Printer Profile Manager Enterprise

Version 4.0

Installation Guide

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zebra.com/linkoslegal

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Contents

Contents

About This Document

This section provides you with contact information, document structure and organization, and additional reference documents.

Who Should Use This Document

This Installation Guide is intended for use by any person who needs to perform installation, routine maintenance, upgrade, or troubleshoot problems with the printer.

How This Document Is Organized

The Installation Guide is set up as follows:

Section	Description
Installation, Upgrade, and Uninstall on page 6	This section includes the procedure to install Printer Profile Manager Enterprise (PPME), upgrade, and uninstall it.
License on page 37	This section provides general and specific information about the license.
LDAP User Directory Configuration on page 39	This section provides you with contact information, document structure and organization, and additional reference documents.
Troubleshooting on page 41	This section provides assistance with installation and other known issues.

Installation, Upgrade, and Uninstall

This section includes the procedure to install Printer Profile Manager Enterprise (PPME), upgrade, and uninstall it.

System Requirements

Supported Operating Systems

Windows:

- Windows Server® 2016, 64-bit processor
- Windows Server® 2019, 64-bit processor
- Windows Server® 2022, 64-bit processor
- Windows® 10, 64-bit processor
- Windows® 11, 64-bit processor

Browsers

- Chrome Browser version 97

Minimum System Requirements

CPU cores: 4

Memory (RAM): 16GB

Minimum: 50GB available drive space

Using the printer analytics or battery management functions will require up to 1TB of disk space. Please refer to the Printer Profile Manager Enterprise User Guide for more information on these features.

Recommended System Requirements

CPU cores: 8

Memory (RAM): 16GB

Printer Requirements

Printers must run Link-OS 2.5 or later in order to connect to PPME.

Printers must run Link-OS 6.0 or later in order to use the Certificate Management feature.

Printers must run Link-OS 6.6 or later in order to use the SGD escape syntax in a Certificate Management Item subject alternative name field.

Network Access Requirements

Internet Access

IMPORTANT: Internet access is required to complete the installation and for the continued use of PPME.

For the PPME licensing system to work, the server must have continued internet access and be able to reach my.nalpeiron.com using port 443.

NOTE: Previous versions of PPME used port 80. Port 443 is used in version 3.2 and later.

For certificate signing, the server must have outgoing port 443 open to the internet, and must be able to reach acs.zebra.com

Internal Network Outgoing Ports

Zebra printers support a discovery process that utilizes UDP on port 4201.

Initial printer configuration may use TCP ports 9100, 9200, or 6101.

If using LDAP, additional ports may need to be opened.

Server Access (Incoming Ports)

The server firewall should be configured to only allow the following incoming ports:

• Port 8443: printer connections
• Port 443: client connections

Best Practice: Zebra recommends that PPME is installed on a physical or virtual server that complies with Microsoft Windows security baselines. Local access to the server should only be by an administrator for software updates, maintenance, and backup. It should not be used as a workstation.

Figure 1 System Overview Diagram
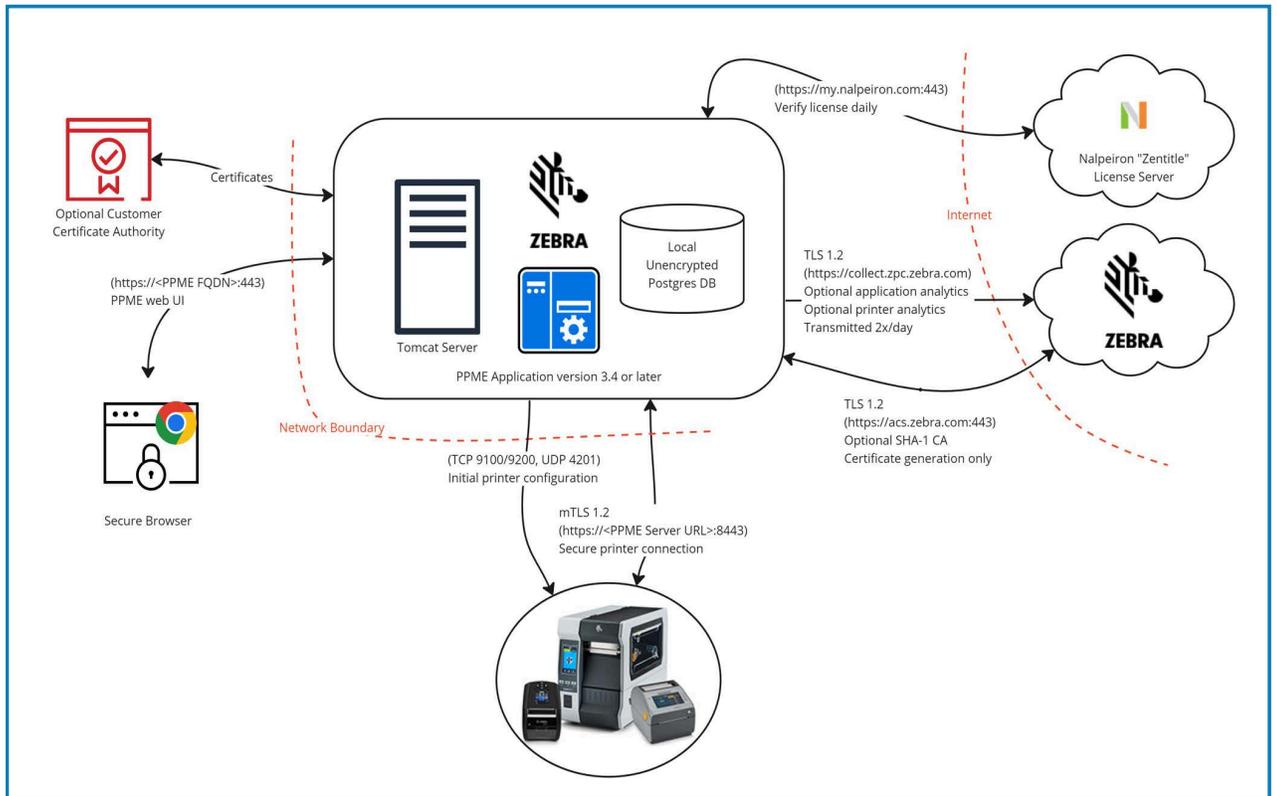
Figure 2   Data Flow Diagram

Admin

PPME

Persistent Admin Connection

(https://<PPME FQDN>:443)
TLS 1.2
Self-signed or public trust certificate
Configure PPME Options
-Admin user/pass
-LDAP(s) server:port, user/pass (optional)

Zebra SHA-1 CA

Get SHA-1 printer certificate (optional)

(https:acs.zebra.com: 443)
Basic Cerificate Request

SHA-1 certificate PEM

License Server

(https://my.nalpeiron.com: 443)
Verify license

Response

Printer

Discover Printer Automatically

(UDP:4201) Subnet Broadcast

Discovery packet response:
-Specific list of printer settings

Configure Found Printer

(TCP:Printer IP Address:9100,9200,6101)
-PPME server URL
-PPME server certificate authority PEM
-Printer certificate and private key PEM
-Proxy URL (optional)
-Reset printer

Persistent Printer Connection

(https://<PPME Server URL>:8443)
TLS 1.2 (mTLS)
PPME Self-signed SHA-256, Zebra signed SHA-1,
or customer supplied certificate
-All printer settings

Printer Management:
-Query settings
-Update settings

Customer Certificate Authority

Sign Printer WLAN Certificate (optional)

(Persistent Printer Connection from above))
-Generate Certificate Request

Certificate Request

(Connection is configuration
dependent
-Sign Certificate Request

Signed Certificate

Deploy Signed Certificate

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Before You Begin

Ensure that your system clock and time zone are set properly before beginning the installation.

⚠️ **CAUTION:** If your server clock is not set to the current time, you will experience issues with installation, provisioning events, operations log, and licensing.

If you have a version of PPME currently installed, continue with Backup PPME on page 12, and then proceed to Upgrading PPME on page 33.

If you do not have a version of PPME installed, proceed to Installation on page 14.

Information Checklist for Installation

The following is a list of information that the user setting up the administrator (admin) account must have before he begins the installation. If you have made changes to these assumptions (location, user, or directory), substitute your changes in the steps, as needed.

1. Installation location: The default location is `C:\Program Files\Zebra Technologies\Printer Profile Manager Enterprise`

2. Local PPME directory: The default location for versions later than v3.3.7607 is: `%PROGRAMDATA%\Zebra Technologies\Printer Profile Manager Enterprise\.PPME`

3. Administrator account information:

   a. Full Name

   b. Username

   c. Email Address

   d. Password

4. Server

   a. Fully Qualified Domain Name (FQDN)

   b. Do you wish to Use Detected FQDN? (Checkbox)

5. PPME License code or Use in Evaluation Mode (Checkbox for Use in Eval. Mode)

6. Network IP Addressing:

   a. DHCP or Static/Permanent IP addressing (Radio buttons)

   b. DNS Server List

   The DNS Server List is a space-delimited list of DNS Server IP addresses. Ensure that each IP address is a valid IPv4 address and that the addresses are separated by a space. The total list of addresses should not be longer than 255 characters.

   c. DNS Domain Name

   The DNS Domain Name needs to be a valid DNS name (for example, no white space in the name and no longer than 255 characters).

7. Outgoing Email Server (SMTP Server)

   a. SMTP Server Host Name

   b. Port

      c. From Address

      Spaces or other whitespaces in the email address is a common cause for failure when requesting a certificate.

      d. Enable SSL and Require Authentication (Checkboxes)

      e. (Optional) Do you wish to Send Test Email or skip to refrain from sending the test email.

8. Certificate Creation details:

      a. Company name

      b. Department

      c. Address

      d. City

      e. State

      f. Country

      g. Postal Code

      h. Email address

      i. Phone number

      j. Server Name (Fully Qualified Domain Name)

9. Type of Server's SSL Certificate

      a. SHA-1: Zebra-Signed Certificate

      b. SHA-2: Self-Signed Certificate

10. For SHA-1 certificate, you will need the Port number.

11. For SHA-2 certificate, you will need the Password and Port number.

Backup PPME

Key Assumptions

If you have made changes to these assumptions (location, user, or directory), substitute your changes in the steps, as needed.

- Assume the location of installation is **C:\Program Files\Zebra Technologies\Printer Profile Manager Enterprise**

- Assume the local user is **Administrator**

NOTE: Versions later than v3.3.7607 do not install anything under user profile folders.

- Assume the local PPME directory is located at:

    The default location in v3.3.7607 and prior versions is: **%USERPROFILE%\.PPME**

    The default location for versions later than v3.3.7607 is:
    %PROGRAMDATA%\Zebra Technologies\Printer Profile Manager Enterprise\.PPME

IMPORTANT: If you are using the same server, printers will not connect after an uninstall or re-install. If you save the certificate, then you are able to re-use it. If you have not saved it, you will not be able to re-use it.

Stop Services

This section directs you to "stop an "xyz" service". You may stop a Microsoft service using several methods:

- Services Window
- net Command
- Sc Command
- Task Manager
- PowerShell

To stop services using the Task Manager, perform the following steps:

1. Open the Task Manager (**CTRL**+**SHIFT**+ **ESC**).

    - Click the **Services** tab at the top of the Task Manager window.

2. To stop the **Printer Profile Manager Enterprise** service (ppme-service):

    a. Select the name of the service.

    b. Right-click on the service.

    c. Select **STOP** to stop the specific service.

3. To stop the **'Printer Profile Manager Enterprise Database x.x.xxxx'** service (Printer Profile Manager Enterprise Database x.x.xxxx): (Where x.x.xxxx indicates the version number of the software.)

    a. Select the name of the service.

    b. Right-click on the service and select **STOP** to stop the specific service.

4. Close the Task Manager window.

To backup your installation, perform the following steps:

1. Backup the following directories:

In v3.3.7607 and prior versions:

%USERPROFILE%\.PPME

%LOCALAPPDATA%\Printer Profile Manager Enterprise

In versions later than v3.3.7607:

%PROGRAMDATA%\Zebra Technologies\Printer Profile Manager Enterprise

2. Backup the '**C:\Program Files\Zebra Technologies\Printer Profile Manager Enterprise**' directory.

3. Start the '**Printer Profile Manager Enterprise Database x.x.xxxx**' service using Task Manager.(Where x.x.xxxx indicates the version number of the software.)

4. Start the '**Printer Profile Manager Enterprise**' service using Task Manager.

Installation

The PPME Installation consists of two parts: the File Deployment and the Application Setup Wizard. Both parts must be completed to use and access the PPME application.

(!) IMPORTANT: Internet access is required to complete the installation of PPME.

File Deployment

This section shows the screens you will see during the file deployment portion of the installation.

1. Log into the server (where you wish to install PPME) as an Administrator.

2. To launch the Printer Profile Manager Enterprise (PPME) installer, double-click on `PPMEx.x.xxxx.exe`.

    (where `x.x.xxxx` indicates the version number of the software)

Figure 3 Welcome Dialog

3. Click **Next** to continue.

    The **License Agreement** dialog displays.

Figure 4 License Agreement Dialog
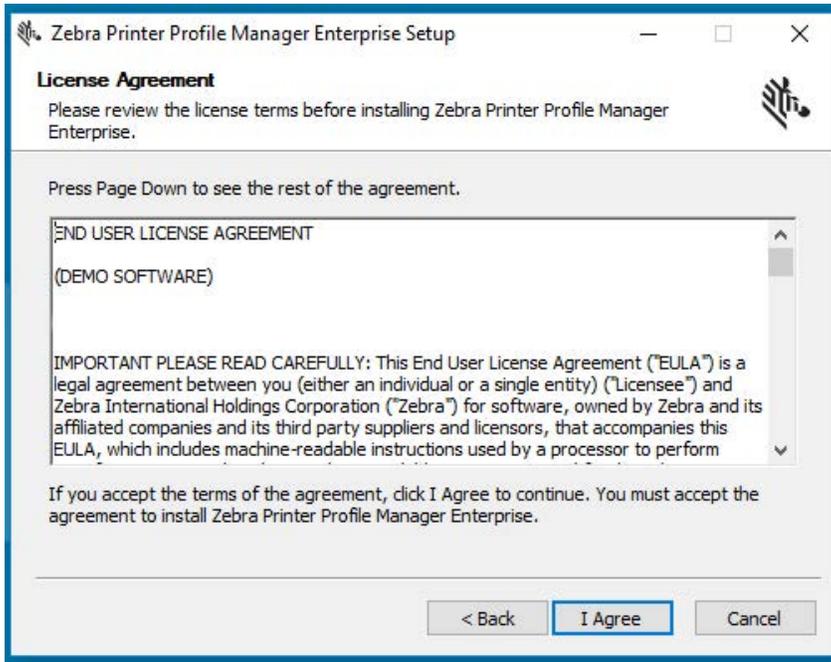
4. Click **I Agree** to accept the terms of the license agreement.

5. Click **Next** on Deprecation of SHA1 Certificates screen.

Figure 5 Deprecation of SHA1 Certificates
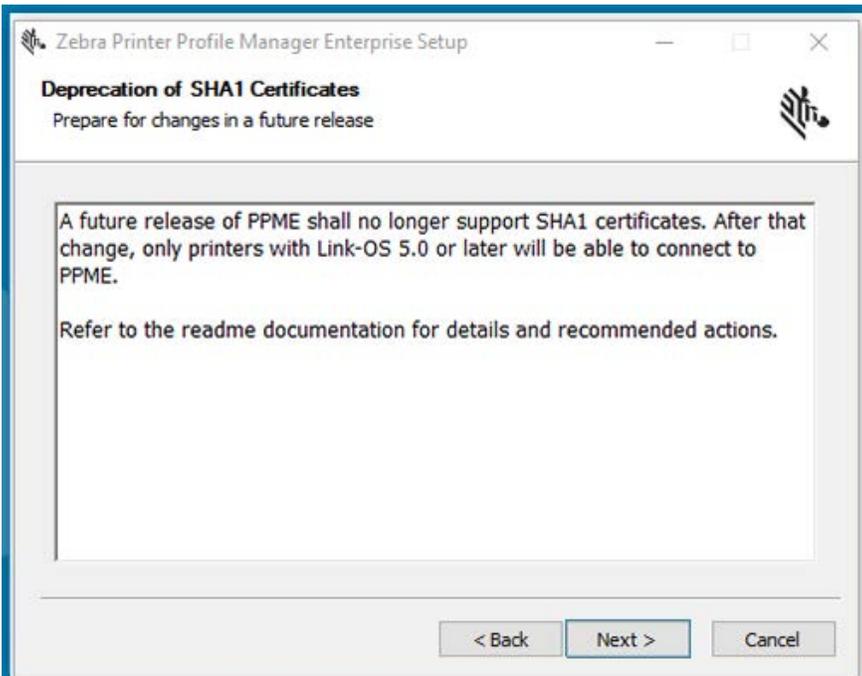
6. Ensure that your server's system clock is synchronized with a time server.

Figure 6   Time Synchronization Dialog
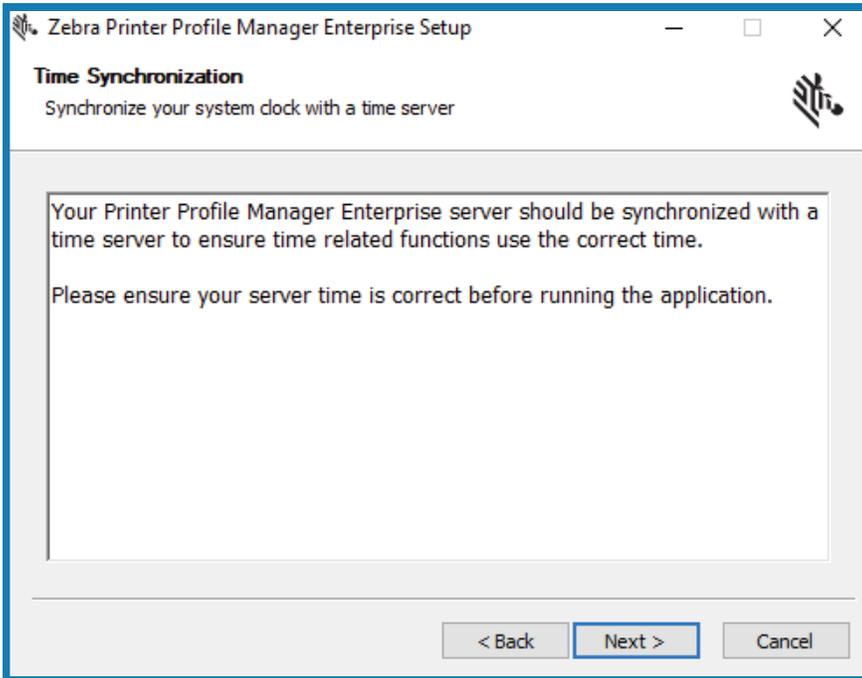
7. Click **Next** to continue.

Figure 7   Port Configuration Dialog
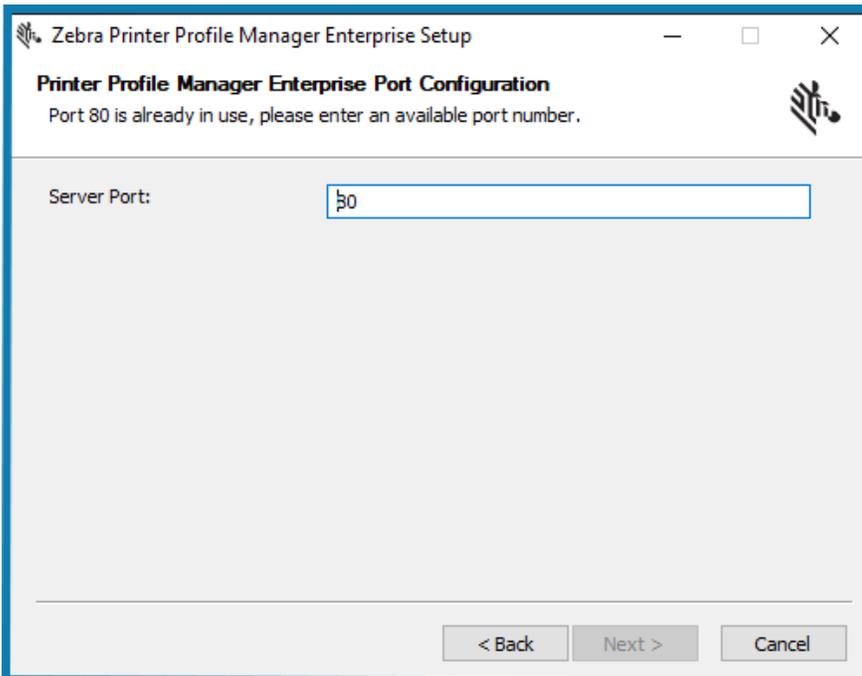
8. The availability of port 80 will be detected. The port configuration dialog will only display if port 80 is in use on your server.

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Figure 8   Port Configuration Error Dialog
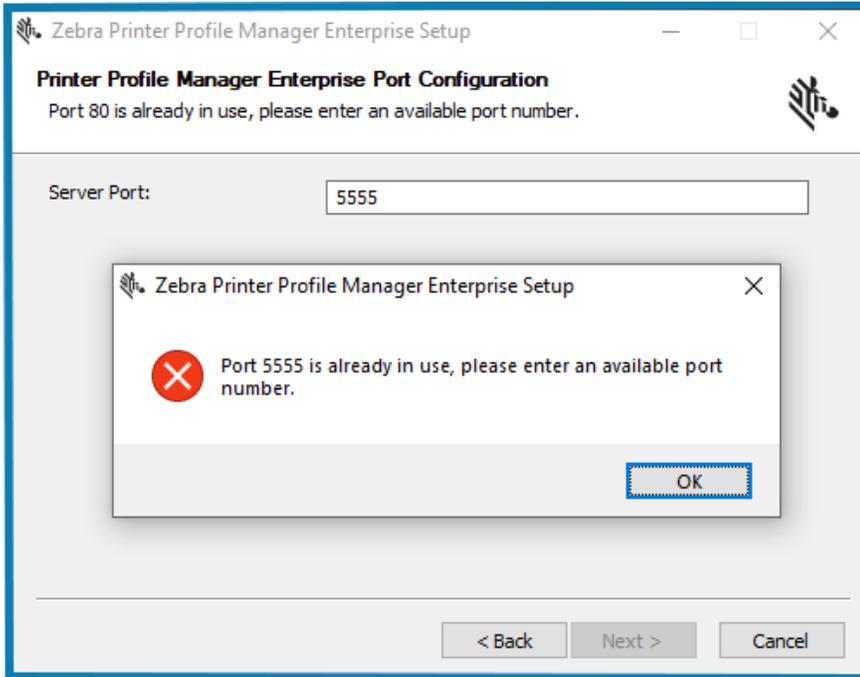
9. Enter an available port number in the **Server Port** field. The port number entered will be checked and must be available in order to continue. If not, an error dialog will display.

Figure 9   Available Port Number Dialog
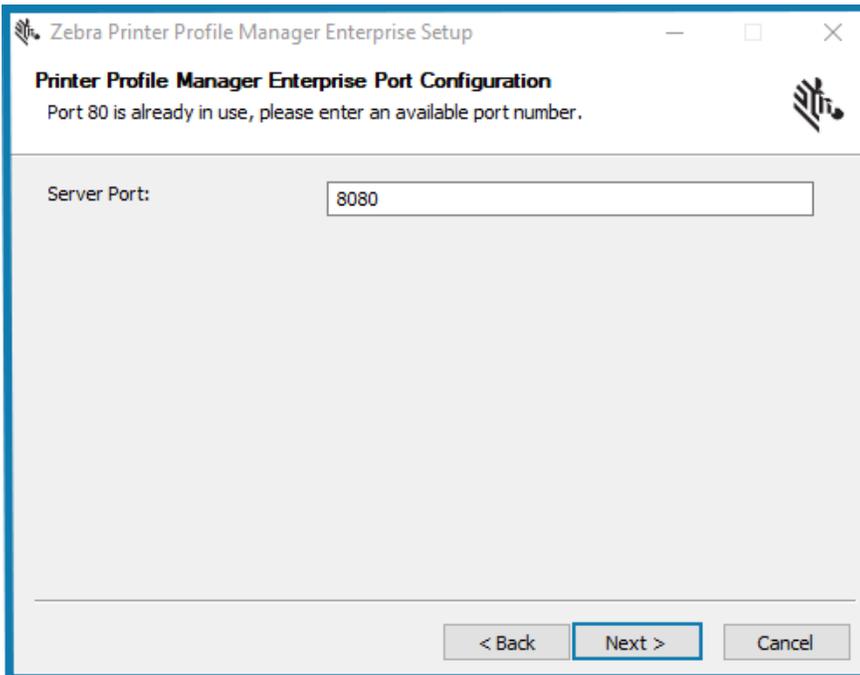
10. Once an available port number is entered (for example, 8080), click **Next** to continue. The **Installation Location Dialog** displays ().

Figure 10   Printer Profile Manager Enterprise Installation Location Dialog
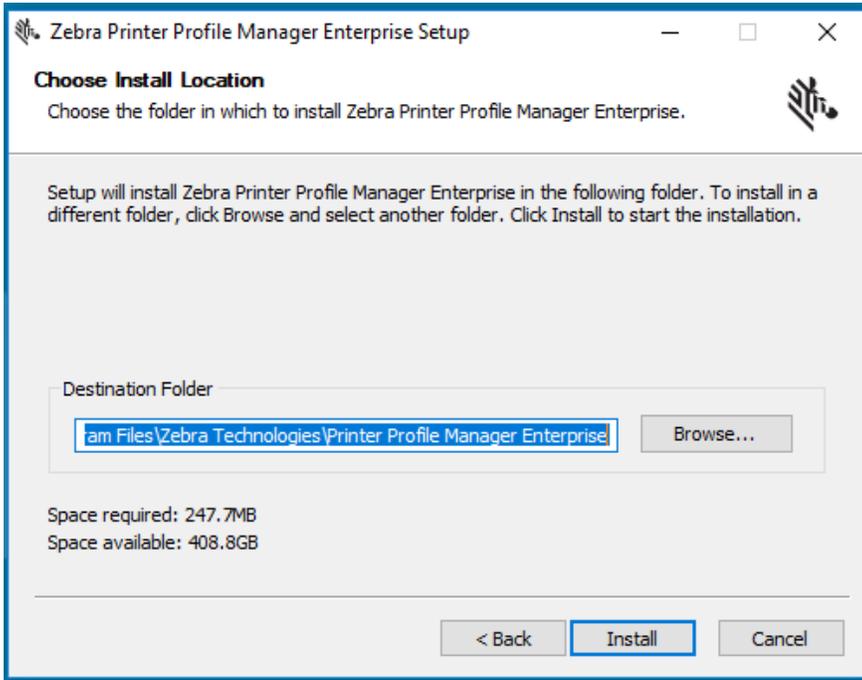
11. Click **Install** to begin the installation.

The **Installing** dialog displays ().

Figure 11   Installing Dialog
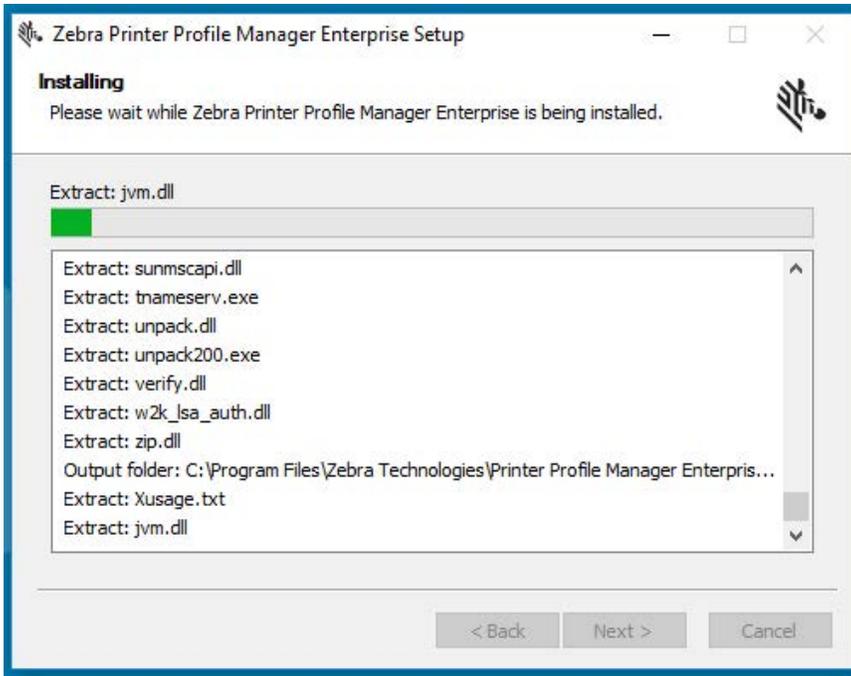
The **Installation Complete** dialog displays.

Figure 12   Installation Complete Dialog
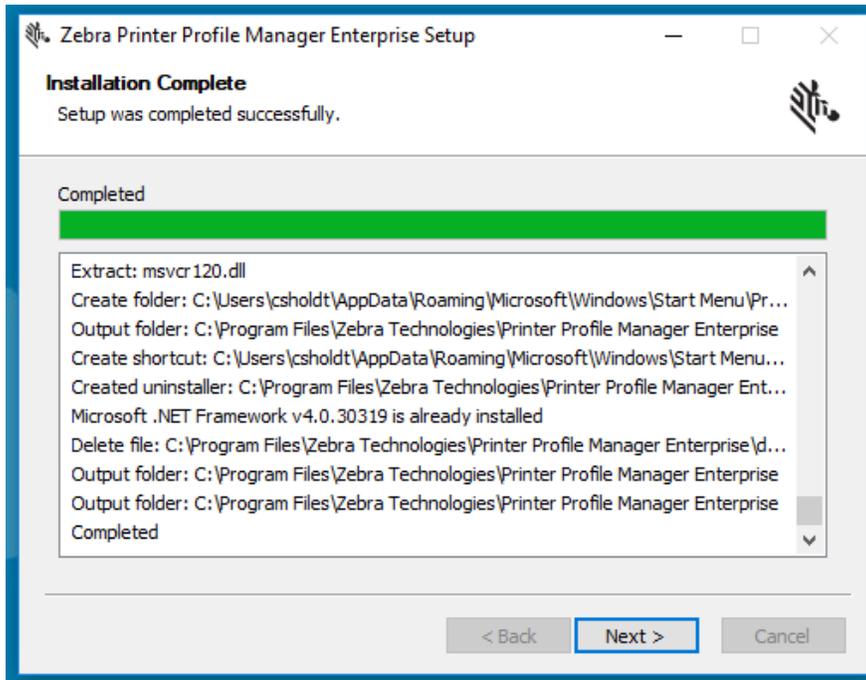
12. Click **Next** to continue.

The **Starting Required Services** dialog displays.

Figure 13   Starting Required Services Dialog
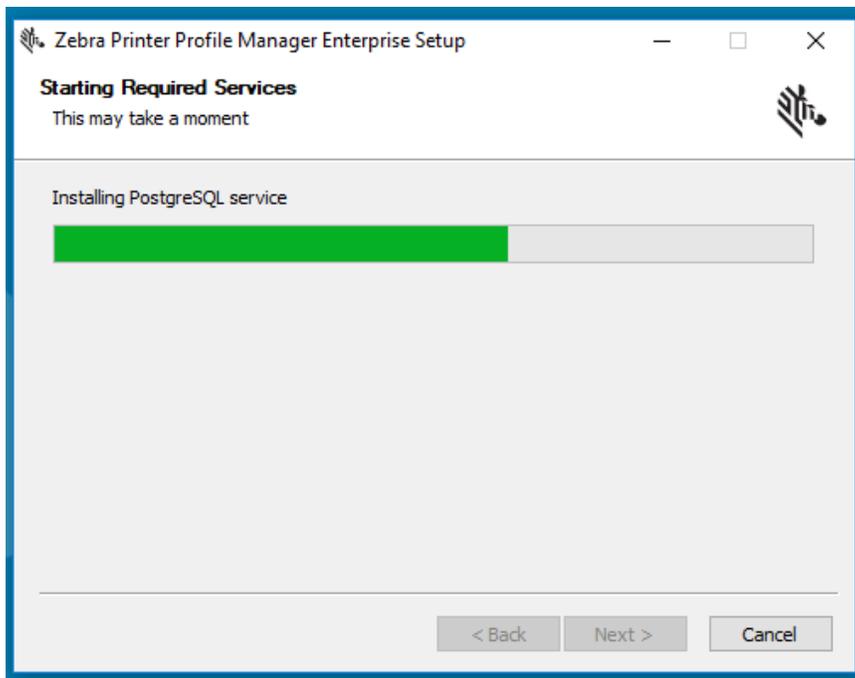
Figure 14   Starting Required Services Installation Complete Dialog
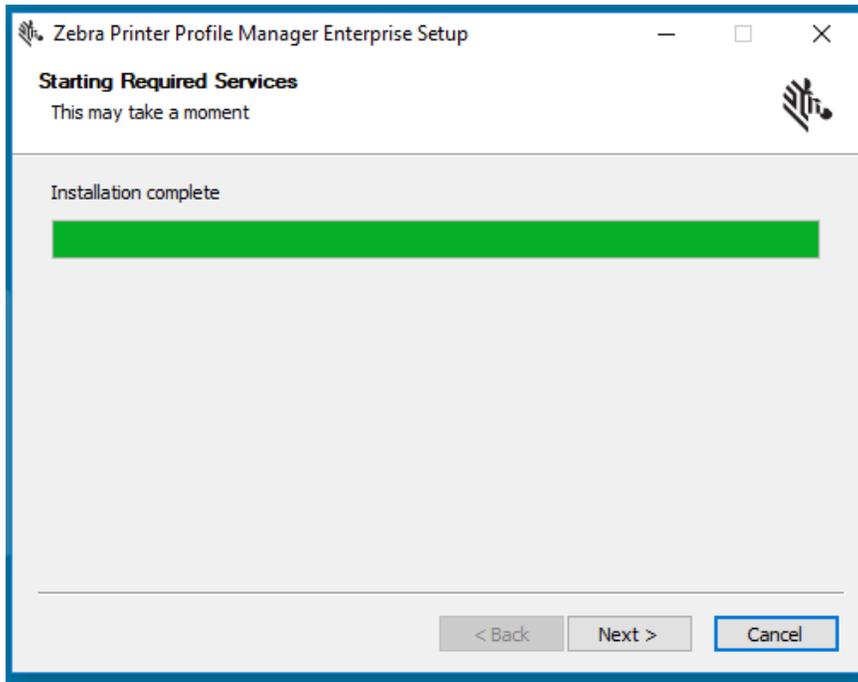
Once the Required Services are complete, the **Setup Wizard Complete** dialog displays.

Figure 15 Setup Wizard Complete Dialog

13. Click **Finish** to close the Setup Wizard.

Ensure that the checkbox is checked.

A browser window will display.

NOTE: If the browser window doesn't connect immediately, be patient, refresh your screen as PPME services may still be starting.

Chrome Browser

If this is the first time you are logging into PPME and you use Chrome as your browser, you may see the Privacy Error warning. The notification displays because PPME generates a self-signed certificate to secure your initial connection.

Click **Advanced** to continue to the Setup Wizard where you will be guided to set up PPME.

⚠️ **Warning:** Do not click on **Back to Safety** or close the browser window without saving the PPME URL.

Figure 16   Privacy Error Warning
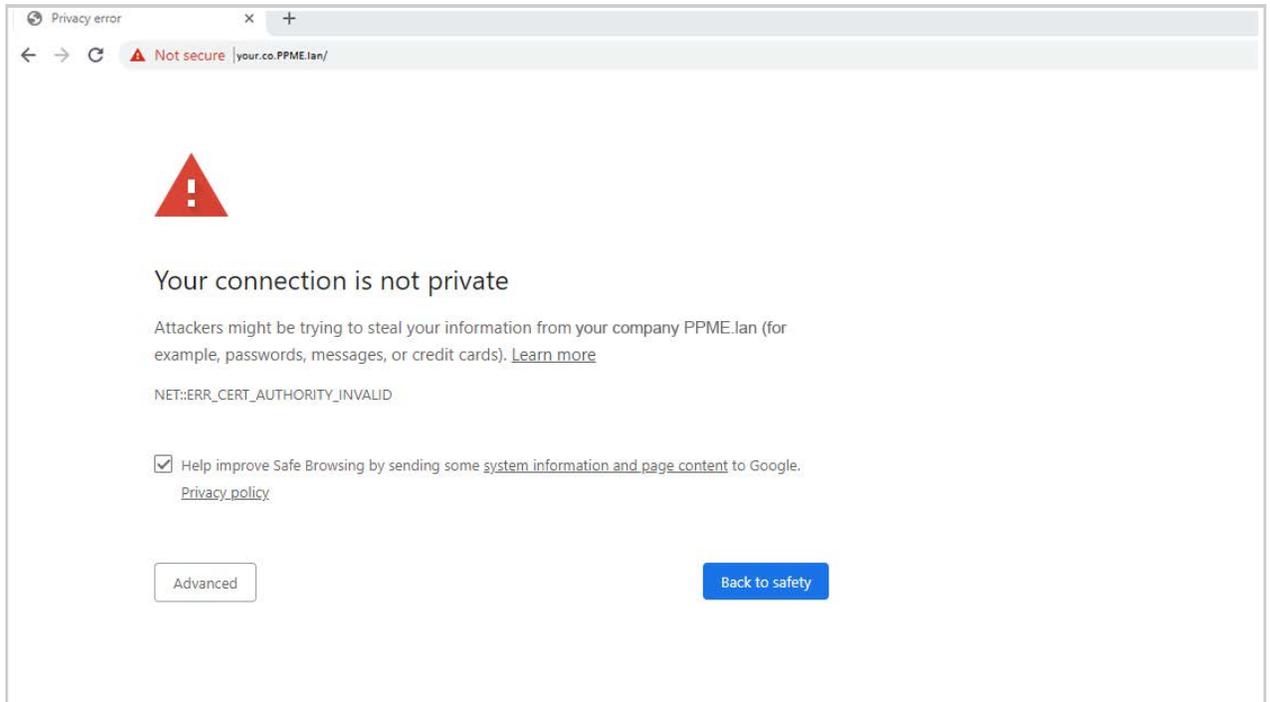
Application Setup Wizard

Introduction to the Setup Wizard

Figure 17 is a complete screenshot of the PPME Application Setup Wizard. To improve readability, all other screens for the Application Setup Wizard are cropped and the size has been increased.

Figure 17   Full Screenshot of PPME Application Setup Wizard

1	Progress bar		5	Fields to fill in
2	Purpose (or main focus) of this screen		6	Continue button advances to the next screen
3	Zebra logo		7	Help button
4	Information button provides additional information. (Click on the icon to open it.)		8	Back button returns to the previous screen

Setup Wizard

The Welcome dialog displays.

Figure 18   Welcome Dialog

Welcome to Printer Profile Manager Enterprise

This app is Zebra's remote printer management solution, allowing easy management of Zebra Link-OS® printers.
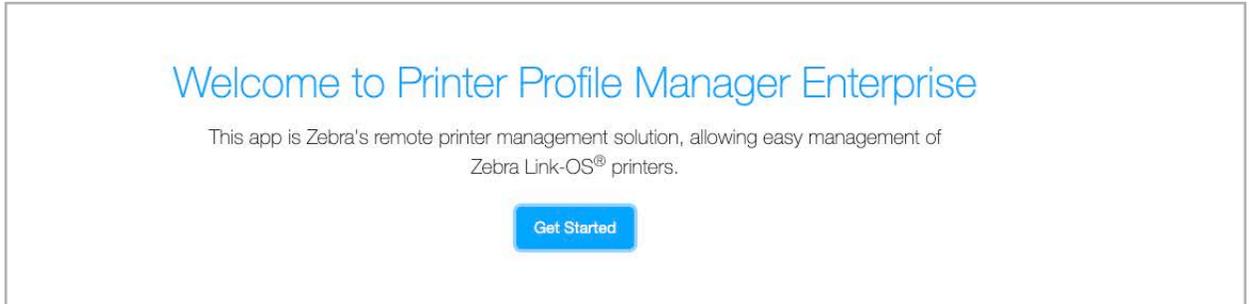
Get Started

1. Click **Get Started** to continue.

The Administrator Account dialog displays.

NOTE: If you cannot access either the Nalpeiron Licensing Server or the Zebra Certificate Signing Server, displays. You **must** be able to connect to both of these servers to continue.

Figure 19   Issue Connecting to Nalpeiron Licensing Server or Zebra Certificate Signing Server

The application is having a problem connecting to the following servers. ⓘ

It may need to use a proxy server or there might be an issue with a firewall setting or another security device. If you are not sure, please consult with your network administrators.

❌ **Nalpeiron Licensing Server**
https://my.nalpeiron.com   Test Again

❌ **Zebra Certificate Signing Server**
https://acs.zebra.com/CertificateSigningServer/sign   Test Again

Use a Proxy Server
Off

Proxy Host   **Port**

Username   **Password**

Test Proxy Settings   Continue

2. See Figure 20. Fill in the fields to create your Admin account.

NOTE: The Admin username is the role with a complete set of permissions and functionality.

- Enter the **Full Name**, **Username**, **Email Address,** and **Password** fields.

3. Click **View EULA**, and then click **Accept EULA and Continue**.

Figure 20   Administrator Account Dialog

The Server Accessibility dialog displays.

4. See Figure 21. Enter the **Fully Qualified Domain Name** (FQDN) or click the checkbox to **Use Detected FQDN**.

5. Click **Continue**.

Figure 21   Server Accessibility Dialog

The Server License dialog displays.

6. See Figure 22. Enter your license code register it or **Use in Evaluation Mode**.

7. Click **Continue**.

Figure 22   Server License Dialog

The Network Addressing dialog displays.

8. See Figure 23. Click the radio button for **DHCP** or **Static/Permanent** IP addressing.

9. Enter the **DNS Server List** and **DNS Domain**.

NOTE: The DNS Server List is a space-delimited list of DNS Server IP addresses. Ensure that each IP address is a valid IPv4 address and that the addresses are separated by a space. The total list of addresses should not be longer than 255 characters.

NOTE: The DNS Domain Name needs to be a valid DNS name (for example, no white space in the name and no longer than 255 characters).

10. Click **Continue**.

Figure 23   Network Addressing Dialog

The Outgoing Email Server dialog displays.

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11. See Figure 24. Enter the SMTP server **Host Name**, **Port**, and **From Address**.

NOTE: Spaces or other whitespaces in the email address is a common cause for failure when requesting a certificate.

12. If you select the checkboxes to **Enable SSL** and **Require Authentication,** enter the username and password.

13. (Optional) Click **Send Test Email**.

Or, click **Skip** to refrain from sending the test email.

14. Click **Continue**.

Figure 24   Outgoing Email Server Dialog

15. If you chose **Skip** on the previous screen, you must confirm the choice.

The Warning dialog displays.

16. See Figure 25. Click **Confirm** to skip the SMTP server setup or click **Cancel** to return to the previous screen.

Figure 25   Warning Dialog

The Certificate Creation dialog displays.

17. See Figure 26. Enter the requested company information, for example, your company name, etc.

18. Click **Continue**.

Figure 26   Certificate Creation Dialog

The Printer Connections dialog displays.

19. See Figure 27. Select the type of printer connection.

Figure 27   Printer Connections Dialog

20. Which type of connection did you choose?

If you chose...	Then do the following...
Advanced Connection/SHA-2 or stronger certificates	• Go to Advanced Connection/SHA-2 Certificate on page 29.
Basic Connection/SHA-1 certificates	• Go to Basic Connection/SHA-1 Certificate on page 30.
Both	• Go to Advanced Connection/SHA-2 Certificate on page 29. • At the end of this procedure in step 6 on page 30, you will also be directed to complete the Basic Connection/SHA-1 Certificate on page 30. **NOTE:** If you enable both certificates, you must ensure that they are both set to different ports.

Advanced Connection/SHA-2 Certificate

If you selected a SHA-2 Certificate, the Advanced Connection dialog displays.

1. See Figure 28. Click **Generate** to create a SHA-2 Certificate or click **Back** to return to the previous screen.

Figure 28   Advanced Connection Dialog
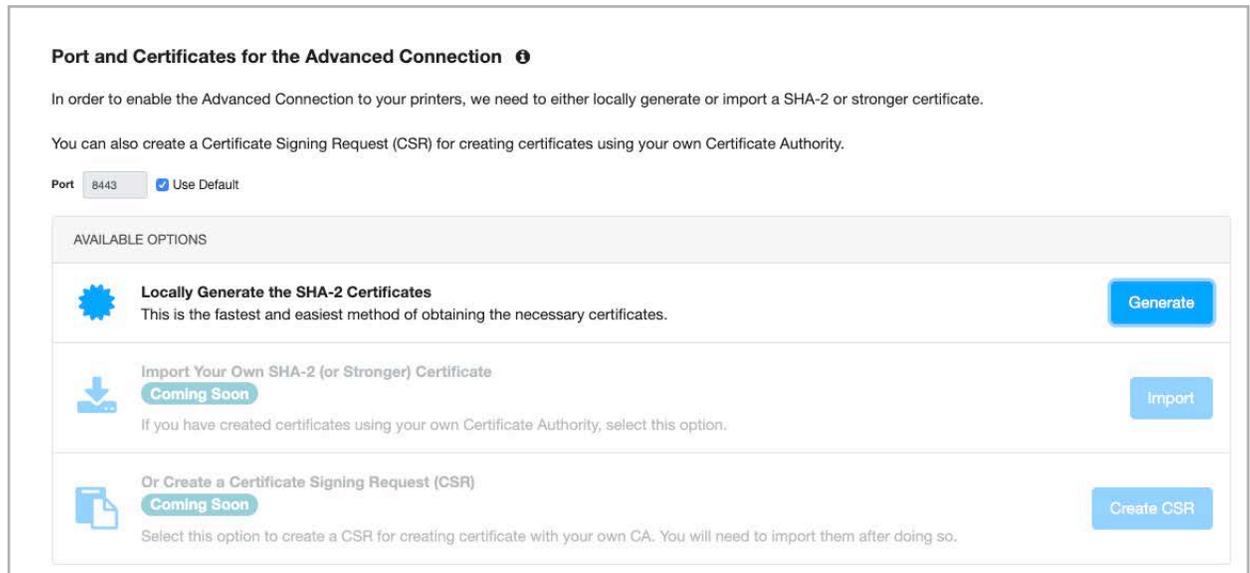
The Passwords for Locally Generated Certificates dialog displays.

2. See Figure 29. Enter the **Server Certificate Password** and **Printer Certificate Password** number.

3. Click **Continue**.

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Figure 29   Locally Generated Certificates Dialog

The Finalizing the Advanced Connection dialog displays.

4. See Figure 30. (Optional) Click **Download** to save a copy of the printer settings if you need to manually connect your printer to PPME.

5. Click **Continue**.

Figure 30   Advanced Connection Dialog

The Backup Your Connection Settings and Certificates dialog displays.

6. If you selected the Advanced Connections (only), go to Setup Complete on page 31.

    If you selected Both connections (Advanced <u>and</u> Basic Connections), go to Basic Connection/SHA-1 Certificate on page 30.

Basic Connection/SHA-1 Certificate

NOTE: If you have enabled the Advanced Connection (SHA-2 certificate), you must ensure that the Basic/SHA-1 certificate uses a different port.

If you selected a Basic Connection/SHA-1 Certificate, the Port and Certificates for the Basic Connection dialog displays.

1. See Figure 31. Click **Generate** to create a SHA-1 Certificate or click **Back** to return to the previous screen.

2. Enter the **Port** number.

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Figure 31   Port and Certificates for the Basic Connection Dialog
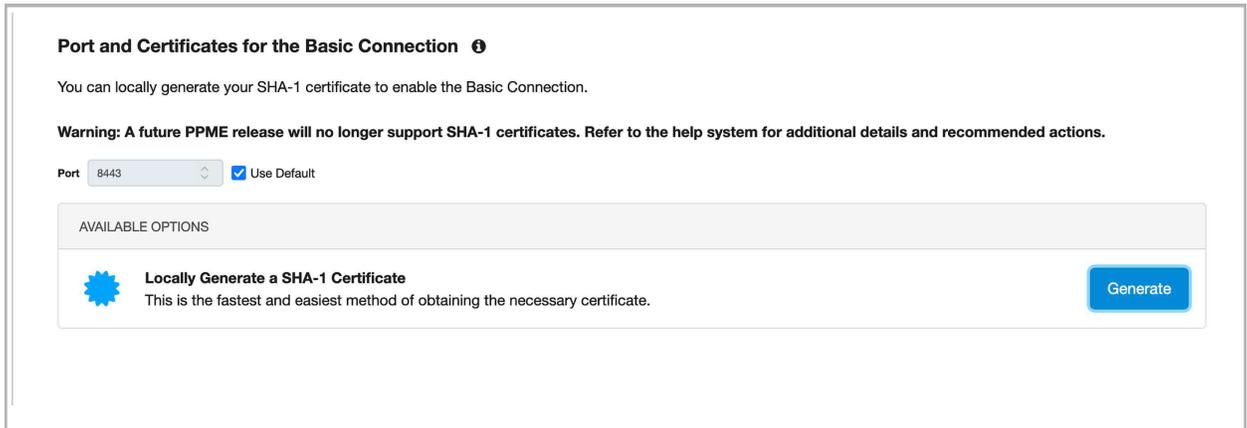
The Finalizing the Basic Connection dialog displays.

3. See Figure 32. (Optional) Click **Download** to save a copy of the printer settings in case you need to manually connect your printer to PPME.

4. Click **Continue**.

Figure 32   Certificate Creation Dialog
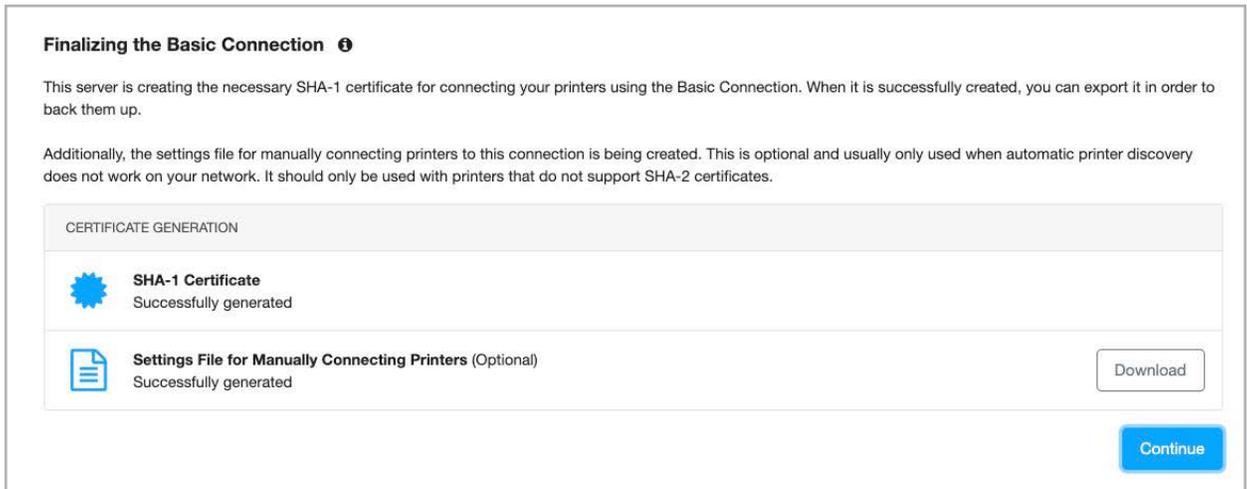
The Backup Your Connection Settings and Certificates dialog displays.

5. Go to .

Setup Complete

1. See Figure 33. Click **Continue** to create the backup archive and save the certificates and configurations for the Weblink connections (Advanced and Basic connections).

The backup archive does not contain any other settings, tags, profiles, or resources.

IMPORTANT: Save this file and the password in a safe and secure location in case you ever need to re-install your PPME instance.

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Figure 33   Backup Your Connection Settings and Certificates Dialog
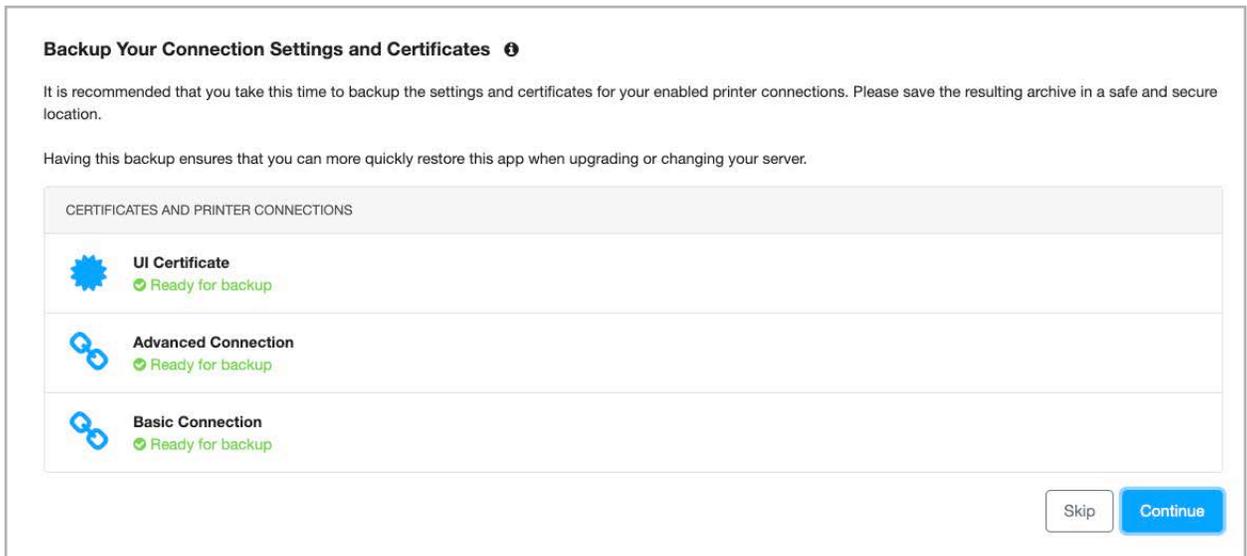
The Backup Your Connections dialog displays.

2. See Figure 35. Enter the **Backup Archive Password**.

3. Click **Backup**.

Figure 34   Backup Your Connections Dialog
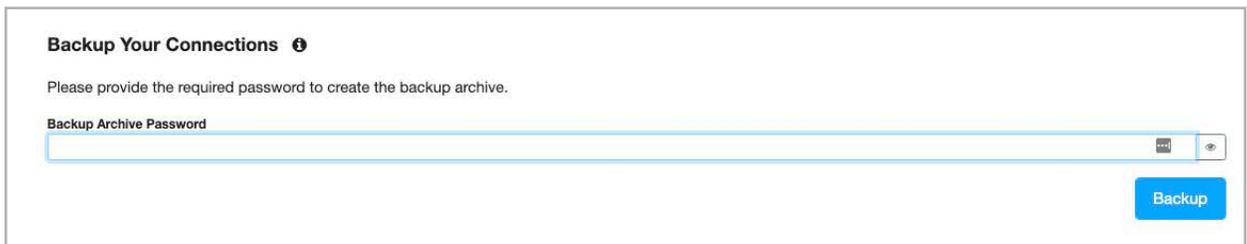
The Setup Complete dialog displays.

4. See Figure 35. Click **All Done!** to complete the PPME application setup and close the Setup Wizard.

Figure 35   Setup Complete Dialog
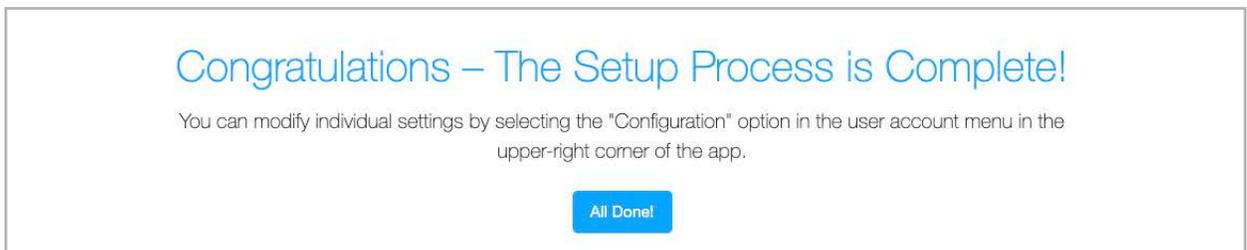
If you experience any connection issues or receive an error message, see Installation Issues on page 41.

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Upgrading PPME

Before continuing with the upgrade, it is recommended that you backup your current installation. See Backup PPME on page 12 for more information.

Any printer management events, or users logged into the software at the time of this upgrade will experience a disruption in service while the upgrade is in progress.

Upgrades should only be performed on successful installations. If an installation was incomplete, the product should be completely uninstalled and a new installation performed. See Uninstall PPME on page 36 for more information.

NOTE: In order to upgrade to v4.x or later, you must already have v3.4.7711. Otherwise, you must upgrade to v3.4.7711 and then perform the upgrade to a 4.x or latest version.

NOTE: Downgrading to an earlier version of PPME is not recommended since new features, data, and recent fixes will be lost in the downgrade process.

To upgrade your installation, perform the following steps:

1. Log in to the server using the same User Account that was used to install PPME.

2. To launch the Printer Profile Manager Enterprise (PPME) installer, double-click on PPMEx.x.xxxx.exe.

    (where x.**x.xxxx** indicates the version number of the software)

3. You will start with the same first two screens as the installation. These screens include:

    • Welcome

    • End User License Agreement

4. The Time Synchronization dialog displays.
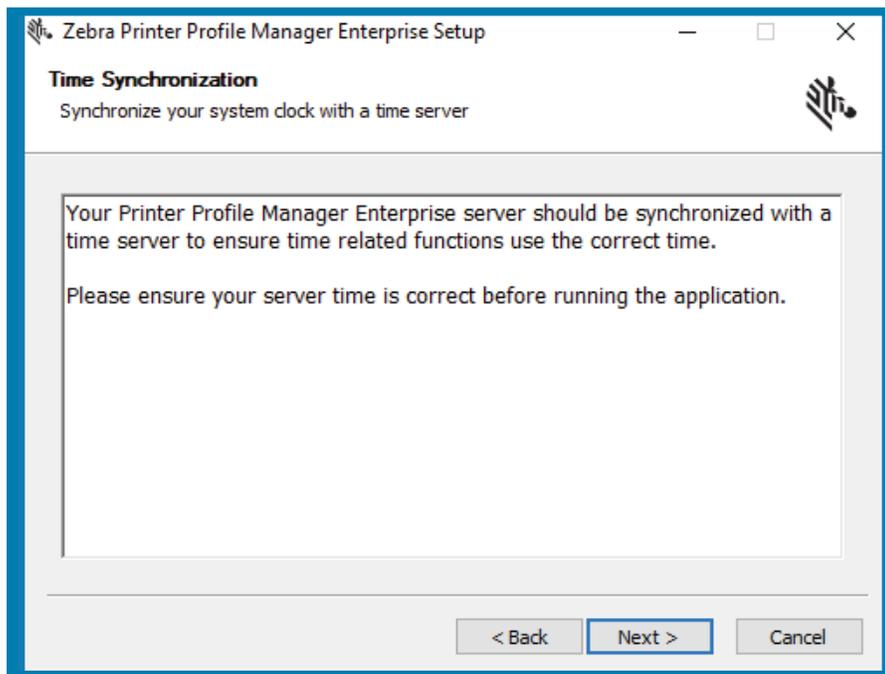
5. Click **Next.**

The Printer Profile Manager Enterprise Upgrade dialog displays.
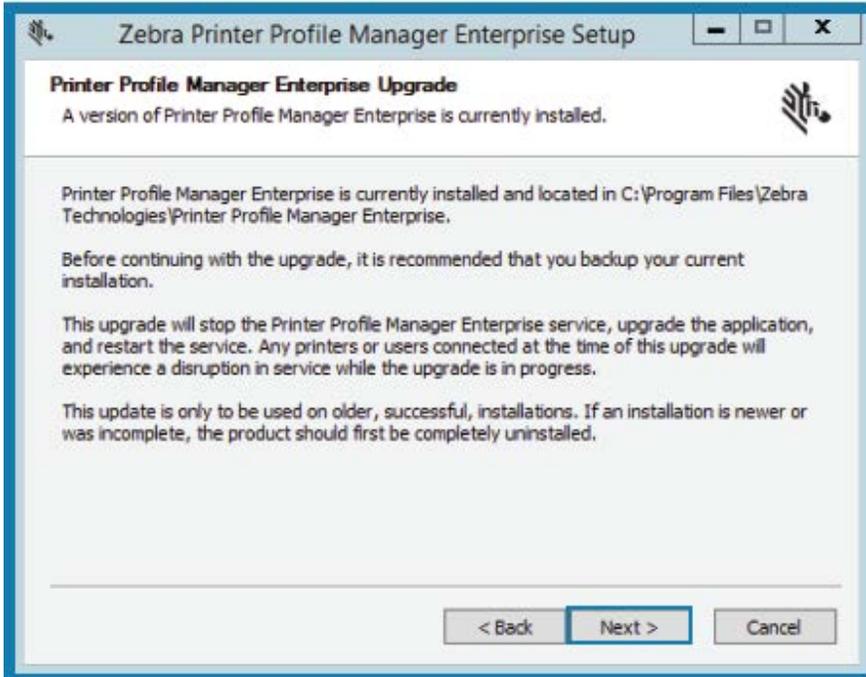
6. Click **Next**.

The **Printer Profile Manager Enterprise Upgrade In Progress** dialog shows the Upgrade complete.
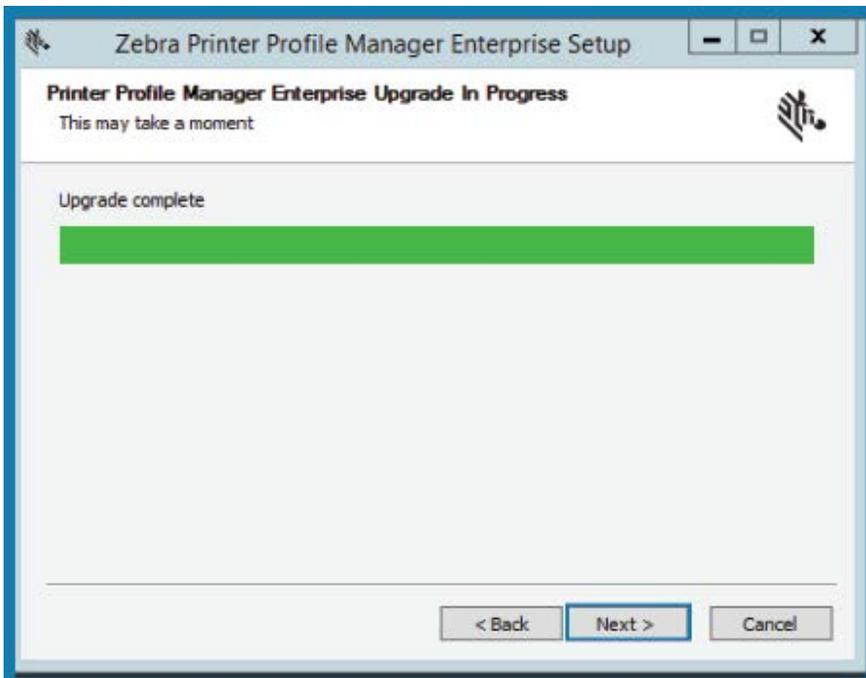
7. Click **Next.**

The **Completing...Setup Wizard** dialog displays.
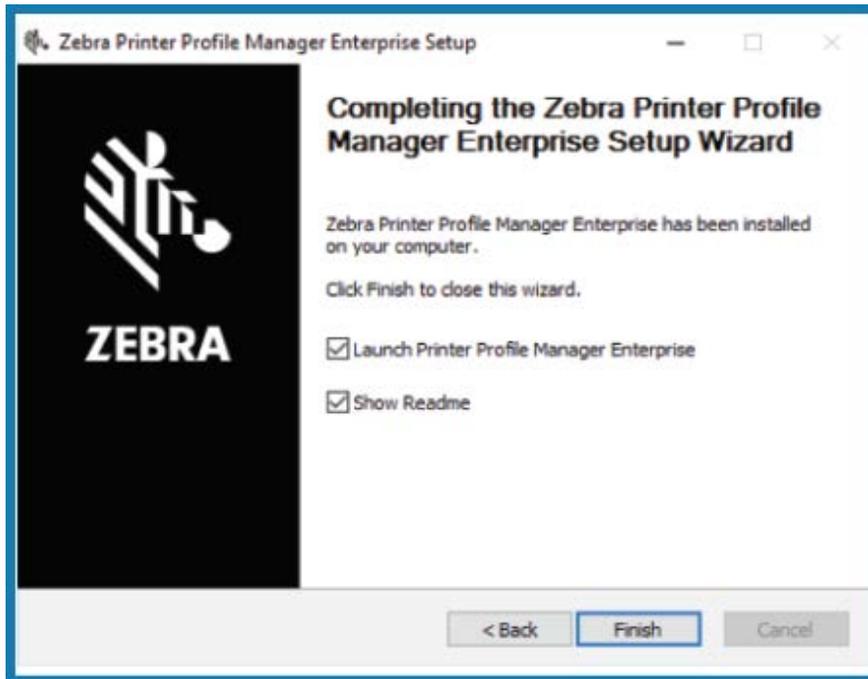
8. Click **Finish** to close the wizard.

Uninstall PPME

Release License

1. Navigate to the main licensing page from the **User** menu admin ▼.

2. Choose **Release** (beside **License Code**) and confirm.

   The license code is returned to the server and allow it to be used on another server without going over the activation limit.

⚠ **CAUTION:** This will log the user out of the application and make it unusable until a valid license is entered.

Uninstall PPME

1. Log in as Administrator.

2. Navigate to the drive and folder where you installed PPME.

   For example:

   `C:\Program Files\Zebra Technologies\Link-OS Printer Profile Manger Enterprise...`

3. Double-click uninstaller.exe to run the uninstaller program.
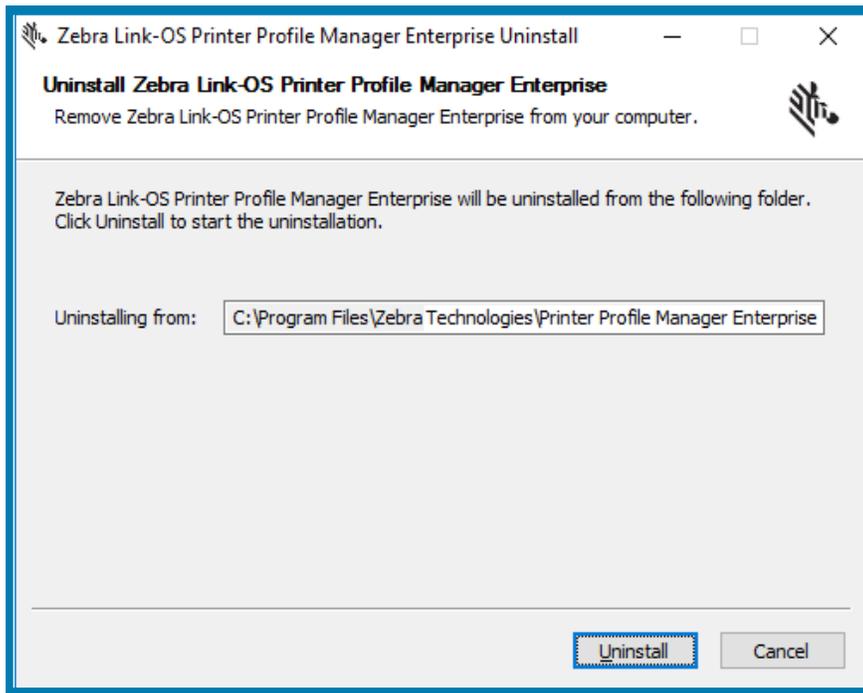
Reboot the Server

- If PPME is uninstalled, rebooting the server is required before re-installing.

License

This section provides general and specific information about the license.

View License Status

This page allows the administrator to view the license status and all relevant license information.

1. Click **User** menu admin 👤 ▾ .
2. Select **License** from the User drop-down menu.

Setup a License

For the PPME licensing system to work, the server must have continued internet access and be able to reach my.nalpeiron.com using port 443.

NOTE: If the server is unable to access the above web site, the server will revert to an unlicensed status and may indicate License Expired.

To Enter a New License Code:

If an administrator wants to enter a new license code before it expires for whatever reason, this can be done from the main license page.

1. Click **User** menu admin 👤 ▾ .
2. Select **License** from the User dropdown menu.
3. Locate the License Code field with the lock icon.
4. Click the lock icon to allow editing, and enter the new code.
5. Click the icon once again to save and activate the new license code.

Effects of License Limits

License Check Interval - If the licensing server is not contacted by PPME within the license check interval, the license will be considered expired. (This means that PPME must always be online.)

Printer Count - When the maximum printer count is reached, further connection attempts from printers will be denied. All PPME admins will receive an e-mail notification.

Move an Installation of PPME

If an administrator is moving an installation of PPME to a new server, you may want to reuse the same license code.

1. Navigate to the main licensing page from the **User** menu admin .

2. Choose **Release** (beside **License Code**) and confirm.

   The license code is returned to the server and allow it to be used on another server without going over the activation limit.

⚠ **CAUTION:** This will log the user out of the application and make it unusable until a valid license is entered.

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LDAP User Directory Configuration

This section describes how to configure the fields in the PPME LDAP User Directory section for user authentication with Active Directory. This can be configured from the PPME configuration page after logging into the console with admin privileges.

Name (Required): This is used only for display purposes within PPME.

Hostname (Required): The address which Active Directory is available at, should not include port or protocol prefix.

Port (Required): The port Active Directory is available on, usually this is 389 for non-secure traffic and 636 for secure traffic.

Use SSL: Check this if the Active Directory system requires secure traffic.

Username (Required): This should be the full path to a management/admin user within Active Directory that can be used for the initial connection, allowing PPME to validate/authenticate users.

Password: The password for the management user.

CA Certificate: If using SSL, you will most likely need to add the certificate which your Active Directory system is hosting unless the certificate is signed by a trusted certificate authority. This will allow PPME to trust the Active Directory server, otherwise, the connection will be refused.

Base DN (Required): This is the base distinguished name for which all queries will be run against. Generally this will be your internal domain for example zebra.lan would be an internal domain and the Base DN might be dc=zebra,dc=lan.

The URL used to connect to the Active Directory server would be ldap://HOSTNAME:PORT/BASE_DN

Additional User DN: This is an optional field which can be used to limit where PPME will query users, for example users may be stored in a path such as CN=PPME_Users,DC=zebra,DC=com in which case you would want to set this field to CN=PPME_Users, as the Base DN will be automatically added. It can however, be left blank and PPME will attempt to search the Active Directory tree for users.

Use of this field requires PPME version 2.1.6638 or later.

Additional Group DN: This is an optional field which can be used to enforce users be part of an Active Directory group via their memberOf attribute. For example, you may have a Group within Active Directory at path CN=PPME_Admins,OU=Groups,DC=zebra,DC=lan in which case you would want to set this field to CN=PPME_Admins,OU=Groups. If you have multiple groups and you want them to be created with specific PPME roles when the users log in, you will have to create multiple LDAP User Directory entries inside of PPME where each one defines a separate Additional Group DN and Default User Role.

User Name Attribute (Required): This is the field name inside of your Active Directory system which maps the username. This is NOT a username, it is a field. Generally, this will be samAccountName if using Active Directory or if using OpenLDAP, it will probably be uid.

User Full Name Attribute (Required): This is the field name inside of your Active Directory system which maps the user's full name.

User Email Attribute (Required): This is the field name inside of your Active Directory system which maps the user email addresses. While this field is required, it is only used to store the email address within PPME and no validation of whether it is a valid email address occurs. Therefore, if you are using an Active Directory system which does not map an email address to users, you can set this to something else, such as the User Name Attribute (samAccountName), and PPME will store the username as the email address.

Default user Role: This is used to predefine which role Active Directory users will be given when they first login to PPME.

Troubleshooting

This section provides assistance with installation and other known issues.

Installation Issues

- If you receive either of the error messages below, check your internet connection.
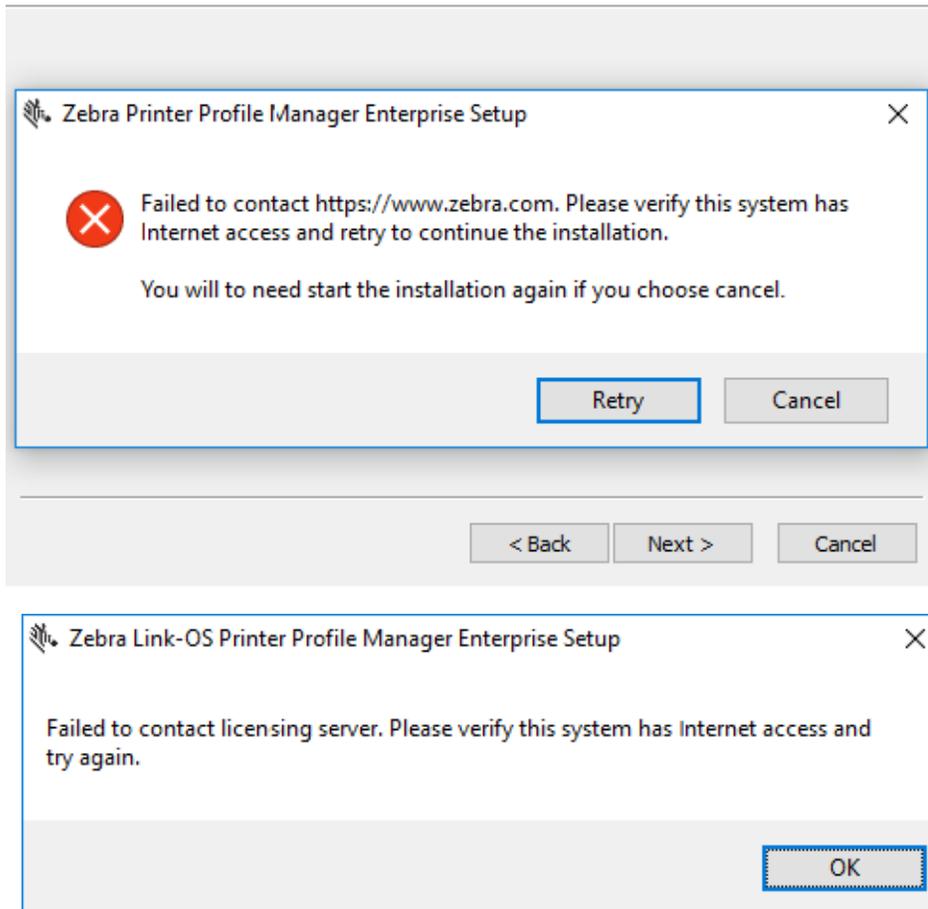
Other reasons you may not be able to connect include:

- Connection to a network that has no internet access
- Firewall is blocking outgoing ports 80/443
- Firewall is blocking zebra.com

- Firewall is blocking nalpeiron.com
- DNS issues

Other Issues

Enabling License Logging

The ability to control the log size applies to version 3.2 and later.

Logging for the license system can be enabled in situations where the licensing may not be functioning correctly.

The log files can be found at the location below and should be provided to Zebra for interpretation.

`C:\Windows\System32\config\systemprofile\AppData\Local\Nalpeiron`

To enable logging:

1. Stop the PPME service.
2. Edit the ppme.properties file at `%PROGRAMDATA%\Zebra Technologies\Printer Profile Manager Enterprise\.PPME` and add the following two entries:

   `linkos.licensing.logLevel=4`

   `linkos.nalpeiron.maxLogSize=<maxlogsize>`

   where `<maxlogsize>` is the maximum file size in bytes. Default, if not specified: 20971520 (20MB)
3. Restart the PPME service.
4. Logging should be disabled for normal usage.

To disable logging:

1. Stop the PPME service.
2. Edit the PPME properties file and set the property below to 0:

   `linkos.licensing.logLevel=0`
3. Restart the PPME service.

NOTE: When a log file reaches the defined size, a new log file is created up to a maximum of 5 log files. When there are 5 full log files, the oldest one is deleted and a new one is created.

Increasing Log Capture Content

The logging levels for PPME are controlled by the ppmelogback.xml file stored in the .PPME folder (for example, `%PROGRAMDATA%\Zebra Technologies\Printer Profile Manager Enterprise\.PPME`). To change the levels, one must edit the file and save it. PPME will automatically check every 2 minutes for any updates and apply them without the need to reboot the server/service.

To Change the Level to Debug for Non-Printer Data:

1. Edit the ppmelogback.xml file in a text editor that understands Windows and Linux line endings. (Notepad or a browser are not recommended.)

2. Find the PPME_LOGS appender. The xml line looks like this:

```
<appender name="PPME_LOGS" class="ch.qos.logback.core.rolling.RollingFileAppender">
```

3. Change the filter level to DEBUG:

```
<filter class="ch.qos.logback.classic.filter.ThresholdFilter">

    <level>DEBUG</level>

</filter>
```

4. Find the root level filter that contains the PPME_LOGS appender and change it to DEBUG.

```
<root level="DEBUG">

   <!--<appender-ref ref="CONSOLE"/>-->

<appender-ref ref="PPME_LOGS"/>

</root>
```

5. Save the file and wait approximately 2 minutes.

6. The .PPME/logs/ppme.log file should start to increase in size at a much faster rate (depending upon how many printers being used).

7. If the file is opened, the 'DEBUG' level should be seen as a prefix to some messages.

To Change the Level to Debug for Printer Data:

1. Edit the ppmelogback.xml file in a text editor that understands Windows and Linux line endings. (Notepad or a browser are not recommended.)

2. Find the PPME_LOGS appender. The xml line looks like this:

```
<appender name="PRINTER_DATA_LOGS"
class="ch.qos.logback.core.rolling.RollingFileAppender">
```

3. Change the filter level to DEBUG:

```
<filter class="ch.qos.logback.classic.filter.ThresholdFilter">

   <level>DEBUG</level>

</filter>
```

4. Find the root level filter that contains the PPME_LOGS appender and change it to DEBUG.

```
<root level="DEBUG">

<!--<appender-ref ref="CONSOLE"/>-->

 <appender-ref ref="PPME_LOGS"/>

</root>
```

5. Save the file and wait approximately 2 minutes.

6. The .PPME/logs/ppme_printer_data.log file should start to increase in size.

7. If the file is opened, the 'DEBUG' level should be seen as a prefix to some messages.

NOTE: In both scenarios above, only leave the new DEBUG level in place for the duration that is needed in order to collect the logs. Once the collection period is over, make sure to put the levels back to WARN, so that the log is not filled up with DEBUG data during normal operation.

Uploading large files triggers an exception in the System Log

No solution required. This exception is just a warning from the database code stating that the operation is taking too long and may be a memory/data leak.

The application fails to start and the log file reads "SOAP: invalid license number"

This is typically due to an incorrectly set server clock. If the server clock is not the correct time, update the clock, and then reinstall the application. If this does not solve the problem, you may have an invalid license key.

LDAP encounters a communication or connection error

This can happen when attempting to 'Save and Test' settings and can be due to several issues:

- One of the server settings being incorrect.

- The PPME server cannot resolve the Hostname.

- The port is blocked between PPME and the LDAP server.

- If the SSL box is checked, the LDAP server may be issuing a self-signed certificate. In order for PPME to connect, it must trust the server's Certificate Authority (CA). If the certificate is self-signed, then PPME needs to be updated to trust that CA. In order to do that, you must configure PPME to trust the LDAP CA.

The following steps can be used to resolve this error in the ppme.log file:

PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target

1. Stop the PPME service.

2. Open a Windows Command Prompt.

3. Navigate to the jre folder within the PPME installation folder, e.g., `C:\Program Files\Zebra Technologies\Printer Profile Manager Enterprise\java\jdk-x.x.xxxx-jre` (Where x.x.xxxx indicates the version number of the software).

4. Note the location of the LDAP CA PEM file. In this example, assume it is `%USERPROFILE%\Desktop\ldap_ca.pem`

5. Run the following command using any value for the -alias parameter, e.g. 'ldapca'.

   `> bin\keytool -importcert -keystore lib\security\cacerts -file %USERPROFILE%\Desktop\ldap_ca.pem -alias ldapca`

6. Start the PPME service.

7. Attempt to configure and connect to your LDAP server again.

The application fails to start and the log file reads, "Nalpeiron: Invalid or corrupt library".

1. Shut down the application.

2. Locate the Nalpeiron folder, typically located at: `C:\Windows\System32\config\systemprofile\AppData\Local\Nalpeiron` and delete the entire folder.

3. Restart the application.

The printer will not connect to PPME and/or the printer is stuck in the 'Adding' state

NOTE: The Zebra Programming Guide contains much of what you see below and goes into more detail on the operation and functionality of Weblink.

The printer uses HTTPS to connect to the PPME server. Therefore, it does hostname verification when connecting to ensure that the certificate that is presented by the server matches the hostname/DNS name the printer is attempting to connect to. In order to make a successful connection to PPME, several things have to be true:

- The PPME server must be reachable from the printer's subnet (for example, you can ping the PPME server from the printer's subnet).

- The port that printers use to connect to PPME (for example, 8443) must be reachable from the printer's subnet (e.g., any firewalls or firewall rules that prevent access to the server port should be modified to allow access).

- The Fully Qualified Domain Name (FQDN) of the server (for example, acme.internal.lan) must be in the DNS server that the printer is configured to use, so that it can be properly resolved.

- The certificate associated with the port that the printer connects to must be signed by Zebra. Only the default certificate generated by the installer or any issued by Zebra after the installation are acceptable.

Printers do not always connect right away

In some cases, a user cannot always login, or there is a large delay when logging in. Other times, pages are extremely slow to load or don't load completely.

It is possible that the database (DB) connections are overwhelming the database. Take the following steps to ensure the PPME DB connection pool size is correct:

1. Open the ppme.log (and maybe a few of the previous days' logs) and look for a message similar to the following:

   `ERROR org.hibernate.engine.jdbc.spi.SqlExceptionHelper - FATAL: sorry, too many clients already`

2. If the above message is found, proceed with the rest of these steps. Otherwise, the DB pool size is not the issue.

3. Open the Windows Services window and find 'Printer Profile Manager Enterprise Database'.

4. Double-click the service to open it.

5. Locate the value passed into the service using the -N parameter (e.g., it is likely -N 75).

6. Close the service dialog.

7. Go to the .PPME directory (e.g., `%PROGRAMDATA%\Zebra Technologies\Printer Profile Manager Enterprise\.PPME`) and open the ppme.properties file.

8. Edit (or insert if it is not present) the linkos.database.poolsize value to be about five fewer than the value seen in step 5.

9. Restart the PPME service and see if the issue(s) still occur.