InControlWare® v2.02.02

Middleware User Guide

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About This Guide

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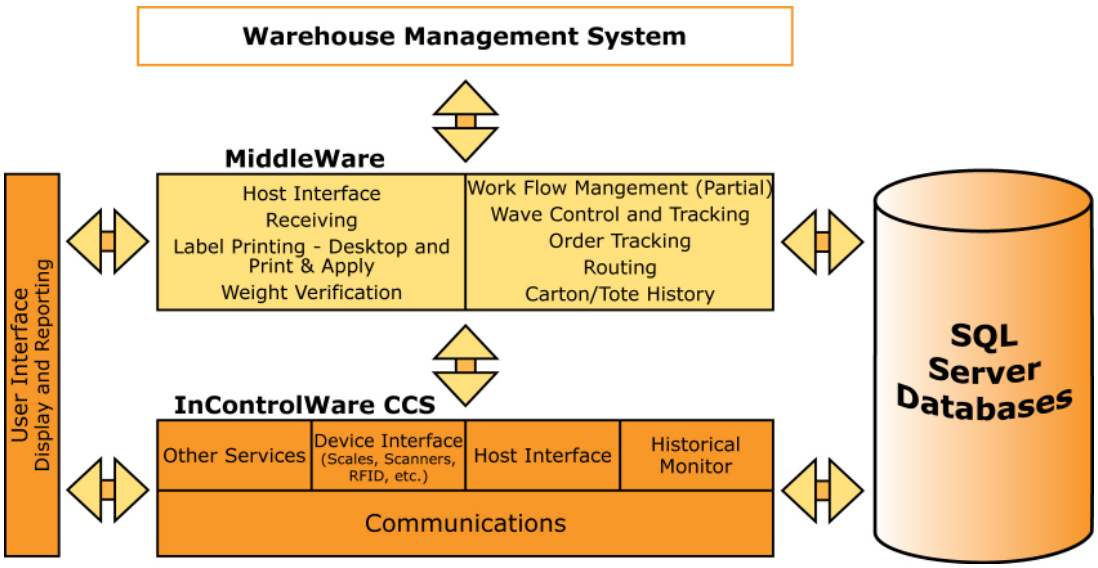
1.1 Introduction

InControlWare's middleware system is a high-level control system that moves and tracks containers within a warehouse or distribution center. Operating in conjunction with a Warehouse Management System (WMS) and a Conveyor Control System (CCS), the middleware system manages and monitors containers as they move through a system.

Figure 1-1 Middleware Architecture



Middleware performs three, primary functions:

- **Communications**: Provides batch and real-time communication with the Warehouse Management System and Conveyor Control System.
- **Routing**: Directs and monitors the movement of containers within a warehouse. Handles errors for container identification problems and other container issues.
- **Historical Data Capture**: Captures the history of containers as they move through a facility. Records information about equipment and system performance that can be used by operations and maintenance personnel to fine tune warehouse operations.

This guide describes the panels in the InControlWare user interface that are used to monitor middleware operations.

1.2 Documentation Conventions

The following typographical conventions are used to distinguish between the different kinds of information presented in this guide, as follows:

Convention	Description
Bold	Used to identify menu selections, toolbar selections, and section references.
Italic	In paragraph text, italic identifies the titles of documents that are being referenced. When used in conjunction with the monospace text described below, italic identifies a variable that should be replaced by the user with an actual value.
`monospace text`	Text that represents programming code.
`monospace italic text`	Variables in programming code.
CTRL+X	A combination of keystrokes that are pressed simultaneously.
Function | **Function**	A path to a function or dialog box within an interface. For example, "Select **File** | **Open**" indicates that you should select the **Open** function from the **File** menu.
( ) and |	Parentheses enclose optional items in command syntax. The vertical bar separates items in a list of choices. For example, any of the following four items can be entered for this command: persistPolicy (Never | OnTimer | OnUpdate | NoMoreOftenThan)

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1.2.1 Notes, Tips, and Important Information

The following callouts and icons are used to highlight information throughout this guide:

Note or Tip

A Note highlights related information or information that is tangential to the topic being discussed. A Tip highlights useful information that can be used to simplify the tasks that are being discussed.

Important

Important callouts are used to highlight information of great significance or value that the reader should be certain to know before proceeding.

Notes, Tips, and Important callouts are used to call attention to useful information and are not safety notices.

Common Functionality

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The middleware panels described in this guide share many common features. This chapter describes those features.

2.1 Context Menus

Each of the middleware panels contains a list of items, such as containers or waves. Right clicking in the list displays a context menu that you can use to alter the contents of the list. You can use the menu options to add, edit, and delete items.

2.1.1 Adding Items to a List

To add an item to a list, select **Add New *Item*** from the context menu. The information that you enter in the dialog box will be added to the database and the new item will appear on the panel.

2.1.2 Editing Items

To edit one of the items in a list, select the item, right click in the list, and select **Edit *Item*** from the context menu. Make changes to the information in the dialog box, as needed. Select **OK** to save the new information.

2.1.3 Deleting Items

To delete one of the items in a list, select the item, right click in the list, and select **Delete *Item*** from the context menu. A prompt appears asking you to confirm the action. Click **Yes** to delete the item from the list. This will also delete the item's information from the database.

Deleting Several Items at Once

Some of the context menus contain additional options that allow you to delete multiple items at one time. Doing so deletes the items from the list and also deletes all of the items' information from the database. The names of the menu options that you'll use to do this are typically named **Delete *Items* Between Dates** or **Delete All *Items***.

2.1.4 Refreshing Lists

Some of the context menus contain a **Refresh** option that you can use to refresh the items in the list. It provides the same functionality as the **Refresh** button.

2.1.5 Multi-Selecting Items

Some panels allow you to select multiple items in a list. To do so, press the CTRL or SHIFT key while you click on items. The CTRL key is used to select non-consecutive items. The SHIFT key is used to select consecutive items.

2.2 Filtering Item Lists

Item lists are usually in one of two states when they are initially displayed: they are empty or they are populated with all of the items of that type in the system. Filters at the top of the panels are used to determine what will be displayed in the list. Although the filter types differ from panel to panel, they are used in the same way.

2.2.1 Filtering by ID

When an ID filter appears at the top of a panel, you can enter a complete or partial ID number. Clicking **Refresh** will then filter the items in the list so that only the items that match the ID number are displayed. If the list was not yet populated, clicking **Refresh** will display only those items that match the ID.

2.2.2 Filtering with Dropdown Lists

When a dropdown list appears at the top of a panel, make a selection from the list and click **Refresh**. Only those items that match the selection will appear in the list. Making selections from several dropdown lists will refine the list further.

2.2.3 Filtering with Dates

When a date field appears at the top of a panel, click the calendar icon to select a date. Clicking **Refresh** will filter the items in the list using the date you selected.

2.3 Sorting Item Lists

You can sort the items in a list by clicking on a column heading. The first click on a heading will list the items in ascending order. Clicking on the heading a second time will sort the items in descending order.

Waves

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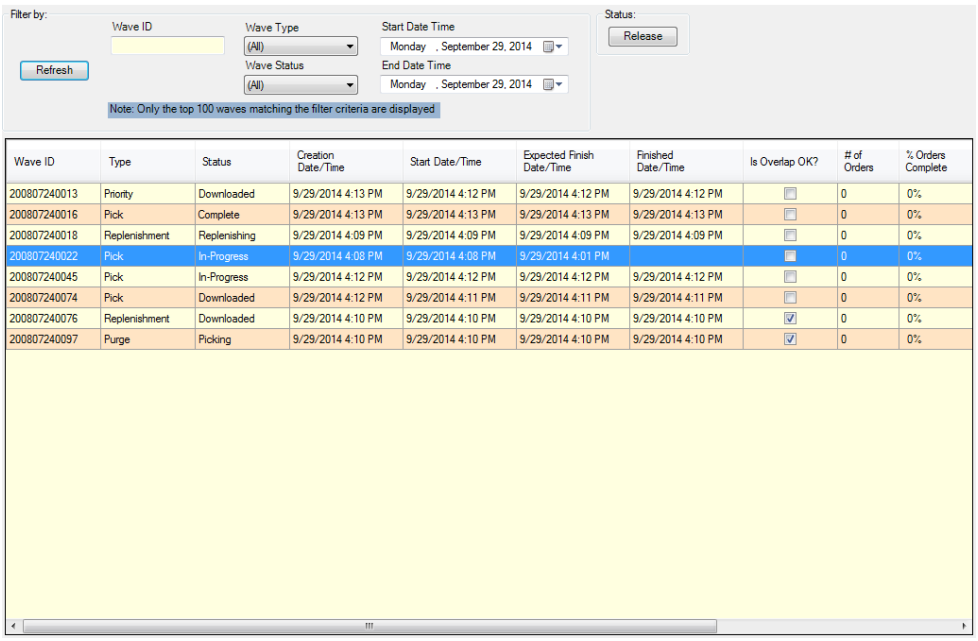
3.1 The Wave Status Panel

A wave is a manageable quantity of orders/containers. Typically, each wave is defined by the WMS. The WMS assigns an ID to the wave and the information is then communicated to InControlWare's middleware.

The Wave Status panel is used to monitor the status of all of the waves in the system. When a wave is complete, InControlWare retains the wave's information in the system for a specified amount of time. This time period is configurable.

Figure 3-1 Wave Status Panel



The Wave Status panel contains the following information:

Field	Description
Wave ID	The unique ID assigned to the wave. Typically, this number is assigned to the wave by the WMS.
Wave Type	The wave's type. Typically, this is assigned by the WMS. For descriptions of the available wave types, refer to **Wave Types** later in this chapter.
Wave Status	The status of the wave as it moves through the material handling system. This information is maintained by the middleware system. For descriptions of the different wave statuses, refer to **Wave Status** later in this chapter.
Creation Date/Time	The date and time at which the wave's information originated in the database. This is recorded by the middleware system when the download is received from the WMS and processed or when the wave is created by an InControlWare user.
Start Date/Time	The date and time when the first container in this wave was scanned in the material handling system. Typically, this is the date/time of the first container's induction into the system.
Expected Finish Date/Time	The date and time when this wave is expected to be complete. This date/time is calculated by the middleware system based on current wave progress and an expected time per container value configured in InControlWare.
Finished Date/Time	The date and time when the last container in this wave was diverted to its final destination.
Is Overlap OK?	A flag that indicates if more than one wave can be processed at a time. If the checkbox is enabled, containers from other waves can appear on the conveyor at the same time as containers from this wave. If the checkbox is disabled, all of the containers from this wave must be complete before another wave can be processed.
# of Orders	The number of orders with containers in this wave. This number is based on information received by the middleware system in the WMS download.
% Orders Complete	The number of completed orders (picked complete) divided by the number of orders in the wave.
# of Containers	The total number of containers in the wave.
# of Multi-Unit Containers	The number of containers in the wave that will have more than one item in them.
# of Single Containers	The number of containers in the wave that will have a single item in them.

Field	Description
# of Replenish Containers	The number of containers in the wave that are being used to replenish the system.
# of Giftwrap Containers	The number of containers in the wave that include items that must be giftwrapped.

3.2 Choosing the Waves to Display

You can filter waves by wave ID, wave type, wave status, and wave date. For information about how to use the filters, refer to Chapter 2.

3.2.1 Wave Types

You can filter waves by the following wave types:

Wave Type	Description
Pick	Waves consisting of only picking activities.
Replenishment	Waves consisting of only replenishment activities to forward pack zones.
Reslotting	Waves consisting of only container activities that relocate inventory from one forward pick zone to another or from forward pick zones to other locations.
Purge	Waves consisting of only container activities that purge goods from the system.
Priority	Waves consisting of only priority picks.
Mixed	Waves consisting of container activities from more than one of the wave types described above.
Transfer	Waves consisting of containers to be relocated to another facility.

3.2.2 Wave Status

You can filter waves by the following wave statuses:

Wave Status	Description
Created	The status given to a wave when it is manually added to the database by an operator.
Cancelled	The status given to a wave that has been cancelled.

Wave Status	Description
Complete	The status given to a wave when the last container in the wave arrives at its final destination.
Downloaded	The status given to a wave when it has been fully downloaded from the WMS.
In Progress	The status given to a wave when it is in the process of being fulfilled.
Received	The status given to a wave when it is automatically added to the database by InControlWare's middleware following a download from the WMS.
Released	The status given to a wave when the first container in the wave is scanned for induction into the conveyor system.
Picking	The status given to a wave when the first container in the wave is scanned at the Picking area.
Packing	The status given to a wave when the first container in the wave is scanned at the Packing area.
Shipping	The status given to a wave when the first container in the wave is diverted to a Shipping lane.
Replenishing	The status given to a replenishment wave when it is in the process of being fulfilled.
At the Merge	The status given to a wave when the first container in the wave is seen at the merge.

3.2.3 Date Filters

You can filter waves by a date range, as follows:

Date	Description
Start Date	Select a range of waves to display beginning on this day.
End Date	Select a range of waves to display ending on this day.

3.3 Releasing a Wave

To manually release a wave, select the wave in the list and click the **Release** button. A prompt appears asking you to confirm the action. Click **Yes** to release the wave.

Orders

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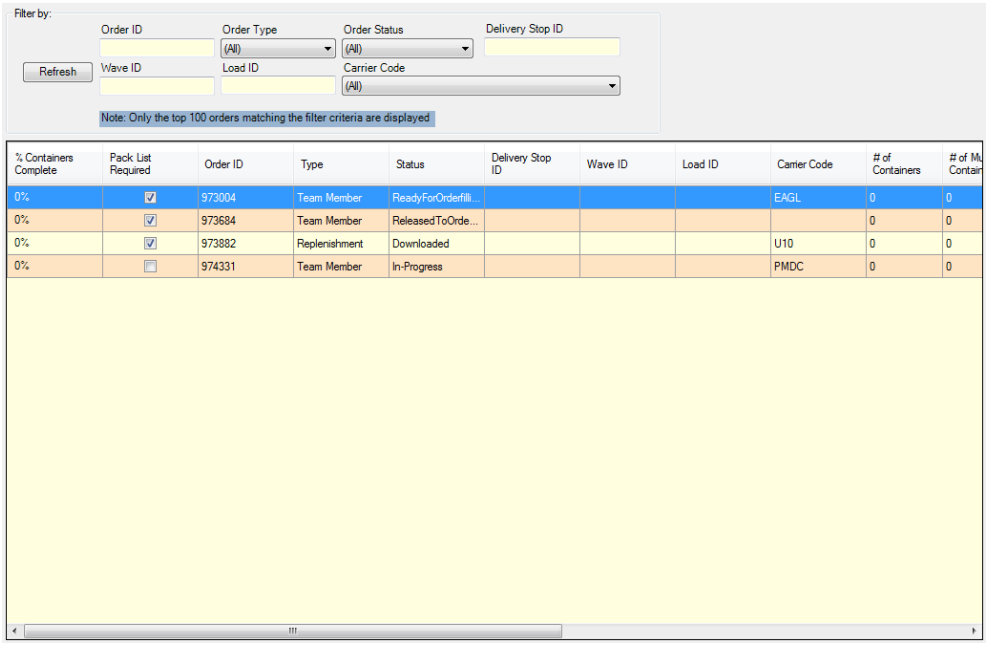
4.1 The Order Status Panel

The Order Status panel contains a list of all of the orders that are currently being processed in the system. It also contains historical information for orders that were processed over a set period of time. The amount of time that order information is maintained in the database after an order has been processed is configurable.

The Order Status panel can be used to monitor an order as it is being completed. It can also be used to review the number and types of containers in the order.

Figure 4-1 Order Status Panel



The Order Status panel contains the following information:

Field	Description
% Containers Complete	The percentage of the total containers in this order that have a status of Complete.
Pack List Required	This checkbox is checked if a packing list must be included with the order.
Order ID	The unique ID assigned to the order. Typically, this number is assigned to the order by the WMS.
Type	The order's type. Typically, this is assigned by the WMS.
Status	The status of the order as its containers move through the material handling system. This information is maintained by the middleware system. For descriptions of the different order statuses, refer to **Order Status** later in this chapter.
Delivery Stop ID	The ID of the delivery stop for this order.
Wave ID	The ID of the wave that includes this order.
Load ID	The ID of the load that includes this order.
Carrier Code	The Carrier Code to be used for shipping this order.
# of Containers	The number of containers in this order.
# of Multi-Unit Containers	The number of containers in the order that will have more than one item in them.
# of Single Containers	The number of containers in the order that will have a single item in them.
# of Replenishment Containers	The number of containers in the order that are for replenishment.
# of Giftwrap Containers	The number of containers in the order that include items that need to be giftwrapped.
Creation Date/Time	The date and time that the order's information appeared in the database. This is recorded by the middleware system when the download is received from the WMS or when the order is created by an InControlWare user.
Start Date/Time	The date and time when the first container in this order was scanned in the material handling system. Typically, this is the date/time of the first container's induction into the system.
Expected Finish Date/Time	The date and time when this order is expected to be complete. This date/time is calculated by the middleware system based on current order progress and an expected time per container value configured in InControlWare.

Field	Description
Finished Date/Time	The date and time when the last container in this order was diverted to its final destination.

4.2 Choosing the Orders to Display

You can filter orders by IDs, order type, order status, and carrier code. For information about how to use the filters, refer to Chapter 2.

4.2.1 Order Types

Order types are entered into the WMS and downloaded to the middleware system. They are customized for each customer site.

4.2.2 Order Status

You can filter orders by the following order statuses:

Order Status	Description
QA	The status given to an order that has been flagged for quality assurance.
Cancelled	The status given to an order that has been cancelled.
Complete	The status given to an order when the last container in the order arrives at its final destination.
Downloaded	The status given to an order when it has been fully downloaded from the WMS.
Ready for Orderfilling	The status given to an order when it is ready to be filled.
Released to Orderfilling	The status given to an order when it has been released to be filled.
In Progress	The status given to an order when it is in the process of being fulfilled.
Replenishing	The status given to an order when it is in the process of being replenished.
Picking	The status given to an order when the first container in the order is scanned at the Picking area.
At the Merge	The status given to an order when the first container in the order is scanned at the merge.

Order Status	Description
Packing	The status given to an order when the first container in the order is scanned at the Packing area.
Orderfilling Complete	The status given to an order when it has been filled.
Order Forced Complete	The status given to an order when it has been forced to be complete. This status might identify an order that is short.
Shipping	The status given to an order when the first container in the order is diverted to a Shipping lane.
Cancellation Pending	The status given to an order when it is the process of being cancelled.

Containers

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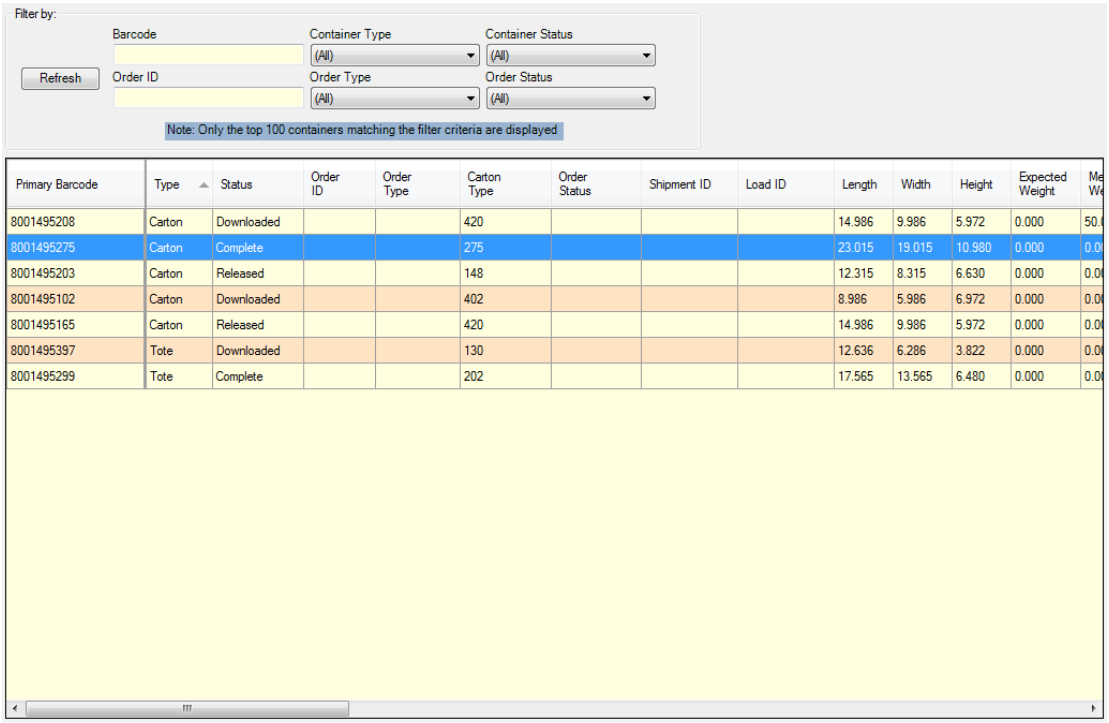
5.1 The Container Status Panel

The Container Status panel contains a list of all of the containers in the system. It can be used to locate a container within the system as well as identify which order and shipment the container is a part of. Container information is typically downloaded from the WMS and remains in the database for a specified amount of time. The period of time is configurable.

Figure 5-1 Container Status Panel



The Container Status panel contains the following information:

Field	Description
Primary Barcode	The primary barcode ID associated with the container. The primary barcode is the barcode that is used when communicating with the host. Typically, this number is assigned to the wave by the WMS.
Type	The container's type. Typically, this is assigned by the WMS. For descriptions of the available container types, refer to **Container Types** later in this chapter.
Status	The status of the container as it moves through the material handling system. This information is maintained by the middleware system. For descriptions of the different container statuses, refer to **Container Status** later in this chapter.
Order ID	The ID of the order that includes this container.
Order Type	The type of order that includes this container.
Carton Type	The type of carton being used by this container. The Carton Type panel can be used to add carton types.
Order Status	The status of the order that includes this container. This information is maintained by the middleware system.
Shipment ID	The ID of the shipment that includes this container. This information is maintained by the middleware system.
Load ID	The ID of the load that includes this container. This information is maintained by the middleware system.
Length	The length of the container.
Width	The width of the container.
Height	The height of the container.
Expected Weight	The expected weight of this container. The middleware system receives this from the WMS.
Measured Weight	The actual weight of the container. This will only be available in systems that include a scale.
Minimum Weight	The minimum acceptable weight for this container. This is received from WMS and is used to accept or reject the container when it is weighed.
Maximum Weight	The maximum acceptable weight for this container. This is received from WMS and is used to accept or reject the container when it is weighed.
Recirculated Count	The number of times that this container has completed a recirculation loop. This string includes the recirculation count at each decision point. This value is reset on a successful divert.

Field	Description
First Scan	The name of the decision point where this container was first scanned.
First Scan Location Description	A description of the scanner where the container was initially scanned.
First Scan Date/Time	The date and time when this container was first scanned.
Last Scan Location	The name of the decision point where this container was most recently scanned.
Last Scan Location Description	A description of the scanner where the container was last scanned.
Last Scan Date/Time	The date and time when this container was last scanned.
Downloaded Date/Time	The time and date when information about this container was received from WMS.
Delivered Date/Time	The time and date when the container was delivered to its final destination.
Confirmed Date/Time	The time and date when the container was confirmed to be at its final destination.
Flags	Detailed container attributes. This can include APO/FPO, HazMat, and Fragile.
Passed Weight Check	This checkbox will be enabled if the container passed its weight check. The checkbox will be disabled if the container did not or has not yet passed its weight check.
Exception Destination	The exception destination this container is being sent to. Exception destinations are assigned per decision point using the Decision Point Status panel. Some examples of exception destinations are No Read, Trouble, and Recirculation.
Exception Assigned Date/Time	The date and time the container was assigned to the exception destination.
Exception Delivered Date/Time	The date and time the container was delivered to the exception destination.

5.2 Choosing the Containers to Display

You can filter containers by barcode, order ID, container type/status, and order type/status. For information about how to use the filters, refer to Chapter 2.

5.2.1 Searching by Barcode

You can use the Barcode field to enter the barcode of a container you would like to display in the list. You can also enter a partial barcode to see all of the containers that contain the series of numbers you supply. Click **Refresh** to display the containers that match the barcode.

5.2.2 Container Types

You can filter containers by carton, tote, bag, letter, and tube types.

5.2.3 Container Status

You can filter containers by the following container statuses:

Container Status	Description
Trouble	The status given to a container when an exception occurs in processing the container. Some examples of exceptions are unknown container, label mismatch, no open routes, and maximum recirculation count exceeded.
Cancelled	The status given to a container when it has been cancelled.
Complete	The status given to a container when it arrives at its final destination.
Downloaded	The status given to a container when its information has been fully downloaded from the WMS.
Available	The status given to a container when it is available to be added to the conveyor system. This status indicates that it is available but has not yet been selected to begin processing.
Released	The status given to a container when it has been selected to begin processing. This indicates that the container is now being built and/or introduced into the conveyor system.
Print Verified	The status given to a container when it has been scanned after a print and apply operation. This indicates that the labels that were applied have been verified as good.

Container Status	Description
In Transit	The status given to a container when it is in the process of being fulfilled.
Picking	The status given to a container when it is scanned at the Picking area.
At the Merge	The status given to a container when it is scanned at the merge.
Packing	The status given to a container when it is scanned at the Packing area.
Shipped	The status given to a container when it is diverted to a Shipping lane.

Loads

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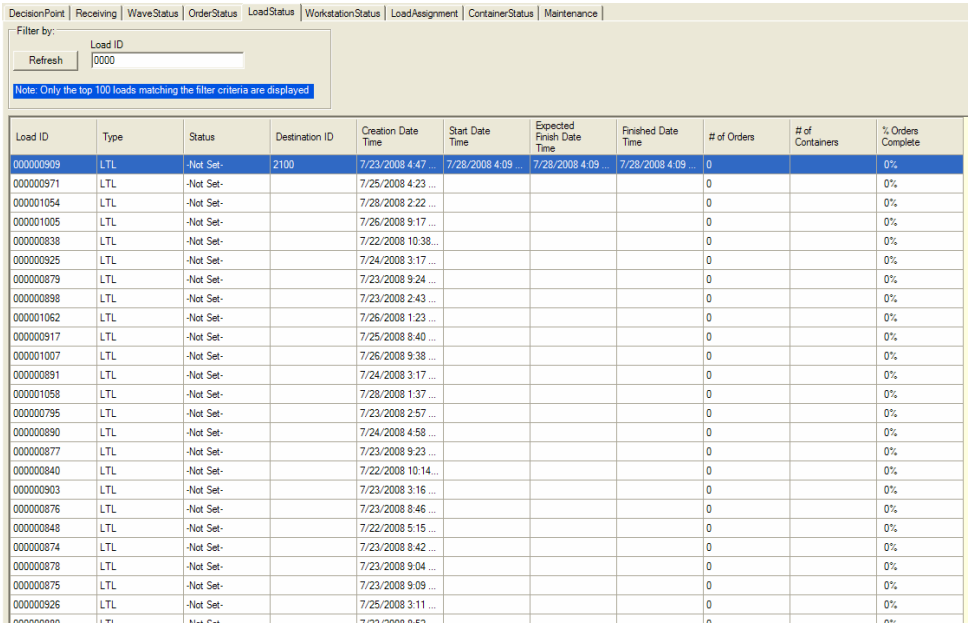
6.1 The Load Status Panel

A load is a logical grouping of orders that are combined for shipping purposes. Typically, loads are defined by the customer using the WMS. They are then downloaded to the middleware system.

The Load Status panel contains a list of all of the loads in the system. It can be used to locate a load in the system as well as to determine how close to completion a load is. Load information is retained in the database for a configured amount of time.

Figure 6-1 Load Status Panel



The Load Status panel contains the following information:

Field	Description
Load ID	The unique ID assigned to the load. Typically, this number is assigned to the load by the WMS.
Type	The load's type, either LTL or Parcel. Typically, this is assigned by the WMS.
Status	The load's status, either LTL or Parcel.
Creation Date/Time	The date and time that the load's information appeared in the database. This is recorded by the middleware system when the download is received from the WMS.
Start Date/Time	The date and time when the first container in this load was scanned in the material handling system. Typically, this is the date/time of the first container's induction into the system.
Expected Finish Date/Time	The date and time when this load is expected to be complete. This date/time is calculated by the middleware system based on current load progress and an expected time per container value configured in InControlWare.
Finished Date/Time	The date and time when the last container in this load was diverted to its final destination.
# of Orders	The number of orders in the load.
% Orders Complete	The percentage of the orders in the load that have been completed.
# of Containers	The number of containers in the load.
Carrier Code	The ID of the transportation company that will be conveying the load.
Carrier	The transportation company that will be conveying the load.
Level of Service	The carrier's level of service for this order.
Destination	The destination to which the load is being directed (e.g., Receiving, Packing, Shipping).

Decision Points

7

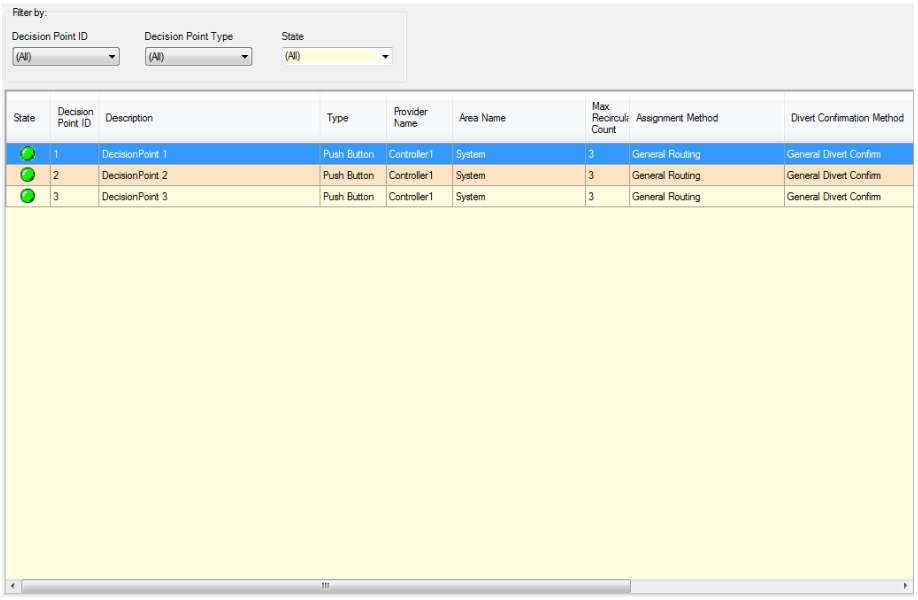
7.1 The Decision Point Panel

A decision point is a physical location in the system where a routing decision needs to be made. Decision points can be ruled by:

- Business logic (e.g., all containers with a barcode that starts with 123 go to lane 2)
- Transportation logic (e.g., when a container arrives and is scanned it must stop for operator adjustment)
- Print and apply (e.g., the container comes through, is scanned, and then labels are applied)
- Single or multi-head scanners (e.g., the system requires input, usually from machine control or a PLC)
- Scales (e.g., the container is weighed and weight information is returned to the middleware system)

The Decision Point panel contains a list of the decision points in the system and provides detailed information about how each point is configured.

Figure 7-1 Decision Point Panel



The Decision Point panel contains the following information:

Field	Description
State	The decision point's state: enabled or disabled. When the lamp is bright green, the decision point is enabled. When the lamp is dark green, the decision point is disabled. Decision points can be enabled/disabled using the context menu.
Decision Point ID	The unique ID assigned to the decision point by the WMS.
Description	A description of the location and purpose of the decision point.
Type	The type of decision point (e.g., picking, packing).
Provider Name	The name of the interface that this specific decision point will be communicating with when sending/receiving Induct, Divert, and Status messages.
Area Name	The area in the system in which this decision point is located. Areas are defined using the Areas panel.
Max Recirc Count	Maximum Recirculation Count. The maximum number of times a container can pass this decision point before it is sent to the trouble lane.
Assignment Method	The method that identifies the divert that should be used for containers passing this decision point. Assignment methods are defined using the Assignment Method panel.

Field	Description
Divert Confirmation Method	The method that verifies if containers passing this decision point have been diverted as expected. Divert confirmation methods are defined using the Divert Confirmation Methods panel.
Scanner Method	The method that is used to parse scanner data to retrieve barcodes from containers passing this decision point. Scanner methods are defined using the Scanner Methods panel.
Enable Trouble Container Display	Indicates whether or not this decision point should be included on the Trouble Container Display.
Save Container History	Indicates whether or not information about when the container was inducted, assigned, diverted, etc. should be saved.
Delete Container on Delivery	Indicates whether or not data about containers passing this decision point should be deleted when the containers are successfully delivered. Database information will not be effected; only cached information will be deleted.
Check Divert Availability	Indicates whether or not the sorter lane's availability (e.g., enabled, 100% full) is checked before containers are sent to that lane. When enabled, and the sorter lane is not available, containers are not sent to that lane.

7.2 Enabling/Disabling Decision Points

Decision points can be enabled and disabled by selecting the **Enable/Disable Decision Point** option from the context menu.

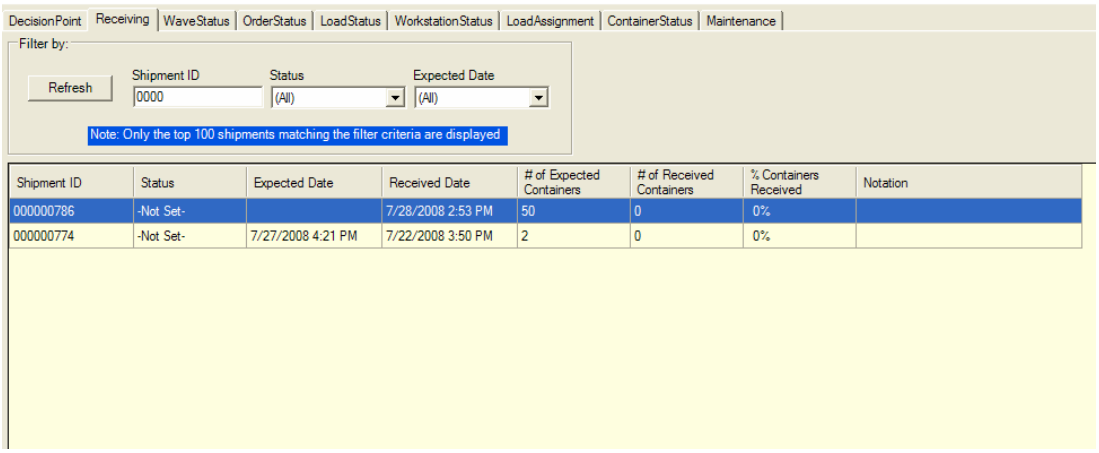
Shipments

8

8.1 The Receiving Status Panel

This panel shows the status of all planned shipments that are currently in the middleware database.

Figure 8-1 Receiving Status Panel



Each row on the panel contains the following information:

Field	Description
Shipment ID	The ID of the shipment as downloaded from the WMS.
Status	The status of the shipment: Downloaded, In Process, or Complete.
Expected Date	The date on which the shipment is expected. This information is downloaded from the WMS.

Field	Description
Received Date	The date on which the shipment was actually received.
# of Expected Containers	The number of cartons that are expected in the shipment.
# of Received Containers	The number cartons that were actually received in the shipment.
% of Containers Received	As the shipment is processed, this percentage is incremented.
Notation	Any additional information about the shipment that was downloaded from the WMS.

Trouble Cartons

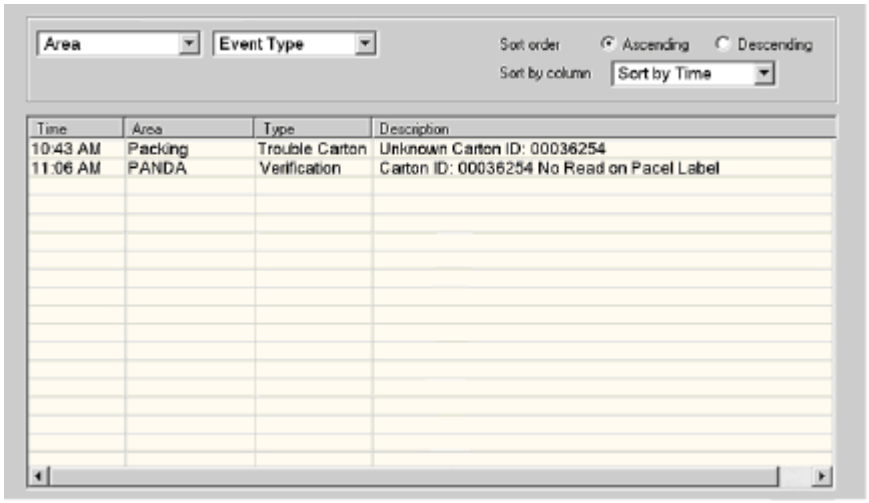
9

9.1 The Trouble Carton Panel

Cartons that are delivered to trouble lanes or stopped in-line for corrective action are displayed on the Trouble Carton panel to assist operators with troubleshooting. This panel shows information about the last 20 cartons that were stopped with a problem or delivered to a trouble lane.

The trouble cartons on the panel can be filtered using the fields at the top of the panel. This can be especially useful for workstation operators who only want to see the trouble cartons for their particular station.

Figure 9-1 Trouble Carton Panel



Each row on the panel contains the following carton information:

Field	Description
Time	The time at which the carton was delivered to a trouble lane or stopped in-line.
Area	The area to which the carton was delivered. Use the Area filter at the top of the window to filter the information on the panel so that only the cartons for one workstation are displayed.
Type	The carton's type: Trouble Carton or Verification.
Message	A description of the trouble that was entered with the carton.

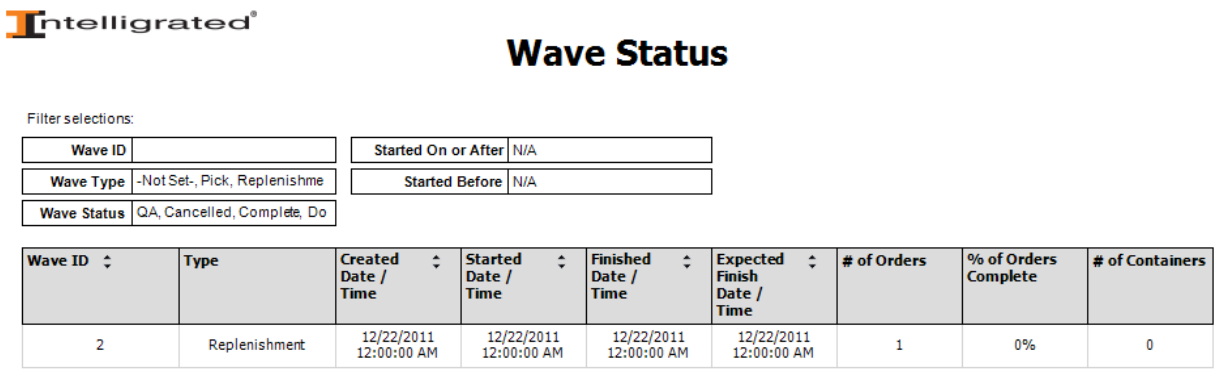
Reports

10

10.1 Wave Status Report

The Wave Status report can be filtered by Wave ID, Wave Type, Wave Status, and Start Date/Time.

Figure 10-1 Wave Status Report



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Wave Status

Filter selections:

Wave ID		Started On or After	N/A
Wave Type	-Not Set-, Pick, Replenishme	Started Before	N/A
Wave Status	QA, Cancelled, Complete, Do		

Wave ID	Type	Created Date / Time	Started Date / Time	Finished Date / Time	Expected Finish Date / Time	# of Orders	% of Orders Complete	# of Containers
2	Replenishment	12/22/2011 12:00:00 AM	12/22/2011 12:00:00 AM	12/22/2011 12:00:00 AM	12/22/2011 12:00:00 AM	1	0%	0

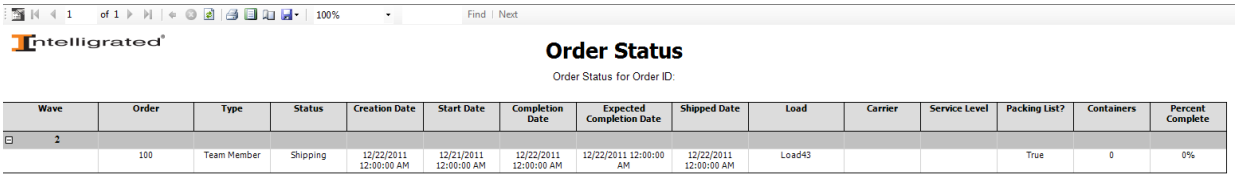
The resulting report contains the following information:

Column	Description
Wave ID	The unique ID assigned to the wave.
Type	The type of the wave.
Created Date/Time	The date and time of the WMS download that included this wave.
Started Date/Time	The date and time when the first container in this wave was scanned.

Column	Description
Finished Date/Time	The date and time when the last container in this wave was diverted to its final destination.
Expected Finish Date/Time	The estimated date and time when the last container in this wave should be diverted to its final destination.
Number of Orders	The number of orders in this wave.
Percentage of Orders Complete	The percentage of orders in the wave that have been completed.
Number of Containers	The number of containers in the wave.

10.2 Order Status Report

Figure 10-2 Order Status Report

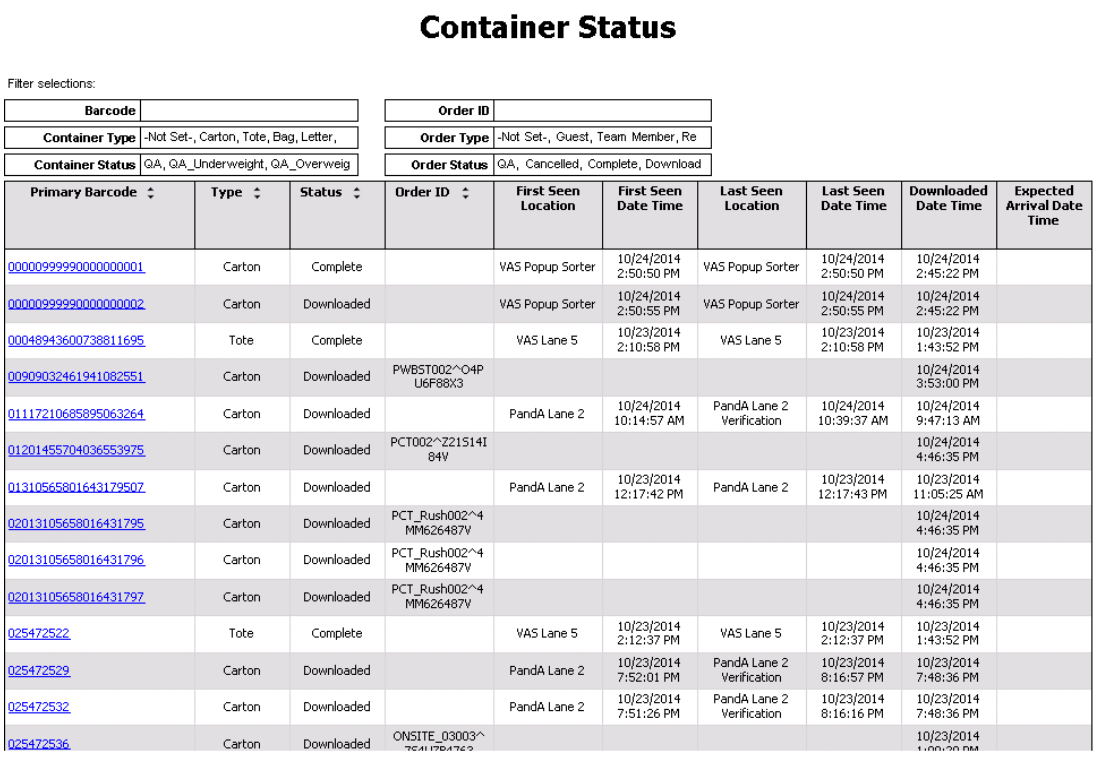


Column	Description
Wave	The wave ID assigned by the WMS.
Order	The order ID assigned by the WMS.
Type	The order type assigned by the WMS.
Status	The status of the order.
Creation Date	The date and time when the order was received from the WMS.
Start Date	The date and time when the order was released for picking.
Completion Date	The date and time when the last item in the order arrived in Packing.
Expected Completion Date	The estimated date and time when the last item in the order will arrive in Packing. The date and time are estimated based on the current progress of orders in the system.
Shipped Date	The date and time when the last item in the order was diverted to Shipping.
Load	The ID of the load that includes this order.
Carrier	The shipping carrier for this order.

Column	Description
Service Level	The carrier's level of service for this order.
Packing List?	Whether or not a packing list is required for the order. This information is provided by the WMS.
Containers	The number of containers in the order.
Percent Complete	The percentage of containers in the order that have been successfully diverted to Shipping.

10.3 Container Status Report

Figure 10-3 Container Status Report



Container Status

Filter selections:

Barcode		**Order ID**	
Container Type	-Not Set-, Carton, Tote, Bag, Letter,	**Order Type**	-Not Set-, Guest, Team Member, Re
Container Status	QA, QA_Underweight, QA_Overweig	**Order Status**	QA, Cancelled, Complete, Download

Primary Barcode	Type	Status	Order ID	First Seen Location	First Seen Date Time	Last Seen Location	Last Seen Date Time	Downloaded Date Time	Expected Arrival Date Time
00000999990000000001	Carton	Complete		VAS Popup Sorter	10/24/2014 2:50:50 PM	VAS Popup Sorter	10/24/2014 2:50:50 PM	10/24/2014 2:45:22 PM	
00000999990000000002	Carton	Downloaded		VAS Popup Sorter	10/24/2014 2:50:55 PM	VAS Popup Sorter	10/24/2014 2:50:55 PM	10/24/2014 2:45:22 PM	
00048943600738811695	Tote	Complete		VAS Lane 5	10/23/2014 2:10:58 PM	VAS Lane 5	10/23/2014 2:10:58 PM	10/23/2014 1:43:52 PM	
00909032461941082551	Carton	Downloaded	PWB5T002^O4P U6F88X3					10/24/2014 3:53:00 PM	
01117210685895063264	Carton	Downloaded		PandA Lane 2	10/24/2014 10:14:57 AM	PandA Lane 2 Verification	10/24/2014 10:39:37 AM	10/24/2014 9:47:13 AM	
01201455704036553975	Carton	Downloaded	PCT002^Z21S14I 84V					10/24/2014 4:46:35 PM	
01310565801643179507	Carton	Downloaded		PandA Lane 2	10/23/2014 12:17:42 PM	PandA Lane 2	10/23/2014 12:17:43 PM	10/23/2014 11:05:25 AM	
02013105658016431795	Carton	Downloaded	PCT_Rush002^4 MM626487V					10/24/2014 4:46:35 PM	
02013105658016431796	Carton	Downloaded	PCT_Rush002^4 MM626487V					10/24/2014 4:46:35 PM	
02013105658016431797	Carton	Downloaded	PCT_Rush002^4 MM626487V					10/24/2014 4:46:35 PM	
025472522	Tote	Complete		VAS Lane 5	10/23/2014 2:12:37 PM	VAS Lane 5	10/23/2014 2:12:37 PM	10/23/2014 1:43:52 PM	
025472529	Carton	Downloaded		PandA Lane 2	10/23/2014 7:52:01 PM	PandA Lane 2 Verification	10/23/2014 8:16:57 PM	10/23/2014 7:48:36 PM	
025472532	Carton	Downloaded		PandA Lane 2	10/23/2014 7:51:26 PM	PandA Lane 2 Verification	10/23/2014 8:16:16 PM	10/23/2014 7:48:36 PM	
025472536	Carton	Downloaded	ONSITE_03003^					10/23/2014	

Column	Description
Primary Barcode	The primary barcode associated with this container.
Type	The type of container: carton or tote.
Status	The current status of the container: Received, Released, Picked, QA, Packed, or Shipped.

Column	Description
Order Number	The order that includes the container. This ID is assigned by the WMS.
First Seen Location	The location of the scanner that initially scanned this container.
Last Seen Location	The location of the scanner that last scanned this container.
Last Seen Date/Time	The time and date of the container's last scan.
Downloaded Date/Time	The time and date of the download from WMS that included this container.
Expected Arrival Date/Time	The time and date that the container is expected to arrive in Shipping based on the current system throughput.

10.4 Load Status Report

Figure 10-4 Load Status Report

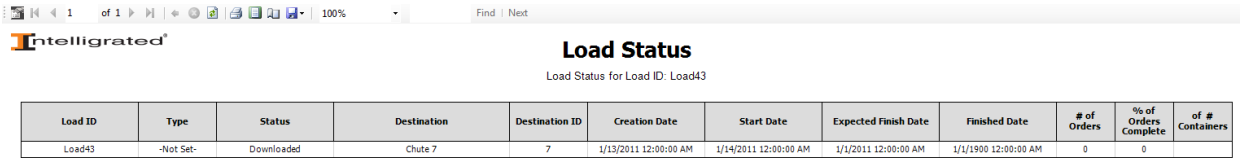


Table 10-1 Load Status Report Information

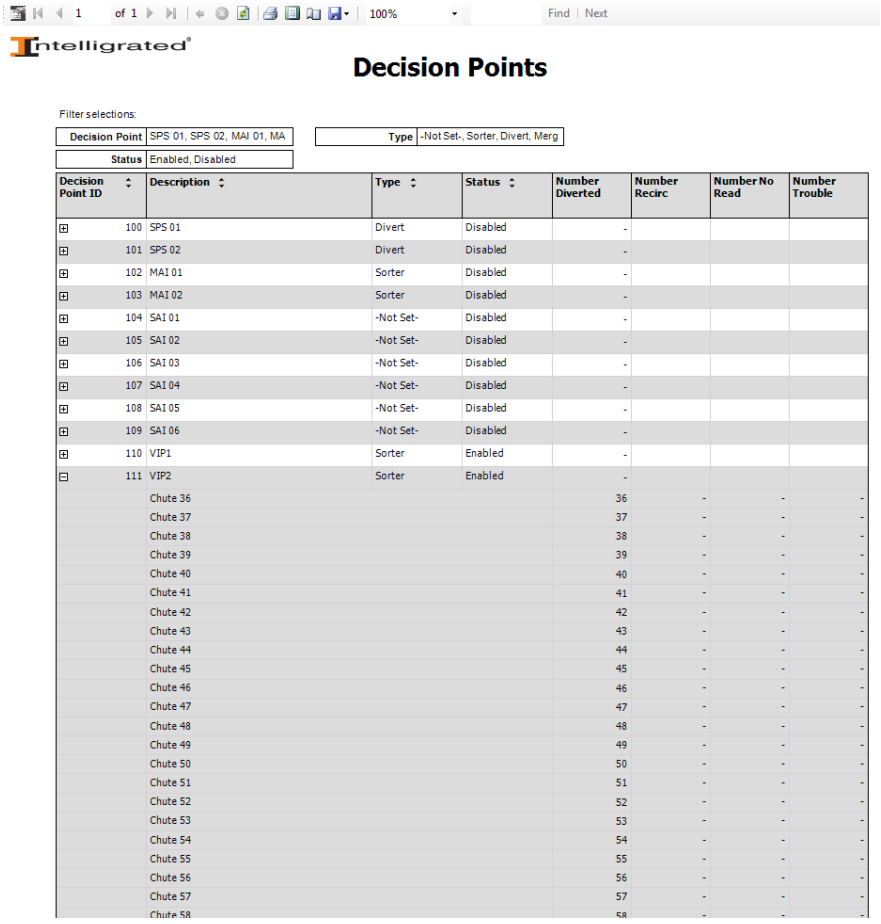
Column	Description
Load ID	The unique ID of the load.
Type	The type of the load.
Status	The status of the load.
Destination	The shipping code for this load
Destination ID	The location to which the load is being conveyed (e.g., Receiving, Palletization, Packing).
Creation Date	The date and time of the WMS download that included this load.
Start Date	The date and time when the first container in this load was released for picking.
Expected Finish Date	The estimated date and time that the last container in this load was diverted to Shipping. The date/time is estimated based on the current system throughput.
Finished Date	The actual date and time that the last container in this load was diverted to Shipping.
Number of Orders	The total number of orders in this load.

Column	Description
Percentage of Orders Complete	The percentage of orders in this load that have been diverted to Shipping.
Number of Containers	The total number of containers in this load.

10.5 Decision Points Report

The Decision Points report provides a summary of container movement through the material handling system based on the decision points that the container passed. The information in the report identifies the number of containers that were inducted and the results of the routing activity.

Figure 10-5 Decision Points Report



Decision Points

Filter selections:

Decision Point	SPS 01, SPS 02, MAI 01, MA	Type	-Not Set-, Sorter, Divert, Merg
Status	Enabled, Disabled		

Decision Point ID	Description	Type	Status	Number Diverted	Number Recirc	Number No Read	Number Trouble
100	SPS 01	Divert	Disabled	-			
101	SPS 02	Divert	Disabled	-			
102	MAI 01	Sorter	Disabled	-			
103	MAI 02	Sorter	Disabled	-			
104	SAI 01	-Not Set-	Disabled	-			
105	SAI 02	-Not Set-	Disabled	-			
106	SAI 03	-Not Set-	Disabled	-			
107	SAI 04	-Not Set-	Disabled	-			
108	SAI 05	-Not Set-	Disabled	-			
109	SAI 06	-Not Set-	Disabled	-			
110	VIP1	Sorter	Enabled	-			
111	VIP2	Sorter	Enabled	-			
	Chute 36			36	-	-	-
	Chute 37			37	-	-	-
	Chute 38			38	-	-	-
	Chute 39			39	-	-	-
	Chute 40			40	-	-	-
	Chute 41			41	-	-	-
	Chute 42			42	-	-	-
	Chute 43			43	-	-	-
	Chute 44			44	-	-	-
	Chute 45			45	-	-	-
	Chute 46			46	-	-	-
	Chute 47			47	-	-	-
	Chute 48			48	-	-	-
	Chute 49			49	-	-	-
	Chute 50			50	-	-	-
	Chute 51			51	-	-	-
	Chute 52			52	-	-	-
	Chute 53			53	-	-	-
	Chute 54			54	-	-	-
	Chute 55			55	-	-	-
	Chute 56			56	-	-	-
	Chute 57			57	-	-	-
	Chute 58			58	-	-	-

The Decision Points report is filtered by Decision Point ID, Decision Point Type, and whether or not the decision point is enabled. The resulting report contains the following information:

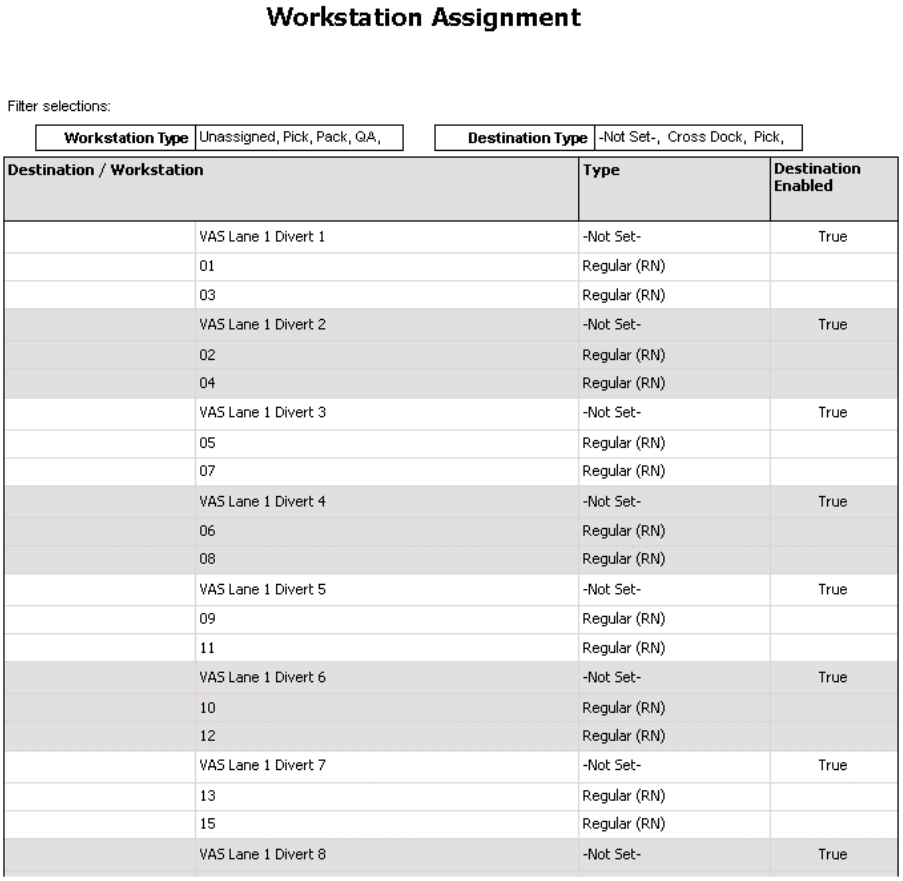
Table 10-2 Decision Points Report Information

Column	Description
Decision Point ID	The unique ID for this decision point.
Description	A description of the location and functionality of the decision point.
Type	The type of the decision point.
Status	Whether the Decision Point is enabled or disabled.
Number Diverted	The number of containers diverted to this decision point.
Number Recirculated	The number of containers that could not reach this decision point and were sent to recirculation loops.
Number No Reads	The number of containers that reached this decision point with unreadable labels and were handled as exceptions.
Number Trouble	The number of containers that reached this decision point with a status of Trouble.

10.6 Workstation Assignment Report

The Workstation Assignment report is sorted by Workstation Type and Destination Type.

Figure 10-6 Workstation Assignment Report



Workstation Assignment

Filter selections:

Workstation Type	Unassigned, Pick, Pack, QA,	Destination Type	-Not Set-, Cross Dock, Pick,

Destination / Workstation	Type	Destination Enabled
VAS Lane 1 Divert 1	-Not Set-	True
01	Regular (RN)	
03	Regular (RN)	
VAS Lane 1 Divert 2	-Not Set-	True
02	Regular (RN)	
04	Regular (RN)	
VAS Lane 1 Divert 3	-Not Set-	True
05	Regular (RN)	
07	Regular (RN)	
VAS Lane 1 Divert 4	-Not Set-	True
06	Regular (RN)	
08	Regular (RN)	
VAS Lane 1 Divert 5	-Not Set-	True
09	Regular (RN)	
11	Regular (RN)	
VAS Lane 1 Divert 6	-Not Set-	True
10	Regular (RN)	
12	Regular (RN)	
VAS Lane 1 Divert 7	-Not Set-	True
13	Regular (RN)	
15	Regular (RN)	
VAS Lane 1 Divert 8	-Not Set-	True

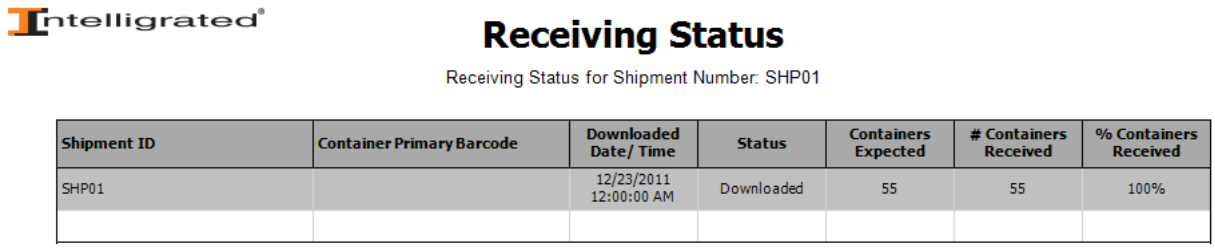
The resulting report contains the following information:

Table 10-3 Workstation Assignment Report Information

Column	Description
Destination/Workstation	The location and name of the workstation.
Type	The type of operation performed by this workstation.
Destination Enabled	Whether or not the current workstation is enabled.

10.7 Receiving Status Report

Figure 10-7 Receiving Status Report



Receiving Status

Receiving Status for Shipment Number: SHP01

Shipment ID	Container Primary Barcode	Downloaded Date/ Time	Status	Containers Expected	# Containers Received	% Containers Received
SHP01		12/23/2011 12:00:00 AM	Downloaded	55	55	100%

Table 10-4 Receiving Status Report Information

Column	Description
Shipment ID	The unique ID for the shipment.
Container Primary Barcode	The primary barcode on the container.
Downloaded Date/Time	The date and time of the WMS download that included this shipment.
Status	The current status of the shipment.
Containers Expected	The number of containers the system expects to be in the shipment.
Number of Containers Received	The number of containers in the shipment that were actually received.
Percentage of Containers Received	The percentage of containers received based on the number that were expected and the number that were received.