# SOFTROL

Software & Control for Automation

## DIRECTED SORTER USERS GUIDE Understanding the SOFTSORT DIRECTED SORTER



#### **Directed Sort by Softrol**

#### **Overview**

The Directed Sort is a semi automated garment sortation system. It uses a graduated hook system for sorting purposes. There are three major components:

- **Database** interface to the facility's route accounting system (ABS), bidirectionally communicating full updates daily and periodic updates on regular intervals during the production day.
- **Operator Workstations** one for each operator at each sort break running:
  - SoftSort Directed Sort Module
  - SoftSort Rail Manager
  - SoftSort Directed Sort Scan Engine.
- **Datamars RFID identification systems** See Chapter 2 of this document for further explanation of this component.

The Directed Sort utilizes three breaks/sorts to sort garments into day/route/stop/wearer order from the wash lots received from production; as an alternative to installing three manual sorters, the 2nd and 3rd break can be completed on the same manual sorter if a "recycle" rail is installed for returning garments to make two passes.

Sort operators scan the tag on a garment, and the Directed Sort quickly responds with a visual and audible signal, indicating for the operator where the garment should be placed on the manual sorter. This same process is carried out for each sort break, with the Directed Sorter performing all sorting decisions. Because of the availability of visual/audible output directly to the operators, there is minimal interface and interaction between operators and the computer hardware comprising the system.

#### Setup

This section goes over the setup for a new installation of the software. This installation will be done by Softrol technicians or under direct instructions of a Softrol technician. If it ever becomes necessary for this process to be preformed it will be initiated by TAC.

The setup operation of the software will have to be performed during initial startup. Also the initial setup of the Lot structure but this will be used when Lot changes occur during on-going operation.

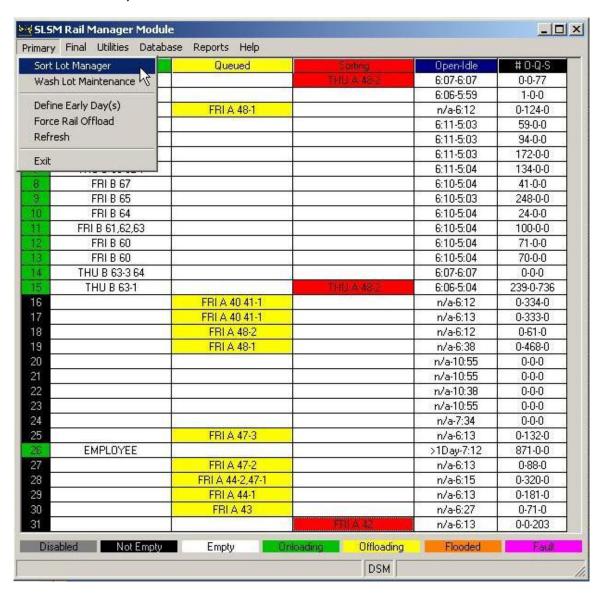
#### **Software**

Initial setup of the system will be accomplished by Softrol and will include the installation of the Directed Sort software, which includes the SoftSort Linear Sort Module (SLSM) Rail Manager, the SoftSort Directed Sorter Module

(SDSM) Scan Engine, the SDSM Operator Interface, SQL Server, and the site-specific ABS interface. Once the ABS interface performs a full update of garment IDs with customer and wearer information, and once data is verified to be complete, sort lots can be constructed for processing on the Directed Sorter.

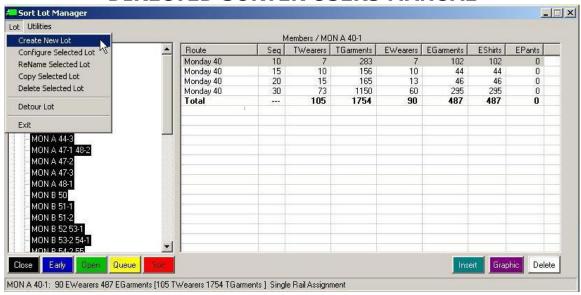
#### Lots

To create sort lots, one must start the SLSM Rail Manager program and open the Sort Lot Manager under the Primary selection on the Main Menu (See Below).



After entering the Sort Lot Manager, new lots can be created, as described in the following.

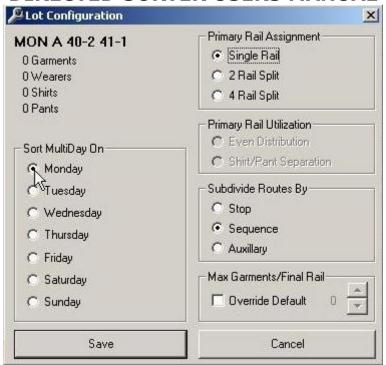
First, from the Lot Menu, select Create New Lot (See Below).



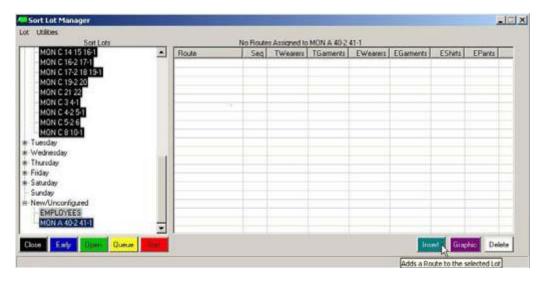
Prompts will appear to Name and configure the lot. Type the preferred name, which can be recognized by the sort operators (See Below).



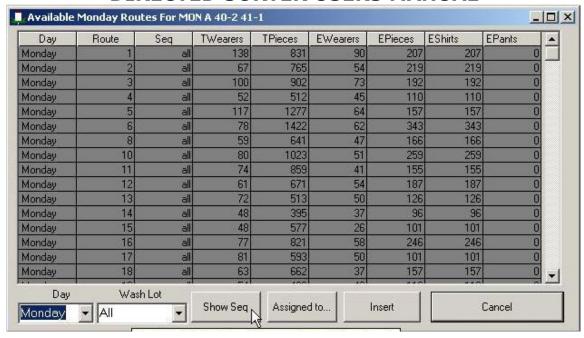
Select which day of the week for which the sort will be performed (i.e.; the "delivery" day). Also indicate if it will typically occupy a single rail, or two or four rails, and whether there will be shirt/pant separation. Indicate that routes can be subdivided by "sequence" (this may depend upon the interface ABS). Finally, indicate if there is an override number for Max Garments per each Final Rail – this is typically not necessary for the Directed Sorter (See Below).

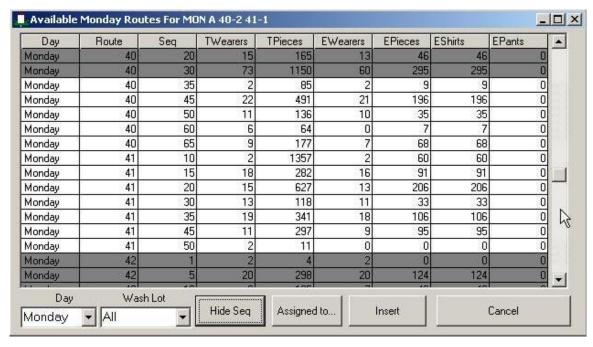


At this point, routes must be assigned to the newly created Sort Lot. Highlight the Sort Lot in Sort Lot Manager and select Insert (See Below).

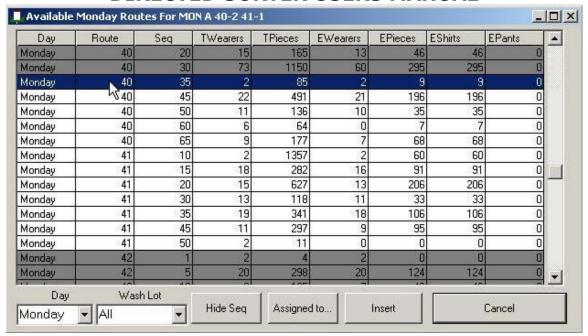


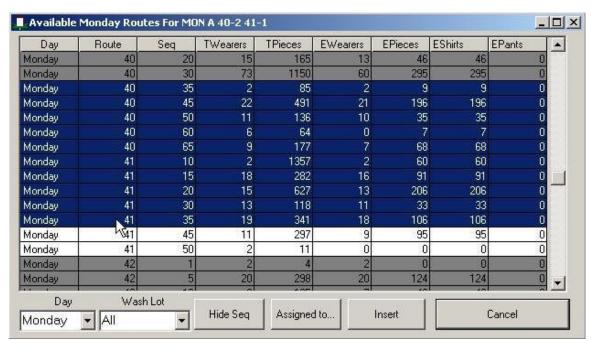
Once available routes are displayed, it is possible to break them into individual sequences (e.g.; accounts, stops, etc.) by selecting the Show Seq button (See Below).

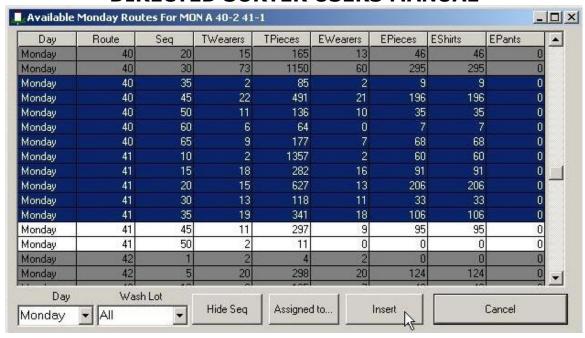




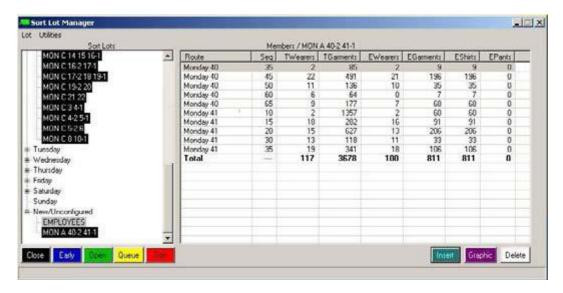
Groups of sequences may then be selected and inserted into the Sort Lot (See Below).







Thus, the Sort Lot is complete. Sequences may be deleted, or new sequences may be added, using the command buttons on the lower left of the dialog box (See Below).



Please note that this example provides for adding only certain sequences to a Sort Lot – entire routes may be added by skipping the "Show Seg" step.

#### **Operation**

Once Sort Lots have been created, they can be processed at the Directed Sort Operator Workstations. The operator(s) at the first sort station will handle all Open and Queued Sort Lots. The operator(s) at the 2nd and 3rd sort stations – which may be on a single set of rails but not necessarily – will handle the Sort Lots in the Sorting mode.

Operators at each station will receive feedback from the Directed Sort System, both visually and audibly, via the Directed Sort Scan Engine, see example below, which provides the number of the rail on which each item should be placed after it, is scanned. The systems that are in service within AmeriPride Services/Canadian Linen are what are called a graduated hook conveyor. Once the Directed Sort displays the rail number, the 11 in the yellow area, the operator places the garment on the corresponding number on the graduated hook conveyor.

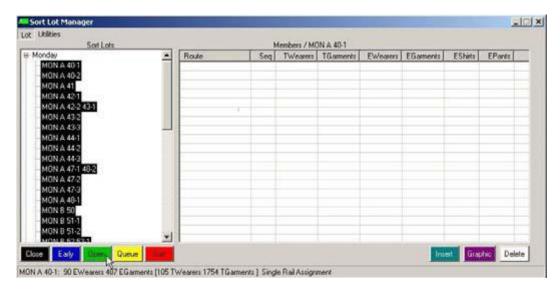
The Softrol Directed Sort Scan Engine screen gives the operator additional information other than where to place the current garment. This workstation is doing  $1^{st}$  Break or  $1^{st}$  Sort and the operator is Isabelle. The window also provides data for the garment, so that an item may be scanned to determine its status. In the example below it shows:

- Tag The RFID ID for the garment in Hex
- Day Route day (R is Thursday)
- Route The route number
- Seq ?
- Account The customer account number
- Wearer The wearer number
- Garment Type The garment style
- Last Primary ?
- Last Final ?
- Last Mend ?
- Dirty ?
- Return ?
- Mend ?
- Archive ?
- 1<sup>st</sup> ?
- Bundle -?

The white area to the left indicates the garment IDs that have been scanned and the hook they were assigned to.



To Open a Sort Lot, the Sort Lot Manager should be entered from the main screen of the Rail Manager, and the desired Sort Lot should be selected and "opened".



The requested Sort Lot will appear on an available rail in the Open column of Rail Manager.

	Open	Queued	Sorting	Open-Idle	# O-Q-S
	THU B 63-2		THU A 48-2	6:23-6:23	0-0-77
. (	OUT OF SEQUENCE			6:22-6:16	1-0-0
		FRI A 48-1		n/a-6:29	0-124-0
	THU B 57-2 61-1	100000000000000000000000000000000000000		6:27-5:20	59-0-0
	THU B 56 57-1			6:27-5:20	94-0-0
	THU B 52-2 53			6:27-5:20	172-0-0
	THU B 50 52-1			6:27-5:20	134-0-0
	FRI B 67			6:27-5:20	41-0-0
	FRI B 65			6:27-5:20	248-0-0
	FRI B 64			6:27-5:20	24-0-0
	FRI B 61,62,63			6:27-5:20	100-0-0
	FRI B 60			6:26-5:20	71-0-0
	FRI B 60			6:26-5:20	70-0-0
	THU B 63-3 64			6:23-6:23	0-0-0
	THU B 63-1		THU A 48-2	6:22-5:20	239-0-736
		FRI A 40 41-1		n/a-6:28	0-334-0
20	) [	FRI A 40 41-1		n/a-6:29	0-333-0
2-1		FRI A 48-2		n/a-6:29	0-61-0
	17	FRI A 48-1		n/a-6:54	0-468-0
	MON A 40-1			0:03-0:03	0-0-0
	4			n/a-11:11	0-0-0
	5000			n/a-10:54	0-0-0
30				n/a-11:11	0-0-0
				n/a-7:50	0-0-0
0	1.	FRI A 47-3		n/a-6:29	0-132-0
	EMPLOYEE	100-32-7-28-0-32-0-2		>1Day-7:28	871-0-0
		FRI A 47-2		n/a-6:29	0-88-0
		FRI A 44-2,47-1		n/a-6:31	0-320-0
		FRI A 44-1		n/a-6:29	0-181-0
3-0		FRI A 43		n/a-6:43	0-71-0
200			FPLA 40	n/a-6:29	0-0-203

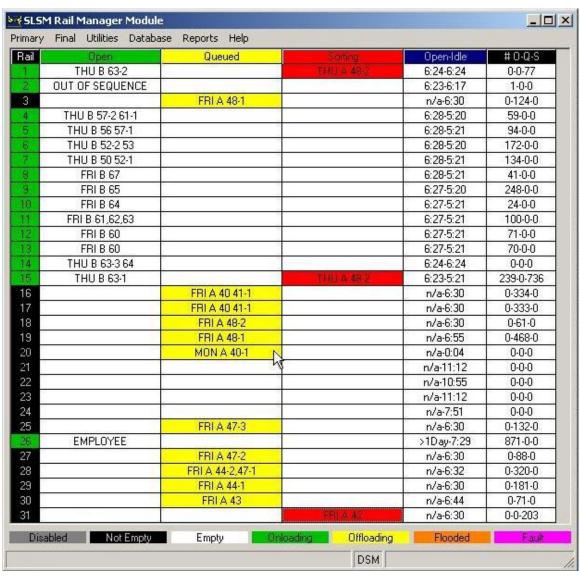
Items can now be scanned for this Sort Lot, as there is a destination rail in  $1^{\rm st}$  sort storage. The Directed Sort Scan Engine will visually and audibly provide a signal to the operator, indicating the rail on which to place the items, as they are scanned. Once the operator determines that the Sort Lot is complete through the  $1^{\rm st}$  sort, they can "Queue" the Sort Lot, indicating for the  $2^{\rm nd}$  and  $3^{\rm rd}$  sort operator(s) that they can begin handling the items.

The "Open-Idle" and "O-Q-S" columns provide key data for making a decision to change the status of the Sort Lot. Open-Idle provides two pieces of information: how long the Sort Lot has been in the Open status, in "hours:minutes" format; and how long the Sort Lot has been Idle

(i.e.; hasn't received an item from the 1<sup>st</sup> sort station), again in "hours:minutes" format. O-Q-S indicates how many items are on a rail in the Open, Queued, or Sorting status. Thus, an operator could determine that a lot is complete or nearly complete through the 1<sup>st</sup> sort station if it has been "Idle" for a significant period of time or if the "O" column entry indicates that it has received the typical maximum number of goods.

To Queue the Sort Lot, an operator clicks on the name of the Sort Lot in the Open column and chooses to Queue it. If an operator accidentally selects to "Close" the lot, a warning screen is provided to double-check that they wish to do so.





When the operator(s) at the 2<sup>nd</sup> sort station are ready to process goods, the status is changed from "Queued" to "Sorting". With the Directed Sort System and manual graduated hook or spider sorters, two passes are made in the Final Sort or "Sorting" operation. This may be completed on two sets of manual sorters, or on a single set of rails, if a recycle rail is available to return the garments. In any case, after the 2<sup>nd</sup> sort, garments must be offloaded and sorted completely, by rail, for the 3<sup>rd</sup> sort – all

of the garments from the first rail of the 2<sup>nd</sup> sort must be completed through the 3<sup>rd</sup> sort station before any garments from the second rail of the 2<sup>nd</sup> sort can be scanned; all of the garments from the second rail of the 2<sup>nd</sup> sort must be completed through the 3<sup>rd</sup> sort station before any garments from the third rail of the 2<sup>nd</sup> sort can be scanned; all of the garments from the third rail of the 2<sup>nd</sup> sort must be completed through the 3<sup>rd</sup> sort station before any garments from the fourth rail of the 2<sup>nd</sup> sort can be scanned; etc.

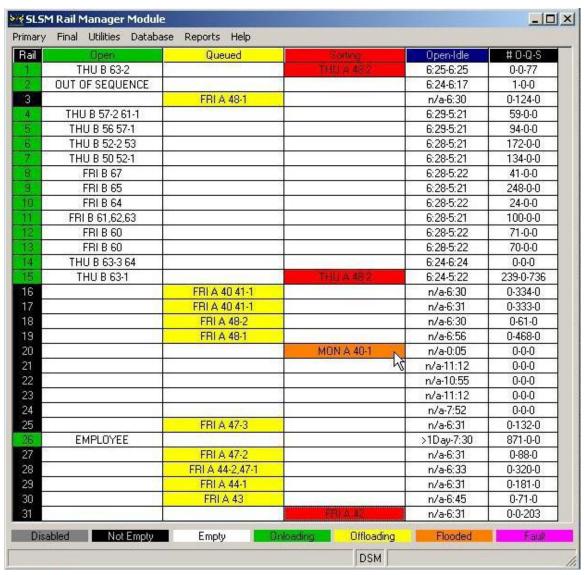
Operators at each sort station must also indicate their position in the system. As mentioned above, the SDSM window indicates on which "Break" an operator is working. To change sort, the SDSM window is selected, and the numbers 1, 2, or 3 are selected on the keyboard. A "1" places an operator at the  $1^{\rm st}$  sort station. A "2" places an operator at the  $2^{\rm nd}$  sort station, etc.



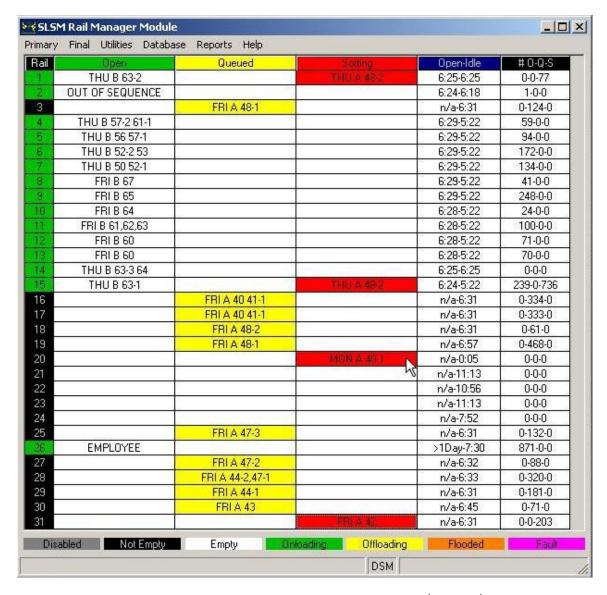


Following is how operators change a Sort Lot from the Queued status to the  $2^{nd}$  sort sorting status and to the  $3^{rd}$  sort sorting status. Note that the highlight color of the Sort Lot in the sorting column changes from orange to red when switching from  $2^{nd}$  to  $3^{rd}$  sort.

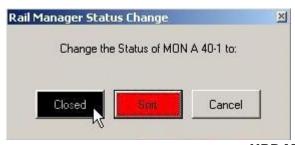




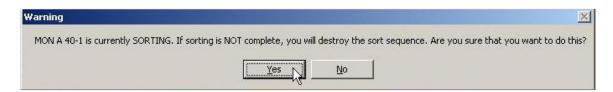




After garments have been processed through both the  $2^{nd}$  and  $3^{rd}$  sort stations, the Sort Lot may be closed.



As mentioned above, the warning window appears, and closing the sort lot is confirmed.



The Sort Lot is now complete. After processing at the 3<sup>rd</sup> sort station, garments will be in wearer, account, route, and day order. They can now be bundled, tied, or bagged, as necessary, for delivery to route storage.

#### **System Start-up Procedure**

Perform the normal Windows Startup on all workstations. The appropriate Directed Sort programs will startup automatically. If an issue occurs during startup see the Troubleshooting section of this document.

The exception will be the workstation that is the Directed Sort server. This system will need to run 24 X 7 to insure the nightly update is preformed. See the Data Transfer section of this document for an explanation of this process.

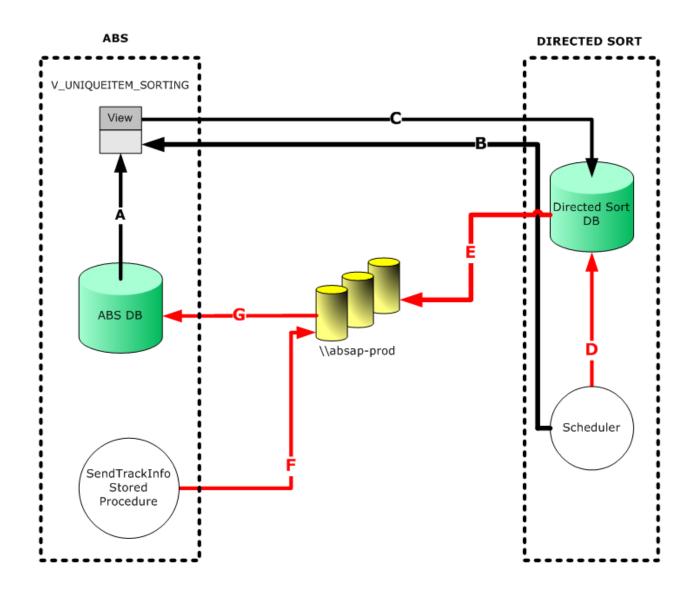
#### Shutdown

Exit all of the Directed Sort programs on perform a normal Windows shutdown. If an issue occurs during shutdown see the Troubleshooting section of this document.

The exception will be the workstation that is the Directed Sort server. This system will need to run 24 X 7 to insure the nightly update is preformed. See the Data Transfer section of this document for an explanation of this process.

Garment Data Transfer

### DIRECTED SORTER USERS MANUAL SOFTROL DIRECTED SORT FILE TRANSFER PROCESS



Transfer of garment information from ABS to Softrol Directed Sort

Transfer of out scan count from Softrol Directed Sort to ABS

DATA POINT	DESCRIPTION
A	The ABS system updates the V_GARMENTSREADYTOBESORTEDFULL when any of the following garment fields change:  • CUSTOMERNUMBER  • DAYNUMBER  • DEPOTCODE

<ul> <li>DESTINATION</li> <li>FLAGS</li> <li>IDCODE</li> <li>PLANTCODE</li> <li>PRODUCTCODE</li> <li>ROUTECODE</li> <li>ROUTENUMBER</li> <li>SORTSTRING</li> <li>STACKCHANGESTRING</li> <li>STOPNUMBER</li> <li>WEARERNUMBER</li> <li>The Directed Scheduler checks the V_UNIQUEITEM_SORTINFO view every hour to see if there are any changes. If there are changes a request is sent to load the changes to the Directed Sort database. The Directed Sort Scheduler also has a predetermined time each day that a request to load the entire database from the view, for the specific</li> </ul>
Branch, is sent to ABS. This is scheduled to occur during non production hours.
The Directed Sort Scheduler's request checks the V_UNIQUEITEM_SORTINFO view and finds all garment that have been updated, in the case of an incremental update, or all records for the specific Branch, in the case of a complete database update, and sends them to the Directed Sort database.
The Directed Sort Scheduler sends a request to the Cheetah database every 15 minutes to send all out scans to the ABS database.
Per Data Point D Timing the Directed Sort sends the out scan information to the network share, interface\files. The file is named sendtrackinfo_DDDDDDDDDDBBB_XXX_YYYY.txt. The file naming convention is:  • DDDDDDDD = Date (year, month, date format)  • BBB = Branch Code  • XXX = Random Generated Number  • YYYY = Random Generated Number  The file format is:  • PLANTCODE  • IDCODE  • Scan Date  • Scan Time  • Scanner ID  • Scan Status
The ABS "SendTrackInfo" stored procedure periodically runs to update any unprocessed scans in the queue.
If there are any unprocessed scans in the share ABS "SendTrackInfo" Stored Procedure request pushes these updates to the SCAN table in the ABS customer database. This process registers the IDCODE, and updates the following fields:  • SCANSTATION • SCANTIMESTAMP • TRANSACTIONTYPE_ID

FIELD	DESCRIPTION	SIZE - TYPE
CUSTOMERNUMBER	Customer number in Oracle.	12 Characters - Numeric
DAYNUMBER	Day of the week, 1=Monday,	1 Character - Numeric
	2=Tuesday, etc.	
DEPOTCODE		12 Characters - Alpha

DESTINATION	Destination Control, for example: hanging delivery or folded.	6 Characters - Alpha
FLAGS	Option flags.	10 Characters - Alpha
IDCODE	Garment Chip ID (RFID).	24 Characters – Alpha/Numeric
PLANTCODE		6 Characters – Alpha/Numeric
PRODUCTCODE		12 Characters - Alpha
ROUTECODE		
ROUTENUMBER	Unique route number during the day	6 Characters - Numeric
Scan Date	Date the garment was scanned out of the Metricon.	8 Characters - Date
Scanner ID	Metricon Scanner ID that scanned out the garment.	3 Characters – Alpha/Numeric
Scan Status	Indicates if the scan was OK or there was an issue. "ID code 00D007C7B918 was scanned less than 24 before," is an example.	
Scan Time	Time garment was scanned out of the Metricon.	6 Characters - Numeric
SCANSTATION		
SCANTIMESTAMP		
SORTSTRING	Sort string used by Metricon to sort garment.	80 Characters - Alpha
STACKCHANGESTRING	Part of sort string, when this string changes then start a new stack on folder (for folded delivery) or new tie for tie-out station (for hanging delivery).	80 Characters - Alpha
STOPNUMBER		6 Characters - Numeric
TRANSACTIONTYPE_ID		

#### **Troubleshooting**

#### 1. Nightly Update is failing or not processing.

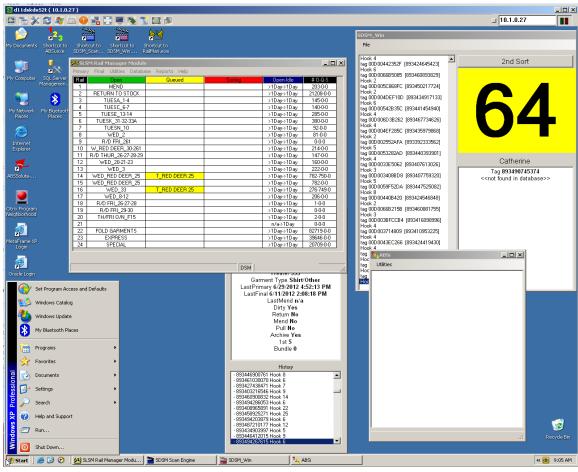
This usually occurs when the AD the password has been changed for the user that is logs into the main workstation this would be:

- **Calgary**  $2^{nd}$  Sort Workstation computer name D11DSKDX52T **Toronto**  $1^{st}$  Sort Workstation computer name D16DSKCW52T

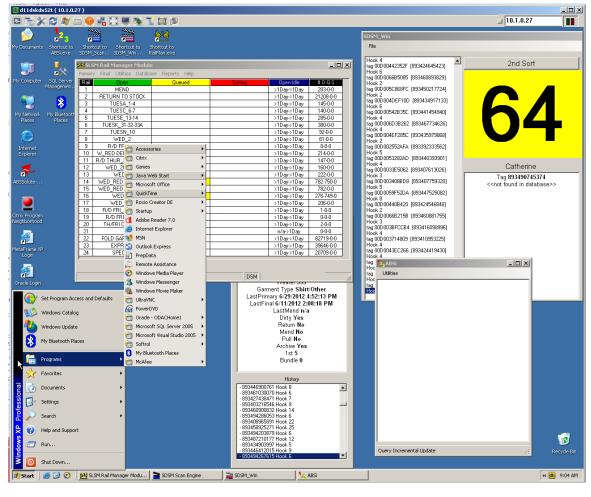
You will also need to change the password in the scheduler.

#### Follow the steps below:

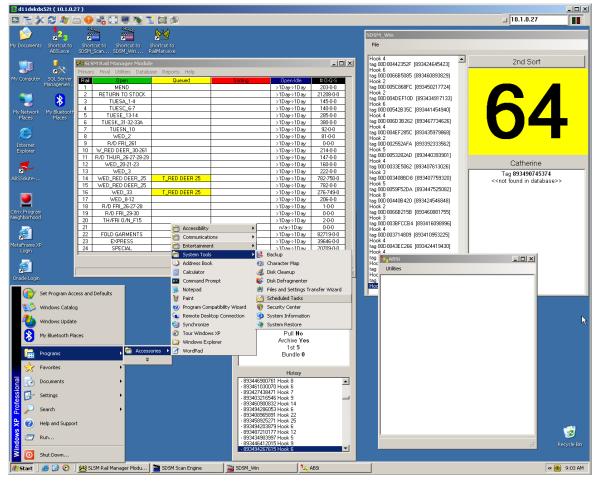
First left click on the Start Button:



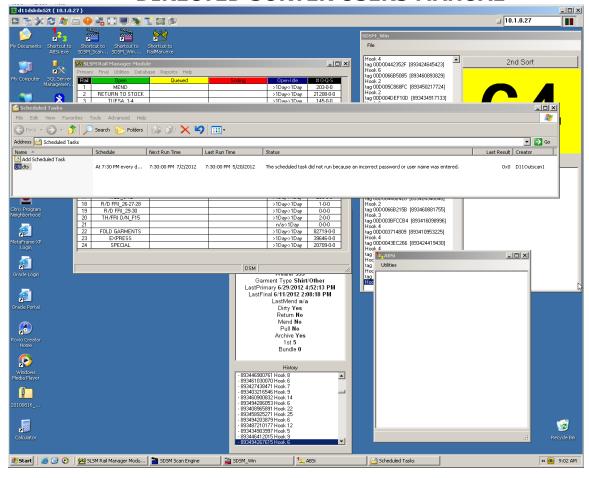
Go to Programs and then Accessories:



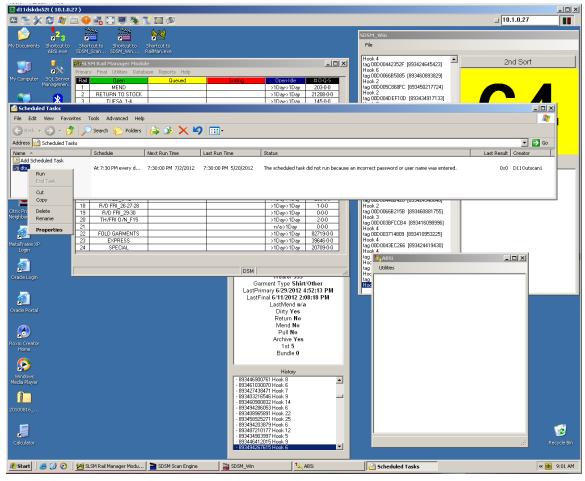
Go to System Tools then left click on Scheduled Tasks:



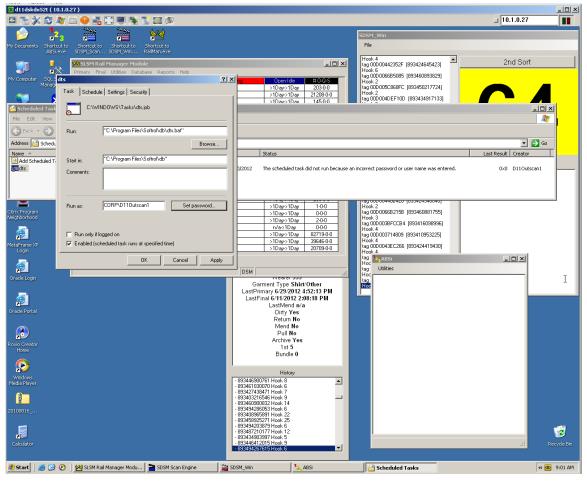
When you click on Scheduled Tasks the following will appear:



Find the line that has DTS on the far left and right click on the DTS:



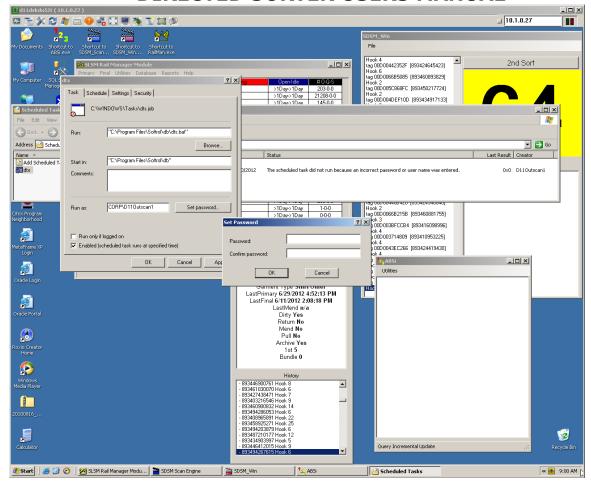
Next left click on Properties:



Verify that in the Run as box it has Corp\the computer name of the system. The computer name will be:

- Calgary -D11DSKDX52T
- Toronto -D16DSKCW52T

If this is not correct change to read correct for the Branch. If it is correct click on the Set Password button:



Enter in the correct password for the user that logs into the system. When complete, click OK and then monitor to insure the nightly update ran correctly.

#### 2. RAIL MANAGER ERROR: Run-time error '52'

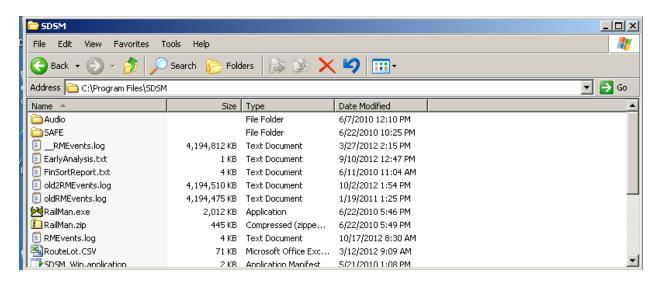
This error will occur when attempting to start the Rail Manager program, see blow:



This usually means the RMEvent.log is full and a new log file needs to be generated. Here are the steps to follow:

- Double click on the "My Computer" icon.
- Double click on "Default (C:)"
- Double click on "Program Files"
- Double click on "SDSM"

It will look like below.



- Rename the RMEvent.log to oldRMEvent.log.
  - If oldRMEvent.log already exists, like the example above, rename the RMEvent.log to old2RMEvent.log.

**NOTE:** If this occurs a 3<sup>rd</sup> time call Softrol support.

• Restart the Rail Manager program using the "Rail Manager Icon"

