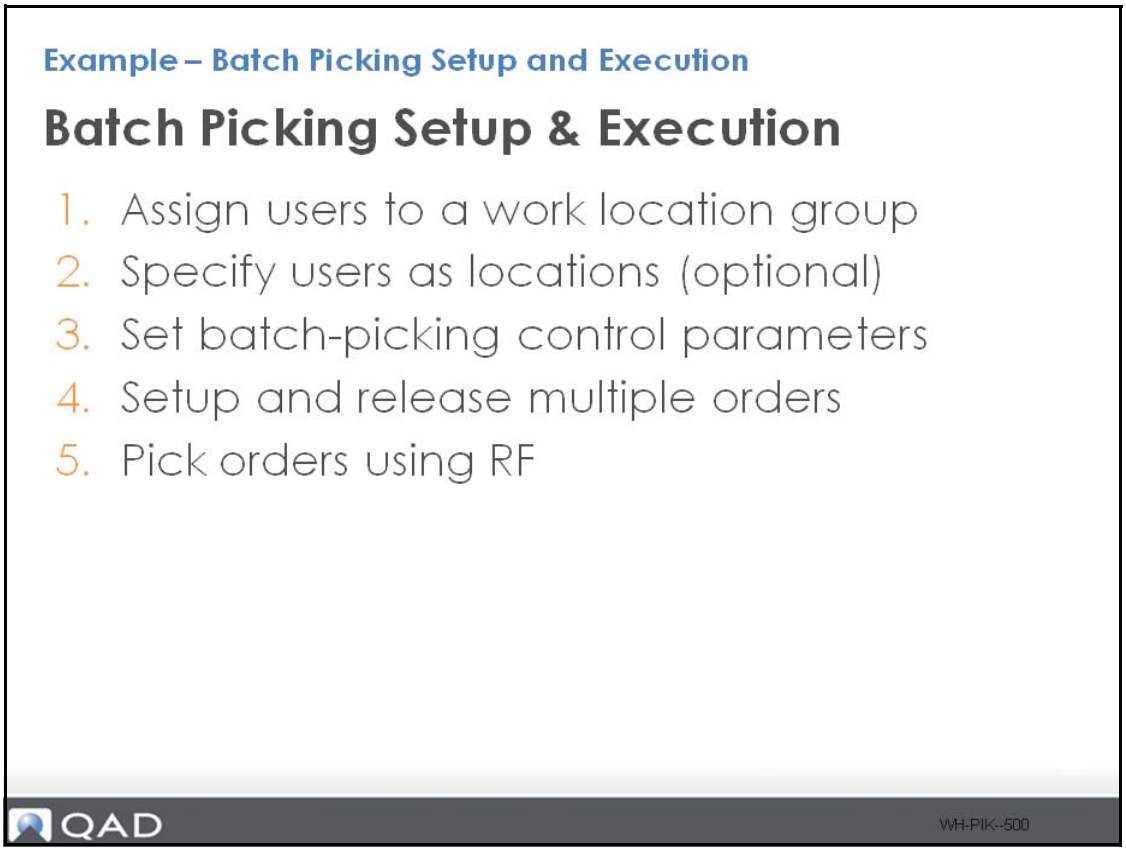
Batch pick allows an operator to pick multiple orders at the same time to minimize operator travel time. Cartonization helps here but is not required or offered by QAD Warehousing.

Batch Picking is best for companies working with small/medium size items and small volumes but many order lines.

Batch Picking Process



Example - Batch Picking Setup and Execution



Did You Know

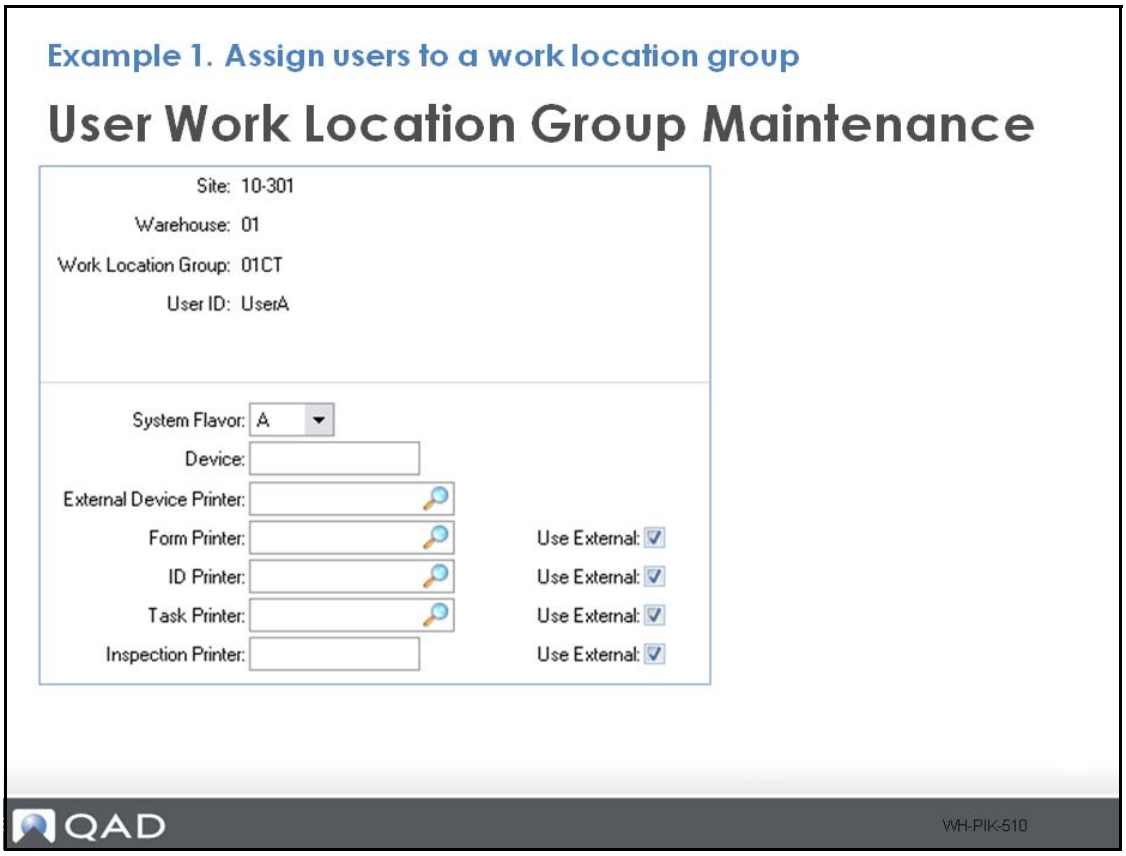
Batch Picking is best for:

- Small items with small volumes
- Multiple order lines
- Multi-bin items for single order

Batch Picking Control consists of several frames that control much more than picking.

Next, you review some of the main configuration fields and walk through a batch pick process.

Example 1- Assign Users to a WLG



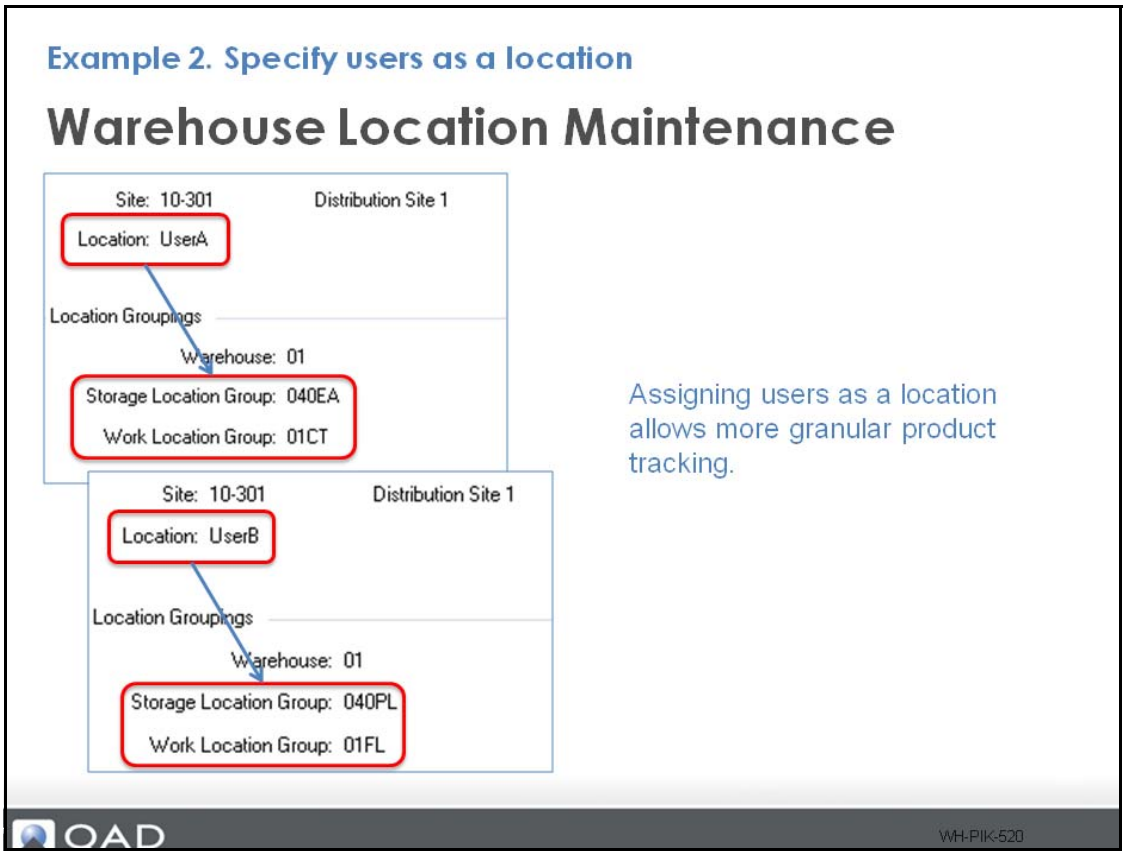
Did You Know

Use User Work Location Group Maintenance to assign users to a workgroup location and set printing options.

You must set a system flavor code for users in workgroup to specify the code to define the style and format of screens for displaying warehouse information.

A User (UserA) is assigned to the cart pick work location group 01CT. This ensures a user receives the pick task when logging into RF.

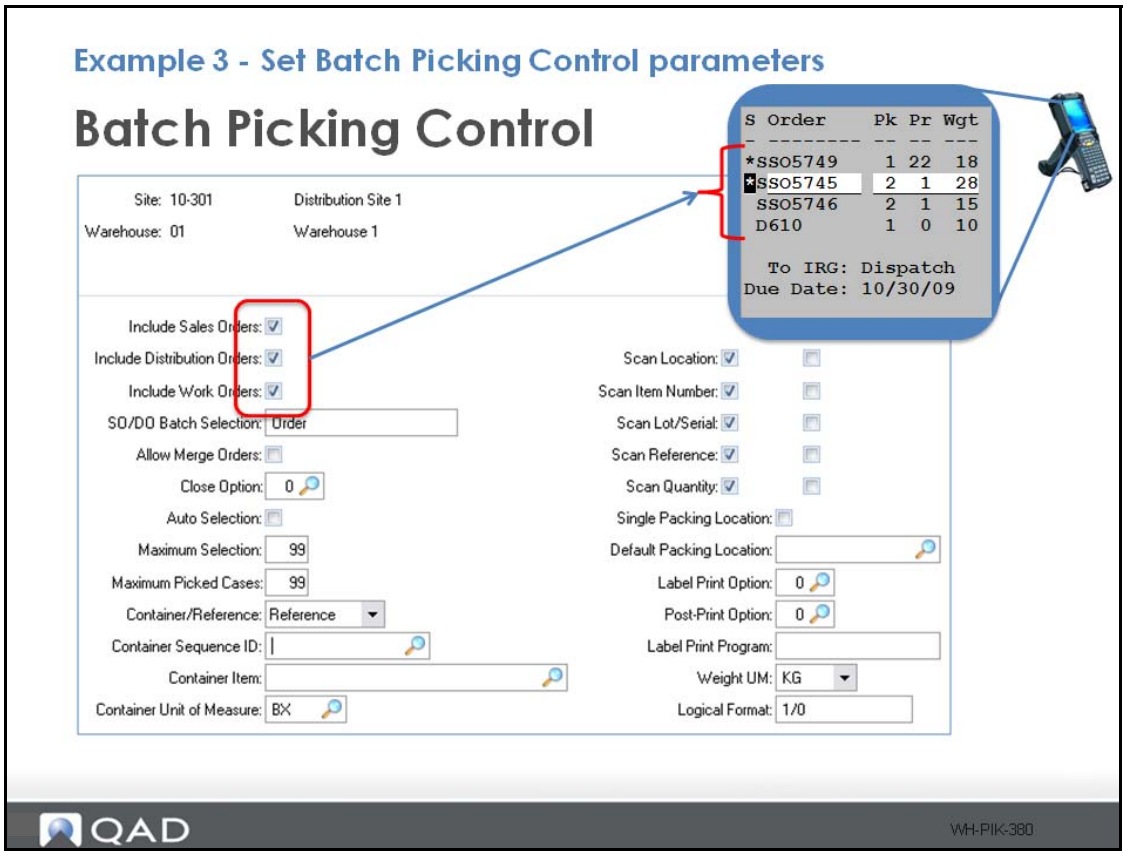
Example 2- Specify Users as a Location



To allow tracking product between storage and staging locations, it is helpful to setup each user as a location.

When the user picks an item, inventory inquiries show the inventory in the user location until they confirm a drop to the destination location. This helps track inventory (and remove inventory from origin locations) during long batch pick cycles.

Example 3 - Set Batch Picking Control Parameters



Did You Know

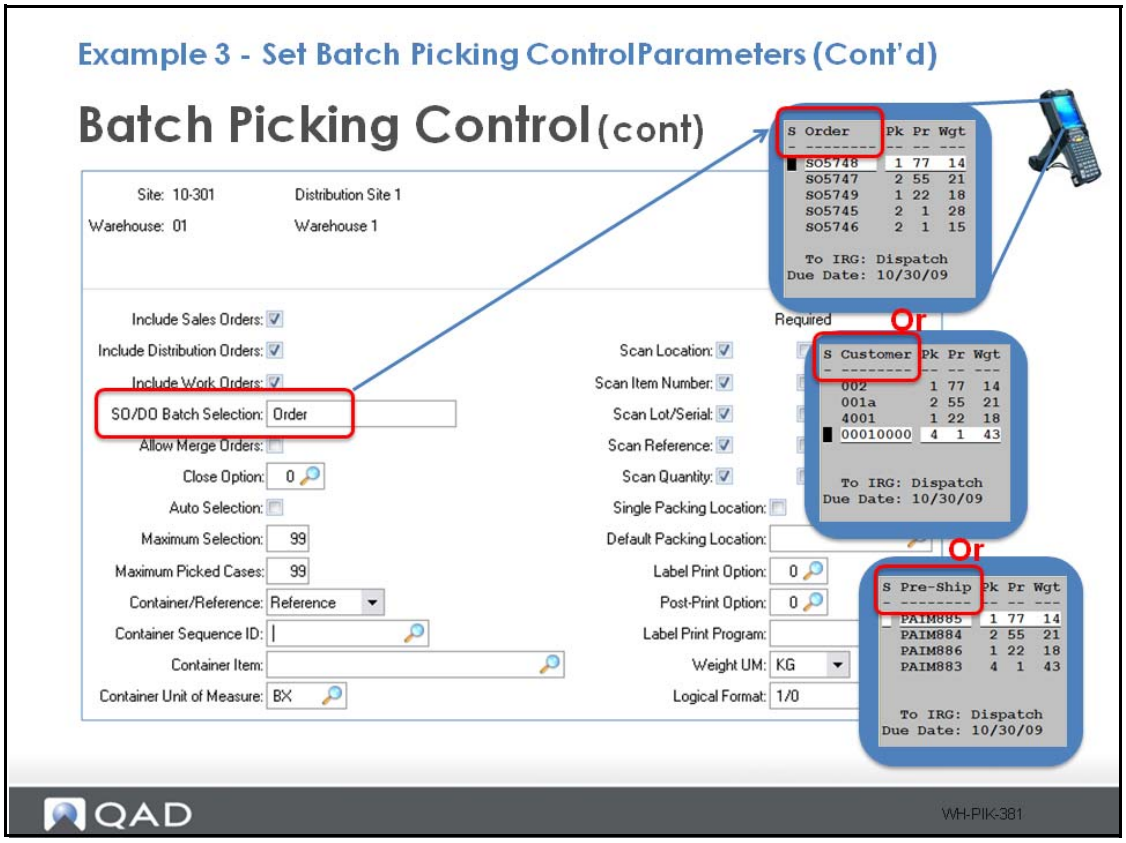
Batch Picking can include:

- Sales orders
- Distribution orders
- Work orders

Batch Pick Control lets you define many Batch Pick parameters, such as types of orders to batch, maximum number of orders and/or cases to batch, and RF scanning requirements.

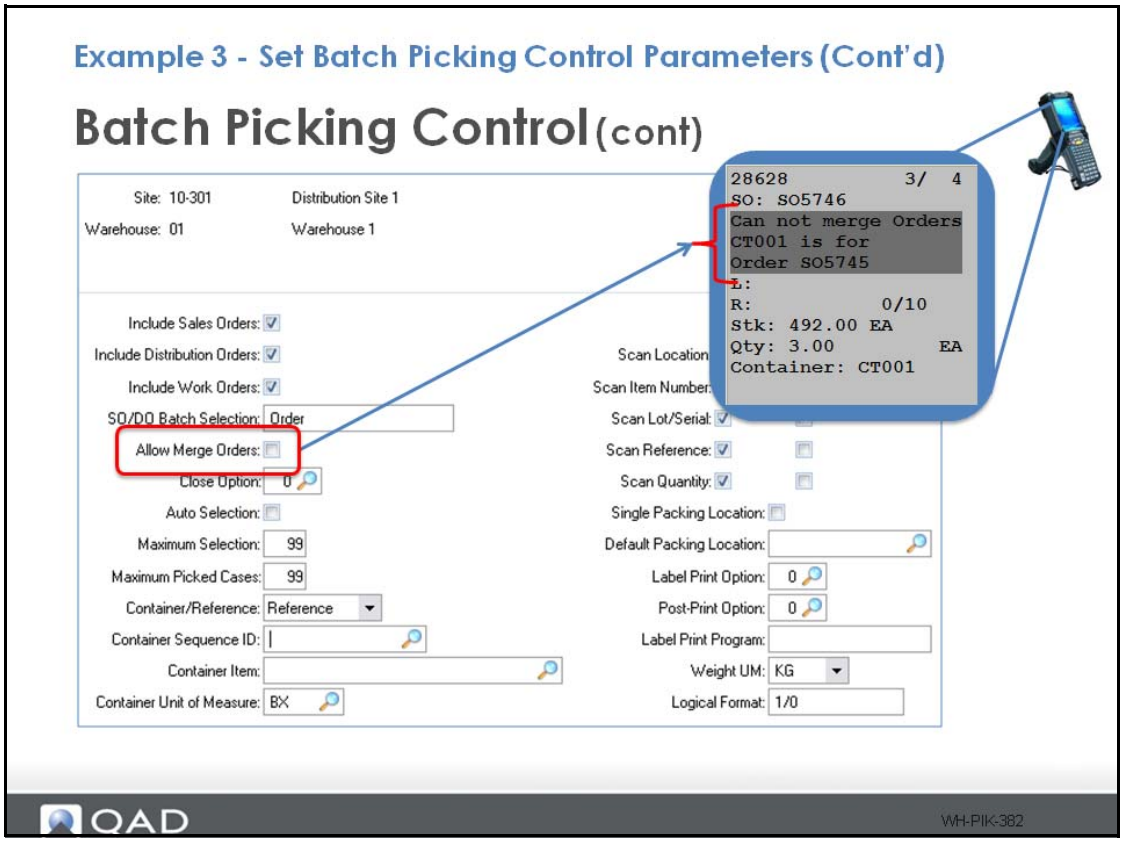
There are eight frames and 54 fields in Batch Picking Control used for configuration.

Example 3 - Set Batch Picking Control Parameters (Continued)



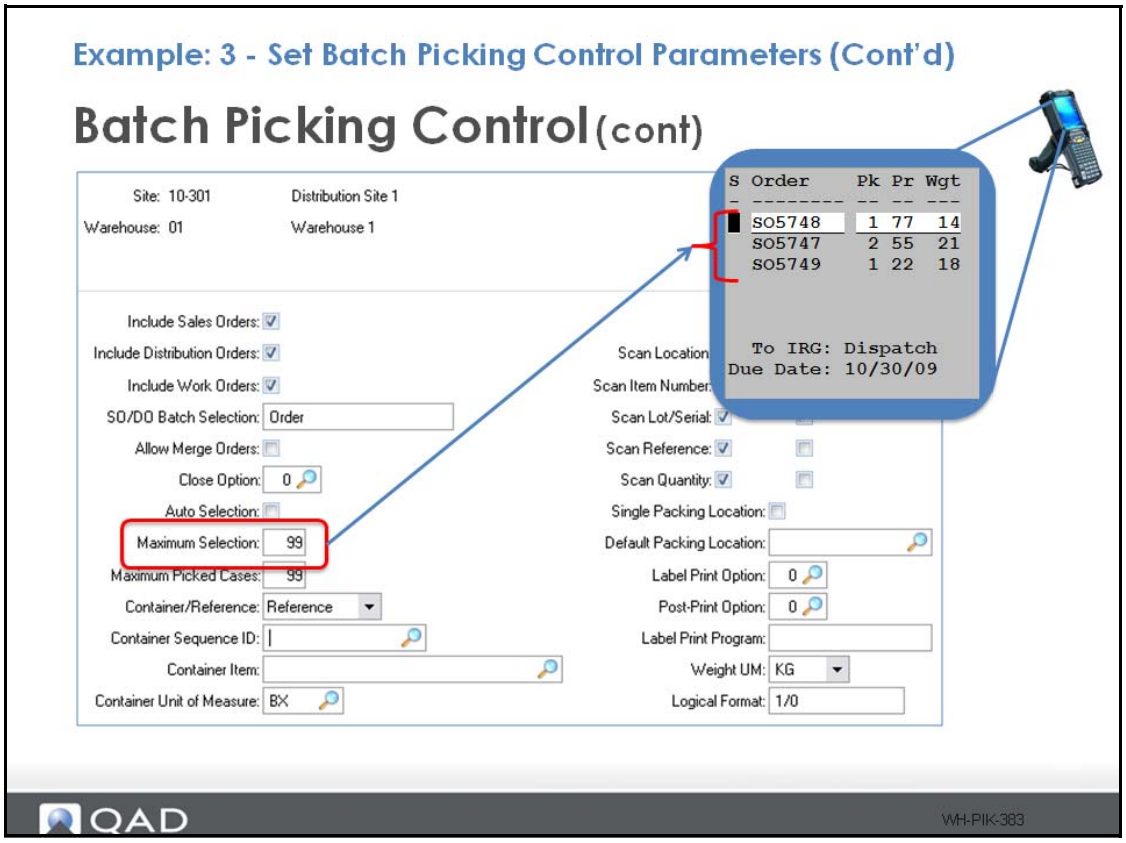
The SO Batch Selection field determines if orders, customers or pre-shipper reference numbers display on the RF screen during BP All selection on the RF device.

Example 3 - Set Batch Picking Control Parameters (Continued)



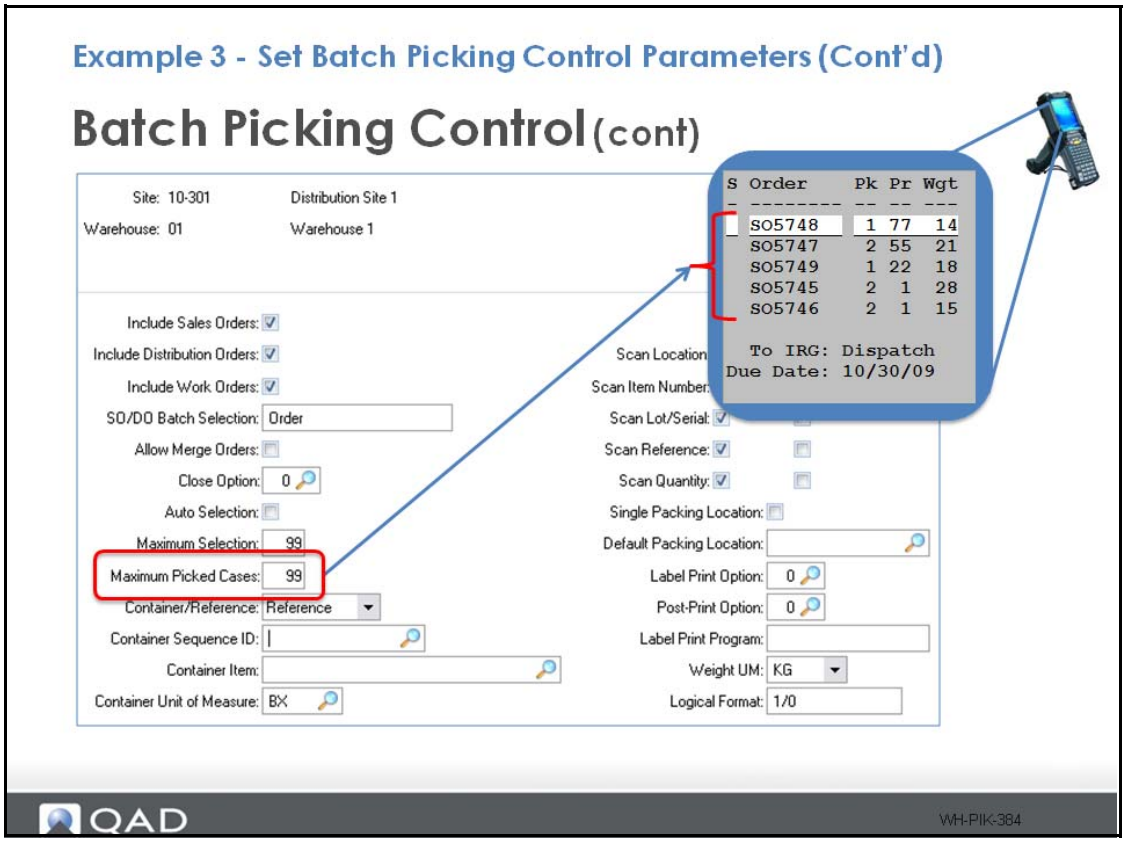
The Allow Merge Order field determines if the user can combine items from different orders into the pick container.

Example 3 - Set Batch Picking Control Parameters (Continued)



The Maximum Selection field determines the number of orders, customers or pre-shippers to *display* on the RF screen during BP Pick All processing.

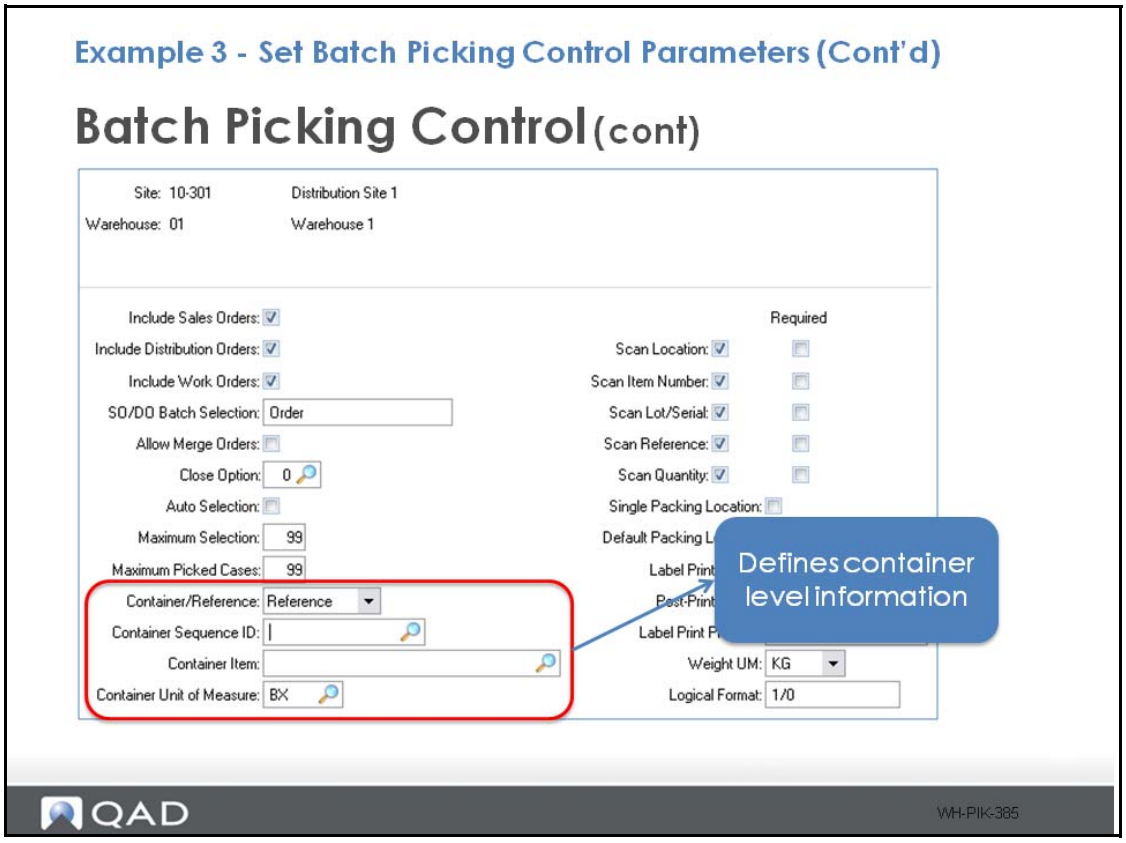
Example 3 - Set Batch Picking Control Parameters (Continued)



The Maximum Picked Cases field determines how many orders the user can pick at the same time during BP All processing.

This is typically determined by how many pick cartons fit on a pick cart considering volume, weight, quality, and operator-handling constraints.

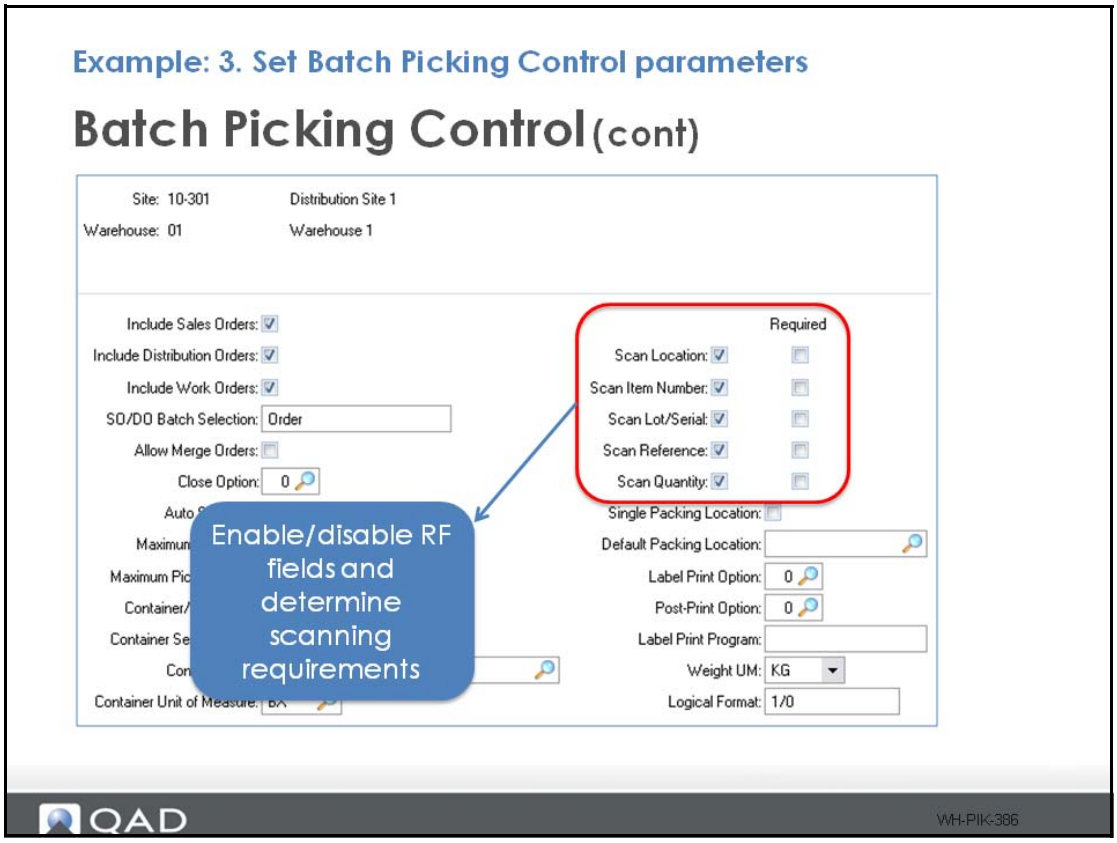
Example 3 - Set Batch Picking Control Parameters (Continued)



The container-related fields define container level information, including:

- Container levels to create for each tote/box/pallet staff used during the batch-picking process.
- The starting sequence ID for box/tote/container numbers when printing labels before picking.
- The item number of the container.
- The unit of measure for the container.

Example 3 - Set Batch Picking Control Parameters (Continued)

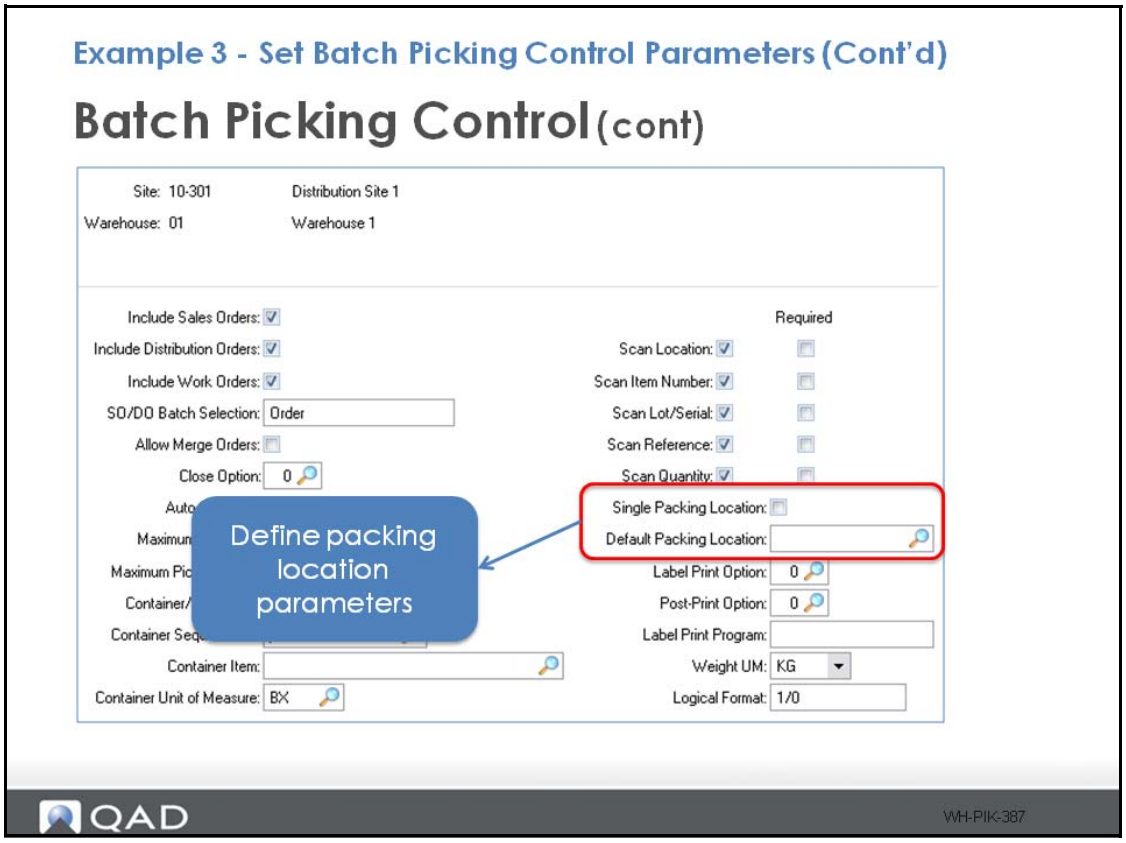


he scan-related fields enable/disable RF fields and determine scanning options, including whether to scan the:

- Location from which items are picked
- Item being picked
- Lot/serial number for the picking location
- Source reference (pallet ID) when picking
- Quantity picked

Note The Required field dictates if the scan is required or optional.

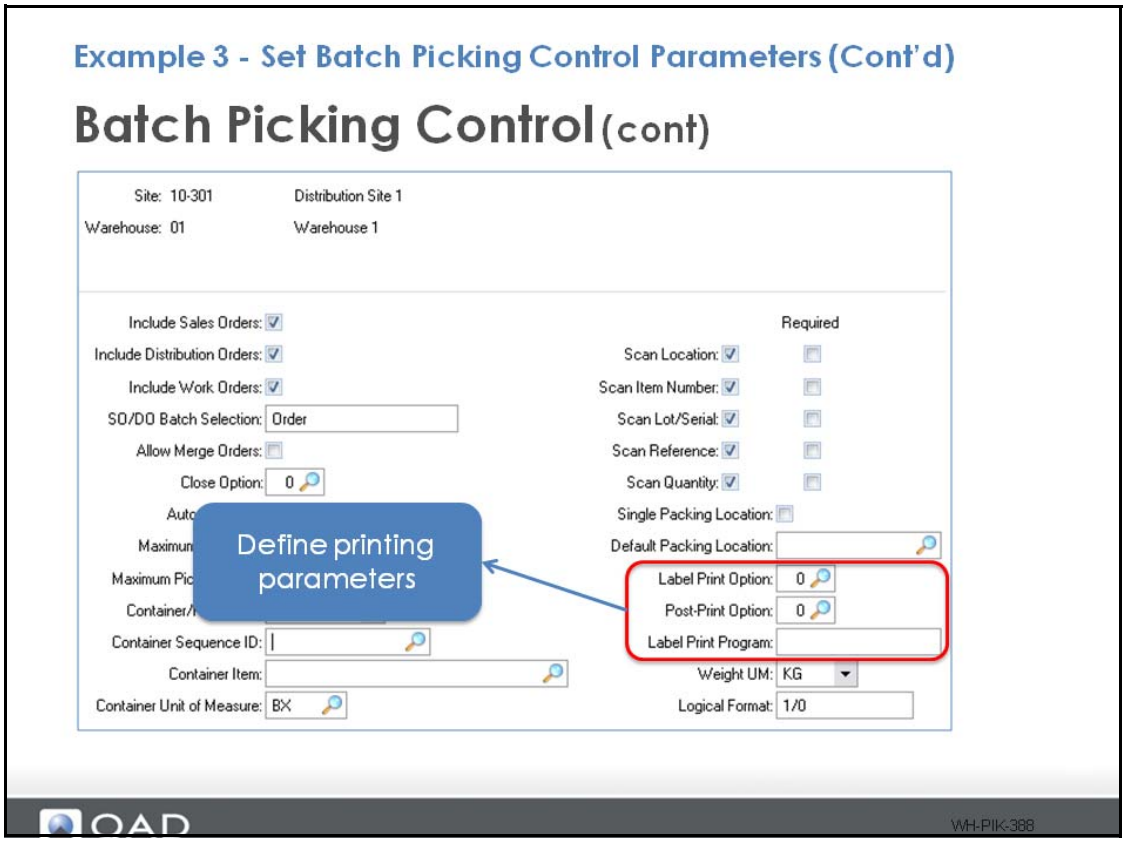
Example 3 - Set Batch Picking Control Parameters (Continued)



The Single Packing Location and Default Picking Location field determine:

- If you use a single location as the packing location
- The default packing location

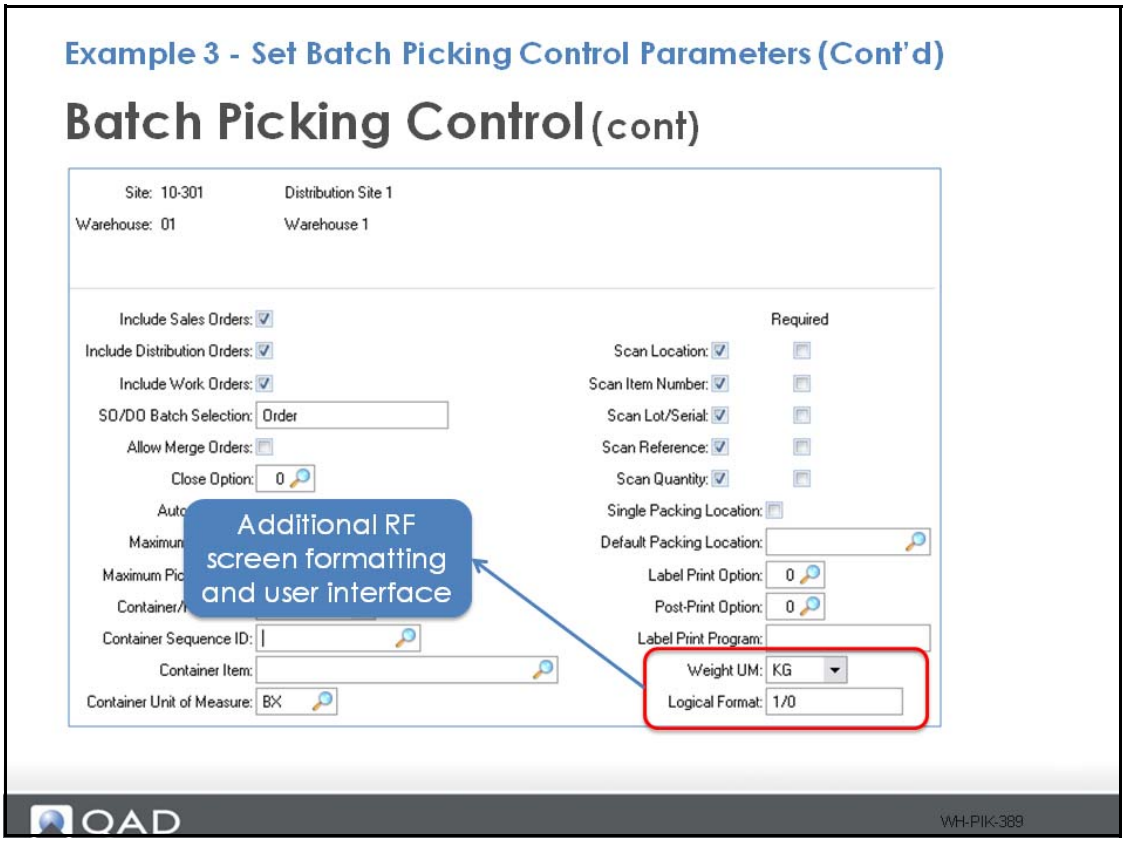
Example 3 - Set Batch Picking Control Parameters (Continued)



The print parameter fields specify:

- When labels should be printed after order selection is complete but before picking begins.
- When labels should be printed after picking is complete.
- The print program to use when printing labels.

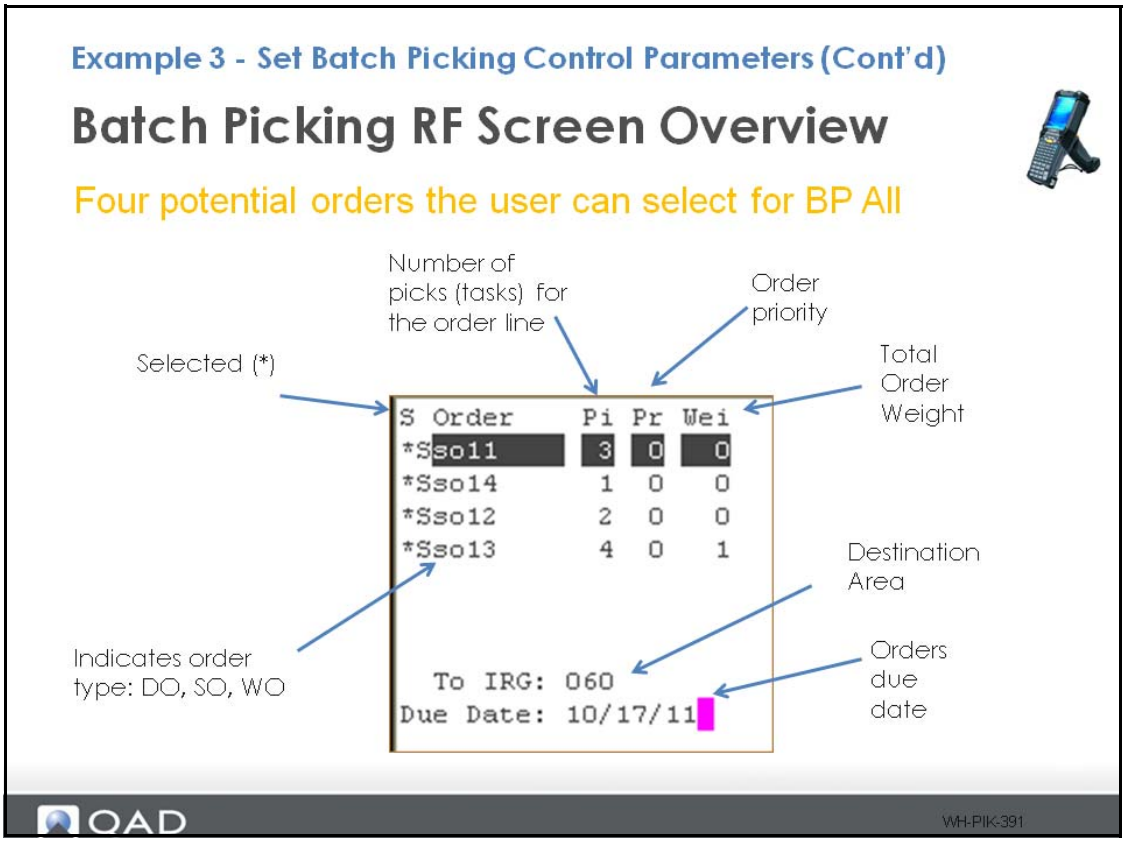
Example 3 - Set Batch Picking Control Parameters (Continued)



Additional RF screen formatting and user-interface fields let you:

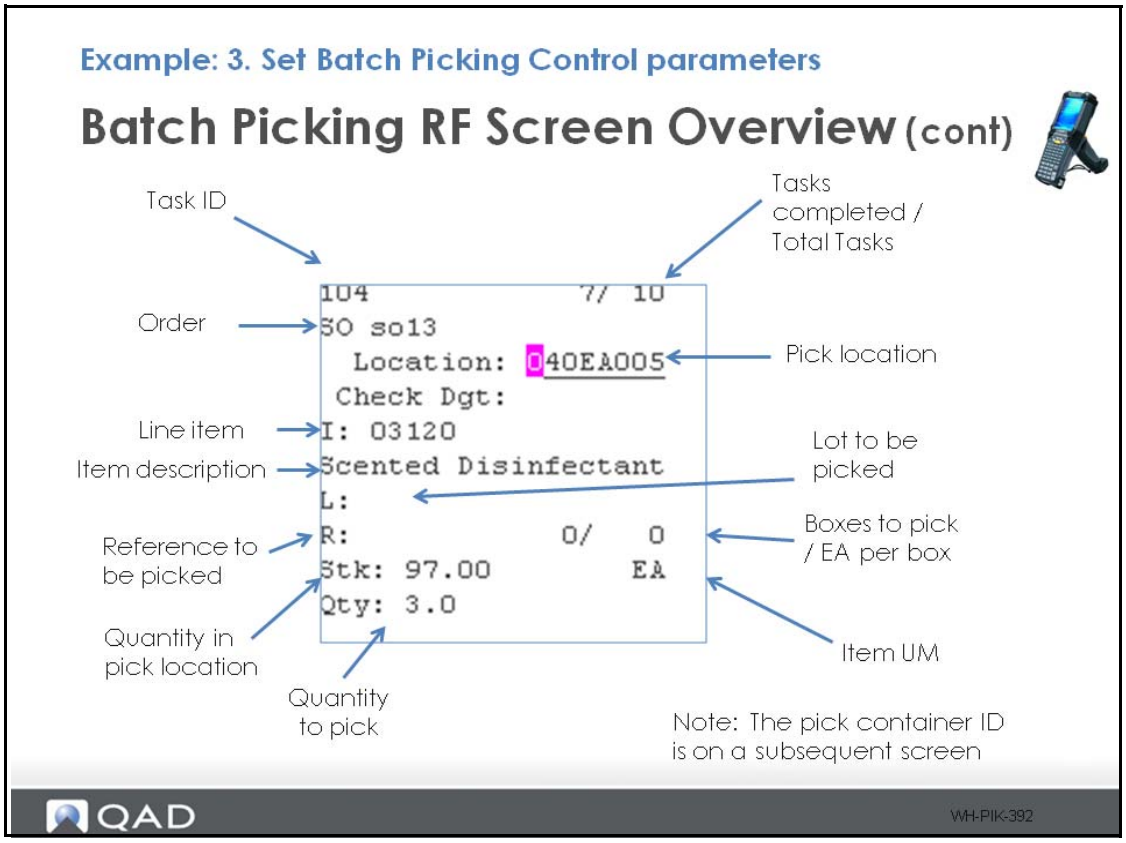
- Specify the default weight
- Specify the user confirmation input: 1/0, Yes/No, Y/N, and so on.

Example 3 - Set Batch Picking Control Parameters (Continued)



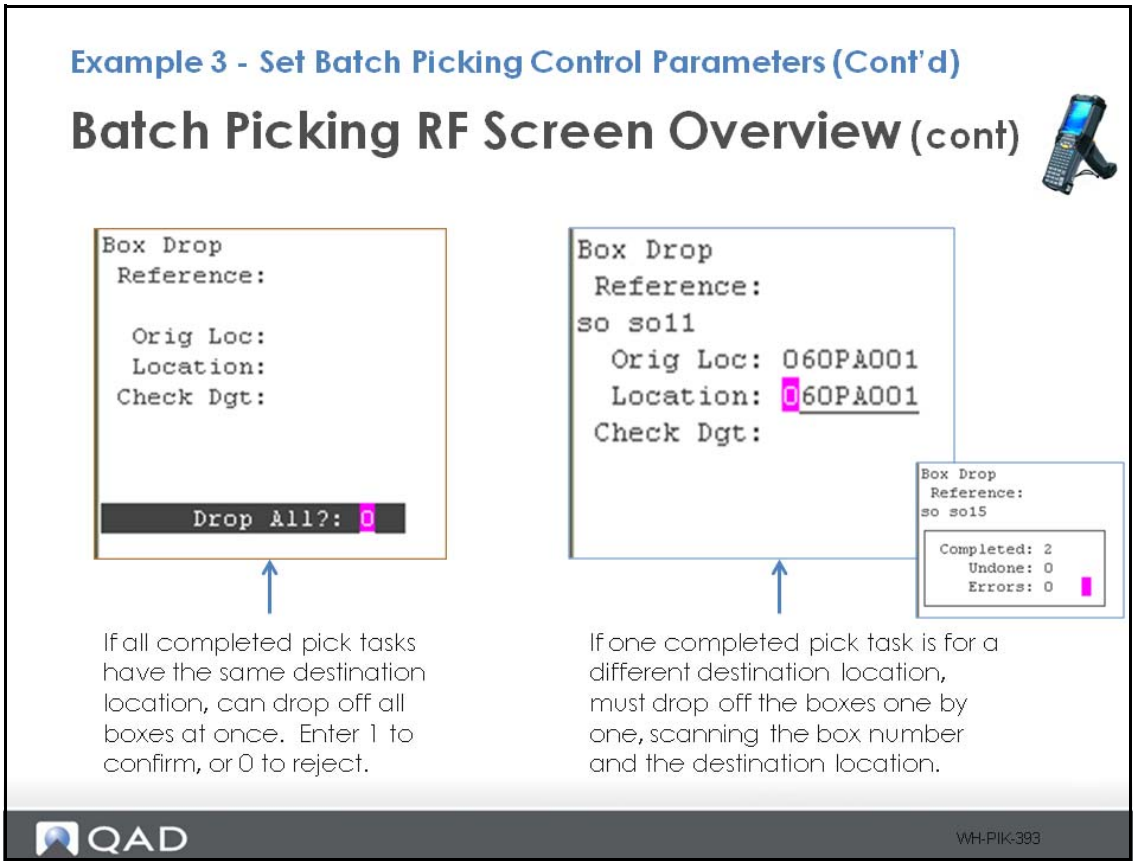
The graphic above depicts the layout and data presented in the RF batch-picking screen.

Example 3 - Set Batch Picking Control Parameters (Continued)



As you process batch picks, entering data and pressing return, more batch picking fields display on the RF, as shown in the graphic above.

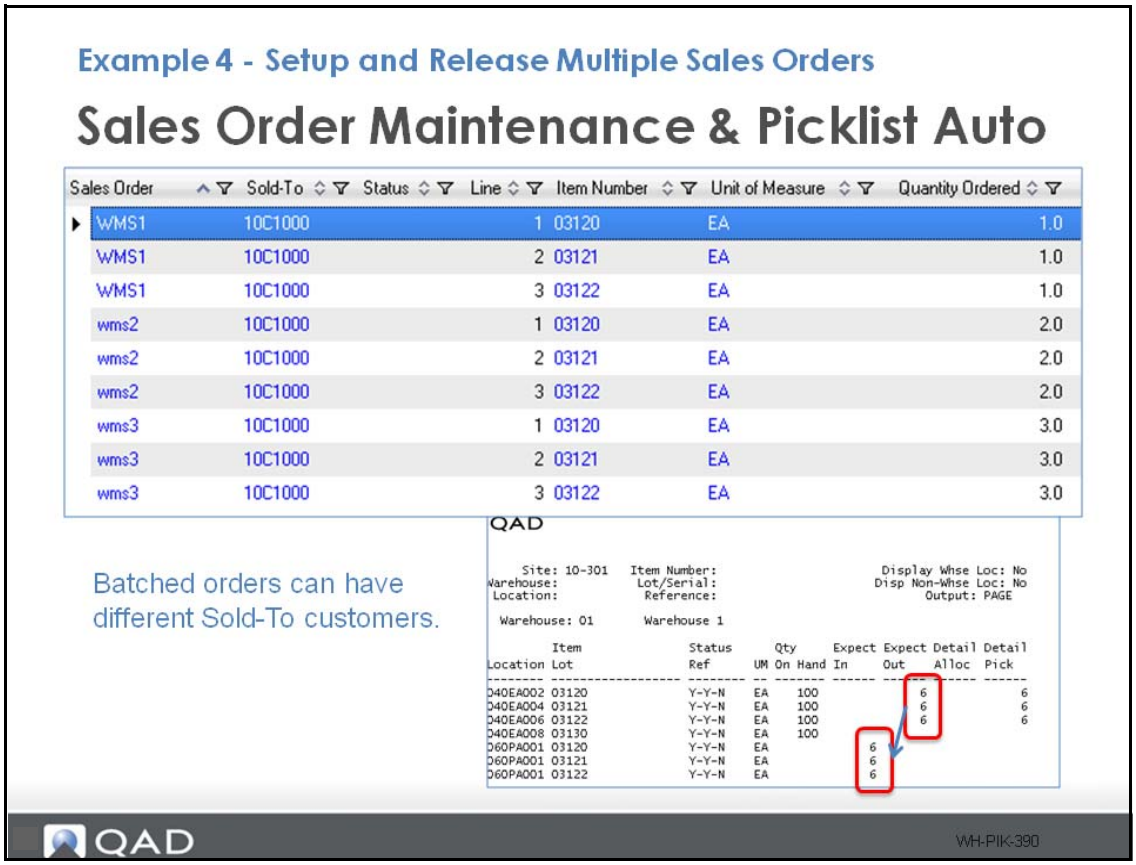
Example 3 - Batch Picking Control Parameters (Cont'd)



The orders for which staff pick can be very large. Occasionally, staff need to drop off boxes at consolidation areas or shipping lanes before they complete batch picking for an order.

- When all completed pick tasks have the same destination location, warehouse staff can optionally drop off all items they finished picking. This lets them avoid scanning each box and the destination location for confirmation.
- If one completed pick task is for a different destination location, staff can still drop off completed boxes, but they must drop off the boxes one by one, scanning the box number, then the location in which they drop off boxes, such as the shipping lane.

Example 4 - Set Up and Release Multiple Sales Orders

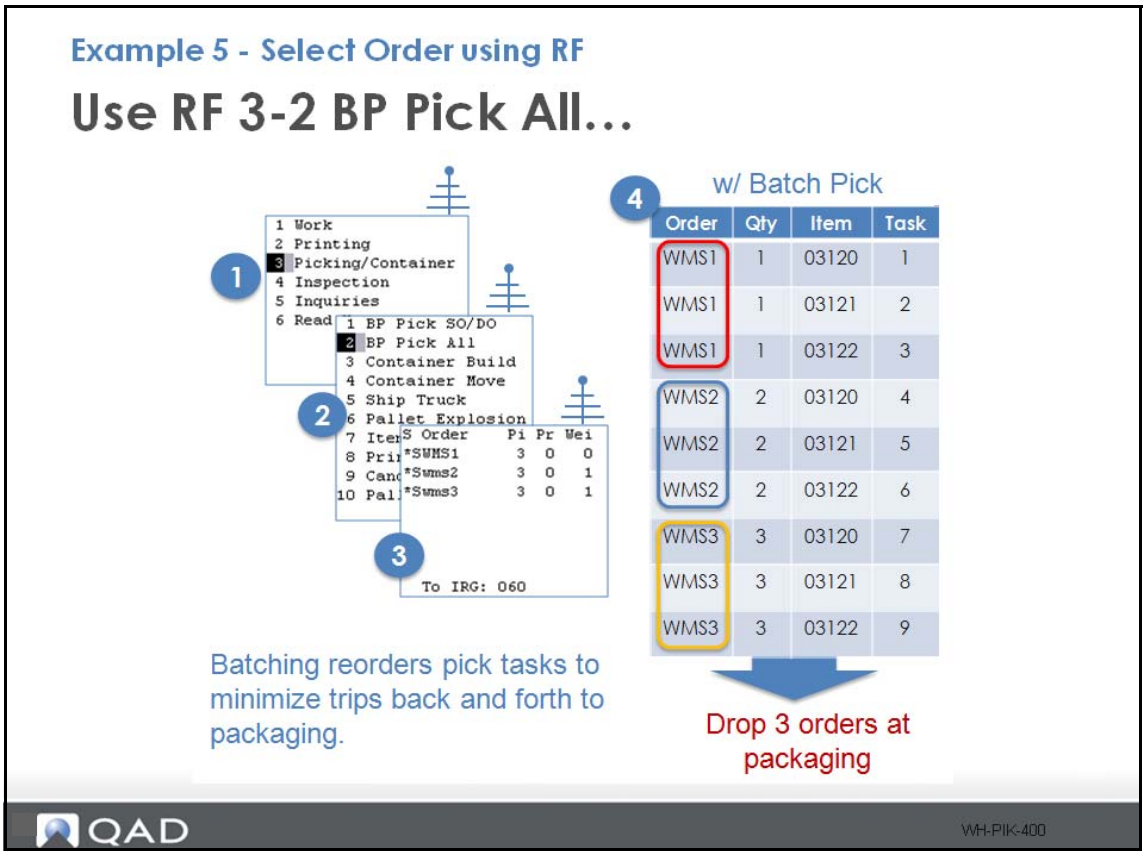


Batch orders can have multiple sales orders, which you can see in the Sales Order Maintenance picklist.

Once batch pick is configured, set up and release multiple orders.

In this example, three orders for customer 01C1000 are released. When the orders are released view the pending inventory moves using Inventory Detail Inquiry.

Example 5 - Select Order Using RF



1 Select option 3, Picking/Container,

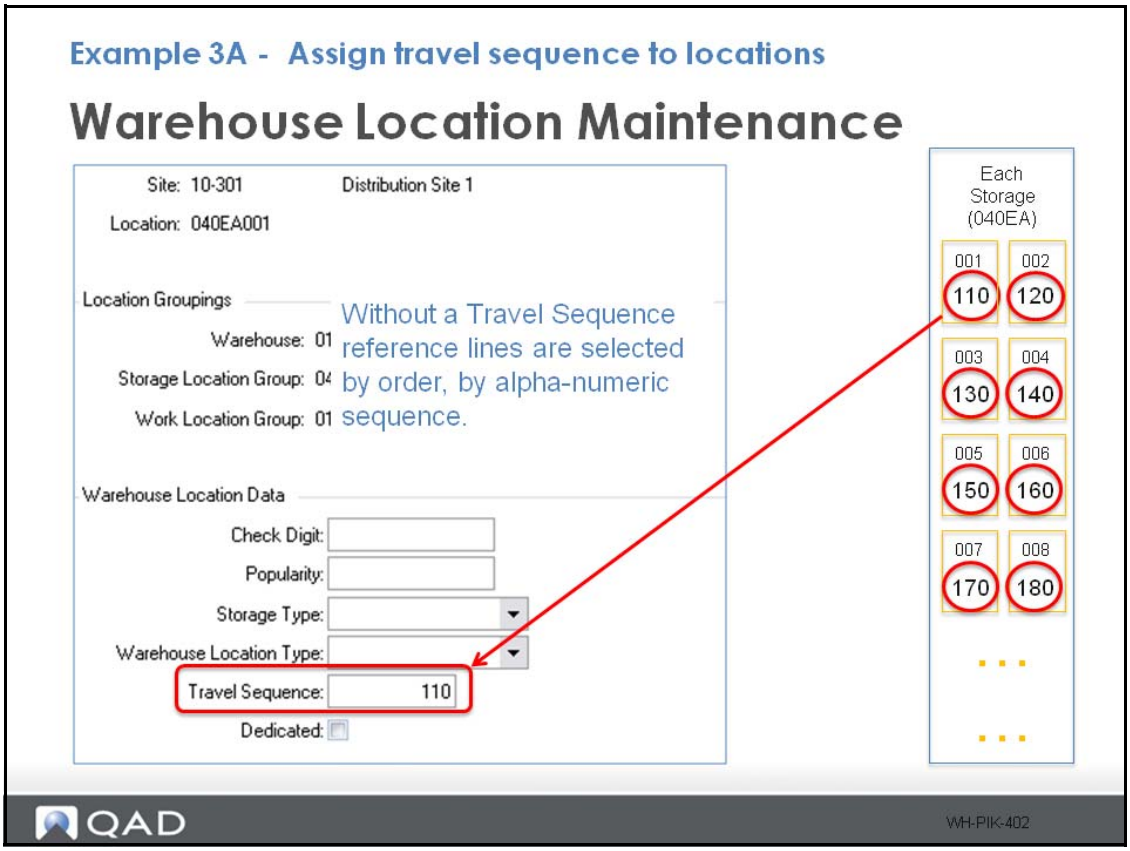
2 Select option 2, BP Pick All,

3 Select all the orders for picking

The operator is directed to pick all orders, order by order, before proceeding to the packaging area to drop the picked orders.

Operationally, how can this flow be improved?

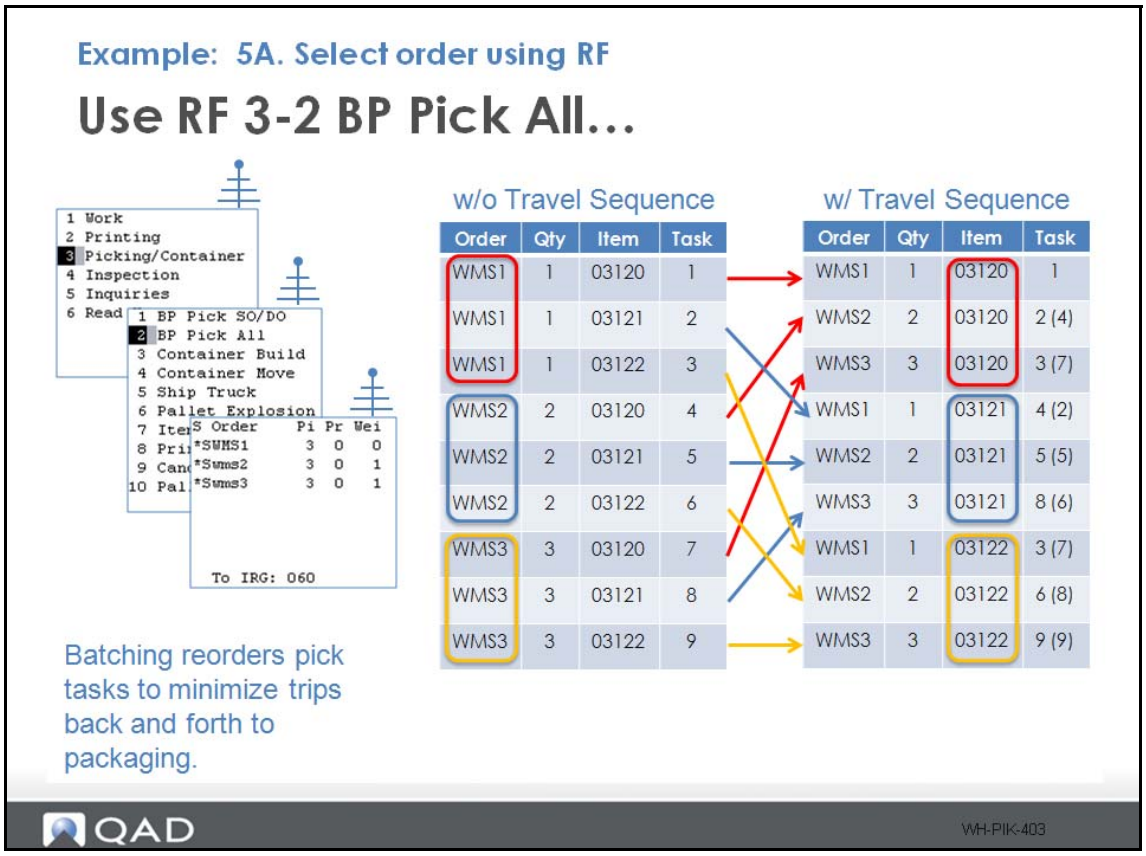
Example 3A- Assign Travel Sequence to Location



This step is a modification step to the Example 3 steps.

You can assign the travel sequence to a location in Warehouse Location Maintenance by specifying the location in the Travel Sequence field.

Example 5A - Select Order Using RF



With a travel sequence assigned to each location, create and release 3 orders (see step 4).

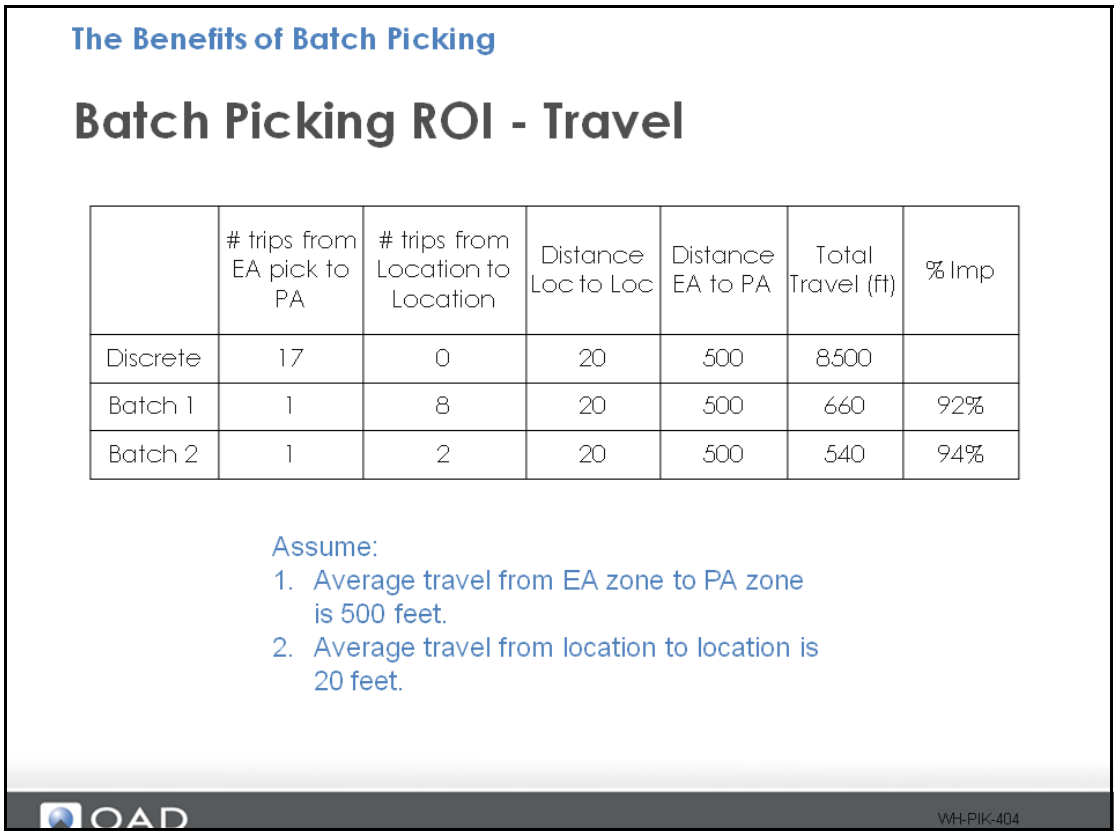
1 Select option 3, Picking/Container.

2 Select option 2, BP Pick All.

3 Select all the orders for picking.

The picks are now sorted by item/ location rather than order.

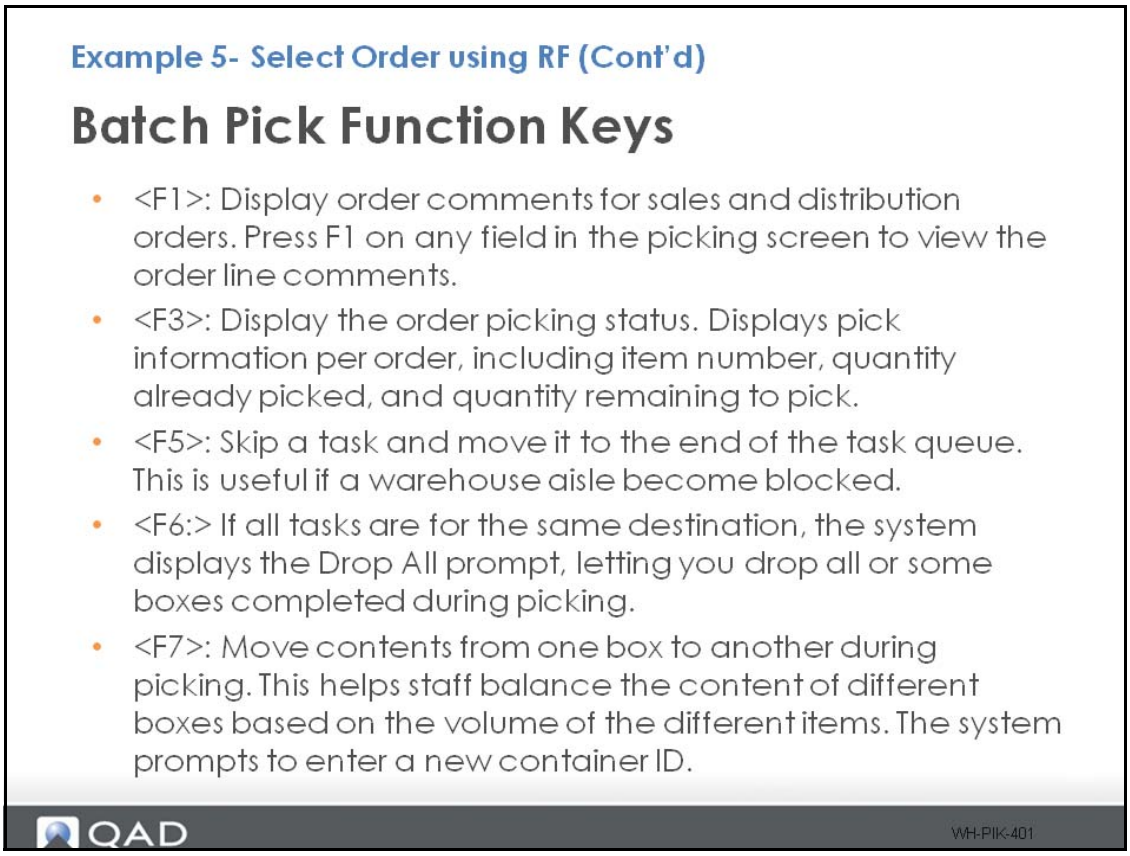
Benefits of Batch Picking



The return on investment (ROI) for batch picking is the shortened travel time, as you can see when comparing discrete picking data, above, to batch picking data.

The primary benefit to batch pick is a significant reduction in travel distance and time the ROI can then be calculated based on processing more orders with the same amount of labor, a reduction in overtime, or both.

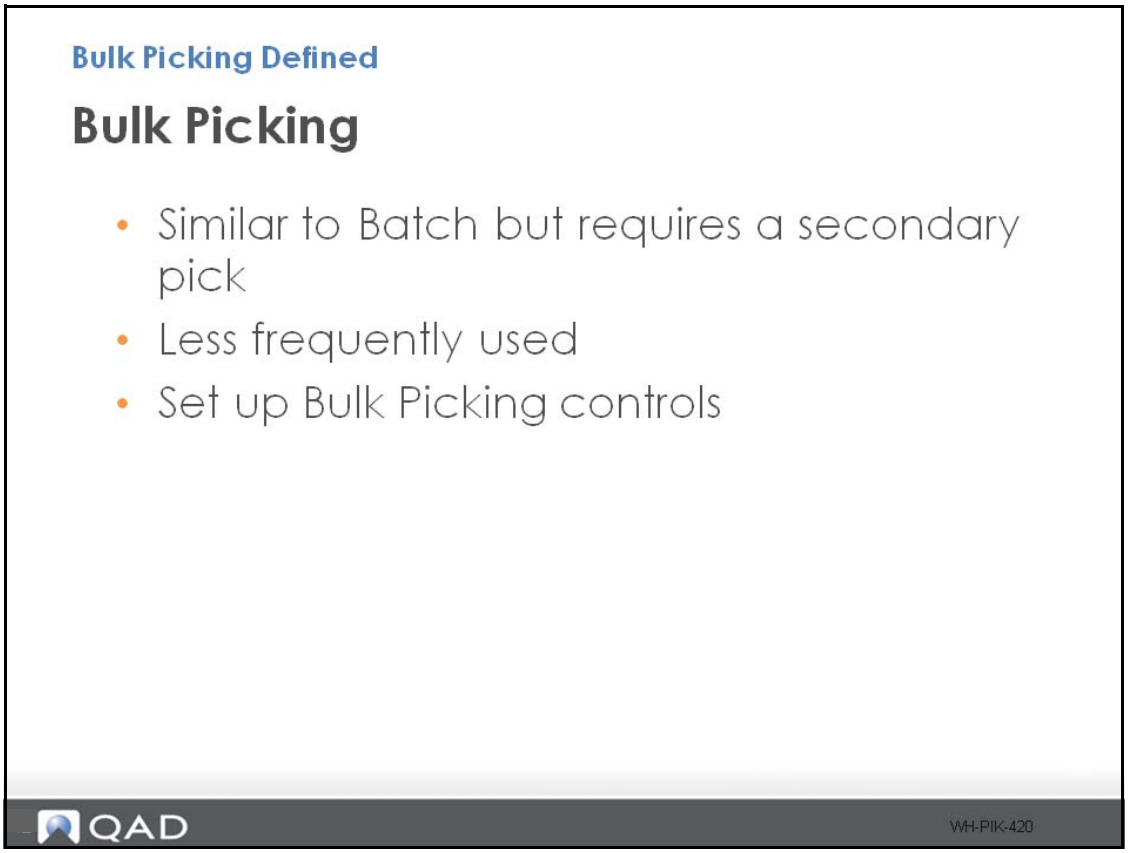
Batch Pick Function Keys



You can use several function keys on the RF device during bulk picking, as shown in the graphic above.

Bulk Picking

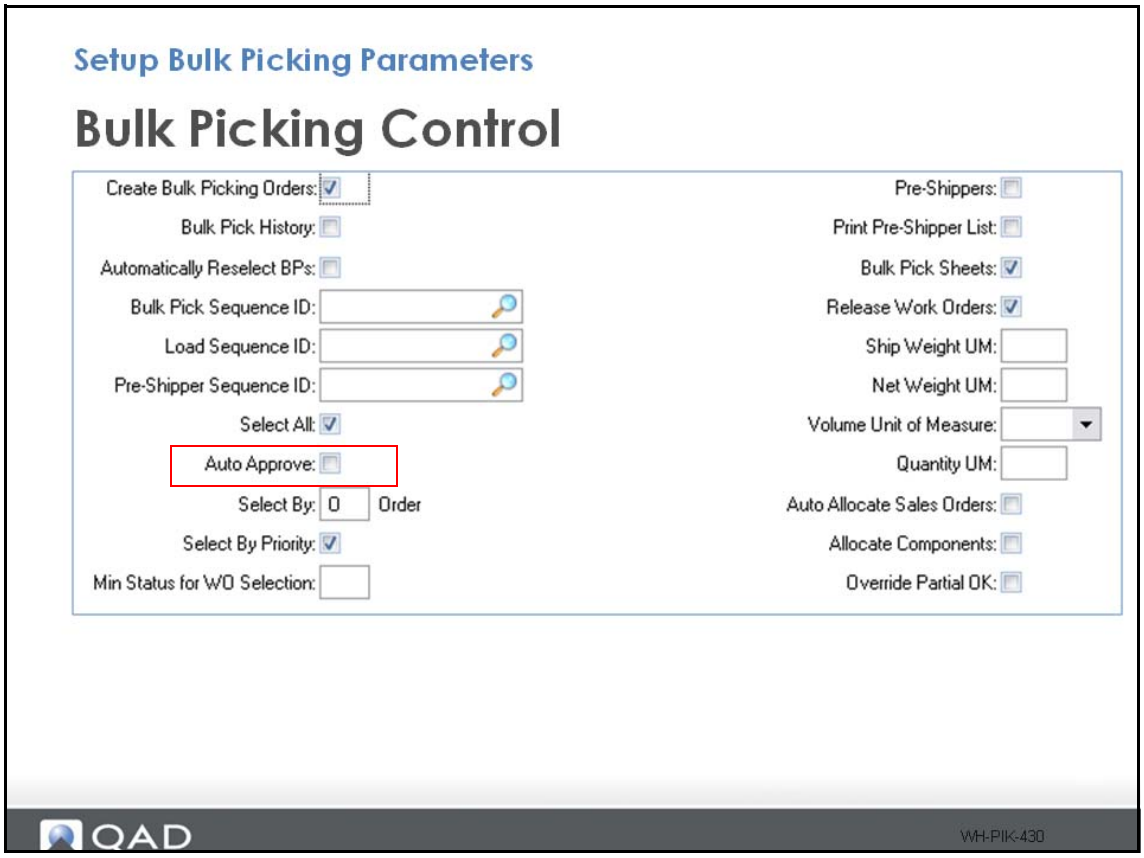
Bulk Picking Defined



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.

Bulk pick is similar to batch pick in that multiple orders are picked concurrently, the difference is bulk pick orders require sorting or a secondary pick at a subsequent stop. This typically results in more space requirements.

Bulk Picking Control

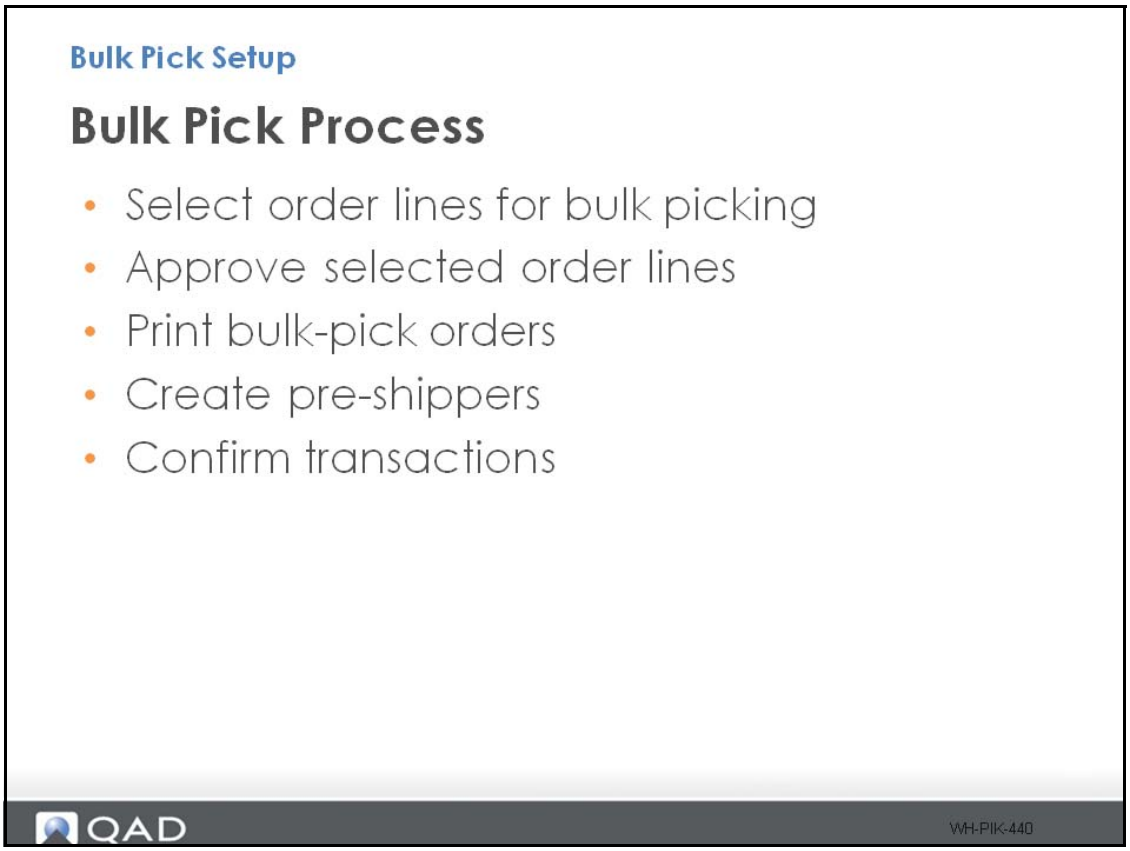


Did You Know

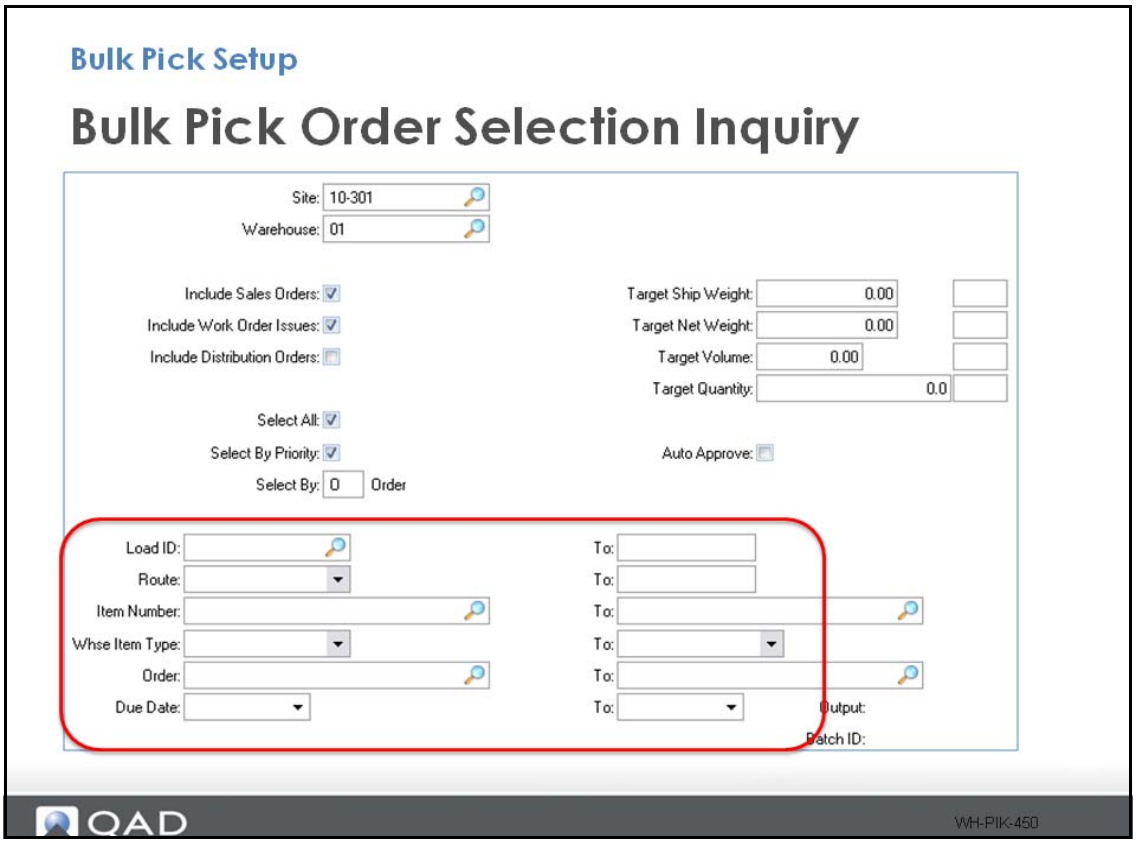
Bulk pick orders can be automatically approved.

There is one frame and 22 fields in Bulk Picking Control used for configuration.

Bulk Pick Setup



Bulk Pick Order Selection Inquiry



Did You Know

Bulk pick selection criteria includes:

- Load ID

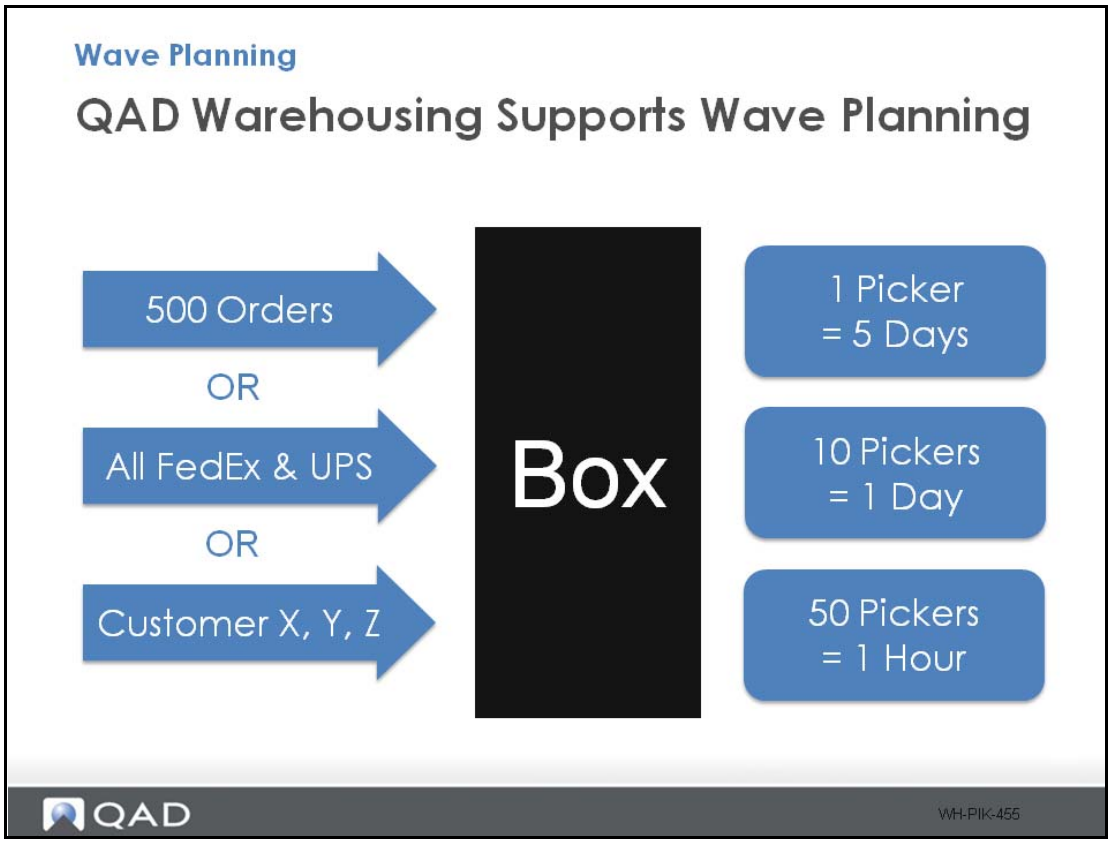
  All order lines with the same load ID are combined, if possible, in the same warehouse transaction. The load ID is automatically generated when you select the order line for inclusion in a bulk pick. Multiple bulk pick details can still result from a single load ID.

- Route

  This is internal routing, typically forward pick to storage. Load ID and route can be on the SO, so that they can be picked together.

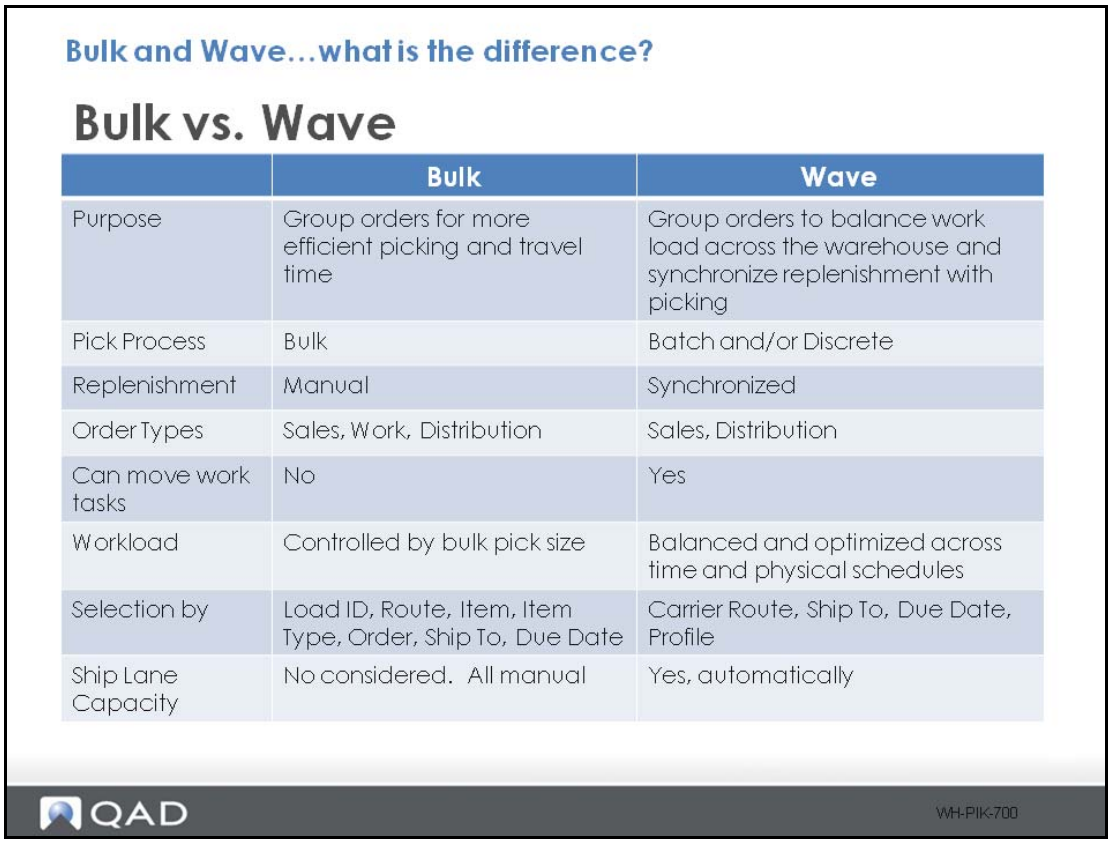
- Item Number
- Due Date

Wave Planning



Wave planning involves the same principles as lean distribution; that is, the objective is to plan activities in a warehouse and eliminate inefficiencies. Wave planning lets you create and release a wave --a collection of orders. Wave planning is covered in Advanced topics training guides for QAD Warehousing.

Bulk and Wave - What is the Difference?



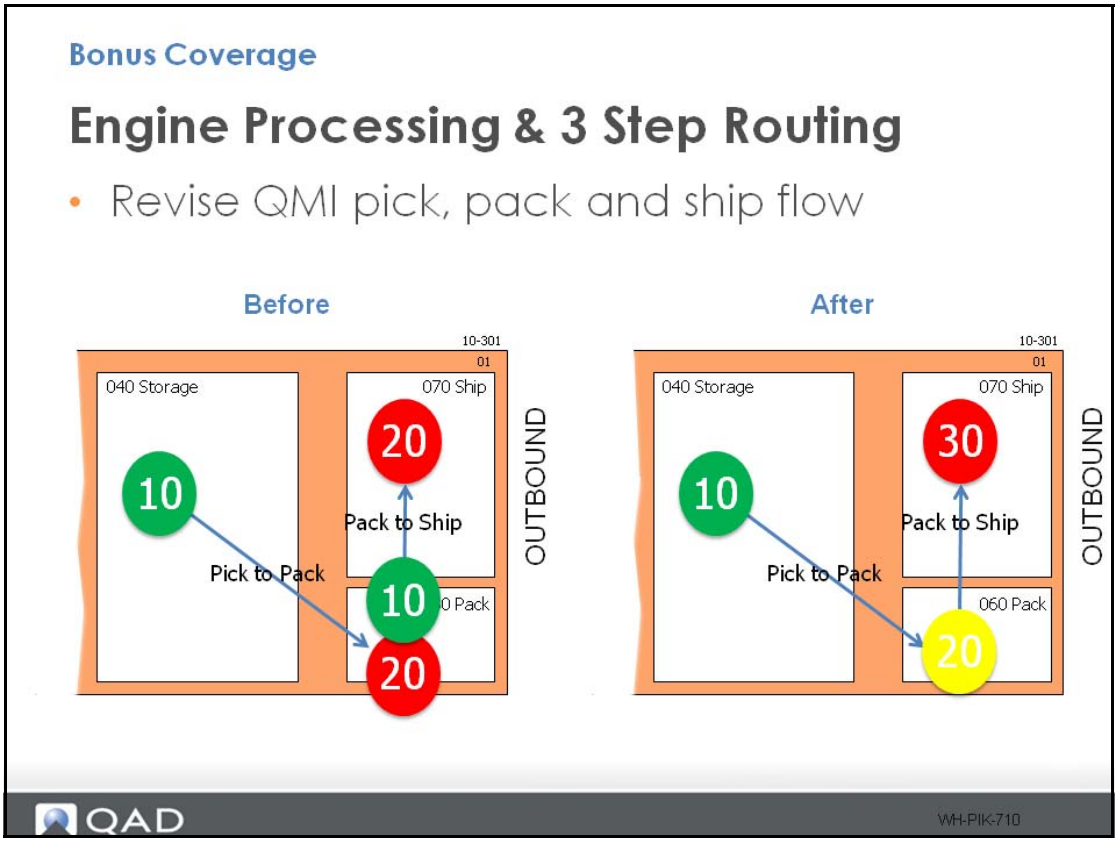
	Bulk	Wave
Purpose	Group orders for more efficient picking and travel time	Group orders to balance work load across the warehouse and synchronize replenishment with picking
Pick Process	Bulk	Batch and/or Discrete
Replenishment	Manual	Synchronized
Order Types	Sales, Work, Distribution	Sales, Distribution
Can move work tasks	No	Yes
Workload	Controlled by bulk pick size	Balanced and optimized across time and physical schedules
Selection by	Load ID, Route, Item, Item Type, Order, Ship To, Due Date	Carrier Route, Ship To, Due Date, Profile
Ship Lane Capacity	No considered. All manual	Yes, automatically

The graphic above depicts the major differences in bulk picking and wave picking, based on the picking functionality and various aspects of warehouse picking.

Bulk picking is more of a process, that is, a method of picking for wave more of a strategy.

In bulk picking, you can pick for orders that are grouped by routes, so that all orders for a particular delivery area can be picked together. These bulk picks accumulate the items together.

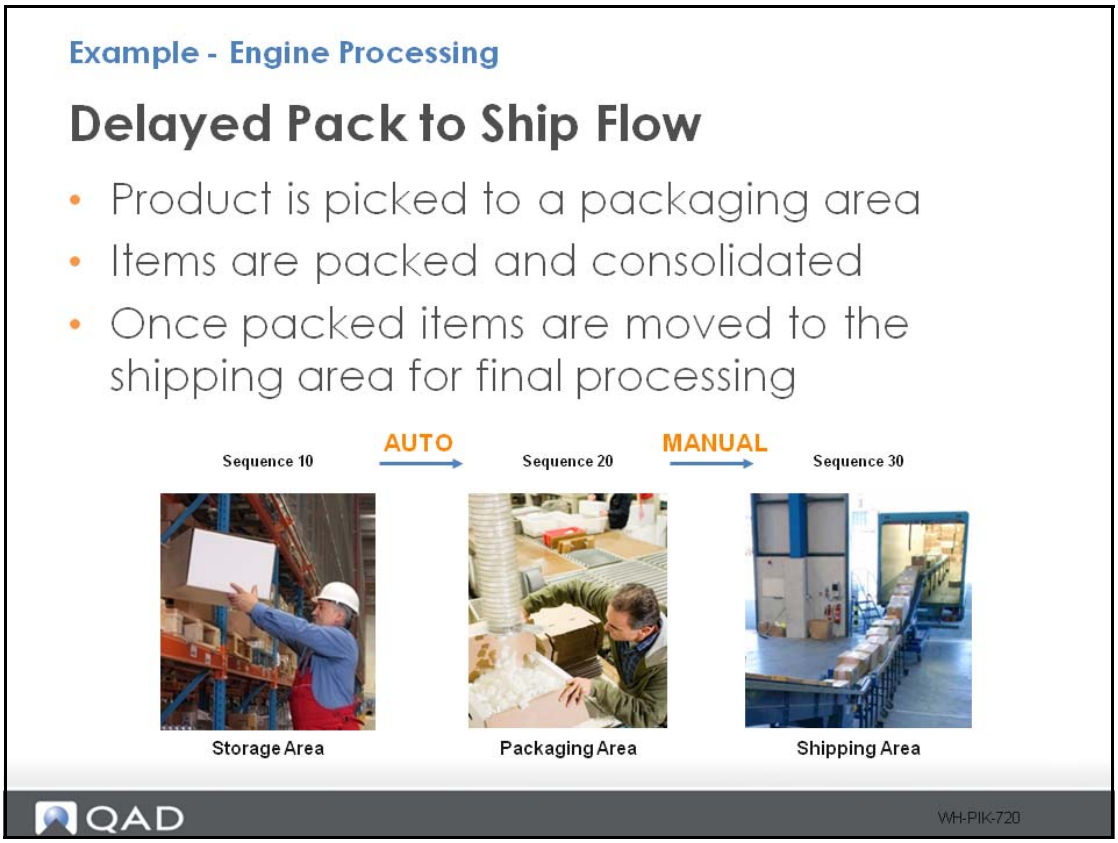
Bonus Coverage - Engine Processing and 3-Step Routing



Up to now, the design has been pick, pack and ship as two different flows; however, it is possible to set up a three-step routing by setting the Mode field in the Miscellaneous Options frame of the Internal Routing Maintenance menu to Manual to *delay* the trigger of product movement from packing to shipping.

In the after picture above, engine processing was used to delay the shipping.

Example - Engine Processing



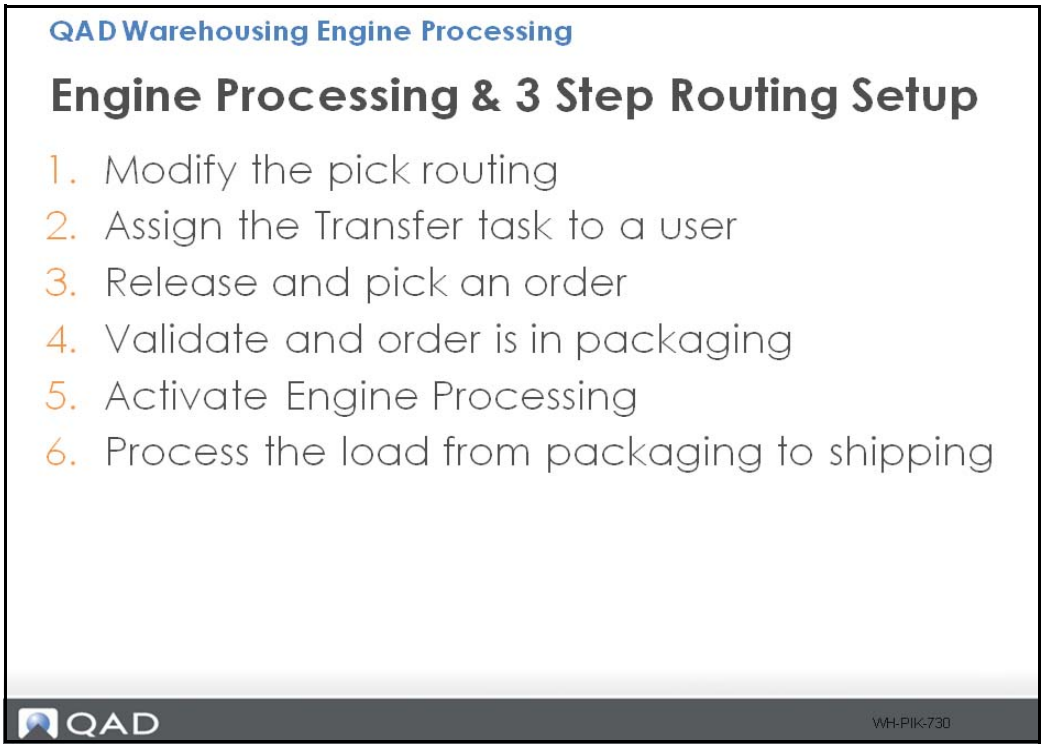
Because the last sequence is manual the move from packaging to shipping does not trigger until a user intervenes to release the task

This proves helpful when there is a long process required in packaging or frequent delays occur.

If the second arrow in the graphic above were Auto, the move from 20 to 30 would automatically trigger when 10 to 20 was complete even if the item/ load was not ready to be moved.

The following topic covers the process of setting up and processing engine processing and a 3 step delay.

Engine Processing - Three-Step Routing Setup

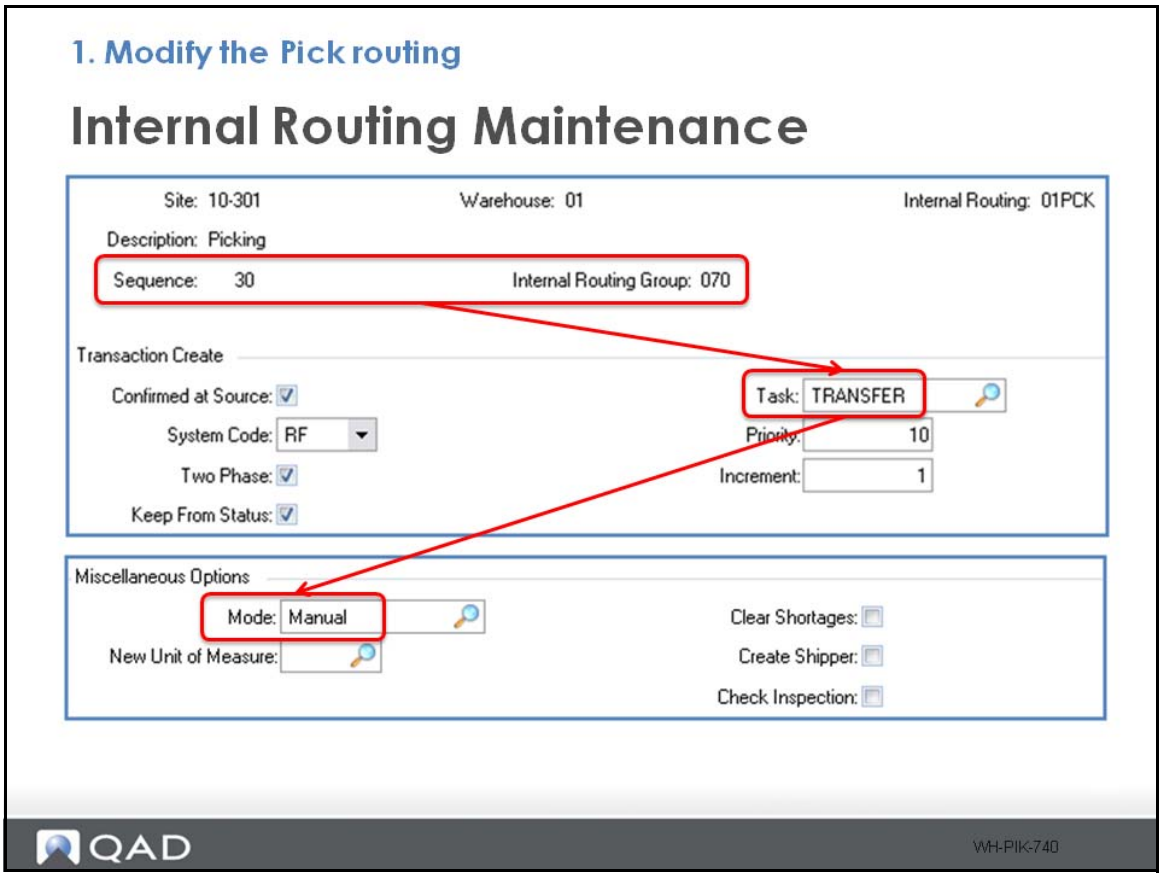


Start with the QMI Warehouse, then:

1. Add Sequence 30; 070, to internal routing 01PCK using Internal Routing Maintenance, setting these fields:
   - c. Task = TRANSFER
   - d. Mode = Manual
2. Assign the Transfer task to UserA using Task Assignment Maintenance or change Work Location Group to 01FL for location 060PL001 using Warehouse Location Maintenance.
3. Release and pick an order.

   The item is in a packaging location using Inventory Detail Inquiry.
4. Activate Engine Processing using RF 1.6:
   - a. Select the packaging location
   - b. Select the item LPN
5. Move the load from packaging to shipping:
   - a. Select Next Task using RF 1.1.
   - b. Select location.
   - c. Select LPN.
   - d. Confirm drop location and LPN move using Inventory Detail Inquiry.

Modify the Pick Routing



Adding another sequence to the Pick internal routing triggers a transfer task when the load is dropped at the packaging area; however, with Mode set to Manual, the trigger requires that the user manually release the task.

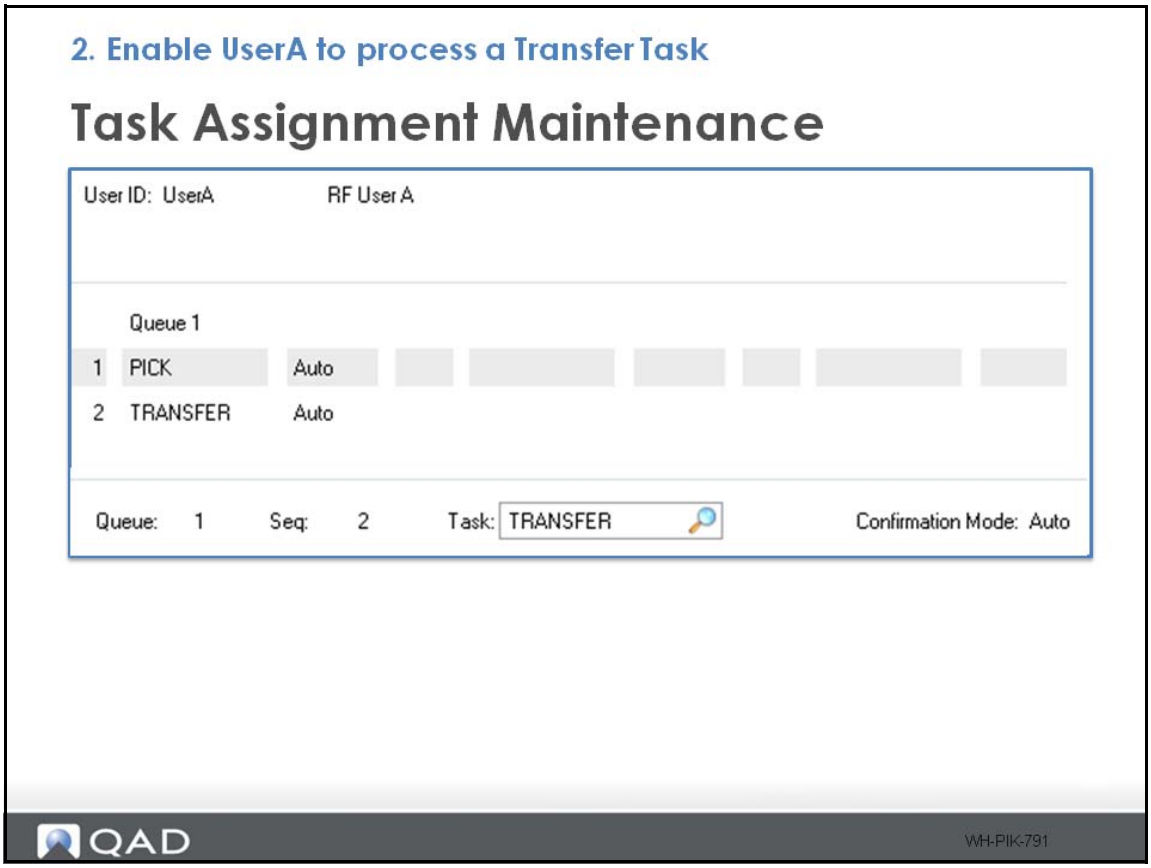
Start with the QMI Warehouse, then:

1 Add Sequence 30; 070, to routing 01PCK using Internal Routing Maintenance, setting:

   a Task = TRANSFER

   b Mode = Manual

Enable User A to Process a Transfer Task



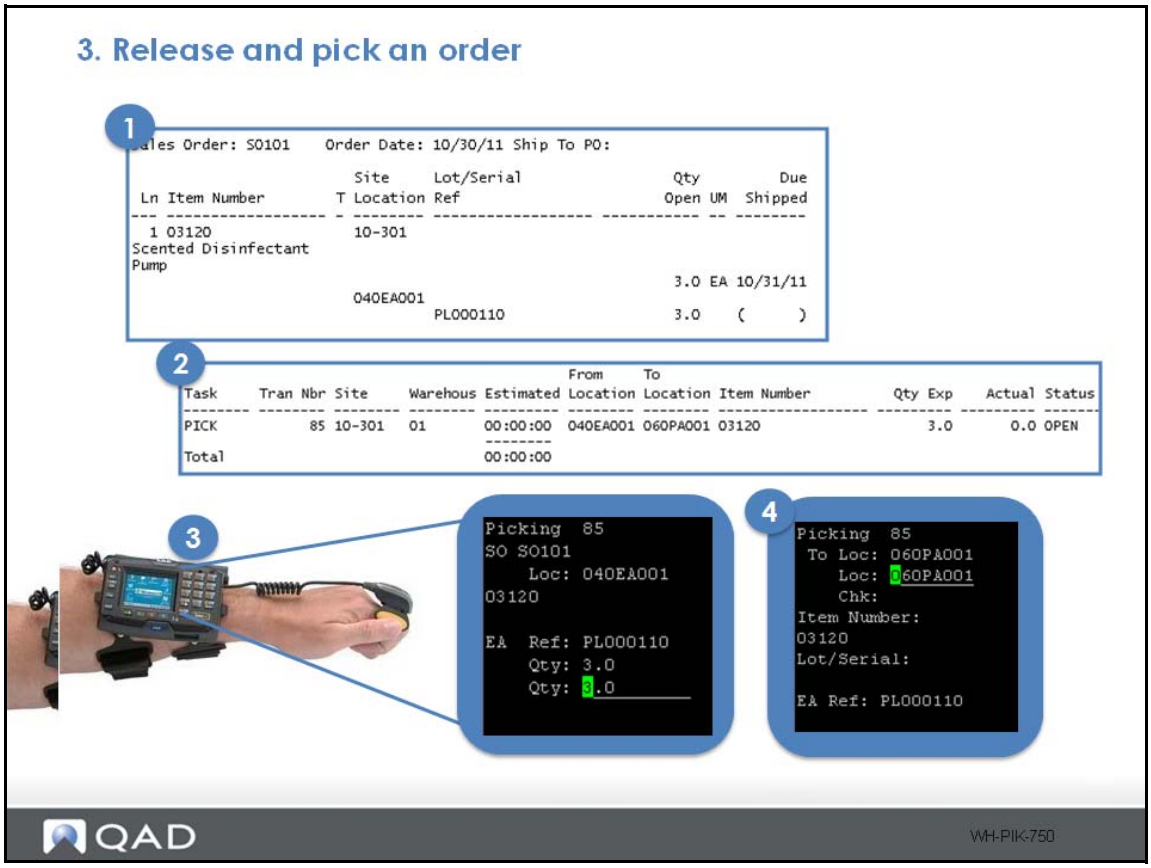
The locations in the packaging area are assigned to WLG 01CT, currently assigned to UserA. To ensure UserA receives the transfer task when the task is triggered, UserA must be setup to process a transfer task. Use User Task Assignment Maintenance to add the transfer task to the work Queue.

Alternatively, you can change the locations in the packaging area to WLG 01FL using Warehouse Location Maintenance.

You can assign UserB to Work Location Group 01CT using User Work Location Group Maintenance.

Doing one of the alternatives enables UserB to receive the load transfer task from the packaging to shipping areas.

Release and Pick an Order



To demonstrate the product flow and delayed task creation, first release and pick an order:

1 Release an order using Picklist/Pre-Shipper – Automatic.

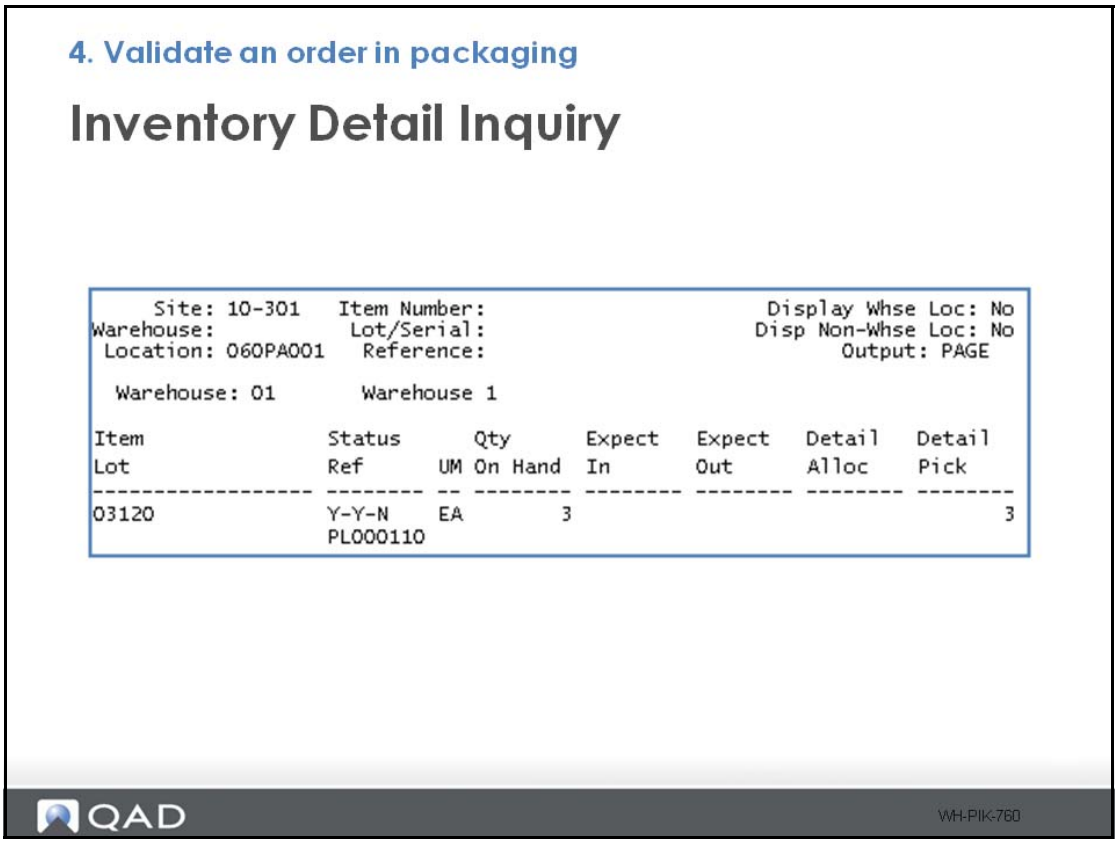
2 View the pending task using Task Load Report. Note, only one task is created for a pick; nothing yet for the subsequent transfer.

3 Process the pick.

4 Drop at the packaging area.

Note The finger scanner, shown in the graphic above, replaces hand-held scanners.

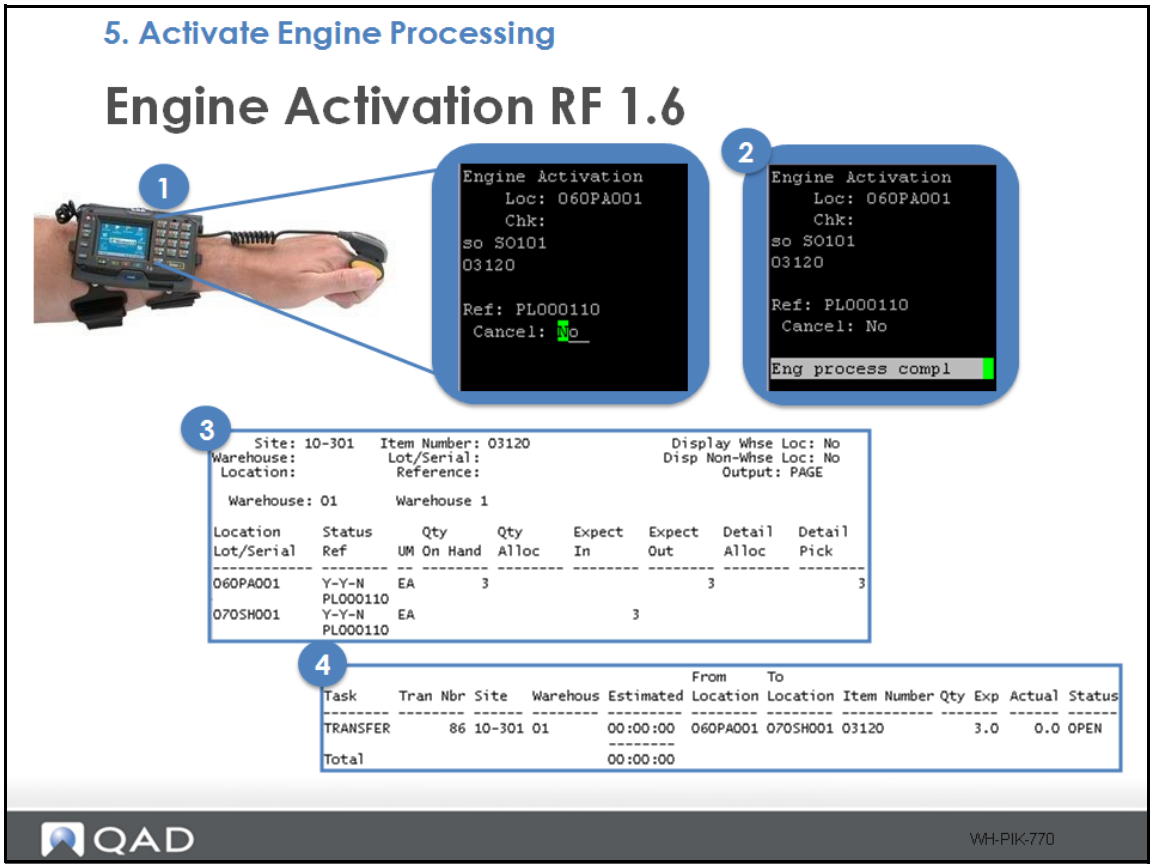
Validate an Order in Packaging



With the pick task complete, view the load in the Packaging Area using Inventory Detail Inquiry.

Product has been moved to the packaging location, as shown in the display above.

Activate Engine Processing



Once packaging activities are complete the load is ready for movement to the shipping area:

1 Activate Engine Processing using RF 1.6. T

This releases the tasks for packaging. This method ensures that inventory is not released before it is ready to be packaged.

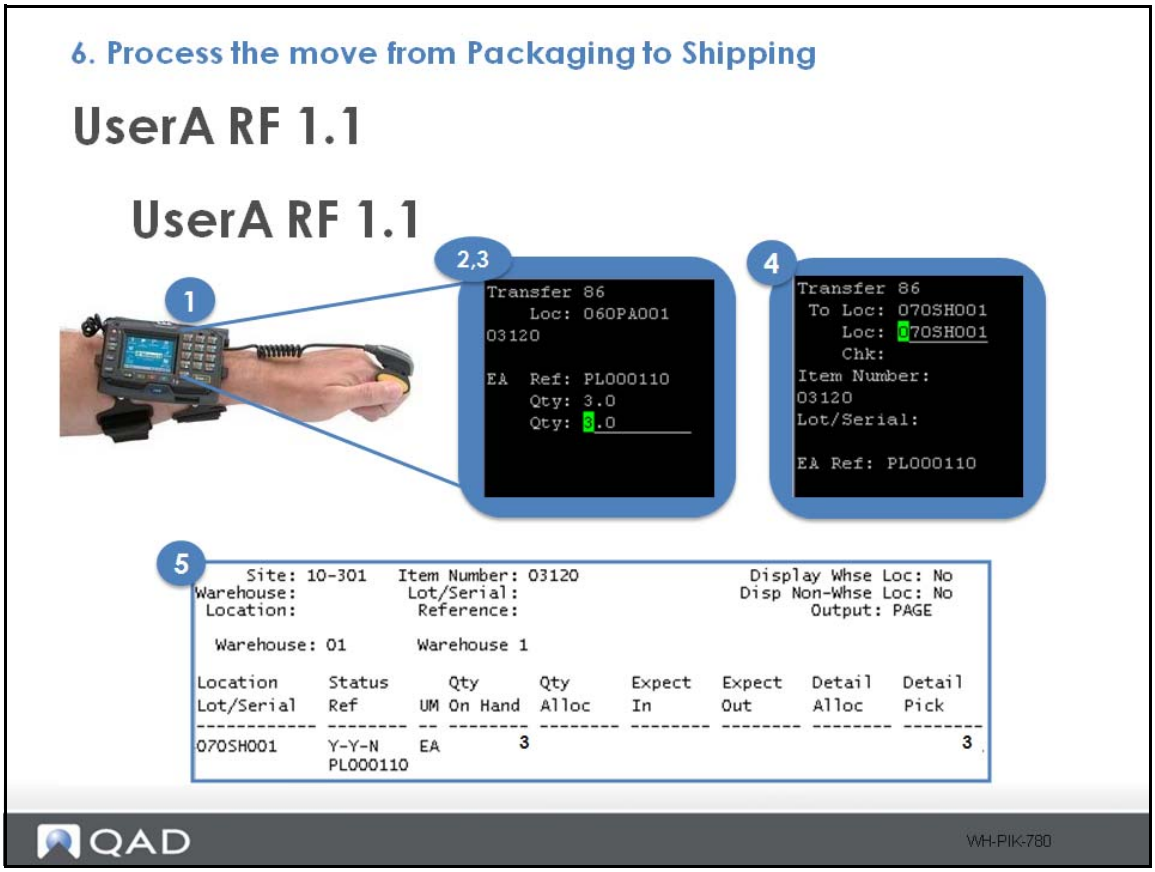
a Select the packaging location.

b Select the item LPN.

2 Once the engine processing is complete, view the pending load move using Inventory Detail Inquiry.

3 View the new task using Task Load Report. This is the send task of the 01PCK internal routing.

Process the Move from Packaging to Shipping



Move the load from packaging to shipping:

1 Select Next Task using RF 1.1.

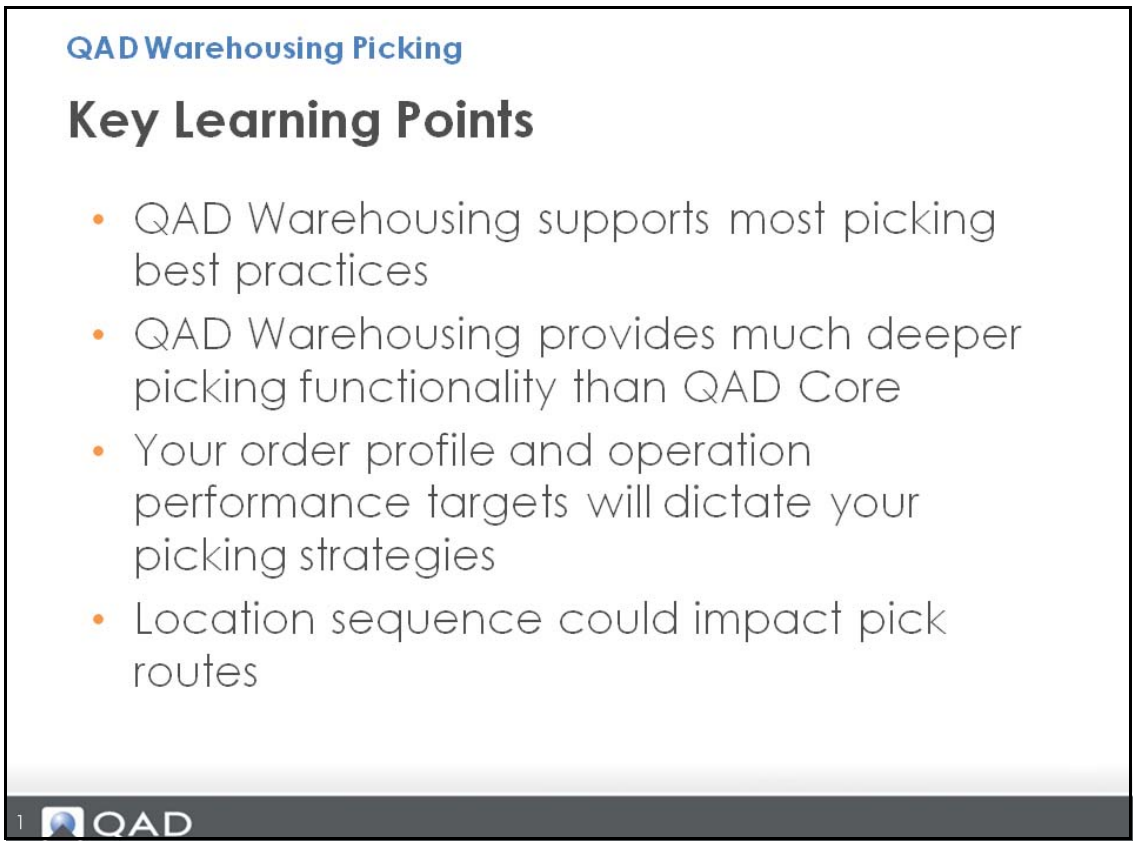
2 Select location.

3 Select LPN.

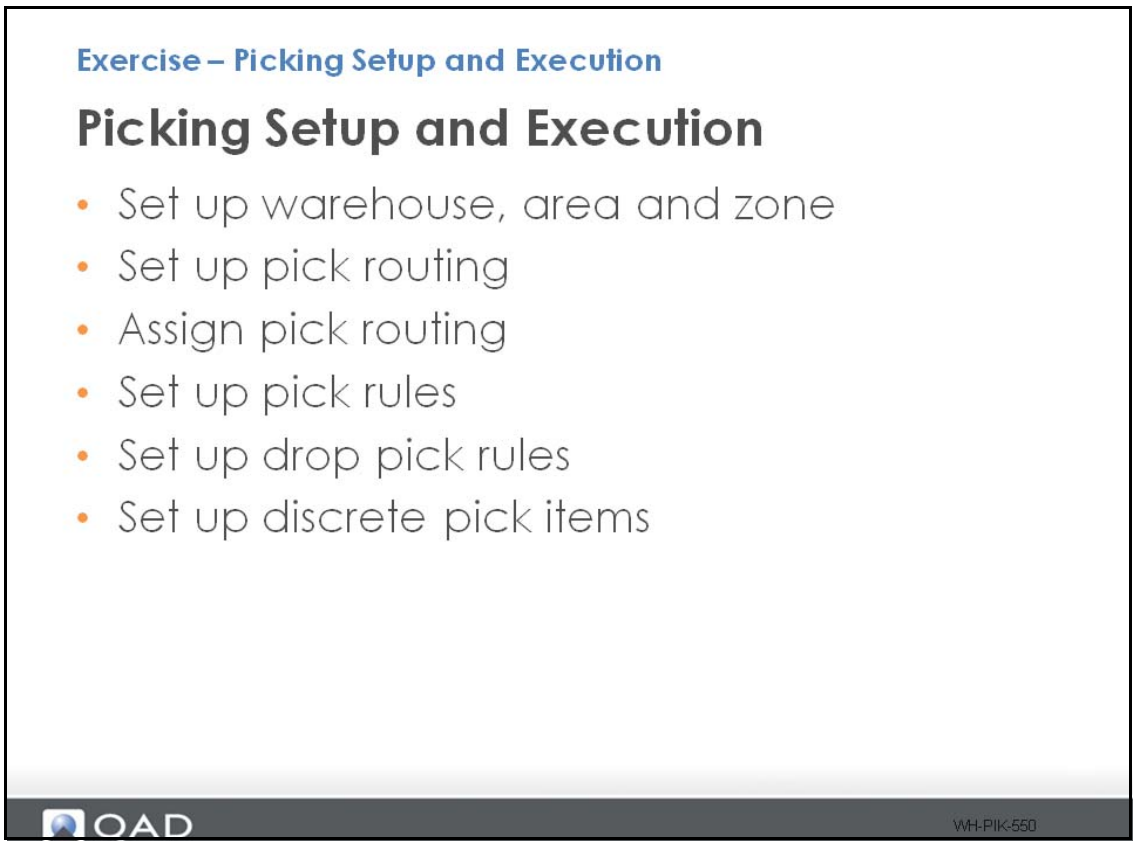
4 Confirm drop location.

5 Confirm the move using Inventory Detail Inquiry.

Key Learning Points



Exercises - Picking Setup and Execution



This exercise teaches you to set up a basic discrete pick from the new QMI warehouse.

1 Set up or confirm setup of the warehouse, area and zone

   c Confirm the pallet and each storage zones are assigned a picking level

   d Confirm the warehouse includes the pallet and each storage zone levels in the picking start and end picking level range.

2 Set up pick routing.

   a Inventory is picked in the Storage area and moved to Shipping.

   b Create a pick routing

3 Assign pick routing

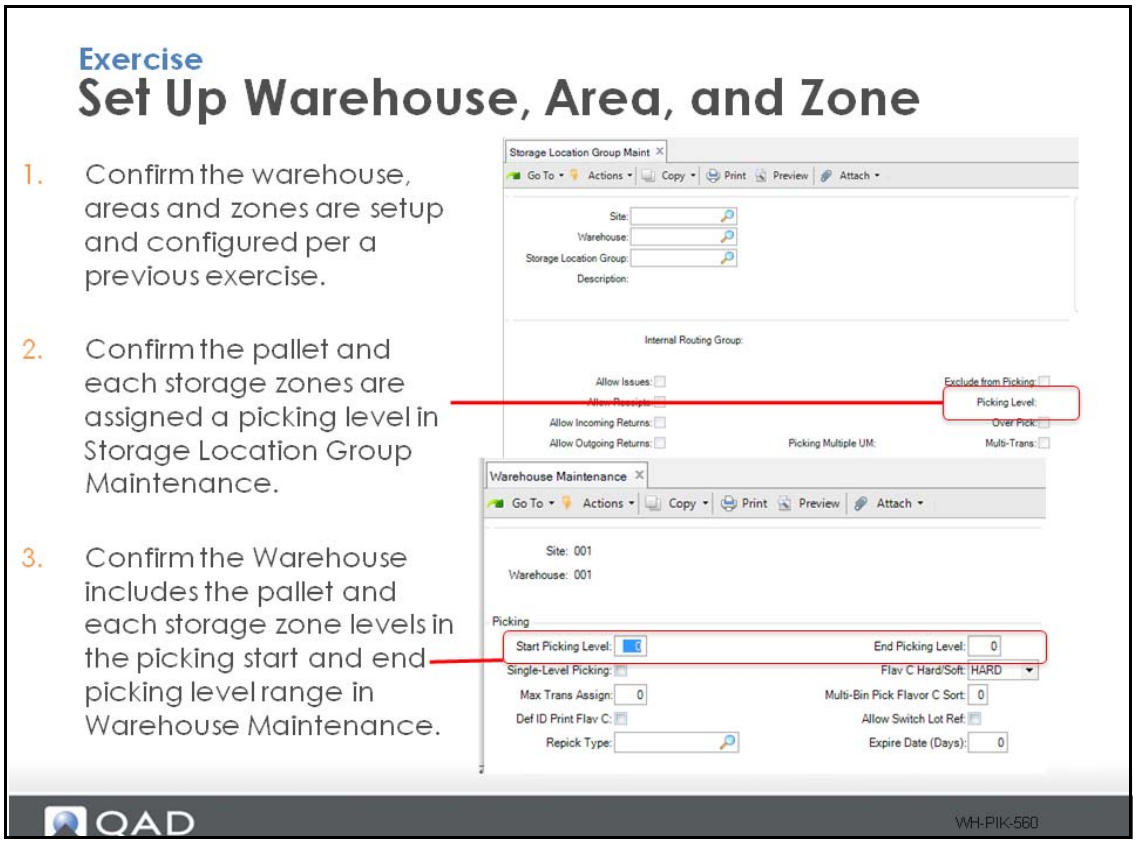
   a Assign the replenishment routing to a generic replenishment pick transaction type

4 Set up pick rules

5 Set up pick drop rules

6 Set up discrete pick items

Exercise - Set Up Warehouse, Area, and Zone

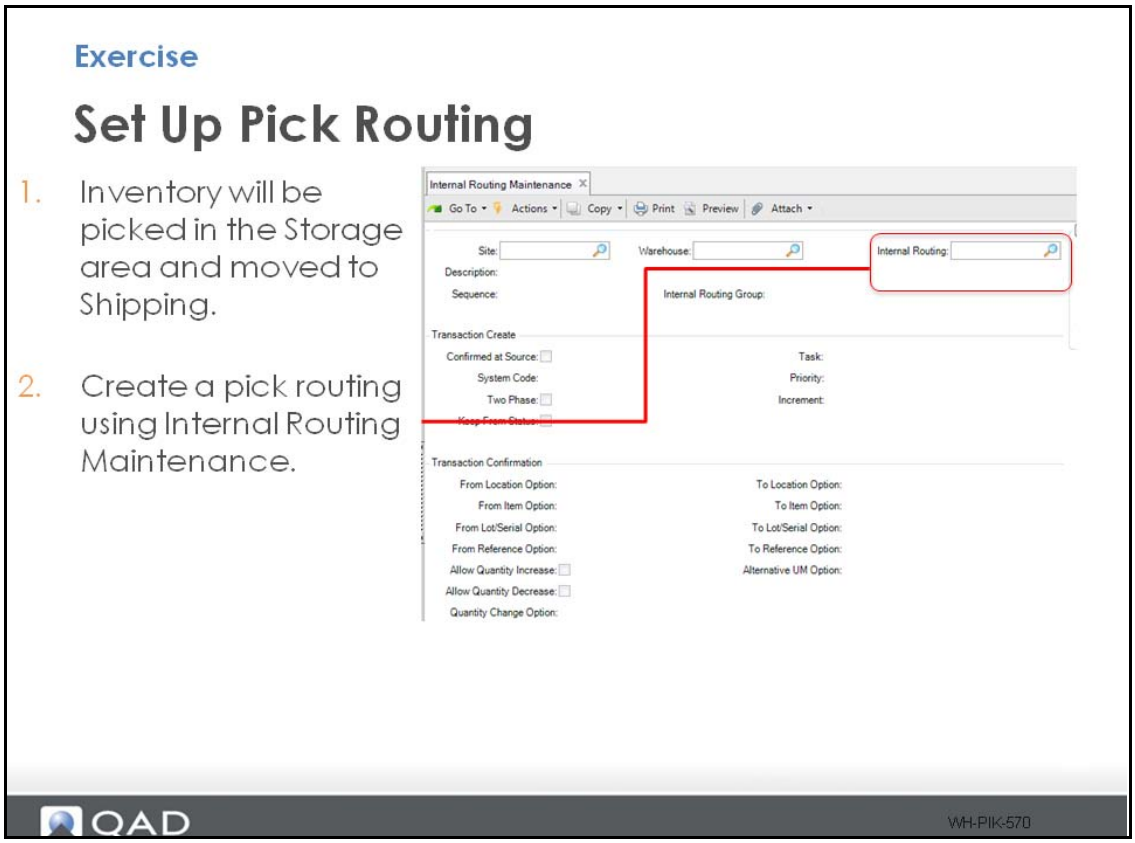


Refer to the Introduction section of this training guide to confirm the warehouse, area, zone and locations are setup.

Next, confirm the pallet and each storage zones are assigned a picking level using Storage Location Group Maintenance.

Confirm the warehouse includes the pallet and each storage zone levels when you set the Start Picking Level and End Picking Level fields in Warehouse Maintenance. Refer to the Introduction chapter in this training guide for more information.

Exercise - Set Up Pick Routing

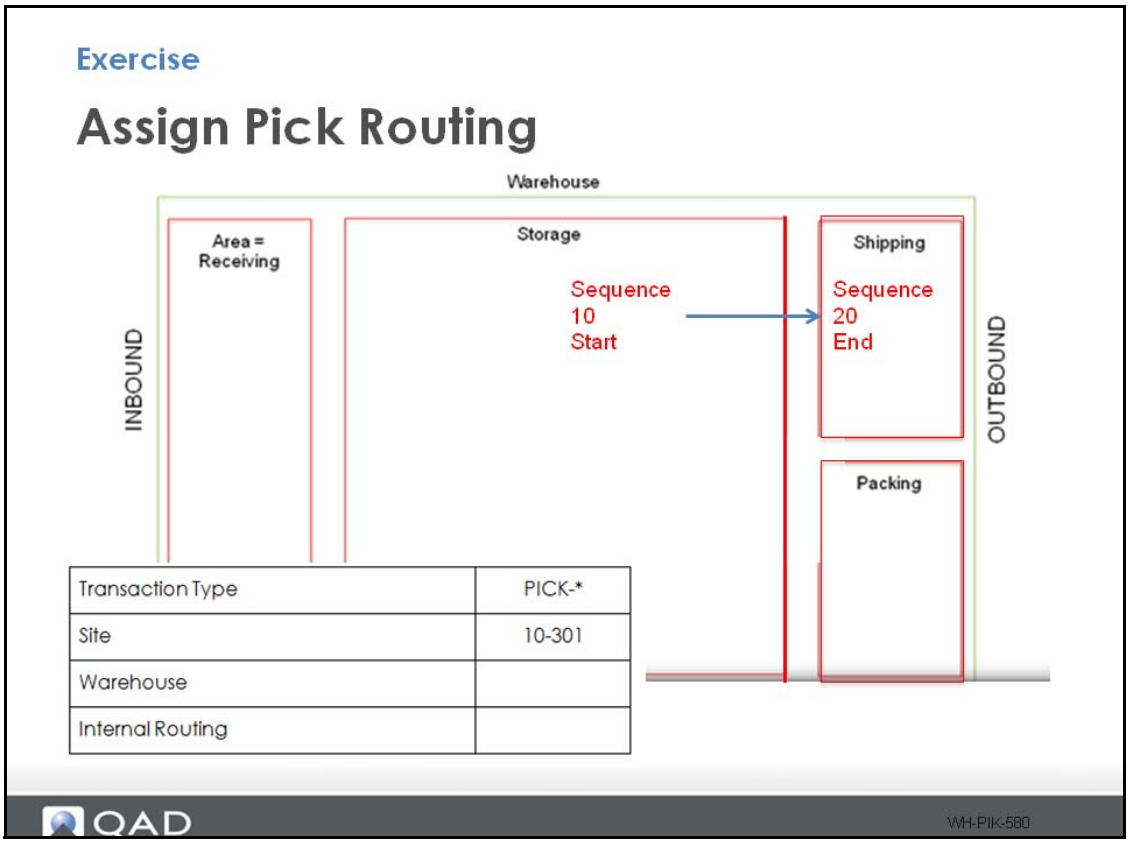


When you set up a routing, inventory is picked in the Storage area and moved to Shipping.

In Internal Routing Maintenance, define parameters, then note the parameters you enter here:

Field	Data to Enter	
Site	10-301	
Warehouse		
Internal Routing	Picking	
Description		
	Start	**End**
Sequence	10	20
IRG		
To Reference Option	0	3

Exercise - Assign Pick Routing

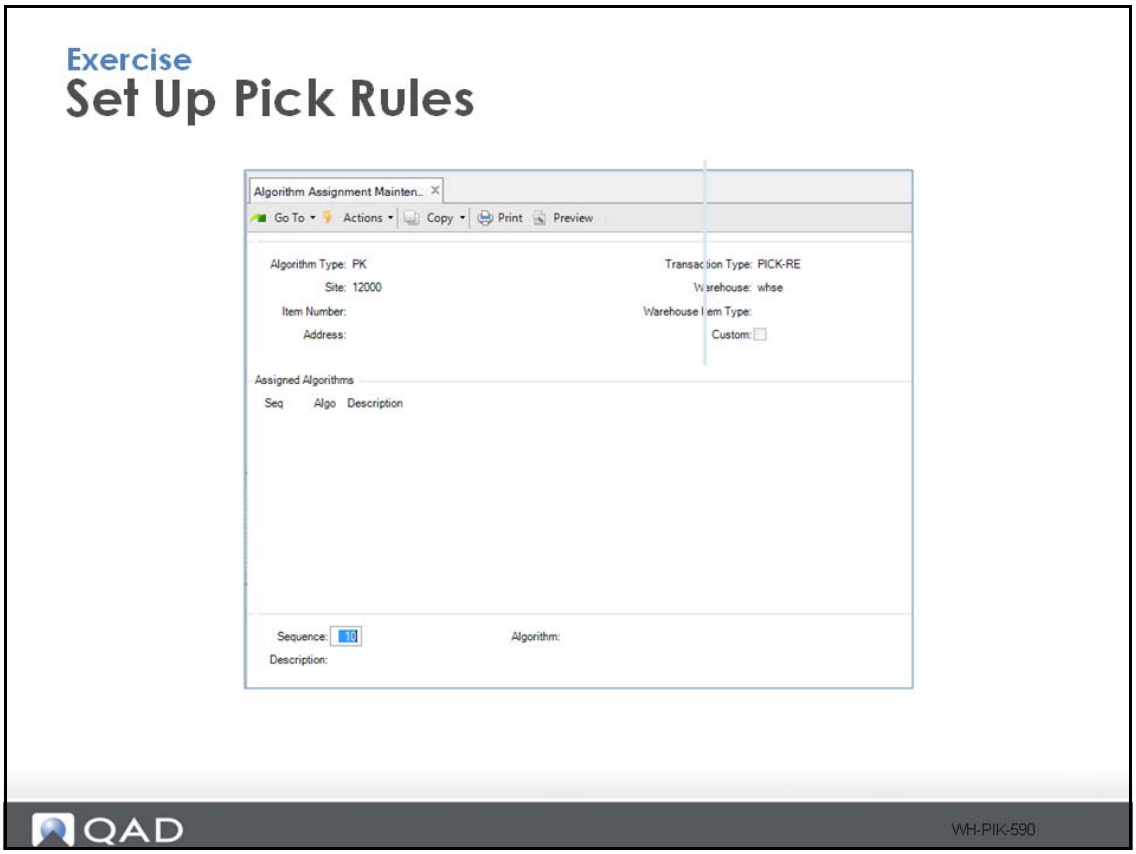


When a pick task is created, it follows the pick routing.

Assign the replenishment routing to a generic replenishment pick transaction type using Int Routing Assignment Maint. Define parameters, then note the parameters you enter here:

Field	Data to Enter
Transaction Type	PICK-*
Site	10-301
Warehouse	
Internal Routing	

Exercise - Set Up Pick Rules



QMI has a FIFO inventory preference.

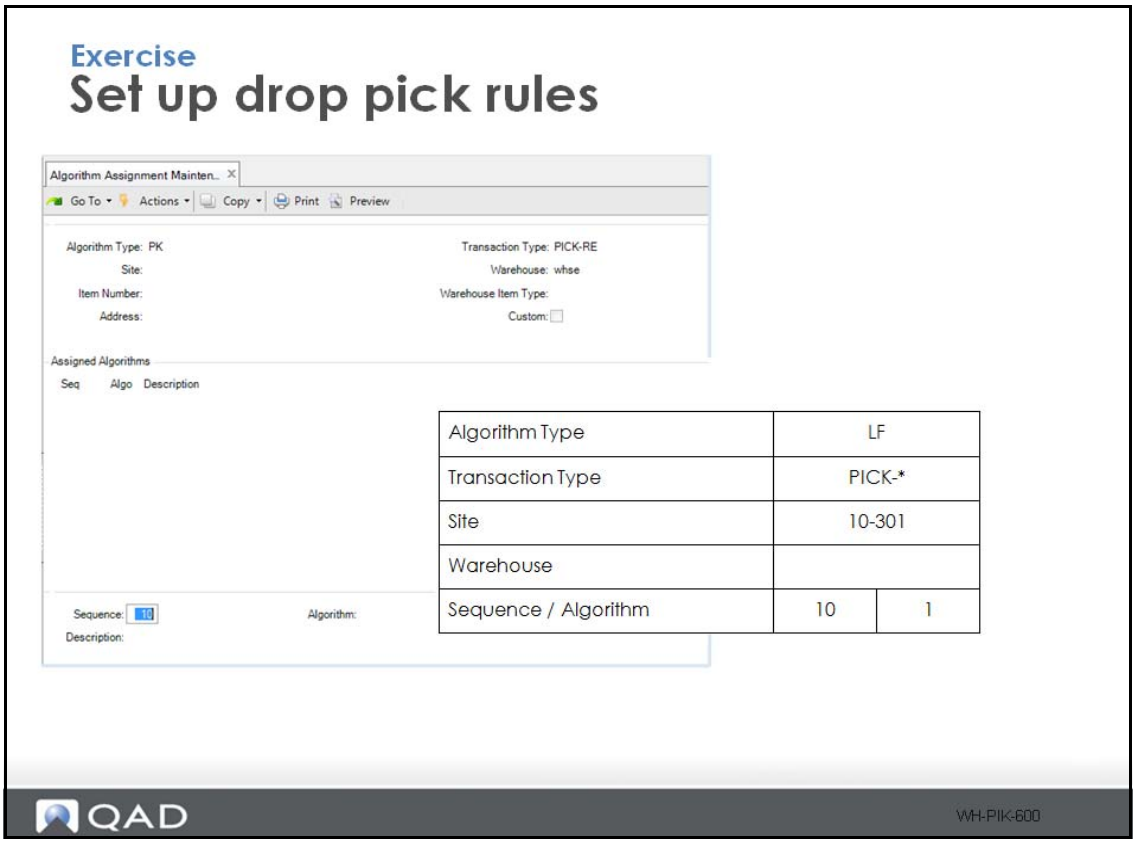
Use Algorithm Assignment Maintenance to define picking rules for replenishment inventory.

The pick rules for picking are the same as the pick rules for replenishment. No changes are made if the replenishment exercise was performed.

Define parameters, then note the parameters you enter here:

Field	Data to Enter
Algorithm Type	PK
Transaction Type	PICK-*
Site	10-301
Warehouse	
Sequence	10
Algorithm	11

Exercise - Set Up Drop Pick Rules

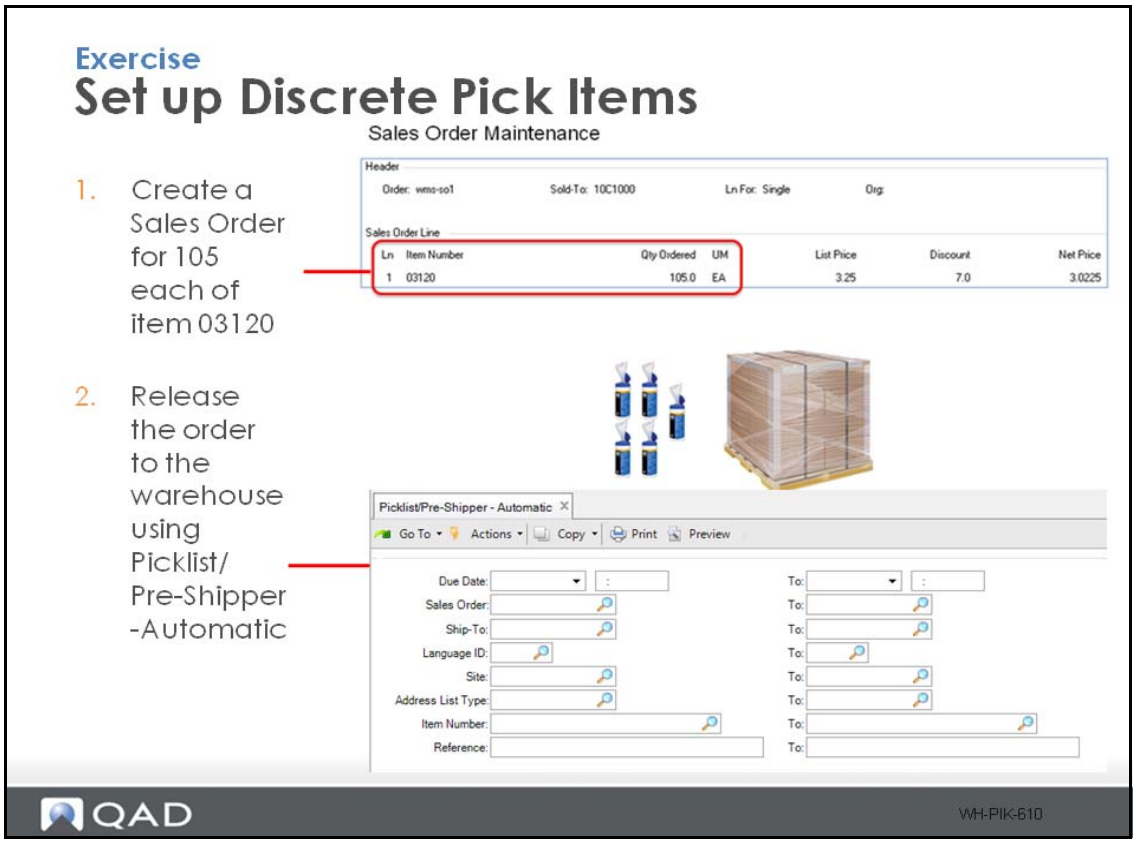


All picks are moved to the shipping area for final processing and shipment.

Use Algorithm Assignment Maintenance to define pick drop rules for inventory in the shipping area. Define parameters, then note the parameters you enter here:

Field		Data to Enter
Algorithm Type		LF
Transaction Type		PICK-*
Site		10-301
Warehouse		
Sequence/Algorithm	10	1

Exercise - Set Up Discrete Pick Items



1 Create a Sales Order for 105 each of item 03120 using the core Sales Order Maintenance program.

2 Release the order to the warehouse using the core Picklist/Pre-Shipper Automatic program.

Question

Is the inventory coming from the same location?

If set up correct, 100 each comes from a pallet location and five from an each location. This is a best practice for optimizing material handling efficiencies.

Questions

1 Name the three types of picking supported by QAD Warehousing.

2 Discrete picking means picking _____ order at a time.

3 True or False. QAD Warehousing lets you pick a less than full pallet, case, or box quantity.

4 Briefly describe why you set start and end picking levels in QAD Warehousing.

5 True or False. You must use the PICK-RE transaction type for picking as it is the only picking transaction type available in QAD Warehousing.

6 Batch and bulk picking are helpful because they allow the user to _____.

7 True or False. Cartonization is the process of systematically selecting the best size carton to which staff pick an order, and is supported in QAD Warehousing?

8 Mix and Match. Which pick type (discrete, bulk, batch) fits the following descriptions:

Attribute	Enter Best Type of Picking
Easy to use	
Requires a secondary pick	
Pick one order at a time	
Easily done with paper pick lists	
Multiple orders picked to a specific order/carton	
Better for higher order volumes with low lines per order	
The least common way to pick multiple orders at the same time	

Answers

1 The three types of picking supported by QAD Warehousing are discrete, bulk, and batch picking.

2 one.

3 True. QAD Warehousing lets you pick a less than full pallet, case, or box quantity.

4 The start and end picking 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.

5 False. There are several PICK-* transaction types in QAD Warehousing; PICK-RE is just one transaction type.

6 pick multiple orders at the same time.

7 False. Although cartonization is the process of systematically selecting the best size carton to pick an order to, this is NOT supported in QAD Warehousing?

8 Pick types (discrete, bulk, batch) that fit the following descriptions:

Attribute	Enter Best Type of Picking
Easy to use	Discrete
Requires a secondary pick	Batch
Pick one order at a time	Discrete
Easily done with paper pick lists	Discrete
Multiple orders picked to a specific order/carton	Bulk
Better for higher order volumes with low lines per order	Bulk
The least common way to pick multiple orders at the same time	Batch

Notes

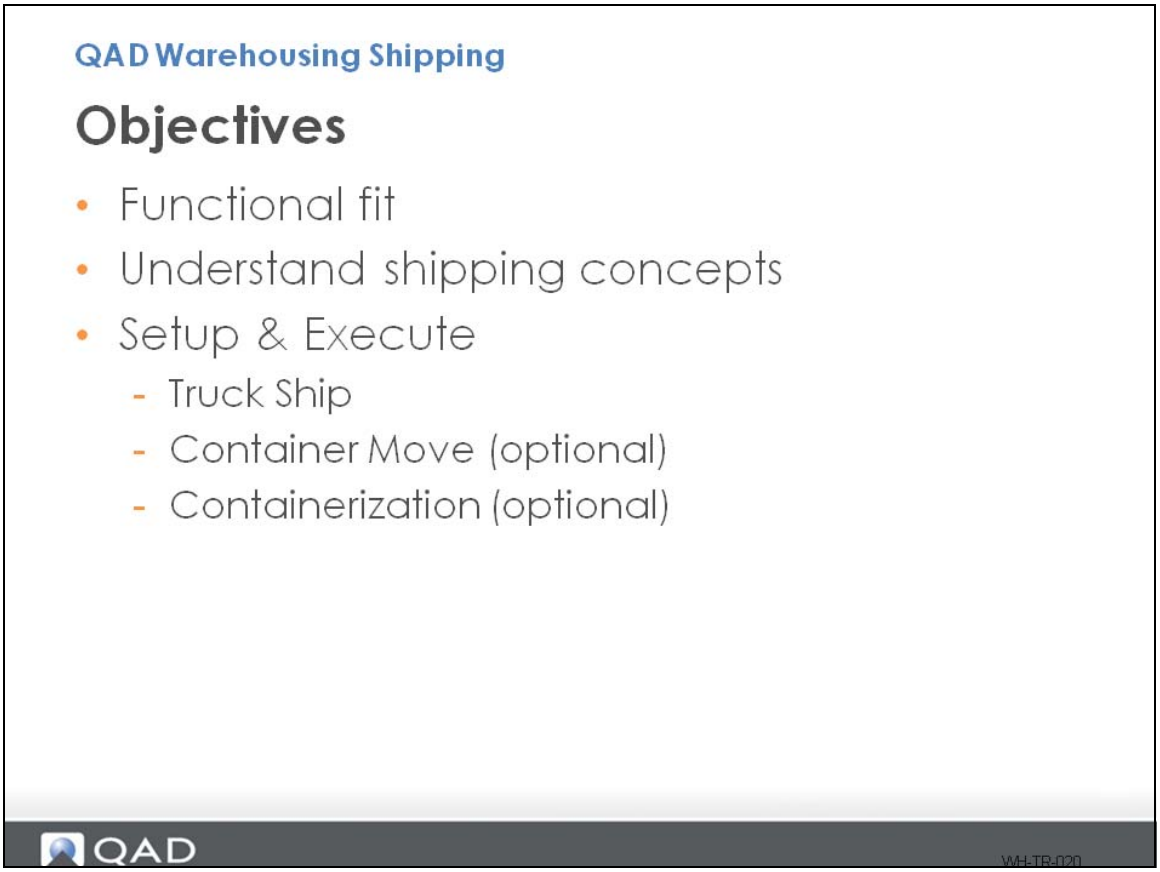
Chapter 5

Shipping

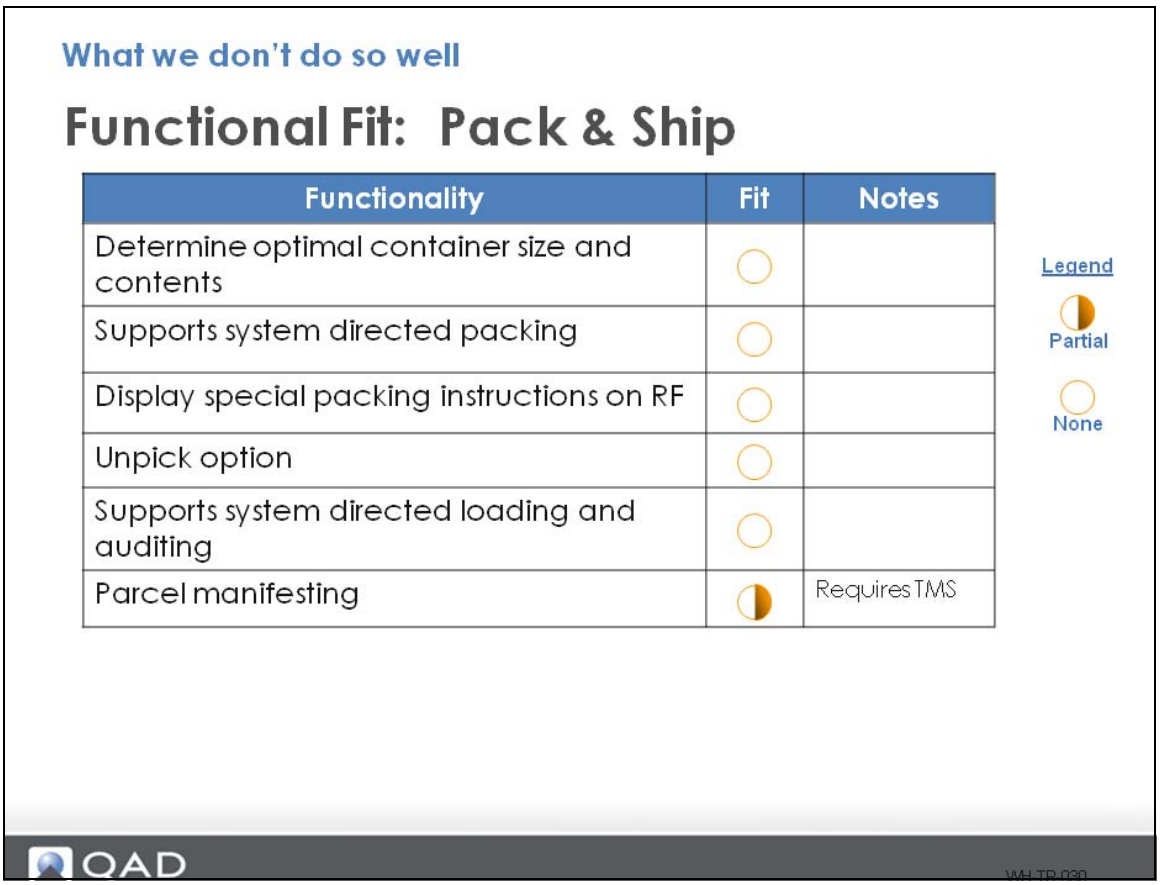
Overview

QAD Warehousing Shipping
QAD Warehousing
WMS Field Readiness Greenbelt
QAD
Our Passion. Your Advantage.

Objectives


QAD Warehousing Shipping
Objectives
• Functional fit
• Understand shipping concepts
• Setup & Execute
- Truck Ship
- Container Move (optional)
- Containerization (optional)
QAD
WH-TR-020

Functional Fit: What We Don't Do So Well

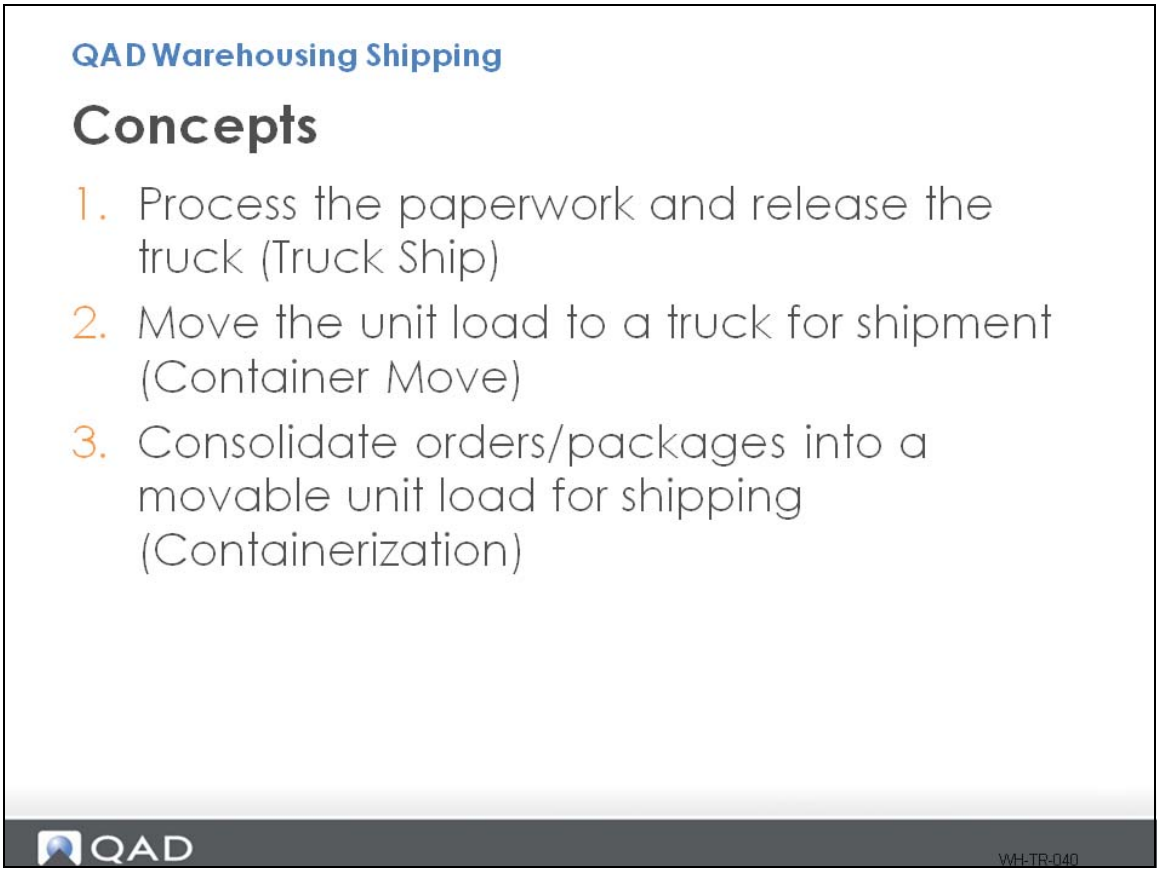


Did You Know

Truck Ship features include:

- Indicate truck shipment
- Create a master bill of lading (MBOL)
- View all shippers loaded on the truck for a given truck location

Concepts



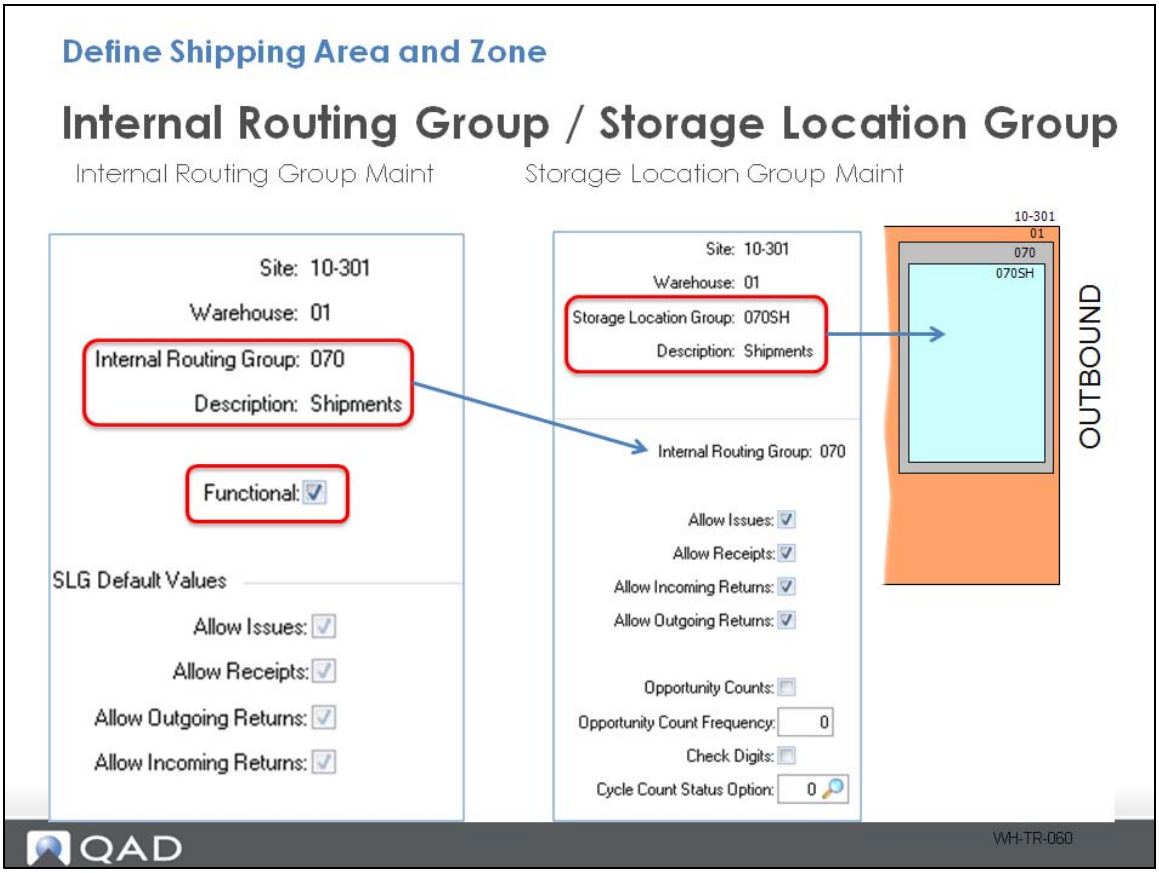
Did You Know

You can print shippers and pre-shippers for distribution orders and sales orders.

Shipping Configuration

The graphic above depicts the programs to use when setting up for and using shipping in QAD Warehousing.

Define Shipping and Zone Area



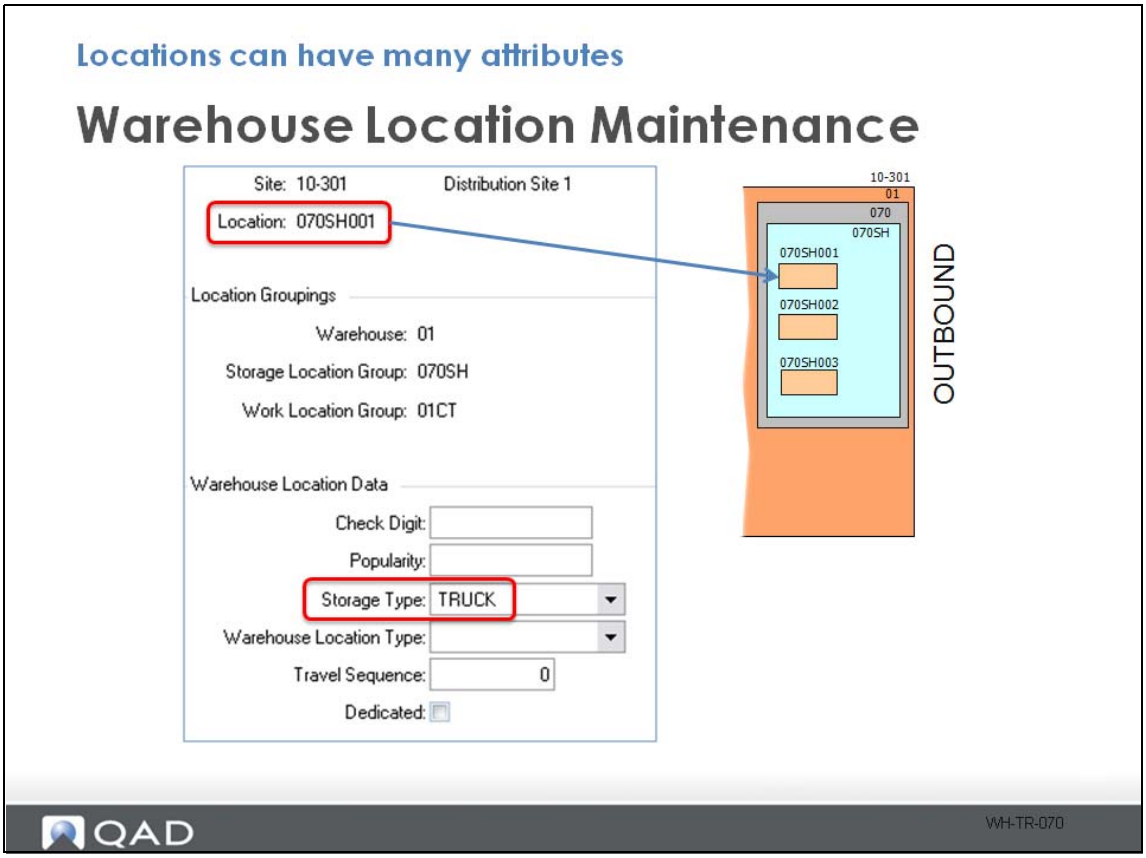
Use Internal Routing Group and Storage Location Group to define shipping areas and zones within the warehouse.

Ensure you have enabled the Functional field, which indicates that the system uses location-find algorithms when selecting the zones and areas when moving goods into them for shipping.

First setup a shipping area and zone using Internal Routing Group Maintenance and Storage Location Group Maintenance respectively. The shipping areas are functional.

In the graphic above, the packaging area was removed from the process flow. Note that, this might be different from the setup in the QMI environment.

Locations Can Have Many Attributes

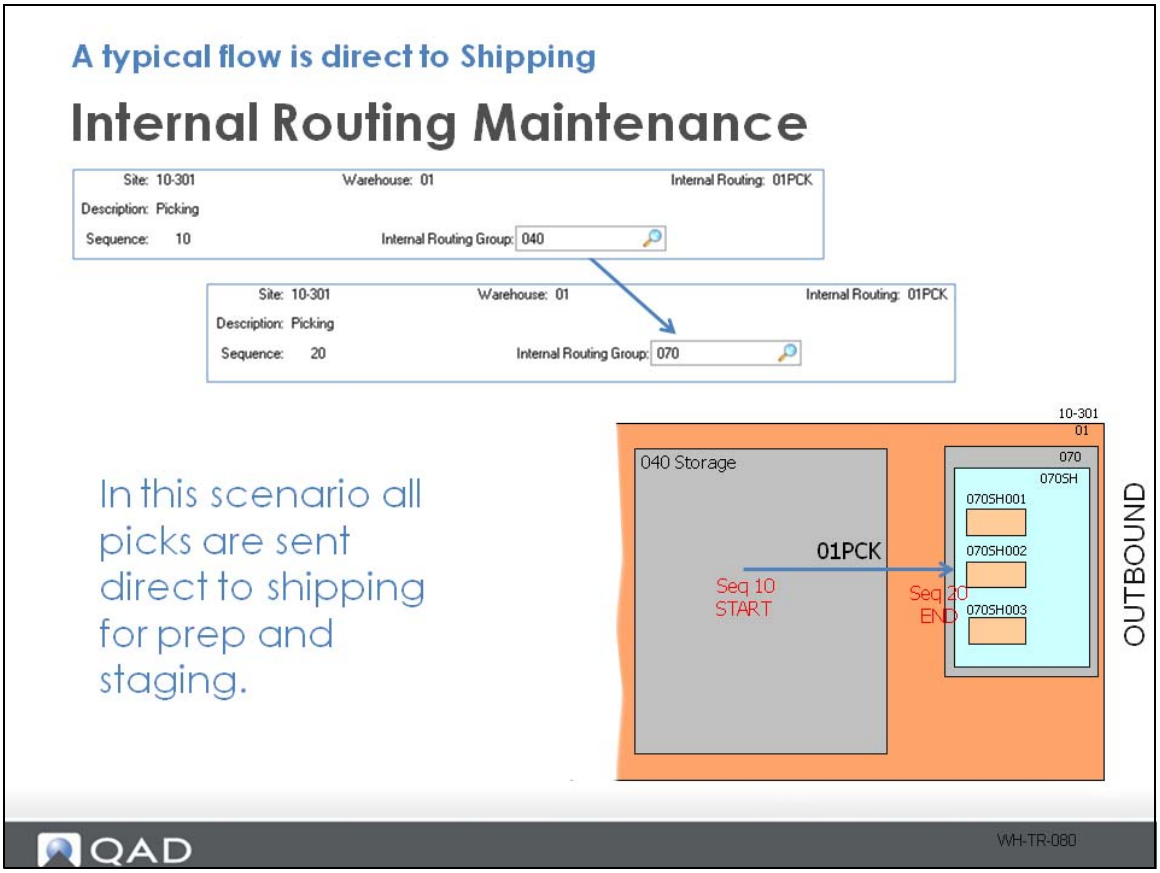


You create at least one location in the ship zone. Assign the Storage Type as Stage.

Assign the location(s) to a Work Location Group.

The Storage Type in QMI data is `Truck`. This is done to facilitate the wave planning process. In the example above, the truck classification is removed from Storage Type.

Typical Flow Direct to Shipping

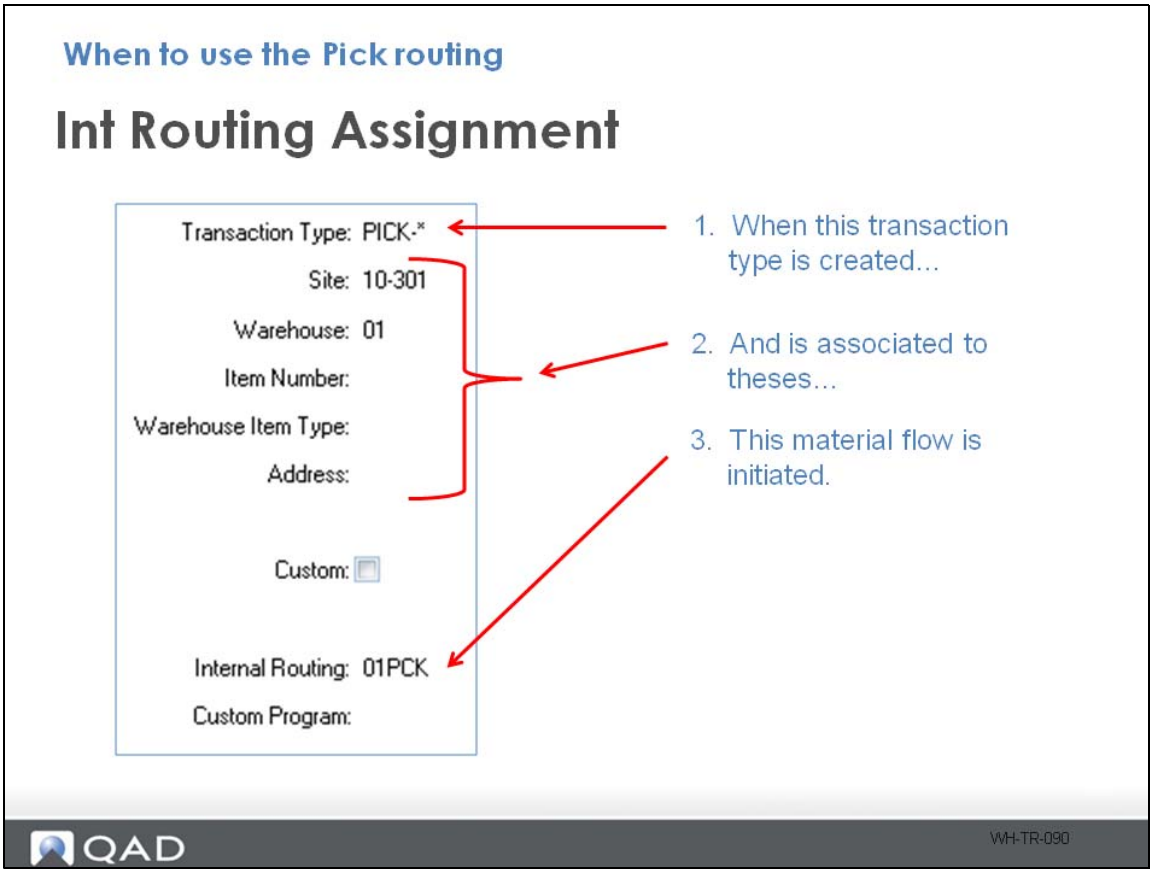


Setup an internal routing to direct picks from the Storage Area 040 to the Shipping area 070.

Note When comparing the setup in the graphic above to the QMI warehouse, 01PCK might route to a packaging area for shipment preparation. For simplicity, the routing was changed to the shipping area by changing Sequence 20 to 070 for Internal Routing 01PCK.

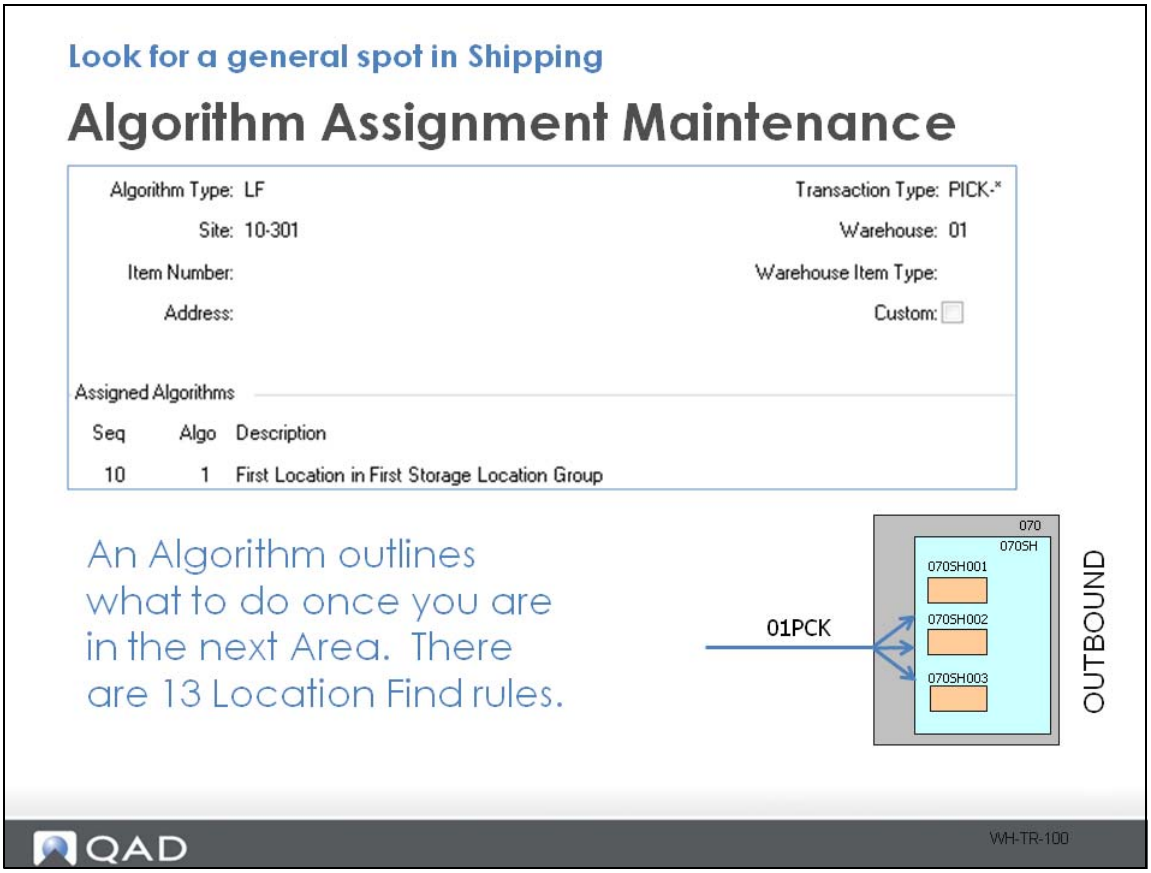
Using this scenario lets you ship a load without the requirement of moving the container/load to a shipping location/lane. This might occur when loading direct to a truck.

When to Use Pick Routing



The routing is assigned to all pick tasks. This was also covered in the Pick session.

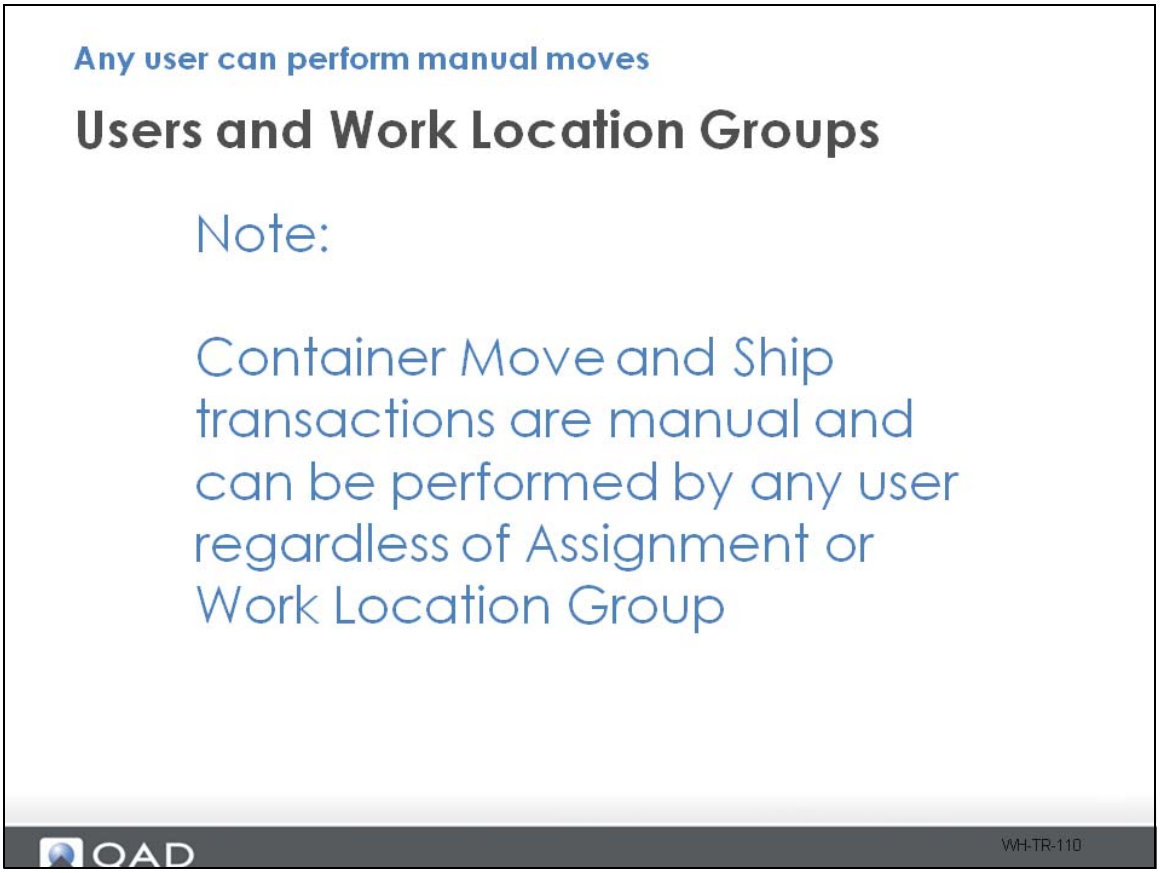
Look for a General Spot in Shipping



Shipping is a functional area so use a generic Location Find (LF) algorithm.

The pick algorithm is also required and was set up earlier. In this example, when any pick task (PICK-*) is created, the system puts the product into the first available location in the defined zone 070SH001, 070SH002, or 070SH003.

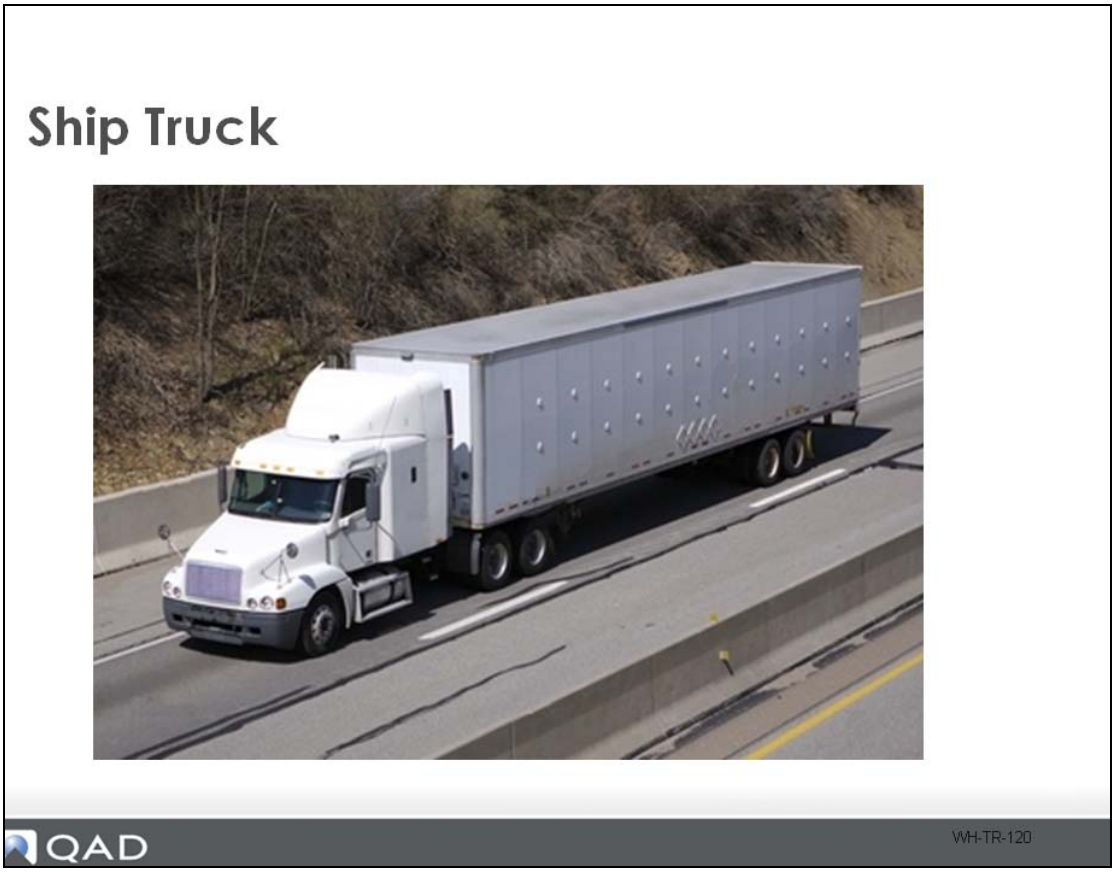
Any User Performs Manual Moves



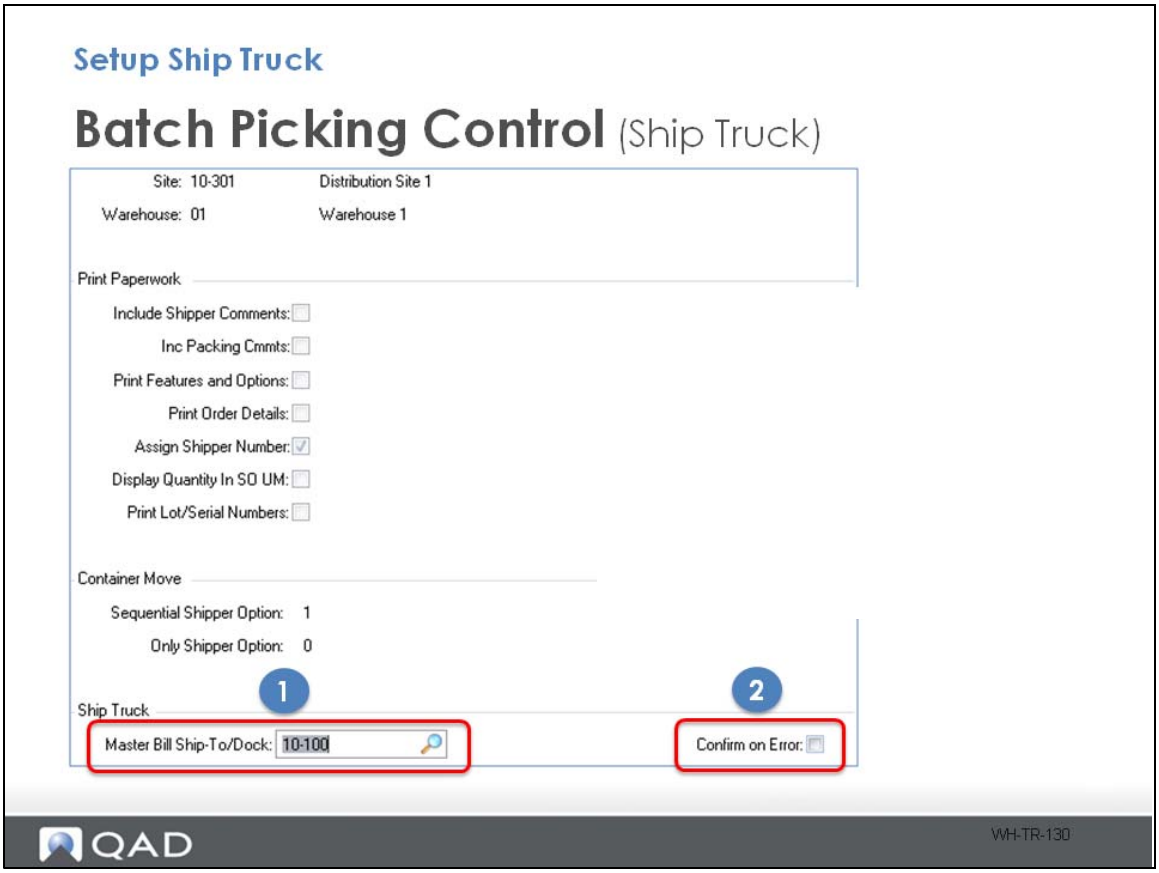
Earlier the ship locations were assigned to Work Location Group 01CT implying UserA, who is assigned to 01CT, would process all moves into and out of shipping locations; however, container move and ship transactions are manual and can be performed by any user regardless of assignment or WLG.

Truck Shipping

Ship Truck



Set Up Ship Truck



When setting up:

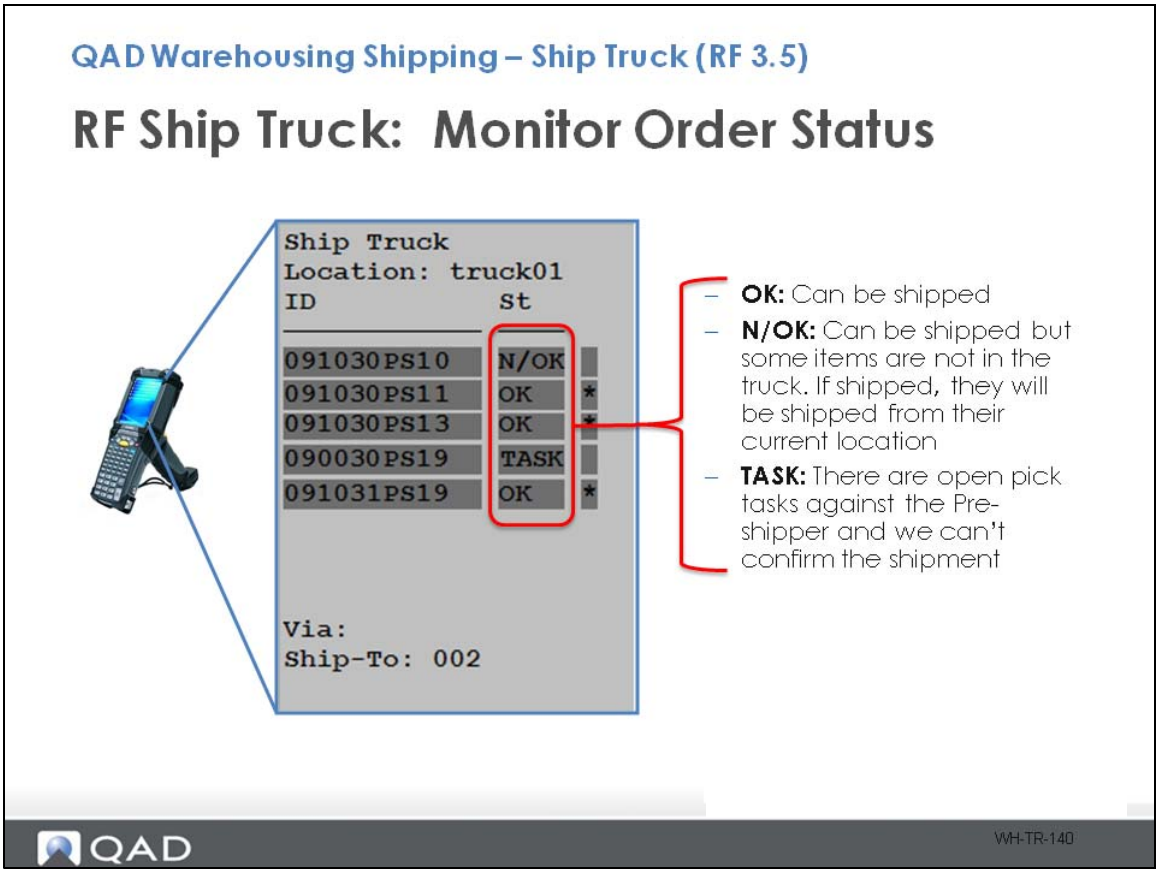
1 Use Ship-to/dock when creating master bills of lading in Master Bill of Lading Maintenance (EE core program). Use MBOL format.

2 Specify whether RF Ship Truck option should confirm shipments when errors are received from a Transportation Management System (TMS).

Did You Know

You can create a master bill of lading (MBOL) from within warehousing to use when truck shipping. You can also confirm shipments on the RF, even when errors are received.

QAD Warehousing Shipping - RF Ship Truck



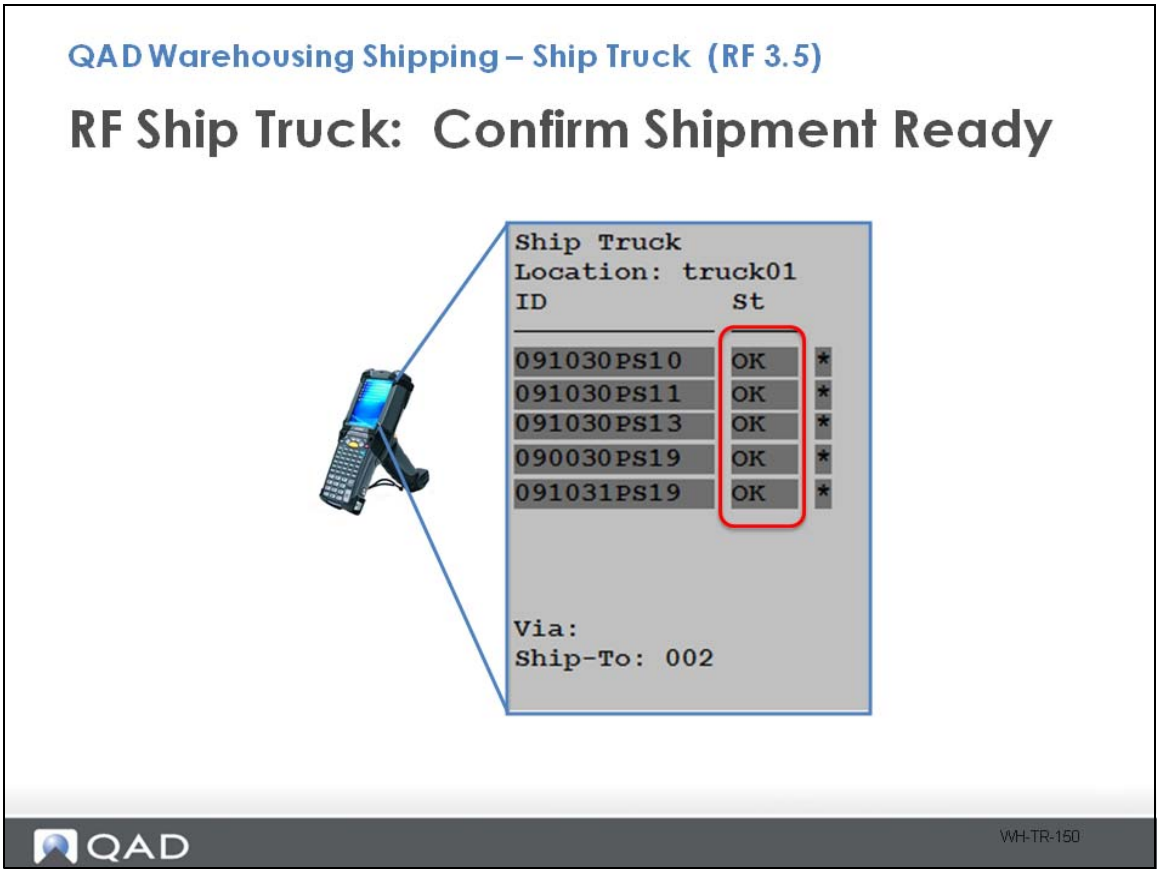
Warehouse staff use the RF Truck Ship (3.5) option to process and confirm truck shipping and to monitor ship status.

The pre-shipper becomes a shipper as soon as staff confirms everything is on the truck.

Did You Know

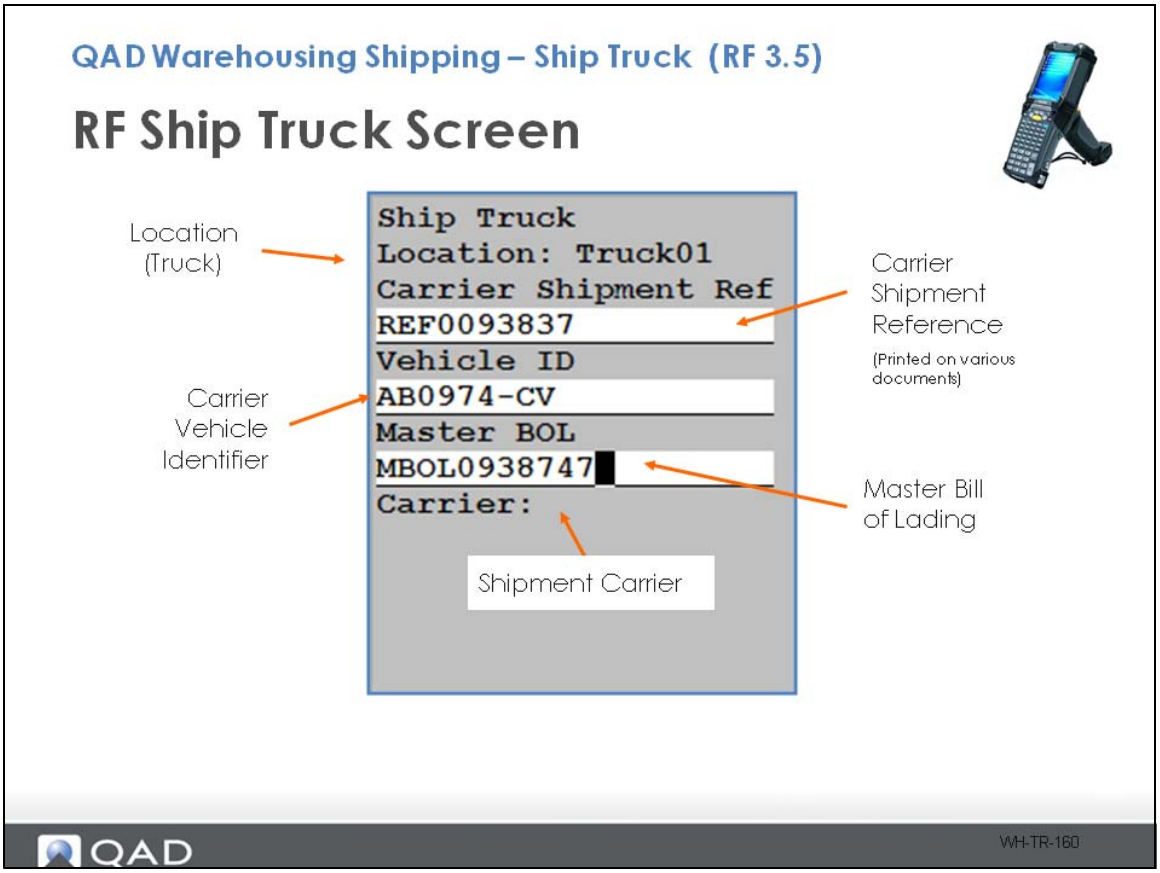
The user must be assigned to the ship zone work location group before loading begins.

QAD Warehousing Shipping - RF Ship Truck (Continued)



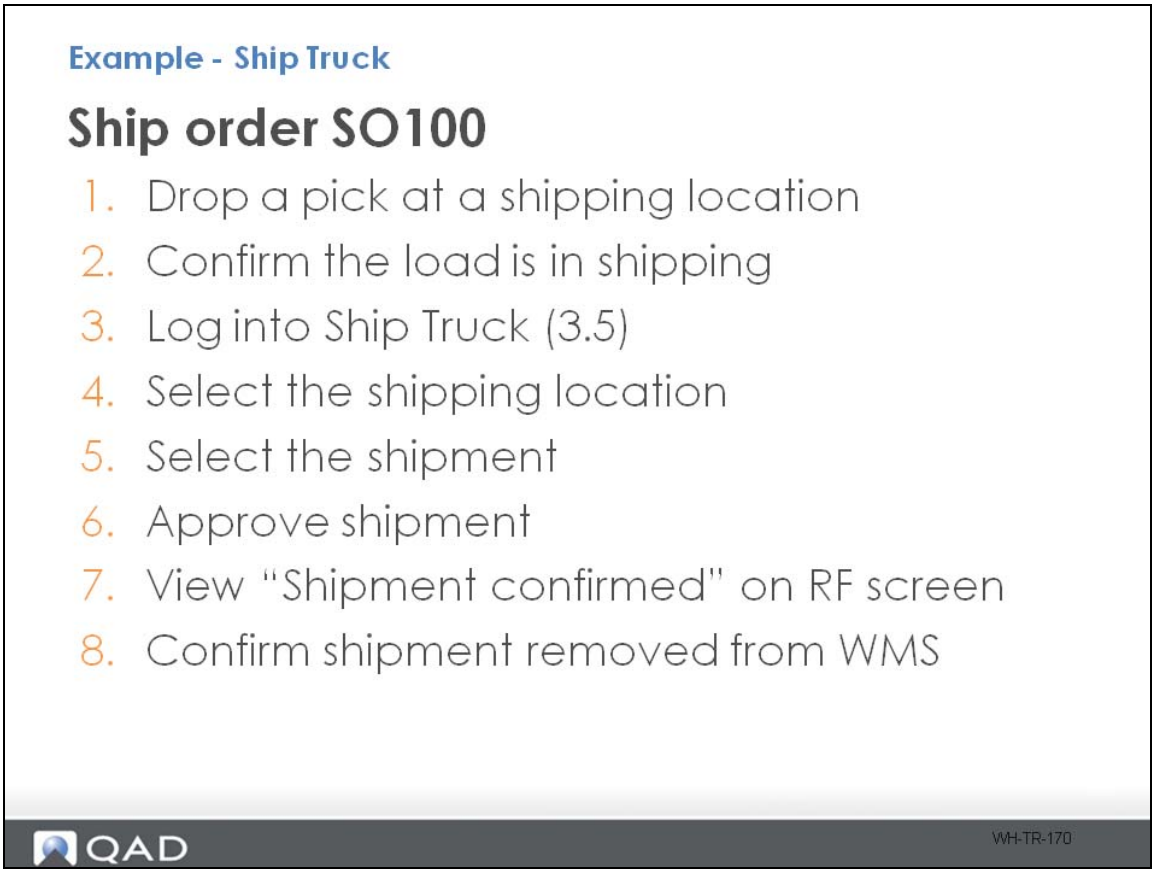
With RF Ship Truck you can view all shippers loaded on the truck for a given truck location.

QAD Warehousing Shipping - RF Ship Truck (Continued)



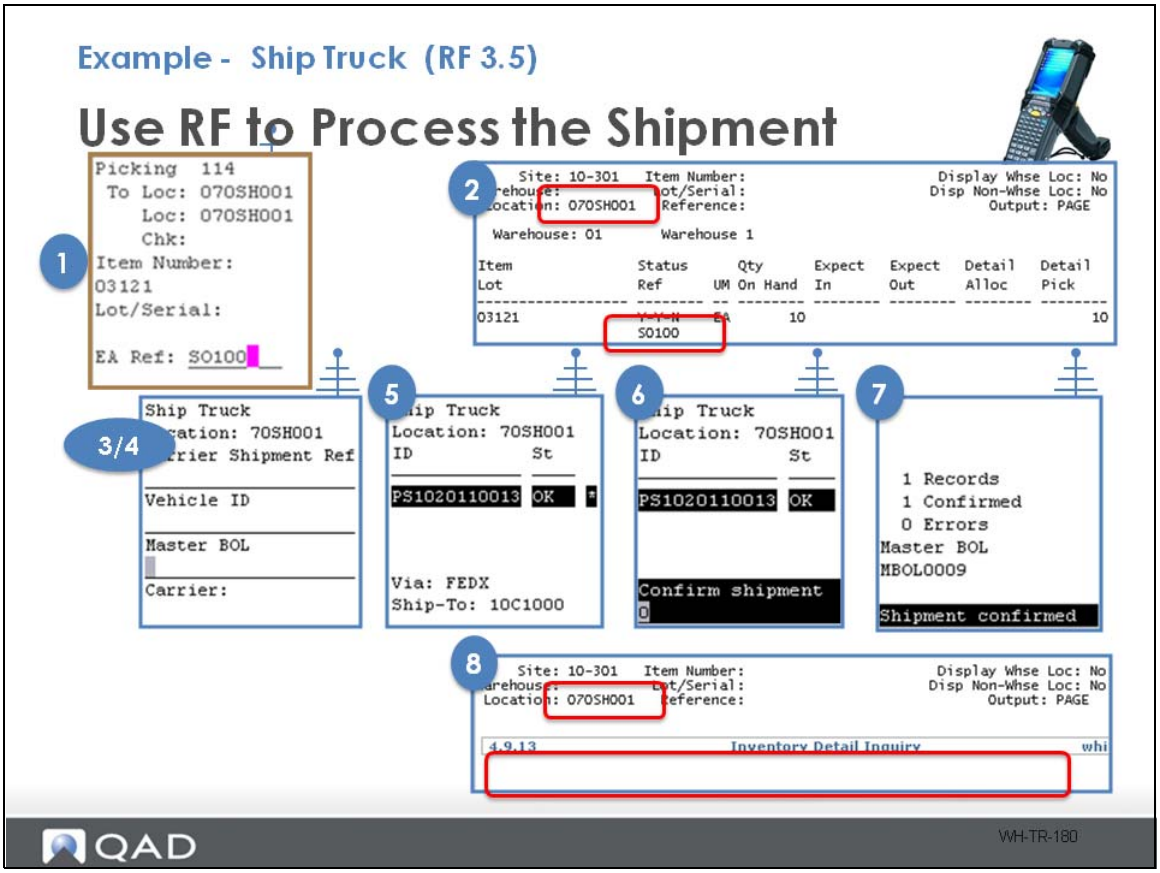
RF Ship Truck allows the user to track ship ready status and select specific shippers to include.

Example - Ship Truck



This example walks you through the shipping of order SO100. The steps shown in the graphic above depict the major steps involved in the Ship Truck process.

Example - Ship Truck (RF 3.5)



On the RF, an asterisk next to the shipper indicates open tasks exist. Tasks include:

1 Drop a pick at a shipping location.

2 Confirm the load is in shipping.

3 Log into Ship Truck (3.5).

4 Select the shipping location.

5 Select the shipment.

6 Approve the shipment.

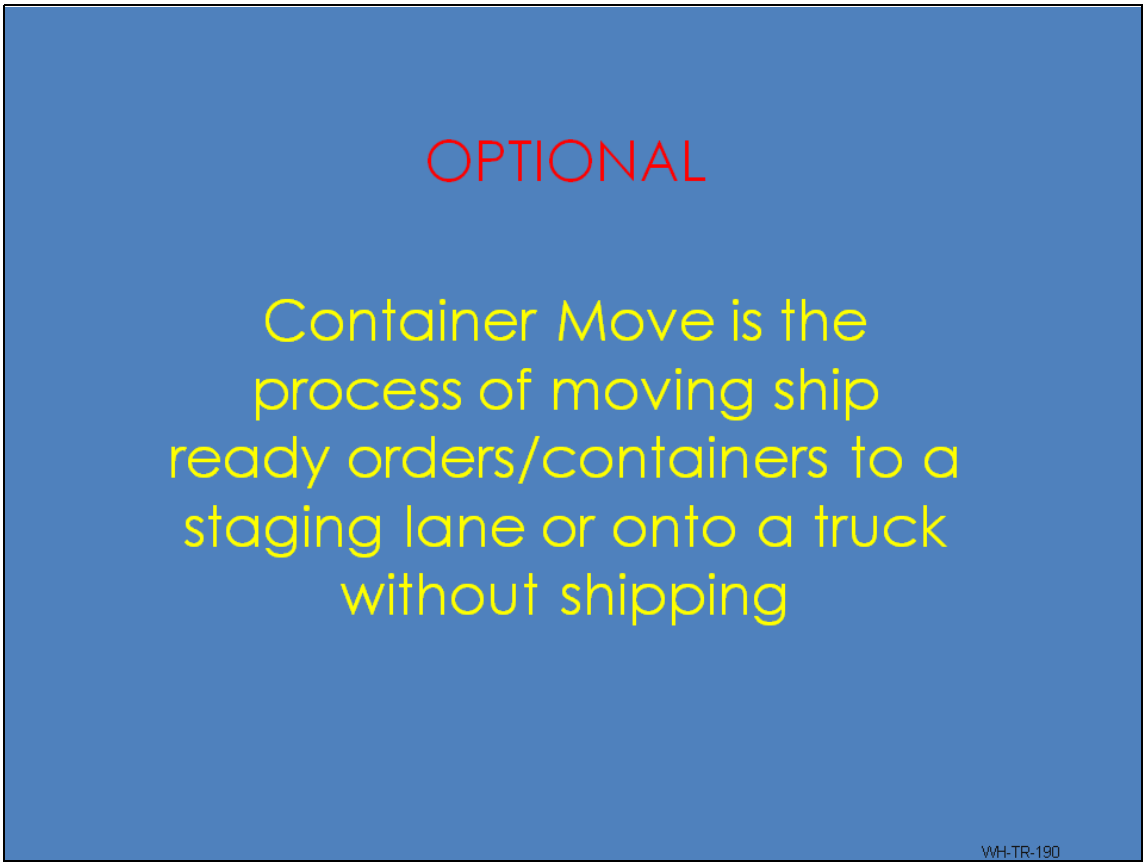
7 View Shipment Confirmed on RF screen.

8 Confirm the shipment removed from QAD Warehousing.

When specifying the carrier when confirming, the RF validates that all shippers being confirmed belong to a service of the carrier.

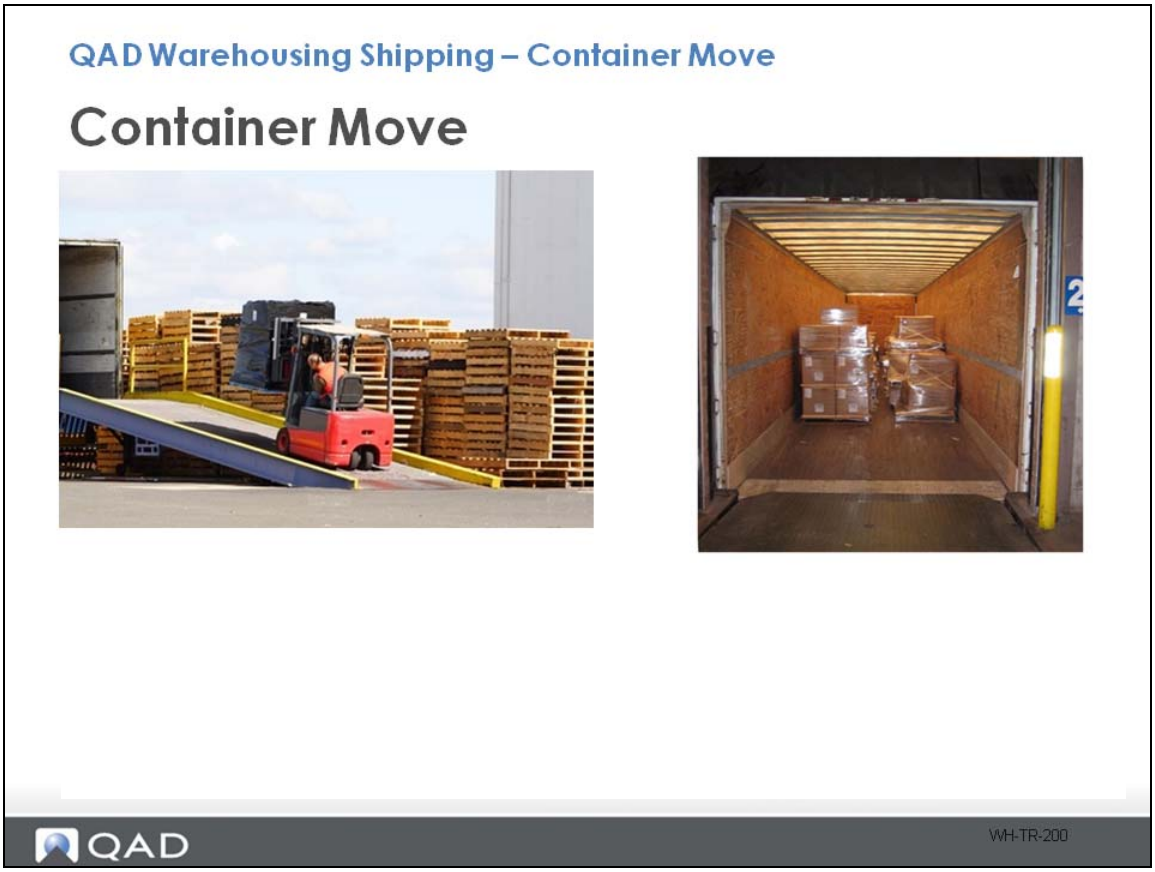
The system may send an process end of day (PEOD) message to the TMS prior to confirming the shipper issue inventory transactions.

Optional - Container Move



QAD Warehousing users are provided optional container move functions when shipping. Refer to User Guide: QAD Warehousing for information on container move functions.

Container Move



Container Move is helpful if you are staging containers or individual orders before shipment or if you plan to use trucks for temporary storage.

Note the following about Container Move:

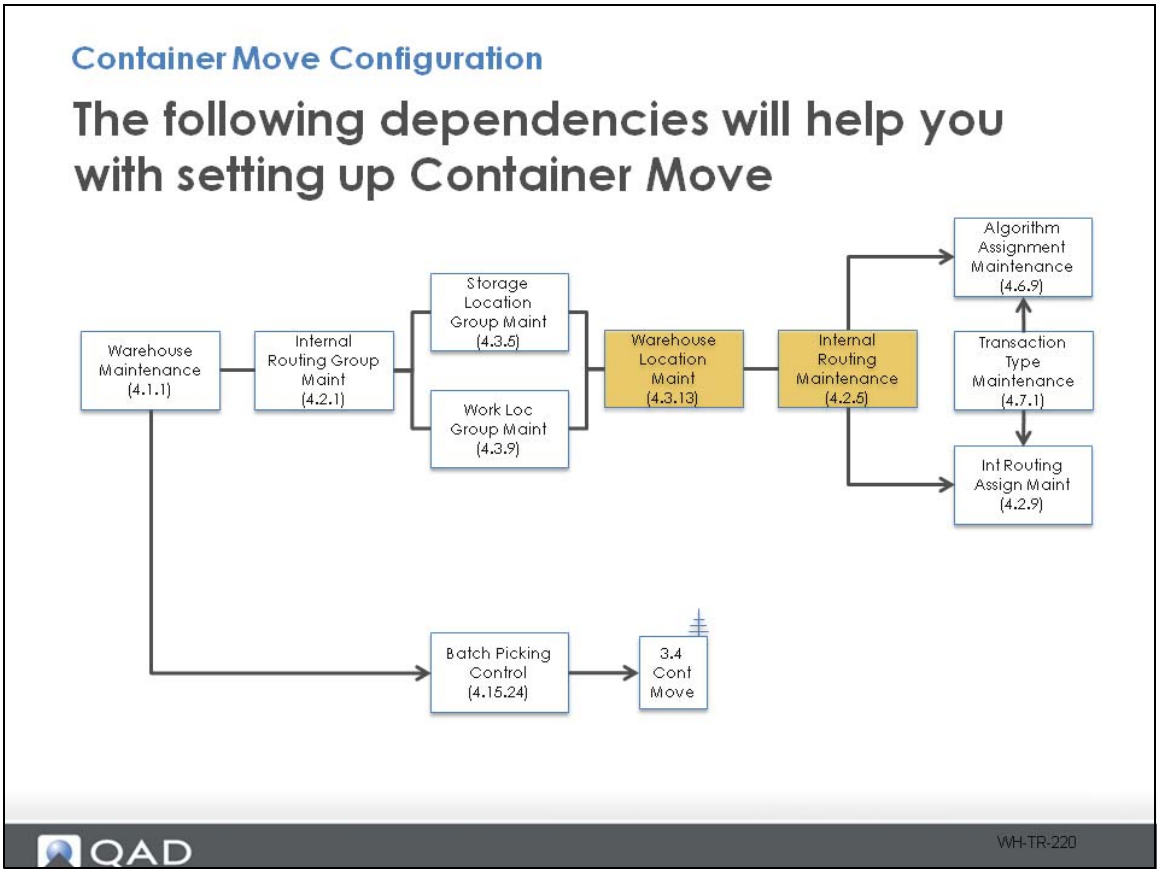
- Container Moves is not available in QAD Core.
- Items are moved to a truck but still require shipping from QAD.
- Can ship the pre-shipper without loading the truck.

Did You Know

With container move functionality you can:

- Move any pallet with detail allocation and containerization to a truck.
- Validate steps when moving containers.
- Report on the position of each pallet in the truck.
- Load pallets in reverse dropping order.

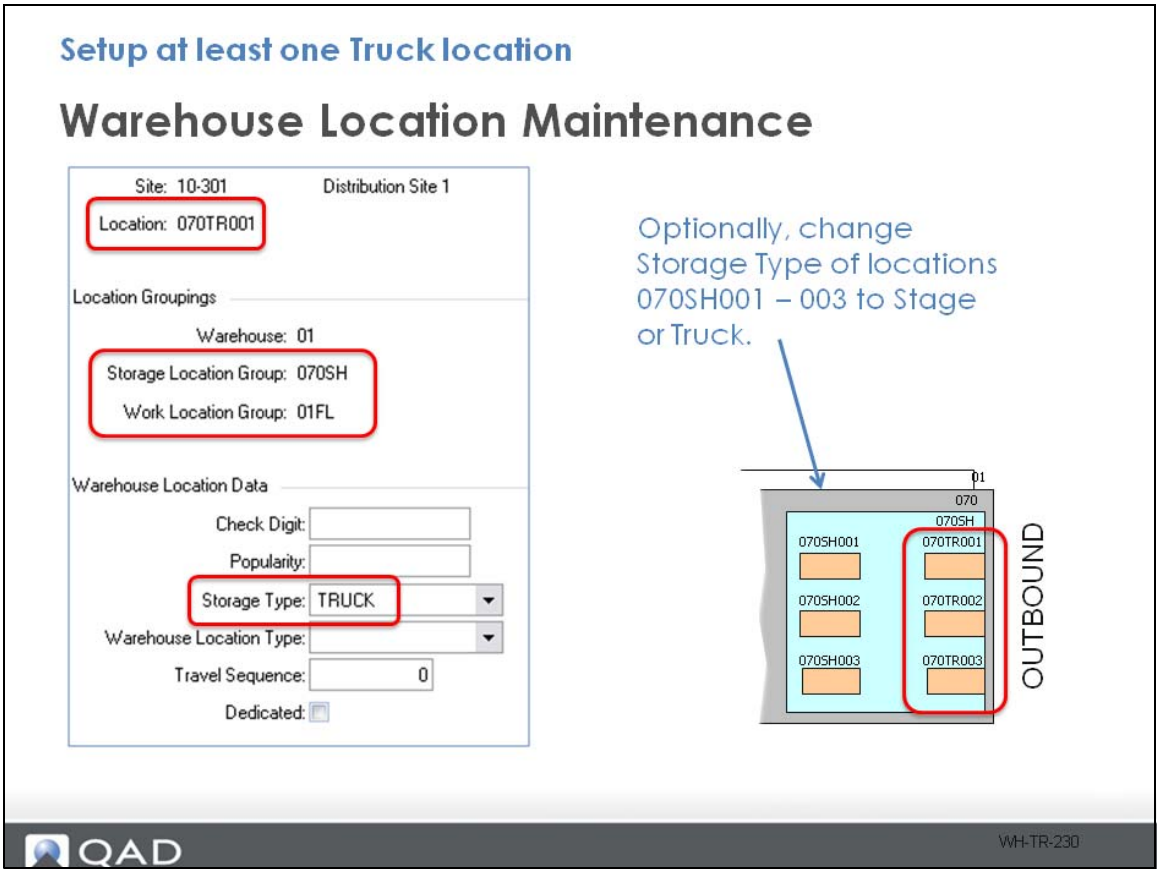
Container Move Configuration



If shipping is already configured, setting up Container Move requires minor changes to Warehouse Location Maintenance and Internal Routing Maintenance.

The highlighted boxes in the graphic above show primary menus to change for this example.

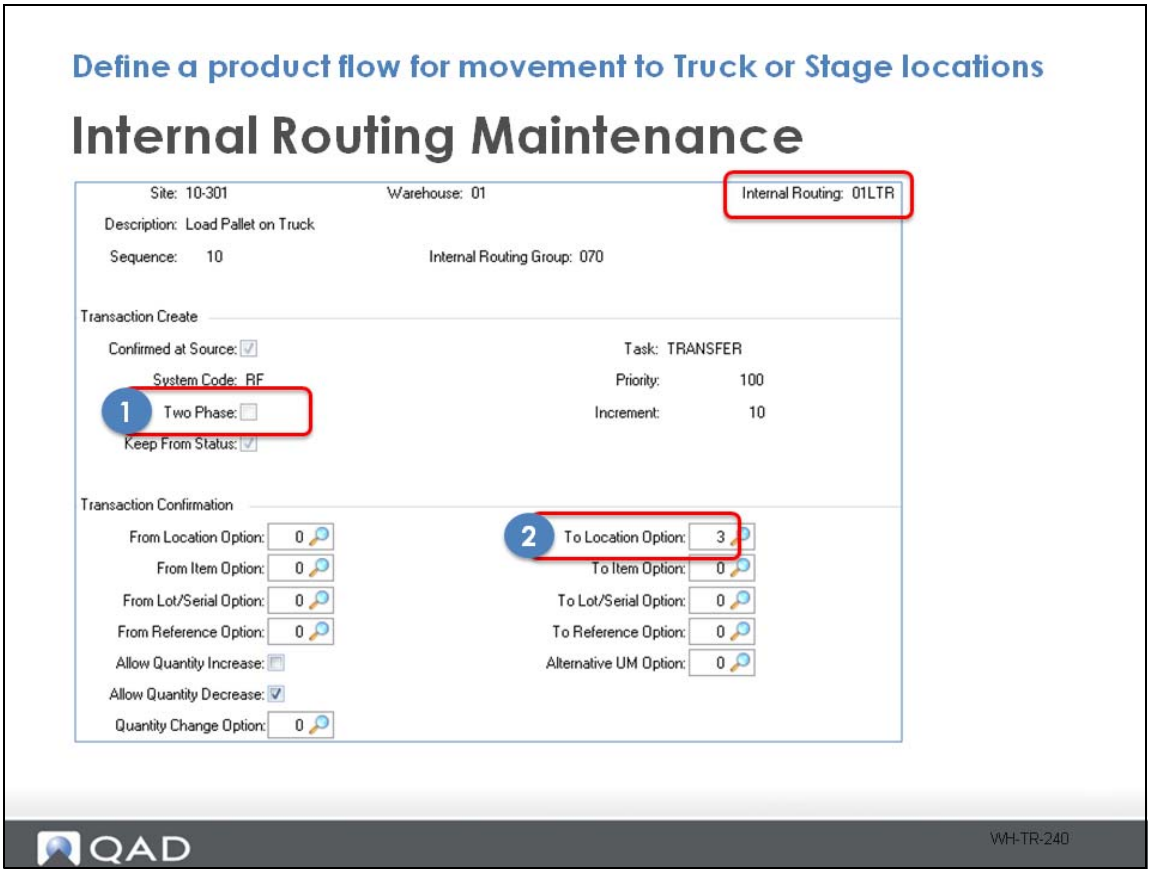
Set Up at Least One Truck Location



Setting up three new locations (one for each dock door) lets you move ship ready containers or orders to a dock prior to loading onto a truck. Or the new locations can represent physical trucks allowing the containers or orders to be loaded direct to the truck

Optionally, changing the Storage Type to Stage or Truck of the current shipping locations lets you move containers or orders to other shipping locations.

Define a Product Flow to Move to Truck Locations

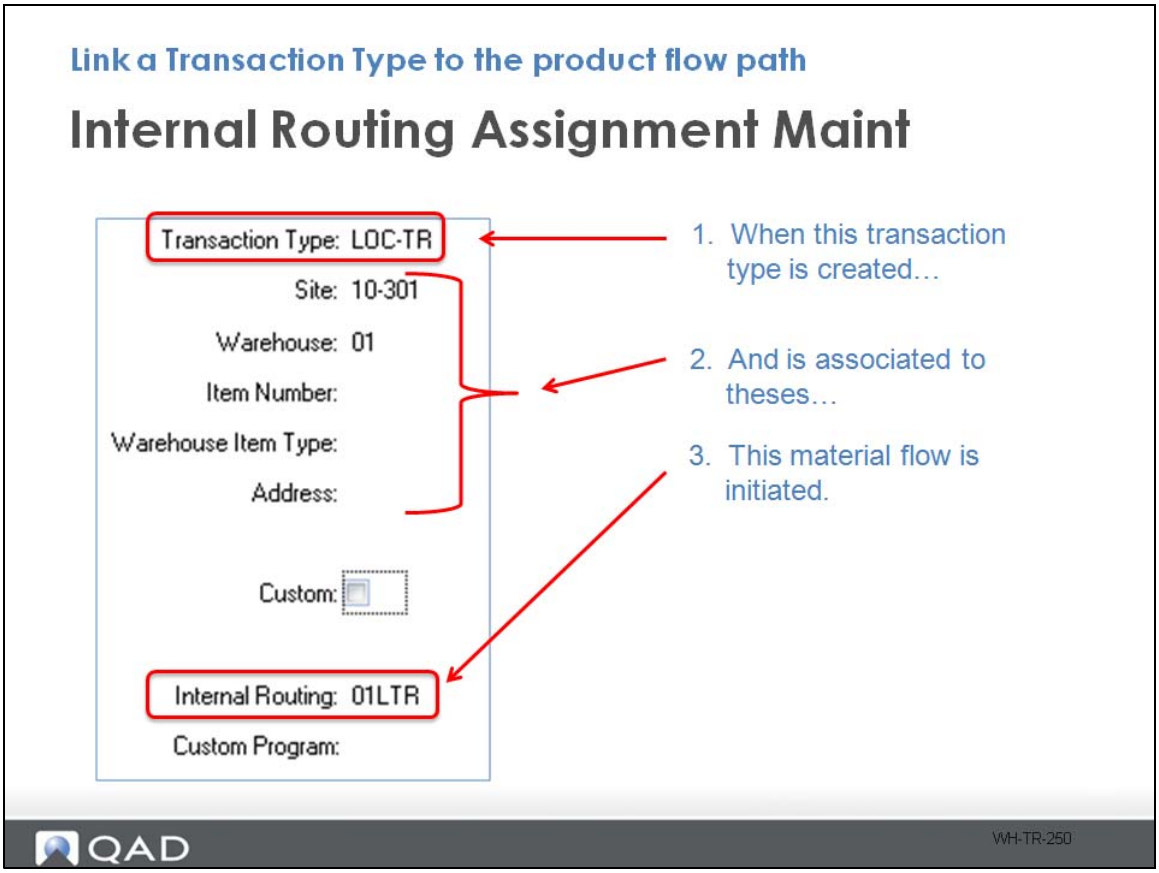


Use Internal Routing Maintenance to define product the flow to a truck location:

1 This is a one-phase movement staying within the shipping area, so do not enable the Two Phase field.

2 Setting the To Location Option to 3 lets you change drop locations within the shipping zone.

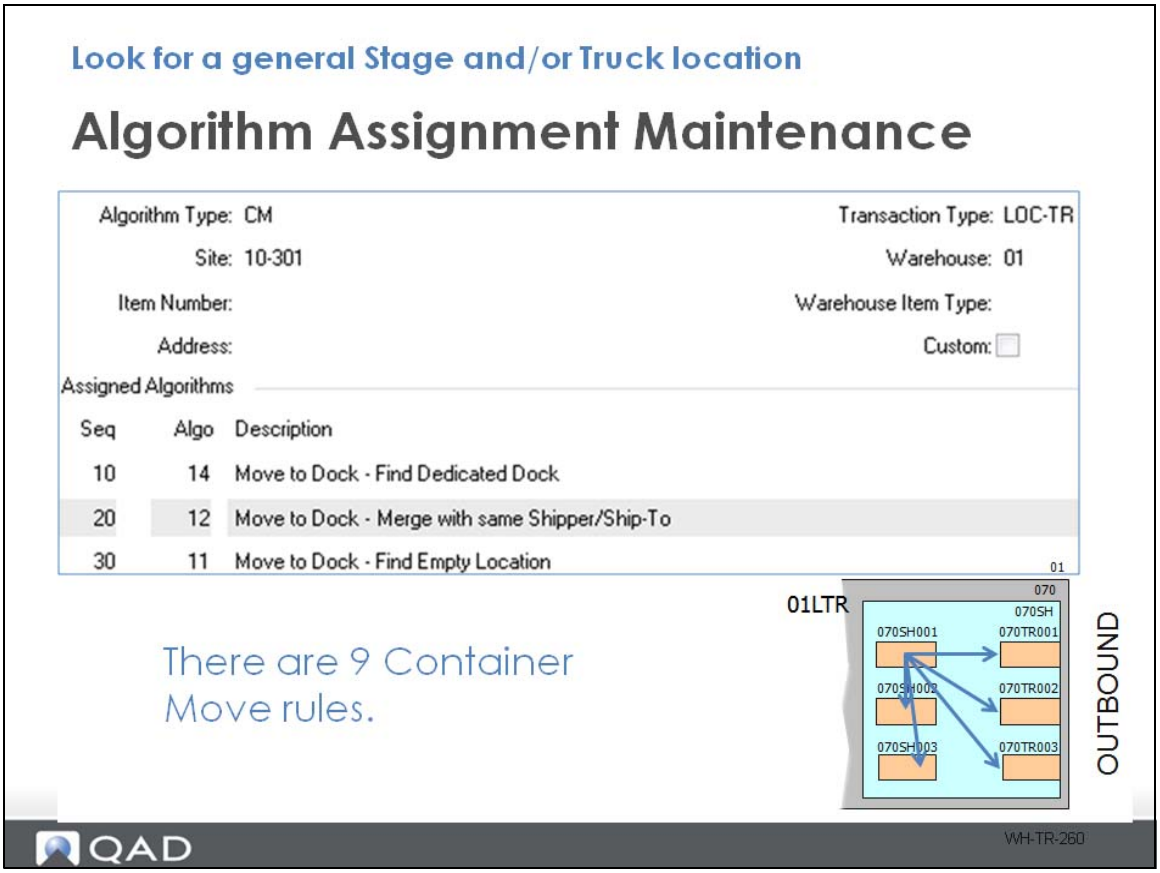
Link a Transaction Path to the Product Flow Type



Use Internal Routing Assignment Maintenance to link a transaction type to the product flow type.

Assign the new Internal Routing to Transaction Type LOC-TR, which is triggered from Container Move on the RF.

Look for a General Stage/Truck Location



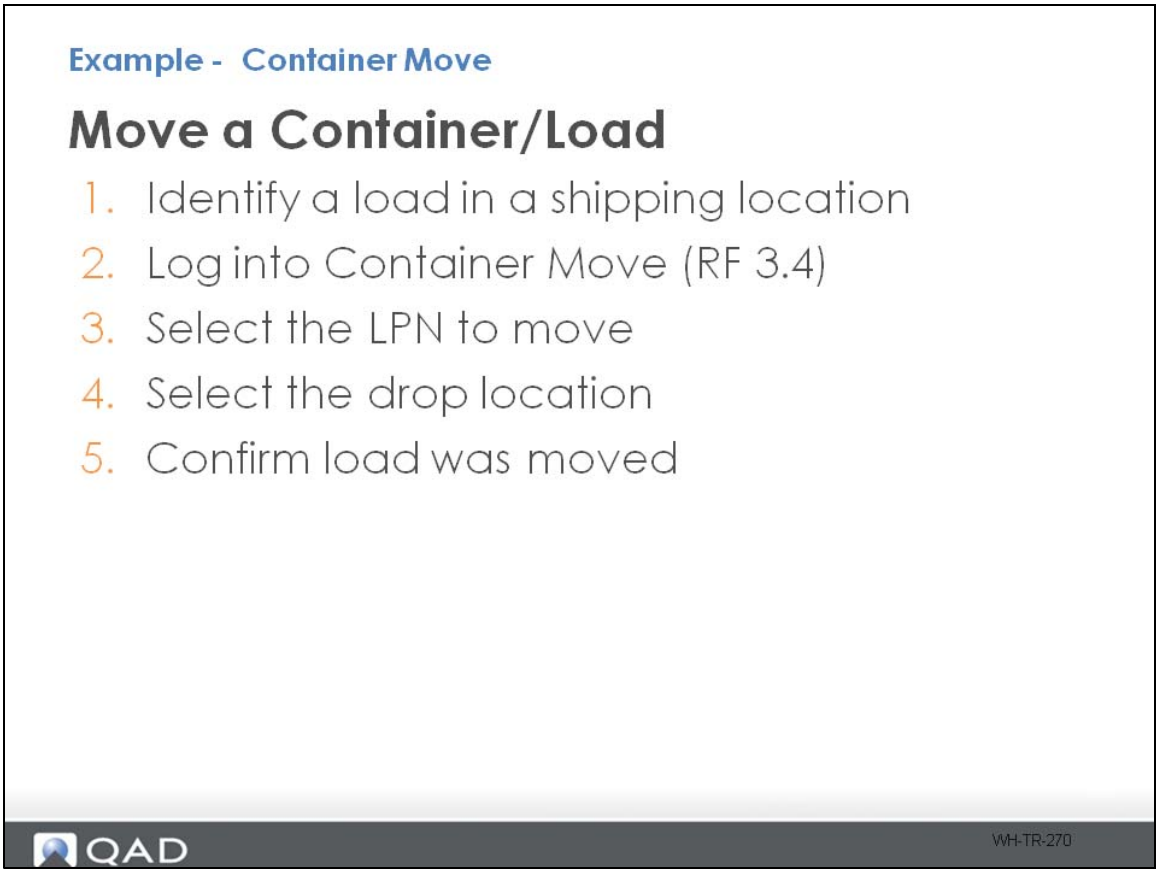
Finally, assign an algorithm sequence to Transaction Type LOC-TR. Use Algorithm Type CM for selecting a Truck or Stage location in the shipping area.

The Move to Dock algorithms look for a location with Storage Type set to Truck; however, you can override the system and move product to locations 070SH002 or 003, even if they are assigned Storage Type as Stage.

Why? You set the To Location Option field in Internal Routing Maintenance to 3.

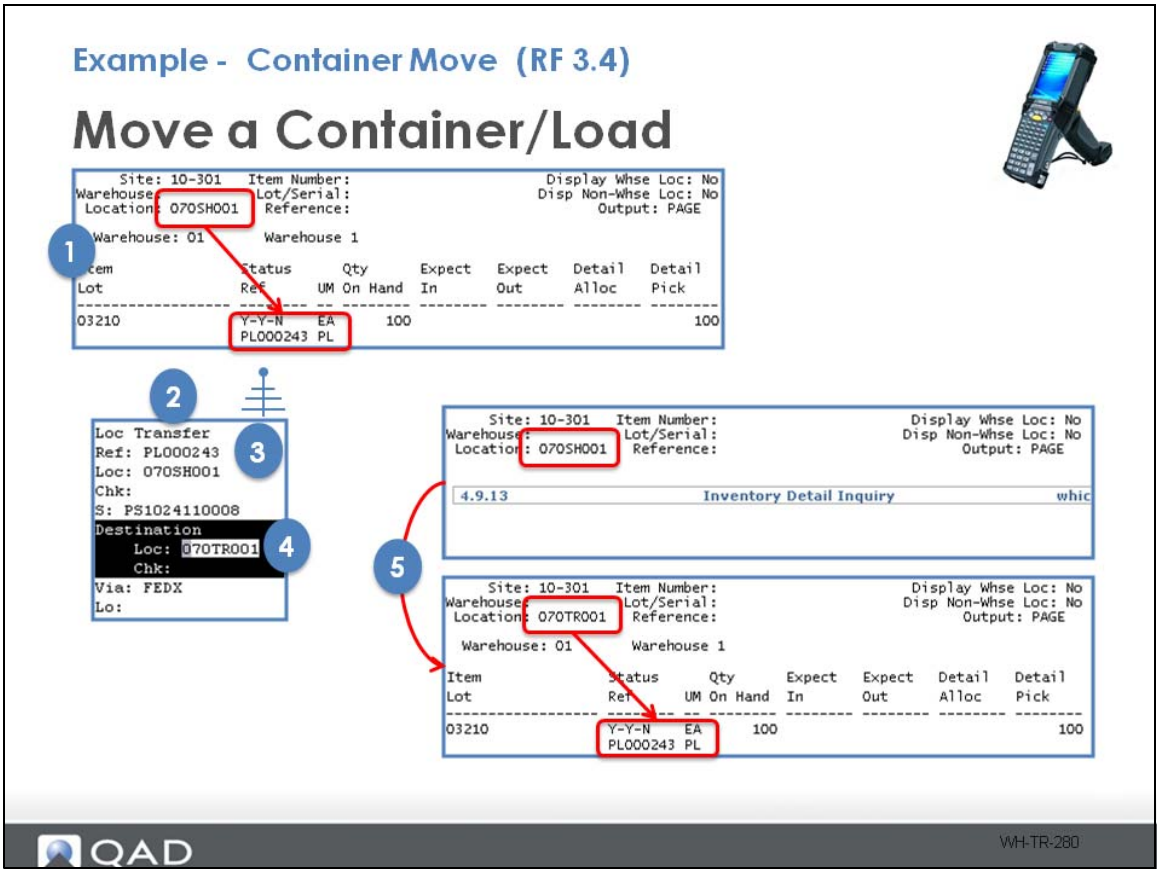
The box at the bottom of the graphic above shows the various locations where staff can move goods once they are ready for shipment.

Example - Container Move



The steps shown in the graphic above depict the major processing steps when using the optional container move function.

Example - Container Move (RF 3.4)



Moving a container or load might be helpful to indicate an packing or consolidation of an order is complete and it is ready for shipment. You can do this by setting up locations and assigning a Storage Type as Stage or Truck. These Storage Types are used as selection criteria with a Container Move Algorithm.

When using Container Move (RF option 3.4), the system promotes a drop location but you can select an alternative.

Steps include;

1 Identify a load in a shipping location (identify the shipper).

2 Log into Container Move (RF 3.4).

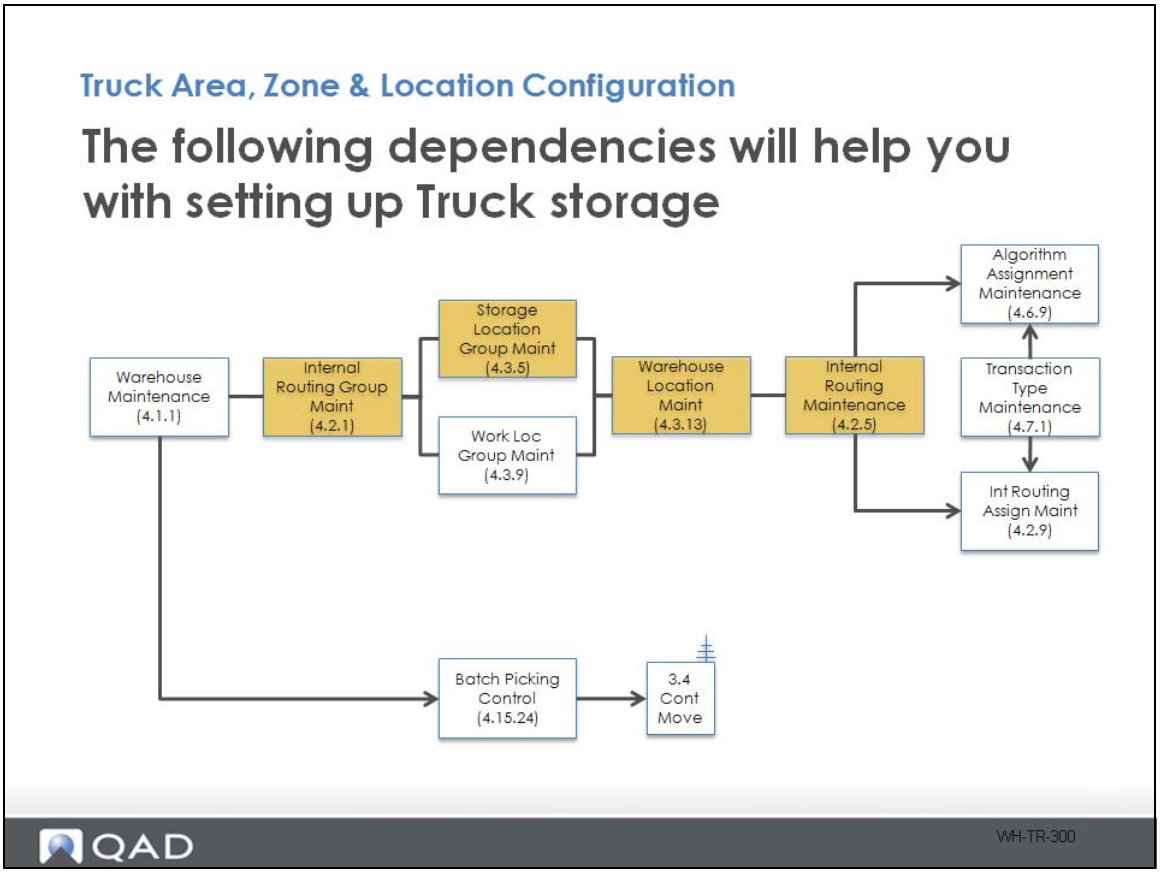
3 Select the LPN to move.

4 Select the drop location.

5 Confirm load was moved.

Optional - Trucks as Temporary Storage

Truck Area, Zone, and Location Configuration

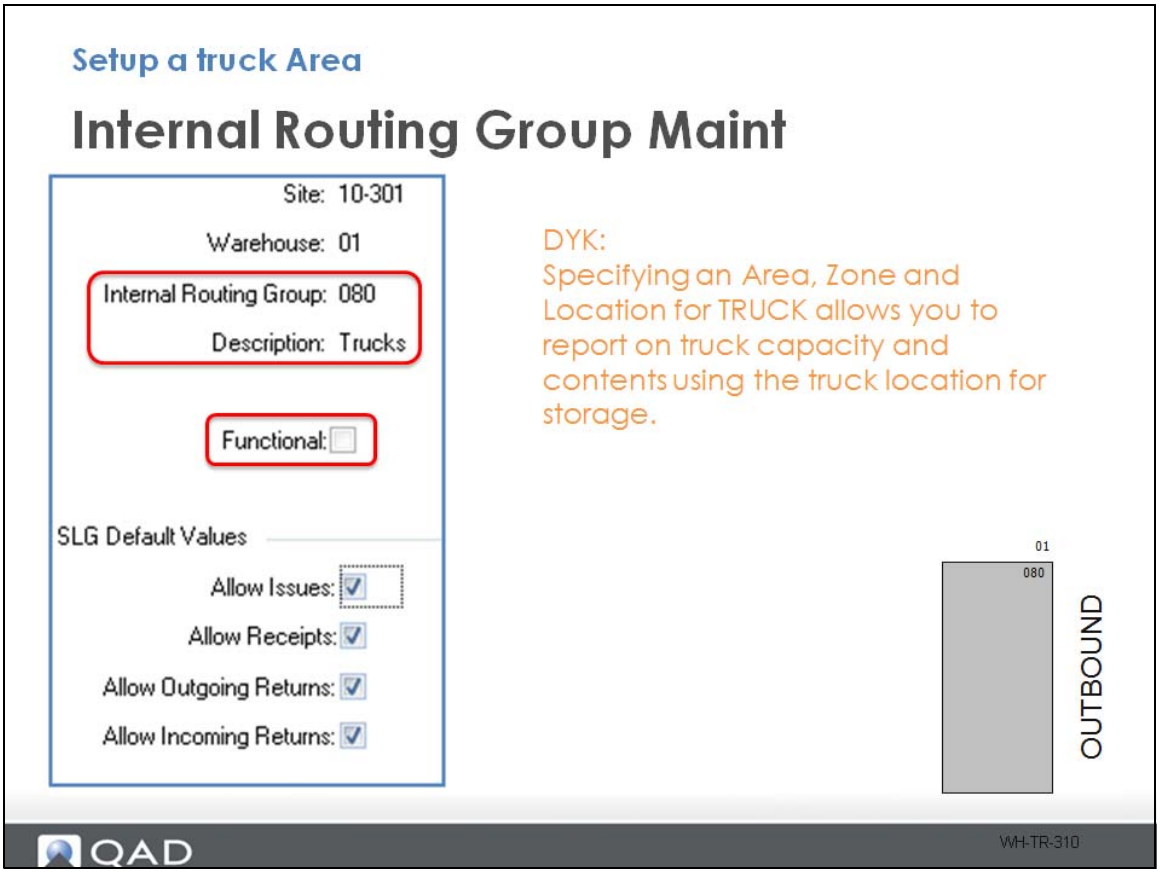


If shipping is already configured, setting up Container Move with a separate Truck zone requires changes to:

- Internal Routing Group Maintenance
- Storage Location group Maintenance
- Warehouse Location Maintenance
- Internal Routing Maintenance.

The boxes highlighted in the graphic above indicate programs you manipulate for this container move configuration.

Set Up a Truck Area



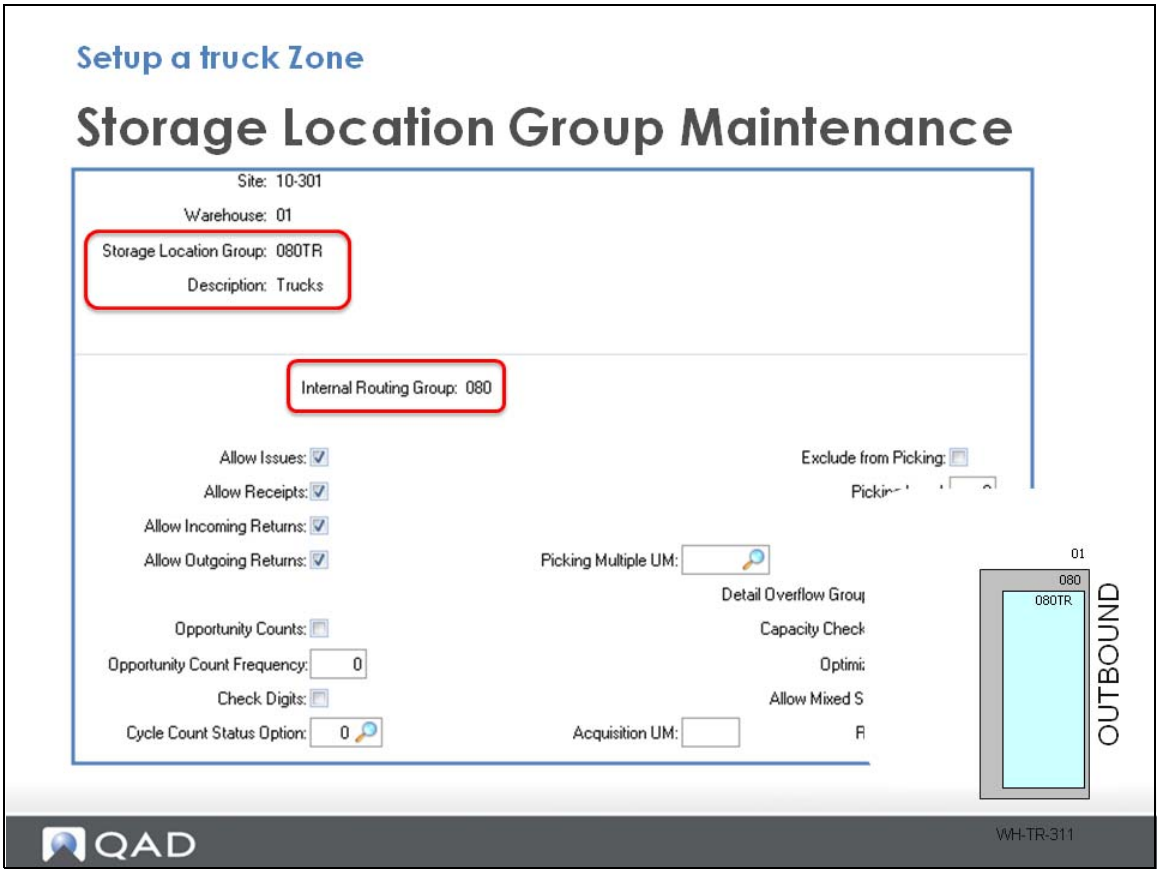
The Location Full % Report extracts information from non-functional locations only.

In the previous example, the Truck locations were in the shipping area and zone. Given the shipping area is functional, you need to create another trucks area to be able to report on truck locations capacity. If detailed truck location capacity reporting is not relevant, keep the truck locations in the shipping area.

Did You Know

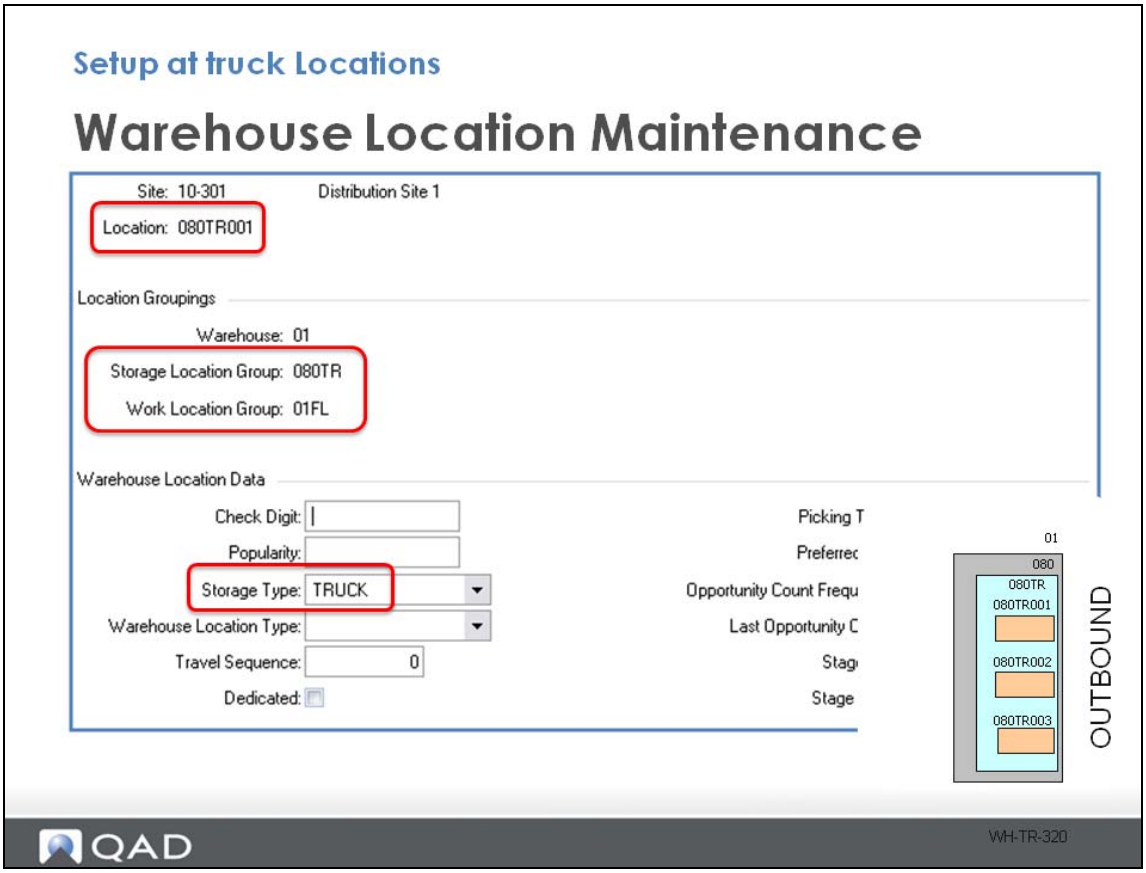
Specifying an area, zone and location for `truck` allows you to report on truck capacity and contents using the truck location for storage.

Set Up a Truck Zone



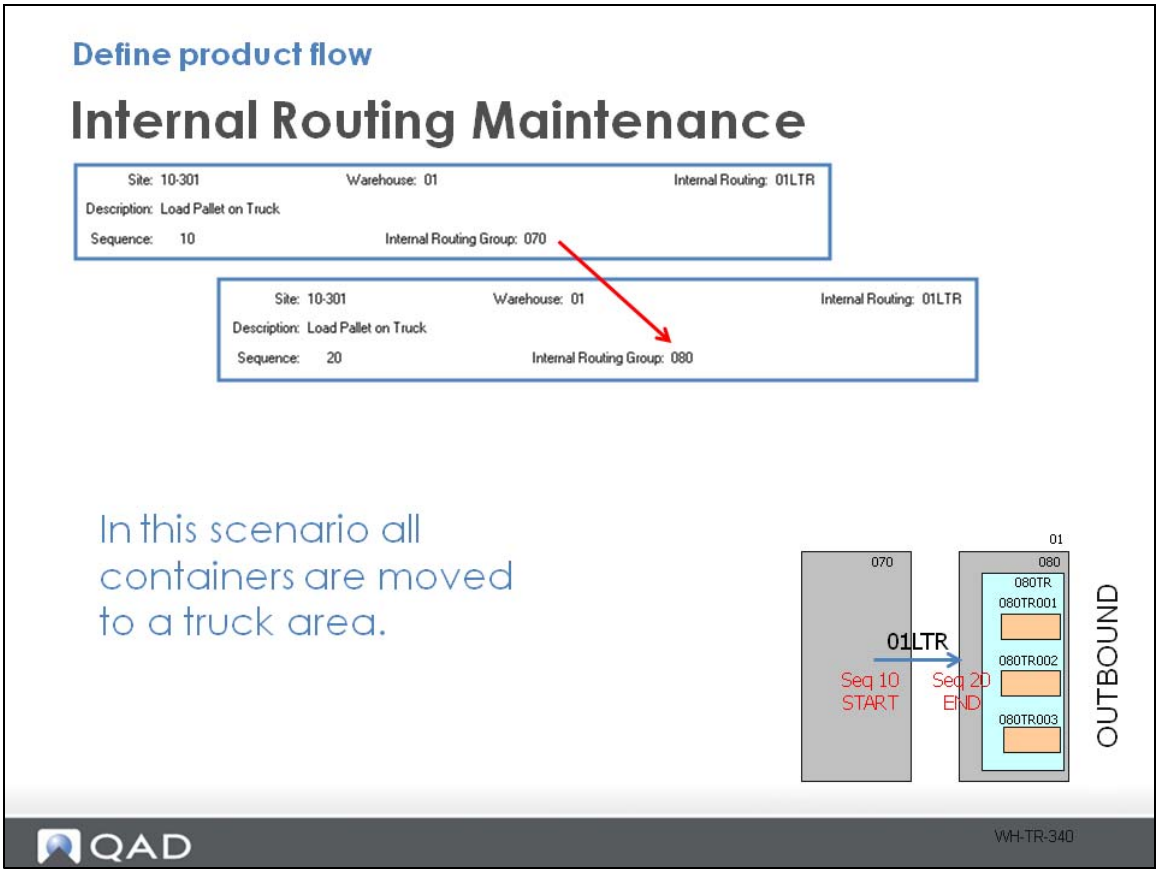
Setting up a new Trucks area requires least one Trucks zone.

Set Up at Truck Locations



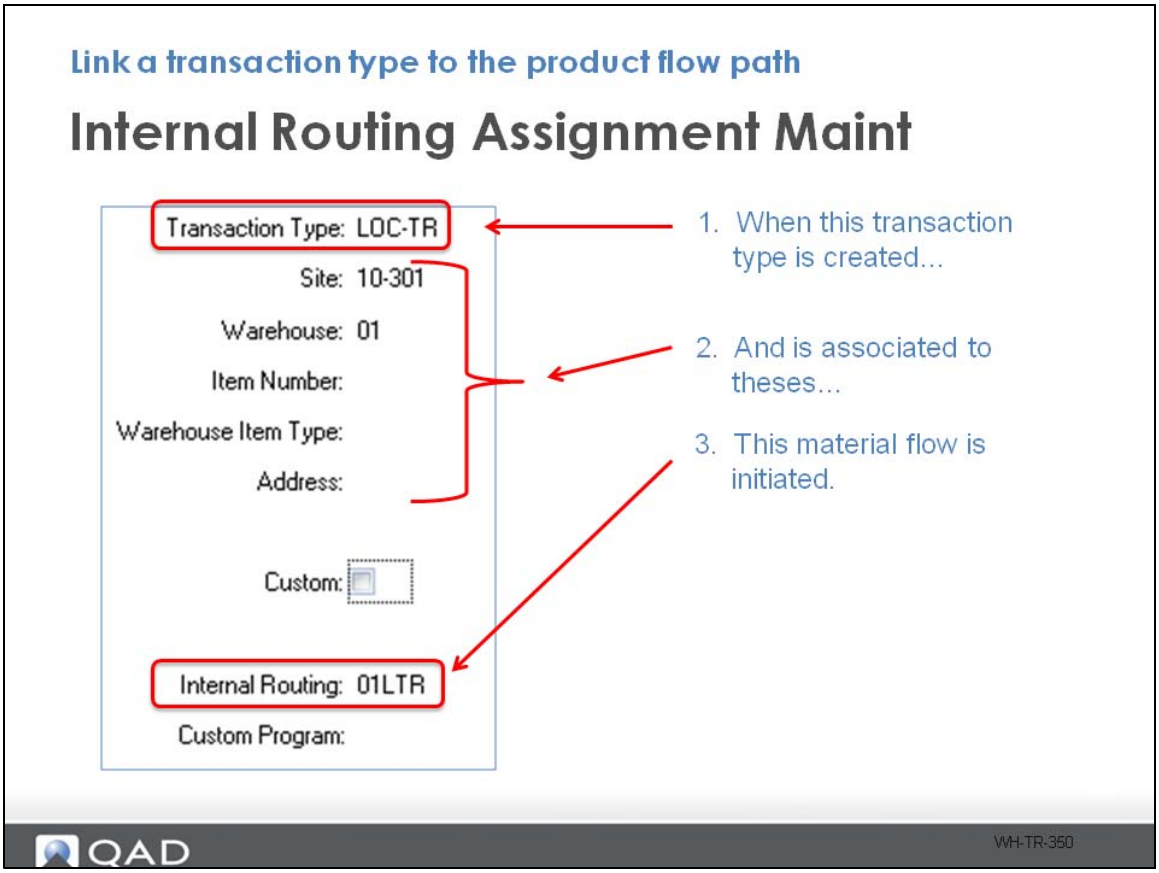
Truck locations can then be assigned to the truck zone and the fork lift work location group, 01FL.

Define Product Flow



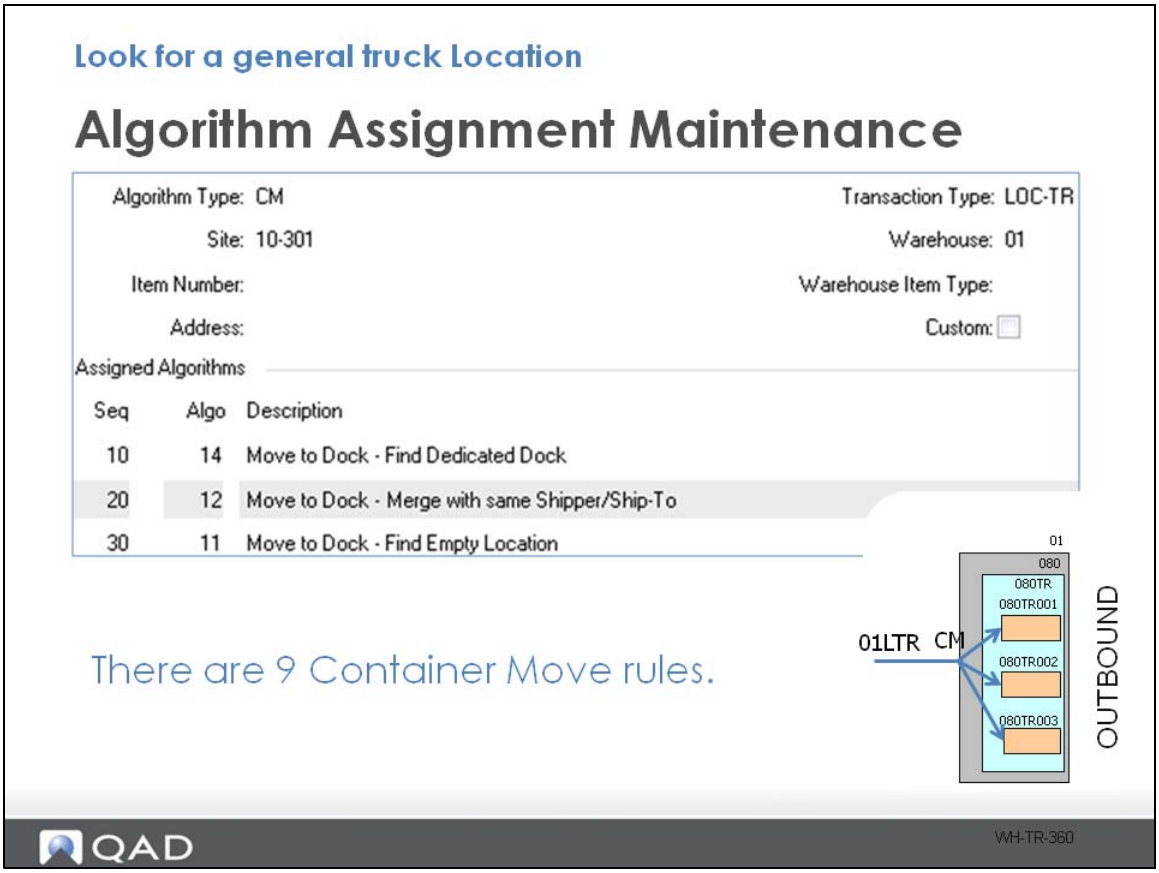
Use Internal Routing Maintenance to manage product flow from the Shipping Area to the new Trucks Area. You can actually add a Sequence 20 to the existing Internal Routing from the prior example.

Link a Transaction Type to the Product Flow Path



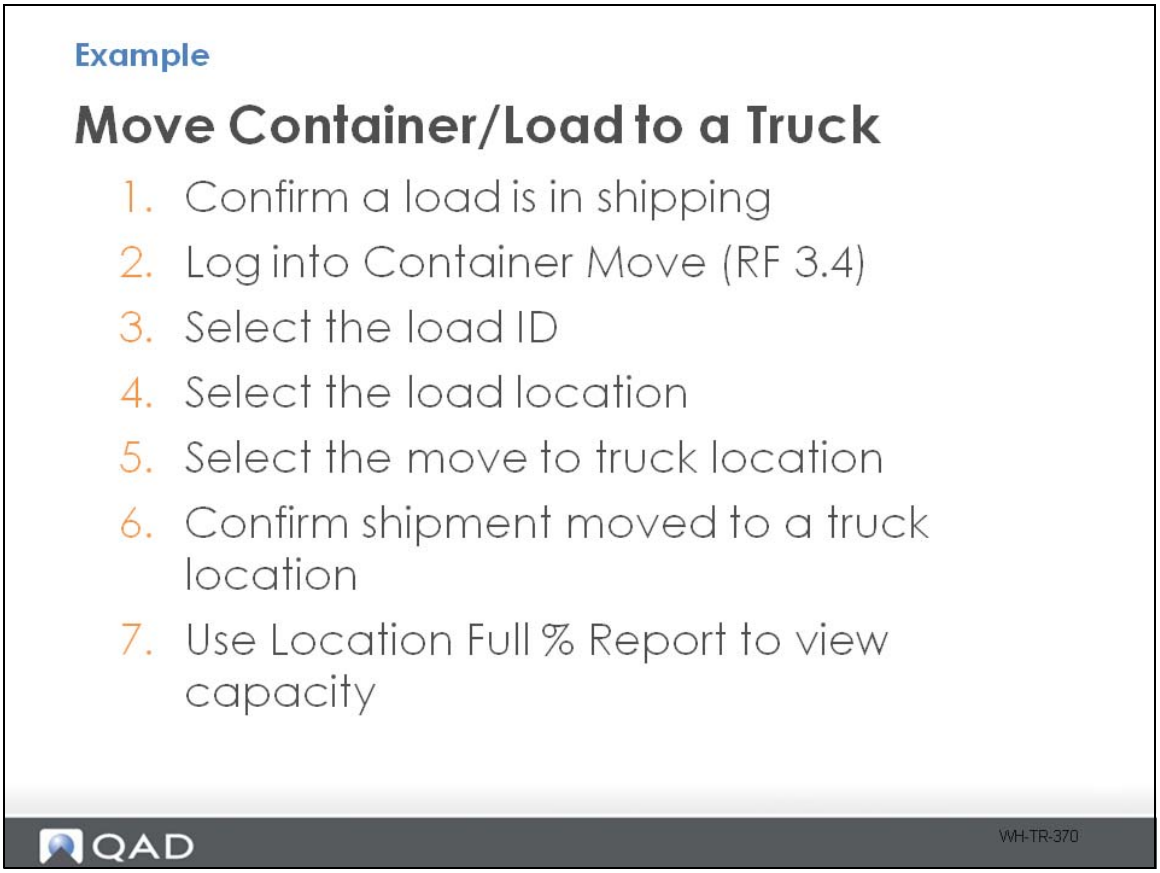
Assign the new routing to a transaction. This does not need to be changed if it was already setup in the prior example.

Look for a General Truck Location



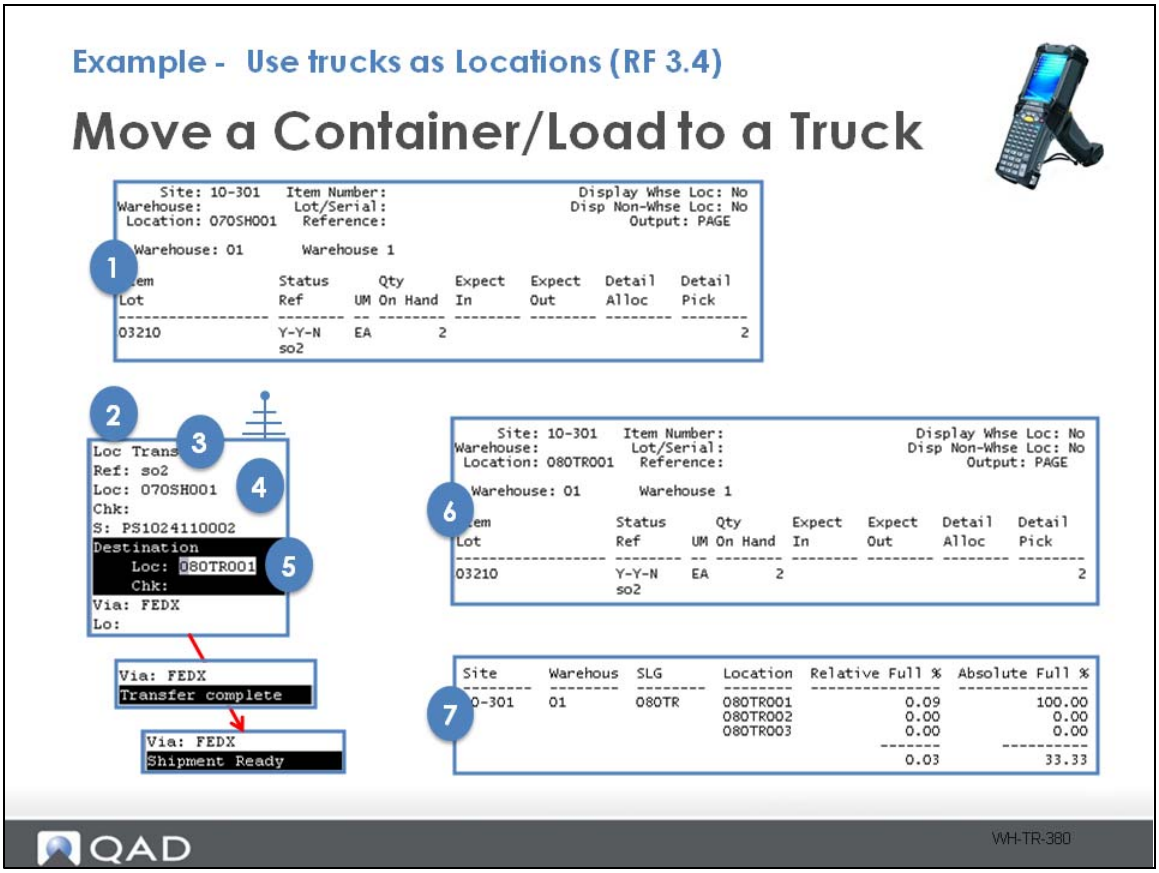
A Container Move series of Algorithms is used to select appropriate Truck locations. Use the same Algorithm from the prior example.

Example - Move Container/Load to a Truck



In this example, the steps involved to move a container (or a load) to a truck are depicted in the steps above.

Example - Use Trucks as Locations (RF 3.4)



As referenced earlier, setting up a new non-functional truck area allows lets you check the location utilization using the Location Full % Report or the Percent Full column of the Warehouse Location field.

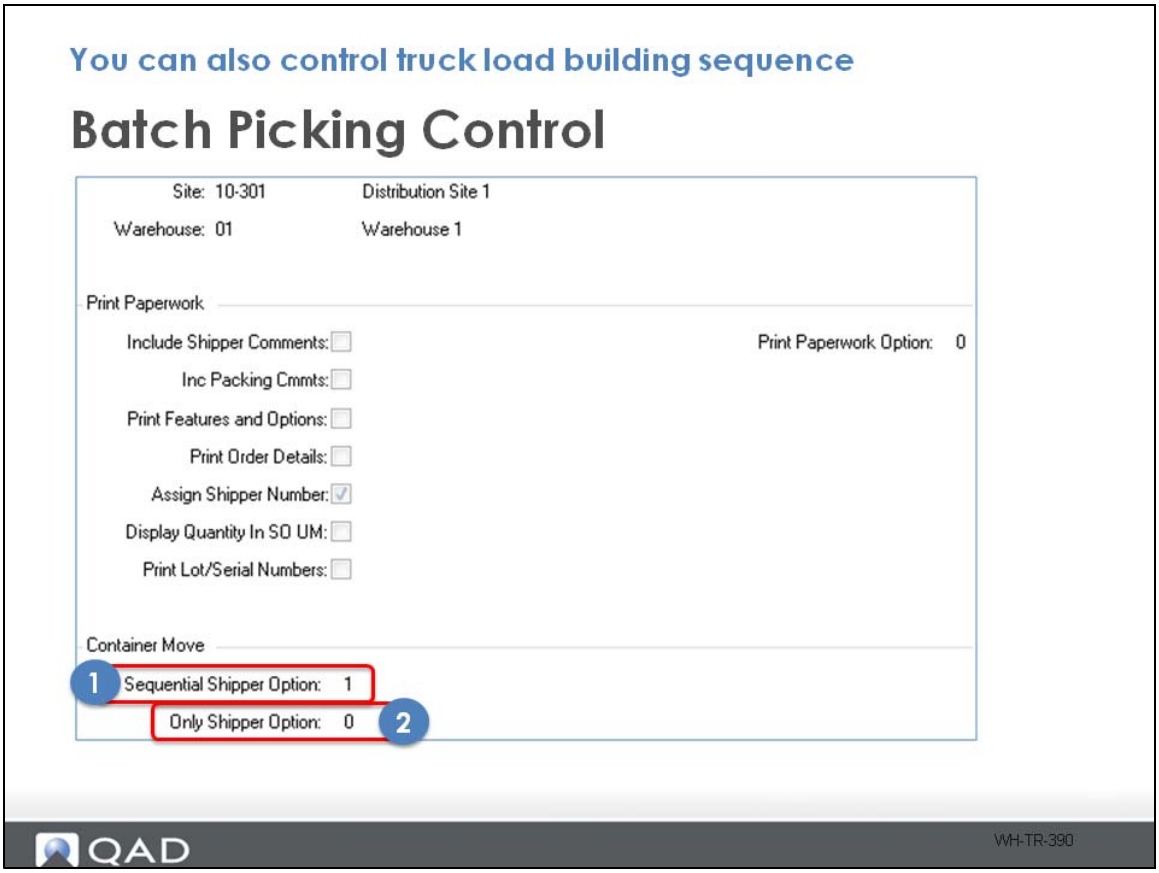
Note Percent Full information is not reported on locations in functional areas.

Steps involved include:

1. Confirm a load is in shipping.
2. Log into RF Container Move (3.4).
3. Select the load ID.
4. Select the load location.
5. Select the move to truck location.
6. Confirm shipment moved to a truck location.
7. Use Location Full % Report to view capacity. This only pulls data for locations in non-functional areas.

Note It is also possible to change inventory status of the item when moved to a truck location. For example, the company wants inventory in a truck not available for any purpose. To change inventory status on a move requires setting the inventory status of the truck locations to N-N-N and disabling Keep From Status on the internal routing

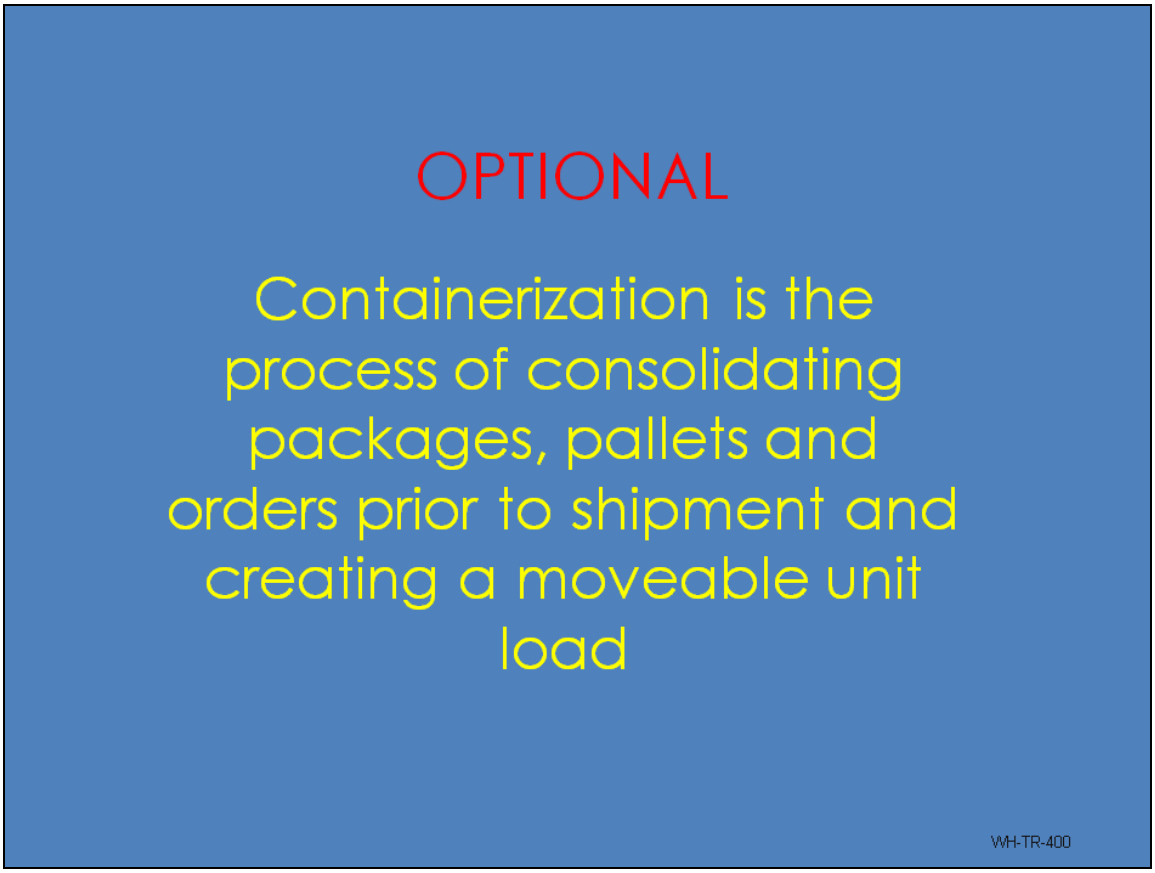
Control Truck Load Building Sequence



1 In Batch Picking Control, you can use the Sequential Shipper Option to control how pallets are loaded onto a truck. This supports reverse stop loading to help with truck unloading efficiency.

2 Use Only Shipper Option to specify the type of message displayed when verifying whether users can load both pre-shippers and shippers or just shippers.

Optional - Containerization



When items/packages arrive at shipping they may need further processing prior to shipment. This might include consolidating all items/packages for the same order or customer and building a larger handling unit load (container). This is frequently done in shipping staging and/or packaging.

Containerization is available for both sales and distribution orders.

Containerization

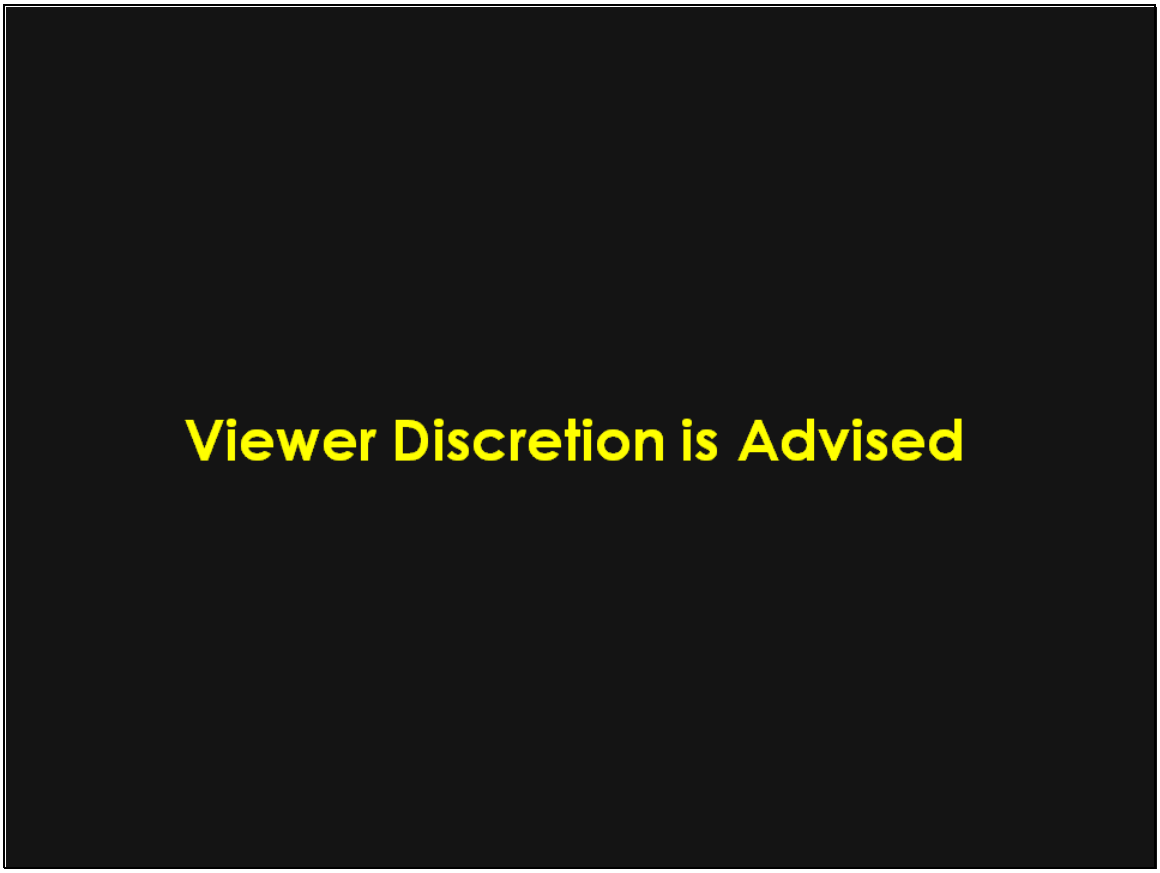
You can manually create a container and link the container to a pre-shipper in Pre-Shipper/Shipper Workbench or in DO Container Maintenance (EE core programs).

QAD Warehousing provides multi-level containerization through the RF, allowing staff to assemble pallets/packages for shipment until all items for a particular customer ship-to address are complete. The RF containerization option allows users to use RF scanning to consolidate all boxes or pallets built during picking into other containers for shipping.

QAD Warehousing Shipping - Containerization

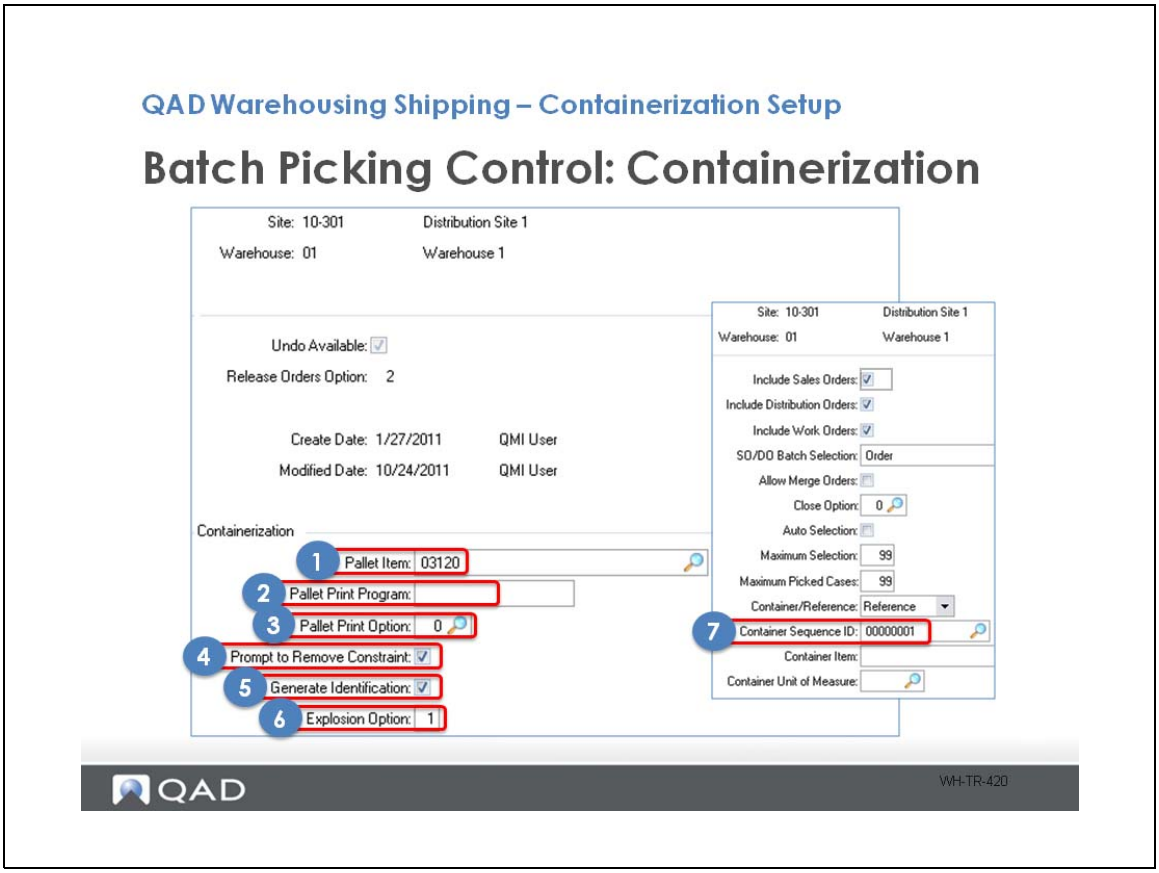
Once orders/packages are consolidated you can shrink wrap the load and stage for loading to a truck.

Viewer Discretion Advised



The following information and setup has not been configured and tested in the QMI training environment.

Containerization Setup



Containerization includes the following steps:

1 Enter the default pallet container item.

2 Define the program to use when printing labels for pallets. The default program is whprtpal.p.

3 Determine if you print pallet labels automatically, not at all, or prompt to print labels.

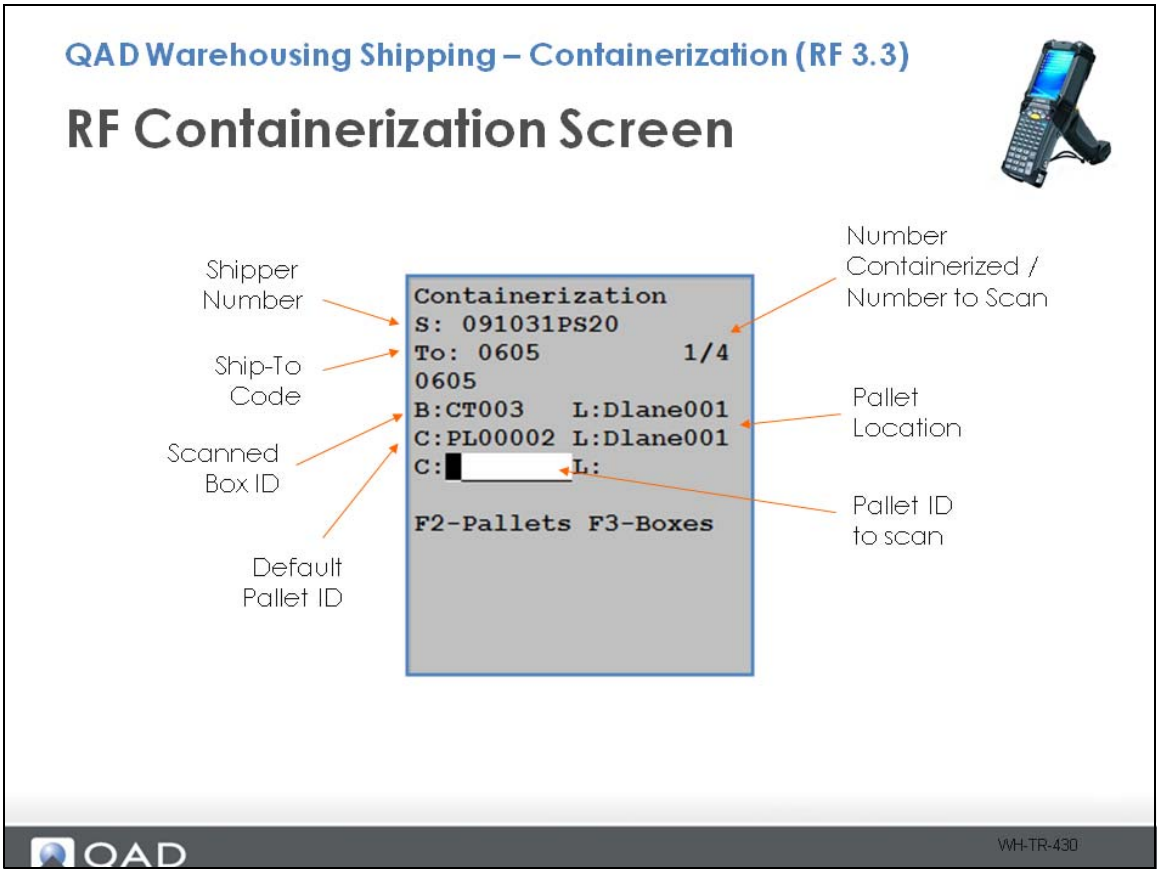
4 Indicate if you want the system to prompt the user to remove a container.

5 Define if the system generates a new container ID when using the RF Container Build menu option.

6 Explosion Option: Specific whether the system prompts the user to enter the number of boxes or splits the items into boxes when you explode the pallet.

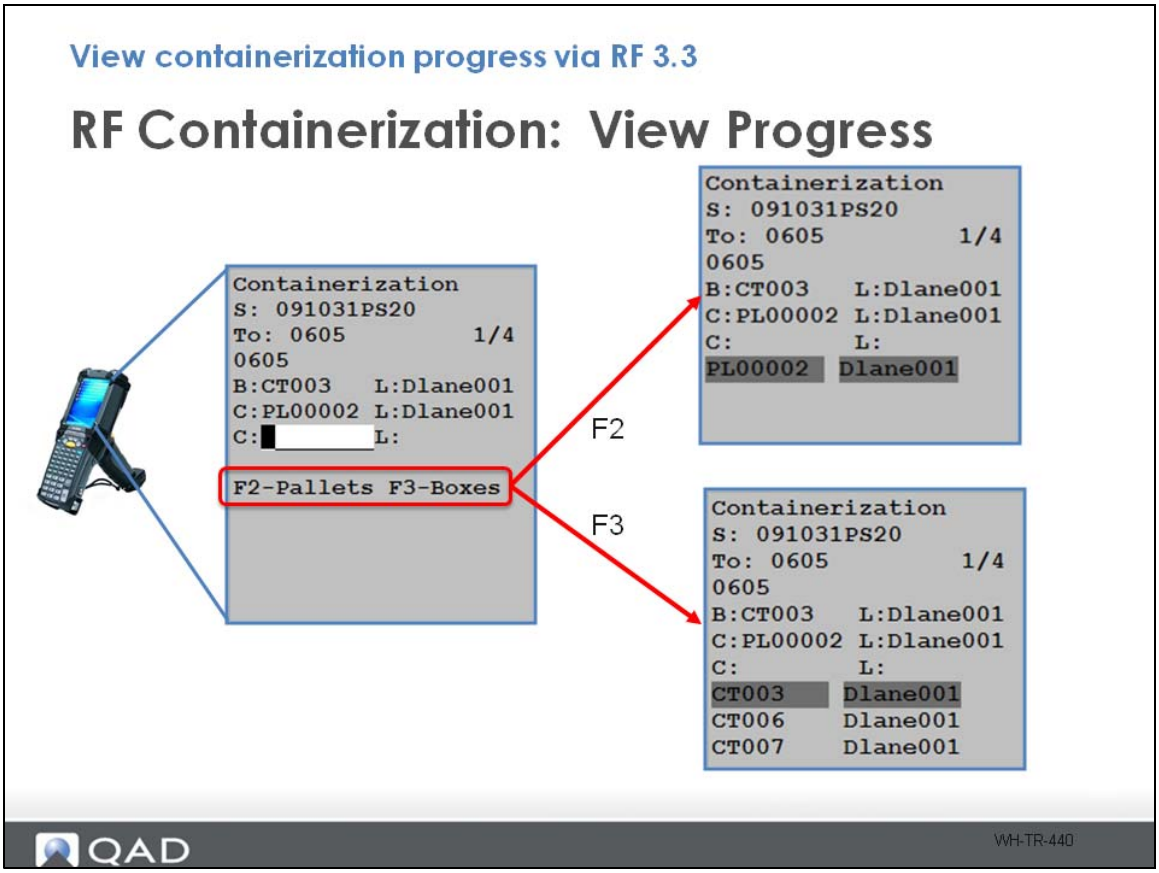
7 Also, make sure a Sequence Definition is assigned to the Container Sequence ID on the initial Batch Picking Control frame.

QAD Warehousing Shipping - Containerization (RF 3.3)



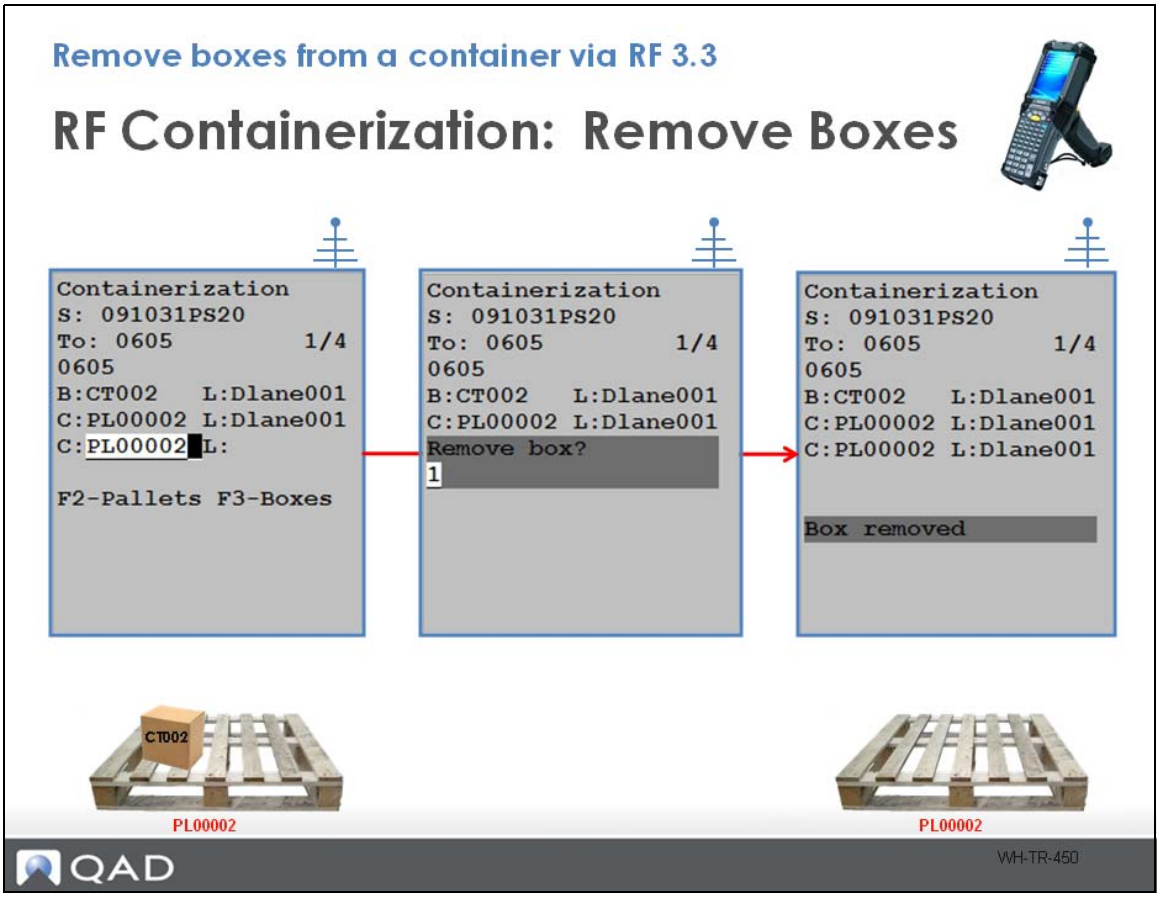
RF Containerization is used to consolidate boxes or items into a shippable container. This allows for more efficient loading, lower transportation costs, and easier unloading.

View Containerization Progress Via RF 3.3



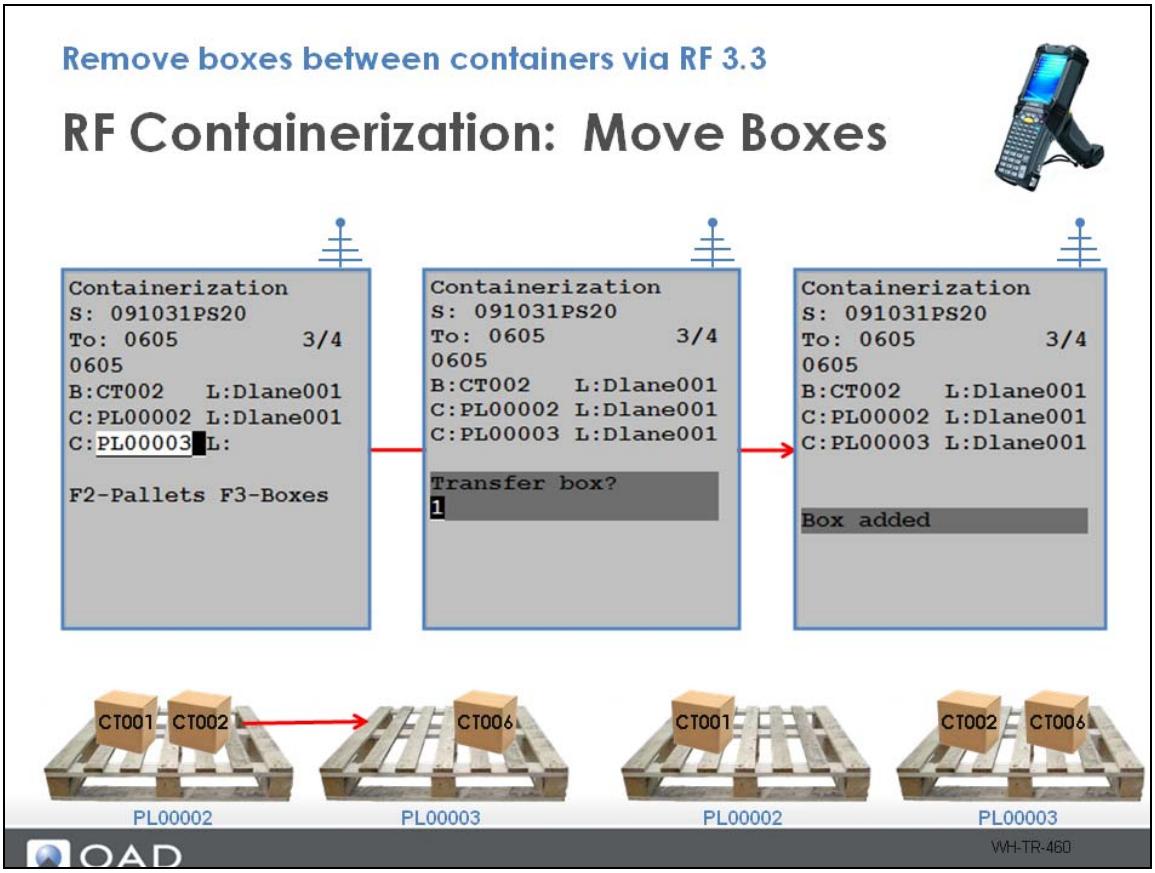
Using the RF you can view the number of boxes already containerized and the remaining boxes to be processed to complete the load.

Remove Boxes from a Container Via RF 3.3



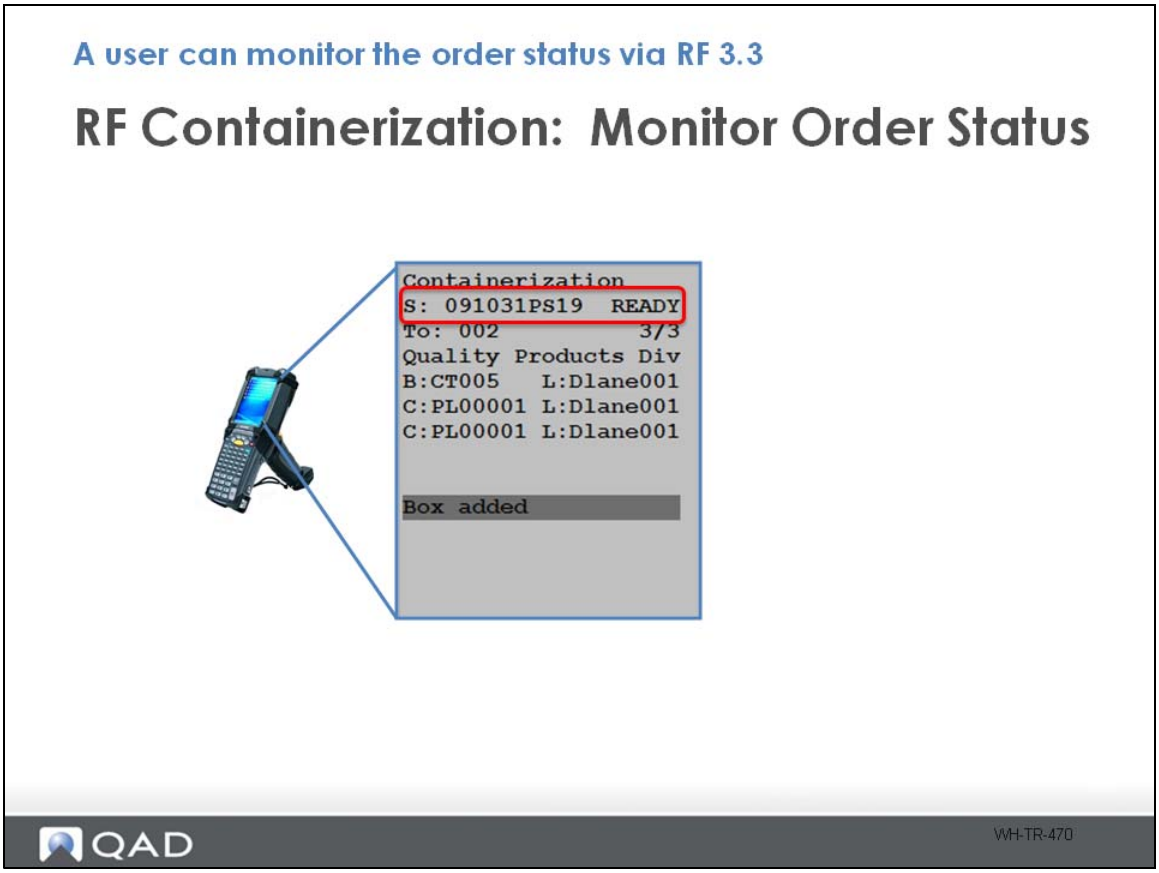
RF Containerization lets you manage load consolidation in real time. You can remove boxes from containers or pallets.

Remove Boxes Between Containers Via RF 3.3



Or, you can move boxes from one pallet to another during load building/containerization.

Monitor the Order Status Via RF 3.3



During RF containerization, you can view order status or shipper data.

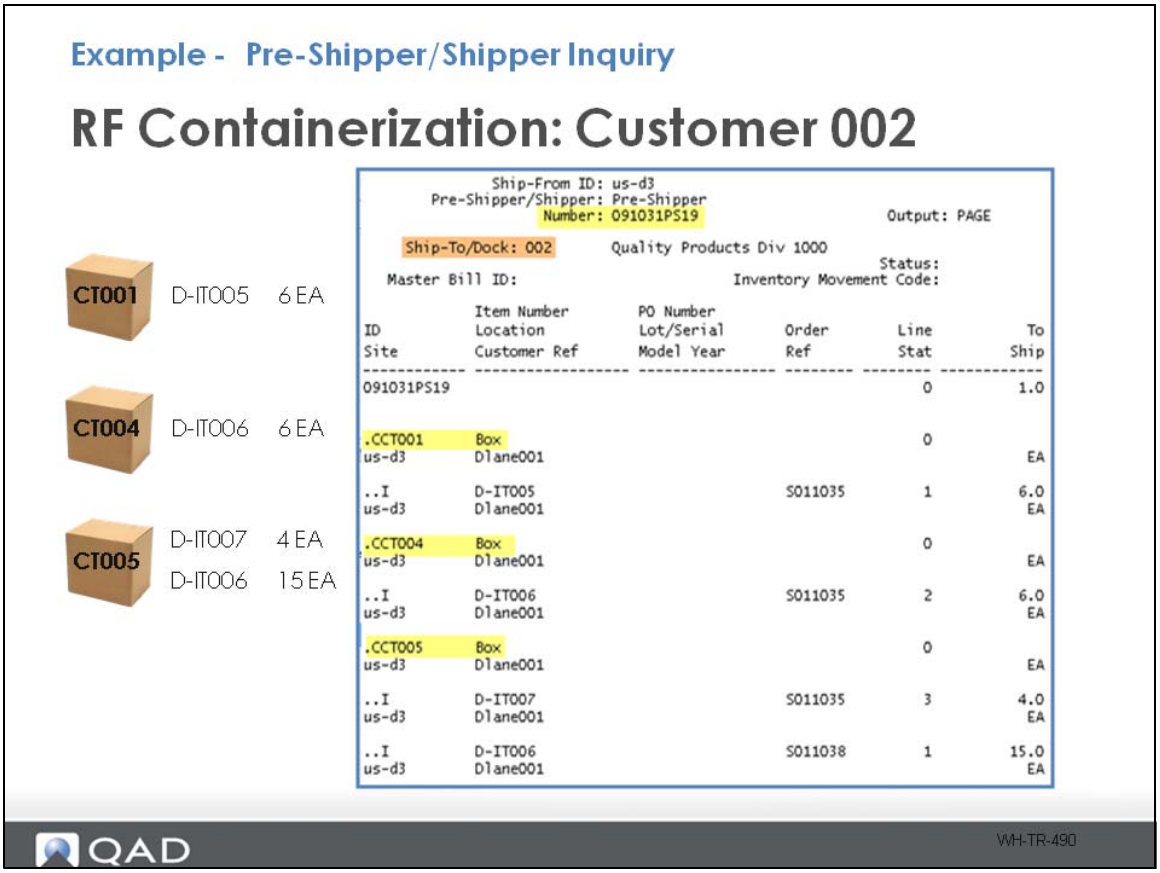
Additionally, RF Containerization allows a user to:

- Merge a pallet into another pallet.
- Transfer a scanned box to a pallet that is in another location on the same shipper.
- Print pallet labels if required.

Example - Pre-Shipper/Shipper Inquiry

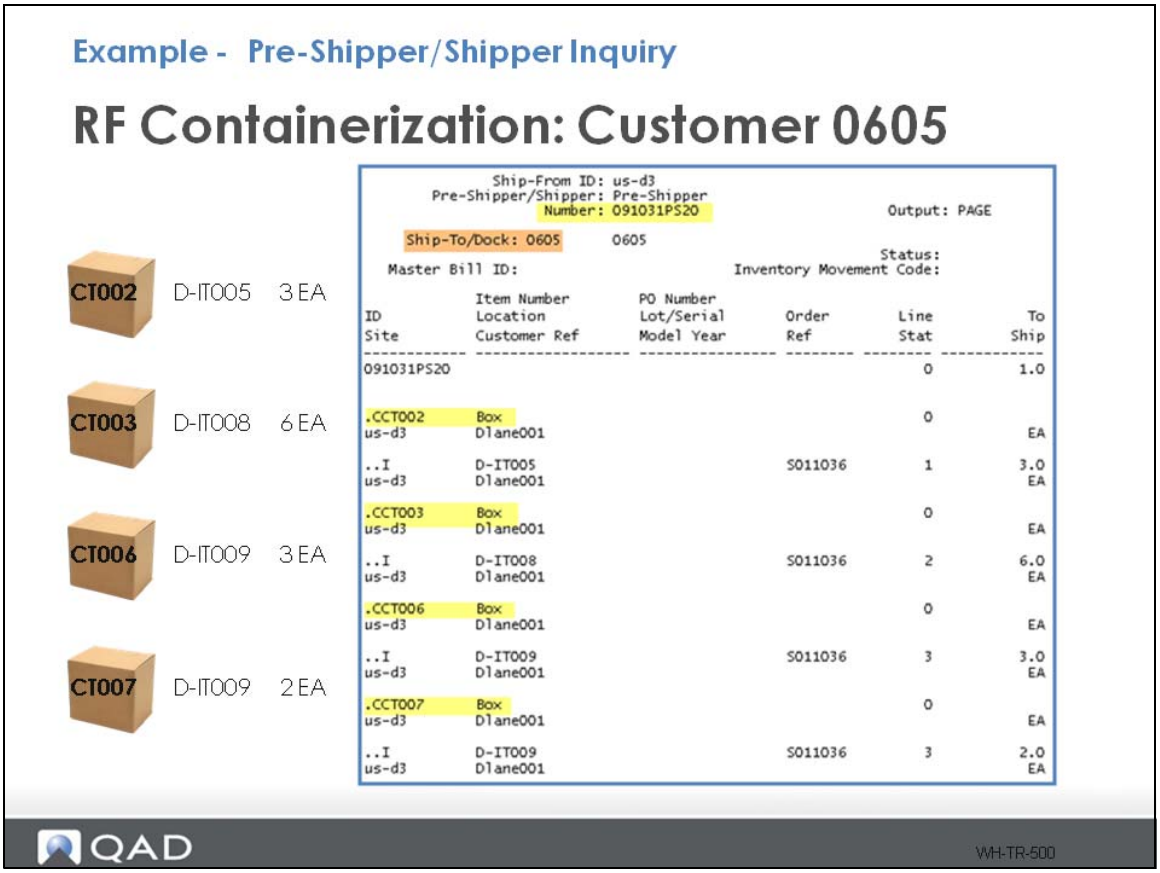
Use Pre-Shipper/Shipper Inquiry (EE Core program) to view the build containers needed in shipment.

Example - Pre-Shipper/Shipper Inquiry



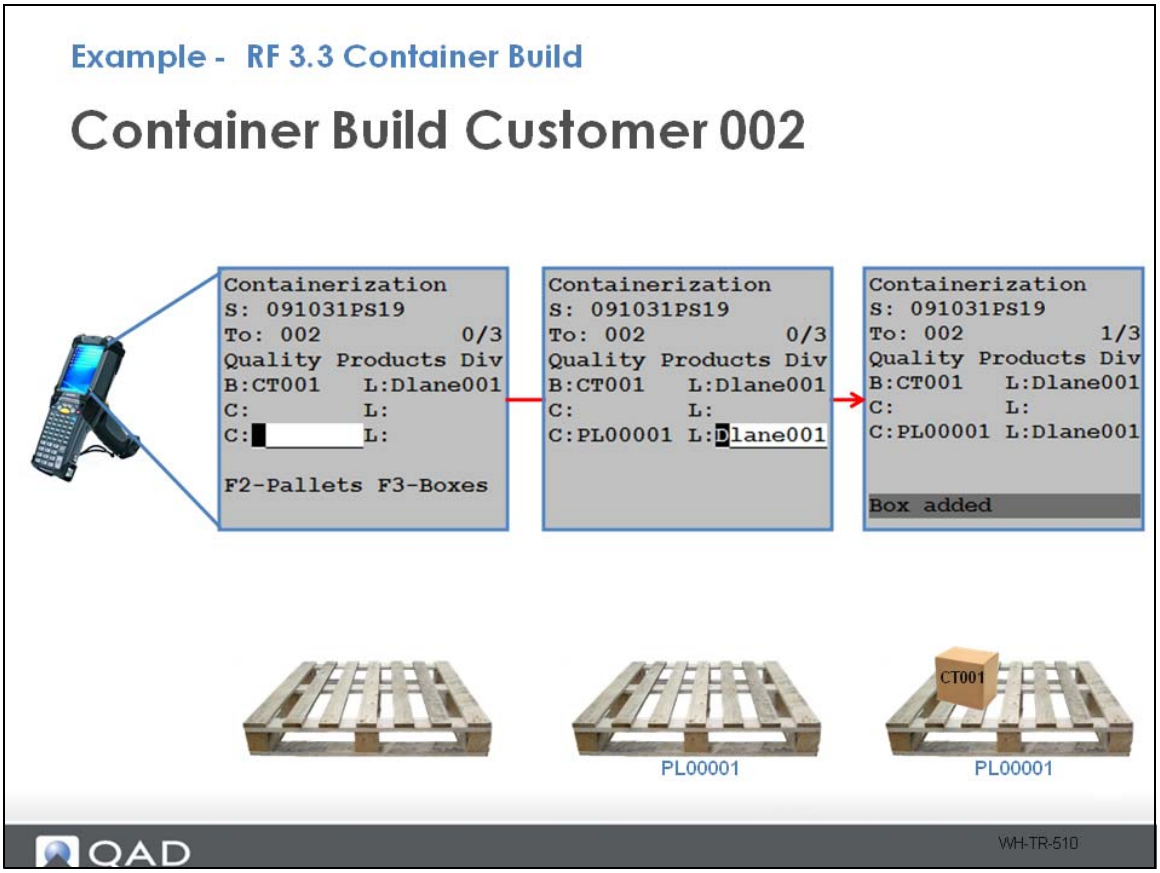
Pre-Shipper/Shipper Inquiry shows the details of the first customer, two orders.

Example - Pre-Shipper/Shipper Inquiry (Continued)



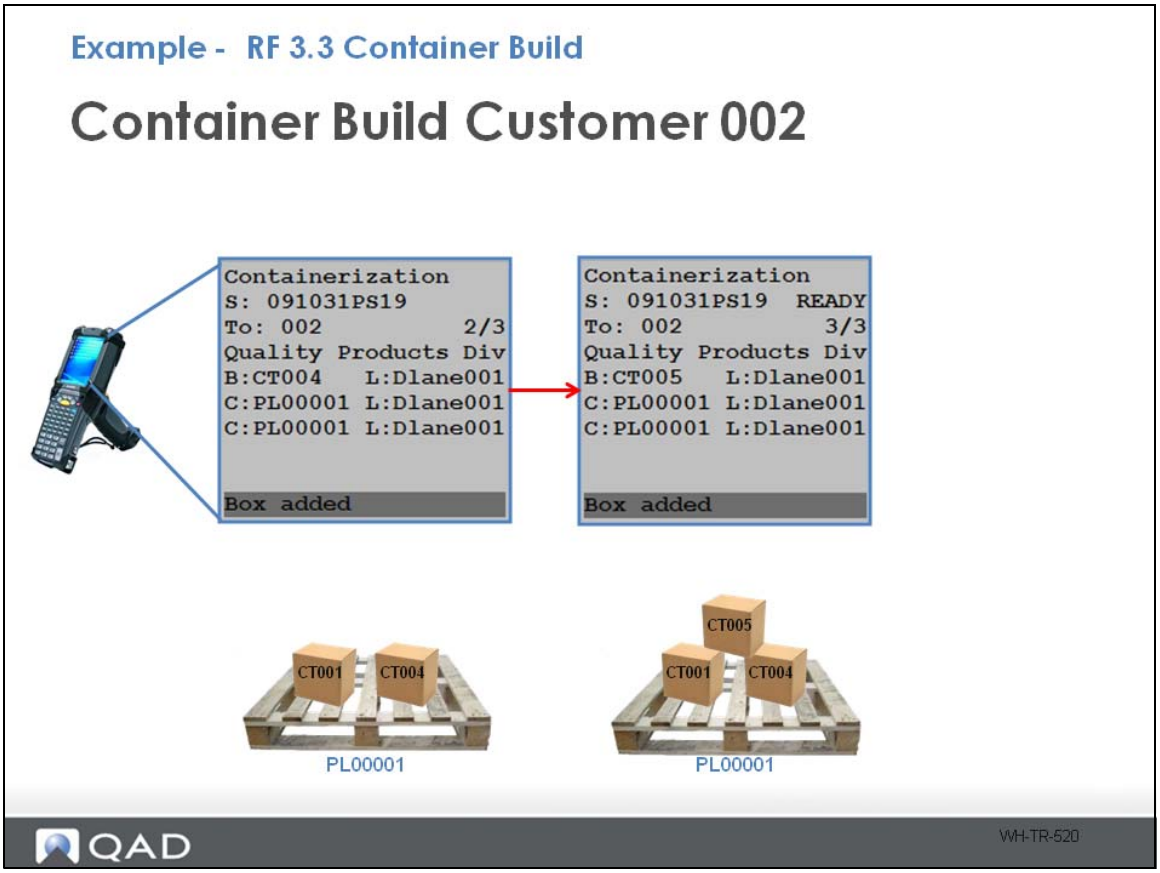
This is the Pre-Shipper inquiry for the second customer.

Example - RF 3.3 Container Build



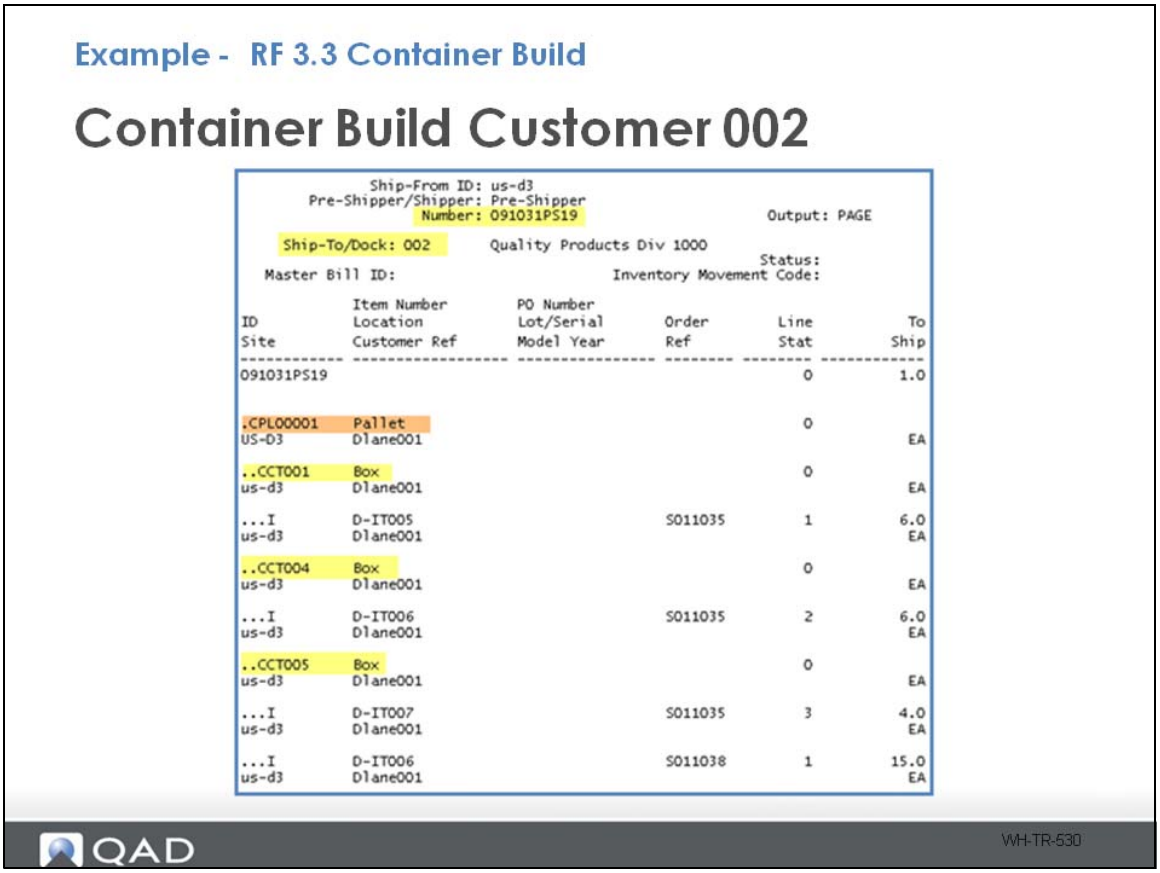
When Batch Picking Control Container options are configured, use RF 3.3 to build a container from the different boxes/items on the order.

Example - RF 3.3 Container Build (Continued)



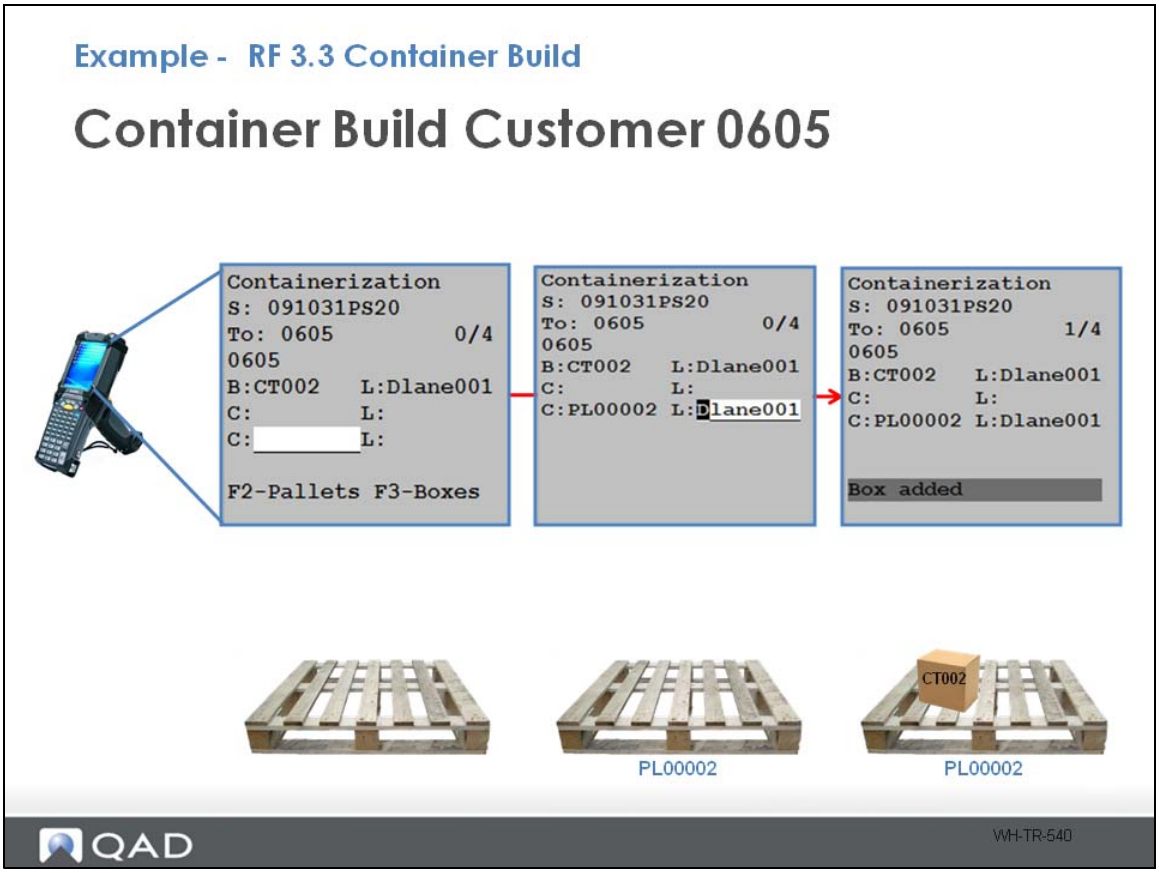
Add as many boxes as needed using the Container Build option.

Example - RF 3.3 Container Build (Continued)



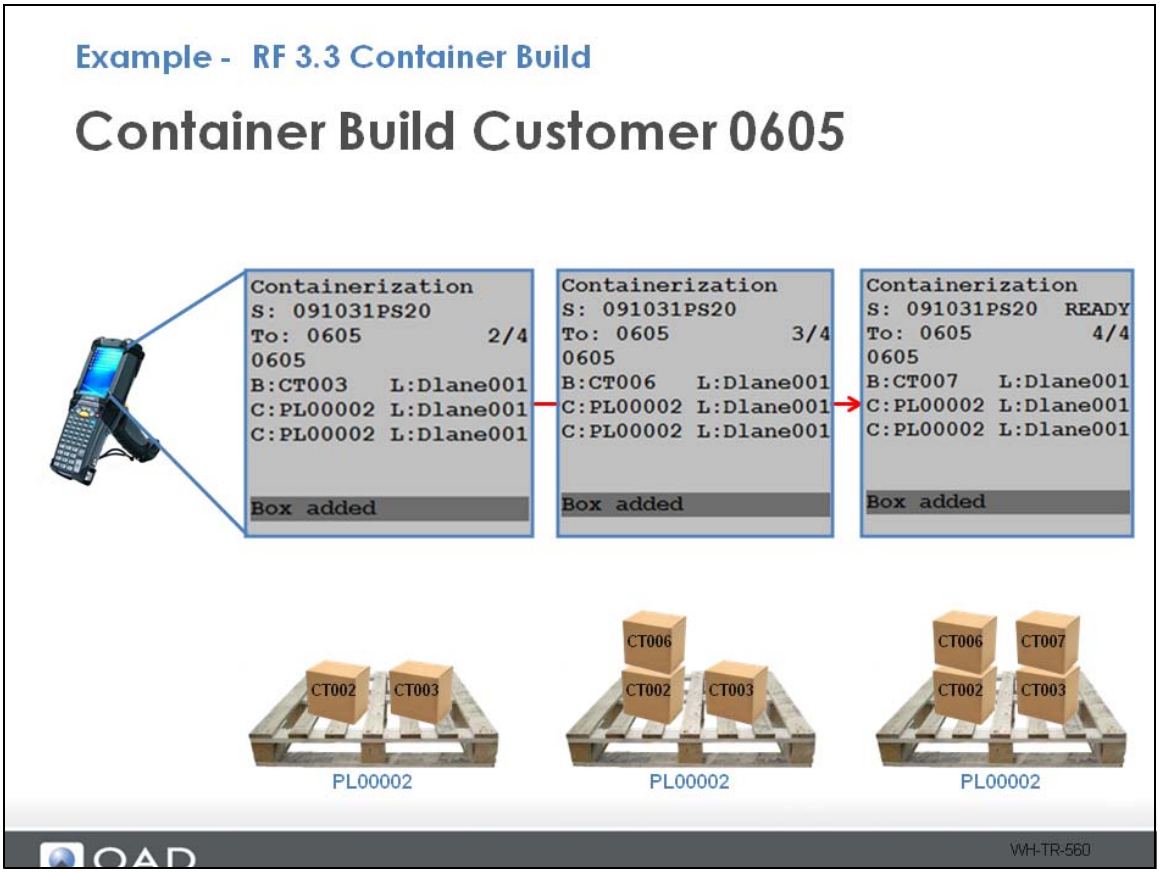
The new Pre-Shipper/Shipper Inquiry shows the new container contents for the first customer.

Example - RF 3.3 Container Build (Continued)



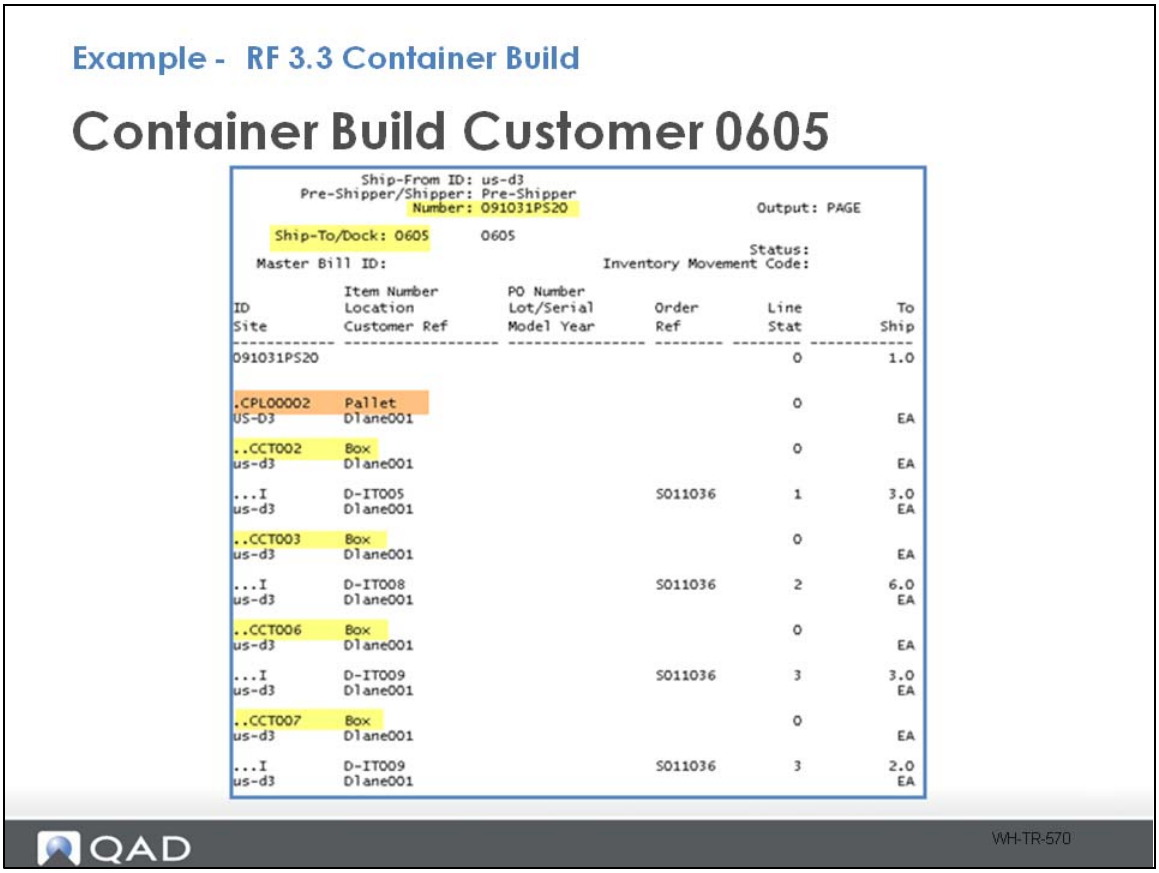
Follow the same process to build a container for the next customer.

Example - RF 3.3 Container Build (Continued)



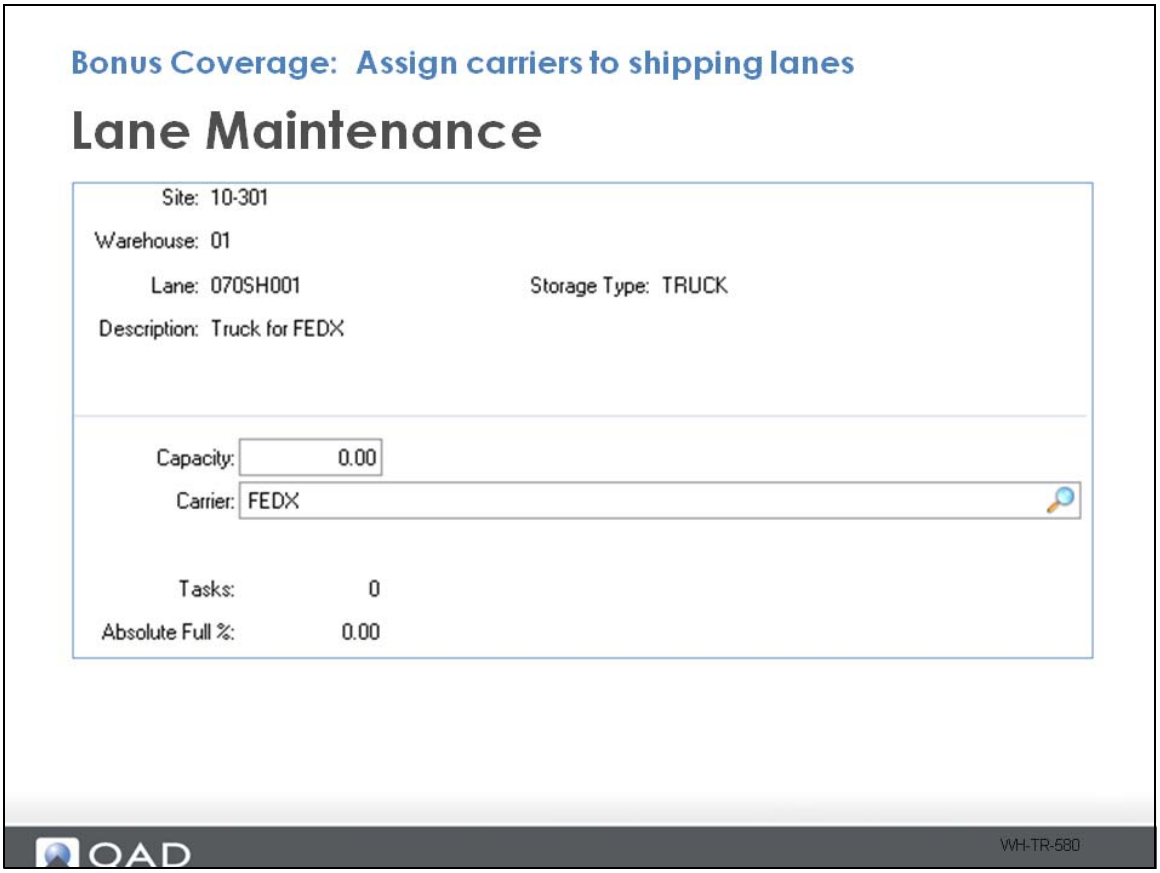
Follow the same process when building containers for customer 0605.

Example - RF 3.3 Container Build (Continued)



Continuing on with customer 0605, view container data in Pre-Shipper/Shipper Inquiry.

Bonus Coverage: Assign Carriers to Shipping Lanes

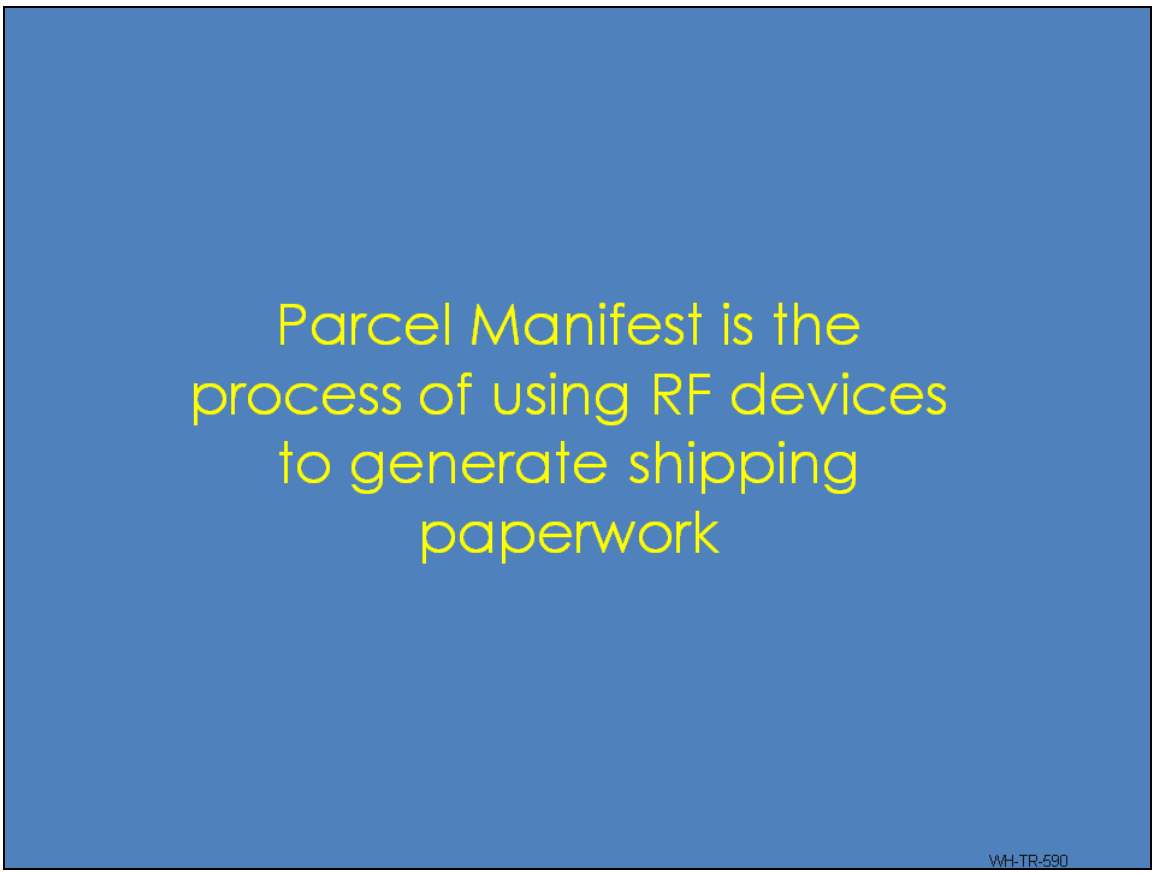


Lanes are a special type of ship staging location and typically associated to a dock door. Lanes let the company to assign carriers to docks are used for identifying pick drop locations during wave picking.

Lanes are mainly used with wave planning in QAD Warehousing. You can assign specific carriers to a lane.

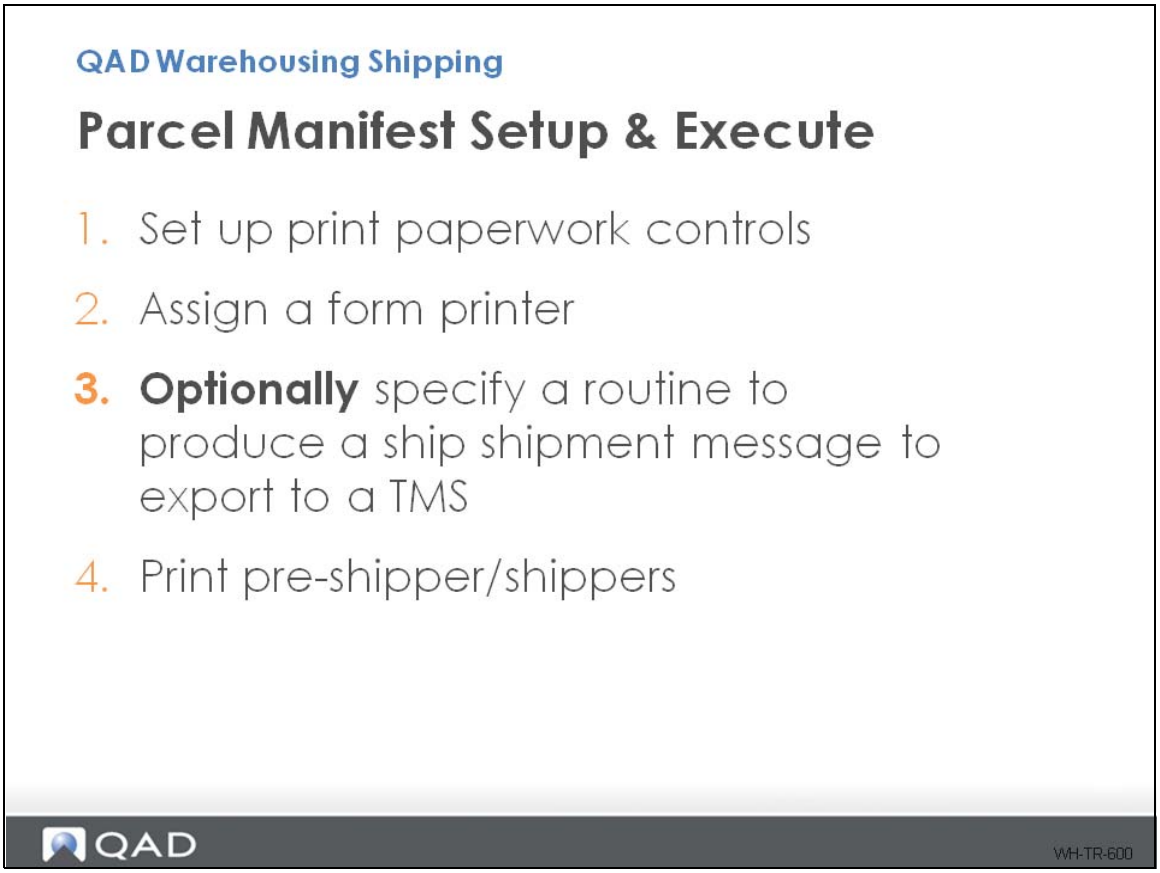
There are three frames and 6 fields in Lane Maintenance used for configuration.

Parcel Manifest



QAD Warehousing provides parcel manifest functions.

Parcel Manifest Setup and Execute

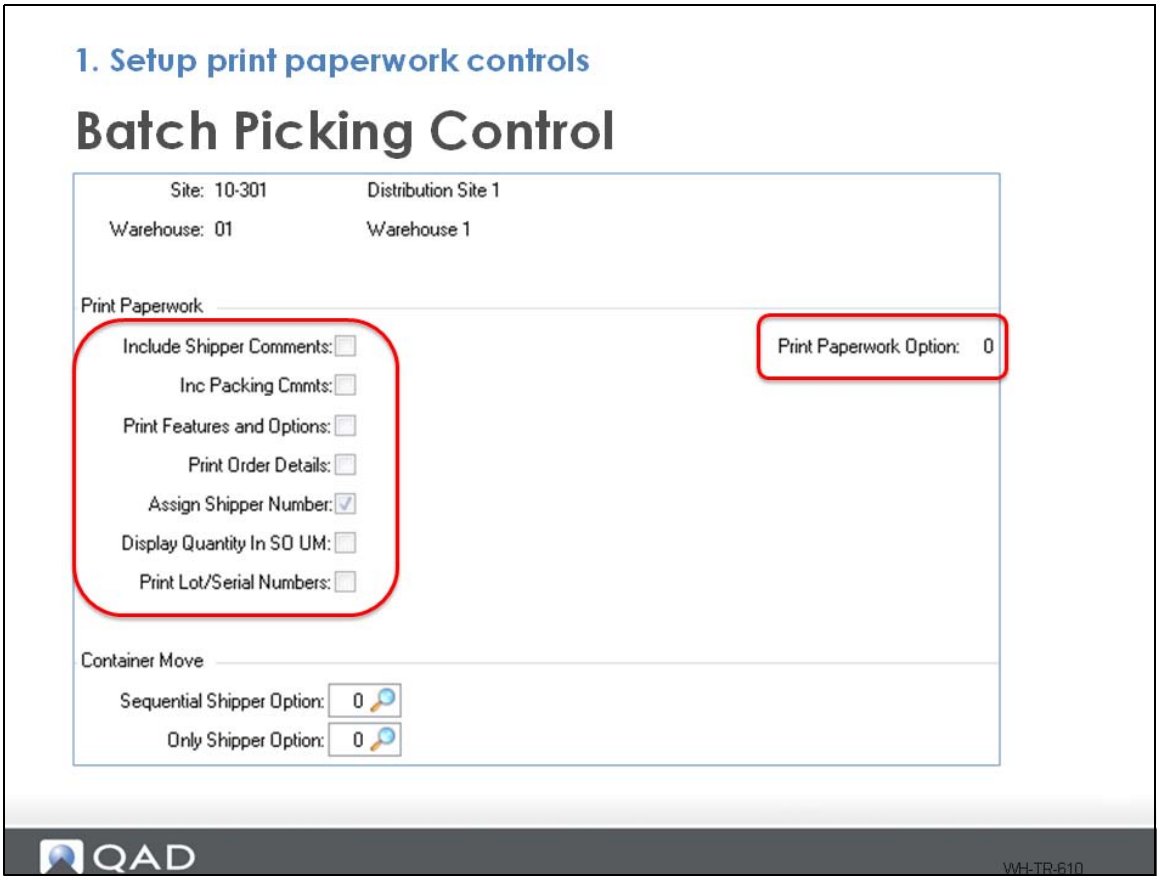


The graphic above depicts the steps included to prepare the print paperwork.

Did You Know

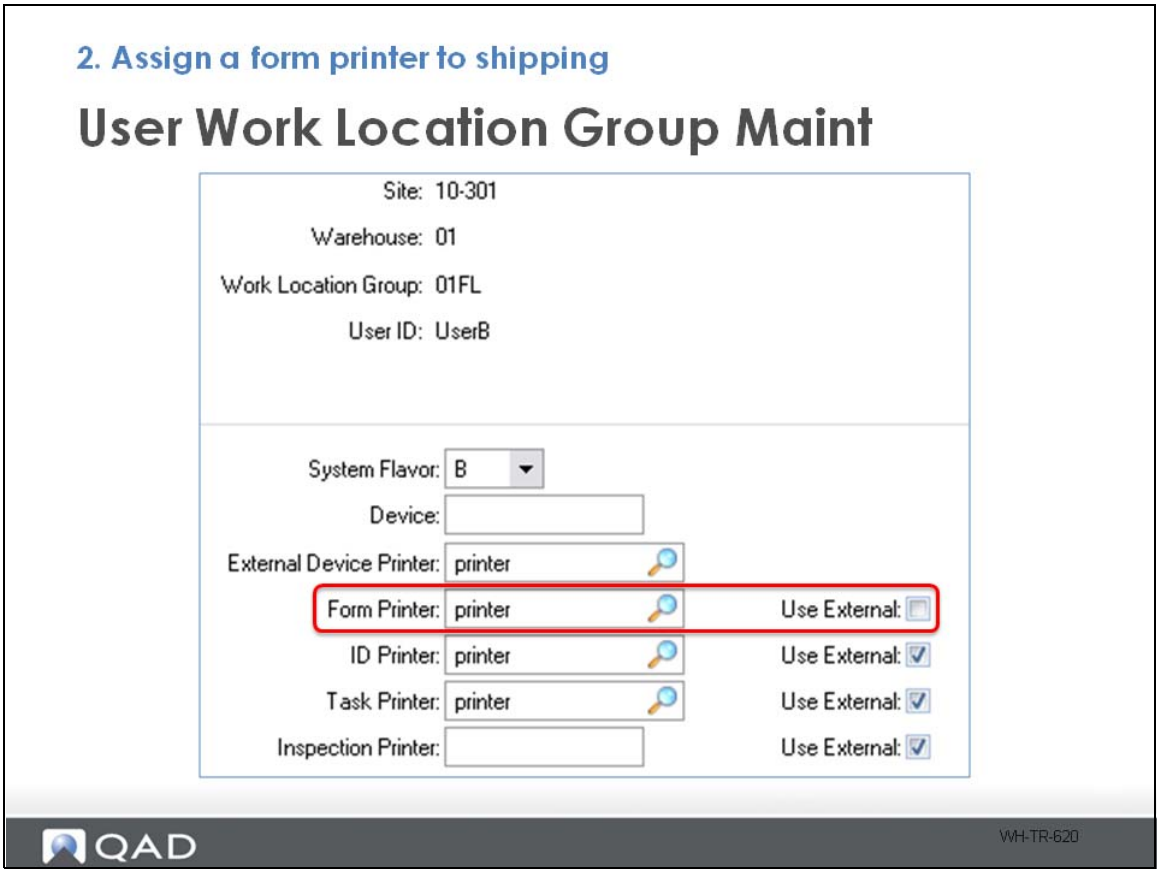
A manifest is a list of goods carried on a truck, train, or ship.

Set Up Print Paperwork Controls



Use the fields in the Batch Picking Control Print Paperwork frame to set up print paperwork controls.

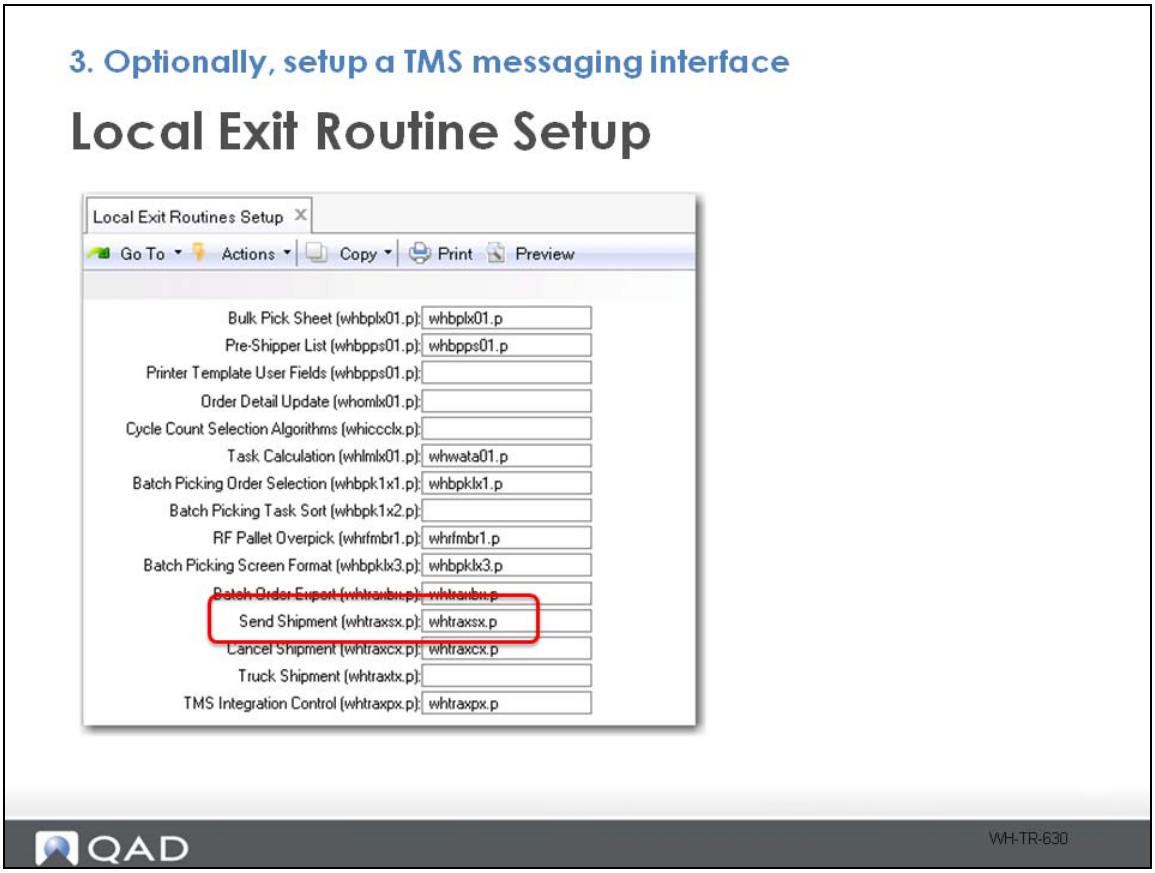
Assign a Form Printer to Shipping



Use User Work Location Group Maintenance to assign a form printer to shipping.

Note The Use External field lets you indicate whether forms should be printed on an external printer.

Optionally Set Up a TMS Messaging Interface



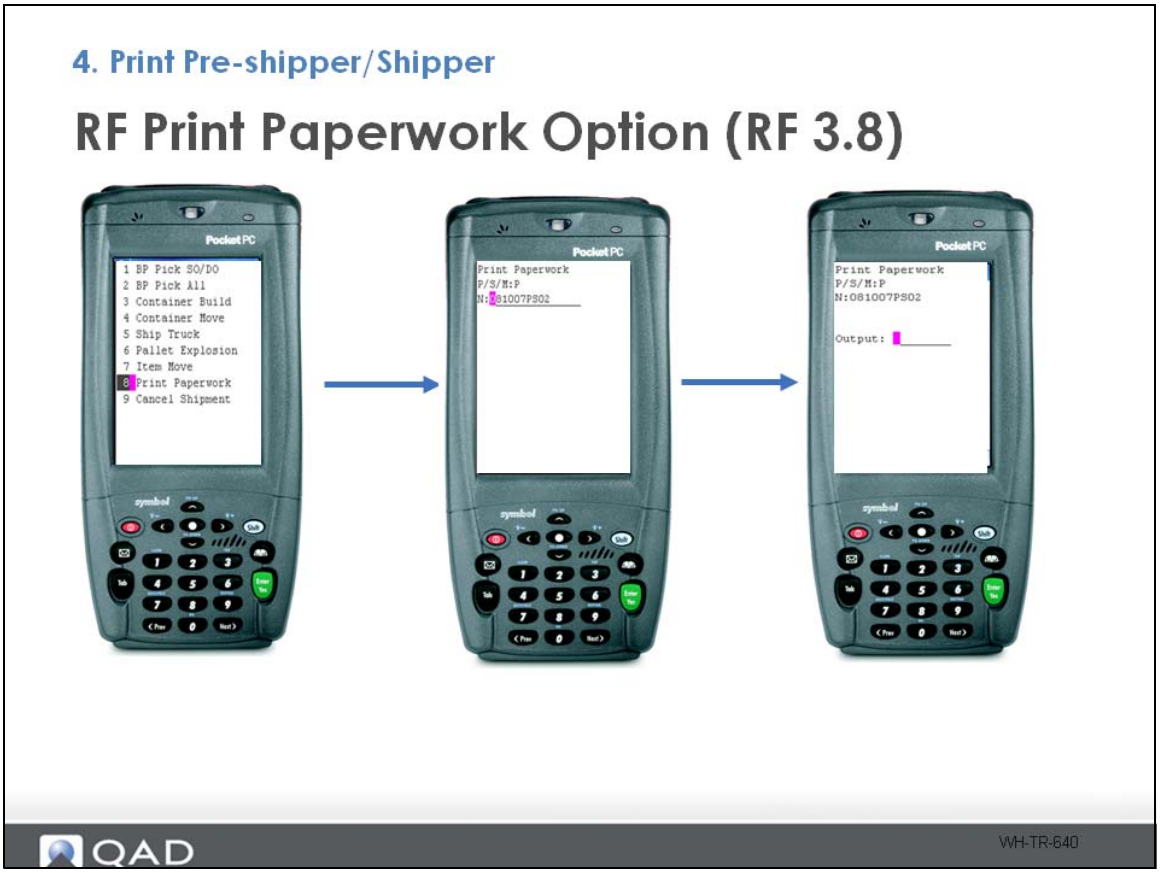
Local Exit Routines are preconfigured or custom programs a company can use to customize processes and/or third party system interfaces without changing core QAD Warehousing code.

For example, Send Shipment is a standard interface used to communicate shipping information to and from a Transportation Management System, TMS.

Did You Know

You can use Ship Truck features with an external Transportation Management System.

Print Pre-Shipper/Shipper



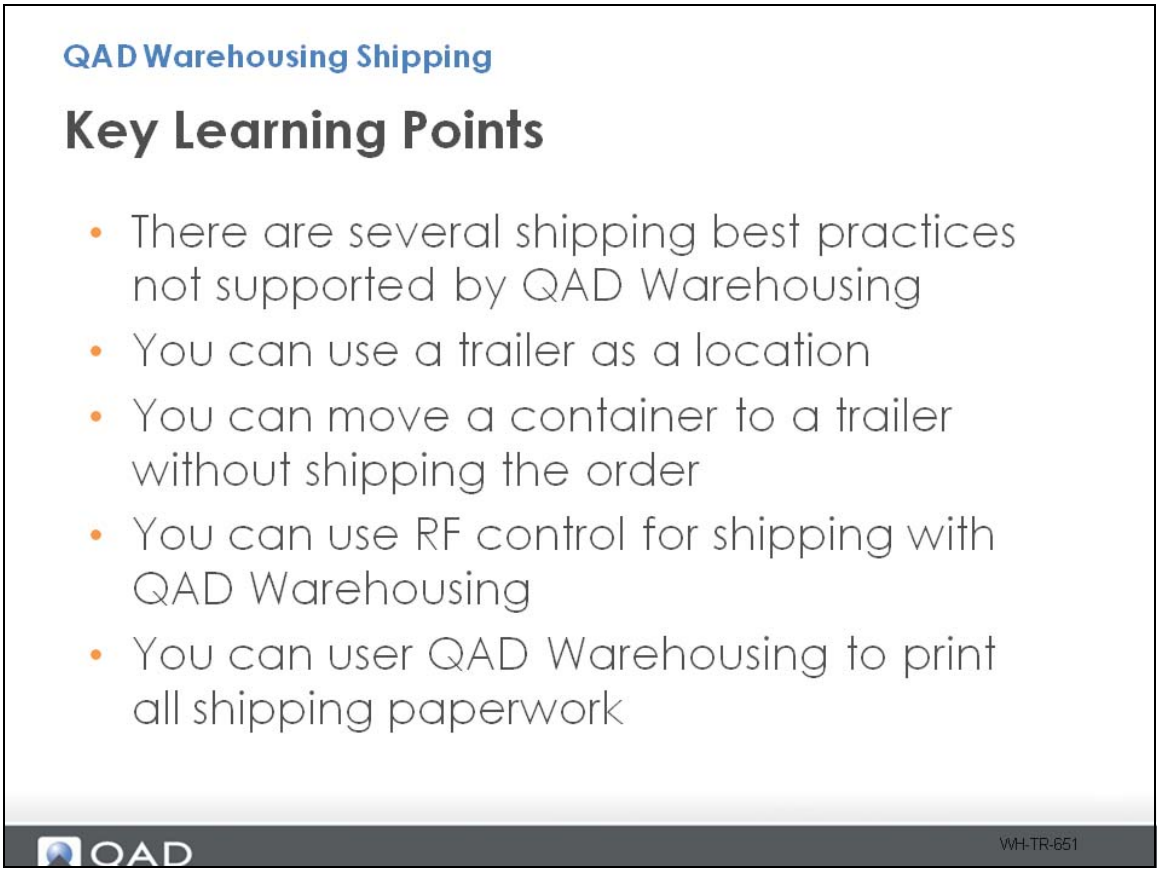
Use the RF Print Paperwork option (3.8) to print the pre-shipper or shipper.

Did You Know

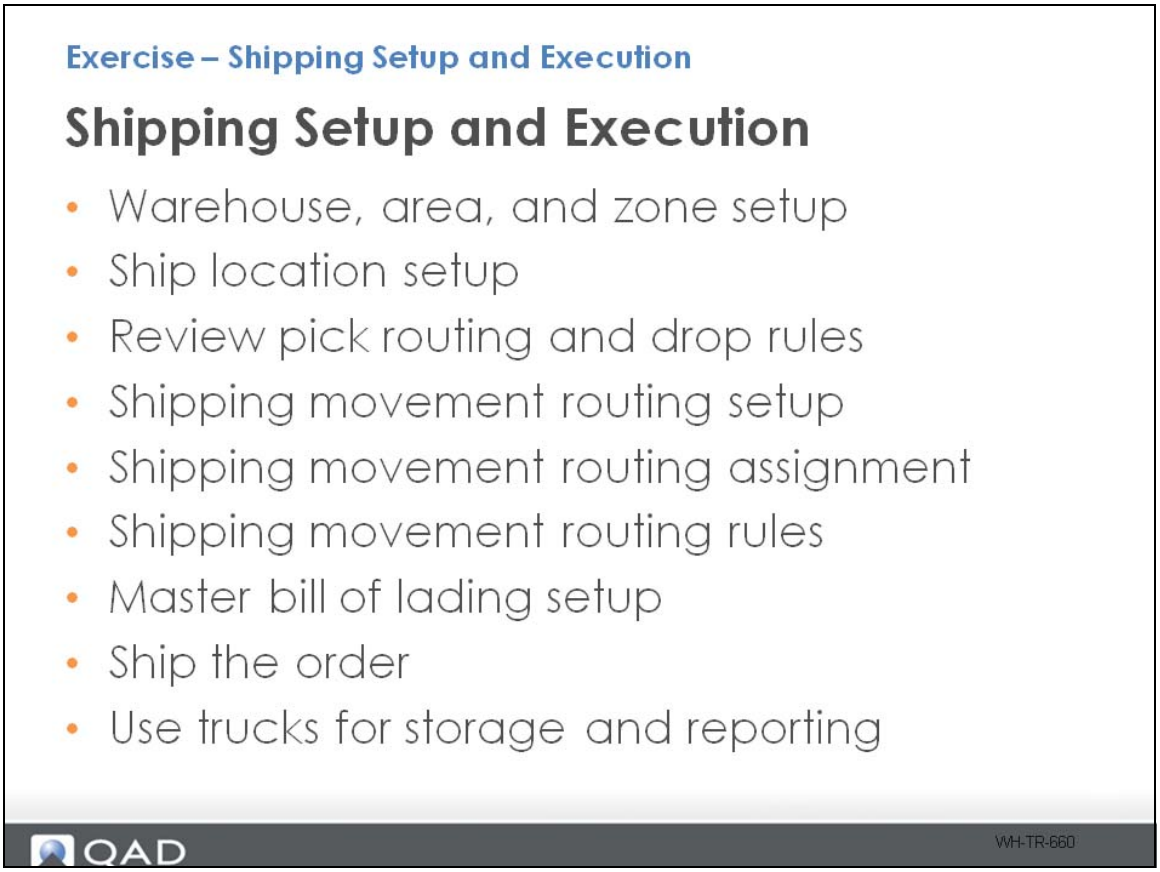
You can print both a shipper and pre-shipper from an RF scanner.

The RF screen prompts the user to print shipping documentation. Printing is done before both container move and truck ship

Key Learning Points



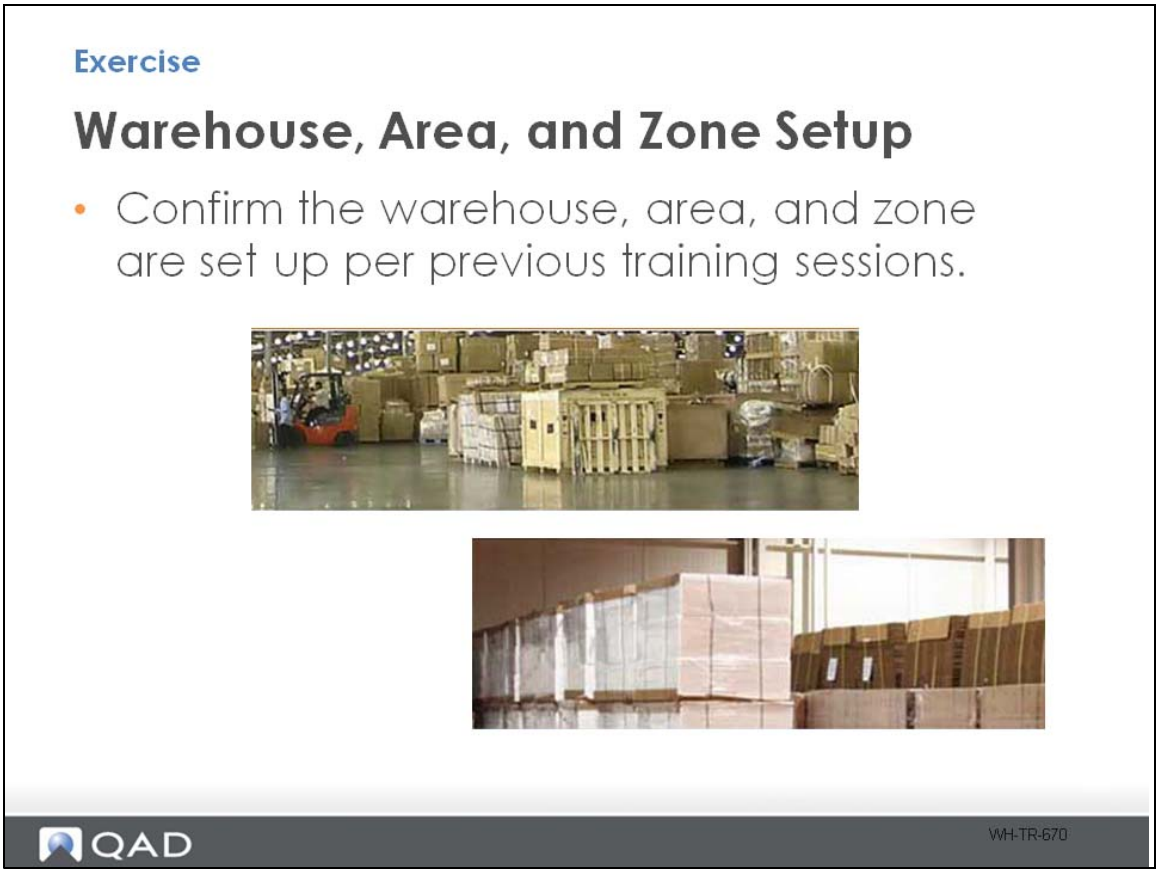
Exercises - Shipping Setup and Execution



For discrete picking, without wave planning, product is picked to packing area for shipment consolidation and shipment prep. Once shipment prep and/or consolidation is complete, the loads are moved to a staging location in the Shipping area.

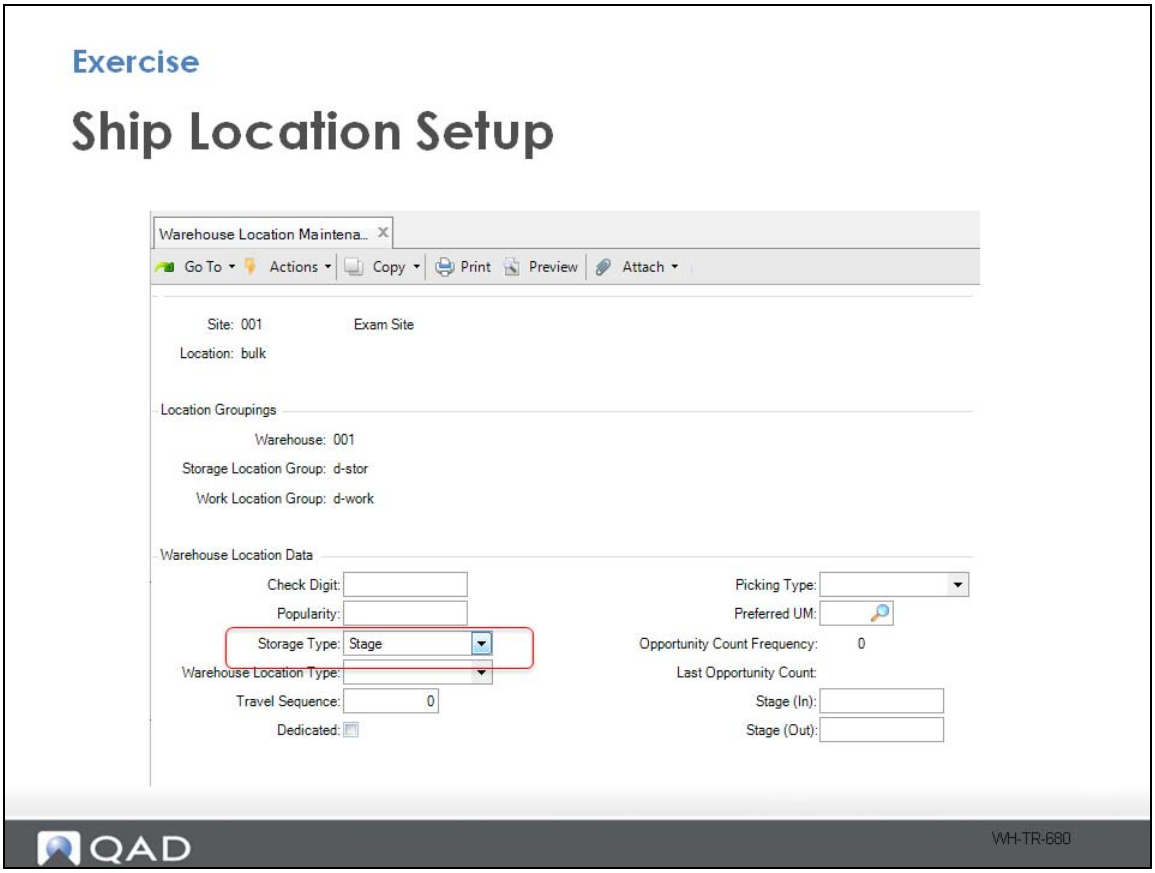
In this exercise, you setup and configure QAD Warehousing for shipping and ship an order. Additionally, you set up trucks as locations used for storage.

Warehouse, Area, and Zone Setup



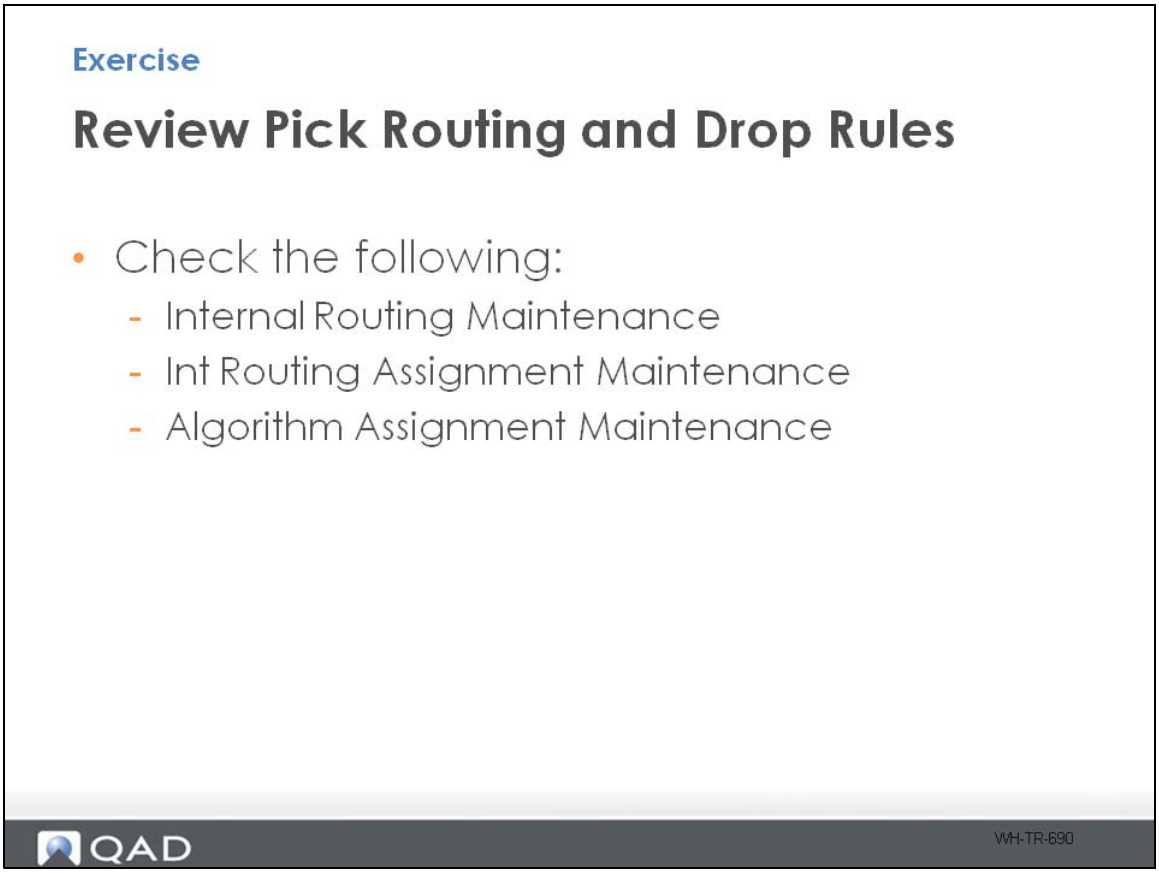
Confirm the warehouse, areas, and zones are setup and configured per a previous exercise. Refer to the Introduction section of this training guide for programs to use to verify setup of these aspects is complete.

Exercise - Ship Location Setup



For scheduling and shipping purposes set the ship location Storage Type to Stage, using Warehouse Location Maintenance. Setting the Storage Type to Stage lets you use different algorithms and move product around.

Exercise - Review Pick Routing and Drop Rules

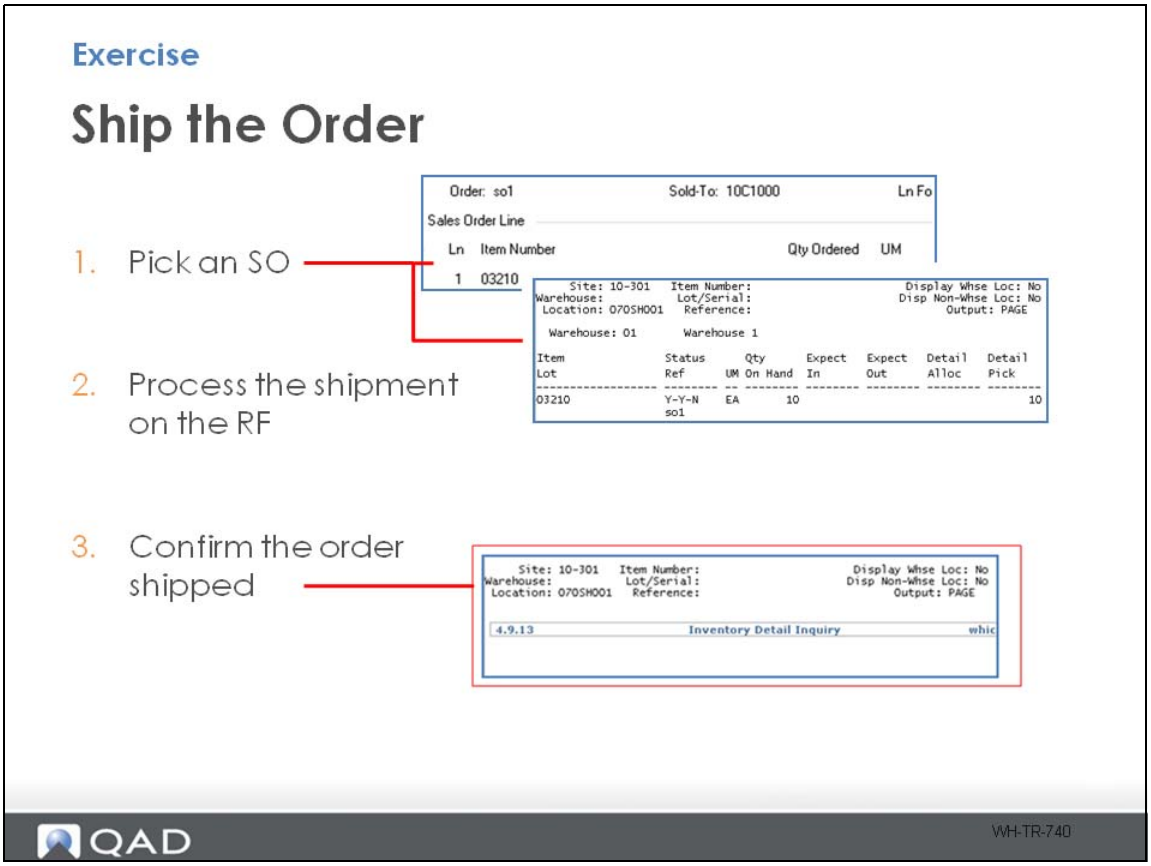


Confirm the a pick routing, routing assignment, and drop rules are associated to the shipping area. Refer to the Picking section of this training guide for more information on:

- Internal Routing Maintenance (Picking)
- Internal Routing Assignment Maintenance (PICK-*—>Picking)
- Algorithm Assignment Maintenance (PK—>PICK-*)

The above maintenance menus were set up in the picking section exercises.

Exercise - Ship the Order



1 Use Sales Order Maintenance to pick the order and assure it is in a shipping location.

2 Process the shipment using RF Truck Ship (3.5) option.

   a Select the shipping location.

   b Confirm the pre-shipper.

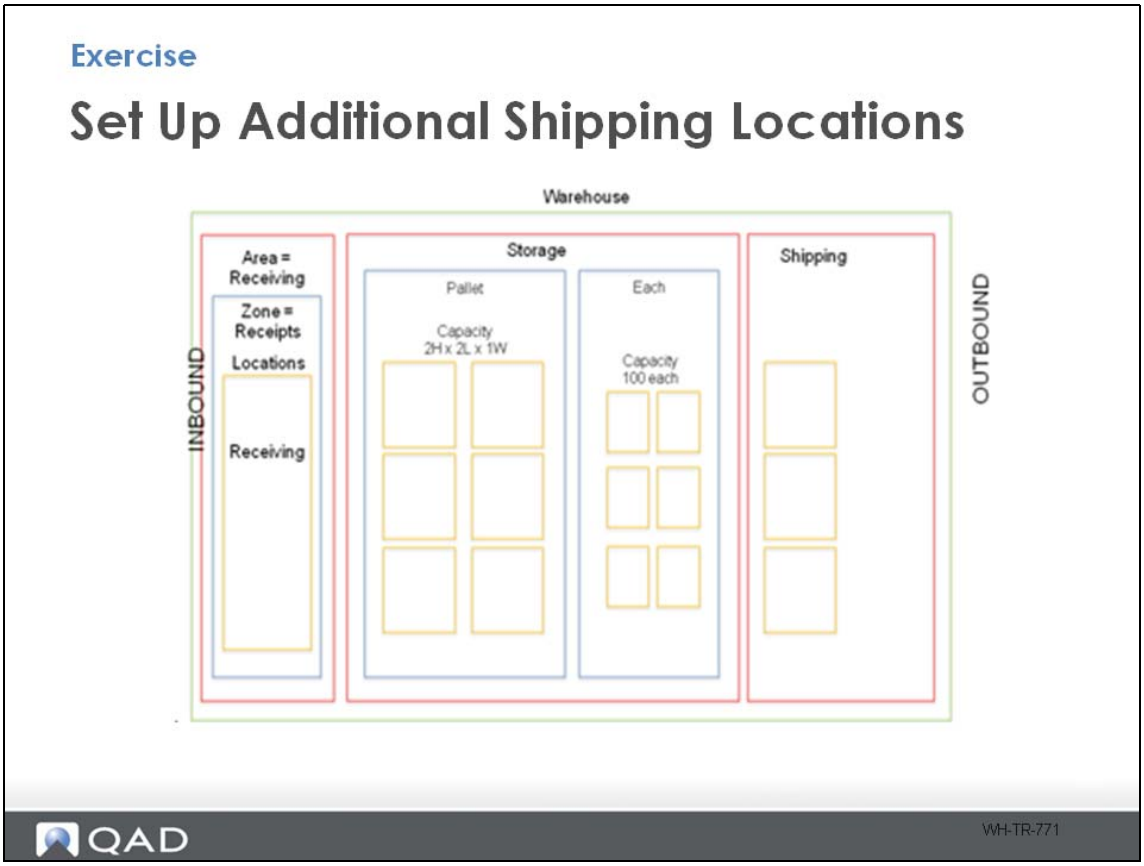
   c Confirm the shipment.

   Note Alternatively you can process the shipment using Pre-Shipper/Shipper Confirm in QAD core programs.

3 Confirm order shipped from shipping location using Inventory Detail Inquiry.

In shipping it is common to move loads between shipping locations/lanes before final shipment. QAD Warehousing supports this process.

Exercise - Move Load to an Alternate Shipping Location/Lane



In this exercise, you perform several steps to move a load to an alternate shipping location/lane. The remainder of this section covers the steps included in this exercise to set up alternate locations.

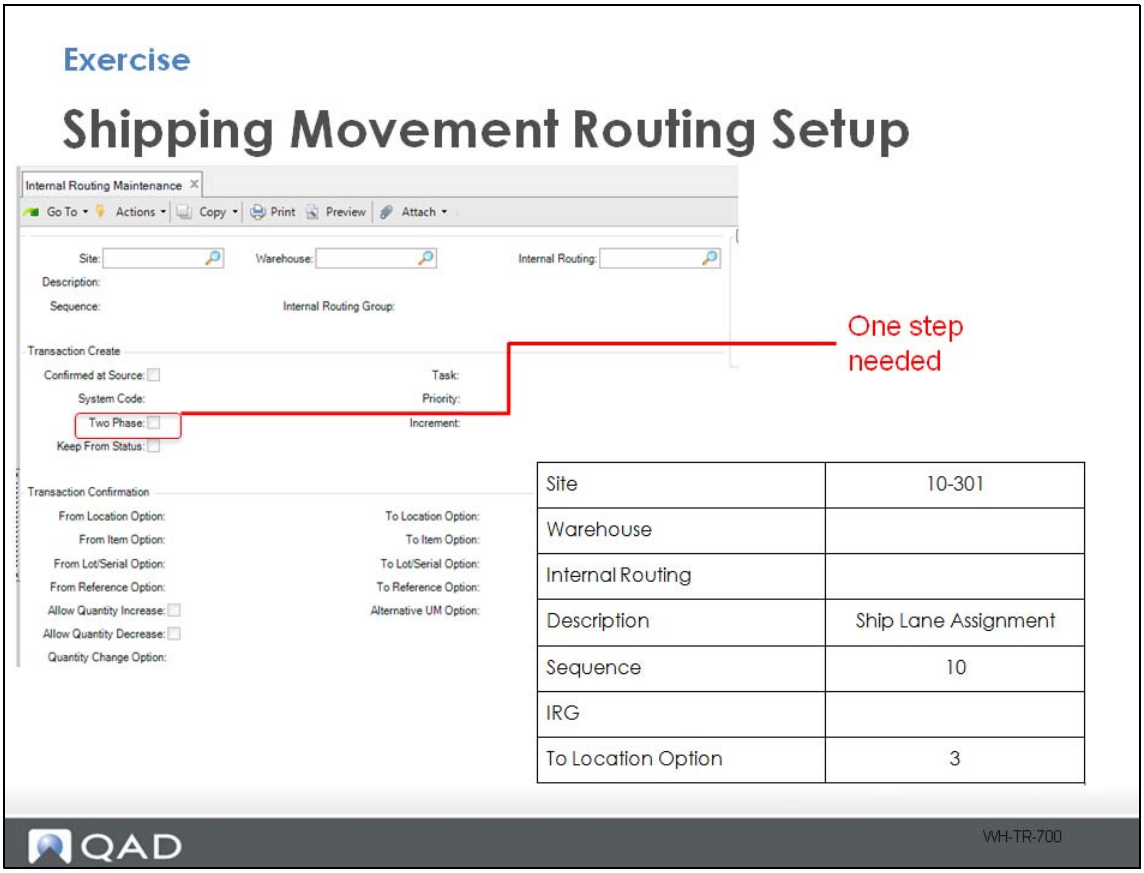
1 Set up two more shipping locations/lanes using Warehouse Location Maintenance

2 Copy the current shipping location format.

Field	Data
Site	10-301
Location	
Description (optional)	
Warehouse	
Storage Location Group	
Work Location Group	
Storage Type	Stage

3 Set up a routing to facilitate the product flow for a manual product move.

Exercise- Move Load to an Alternate Shipping Location/Lane (cont'd)



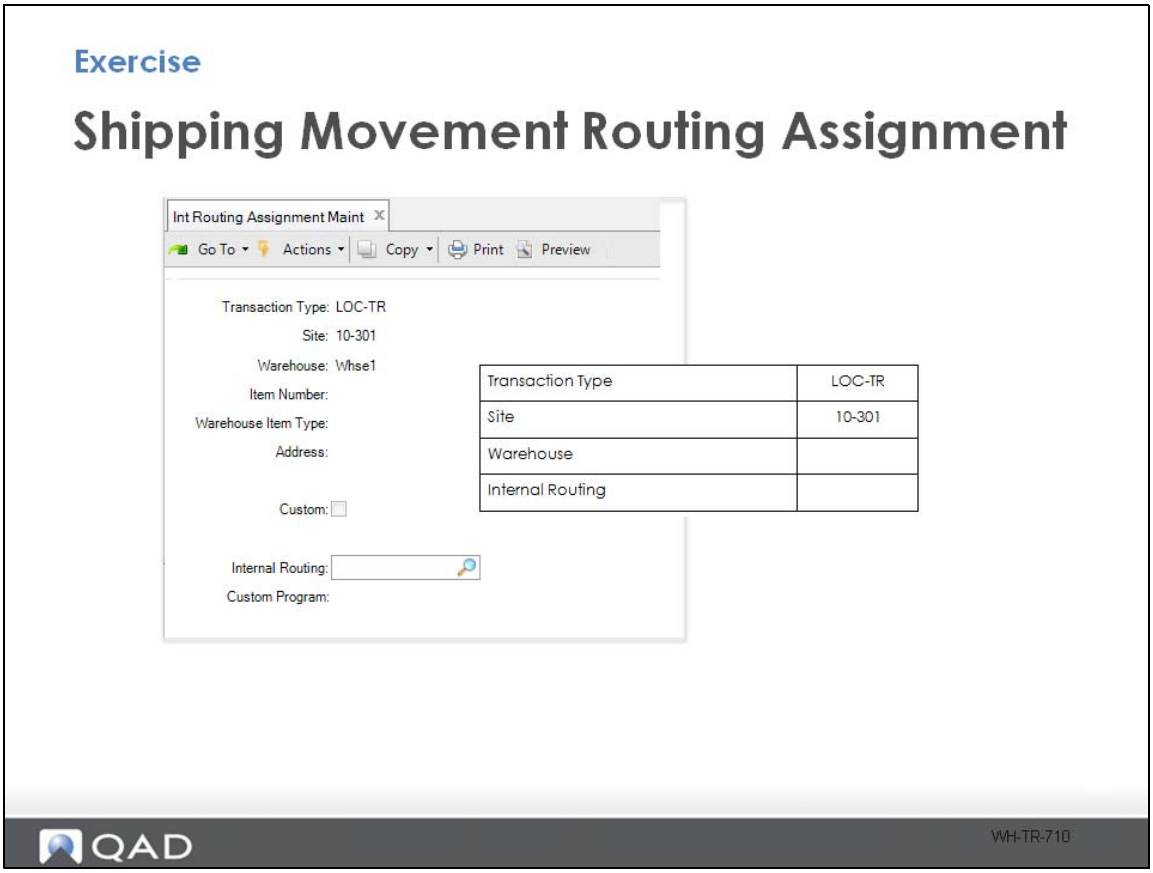
A manual container move on the RF scanner moves the load to another shipping location within the shipping area.

4 Setup a one step routing to move the load to a shipping lane using Internal Routing Maintenance.

5 Define parameters, and when not provided, note the parameters you enter here:

Field	Data to Enter
Site	10-301
Warehouse	
Internal Routing	
Description	
Sequence	10
IRG	
To Location Option	3

Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd)



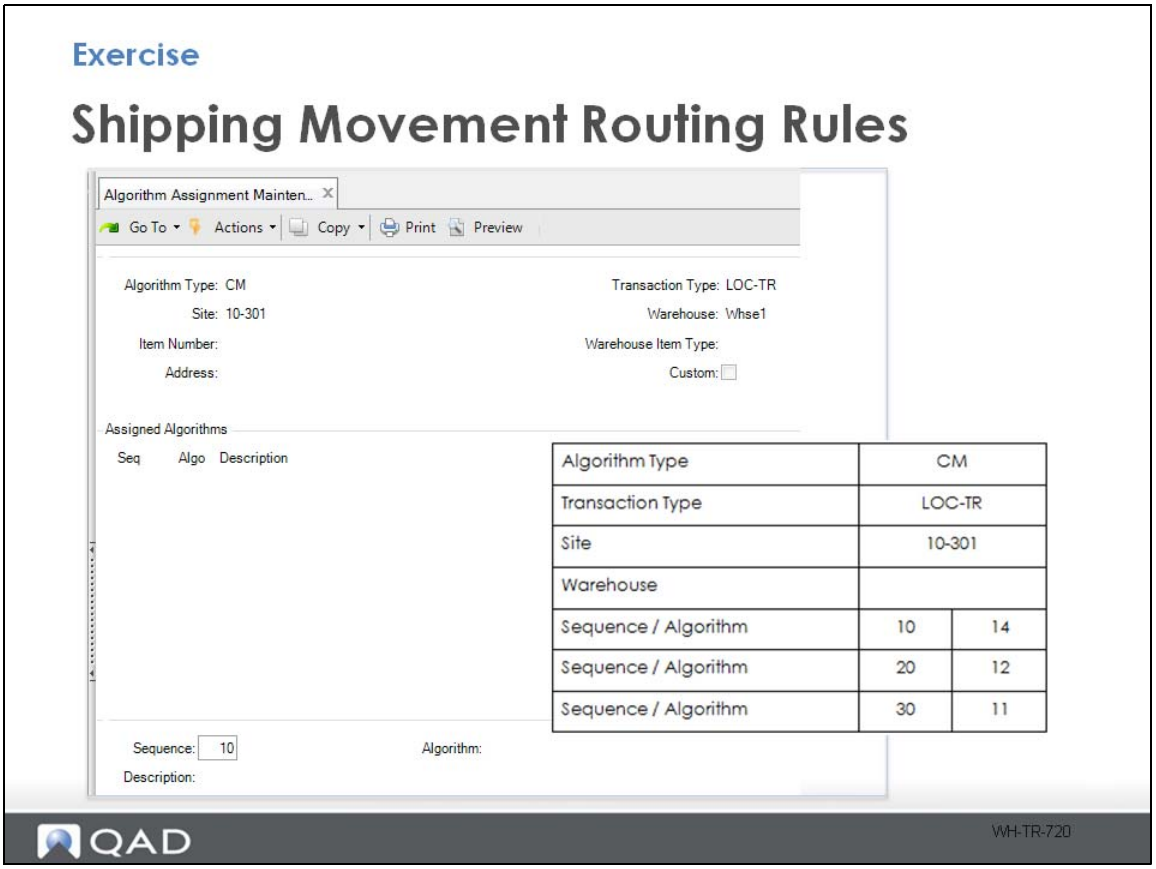
When the system generates a location transfer transaction during a manual container move, the transaction follows the shipping movement routing.

6 Assign the shipping movement routing to the location transfer transaction type using Internal Routing Assignment Maint.

7 Define parameters, and when not provided, note the parameters you enter here:

Field	Data to Enter
Transaction Type	LOC-TR
Site	10-301
Warehouse	
Internal Routing	

Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd)



Each order has a pre-defined carrier. The ship lane assignment rules should assign the order to a specific lane based on carrier.

8 Use Algorithm Assignment Maintenance to define picking rules for replenishment inventory.

9 Define parameters, and when not provided, note the parameters you enter here:

Field		Data to Enter
Algorithm Type		CM
Transaction Type		LOC-TR
Site		10-301
Warehouse		
Sequence/Algorithm	10	14
Sequence/Algorithm	20	12
Sequence/Algorithm	30	11

10 Test the load movement in the shipping area

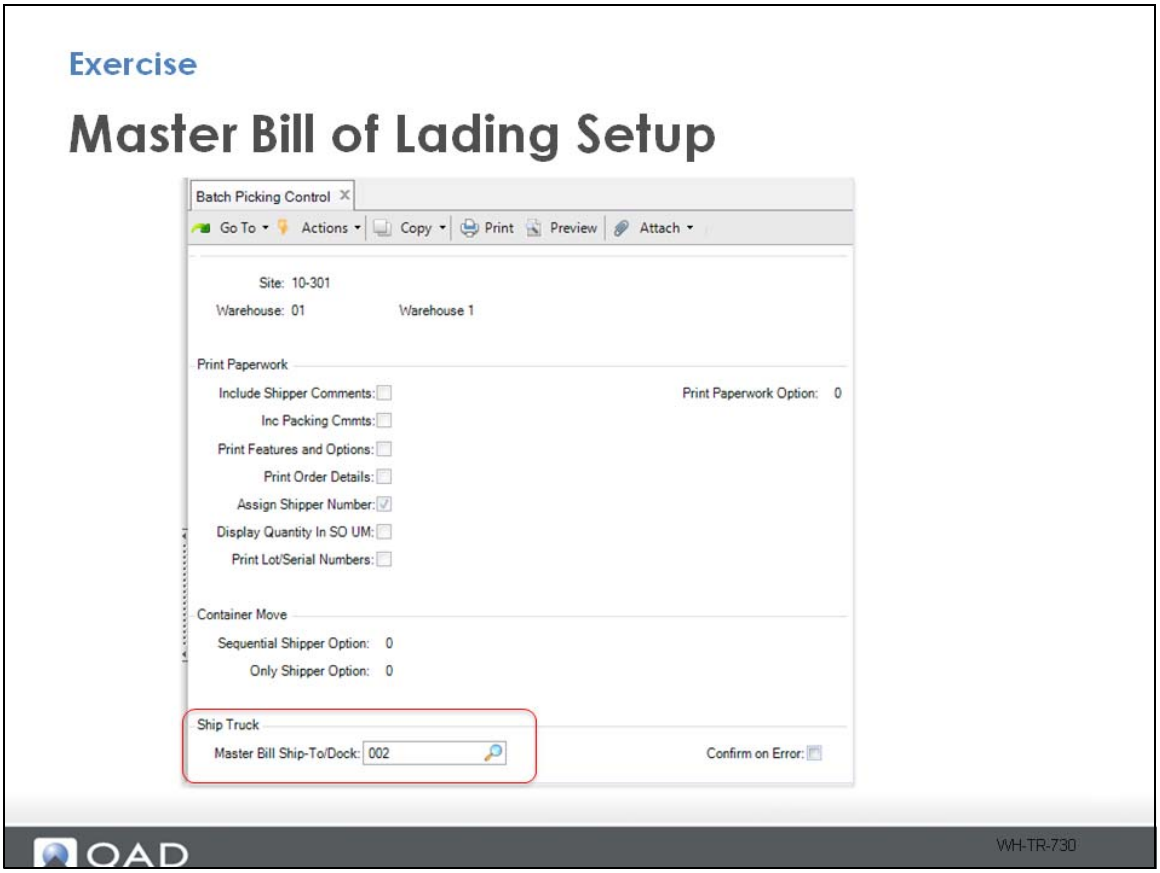
- **a** Confirm a load is in shipping.
- **b** Log into RF.
- **c** Select RF 3.4.
- **d** Select an LPN in shipping to move.

e Select the origination destination.

f Select the new location.

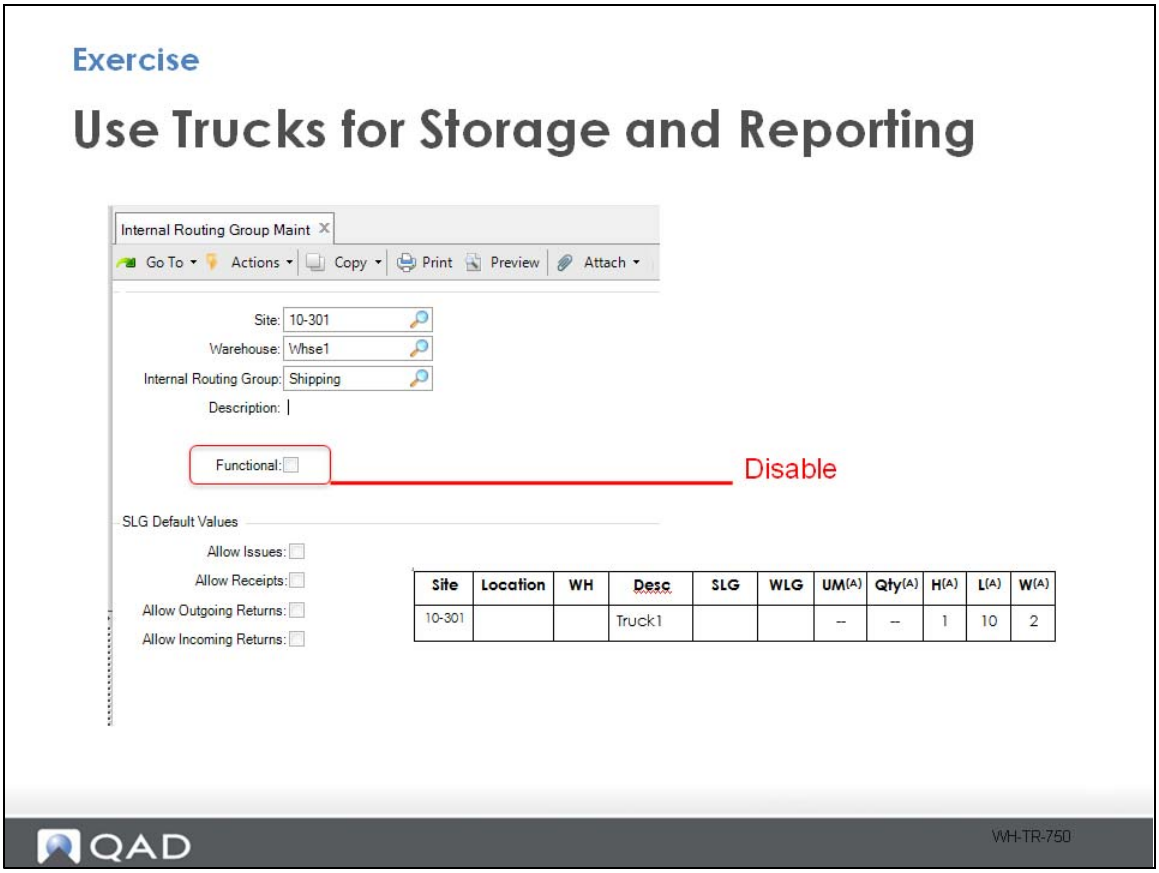
g Check Inventory Detail Inquiry to see load moved to a new location.

Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd)



11 Some companies may want to setup trucks as temporary storage locations and report on the truck location capacity. Use Batch Picking Control to set this up.

Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd)



12 To report the capacity of locations in the shipping area, disable the Functional field in Internal Routing Group Maintenance.

13 Define parameters, and when not provided, note the parameters you enter here:

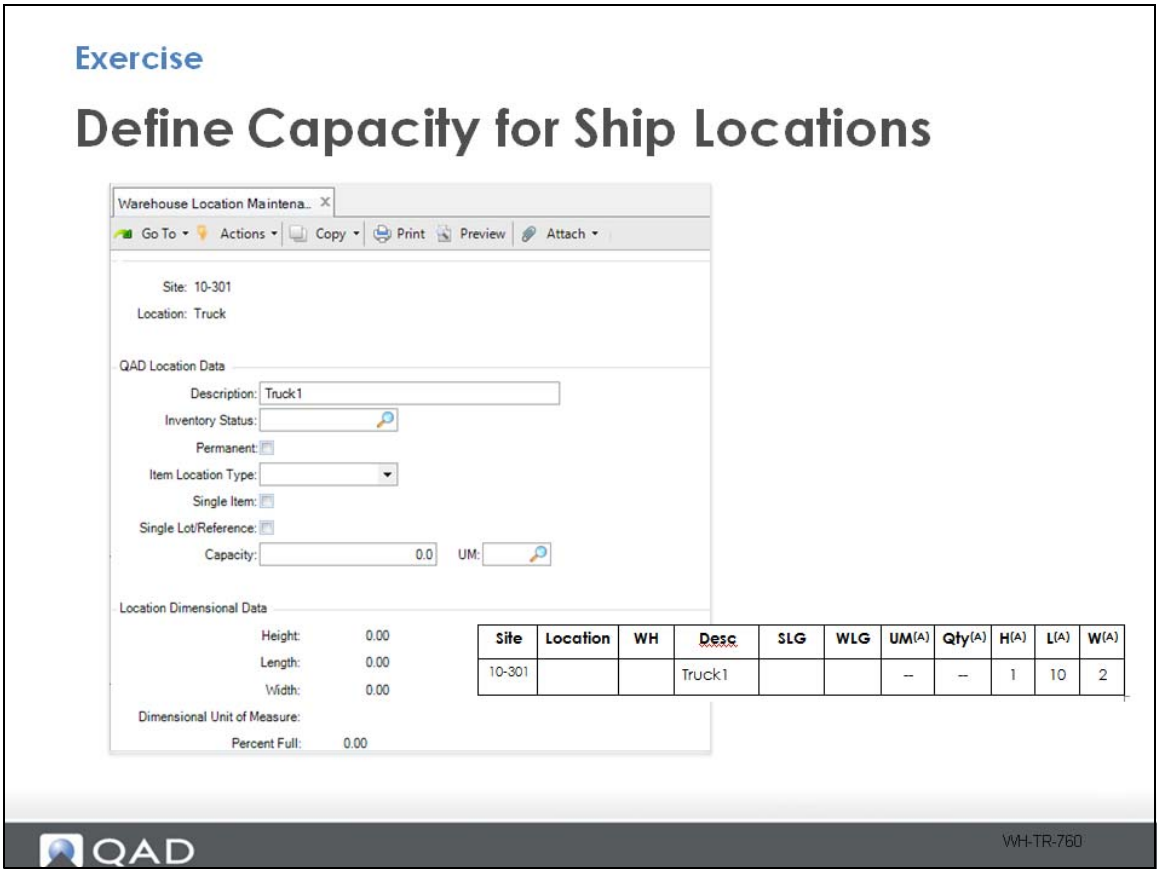
Site	Warehouse	IRG	Description (optional)	Functional
10-301			Shipping	N

Notes

Field is in the final frame.

Set Storage Type to Truck.

Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd)



14 Add a truck location using Warehouse Location Maintenance, and define location capacity.

15 Define parameters, and when not provided, note the parameters you enter here:

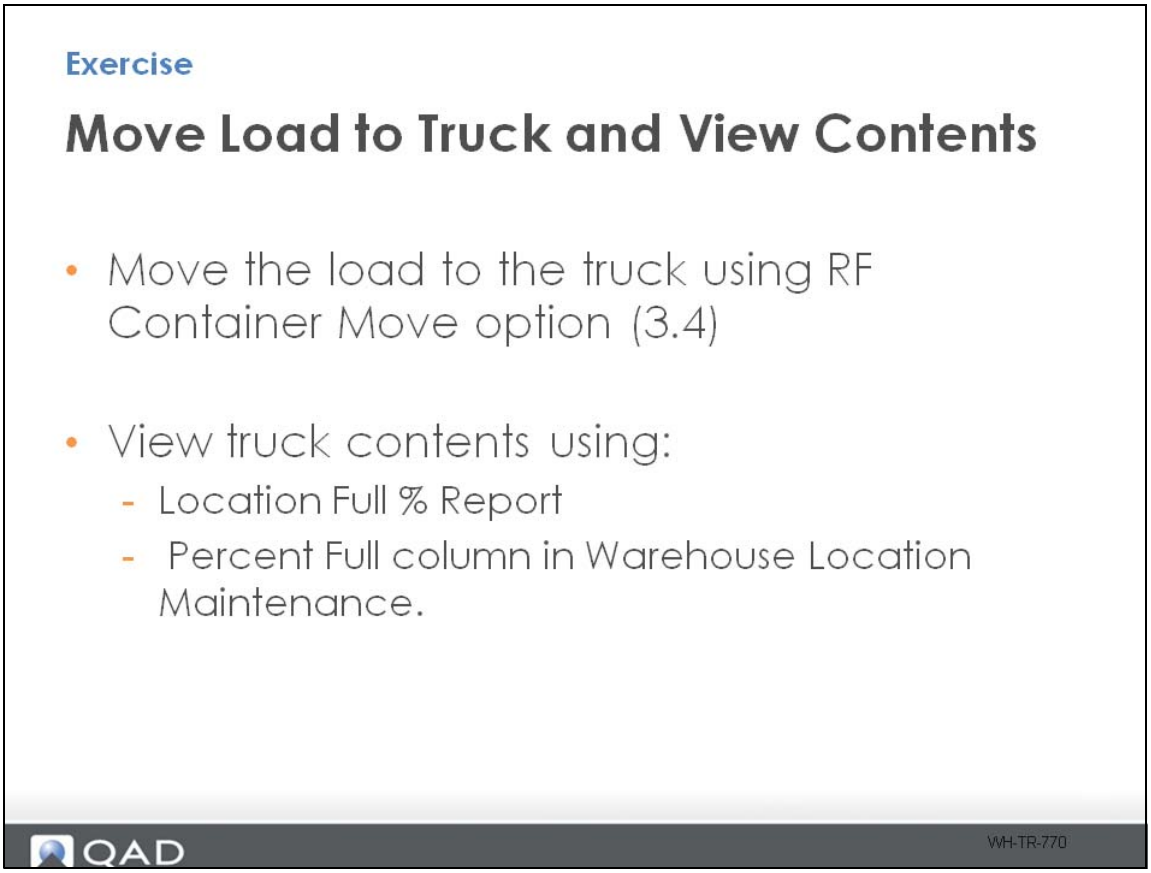
Site	Location	Warehouse	Description	WLG	UM(A)	QTY(A)	H(A)	L(A)	W(A)
10-301			Truck1				1	10	2

Notes

Field is in the final frame.

Set Storage Type to Truck.

Exercise - Move Load to an Alternate Shipping Location/Lane (cont'd)



16 You are ready to move the load to a truck. To do this, use the RF Container Move option (3.4).

17 You can view truck contents using:

- Location Full % Report
- Percent Full column in Warehouse Location Maintenance.

Note When changing the shipping area to non-functional, you are restricted in using lanes and lane assignment algorithms for wave-picking purposes. To avoid this restriction, keep the shipping area a functional area and add a new non-functional truck area.

Questions

1. When truck shipping, why do you use Internal Routing Group and Storage Location Group as part of the setup?
2. True or False. Shipping is a functional area, so you use a LF algorithm.
3. True or False. Only one user in the warehouse can perform the manual truck ship moves.
4. What does the RF Ship Truck option provide?
5. What does the RF Container Move option provide?
6. In QAD Warehousing you can use trucks as _____ locations

Answers

1 When setting up shipping, why do you use Internal Routing Group and Storage Location Group Maintenance programs

2 True. Shipping is a functional area, so you use a LF algorithm that does not factor in available space.

3 False. Since you associate users with the truck work location group in User Work Location Group Maintenance, any user assigned can perform the manual moves.

4 RF Ship Truck lets you track ship ready status and select specific shippers to include.

5 With container move, you can move any pallet to a truck, validate moving container steps, report the position of pallets in the truck, and load pallets in reverse dropping order.

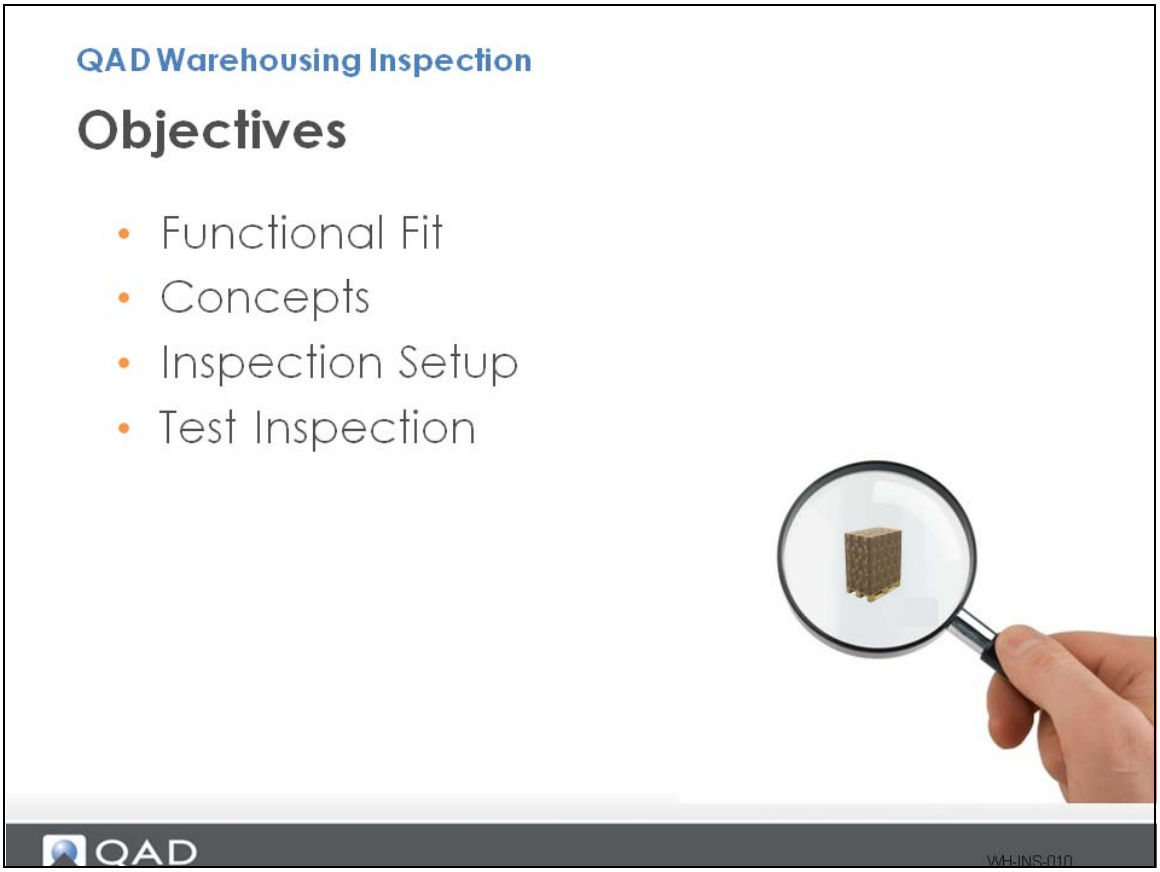
6 storage

Notes

Chapter 6

Inspection

Objectives

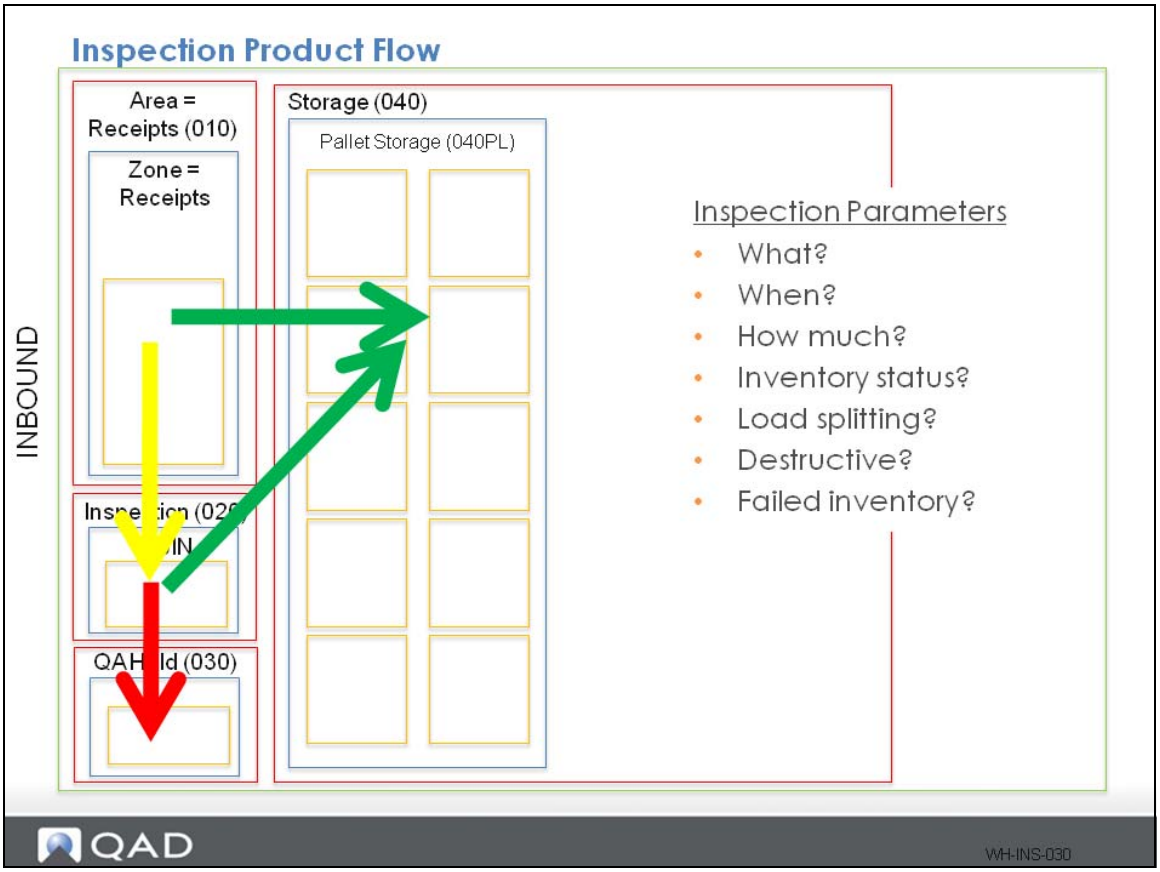


QAD Warehousing supports quality inspection with sample control, change of inventory status and creation of warehouse transactions.

What We Do Not Do Well

QAD Warehousing supports the product flow through the inspection process but requires a quality module interface to manage specific quality parameters.

Inspection Product Flow



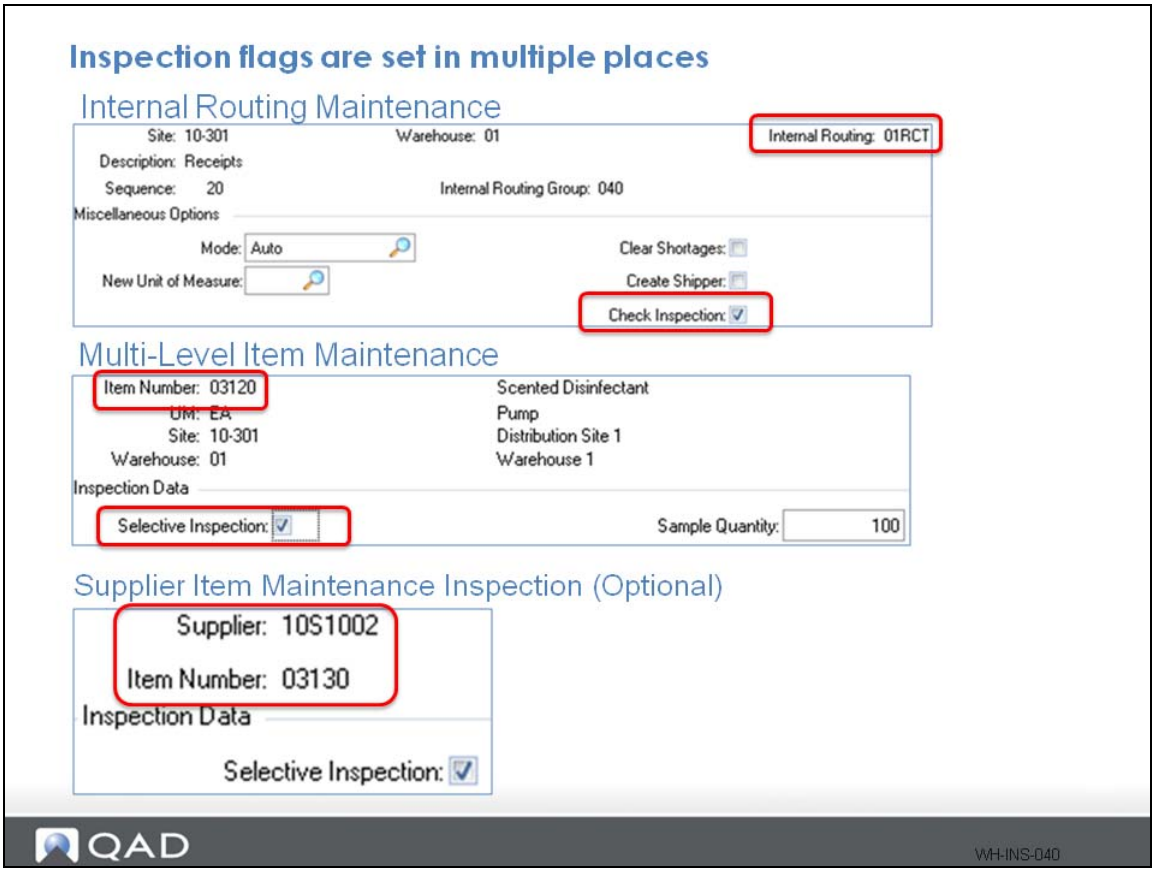
When product is received, QAD Warehousing supports the product movement from receiving into inspection and on to disposition or storage. Flexible parameters can be setup to determine when product is inspected.

- What is inspected?
- When is it inspected?
- How much is inspected?
- What is the inventory status during inspection?
- What happens to the load during inspection?
- Is inspection destructive?
- What happens to failed inspections?

Did You Know

- Quality algorithms start at receiving.
- Inspection tags can be printed based on receipt frequency, a previous bad inspection, and a required inspection on the order.

Inspection Flags Set in Multiple Places



Once you determine the use of inspection, next, set up the inspection process.

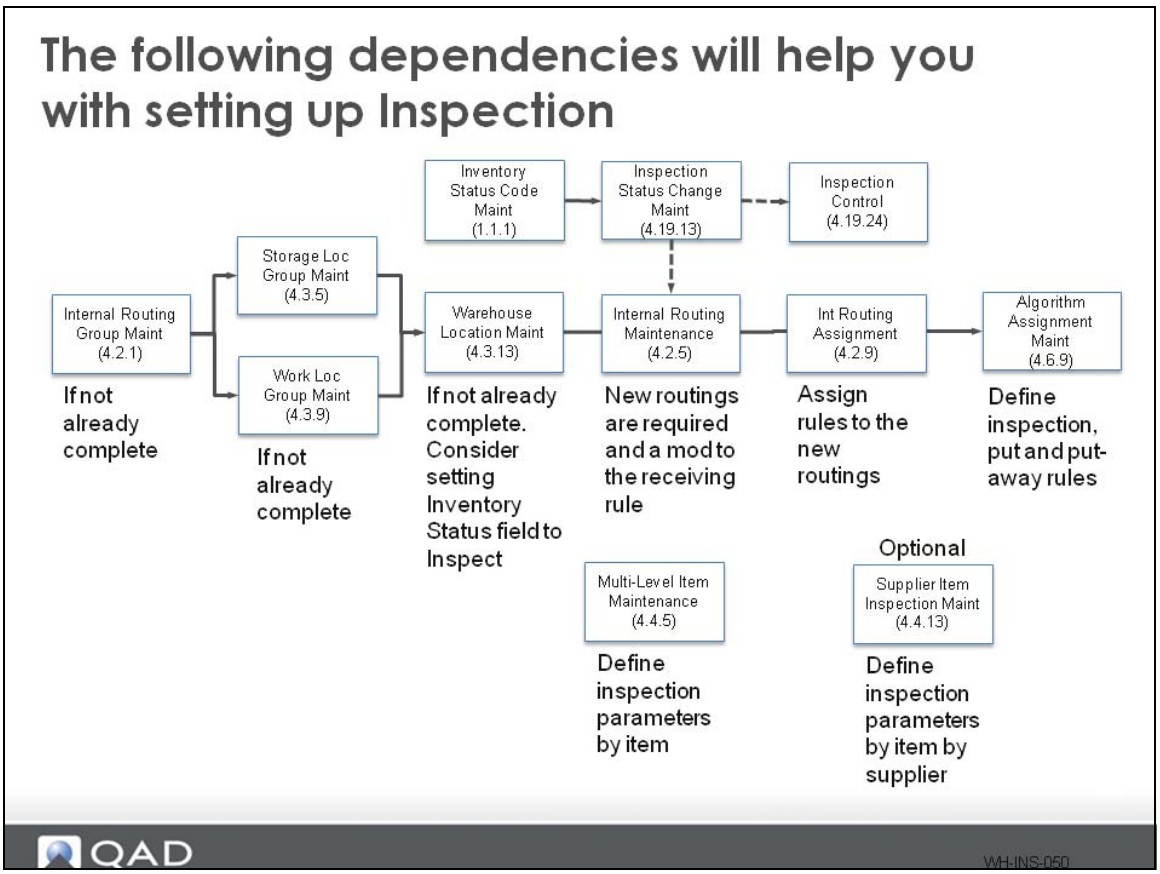
In Internal Routing Maintenance, enable the:

- Check Inspection field, confirming the receipt routing checks the item inspection parameters.
- Selective Inspection field, indicating the item requires inspection in the warehouse based on the defined inspection parameters.

Optionally, setup the Item/Supplier Selective Inspection field to trigger inspection parameters.

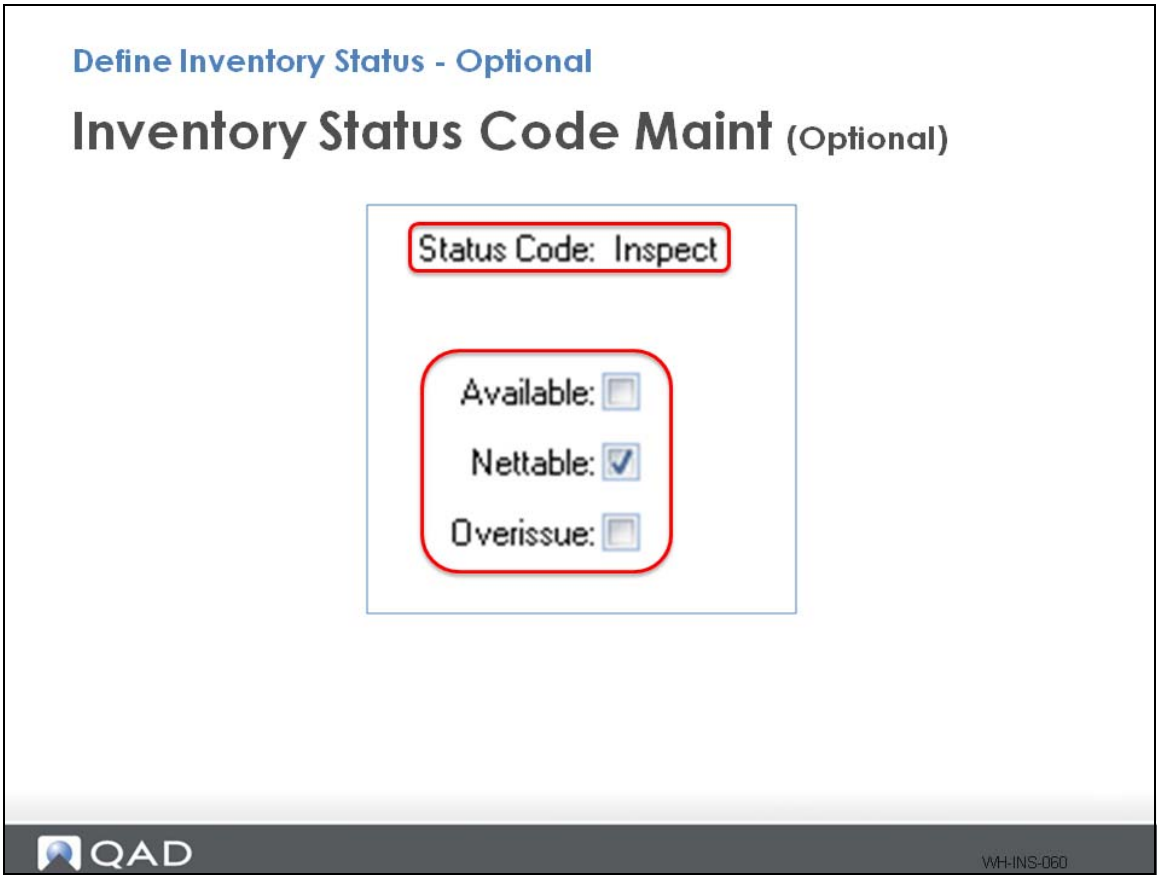
You can set the Inspection field in Internal Routing Maintenance, Multi-Level Item Maintenance, and Supplier Item Maintenance Inspection.

Dependencies



The graphic above depicts the QAD Warehousing programs you use to set up for inspection.

Define Inventory Status - Optional



Optionally, use Inventory Status Code Maintenance to define a Status Code for inspection. This provides more detail to inventory status when in different processing areas.

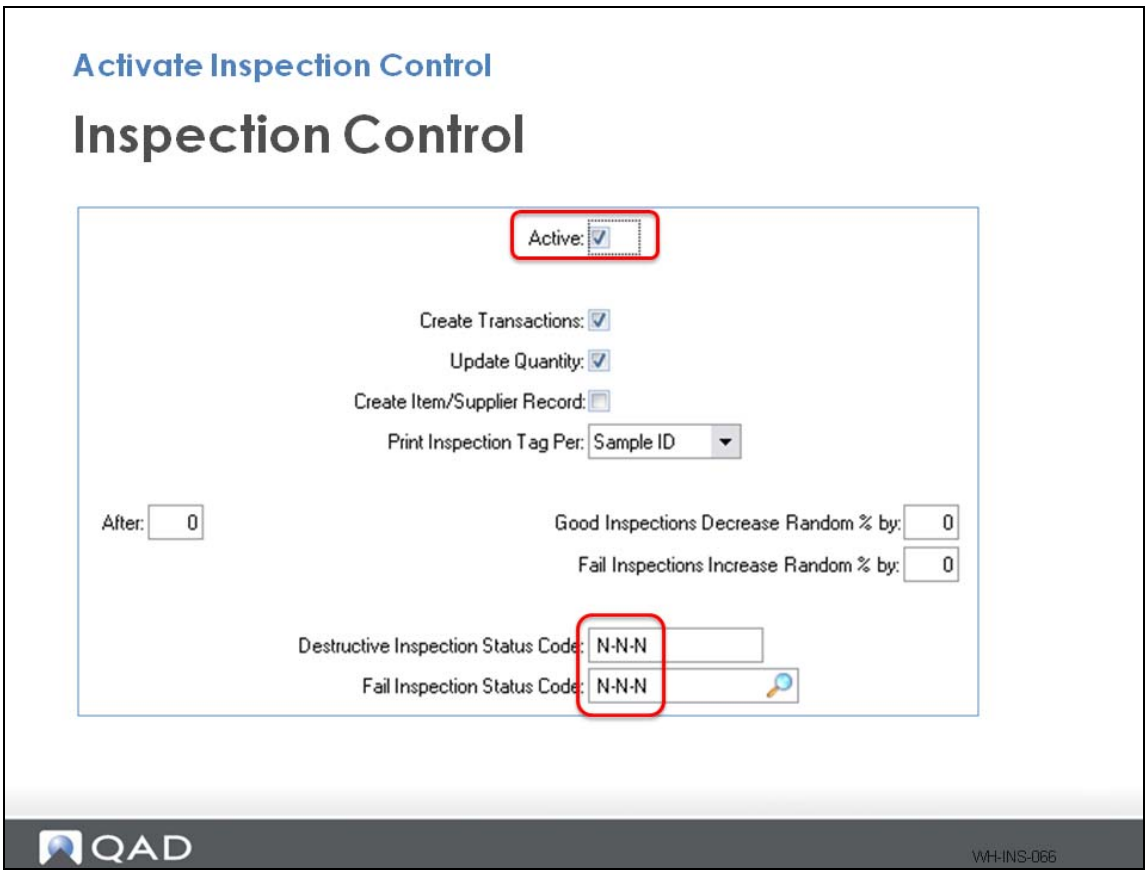
This optional field lets you define new status codes when inventory moves into the inspection area.

There are four frames and 6 fields in Inventory Status Code Maintenance used for configuration.

Did You Know

Inventory status codes can automatically change when moved to inspection.

Activate Inspection Control



The Inspection module need to be activated using Inspection Control prior to use.

Destructive Inspection Status Code lets you enter the inventory status code for destructive inspections. When a destructive inspection occurs, inspected goods are useless and cannot be re-used. The system changes the inventory status code to prevent its usage in future warehouse transactions.

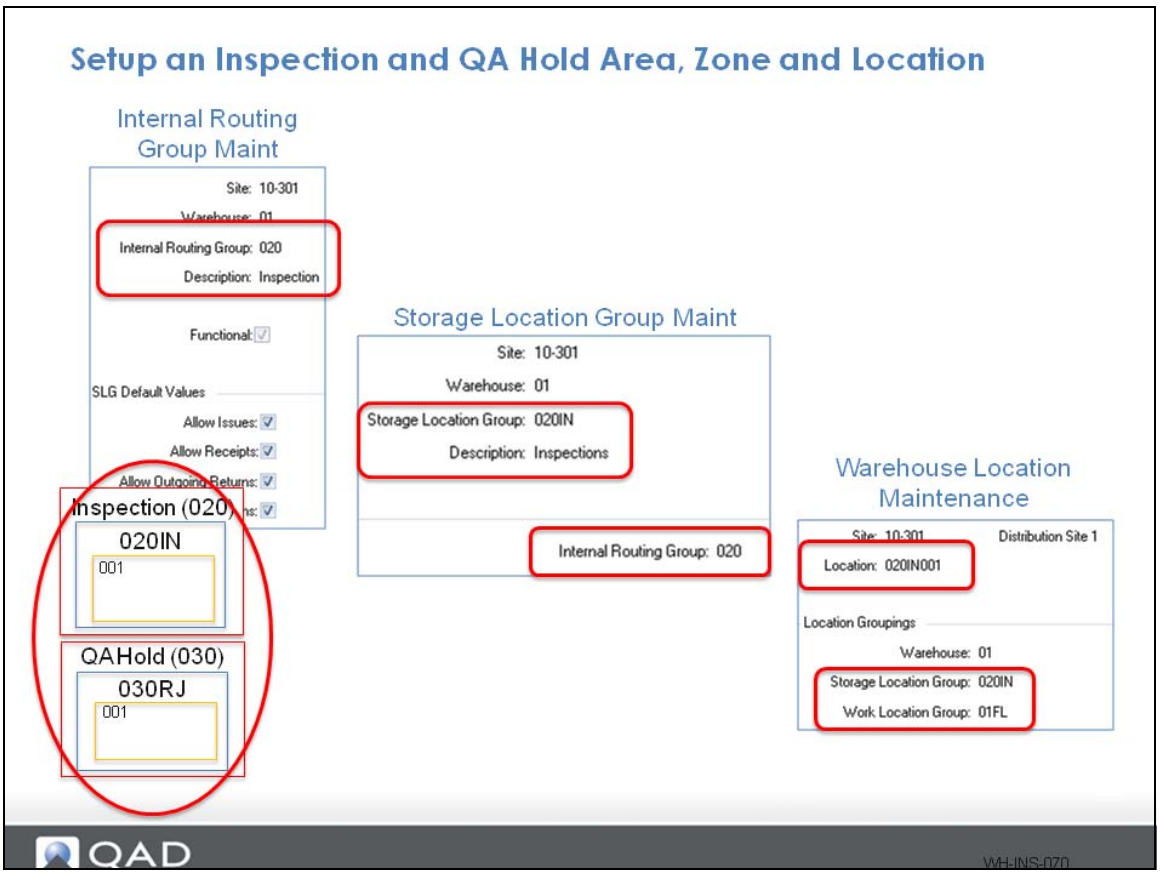
Fail Inspection Status Code lets you enter the percentage to increase the random inspection percentage after a number of failed inspections.

There is one frame and 10 fields in Inspection Control used for configuration.

Did You Know

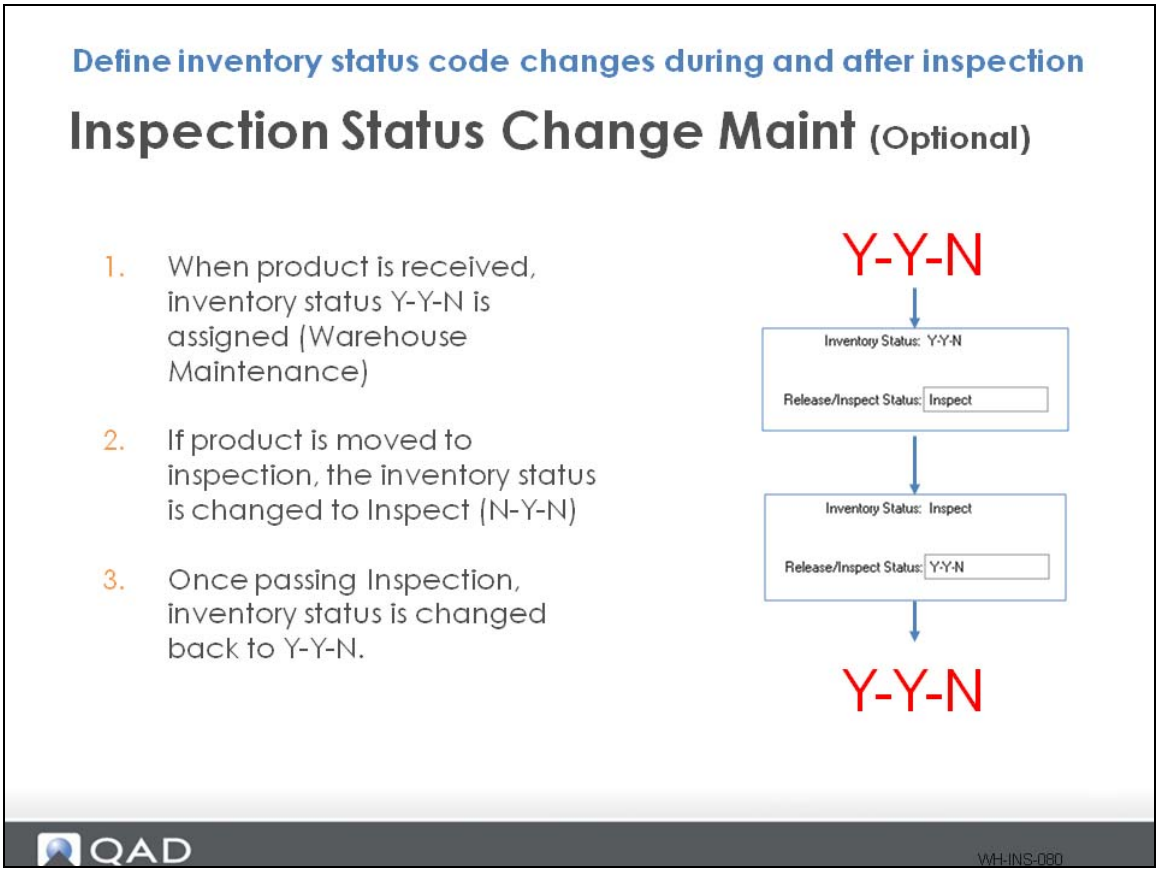
Destructive inspection means the inspected item is no longer usable.

Set Up Inspection and QA Hold Area, Zone, and Location



Set up an area and zone, using the traditional parameters for a functional area. When setting up locations for inspection and QA hold areas, you create a custom inventory status for each zone, using Inventory Status Code Maintenance. Remember that you must have at least one location within the zone.

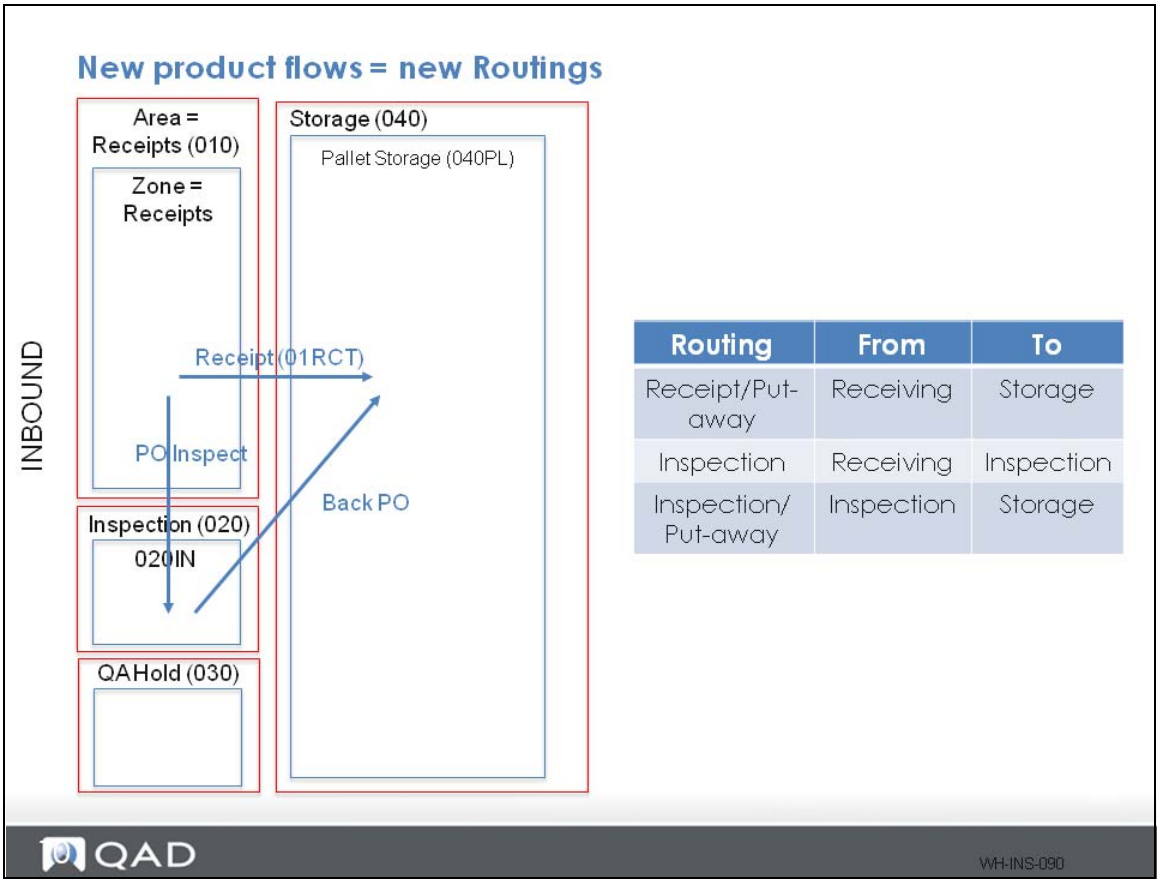
Define Inventory Status Code Changes



In some situations, it is helpful to change the inventory status when product is being inspected. Use Inspection Status Change Maintenance to define the inventory status code changes when product enters and leaves the inspection area.

There are two frames and two fields in Inspection Status Change Maintenance used for configuration.

New Product Flows=New Routings



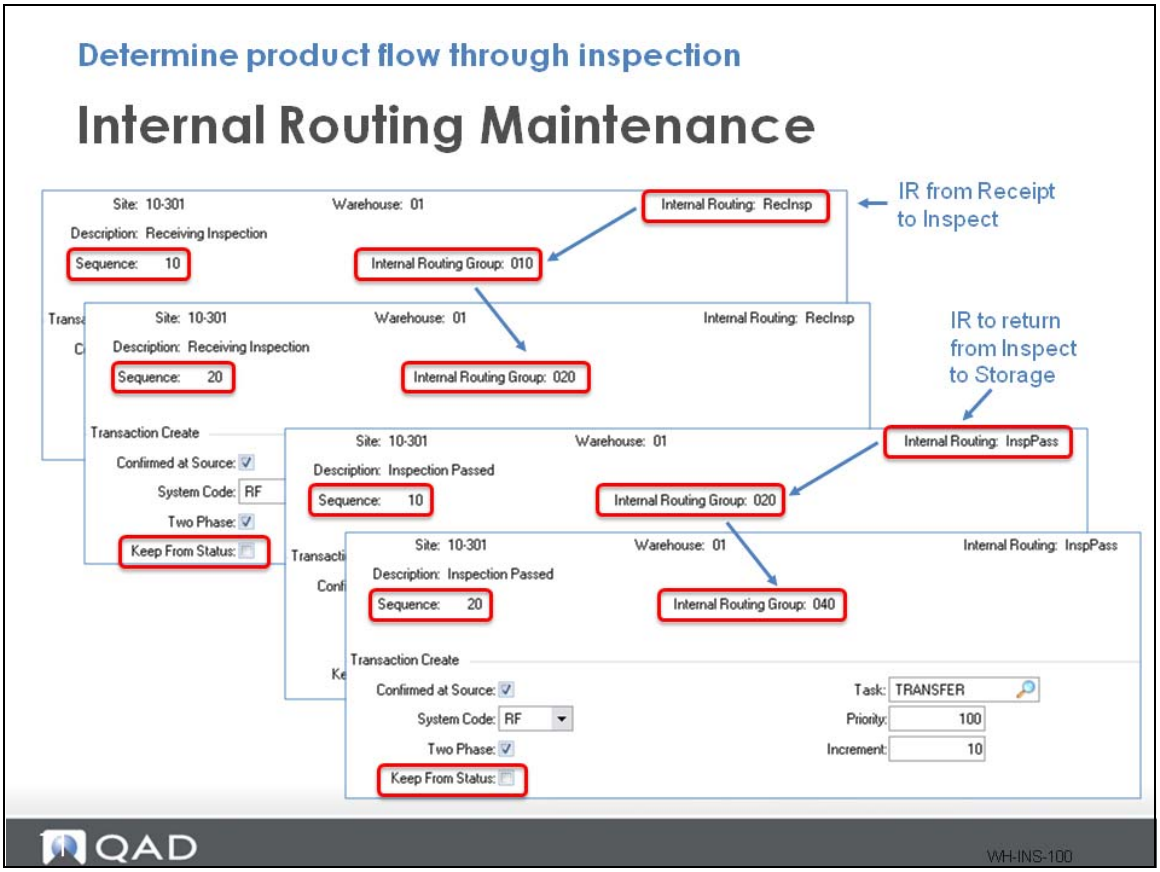
Routing	From	To
Receipt/Put-away	Receiving	Storage
Inspection	Receiving	Inspection
Inspection/ Put-away	Inspection	Storage

With the addition of an inspection process and area, you need to develop two new potential routings to represent the new product flows:

- One from receiving to inspection (PO Inspect in the graphic above).
- Another from inspection to storage (Back PO in graphic above).

You can also develop a routing from the inspection to QA Hold Area, but for now, you can focus on a pass inspection result.

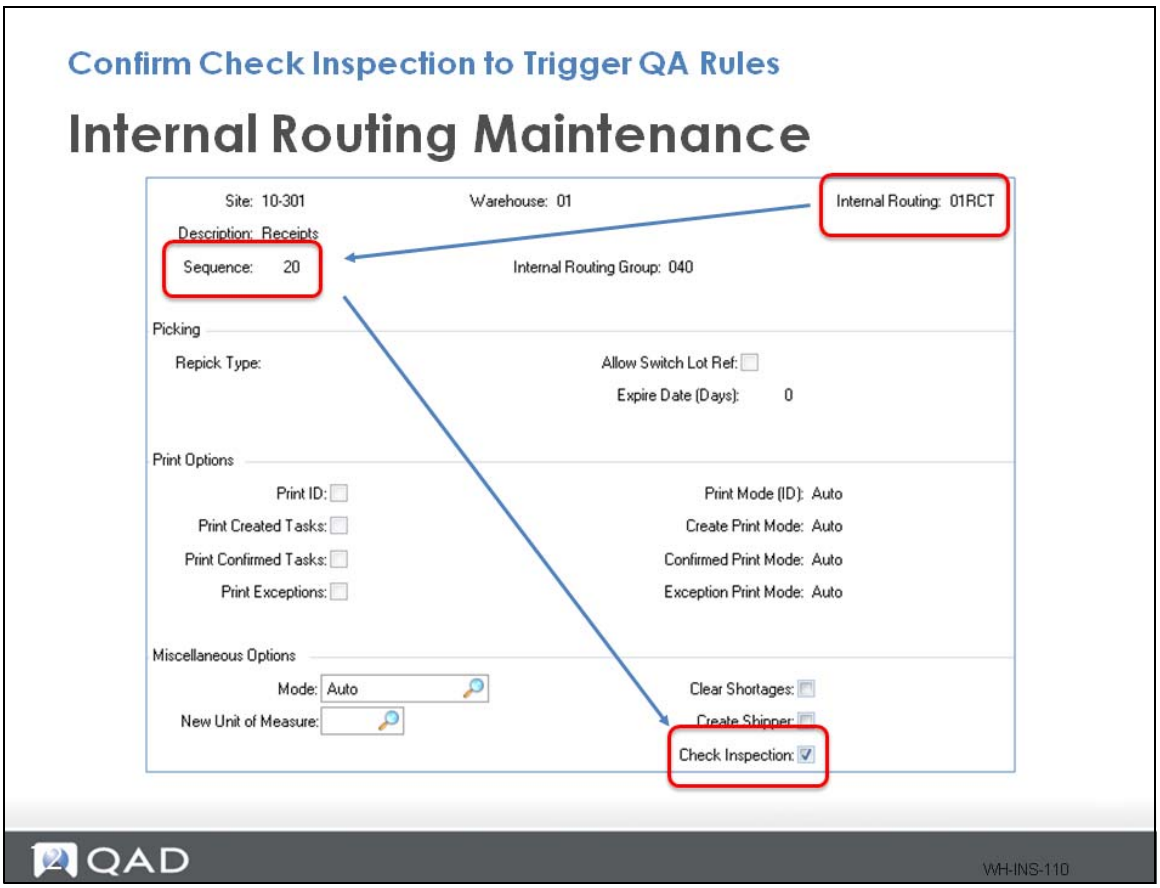
Determine Product Flow through Inspection



Set up a routing for moving from receiving (010) to inspection (020) and from inspection (020) to storage (040).

To keep inventory status codes correct, uncheck the Keep From Status field in the Sequence 20 of both routings. This allows the inventory status code to change as the product moves into the new area. If checked, inventory keeps the previous status that it had when it is moved into the new area. In this example, you change the inventory status when the product moves into inspection so you uncheck this field.

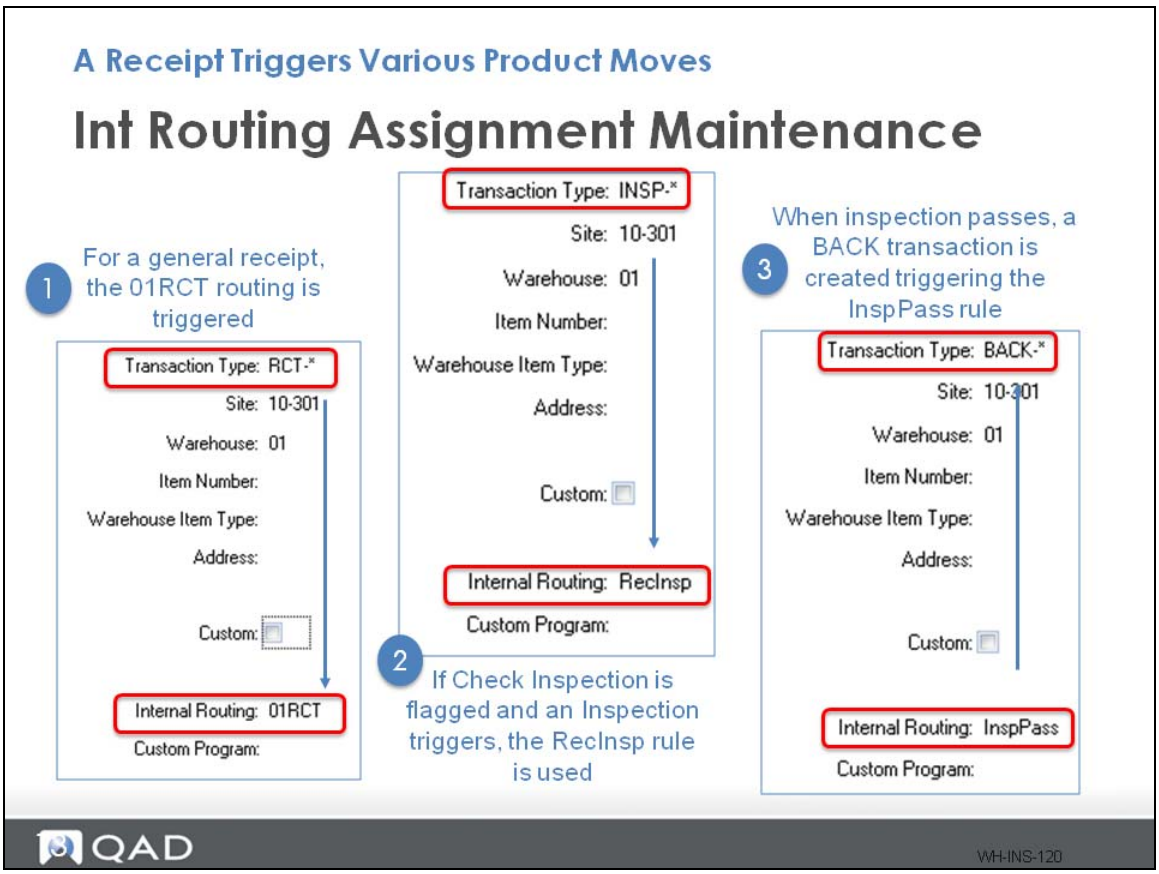
Confirm Check Inspection to Trigger QA Rules



Going back to the initial receipt to put-away routing developed during receiving or warehouse setup, check the Check Inspection field in the last frame of the Sequence 20 in Internal Routing Maintenance. This triggers the QA rules upon receipt and routes the load, or part of the load, to inspection as needed.

Note Enabling the Check Inspection field in Sequence 10 does *not* trigger the QA rules; however, if you have additional sequences, 10, 20, 30, and so on, the system does look at all additional sequences. Generally, sequence 10, which is the product receipt, or first step, does not get assigned an inspection step, it is the subsequent step after receiving.

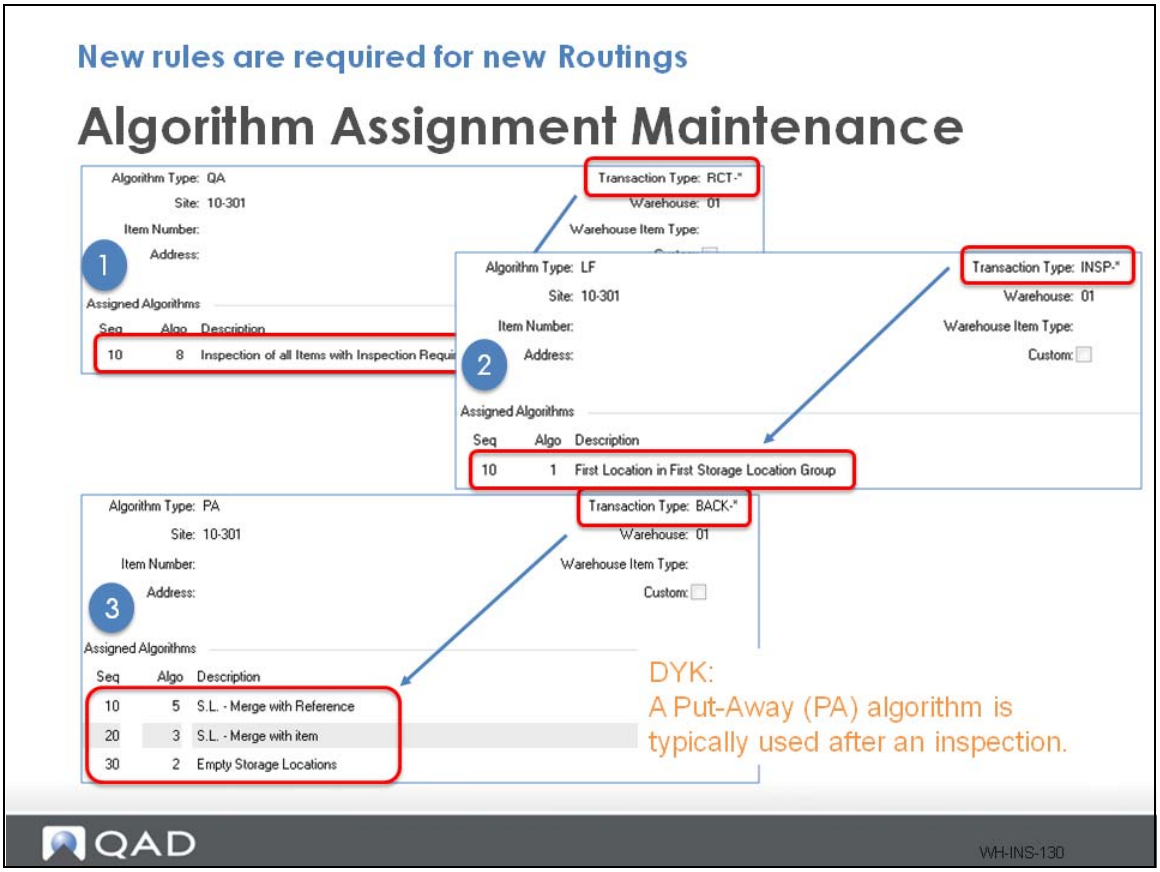
A Receipt Triggers Various Product Moves



Note the following regarding inspection triggers:

- When a product is received, the system creates a RCT transaction. This transaction triggers the general receipt routing.
- If the Check Inspection field is enabled in the 01RCT routing, the QA parameters are reviewed. If an inspection is required, the system creates an INSP transaction and triggers the inspection routing, RecInsp.
- When inspection passes, the system creates a BACK transaction, triggering the storage put-away routing, InspPass.

New Rules Required for New Routings



With the new routings, new algorithms are required to establish put-away rules.

The objective of a quality algorithm is to decide whether an inspection is required, to create an inspection tag. Inspections can be required, for example:

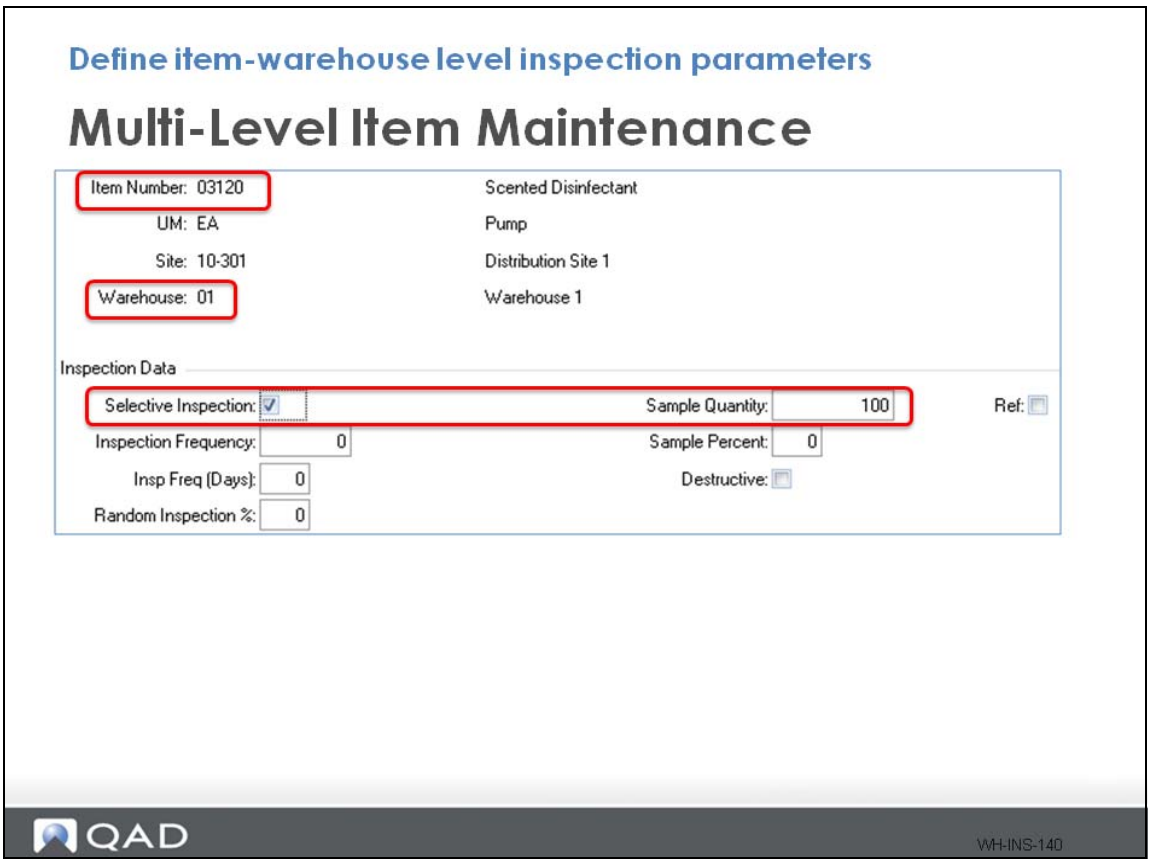
- Every X days
- If previous inspection was bad
- If inspection required on order (PO and WO)
- Every X receipts

In the scenario shown in the graphic above, QA rule 8 is triggered. An inspection takes place if the item is marked for inspection in Multi-Level Item Maintenance inspection data frame.

If an inspection is triggered based on the QA rules, the INSP transaction uses Location Find rule 1 to put-away product. Remember, LF rules do not consider space capacity.

When the inspection passes, the system creates a BACK transaction and uses the 5, 3, 2 rule sequence to put product away into storage. This rule sequence attempts to merge the sample back with the initial load (if a sample was used for inspection). Then, an attempt is made to consolidate in a location with the same. Finally, any empty location is sought.

Define Item-Warehouse Level Inspection Parameters



When the QA rule 8 is triggered, an inspection takes place if the item is marked for inspection in the Multi-Level Item Maintenance inspection data frame.

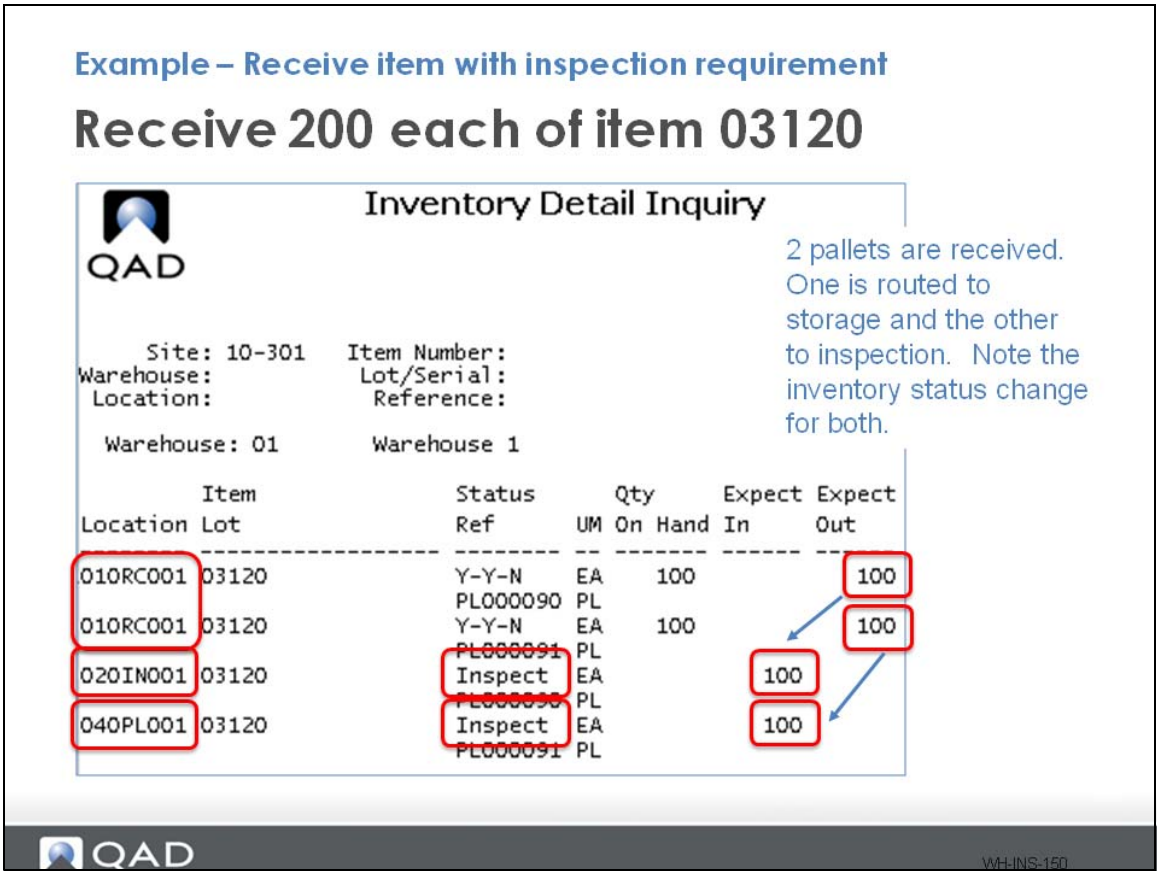
In the graphic above, you setup item 03120 to inspect 100 each whenever the product is received.

Did You Know

You can inspect items for inspection by quantity or percent.

Note When using Multi-Level Item Maintenance, there are three frames where you can enter inspection data. To get the inspection triggers to work in the warehouse, use the final Inspection Data frame to enter the item inspection parameters. Alternatively, you can enter the inspection parameters using Item-Warehouse Maintenance.

Example - Receive Item with Inspection Requirement

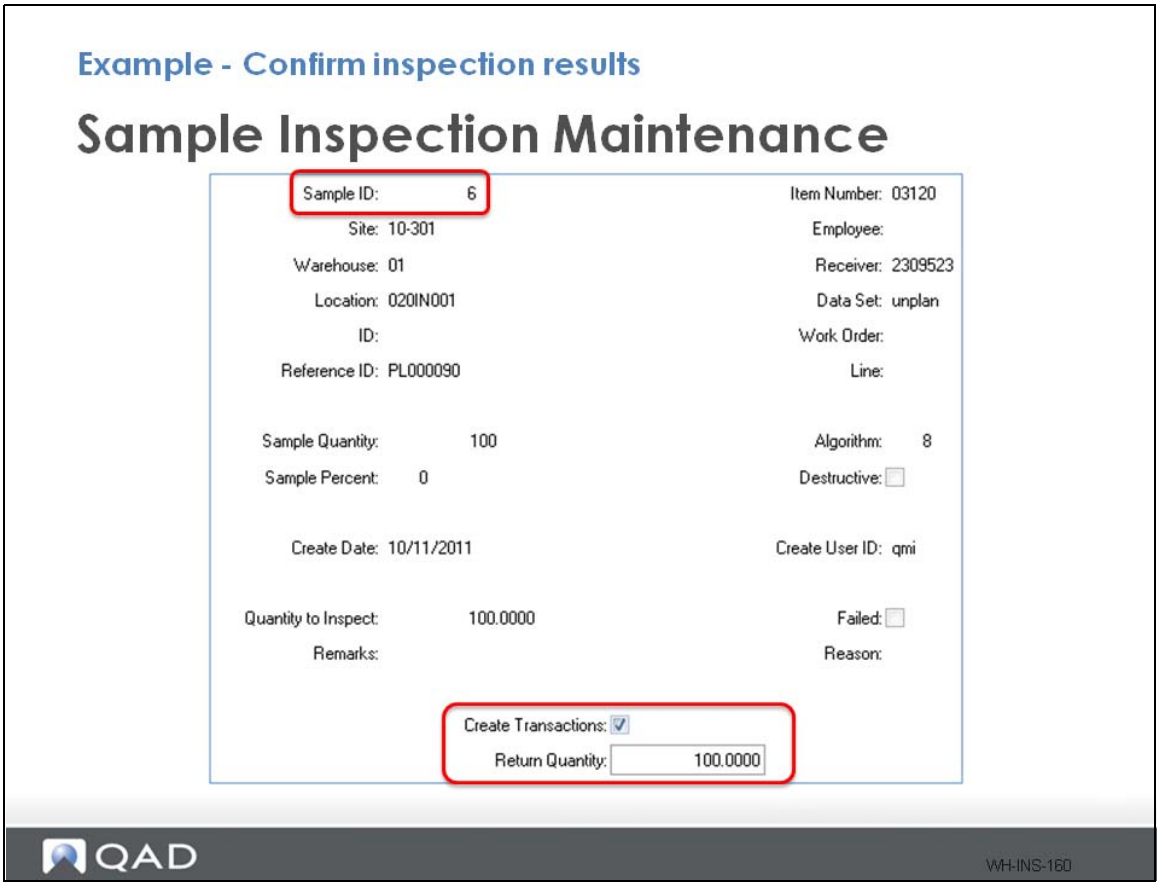


In this example:

1. Ensure all inspection flags, routings, and parameters are set for item 03120 as outlined earlier.
2. Receive 200 each of item 03120.

   Because the inspection flag is set for 100 each of item 03120, one full pallet (100 each) is routed to inspection. The remaining pallet is moved into a pallet storage location, but the inventory status is changed to Inspect, making it not available (N-N-N).
3. Move all pallets using Movement Confirmation Workbench to prepare for the next example step.

Example - Confirm Inspection Results



Use Sample Inspection Maintenance in QAD Warehousing to confirm inspection of one line item at a time. To do this:

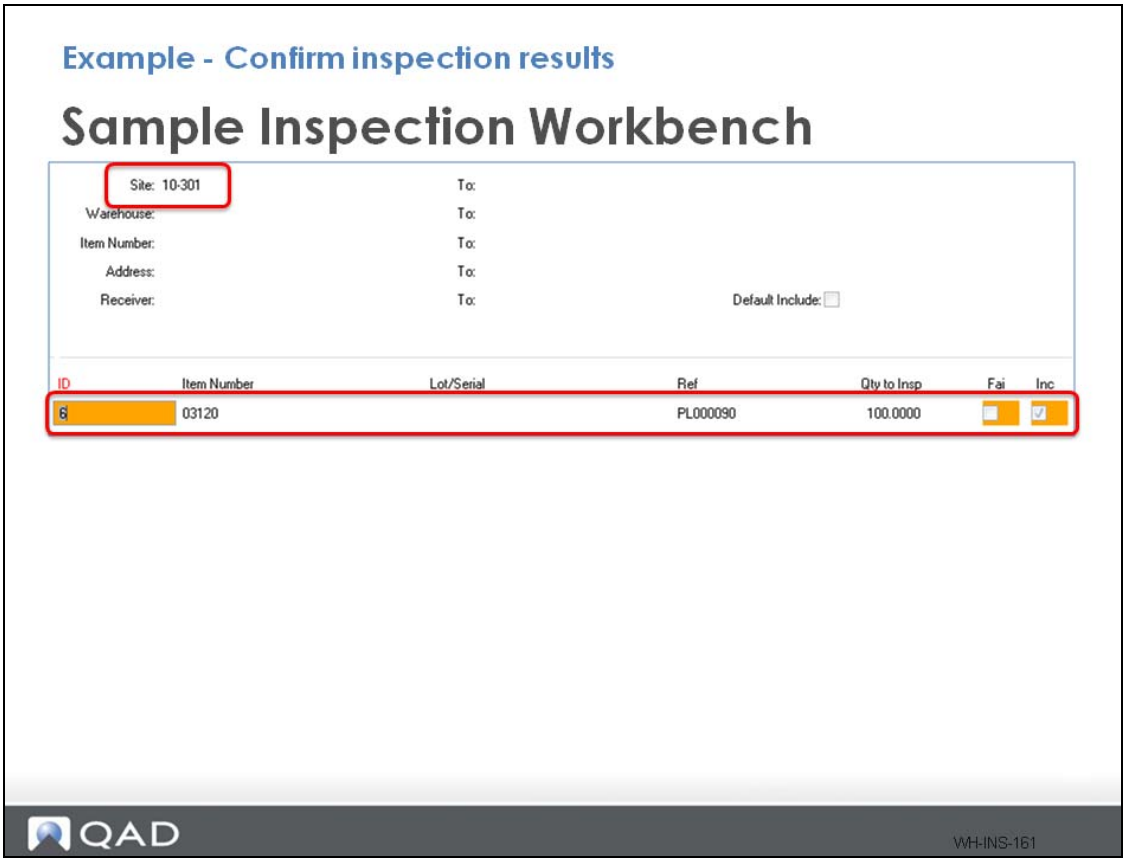
1 Select the Sample ID.

2 Click twice to get to the Create Transactions and Return Quantity fields.

3 Ensure the Create Transactions field is checked and the successful inspection quantity is entered.

4 Click Next.

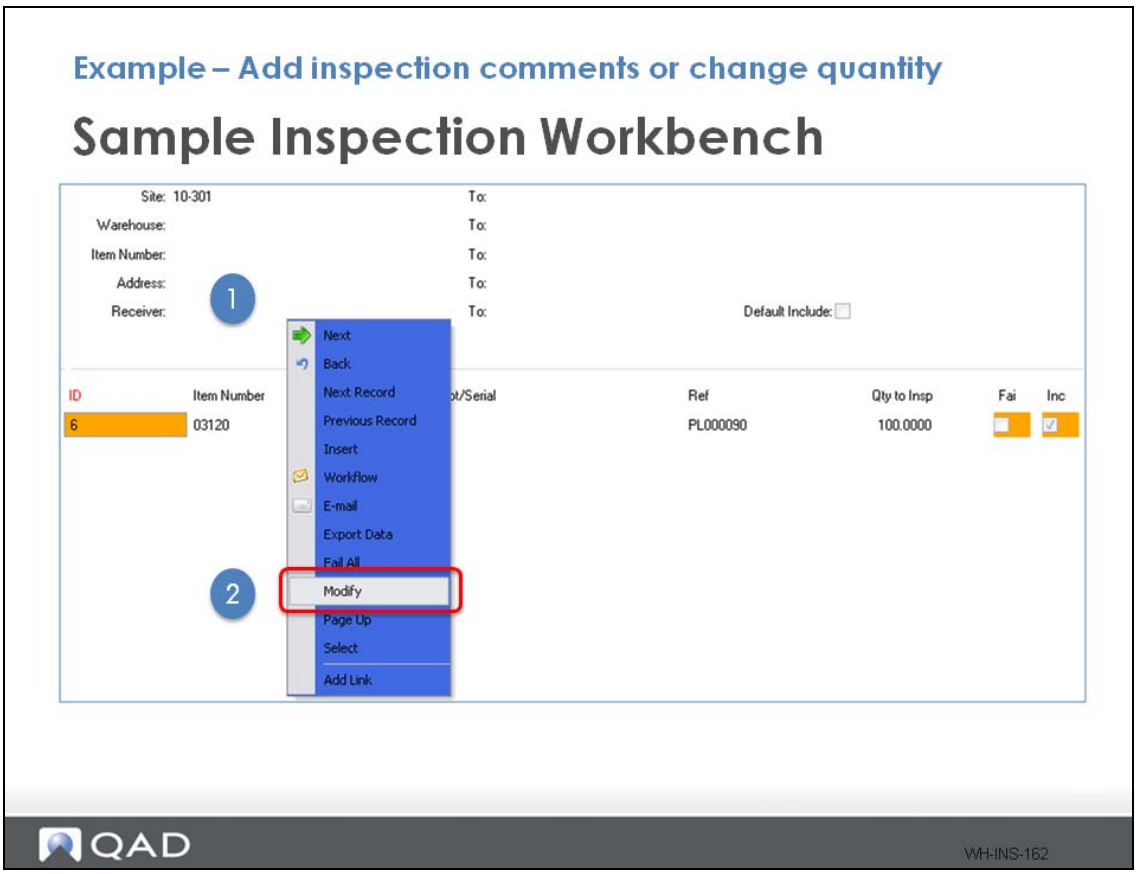
Example - Confirm Inspection Results (Continued)



Alternatively, you can use Sample Inspection Workbench to approve multiple inspection samples and trigger a BACK put-away transaction.

Select the line to accept and click anywhere in the line item frame. This enables the Inc field. To change the quantity or add a remark, right click anywhere in the above frame to open a drop down menu.

Example - Add Inspection Comments/Change Qty

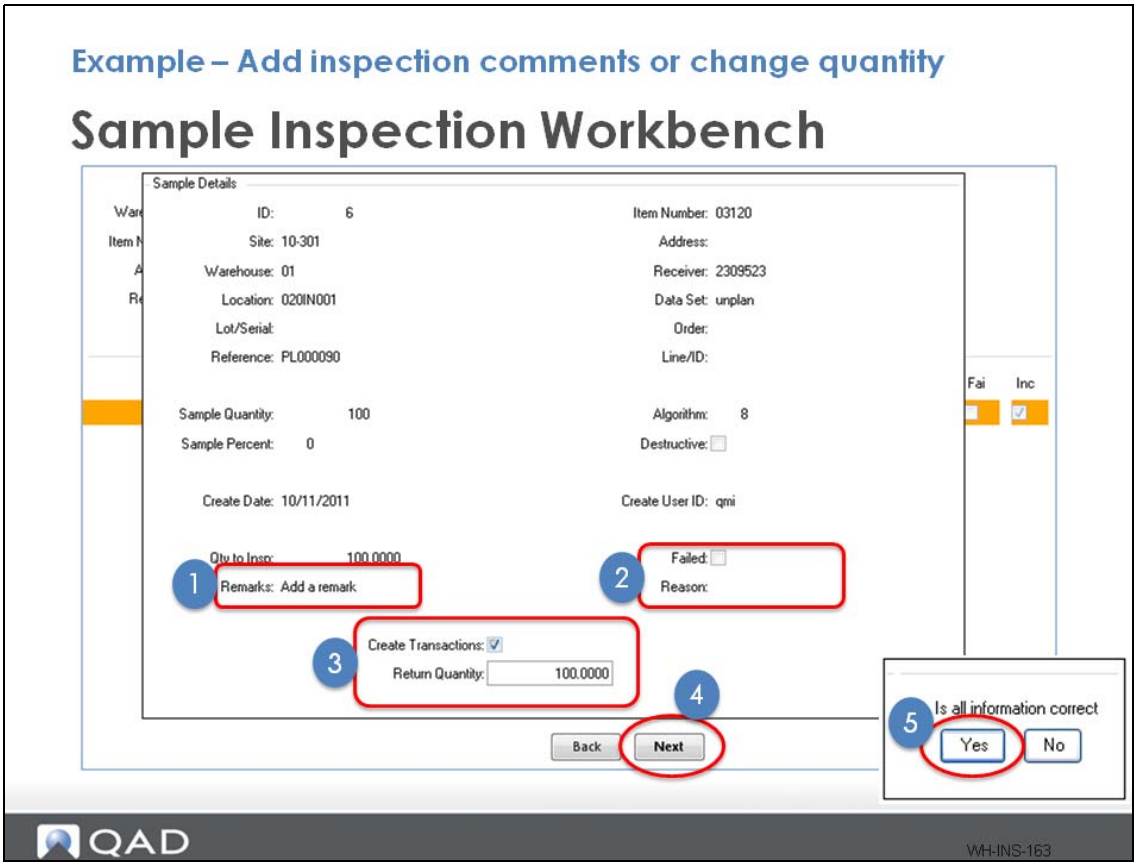


To change the quantity or add a remark:

1 Right click anywhere in the frame one.

2 Select Modify in the drop down menu.

Example - Add Inspection Comments/Change Qty (Contd)



In the Sample Inspection Maintenance frame, before confirming the inspection you can:

1 Add a remark.

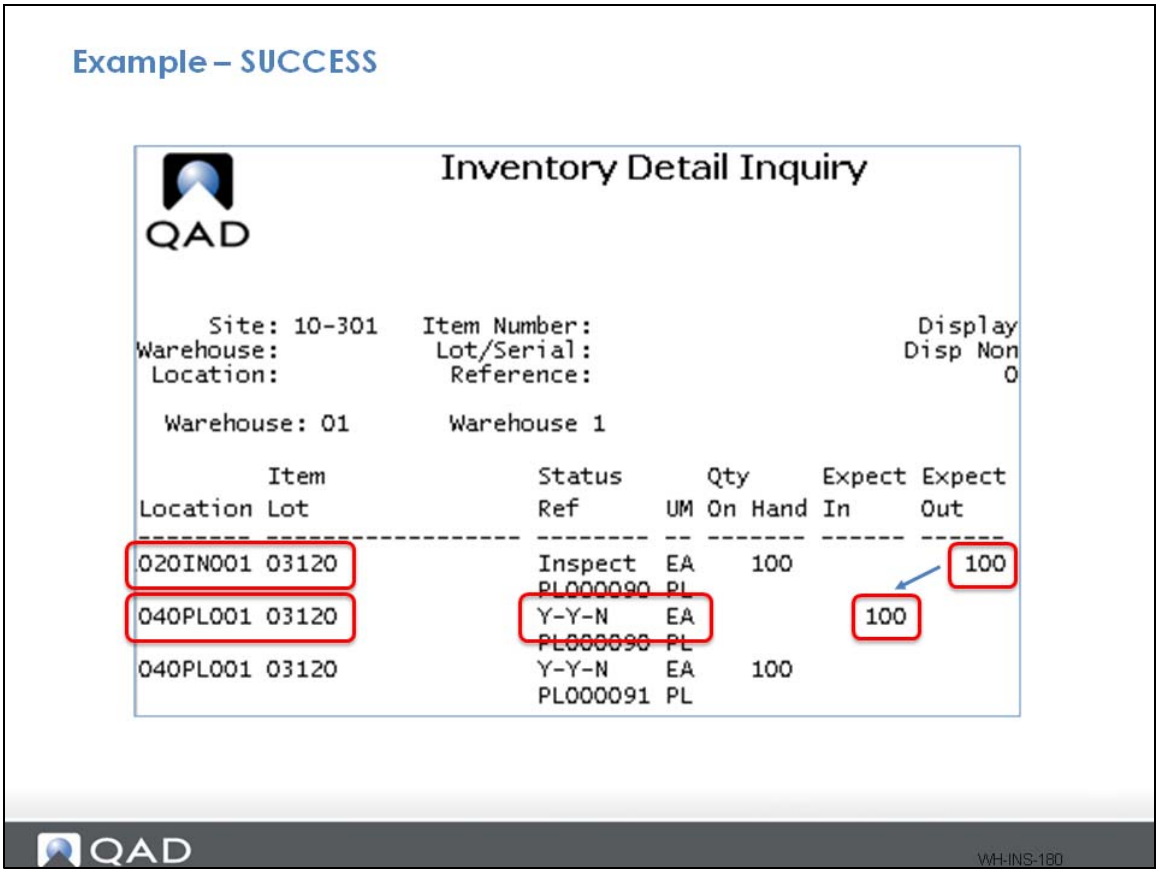
2 Fail the inspection.

3 Change the inspection quantity.

4 Clicking Next.

5 Select Yes in the next frame confirms the inspection results and creates a BACK movement transaction to storage.

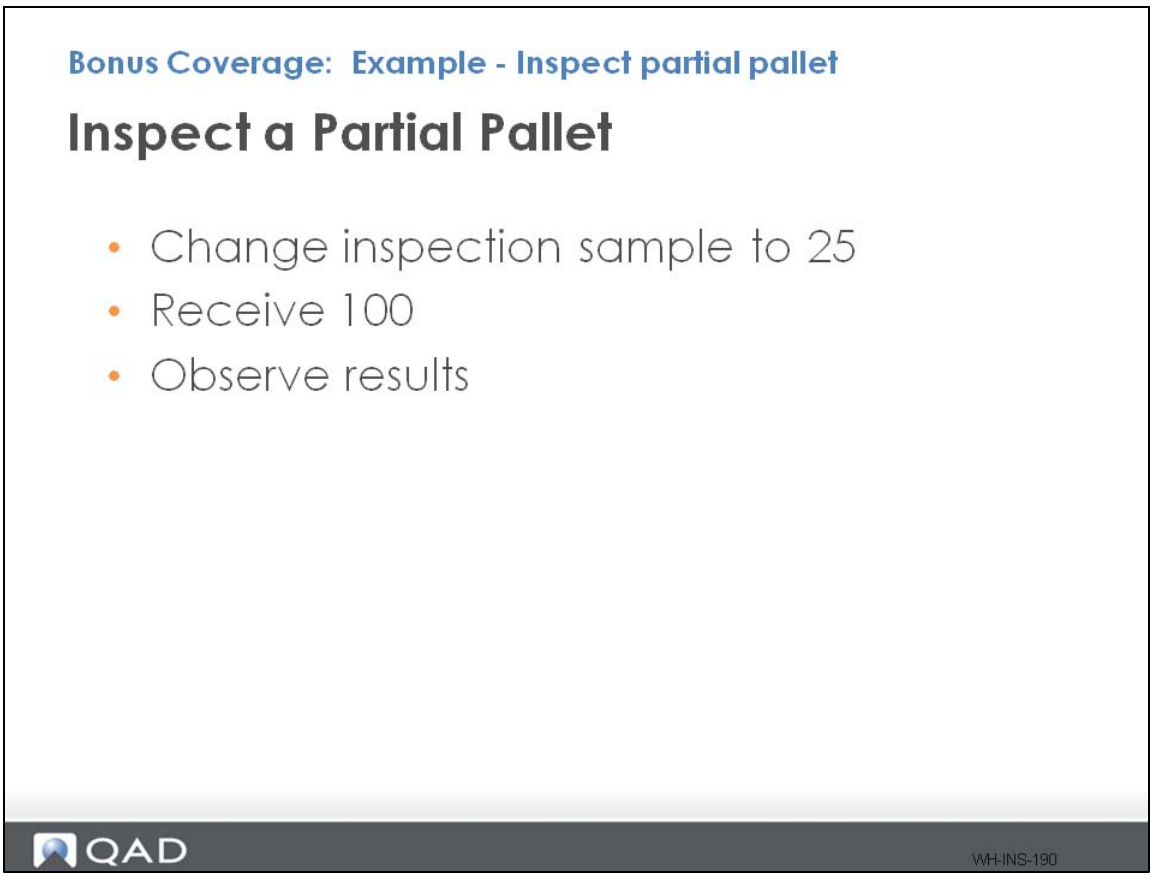
Example - Success



Use Inventory Detail Inquiry to check the results.

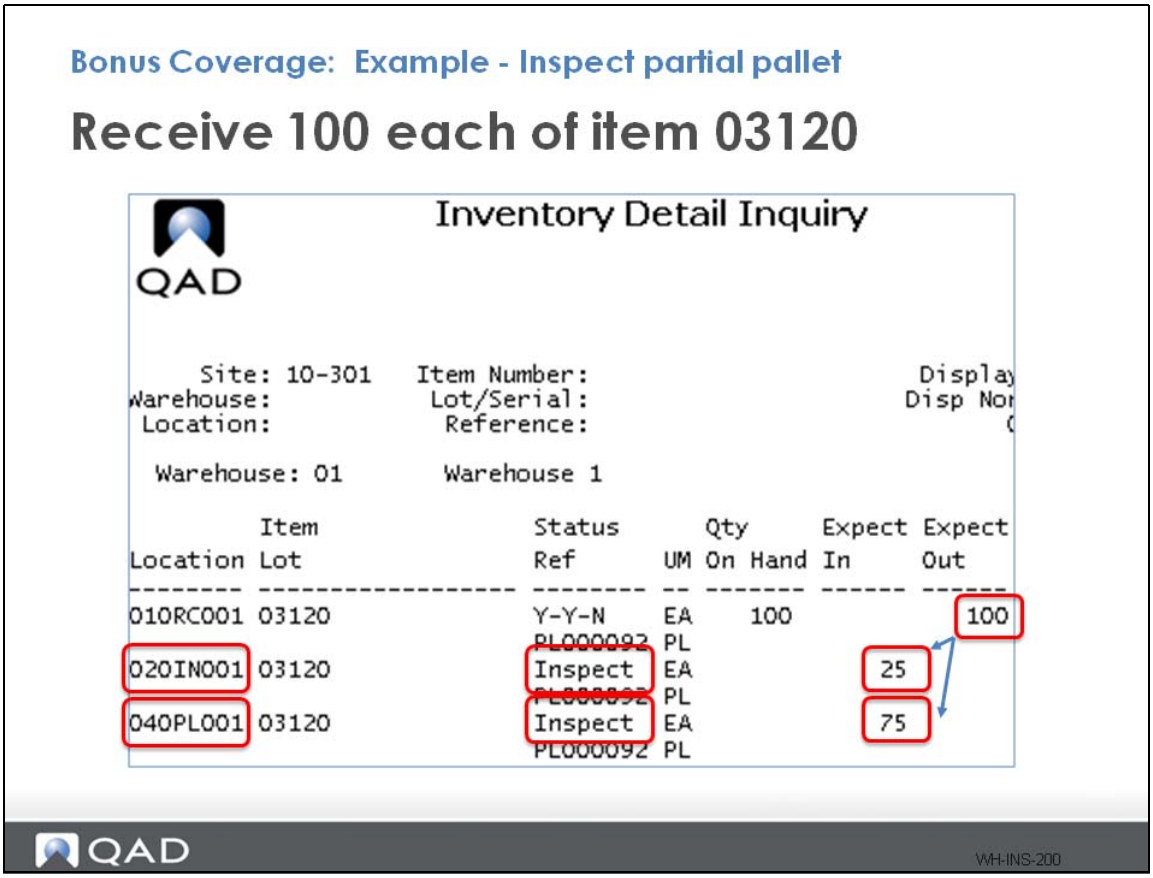
When the inspection results are confirmed, the load is moved from inspection back into storage where is it merged with the same item. The inventory status code is changed to available (Y-Y-N).

Bonus Coverage: Example - Inspect Partial Pallet



Try the inspection again, changing the sample to 25 and receiving 100. Then, observe the results.

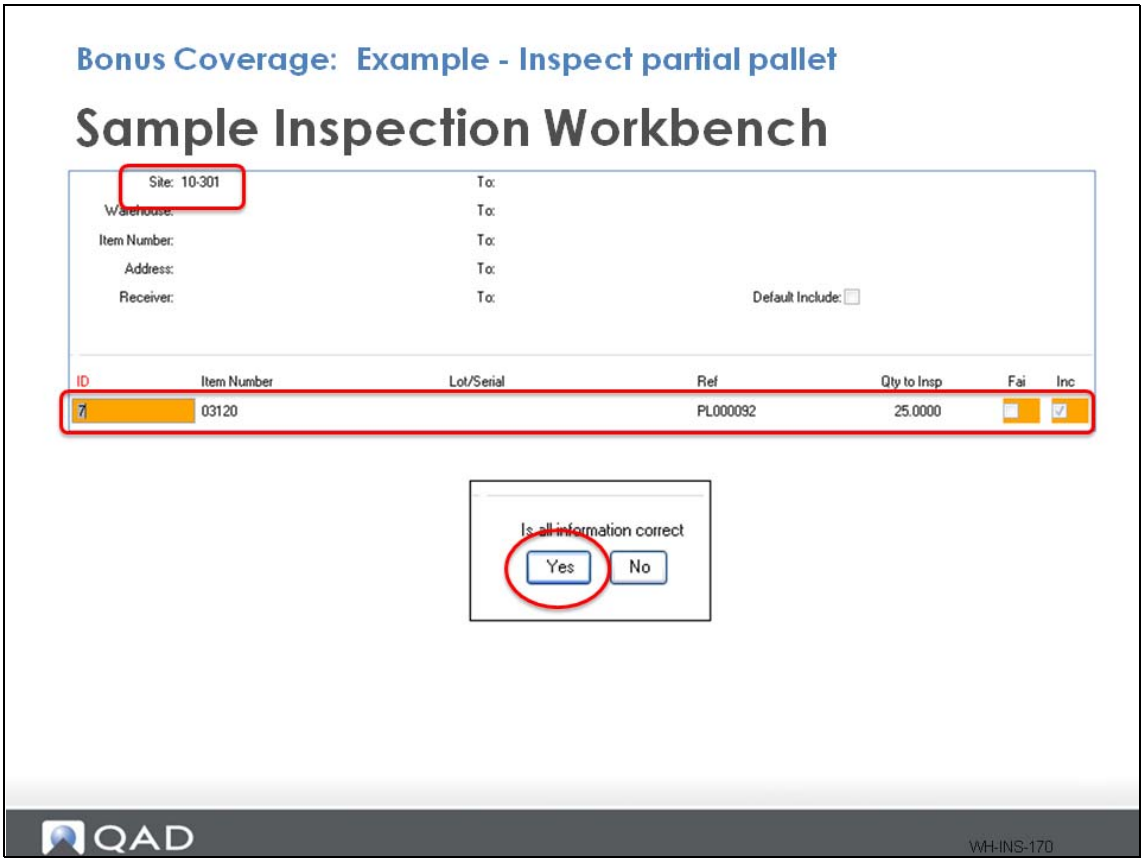
Bonus Coverage - Example Inspect Partial Pallet (Continued)



Because the inspection flag is set for 25 each of item 03120, 25 are routed to inspection. The remaining pallet is moved into a pallet storage location, but the inventory status is changed to Inspect, making it not available (N-N-N).

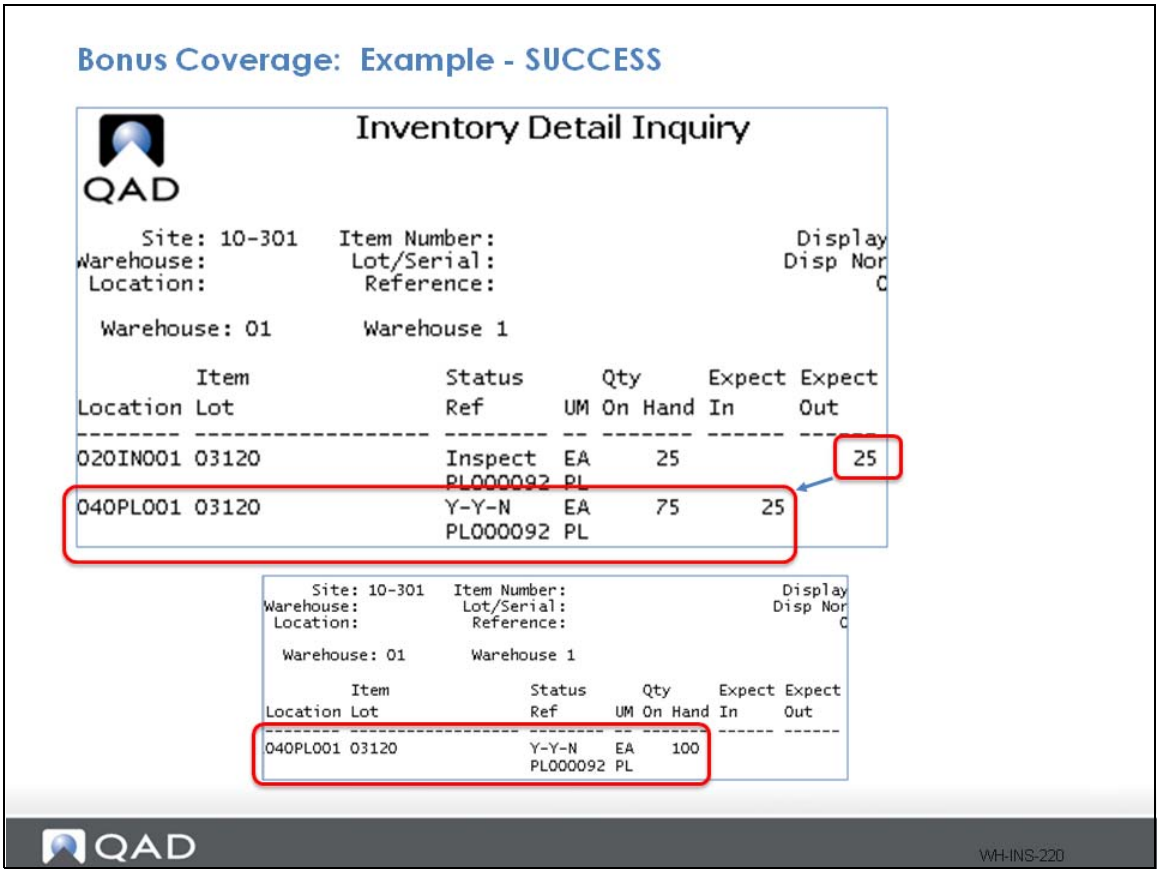
Move all pallets using Movement Confirmation Workbench to prepare for the next example step.

Bonus Coverage: Example - Inspect Partial Pallet (Continued)



Confirm the inspection results using Sample Inspection Workbench. Note that only 25 are in the sample, but they maintain the original LPN.

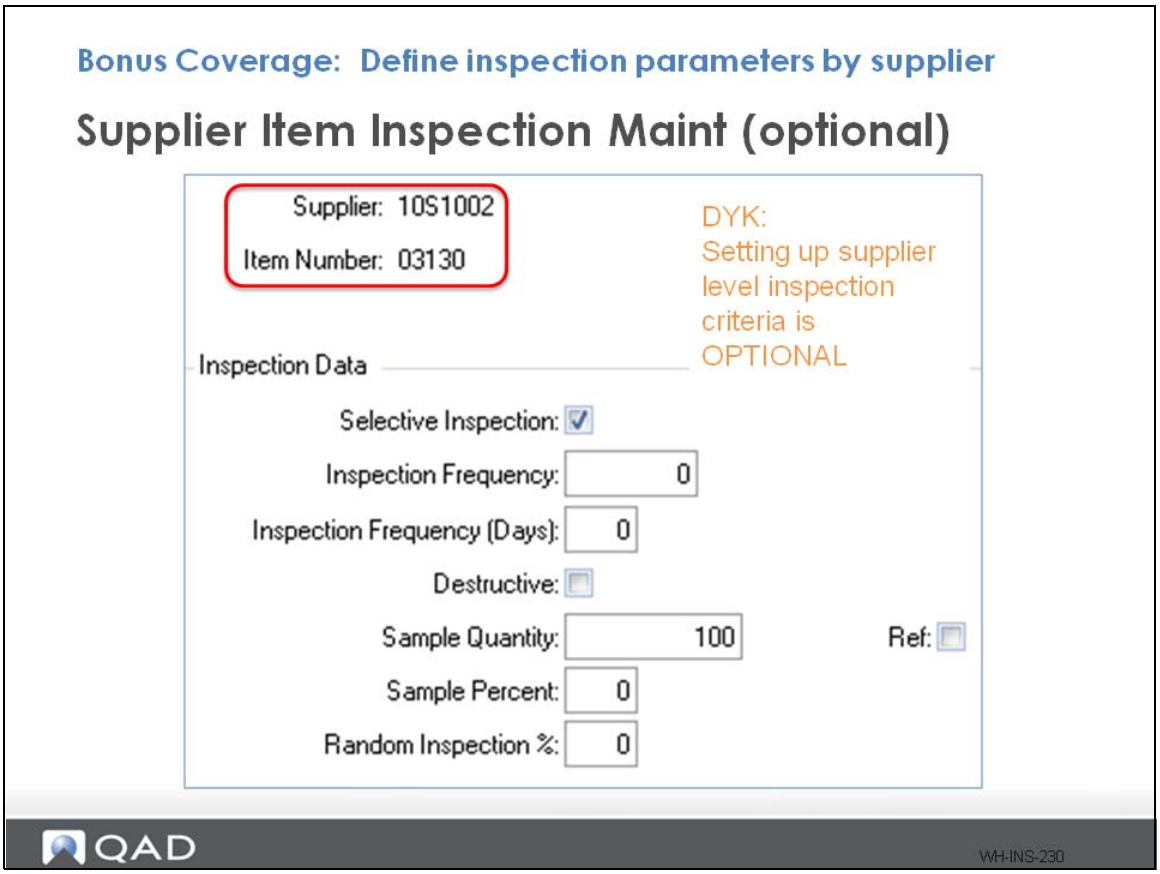
Bonus Coverage - Example - Success



When the sample is released from inspection, is it routed back to storage. The first put-away rule (5) attempts to merge the item reference number with the same (original) reference number already in storage. In this instance, the 25 are merged back with reference number PL000092.

Once the item is merged, the new quantity for reference PL000092 is 100.

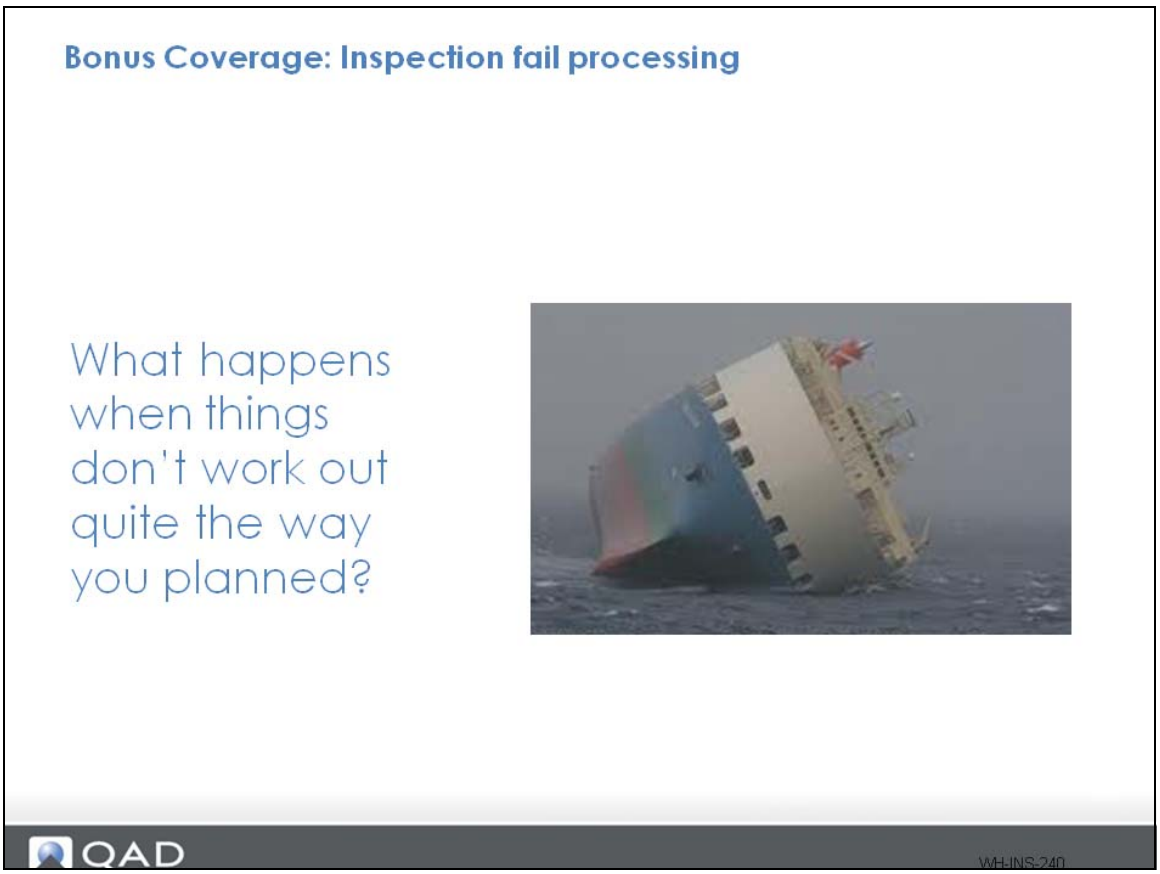
Bonus Coverage: Define Inspection Parameters by Supplier



Rather than inspect an item every time it is received, you can set up the item to be inspected when it is received from a specific supplier. This might be helpful when setting up a new supplier for an item or if a supplier has temporary issues. You can set this up using Supplier Item Inspection Maintenance.

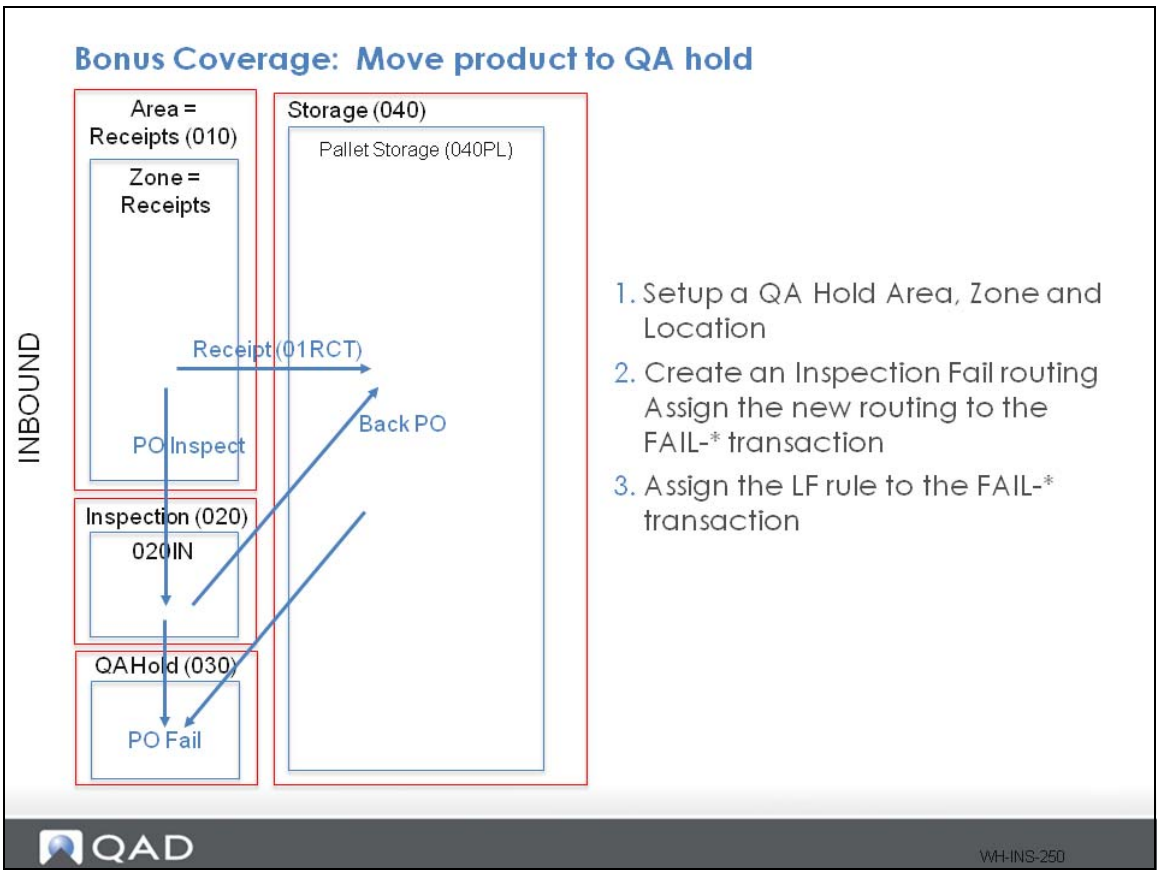
There are two frames and 10 fields in Supplier Item Inspection Maintenance used for configuration.

Bonus Coverage: Inspection Fail Processing



You can view details of failed inspections, using Failed Inspections Inquiry and Inspection Status Change Maintenance.

Bonus Coverage: Move Product to QA Hold



Setup

1 Setup a QA Hold Area, a zone, and a location.

2 Create an inspection fail routing; then, assign the new routing to the FAIL-* transaction. This is a one sequence routing with the destination Area

3 Assign the LF rule to the FAIL-* transaction.

4 Use Sequence 10 = 1.

Process

1 Receive an item requiring inspection.

2 Complete the moves.

3 Fail the open inspection.

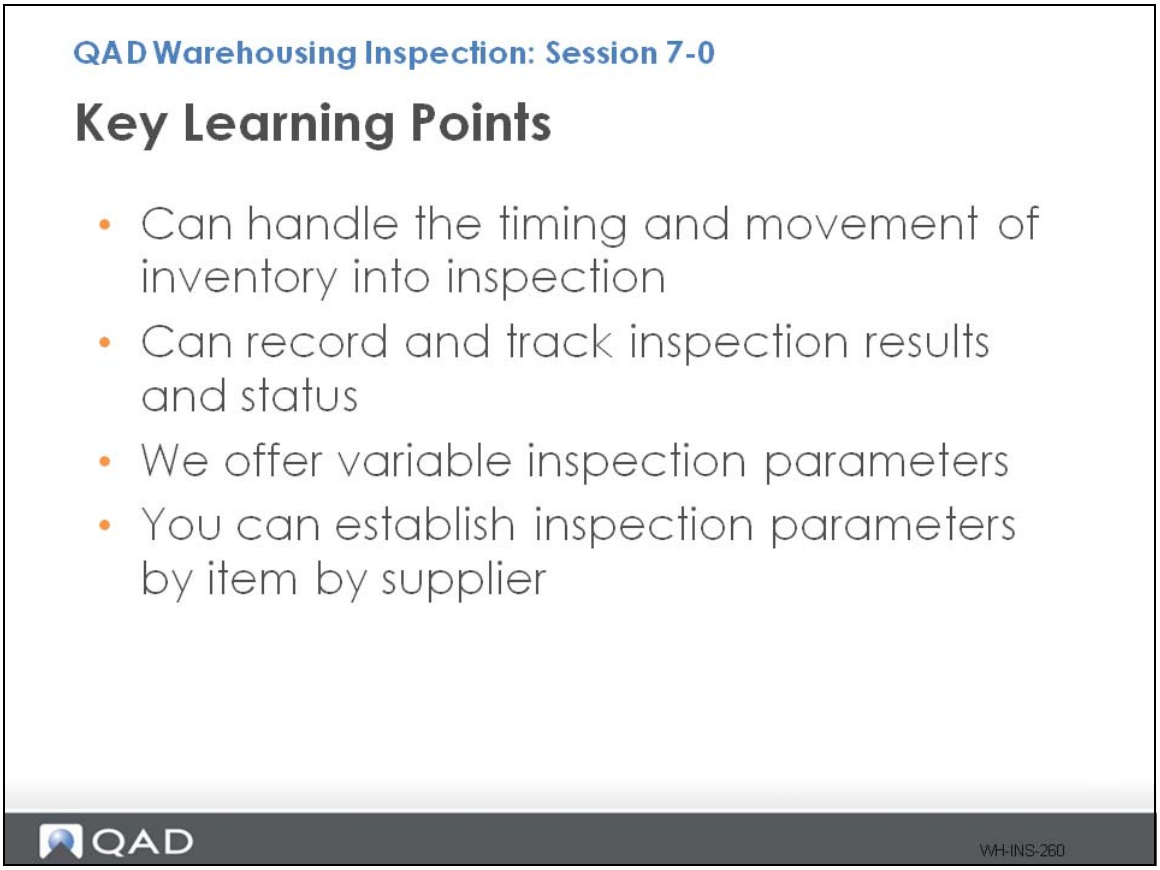
4 Confirm the items in inspection and storage are moved to QA Hold Area.

5 Complete moves.

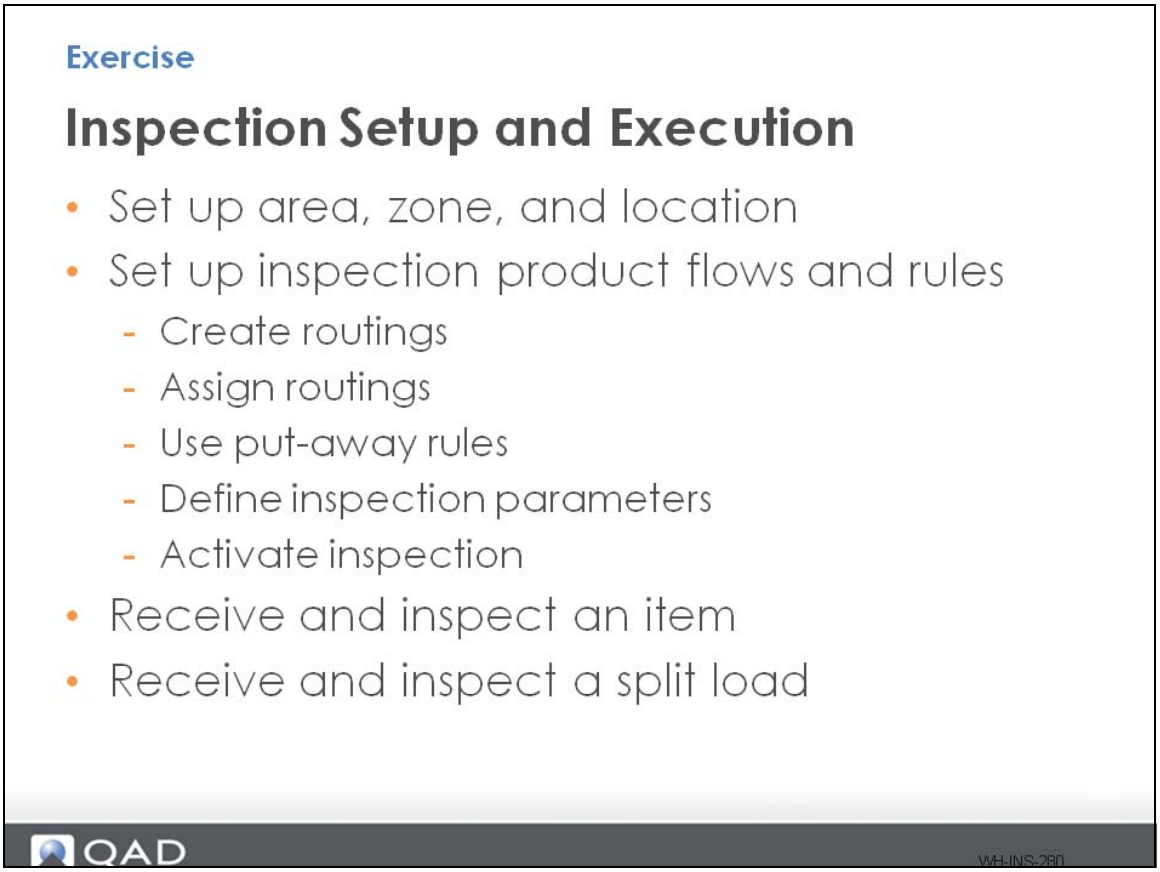
6 Confirm inventory status for all failed items.

Note This process works when the entire load is inspected. If the load is split between storage and inspection, the inventory status of all items changes to FAIL, and the partial load in storage is moved to the reject area. However, the partial quantity in the inspection area is not moved. You need to further review the internal routing setup and failed quantity confirmation.

Key Learning Points



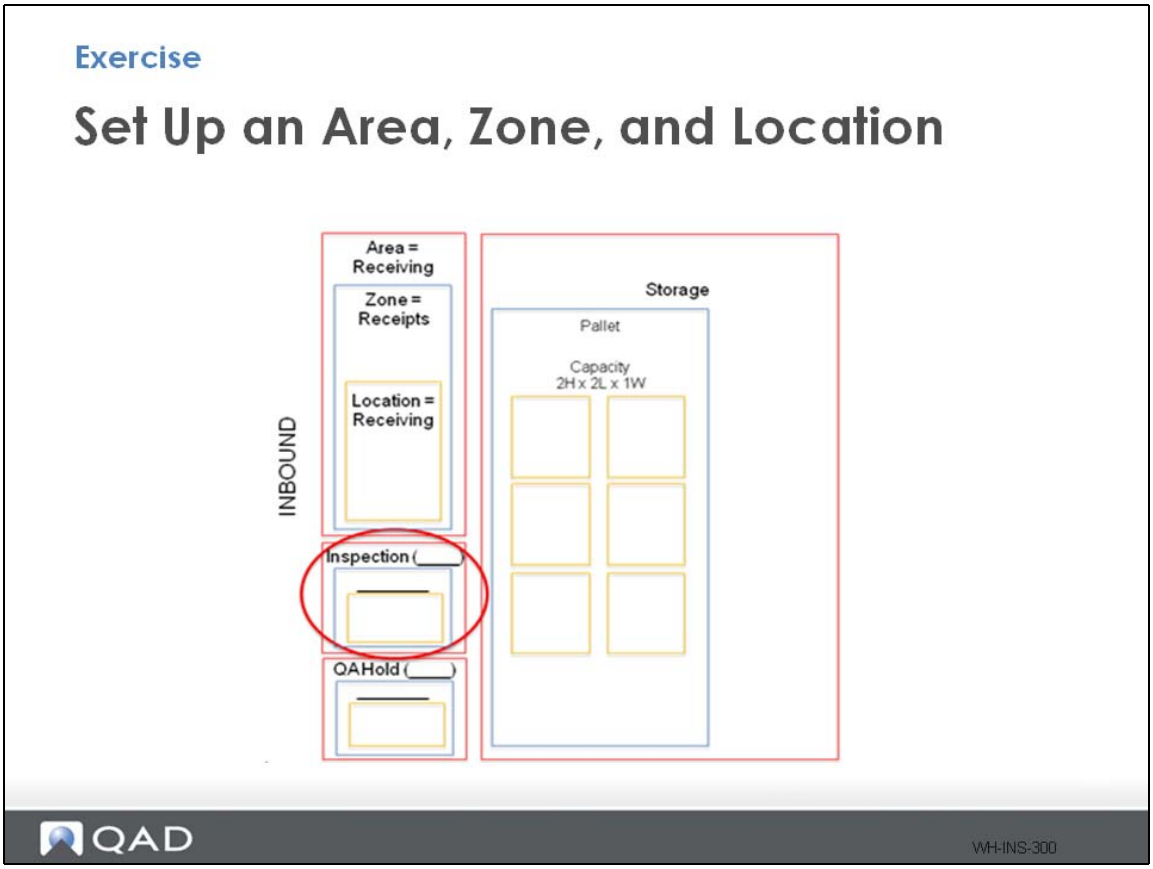
Exercises - Inspection Setup and Execution



QAD Warehousing supports the inspection process.

In this exercise, and using QMI data, you set up one item for inspection and test the process using various inspection parameters.

Exercise - Set up an Area, Zone, and Location



Setup an area, zone and location for inspection, as depicted in the graphic above.

You can use information in the Introduction chapter of this training guide to help you set up.

To set up an area, use Internal Routing Group Maintenance. Set the following, using parameters when dictated in the tables, and entering parameters when you define your own into the tables:

Site	Warehouse	IRG (Area)	Description (optional)	Functional
10-301			Receiving	Y

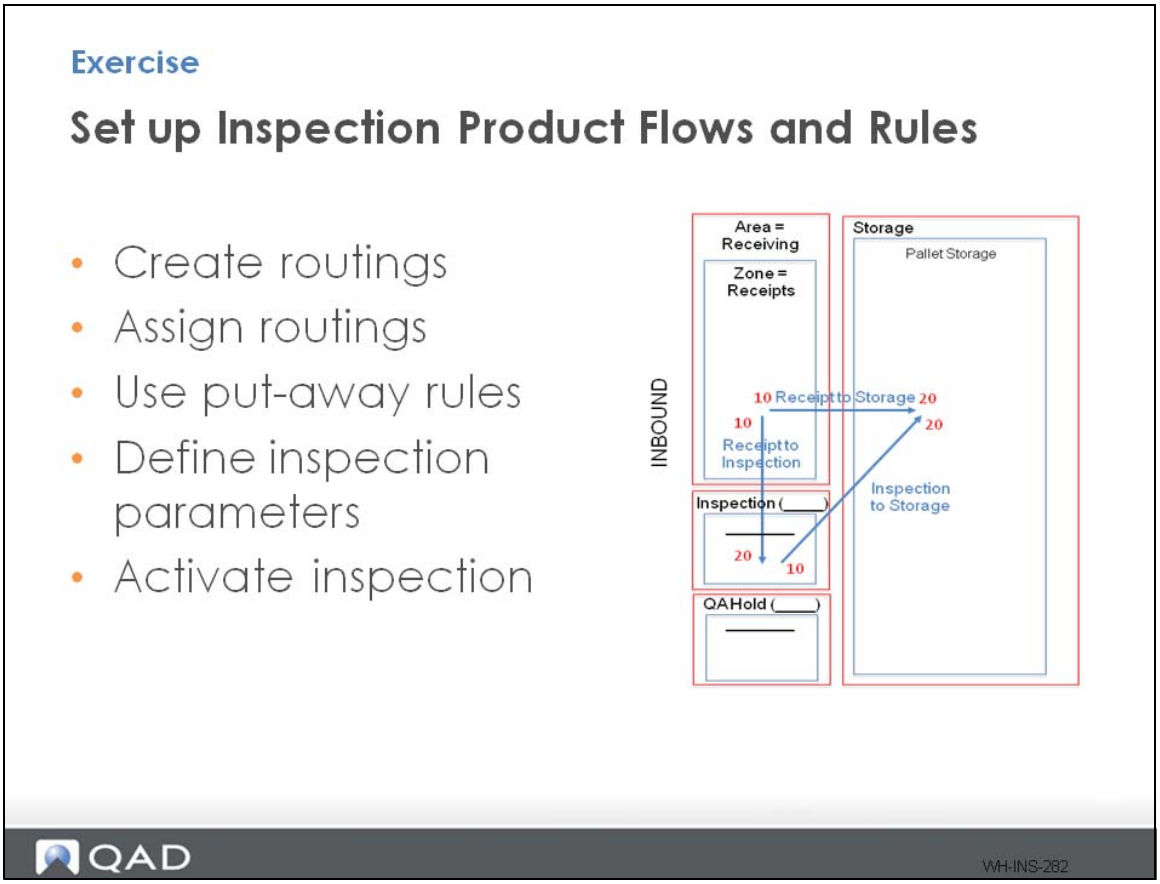
To set up a zone, use Storage Location Group Maintenance. Set the following, using parameters when dictated in the tables, and entering parameters when you define your own into the tables:

Site	Warehouse	SLG (Zone)	IRG	Exclude from Picking	Picking Level	Picking Multiple UM	UM	Acquisition UM
10-301				Y	0	blank	blank	blank

To set up a location, use Warehouse Location Maintenance.Set the following, using parameters when dictated in the tables, and entering parameters when you define your own into the tables:

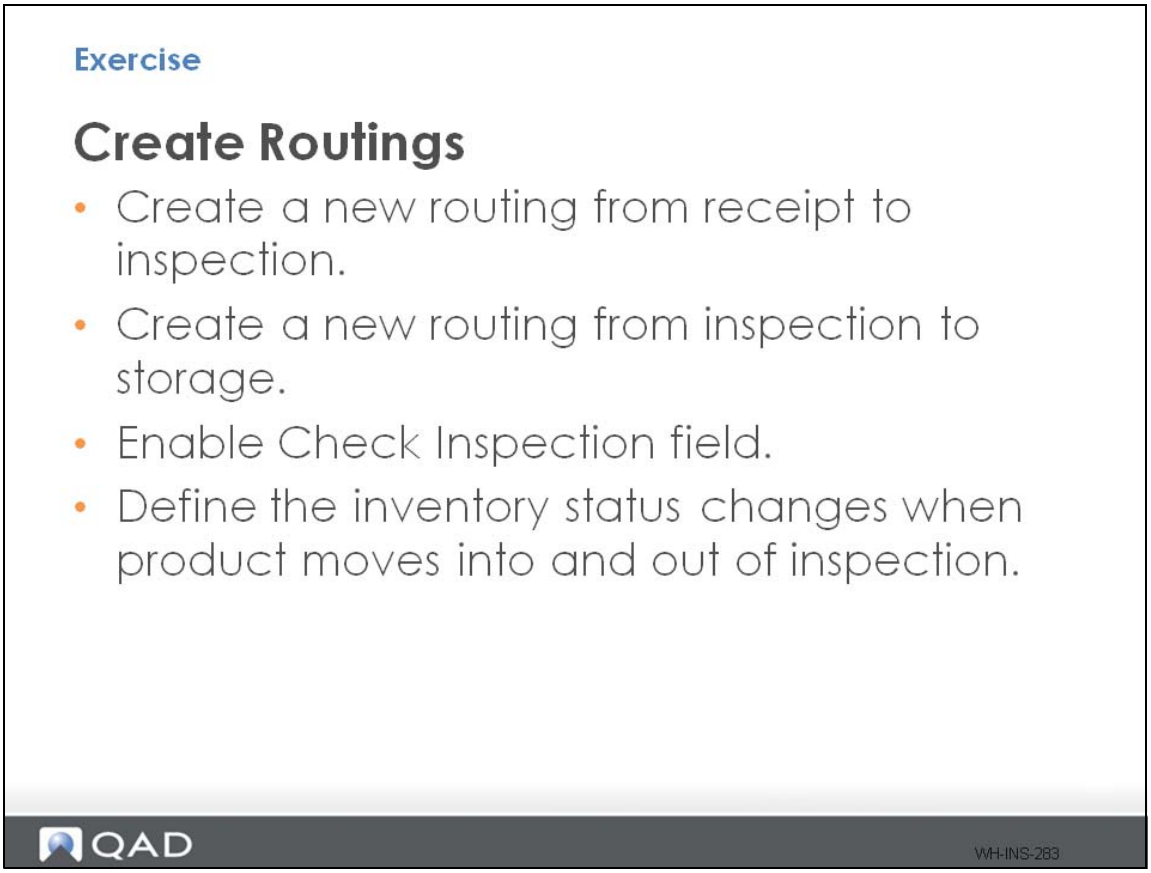
Site	Location	Warehouse	Description (Optional)	SLG	WLG	UM	QTY	H	L	W
10-301			Inspect	Y	0	blank	blank	blank	blank	blank

Exercise - Set Up Inspection Product Flows and Rules



If inspection parameters are set, QA rules trigger and product can be routed from receipt to inspection to storage or both. Also, once product passes inspection, it is moved to storage for put-away. New routings and rules are required along with a change to an existing routing.

Exercise - Create Routings



1 Create a new routing from receipt to inspection using Internal Routing Maintenance. Define parameters, and when not provided, note the parameters you enter here:

Field	Data to Enter	
Site	10-301	
Warehouse		
Internal Routing		
Description (Optional)	Inspection	
	Start	**End**
Sequence	10	20
IRG		
Keep from Status	N	N

2 Create a new routing from inspection to storage using Internal Routing Maintenance. Define parameters, and when not provided, note the parameters you enter here:

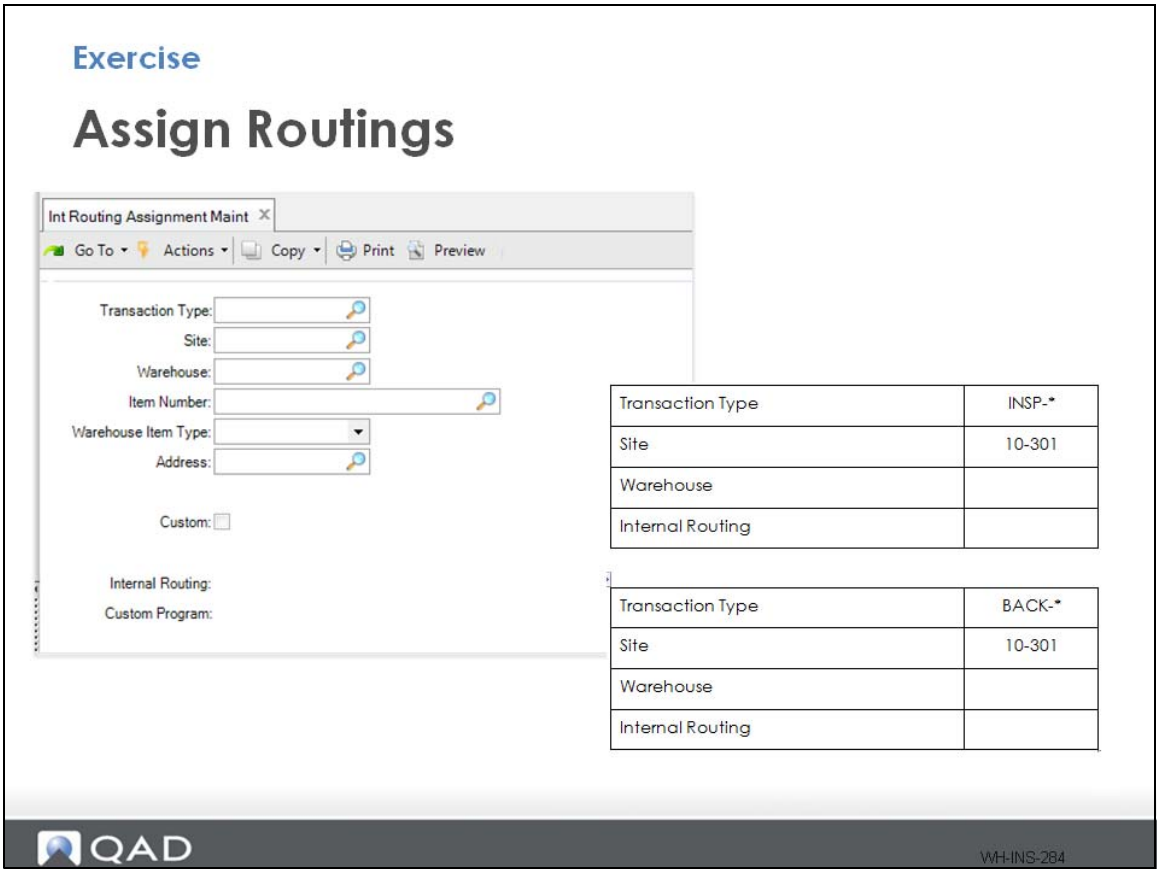
Field	Data to Enter	
Site	10-301	
Warehouse		
Internal Routing		
Description (Optional)	Inspection	
	Start	**End**

Field		Data to Enter
Sequence	10	20
IRG		
Keep from Status	N	N

3 Using Internal Routing Maintenance to enable the Check Inspection field in the final frame.

4 Use Inspection Status Change Maintenance to define the inventory status changes when product moves into and out of inspection.

Exercise - Assign Routing

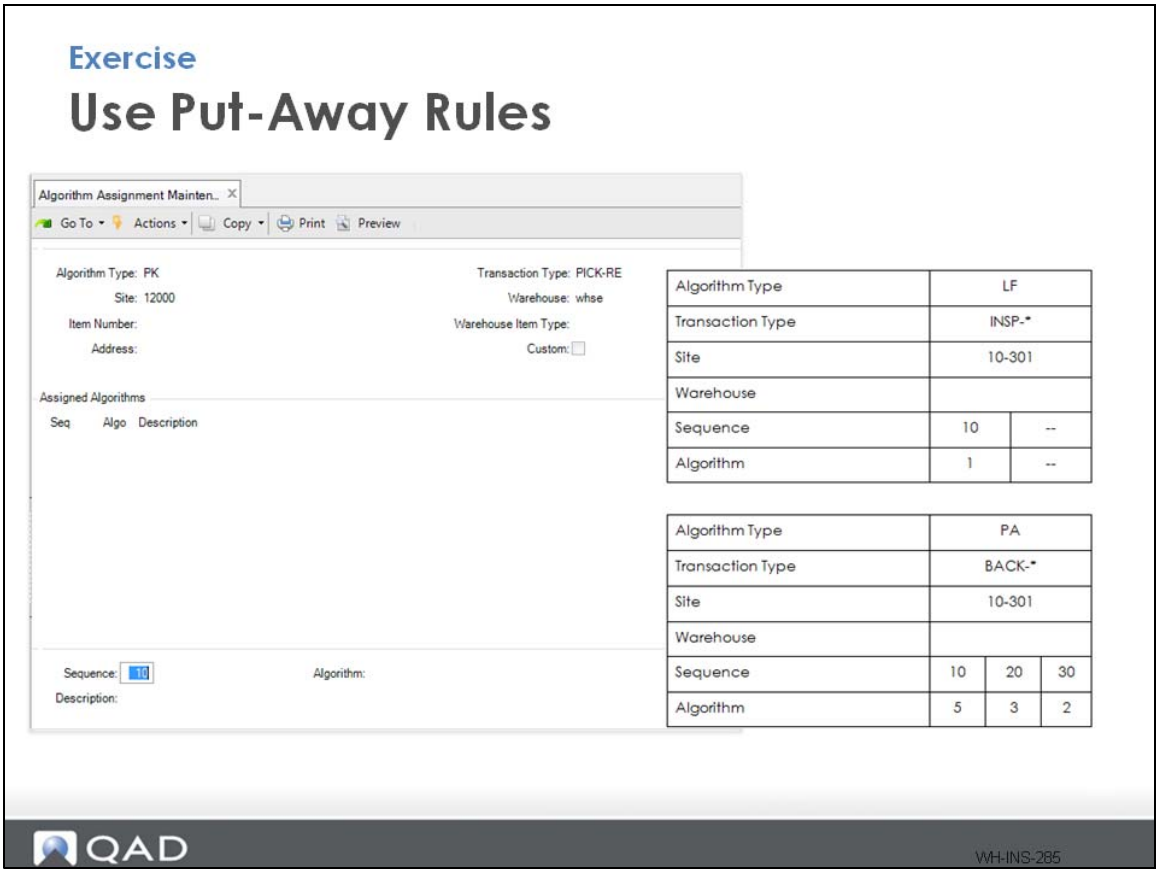


Assign the new routings to the associated transaction types using Int Routing Assignment Maintenance. Define parameters, and when not provided, note the parameters you enter here:

Field	Data to Enter
Transaction Type	INSP-*
Site	10-301
Warehouse	
Internal Routing	

Field	Data to Enter
Transaction Type	BACK-*
Site	10-301
Warehouse	
Internal Routing	

Exercise - Use Put-Away Rules



Product in the inspection area is put away into any location regardless of available space. Product put back into storage should first attempt to merge with the same LPN, the same item then find an empty location.

What happens when the load/item arrives in the next area? How are storage locations selected? Storage rules should first attempt to merge same item loads, next look for an empty location.

1 Use Algorithm Assignment Maintenance to define the new rules. Define parameters, and when not provided, note the parameters you enter here:

Field	Data to Enter
Algorithm Type	LF
Transaction Type	INSP-*
Site	10-301
Warehouse	

	Start	End
Sequence	10	blank
Algorithm	1	blank

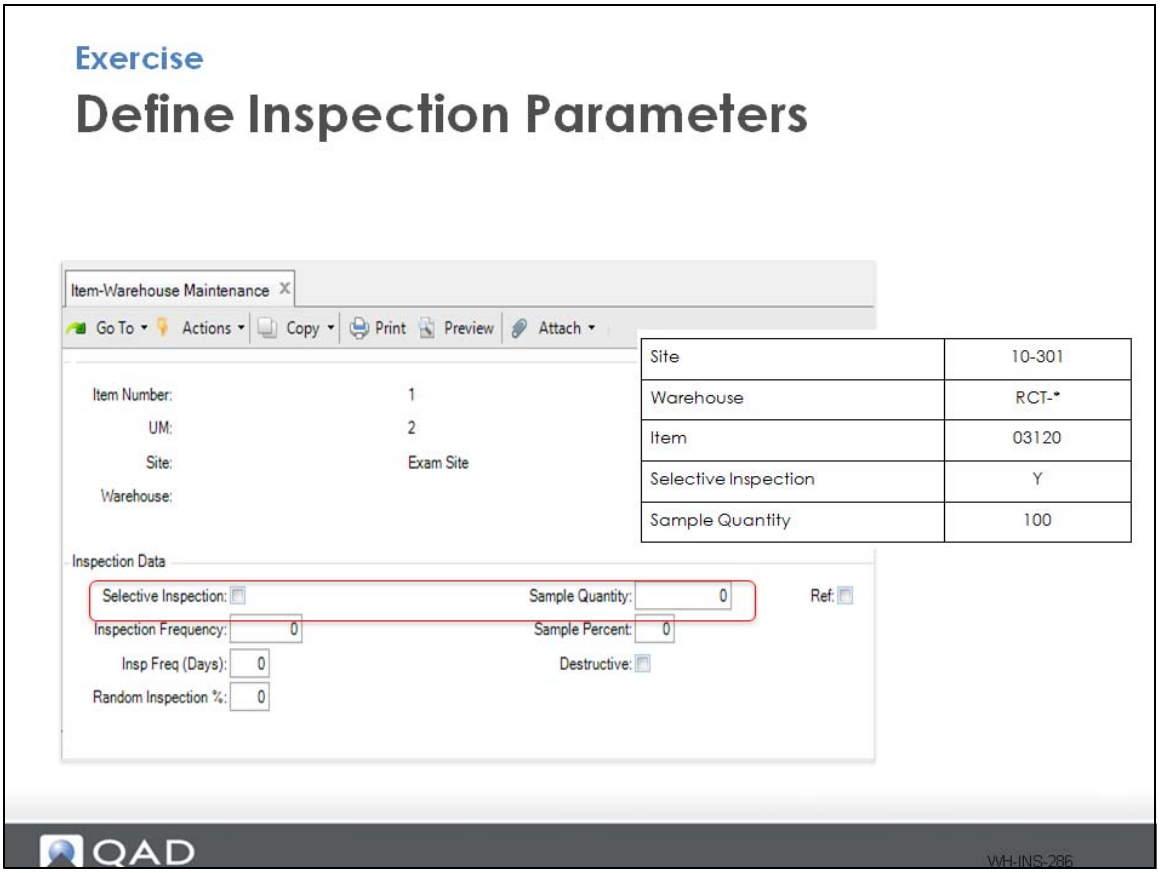
Field	Data to Enter		
Algorithm Type	PA		
Transaction Type	BACK-*		
Site	10-301		
Warehouse			
Sequence	10	20	30
Algorithm	5	3	2

Question - What does this algorithm sequence accomplish?

2 With the addition of inspection, you now use the QA algorithms. Set up anew QA algorithm to determine the inspection type required upon receipt:

Field	Data to Enter	
Algorithm Type	QA	
Transaction Type	RCT-*	
Site	10-301	
Warehouse		
	Start	**End**
Sequence	10	blank
Algorithm	1	blank

Exercise - Define Inspection Parameters

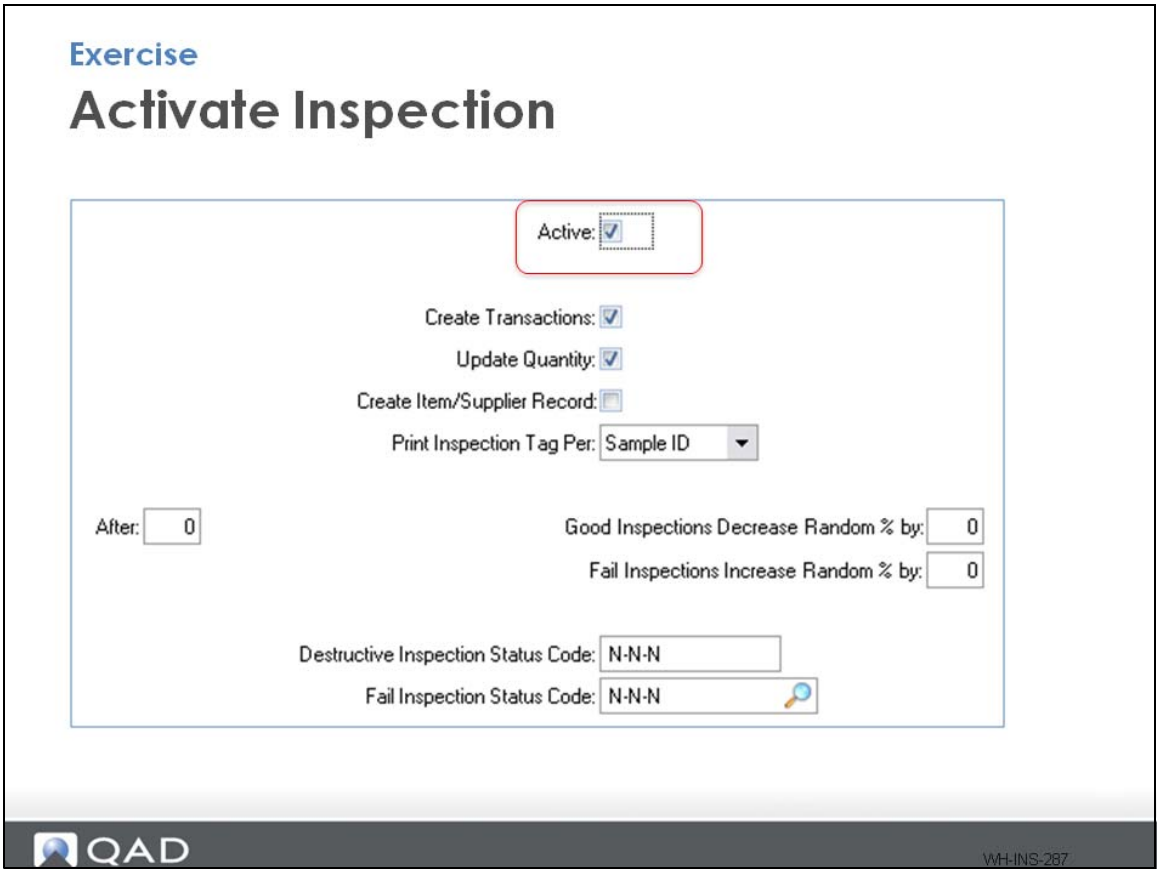


Each item requires specific inspection parameter. Define these parameters using Item-Warehouse Maintenance or Multi-Level Item Maintenance.

Define parameters, and when not provided, note the parameters you enter here:

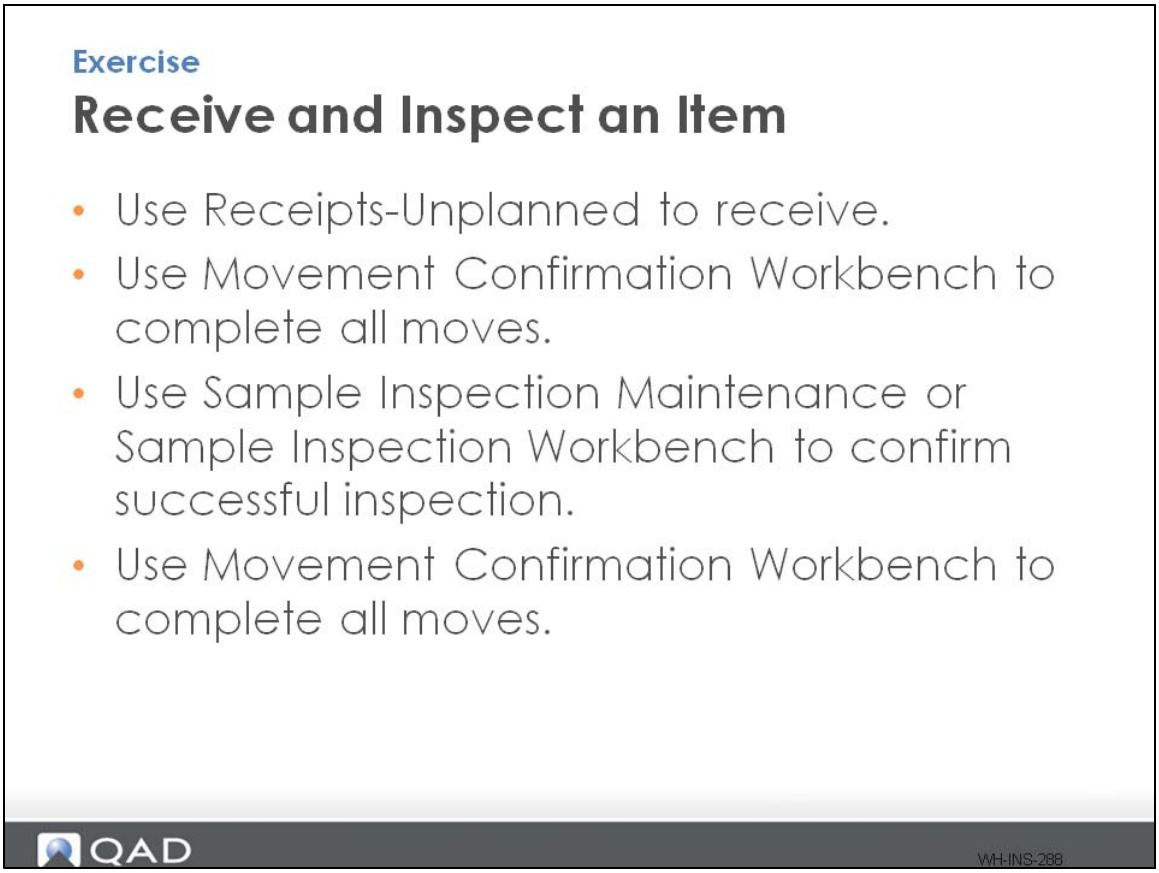
Field	Data to Enter
Site	10-301
Warehouse	
Item	03120
Selective Inspection	Y
Sample Quantity	100

Exercise - Activate Inspection



Use Inspection Control to activate warehouse inspections. Enable the Activate field.

Exercise - Receive and Inspect an Item



1 Use Receipts-Unplanned to receive: 200 EA, item 03120:

- What loads are created? View Inventory Detail Inquiry to determine the LPN, item, and quantity. Note the parameters here:

LPN	Item	Quantity

- One pallet should be pending movement to inspection; the other to storage.
- Did the inventory status of both loads change to the status you defined using Inventory Status Change Maintenance?

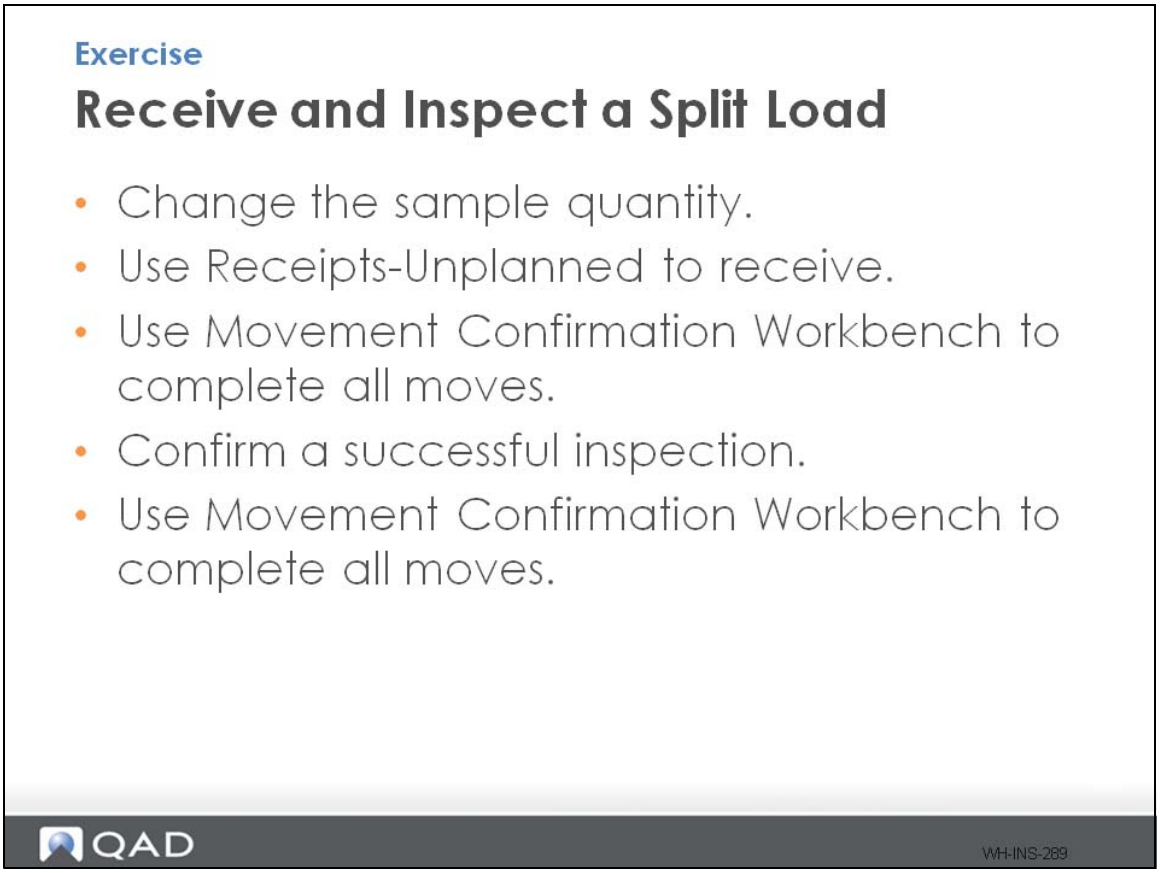
2 Use Movement Confirmation Workbench to complete all moves.

3 Use either Sample Inspection Maintenance or Sample Inspection Workbench to confirm a successful inspection:

- The load in inspection should have a pending move back into storage.
- Did the inventory status of both loads change to the status you defined using Inventory Status Change Maintenance?

4 Use Movement Confirmation Workbench to complete all moves.

Exercise - Receive and Inspect a Split Load



1 Using Item-Warehouse Maintenance change the sample quantity to 25 for item 03120.

2 Use Receipts-Unplanned to receive: 100 EA, item 03120

- What loads are created? View Inventory Detail Inquiry to determine the LPN, item, and quantity. Note the parameters here:

LPN	Item	Quantity

- There should be two loads both with the same LPN. One for 25 the other for 75 each with a pending move. Where is each load scheduled for movement? Note the parameters here:

LPN	Item	Quantity	Move To

- Did the inventory status of both loads change to the status you defined using Inventory Status Change Maintenance?

3 Use Movement Confirmation Workbench to complete all moves.

4 Confirm a successful inspection using either Sample Inspection Maintenance or Sample Inspection Workbench.

- The load in inspection should have a pending move back into storage. Where is the load scheduled for movement? Note the parameters here:

LPN	Item	Quantity	Move To

- Did the inventory status of both loads change to the status you defined using Inventory Status Change Maintenance?

5 Use Movement Confirmation Workbench to complete all moves.

- What is the new inventory position of the load? Note the parameters here:

LPN	Item	Quantity	Move To

If done successfully, the load should be moved back to pallet storage and merged with the original LPN. The new load quantity is 100.

Questions

1. True or False. You can set inspection flags in multiple places throughout QAD Warehousing.
2. You can optionally use which program to define a status code for inspection.
3. Use which program to define the inventory status code changes when product enters and leaves the inspection area?
4. True or False. You can define inspection parameters by supplier.
5. True or False. Once you set up inspection in the various maintenance programs, there is nothing preventing you from starting inspections.
6. True or False. The QAD Warehousing inspection module manages specific quality parameters?

Answers

1 True. You can set inspection flags in multiple places throughout QAD Warehousing.

2 You can optionally use Inventory Status Code Maintenance to define a status code for inspection.

3 Use Inspection Status Change Maintenance to define the inventory status code changes when product enters and leaves the inspection area.

4 True. You can define inspection parameters by supplier.

5 False. You must activate inspection first in Inspection Control.

6 False. QAD Warehousing supports the product flow through the inspection process but requires a quality module interface to manage specific quality parameters

Notes

Chapter 7

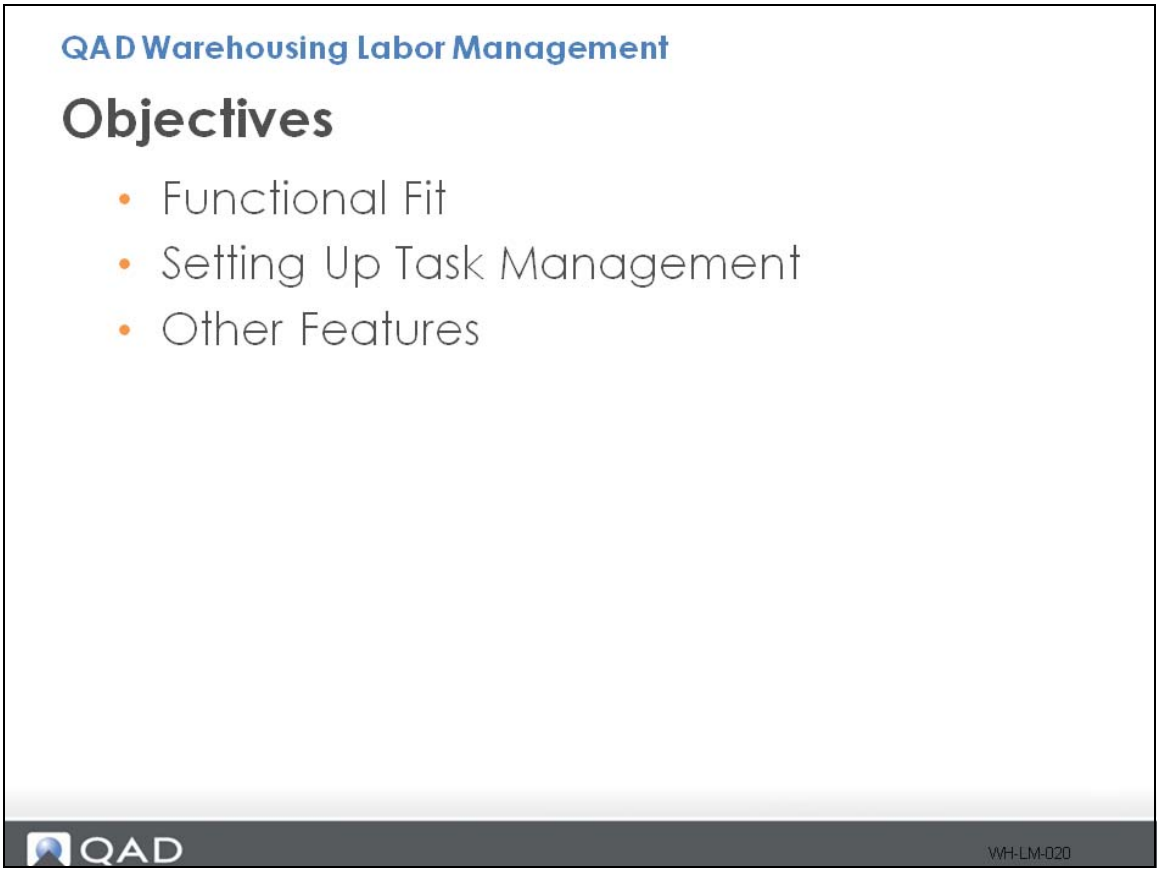
Labor Management

Overview

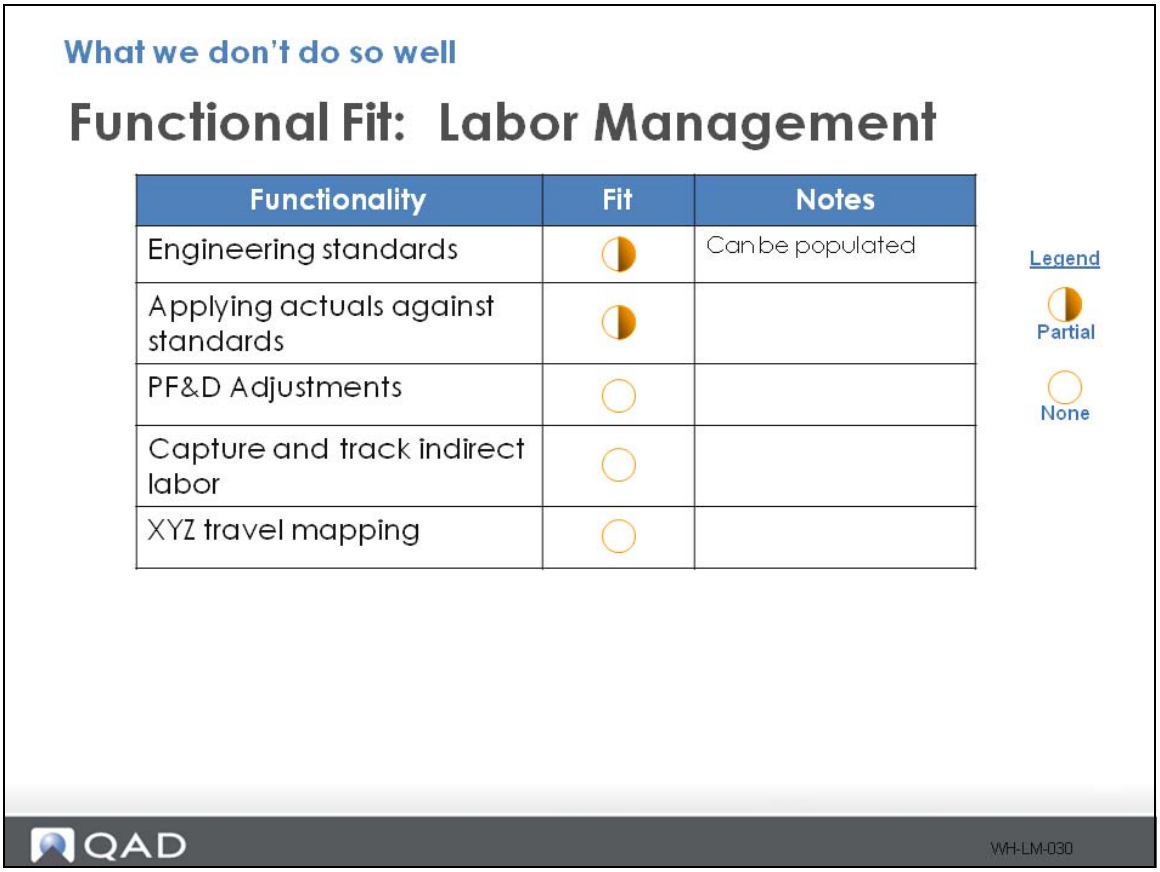
QAD Warehousing lets you manage resources by monitoring and assigning warehouse tasks. Resources are users of the system, who work specifically within the warehouse.

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

Objectives


QAD Warehousing Labor Management
Objectives
Functional Fit
Setting Up Task Management
Other Features
QAD
WH-LM-020

Functional Fit: Labor Management

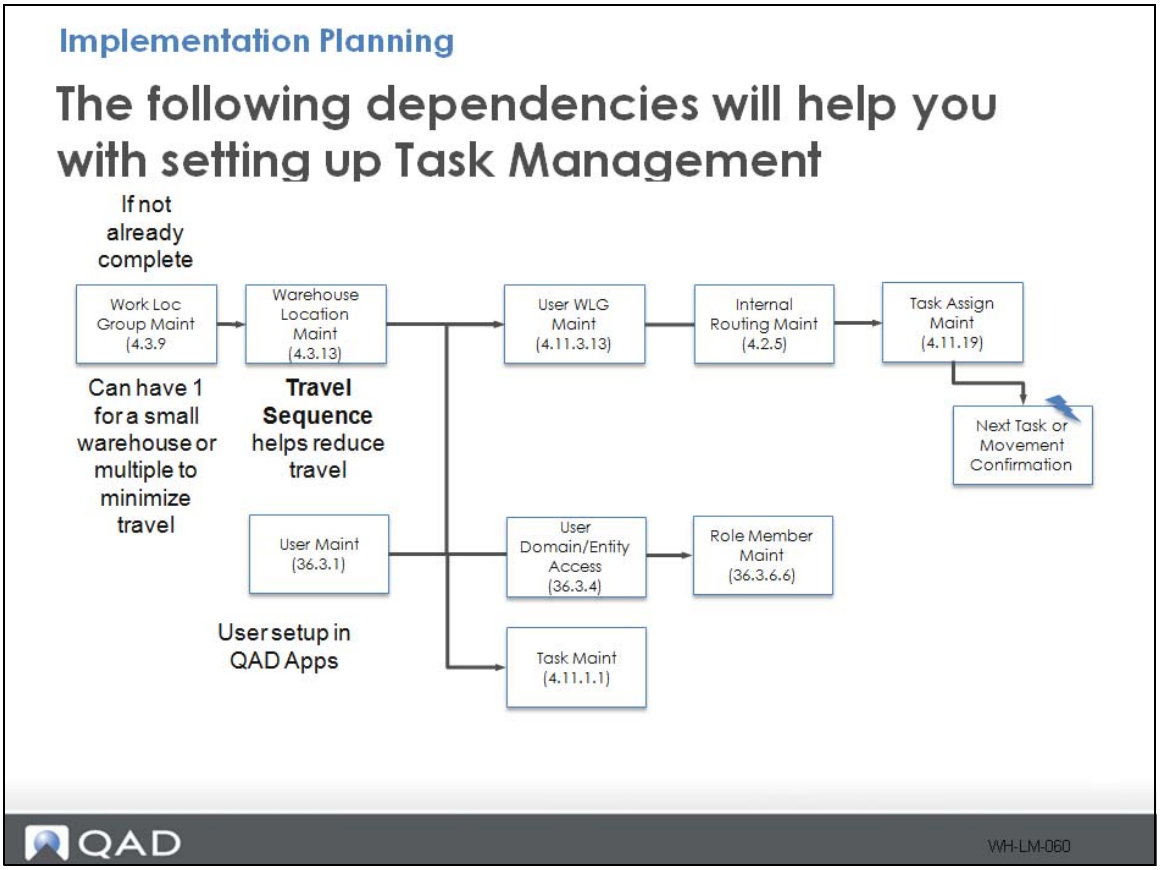


As shown in the graphic above, QAD Warehousing provides partial functionality for engineering standards and applying actuals against standards; however, QAD Warehousing lacks some labor management features.

QAD Warehousing supports general labor tracking and reporting capabilities but falls short of having true labor management capabilities.

Note PF &D is personal fatigue and delay.

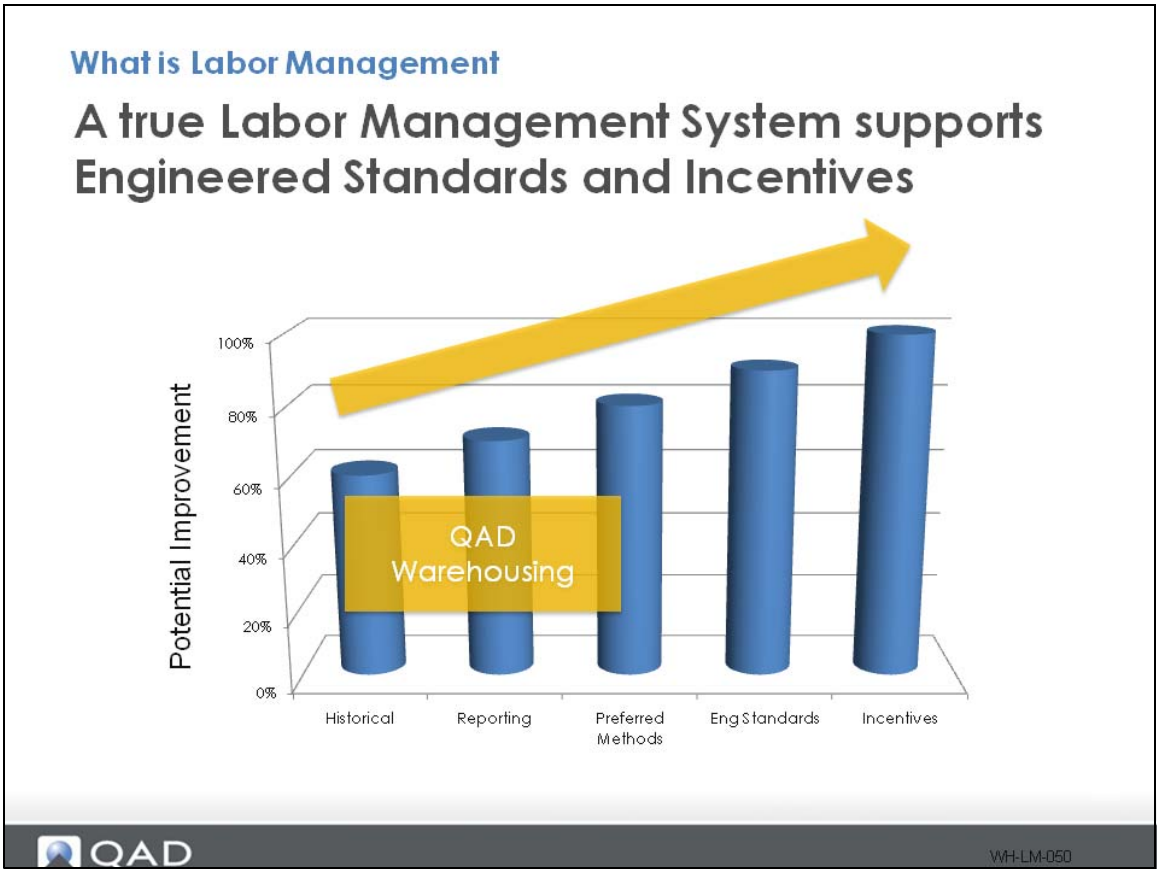
What is Labor Management?



A true labor productivity improvement program is built on three axioms:

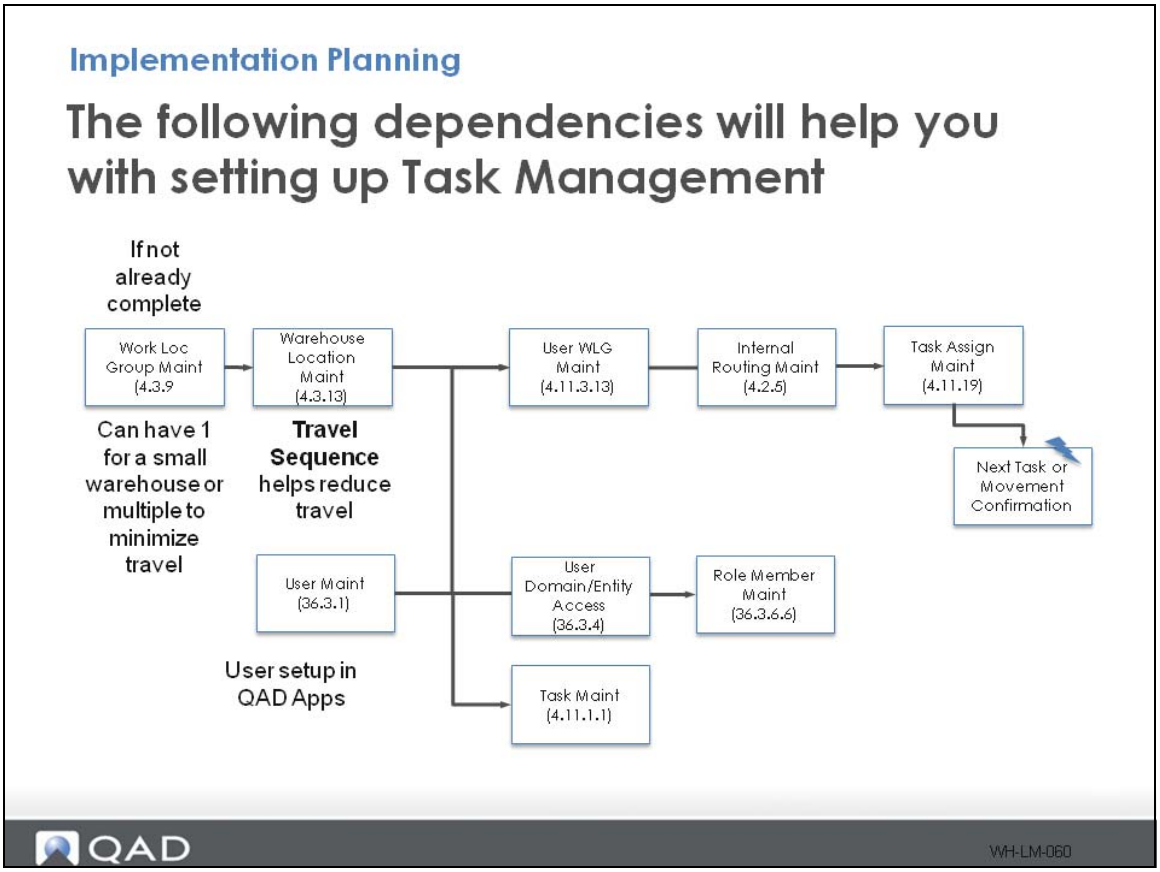
- Industrial Engineering: Defines the optimal operating methods and develops appropriate performance standards.
- Labor Management System (LMS) : Enables improved workforce management and compares actual work accomplished with expected standards.
- Change Management: Ensures potential gains from productivity improvement initiatives are realized during and after implementation.

What is Labor Management - True Labor Management System



QAD Warehousing provides historical performance reporting and can provide expected work but does not equate to a true LMS; however, the data in QAD Warehousing feeds into a third party LMS solution.

Implementation Planning



You set up the following:

- Resources

  Define each warehouse staff, the warehouse groups, and optionally the warehouse shifts. Each warehouse staff member is a resource.

- Tasks

  Define each variation of warehouse task (transaction).

- Assign Resources to Tasks

  Define which tasks can be performed by which users.

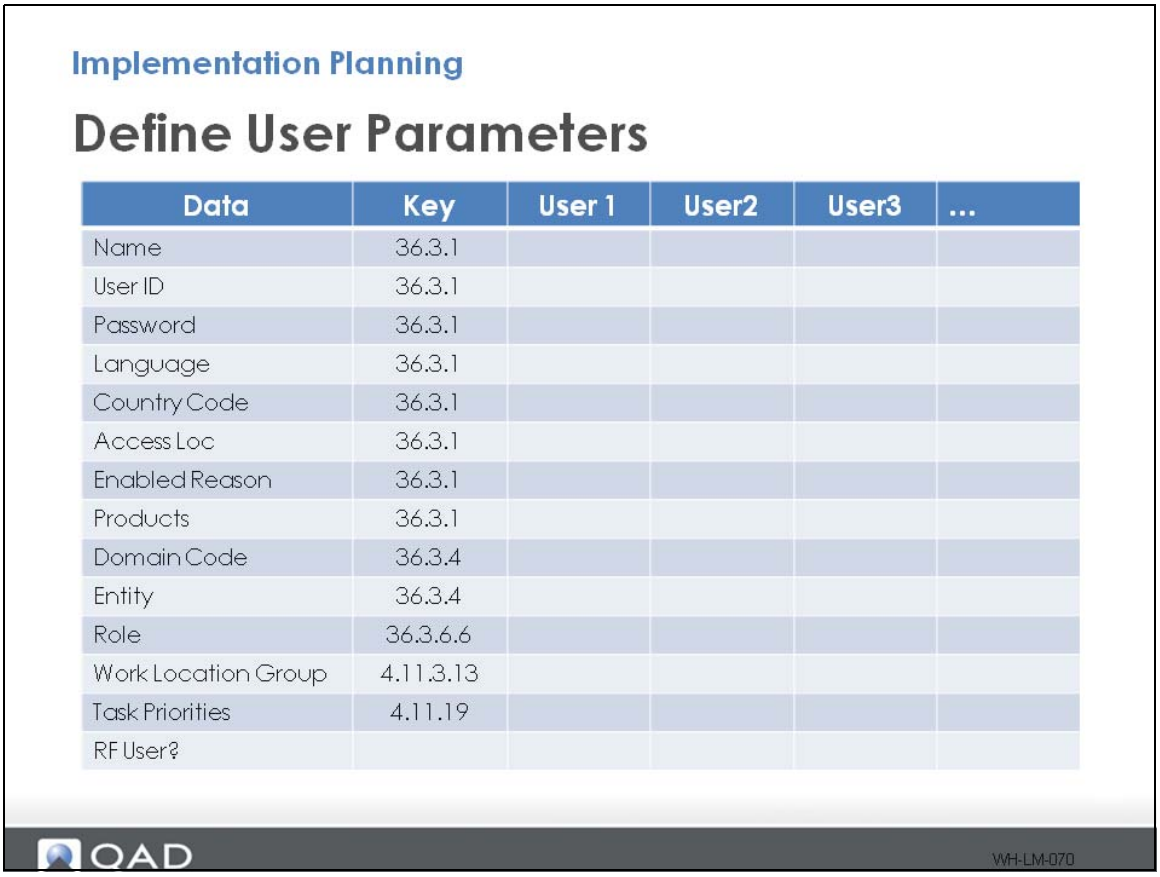
- Approve Tasks

  Use the RF (Radio Frequency), RDT (Radio Data Terminal), or non-RF movement confirmation to approve the movement of inventory from one location to another (tasks).

- Flavor

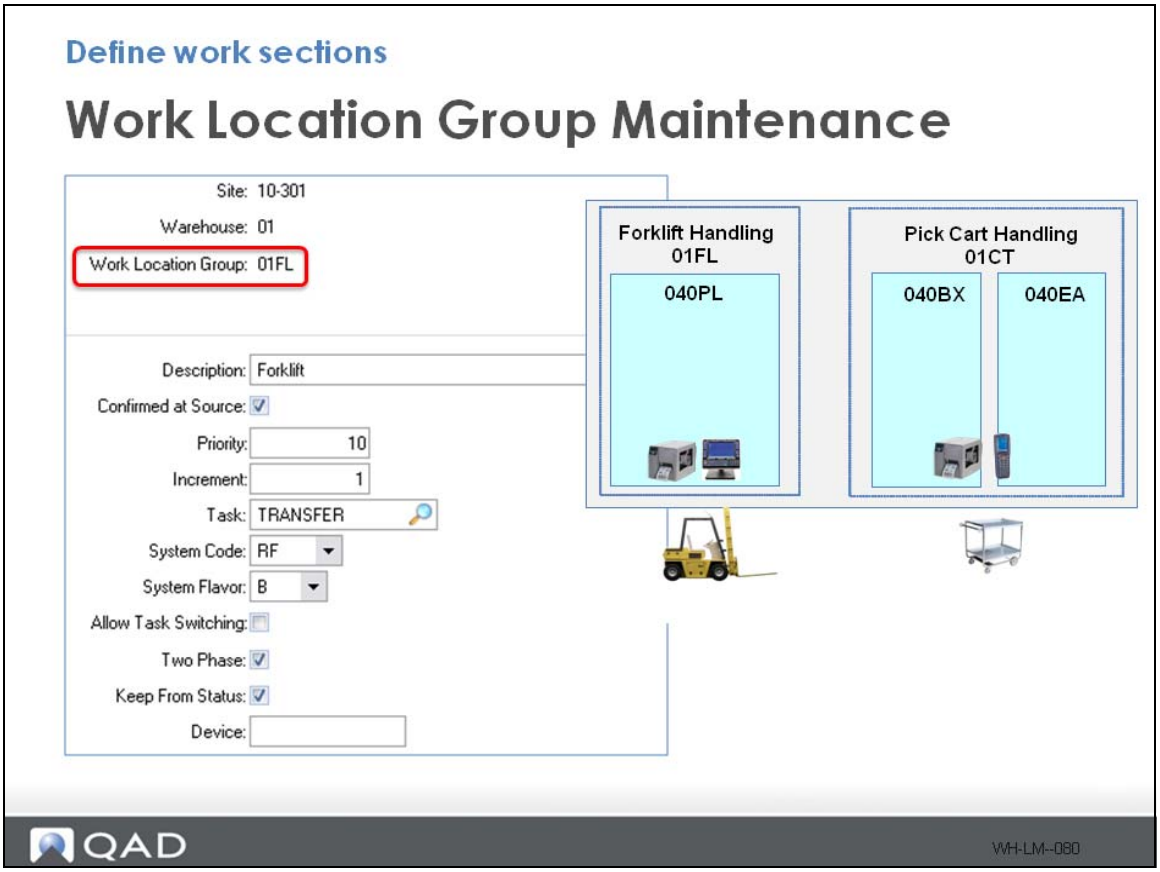
  Style and format of Radio Frequency screens to be used for displaying information.

Implementation Planning - User Parameters



The graphic above shows you the data you need to set up and the program menu number for the program that you use to set up the data.

Define Work Sections



Work Location Groups (WLG) are defined by types or equipment used and work processes. WLGs can cross over different zones and focus on procedures rather than physical placement of inventory.

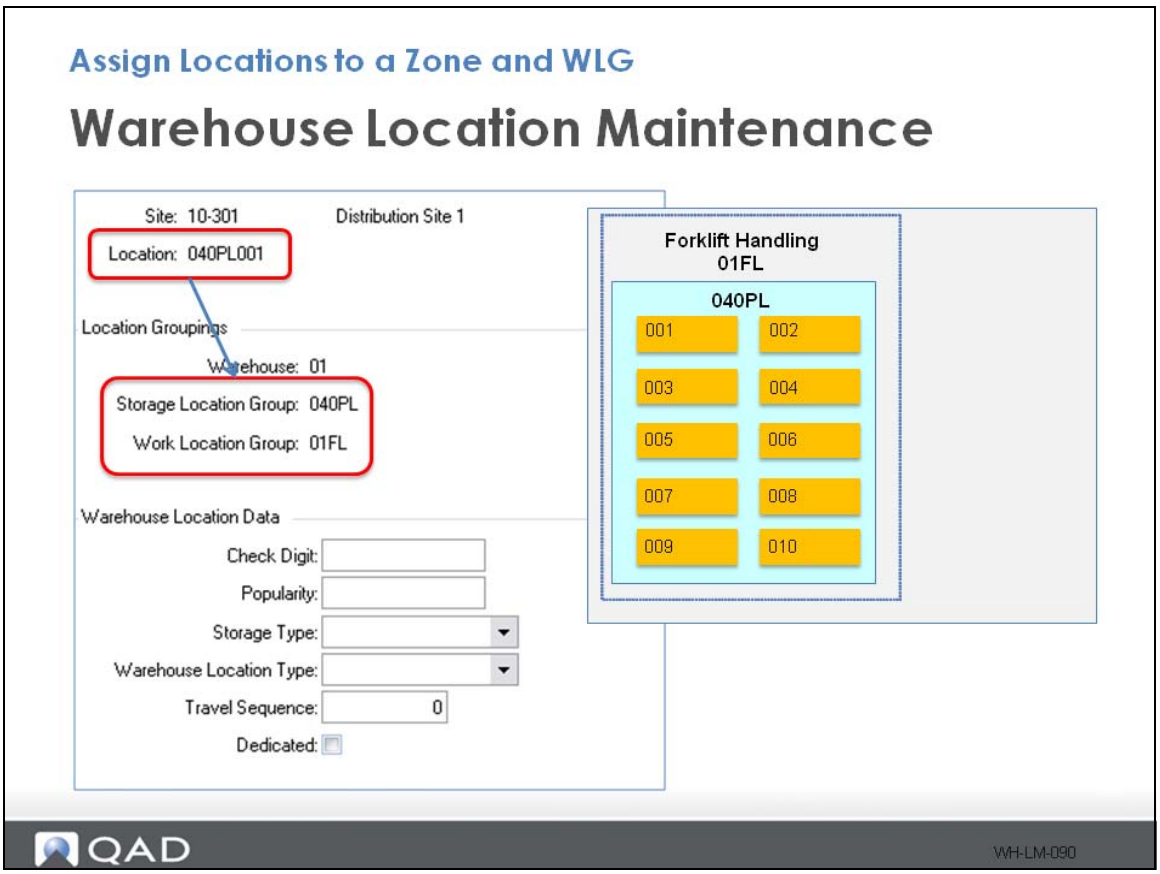
WLGs are helpful for defining where operators can work in the warehouse, the format of the RF screens and the printers they use.

Did You Know

Work Groups help by:

- Assigning users to work sections based on equipment type
- Assigning users to work sections based on capability type
- Defining RF screen parameters for the work section

Assign Locations to a Zone or WLG



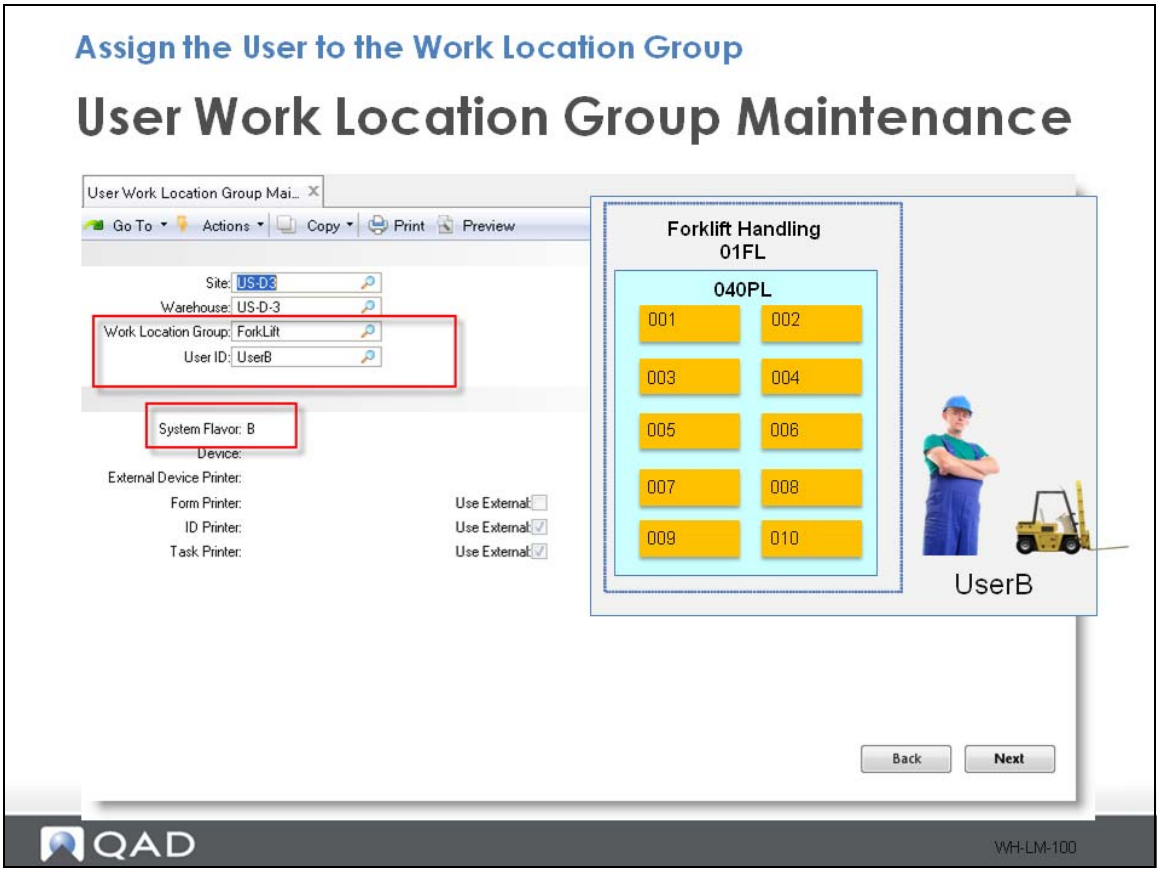
Use Warehouse Location Maintenance to set up all locations within a warehouse. You can also set up a user as a location.

A user location is used 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.

Did You Know

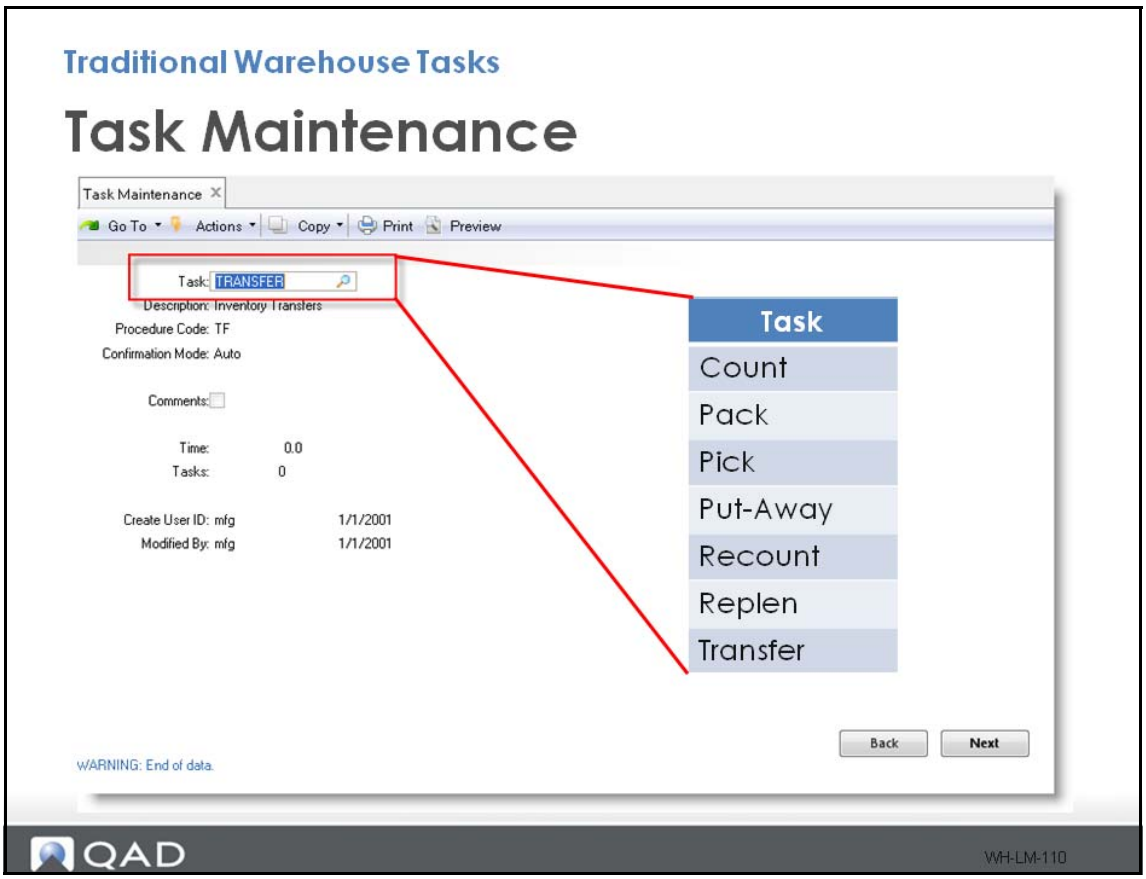
Locations can be assigned to a User to track inventory during long pick cycles.

Assign User to Work Location Group



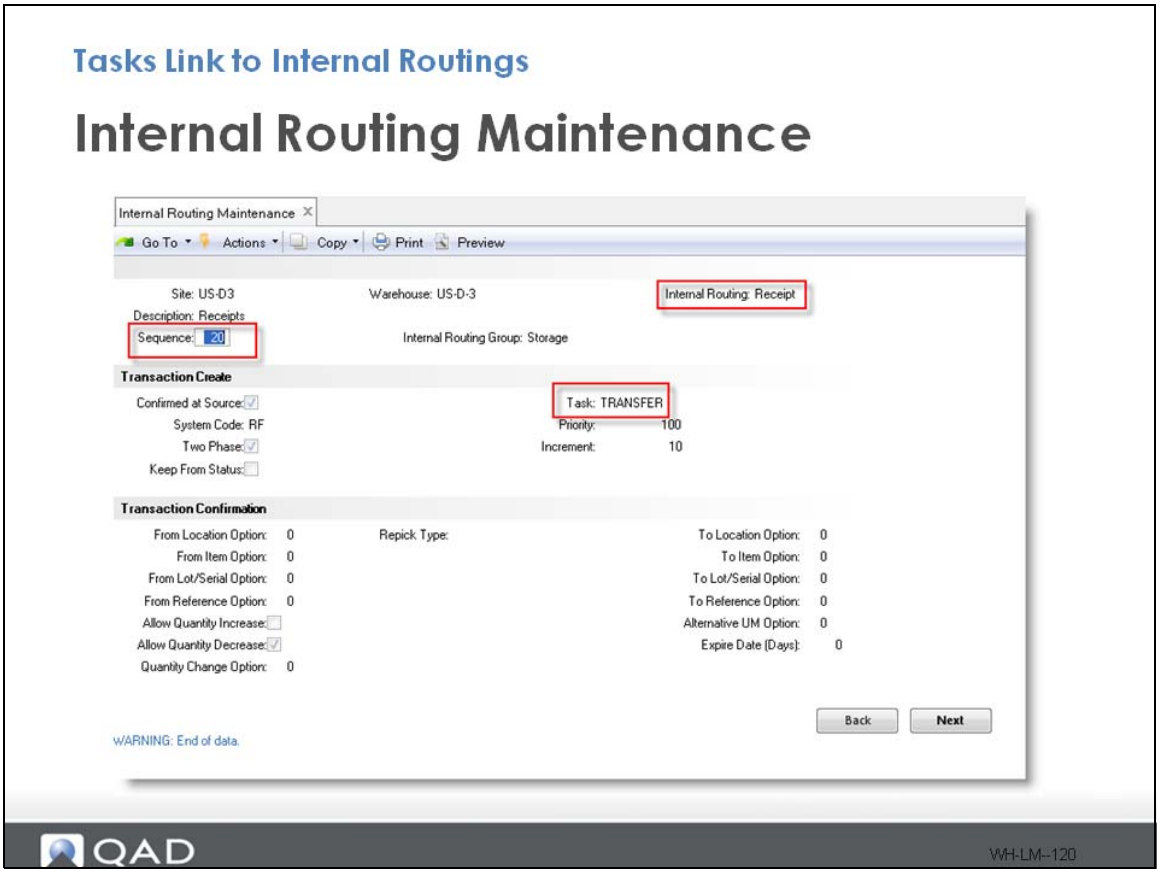
Use User Work Location Group Maintenance to assign a user to a work location group, set up print options specific to that user, and set the system flavor for the user.

Traditional Warehouse Tasks



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

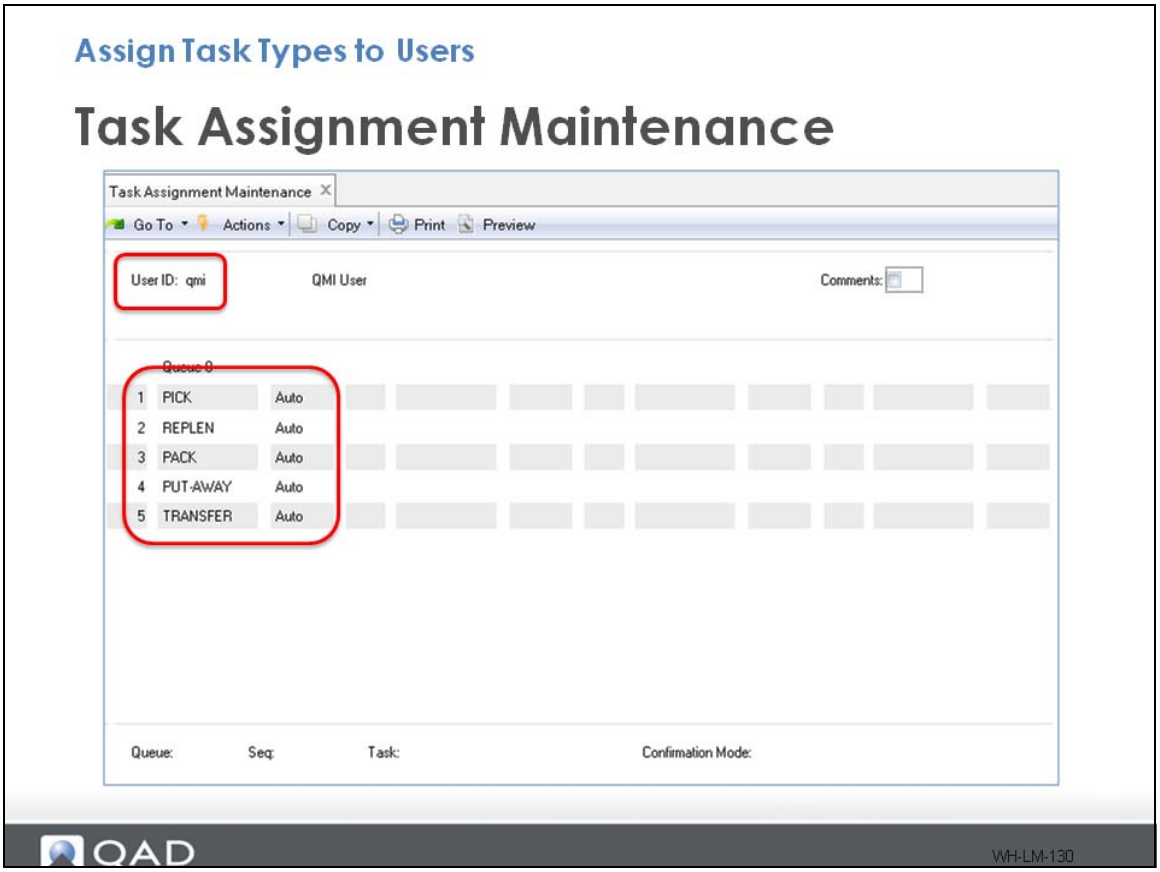
Tasks Link to Internal Routings



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

Key fields are identified in the graphic above, but you can change these at any time. You can configure the tasks for each user.

Assign Task Types to Users



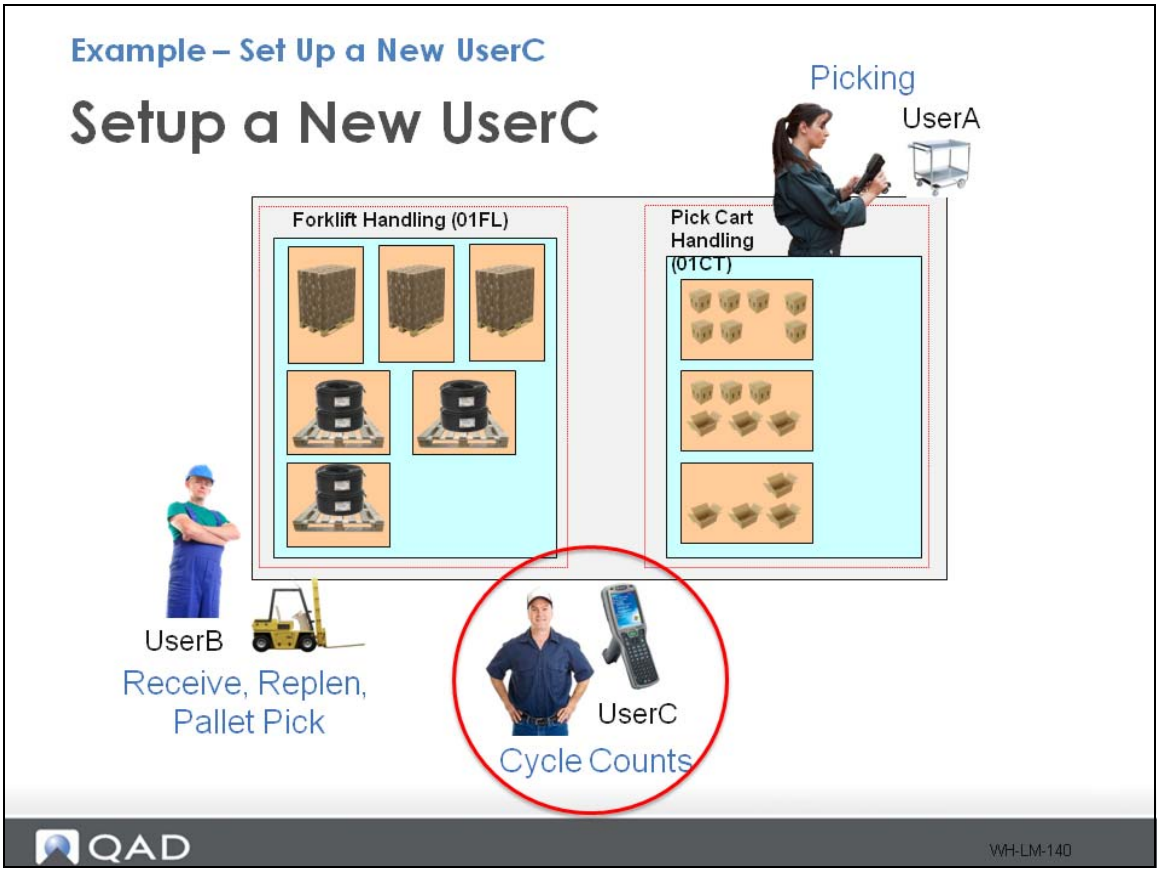
After defining the resources and tasks that are being undertaken within the warehouse, you must assign the tasks to the resources. This is achieved by using Task Assignment Maintenance.

For cross-trained users working in multiple areas, Task Assignment Maintenance helps prioritization when multiple tasks are available.

Did You Know

Task priority queues can be setup to help ensure important tasks are completed first.

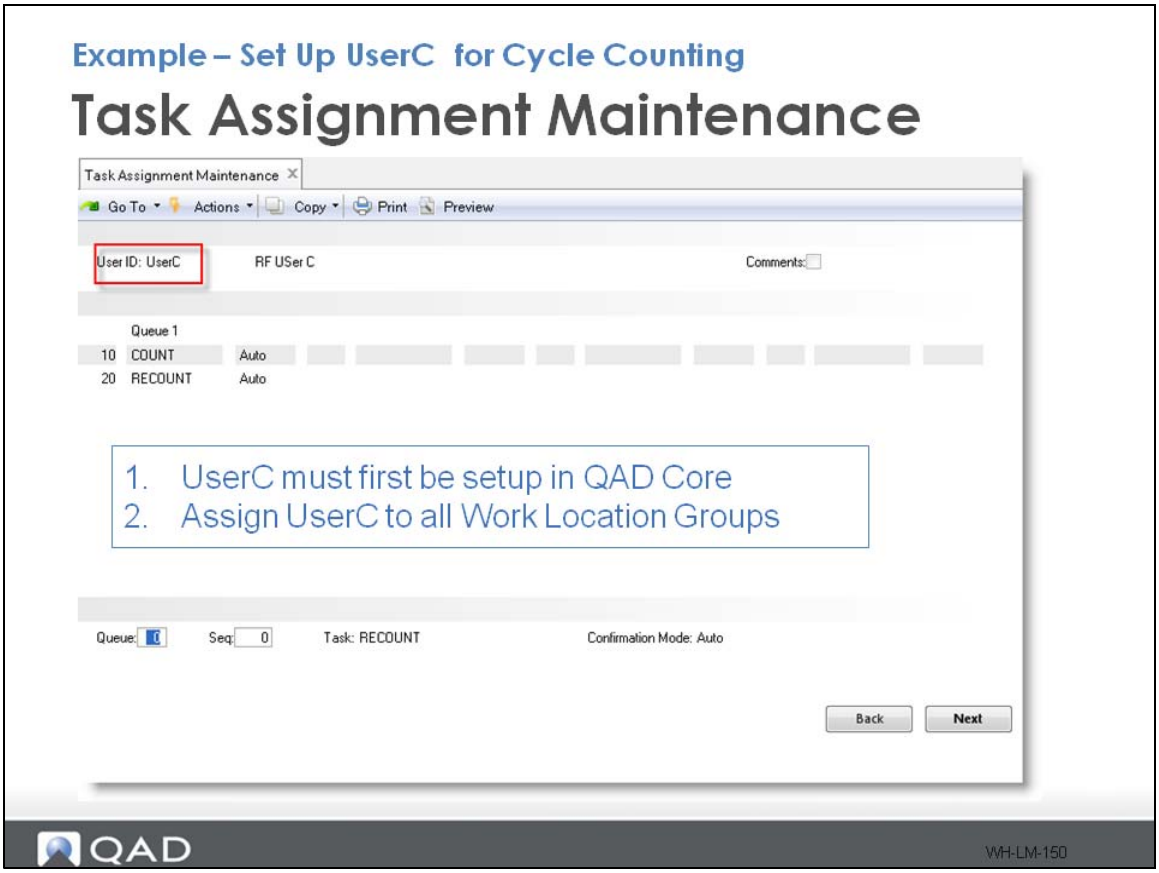
Example - Set Up a New UserC



In this example, User B is assigned to the pallet area due to a forklift handling requirement and UserA to Boxes area for handling less than pallet quantities (for example, boxes).

UserC needs to be assigned to a WLG so that he/she can perform cycle counts.

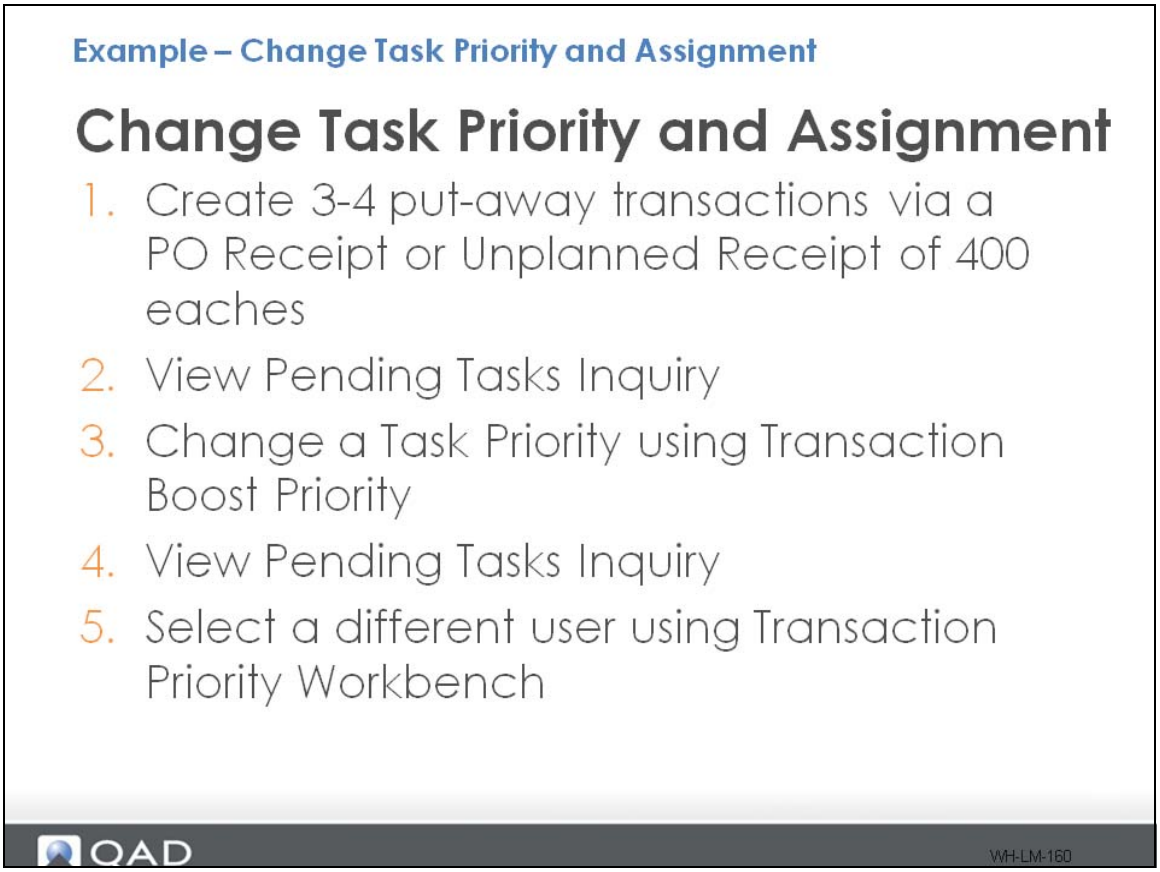
Example- Set Up UserC for Cycle Counting



You must set up the user in User Maintenance in QAD EE.

You must assign the user to all WLGs using User Work Location Group Maintenance.

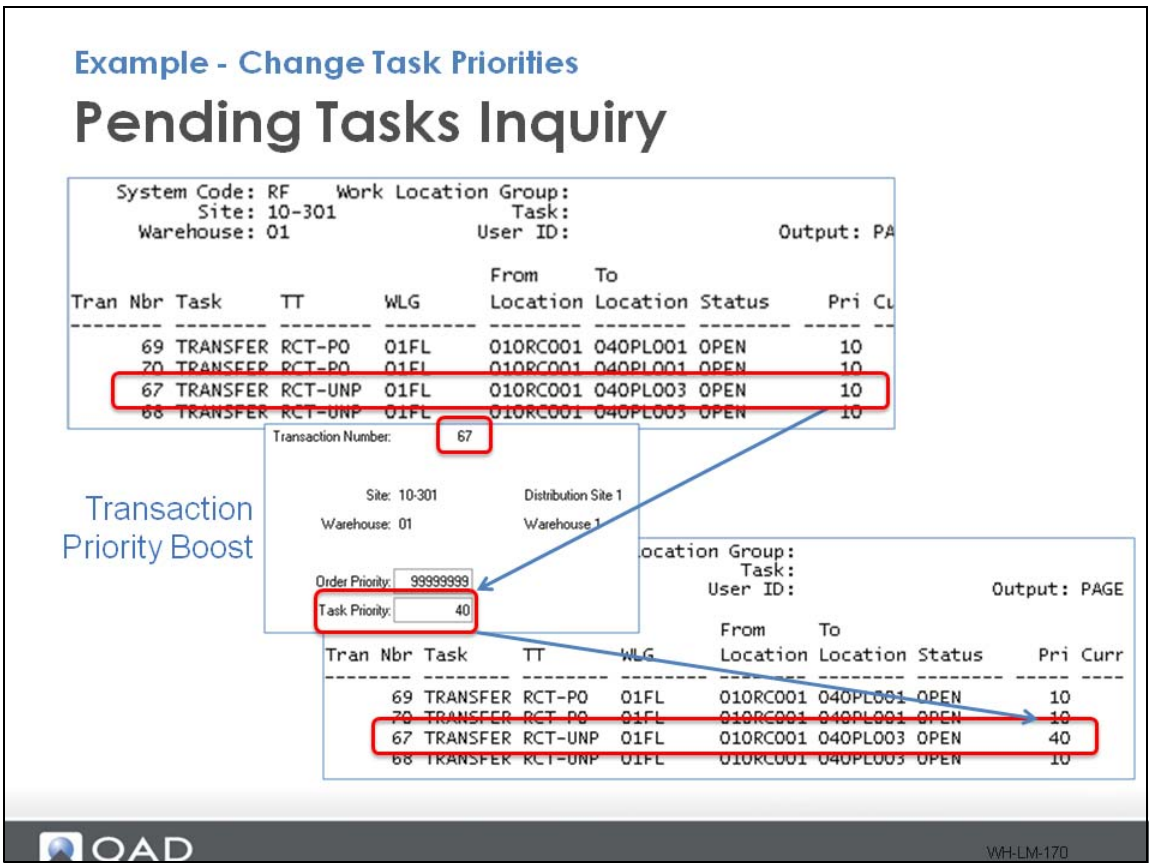
Example - Change Task Priority and Assignment



You change task priority and assignment by:

1. Creating put-away transactions using core receipt programs.
2. Viewing tasks in Task Load Report
3. Changing task priority using Transaction Priority Boost
4. Re-viewing pending tasks in Task Load Report.
5. Selecting a different use using Transaction Priority Workbench.

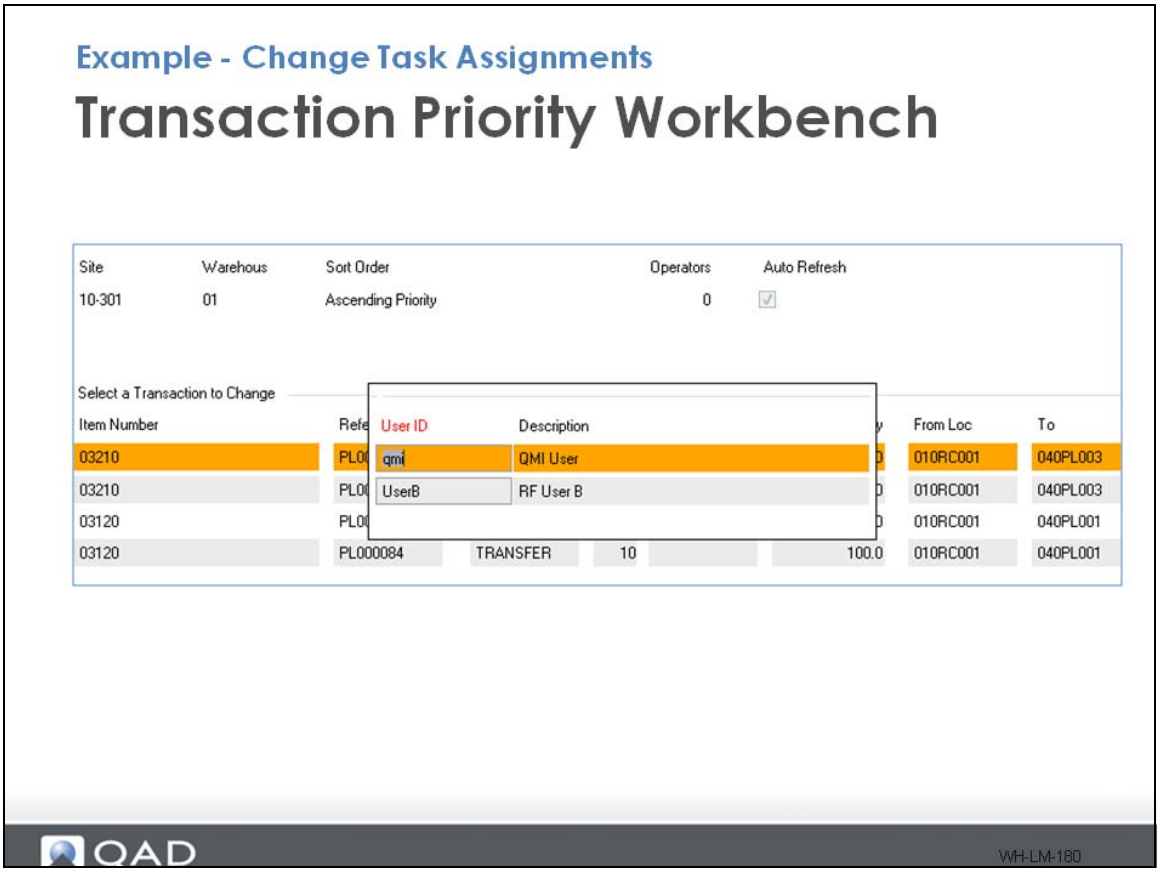
Example - Change Task Priorities



Use Task Load Report to view pending tasks, then use Transaction Priority Boost.

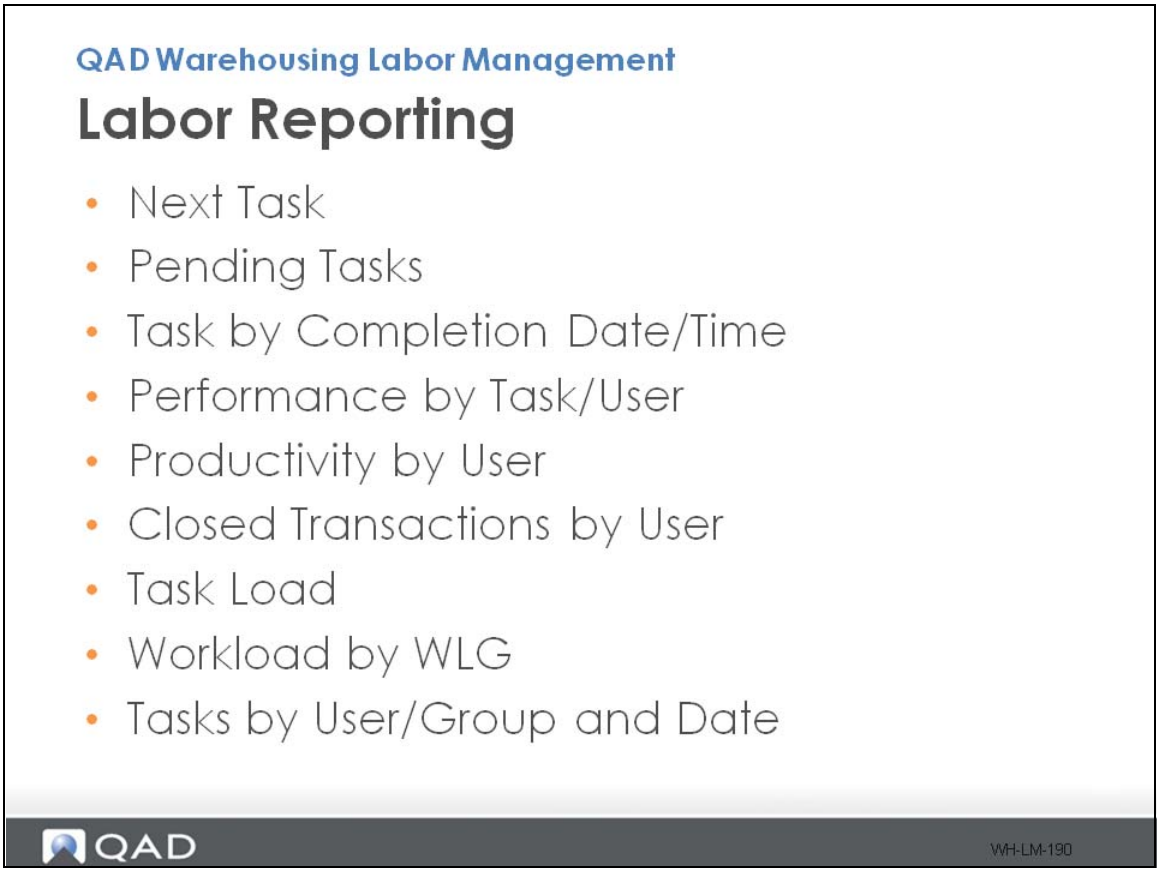
In the example above, the priority increased from 10 to 40. The next time a user logs in to Next Task and is assigned Transfers, they receive this transfer task, assuming there are no other accessible tasks with a higher priority than 40.

Example - Change Task Assignments



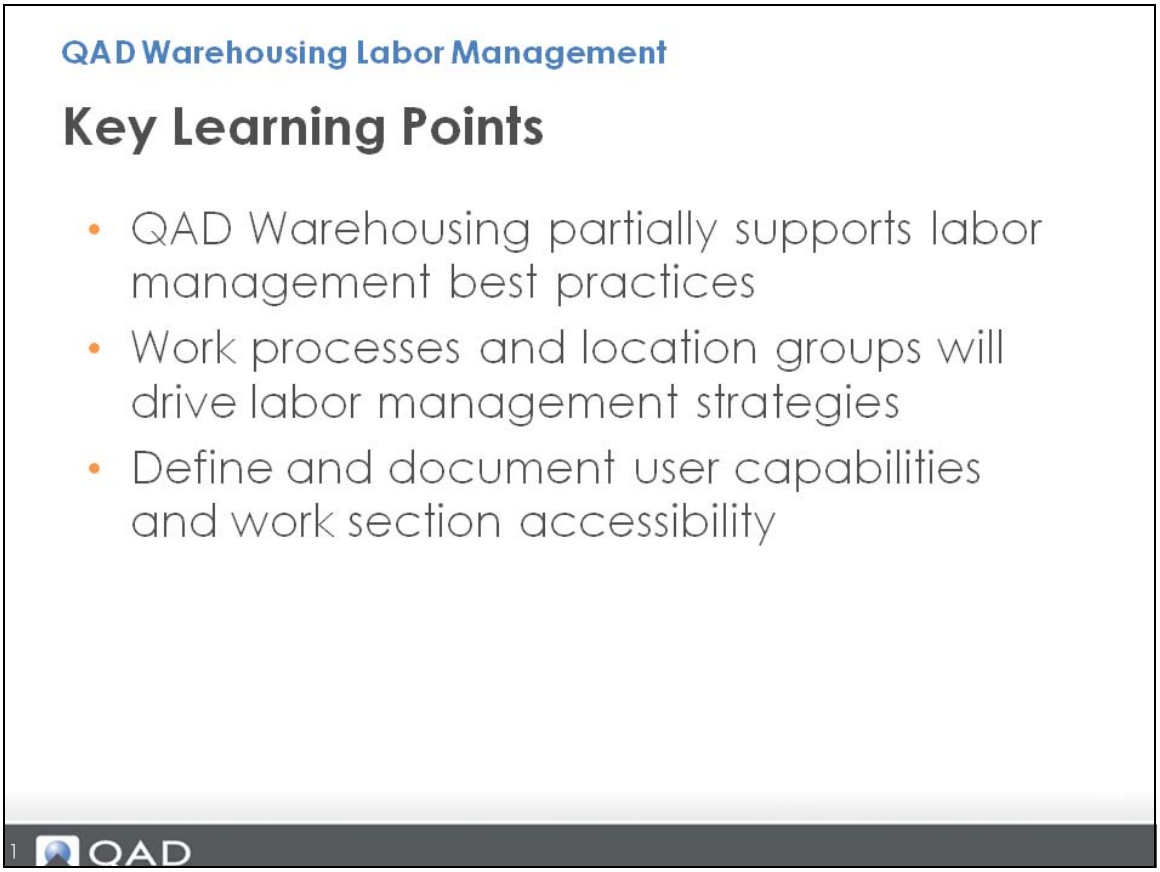
You can assign/re-assign tasks using Transaction Priority Workbench. You can see which user is working on which task; then, you can reassign tasks as necessary.

Labor Reporting



You can use any of the reporting tools, shown above, within QAD Warehousing's Labor Management module to view labor management data.

Key Learning Points



Questions

1. True or False. QAD Warehousing provides some functions of a true labor management system but not all functionality. For example, there are no engineering standards or incentives in QAD Warehousing.
2. What is system flavor?
3. Name at least two traditional warehouse tasks.
4. Which QAD Warehousing program defines the priority of generic tasks a user receives when multiple tasks are available?
5. Which QAD Warehousing programs help you view warehouse staff tasks?
6. True or False. Users must first exist in QAD core before being setup in QAD Warehousing?

Answers

1 True. QAD Warehousing provides some functions of a true labor management system but not all functionality. For example, there are no engineering standards or incentives in QAD Warehousing.

2 System flavor defines the style and format of Radio Frequency (RF) screens and printing preferences.

3 Traditional warehouse tasks can include count, pick, pack, put-away, reount, replenish, and transfer.

4 Task Assignment Maintenance helps prioritization when multiple tasks are available.

5 Task Priority Workbench helps you view warehouse staff tasks.

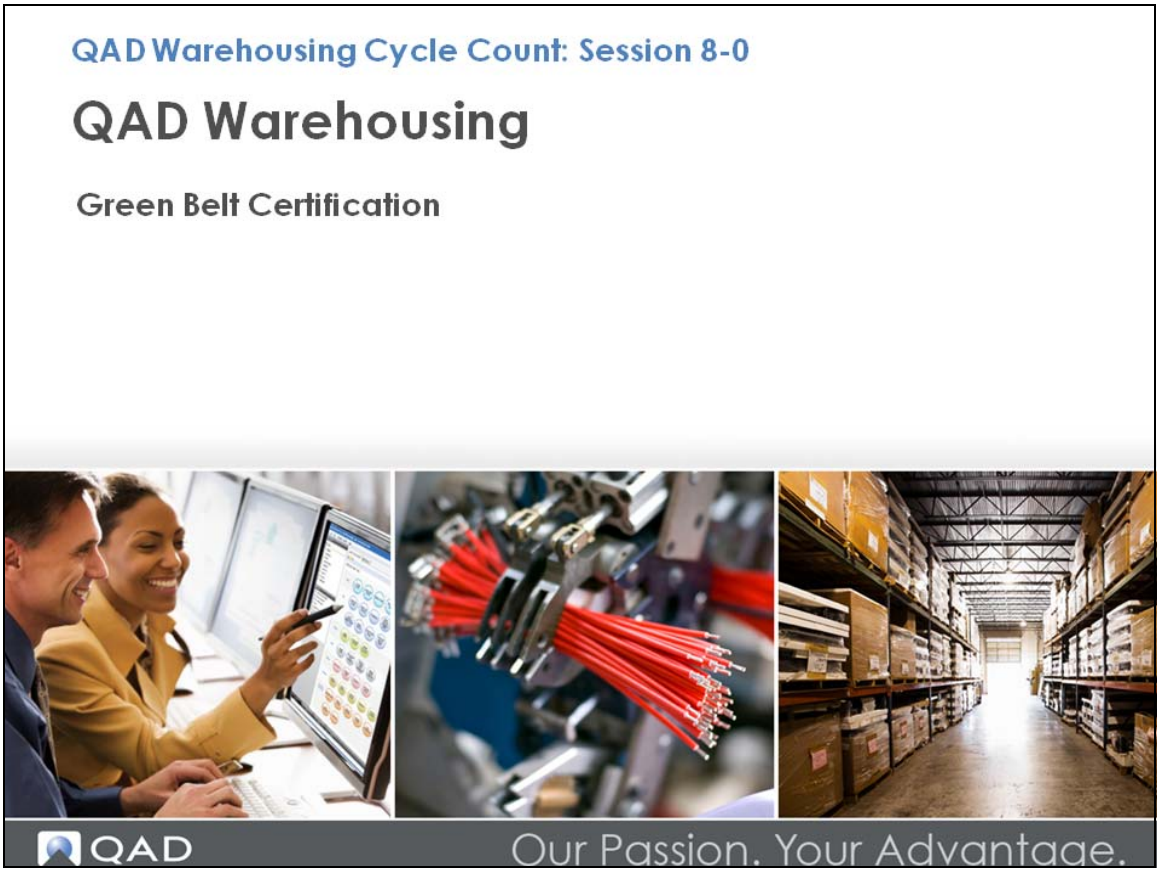
6 True. QAD Warehousing depends on users for first be setup in User Maintenance.

Notes

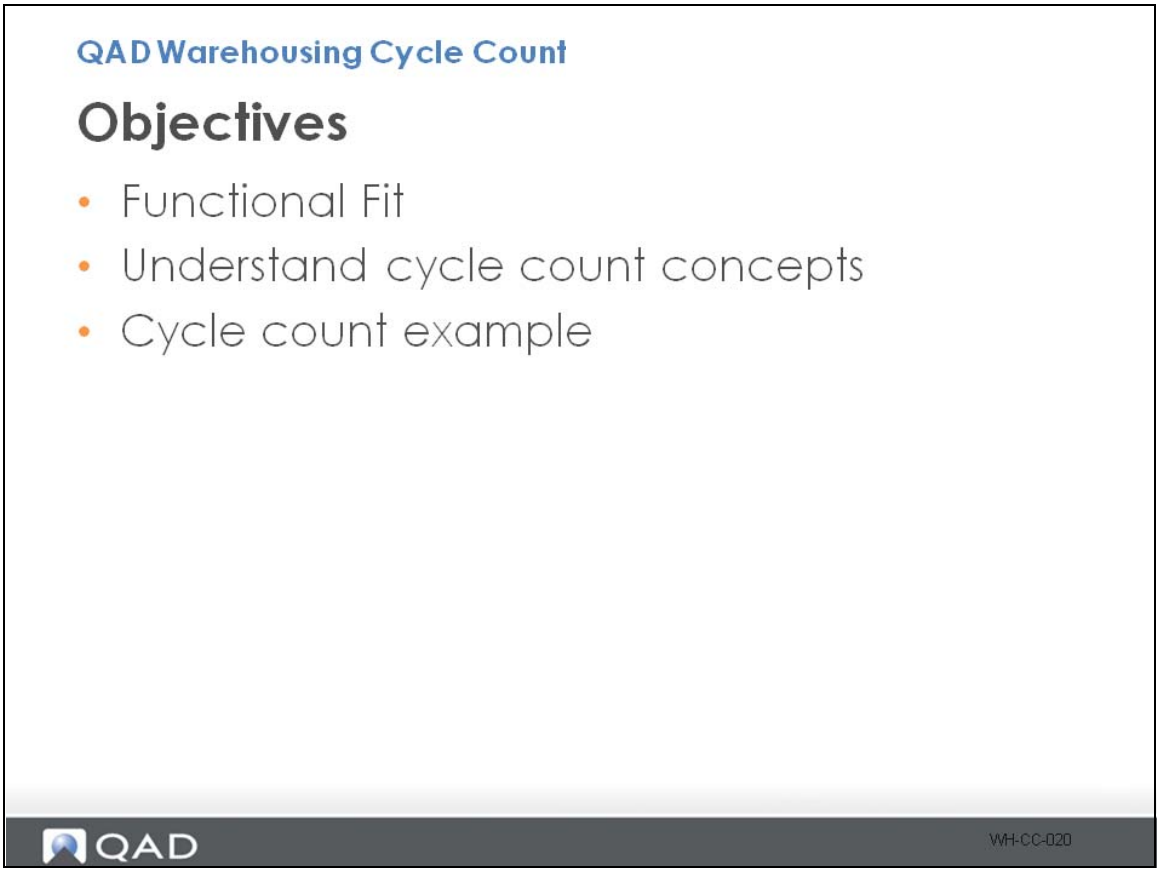
Chapter 8

Cycle Count

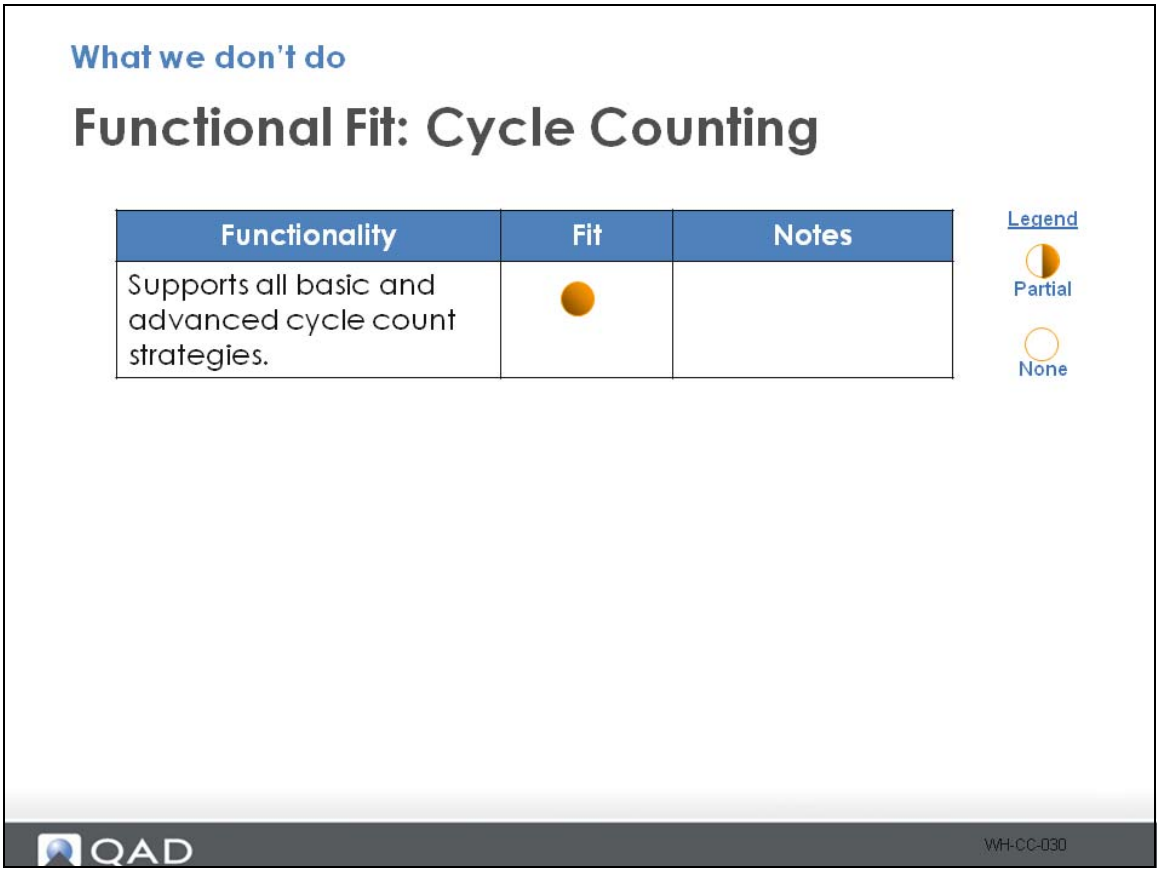
Overview


QAD Warehousing Cycle Count: Session 8-0
QAD Warehousing
Green Belt Certification
QAD
Our Passion. Your Advantage.

Objectives

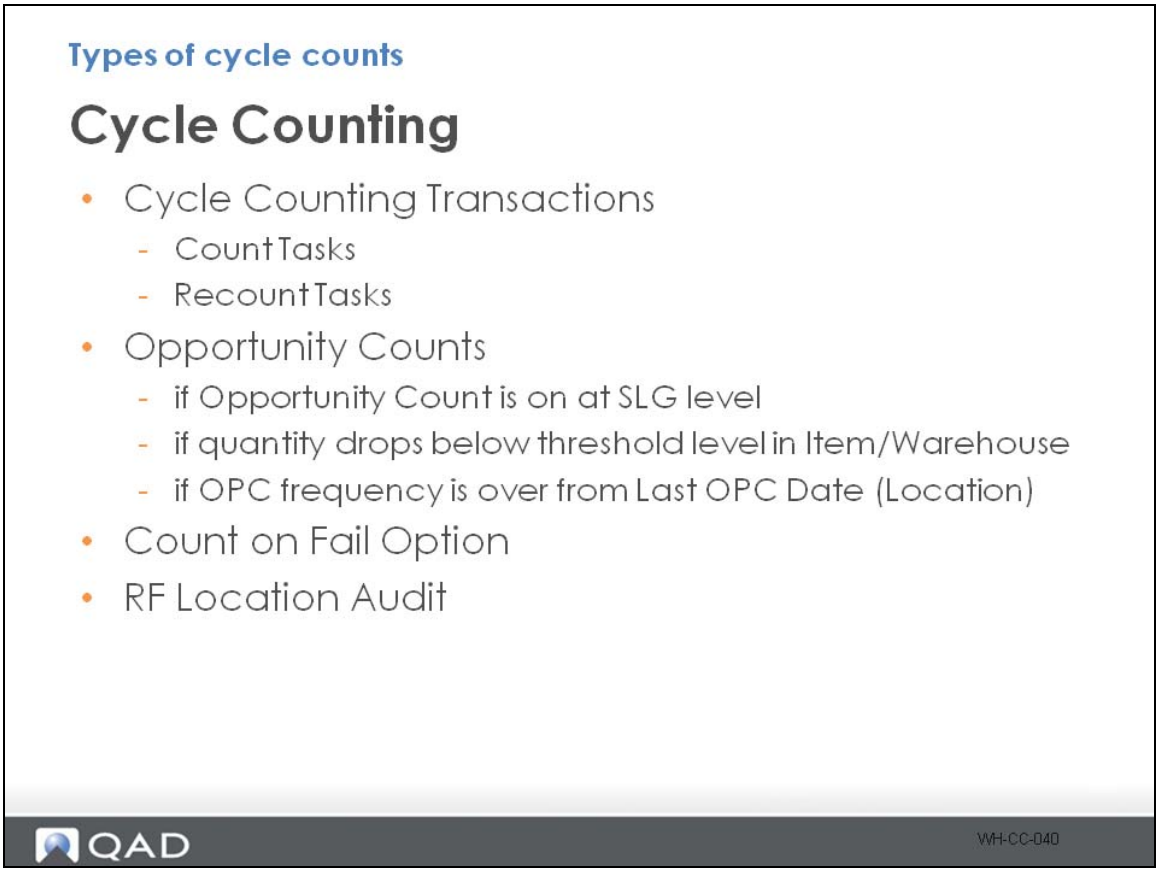

QAD Warehousing Cycle Count
Objectives
Functional Fit
Understand cycle count concepts
Cycle count example
QAD
WH-CC-020

Functional Fit: What We Don’t Do



As you can see in this graphic, QAD Warehousing cycle count functions provide all basic and advanced warehousing cycle count strategies.

Types of Cycle Count



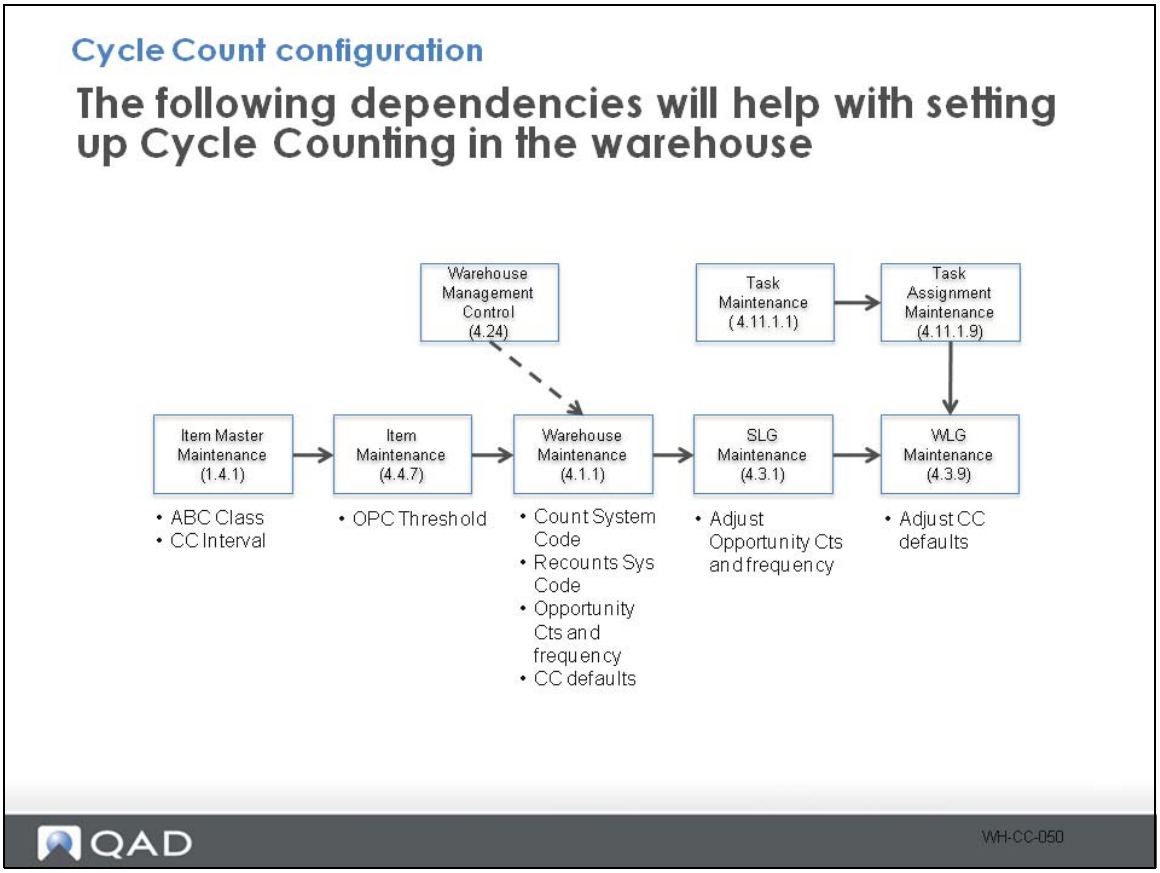
Did You Know

- You can count the contents of a pallet or bin through the RF Location Audit option?
- Cycle counts are planned and scheduled events while opportunity counts are driven by triggers/events.

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.

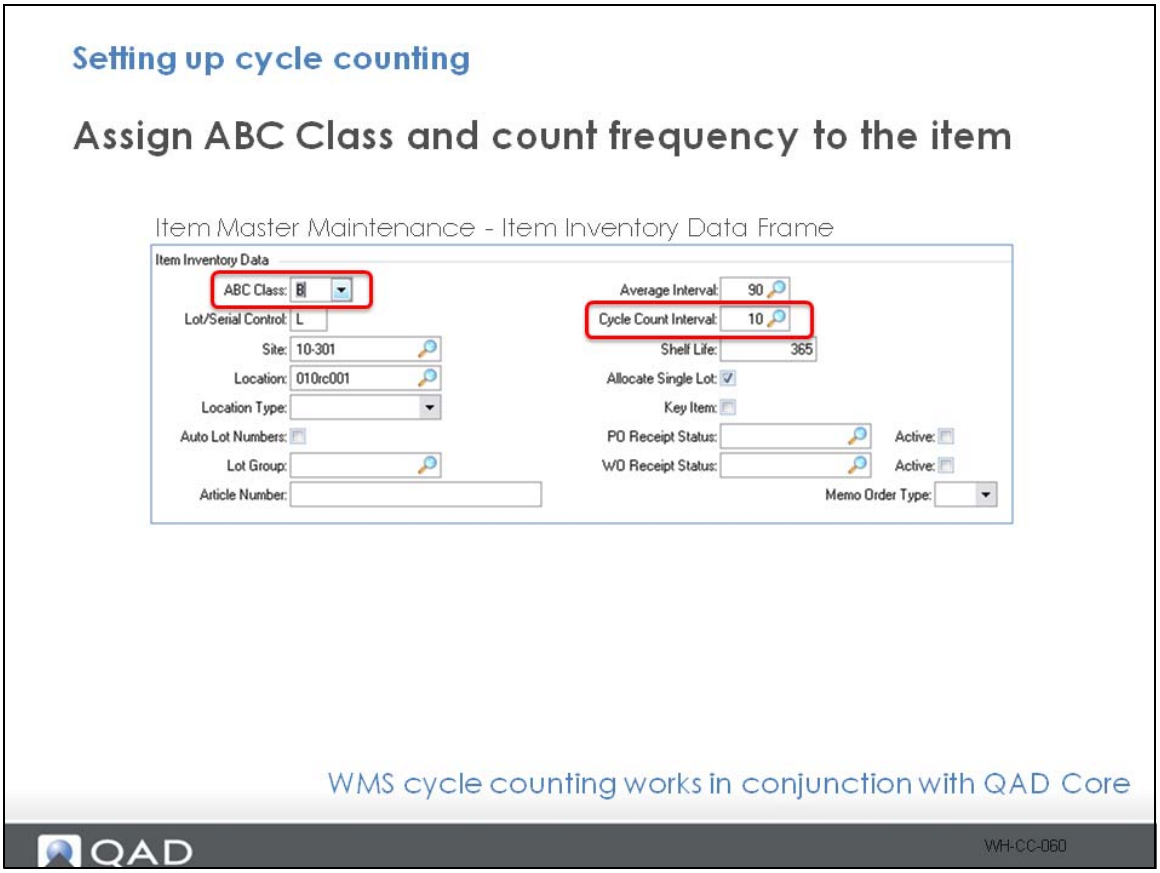
Cycle Count Configuration



Cycle count setup includes the following:

- 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.
- Enable users to perform cycle count tasks.

Setting Up Cycle Counting

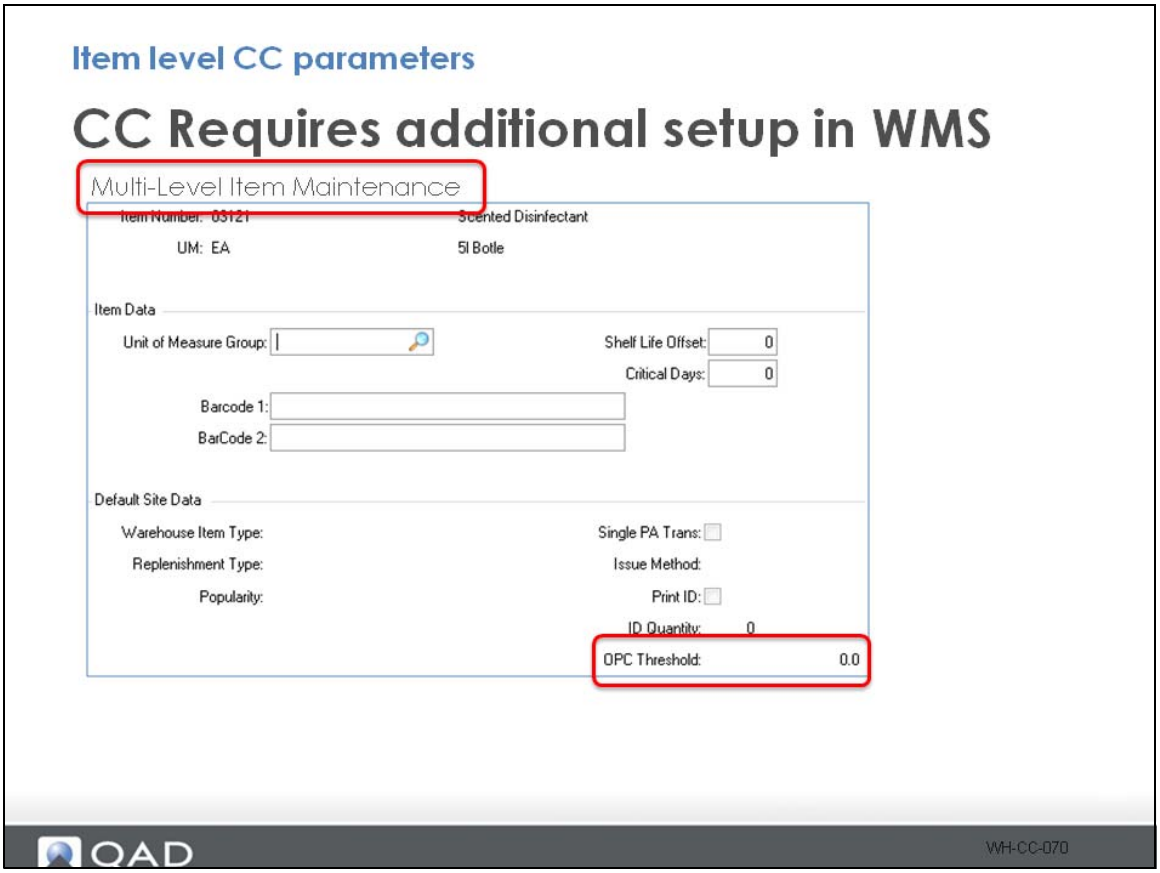


Did You Know

- ABC Class is used as a selection category for cycle count setup.
- Cycle Count Interval (frequency) is measured in Days only.

Use Cycle Count Maintenance to set up these functions.

Item Level CC Parameters

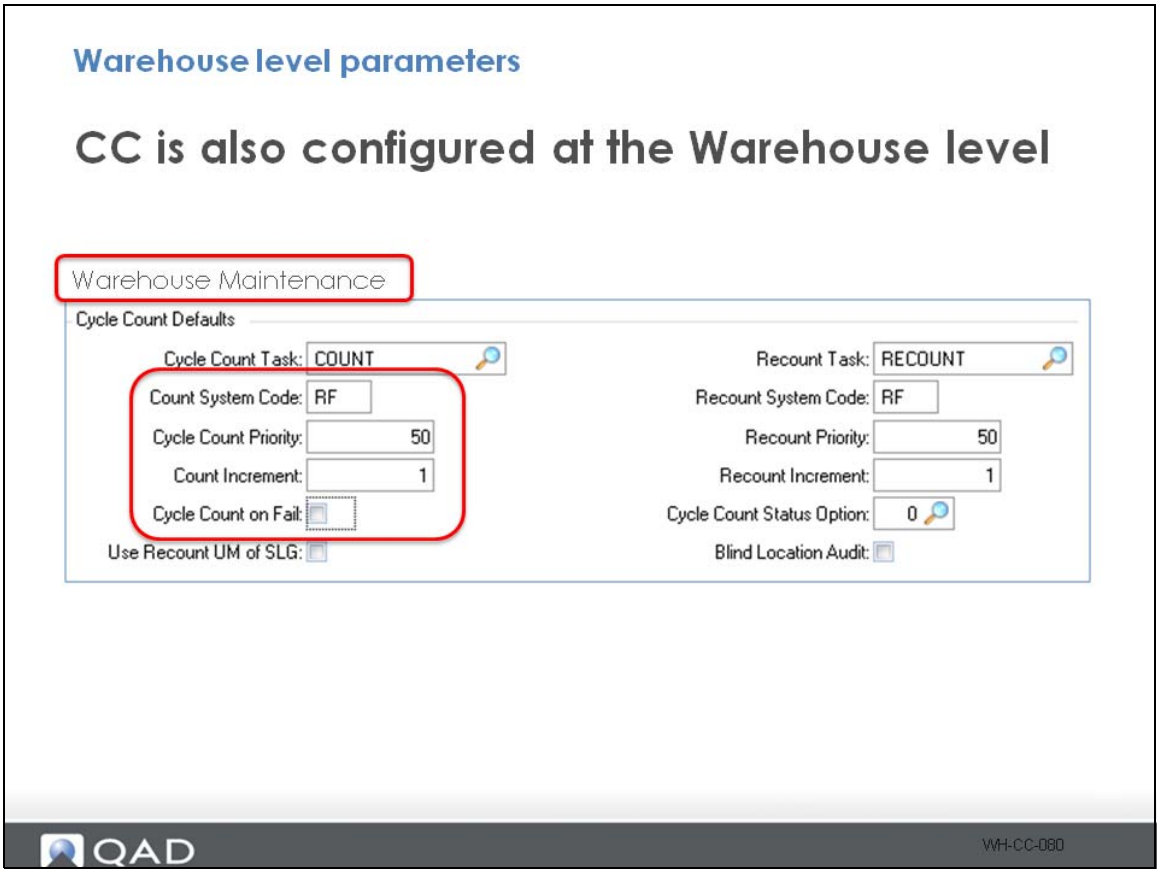


Did You Know

Opportunity counts are not triggered by a manual product move.

When a pick or replenishment task is complete and the inventory level drops below the OPC Threshold, an opportunity cycle count is generated.

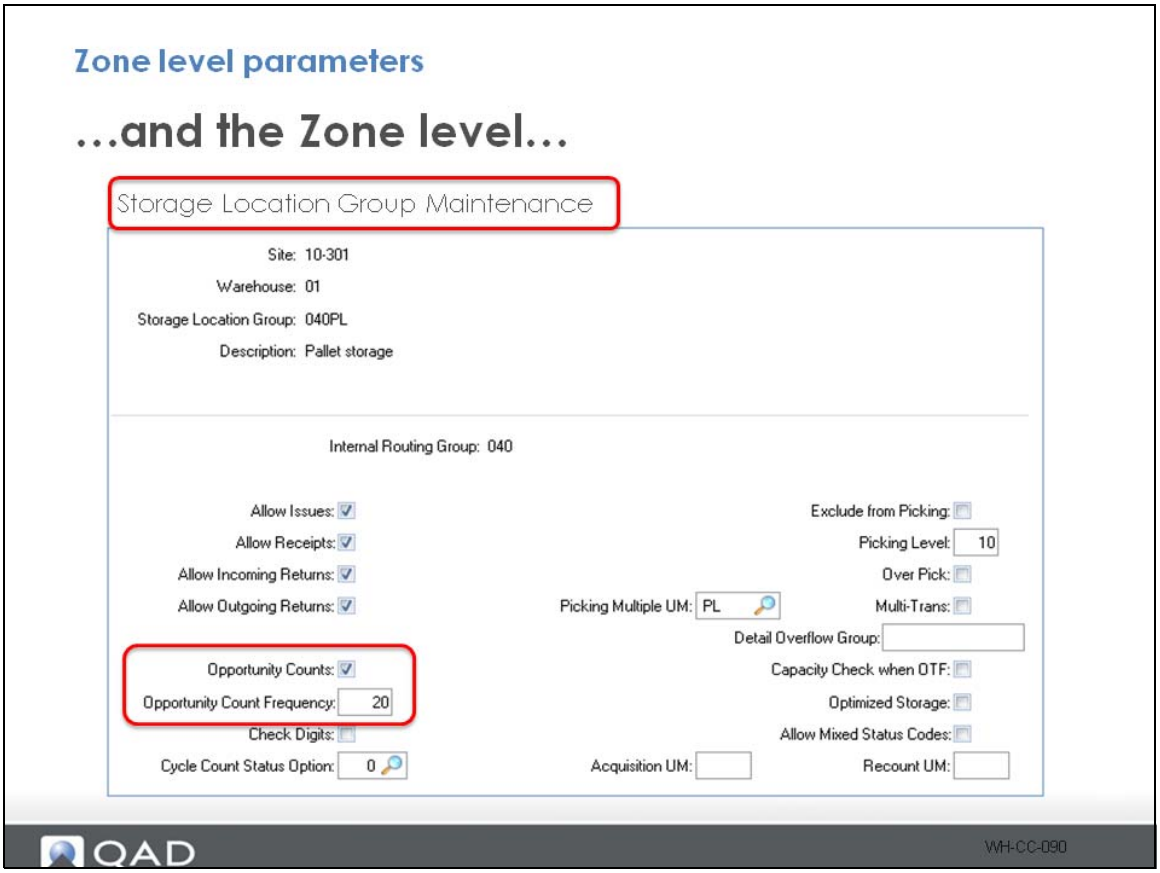
Warehouse Level Parameters



Use Warehouse Maintenance to specify the RF is the device where the system creates a cycle count or recount request in the WLG.

You can specify that cycle counts are done on the RF. You set up priority and by how many days the cycle count increments, or whether the cycle counts occur on fails.

Zone Level Parameters



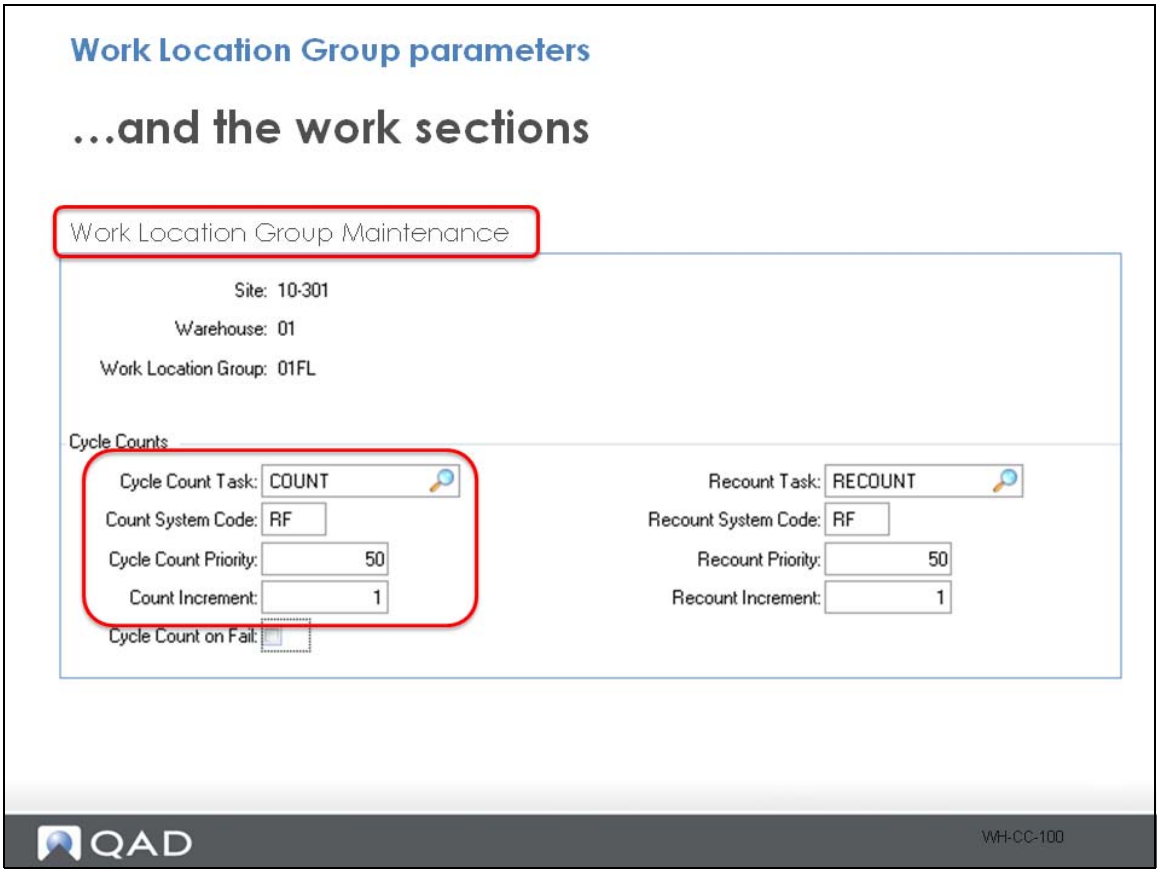
Use Storage Location Group Maintenance to:

- Set the Opportunity Counts field so the system requests warehouse staff perform a cycle count.
- Specify the frequency in days since the last count you want to perform a new count.

Did You Know

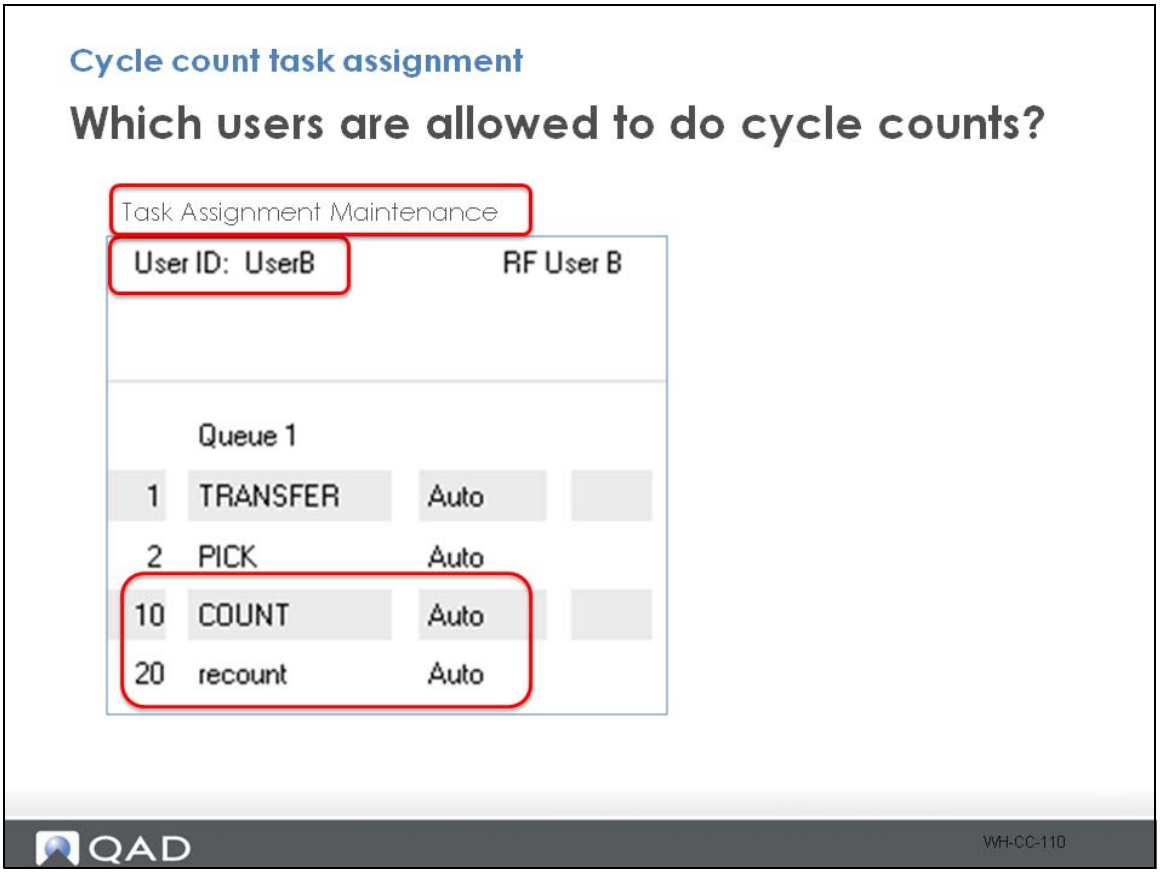
Opportunity counts are setup by zone and trigger an interleaved cycle count when the item is picked below the threshold set in Item Maintenance.

Work Location Group Parameters



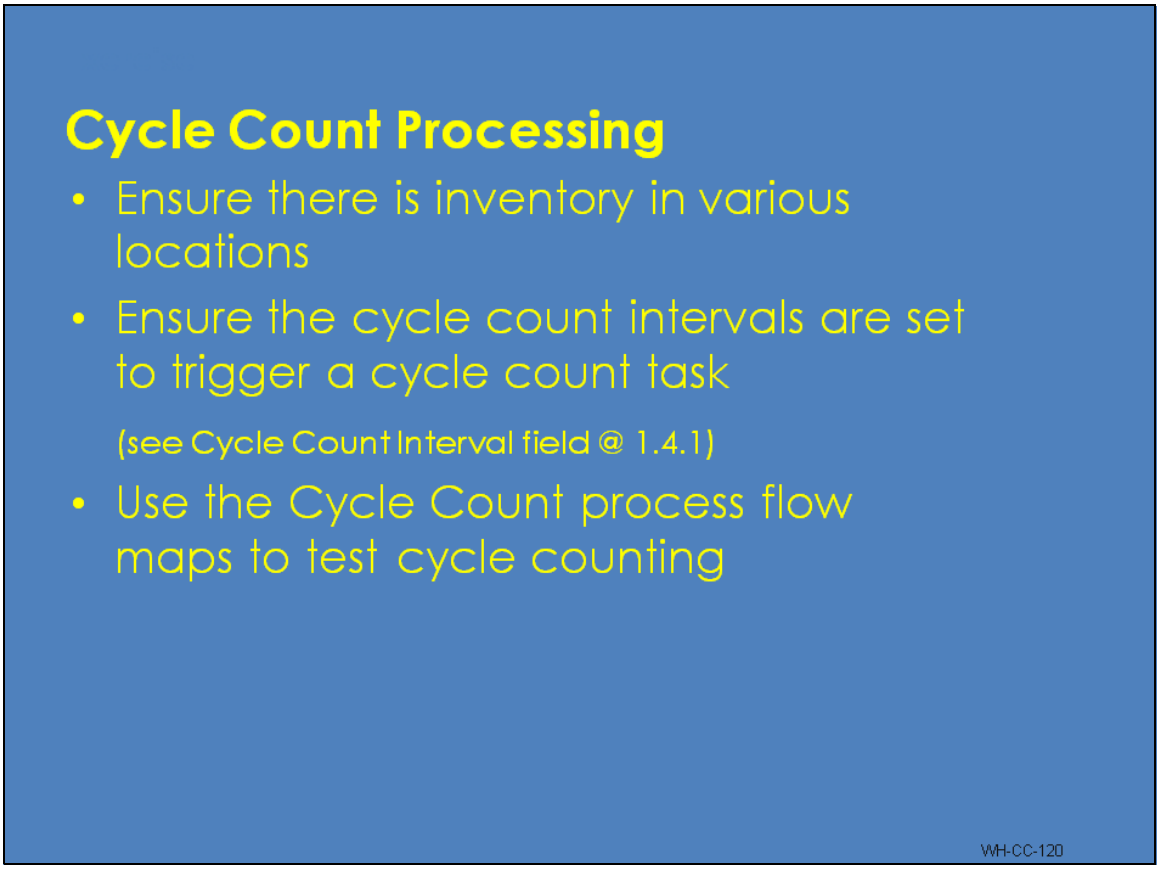
Use Work Location Group Maintenance to specify whether the system creates a cycle count task at the WLG level.

Cycle Count Task Assignment

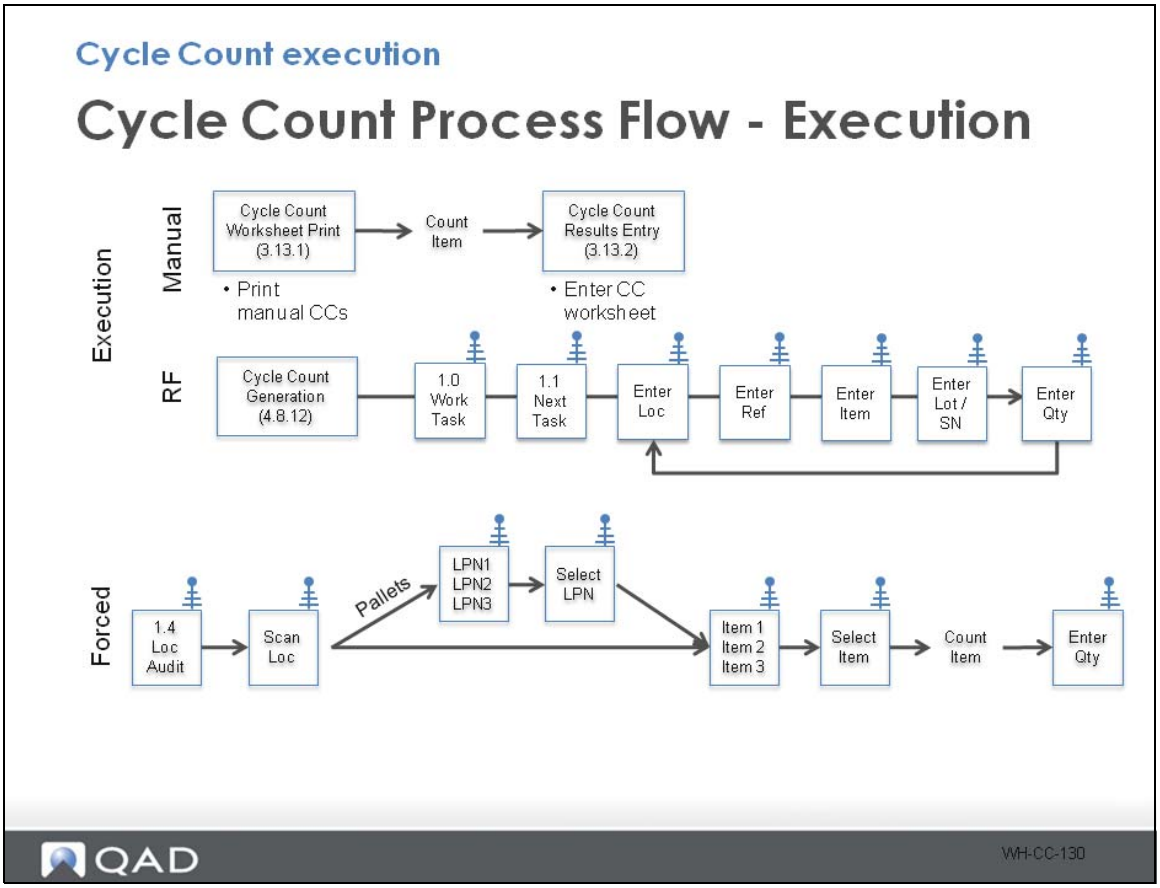


Use Task Assignment Maintenance to assign warehouse users to cycle count tasks.

Cycle Count Processing

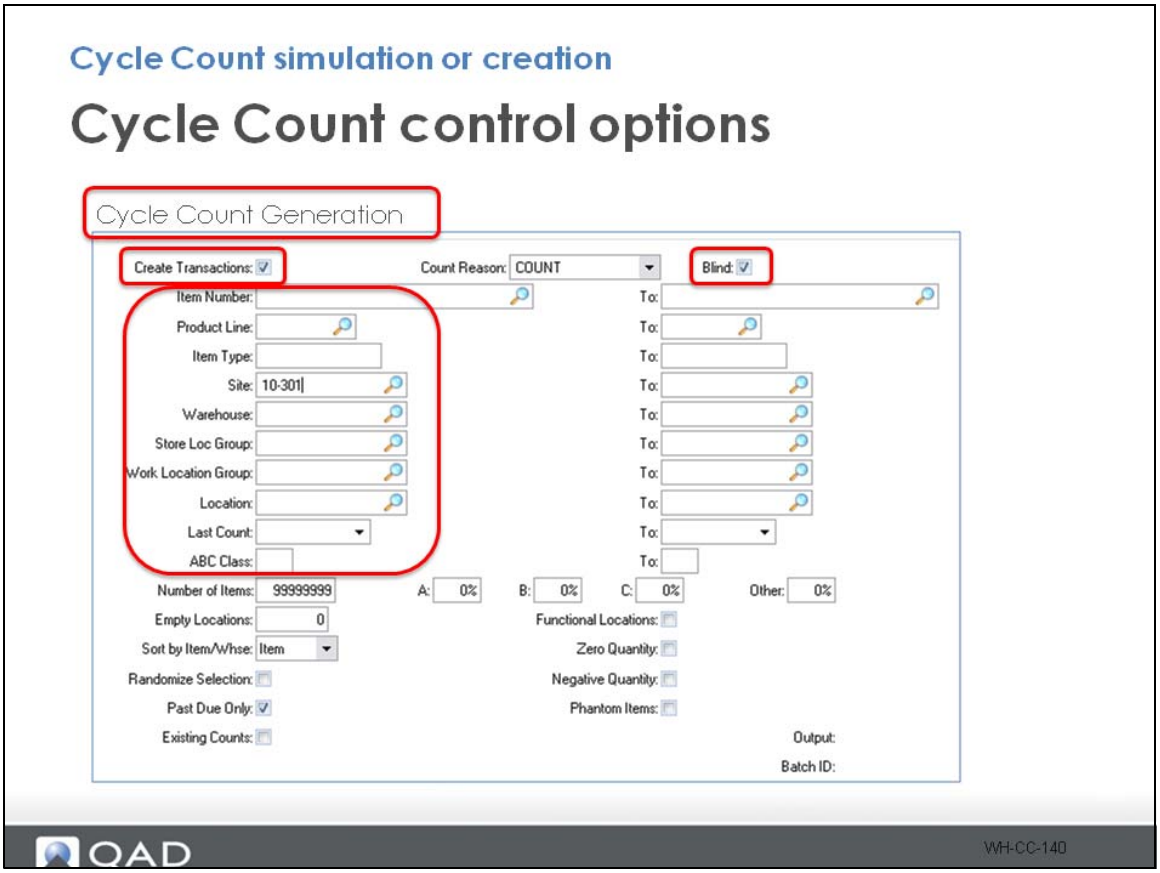


Cycle Count Execution



The graphic above depicts the programs, both within QAD Warehousing and the RF, the system uses when executing cycle counting, either RF cycle count or manual cycle count.

Cycle Count Simulation or Creation

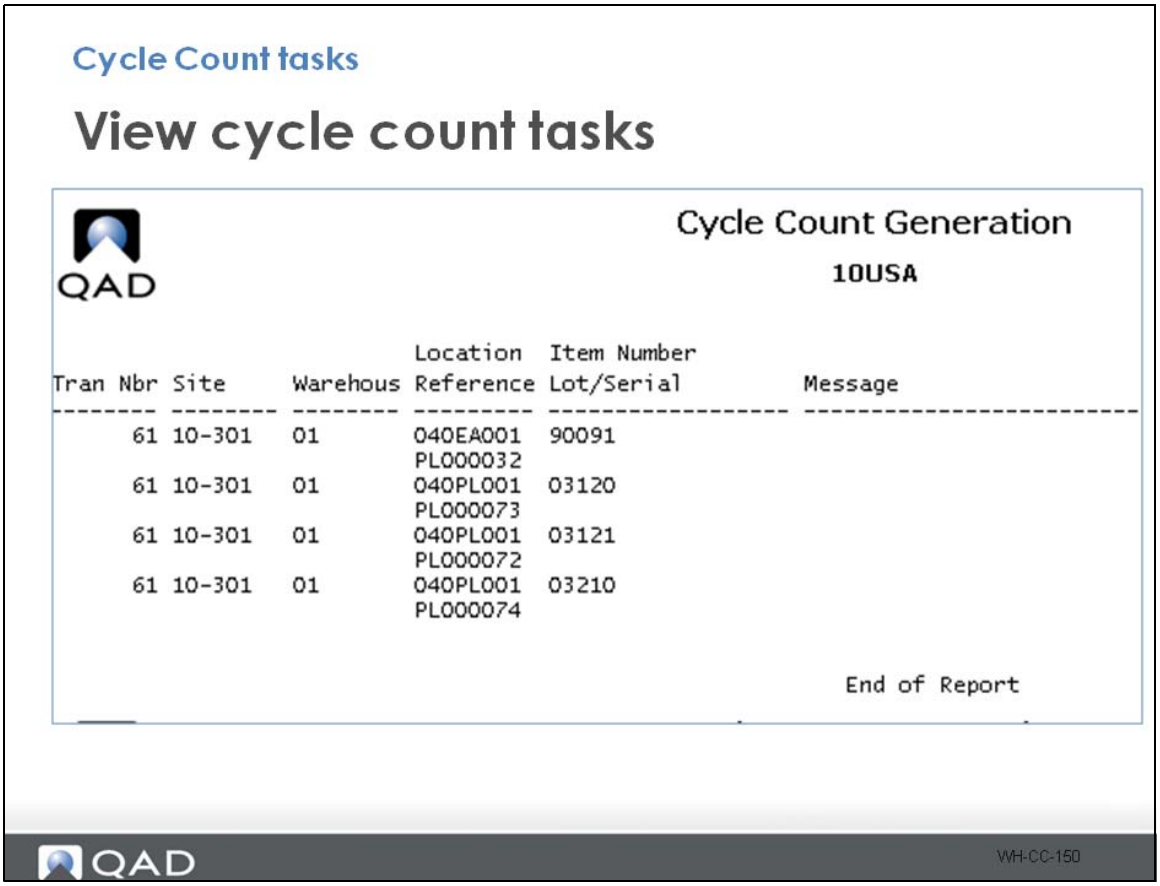


Did You Know

Use Cycle Count Generation to create cycle count transactions. You can set up rules here for cycle count tasks.

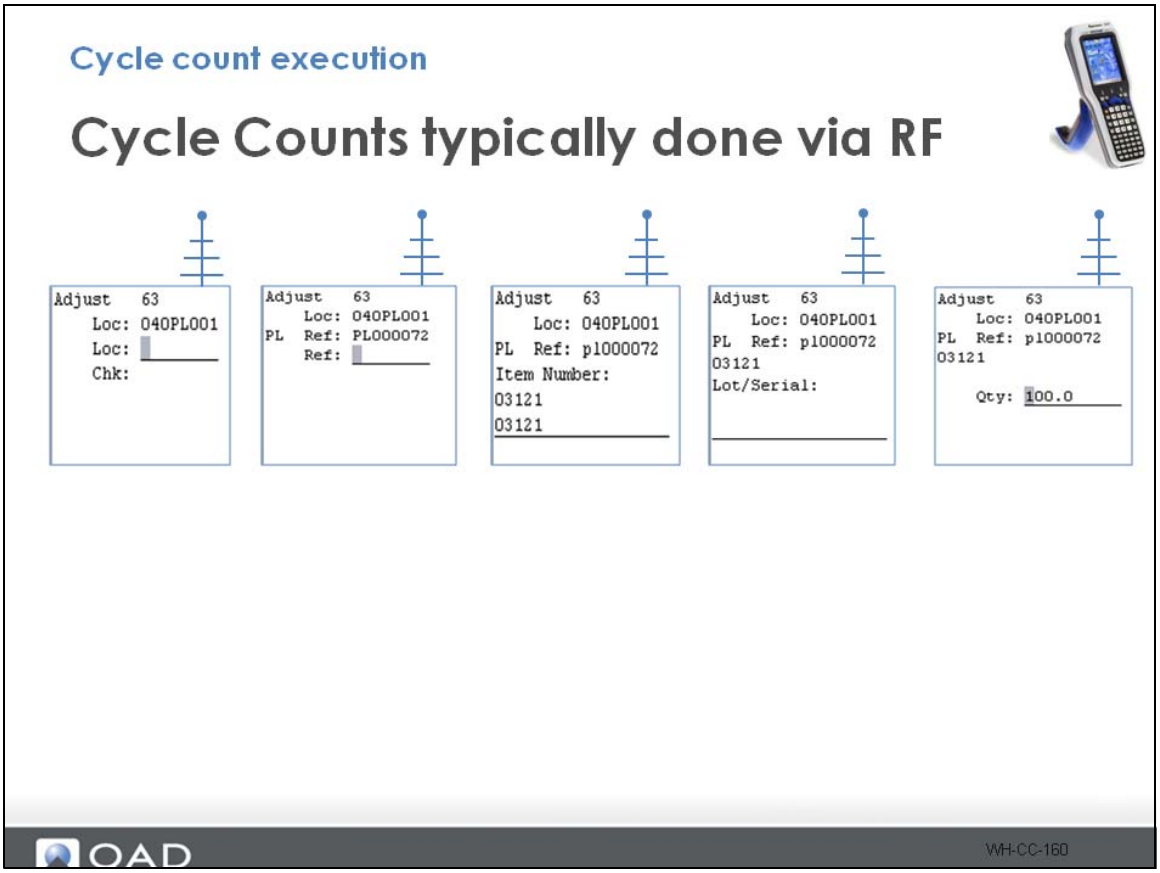
You can specify whether the count is visible to the person counting or not by setting the Blind field.

Cycle Count Tasks



Cycle Count Generation displays the cycle count tasks it generates.

Cycle Count Execution - Done on RF

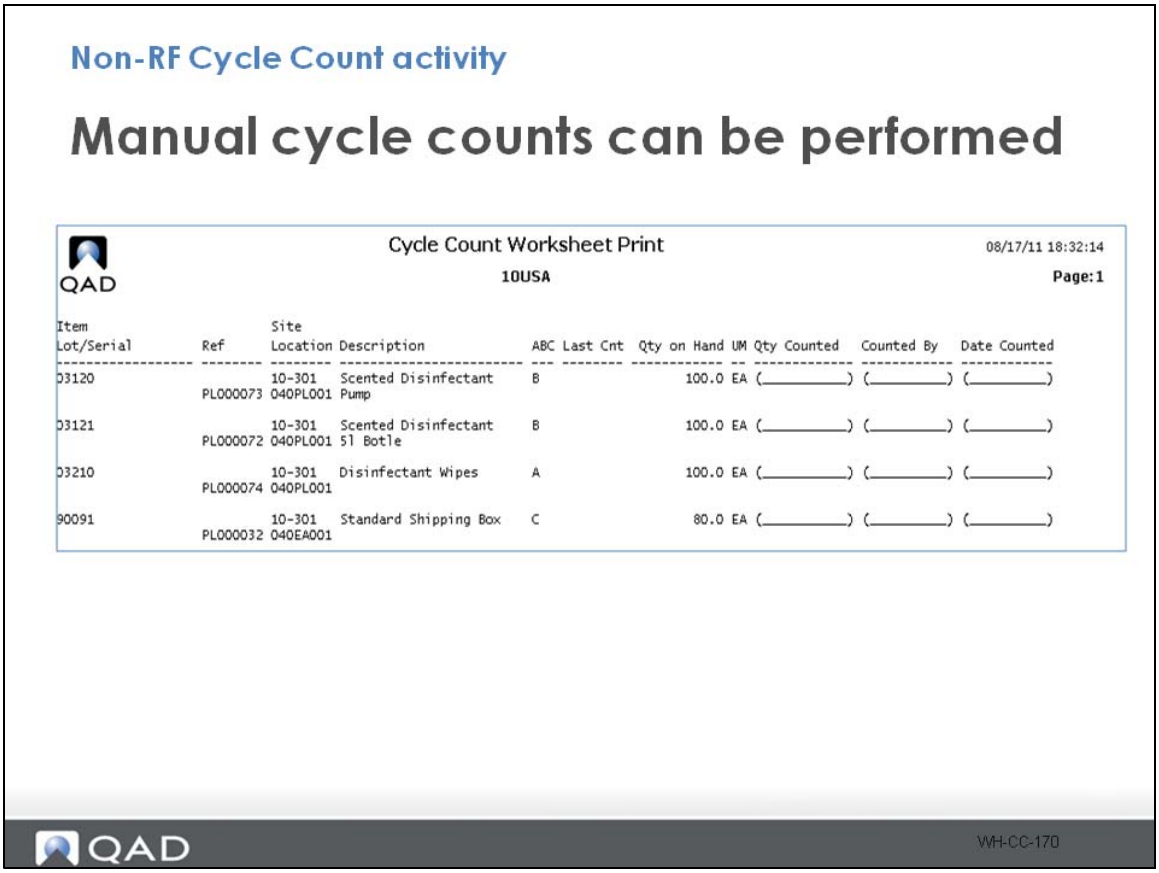


Use the RF Next Task option to receive the cycle count task and confirm the cycle count transaction. Staff scan the location, reference, item, and quantity.

Did You Know

- The RF displays a cycle count task prompting the warehouse employee to count the level of stock.
- You can also confirm Cycle Count tasks without RF using Movement Confirmation.

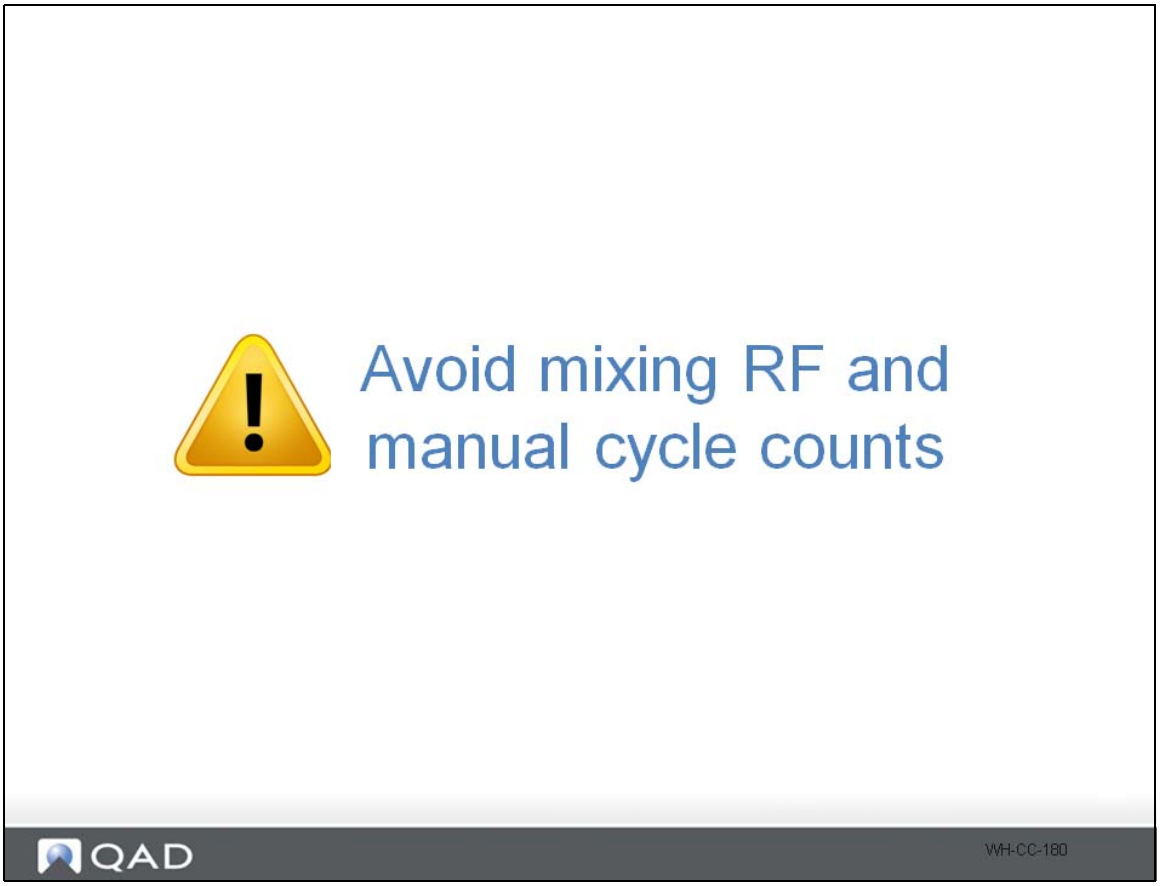
Non-RF Cycle Count Activity



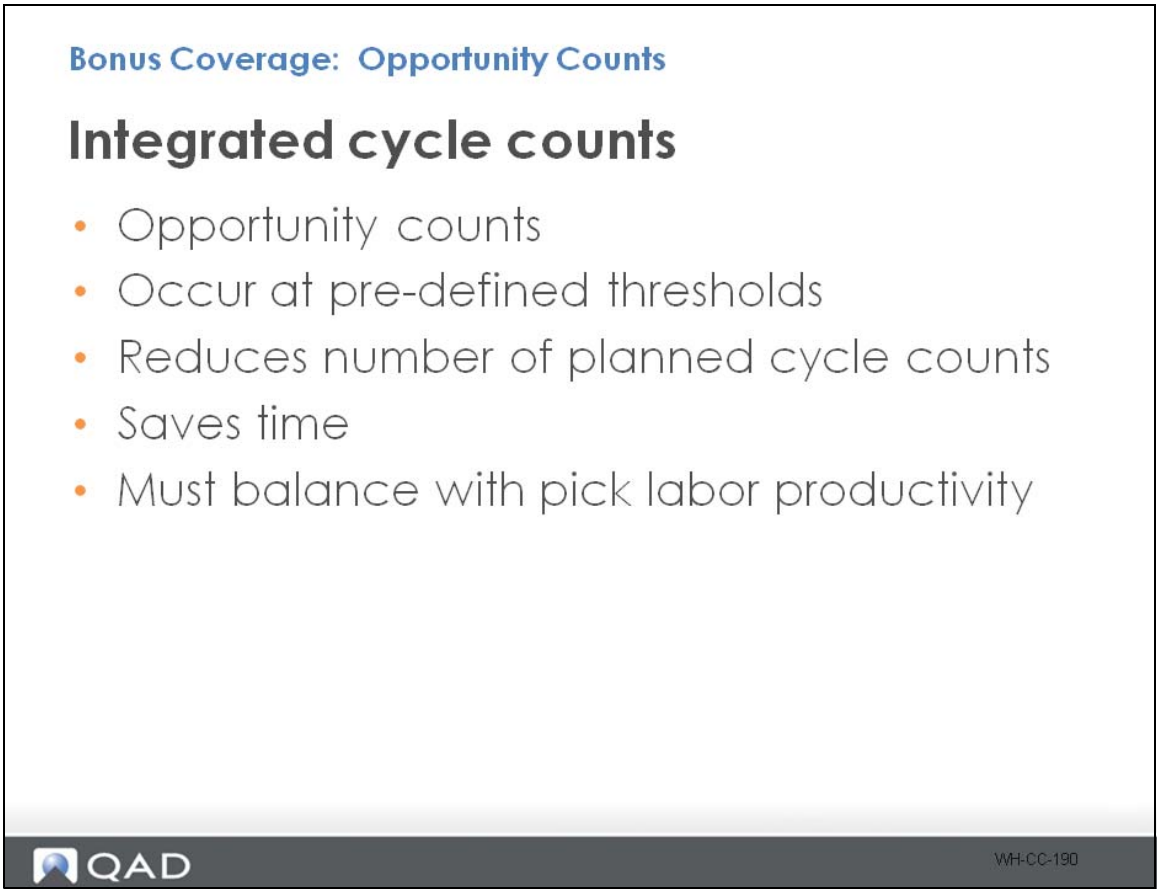
Did You Know

If cycle counts are created on a Cycle Count Worksheet they are not recreated with Cycle Count Generation.

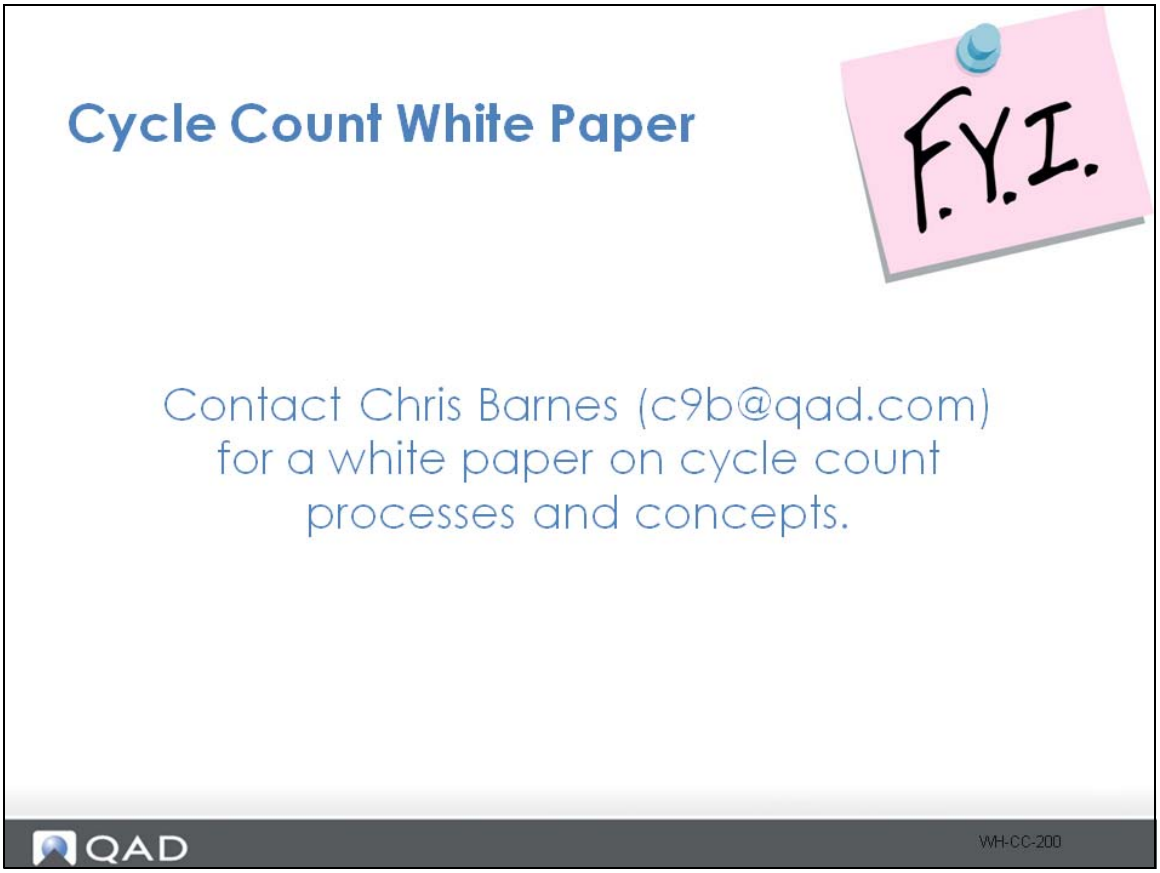
Avoid Mixing



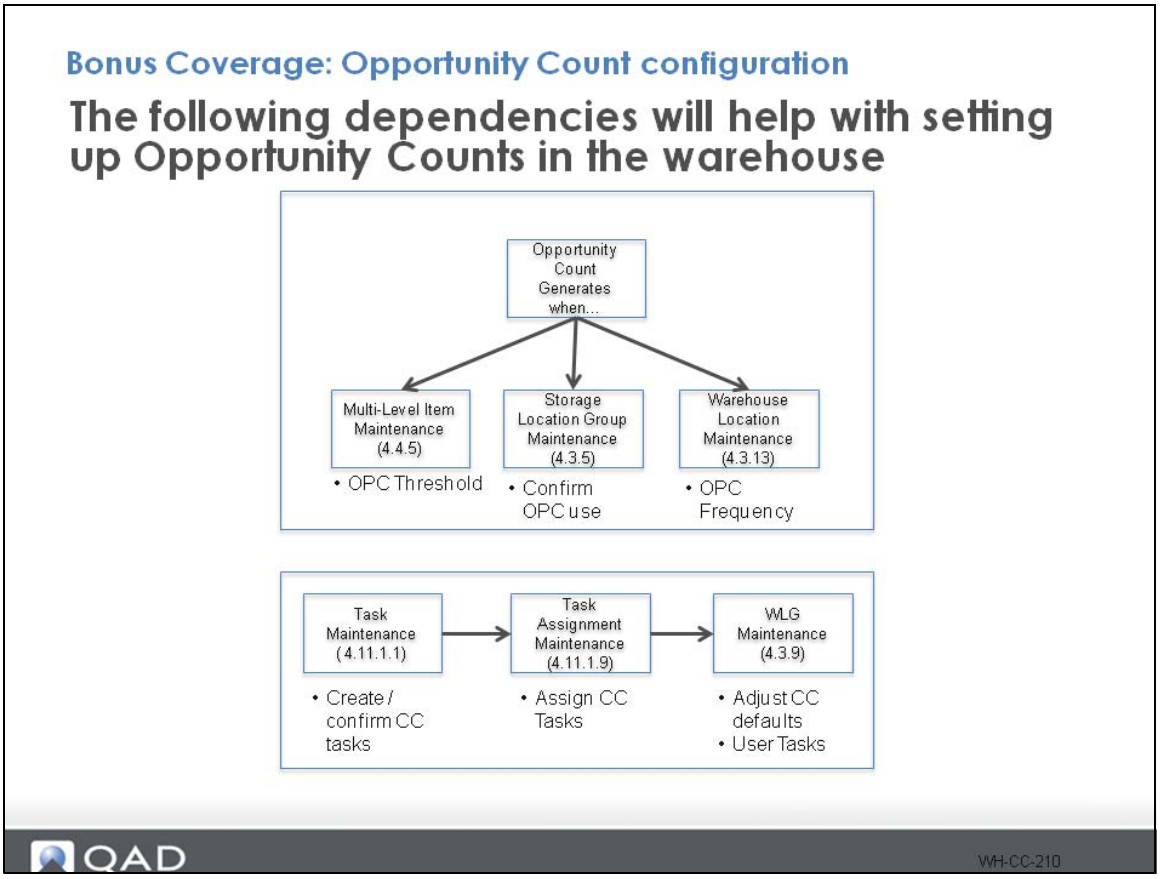
Bonus Coverage - Opportunity Counts



Cycle Count White Paper

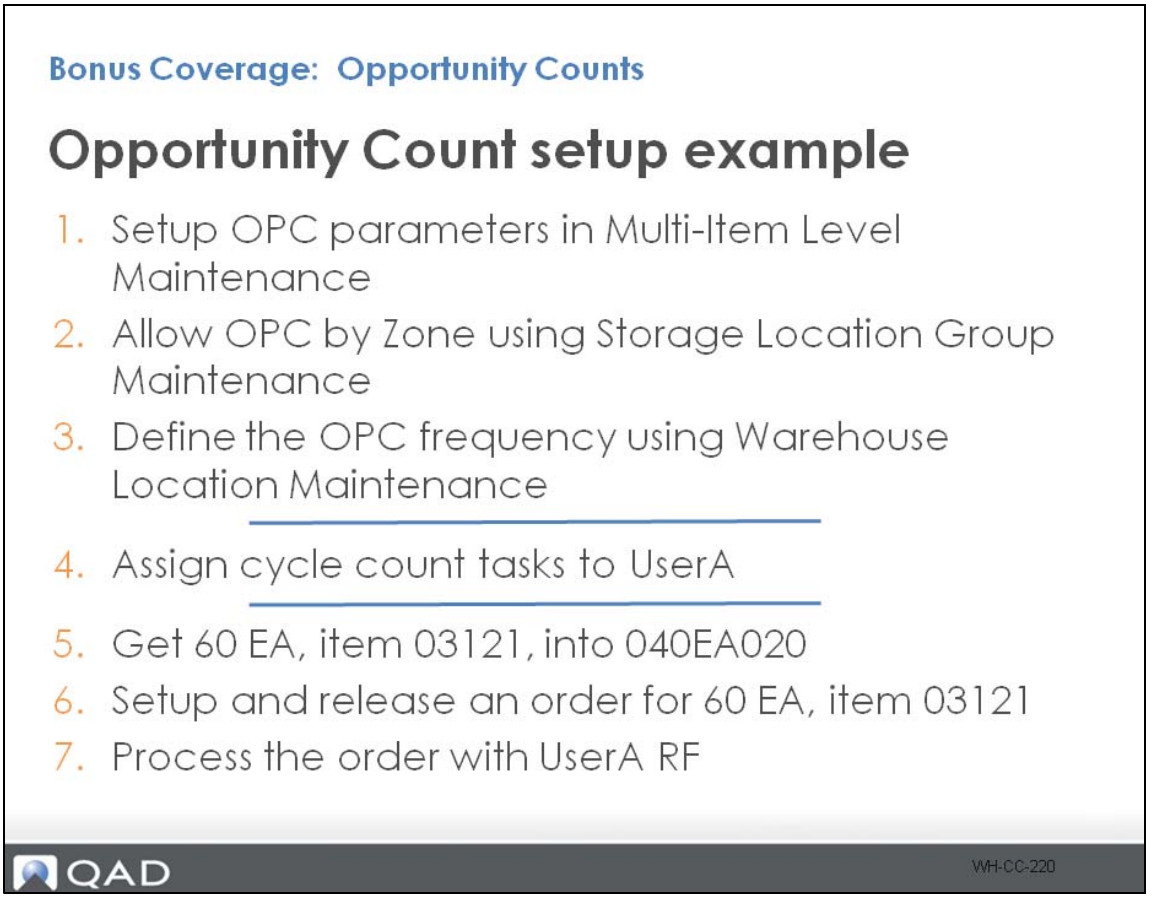


Bonus Coverage - Opportunity Count Configuration



The graphic above depicts the QAD Warehousing programs you use when you set up for cycle counts through QAD Warehousing.

Bonus Coverage - Opportunity Counts



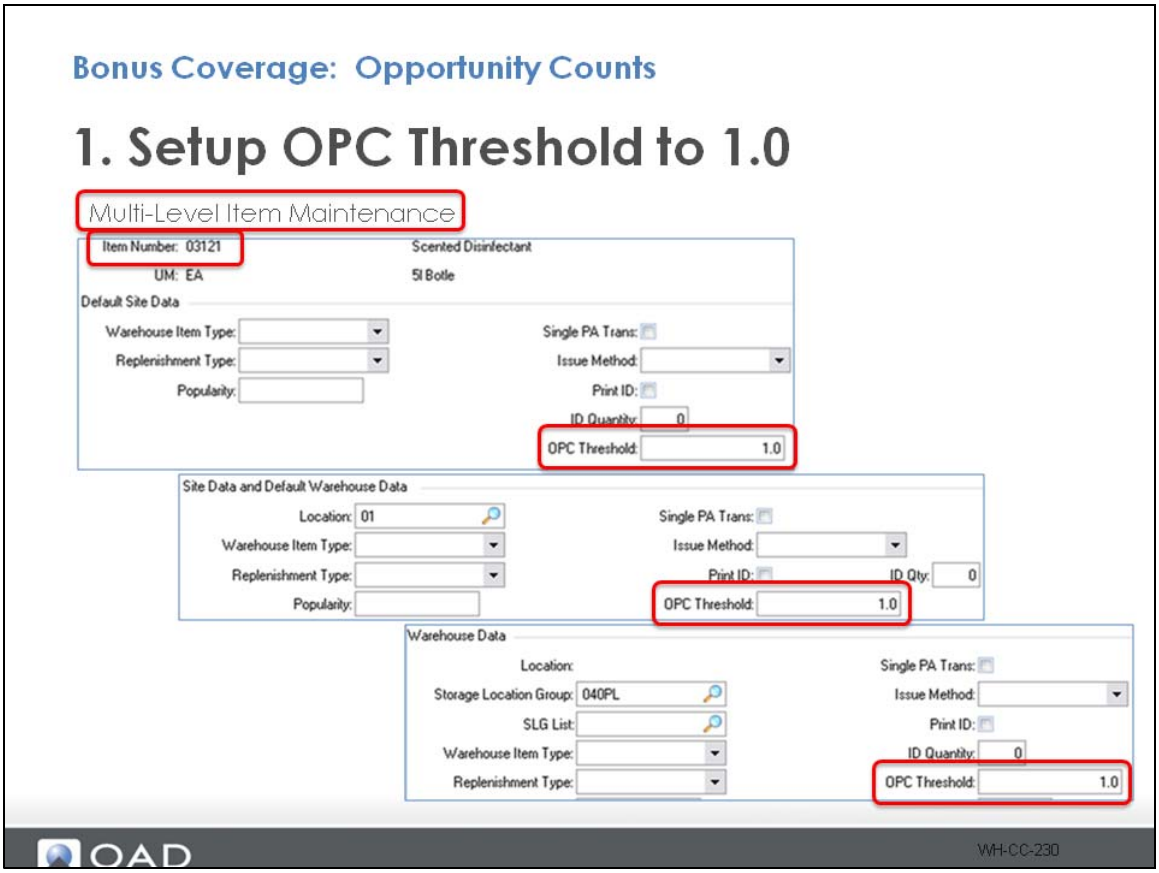
The graphic above depicts the setup steps involved in an opportunity count.

Unlike cycle counts, opportunity counts are triggered automatically by stock movements. Certain conditions-for example when stock is picked or transferred-causes 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.

Bonus Coverage - Opportunity Count, Set OPC Threshold

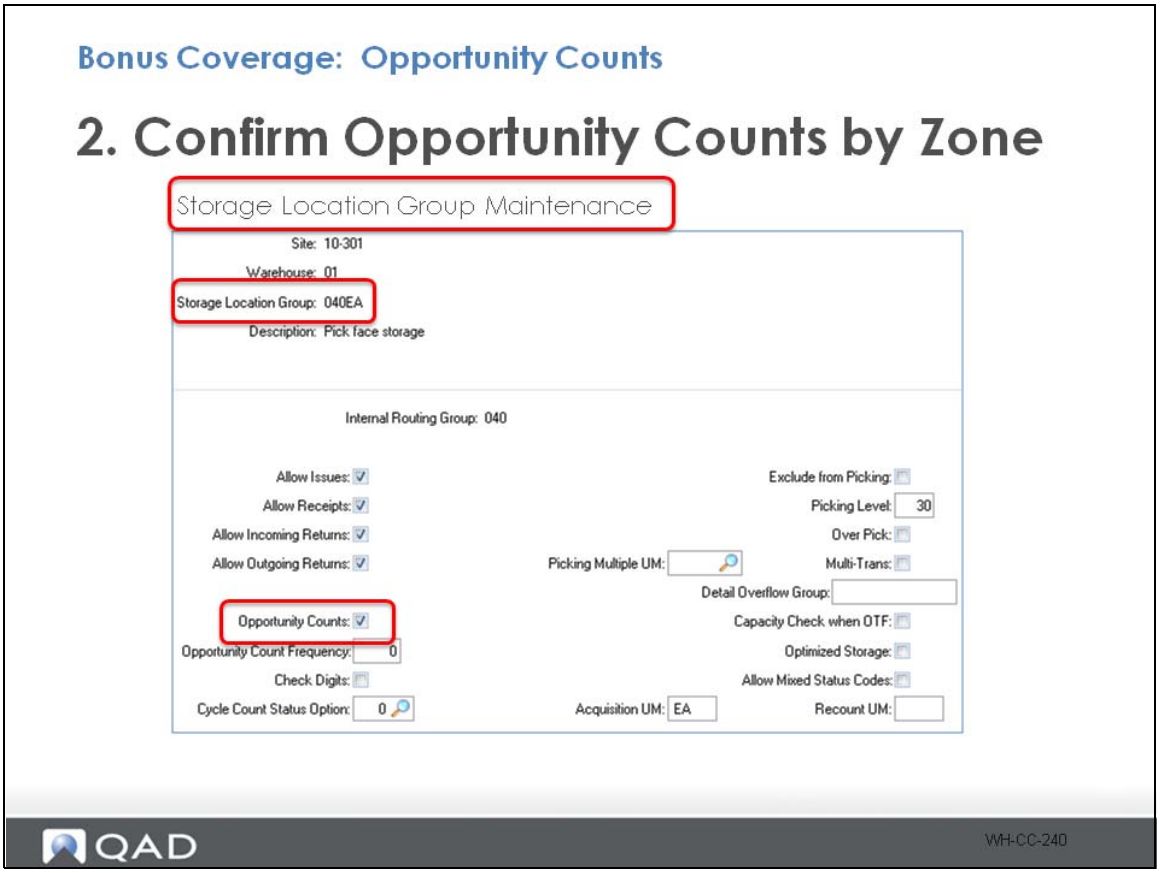


The OPC Threshold field relates to opportunity counts, which you can specify. When inventory is taken out of the location, the system checks whether the quantity on-hand falls below the threshold level you specify for the item, and also checks the OPC frequency value for the location where the item is 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 zone.

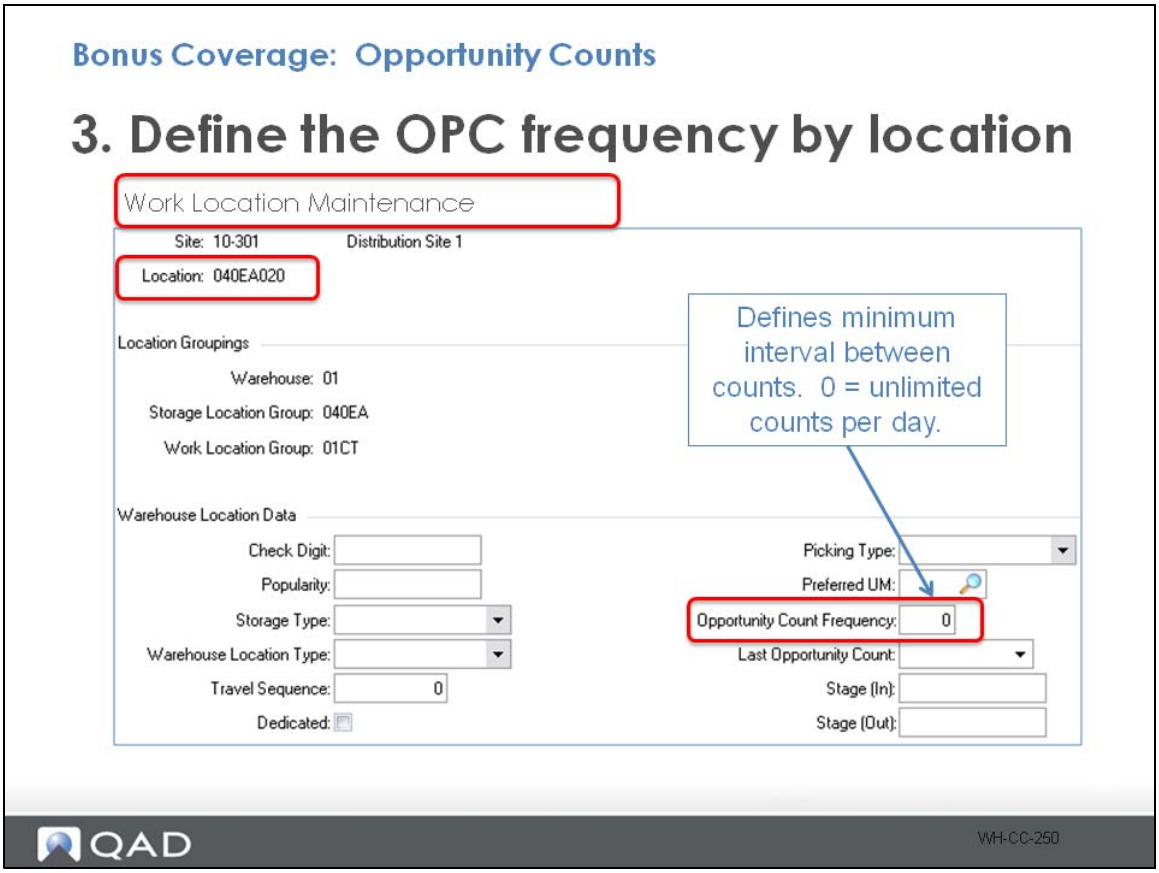
The graphic above shows three screens for item, site, and zone where you can set up the OPC threshold.

Bonus Coverage - Confirm Opportunity Counts by Zone



You can specify an OPC threshold value for each item, and also for items related to a specific zone.

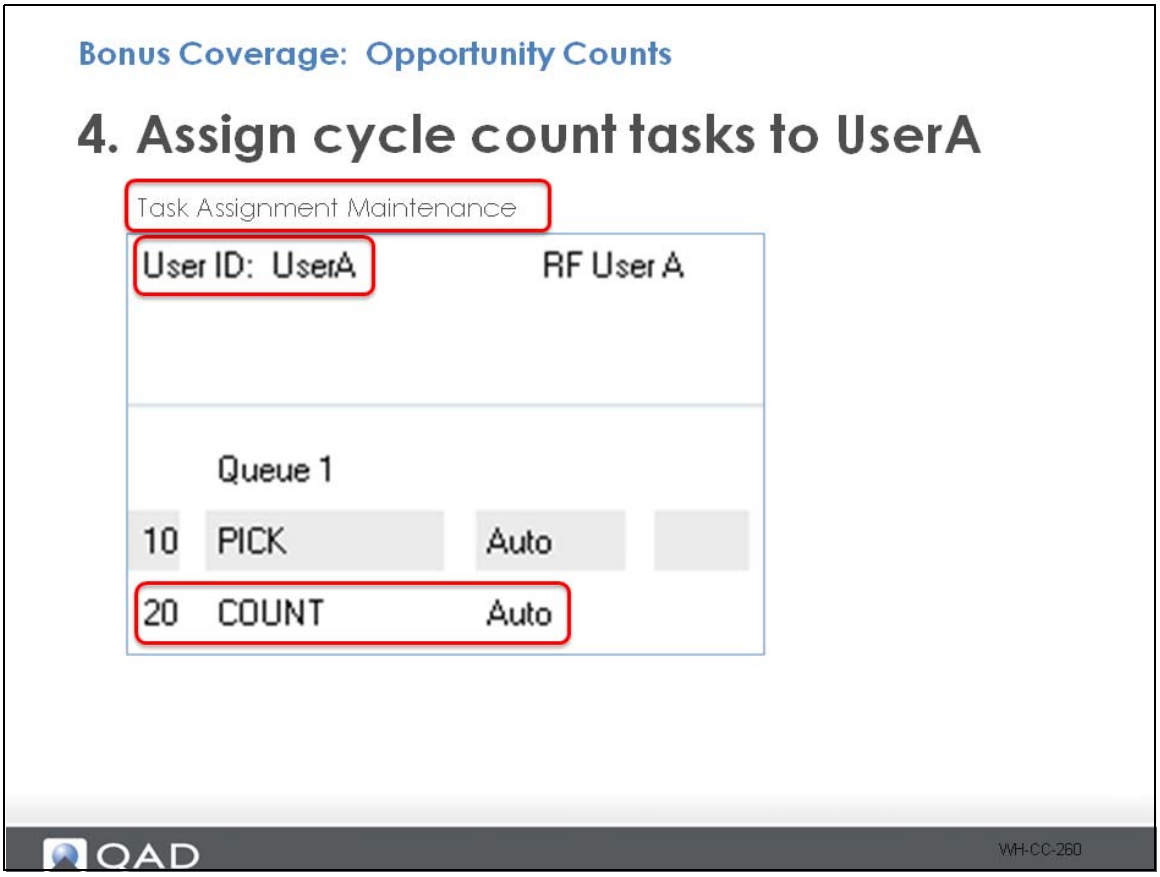
Bonus Coverage - Opportunity Counts, Define OPC Frequency



If the Opportunity Count flag is set to No at the SLG Maintenance screen you cannot change the Opportunity Count Frequency field here.

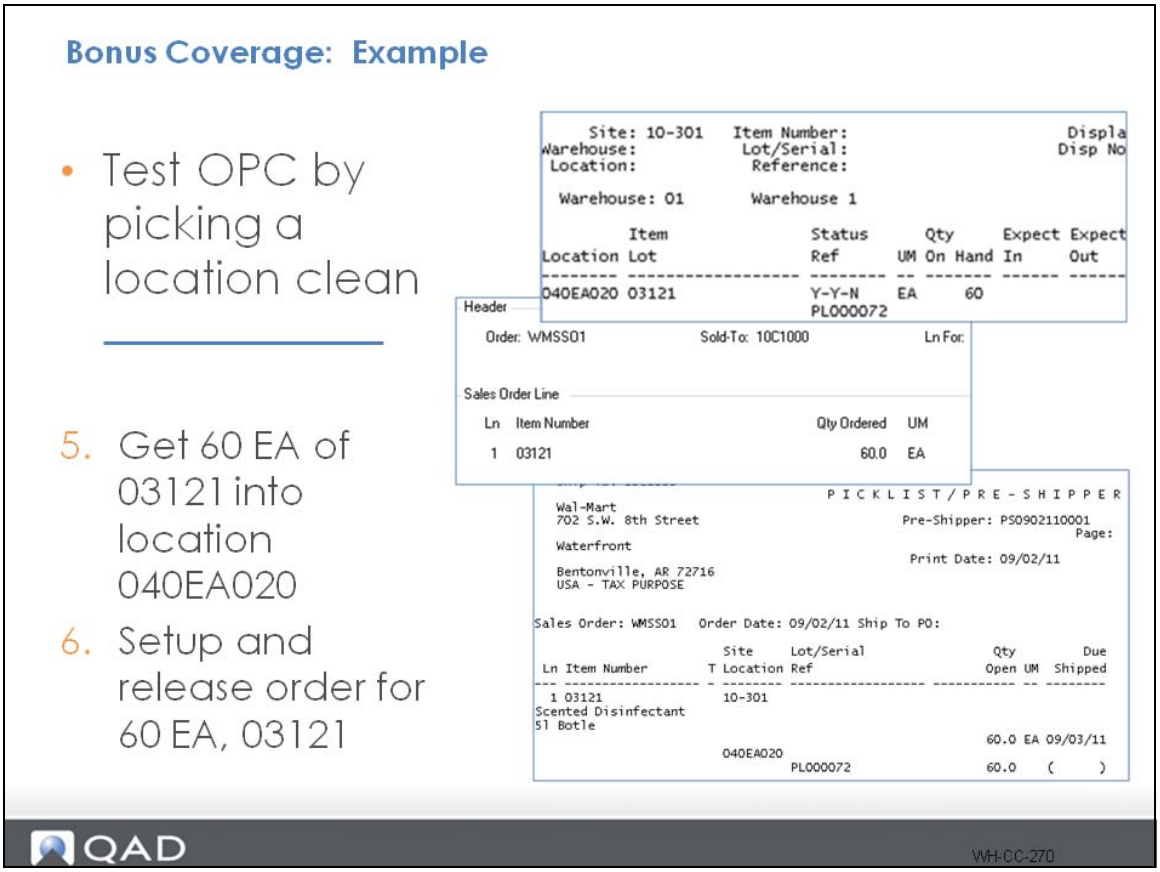
- Enter 0 to let unlimited numbers of opportunity accounts
- Enter 1 to let one opportunity count per day
- Enter 2 to let one opportunity counts every 2 days, and so on.

Bonus Coverage - Opportunity Counts, Assign Cycle Count Tasks



Use Task Assignment Maintenance to assign warehouse users to cycle count tasks.

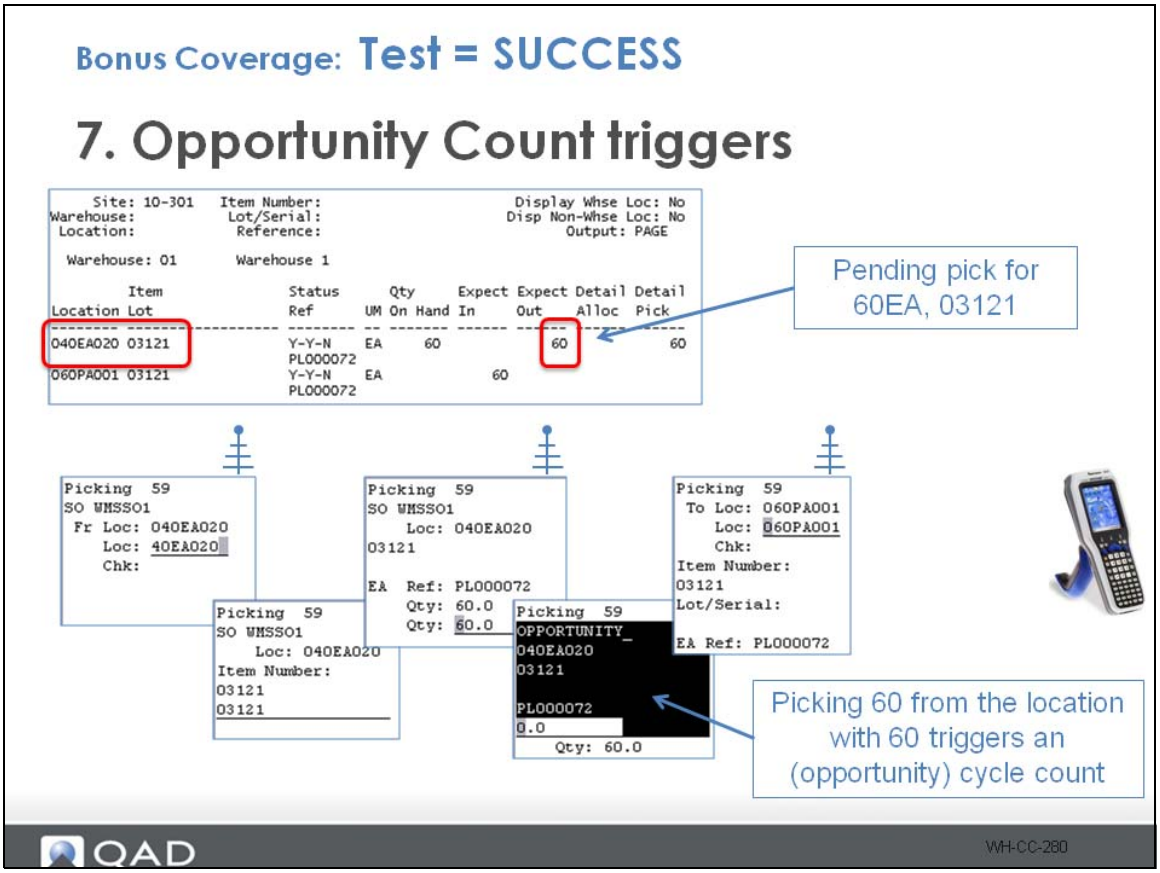
Bonus Coverage - Example



Use Inventory Detail Inquiry to pick a clean location.

Use Sales Order Maintenance, then Picklist/Pre-Shipper workbench to get the 60 EA into the location, then set up and release the order.

Bonus Coverage - Example Test = Success

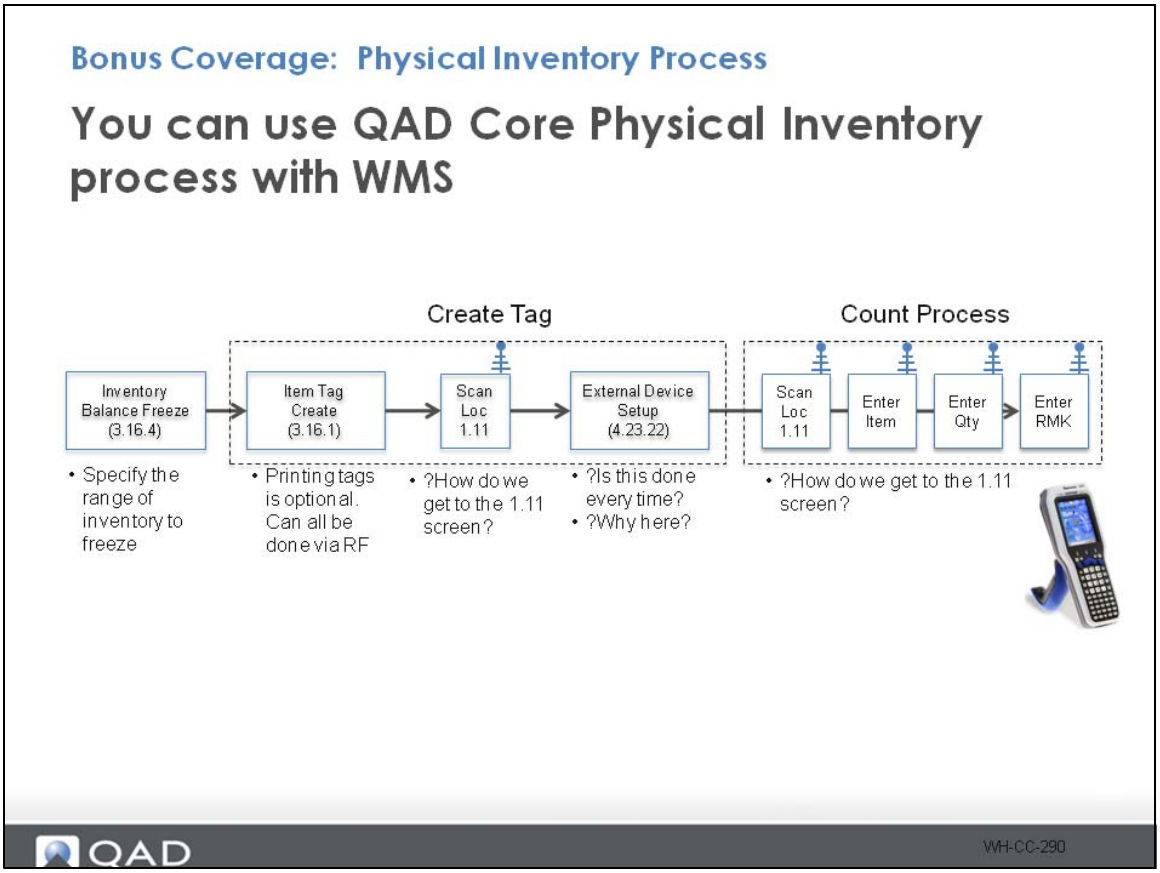


Use Warehouse Detail Inquiry to see the pending pick for 60EA of item 03121.

The RF screens involved in an opportunity count are displayed at the bottom of the graphic above.

In the graphic above, when 60 each of item 03121 is picked from 040EA020, the system triggers a cycle (opportunity) count to the user. This lets the user perform the count while the user is already at the location.

Bonus Coverage - Physical Inventory Process

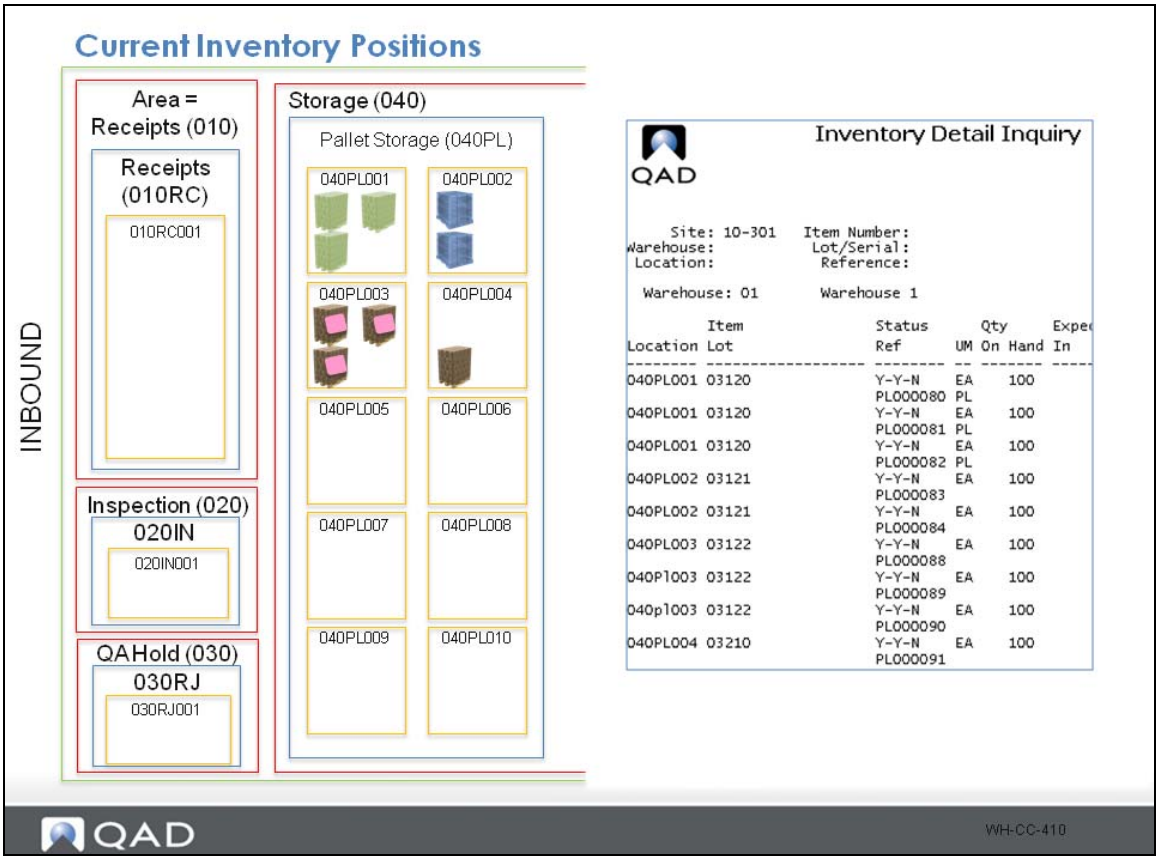


Physical inventory enables you to count and compare actual, on-hand inventory balances with on-hand quantities recorded in the system. This can also be done with cycle counting. Warehouse staff can conduct a physical inventory through the RF device within the warehouse.

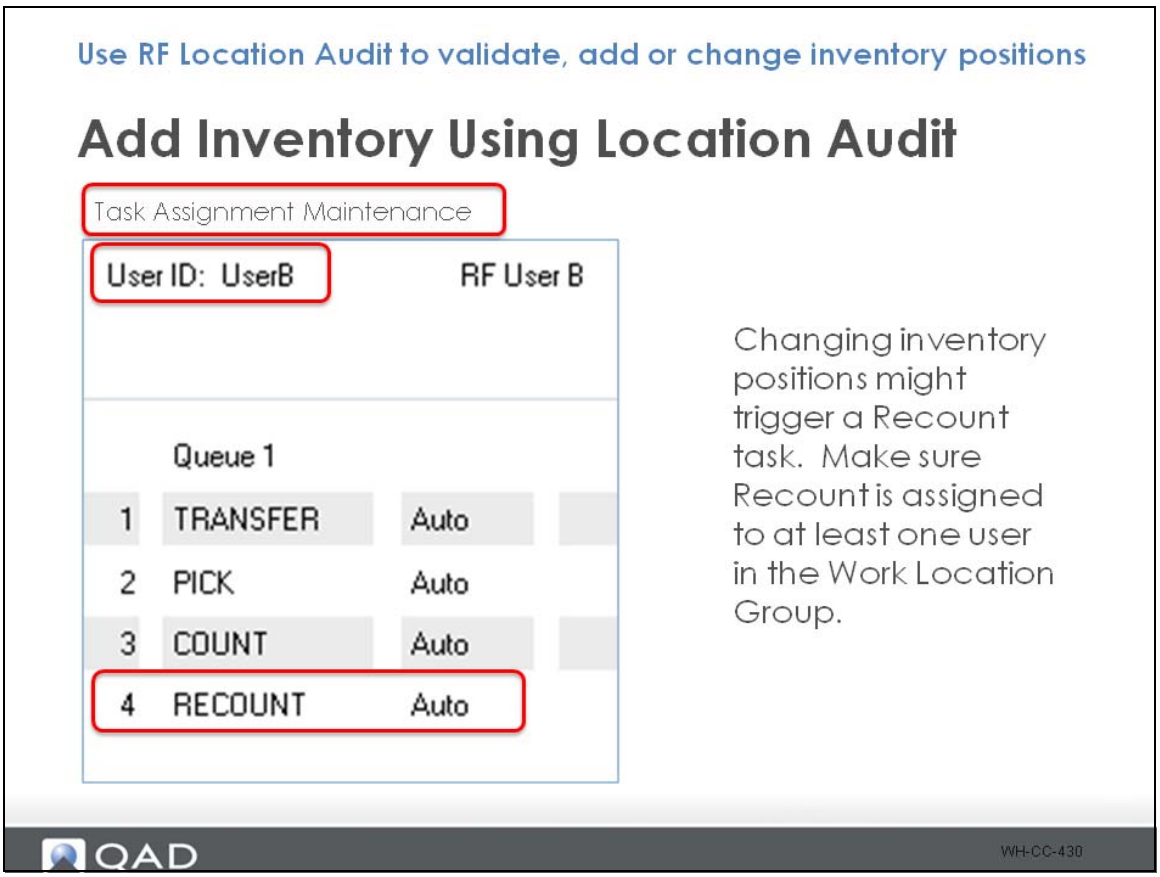
Implementation Consideration- Using Location Audit

Location audit is a forced cycle count that typically occurs when it is expected that something is not right with inventory quantities.

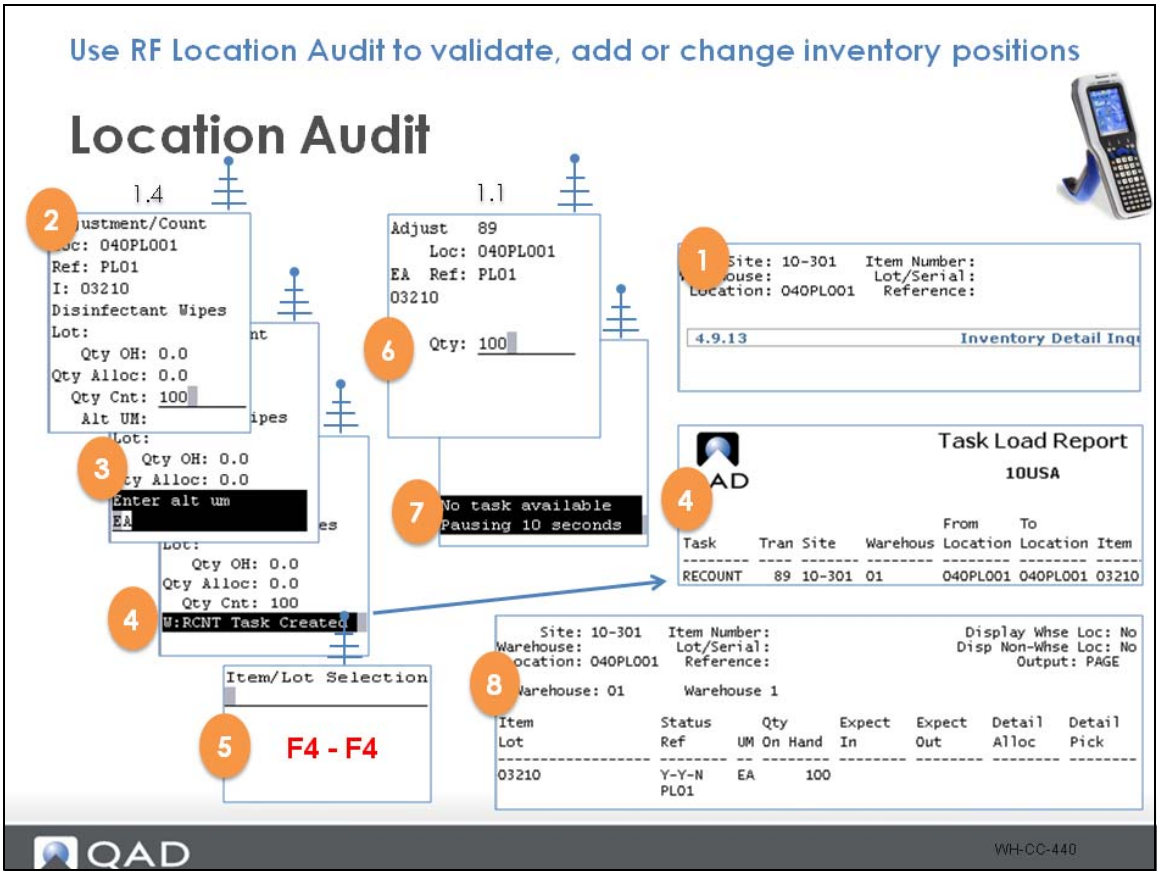
Current Inventory Positions



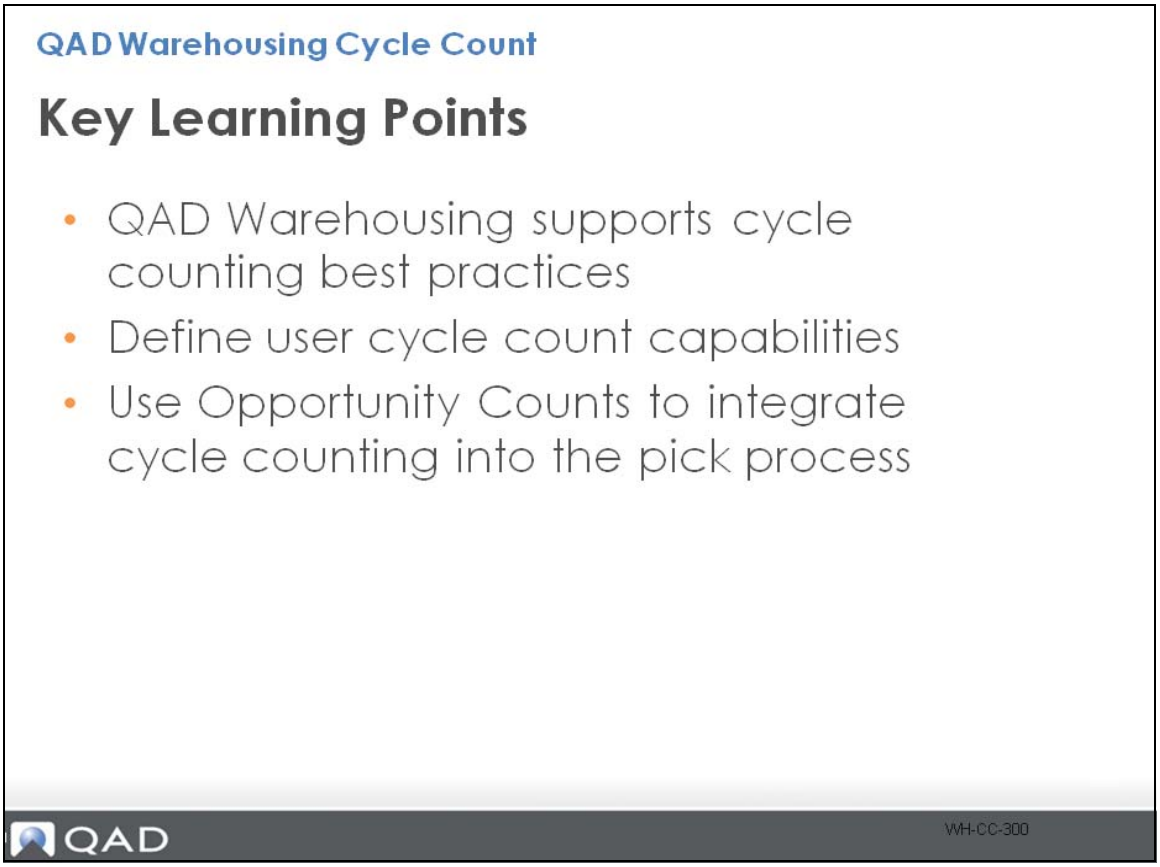
Use RF Location Audit to Change Inventory Positions



Use RF Location Audit to Change Inventory Positions (Continued)



Key Learning Points



Questions

1. True or False. Cycle counting is one area of QAD Warehousing where all functions are met for a true warehousing cycle count system.
2. When do warehouse staff perform count tasks as opposed to recount tasks?
3. Which programs let you generate cycle count tasks?
4. Opportunity count is a type of cycle count directing a picker to?
5. True or False. QAD Warehousing uses the same cycle count program as QAD core?
6. Cycle counting in the warehouse uses parameters setup exclusively in QAD Warehousing?

Answers

1 True. Cycle counting is one area of QAD Warehousing where all functions are met for a true warehousing cycle count system.

2 Warehouse staff perform count tasks when stock quantities are inside the tolerance; they perform recount tasks when stock quantities are outside the tolerance.

3 Count locations during the pick process, after the pick and prior to leaving.

4 False. QAD Warehousing has different cycle count flags but can use the QAD core cycle count worksheet option.

5 False. QAD Warehousing cycle counting starts with ABC and frequency parameters setup in QAD core, Item Master Maintenance

Notes

Chapter 9

Printing

Overview

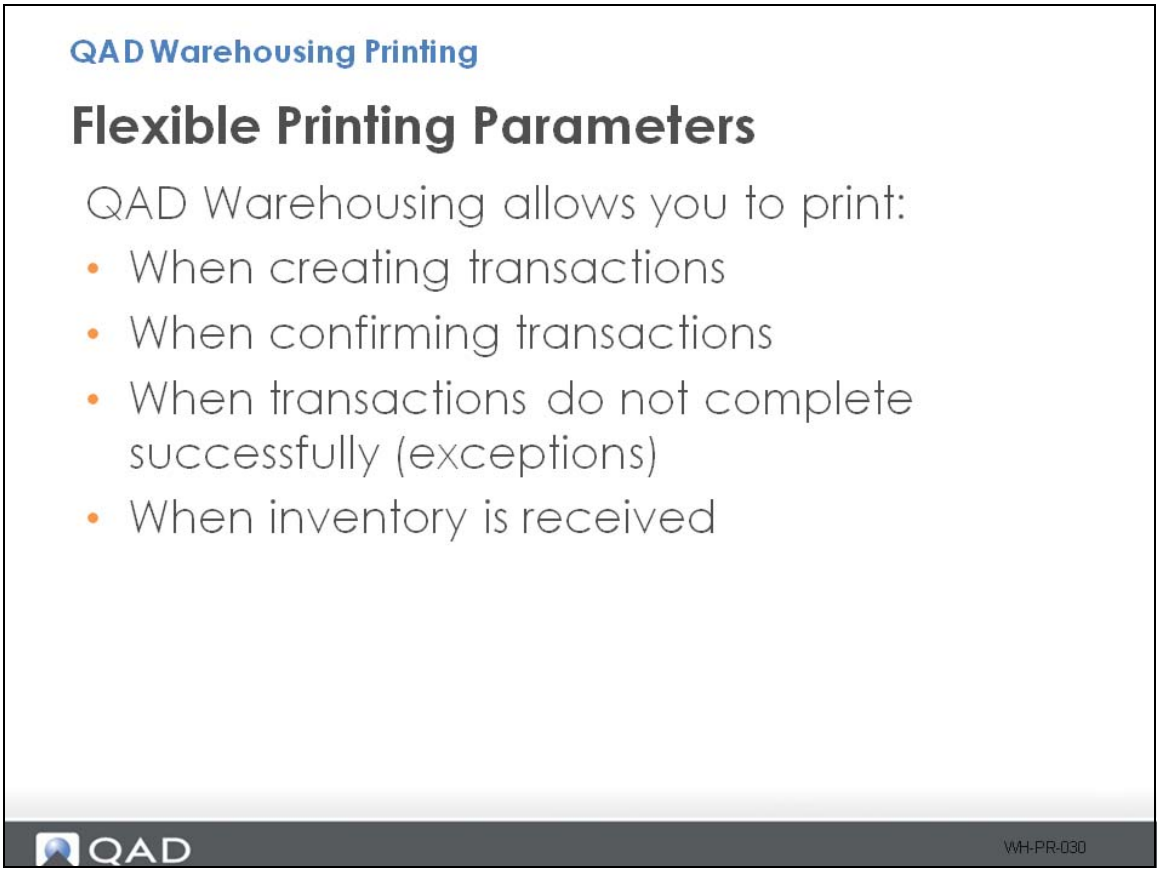
Warehouse staff are required to print several documents during normal warehouse processing.

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

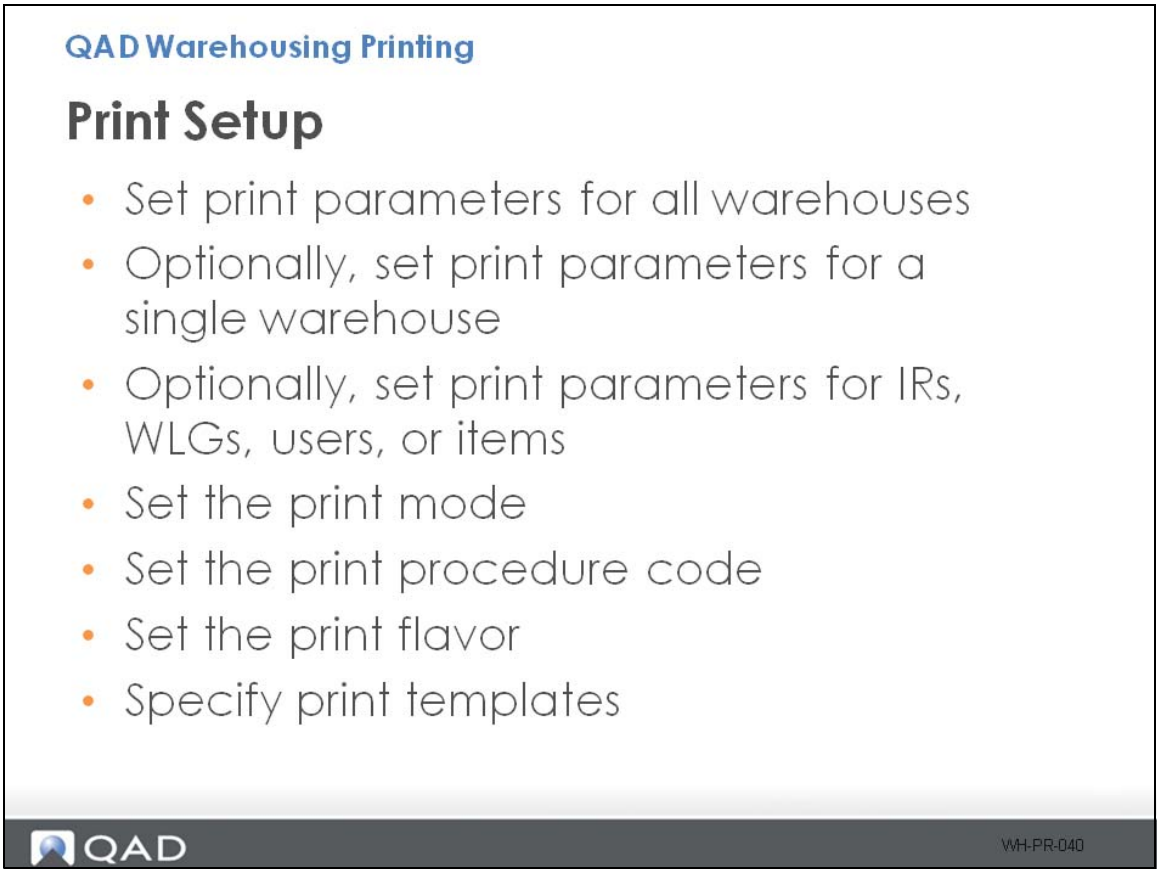
QAD Warehouse Printing



You can print:

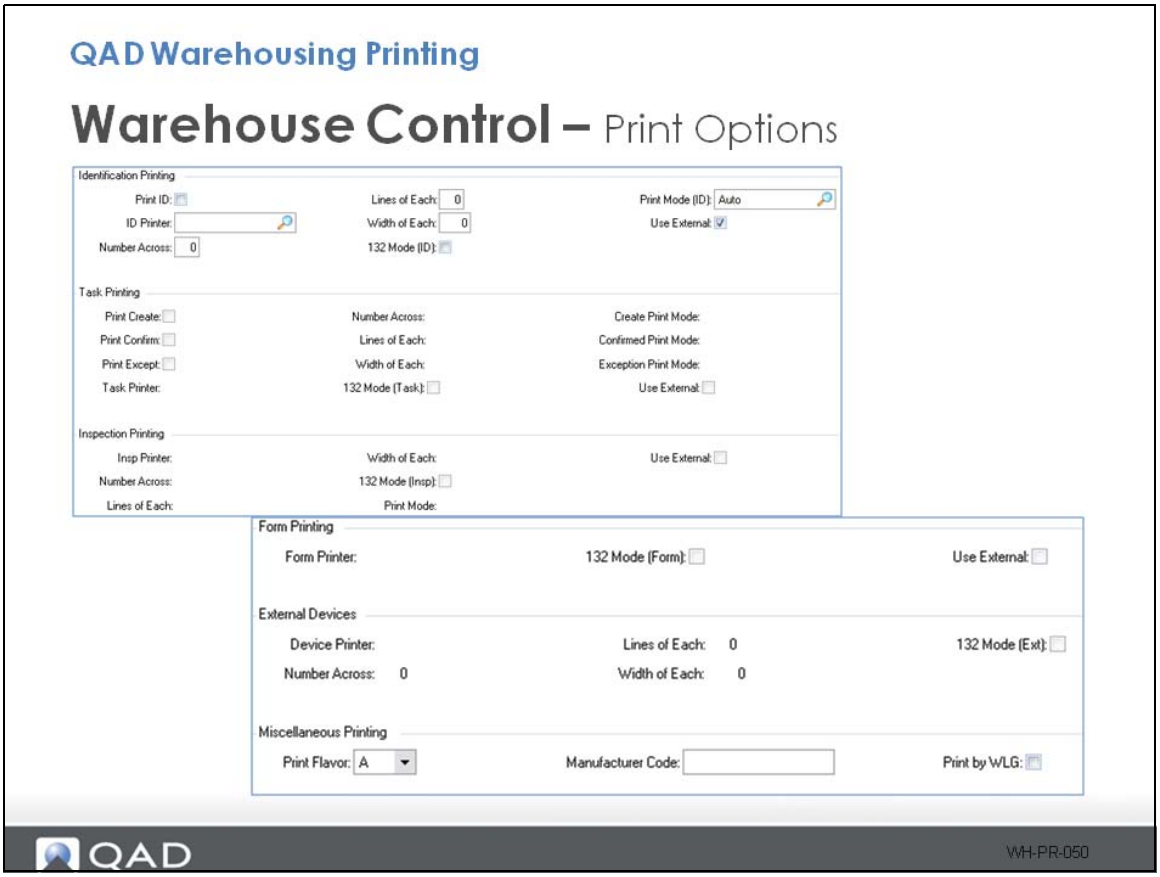
- Inventory IDs
- New, confirmed, or exceptions to transactions
- QA inspection tags
- Unplanned issue tags
- Picklists/preshippers
- Shipping documents

Print Setup



The graphic above lists the steps involved when setting up printing within QAD Warehousing.

Warehouse Control Print Options

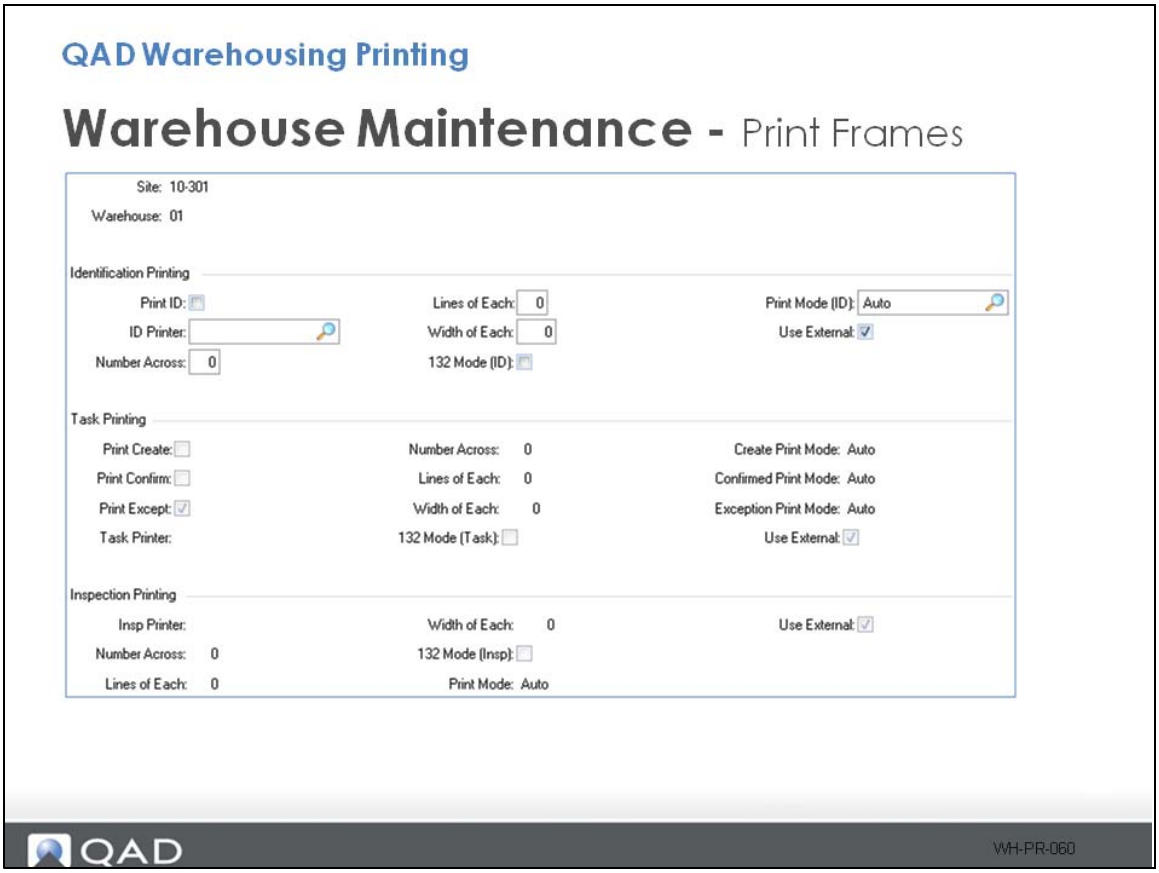


Use Warehouse Control to set print options for all warehouses. Print options default to Warehouse Maintenance.

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

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.

Warehouse Maintenance Print Frames

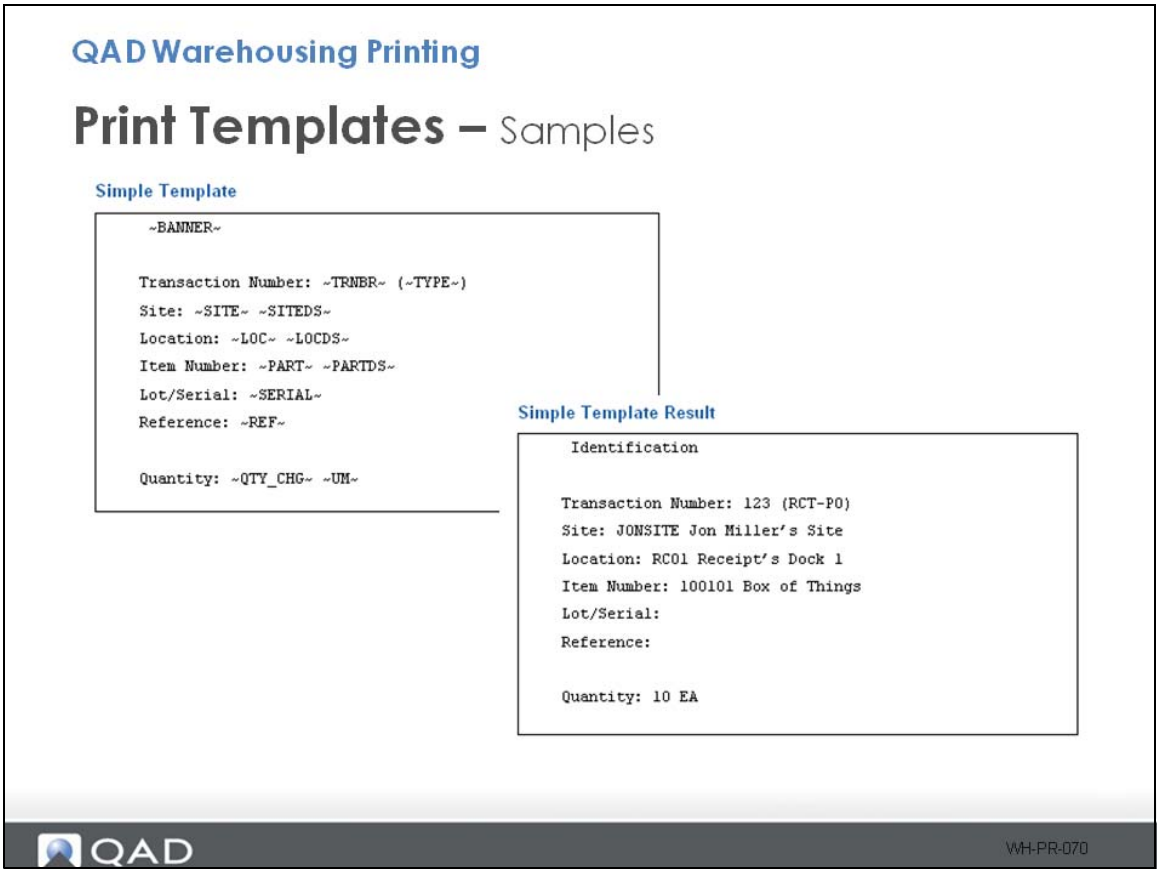


Warehouse Maintenance has several frames devoted to setting up print parameters.

Did You Know

Print Flavor determines the format of the printed output, either a default format or a template.

Print Templates

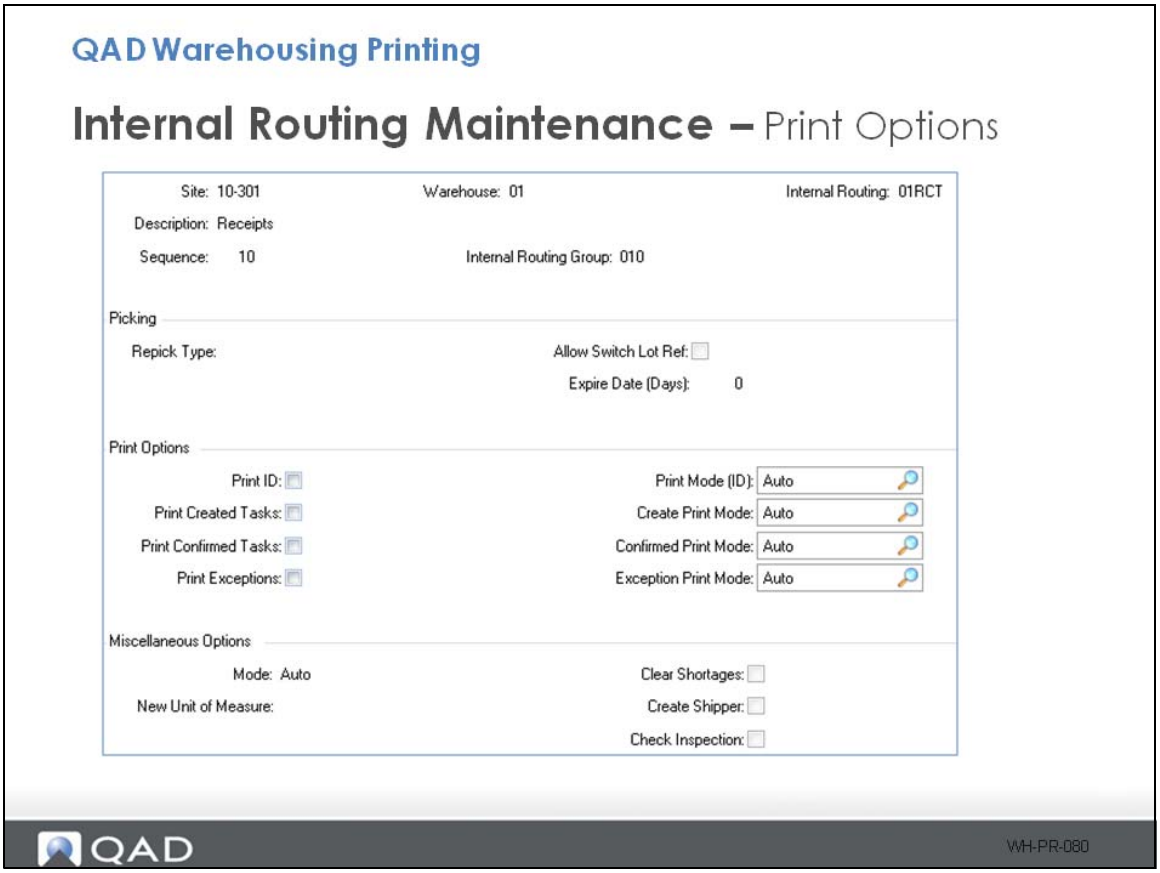


Templates are flat ASCII files that contain the layout of required printed output. Use Print Template Load to load the template into the database.

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.

Internal Routing Maintenance Print Options



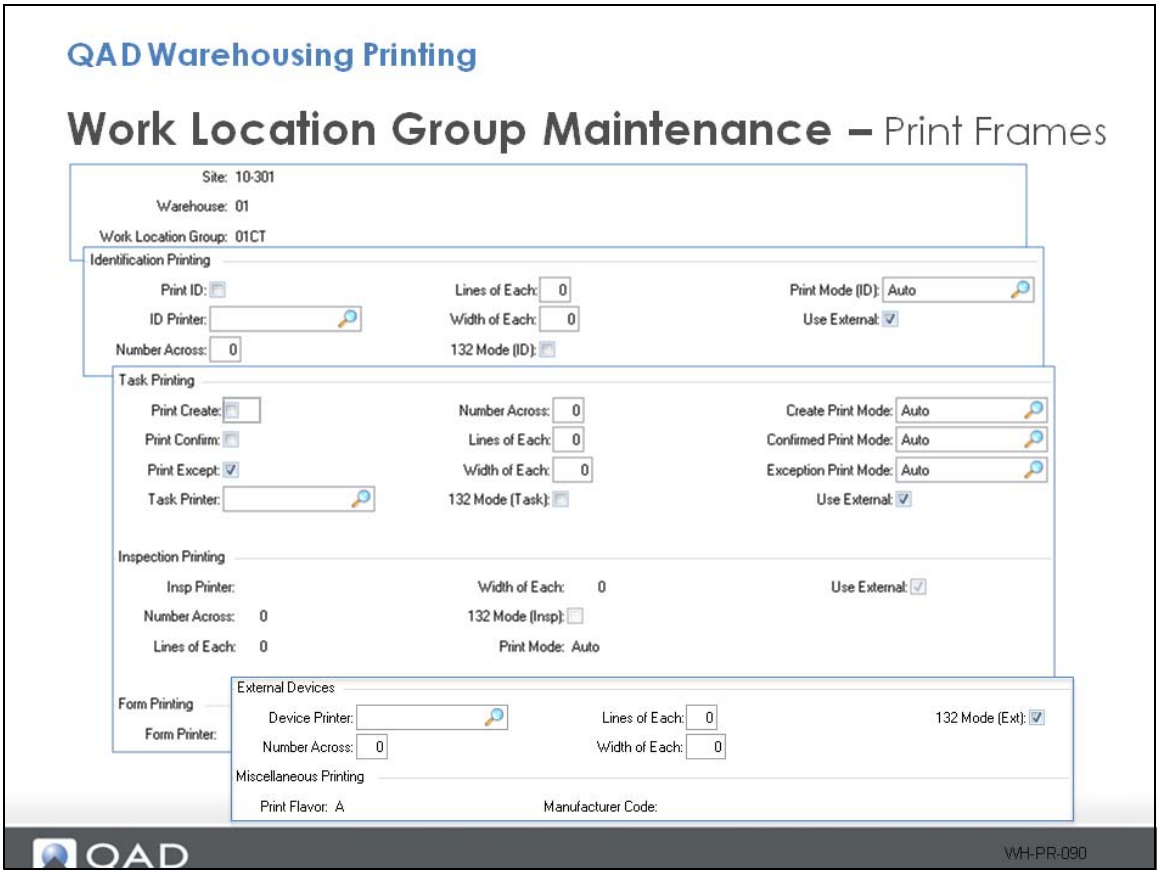
Use Internal Routing Maintenance to set print options for an individual step in an IR and to define the print mode.

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

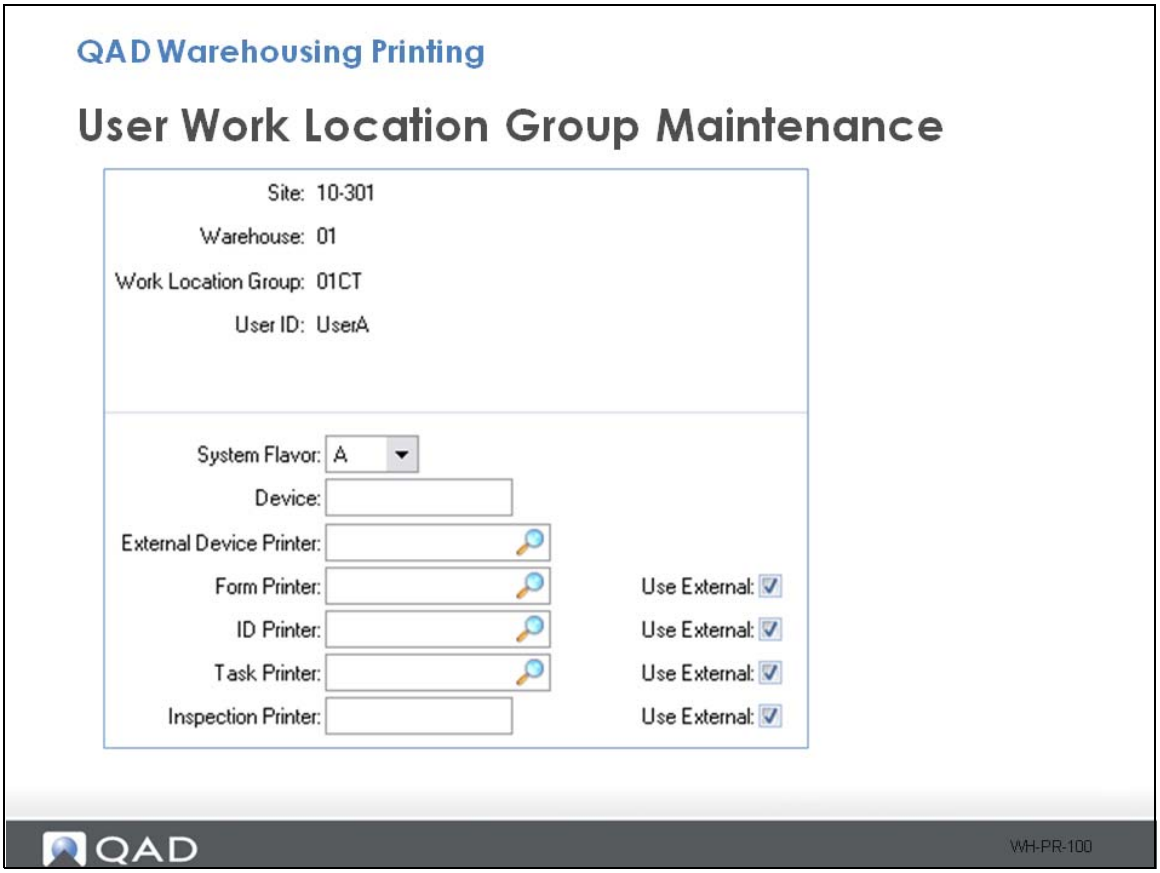
Work Location Group Maintenance Print Frames



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

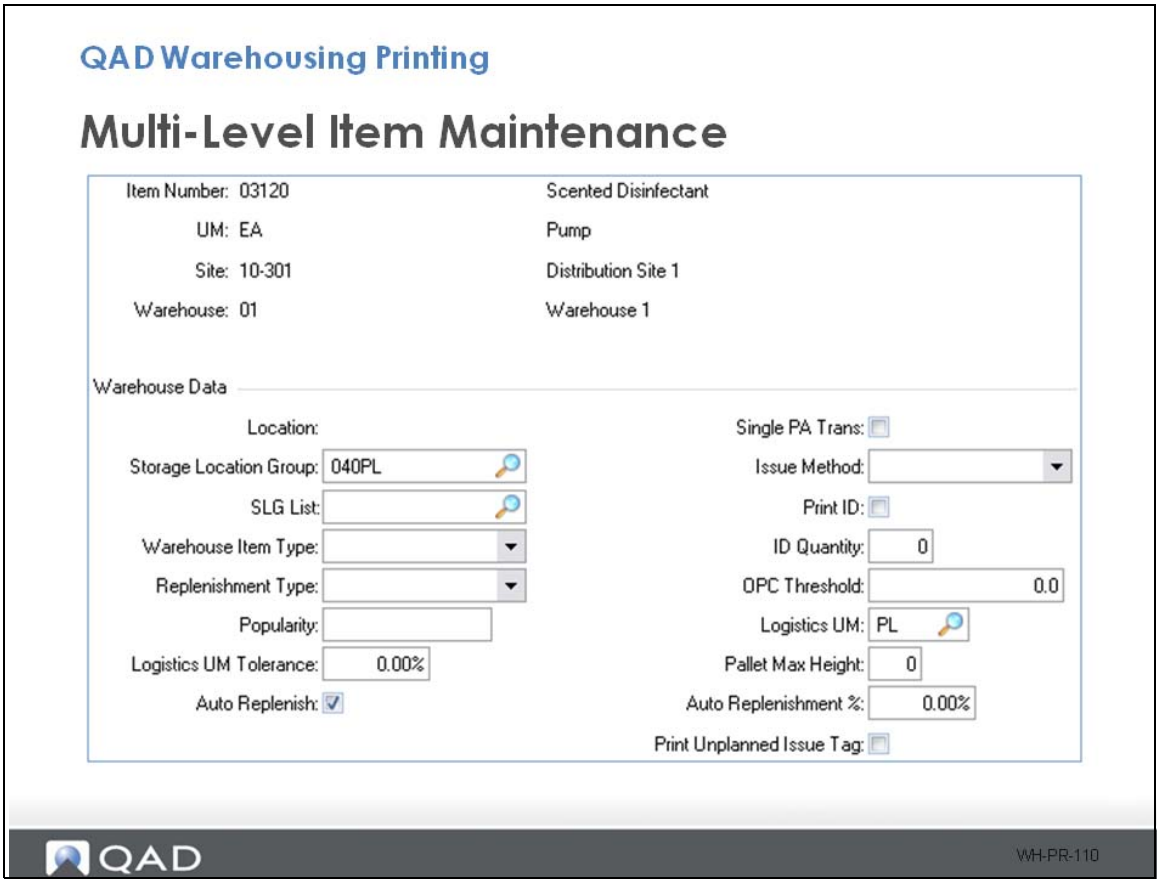
The Printing frames of Work Location Group Maintenance contains fields where you define the printing operations that are performed in this WLG. The initial values default from the Printing frame in Warehouse Maintenance, but you can change the values.

User Work Location Group Maintenance



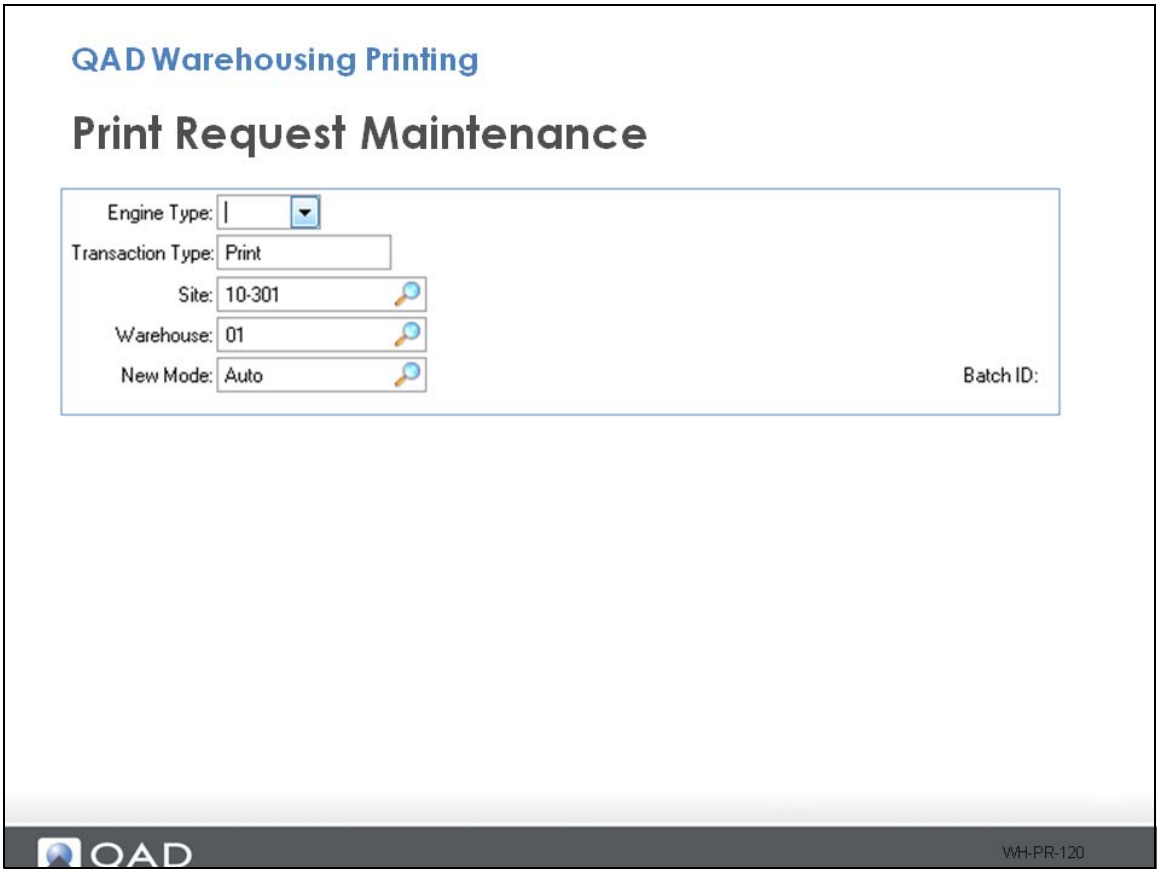
Use User Work Location Group Maintenance to set up print options specific to a user. In the Printer fields in the graphic above, you add a specific printer name to these fields so the correct print request is sent to the correct printer.

Multi-Level Item Maintenance



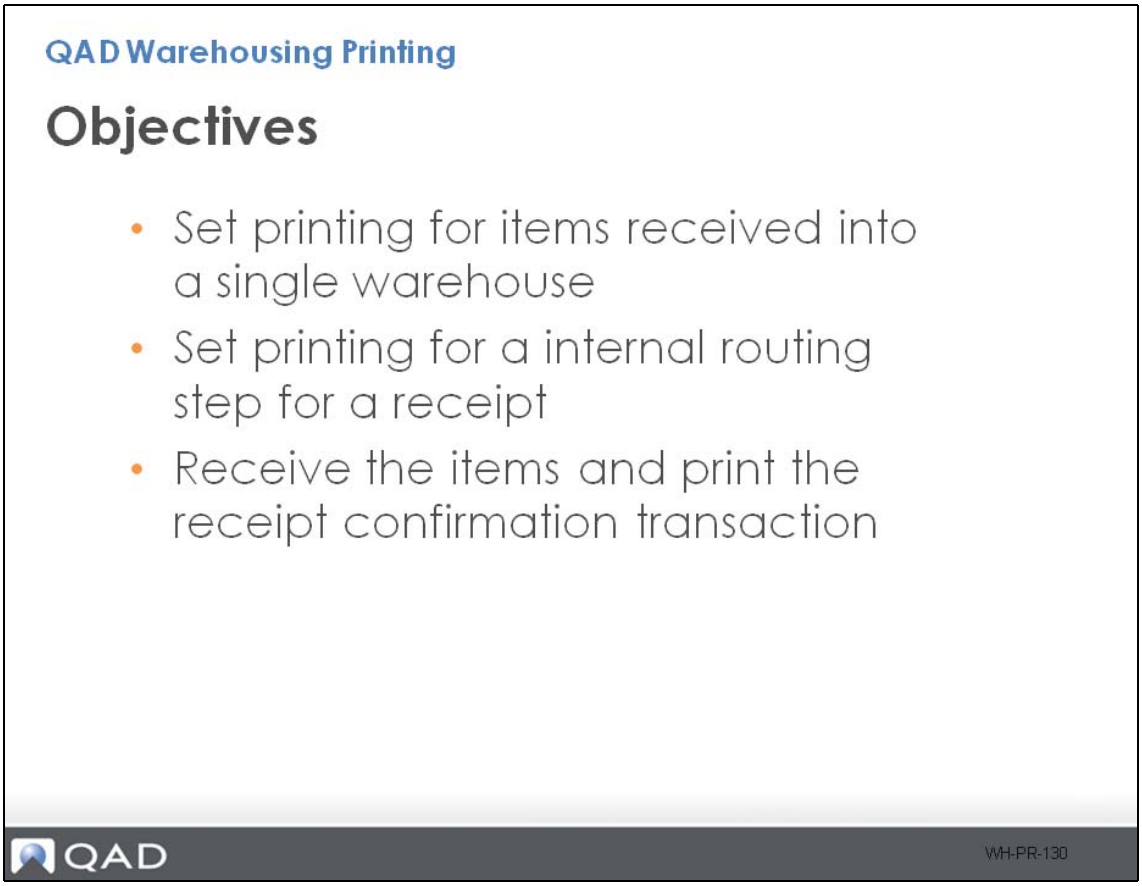
Use Multi-Level Item Maintenance to set up a print ID for an item.

Print Request Maintenance

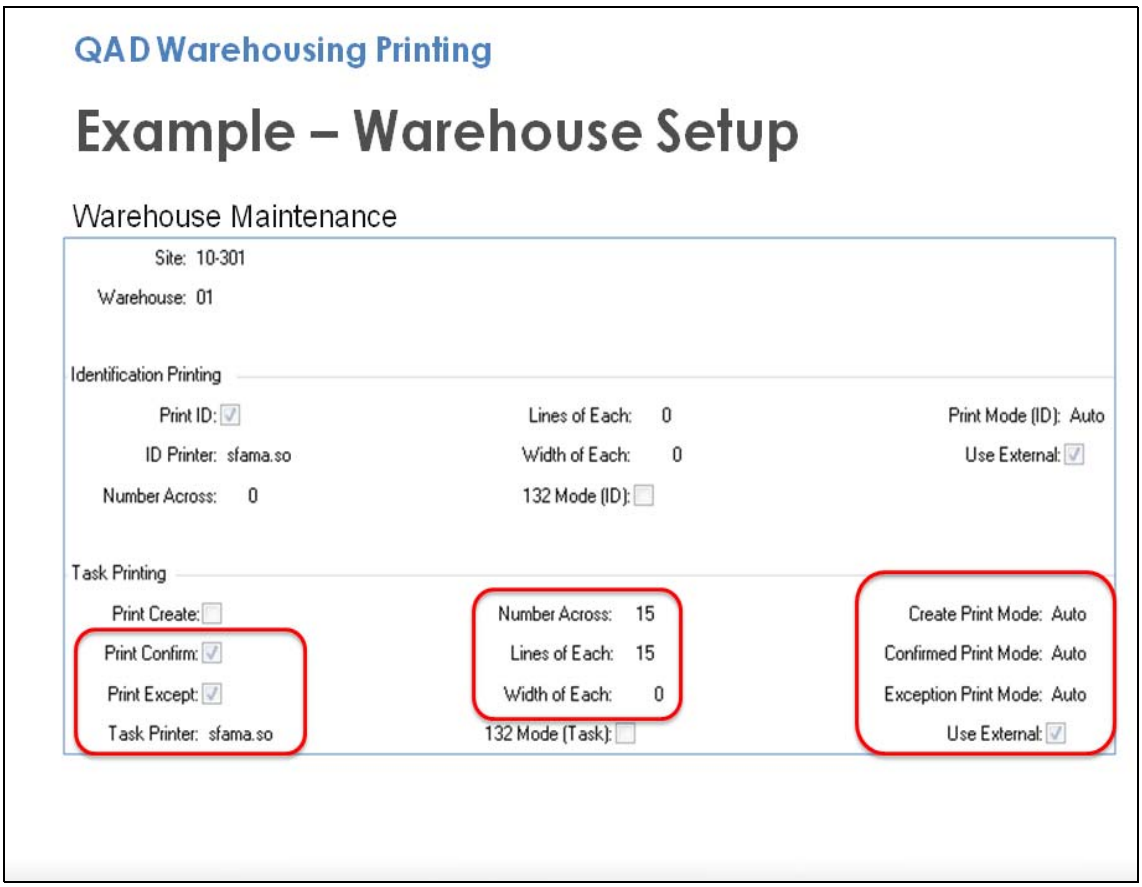


Use Print Request Maintenance to manually process print requests through QAD Warehousing print functions.

Objectives

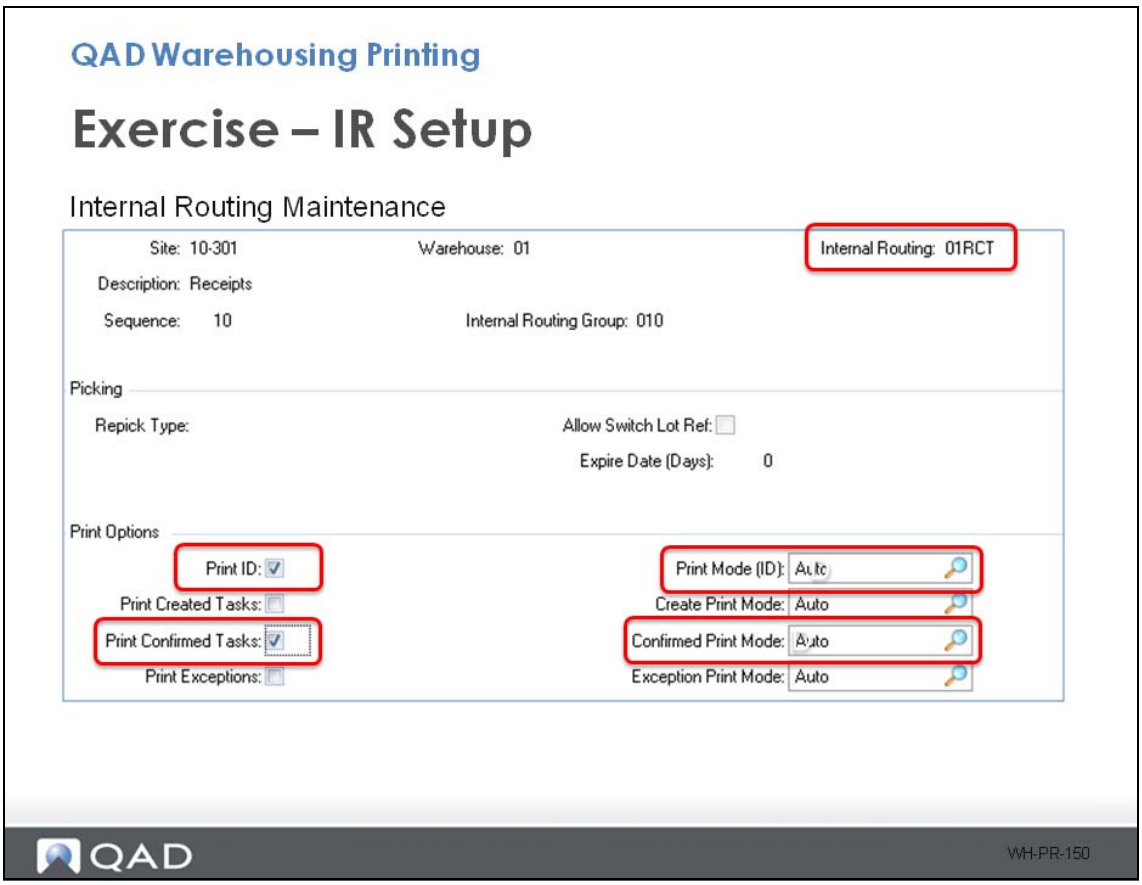

QAD Warehousing Printing
Objectives
Set printing for items received into a single warehouse
Set printing for a internal routing step for a receipt
Receive the items and print the receipt confirmation transaction
QAD
WH-PR-130

Example - Warehouse Setup



Use Warehouse Maintenance to set several print frames for a single warehouse that default to other warehousing maintenance programs. Use Warehouse Maintenance to set the print mode, also.

Exercise - IR Setup



In this exercise, you use Internal Routing Maintenance 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.

Questions

1. What printing can you control with QAD Warehousing print functions?
2. True or False. There are print frames in several Warehousing maintenance programs, and most fields default from Warehousing Control or Warehouse Maintenance.
3. What are print templates?
4. Which program do you use to set up print options specific to a user?
5. Which program do you use to manually process print requests through QAD Warehousing print functions?

Answers

1 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.

2 True. There are print frames in several Warehousing maintenance programs, and most fields default from Warehousing Control or Warehouse Maintenance.

3 Templates are flat ASCII files that contain the layout of required printed output.

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

5 Use Print Request Maintenance to manually process print requests through QAD Warehousing print functions.

Notes