

Version 25



Trapeze

Enterprise Asset Management

EAM Print Service & Label Configuration

Reference Guide

Trade Secret | February 2025

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Trapeze provides several ways to connect with the Customer Care team. Please provide detailed information to the representative. If you are reporting an issue by e-mail, include any error messages, screen shots of your problem, and steps to replicate the issue.

Customer Care is available Monday through Friday, 8:00 a.m. to 8:00 p.m., Eastern Standard Time.

Toll-Free Telephone: 1-877-411-8727

E-mail: cc@trapezegroup.com

FTP Site: <https://ftps.trapezegroup.com/>

Web Site: <https://collaborate.trapezegroup.com>

The website provides access to Trapeze Collaborate which offers resources to implement and operate the software, search knowledge, participate in communities, log/track service requests, sign-up for release alerts, view product health recommendations, and download updates or documentation. For secure access to Collaborate, contact Customer Care through the website or by calling the number above.

Product Compatibility

Refer to the latest [Product Compatibility](#) information on Trapeze Collaborate for requirements including operating system information, databases, Crystal reports, network protocol, HTTP servers and browsers that are supported.

EAM Print Service & Label Configuration

February 2025

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1. Overview

EAM allows users to print labels for a variety of purposes. This functionality is supported using Intermec (IPL), ZPL, or EPL label programming languages. EAM provides out-of-the-box label printer types for Intermec, ZPL, and EPL labels. Other label programming languages can be used by creating custom label printer types and specifying codes for the targeted label programming language.

The EAM Print Service is an external program that can be run separately or via a Windows Service to facilitate printing labels from EAM in environments where the EAM Application Server cannot access the printers. This is usually seen in cloud environments like EAM Cloud or TCMS Cloud.

This document focuses on the setup required for ZPL label printing, details about barcode and QR code configuration, as well as setup and installation for the EAM Print Service.

2. Label Configuration

ZPL codes are configured on the **Label Printer Types** screen in Enterprise Portal. Users choose what pre-defined data source they would like to be used as the data for that code string. Then, the user manually enters the specific ZPL code string required to output the text they want.

The printer and label type can be defined multiple times in the header of the Label Printer Types screen.

Label Printer Types

Printer type: ZEBRA EPL (4 X 2) Label type: PART RECEIPT WARRANTY LABEL, PART TRANSFER LABEL, **BIN LABEL**

Label Printer Codes

Number of labels: 1

Row #	Delete	Code type	Code string
1	☐	BEGIN1	[PERIOD]
2	☐	BEGIN2	N

The **Printer type** needs to be defined for each **Label type**. The same printer type should be chosen for each label type that will be used. When a process needs to print a label, the correct definition is retrieved automatically from this screen based on the label type appropriate to the context.

The following is a list of the available label types and their intended usage:

- **Part Receipt Label:** Label for parts being received.
- **Part Receipt Warranty Label:** Label for parts being received which is based on the Part Receipt Label with the addition of Purchase Order ID and Receipt Date.

Note: If the classification of the Part ID suffix is warrantable, this label will be used when printing a part receipt. If the classification of the Part ID suffix is not warrantable or if the PART RECEIPT WARRANTY LABEL does not exist for the specified printer, then the standard Part Receipt Label will be used.
- **Part Transfer Label:** Label for parts being transferred to another location.
- **Bin Label:** Label for bins.
- **Control Label:** Label for parts that were removed from a vehicle but need to be retained for warranty purposes or for rebuilding.

- **Rebuild Part Label:** Label for parts that are being rebuilt. If a serialized part was rebuilt, the label includes the serial number.
- ✔ Tip: You may combine the same printer type with more than one label type by creating separate entries for each combination.
- ✔ Tip: A history of labels can be printed by going to the Parts – Setup – Options screen and enabling the **Track history of labels printed** setting.

Set up Control Printer

To set up the control printer, you must set the following settings on the **Label Printer Types** screen, the **Printer Devices/Queues** screen, and the **Users** screen. For more information on each field, refer to the help for the screen.

Label Printer Types Screen

Label Types

- **Part Receipt Label** - Labels printed for parts received from either ordering or part transfers from another location.
- **Part Transfer Label** - Labels printed for parts that are going to be sent to another location.
- **Control Label** - Labels for parts removed from assets or components that are being tracked for warranty, rebuild, or re-use purposes. Parts being put back into stock after coming off an asset.
 - If configured to do so, control labels are sometimes printed when a part is requested for a work order. The tech picking up the part to put on an asset will also be given the label to place on the part coming off of the asset.
- **Rebuild Label** - Labels for parts that have been rebuilt and are being placed back into stock.
- **Bin Label** - Labels to help identify bins and potential parts stored in those given bins.

Label Types Supported Label Codes

Label types only support certain codes. The specified workflow typically only populates certain related label data and only codes associated with that data can be printed onto the given label type. An example of this is the label code "WORK_ORDER_ID" cannot be used on a bin label, as there is no specific work order context for a bin. The following are label codes that can be used per label type.

Label Codes supported by all label types:

- LABEL_BEGIN

- LABEL_DIMENSION
- LABEL_END
- LABEL_HEIGHT
- LINE_BEGIN
- LINE_END
- BEGIN1
- BEGIN2
- BEGIN3
- BEGIN4
- BEGIN5
- END1
- END2
- END3
- END4
- END5

To set up the label printer:

1. Open the **Label Printer Types** screen.

The screenshot shows the 'Label Printer Types' configuration screen. At the top, there's a teal header bar. Below it, a toolbar contains 'Search', 'Reload', 'Sort', and a '+ New' button (indicated by a red arrow). To the right of the toolbar are 'Select Filter' and 'Select Sort' dropdowns. Below the toolbar, there's a section for 'Label Printer Codes' with a 'Printer type' dropdown and a 'Label type' dropdown (showing 'PART RECEIPT LABEL', 'PART RECEIPT WARRANTY LABEL', and 'PART TRANSFER LABEL'). At the bottom, there's a table with columns 'Row #', 'Delete', 'Code type', and 'Code string'. The 'Number of labels' is set to 1.

2. Click **New**.
3. Enter the **Printer type**.
4. Select **Control Label** as the Label type.
5. In the Group/Row section, enter the **Code types** by selecting from the drop-down list.
6. Click **Save**.

Printer Devices/Queues Screen

1. Open the **Printer Devices/Queues** and follow the steps below. For more information on each field, refer to the help for this screen.

The screenshot shows the 'Printer Devices/Queues' screen. At the top, there is a teal header bar with the title 'Printer Devices/Queues'. Below the header, there is a toolbar with three buttons: 'Search' (magnifying glass icon), 'Reload' (refresh icon), and 'Sort' (up/down arrows icon). To the right of these buttons are two dropdown menus: 'Select Filter' and 'Select Sort'. Below the toolbar, there is a section for 'Printer ID' with two input fields. On the left side, there is a sidebar with the text 'Printer Devices / Queues'. The main content area is titled 'Printer Devices/Queues' and contains the following fields: 'Description' (text input), 'Printer type' (text input), 'Label or standard' (text input), and 'Device/queue name' (text input). Below these fields are three checkboxes: 'Send output to client station', 'For messages only', and 'Record in database only'.

2. Click **New**.
3. Enter the **Printer ID**.
4. Enter a **Description**.
5. Select the same **Printer type** as previously created on the Label Printer Types screen.
6. In **Device/queue name** field, enter the name of the device to print to. For more information on this field, refer to the help for the screen.
7. Check the box for **Send output to client station**.
8. Click **Save**.

Users Screen

Users should have a default label printer defined to facilitate automated label printing activities such as the ability to automatically print labels when receiving parts. For more information on each field, refer to the help for this screen.

To set up the Users screen for each user that will be printing:

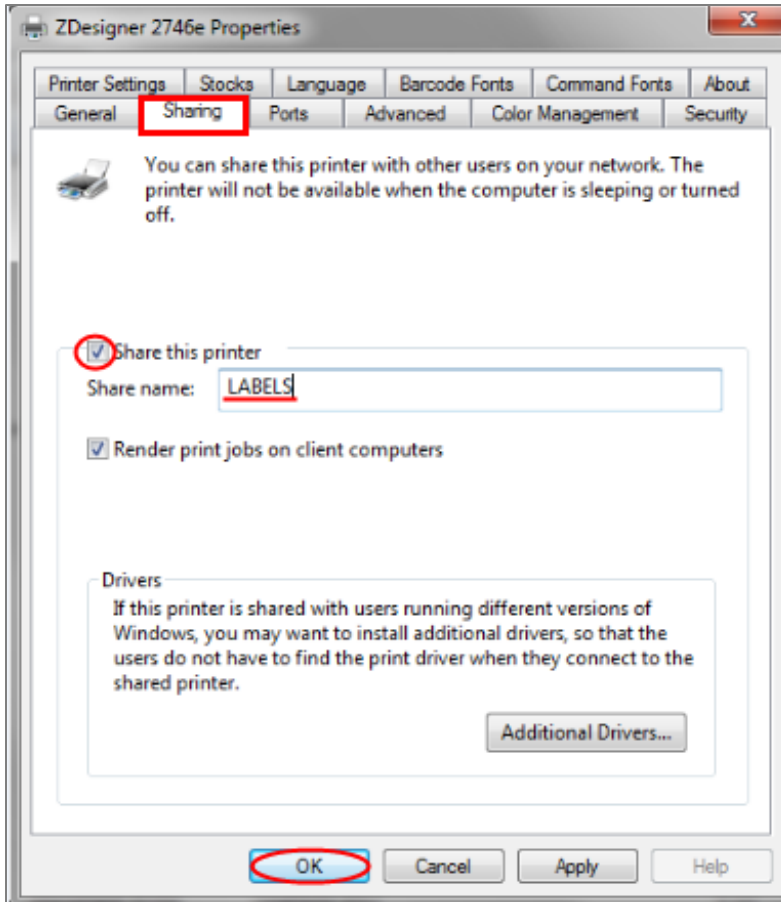
1. Open the Users screen.

2. Select the user that needs to be updated.
3. Click **Edit** to open the record for update.
4. On the Printers tab, select the **Printer ID** that you entered on the Printer Devices/Queues screen.
5. Check the **Default label printer** option.
6. Click **Save**.

Example – Zebra Printer Setup

Depending on your operating system, screens may appear slightly different than those in the sample screenshots provided.

1. Connect printer to the PC via a serial cable/USB/LPT1.
2. Install the printer drivers from the CD. See Zebra documentation for details.
3. Share the printer.
 - a. Right-click on the printer and choose **Printer Properties**. Choose the Sharing tab, check the box for **Share this printer**, and enter the desired Share name for your shared printer. Then, click **OK**.



4. Log into EAM as an administrative user and create a new Printer Device/Queue.
 - a. Go to the **Printer Devices/Queues screen** and click **New**. Complete the fields for **Printer ID** and **Description**.
5. In the **Printer Type** field, select the appropriate Zebra ZPL or Zebra EPL label type for your printer from the dropdown. The **Label or standard** field will automatically populate based on your selection.

The **Device/queue name** field should be:

\\MACHINE_NAME\LABELS

Where **MACHINE_NAME** is the name of the machine where the printer is shared.

6. Check **Send output to client station** and click **Save** to process.
 - a. Add a new Printer Device/Queue to all users that will be printing to the label printer.
 - b. Test the printer using the screen or report needed for your tasks.

Set up Barcodes

ZPL, EPL and Intermec (IPL) programming languages support the ability to print Code 39 Full ASCII barcodes. Some of the out-of-the-box label printer types are configured to print barcodes in this format. This includes barcodes on work order printouts, all formats of part labels, and barcodes that are output automatically.

When scanning, the beam needs to clearly see whitespace on both sides of the barcode at the same time for it to know that it is seeing a valid barcode.

The data within a barcode generated by the system follows these rules:

- Each barcode starts with /F and ends with /F. The /F is interpreted by wedge scanners as &. The GUI and Enterprise Portal use these indicators to know whether the user is scanning a barcode or simply typing data. The difference is important because barcodes generated by the system also include an identifying character to note what type of data is included in the barcode.
- Part barcodes use a prefix of P, tasks use a prefix of T, work order IDs use a prefix of W, etc. The system needs to know whether the user is scanning a barcode generated by the system so it can strip off this prefix character before outputting the scanned data into the field. MobileFocus also uses this prefix character to know the context of what you are scanning.
- Barcodes often include other special characters, the most common being \$. Wedge scanners interpret this into a tab, and use this to separate different fields within a barcode, such as the three parts of a work order ID or the part ID, part suffix, and in some cases the part location ID.

A part barcode for part ID A2230001943, suffix 0, at location A21 would contain the following text string:

```
/FPA2230001943$I0$A21/F
```

It would look like this if you scanned it into Notepad:

```
&PA2230001943 0      A21&
```

To save barcode space, you can omit the location from the barcode, in which case the text string within the barcode would be:

```
/FPA2230001943$I0/F
```

It would look like this if you scanned it into Notepad:

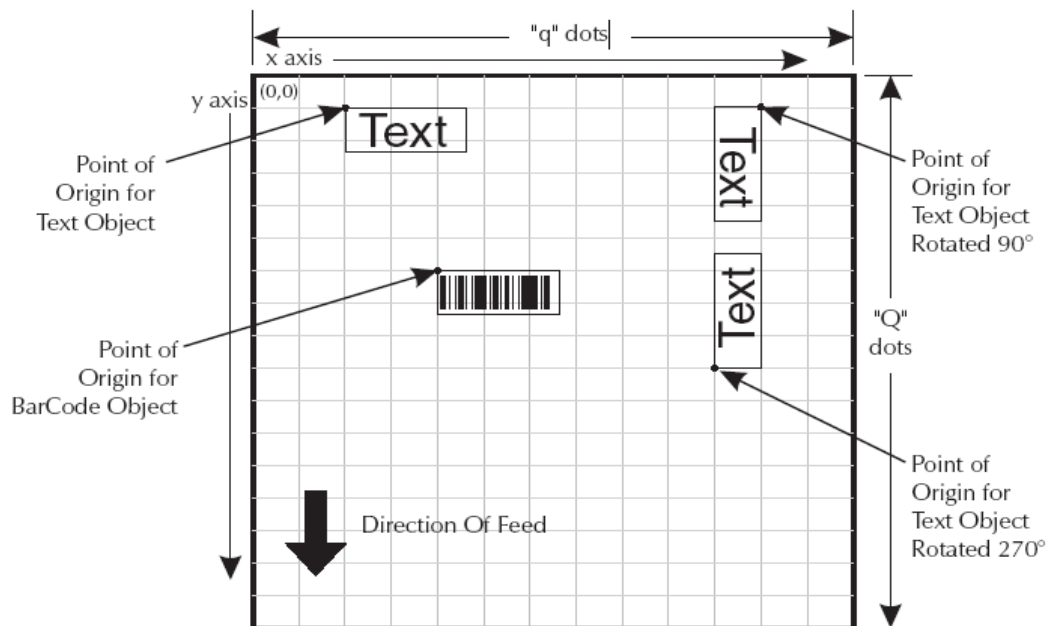
```
&PA2230001943 0&
```

Zebra ZPL Barcode Setup

Set up codes for control of label activity.

Sample Format

1-inch equals about 203 dots for references.



Row	Printer type	Label type
1	ZEBRA ZPL 2X1.5 IN	CONTROL LABEL

Label Printer Codes

Printer type: ZEBRA ZPL 2X1.5 IN

Label type: PART TRANSFER BIN LABEL

Row	Code type	Code string
1	BEGIN1	^XA
2	PART_BAR	^FO25.25^BY2^B3N.N.75.N.N^FD[DATA]^FS
3	PART_CHARACTER	^FO25.100^ARN.20.15^FDPart ID: [DATA]^FS
4	LOCATION_CHARACTER	^FO25.130^ARN.15.12^FDLocation: [DATA]^FS
5	BIN_CHARACTER	^FO25.160^ARN.15.12^FDBIN: [DATA]^FS
6	DESCRIPTION	^FO25.190^ARN.15.12^FDDescription: [DATA]^FS
7	VENDOR_CHARACTER	^FO25.220^ARN.15.12^FDVendor: [DATA]^FS
8	VENDOR_BAR	^FO25.260^BY2^B3N.N.75.N.N^FD[DATA]^FS
9	END1	^XZ

BEGIN1 ^XA for Start new label

PART_BAR ^FO25.25 is field origin upper left corner, x,y axis

 ^BY2 is Barcode (BY) and width (2); 1-10 are valid

^B3N.N.75.N.N is Code 39 (B3); is Normal Orientation(N); is No Check digit (N); is barcode height (75) in dots; is No print interpretation (N) ; is No line above code (N);

^FD[DATA] is field data (^FD) and variable data [DATA]

^FS is end of field definition.

PART_CHARACTER

^FO25.100 is 100 dots from top to start

^ARN.20.15 is a text field (^A); is font R with A-Z as valid(R); is normal orientation (N); is character height (20); is width (15).

^FDPart ID: is label and variable data [DATA]

^FS is end of field definition.

Each line is repeated for similar format.

END1 ^XZ is for end of label format

Example

This is the regular label with a barcode and small font.

The code for the font size is 20.15 on the PART_CHARACTER line where 20 is the character height and 15 is the character width.

LABEL WITH BAR CODE AND SMALL FONT:

Row	Delete	Code type	Code string
1		BEGIN1	^XA
2		PART_BAR	^FO25.25^BY2^B3N.N.75.N.N^FD[DATA]^FS
3		PART_CHARACTER	^FO25.100^ARN.20.15^FDPart ID: [DATA]^FS
4		DESCRIPTION_SHORT	^FO25.130^ARN.15.12^FDDescription: [DATA]^FS
5		DATE_REMOVED	^FO25.160^ARN.15.12^FDDate Removed: [DATA]^FS
6		WORK_ORDER_ID	^FO25.190^ARN.15.12^FDWork Order: [DATA]^FS
7		DATE_INSTALLED	^FO25.220^ARN.15.12^FDDate Installed: [DATA]^FS
8		SERIAL_NO_REMOVED	^FO25.260^ARN.15.12^FDSerial Number: [DATA]^FS
9		END1	^XZ

RESULT:



Changes

By changing the 20.15 to 80.60, the font size for the Part ID is made bigger.

LABEL, NO BAR CODE, LARGE PART ID AND SERIAL NUMBER:

Number of labels: 1			
Row	Delete	Code type	Code string
1		BEGIN1	^XA
2		PART_CHARACTER	^FO25.40^ARN.80.60^FDPart ID: [DATA]^FS
3		DESCRIPTION_SHORT	^FO25.100^ARN.15.12^FDDescription: [DATA]^FS
4		DATE_REMOVED	^FO25.130^ARN.15.12^FDDate Removed: [DATA]^FS
5		WORK_ORDER_ID	^FO25.160^ARN.15.12^FDWork Order: [DATA]^FS
6		DATE_INSTALLED	^FO25.190^ARN.15.12^FDDate Installed: [DATA]^FS
7		SERIAL_NO_REMOVED	^FO25.230^ARN.80.60^FDSerial No: [DATA]^FS
8		END1	^XZ

RESULTS:

Part ID: 83023022 – 98

Description: TRACTION MOTOR 5BL
Date Removed: 05/03/2012
Work Order: 434 – 2012 – 1400
Date Installed: 04/30/2012

Serial No: 112456789ABC005 – 2008

Part ID: 83023022 – 98

Description: TRACTION MOTOR 5BL
Date Removed: 05/03/2012
Work Order: 434 – 2012 – 1400
Date Installed: 05/09/2012

Serial No: 1124634080005 – 2005

Set up ZPL QR Code

On the Label Printer Types screen, the user may select the Code Type that they want. This will be the data source that the app will use for the field. In the case of a QR code, they will select the field they want and then will type in the related Code String that will output the QR code.

Label Printer Codes			
Number of labels: 1			
Row #	Delete	Code type	Code string
8	☐	LOCATION_CHARACTER	A50,100,0,4,1,1,N,[OQ]Location:[DATA][CQ]
9	☐	PART_CHARACTER	A50,180,0,4,1,1,N,[OQ]Part:[DATA][CQ]
10	☐	DESCRIPTION	A50,220,0,4,1,1,N,[OQ]DESC:[DATA][CQ]
11	☐	VENDOR_CHARACTER	A50,370,0,4,1,1,N,[OQ]VENDOR:[DATA][CQ]
12	☐	PART_BAR	B41,0,0,3,2,5,85,N,[OQ][DATA][CQ]
13	☐	VENDOR_BAR	B41,260,0,3,2,5,85,N,[OQ][DATA][CQ]
	☐		

QR Code Format

Language: ZPL

```
^FO[X-OFFSET][Y-OFFSET][Z-OFFSET]
^BQ[FIELD_ORIENTATION],[MODEL],[MAGNIFICATION_FACTOR],[ERROR_CORRECTION],[MASK_VALUE]
^FD[ERROR_CORRECTION][INPUT_MODE],[DATA_TYPE][DATA]
^FS
```

Example

```
^XA^LRY
^FO50,50^GC70,2,B^FS
^FO73,73^ADN,38,22^FDT^FS
^FO128,50^ADN,36,20^FDMBTA Asset:^FS
^FO128,90^ADN,40,10^FD01234567890123456789^FS
^FO80,130^ADN,30,14^FD[C] 01234567890123456789^FS
^FO50,300^GB150,50,40,,3^FS
^FO52,309^ADN,38,22^FR^FDITEST!^FS
^FO250,300^ADN,36,20^FDXXX-YYY-ZZZ-nnnnnn^FS
^FO550,50^BQN,2,20^FDMM,AXXX-YYY-ZZZ-nnnnnn^FS
^XZ
```



For further information about ZPL QR Code programming, reference online ZPL programming guides.

3. EAM Print Service

The EAM Print Service is an external program that can be run separately or via a Windows Service to facilitate printing labels from EAM in environments where the EAM Application Server cannot access the printers. This is usually seen in cloud environments like EAM Cloud or TCMS Cloud.

Requirements

- EAM Data Services must be running in a supported version and must be accessible by the EAM Print Service.
- EAM user must have a label printer setup with **Send output to client station** unchecked. It is recommended to check **Database only** on this printer as the output is not needed.
- The printer(s) that will be used must be reachable on the machine running the print service via the name you have configured in EAM as the device/queue name.

Compatibility

EAM Print Service Version	v1.0.1
Supported EAM Data Service Version	v23.1.1+

Set up EAM Print Service

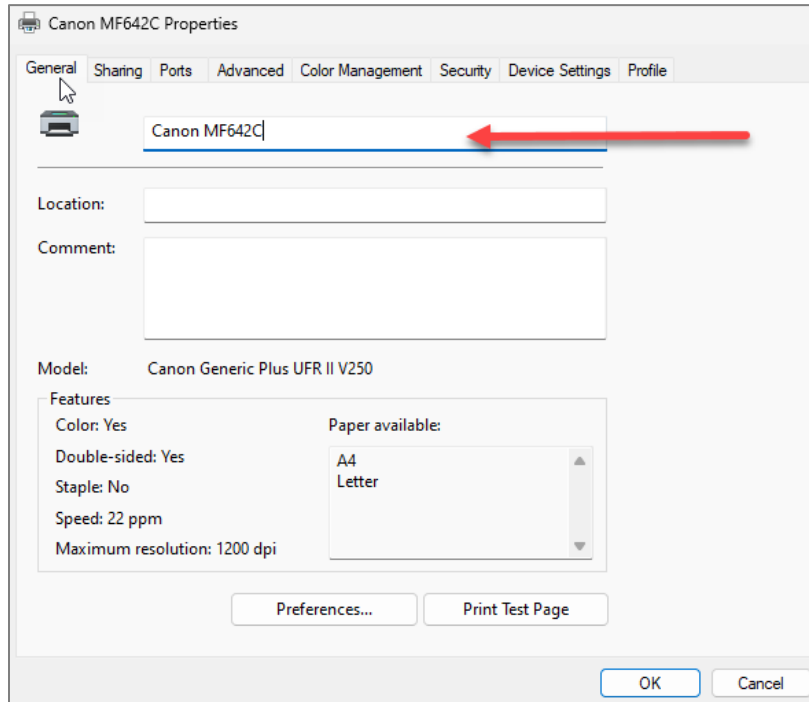
Parts - Setup - Options Screen

The screenshot shows the 'Parts - Setup - Options' screen. On the left is a sidebar with a teal header and a list of options: General, Issues, Part Status Tracking (highlighted in orange), Stock Promotion, EOQ, Messaging, and Labels. The main content area has a grey header 'Parts options' and a white body. The 'Part Status Tracking' section contains an unchecked checkbox labeled 'Enable part status tracking' (highlighted with a red box). Below this is a section titled 'Part suffix used for part status' with a list of suffixes and corresponding input boxes: New, Rebuilt, Used, Core-awaiting warranty, Core-awaiting rebuild, and Scrapped.

Enable **Track history of labels printed**.

Printer Devices/Queues Screen

Must have a printer setup with device/queue name = Your printer NAME (not path). The Device/queue name must match the Printer name found in Windows (IE, in the Printer properties dialog)



Record in database only should be checked with nothing else checked.

The screenshot shows a configuration window titled 'Printer ID' with two tabs: 'PRINT SERVICE PRINTER' and 'PRINTER TO PRINT USING THE EAM PRINT SERVICE'. The main area is titled 'Printer Devices/Queues'. It contains several input fields: 'Description' (PRINT SERVICE PRINTER), 'Printer type' (ZEBRA ZPL (4 X 2)), 'Label or standard' (LABEL), and 'Device/queue name' (ZDesigner ZQ630 (CPCL)). At the bottom, there are three checkboxes: 'Send output to client station' (unchecked), 'For messages only' (unchecked), and 'Record in database only' (checked).

Users Screen

User must have the printer(s) listed as Supported. A printer does not have to be the Default label printer for that user to be used with the EAM Print Service.

User ID

Printers

Row #	Delete	Printer ID	Device/queue name	Default standard printer	Default label printer
1	☐	PRINT SERVICE PRINTER	PRINTER TO PRINT USING THE EAM	☐	☒

Install EAM Print Service

Versions of the print service can be found here: \\trp-cdc-fs0\EAM\CC\Tools\PrintService. The following are high-level steps to install the EAM Print Service.

1. Extract the EAM Print Service.
2. Install the EAM Print Service.
3. Configure the Window Service.
4. Configure the EAM password to use for connections.
5. Update the EAM Print Service's configuration file.
6. Start the Service.

To install the service, download the archive for the desired version and follow the steps below:

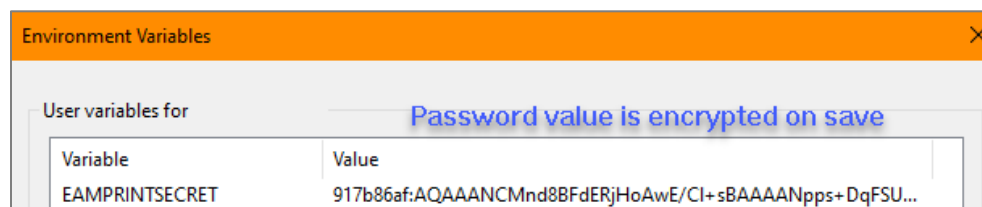
1. Extract the EAM.Print Service archive folder to a safe location.
2. Open a Powershell window as Administrator and go to the newly extracted folder.
 - a. This install script must be run from the extracted folder directly.
 - b. In powershell terminal, enter `.\install.ps1`.



Note: Do not copy and paste the script into powershell, as you will not be able to start the service if this is done.

3. Configure the Windows Service.

- a. Open the Windows Services program and refresh, then right click on the EAM.PrintService service and select **Properties**.
 - b. On the **General** tab, configure desired startup type. Automatic is recommended once you are ready to deploy this in a production environment.
 - c. On the **Log On** tab, select **This Account**.
 - i. Click **Browse** and enter the credentials of the user on which to run the service. Note: Currently, the EAM.PrintService does not support being run as a Local System account. Note: For Internal EAM testing, this account will be your network account (IE, VGNET\username).
 - ii. Click **Check Names**, then click **OK**.
 - iii. Enter your user's password when prompted
 - d. Click **Apply**, then click **OK**.
4. Configure the password.
 - a. From Windows, create a USER environmental variable with the name **EAMPRINTSECRET**.
 - i. Within your windows search bar, type and open "Environment Variable"
 - ii. Click **New**.
 - Set the Variable name = EAMPRINTSECRET
 - Set the Variable value = The EAM password you will use for connection to the API (you will enter the EAM username in a moment). This user must have API access in EAM.
-
- Note: After initial startup, this variable will be protected.



5. Configure the Service settings.

- a. Open appsettings.json in a text editor. This file can be found within the EAM.PrintService-vX.XX printer folder.
 - i. Update the IdentityUrl and ApiUrl variables to the URL of your EAM API. For example: http://localhost:9124/.
 - ii. Update the EAMUser variable to the EAM User you are using for API access. This should be the user who's password you entered in Step 4.
 - iii. Save the file. Example configuration section:

```
1  "AppSettings": {  
2    "IdentityUrl": "http://localhost:9124/",  
3    "ApiUrl": "http://localhost:9124/",  
4    "EAMUser": "LM",  
5    "IntervalSeconds": 5  
6  }
```

6. Start Printer Service.

Logging

By default, Log files are written to C:\Windows\System32\Logs\. Log files will be called PrintService-YYYYMMDD.log.

Events and errors will also be logged to the Windows Event Viewer under Windows/Application section.