Setting up your Printronix Auto ID printer on SOTI Connect

Subject

This document will help you setup your Printronix Auto ID printers on SOTI Connect.

Printer Firmware Requirements

The minimum firmware required is:

FILE,PRGM,PTX,T800,CMB-MGL	V1.20D P301002
FILE,PRGM,PTX,T4000,CMB-MGL	V1.19C P301004
FILE,PRGM,PTX,T6,COMBO	V2.20D P301006
FILE,PRGM,PTX,T6e,COMBO	V1.13E P301008
FILE,PRGM,PTX,T8,COMBO	V2.32E P301018

The minimum PrintNet Enterprise software required is:

PrintNet Enterprise (PNE)	V5.05C P301010

SOTI Connect Information Needed

Before you start, you will need the follow information from SOTI Support:

- MQTT Server IP address
- MQTT Tenant ID
- Token
- Tenant ID
- Certificate file (as needed)

Check the Printer Network Connection

The printer needs to be connected to network to start. Verify the connectivity by either:

- Pinging printer's IP address, or
- Bringing up printer's webpage

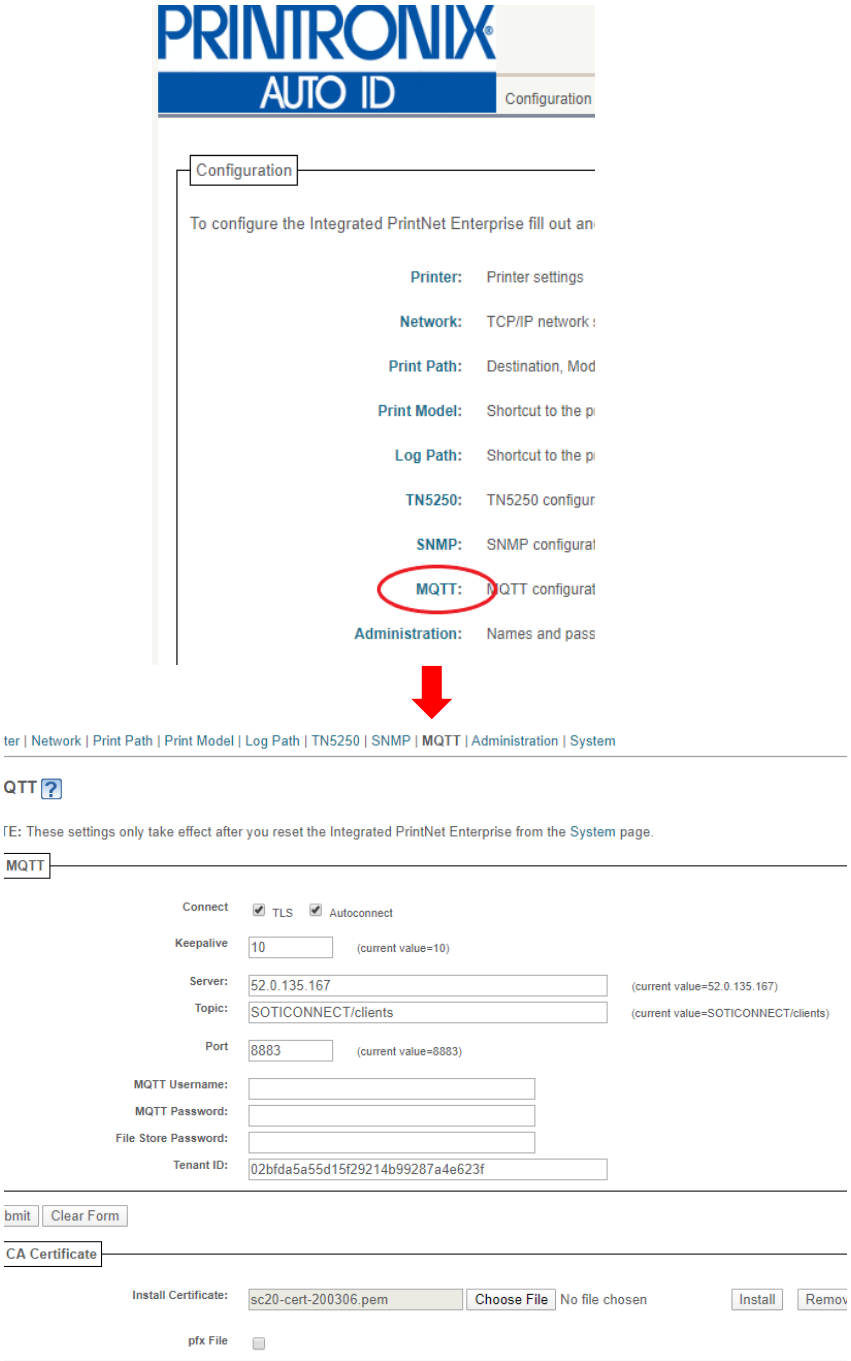
Setup Methods

You can setup your printers in one of three ways

- Webpage easy to do but each printer is setup one at a time
- PrintNet Enterprise (PNE) – convenient for large printer deployments
- Script – best method when raw socket printing, LPR, or FTP is preferred

1. Webpage

To bring up printer's webpage, you can use any web browser and enter printer's IP address. It will ask for the ID and password. ID is 'root' and no password. On the CONFIGURATION page, select MQTT. On the MQTT page, enter MTTT parameters and Certificate as needed.



2. PrintNet Enterprise

Here is an excerpt from PrintNet Enterprise (PNE) User's Manual.

Overview

The purpose of this tool is to help users install MQTT configurations on multiple printers for SOTI Connect. This tool allows users to set MQTT configuration parameters such as the host address, port number, topic string, and tenantID. Users can also download the required certificate files to establish a connection with the server. Lastly, this tool allows you to view the current MQTT configuration for printers listed in the MQTT Printer List.

Instructions

1. To open the MQTT Setup tool click "Utilities > MQTT Setup".
2. Go to the main PNE window and select the desired printers.
3. Go back to the MQTT Setup window and click the add button at the bottom.
4. Confirm that your selected printers are displaying in the MQTT Printer List.
5. Under the MQTT Server Configuration section, enter the appropriate parameters for the MQTT server setup. **Note: The host field and port field are required parameters.**
6. Under the Certificate Files section, select the appropriate cert files for each cert that is needed.

- **Note: To download the cert files, the ASCII Data port must be set to 9100.**

7. Under the MQTT Printer List, select the desired checkboxes for each printer. You can double-click the column headers to select/unselect all checkboxes in a column.
8. Once you are satisfied with your selections click the Start button to begin the MQTT setup process. If any missing fields are found, make sure to fill them in, and click start again.
9. Once the setup process is complete for a printer, that printer will reboot so the changes can take effect immediately. After the reboot a success message will display to let you know the setup is done for that printer.

- **Note: All printers must be online for the MQTT setup to work properly.**

User Interface

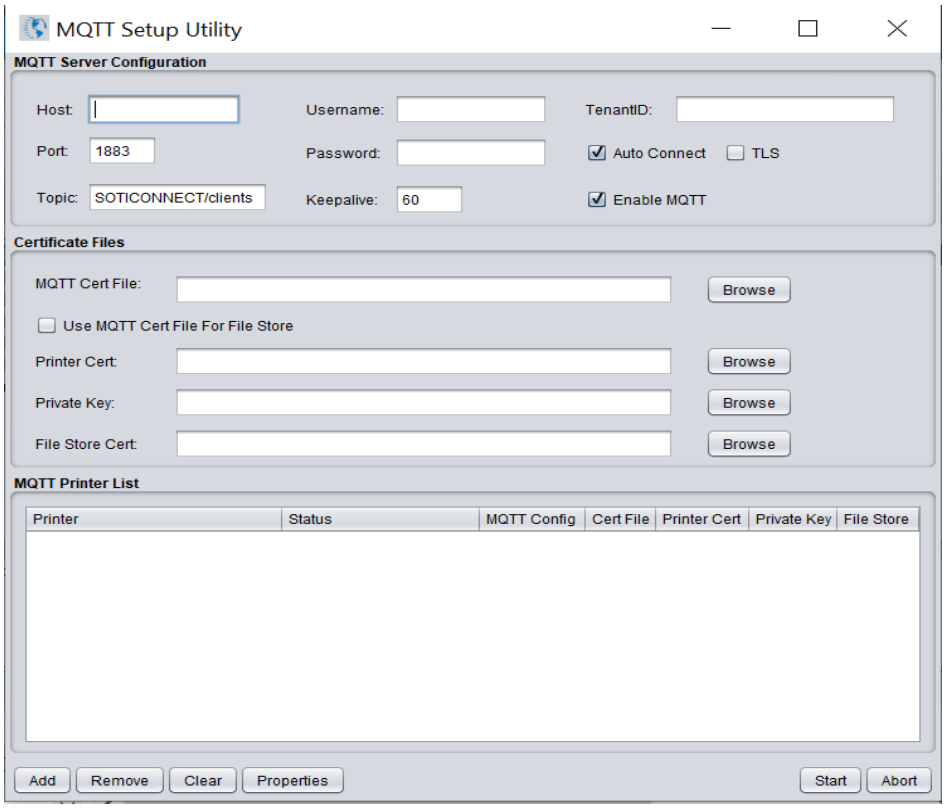


Figure 1 MQTT Setup UI

The functionality for the user interface is broken up into three sections: MQTT Server Configuration, Certificate files, and MQTT Printer List.

MQTT Server Configuration

The MQTT Server Configuration section allows users to specify the following parameters: host, port, topic, username, password, keepalive, tenantID, Auto connect, enable/disable MQTT, TLS. By default, the port number is set to 1883, the topic string is set to SOTICONNECT/clients, and the keepalive value is set to 60. In addition, auto connect is enabled and MQTT will be enabled. The host address and port number are required parameters for the setup process.

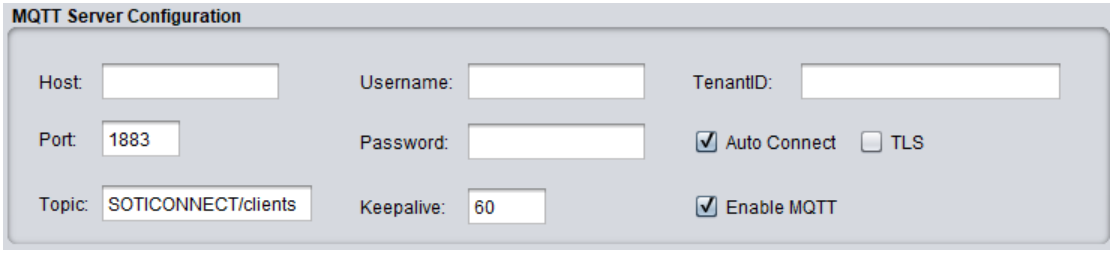


Figure 2 MQTT Server Configuration

Certificate Files

The Certificate files section allows users to specify which cert file, printer cert, private key, and file store cert they want included in the setup process. When browsing for a cert file, the file browser will display ".pem" files. The printer can take .pem or .crt certificate file. MQTT server may require either one certificate or 3 certificate files. MQTT Cert File is CA file. Printer Cert is client cert file and Private key is client private key file. For printer to access File Store it requires to have a File Store certificate.

Figure 3 Certificate Files

The checkbox "Use MQTT Cert File For File Store" means that the MQTT Cert File and the File Store Cert file use the same certificate as seen below.

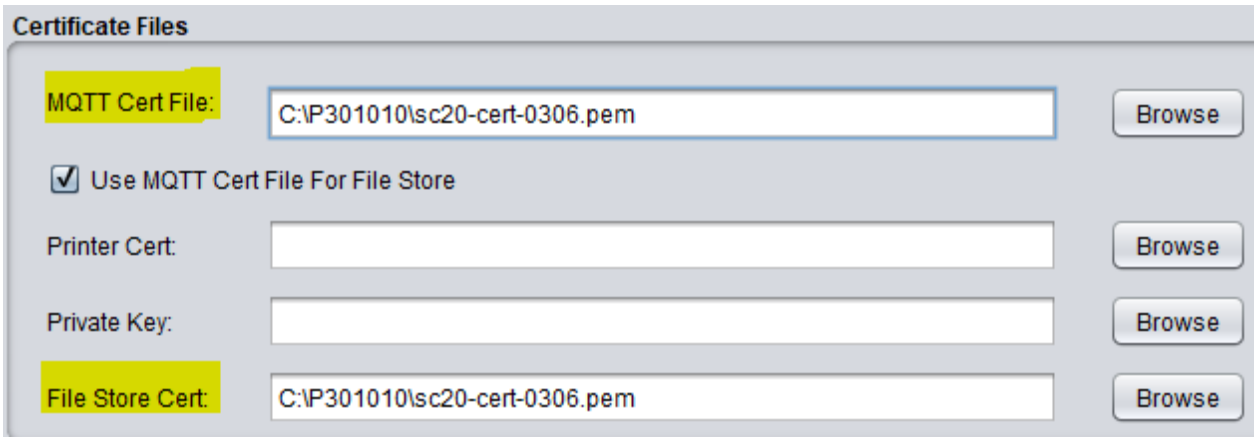


Figure 4 Use MQTT Cert for File Store

MQTT Printer List

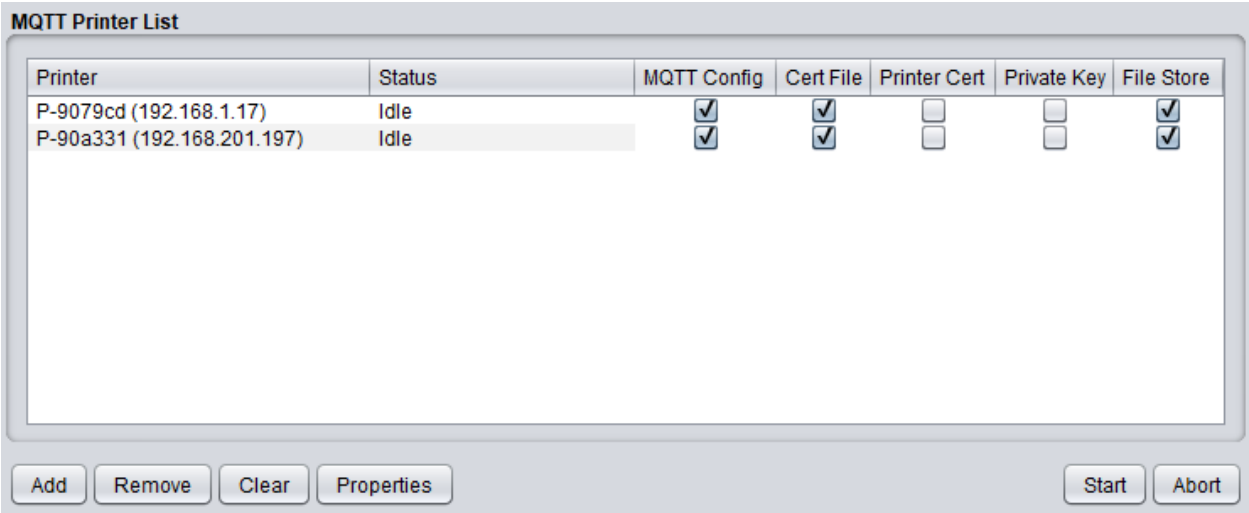


Figure 5 MQTT Printer List

The MQTT Printer List section is where users add the desired printers for setting up the MQTT connection. There are six buttons at the bottom of the window and the first four buttons are for manipulating the printer list. The add button allows you to add printer(s) to the list. This is done by going to the main PNE window and selecting the desired printers for the setup process. Once you have selected the printers, go back to the MQTT Setup window, and click the add button. All the selected printers should now be visible in the MQTT Printer List.

The remove button allows you to remove printer(s) from the printer list. This is done by selecting the desired printer(s) for removal from the list and clicking remove. The clear button is like the remove button and will remove all printers from the printer list. The properties button allows you to view the current MQTT configuration for a selected printer. A separate window will popup that shows the current MQTT Parameters set for the printer.

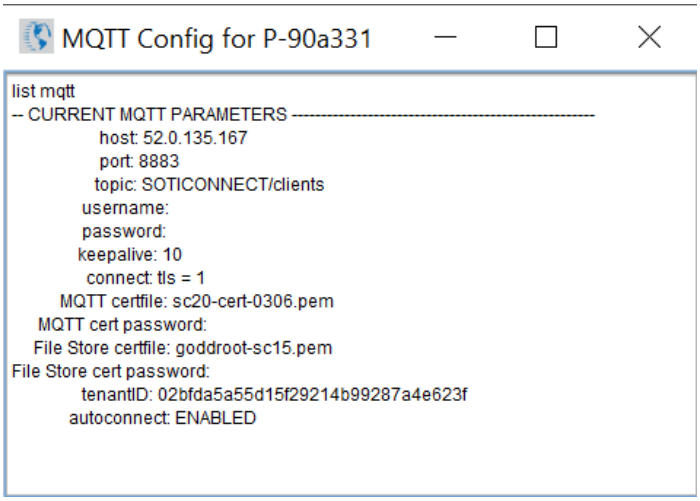


Figure 6 Current MQTT Config

The start and abort buttons are related to the actual setup process. The start button allows you to start the setup process and the abort button allows you to stop an active setup process. Before the process beings, we check to make sure that all the required fields have been provided. If not, then an error message will popup alerting the user to the missing fields.

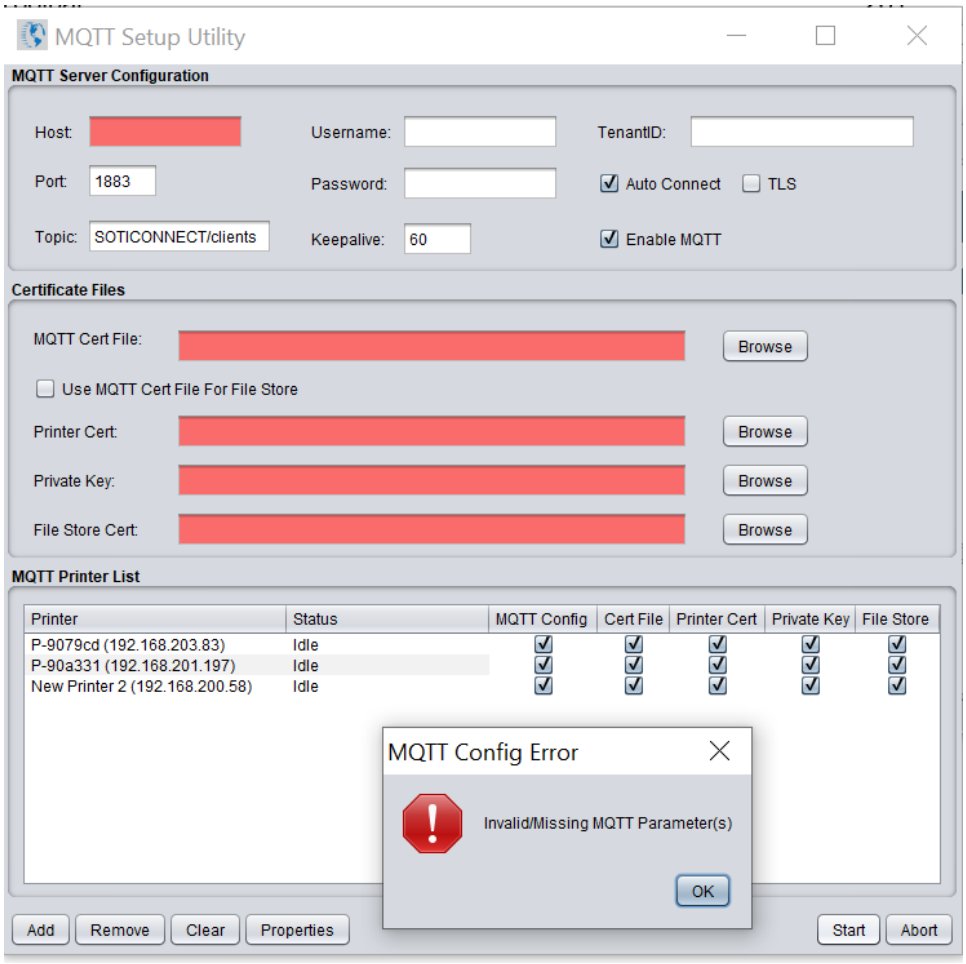


Figure 7 MQTT Config Error

Each list item contains the printer name and IP address, printer status, and 5 checkboxes. The printer status column provides messages that tell the user what is happening throughout the setup process for each printer. At the start of the setup process, we check to make sure that each printer is online. If the printer is not online or we cannot establish a connection, then the printer status will display a failure message ("Fail: Printer Offline"). If you get this message, check to ensure that printer is online and has a network connection. If everything works out and the printer has rebooted and established a connection, you will see a success message ("Success: MQTT Setup") letting you know the process completed without issue.

Each checkbox coincides with a specific part of the setup. The MQTT Config checkbox corresponds to the MQTT Server Configuration section. The Cert File checkbox is associated with the MQTT Cert File field under the Certificate Files section. The Printer Cert checkbox is associated with the Printer Cert field. The Private key checkbox is associated with the private key field and the file store checkbox is associated with the File Store Cert field.

Note: You can double-click the column headers in the printer list(MQTT Config, Cert File, Printer Cert, Private Key, File Store) and all the checkboxes will be selected/unselected.

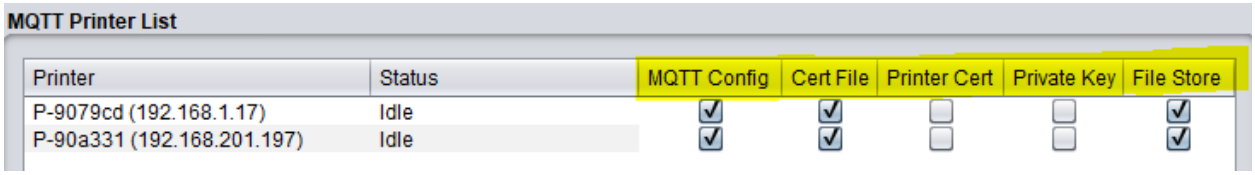


Figure 8 Column Headers

3. Script File

The printer can be configured by sending a script file to the printer using raw socket printing, LPR, or FTP. The script is written in PTX_SETUP.

Non-secured MQTT Connection

1. Make a script file to setup SOTI. Below is the sample and explanation of the script file.
2. Send the script file to the printer using raw socket printing, LPR, or FTP.

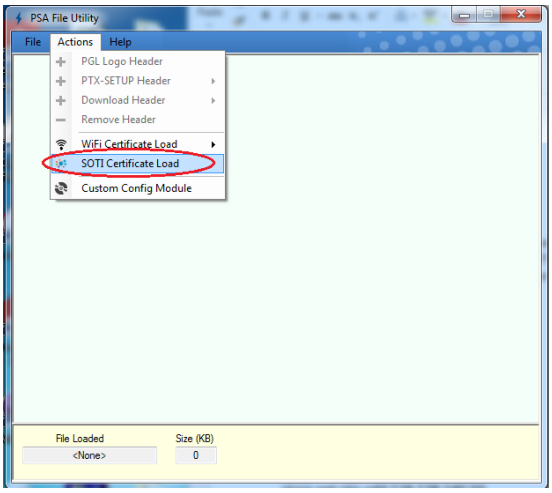
!PTX_SETUP	
NIC_SETUP	
store mqtt server <IP address>	IP address is the MQTT broker IP address
store mqtt port 1883store mqtt topic SOTICONNECT/clients	=1883 if non-secured port, =8883 if secured port Blank if no topic. = SOTICONNECT/clients If using SOTI
store mqtt connect -tls	=-tls if not secured connect, =tls if secured connect
store mqtt tenantID <tenant ID>	Tenant ID is provided by SOTI
enable mqtt	Turn on MQTT protocol.
store net ntp add 129.16.15.28	Internet time server 1
store net ntp add 128.138.140.50	Internet time server 2
store net ntp add 204.62.12.123	Internet time server 3
store net ntp timezone -7	Setup Time Zone for the printer
reset	Reset the printer
PTX_END	
END_NIC_SETUP	

NOTE: You will get the MQTT server IP address and port number from the IT person who sets up MQTT server.

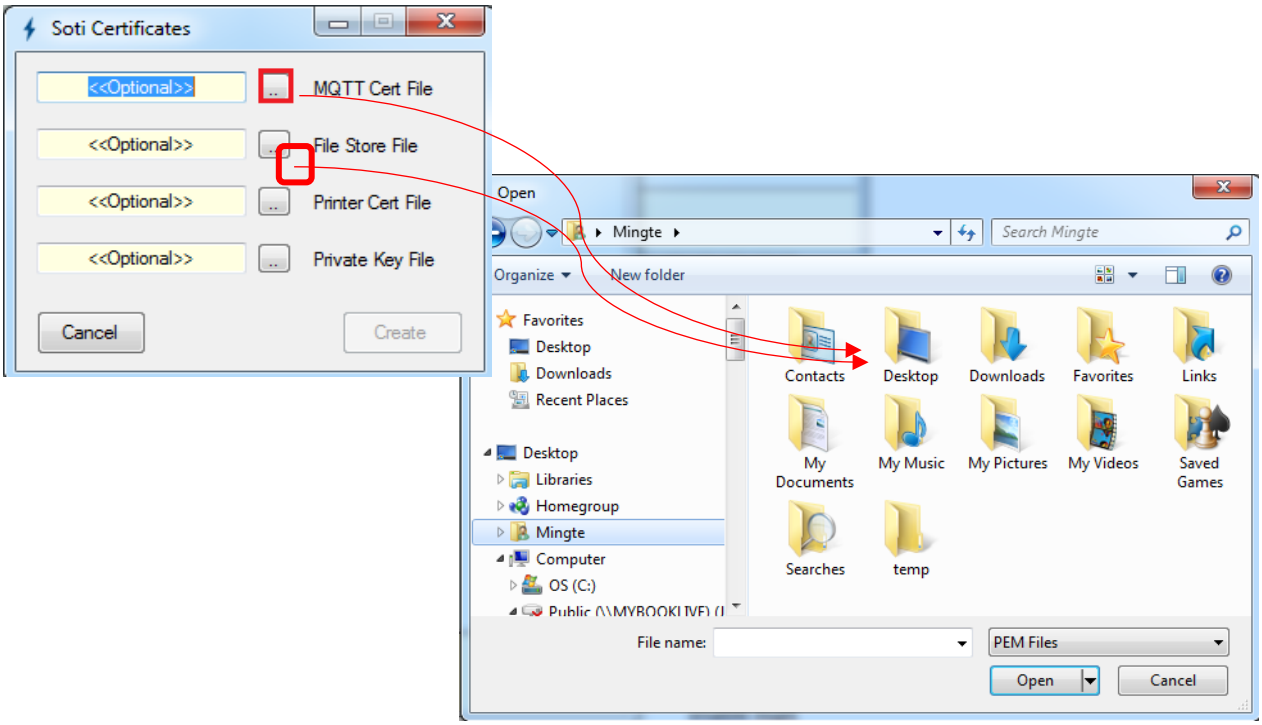
Secured MQTT Connection

Because this is secured MQTT connection, you will need to load certificate first to start the setup. You will get the security certificate from the IT person who sets up MQTT server. Use PrintronixAutoID FileUtility.exe (download from Printronix Auto ID Support > Downloads website) to build a file to send to printer as a script. If you are using File Store to load files from, you will need certificate for accessing File Store. You can get File Store certificate from the IT person.

3. Run FileUtility.exe and click Actions -> SOTI Certificates



4. Navigate to the folder that holds the certificate file click Open followed by clicking Create button.



5. Enter the file name for the output file.
6. Send the output file to the printer using raw socket printing, LPR, or FTP.
7. Make a script file to setup SOTI. Below is the sample and explanation of the script file.

8. Send the script file to the printer using raw socket printing, LPR, or FTP.

!PTX_SETUP	
NIC_SETUP	
store mqtt server <IP address>	IP address is the MQTT broker IP address
store mqtt port 8883	=1883 if non-secured port, =8883 if secured port
store mqtt topic SOTICONNECT/clients	Blank if no topic. = SOTICONNECT/clients if using SOTI
store mqtt connect tls	=-tls if not secured connect, =tls if secured connect
store mqtt tenantID <tenant ID>	Tenant ID is provided by SOTI
enable mqtt	Turn on MQTT protocol.
store net ntp add 129.16.15.28	Internet time server 1
store net ntp add 128.138.140.50	Internet time server 2
store net ntp add 204.62.12.123	Internet time server 3
store net ntp timezone -7	Setup Time Zone for the printer
reset	Reset the printer
END_NIC_SETUP	
PTX_END	

NOTE: You will get the MQTT server IP address and port number from the IT person who sets up MQTT server.